Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
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Clayton
ENVIRONMENTAL
CONSULTANTS

March 9, 1994

Ms. Juliett Shin
Hazardous Materials Specialist
ALAMEDA COUNTY HEALTH AGENCY
80 Swan Way, Room 200
Oakland, California 94621

Clayton Project No. 53966.00

Subject: Work Plan for Subsurface Investigation at Ballena Isle Marina located at 1150 Ballena Boulevard in Alameda, California

Dear Ms. Shin:

Clayton Environmental Consultants, Inc. on behalf of Ballena Isle Marina is pleased to present this work plan for subsurface investigation at Ballena Isle Marina facility located at 1150 Ballena Boulevard in Alameda, California.

If you have any questions please contact me or Mr. John Vargas at (510) 426-2676.

Sincerely,

Dariush Dastmalchi
Geologist

DD/dd
cc: Mr. Don Anderson, Ballena Isle Marina

Western Operations

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Work Plan for Subsurface Investigation at Ballena Isle Marina 1150 Ballena Boulevard Alameda, California

Clayton Project No. 53966.00
March 9, 1994

CONTENTS

1.0 INTRODUCTION

Ballena Isle Marina retained Clayton Environmental Consultants, Inc. to prepare a work plan for the future activities planned for Ballena Isle Marina facility lactated at 1150 Ballena Boulevard in Alameda, California.

The subject facility is located on an artificial island in a commercial area of the City of Alameda (Figure 1). The site is currently used as a yacht harbor by Ballena Isle Marina.

An underground storage tank (UST) was located under the sidewalk, approximately 30 feet from the San Francisco Bay shoreline. A site diagram showing the tank location is included as Figure 2.

2.0 BACKGROUND

In September 1991 a 250-gallon waste oil UST was removed from the subject facility by the owner of the site. The soil around the tank appeared to be contaminated as a result of spillage and overfilling the tank. One soil sample was collected from the excavation pit and transported to Trace Analysis Laboratory (TAL). The soil sample was analyzed using the following methods:

- Department of Health Services (DHS) Method for total petroleum hydrocarbons as gasoline (TPH-G)
- DHS Method for total petroleum hydrocarbons as diesel (TPH-D).
- Environmental Protection Agency (EPA) Method 8020 for benzene, toluene, ethylbenzene and xylenes (BTEX)
- EPA Method 8010 for chlorinated hydrocarbons
- Standard Method (SM) 5520 for total oil and grease (TOG)
- EPA 7000 series Methods for cadmium, chromium, lead, nickel, and zinc

Analytical results of the soil sample collected from the excavation pit identified TPH-G, TPH-D and TOG above the analytical detection limits in the soil samples from the excavation pit. Analytical results for organic compounds are summarized in Table 1.

Table 1

Analytical Results for the Soil Sample Collected by TAL in September 1991
All Concentrations in Milligrams per Kilogram (mg/kg)

Sample	TPH-D	TPH-G	TOG	Toluene	Ethylbenzene	Xylenes
1	5,700	860	11,000	3.9	13	140

Chlorinated hydrocarbons and benzene were not detected in the soil sample. TAL analytical report is included in Appendix A.

Subsequently the excavation pit was over excavated to remove the contamination. According to ENSR Consulting and engineering report dated May 21, 1992 two soil samples were collected from the over-excavated tank pit (see Appendix B). One sample was collected from the north wall (SW-1) of the pit and the other sample was collected from the bottom of the pit (PB-1). The soil samples were analyzed for the following:

- TPH-G using EPA Method 8015
- TPH-D using EPA Method 8015
- BTEX using EPA Method 8020
- Volatile organic compounds (VOC) using EPA Method 8240
- TOG using SM 5520
- cadmium, chromium, lead, nickel, and zinc

Analytical results of the soil samples collected by ENSR identified TPH-D and TOG in the soil samples from the excavation pit. Analytical results for organic compounds are summarized in Table 2.

Table 2

Analytical Results for the Soil Samples Collected by ENSR in May 1992
All Concentrations in Milligrams per Kilogram (mg/kg)

Sample	TPH-D	TPH-G	TOG	Benzene	Toluene	Ethylbenzene	Xylenes
SW-1	2,200	91	5,300	ND*	ND	ND	1.9
PB-1	1,800	79	4,200	ND*	1	0.84	9.2

* ND Not detected at or above the analytical detection limits

Further excavation of the contaminated soil was not possible because the excavation pit is bounded by a building foundation on the south and south west and utility vaults on the north.

In December 1992 Law/Crandall, Inc. drilled five soil borings and collected five soil samples (B-1 through B-5) from the surrounding area of the former waste oil UST. The soil samples were collected from approximately 10 feet below ground surface (bgs) and approximately 8 to 34 feet away from the excavation pit. In addition one grab water sample was collected from a boring located approximately 8 feet northwest of the pit.

The soil and grab water samples ware analyzed for the following:

- TPH-G using EPA Method 8015
- TPH-D using EPA Method 8015
- BTEX using EPA Method 8020

- VOC using EPA Method 8240
- Semivolatile organic compound (SVOC) using EPA Method 8270
- Polychlorinated biphenyls (PCB) and pesticides using EPA Method 8080
- TOG using SM 5520
- Cadmium, chromium, lead, nickel, and zinc

TOG was detected in the soil samples ranging from 53 mg/kg in soil sample B-5 to 110 mg/kg in soil sample B-1. The grab water sample contained toluene concentration of 0.3 micrograms per liter (µg/l). The other analytes in the soil and grab water samples were not detected at or above the analytical detection limits. The Law/Crandall report is included in Appendix C.

On October 2, 1993 Hydrocarbon Consultants collected a grab water sample from the excavation pit (OP1). The OP1 sample was analyzed for the following:

- TPH-G using EPA Method 8015
- TPH-D using EPA Method 8015
- BTEX using EPA Method 8020
- Semi volatile organic compound (SVOC) using EPA Method 8270
- PCB using EPA Method 8080
- TOG using SM 5520
- Cadmium, chromium, lead, nickel, and zinc

Analytical results for the sample OP1 are summarized in Table 3.

Table 3

Analytical Results for the Grab Water Sample OP1 Collected by Hydrocarbon Consultants in September 1993
All Concentrations in µg/l

Sample	TPH-D	TPH-G	TOG	Toluene	Ethylbenzene
OP1	9100	580	43,000	3.9	19

SVOCs, PCBs, and metals were not detected at concentration at or above the analytical detection limit. A copy of the analytical Data summary by Hydrocarbon Consultants is included in Appendix D.

3.0 EXTENT AND NATURE OF SOIL AND GROUNDWATER CONTAMINATION

Based on the analytical results collected to-date, the soil and groundwater inside the excavation pit has been impacted primarily by TPH-G, TPH-D, and TOG. According to the Law/Crandall report hydrocarbons on the east, west, and north sides of the former UST in the vicinity of boreholes B-2, B-3, an B-5. No soil sample has been collected from the south side of the excavation pit.

Based on analytical results, the groundwater collected from the excavation pit appears to be impacted by TPH-G, TPH-D, and TOG. However, the water sample collected

from hydropunch location HP-1 did not contain hydrocarbon concentrations at or above the analytical detection limits.

The following scope of work is developed to determine potential groundwater contamination in a direction closest to San Francisco Bay and extent of soil contamination on the south, east, and west side walls of the excavation pit. Based on the results of this investigation, recommendations for further work, if required, will be made.

4.0 SCOPE OF WORK

This work plan describes activities planned at the Ballena Isle Marina site to further investigate the extent of soil and possible groundwater contamination near the former UST. This work plan is based on a conversation between Ms. Juliet Shin, Hazardous Materials Specialist with Alameda County Health Care Services (ACHCS) and Mr. Dariush Dastmalchi, Clayton Project Geologist on February 17, 1994. The tasks required to perform this investigation are described in the following subsections.

4.1 TASK 1: HEALTH AND SAFETY PLAN

A health and safety plan will be prepared for the work outlined in this work plan in accordance with the requirements of Title 29 of the Code of Federal Regulations, Section 1910.120 (29 CFR 1910.120).

4.2 TASK 2: DRILLING AND MONITORING WELL INSTALLATION PERMITS

Before commencing the field activities Clayton will obtain the necessary permits from the Zone 7 Water Agency

4.3 TASK 3: IDENTIFICATION OF UNDERGROUND UTILITY TRENCHES

Clayton will contact Underground Service Alert (USA) to identify the utilities in the vicinity of the soil boring location. The identified utilities will be clearly marked on the ground. Clayton will not drill within 3 feet of a known utility line.

4.4 TASK 4: TEMPORARY MONITORING WELL INSTALLATION AND SAMPLING

To define the extent of soil and possible groundwater contamination, one temporary monitoring well (TW-1) will be installed near the former UST excavation pit. The monitoring well will be placed in the estimated downgradient side of the former tank location. This well will be installed to determine the extent of potential groundwater contamination. The proposed temporary monitoring well location is shown in Figure 2.

Boring TW-1 will be drilled using a specialized truck-mounted auger or hand auger. The borehole will extent approximately 5 feet below first encountered groundwater. The borehole will be converted into a temporary monitoring well using a 2 inch diameter schedule 40 polyvinyl chloride (PVC) casing.

To collect a representative sample of the groundwater, water within the well casing will be purged and water from the lithologic formation will be allowed to replace it. The water will be purged from the well by bailing at least three well volumes. Groundwater samples will be collected only after purging has been of sufficient duration for pH, temperature, and electrical conductivity to stabilize.

All samples will be collected in such a manner so as to minimize the volatilization of a sample due to agitation and/or transfer from bailer to sample container.

Water samples will be collected using clean disposable bailers. All equipment that contacts samples is thoroughly cleaned before arrival at the site. Water will be collected in clean laboratory-supplied containers, labeled, placed immediately into an ice chest pre-cooled to 4°C, and transported to the laboratory for analysis.

To document and trace samples from time of collection, a signed chain-of-custody record is filled out by the sampler and accompanies the samples through the laboratory analyses. The completed chain-of-custody is included with the analytical report from the laboratory.

After completion of groundwater sampling activities, the PVC casing will be removed from the well. The borehole will then be plugged with grout.

Drilling and sampling activities will be conducted in accordance under the supervision of a geologist registered in the State of California.

The soil cuttings and sampling spoils generated by the drilling process will be placed into individually labeled, Department of Transportation (DOT)-approved 55-gallon drums and left onsite until proper disposal can be determined based on laboratory analysis.

4.5 TASK 5: SOIL SAMPLE COLLECTION

A soil sample will be collected from south wall of the excavation pit at approximately 8 feet bgs. The soil sample will be collected from the excavation wall to determine the extent of contamination within the pit. Before collecting the soil sample, 4 to 6 inches of soil will be removed by hand or a mechanical device. The soil sample will then be collected using a 2.5-inch barrel hand sampler.

The soil sample will be collected in precleaned brass tube for laboratory analysis. The brass tube will be sealed with aluminum foil, plastic caps, and teflon tape, and immediately placed in an iced cooler for transport to a State Certified laboratory. Legal chain-of-custody procedures will be followed for handling of soil and water samples.

4.6 TASK 6: LABORATORY ANALYSIS

One soil sample and one water sample will be collected and transported to the state-certified laboratory.

The soil and groundwater samples will be analyzed using the following methods:

- EPA Method 8015 for TPH-D
- EPA Method 8015 for TPH-G
- EPA Method 8020 for BTEX
- SM 5520 for TOG

4.7 TASK 7: DATA ANALYSIS AND REPORT PREPARATION

Upon completion of the laboratory analysis, a report will be prepared, summarizing the findings of the investigation. A discussion of the site investigation technique, soil and water sampling, analytical results, conclusions, and recommendations will be included in the report.

5.0 SCHEDULE

The work on this project can begin within 10 days after receipt of authorization to proceed from the ACHCS.

This work plan prepared by: Dariush Dastmalchi

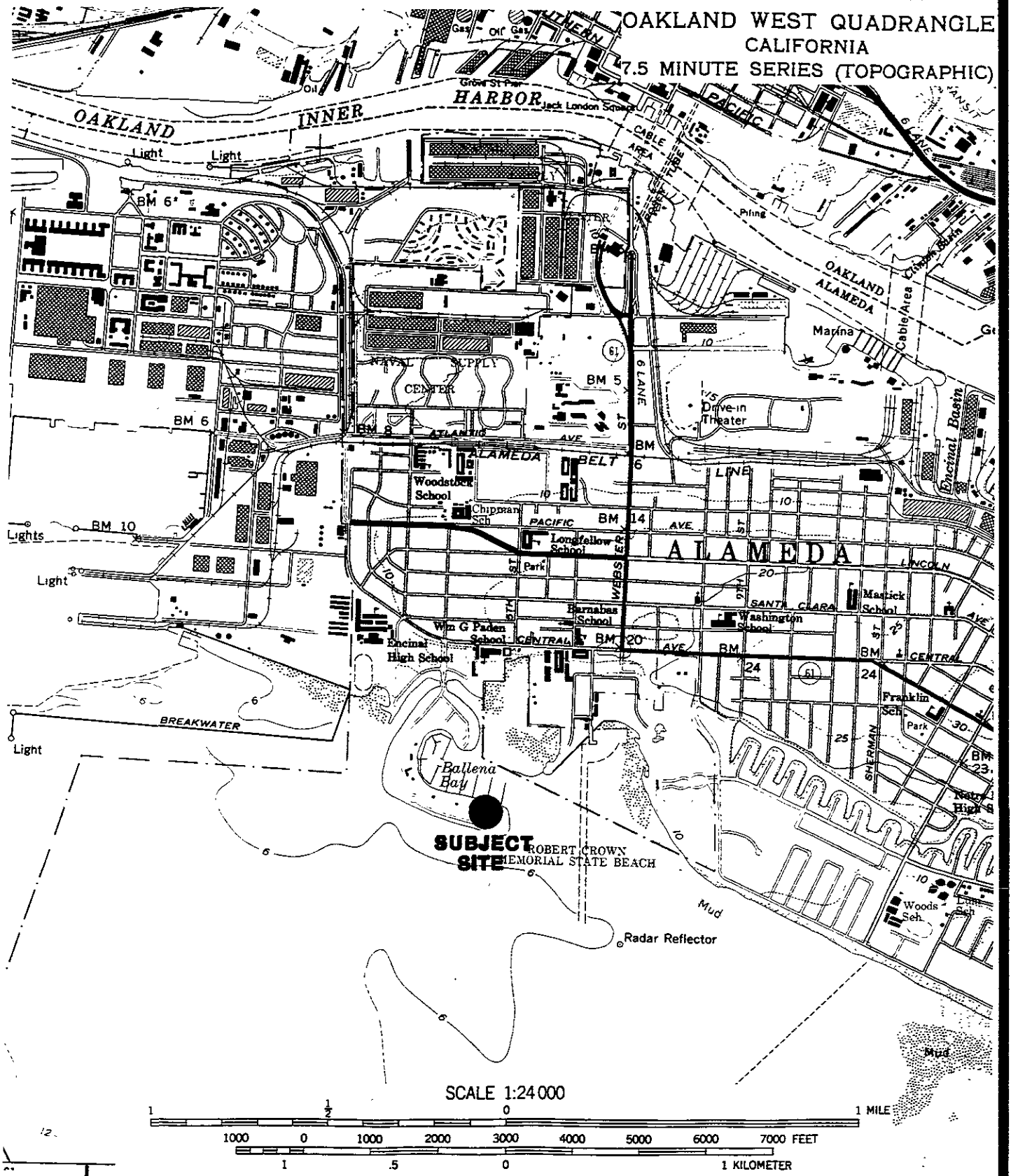
Dariush Dastmalchi
Geologist

This work plan reviewed by: John F. Vargas

John F. Vargas, R.G.
Supervisor, Geosciences & Remediation
Western Operations

March 9, 1994

FIGURES



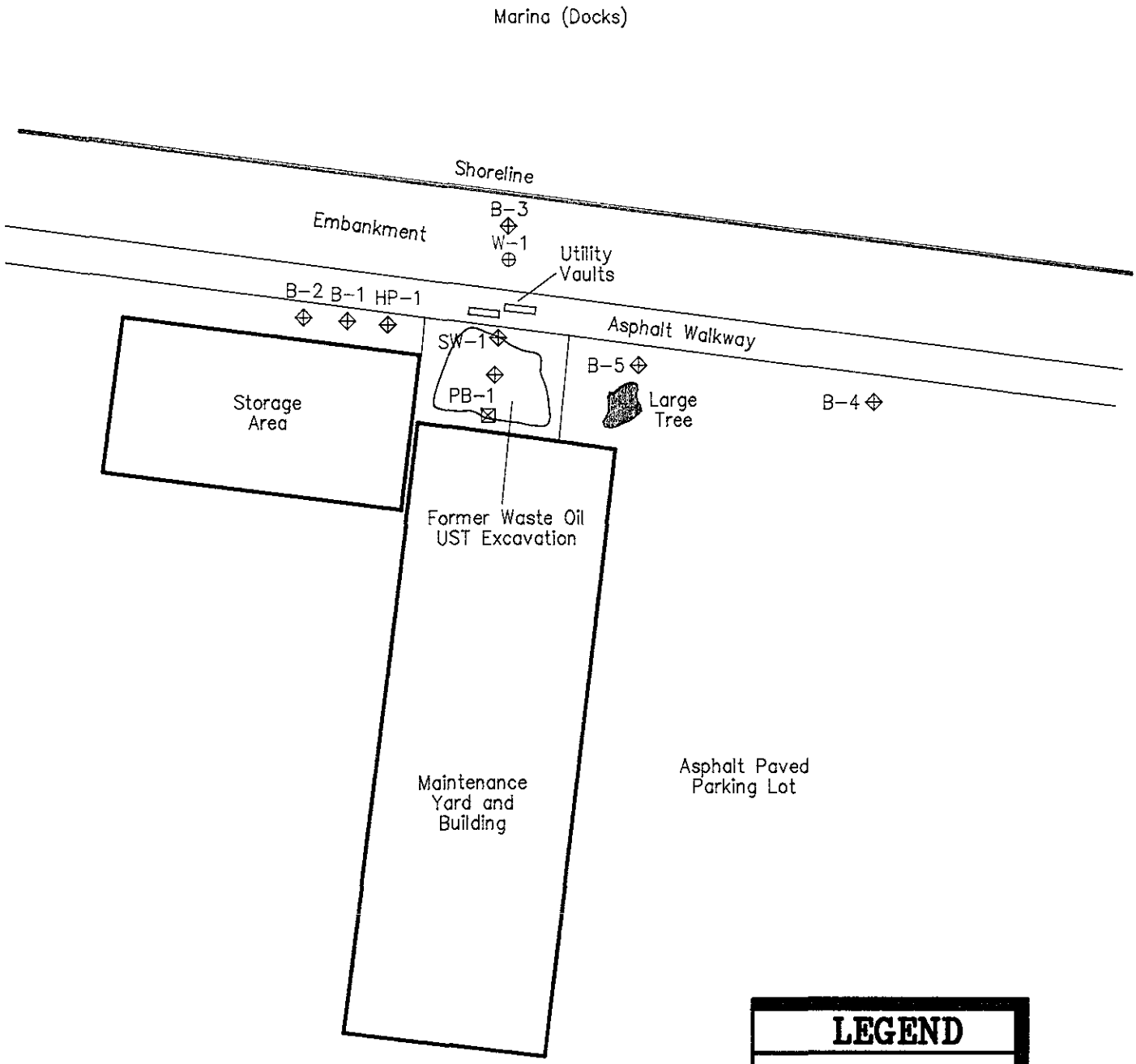
Site Location and Topographic Map
BALLENA ISLE MARINA
1150 Ballena Boulevard
Alameda, California

Clayton Project No. 53966.00

Figure
1

53966-00-16

Clayton
ENVIRONMENTAL CONSULTANTS



Site Map
BALLENA ISLE MARINA
1150 Ballena Boulevard
Alameda, California

Clayton Project No. 53966.00

Figure 2

53966-00-17

Clayton ENVIRONMENTAL CONSULTANTS

APPENDIX A

TAL REPORT

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (415) 783-6960
Facsimile (415) 783-1512

TAL

LOG NUMBER: 1353
DATE SAMPLED: 09/27/91
DATE RECEIVED: 09/27/91
DATE EXTRACTED: 10/08/91
DATE ANALYZED: 10/12/91 and 10/14/91
DATE REPORTED: 10/17/91

CUSTOMER: Ballena Isle Marina

REQUESTER: Jerry Green

PROJECT: 1100 Ballena Boulevard, Alameda, CA

Sample Type: Soil

Method and Constituent:	Units	1 Concentration	1 Reporting Limit	Composite 2 and 3 Concentration	Composite 2 and 3 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:							
Total Petroleum Hydrocarbons as Diesel	ug/kg	5,700,000	6,100	1,300,000	6,100	ND	1,000

QC Summary:

% Recovery: 94 and 98
% RPD: 0.6 and 3.5

Concentrations reported as ND were not detected at or above the reporting limit.

Samples 1 and Composite of 2 and 3 indicate compounds eluting later than diesel.

LOG NUMBER: 1353
DATE SAMPLED: 09/27/91
DATE RECEIVED: 09/27/91
DATE EXTRACTED: 10/01/91
DATE ANALYZED: 10/02/91 and 10/03/91
DATE REPORTED: 10/17/91
PAGE: Two

Sample Type: Soil

Method and Constituent:	Units	1 Concentration	1 Reporting Limit	Composite 2 and 3 Concentration	Composite 2 and 3 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	860,000	2,400	7,400	500	ND	500
EPA Method 8020 for:							
Benzene	ug/kg	ND	180	ND	8.8	ND	5.0
Toluene	ug/kg	3,900	170	20	8.4	ND	5.0
Ethylbenzene	ug/kg	13,000	180	27	9.2	ND	5.0
Xylenes	ug/kg	140,000	440	140	22	ND	15

QC Summary:

% Recovery: 124 and 95
% RPD: 17 and 23

Concentrations reported as ND were not detected at or above the reporting limit.

TAL Trace Analysis Laboratory, Inc.

LOG NUMBER: 1353
DATE SAMPLED: 09/27/91
DATE RECEIVED: 09/27/91
DATE EXTRACTED: 10/01/91
DATE ANALYZED: 10/01/91
DATE REPORTED: 10/17/91
PAGE: Three

Sample Type: Soil

Method and Constituent:	Units	1 Concentration	1 Reporting Limit	Composite 2 and 3 Concentration	Composite 2 and 3 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
Standard Method 5520F Hydrocarbons:							
Oil and Grease	ug/kg	11,000,000	50,000	4,800,000	50,000	ND	50,000

QC Summary:

% Recovery: 61
% RPD: 4.2

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1353
DATE SAMPLED: 09/27/91
DATE RECEIVED: 09/27/91
DATE EXTRACTED: 10/01/91
DATE ANALYZED: 10/05/91
DATE REPORTED: 10/17/91
PAGE: Four

Sample Type: Soil

Method and Constituent	Units	1 Concentration	1 Reporting Limit	Composite 2 and 3 Concentration	Composite 2 and 3 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
EPA Method 8010:							
Benzyl Chloride	ug/kg	ND	6.8	ND	6.8	ND	6.8
Bis (2-Chloroethoxy) Methane	ug/kg	ND	6.8	ND	6.8	ND	6.8
Bis (2-Chloroisopropyl) Ether	ug/kg	ND	6.8	ND	6.8	ND	6.8
Bromobenzene	ug/kg	ND	6.8	ND	6.8	ND	6.8
Bromodichloromethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
Bromoform	ug/kg	ND	6.8	ND	6.8	ND	6.8
Bromomethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
Carbon Tetrachloride	ug/kg	ND	6.8	ND	6.8	ND	6.8
Chloracetaldehyde	ug/kg	ND	6.8	ND	6.8	ND	6.8
Chloral	ug/kg	ND	6.8	ND	6.8	ND	6.8
Chlorobenzene	ug/kg	ND	6.8	ND	6.8	ND	6.8
Chloroethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
Chloroform	ug/kg	ND	6.8	ND	6.8	ND	6.8
1-Chlorohexane	ug/kg	ND	6.8	ND	6.8	ND	6.8
2-Chloroethyl Vinyl Ether	ug/kg	ND	6.8	ND	6.8	ND	6.8

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1353
DATE SAMPLED: 09/27/91
DATE RECEIVED: 09/27/91
DATE EXTRACTED: 10/01/91
DATE ANALYZED: 10/05/91
DATE REPORTED: 10/17/91
PAGE: Five

Sample Type: Soil

Method and Constituent	Units	1 Concentration	1 Reporting Limit	Composite 2 and 3 Concentration	Composite 2 and 3 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
EPA Method 8010 (Continued):							
Chloromethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
Chloromethyl Methyl Ether	ug/kg	ND	6.8	ND	6.8	ND	6.8
Chlorotoluene	ug/kg	ND	6.8	ND	6.8	ND	6.8
Dibromochloromethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
Dibromomethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
1,2-Dichlorobenzene	ug/kg	ND	6.8	ND	6.8	ND	6.8
1,3-Dichlorobenzene	ug/kg	ND	6.8	ND	6.8	ND	6.8
1,4-Dichlorobenzene	ug/kg	ND	6.8	ND	6.8	ND	6.8
Dichlorodifluoromethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
1,1-Dichloroethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
1,2-Dichloroethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
1,1-Dichloroethylene	ug/kg	ND	6.8	ND	6.8	ND	6.8
Trans-1,2-Dichloro-ethylene	ug/kg	ND	6.8	ND	6.8	ND	6.8
Dichloromethane	ug/kg	ND	9.9	ND	9.9	ND	9.9
1,2-Dichloropropane	ug/kg	ND	6.8	ND	6.8	ND	6.8
1,3-Dichloropropylene	ug/kg	ND	6.8	ND	6.8	ND	6.8
1,1,2,2-Tetrachloro-ethane	ug/kg	ND	6.8	ND	6.8	ND	6.8

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1353
DATE SAMPLED: 09/27/91
DATE RECEIVED: 09/27/91
DATE EXTRACTED: 10/08/91
DATE ANALYZED: 10/09/91 and 10/10/91
DATE REPORTED: 10/17/91
PAGE: Seven

Sample Type: Soil

Method and Constituent:	Units	1 Concentration	1 Reporting Limit	Composite 2 and 3 Concentration	Composite 2 and 3 Reporting Limit
EPA Method 7130:					
Cadmium	ug/kg	ND	210	ND	210
EPA Method 7190:					
Chromium	ug/kg	18,000	1,200	17,000	1,200
EPA Method 7420:					
Lead	ug/kg	55,000	2,500	51,000	2,500
EPA Method 7520:					
Nickel	ug/kg	14,000	2,500	14,000	2,500
EPA Method 7950:					
Zinc	ug/kg	23,000	1,200	42,000	1,200

Concentrations reported as ND were not detected at or above the reporting limit.

LOG NUMBER: 1353
DATE SAMPLED: 09/27/91
DATE RECEIVED: 09/27/91
DATE EXTRACTED: 10/08/91
DATE ANALYZED: 10/09/91 and 10/10/91
DATE REPORTED: 10/17/91
PAGE: Eight

Sample Type: Soil

Method and Constituent:	Units	Method Blank Concentration	Method Blank Reporting Limit	QC Summary % Recovery	QC Summary % RPD
EPA Method 7130:					
Cadmium	ug/kg	ND	210	91	*
EPA Method 7190:					
Chromium	ug/kg	ND	1,200	78	7.8
EPA Method 7420:					
Lead	ug/kg	ND	2,500	91	13
EPA Method 7520:					
Nickel	ug/kg	ND	2,500	90	0.0
EPA Method 7950:					
Zinc	ug/kg	ND	1,200	81	6.3

Concentrations reported as ND were not detected at or above the reporting limit.

* The RPD is not reportable since the sample prepared in duplicate was not detectable.

Louis W. DuPuis
Quality Assurance/Quality Control Manager

LOG NUMBER: 1353
DATE SAMPLED: 09/27/91
DATE RECEIVED: 09/27/91
DATE EXTRACTED: 10/01/91
DATE ANALYZED: 10/05/91
DATE REPORTED: 10/17/91
PAGE: Six

Sample Type: Soil

Method and Constituent	Units	1 Concentration	1 Reporting Limit	Composite 2 and 3 Concentration	Composite 2 and 3 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
EPA Method 8010 (Continued):							
1,1,1,2-Tetrachloroethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
Tetrachloroethylene	ug/kg	ND	6.8	ND	6.8	ND	6.8
1,1,1-Trichloroethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
1,1,2-Trichloroethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
Trichloroethylene	ug/kg	ND	6.8	ND	6.8	ND	6.8
Trichlorofluoromethane	ug/kg	ND	6.8	ND	6.8	ND	6.8
Trichloropropane	ug/kg	ND	6.8	ND	6.8	ND	6.8
Vinyl Chloride	ug/kg	ND	6.8	ND	6.8	ND	6.8

QC Summary:

% Recovery: 110
% RPD: 5.6

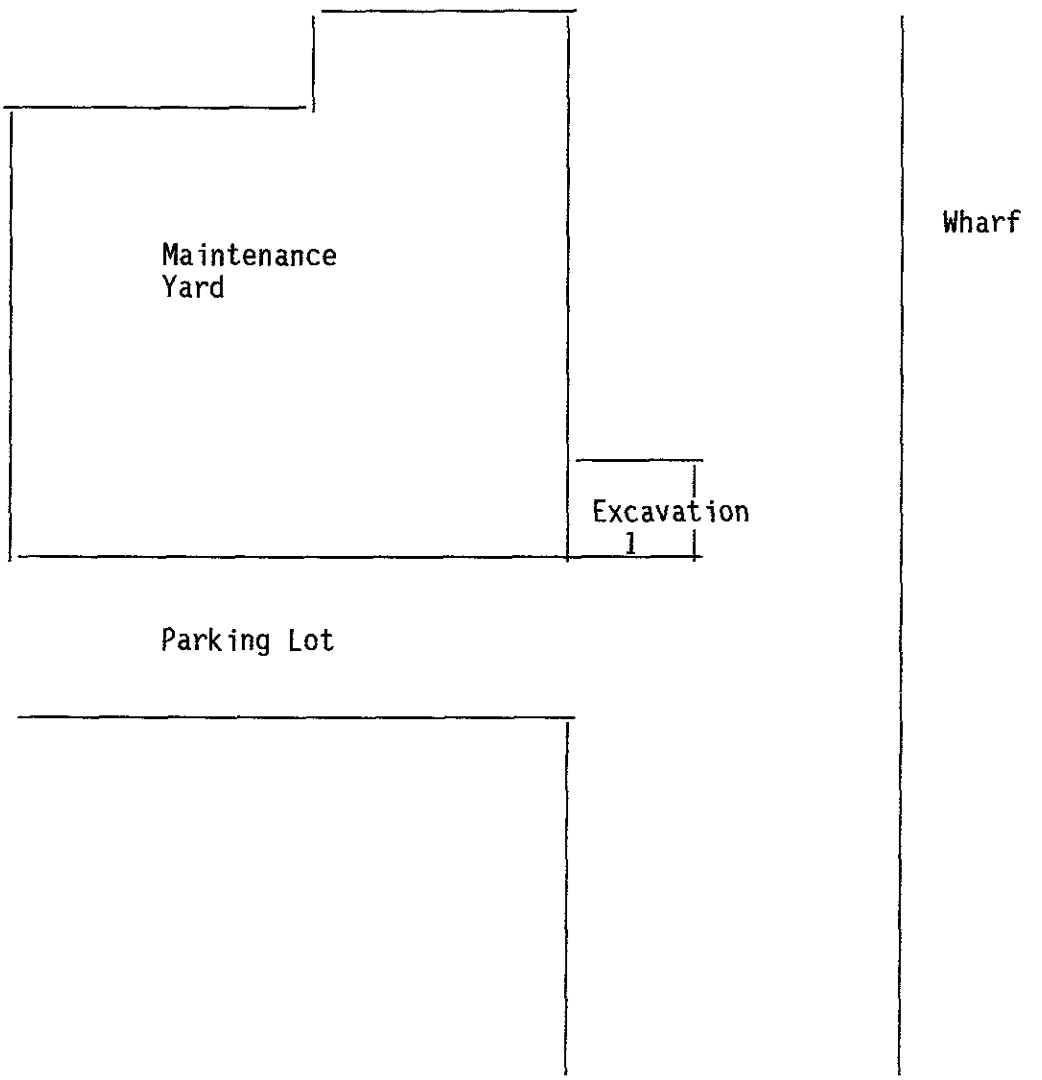
Concentrations reported as ND were not detected at or above the reporting limit.

Trace Analysis Laboratory, Inc.

Site: Ballena Isle Marina

Address: 1100 Ballena Boulevard
Alameda, CA 94501

North



Requester: Jerry Green

Customer: Ballena Isle Marina

Address: 1150 Ballena Blvd., Ste. 111
Alameda, CA 94501

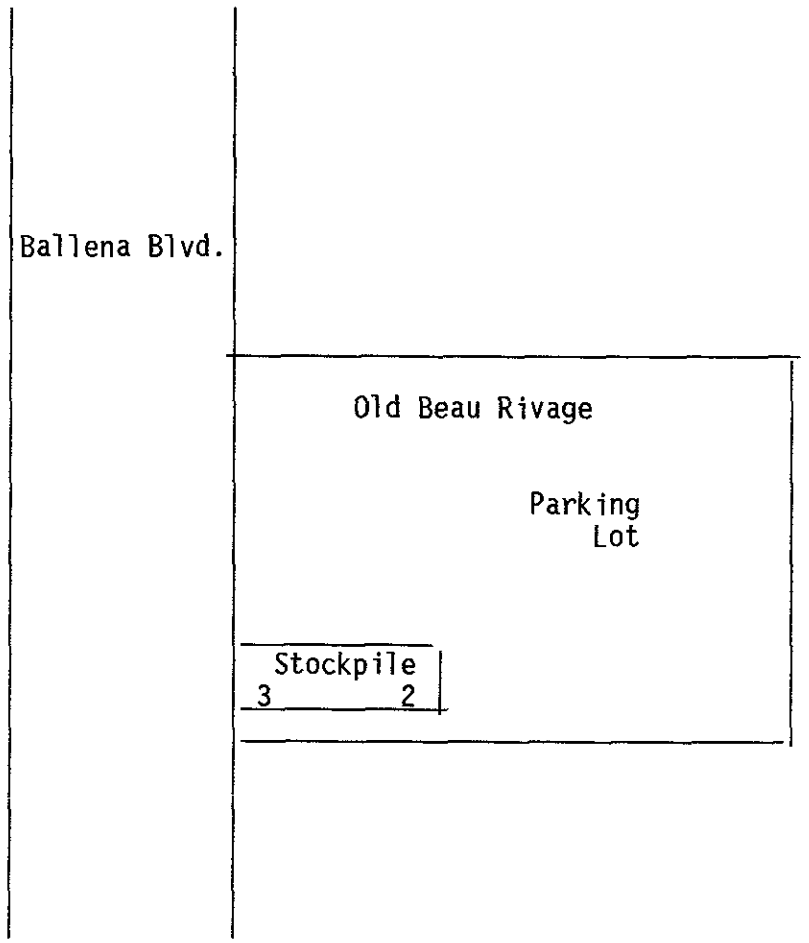
Date Sampled: 09/27/91

Log #: 1353

Trace Analysis Laboratory, Inc.

Site: Ballena Isle Marina
Address: 1100 Ballena Boulevard
Alameda, CA 94501

North



Requester: Jerry Green
Customer: Ballena Isle Marina
Address: 1150 Ballena Blvd., Ste. 111
Alameda, CA 94501

Date Sampled: 09/27/91
Log #: 1353

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (415) 783-6960
Facsimile (415) 783-1512

TAL

CHAIN OF CUSTODY RECORD

1353

Proj. No.	Project Name		No. of Containers
	1100 Ballena Blvd Alameda, CA		

Samplers: (signature) John Kong TAL

Sample ID	Date	Time	Site Location	No. of Containers	TPHD	TPHG/BTEX	OCL F	TTLC-5	SOLID	
1	9/27/91	10:57	1100 Ballena Blvd	1-Lt.	X	X	X	X	X	
2	9/27/91	11:00	↓	↓	X	X	X	X	X	(Comp)
3	9/27/91	11:08								

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time

Received for Laboratory by: (signature)	Date/Time

REMARKS
Send copy of report, coc, site division to county

Reg - TAT
soil
1-Lt ea
on ice
Field Sampler
: Y-6 &2

APPENDIX B

ENSR REPORT

ENSR

ENSR Consulting
and Engineering
1320 Harbor Bay Parkway
Alameda, CA 94501
(510) 865-1888
(510) 748-6799 FAX

May 21, 1992

Mr. Ravi Arulanantham
Alameda County Health Agency
Division of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Subject: Soil excavation and sampling activities at the Ballena Isle Marina, 1150 Ballena Boulevard, Alameda, California.

Dear Mr. Arulanantham:

ENSR Consulting and Engineering collected soil samples during the excavation of contaminated soil from the former underground tank pit at the Ballena Isle Marina. As you will recall, a 250-gallon underground tank was excavated and removed from this site in 1991 by the owner. The tank was used to temporarily store waste oil from the engines of the boats that are docked at the marina. Soil around the tank was contaminated as a result of spillage from occasional overfilling.

Recent excavation of contaminated soil enlarged the pit, so that the pit currently measures 9.5 feet by 11.5 feet and is approximately 9 feet deep. During excavation of contaminated soil, soil staining appears to have extended beneath the maintenance building adjacent to the pit. The stained soil is at a depth of 5 feet. Further excavation of the stained soil was not possible without incurring possible damage to the foundation of the maintenance building. Groundwater was encountered at a depth of approximately 9.5 feet.

Two soil samples were collected from the pit. One soil sample (PB-1) was collected from the bottom of the pit (approximately 9 feet below grade), and the other soil sample (SW-1), was collected from the base of the sidewall on the north end of the pit. This soil sample was collected from a depth of 8.5 feet.

The soil samples were placed into laboratory-supplied glass jars using stainless steel hand trowels. The jars were placed on ice and transported to the laboratory under chain-of-custody protocol. The soil samples were analyzed by Curtis & Tompkins, Ltd., a California-State certified hazardous waste laboratory. Both soil samples were analyzed for the following:

TPH (gasoline)	EPA Method 8015
TPH (diesel)	EPA Method 8015
Total Oil & Grease	EPA Method SMWW 5520
Volatile Organic Compounds	EPA Method 8240
Metals:	
Cadmium	
Chromium	
Lead	
Nickel	
Zinc	

The excavated soil was stockpiled at the site by placing the soil on visquine sheeting which was then covered by visquine while awaiting the laboratory results.

The analytical results are summarized on Table 1. Oil & grease and diesel were detected at concentrations of 4,200 parts per million (ppm) and 1,800 ppm, respectively, in the sample from the bottom of the pit. Lower amounts of gasoline, xylene, toluene, and ethylbenzene were detected at 79 ppm, 9.2 ppm, 1 ppm, and 0.840 ppm, respectively. Low levels of chromium, nickel, zinc, and lead were detected in this soil sample.

In the soil sample from the base of the sidewall, oil & grease and diesel were detected at 3,500 ppm and 2,200 ppm, respectively. Lower levels of gasoline, and xylene were detected in this sample at 91 ppm, and 1.9 ppm, respectively.

Conclusions and Recommendations

Because contaminated soil remains in the ground, and because of the shallow depth of the groundwater at this location, it is likely that the groundwater has been impacted by the contaminants in the soil. However, it is ENSR's opinion that establishing a groundwater monitoring program involving the installation of one or more monitoring wells is not necessary at this site.

The Ballena Isle Marina is constructed on a narrow, man-made body of land which is bounded on three sides by seawater. The harbor is approximately 30 feet northeast of the contaminated area. San Francisco Bay is approximately 200 feet southwest of the contaminated area. Shallow groundwater in the marina area (including the contaminated area) is probably affected by saltwater intrusion and is therefore saltwater to brackish, at best. As a result, the groundwater has no beneficial uses. Any effects on aquatic wildlife resulting from contaminated groundwater entering San Francisco Bay waters would be neglible because: (1) the extent and scope of contamination is relatively small, and (2) the contaminated groundwater would be greatly diluted upon entering San Francisco Bay.

ENSR

The close proximity of the contaminated area to San Francisco Bay and the harbor also means that groundwater flow is strongly influenced by the ebb and flow of the tides. Because the water level changes from high to low tide twice daily, groundwater flow direction in the vicinity of the contaminated area is likely to change over the course of a single day. For these reasons, ENSR believes that groundwater monitoring is not necessary.

Instead, it is our recommendation that the Ballena Isle Marina backfill the open pit with clean fill material, and that an impermeable cap in the form of concrete pavement be placed over the former pit and surrounding area. This barrier would prevent surface runoff and rainwater from infiltrating the soil, thereby preventing further mobilization of the contaminants downward into the water table.

We will call you within the week to seek your response to our recommendation. If you have any questions or comments, please give me a call at (510) 865-1888.

Sincerely,
ENSR Consulting and Engineering

Brian Ho
Project Geologist

Paul Hilbelink, C.E.G.
Manager, Geological Sciences

Attachments

cc Jerry Green, Ballena Isle Marina

ENSR

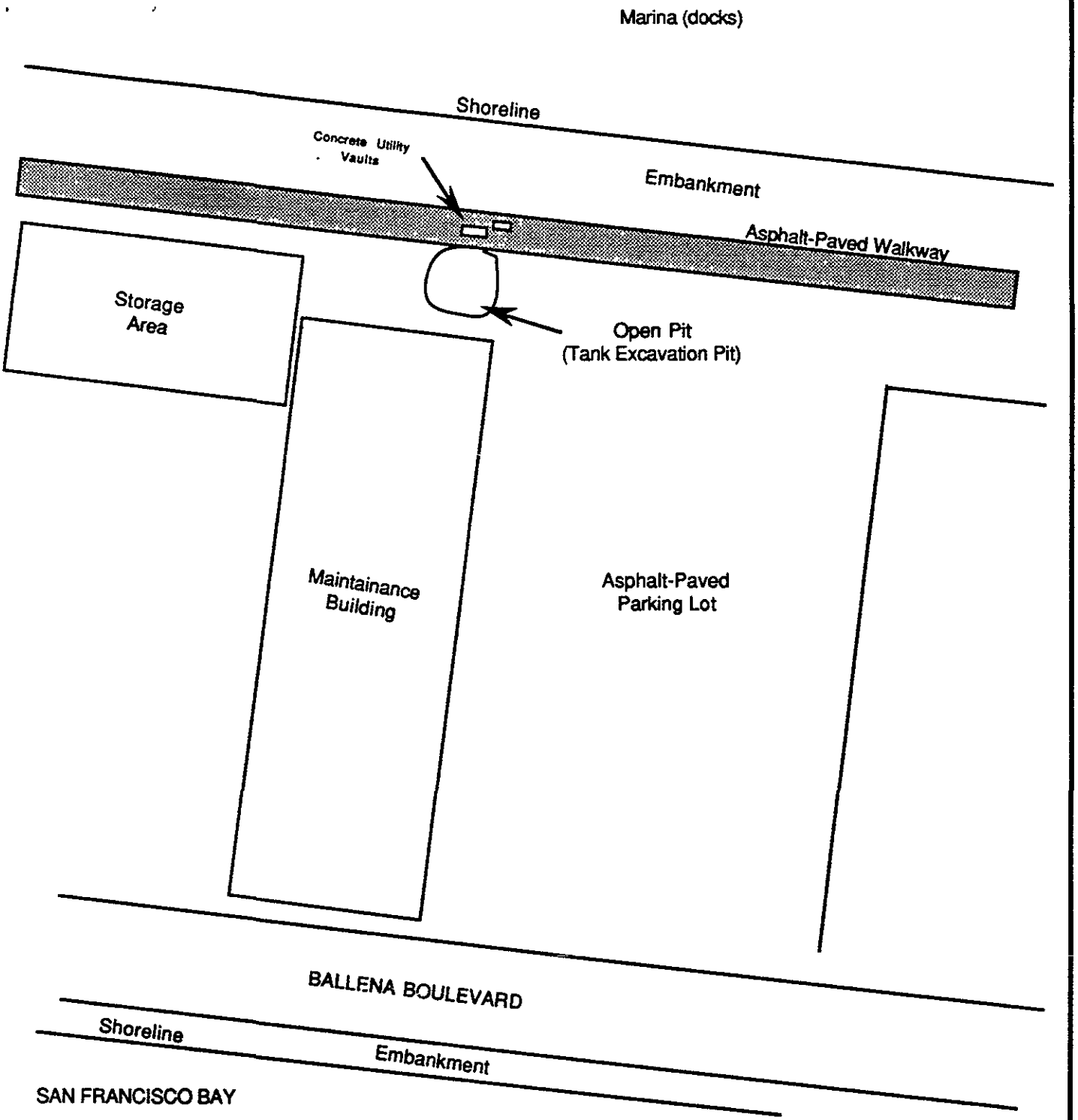
TABLE 1

Summary of Analytical Results of Soil Samples from Ballena Isle Marina

Sample No.	Diesel	Gasoline	Xylene	Toluene	Benzene	Ethylbenzene	Oil & Grease
SW-1	2,200 ppm	91 ppm	1.9 ppm	ND	ND	ND	3,500 ppm
PB-1	1,800 ppm	79 ppm	9.2 ppm	1 ppm	ND	0.840 ppm	4,200 ppm

	Metals				
Sample No.	Cadmium	Chromium	Lead	Nickel	Zinc
SW-1	0.41 ppm	16.2 ppm	13 ppm	13.3 ppm	13.7 ppm
PB-1	ND	15.8 ppm	4.5 ppm	14.0 ppm	13.7 ppm

ND = Not Detected at or above the limit of detection of 0.5 ppm.



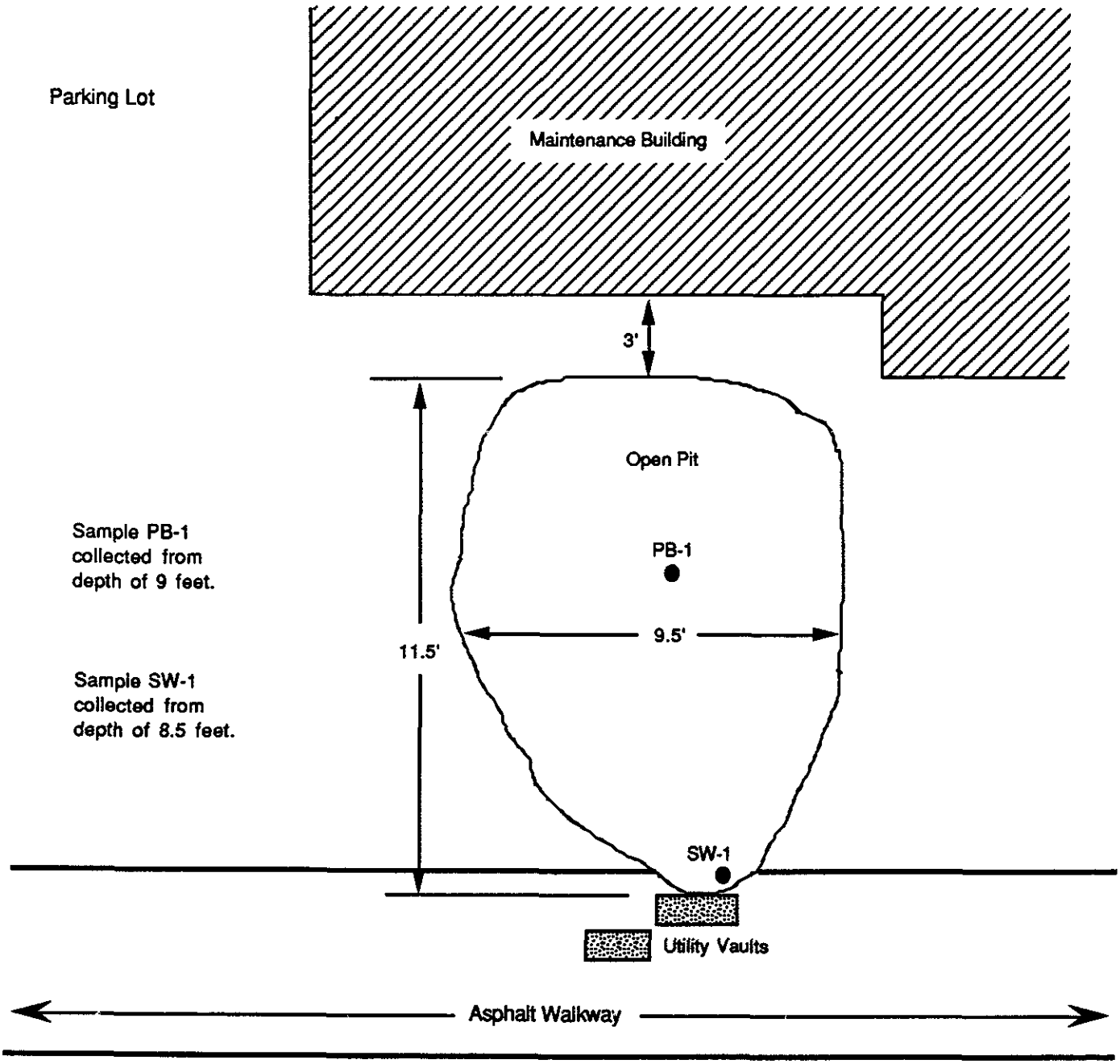
Not to Scale

N

ENSR

SITE PLAN
BALLENA ISLE MARINA
1150 BALLENA BOULEVARD, ALAMEDA, CALIFORNIA

DRAWN BY: BRIAN HO	DATE: 2/19/92	PROJECT NO.
CHK BY:	REVISED:	FIGURE NO.: 1



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ENSR Consulting and Engineering

SOIL SAMPLE LOCATION MAP
BALLENA ISLE MARINA
1150 Ballena Boulevard, Alameda, California

DRAWN BY: Brian Ho	DATE: 5/7/92	PROJECT NO. 8700-114.000
CHK BY:	REVISED:	FIGURE NO.: 2

APPENDIX C

LAW/CRANDALL REPORT

LAW/CRANDALL, INC.

geotechnical, environmental & construction materials consultants

Report of
PHASE II ENVIRONMENTAL ASSESSMENT

Ballena Isle Marina
1150 Ballena Boulevard
Alameda, California
Control No. 1026
Great American Portfolio

prepared for

G.A.P. Portfolio Partners
c/o Colony Advisors, Inc.
1999 Avenue of the Stars, Suite 1200
Los Angeles, California 90067

prepared by

LAW/CRANDALL, INC.
Project No. 2123-20669-1

December 29, 1992

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Page No.

LAW/CRANDALL, INC. ▲ geotechnical, environmental & construction materials consultants
4000 Civic Center Drive, Suite 305, San Rafael, California 94903, Phone (415) 499-1422, Fax (415) 499-8419
Los Angeles ▲ Anaheim ▲ Marina del Rey ▲ Phoenix ▲ Riverside ▲ San Diego ▲ Seattle

December 29, 1992

G.A.P. Portfolio Partners
c/o Colony Advisors, Inc.
1999 Avenue of the Stars, Suite 1200
Los Angeles, California 90067

Subject: **Report of Phase II Environmental Site Assessment**
Great American Portfolio
Control No. 1026
Oakland, California
Law/Crandall Project No. 2123-20669-1

Attention: Ms. Sandra Kossacoff

Law/Crandall, Inc. (LAW) is pleased to submit this report of our Phase II environmental site assessment for the subject property. The purpose of our services is described in our proposal and addendum dated October 5 and October 13, 1992 and in the scope of work contained in job order number 92-1026-3 under the Master Consulting Agreement between Colony Advisors, Inc. as agent to G.A.P. Portfolio Partners and Law Associates, Inc. (hereinafter "MCA").

This report is intended for the use of G.A.P. Portfolio Partners, Inc. Our services have been performed under mutually agreed upon terms and conditions. If third parties wish to rely on this report, such reliance shall be governed by paragraphs 9.6 and 3.3 of the MCA. Any third party not specifically mentioned herein shall not distribute this report except at its own sole and exclusive risk and without liability to LAW.

We appreciate the opportunity to be of service to you. Please call us at (415) 499-1422 if you have any questions or if we may be of further service.

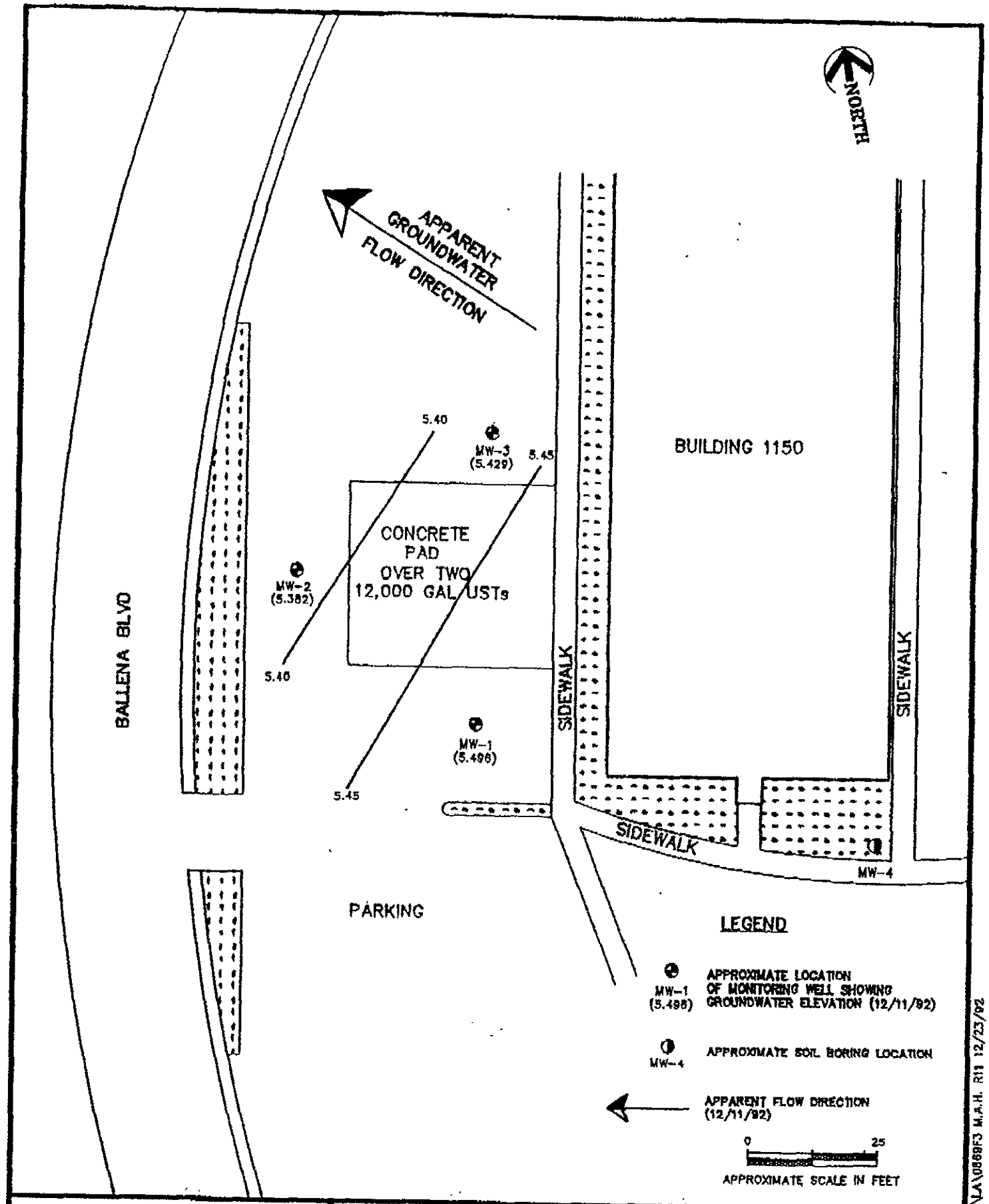
Sincerely,
Law/Crandall, Inc.

Susan Gahry (KGR)

Susan Gahry, P.E.
Senior Chemical Engineer

Mark I. Miller

Mark I. Miller, C.E.G. 1540
Principal



G.A.P. PORTFOLIO PARTNERS
C/O COLONY ADVISORS, INC.
LOS ANGELES, CALIFORNIA

LAW/CRANDALL, INC.

EXISTING UST AREA
GE SITE # 1026
BALLENA ISLE MARINA
ALAMEDA, CALIFORNIA

JOB NO. 2123-20569-1 FIGURE 3

\DWGS\GECAPTOL\LA\0569F3 M.A.H. R11 12/23/92

1.0 INTRODUCTION

Colony Advisors, Inc. as agent to G.A.P. Portfolio Partners engaged Law/Crandall, Inc. (LAW) to perform a Phase II environmental site assessment for the Ballena Isle Marina in Alameda, California. This study was performed substantially as outlined in LAW's proposal and addendum dated October 5 and October 13, 1992, respectively.

The site occupies a 56-acre man-made peninsula and is located at 1150 Ballena Boulevard. The site is currently managed by Almar Limited (site operators). The site location is shown on Figure 1. The site contains 20 acres of water, a marina with 455 berths, several two-story office buildings, parking lots, and a restaurant. A fuel dock, hoist for pulling boats out of the water, service yard/maintenance shed, tennis court, and the concrete foundation for the former Beau Rivage Restaurant (destroyed by fire in 1990) are also located on the property. A site plan is included as Figure 2.

The Phase I Environmental Assessment Report was prepared by LAW on October 13, 1992. The report identified:

- The potential for soil/groundwater petroleum hydrocarbon contamination due to the current and former presence of underground storage tanks (USTs) at three separate locations on the property. These areas are identified as the existing USTs, former USTs, and waste oil UST.

- The potential for shallow soil contamination due to the presence of an abandoned above-ground diesel tank and the collection of waste oil in 55-gallon drums.

- The potential for contamination, particularly heavy metals, due to the deposition of dredging materials onto a portion of the site.

Additional background on specific areas of environmental concern follows.

Existing USTs

Two 12,000-gallon USTs are located in the parking lot immediately west of Building 1150. These double-walled USTs were installed in 1990 following the October 1989 earthquake to replace damaged USTs which had been installed in 1987. Unleaded gasoline and diesel fuel are stored in the USTs.

During the 1989 earthquake, the existing tanks were displaced upward and the piping connections at the tank were broken. On July 2, 1990, the two single-wall underground fuel tanks were removed from the site by Subsurface Consultants. The tanks did not appear to be damaged or deteriorated. The gasoline and diesel tank were located on the northern and southern side of the tank pit, respectively. Six soil samples were collected at a depth of 5

feet below ground surface from the walls of the tank pit during UST replacement activities. The samples were analyzed for total volatile hydrocarbons (TVH), benzene, toluene, ethylbenzene, and xylenes (BTEX), and total extractable hydrocarbons as diesel (TEH). The soil sample collected from the east side wall of the former diesel tank near the piping connection (approximately 6 feet west of the sidewalk) contained 130 milligrams per kilogram (mg/kg or parts per million) of TEH. Contaminants were not detected in the five other soil samples.

One groundwater sample was collected from the tank pit before the tank pit was purged; another groundwater sample was collected after approximately two weeks. The initial groundwater sample contained 24 milligrams per liter (mg/l) of TVH, 0.87 mg/l of benzene, 0.52 mg/l of toluene, 4.2 mg/l of xylenes, and 0.0007 mg/l of TEH. The later groundwater sample contained 0.0007 mg/l of toluene. The remaining contaminants were reported to have volatilized from the water.

On May 15, 1992, the Alameda County Health Care Services Agency (County) requested that a workplan be prepared for a groundwater investigation. The site operators have not responded to the County's request. Ms. Juliet Shin, the County's case worker, has not sent the owners another letter requesting action since she is aware of the current investigation by LAW.

Former USTs

Four 4,000-gallon USTs for leaded gasoline and diesel fuel were removed in 1984 to allow construction of Building 1150. These tanks were located between the Whale's Tail restaurant and Building 1150; they are reported to have extended to what is now the southeast corner of Building 1150. Soil and/or groundwater sampling was not conducted when these tanks were removed.

Former Waste Oil Tank

A 250-gallon waste oil UST, formerly located just north of the maintenance building, was removed in July 1991 by the site operators. The excavation associated with the removal of this UST has not been backfilled and excavated soils are stored on-site. The tank pit is covered with planks and enclosed by a wooden fence. The soil has been placed on and covered with plastic in the parking lot for the former Beau Rivage restaurant.

On September 27, 1991, one soil sample was collected from the tank pit excavation and two samples were collected from the stockpiled soil in the former Beau Rivage Restaurant parking lot by Trace Analysis Laboratory, Inc. The stockpile soil samples were composited into one sample at the laboratory. The stockpile and tank pit soil samples contained the following concentrations of contaminants, respectively: oil & grease (O&G) at 4,800 mg/kg and 11,000 mg/kg; total petroleum hydrocarbons as diesel (TPH/D) at 1,300 mg/kg and 5,700 mg/kg; total petroleum hydrocarbons as gasoline (TPH/G) at 860 mg/kg and 7.4

mg/kg; xylenes at 3.9 mg/kg and 0.14 mg/kg; toluene at 0.02 mg/kg and 3.9 mg/kg; ethylbenzene at 0.027 mg/kg and 13 mg/kg; chromium (Cr) at 17 mg/kg and 18 mg/kg; lead (Pb) at 51 mg/kg and 55 mg/kg; nickel (Ni) at 14 mg/kg and 14 mg/kg; and zinc (Zn) at 42 mg/kg and 23 mg/kg. The samples were not analyzed for semi-volatile organics or PCBs; volatile organic compounds (VOCs) other than BTEX were not detected.

According to ENSR Consulting and Engineering's May 21, 1992 report to the County, the tank pit was additionally excavated in May 1992 to dimensions of 9.5 feet by 11.5 feet with an approximate depth of 9 feet. During the additional excavation, soil staining appeared to extend beneath the maintenance building adjacent to the pit. The stained soil was noted at a depth of approximately 5 feet. Further excavation of the stained soil was reported to not be possible without incurring possible damage to the foundation of the maintenance building. Groundwater was encountered at a depth of 9.5 feet.

Two soil samples were collected from the tank pit following the additional excavation by ENSR Consulting and Engineering. The soil samples contained the following concentrations of contaminants: O & G from 3,500 to 4,200 mg/kg; TPH/D ranging from 1,800 to 2,200 mg/kg; TPH/G ranging from 79 to 91 mg/kg; xylenes ranging from 1.9 to 9.2 mg/kg; toluene at 1 mg/kg; ethylbenzene at 0.84 mg/kg; Cadmium at 0.41 mg/kg; Cr ranging from 15.8 to 16.2 mg/kg; Pb ranging from 4.5 to 13 mg/kg; Ni ranging from 13.3 to 14 mg/kg; and Zn at 13.7 mg/kg. The samples were not analyzed for semi-volatile organics or PCBs; VOCs (other than BTEX) were not detected.

On July 2, 1992, the County requested that the tank pit be excavated down to groundwater and that a groundwater grab sample be collected and analyzed for TPH/G, TPH/G, O&G, VOCs, and Cd, Cr, Pb, Ni, and Zn. Also, the County requested that further attempts should be made to investigate the extent of and remediate soil contamination at the site. A workplan to address the investigation and remediation of the soil contamination was requested within 45 days of the receipt of the County's letter. On August 10, 1992, Ballena Isle Marina requested a 45 day extension to obtain bids and authorization from their parent company, Almar.

Abandoned Above-ground Diesel Tank

An abandoned 250-gallon above-ground diesel tank is also located on the property. The spigot from the tank is located directly above what appears to be a screened sump.

Drummed Waste Oil Storage Area

Waste oil is currently collected in several 55-gallon drums, enclosed by wooden planks, located in a wooden shack near the former Beau Rivage restaurant. The drums are hauled off-site by Waste Oil Disposal approximately every 2 to 3 months. Oil stains and sorbant-type material were noted on the floor in the vicinity of these drums.

On-Site Disposal of Dredge Tailings

The area west of the parking lot at the tip of the peninsula is periodically dug out and used to contain dredging spoils. The marina was last dredged in 1987; the facility is currently in the process of obtaining another permit from the San Francisco Bay Conservation and Development Commission to allow the dredging to be conducted again.

2.0 PURPOSE, SCOPE AND REPORT FORMAT

2.1 Purpose

The purpose of the Phase II Environmental Site Assessment was to assess the potential degree and extent of subsurface contamination in the areas identified with environmental concerns during LAW's Phase I environmental assessment. Such services were performed pursuant to the generally accepted national standards of care, skill, diligence and professional competence applicable to LAW.

2.2 Scope of Work

The scope of services included the following:

- Installation of three monitoring wells in the vicinity of the existing gasoline/diesel USTs to assess 1) the potential for soil and groundwater contamination and 2) the groundwater gradient to evaluate the direction in which contamination would be expected to move.

- Installation of one monitoring well in the vicinity of the former gasoline/diesel USTs to assess the potential for soil and groundwater contamination.

- Installation of five soil borings in the vicinity of the former waste oil UST to assess the extent of contamination and the potential limits of excavation needed to remediate soils in the area.

- Collection of a grab groundwater sample from the former waste oil UST area with a Hydropunch™ sampling device to assess the degree to which groundwater has been impacted.

- Collection of shallow soil samples in the area of the abandoned aboveground diesel tank, dredging spoils, and waste oil collection area to assess the potential for soil contamination due to surface spills and/or use of inappropriate fill materials.

- Preparation of this report containing our findings and conclusions and an order of magnitude opinion of cost to remediate the site, if necessary.

Our scope of services did not include disposal of drums of soil and groundwater generated during drilling. A cost estimate for drum disposal will be submitted under separate cover; costs for drum disposal were included in our proposal as part of Phase III activities which were not authorized.

2.3 Report Format

Our report format has four major sections:

- Field Assessment Procedures
- Field Assessment Results
- Remedial and Regulatory Requirements
- Opinion of Remedial Costs

3.0 FIELD ASSESSMENT PROCEDURES

The field assessment commenced on December 1, 1992 and was completed on December 11, 1992.

3.1 Preparatory Activities

We prepared a site-specific Health and Safety Plan to address chemical contaminants potentially present at the site, as required by the Occupational Safety and Health Administration (29 CFR 1910.120). The Health and Safety Plan was used to acquaint LAW field personnel and our drilling subcontractor with chemical hazards potentially present at the site, and to insure that the proper safety equipment was available for use if potentially hazardous conditions were encountered.

We obtained monitoring well construction permit number 92611 from the Alameda County Flood Control and Water Conservation District (Water Resources Zone 7 Management) in Pleasanton, California on November 24, 1992. A copy of the well construction permit is included as Appendix A.

We notified Underground Service Alert, a public utility locating firm, on December 1, 1992. Under the direction of LAW, Cruz Brothers Subsurface Locators of Milpitas, California, screened proposed boring locations for subsurface obstructions on December 1, 1992.

3.2 Soil Boring and Monitoring Well Locations

LAW's drilling subcontractor, Great Sierra Exploration, Inc. of Novato, California, drilled a total of eight borings on the site under the supervision of Andrew Muha, a LAW field hydrogeologist, on December 4 and December 7, 1992. Three of the borings were converted to groundwater monitoring wells. Grab groundwater samples were collected from two of the borings, MW-4 and HP-1, using a hand auger and Hydropunch™, respectively. LAW also hand augered four other soil borings (SB-5, SB-6, SB-7, and SB-8). Boring and/or monitoring well locations are shown on Figure 2. The rational for the locations and depth of borings are discussed below.

- Monitoring wells MW-1, MW-2, and MW-3 were installed in the vicinity of the existing USTs to a depth of 15 feet below ground surface. Well locations are also shown on Figure 3.

- Soil boring MW-4 was installed in the vicinity of the former USTs between the Whales Tail Restaurant and Building 1150; the location is shown on Figure 3. We had initially planned to install a monitoring well at this location. However, due to access restrictions and the presence of numerous underground utilities in the area, a drill rig could not be used. The boring was constructed using a hand auger to an approximate depth of 9 feet below ground surface. A clean, slotted PVC casing was placed into the boring and a bailer was lowered into the casing to collect a grab groundwater sample.

- Soil borings B-1, B-2, B-3, and B-4 were drilled near the former waste oil UST to depths of 15 feet below ground surface to assess the lateral extent of potential contamination. Boring B-1 was located approximately 8 feet west of the tank pit. Boring B-2 was located approximately 18 feet west of the tank pit. Boring B-3 was located approximately 12 feet north of the tank pit. Boring B-4 was located approximately 34 feet east of the tank pit (the presence of underground utilities prevented drilling at a location closer to the tank pit). Boring B-5 was located approximately 10 feet east of the tank pit; boring B-5 was hand augered to an approximate depth of 10 feet below ground surface. A large tree in the area prevented use of the drill rig. Boring locations are shown on Figure 4.

- Hydropunch™ location HP-1 was located approximately 2 feet north of the former waste oil UST to a depth of 10 feet below ground surface (Figure 4).

- Soil boring SB-6 was hand augered near the abandoned above-ground diesel tank approximately 2 feet southwest of the sump to a depth of 5 feet below ground surface.

- Soil boring SB-7 was hand augered near the drums of waste oil. The boring was augered at an approximate 45 degree angle to a depth of approximately 4 feet below ground surface. The barrels were stored on a concrete pad; the concrete coring equipment available on the drill rig could not access the area. The angled boring was used to get beneath the drums from an area which was not paved.

- Soil boring SB-8 was hand augered in the dredged tailings disposal area to a depth of 5 feet below ground surface.

3.3 Soil Boring and Sampling Procedures

The borings constructed by Great Sierra Exploration were advanced using a truck-mounted drill rig equipped with 8-inch diameter hollow stem augers, with the exception of MW-4. Boring MW-4 and those borings installed by LAW were advanced by hand using a 3.5-inch diameter stainless steel auger.

Soil samples were collected with a California modified split-spoon sampler or equivalent. Samples were retained in six-inch-long brass tubes. One tube from each sampling interval was capped with teflon liners, plastic end caps, wrapped with duct tape, sealed in a plastic bag and placed on ice in a thermally insulated cooler pending selection of samples for laboratory analysis. The remaining sample tubes were used in the soil classification and laboratory screening processes. Selected samples were shipped to a state-certified analytical laboratory with chain-of-custody documentation.

Soils encountered in the borings were classified according to the Unified Soil Classification System. Soil samples were collected at 5-foot intervals and significant lithologic changes. We screened soil samples in the field with a Foxboro flame-ionization Organic Vapor Analyzer (OVA). One sample from each boring showing visible evidence of potential contamination and/or the highest readings on the OVA was to be selected for analysis. If soil samples in a particular boring did not exhibit visible evidence of contamination or elevated OVA readings above the soil/groundwater interface, the deepest soil sample encountered in the boring prior to the soil/groundwater interface was to be analyzed. Using

this protocol, the samples selected for analysis were the deepest soil sample encountered prior to the soil/groundwater interface.

Downhole drilling equipment was steam cleaned prior to use and between borings. Soil sampling and hand auger equipment was washed in an Alconox soap solution after each use. All drill cuttings and wash water were placed into D.O.T.-approved, watertight 55-gallon drums and stored on site pending the receipt of laboratory analyses.

3.4 Construction and Sampling of Monitoring Wells

Three of the soil borings were converted to monitoring wells. The wells were necessary to evaluate groundwater conditions in the vicinity of the existing USTs. The wells were located on the north, south, and west sides of the existing USTs. We anticipated that groundwater would occur approximately 10 feet below ground surface, its flow would be influenced by tidal actions, and the gradient would be relatively flat.

The monitoring wells were constructed with 2-inch diameter, Schedule 40 PVC screen and riser sections. Great Sierra Exploration installed a sandpack around the 10-foot slotted PVC casing interval and a bentonite seal above the sandpack. The wells were sealed to the ground surface with bentonite chips. Boring logs and monitoring well construction details are presented in Appendix B. The wells were finished at the surface with flush-mounted, traffic-rated protective vaults.

On December 8, 1992, we used a KVA submersible pump to develop the monitoring wells. The wells were developed until the clarity of the discharge water stabilized. Purging continued until the field-measured parameters of pH, temperature and electrical conductivity stabilized with less than a 10 percent variance. Approximately 45 to 50 gallons of water (at least four well casing volumes) were removed from each well during the development process. Following development, we collected one set of groundwater samples from each well with a new disposable bailer after the water level in each well had recovered to approximately 80 percent of its initial level. The groundwater samples were poured into laboratory-supplied glass bottles, placed on ice in a thermally insulated container, and delivered along with a chain-of-custody form to a state-certified laboratory for analysis.

The well development purge water was placed into D.O.T.-approved, watertight 55-gallon drums and stored on-site pending receipt of laboratory analytical results. The development and purge water was subsequently moved to another location at the site at the request of the marina operators.

On December 11, 1992, we measured the water levels in the wells to within 0.01 foot using a Solinst water level meter. We also surveyed the top-of-casing elevation of each well and

referenced the elevation to a temporary benchmark located at the southwest corner of the concrete pad which overlaid the USTs.

3.5 Analysis of Soil and Groundwater Samples

Soil and groundwater samples were delivered to Superior Precision Analytical, Inc. in San Francisco, California for chemical analysis on a 5-day turnaround basis. With the exception of the dredged soil disposal area, the selected laboratory analyses addressed requirements contained in the Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites, California Regional Water Quality Control Board, San Francisco Bay Region, dated August 10, 1990 (Regional Board Guidelines). Analyses for the dredged soil disposal area were based on typical non-volatile contaminants found in dredge tailings.

Soil and groundwater samples collected near the former and existing USTs (MW-1 through MW-4) were analyzed for TPH/G, TPH/D, BTEX, and Pb.

Soil samples collected from the five soil borings near the former waste oil UST (B-1 through B-5) and the one soil sample near the waste oil drum storage area (SB-7) were analyzed for TPH/G, TPH/D, BTEX, VOCs, O&G, semi-volatile organics, pesticides and PCBs, and soluble Cd, Cr, Pb, Zn, and Ni. The grab groundwater sample collected near the former waste oil UST was analyzed for the same constituents except the metals were analyzed for total rather than soluble constituents.

The soil sample from boring SB-6 (near the abandoned above-ground diesel tank sump) was analyzed for TPH/D and BTEX.

The soil sample from boring SB-8 (the dredged soil disposal area) was analyzed for semi-volatile organics, O&G, and seventeen metals.

4.0 FIELD ASSESSMENT RESULTS

4.1. Laboratory Analytical Results

Results of the laboratory analyses of soil samples for the waste oil and existing UST areas are summarized on Table 4.1 and 4.2; groundwater analytical results for the existing UST area are summarized on Table 4.3. The complete laboratory report and chain-of-custody documents are presented in Appendix C. Laboratory analytical results are presented below by location.

Existing USTs

The soil samples collected from the three monitoring wells (MW-1 through MW-3) at a depth of 10 feet did not contain concentrations of TPH/G, TPH/D, BTEX, or total lead in excess of laboratory detection limits. The groundwater sample from well MW-1 contained 0.5 micrograms per liter (ug/l or ppb) of toluene and 0.6 ug/l of xylenes. The groundwater sample from well MW-3 contained TPH/G, toluene, and xylenes at concentrations of 52 ug/l, 0.5 ug/l, and 0.6 ug/l, respectively. TPH/G, toluene, and xylenes were not detected in the groundwater sample from well MW-2. TPH/D, benzene, ethylbenzene, and soluble or total lead were not detected in any of the soil or groundwater samples.

Former USTs

TPH/G, BTEX, TPH/D, and soluble or total lead were not detected in the soil or grab groundwater samples (MW-4) collected near the location of the former USTs.

Former Waste Oil Tank

The five soil samples (B-1 through B-5) collected at locations ranging from 8 to 34 feet away from the perimeter of the former waste oil UST excavation at depths of 10 feet contained total O&G concentrations ranging from 53 mg/kg in B-5 to 110 mg/kg in B-1. TPH/G, BTEX, TPH/D, VOCs, semi-volatile organics, pesticides, PCBs, and soluble metals (Zn, Cd, Cr, Pb, and Ni), were not detected.

The grab groundwater sample, HP-1, contained toluene at a concentration of 0.3 ug/l. TPH/G, benzene, ethylbenzene, xylenes, TPH/D, O&G, VOCs, semi-volatile organics, pesticides, PCBs, and soluble metals (Zn, Cd Cr, Pb, and Ni), were not detected.

Abandoned Above-ground Diesel Tank

The soil sample (SB-6) collected at a depth of 5 feet near the sump associated with the abandoned above-ground diesel tank did not contain concentrations of TPH/D or BTEX in excess of laboratory detection limits.

Drummed Waste Oil Storage Area

The soil sample (SB-7) collected beneath the drums of waste oil contained 83 mg/kg of O&G. TPH/G, BTEX, TPH/D, VOCs, semi-volatile organics, pesticides, PCBs and soluble metals (Zn, Cd Cr, Pb, and Ni), were not detected.

Dredge Tailings Disposal Area

The soil sample (SB-8) collected at a depth of 5 feet in the dredge tailings disposal area contained 130 mg/kg of total oil and grease. Antimony, arsenic, barium, chromium, copper, lead, mercury, nickel, vanadium, and zinc were detected at concentrations ranging from 0.19 to 80 mg/kg. Concentrations were well below California Administrative Code's Threshold Limit Concentration (TTLC) Values. Semi-volatile organic compounds were not detected.

Subsequent Analyses

Subsequent to the discovery of O&G in soil samples from other areas of the site, the soil samples from MW-1 through MW-4 were also analyzed for O&G. The samples did not contain O&G in excess of laboratory detection limits.

4.2. Groundwater Gradient

As shown on Figure 3, the groundwater gradient was calculated to be towards the northwest at 0.0025 feet per foot. As previously stated, the groundwater gradient is expected to fluctuate due to tidal influences. Groundwater level measurements and top of casing elevations are summarized on Table 4.4.

5.0 REMEDIAL AND REGULATORY REQUIREMENTS

Cleanup requirements or levels for soil and groundwater contamination have not been established for sites in the San Francisco Bay Area. Regional Board Guidelines require a soil/groundwater investigation should soil samples collected during the removal of underground storage tanks exceed 100 mg/kg of total petroleum hydrocarbons or O&G. The required soil/groundwater investigation typically includes the installation of monitoring wells for sites with a groundwater depth of less than 50 feet. The Regional Board does not consider 100 mg/kg to be a cleanup level; the guidelines state that "in many instances it may not be appropriate to leave soil in-place which is contaminated with total petroleum hydrocarbons or other compounds at any concentration".

On December 18, 1992, potential cleanup and regulatory requirements were discussed with the County's assigned case worker, Ms. Juliet Shin. Specific requirements are subject to the County's review of the well and sample locations, previous assessment results, current assessment results, and future assessment results. Likely regulatory requirements for the areas of concern are discussed below.

Existing USTs

Monthly water level measurements and gradient determinations could be required since the groundwater gradient is expected to fluctuate. Groundwater remediation will likely not be required since the current groundwater sampling results indicate relatively low levels (near reporting limits) and the absence of benzene. Rather, quarterly groundwater monitoring will likely be required for a minimum period of one year. If groundwater concentrations remain similar to the current result after one year, site closure (removal from the regulatory list) will likely be recommended by the County. Final closure decisions rest with the San Francisco Regional Water Quality Control Board, San Francisco Bay Region.

Former Waste Oil UST

Approximately 2 feet from the perimeter of the waste oil UST excavation, a grab groundwater sample contained only toluene at 0.3 ug/l. Soil samples at further distances from the excavation contained O&G concentrations ranging from 53 mg/kg to 110 mg/kg. Previous soil samples collected from the tank pit indicated relatively high levels of contamination (up to 11,000 mg/kg of O&G). Widespread contamination was not identified during the current assessment at distances of 8 to 34 feet beyond the tank pit's perimeter; the tank pit area adjacent to the maintenance building was not evaluated due to access limitations. These results suggest that remedial activities may not be required since the groundwater in the vicinity of the excavation does not appear to be adversely affected. The soil sample analytical results are surprising since the soil samples collected from the tank pit contained much higher concentrations of contaminants. Documentation substantiating that further excavation is limited due to the close proximity to the maintenance building and underground utilities may be required. Alternately, the County may require additional excavation to the extent feasible without undertaking unusual methods to protect utilities and/or nearby structures.

Presence of O&G

The source of the widespread O&G concentrations and the evidence that it has not adversely impacted the groundwater should be documented. Current indications are that the O&G is due to the use of dredged fill material to create the site and that it has not impacted the groundwater. A cost/benefit analysis may be required to document that the costs of remediating the O&G far exceed the associated benefits.

6.0 OPINION OF REMEDIAL COSTS

Based on the results of the field assessment and our preliminary evaluation of remedial and regulatory requirements, the following additional activities are required at the site to obtain

closure (removal from regulatory lists and oversight). For purposes of this report, these additional activities are considered to comprise remedial costs. An opinion of remedial cost is provided for each area of concern; a summary is provided on Table 6.1.

6.1 Existing USTs

The groundwater gradient would be measured monthly for a period of six consecutive months. The three wells would be monitored for TPH/G, TPH/D, and BTEX for four consecutive quarters. Quarterly reports would be submitted to the County documenting the results of the groundwater monitoring activities; the reports would include appropriate documentation such as groundwater gradient maps. Following a period of one year with no significant changes in the groundwater concentrations, a request for closure report would be submitted to the County. Our estimated order-of-magnitude opinion of cost to complete these activities is approximately $ 25,000.

6.2 Disposal of Stockpiled Soils

The soils previously excavated from the tank pit would be appropriately disposed, the tank area would be backfilled, and a report would be submitted to the County documenting that additional excavation is not feasible and requesting closure. Assuming that the stockpiled soils would require disposal at a Class 1 (hazardous) landfill due to the elevated level of contaminants (greater than 1,000 ppm of O&G) identified by previous laboratory analysis, our estimated order-of-magnitude opinion of cost is approximately $ 25,000.

6.3 Additional Excavation of Waste Oil UST

Should additional excavation be required by the County, the excavation limits would likely not extend more than 10 feet to the north, west and east. Approximately 100 cubic yards of soil would be excavated. Soil samples would need to be collected from each end of the excavation to verify the levels of contaminants that remain. Soil samples would need to be analyzed for contaminants previously identified in the area (O&G, TPH/D, TPH/G, and BTEX). The excavated soil would likely require disposal at a Class 1 facility due to the elevated level of contaminants previously identified in the immediate vicinity of the tank pit. A report would be submitted documenting the excavation, soil sample results, disposal of excavated soils, and requesting site closure. Our estimated order-of-magnitude opinion of cost to complete these activities is approximately $ 50,000.

6.4 Presence of O&G

A cost/benefit report would be submitted to the County documenting that the clean-up costs associated with removing the O&G contamination far exceed the benefits. Our estimated order-of-magnitude opinion of cost to complete this report is approximately $ 10,000.

The above opinion of costs assume that the owner is responsive to the County's requirements and/or requests. Failure to provide information to the County in a timely manner may result in enforcement actions, fines, and/or requests for additional information. Our estimated costs exclude costs associated with being non-responsive to the County's requirements and/or requests.

7.0 STANDARD OF CARE

The services performed that are the subject of this report were performed according to generally accepted national standards of care, skill, diligence and professional competence applicable to Law/Crandall, Inc. and are subject to the extent and limitations contained in the scope of work between Law Associates, Inc. and G.A.P. Portfolio Partners outlined in job order number 92-1026-3 issued under the Master Consulting Agreement. Furthermore, this assessment included a review of reports prepared by other consultants upon which Law/Crandall, Inc. reasonably relied upon without verifying the accuracy of the information contained therein.

TABLES

TABLE 4.1: SOIL SAMPLE RESULTS FOR WASTE OIL AREAS
BALLENA ISLE MARINA, ALAMEDA, CA
CONTROL NUMBER 1026, GREAT AMERICAN PORTFOLIO
LAW/CRANDALL PROJECT NO. 2123-20669-1

Sample ID:	B-1	B-2	B-3	B-4	B-7
Sample Depth, Feet:	10	10	10	10	5
Sample Date:	12/7/92	12/7/92	12/7/92	12/7/92	12/7/92
TPH/G	ND<1	ND<1	ND<1	ND<1	ND<1
TPH/D	ND<10	ND<10	ND<10	ND<10	ND<10
VOCs	ND	ND	ND	ND	ND
BTEX					
Benzene	ND<0.003	ND<0.003	ND<0.003	ND<0.003	ND<0.003
Toluene	ND<0.003	ND<0.003	ND<0.003	ND<0.003	ND<0.003
Ethylbenzene	ND<0.003	ND<0.003	ND<0.003	ND<0.003	ND<0.003
Xylenes	ND<0.003	ND<0.003	ND<0.003	ND<0.003	ND<0.003
Semi-volatiles	ND	ND	ND	ND	ND
Pesticides and PCBs	ND	ND	ND	ND	ND
Metals					
Cadmium	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Chromium	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Lead	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Nickel	ND<1	ND<1	ND<1	ND<1	ND<1
Zinc	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Notes:
All analytical results in mg/kg except lead.
TPH/D: Total Petroleum Hydrocarbons as Diesel by EPA Method Mod. 8015.
TPH/G: Total Petroleum Hydrocarbons as Gasoline by EPA Method 5030/Mod. 8015.
Pesticides/PCB: Polychlorinated biphenyls by EPA Method 8080.
VOC: Volatile Organics by EPA Method 8240.
BTEX: By EPA Method 8020.
Oil & Grease: By EPA Method 413.1 (5520 D & F).
Pesticides: By EPA Method 8080.
Semi-Volatile: By EPA Method 8270.
Metals: By California Administrative Code Title 22 and SW0846 Method 6010; results in mg/l.

TABLE 4.2: SOIL SAMPLE RESULTS FOR UST AREAS
BALLENA ISLE MARINA, ALAMEDA, CA
CONTROL NUMBER 1026, GREAT AMERICAN PORTFOLIO
LAW/CRANDALL PROJECT NO. 2123-20669-1

Sample ID:	MW-1	MW-2	MW-3	MW-4
Sample Depth, Feet:	5	5	5	5
Sample Date:	12/4/92	12/4/92	12/4/92	12/4/92
TPH/G	ND<1	ND<1	ND<1	ND<1
TPH/D	ND<10	ND<10	ND<10	ND<10
Oil and Grease	ND<50	ND<50	ND<50	ND<50
BTEX				
Benzene	ND<0.003	ND<0.003	ND<0.003	ND<0.003
Toluene	ND<0.003	ND<0.003	ND<0.003	ND<0.003
Ethylbenzene	ND<0.003	ND<0.003	ND<0.003	ND<0.003
Xylenes	ND<0.003	ND<0.003	ND<0.003	ND<0.003
Lead	ND<0.5	ND<0.5	ND<0.5	ND<0.5

Notes:
All analytical results in mg/kg except lead.
TPH/D: Total Petroleum Hydrocarbons as Diesel by EPA Method Mod. 8015.
TPH/G: Total Petroleum Hydrocarbons as Gasoline by EPA Method 5030/Mod. 8015.
BTEX: By EPA Method 8020.
Lead: By California Administrative Code Title 22 and SW-846 Method 6010; results in mg/l.
Oil and Grease: By EPA Method 413.1(5520 D&F).

TABLE 4.3: GROUNDWATER SAMPLE RESULTS FOR UST AREAS
BALLENA ISLE MARINA, ALAMEDA, CA
CONTROL NUMBER 1026, GREAT AMERICAN PORTFOLIO
LAW/CRANDALL PROJECT NO. 2123-20669-1

Sample ID:	MW-1	MW-2	MW-3	MW-4
Sample Date:	12/8/92	12/8/92	12/8/92	12/4/92
TPH/G	ND<50	ND<50	52	ND<50
TPH/D	ND<50	ND<50	ND<50	ND<50
BTEX				
Benzene	ND<0.3	ND<0.003	ND<0.3	ND<0.003
Toluene	0.5	ND<0.003	0.5	ND<0.003
Ethylbenzene	ND<0.3	ND<0.003	ND<0.3	ND<0.003
Xylenes	0.6	ND<0.003	0.6	ND<0.003
Lead	ND<0.1	ND<0.1	ND<0.1	ND<0.1

Notes:
All analytical results in mg/l.
TPH/D: Total Petroleum Hydrocarbons as Diesel by EPA Method Mod. 3550/8015.
TPH/G: Total Petroleum Hydrocarbons as Gasoline by EPA Method 5030/Mod. 8015.
BTEX: By EPA Method 8020.
Lead: By SW-846 Method 6010.

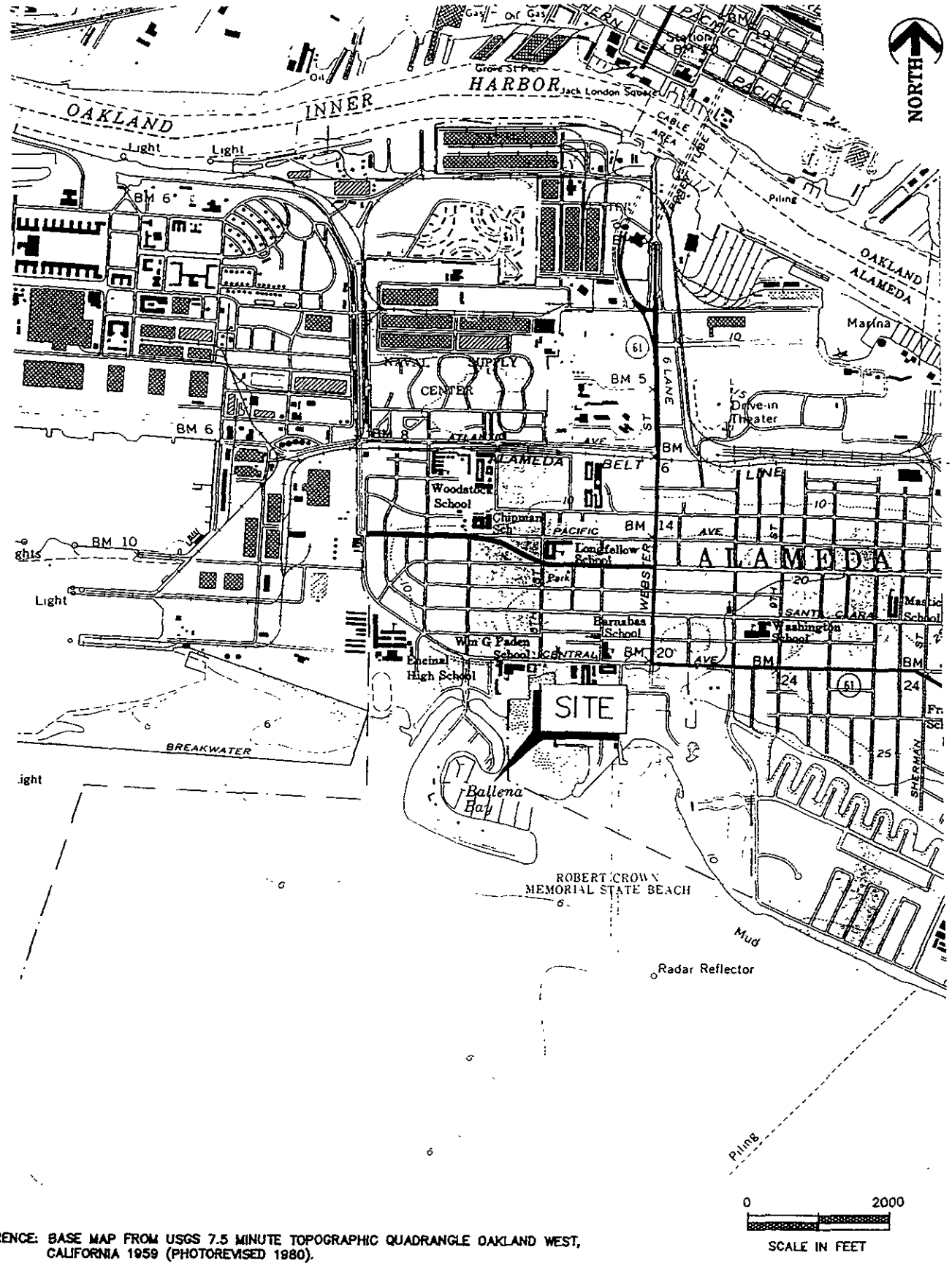
TABLE 4.4: GROUNDWATER ELEVATIONS
BALLENA ISLE MARINA, ALAMEDA, CA
CONTROL NUMBER 1026, GREAT AMERICAN PORTFOLIO
LAW/CRANDALL PROJECT NO. 2123-20669-1

MONITORING WELL	DEPTH TO WATER (FT)	TOP OF CASING ELEVATION (FT)	GROUNDWATER ELEVATION (FT)
MW-1	4.16	9.66	5.50
MW-2	4.68	10.06	5.38
MW-3	4.56	9.99	5.43

Notes:

1) Top of casing elevations and groundwater elevations were calculated based on a temporary benchmark located at the southwest corner of the concrete pad which overlies the UST; the benchmark had an assumed elevation of 10 feet.
2) Groundwater levels were measured on 12/11/92.

FIGURES



REFERENCE: BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE OAKLAND WEST, CALIFORNIA 1959 (PHOTOREVISED 1980).

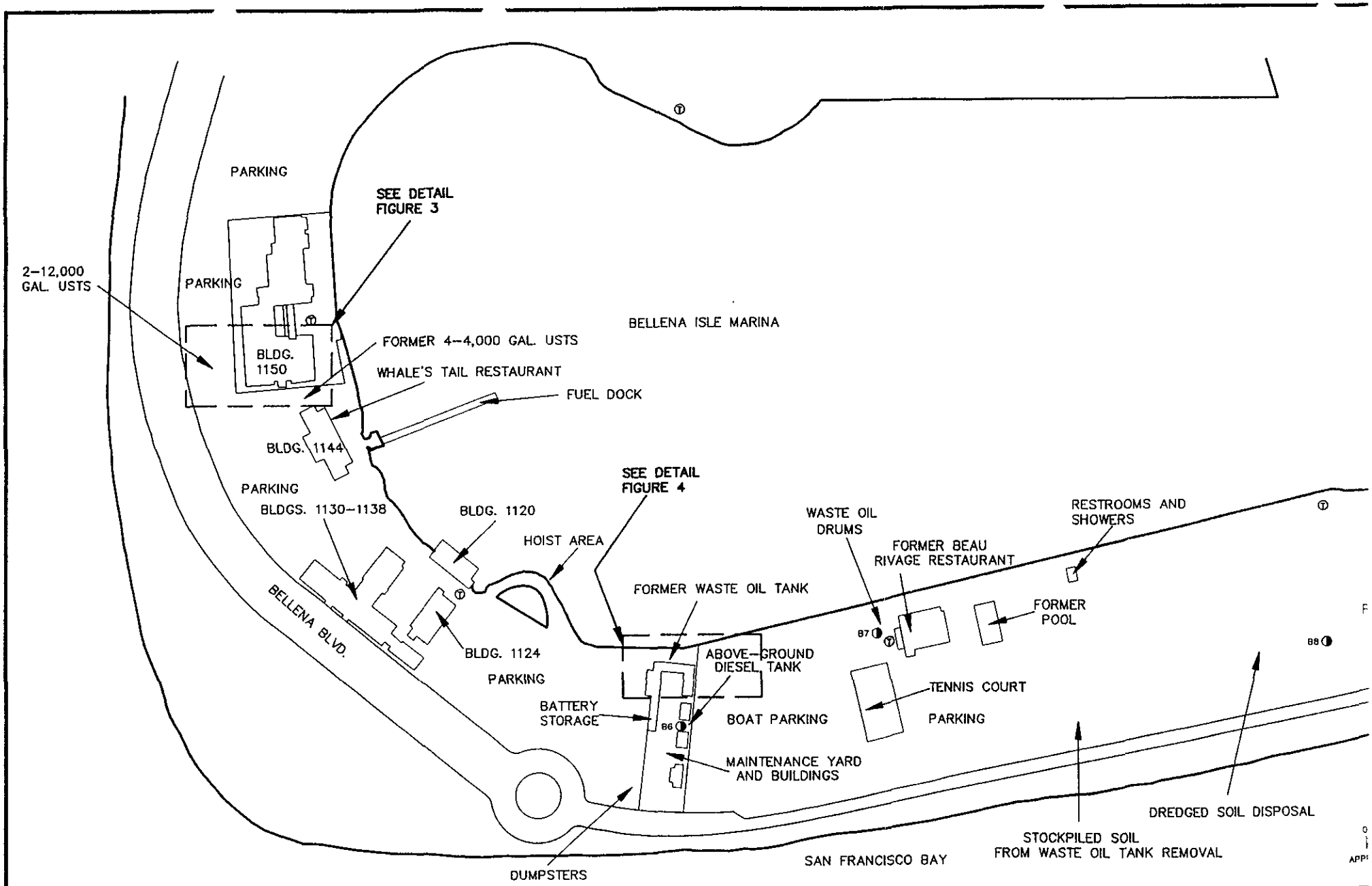
G.A.P. PORTFOLIO PARTNERS
C/O COLONY ADVISORS, INC.
LOS ANGELES, CALIFORNIA

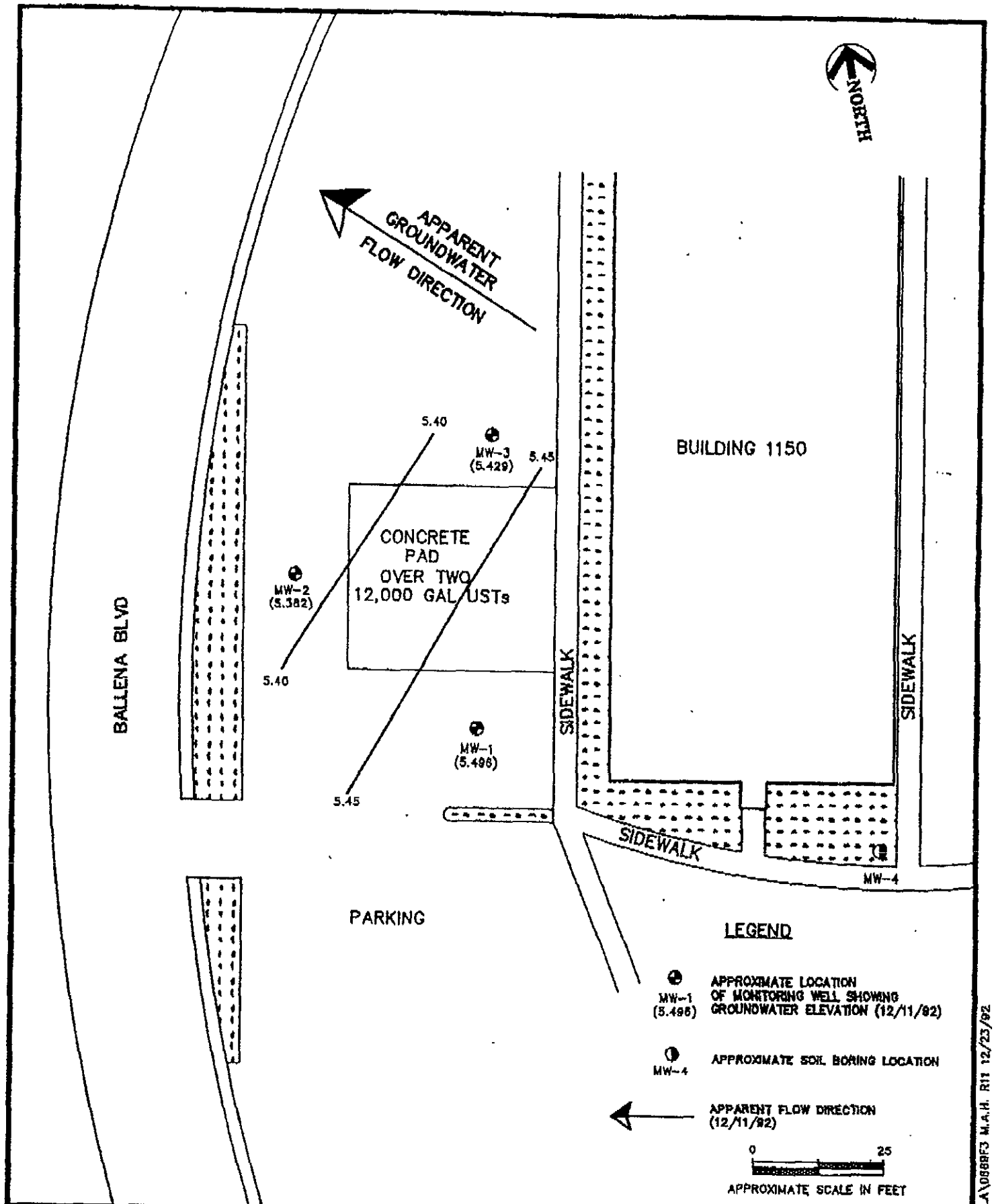
LAW/CRANDALL, INC.

SITE LOCATION MAP
GE SITE # 1026
BALLENA ISLE MARINA
ALAMEDA, CALIFORNIA

JOB NO. 2123-20669-1 FIGURE 1

C:\DWGS\GECAPTOL\LA\0669F1 M.A.H. R11 12/21/92


PARKING
SEE DETAIL FIGURE 3
2–12,000 GAL. USTS
PARKING
BELLENA ISLE MARINA
BLDG. 1150
FORMER 4–4,000 GAL. USTS
WHALE'S TAIL RESTAURANT
FUEL DOCK
BLDG. 1144
SEE DETAIL FIGURE 4
PARKING
BLDGS. 1130–1138
BLDG. 1120
HOIST AREA
WASTE OIL DRUMS
RESTROOMS AND SHOWERS
FORMER BEAU RIVAGE RESTAURANT
BELLENA BLVD.
FORMER WASTE OIL TANK
FORMER POOL
B7
B8
BLDG. 1124
PARKING
ABOVE–GROUND DIESEL TANK
TENNIS COURT
BATTERY STORAGE
B6
BOAT PARKING
PARKING
MAINTENANCE YARD AND BUILDINGS
DREDGED SOIL DISPOSAL
STOCKPILED SOIL FROM WASTE OIL TANK REMOVAL
SAN FRANCISCO BAY
DUMPSTERS
LEGEND
TRANSFORMER
SOIL BORING
G.A.P. PORTFOLIO PARTNERS
C/O COLONY ADVISORS, INC.
LOS ANGELES, CALIFORNIA
LAW/CRANDALL, INC.
JOB NO. 2123–20669–1



G.A.P. PORTFOLIO PARTNERS
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LOS ANGELES, CALIFORNIA

LAW/CRANDALL, INC.

EXISTING UST AREA
GE SITE # 1028
BALLENA ISLE MARINA
ALAMEDA, CALIFORNIA

JOB NO. 2123-20669-1 FIGURE 3

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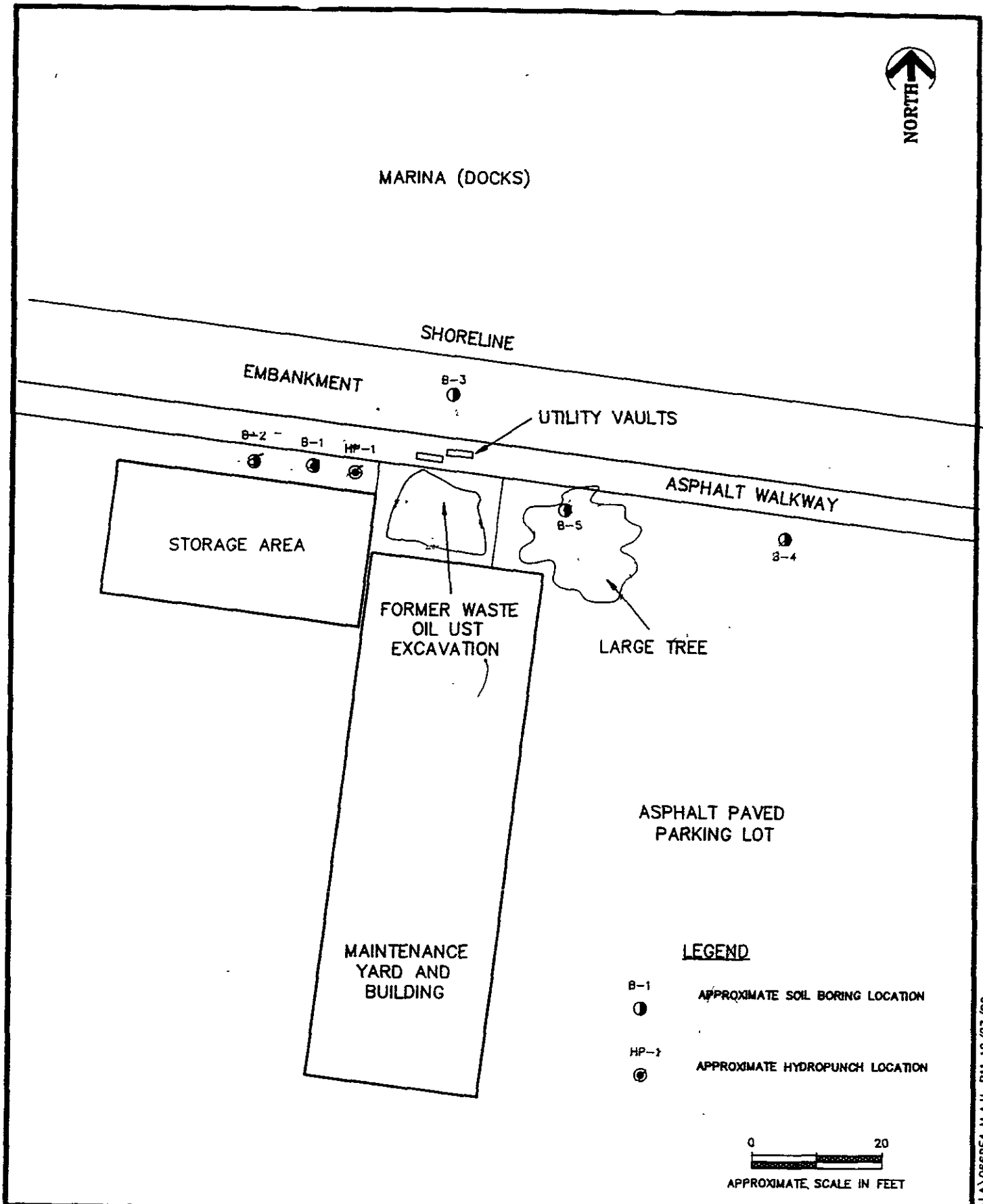

G.A.P. PORTFOLIO PARTNERS
C/O COLONY ADVISORS, INC.
LOS ANGELES, CALIFORNIA

LAW/CRANDALL, INC.

FORMER WASTE OIL
UST AREA
GE SITE # 1026
BALLENA ISLE MARINA
ALAMEDA, CALIFORNIA
JOB NO. 2123-20669-1 FIGURE 4

C:\DWGS\GECAPTOL\LA\0669F4 M.A.H. R11 12/23/92

APPENDIX A

SOIL BORING AND WELL CONSTRUCTION PERMIT

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94588 ♦ (415) 484-2600

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT RALLENA ISLE MARINA
1150 RALLENA BLVD.
ALAMEDA, CA

PERMIT NUMBER 92611
LOCATION NUMBER

CLIENT

Name GENERAL ELECTRIC CAPITAL CORP.
Address 260 LONG RIDGE RD Phone (415) 499-1422 c/o LAW/CRANDALL
City STAMFORD, CT Zip 06927-9100

APPLICANT

Name PAUL BURRAGE
LAW/CRANDALL INC.
Address 4000 CIVIC CENTER DR Phone (415) 499-1422
City SAN RAFAEL, CA Zip 94903

TYPE OF PROJECT

Well Construction
Cathodic Protection ___
Water Supply ___
Monitoring X

Geotechnical Investigation
General ___
Contamination X
Well Destruction ___

PROPOSED WATER SUPPLY WELL USE

Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:

Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. C-57 610487

WELL PROJECTS

Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 15 ft.
Surface Seal Depth 3 ft. Number 4

GEOTECHNICAL PROJECTS

Number of Borings 6 Maximum
Hole Diameter 8 in. Depth 15 ft.

ESTIMATED STARTING DATE 12/1/92
ESTIMATED COMPLETION DATE 12/4/92

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

APPLICANT'S SIGNATURE Paul Burrage Date 11/20/92

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 or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 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 and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in 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 24 Nov 92
Wyman Hong

APPENDIX B

SOIL BORING AND MONITORING WELL CONSTRUCTION LOGS

MW-1 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	Asphalt 3 in., Gravel Base 3 in.				Locking vault and watertight well cap	
0.5	FILL-SAND (SP): tan - light grey; 90-95% fine sand; 5-10% silt; poorly graded; subangular; very loose; slightly moist; no unusual odors or discoloration				Grout Seal Bentonite pellets 2" dia. PVC blank Schedule 40 casing	
	NOTE: Sand becoming light - medium grey, no unusual odors or discoloration.		SA			0
					#3 filter sand	
	NOTE: Soil is light-medium grey; 80% fine sand; 20% shell fragments; very loose; very wet; no unusual odors or discoloration; fill				2" dia. PVC slotted Schedule 40 casing (0.02 inch slots)	0
15.0	Boring terminated at approximately 15 feet, groundwater encountered at a depth of approximately 7 feet. Some sloughing of sands, no unusual odors or discoloration.				Threaded pointed endcap	0

REMARKS:

1) Boring advanced using 8-inch hollow stem augers.
   Groundwater encountered at depth of approximately 7 feet.
3) SA = Sample Analyzed
4) ⌯ = Stabilized groundwater level
5) ⌯ = Drilling water level

DRILLED BY	G. SIERRA	BORING NUMBER	MW-1
LOGGED BY	ATM	DATE STARTED	12/4/92
CHECKED BY	MIM	DATE COMPLETED	12/4/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

MW-2 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	Asphalt 6 in., Gravel Base 3 in.				Locking vault and watertight well cap	
0.8	FILL-SAND (SP): Tan-light grey; 90% fine grained sand; 10% silt; some silt lenses; poorly graded; subangular; loose; moist; no unusual odors or discoloration				Grout seal Bentonite pellets 2" dia. PVC blank Schedule 40 casing	
	NOTE: Becoming light - medium grey at 3 feet		SA		▽	20
					#3 filter sand	
	NOTE: Sand is light-medium grey; 90% fine - medium sand; 5-10% silt; trace shell fragments; poorly graded; subangular; loose-very loose; wet; no unusual odors or discoloration, fill				2" dia. PVC slotted Schedule 40 casing (0.02 inch slots)	120
	NOTE: Shell fragments make up 15% of soil					
15.0	Boring terminated at approximately 15 feet, groundwater encountered at a depth of approximately 7 feet. Some sloughing of sands, no unusual odors or discoloration.				Threaded pointed endcap	15

REMARKS:

1)Boring advanced using 8-inch hollow stem augers.

.)Groundwater encountered at a depth of approximately 7 feet.

3)SA = Sample Analyzed

4)▽ = Stabilized groundwater level

5)▽ = Drilling water level

DRILLED BY	G. SIERRA	BORING NUMBER	MW-2
LOGGED BY	ATM	DATE STARTED	12/4/92
CHECKED BY	MIM	DATE COMPLETED	12/4/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

MW-3 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	Asphalt 4 in., Gravel base 3 in.				Locking vault and watertight well cap	
0.6	FILL-SAND (SP) tan-light grey: 90% fine sand; 10% silt; poorly graded; subangular; loose; slightly moist; no unusual odors or discoloration		SA		Grout seal Bentonite pellets 2" dia. PVC blank Schedule 40 casing	
	NOTE: Sand becoming light - medium grey, no unusual odors or discoloration				▽ #3 filter sand ▽	0
	NOTE: Silt content is decreasing; trace shell fragments; no unusual odors or discoloration.				2" dia. PVC slotted Schedule 40 casing (0.02 inch slots)	0
15.0	Boring terminated at approximately 15 feet, groundwater encountered at a depth of approximately 7 feet. Some sloughing of sands. No unusual odors or discoloration.				Threaded pointed endcap	0

REMARKS:

1)Boring advanced using 8-inch hollow stem augers.

)Groundwater encountered at a depth of approximately 7 feet.

3)SA = Sample Analyzed

4)▽ = Stabilized groundwater level

5)▽ = Drilling water level

DRILLED BY	G. SIERRA	BORING NUMBER	MW-3
LOGGED BY	ATM	DATE STARTED	12/4/92
CHECKED BY	MIM	DATE COMPLETED	12/4/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

MW-4 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	FILL-SAND (SP): light-medium grey; 90% fine sand; 10% shell fragments; poorly graded; subangular; very loose; wet; no unusual odors or discoloration		SA		Bentonite pellets	0
9.0	Hand augering terminated at approximately 9 feet. Groundwater encountered at a depth of approximately 7.3 feet. Some sloughing of sands, no unusual odors or discoloration.					

REMARKS:

1)Boring advanced using 3.5-inch hand auger
2)Groundwater encountered at a depth of 7.3 feet
3)SA = Sample analyzed
4)⏚ = Drilling water level

DRILLED BY	G. SIERRA	BORING NUMBER	MW-4
LOGGED BY	ATM	DATE STARTED	12/4/92
CHECKED BY	MIM	DATE COMPLETED	12/4/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

B-1 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	Asphalt 4 in., Gravel Base 3 in.					
0.6	FILL-SILTY SAND (SM): Tan-light grey; 70% fine sand; 10% silt; 20% shell fragments; poorly graded; subangular; very loose; moist; no unusual odors or discoloration				Neat Cement/Grout Seal	
	NOTE: Color becoming light - medium grey					0
			SA			
10.0	FILL-SAND (SP): light-medium grey; 90% fine sand; 10% shell fragments; poorly graded; subangular; very loose; wet; no unusual odors or discoloration			▽		0
15.0	Boring terminated at approximately 15 feet. Groundwater encountered at 10.6 feet. No unusual odors or discoloration.					0

REMARKS:

1)Boring advanced using 8-inch hollow stem augers.

2)Groundwater encountered at a depth of 10.8 feet.

3)SA = Sample Analyzed

4)▽ = Drilling water level

DRILLED BY	G. SIERRA	BORING NUMBER	B-1
LOGGED BY	ATM	DATE STARTED	12/7/92
CHECKED BY	MIM	DATE COMPLETED	12/7/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

B-2 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	Asphalt 4 in., Gravel Base 3 in.					
0.6	FILL-SILTY SAND (SM): Tan-light grey; 70% fine sand; 10% silt; 20% shell fragments; poorly graded; subangular; very loose; moist; no unusual odors or discoloration				Neat Cement/Grout Seal	
	NOTE: Color becoming light - medium grey		SA			0
10.0	FILL-SAND (SP): light-medium grey; 90% fine sand; 10% shell fragments; poorly graded; subangular; very loose; wet; no unusual odors or discoloration			▽		0
15.0	Boring terminated at approximately 15 feet. Groundwater encountered at 10.6 feet. No unusual odors or discoloration.					0

REMARKS:

1)Boring advanced using 8-inch hollow stem augers.

2)Groundwater encountered at a depth of 10.8 feet.

3)SA = Sample Analyzed

4)▽ = Drilling water level

DRILLED BY	G. SIERRA	BORING NUMBER	B-2
LOGGED BY	ATM	DATE STARTED	12/7/92
CHECKED BY	MIM	DATE COMPLETED	12/7/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

B-3 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	Asphalt 4 in., Gravel Base 3 in.					
0.6	FILL-SILTY SAND (SM): Tan-light grey; 70% fine sand; 10% silt; 20% shell fragments; poorly graded; subangular; very loose; moist; no unusual odors or discoloration				Neat Cement/Grout Seal	
	NOTE: Color becoming light - medium grey					0
			SA			
10.0	FILL-SAND (SP): light-medium grey; 90% fine sand; 10% shell fragments; poorly graded; subangular; very loose; wet; no unusual odors or discoloration			▽		0
15.0	Boring terminated at approximately 15 feet. Groundwater encountered at 10.6 feet. No unusual odors or discoloration.					0

REMARKS:

1)Boring advanced using 8-inch hollow stem augers.

2)Groundwater encountered at a depth of 10.8 feet.

3)SA = Sample Analyzed

4)▽ = Drilling water level

DRILLED BY	G. SIERRA	BORING NUMBER	B-3
LOGGED BY	ATM	DATE STARTED	12/7/92
CHECKED BY	MIM	DATE COMPLETED	12/7/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

B-4 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	Asphalt 4 in., Gravel Base 3 in.					
0.6	FILL-SILTY SAND (SM): Tan-light grey; 70% fine sand; 10% silt; 20% shell fragments; poorly graded; subangular; very loose; moist; no unusual odors or discoloration				Neat Cement/Grout Seal	
	NOTE: Color becoming light - medium grey					0
			SA			
10.0	FILL-SAND (SP): light-medium grey; 90% fine sand; 10% shell fragments; poorly graded; subangular; very loose; wet; no unusual odors or discoloration			▽		0
15.0	Boring terminated at approximately 15 feet. Groundwater encountered at 10.6 feet. No unusual odors or discoloration.					0

REMARKS:

1)Boring advanced using 8-inch hollow stem augers.

2)Groundwater encountered at a depth of 10.8 feet.

3)SA = Sample Analyzed

4)▽ = Drilling water level

DRILLED BY	G. SIERRA	BORING NUMBER	B-4
LOGGED BY	ATM	DATE STARTED	12/7/92
CHECKED BY	MIM	DATE COMPLETED	12/7/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

B-5 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	FILL-SILTY SAND (SM): Light-medium grey; 80% fine sand; 10% silt; 10% shell fragments and roots; poorly graded; subangular; very loose; no unusual stains or discoloration				Neat Cement/Grout Seal	
5.0	FILL-SAND (SP): Light-medium grey; 90% fine sand; 10% shell fragments; poorly graded; subangular; very loose; no unusual odors or discoloration		SA			0
9.0	Hand augering terminated at approximately 9 feet, no unusual odors or discoloration					0

REMARKS:

1)Boring advanced using 3.5 inch hand auger due to presence of large tree

2)groundwater not encountered

3)SA = Sample Analyzed

DRILLED BY	G.SIERRA	BORING NUMBER	B-5
LOGGED BY	ATM	DATE STARTED	12/7/92
CHECKED BY	MIM	DATE COMPLETED	12/7/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

B-6 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	Concrete 3 in., Gravel Base 3 in.					
0.5	FILL-SILTY SAND (SM): Tan-light grey; 80% fine sand; 10% silt; 10% shell fragments; poorly graded; subangular; very loose; moist; no unusual stains or discoloration		SA		Neat Cement/Grout Seal	0
5.0	Hand augering terminated at approximately 5 feet					

REMARKS:

1)Boring advanced using 3.5 inch hand auger.

2)Groundwater not encountered

)SA = Sample analyzed

DRILLED BY	L/C	BORING NUMBER	B-6
LOGGED BY	ATM	DATE STARTED	12/7/92
CHECKED BY	MiM	DATE COMPLETED	12/7/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

B-7 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	FILL-SAND (SP): Tan-light grey; 85% fine sand; 15% shell fragments and roots; poorly graded; subangular; very loose; moist; no unusual odors or discoloration		SA		Backfill	0
4.0	Boring terminated at 4.00 feet					
	NOTE: Angled boring					

REMARKS:
1)Hand augering terminated at 4 feet
2)Groundwater not encountered
3)SA = Sample analyzed

DRILLED BY	L/C	BORING NUMBER	B-7
LOGGED BY	ATM	DATE STARTED	12/8/92
CHECKED BY	MIM	DATE COMPLETED	12/8/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

B-8 TEST BORING RECORD

DEPTH (FEET)	DESCRIPTION	LITH	S	DIAGRAM	MATERIALS	OVA READINGS
0.0	CLAY (CL): Dark brown - dark grey brown; high plasticity fines; trace fine sand; moist; no unusual odors or discoloration				Backfill	
			SA			0
4.0	Hand augering terminated at 4 feet.					

REMARKS:

1)Hand augering terminated at 4 feet.

2)Groundwater not encountered

)SA = Sample analyzed

DRILLED BY	L/C	BORING NUMBER	B-8
LOGGED BY	ATM	DATE STARTED	12/8/92
CHECKED BY	MIM	DATE COMPLETED	12/8/92
		JOB NUMBER	2123-20669-1

Law/Crandall Inc.

APPENDIX C

LABORATORY ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY DOCUMENTATION

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55903
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/18/92
DATE REPORTED: 12/23/92

ANALYSIS FOR TOTAL PETROLEUM OIL AND GREASE
by Method 5520F (formerly 503E)

LAB #	Sample Identification	Concentration (mg/kg) Total Petroleum Oil & Grease
1	MW1 @ 5'	ND<50
2	MW2 @ 5'	ND<50
3	MW3 @ 5'	ND<50
4	MW4 @ 5'	ND<50

mg/kg - parts per million (ppm)

Minimum Detection Limit for oil & grease in Soil: 50mg/kg

QAQC Summary:
MS/MSD Average Recovery = 99%
Duplicate RPD = 6%

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821 7123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 55863
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/04/92
DATE REPORTED: 12/15/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration Gasoline Range
1	MW1 @ 5'	ND<1 mg/kg
2	MW2 @ 5'	ND<1 mg/kg
3	MW3 @ 5'	ND<1 mg/kg
4	MW4 @ 5'	ND<1 mg/kg
5	MW4	ND<50 ug/L

ug/L - parts per billion (ppb)
mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Water: 50 ug/L
Method Detection Limit for Gasoline in Soil : 1 mg/kg

QAQC Summary:

Daily Standard run at 2mg/L: %Diff Gasoline = <15
MS/MSD Recovery = 95%: Duplicate RPD = 1%

Richard Srna, Ph.D.

Laboratory Manager

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 55863
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/04/92
DATE REPORTED: 12/15/92
DATE REVISED : 12/17/92

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration Benzene	Toluene	Ethyl Benzene	Xylenes	
1	MW1 @ 5'	ND<.003	ND<.003	ND<.003	ND<.003	mg/kg
2	MW2 @ 5'	ND<.003	ND<.003	ND<.003	ND<.003	mg/kg
3	MW3 @ 5'	ND<.003	ND<.003	ND<.003	ND<.003	mg/kg
4	MW4 @ 5'	ND<.003	ND<.003	ND<.003	ND<.003	mg/kg
5	MW4	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ug/L

ug/L - parts per billion (ppb)
g/kg - parts per million (ppm)

Method Detection Limit in Water: 0.3 ug/L
Method Detection Limit in Soil : 0.003 mg/kg

QAQC Summary:

Daily Standard run at 20ug/L: %Diff 8020 = <15%
MS/MSD Average Recovery = 91%: Duplicate RPD = 4%

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Manager

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647 2081 / fax (415) 821 7123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 55863
CLIENT: LAW/CRANDALL
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/04/92
DATE REPORTED: 12/15/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/kg) Diesel Range	
1	MW1 @ 5'	ND<10	mg/kg
2	MW2 @ 5'	ND<10	mg/kg
3	MW3 @ 5'	ND<10	mg/kg
4	MW4 @ 5'	ND<10	mg/kg
5	MW4	ND<50	ug/L

mg/kg - parts per million (ppm)
ug/L - parts per billion (ppb)
Minimum Detection Limit for Diesel in Soil: 10mg/kg
Minimum Detection Limit for Diesel in Water : 50ug/L

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 88%: Duplicate RPD = 1%

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 87362
CLIENT: LAW/CRANDALL
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/04/92
DATE REPORTED: 12/14/92
DATE SAMPLED : 12/04/92

ANALYSIS FOR STLC LEAD
by Calif. Admin. Code Title 22, Paragraph 66700 (WET)
and by EPA SW-846 Method 6010

LAB #	Sample Identification	Concentration (mg/L) Lead
1	MW1 @5'	ND<0.5
2	MW2 @5'	ND<0.5
3	MW3 @5'	ND<0.5
4	MW4 @5'	ND<0.5

mg/L = parts per million in extract

Method Detection Limit for Extractable Lead in Soil: 0.5 mg/L

QAQC Summary: MS/MSD Average Recovery : 92%
Duplicate RPD : 1%

Richard Srna, Ph.D.
Laboratory Manager

RECEIVED
DEC 16 1992
LAW ENVIRONMENTAL INC.

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 87362
CLIENT: Law/Crandall
CLIENT JOB NO.: 2123206630001

DATE RECEIVED:12/04/92
DATE REPORTED:12/14/92
DATE SAMPLED: 12/4/92

ANALYSIS FOR TOTAL LEAD
by SW-846 Method 6010

LAB #	Sample Identification	Concentration(mg/l) Total Lead
5	MW4	ND<0.1

mg/l - parts per million (ppm)

Method Detection Limit for Lead in Water: 0.1 mg/L

QAQC Summary: MS/MSD Average Recovery : 92%
Duplicate RPD : 2%

Richard Srna, Ph.D.
Nancy A. Nelson for
Laboratory Manager

CHAIN OF CUSTODY RECORD

558

BCA Log Number _____

Client name	Project or PO#
LAW/CRANDALL INC	212320C630001
Address 400 Civic Center Dr. Suite 305	Phone # 415 499 1422
City, State, Zip	Report attention SUSAN BATTEY

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by ATM / Sample description	Number of containers	TPH/6 + BTex	TPH/D	STLC Lead	Total Lead					Remarks
	12/4/92	10:00	SO	MW1 at 5ft	1	X	X	X						5 day Turnaround
	12/4/92	11:30	SO	MW2 at 5ft	1	X	X	X						
	12/4/92	1:00	SO	MW3 at 5ft	1	X	X	X						
	12/4/92	3:00	SO	MW4 at 5ft.	1	X	X	X						
	12/4/92	3:30	GW	MW4	5	X	X		X					

Analyses required: Hazardous sample / Special handling required

	Signature	Print Name	Company	Date	Time
Relinquished by					
Received by					
Relinquished by					
Received by					
Relinquished by	Andrew T. Mulla	Andrew T. Mulla	Law/Crandall	12/4/92	18:10
Received by Laboratory	Cecilia Joaquin	Cecilia Joaquin	Superior Lab	12/4/92	1810

B C ANALYTICAL

1255 Powell Street, Emeryville, CA 94608 (510) 428-2300

801 Western Aver ndale, CA 91201 (818) 247-5737

1200 Gene Autry naheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____ _____

_____ _____

*KEY: WW—Wastewater SU—Surface Water SO—Soil SL—Sludge PE—Petroleum OT—Other NA—Nonaqueous GW—Gro er AQ—Aqueous

Superior Precision Analytical, Inc.
1555 Burke, Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821 7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55874
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123-20663-0001

DATE RECEIVED: 12/08/92
DATE REPORTED: 12/15/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration Gasoline Range
1	SB 7	ND<1 mg/kg
3	MW 1	ND<50 ug/L
4	MW 2	ND<50 ug/L
5	MW 3	52 ug/L

ug/L - parts per billion (ppb)

Method Detection Limit for Gasoline in Soil: 1 mg/kg
Method Detection Limit for Gasoline in Water: 50 ug/L

QAQC Summary:

Daily Standard run at 2mg/L: %Diff Gasoline = <15
MS/MSD Recovery = 94%: Duplicate RPD = 4%

Richard Srna, Ph.D.

Cecilia G Joaquin (for)
Laboratory Manager

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 55874
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123-20663-0001

DATE RECEIVED: 12/08/92
DATE REPORTED: 12/15/92

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration Benzene	Toluene	Ethyl Benzene	Xylenes	
1	SB 7	ND<.003	ND<.003	ND<.003	ND<.003	mg/kg
3	MW 1	ND<0.3	0.5	ND<0.3	0.6	ug/L
4	MW 2	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ug/L
5	MW 3	ND<0.3	0.5	ND<0.3	0.6	ug/L

ug/L - parts per billion (ppb)
g/kg - parts per million (ppm)

Method Detection Limit in Soil: 0.003 mg/kg
Method Detection Limit in Water: 0.3 ug/L

QAQC Summary:

Daily Standard run at 20ug/L: %Diff 8020 = <15%
MS/MSD Average Recovery = 93%: Duplicate RPD = 5%

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Manager

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55874
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123-20663-0001

DATE RECEIVED: 12/08/92
DATE REPORTED: 12/15/92

ANALYSIS FOR TOTAL PETROLEUM OIL AND GREASE
by Method 5520F (formerly 503E)

LAB #	Sample Identification	Concentration (mg/kg) Total Petroleum Oil & Grease
1	SB 7	83
2	SB 8	130

mg/kg - parts per million (ppm)

Minimum Detection Limit for oil & grease in Soil: 50mg/kg

QAQC Summary:
MS/MSD Average Recovery = 98%
Duplicate RPD = 8%

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55874
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123-20663-0001

DATE RECEIVED: 12/08/92
DATE REPORTED: 12/16/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration Diesel Range
1	SB 7	ND<10 mg/kg
3	MW 1	ND<50 ug/L
4	MW 2	ND<50 ug/L
5	MW 3	ND<50 ug/L

mg/kg - parts per million (ppm)
ug/L - parts per billion (ppb)

Minimum Detection Limit for Diesel in Water: 50ug/L
Minimum Detection Limit for Diesel in Soil : 10mg/kg

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 67%: Duplicate RPD = 9%

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821 7123

CERTIFICATE OF ANALYSIS

LABORATORY NO. 55874-1
CLIENT: LAW/CRANDALL
DATE SAMPLED : 12/08/92
DATE ANALYZED: 12/11/92

DATE RECEIVED: 12/08/92
DATE REPORTED: 12/15/92
PROJECT NO. 2123-20663-0001

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: SB7

Compound	MDL	ug/kg	Compound	MDL	ug/kg
Chloromethane	50	ND	Cis-1,3-Dichloropropene	15	ND
Bromomethane	50	ND	Trichloroethene	15	ND
Vinyl Chloride	50	ND	Dibromochloromethane	15	ND
Chloroethane	50	ND	1,1,2-Trichloroethane	15	ND
Methylene Chloride	50	ND	Benzene	5	ND
Acetone	50	ND	Trans-1,3-Dichloropropene	15	ND
Carbon Disulfide	15	ND	2-Chloroethyl vinyl ether	15	ND
Trichlorofluoromethane	15	ND	Bromoform	15	ND
1,1-Dichloroethene	15	ND	4-Methyl-2-Pentanone	50	ND
1,1-Dichloroethane	15	ND	2-Hexanone	50	ND
trans-1,2-Dichloroethene	15	ND	Tetrachloroethene	15	ND
Chloroform	15	ND	1,1,2,2-Tetrachloroethane	15	ND
1,2-Dichloroethane	5	ND	Toluene	15	ND
2-Butanone	100	ND	Chlorobenzene	15	ND
1,1,1-Trichloroethane	15	ND	Ethylbenzene	15	ND
Carbon Tetrachloride	15	ND	Styrene	15	ND
Vinyl Acetate	50	ND	Total Xylenes	15	ND
Bromodichloromethane	15	ND	1,3-Dichlorobenzene	15	ND
1,2-Dichloropropane	15	ND	1,4-Dichlorobenzene	15	ND
cis-1,2-Dichloroethene	15	ND	1,2-Dichlorobenzene	15	ND

ug/kg = parts per billion (ppb)
ND = ANALYTE NOT DETECTED ABOVE QUANTITATION LIMIT
QC DATA:

Surrogate Recoveries		QC LIMITS soil
1,2-DCA-d4.....	105%	70-121 %
Toluene-d8.....	104%	81-117 %
Bromofluorobenzene.....	94%	74-121 %

comments:

Richard Srna, Ph.D.

Laboratory Director

Section I

Chain of Custody and Analysis Request

page ___ of ___

Consultant: LAW/CRANDALL
Address: 4000 Civic Center Drive
San Rafael CA 94903
Phone No. 415 499 1422 Fax No. 415 499 8419
Project Manager: Susan Gahry
Alternate Contact: Andrew Muha
Project No. 2123-20663-0001 P.O. No. ___

Turn Around Time (circle one)
Same Day 72 Hrs
24 Hrs 48 Hrs
(Normal 5 Day) — circled

Superior Precision Analytical, Inc.
P.O. Box 1545
Martinez, California 94553
Martinez 1 (510) 229-1512 Martinez 2 (510) 229-0166
SanFrancisco (415) 647-2081

Sampler: A.T. Muha
Regulatory Agency: ___

Section II: Analysis Request

Laboratory Sample Identification	Matrix (S = Soil A = Air W = Water)	mod 8015 - Gas	mod 8015 - BTEX	mod 8015 - Diesel	8010	8240	CAM17	TCLP Metals: ___	Metals: Total lead	418.1 - TPH by IR	O & G	PCBs + Pesticides	8270	STLC Cd, Cr, Pb, Zn, Ni	Date Sampled	Time Sampled	Number of Containers	Preservative (yes or no)
1 SB 7	S	X	X	X		X					X	X	X	~~X~~	12/8	1:30	1	N
2 SB 8	S	[blotted out]	[blotted out]	[blotted out]			X				X		X					
3 MW1	W	X	X	X					X									
4 MW2	W	X	X	X					X									
5 MW3	W	X	X	X					X									
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Sample 2 remark: RB Do not run g/BTXE or Diesel

Please initial:
Samples Stored in ice ✓
Appropriate containers ✓
Samples preserved ✓
VOAs without headspace ✓
Comments

Sampling Remarks
- [ ] Bio-remediation
- [x] Underground storage tank
- [ ] Monitoring
- [ ] Recent Contamination
- [x] Unknown Compounds

Relinquished by: Andrew T. Muha Organization: Law/Crandall	Date/Time: 12/8/92 8:30 pm	Received by: ___ Organization: ___	Date/Time:
Relinquished by: ___ Organization: ___	Date/Time:	Received by: ___ Organization: ___	Date/Time:
Relinquished by: ___ Organization: ___	Date/Time:	Received by: Cecilia Joaquin Organization: Superior Lab	Date/Time: 12/8/92 8:30 pm

Lab please initial the following:
Samples Stored in Ice: Yes
Appropriate Containers: Yes
Samples Preserved: NA
VOAs without Headspace: Yes
Comments: ___

Section I

Chain of Custody and Analysis Request

From: Superior Precision Analytical, Inc.
1555 Burke St. Unit I
San Francisco, CA 92124
Phone No. (415) 647-2081 Fax No. (415) 821-7123
Contact: RENE BOONGALING
P.O. No. 55874

Turn Around Time (circle one)
Same Day 72 Hrs
24 Hrs (5 Day)
48 Hrs 10 Day

Superior Precision Analytical, Inc.
P.O. Box 1545
Martinez, California 94553

Work Subcontracted to: HTZ

Section II: Analysis Request

Laboratory Sample Identification	S = Soil A = Air W = Water Matrix	CAM17	Metals:	418.1	8270	8080 (pest. and PCB's)	STLC Cd, Cr, Pb Zn, Ni	TOTAL LEAD			Client Sample Identification	Number of Containers	Preservative (yes or no)			Sampling Remarks
1 55874-1	S						X					1	N			☐ Chevron ☒ Non-Chevron **Please Fax Results**
2 -2	S	X										1	N			
3 -3	W							X				1	Y			
4 -4	↓							X				1	↓			
5 -5	↓							X				1	↓			
6																
7																
8																
9																
10																
11																
12																

Relinquished by R. Boongaling	Date/Time 12/9/92 11:00	Received by	Date/Time	Lab please initial the following:
Organization Superior		Organization		Samples Stored in Ice
Relinquished by	Date/Time	Received by	Date/Time	Appropriate Containers
Organization		Organization		Samples Preserved
Relinquished by	Date/Time	Received by	Date/Time	VOAs without Headspace
Organization		Organization		Comments

Section I

Chain of Custody and Analysis Request

page 1 of 1

From: Superior Precision Analytical, Inc.
1555 Burke St. Unit I
San Francisco, CA 92124
Phone No. (415) 647-2081 Fax No. (415) 821-7123
Contact: RENE BOONTALING
P.O. No. 55874

Turn Around Time (circle one)
Same Day 72 Hrs
24 Hrs (5 Day)
48 Hrs 10 Day

Superior Precision Analytical, Inc.
P.O. Box 1545
Martinez, California 94553

Work Subcontracted to: CLAYTON

Section II: Analysis Request

Laboratory Sample Identification	S = Soil A = Air W = Water Matrix	CAM17	Metals	418.1	8270	8080 (pest. and PCB's)					Client Sample Identification	Number of Containers	Preservative (yes or no)			Sampling Remarks
155874-1	S				X	X						1	N			☐ Chevron ☒ Non-Chevron **Please Fax Results**
2 -2	S				X							1	N			
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																

Relinquished by: R. Boontaling	Date/Time: 12/9/92 5:00 pm	Received by:	Date/Time:	Lab please initial the following:
Organization: SUPERIOR		Organization:		Samples Stored in Ice
Relinquished by:	Date/Time:	Received by:	Date/Time:	Appropriate Containers
Organization:		Organization:		Samples Preserved
Relinquished by:	Date/Time:	Received by:	Date/Time:	VOAs without Headspace
Organization:		Organization:		Comments

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 87386-1
CLIENT: Law/Crandall
CLIENT JOB NO.: 2123-20663-0001

DATE RECEIVED: 12/08/92
DATE REPORTED: 12/15/92
DATE SAMPLED : 12/08/92

Analysis For Soluble Cadmium, Chromium, Lead, Nickel, Zinc
by Calif. Admin. code Title 22, Paragraph 66700
& EPA Method SW-846 6010

LAB #	Sample I.D.	Concentration (mg/L) Cadmium	Chromium	Lead	Nickel	Zinc
1	SB7	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<0.5

mg/L = parts per million in extract

Method Detection Limit for Extractable Cadmium in Soil: 0.5 mg/L
Method Detection Limit for Extractable Chromium in Soil : 0.5 mg/L
Method Detection Limit for Extractable Lead in Soil : 0.5 mg/L
Method Detection Limit for Extractable Nickel in Soil : 1.0 mg/L
Method Detection Limit for Extractable Zinc in Soil : 0.5 mg/L

QAQC Summary: MS/MSD Average Recovery : 90%
Duplicate RPD : 3

Richard Srna, Ph.D.
Nancy A. Nelson for
Laboratory Manager

RECEIVED
DEC 17 1992
LAW ENVIRONMENTAL INC.

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229 1512 / fax (510) 229 1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 87386 -2
CLIENT: Law/ Crandall
CLIENT JOB NO.: 2123-20663-0001

DATE RECEIVED:12/08/92
DATE REPORTED:12/15/92
CLIENT SAMPLE ID: SB8
DATE SAMPLED: 12/08/92

CAM 17 METALS
Methods: EPA SW 846 6000 & 7000 Series
California Administrative Code Title 22

Compound		Results (mg/kg)	Detection Limit (mg/kg)
Antimony	(Sb)	5	5
Arsenic	(As)	3	0.01
Barium	(Ba)	36	5
Beryllium	(Be)	ND	0.5
Cadmium	(Cd)	ND	1
Chromium	(Cr)	50	5
Cobalt	(Co)	ND	10
Copper	(Cu)	40	10
Lead	(Pb)	20	5
Mercury	(Hg)	0.19	0.05
Molybdenum	(Mo)	ND	5
Nickel	(Ni)	50	10
Selenium	(Se)	ND	1
Silver	(Ag)	ND	5
Thallium	(Tl)	ND	5
Vanadium	(V)	40	10
Zinc	(Zn)	80	20

mg/kg = parts per million (ppm)

QAQC Summary: Spike Recovery Range: 62-110%
Duplicate RPD = < 14

Richard Srna, Ph.D.
Laboratory Manager

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 87386
CLIENT: Law/Crandall
CLIENT JOB NO.: 2123-20663-0001

DATE RECEIVED:12/08/92
DATE REPORTED:12/15/92

ANALYSIS FOR TOTAL LEAD
by SW-846 Method 6010

LAB #	Sample Identification	Concentration(mg/L) Total Lead
3	MW1	ND<0.1
4	MW2	ND<0.1
5	MW3	ND<0.1

mg/L - parts per million (ppm)

Method Detection Limit for Lead in Water: 0.1 mg/L

QAQC Summary: MS/MSD Average Recovery : 92 %
Duplicate RPD : 2 %

Richard Srna, Ph.D.
Nancy A. Nelson for
Laboratory Manager

Sect. I

Chain of Custody and Analysis Request

page__of__

Consultant:	LAW/CRANDALL
Address:	4000 Civic Center Drive San Rafael CA 94903
Phone No.	4154991477
Fax No.	415 499 8419
Project Manager:	Susan Gahry
Alternate Contact:	Andrew Mika
Project No.	2123-20663-0001
P.O. No.	

Turn Around Time (circle one): Same Day / 72 Hrs / 24 Hrs / 48 Hrs / (Normal 5 Day) — circled

Superior Precision Analytical, Inc.
P.O. Box 1545
Martinez, California 94553
Martinez I (510) 229-1512 Martinez 2 (510) 229-0166
SanFrancisco (415) 647-2081

Sampler: A.T. Mika
Regulatory Agency:

Section II: Analysis Request:

Laboratory Sample Identification	Matrix (S = Soil A = Air W = Water)	mod 8015 - Gas	mod 8015 - BTEX	mod 8015 - Diesel	8010	8240	CAM17	TCLP Metals:	Metals: Total Lead	418.1 - TPH by IR	O & G	RCBs + Pesticides	8270	STLC Cd, Cr, Pb, Zn, Ni	Date Sampled	Time Sampled	Number of Containers	Preservative (yes or no)	Sampling Remarks
1 SB 7	S	X	X	X		X					X	X	X	~~X~~	12/8	1:30		N	
2 SB 8	S	~~X~~	~~X~~	~~X~~			X				X		X	Please initial:				RB	Do not run g/BTXE or Diesel
3 MW 1	W	X	X	X					X					Samples Stored in ice					✓
4 MW 2	W	X	X	X					X					Appropriate containers					✓
5 MW 3	W	X	X	X					X					...served					✓
6														VOA... headspace					✓
7														Comments					
8																			
9																			
10																			
11																			
12																			

Sampling Remarks

- [ ] Bio-remediation
- [x] Underground storage tank
- [ ] Monitoring
- [ ] Recent Contamination
- [x] Unknown Compounds

Relinquished by / Organization	Date/Time	Received by / Organization	Date/Time
Relinquished by: Andrew T. Mika Organization: Law/Crandall	12/8/92 8:30 PM	Received by: Organization:	
Relinquished by: Organization:		Received by: Organization:	
Relinquished by: Organization:		Received by: Celelia Joaquin Organization: Superior Lab	12/8/92 8:30 pm

Lab please initial the following:
Samples Stored in Ice: yes
Appropriate Containers: yes
Samples Preserved: NA
VOAs without Headspace: yes
Comments:

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55874
CLIENT: LAW/CRANDALL, INC.
CLIENT PROJECT NO.: 2123206630001

DATE RECEIVED: 12/08/92
DATE REPORTED: 12/17/92

Following is a list of Cross referenced Lab Numbers and Sample I.D.'s for referring to the following reports.

Superior Lab Number	Subbed Lab Number	Customer Sample Identificatio
55874- 1	9212151-01A	SB7
55874- 2	9212151-02A	SB8

Subbed to: CLAYTON ENVIRONMENTAL CONSULTANTS DOHS#1196.

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

December 17, 1992

Mr. Rene Boongaling
SUPERIOR ANALYTICAL LABORATORY
1555 Burke Street, Unit 1
San Francisco, CA 94124

Client Ref. 55874
Clayton Project No. 92121.51

Dear Mr. Boongaling:

Attached is our analytical laboratory report for the samples received on December 10, 1992. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/caa
Attachments

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	55874-1	Date Sampled:	12/08/92
Lab Number:	9212151-01A	Date Received:	12/10/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Organochlorine Pesticides			
alpha-BHC	319-84-6	ND	0.003
gamma-BHC (Lindane)	58-89-9	ND	0.003
beta-BHC	319-85-7	ND	0.003
Heptachlor	76-44-8	ND	0.003
delta-BHC	319-86-8	ND	0.003
Aldrin	309-00-2	ND	0.003
Heptachlor epoxide	1024-57-3	ND	0.003
Endosulfan I	959-98-8	ND	0.003
4,4'-DDE	72-55-9	ND	0.003
Dieldrin	60-57-1	ND	0.003
Endrin	72-20-8	ND	0.003
4,4'-DDD	72-54-8	ND	0.003
Endosulfan II	33212-65-9	ND	0.003
4,4'-DDT	50-29-3	ND	0.003
Endrin aldehyde	7421-93-4	ND	0.003
Endosulfan sulfate	1031-07-8	ND	0.003
Methoxychlor	72-43-5	ND	0.02
Chlordane	57-74-9	ND	0.02
Toxaphene	8001-35-2	ND	0.2
Polychlorinated Biphenyls (PCB's)			
Aroclor 1016	12674-11-2	ND	0.03

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	55874-1	Date Sampled:	12/08/92
Lab Number:	9212151-01A	Date Received:	12/10/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Polychlorinated Biphenyls (PCB's) (continued)			
Aroclor 1221	1104-28-2	ND	0.03
Aroclor 1232	11141-16-5	ND	0.03
Aroclor 1242	53469-21-9	ND	0.03
Aroclor 1248	12672-29-6	ND	0.03
Aroclor 1254	11097-69-1	ND	0.03
Aroclor 1260	11096-82-5	ND	0.03

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Tetrachloro-m-xylene	877-09-8	82	24 -	150
Dibutylchlorendate	1770-80-5	87	20 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212151-03A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Organochlorine Pesticides			
alpha-BHC	319-84-6	ND	0.003
gamma-BHC (Lindane)	58-89-9	ND	0.003
beta-BHC	319-85-7	ND	0.003
Heptachlor	76-44-8	ND	0.003
delta-BHC	319-86-8	ND	0.003
Aldrin	309-00-2	ND	0.003
Heptachlor epoxide	1024-57-3	ND	0.003
Endosulfan I	959-98-8	ND	0.003
4,4'-DDE	72-55-9	ND	0.003
Dieldrin	60-57-1	ND	0.003
Endrin	72-20-8	ND	0.003
4,4'-DDD	72-54-8	ND	0.003
Endosulfan II	33212-65-9	ND	0.003
4,4'-DDT	50-29-3	ND	0.003
Endrin aldehyde	7421-93-4	ND	0.003
Endosulfan sulfate	1031-07-8	ND	0.003
Methoxychlor	72-43-5	ND	0.02
Chlordane	57-74-9	ND	0.02
Toxaphene	8001-35-2	ND	0.2
Polychlorinated Biphenyls (PCB's)			
Aroclor 1016	12674-11-2	ND	0.03

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212151-03A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Polychlorinated Biphenyls (PCB's) (continued)			
Aroclor 1221	1104-28-2	ND	0.03
Aroclor 1232	11141-16-5	ND	0.03
Aroclor 1242	53469-21-9	ND	0.03
Aroclor 1248	12672-29-6	ND	0.03
Aroclor 1254	11097-69-1	ND	0.03
Aroclor 1260	11096-82-5	ND	0.03

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Tetrachloro-m-xylene	877-09-8	82	24 -	150
Dibutylchlorendate	1770-80-5	90	20 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	55874-1	Date Sampled:	12/08/92
Lab Number:	9212151-01A	Date Received:	12/10/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	55874-1	Date Sampled:	12/08/92
Lab Number:	9212151-01A	Date Received:	12/10/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	55874-1	Date Sampled:	12/08/92
Lab Number:	9212151-01A	Date Received:	12/10/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	55874-2	Date Sampled:	12/08/92
Lab Number:	9212151-02A	Date Received:	12/10/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	55874-2	Date Sampled:	12/08/92
Lab Number:	9212151-02A	Date Received:	12/10/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	55874-1	Date Sampled:	12/08/92
Lab Number:	9212151-01A	Date Received:	12/10/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	55	25	121
Phenol-d6	13127-88-3	67	24	113
Nitrobenzene-d5	4165-60-0	69	23	120
2-Fluorobiphenyl	321-60-8	79	30	115
2,4,6-Tribromophenol	118-79-6	71	19	122
Terphenyl-d14	98904-43-9	71	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	55874-2	Date Sampled:	12/08/92
Lab Number:	9212151-02A	Date Received:	12/10/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	55874-2	Date Sampled:	12/08/92
Lab Number:	9212151-02A	Date Received:	12/10/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	61	25	121
Phenol-d6	13127-88-3	72	24	113
Nitrobenzene-d5	4165-60-0	71	23	120
2-Fluorobiphenyl	321-60-8	82	30	115
2,4,6-Tribromophenol	118-79-6	62	19	122
Terphenyl-d14	98904-43-9	70	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212151-03A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification: METHOD BLANK
Lab Number: 9212151-03A
Sample Matrix/Media: SOIL
Extraction Method: EPA 3550
Analytical Method: EPA 8270

Date Sampled: --
Date Received: --
Date Extracted: 12/14/92
Date Analyzed: 12/15/92

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212151-03A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55874
Clayton Project No. 92121.51

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212151-03A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/14/92
Extraction Method:	EPA 3550	Date Analyzed:	12/15/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	58	25 -	121
Phenol-d6	13127-88-3	72	24 -	113
Nitrobenzene-d5	4165-60-0	80	23 -	120
2-Fluorobiphenyl	321-60-8	91	30 -	115
2,4,6-Tribromophenol	118-79-6	59	19 -	122
Terphenyl-d14	98904-43-9	74	18 -	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Quality Assurance Results Summary
for
Clayton Project No. 92121.51

Clayton Lab Number:	9212151-01A	Analytical Method:	EPA8080
Ext./Prep. Method:	EPA3550	Instrument ID:	02933
Date:	12/14/92	Date:	12/15/92
Analyst:	CON	Time:	20:29
Std. Source:	G921201-04W	Analyst:	LC
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
4,4'-DDT	ND	0.0400	0.0320	80	0.0330	83	81	32	120	3.1	50
ALDRIN	ND	0.0400	0.0330	83	0.0340	85	84	34	132	3.0	43
DIELDRIN	ND	0.0400	0.0320	80	0.0320	80	80	31	134	0.0	38
ENDRIN	ND	0.0400	0.0350	88	0.0350	88	88	42	139	0.0	45
GAMMA-BHC (LINDANE)	ND	0.0400	0.0330	83	0.0340	85	84	46	127	3.0	50
HEPTACHLOR	ND	0.0400	0.0400	100	0.0400	100	100	35	130	0.0	31

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 92121.51

Clayton Lab Number:	9212109-MB	Analytical Method:	EPA8270
Ext./Prep. Method:	EPA3550	Instrument ID:	05138
Date:	12/14/92	Date:	12/15/92
Analyst:	CON	Time:	11:19
Std. Source:	M921202-01W	Analyst:	AC
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
1,2,4-Trichlorobenzene	ND	3.33	2.03	61	2.10	63	62	38	107	3.4	23
1,4-Dichlorobenzene	ND	3.33	2.06	62	1.97	59	61	28	104	4.5	27
2,4-Dinitrotoluene	ND	3.33	1.99	60	1.86	56	58	28	89	6.8	47
2-Chlorophenol	ND	3.33	2.36	71	2.33	70	70	25	102	1.3	50
4-Chloro-m-cresol	ND	3.33	2.47	74	2.53	76	75	26	103	2.4	33
4-Nitrophenol	ND	3.33	2.43	73	2.16	65	69	11	114	12	50
Acenaphthene	ND	3.33	2.70	81	2.40	72	77	31	137	12	19
N-Nitrosodipropylamine	ND	3.33	1.80	54	1.83	55	55	41	126	1.7	38
Pentachlorophenol	ND	3.33	2.19	66	2.76	83	74	17	109	23	47
Phenol	ND	3.33	1.74	52	1.66	50	51	26	90	4.7	35
Pyrene	ND	3.33	2.45	74	2.36	71	72	35	142	3.7	36

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 92121.51

Clayton Lab Number:	9212109-06A	Analytical Method:	EPA8270
Ext./Prep. Method:	EPA3550	Instrument ID:	05138
Date:	12/14/92	Date:	12/15/92
Analyst:	CON	Time:	16:03
Std. Source:	M921202-01W	Analyst:	AC
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
1,2,4-Trichlorobenzene	ND	3.33	2.80	84	3.07	92	88	38	107	9.2	23
1,4-Dichlorobenzene	ND	3.33	2.96	89	2.96	89	89	28	104	0.0	27
2,4-Dinitrotoluene	ND	3.33	1.52	46	1.68	50	48	28	89	10	47
2-Chlorophenol	ND	3.33	2.78	83	2.79	84	84	25	102	0.4	50
4-Chloro-m-cresol	ND	3.33	2.33	70	2.76	83	76	26	103	17	33
* 4-Nitrophenol	ND	3.33	0.170	5	0.200	6	6*	11	114	16	50
Acenaphthene	3.40	3.33	5.94	76	6.11	81	79	31	137	2.8	19
N-Nitrosodipropylamine	ND	3.33	2.20	66	2.50	75	71	41	126	13	38
* Pentachlorophenol	ND	3.33	0.00010	0	0.00010	0	0*	17	109	0.0	47
Phenol	ND	3.33	2.35	71	2.54	76	73	26	90	7.8	35
Pyrene	2.30	3.33	5.22	88	5.63	100	94	35	142	7.6	36

* Note: 4-Nitrophenol and Pentachlorophenol spike result out of control limits due to matrix interferences

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration

Section I

Chain of Custody and Analysis Request

page 1 of 1

From: Superior Precision Analytical, Inc. 1555 Burke St. Unit I San Francisco, CA 92124 Phone No. (415) 647-2081 Fax No. (415) 821-7123 Contact: RENE BOONGALING P.O. No. 33874	Turn Around Time (circle one) Same Day 72 Hrs 24 Hrs (5 Day) 48 Hrs 10 Day	Superior Precision Analytical, Inc. P.O. Box 1545 Martinez, California 94553
	Work Subcontracted to: CLAYTON	

Section II: Analysis Request

9212151

Laboratory Sample Identification	Matrix (S = Soil A = Air W = Water)	CAM17	Metals:	418.1	8270	8080 (pest. and PCB's)					Client Sample Identification	Number of Containers	Preservative (yes or no)			Sampling Remarks
01A 1 33874-1	S				X	X						1	N			FAX RESULTS TO 125ml
02A 2 -2	S				X							1	N			SUPERIOR.
3																INVOICE SUPERIOR
4																
5																
6																
7																
8																Rec'd at 125ml amber
9																jars Cond OK
10																
11																
12							VD/NA CLAYTON COURIER THURSDAY 12/10/92 AFTERNOON									

Sampling Remarks: ☐ Chevron ☒ Non-Chevron

Please Fax Results

Relinquished by R. Boongaling Organization SUPERIOR	Date/Time 12/9/92 5:00 PM	Received by [signature] Organization Clayton ENV.	Date/Time 12/10/92 6:10 PM	Lab please initial the following: Samples Stored in Ice Yes Appropriate Containers Yes Samples Preserved VOAs without Headspace Comments
Relinquished by Organization	Date/Time	Received by Organization	Date/Time	
Relinquished by Organization	Date/Time	Received by Organization	Date/Time	

Section I

Chain of Custody and Analysis Request

page__of__

Consultant: LAW/CRANDALL
Address: 4000 Civic Center Drive
San Rafael CA 94903
Phone No. 415 499 1422 Fax No. 415 499 8419
Project Manager: Susan Gahry
Alternate Contact: Andrew Muha
Project No. 2123-20663-0001 P.O. No.

Turn Around Time (circle one): Same Day / 72 Hrs / 24 Hrs / 48 Hrs / **Normal 5 Day** (circled)

Superior Precision Analytical, Inc.
P.O. Box 1545
Martinez, California 94553
Martinez 1 (510) 229-1512 Martinez 2 (510) 229-0166
San Francisco (415) 647-2081

Sampler: A.J. Muha
Regulatory Agency:

Section II: Analysis Request

9212151

Laboratory Sample Identification	Matrix (S = Soil A = Air W = Water)	mod 8015 - Gas	mod 8015 - BTEX	mod 8015 - Diesel	8010	8240	CAM17	TCLP Metals	Metals: Total Lead	418.1 - TPH by IR	8080	PCBs + Pesticides	8270	STLC Cd, Cr, Pb, Zn, Ni	Date Sampled	Time Sampled	Number of Containers	Preservative (yes or no)
1 SB 7	S	X	X	X		X					X	X	X	X	12/8	11:30	1	N
2 SB 8	S	[illegible]	[illegible]	[illegible]			X				X		X					
3 MW1	W	X	X	X					X									
4 MW2	W	X	X	X					X									
5 MW3	W	X	X	X					X									
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Please initial: RB Do not run g/BTXE or Diesel
Samples Stored in ice ✓
Appropriate containers ✓
Samples Preserved ✓
VOAs without headspace ✓
Comments

Sampling Remarks
- [ ] Bio-remediation
- [x] Underground storage tank
- [ ] Monitoring
- [ ] Recent Contamination
- [x] Unknown Compounds

Relinquished by	Date/Time	Received by	Date/Time
Andrew T. Muha; Organization: Law/Crandall	12/8/92 8:30 PM	Organization:	
Relinquished by: ; Organization:	Date/Time	Received by: ; Organization:	Date/Time
Relinquished by: ; Organization:	Date/Time	Received by: Cecilia Joaquin; Organization: Superior Lab	12/8/92 8:30 pm

Lab please initial the following:
Samples Stored in Ice
Appropriate Containers
Samples Preserved
VOAs without Headspace
Comments

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55864
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92

ANALYSIS FOR TOTAL PETROLEUM OIL AND GREASE
by Method 5520F (formerly 503E)

LAB #	Sample Identification	Concentration (mg/L) Total Petroleum Oil & Grease
1	HP1	ND<5

mg/L - parts per million (ppm)

Minimum Detection Limit for oil & grease in Water: 5mg/L

QAQC Summary:
MS/MSD Average Recovery = 81%
Duplicate RPD = 2%

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 55864
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/L) Benzene	Toluene	Ethyl Benzene	Xylenes
1	HP1	ND<0.3	0.3	ND<0.3	ND<0.3

ug/L - parts per billion (ppb)

Method Detection Limit in Water: 0.3 ug/L

QAQC Summary:

Daily Standard run at 20ug/L: %Diff 8020 = <15%
MS/MSD Average Recovery = 94%: Duplicate RPD = 4%

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Manager

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55864
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (ug/L) Gasoline Range
1	HP1	ND<50

ug/L - parts per billion (ppb)

Method Detection Limit for Gasoline in Water: 50 ug/L

QAQC Summary:

Daily Standard run at 2mg/L: %Diff Gasoline = <15
MS/MSD Recovery = 93%: Duplicate RPD = 5%

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Manager

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55864
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/16/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (ug/L) Diesel Range
1	HP1	ND<50

ug/L - parts per billion (ppb)

Minimum Detection Limit for Diesel in Water: 50ug/L

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 67%: Duplicate RPD = 9%

Richard Srna, Ph.D.

Cecilia Y. Jouquin (for)
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

LABORATORY NO. 55864-1
CLIENT: LAW/CRANDALL, INC.
DATE SAMPLED : 12/07/92
DATE ANALYZED: 12/11/92

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92
PROJECT NO. 2123-20663-0001

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: HP1

Compound	MDL	ug/L	Compound	MDL	ug/L
Chloromethane	10	ND	Cis-1,3-Dichloropropene	3	ND
Bromomethane	10	ND	Trichloroethene	3	ND
Vinyl Chloride	10	ND	Dibromochloromethane	3	ND
Chloroethane	10	ND	1,1,2-Trichloroethane	3	ND
Methylene Chloride	10	ND	Benzene	1	ND
Acetone	10	ND	Trans-1,3-Dichloropropene	3	ND
Carbon Disulfide	3	ND	2-Chloroethyl vinyl ether	3	ND
~ichlorofluoromethane	3	ND	Bromoform	3	ND
1-Dichloroethene	3	ND	4-Methyl-2-Pentanone	10	ND
1,1-Dichloroethane	3	ND	2-Hexanone	10	ND
trans-1,2-Dichloroethene	3	ND	Tetrachloroethene	3	ND
Chloroform	3	ND	1,1,2,2-Tetrachloroethane	3	ND
1,2-Dichloroethane	1	ND	Toluene	3	ND
2-Butanone	20	ND	Chlorobenzene	3	ND
1,1,1-Trichloroethane	3	ND	Ethylbenzene	3	ND
Carbon Tetrachloride	3	ND	Styrene	3	ND
Vinyl Acetate	10	ND	Total Xylenes	3	ND
Bromodichloromethane	3	ND	1,3-Dichlorobenzene	3	ND
1,2-Dichloropropane	3	ND	1,4-Dichlorobenzene	3	ND
cis-1,2-Dichloroethene	3	ND	1,2-Dichlorobenzene	3	ND

ug/L = parts per billion (ppb)
ND = ANALYTE NOT DETECTED ABOVE QUANTITATION LIMIT
QC DATA:

Surrogate Recoveries		QC LIMITS water
1,2-DCA-d4.....	97%	76-114 %
Toluene-d8.....	106%	88-110 %
Bromofluorobenzene.....	100%	86-115 %

comments:

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55864
CLIENT: LAW/CRANDALL, INC.
CLIENT PROJECT NO.: 2123206630001

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92

Following is a list of Cross referenced Lab Numbers and Sample I.D.'s for referring to the following reports.

Superior Lab Number	Subbed Lab Number	Customer Sample Identification
55864- 1	9212101-01A	HP1

ubbed to: CLAYTON ENVIRONMENTAL CONSULTANTS DOHS#1196.

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 87364
CLIENT: Law/Crandall
CLIENT JOB NO.: 2123-20663-0001

DATE RECEIVED:12/07/92
DATE REPORTED:12/12/92
DATE SAMPLED :

ANALYSIS FOR TOTAL NICKEL
by SW-846 METHOD 6010

LAB #	Sample Identification	Concentration(mg/L) Total Nickel
1	HP1	ND<0.1

mg/L - parts per million (ppm)

Method Detection Limit for Nickel in Water: 0.1 mg/L

QAQC Summary: MS/MSD Average Recovery : 85%
Duplicate RPD : 2%

Richard Srna, Ph.D.
Laboratory Manager

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 87364
CLIENT: Law/Crandall
CLIENT JOB NO.: 2123-20663-0001

DATE RECEIVED:12/07/92
DATE REPORTED:12/12/92

ANALYSIS FOR CADMIUM, CHROMIUM, LEAD & ZINC
by EPA SW-846 Method 6010

LAB #	Sample Identification	Concentration (mg/L) Cadmium	Chromium	Lead	Zinc
1	HP1	ND<0.05	ND<0.05	ND<0.1	ND<0.05

mg/L - parts per million (ppm)

Method Detection Limit for Cadmium in Water: 0.05 mg/L
Method Detection Limit for Chromium in Water: 0.05 mg/L
Method Detection Limit for Lead in Water: 0.1 mg/L
Method Detection Limit for Zinc in Water: 0.05 mg/L

QAQC Summary: MS/MSD Average Recovery : 92%
Duplicate RPD : 2%

Richard Srna, Ph.D.
Laboratory Manager

CHAIN OF CUSTODY RECORD

55064

BCA Log Number _____

Crandall	Project or PO# 7123-20663-0001	
1000 Civic Center Dr. Suite 305	Phone # 415 499 1422	
City, State, Zip San Rafael, CA 94903	Report attention Susan Garry	

Lab Sample Number	Date sampled	Time sampled	Type* See key below	Sampled by ATM / Sample description	Number of containers	TPH/C + BTEX	TPH/D	Semi Volatile Organics	Pesticides + PCB's	Volatile Organics	CD, CR, Pb, ZN, Ni	O+G (5520 D+F)	Hazardous sample Special handling required	Remarks
	12/7/92	3:30	GW	HP1	3	X								5 Day Turnaround
	12/7/92	3:30	GW	HP1	1		X							
	12/7/92	3:30	GW	HP1	1			X						
	12/7/92	3:30	GW	HP1	1				X					
	12/7/92	3:30	GW	HP1	3					X				
	12/7/92	3:30	GW	HP1	1						X			
	12/7/92	3:30	GW	HP1	1							X		

Please initial:
Samples Stored in Ice.
Appropriate Containers.
Samples Preserved.
VOA's without headspace.
Comments:

	Signature	Print Name	Company	Date	Time
Relinquished by	Andrew T. Moha	Andrew T. Moha	Low/Crandall	12/7/92	5:30
Received by	Doug Stamats	DOUG STAATS	AERO / DEL	12/7/92	5:30
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory		KIEHLE	SPA	12/7/92	8:00 P

BC ANALYTICAL
1255 Powell Street, Emeryville, CA 94608 (510) 428-2300
801 Western Avenue, Glendale, CA 91201 (818) 247-5737

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements _____

*KEY: WW—Wastewater SU—Surface Water SO—Soil SL—Sludge PE—Petroleum OT—Other NA—Nonaqueous GW—Groundwater AQ—Aqueous

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

December 15, 1992

Mr. Rich Kiehle
SUPERIOR ANALYTICAL LABORATORY
1555 Burke Street, Unit 1
San Francisco, CA 94124

Client Ref. 55864
Clayton Project No. 92121.01

Dear Mr. Kiehle:

Attached is our analytical laboratory report for the samples received on December 8, 1992. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/caa
Attachments

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	55864-1	Date Sampled:	12/07/92
Lab Number:	9212101-01A	Date Received:	12/08/92
Sample Matrix/Media:	WATER	Date Extracted:	12/10/92
Extraction Method:	EPA 3510	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Acid Extractables			
Phenol	108-95-2	ND	5
2-chlorophenol	95-57-8	ND	5
2-methyl phenol	95-48-7	ND	5
4-methyl phenol	106-44-5	ND	5
2-nitrophenol	88-75-5	ND	5
2,4-dimethylphenol	105-67-9	ND	5
2,4-dichlorophenol	120-83-2	ND	5
4-chloro-3-methylphenol	59-50-7	ND	5
2,4,5-trichlorophenol	95-95-4	ND	5
2,4,6-trichlorophenol	88-06-2	ND	5
2,4-dinitrophenol	51-28-5	ND	20
4-nitrophenol	100-02-7	ND	20
2-methyl-4,6-dinitrophenol	534-52-1	ND	20
Pentachlorophenol	87-86-5	ND	20
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	5
1,3-dichlorobenzene	541-73-7	ND	5
1,4-dichlorobenzene	106-46-7	ND	5
Benzyl alcohol	100-51-6	ND	10
1,2-dichlorobenzene	95-50-1	ND	5
Bis-(2-chloroisopropyl)ether	108-60-1	ND	5

ND Not detected at or above limit of detection
-- Information not available or not applicable

* Note: Tentative results reported for acid extractables due to low acid surrogate recoveries.

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	55864-1	Date Sampled:	12/07/92
Lab Number:	9212101-01A	Date Received:	12/08/92
Sample Matrix/Media:	WATER	Date Extracted:	12/10/92
Extraction Method:	EPA 3510	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	5
Hexachloroethane	67-72-1	ND	5
Nitrobenzene	98-95-3	ND	5
Isophorone	78-59-1	ND	5
Benzoic acid	65-85-0	ND	20
Bis-(2-chloroethoxy)methane	111-91-1	ND	5
1,2,4-trichlorobenzene	120-82-1	ND	5
Naphthalene	91-20-3	ND	5
Hexachlorobutadiene	87-68-3	ND	5
2-chloronaphthalene	91-58-7	ND	5
2-methyl naphthalene	91-57-6	ND	5
4-chloroaniline	106-47-8	ND	20
2-nitroaniline	88-74-4	ND	20
3-nitroaniline	99-09-2	ND	20
4-nitroaniline	100-01-6	ND	20
Hexachlorocyclopentadiene	77-47-4	ND	5
Dimethyl phthalate	131-11-3	ND	10
Acenaphthylene	208-96-8	ND	5
Acenaphthene	83-32-9	ND	5
Dibenzofuran	132-64-9	ND	5

ND Not detected at or above limit of detection
-- Information not available or not applicable

* Note: Tentative results reported for acid extractables due to low acid surrogate recoveries.

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	55864-1	Date Sampled:	12/07/92
Lab Number:	9212101-01A	Date Received:	12/08/92
Sample Matrix/Media:	WATER	Date Extracted:	12/10/92
Extraction Method:	EPA 3510	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	5
2,6-dinitrotoluene	606-20-2	ND	5
Diethyl phthalate	84-66-2	ND	5
4-chlorophenylphenylether	7005-72-3	ND	5
Fluorene	86-73-7	ND	5
N-nitrosodiphenylamine	86-30-6	ND	5
4-bromophenylphenylether	101-55-3	ND	5
Hexachlorobenzene	118-74-1	ND	5
Phenanthrene	85-01-8	ND	5
Anthracene	120-12-7	ND	5
Di-n-butylphthalate	84-74-2	ND	5
Fluoranthene	206-44-2	ND	5
Benzidine	92-87-5	ND	30
Pyrene	129-00-0	ND	5
Benzylbutylphthalate	85-68-7	ND	5
3,3'-dichlorobenzidine	91-94-1	ND	40
Benzo(a)anthracene	56-55-3	ND	5
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	10
Chrysene	218-01-9	ND	5
Di-n-octylphthalate	117-84-0	ND	5

ND Not detected at or above limit of detection
-- Information not available or not applicable

* Note: Tentative results reported for acid extractables due to low acid surrogate recoveries.

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	55864-1	Date Sampled:	12/07/92
Lab Number:	9212101-01A	Date Received:	12/08/92
Sample Matrix/Media:	WATER	Date Extracted:	12/10/92
Extraction Method:	EPA 3510	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	5
Benzo(k)fluoranthene	207-08-9	ND	5
Benzo(a)pyrene	50-32-8	ND	5
Indeno(1,2,3-cd)pyrene	193-39-5	ND	5
Dibenzo(a,h)anthracene	53-70-3	ND	5
Benzo(ghi)perylene	191-24-2	ND	5

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	2*	21	100
Phenol-d6	13127-88-3	0*	10	94
Nitrobenzene-d5	4165-60-0	85	35	114
2-Fluorobiphenyl	321-60-8	92	43	116
2,4,6-Tribromophenol	118-79-6	27	10	123
Terphenyl-d14	--	83	33	141

ND Not detected at or above limit of detection
-- Information not available or not applicable

* Note: Tentative results reported for acid extractables due to low acid surrogate recoveries.

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212101-02A	Date Received:	--
Sample Matrix/Media:	WATER	Date Extracted:	12/10/92
Extraction Method:	EPA 3510	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Acid Extractables			
Phenol	108-95-2	ND	5
2-chlorophenol	95-57-8	ND	5
2-methyl phenol	95-48-7	ND	5
4-methyl phenol	106-44-5	ND	5
2-nitrophenol	88-75-5	ND	5
2,4-dimethylphenol	105-67-9	ND	5
2,4-dichlorophenol	120-83-2	ND	5
4-chloro-3-methylphenol	59-50-7	ND	5
2,4,5-trichlorophenol	95-95-4	ND	5
2,4,6-trichlorophenol	88-06-2	ND	5
2,4-dinitrophenol	51-28-5	ND	20
4-nitrophenol	100-02-7	ND	20
2-methyl-4,6-dinitrophenol	534-52-1	ND	20
Pentachlorophenol	87-86-5	ND	20
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	5
1,3-dichlorobenzene	541-73-7	ND	5
1,4-dichlorobenzene	106-46-7	ND	5
Benzyl alcohol	100-51-6	ND	10
1,2-dichlorobenzene	95-50-1	ND	5
Bis-(2-chloroisopropyl)ether	108-60-1	ND	5

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212101-02A	Date Received:	--
Sample Matrix/Media:	WATER	Date Extracted:	12/10/92
Extraction Method:	EPA 3510	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	5
Hexachloroethane	67-72-1	ND	5
Nitrobenzene	98-95-3	ND	5
Isophorone	78-59-1	ND	5
Benzoic acid	65-85-0	ND	20
Bis-(2-chloroethoxy)methane	111-91-1	ND	5
1,2,4-trichlorobenzene	120-82-1	ND	5
Naphthalene	91-20-3	ND	5
Hexachlorobutadiene	87-68-3	ND	5
2-chloronaphthalene	91-58-7	ND	5
2-methyl naphthalene	91-57-6	ND	5
4-chloroaniline	106-47-8	ND	20
2-nitroaniline	88-74-4	ND	20
3-nitroaniline	99-09-2	ND	20
4-nitroaniline	100-01-6	ND	20
Hexachlorocyclopentadiene	77-47-4	ND	5
Dimethyl phthalate	131-11-3	ND	10
Acenaphthylene	208-96-8	ND	5
Acenaphthene	83-32-9	ND	5
Dibenzofuran	132-64-9	ND	5

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212101-02A	Date Received:	--
Sample Matrix/Media:	WATER	Date Extracted:	12/10/92
Extraction Method:	EPA 3510	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	5
2,6-dinitrotoluene	606-20-2	ND	5
Diethyl phthalate	84-66-2	ND	5
4-chlorophenylphenylether	7005-72-3	ND	5
Fluorene	86-73-7	ND	5
N-nitrosodiphenylamine	86-30-6	ND	5
4-bromophenylphenylether	101-55-3	ND	5
Hexachlorobenzene	118-74-1	ND	5
Phenanthrene	85-01-8	ND	5
Anthracene	120-12-7	ND	5
Di-n-butylphthalate	84-74-2	ND	5
Fluoranthene	206-44-2	ND	5
Benzidine	92-87-5	ND	30
Pyrene	129-00-0	ND	5
Benzylbutylphthalate	85-68-7	ND	5
3,3'-dichlorobenzidine	91-94-1	ND	40
Benzo(a)anthracene	56-55-3	ND	5
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	10
Chrysene	218-01-9	ND	5
Di-n-octylphthalate	117-84-0	ND	5

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212101-02A	Date Received:	--
Sample Matrix/Media:	WATER	Date Extracted:	12/10/92
Extraction Method:	EPA 3510	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	5
Benzo(k)fluoranthene	207-08-9	ND	5
Benzo(a)pyrene	50-32-8	ND	5
Indeno(1,2,3-cd)pyrene	193-39-5	ND	5
Dibenzo(a,h)anthracene	53-70-3	ND	5
Benzo(ghi)perylene	191-24-2	ND	5

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	55	21	100
Phenol-d6	13127-88-3	45	10	94
Nitrobenzene-d5	4165-60-0	81	35	114
2-Fluorobiphenyl	321-60-8	79	43	116
2,4,6-Tribromophenol	118-79-6	92	10	123
Terphenyl-d14	--	88	33	141

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	55864-1	Date Sampled:	12/07/92
Lab Number:	9212101-01B	Date Received:	12/08/92
Sample Matrix/Media:	WATER	Date Extracted:	12/08/92
Extraction Method:	EPA 3510	Date Analyzed:	12/09/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Organochlorine Pesticides			
alpha-BHC	319-84-6	ND	0.01
gamma-BHC (Lindane)	58-89-9	ND	0.01
beta-BHC	319-85-7	ND	0.01
Heptachlor	76-44-8	ND	0.01
delta-BHC	319-86-8	ND	0.01
Aldrin	309-00-2	ND	0.01
Heptachlor epoxide	1024-57-3	ND	0.01
Endosulfan I	959-98-8	ND	0.01
4,4'-DDE	72-55-9	ND	0.01
Dieldrin	60-57-1	ND	0.01
Endrin	72-20-8	ND	0.01
4,4'-DDD	72-54-8	ND	0.01
Endosulfan II	33212-65-9	ND	0.01
4,4'-DDT	50-29-3	ND	0.01
Endrin aldehyde	7421-93-4	ND	0.01
Endosulfan sulfate	1031-07-8	ND	0.01
Methoxychlor	72-43-5	ND	0.05
Chlordane	57-74-9	ND	0.05
Toxaphene	8001-35-2	ND	1
Polychlorinated Biphenyls (PCB's)			
Aroclor 1016	12674-11-2	ND	0.5

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	55864-1	Date Sampled:	12/07/92
Lab Number:	9212101-01B	Date Received:	12/08/92
Sample Matrix/Media:	WATER	Date Extracted:	12/08/92
Extraction Method:	EPA 3510	Date Analyzed:	12/09/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Polychlorinated Biphenyls (PCB's) (continued)			
Aroclor 1221	1104-28-2	ND	0.5
Aroclor 1232	11141-16-5	ND	0.5
Aroclor 1242	53469-21-9	ND	0.5
Aroclor 1248	12672-29-6	ND	0.5
Aroclor 1254	11097-69-1	ND	0.5
Aroclor 1260	11096-82-5	ND	0.5

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Tetrachloro-m-xylene	877-09-8	79	24 -	150
Dibutylchlorendate	1770-80-5	59	24 -	154

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212101-02A	Date Received:	--
Sample Matrix/Media:	WATER	Date Extracted:	12/08/92
Extraction Method:	EPA 3510	Date Analyzed:	12/09/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Organochlorine Pesticides			
alpha-BHC	319-84-6	ND	0.01
gamma-BHC (Lindane)	58-89-9	ND	0.01
beta-BHC	319-85-7	ND	0.01
Heptachlor	76-44-8	ND	0.01
delta-BHC	319-86-8	ND	0.01
Aldrin	309-00-2	ND	0.01
Heptachlor epoxide	1024-57-3	ND	0.01
Endosulfan I	959-98-8	ND	0.01
4,4'-DDE	72-55-9	ND	0.01
Dieldrin	60-57-1	ND	0.01
Endrin	72-20-8	ND	0.01
4,4'-DDD	72-54-8	ND	0.01
Endosulfan II	33212-65-9	ND	0.01
4,4'-DDT	50-29-3	ND	0.01
Endrin aldehyde	7421-93-4	ND	0.01
Endosulfan sulfate	1031-07-8	ND	0.01
Methoxychlor	72-43-5	ND	0.05
Chlordane	57-74-9	ND	0.05
Toxaphene	8001-35-2	ND	1
Polychlorinated Biphenyls (PCB's)			
Aroclor 1016	12674-11-2	ND	0.5

ND Not detected at or above limit of detection
-- Information not available or not applicable

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55864
Clayton Project No. 92121.01

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212101-02A	Date Received:	--
Sample Matrix/Media:	WATER	Date Extracted:	12/08/92
Extraction Method:	EPA 3510	Date Analyzed:	12/09/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (ug/L)	Limit of Detection (ug/L)
Polychlorinated Biphenyls (PCB's) (continued)			
Aroclor 1221	1104-28-2	ND	0.5
Aroclor 1232	11141-16-5	ND	0.5
Aroclor 1242	53469-21-9	ND	0.5
Aroclor 1248	12672-29-6	ND	0.5
Aroclor 1254	11097-69-1	ND	0.5
Aroclor 1260	11096-82-5	ND	0.5

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Tetrachloro-m-xylene	877-09-8	70	24 -	150
Dibutylchlorendate	1770-80-5	95	24 -	154

ND Not detected at or above limit of detection
-- Information not available or not applicable

Quality Assurance Results Summary
for
Clayton Project No. 92121.01

Clayton Lab Number:	9212121-MB	Analytical Method:	EPA625 8270
Ext./Prep. Method:	EPA3510	Instrument ID:	05138
Date:	12/10/92	Date:	12/12/92
Analyst:	CON	Time:	16:05
Std. Source:	M921202-01W	Analyst:	AC
Sample Matrix/Media:	WATER	Units:	UG/L

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
1,2,4-Trichlorobenzene	ND	100	61.0	61	60.0	60	61	39	98	1.7	28
1,4-Dichlorobenzene	ND	100	56.0	56	59.0	59	58	36	97	5.2	28
2,4-Dinitrotoluene	ND	100	59.0	59	62.0	62	61	24	96	5.0	38
2-Chlorophenol	ND	100	69.0	69	68.0	68	69	27	123	1.5	40
4-Chloro-m-cresol	ND	100	69.0	69	69.0	69	69	23	97	0.0	42
4-Nitrophenol	ND	100	26.0	26	35.0	35	31	10	80	30	50
Acenaphthene	ND	100	77.0	77	85.0	85	81	46	118	9.9	31
N-Nitrosodipropylamine	ND	100	65.0	65	68.0	68	67	41	116	4.5	38
Pentachlorophenol	ND	100	52.0	52	67.0	67	60	9	103	25	50
Phenol	ND	100	35.0	35	37.0	37	36	12	89	5.6	42
Pyrene	ND	100	74.0	74	72.0	72	73	26	127	2.7	31

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration

Quality Assurance Results Summary
for
Clayton Project No. 92121.01

Clayton Lab Number:	9212028-MB	Analytical Method:	EPA8080
Ext./Prep. Method:	EPA3510	Instrument ID:	02933
Date:	12/09/92	Date:	12/09/92
Analyst:	GAU	Time:	21:07
Std. Source:	G921201-04W	Analyst:	LC
Sample Matrix/Media:	WATER	Units:	UG/L

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
4,4'-DDT	ND	0.200	0.130	65	0.160	80	73	40	140	21	30
ALDRIN	ND	0.200	0.180	90	0.190	95	93	40	120	5.4	30
DIELDRIN	ND	0.200	0.150	75	0.160	80	78	52	126	6.5	30
ENDRIN	ND	0.200	0.160	80	0.170	85	83	56	121	6.1	30
GAMMA-BHC (LINDANE)	ND	0.200	0.160	80	0.170	85	83	56	123	6.1	30
HEPTACLOR	ND	0.200	0.190	95	0.180	90	93	40	131	5.4	30

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

12101

Section I

Chain of Custody and Analysis Request

page___of___

From: Superior Precision Analytical, Inc. 1555 Burke St. Unit I San Francisco, CA 92124 Phone No. (415) 647-2081 Fax No. (415) 821-7123 Contact: 55864 P.O. No. KK	Turn Around Time (circle one): Same Day 72 Hrs 24 Hrs (5 Day) per Lester 48 Hrs 10 Day	Superior Precision Analytical, Inc. P.O. Box 1545 Martinez, California 94553
	Work Subcontracted to: Clayton	

Section II: Analysis Request

Laboratory Sample Identification	Matrix (S = Soil A = Air W = Water)	CAM17	Metals:	418.1	8270	8080 (pest. and PCB's)					Client Sample Identification	Number of Containers	Preservative (yes or no)			Sampling Remarks
1 55864-1	water				X	X					HP1					☐ Chevron
2																☒ Non-Chevron
3																**Please Fax Results**
4																
5																
6																
7																
8																
9																
10																
11																
12																

Relinquished by / Organization	Date/Time	Received by / Organization	Date/Time	Lab please initial the following:
Relinquished by [signature] Organization	12/7/94 10P	Received by Terry [signature] Organization C.E.C.	12/8/94 1:29p	Samples Stored in Ice OK Appropriate Containers [initial] Samples Preserved N/A
Relinquished by ______ Organization ______	Date/Time	Received by ______ Organization ______	Date/Time	VOAs without Headspace [initial]
Relinquished by ______ Organization ______	Date/Time	Received by ______ Organization ______	Date/Time	Comments Rec'd 2 1L [illegible]

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55866
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/kg) Diesel Range
1	SB6@5'	ND<10

mg/kg - parts per million (ppm)

Minimum Detection Limit for Diesel in Soil: 10mg/kg

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 88%: Duplicate RPD = 1%

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55866
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED:12/07/92
DATE REPORTED:12/15/92

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(mg/kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	SB6@5'	ND<.003	ND<.003	ND<.003	ND<.003

ıg/kg - parts per million (ppm)

Method Detection Limit in Soil: 0.003 mg/kg

QAQC Summary:

Daily Standard run at 20 ug/L: RPD = <15%
MS/MSD Average Recovery = 89%: Duplicate RPD = 1%

Richard Srna, Ph.D.

Laboratory Manager

RECEIVED
DEC 16 1992
LAW ENVIRONMENTAL INC.

CHAIN OF CUSTODY RECORD

BCA Log Number _____

Client name: LAW / CRANDALL	Project or PO#: 2123-20663-0001
Address: 4000 Civic Center Drive Suite 305	Phone #: 415-499-1422
City, State, Zip: SAN RAFAEL, CA 94903	Report attention: SUSAN GAHAGAN

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by / Sample description	Number of containers	BTEX	TPH/D	Hazardous sample Special handling required	Remarks
	12/7/92	4:15	SO	SB6 at 5	1	X	X		5 Day Turnaround

Please initial:
Samples Stored in ice.
Appropriate containers.
Samples preserved.
VOA's without headspace.
Comments:

	Signature	Print Name	Company	Date	Time
Relinquished by	Andrew T. Mulka	Andrew T. Mulka	Law / Crandall	12/7/92	5:30
Received by	Doug Staats #738	DOUG STAATS	AERO / DELIVERY	12/7/92	5:30
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory		KIEHLE		12/7/92	8:00

B C ANALYTICAL

- ☐ 1255 Powell Street, Emeryville, CA 94608 (510) 428-2300
- ☐ 801 Western Ave[illegible]ndale, CA 91201 (818) 247-5737
- ☐ 1200 Gene Autry W[illegible] Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: WW—Wastewater SU—Surface Water SO—Soil SL—Sludge PE—Petroleum [illegible]-Other NA—Nonaqueous GW—Gro[illegible]r AQ—Aqueous

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55865
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92

ANALYSIS FOR TOTAL PETROLEUM OIL AND GREASE
by Method 5520F (formerly 503E)

LAB #	Sample Identification	Concentration (mg/kg) Total Petroleum Oil & Grease
1	B1@10'	110
2	B2@10'	60
3	B3@10'	100
4	B4@10'	80
5	B5@10'	53

mg/kg - parts per million (ppm)

Minimum Detection Limit for oil & grease in Soil: 50mg/kg

QAQC Summary:
MS/MSD Average Recovery = 98%
Duplicate RPD = 8%

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55865
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/kg) Gasoline Range
1	B1@10'	ND<1
2	B2@10'	ND<1
3	B3@10'	ND<1
4	B4@10'	ND<1
5	B5@10'	ND<1

mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/kg

QAQC Summary:

Daily Standard run at 2mg/L: %Diff Gasoline = <15
MS/MSD Recovery = 96%: Duplicate RPD = 2%

Richard Srna, Ph.D.

Laboratory Manager

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55865
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration (mg/kg) Benzene	Toluene	Ethyl Benzene	Xylenes
1	B1@10'	ND<.003	ND<.003	ND<.003	ND<.003
2	B2@10'	ND<.003	ND<.003	ND<.003	ND<.003
3	B3@10'	ND<.003	ND<.003	ND<.003	ND<.003
4	B4@10'	ND<.003	ND<.003	ND<.003	ND<.003
5	B5@10'	ND<.003	ND<.003	ND<.003	ND<.003

mg/kg - parts per million (ppm)

Method Detection Limit in Soil: 0.003 mg/kg

QAQC Summary:

Daily Standard run at 20ug/L: %Diff 8020 = <15%
MS/MSD Average Recovery = 91%: Duplicate RPD = 1%

Richard Srna, Ph.D.

Laboratory Manager

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 55865
CLIENT: LAW/CRANDALL, INC.
CLIENT JOB NO.: 2123206630001

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/16/92

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/kg) Diesel Range
1	B1@10'	ND<10
2	B2@10'	ND<10
3	B3@10'	ND<10
4	B4@10'	ND<10
5	B5@10'	ND<10

mg/kg - parts per million (ppm)

Minimum Detection Limit for Diesel in Soil: 10mg/kg

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 88%: Duplicate RPD = 1%

Richard Srna, Ph.D.

Cecilia G. Joaquin (for)
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO. 55865-1
CLIENT: LAW/CRANDALL, INC.
DATE SAMPLED : 12/07/92
DATE ANALYZED: 12/11/92

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92
PROJECT NO. 2123206630001

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: B1 @ 10'

Compound	MDL	ug/kg	Compound	MDL	ug/kg
Chloromethane	50	ND	Cis-1,3-Dichloropropene	15	ND
Bromomethane	50	ND	Trichloroethene	15	ND
Vinyl Chloride	50	ND	Dibromochloromethane	15	ND
Chloroethane	50	ND	1,1,2-Trichloroethane	15	ND
Methylene Chloride	50	ND	Benzene	5	ND
Acetone	50	ND	Trans-1,3-Dichloropropene	15	ND
arbon Disulfide	15	ND	2-Chloroethyl vinyl ether	15	ND
richlorofluoromethane	15	ND	Bromoform	15	ND
1,1-Dichloroethene	15	ND	4-Methyl-2-Pentanone	50	ND
1,1-Dichloroethane	15	ND	2-Hexanone	50	ND
trans-1,2-Dichloroethene	15	ND	Tetrachloroethene	15	ND
Chloroform	15	ND	1,1,2,2-Tetrachloroethane	15	ND
1,2-Dichloroethane	5	ND	Toluene	15	ND
2-Butanone	100	ND	Chlorobenzene	15	ND
1,1,1-Trichloroethane	15	ND	Ethylbenzene	15	ND
Carbon Tetrachloride	15	ND	Styrene	15	ND
Vinyl Acetate	50	ND	Total Xylenes	15	ND
Bromodichloromethane	15	ND	1,3-Dichlorobenzene	15	ND
1,2-Dichloropropane	15	ND	1,4-Dichlorobenzene	15	ND
cis-1,2-Dichloroethene	15	ND	1,2-Dichlorobenzene	15	ND

ug/kg = parts per billion (ppb)
ND = ANALYTE NOT DETECTED ABOVE QUANTITATION LIMIT
QC DATA:

Surrogate Recoveries		QC LIMITS soil
1,2-DCA-d4.....	100%	70-121 %
Toluene-d8.....	94%	81-117 %
Bromofluorobenzene.....	110%	74-121 %

comments:

Richard Srna, Ph.D.
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

LABORATORY NO. 55865-2
CLIENT: LAW/CRANDALL, INC.
DATE SAMPLED : 12/07/92
DATE ANALYZED: 12/11/92

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92
PROJECT NO. 2123206630001

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: B2 @ 10'

Compound	MDL	ug/kg	Compound	MDL	ug/kg
Chloromethane	50	ND	Cis-1,3-Dichloropropene	15	ND
Bromomethane	50	ND	Trichloroethene	15	ND
Vinyl Chloride	50	ND	Dibromochloromethane	15	ND
Chloroethane	50	ND	1,1,2-Trichloroethane	15	ND
Methylene Chloride	50	ND	Benzene	5	ND
Acetone	50	ND	Trans-1,3-Dichloropropene	15	ND
arbon Disulfide	15	ND	2-Chloroethyl vinyl ether	15	ND
richlorofluoromethane	15	ND	Bromoform	15	ND
1,1-Dichloroethene	15	ND	4-Methyl-2-Pentanone	50	ND
1,1-Dichloroethane	15	ND	2-Hexanone	50	ND
trans-1,2-Dichloroethene	15	ND	Tetrachloroethene	15	ND
Chloroform	15	ND	1,1,2,2-Tetrachloroethane	15	ND
1,2-Dichloroethane	5	ND	Toluene	15	ND
2-Butanone	100	ND	Chlorobenzene	15	ND
1,1,1-Trichloroethane	15	ND	Ethylbenzene	15	ND
Carbon Tetrachloride	15	ND	Styrene	15	ND
Vinyl Acetate	50	ND	Total Xylenes	15	ND
Bromodichloromethane	15	ND	1,3-Dichlorobenzene	15	ND
1,2-Dichloropropane	15	ND	1,4-Dichlorobenzene	15	ND
cis-1,2-Dichloroethene	15	ND	1,2-Dichlorobenzene	15	ND

ug/kg = parts per billion (ppb)
ND = ANALYTE NOT DETECTED ABOVE QUANTITATION LIMIT
QC DATA:

Surrogate Recoveries		QC LIMITS soil
1,2-DCA-d4.....	86%	70-121 %
Toluene-d8.....	112%	81-117 %
Bromofluorobenzene.....	86%	74-121 %

comments:

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO. 55865-3
CLIENT: LAW/CRANDALL, INC.
DATE SAMPLED : 12/07/92
DATE ANALYZED: 12/11/92

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92
PROJECT NO. 2123206630001

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: B3 @ 10'

Compound	MDL	ug/kg	Compound	MDL	ug/kg
Chloromethane	50	ND	Cis-1,3-Dichloropropene	15	ND
Bromomethane	50	ND	Trichloroethene	15	ND
Vinyl Chloride	50	ND	Dibromochloromethane	15	ND
Chloroethane	50	ND	1,1,2-Trichloroethane	15	ND
Methylene Chloride	50	ND	Benzene	5	ND
Acetone	50	ND	Trans-1,3-Dichloropropene	15	ND
arbon Disulfide	15	ND	2-Chloroethyl vinyl ether	15	ND
richlorofluoromethane	15	ND	Bromoform	15	ND
1,1-Dichloroethene	15	ND	4-Methyl-2-Pentanone	50	ND
1,1-Dichloroethane	15	ND	2-Hexanone	50	ND
trans-1,2-Dichloroethene	15	ND	Tetrachloroethene	15	ND
Chloroform	15	ND	1,1,2,2-Tetrachloroethane	15	ND
1,2-Dichloroethane	5	ND	Toluene	15	ND
2-Butanone	100	ND	Chlorobenzene	15	ND
1,1,1-Trichloroethane	15	ND	Ethylbenzene	15	ND
Carbon Tetrachloride	15	ND	Styrene	15	ND
Vinyl Acetate	50	ND	Total Xylenes	15	ND
Bromodichloromethane	15	ND	1,3-Dichlorobenzene	15	ND
1,2-Dichloropropane	15	ND	1,4-Dichlorobenzene	15	ND
cis-1,2-Dichloroethene	15	ND	1,2-Dichlorobenzene	15	ND

ug/kg = parts per billion (ppb)
ND = ANALYTE NOT DETECTED ABOVE QUANTITATION LIMIT
QC DATA:

Surrogate Recoveries		QC LIMITS soil
1,2-DCA-d4.....	99%	70-121 %
Toluene-d8.....	104%	81-117 %
Bromofluorobenzene.....	96%	74-121 %

comments:

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO. 55865-4
CLIENT: LAW/CRANDALL, INC.
DATE SAMPLED : 12/07/92
DATE ANALYZED: 12/14/92

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92
PROJECT NO. 2123206630001

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: B4 @ 10'

Compound	MDL	ug/kg	Compound	MDL	ug/kg
Chloromethane	50	ND	Cis-1,3-Dichloropropene	15	ND
Bromomethane	50	ND	Trichloroethene	15	ND
Vinyl Chloride	50	ND	Dibromochloromethane	15	ND
Chloroethane	50	ND	1,1,2-Trichloroethane	15	ND
Methylene Chloride	50	ND	Benzene	5	ND
Acetone	50	ND	Trans-1,3-Dichloropropene	15	ND
Carbon Disulfide	15	ND	2-Chloroethyl vinyl ether	15	ND
Trichlorofluoromethane	15	ND	Bromoform	15	ND
1,1-Dichloroethene	15	ND	4-Methyl-2-Pentanone	50	ND
1,1-Dichloroethane	15	ND	2-Hexanone	50	ND
trans-1,2-Dichloroethene	15	ND	Tetrachloroethene	15	ND
Chloroform	15	ND	1,1,2,2-Tetrachloroethane	15	ND
1,2-Dichloroethane	5	ND	Toluene	15	ND
2-Butanone	100	ND	Chlorobenzene	15	ND
1,1,1-Trichloroethane	15	ND	Ethylbenzene	15	ND
Carbon Tetrachloride	15	ND	Styrene	15	ND
Vinyl Acetate	50	ND	Total Xylenes	15	ND
Bromodichloromethane	15	ND	1,3-Dichlorobenzene	15	ND
1,2-Dichloropropane	15	ND	1,4-Dichlorobenzene	15	ND
cis-1,2-Dichloroethene	15	ND	1,2-Dichlorobenzene	15	ND

ug/kg = parts per billion (ppb)
ND = ANALYTE NOT DETECTED ABOVE QUANTITATION LIMIT
QC DATA:

Surrogate Recoveries		QC LIMITS soil
1,2-DCA-d4.....	97%	70-121 %
Toluene-d8.....	103%	81-117 %
Bromofluorobenzene.....	100%	74-121 %

comments:

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO. 55865-5
CLIENT: LAW/CRANDALL, INC.
DATE SAMPLED : 12/07/92
DATE ANALYZED: 12/14/92

DATE RECEIVED: 12/07/92
DATE REPORTED: 12/15/92
PROJECT NO. 2123206630001

EPA SW-846 METHOD 8240 - VOLATILE ORGANICS
by Gas Chromatography/ Mass Spectrometry

SAMPLE: B5 @ 10'

Compound	MDL	ug/kg	Compound	MDL	ug/kg
Chloromethane	50	ND	Cis-1,3-Dichloropropene	15	ND
Bromomethane	50	ND	Trichloroethene	15	ND
Vinyl Chloride	50	ND	Dibromochloromethane	15	ND
Chloroethane	50	ND	1,1,2-Trichloroethane	15	ND
Methylene Chloride	50	ND	Benzene	5	ND
Acetone	50	ND	Trans-1,3-Dichloropropene	15	ND
arbon Disulfide	15	ND	2-Chloroethyl vinyl ether	15	ND
richlorofluoromethane	15	ND	Bromoform	15	ND
1,1-Dichloroethene	15	ND	4-Methyl-2-Pentanone	50	ND
1,1-Dichloroethane	15	ND	2-Hexanone	50	ND
trans-1,2-Dichloroethene	15	ND	Tetrachloroethene	15	ND
Chloroform	15	ND	1,1,2,2-Tetrachloroethane	15	ND
1,2-Dichloroethane	5	ND	Toluene	15	ND
2-Butanone	100	ND	Chlorobenzene	15	ND
1,1,1-Trichloroethane	15	ND	Ethylbenzene	15	ND
Carbon Tetrachloride	15	ND	Styrene	15	ND
Vinyl Acetate	50	ND	Total Xylenes	15	ND
Bromodichloromethane	15	ND	1,3-Dichlorobenzene	15	ND
1,2-Dichloropropane	15	ND	1,4-Dichlorobenzene	15	ND
cis-1,2-Dichloroethene	15	ND	1,2-Dichlorobenzene	15	ND

ug/kg = parts per billion (ppb)
ND = ANALYTE NOT DETECTED ABOVE QUANTITATION LIMIT

QC DATA:

Surrogate Recoveries		QC LIMITS soil
1,2-DCA-d4.....	99%	70-121 %
Toluene-d8.....	104%	81-117 %
Bromofluorobenzene.....	104%	74-121 %

comments:

Richard Srna, Ph.D.

Ann A Nwosu (for)
Laboratory Director

CHAIN OF CUSTODY RECORD

55065

BCA Log Number _____

Client name: LAW / CRANDALL INC.	Project or PO#: 2123-20663-0001
Address: 4000 Civic Center Drive, Suite 305	Phone #: 415 499 1422
City, State, Zip: San Rafael, CA 94903	Report attention: SUSAN GAHRY

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: ATM / Sample description	Number of containers	TPH/G + BTEX	TPH/D	Semivolatile Organics EPA 8270	Pesticides + PCBs	Volatile Organics	STLC Cd, Cr, Pb, Zn, Ni	8+6 (5520 D+F)	Hazardous sample Special handling required	Remarks
	12/7/92	~~10:00~~ 10:00	SO	B1 at 10	1	X	X	X	X	X	X	X		5 day Turnaround
	12/7/92	10:30	SO	B2 at 10	1	X	X	X	X	X	X	X		
	12/7/92	11:00	SO	B3 at 10	1	X	X	X	X	X	X	X		
	12/7/92	11:45	SO	B4 at 10	1	X	X	X	X	X	X	X		
	12/7/92	12:30	SO	B5 at 10	1	X	X	X	X	X	X	X		

Please initial:
Samples Shipped on Ice.
Appropriate containers.
Samples preserved.
VOA's without headspace.
Comments:

Signature	Print Name	Company	Date	Time
Relinquished by: Andrew T. Mula	ANDREW T. MULA	LAW / CRANDALL	12/7/92	5:30
Received by: Doug Stouts	DOUG STOUTS	AERO / DEL	12/7/92	5:[illegible]
Relinquished by:				
Received by:				
Relinquished by:				
Received by Laboratory:	KIEHLE		12/7/92	[illegible]

B C ANALYTICAL

1255 Powell Street, Emeryville, CA 94608 (510) 428-2300
801 Western Avenue, Glendale, CA 91201 (818) 247-5737
1200 Gene Autry Way, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: WW—Wastewater SU—Surface Water SO—Soil SL—Sludge PE—Petroleum OT—Other NA—Nonaqueous GW—Groundwater AQ—Aqueous

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

December 15, 1992

Rich Kiehle
SUPERIOR ANALYTICAL LABORATORY
1555 Burke Street, Unit 1
San Francisco, CA 94124

Client Ref. 55865
Clayton Project No. 92120.97

Dear Mr. Kiehle:

Attached is our analytical laboratory report for the samples received on December 8, 1992. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of 30 days after the date of this report, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Silvera, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Ronald H. Peters, CIH
Director, Laboratory Services
Western Operations

RHP/caa
Attachments

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-1	Date Sampled:	12/07/92
Lab Number:	9212097-01A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-1	Date Sampled:	12/07/92
Lab Number:	9212097-01A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-1	Date Sampled:	12/07/92
Lab Number:	9212097-01A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-1	Date Sampled:	12/07/92
Lab Number:	9212097-01A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	62	25	121
Phenol-d6	13127-88-3	77	24	113
Nitrobenzene-d5	4165-60-0	77	23	120
2-Fluorobiphenyl	321-60-8	95	30	115
2,4,6-Tribromophenol	118-79-6	78	19	122
Terphenyl-d14	98904-43-9	77	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-2	Date Sampled:	12/07/92
Lab Number:	9212097-02A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-2	Date Sampled:	12/07/92
Lab Number:	9212097-02A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-2	Date Sampled:	12/07/92
Lab Number:	9212097-02A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-2	Date Sampled:	12/07/92
Lab Number:	9212097-02A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	73	25	121
Phenol-d6	13127-88-3	87	24	113
Nitrobenzene-d5	4165-60-0	84	23	120
2-Fluorobiphenyl	321-60-8	92	30	115
2,4,6-Tribromophenol	118-79-6	85	19	122
Terphenyl-d14	98904-43-9	86	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-3	Date Sampled:	12/07/92
Lab Number:	9212097-03A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-3	Date Sampled:	12/07/92
Lab Number:	9212097-03A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-3	Date Sampled:	12/07/92
Lab Number:	9212097-03A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-3	Date Sampled:	12/07/92
Lab Number:	9212097-03A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	67	25	121
Phenol-d6	13127-88-3	73	24	113
Nitrobenzene-d5	4165-60-0	84	23	120
2-Fluorobiphenyl	321-60-8	91	30	115
2,4,6-Tribromophenol	118-79-6	87	19	122
Terphenyl-d14	98904-43-9	78	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-4	Date Sampled:	12/07/92
Lab Number:	9212097-04A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-4	Date Sampled:	12/07/92
Lab Number:	9212097-04A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-4	Date Sampled:	12/07/92
Lab Number:	9212097-04A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-4	Date Sampled:	12/07/92
Lab Number:	9212097-04A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	64	25	121
Phenol-d6	13127-88-3	72	24	113
Nitrobenzene-d5	4165-60-0	86	23	120
2-Fluorobiphenyl	321-60-8	91	30	115
2,4,6-Tribromophenol	118-79-6	82	19	122
Terphenyl-d14	98904-43-9	79	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-5	Date Sampled:	12/07/92
Lab Number:	9212097-05A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-5	Date Sampled:	12/07/92
Lab Number:	9212097-05A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-5	Date Sampled:	12/07/92
Lab Number:	9212097-05A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-5	Date Sampled:	12/07/92
Lab Number:	9212097-05A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	63	25	121
Phenol-d6	13127-88-3	75	24	113
Nitrobenzene-d5	4165-60-0	80	23	120
2-Fluorobiphenyl	321-60-8	99	30	115
2,4,6-Tribromophenol	118-79-6	81	19	122
Terphenyl-d14	98904-43-9	80	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212097-06A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Acid Extractables			
Phenol	108-95-2	ND	0.2
2-chlorophenol	95-57-8	ND	0.2
2-methyl phenol	95-48-7	ND	0.2
4-methyl phenol	106-44-5	ND	0.2
2-nitrophenol	88-75-5	ND	0.2
2,4-dimethylphenol	105-67-9	ND	0.2
2,4-dichlorophenol	120-83-2	ND	0.2
4-chloro-3-methylphenol	59-50-7	ND	0.2
2,4,5-trichlorophenol	95-95-4	ND	0.2
2,4,6-trichlorophenol	88-06-2	ND	0.2
2,4-dinitrophenol	51-28-5	ND	1
4-nitrophenol	100-02-7	ND	1
2-methyl-4,6-dinitrophenol	534-52-1	ND	1
Pentachlorophenol	87-86-5	ND	1
Base/Neutral Extractables			
Bis(2-chloroethyl)ether	111-44-4	ND	0.2
1,3-dichlorobenzene	541-73-7	ND	0.2
1,4-dichlorobenzene	106-46-7	ND	0.2
Benzyl alcohol	100-51-6	ND	0.4
1,2-dichlorobenzene	95-50-1	ND	0.2
Bis-(2-chloroisopropyl)ether	108-60-1	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212097-06A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
N-nitrosodi-n-propylamine	621-64-7	ND	0.2
Hexachloroethane	67-72-1	ND	0.2
Nitrobenzene	98-95-3	ND	0.2
Isophorone	78-59-1	ND	0.2
Benzoic acid	65-85-0	ND	0.8
Bis-(2-chloroethoxy)methane	111-91-1	ND	0.2
1,2,4-trichlorobenzene	120-82-1	ND	0.2
Naphthalene	91-20-3	ND	0.2
Hexachlorobutadiene	87-68-3	ND	0.2
2-chloronaphthalene	91-58-7	ND	0.2
2-methyl naphthalene	91-57-6	ND	0.2
4-chloroaniline	106-47-8	ND	1
2-nitroaniline	88-74-4	ND	1
3-nitroaniline	99-09-2	ND	1
4-nitroaniline	100-01-6	ND	1
Hexachlorocyclopentadiene	77-47-4	ND	2
Dimethyl phthalate	131-11-3	ND	0.2
Acenaphthylene	208-96-8	ND	0.2
Acenaphthene	83-32-9	ND	0.2
Dibenzofuran	132-64-9	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212097-06A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
2,4-dinitrotoluene	121-14-2	ND	0.2
2,6-dinitrotoluene	606-20-2	ND	0.2
Diethyl phthalate	84-66-2	ND	0.2
4-chlorophenylphenylether	7005-72-3	ND	0.2
Fluorene	86-73-7	ND	0.2
N-nitrosodiphenylamine	86-30-6	ND	0.2
4-bromophenylphenylether	101-55-3	ND	0.2
Hexachlorobenzene	118-74-1	ND	0.2
Phenanthrene	85-01-8	ND	0.2
Anthracene	120-12-7	ND	0.2
Di-n-butylphthalate	84-74-2	ND	0.2
Fluoranthene	206-44-2	ND	0.2
Benzidine	92-87-5	ND	5
Pyrene	129-00-0	ND	0.2
Benzylbutylphthalate	85-68-7	ND	0.2
3,3'-dichlorobenzidine	91-94-1	ND	5
Benzo(a)anthracene	56-55-3	ND	0.2
Bis-(2-ethylhexyl)phthalate	117-81-7	ND	2
Chrysene	218-01-9	ND	0.2
Di-n-octylphthalate	117-84-0	ND	0.2

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212097-06A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/09/92
Extraction Method:	EPA 3550	Date Analyzed:	12/12/92
Analytical Method:	EPA 8270		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Base/Neutral Extractables (continued)			
Benzo(b)fluoranthene	205-99-2	ND	0.2
Benzo(k)fluoranthene	207-08-9	ND	0.2
Benzo(a)pyrene	50-32-8	ND	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.2
Dibenzo(a,h)anthracene	53-70-3	ND	0.2
Benzo(ghi)perylene	191-24-2	ND	0.2

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
2-Fluorophenol	367-12-4	70	25	121
Phenol-d6	13127-88-3	80	24	113
Nitrobenzene-d5	4165-60-0	88	23	120
2-Fluorobiphenyl	321-60-8	96	30	115
2,4,6-Tribromophenol	118-79-6	83	19	122
Terphenyl-d14	98904-43-9	80	18	137

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-1	Date Sampled:	12/07/92
Lab Number:	9212097-01A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Organochlorine Pesticides			
alpha-BHC	319-84-6	ND	0.003
gamma-BHC (Lindane)	58-89-9	ND	0.003
beta-BHC	319-85-7	ND	0.003
Heptachlor	76-44-8	ND	0.003
delta-BHC	319-86-8	ND	0.003
Aldrin	309-00-2	ND	0.003
Heptachlor epoxide	1024-57-3	ND	0.003
Endosulfan I	959-98-8	ND	0.003
4,4'-DDE	72-55-9	ND	0.003
Dieldrin	60-57-1	ND	0.003
Endrin	72-20-8	ND	0.003
4,4'-DDD	72-54-8	ND	0.003
Endosulfan II	33212-65-9	ND	0.003
4,4'-DDT	50-29-3	ND	0.003
Endrin aldehyde	7421-93-4	ND	0.003
Endosulfan sulfate	1031-07-8	ND	0.003
Methoxychlor	72-43-5	ND	0.02
Chlordane	57-74-9	ND	0.02
Toxaphene	8001-35-2	ND	0.2
Polychlorinated Biphenyls (PCB's)			
Aroclor 1016	12674-11-2	ND	0.03

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-1	Date Sampled:	12/07/92
Lab Number:	9212097-01A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Polychlorinated Biphenyls (PCB's) (continued)			
Aroclor 1221	1104-28-2	ND	0.03
Aroclor 1232	11141-16-5	ND	0.03
Aroclor 1242	53469-21-9	ND	0.03
Aroclor 1248	12672-29-6	ND	0.03
Aroclor 1254	11097-69-1	ND	0.03
Aroclor 1260	11096-82-5	ND	0.03

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Tetrachloro-m-xylene	877-09-8	92	24 -	150
Dibutylchlorendate	1770-80-5	95	20 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-2	Date Sampled:	12/07/92
Lab Number:	9212097-02A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Organochlorine Pesticides			
alpha-BHC	319-84-6	ND	0.003
gamma-BHC (Lindane)	58-89-9	ND	0.003
beta-BHC	319-85-7	ND	0.003
Heptachlor	76-44-8	ND	0.003
delta-BHC	319-86-8	ND	0.003
Aldrin	309-00-2	ND	0.003
Heptachlor epoxide	1024-57-3	ND	0.003
Endosulfan I	959-98-8	ND	0.003
4,4'-DDE	72-55-9	ND	0.003
Dieldrin	60-57-1	ND	0.003
Endrin	72-20-8	ND	0.003
4,4'-DDD	72-54-8	ND	0.003
Endosulfan II	33212-65-9	ND	0.003
4,4'-DDT	50-29-3	ND	0.003
Endrin aldehyde	7421-93-4	ND	0.003
Endosulfan sulfate	1031-07-8	ND	0.003
Methoxychlor	72-43-5	ND	0.02
Chlordane	57-74-9	ND	0.02
Toxaphene	8001-35-2	ND	0.2
Polychlorinated Biphenyls (PCB's)			
Aroclor 1016	12674-11-2	ND	0.03

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-2	Date Sampled:	12/07/92
Lab Number:	9212097-02A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Polychlorinated Biphenyls (PCB's) (continued)			
Aroclor 1221	1104-28-2	ND	0.03
Aroclor 1232	11141-16-5	ND	0.03
Aroclor 1242	53469-21-9	ND	0.03
Aroclor 1248	12672-29-6	ND	0.03
Aroclor 1254	11097-69-1	ND	0.03
Aroclor 1260	11096-82-5	ND	0.03

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Tetrachloro-m-xylene	877-09-8	94	24 -	150
Dibutylchlorendate	1770-80-5	96	20 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-3	Date Sampled:	12/07/92
Lab Number:	9212097-03A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Organochlorine Pesticides			
alpha-BHC	319-84-6	ND	0.003
gamma-BHC (Lindane)	58-89-9	ND	0.003
beta-BHC	319-85-7	ND	0.003
Heptachlor	76-44-8	ND	0.003
delta-BHC	319-86-8	ND	0.003
Aldrin	309-00-2	ND	0.003
Heptachlor epoxide	1024-57-3	ND	0.003
Endosulfan I	959-98-8	ND	0.003
4,4'-DDE	72-55-9	ND	0.003
Dieldrin	60-57-1	ND	0.003
Endrin	72-20-8	ND	0.003
4,4'-DDD	72-54-8	ND	0.003
Endosulfan II	33212-65-9	ND	0.003
4,4'-DDT	50-29-3	ND	0.003
Endrin aldehyde	7421-93-4	ND	0.003
Endosulfan sulfate	1031-07-8	ND	0.003
Methoxychlor	72-43-5	ND	0.02
Chlordane	57-74-9	ND	0.02
Toxaphene	8001-35-2	ND	0.2
Polychlorinated Biphenyls (PCB's)			
Aroclor 1016	12674-11-2	ND	0.03

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-3	Date Sampled:	12/07/92
Lab Number:	9212097-03A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Polychlorinated Biphenyls (PCB's) (continued)			
Aroclor 1221	1104-28-2	ND	0.03
Aroclor 1232	11141-16-5	ND	0.03
Aroclor 1242	53469-21-9	ND	0.03
Aroclor 1248	12672-29-6	ND	0.03
Aroclor 1254	11097-69-1	ND	0.03
Aroclor 1260	11096-82-5	ND	0.03

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Tetrachloro-m-xylene	877-09-8	88	24 -	150
Dibutylchlorendate	1770-80-5	93	20 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-4	Date Sampled:	12/07/92
Lab Number:	9212097-04A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Organochlorine Pesticides			
alpha-BHC	319-84-6	ND	0.003
gamma-BHC (Lindane)	58-89-9	ND	0.003
beta-BHC	319-85-7	ND	0.003
Heptachlor	76-44-8	ND	0.003
delta-BHC	319-86-8	ND	0.003
Aldrin	309-00-2	ND	0.003
Heptachlor epoxide	1024-57-3	ND	0.003
Endosulfan I	959-98-8	ND	0.003
4,4'-DDE	72-55-9	ND	0.003
Dieldrin	60-57-1	ND	0.003
Endrin	72-20-8	ND	0.003
4,4'-DDD	72-54-8	ND	0.003
Endosulfan II	33212-65-9	ND	0.003
4,4'-DDT	50-29-3	ND	0.003
Endrin aldehyde	7421-93-4	ND	0.003
Endosulfan sulfate	1031-07-8	ND	0.003
Methoxychlor	72-43-5	ND	0.02
Chlordane	57-74-9	ND	0.02
Toxaphene	8001-35-2	ND	0.2
Polychlorinated Biphenyls (PCB's)			
Aroclor 1016	12674-11-2	ND	0.03

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-4	Date Sampled:	12/07/92
Lab Number:	9212097-04A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Polychlorinated Biphenyls (PCB's) (continued)			
Aroclor 1221	1104-28-2	ND	0.03
Aroclor 1232	11141-16-5	ND	0.03
Aroclor 1242	53469-21-9	ND	0.03
Aroclor 1248	12672-29-6	ND	0.03
Aroclor 1254	11097-69-1	ND	0.03
Aroclor 1260	11096-82-5	ND	0.03

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Tetrachloro-m-xylene	877-09-8	82	24 -	150
Dibutylchlorendate	1770-80-5	88	20 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-5	Date Sampled:	12/07/92
Lab Number:	9212097-05A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Organochlorine Pesticides			
alpha-BHC	319-84-6	ND	0.003
gamma-BHC (Lindane)	58-89-9	ND	0.003
beta-BHC	319-85-7	ND	0.003
Heptachlor	76-44-8	ND	0.003
delta-BHC	319-86-8	ND	0.003
Aldrin	309-00-2	ND	0.003
Heptachlor epoxide	1024-57-3	ND	0.003
Endosulfan I	959-98-8	ND	0.003
4,4'-DDE	72-55-9	ND	0.003
Dieldrin	60-57-1	ND	0.003
Endrin	72-20-8	ND	0.003
4,4'-DDD	72-54-8	ND	0.003
Endosulfan II	33212-65-9	ND	0.003
4,4'-DDT	50-29-3	ND	0.003
Endrin aldehyde	7421-93-4	ND	0.003
Endosulfan sulfate	1031-07-8	ND	0.003
Methoxychlor	72-43-5	ND	0.02
Chlordane	57-74-9	ND	0.02
Toxaphene	8001-35-2	ND	0.2
Polychlorinated Biphenyls (PCB's)			
Aroclor 1016	12674-11-2	ND	0.03

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	55865-5	Date Sampled:	12/07/92
Lab Number:	9212097-05A	Date Received:	12/08/92
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Polychlorinated Biphenyls (PCB's) (continued)			
Aroclor 1221	1104-28-2	ND	0.03
Aroclor 1232	11141-16-5	ND	0.03
Aroclor 1242	53469-21-9	ND	0.03
Aroclor 1248	12672-29-6	ND	0.03
Aroclor 1254	11097-69-1	ND	0.03
Aroclor 1260	11096-82-5	ND	0.03

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Tetrachloro-m-xylene	877-09-8	90	24 -	150
Dibutylchlorendate	1770-80-5	99	20 -	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212097-06A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Organochlorine Pesticides			
alpha-BHC	319-84-6	ND	0.003
gamma-BHC (Lindane)	58-89-9	ND	0.003
beta-BHC	319-85-7	ND	0.003
Heptachlor	76-44-8	ND	0.003
delta-BHC	319-86-8	ND	0.003
Aldrin	309-00-2	ND	0.003
Heptachlor epoxide	1024-57-3	ND	0.003
Endosulfan I	959-98-8	ND	0.003
4,4'-DDE	72-55-9	ND	0.003
Dieldrin	60-57-1	ND	0.003
Endrin	72-20-8	ND	0.003
4,4'-DDD	72-54-8	ND	0.003
Endosulfan II	33212-65-9	ND	0.003
4,4'-DDT	50-29-3	ND	0.003
Endrin aldehyde	7421-93-4	ND	0.003
Endosulfan sulfate	1031-07-8	ND	0.003
Methoxychlor	72-43-5	ND	0.02
Chlordane	57-74-9	ND	0.02
Toxaphene	8001-35-2	ND	0.2
Polychlorinated Biphenyls (PCB's)			
Aroclor 1016	12674-11-2	ND	0.03

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Results of Analysis
for
Superior Analytical Laboratory

Client Reference: 55865
Clayton Project No. 92120.97

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9212097-06A	Date Received:	--
Sample Matrix/Media:	SOIL	Date Extracted:	12/10/92
Extraction Method:	EPA 3550	Date Analyzed:	12/10/92
Analytical Method:	EPA 8080		

Analyte	CAS #	Concentration (mg/kg)	Limit of Detection (mg/kg)
Polychlorinated Biphenyls (PCB's) (continued)			
Aroclor 1221	1104-28-2	ND	0.03
Aroclor 1232	11141-16-5	ND	0.03
Aroclor 1242	53469-21-9	ND	0.03
Aroclor 1248	12672-29-6	ND	0.03
Aroclor 1254	11097-69-1	ND	0.03
Aroclor 1260	11096-82-5	ND	0.03

Surrogates		Recovery (%)	QC Limits (%) LCL	UCL
Tetrachloro-m-xylene	877-09-8	87	24	150
Dibutylchlorendate	1770-80-5	87	20	150

ND Not detected at or above limit of detection
-- Information not available or not applicable
Results are reported on a wet weight basis, as received

Quality Assurance Results Summary
for
Clayton Project No. 92120.97

Clayton Lab Number:	9212114-01B	Analytical Method:	EPA8270
Ext./Prep. Method:	EPA3550	Instrument ID:	0513B
Date:	12/09/92	Date:	12/12/92
Analyst:	SCB	Time:	23:37
Std. Source:	M921202-01W	Analyst:	AC
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
1,2,4-Trichlorobenzene	ND	3.33	2.05	62	1.90	57	59	38	107	7.6	23
1,4-Dichlorobenzene	ND	3.33	1.70	51	2.00	60	56	28	104	16	27
2,4-Dinitrotoluene	ND	3.33	1.60	48	1.80	54	51	28	89	12	47
2-Chlorophenol	ND	3.33	1.90	57	2.20	66	62	25	102	15	50
4-Chloro-m-cresol	ND	3.33	2.10	63	2.30	69	66	26	103	9.1	33
4-Nitrophenol	ND	3.33	2.10	63	2.00	60	62	11	114	4.9	50
Acenaphthene	ND	3.33	2.20	66	2.30	69	68	31	137	4.4	19
N-Nitrosodipropylamine	ND	3.33	1.80	54	2.10	63	59	41	126	15	38
Pentachlorophenol	ND	3.33	2.10	63	2.50	75	69	17	109	17	47
Phenol	ND	3.33	1.80	54	2.10	63	59	26	90	15	35
Pyrene	ND	3.33	2.90	87	2.50	75	81	35	142	15	36

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 92120.97

Clayton Lab Number:	9212097-03A	Analytical Method:	EPA8080
Ext./Prep. Method:	EPA3550	Instrument ID:	02933
Date:	12/10/92	Date:	12/11/92
Analyst:	STF	Time:	03:13
Std. Source:	G921201-04W	Analyst:	LC
Sample Matrix/Media:	SOIL	Units:	MG/KG

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
4,4'-DDT	ND	0.0400	0.0270	68	0.0280	70	69	32	120	3.6	50
ALDRIN	ND	0.0400	0.0320	80	0.0320	80	80	34	132	0.0	43
DIELDRIN	ND	0.0400	0.0300	75	0.0300	75	75	31	134	0.0	38
ENDRIN	ND	0.0400	0.0330	83	0.0330	83	83	42	139	0.0	45
GAMMA-BHC (LINDANE)	ND	0.0400	0.0320	80	0.0350	88	84	46	127	9.0	50
HEPTACHLOR	ND	0.0400	0.0380	95	0.0380	95	95	35	130	0.0	31

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection
LCL = Lower Control Limit
UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

12097

Chain of Custody and Analysis Request

Section I

page__of__

From: Superior Precision Analytical, Inc.
1555 Burke St. Unit II
San Francisco, CA 92124
Phone No. (415) 647-2081 Fax No. (415) 821-7123
Contact: KK
P.O. No. 55565

Turn Around Time (circle one)
Same Day 72 Hrs
24 Hrs 5 Day
48 Hrs 10 Day
per Lester

Superior Precision Analytical, Inc.
P.O. Box 1545
Martinez, California 94553

Work Subcontracted to: CLTS

Section II: Analysis Request

Laboratory Sample Identification	S = Soil A = Air W = Water Matrix	CAM17	Metals:	418.1	8270	8080 (pest. and PCB's)					Client Sample Identification	Number of Containers	Preservative (yes or no)			Sampling Remarks
1 55565-1	S-11				X	X					B1 D 10'					☐ Chevron ☑ Non-Chevron **Please Fax Results**
2 -2	S				X	X					B2 D 10'					
3 -3					X	X					B3 D 10'					
4 -4					X	X					B4 D 10'					
5 -5	W				X	X					B5 D 10'					
6																
7																
8																
9																
10																
11																
12																

Relinquished by: [signature] 12/7/12	Date/Time 10P	Received by: [signature] C.E.C.	Date/Time 12/8/12 1:20pm	Lab please initial the following: Samples Stored in Ice OK; Appropriate Containers ✓; Samples Preserved NA; VOAs without Headspace ✓; Comments Rec'd 5M5pt
Relinquished by:	Date/Time	Received by:	Date/Time	
Organization		Organization		
Relinquished by:	Date/Time	Received by:	Date/Time	
Organization		Organization		

APPENDIX D

HYDROCARBON CONSULTANTS ANALYTICAL SUMMARY

Table 2

Groundwater Analytical Data Summary–Petroleum Hydrocarbon Constituents
1150 Ballena Blvd., Alameda, California

Well No.	Date Sampled	TPH/d[a] (µg/L)[g]	TPH/g[b] (µg/L)[g]	B[c] (µg/L)[g]	T[c] (µg/L)[g]	E[c] (µg/L)[g]	X[c] (µg/L)[g]	SVOCs[d] (µg/L)[g]	TOG[e] (µg/L)[g]	PCBs[f] (µg/L)[g]
MW1	09/02/93	98	<50[h]	<0.5	<0.5	<0.5	<0.5	NA[i]	NA	NA
MW2	09/02/93	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
MW3	09/02/93	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
OP1	09/02/93	9,100	580	<0.5	<0.5	19	0.5	ND	43,000	<0.5

Grab G.W. Sample

a. TPH/d = total petroleum hydrocarbons as diesel
b. TPH/g = total petroleum hydrocarbons as gasoline
c. B = benzene; T = toluene; E = ethylbenzene; x = total xylenes
d. SVOCs = semi volatile organic compounds
e. TOG = total oil and grease
f. PCBs = polychlorinated biphenols
g. µg/L = micrograms per liter, equal to parts per billion (ppb)
h. <50 = less than method detection limit of 50 µg/L
i. NA = analysis not requested
j. ND = no analytes detected above respective method detection limits (see analytical test reports for individual analyte detection limits)

Table 3

Groundwater Analytical Data Summary-Metals
1150 Ballena Blvd., Alameda, California

Well No.	Cadmium (µg/L)[a]	Chromium (µg/L)[a]	Lead (µg/L)[a]	Nickel (µg/L)[a]	Zinc (µg/L)[a]
MW1	NA[b]	NA	NA	NA	NA
MW2	NA	NA	NA	NA	NA
MW3	NA	NA	NA	NA	NA
OP1	<1[c]	~~50~~ 60	20	140	100

a. µg/L = micrograms per liter, equal to parts per billion (ppb)
b. NA = analysis not requested
c. <1 = less than the method detection limit of 1 µg/L.

grab g.w. sample