STEAM VALVE MACHINE CO. INC.
98 HEGENBERGER LOOP
OAKLAND CALIFORNIA 94621
510-635-9091 FAX 510-635-2223

29 January 1997

To: Alameda Health Agency
Division of Environmental Protection
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, Ca. 94502

Attn: Ms. Madhulla Logan
Hazardous Material Specialist

Re: 1899 Dennison Street, Oakland

Environmental Health Services Reference: **STID 205**

Dear Ms. Madhulla Logan

Steam Valve Machine Co., Inc. (SVMC) respectfully submits the attached package in Binder format in accordance with your written request for a "Site Investigation Summary Report" for the referenced property.

To the best of my knowledge, the information provided addresses the issues outlined in your letter of 4 December 1996.

Also enclosed, please find a check for $1,000.00 (one thousand dollars). as a deposit for past and future costs pertaining to this case.

I would appreciate pertinent accountability for funds provided concerning this project.

If you have any further questions, please do not hesitate to contact me at 510-635-9091.

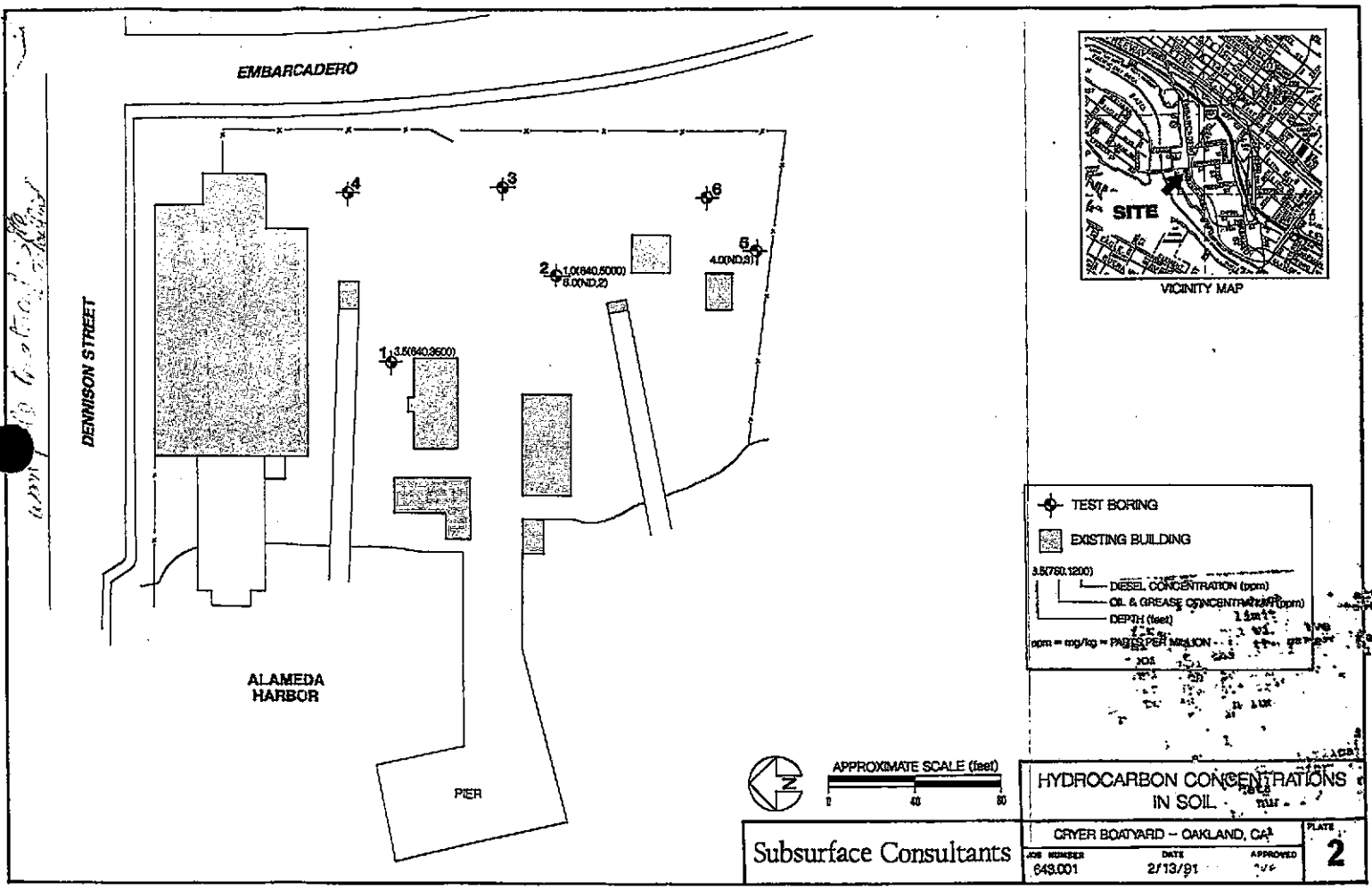
Respectfully,

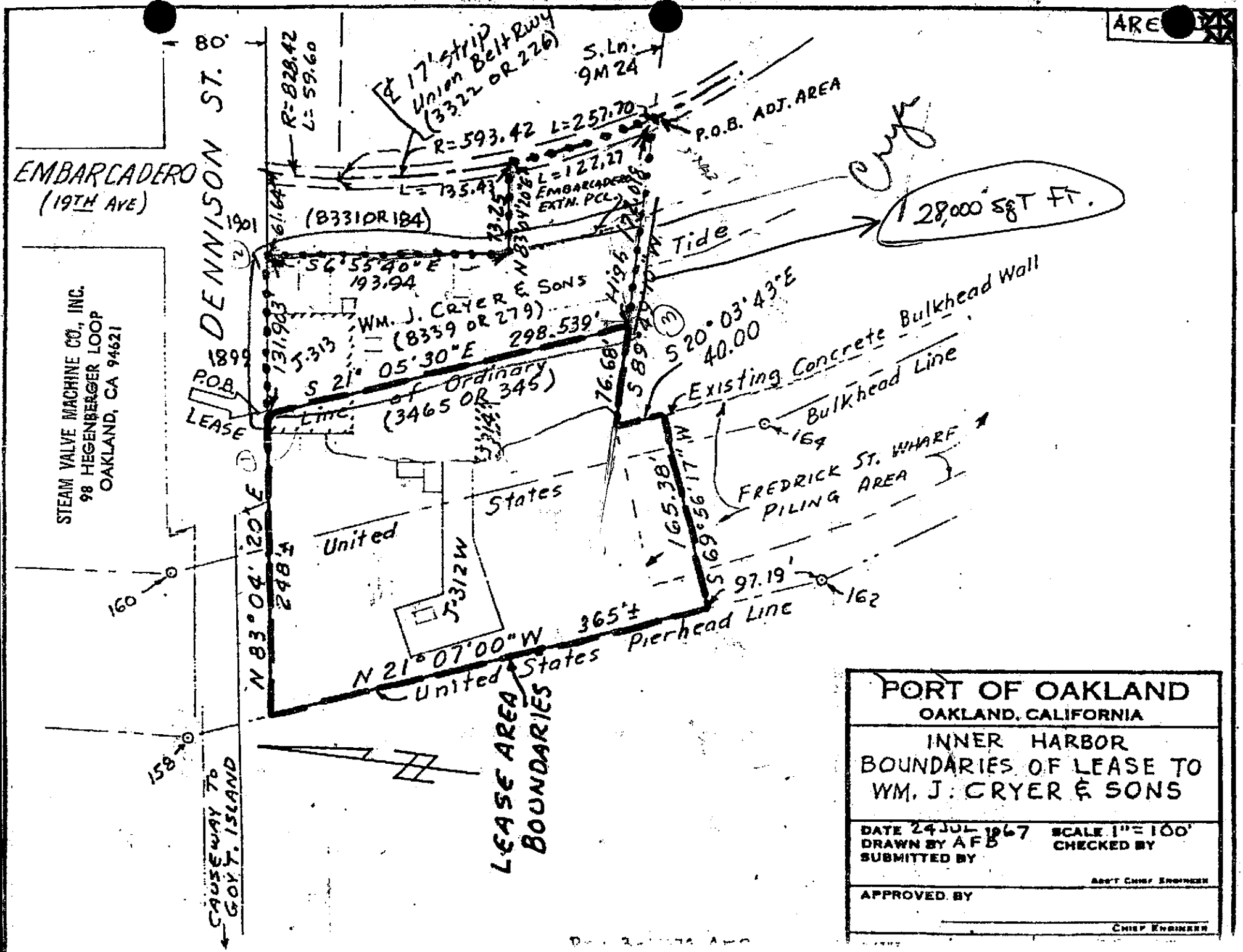
Stephen J Cowley

Stephen J. Cowley
President

cc: Mr. David henderson, Cushman & Wakefield

SITE - MAP
1899 DENNISON STR., OAKLAND, CA.





PORT OF OAKLAND
OAKLAND, CALIFORNIA

INNER HARBOR
BOUNDARIES OF LEASE TO
WM. J. CRYER & SONS

DATE 24 JUL 1967 SCALE 1" = 100'
DRAWN BY A F B CHECKED BY
SUBMITTED BY
ASST CHIEF ENGINEER

APPROVED BY
CHIEF ENGINEER

92008723

ORDER NO: 990286
Page 1

LEGAL DESCRIPTION

CITY OF OAKLAND

BEGINNING AT THE INTERSECTION OF THE CENTER LINE OF THE STRIP OF LAND 17 FEET WIDE DESCRIBED IN THE INSTRUMENT EXECUTED BY THE ANGLO CALIFORNIA NATIONAL BANK OF SAN FRANCISCO TO UNION BELT RAILWAY OF OAKLAND, DATED APRIL 30, 1936, RECORDED JUNE 2, 1936, IN BOOK 3322 OF OFFICIAL RECORDS OF ALAMEDA COUNTY, PAGE 226, WITH THE SOUTHERN LINE OF THE LAND SHOWN ON THE "MAP OF THE CAMDEN 23RD AVENUE TRACT, OAKLAND", FILED MAY 31, 1889, IN BOOK 9 OF MAPS, PAGE 24, IN THE OFFICE OF THE COUNTY RECORDER OF ALAMEDA COUNTY; AND RUNNING THENCE ALONG THE NORTHERN LINE OF SAID LAND SHOWN ON SAID MAP; SOUTH 89° 49' 10" WEST 172.018 FEET TO THE LINE OF ORDINARY HIGH TIDE AS SAID LINE IS ESTABLISHED IN THE AGREEMENT BETWEEN CITY OF OAKLAND AND THE ANGLO CALIFORNIA NATIONAL BANK OF SAN FRANCISCO, ET. AL., DATED FEBRUARY 23, 1937, RECORDED JUNE 16, 1937, IN BOOK 3465 OF OFFICIAL RECORDS OF ALAMEDA COUNTY, PAGE 345; THENCE ALONG THE LAST NAMED LINE NORTH 21° 05' 30" WEST 298.539 FEET TO THE SOUTHERN LINE OF DENNISON STREET; THENCE ALONG THE LAST NAMED LINE NORTH 83° 04' 20" EAST 193.543 FEET TO THE CENTER LINE OF SAID 17 FOOT STRIP AND THENCE ALONG THE LAST NAMED LINE SOUTHERLY 317.30 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PORTION CONVEYED IN THE DEED TO STANDARD BRASS FOUNDRY, A PARTNERSHIP, DATED APRIL 3, 1957; RECORDED APRIL 4, 1957, BOOK 8331, OFFICIAL RECORDS PAGE 184, ALAMEDA COUNTY RECORDS.

ALSO, EXCEPTING THEREFROM THAT PORTION CONVEYED IN THE DEED TO THE CITY OF OAKLAND, A MUNICIPAL CORPORATION, DATED OCTOBER 30, 1984; RECORDED MARCH 18, 1985, SERIES NO. 85-53960, ALAMEDA COUNTY RECORDS.

ASSESSOR'S PARCEL NO. 019-0060-001-14

EXHIBIT A

STEAM VALVE MACHINE CO., INC.

98 HEGENBERGER LOOP
OAKLAND, CA 94621
PHONE (415) 635-9091
FAX (415) 635-2223

1899 Dennison Street, Oakland, CA

Research indicates that in the early 1900's, the property was owned/utilized by the Standard Gas/Diesel Engine Company.

Thereafter, and for a period of approximately forty-five years, the site had been used by William Cryer & Son Company for the repair, maintenance, and construction of marine vessels.

On June 18, 1989, the property was purchased by Messrs. Stephen J. Cowley and Frank Cheng from William Cryer & Son Company.

In June, 1990, Cowley and Cheng entered into a Lease/Purchase Agreement with Oceanic Boat Works, Inc. who intended to utilize the property for ship repair and ship building. A stipulation of this Lease/Purchase Agreement (Attachment #1) was to conduct a Level 1 Study. This study was conducted on March 1, 1991 by Subsurface Consultants, Inc. Six test borings were drilled in areas of potential environmental concern. The test borings extended to depths of approximately 15 feet below the ground surface. Grab ground water samples were obtained from three temporary wells installed in Borings 1, 2 and 3. The wells were about 15 feet deep.

Based on the Level 1 study, Oceanic Boat Works proceeded to remediate the soil. They removed approximately 18-24 inches of top soil which they did not replace. Cowley and Cheng were not given a copy of the manifest for the removed top soil. In September, 1991, Oceanic Boat Works abandoned the site leaving the property in disarray. They subsequently dissolved Oceanic Boat Works, Inc. Attempts to locate Oceanic Boat Works' officers has proved futile.

(Note: During the period of lease between Cowley/Cheng and Oceanic Boat Works, disputes arose between the Messrs. Cowley and Cheng which involved lengthy litigation. The result of the litigation was that on January 10, 1992, the property was transferred to Stephen J. Cowley and Steam Valve Machine Company, Inc.).

Steam Valve Machine Company cleaned up all surface debris, removed scrap metal and voluminous quantities of miscellaneous debris left by Oceanic Boat Works. There were approximately 24 drums of toxic material removed. (Attachment #2).

After all debris had been removed from the property, Steam Valve Machine Company replaced the removed top soil with an aggregate road base material. (Attachment #3 - Gallagher and Burke Certification).

Based on the Level 1 report, Steam Valve Machine Company retested the bore sites on March 16, 1993 utilizing the same laboratory (Superior Precision Analytical, Inc.) used for the initial reports. Comparison studies were conducted by the same consultant who'd evaluated the Level 1 report. All results were sent to the Alameda County Health Agency, Division of Hazardous Materials, Department of Environmental Health. After review, the Agency recommended that additional testing be conducted.

SEPT. 27, 1993 SJC

On ~~October 4, 1993~~, Superior Precision Analytical tested the site for total petroleum hydrocarbons (gasoline, benzene, toluene, ethyl benzene, total xylenes, Diesel range), and CAM 17 metals. Their Certificate of Analysis dated October 5, 1993, clearly indicates that the controlled samples were well within the control limits of EPA SW-846 (Methods 8015, 5030 and 8020/BTXE). (Attachment #4).

On November 2, 1993, Superior Precision Analytical retested the samples to ascertain levels of petroleum, oil and grease. The result of the petroleum hydrocarbons, oil and grease borings/evaluation clearly indicate that the controlled samples were well within EPA control limits.

Steam Valve Machine Company is confident that the property has been fully remediated; and does not pose any environmental threat(s) to any surrounding properties.

signed: David M. Curto

David M. Curto, President
Steam Valve Machine Co., Inc.

ATTACHMENT #1

LEASE/PURCHASE AGREEMENT

OCEANIC BOATWORKS COMPANY, INC.
232 Dantley Way
Walnut Creek, CA 94598

September 18, 1990

Mr. Steve Cowley
Steam Valve Machine Co.
98 Hegenberger Loop
Oakland, CA

RE: 1899 Dennison St.
Oakland, CA

Dear Steve,

In accordance with our recent discussions, this letter shall serve to formally express the intent of Oceanic Boatworks Co. Inc. to lease the above referenced property under the general terms and conditions described hereinafter, and shall be binding upon the parties hereto unless and until it is superceded by a formal lease agreement.

PROPERTY: The entire facility located at 1899 Dennison St., Oakland, CA., commonly known as The William J. Cryer & Sons Boat Yard; owned by Frank & Dorothy Cheng, and Steve Cowley, as Lessors, together with all equipment and supplies existing on the premises. Lessor shall ensure that the portion of the property currently leased from the Port of Oakland is available for use by the Lessee, and for purposes of the lease contemplated herein, shall be considered part of the demised premises.

USE: The demised premises shall be used by the Lessee for the maintaining, conducting and operating of a small ship repair and boatyard, maintaining buildings, wharves, docks and other structures and improvements, including the installation of equipment, machinery and facilities necessary or convenient for the operation of such ship and boat repair yard, including sandblasting and painting, and for other uses incidental thereto. Lessor warrants that to the best of its knowledge, the premises may, during the lease term, be used under all applicable law for the use described above.

LEASE TERM: One (1) year. Possession of the premises to be immediately upon agreement of the terms outlined in this letter. Lessee shall cause a formal lease option document to be prepared and submitted to Lessor for its approval within 14 days. The term of this lease may only be extended upon written agreement between both parties.

LEASE TYPE: The lease shall be a modified Net Lease with the following general provisions:

a) Real Estate Taxes: Lessor shall pay the real estate taxes.

b) Property Insurance: Lessor shall provide casualty insurance on the improvements in an amount equal to the replacement value of said improvements.

c) Liability Insurance: Lessee agrees to carry liability insurance in an amount equal to $1,000,000 and workers compensation as required. Lessee shall provide a certificate of insurance to Lessor and to the Port of Oakland.

d) Lessee shall provide routine maintenance for the property and pay all incidental costs associated with the operation of the property for its intended use.

LEASE RATE: The lease rate shall be $6,000.00 per month payable in advance on the first day of each and every month.

DEPOSIT: A security deposit in the amount of $6,000.00 shall be paid upon agreement hereof and the granting of possession of the premises.

FREE RENT: Lessee shall be allocated one month of free rent in order to accomplish a full scale clean up of the property, move in and set up business operations. Details of clean up are listed in Attachment 'A'.

OPTION TO PURCHASE: Lessee shall have an option to purchase the property at any time during the term of this lease. Said option may be exercised by Lessee presenting written notice to Lessor of its intent to exercise the option no later than 90 days prior to the expiration date of said lease. Escrow of sale of property to close on or about the expiration date of lease unless otherwise agreed to by bothe parties in writing. The terms of the option are as follows:

1. The purchase price shall be $600,000. The price shall be adjusted by:

   a. 50% of the lease payments made during the term of the lease. Any extensions to the lease term will not further discount the price.

2. The terms shall be all cash, or other terms that are mutually agreeable to the parties.

3. Transfer and escrow costs shall be split between buyer and seller 50/50.

In consideration of this option agreement, Lessee agrees to pay to Lessor the sum of $5,000 upon execution of this agreement. If the option is exercised, this amount shall be deducted from the purchase price, otherwise it shall be non-refundable.

RIGHT TO SUBLEASE: Lessee is granted the right to sublease all or a portion of the premises upon written consent and approval by Lessor, in accordance with the terms conditions of the Port of Oakland master lease. Said consent shall not be unreasonably withheld. Lessee shall remain responsible for the financial obligations of the Lease as guarantor.

SIGNAGE: Lessee shall have the full and exclusive right to place identification signs on the premises, with the written approval of the Lessor and the executive director of the Port IAW paragraph 11 of the port lease.

NON DISTURBANCE: Lessor shall obtain from all mortgage holders written agreements that in the event of default by Lessor, the lease contemplated herein will remain in full force and effect.

ENVIRONMENTAL: Lessor shall indemnify, defend, and hold Lessee harmless with respect to any environmental liability resulting from prior activities that Lessor was responsible for. Lessor warrants that it has disclosed all material information that it is aware of pertaining to toxic materials on or about the demised premises.

ATTACHMENT 'A'

To that binding letter of intent by and between Oceanic Boatworks Co. Inc. (Lessee) and Frank & Dorothy Cheng, and Steve Cowley (Lessor) dated September 18, 1990.

I. The following is a partial list of clean up items referenced in the "Free Rent" paragraph:

A. Remove and haul off debree along shore line.

B. Remove and haul off partially sunken dock sections.

C. Remove and haul off partially sunken hulls.

D. Thoroughly clean and organize main building.

E. Clear and clean staging areas for steel.

F. Repair as needed all rail systems.

G. Inventory all power equipment and stations.

H. Clean and test all blowers and ducting equipment.

I. Clean and set up welding shop.

J. Clean and check operation of all work areas and plumbing systems.

K. Perform maintenance on cranes and verify operation. (Current certification?)

L. Clean offices, install phones.

M. Remove oil drums.

N. Build cage with tool crib in main building.

O. Clean and dispose of sand blast residue.

ATTORNEYS' FEES: In the event of any controversy, claim or dispute between or involving any of the parties hereto arising out of or relating to this agreement or the breach thereof, or documents executed pursuant thereto, the prevailing party shall be entitled to recover from the losing party reasonable expenses, attorney's fees and costs.

COMMISSIONS: Lessor shall be responsible for all real estate commissions that may be owed for the lease contemplated herein and the sale that may occur pursuant to the option described hereinabove.

Obviously, time is of the essence. Please indicate your approval below in order that we may proceed with the formal lease documentation.

Very Truly Yours,

David D. Powell
President

AGREED TO AND ACKNOWLEDGED BY:

LESSEE:
OCEANIC BOATWORKS CO. INC.

David D. Powell
President

Date: 9-21-90

LESSOR:

Stephen J Cowley

Date: 9-24-90

Oceanic Boatworks Company, Inc.
1899 Dennison Street · Oakland, CA 94606 · Tel. (415) 533-5270 · Fax (415) 533-5259

July 1, 1991

Mr. Steve Cowley
Steam Valve Machine Co.
98 Hegenberger Loop
Oakland, CA

RE: Option to Purchase
1899 Dennison St.
Oakland, CA

Dear Steve,

Pursuant to our lease agreement, this is to notify you that we are exercising our option to purchase the above referenced property.

We will cause a formal purchase agreement to be drafted in accordance with the terms previously agreed to and furnish to you within the next thirty (30) days. Due to the toxic issue on the property we will need to extend the closing date to at least December 31, 1991.

Please respond with your approval of this time extension, and we will proceed with drafting the contract documentation.

Very truly yours,

Edward D. Powell

ATTACHMENT #2

MANIFEST (Toxic Material)

State of California—Health and Welfare Agency

Department of Health Services
Toxic Substances Control Program
Sacramento, California

See Instructions on back of page 6.

Please print or type. Form designed for use on elite (12-pitch typewriter). CAC000609736

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: C A C 0 0 0 6 0 9 7 3 6
Manifest Document No.: 001
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
GRANVILLE FIELDS
1036 4th st. ANCHORAGE, ALASKA 99501

4. Generator's Phone: 907 381-3441

A. State Manifest Document Number: 91631531
B. State Generator's ID

5. Transporter 1 Company Name: CROSBY & OVERTON ~~HYDRO CHEM SERVICES, INC.~~
6. US EPA ID Number: CAD 982524480 ~~C A D 9 8 0 814594~~
C. State Transporter's ID: 310799
D. Transporter's Phone: ~~(415) 822-1181~~ 310 637-2336

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
U.S. ECOLOGY
HIGHWAY 95 beatty, Ne. 89003
10. US EPA ID Number: NVT 330010000
G. State Facility's ID
H. Facility's Phone: (702) 553-2203

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. NON RCRA HAZARDOUS WASTE, SOLID	009 (5) ~~004~~	D M	9002 1/4	Y	State 611 / EPA/Other
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above:
a. contaminated soil with sorbent, rags, diesel and associated debris

K. Handling Codes for Wastes Listed Above: a. b. c. d.

15. Special Handling Instructions and Additional Information:
ERG: none EMERGENCY PHONE NUMBER: 1-800-8220019
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: ON BEHALF OF Robert Johnson | Signature: [signature] | Month Day Year: 12 18 92

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Aaron Irving ~~STEVE MESQUITE~~ | Signature: [signature] | Month Day Year: 12 18 92

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.
Printed/Typed Name | Signature | Month Day Year

(Left margin: 91631531 — IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550 — GENERATOR — TRANSPORTER — FACILITY)

DO NOT WRITE BELOW THIS LINE.

DHS 8022A (12/90)
EPA 8700—22

White: TSDF SENDS THIS COPY TO DHS WITHIN 30 DAYS.
To: P.O. Box 3000, Sacramento, CA 95812

State of California—Health and Welfare Agency

See Instructions on back of page 6.

Department of Health Servic
Toxic Substances Control Progra
Sacramento, Californ

Type or print. *Form designed for use on elite (12-pitch typewriter).*

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA C 0 0 0 1 6 0 9 7 3 4 — Manifest Document No. 3 1 5 5 2 — 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
GRANVILLE FIELD
1036 4TH ST ANCHORAGE, ALASKA 99501
4. Generator's Phone ( )

A. State Manifest Document Number: 91631532
B. State Generator's ID:
C. State Transporter's ID: 510766
D. Transporter's Phone: 570 653-6236

5. Transporter 1 Company Name: CROSBY AND OVERTON
6. US EPA ID Number: C A D 9 8 2 5 2 4 4 8 0
7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
REFINERIES SERVICE
1331 NO HIGHWAY 33
PATTERSON, CA 93305
10. US EPA ID Number: C A D 0 8 3 1 1 6 1 7 2 8
G. State Facility's ID:
H. Facility's Phone: 209-892-8044

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. UN 1263 WASTE PAINT RELATED MATERIAL FLAMMABLE LIQUID	009	DM	0 0 1 4 0 0	G	State 461 EPA/Other D001
b. WASTE PAINT RELATED MATERIAL FLAMMABLE LIQUID	0 0 3	D F	0 0 1 5 0	G	State 461 EPA/Other D001
c. NON RCRA HAZARDOUS WASTE LIQUID	0 0 1	D M	0 0 0 3 0	G	State 155 EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
A. OIL BASE PAINT
B. OIL BASE PAINT
C. SPENT ANTI FREEZE

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
STEVE MESQUITE		1 2	1 8	9 2

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Aaron Irving		1 2	1 8	9 2

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month	Day	Year

DO NOT WRITE BELOW THIS LINE.

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER (800) 424-8802: WITHIN CALIFORNIA, CALL 1-800-852-7550

91631532

DHS 8022A (12/90)

White: TSDF SENDS THIS COPY TO DHS WITHIN 30 DAYS

State of California—Health and Welfare Agency

See Instructions on back of page 6.

Department of Health Service:
Toxic Substances Control Program
Sacramento, California

Print or type. Form designed for use on elite (12-pitch typewriter).

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CA C 0 0 0 1 6 0 9 7 3 6 | Manifest Document No. 3 1 5 3 6 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
GRANVILLE FIELD
1036 4th ST ANCHORAGE, ALASKA 99501
4. Generator's Phone (907) 381 - 3441

A. State Manifest Document Number 91631536
B. State Generator's ID
C. State Transporter's ID 31000
D. Transporter's Phone 415 822-1181

5. Transporter 1 Company Name: HYDRO-CHEM SERVICES
6. US EPA ID Number: CA D 9 8 0 8 1 4 5 9 4
7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
REFINERIES SERVICE / PRC
1331 NO HIGHWAY 33
PATTERSON, CA. 93305
10. US EPA ID Number: CA D 0 8 3 1 6 6 7 2 8
G. State Facility's ID
H. Facility's Phone 1-800-874-4444

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. NON RCRA HAZARDOUS WASTE LIQUID	001	TT	0 0 2 4 5	G	State 222 / EPA/Other
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above: a. OIL AND WATER
K. Handling Codes for Wastes Listed Above: a. b. c. d.

15. Special Handling Instructions and Additional Information
EMERGENCY PHONE: 1-800-822-0899
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
ON BEHALF OF STEVE MESQUITE		12	18	92

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ROBERT JOHNSON	Robert Johnson	12	18	92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month	Day	Year

DO NOT WRITE BELOW THIS LINE.

GENERATOR

TRANSPORTER

FACILITY

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER (800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550)

91631536

DHS 8022A (12/90)

White: TSDF SENDS THIS COPY TO DHS WITHIN 30 DAYS.

P. PATTERSON
REFINERIES SERVICE
P.O. BOX 1167
PATTERSON, CA 95363
(209) 892-6742

534638

SHIPPER [illegible] DATE [illegible]
ADDRESS [illegible] SHIPPERS #
[illegible] WT TAG #
CONSIGNEE [illegible] TRUCK # [illegible]
ADDRESS [illegible] TRAILER # [illegible]
PATTERSON CA 95363 MANIFEST # [illegible]
TIME IN
BILLING - REMITTANCE IF OTHER THAN ABOVE: TIME OUT
PPD COL
FOB
TERMS

QUANTITY	SHIPPING NAME	CLASSIFICATION	ID#	PRODUCT CODE #
	OIL, N.O.S.	COMBUSTIBLE LIQUID	N A 1270	
	FUEL OIL	COMBUSTIBLE LIQUID	N A 1993	

PRODUCT SPECS FROM TANK # (s) TO TANK #
API GRAVITY [illegible] @ [illegible] ° = [illegible] @ 60° F SAMPLE #
CENTRIFUGE % BS&W DISTILLATION % H2O
VISCOSITY FLASHPOINT SULPHER
UNSATURATES: POSITIVE ☐ NEGATIVE ☐
NET WT 29100 # PER GAL [illegible] GROSS GALLONS [illegible]
REMARKS LESS BS&W [illegible]
NET GALLONS [illegible]
PRICE GAL BBL
DRIVERS SIGNATURE [illegible] FREIGHT CHARGES
RECEIVED BY [illegible] RESALE S/T
DATE RECEIVED [illegible] TOTAL

WHITE-OFFICE GREEN-OFFICE CANARY-INV CONTROL/OFFICE PINK-INV CONTROL/PLANT GOLD-CUSTOMER

Department of Health Services
Toxic Substances Control Division
Sacramento, California

the shaded areas
d by Federal law

Waste No.
State
EPA/Other
State
EPA/Other
State
EPA/Other
State
EPA/Other

shipping name
ternational and
have determined
ch minimizes the
ize my waste

Month Day Year

Signature
Month Day Year
18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year
19. Discrepancy Indication Space
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19
Printed/Typed Name
Signature
Month Day Year

DHS 8022 A (1/88)
EPA 8700-22

Do Not Write Below This Line

ATTACHMENT #3

GALLAGHER AND BURKE CERTIFICATION

KLEINFELDER

April 13, 1993
File: 11-4017-01

SUMMARY OF LABORATORY TEST RESULTS

Source: Source: 3/4"-Class II Recycled Aggregate Base Material

Submitted by: Gallagher & Burke, Inc. on 3/31/93

Lab No.: 3613

Grading Analysis
(ASTM C-136)

Sieve Size	% Passing	Caltrans Specs., Sec. 26 3/4" Class-II AB (Operating Range)
1"	100	100
3/4"	95	90 - 100
#4	53	35 - 60
#30	23	10 - 30
#200	7.9	2 - 9

R-Value / Sand Equivalent / Duribility Index

Test Type	3/4" Class-II AB / Recycled	Caltrans Specs., Sec. 26
R-Value (CAL-301)	84	78 (Min.)
Expansion Pressure (psf)	0	-----
Sand Equivalent (CAL-217)	47	25 (Min.)
Durability Index, Coarse (CAL-229)	90	-----
Durability Index, Fine	61	35 (Min.)

Liquid Limit & Plasticity Index

Sample I.D.	Liquid Limit	Plasticity Index
3/4" Class-II AB / Recycled (Portion Passing #40 Sieve)	40	10

Maximum Dry Density
& Optimum Moisture Content
(ASTM D-1557)

Sample I.D.	Maximum Dry Density	Optimum Moisture %
3/4" Class-II AB / Recycled	132	7.7

ATTACHMENT #4

CERTIFICATE OF ANALYSIS (10/5/93)

* refer to 1993 for further details

90103

Section I

Chain of Custody and Analysis Request

page__of__

Consultant: Steen Valve Machine
Address: 98 Hagen Ranch Loop
Oakland Ca 94621
Phone No. 510-635-9099 Fax No. 510-635-2223
Project Manager: TERRY R. BOUQUENOY
Alternate Contact: DAVE CURTO
Project No. 1899 DENNISON P.O. No. TERRY

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

Superior Precision Analytical, Inc.
P.O. Box 1545
Martinez, California 94553
313-0850
Martinez 1 (510) 229-1512 Martinez 2 (510) 229-0166
SanFrancisco (415) 647-2081

Sampler: SOILS EXPLORATION SERVICE
Regulatory Agency: _____

Section II: Analysis Request

635-9948

Laboratory Sample Identification	S = Soil A = Air W = Water Matrix	mod 8015 - Gas	mod 8015 - BTEX	mod 8015 - Diesel	8010	8240	CAM17	TCLP Metals:	Metals:	418.1 - TPH by IR	O & G	PCBs			Date Sampled	Time Sampled	Number of Containers	Preservative (yes or no)
1 BORING #1		X	X	X														
2 BORING #2		X	X	X			X											
3 BORING #3		X	X	X			X											
4 BORING #4		X	X	X														
5 BORING #5		X	X	X			X											
6 BORING #6		X	X	X			X											
7																		
8																		
9																		
10																		
11																		
12																		

Sampling Remarks
- ☐ Bio-remediation
- ☐ Underground storage tank
- ☐ Monitoring
- ☐ Recent Contamination
- ☐ Unknown Compounds

Relinquished by		Data/Time	Received by	Date/Time
Organization	SOILS EXPLORATION	9-27-93	Organization AERO	9/27 11:25
Relinquished by		Date/Time	Received by	Date/Time
Organization	AERO	9/27 3:3	Organization	
Relinqui		Date/Time	Received by	Date/Time
Organizat			Organization	9-27 3:30pm

Lab please initial the following:
Samples Stored in Ice ye 4°C
Appropriate Containers
Samples Preserved
VOAs without Headspace
Comments

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

SOILS EXPLORATION SERVICE
Attn: TERRY R. BOUQUENOY

Project 1899 DENNISEN
Reported 03-October-1993

ANALYSIS FOR CAM 17 METALS

California Administration Code Title 22, Paragraph 66700 & EPA Methods SW-846 6010 & 7000 series.

Chronology

Laboratory Number 90103

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
BORING #2	09/27/93	09/27/93	09/30/93	10/01/93		2
BORING #3	09/27/93	09/27/93	09/30/93	10/01/93		3
BORING #5	09/27/93	09/27/93	09/30/93	10/01/93		5
BORING #6	09/27/93	09/27/93	09/30/93	10/01/93		6

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SOILS EXPLORATION SERVICE
Attn: TERRY R. BOUQUENOY

Project 1899 DENNISEN
Reported 03-October-1993

ANALYSIS FOR CAM 17 METALS

Laboratory Number	Sample Identification	Matrix
90103- 2	BORING #2	Soil
90103- 3	BORING #3	Soil
90103- 5	BORING #5	Soil
90103- 6	BORING #6	Soil

RESULTS OF ANALYSIS

Laboratory Number:		90103- 2	90103- 3	90103- 5	90103- 6
Antimony	(Sb):	ND<5	ND<5	ND<5	ND<5
Arsenic	(As):	3	4	ND<1	5
Barium	(Ba):	56	54	34	54
Beryllium	(Be):	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Cadmium	(Cd):	ND<0.5	0.6	ND<0.5	ND<0.5
Chromium	(Cr):	52	77	38	51
Cobalt	(Co):	12	11	7	12
Copper	(Cu):	18	30	6	12
Lead	(Pb):	ND<5	8	ND<5	ND<5
Mercury	(Hg):	ND<0.05	0.13	ND<0.05	0.30
Molybdenum	(Mo):	ND<5	ND<5	ND<5	ND<5
Nickel	(Ni):	76	84	33	68
Selenium	(Se):	ND<1	ND<1	ND<1	ND<1
Silver	(Ag):	ND<5	ND<5	ND<5	ND<5
Thallium	(Tl):	ND<5	ND<5	ND<5	ND<5
Vanadium	(V):	36	36	37	26
Zinc	(Zn):	51	64	23	42
Concentration:		mg/Kg	mg/Kg	mg/Kg	mg/Kg

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

ANALYSIS FOR CAM 17 METALS
Quality Assurance and Control Data - Soil

Laboratory Number 90103

Compound		Method Blank (mg/Kg)	PQL (mg/Kg)	Average Spike Recovery (%)	Limits (%)	RPD (%)
Antimony	(Sb):	ND<5	5	107%	75-125	3%
Arsenic	(As):	ND<1	1	87%	75-125	1%
Barium	(Ba):	ND<5	5	105%	75-125	0%
Beryllium	(Be):	ND<0.5	0.5	111%	75-125	0%
Cadmium	(Cd):	ND<0.5	0.5	116%	75-125	1%
Chromium	(Cr):	ND<5	5	107%	75-125	2%
Cobalt	(Co):	ND<5	5	115%	75-125	3%
Copper	(Cu):	ND<5	5	107%	75-125	0%
Lead	(Pb):	ND<5	5	114%	75-125	1%
Mercury	(Hg):	ND<0.05	0.05	116%	75-125	2%
Molybdenum	(Mo):	ND<5	5	108%	75-125	0%
Nickel	(Ni):	ND<5	5	112%	75-125	1%
Selenium	(Se):	ND<1	1	100%	75-125	3%
Silver	(Ag):	ND<5	5	105%	75-125	2%
Thallium	(Tl):	ND<5	5	113%	75-125	2%
Vanadium	(V):	ND<5	5	107%	75-125	1%
Zinc	(Zn):	ND<5	5	109%	75-125	5%

Definitions:

ND = Not Detected
PQL = Practical Quantitation Limit

RPD = Relative Percent Difference

QC File No. 90103

10/5/93
Senior Chemist
Account Manager

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

SOILS EXPLORATION SERVICE
Attn: TERRY R. BOUQUENOY

Project 1899 DENNISEN
Reported 10/04/93

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
90103- 1	BORING #1	09/27/93	10/01/93	Soil
90103- 2	BORING #2	09/27/93	10/01/93	Soil
90103- 3	BORING #3	09/27/93	10/01/93	Soil
90103- 4	BORING #4	09/27/93	10/01/93	Soil
90103- 5	BORING #5	09/27/93	10/01/93	Soil
90103- 6	BORING #6	09/27/93	10/01/93	Soil

RESULTS OF ANALYSIS

Laboratory Number:	90103- 1 (1)	90103- 2 (2)	90103- 3 (3)	90103- 4 (4)	90103- 5 (5)
Gasoline:	17	ND<1	ND<1	ND<1	ND<1
Benzene:	0.14	0.013	ND<.003	ND<.003	ND<.003
Toluene:	1.1	0.075	ND<.003	ND<.003	ND<.003
Ethyl Benzene:	0.38	0.021	ND<.003	ND<.003	ND<.003
Total Xylenes:	1.6	0.084	ND<.009	ND<.009	ND<.009
Diesel Range:	89	ND<10	ND<10	ND<10	ND<10
Concentration:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg

Laboratory Number:	90103- 6
Gasoline:	ND<1
Benzene:	ND<.003
Toluene:	ND<.003
Ethyl Benzene:	ND<.003
Total Xylenes:	ND<.009
Diesel Range:	26
Concentration:	mg/Kg

fin

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CERTIFICATE OF ANALYSIS
ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 90103

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = parts per million (ppm)

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 10mg/kg

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.003mg/kg

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	112/99	12%	70-130
Benzene:	98/102	4%	70-130
Toluene:	91/99	8%	70-130
Ethyl Benzene:	96/98	2%	70-130
Total Xylenes:	94/96	2%	70-130
Diesel Range:	114/119	4%	75-125

10/5/93
Senior Chemist

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

SOILS EXPLORATION SERVICE
Attn: TERRY R. BOUQUENOIY

Project 1899 DENNISON
Reported 11/02/93

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
90405- 1	BORING #1	09/27/93	11/02/93	Soil
90405- 2	BORING #2	09/27/93	11/02/93	Soil
90405- 3	BORING #3	09/27/93	11/02/93	Soil
90405- 4	BORING #4	09/27/93	11/02/93	Soil
90405- 5	BORING #5	09/27/93	11/02/93	Soil
90405- 6	BORING #6	09/27/93	11/02/93	Soil

RESULTS OF ANALYSIS

Laboratory Number:	90405- 1	90405- 2	90405- 3	90405- 4	90405- 5
Oil and Grease:	ND<50	73	ND<50	ND<50	ND<50
Concentration:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg

Laboratory Number:	90405- 6
Oil and Grease:	ND<50
Concentration:	mg/Kg

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

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 90405

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = parts per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil and Grease:	78/84	7%	56-106

Senior Chemist

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BLAKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 52727-1
CLIENT: Hydro-Chem Services

DATE RECEIVED: 11/05/90
DATE REPORTED: 11/30/90
JOB NO.: Alameda Boat

CAM-17 METALS
Methods: EPA SW 846 6000 & 7000 SERIES

SAMPLE: Alamrda Boat Yard

Compound	Results (mg/kg)	Detection limit (mg/kg)	EPA METHOD	T
Antimony	ND	3	6010	5
Arsenic	8	0.3	7060	
Barium	200	0.5	6010	10
Beryllium	ND	0.2	6010	
Cadmium	ND	0.5	6010	10
Chromium (total)	140	1	6010	25
Cobalt	33	1	6010	50
Copper*	2400	0.6	6010	25
Lead *	320	5	6010	100
Mercury	0.85	0.05	7470	2
Molybdenum	ND	2	6010	350
Nickel	90	1	6010	200
Selenium	ND	0.3	7740	10
Silver	ND	0.1	6010	50
Thallium	0.6	0.5	7841	30
Vanadium	46	1	6010	24
Zinc*	2400	2	6010	500

mg/kg = part per million (ppm)

QA/QC Summary: Spike Recovery Range: 40-108%.
Analysis subcontracted to Kennedy/Jenks/Chilton DOHS# 113.

Richard Srna, Ph.D.

Laboratory Director

Terry — Hydro Chem
Subsurface Consultants.
Jim Bowers Pres — 268-0461

Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878
2323 Fifth Street, Berkeley, CA 94710. Phone (415) 486-0900

DATE RECEIVED: 02/13/91
DATE REPORTED: 02/19/91

LAB NUMBER: 102987

CLIENT: SUBSURFACE CONSULTANTS

REPORT ON: 3 WATER SAMPLES, 10 SOIL SAMPLES & 2 SOIL COMPOSITE SAMPLES

PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD

RESULTS: SEE ATTACHED

QA/QC Approval

Final Approval

Curtis & Tompkins, Ltd

LAB NUMBER: 102987
CLIENT: SUBSURFACE CONSULTANTS
PROJECT # : 643.001
LOCATION: CRYER SHIPYARD

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/15/91
DATE REPORTED: 02/19/91

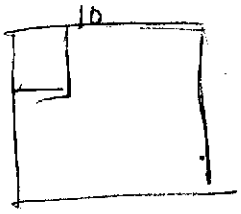
ANALYSIS: HYDROCARBON OIL AND GREASE
METHOD: SMWW 17:5520EF

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
102987-5	1 @ 3.5	640	mg/Kg	50
102987-6	2 @ 1.0	840	mg/Kg	50
102987-8	2 @ 6.0	ND	mg/Kg	50
102987-13	5 @ 4.0	ND	mg/Kg	50

ND = Not detected at or above reporting limit

QA/QC SUMMARY

RPD, %	4
RECOVERY, %	83



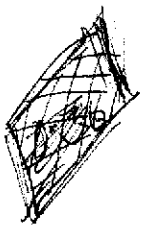
Curtis & Tompkins, L

LABORATORY NUMBER: 102987
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD

DATE RECEIVED: 02/13/91
DATE EXTRACTED: 02/13/91
DATE ANALYZED: 02/15/91
DATE REPORTED: 02/19/91

Extractable Petroleum Hydrocarbons in Soils & Wastes
California DOHS Method
LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	REPORTING LIMIT* (mg/Kg)
102987-5	1 @ 3.5	ND	3,600	10
102987-6	2 @ 1.0	ND	5,000	100
102987-8	2 @ 6.0	ND	2	1
102987-13	5 @ 4.0	ND	3	1



ND = Not Detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	5
RECOVERY, %	96

Curtis & Tompkins, Ltc

LABORATORY NUMBER: 102987-1
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: BORING 1

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/13/91
DATE REPORTED: 02/19/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	REPORTING LIMIT ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	1.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	ND	1.0
1,2-dichloroethene (total)	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethylvinyl ether	ND	1.0
bromoform	ND	2.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0
	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	12
RECOVERY, %	94

Curtis & Tompkins, Ltc

LABORATORY NUMBER: 102987-1
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: BORING 1

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/13/91
DATE REPORTED: 02/19/91

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1.0
Toluene	ND	1.0
Ethyl Benzene	ND	1.0
Total Xylenes	ND	1.0
Chlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	2
RECOVERY, %	99

Curtis & Tomokins, Ltd

LABORATORY NUMBER: 102987-2
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: BORING 2

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	REPORTING LIMIT ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	1.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	ND	1.0
1,2-dichloroethene (total)	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethylvinyl ether	ND	1.0
bromoform	ND	2.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0
	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	4
RECOVERY, %	100

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-2
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: BORING 2

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1.0
Toluene	ND	1.0
Ethyl Benzene	ND	1.0
Total Xylenes	ND	1.0
Chlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	1
RECOVERY, %	101

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-3
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: BORING 3

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/13/91
DATE REPORTED: 02/19/91

EPA 8010
Purgeable Halocarbons in Water

Compound	Result ug/L	REPORTING LIMIT ug/L
chloromethane	ND	2.0
bromomethane	ND	2.0
vinyl chloride	ND	2.0
chloroethane	ND	2.0
methylene chloride	ND	1.0
trichlorofluoromethane	ND	1.0
1,1-dichloroethene	ND	1.0
1,1-dichloroethane	ND	1.0
1,2-dichloroethene (total)	ND	1.0
chloroform	ND	1.0
freon 113	ND	1.0
1,2-dichloroethane	ND	1.0
1,1,1-trichloroethane	ND	1.0
carbon tetrachloride	ND	1.0
bromodichloromethane	ND	1.0
1,2-dichloropropane	ND	1.0
cis-1,3-dichloropropene	ND	1.0
trichloroethylene	ND	1.0
1,1,2-trichloroethane	ND	1.0
trans-1,3-dichloropropene	ND	1.0
dibromochloromethane	ND	1.0
2-chloroethylvinyl ether	ND	2.0
bromoform	ND	1.0
tetrachloroethene	ND	1.0
1,1,2,2-tetrachloroethane	ND	1.0
chlorobenzene	ND	1.0
1,3-dichlorobenzene	ND	1.0
1,2-dichlorobenzene	ND	1.0
1,4-dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	12
RECOVERY, %	94

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-3
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: BORING 3

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/13/91
DATE REPORTED: 02/19/91

EPA 8020: Volatile Aromatic Hydrocarbons in Water

COMPOUND	RESULT ug/L	REPORTING LIMIT ug/L
Benzene	ND	1.0
Toluene	ND	1.0
Ethyl Benzene	ND	1.0
Total Xylenes	ND	1.0
Chlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %	2
RECOVERY, %	99

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-4
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: 1 @ 1.0

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5	EPA 6010
Arsenic	2.8	2.5	EPA 7060
Barium	36	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	2.0	0.5	EPA 6010
Chromium (total)	36	0.5	EPA 6010
Cobalt	5.7	0.5	EPA 6010
Copper	20	1	EPA 6010
Lead	ND	2.5	EPA 7420
Mercury	ND	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	19	0.5	EPA 6010
Selenium	ND	2.5	EPA 7760
Silver	16	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	20	1	EPA 6010
Zinc	42	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	3	89	Mercury	7	102
Arsenic	13	89	Molybdenum	<1	94
Barium	<1	101	Nickel	3	101
Beryllium	<1	96	Selenium	2	90
Cadmium	5	103	Silver	6	105
Chromium	<1	98	Thallium	5	88
Cobalt	1	95	Vanadium	<1	98
Copper	<1	98	Zinc	<1	98
Lead	5	87			

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-5
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: 1 @ 3.5

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5	EPA 6010
Arsenic	ND	2.5	EPA 7060
Barium	55	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	1.4	0.5	EPA 6010
Chromium (total)	27	0.5	EPA 6010
Cobalt	3.4	0.5	EPA 6010
Copper	24	1	EPA 6010
Lead	ND	2.5	EPA 7420
Mercury	ND	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	23	0.5	EPA 6010
Selenium	ND	2.5	EPA 7740
Silver	ND	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	14	1	EPA 6010
Zinc	69	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	3	89	Mercury	7	102
Arsenic	13	89	Molybdenum	<1	94
Barium	<1	101	Nickel	3	101
Beryllium	<1	96	Selenium	2	90
Cadmium	5	103	Silver	6	105
Chromium	<1	98	Thallium	5	88
Cobalt	1	95	Vanadium	<1	98
Copper	<1	98	Zinc	<1	98
Lead	5	87			

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-6
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: 2 @ 1.0

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5	EPA 6010
Arsenic	ND	2.5	EPA 7060
Barium	100	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	2.1	0.5	EPA 6010
Chromium (total)	27	0.5	EPA 6010
Cobalt	9.0	0.5	EPA 6010
Copper	75	1	EPA 6010
Lead	24	2.5	EPA 7420
Mercury	0.2	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	32	0.5	EPA 6010
Selenium	ND	2.5	EPA 7740
Silver	ND	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	15	1	EPA 6010
Zinc	120	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	3	89	Mercury	7	102
Arsenic	13	89	Molybdenum	<1	94
Barium	<1	101	Nickel	3	101
Beryllium	<1	96	Selenium	2	90
Cadmium	5	103	Silver	6	105
Chromium	<1	98	Thallium	5	88
Cobalt	1	95	Vanadium	<1	98
Copper	<1	98	Zinc	<1	98
Lead	5	87			

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-7
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: 2 @ 3.5

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5	EPA 6010
Arsenic	ND	2.5	EPA 7060
Barium	57	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	1.0	0.5	EPA 6010
Chromium (total)	30	0.5	EPA 6010
Cobalt	7.0	0.5	EPA 6010
Copper	31	1	EPA 6010
Lead	ND	2.5	EPA 7420
Mercury	0.2	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	34	0.5	EPA 6010
Selenium	ND	2.5	EPA 6010
Silver	ND	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	11	1	EPA 6010
Zinc	50	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	3	89	Mercury	7	102
Arsenic	13	89	Molybdenum	<1	94
Barium	<1	101	Nickel	3	101
Beryllium	<1	96	Selenium	2	90
Cadmium	5	103	Silver	6	105
Chromium	<1	98	Thallium	5	88
Cobalt	1	95	Vanadium	<1	98
Copper	<1	98	Zinc	<1	98
Lead	5	87			

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-9
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: 3 @ 1.5

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	14	5	EPA 7041
Arsenic	5.9	2.5	EPA 7060
Barium	50	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	4.2	0.5	EPA 6010
Chromium (total)	39	0.5	EPA 6010
Cobalt	10	0.5	EPA 6010
Copper	1,700	1	EPA 6010
Lead	550	2.5	EPA 6010
Mercury	0.6	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	65	0.5	EPA 6010
Selenium	ND	2.5	EPA 6010
Silver	ND	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	25	1	EPA 6010
Zinc	220	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	3	89	Mercury	7	102
Arsenic	13	89	Molybdenum	<1	94
Barium	<1	101	Nickel	3	101
Beryllium	<1	96	Selenium	2	90
Cadmium	5	103	Silver	6	105
Chromium	<1	98	Thallium	5	88
Cobalt	1	95	Vanadium	<1	98
Copper	<1	98	Zinc	<1	98
Lead	5	87			

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-10
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: 4 @ 1.5

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5	EPA 6010
Arsenic	3.1	2.5	EPA 7060
Barium	62	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	2.3	0.5	EPA 6010
Chromium (total)	47	0.5	EPA 6010
Cobalt	7.7	0.5	EPA 6010
Copper	230	1	EPA 6010
Lead	21	2.5	EPA 7420
Mercury	2.3	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	35	0.5	EPA 6010
Selenium	ND	2.5	EPA 7740
Silver	5.8	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	22	1	EPA 6010
Zinc	120	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	3	89	Mercury	7	102
Arsenic	13	89	Molybdenum	<1	94
Barium	<1	101	Nickel	3	101
Beryllium	<1	96	Selenium	2	90
Cadmium	5	103	Silver	6	105
Chromium	<1	98	Thallium	5	88
Cobalt	1	95	Vanadium	<1	98
Copper	<1	98	Zinc	<1	98
Lead	5	87			

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-11
CLIENT: SUBSURFACE CONSULTANTS
JOB #: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: COMPOSITE 1@1.0,3@1.5 & 4@1.5

DATE RECEIVED: 02/13/91
DATE REQUESTED: 02/19/91
DATE EXTRACTED: 02/15/91
DATE ANALYZED: 02/15/91
DATE REPORTED: 02/19/91

EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
Extraction Method: EPA 3550 Sonication

ACID COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Phenol	ND	330
2-Chlorophenol	ND	330
Benzyl Alcohol	ND	330
2-Methylphenol	ND	330
4-Methylphenol	ND	330
2-Nitrophenol	ND	1650
2,4-Dimethylphenol	ND	330
Benzoic Acid	ND	1650
2,4-Dichlorophenol	ND	330
4-Chloro-3-methylphenol	ND	330
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	1650
2,4-Dinitrophenol	ND	1650
4-Nitrophenol	ND	1650
4,6-Dinitro-2-methylphenol	ND	1650
Pentachlorophenol	ND	1650
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	330
Aniline	ND	330
Bis(2-chloroethyl)ether	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
Bis(2-chloroisopropyl)ether	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
Bis(2-chloroethoxy)methane	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
2-Methylnaphthalene	ND	330
Hexachlorocyclopentadiene	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1650

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-11 EPA 8270
SAMPLE ID: COMPOSITE 1@1.0,3@1.5 & 4@1.5

COMPOUND	RESULT ug/kg	REPORTING LIMIT ug/kg
CHLORINATED PESTICIDES		
alpha-BHC	ND	330
beta-BHC	ND	330
gamma-BHC	ND	330
delta-BHC	ND	330
Heptachlor	ND	330
Aldrin	ND	330
Heptachlor Epoxide	ND	330
Endosulfan I	ND	330
4,4'-DDE	ND	330
Dieldrin	ND	330
Endrin	ND	330
Endosulfan II	ND	330
4,4'-DDD	ND	330
Endrin Aldehyde	ND	330
Endosulfan Sulfate	ND	330
4,4'-DDT	ND	330
Chlordane	ND	1650
Toxaphene	ND	1650
Methoxychlor	ND	1650
Aroclor 1016	ND	1650
Aroclor 1221	ND	1650
Aroclor 1232	ND	1650
Aroclor 1242	ND	1650
Aroclor 1248	ND	1650
Aroclor 1254	ND	1650
Aroclor 1260	ND	1650

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Compound	%Recovery	Compound	%Recovery
2-Fluorophenol	108 %	Nitrobenzene-d5	103 %
Phenol-d6	144 %	2-Fluorobiphenyl	98 %
2,4,6-Tribromophenol	106 %	Terphenyl-d14	77 %

LABORATORY NUMBER: 102987-11
SAMPLE ID: COMPOSITE 1@1.0,3@1.5 & 4@1.5

EPA 8270

BASE/NEUTRAL COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	ND	330
4-Nitroaniline	ND	1650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	ND	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	ND	330
Benzidine	ND	330
Pyrene	ND	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1650
Benzo (a) anthracene	ND	330
Chrysene	ND	330
Bis (2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo (b) fluoranthene	ND	330
Benzo (k) fluoranthene	ND	330
Benzo (a) pyrene	ND	330
Indeno (1,2,3-cd) pyrene	ND	330
Dibenzo (a,h) anthracene	ND	330
Benzo (g,h,i) perylene	ND	330

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-12
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: 5 @ 1.0

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5	EPA 6010
Arsenic	4.9	2.5	EPA 7060
Barium	120	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	3.4	0.5	EPA 6010
Chromium (total)	26	0.5	EPA 6010
Cobalt	7.5	0.5	EPA 6010
Copper	770	1	EPA 6010
Lead	190	2.5	EPA 6010
Mercury	0.5	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	33	0.5	EPA 6010
Selenium	ND	2.5	EPA 6010
Silver	ND	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	19	1	EPA 6010
Zinc	350	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	3	89	Mercury	7	102
Arsenic	13	89	Molybdenum	<1	94
Barium	<1	101	Nickel	3	101
Beryllium	<1	96	Selenium	2	90
Cadmium	5	103	Silver	6	105
Chromium	<1	98	Thallium	5	88
Cobalt	1	95	Vanadium	<1	98
Copper	<1	98	Zinc	<1	98
Lead	5	87			

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-13
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: 5 @ 4.0

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5	EPA 6010
Arsenic	ND	2.5	EPA 7060
Barium	100	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	1.1	0.5	EPA 6010
Chromium (total)	33	0.5	EPA 6010
Cobalt	7.7	0.5	EPA 6010
Copper	25	1	EPA 6010
Lead	2.9	2.5	EPA 7420
Mercury	ND	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	54	0.5	EPA 6010
Selenium	ND	2.5	EPA 6010
Silver	ND	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	9.7	1	EPA 6010
Zinc	45	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	3	89	Mercury	7	102
Arsenic	13	89	Molybdenum	<1	94
Barium	<1	101	Nickel	3	101
Beryllium	<1	96	Selenium	2	90
Cadmium	5	103	Silver	6	105
Chromium	<1	98	Thallium	5	88
Cobalt	1	95	Vanadium	<1	98
Copper	<1	98	Zinc	<1	98
Lead	5	87			

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-14
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: 6 @ 10

DATE RECEIVED: 02/13/91
DATE ANALYZED: 02/14/91
DATE REPORTED: 02/19/91

Title 26 Metals in Soils & Wastes
Digestion Method: EPA 3050

METAL	RESULT mg/Kg	REPORTING LIMIT mg/Kg	METHOD
Antimony	ND	5.	EPA 6010
Arsenic	5.8	2.5	EPA 7060
Barium	77	0.5	EPA 6010
Beryllium	ND	0.5	EPA 6010
Cadmium	5.1	0.5	EPA 6010
Chromium (total)	31	0.5	EPA 6010
Cobalt	10	0.5	EPA 6010
Copper	490	1	EPA 6010
Lead	190	2.5	EPA 6010
Mercury	ND	0.1	EPA 7471
Molybdenum	ND	0.5	EPA 6010
Nickel	22	0.5	EPA 6010
Selenium	ND	2.5	EPA 6010
Silver	ND	1	EPA 6010
Thallium	ND	5	EPA 6010
Vanadium	25	1	EPA 6010
Zinc	130	0.5	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

	RPD,%	RECOVERY,%		RPD,%	RECOVERY,%
Antimony	3	89	Mercury	7	102
Arsenic	13	89	Molybdenum	<1	94
Barium	<1	101	Nickel	3	101
Beryllium	<1	96	Selenium	2	90
Cadmium	5	103	Silver	6	105
Chromium	<1	98	Thallium	5	88
Cobalt	1	95	Vanadium	<1	98
Copper	<1	98	Zinc	<1	98
Lead	5	87			

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-15
CLIENT: SUBSURFACE CONSULTANTS
JOB #: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: COMPOSITE 2@1.0,5@1.0 & 6@1.0

DATE RECEIVED: 02/13/91
DATE REQUESTED: 02/19/91
DATE EXTRACTED: 02/15/91
DATE ANALYZED: 02/15/91
DATE REPORTED: 02/19/91

EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
Extraction Method: EPA 3550 Sonication

ACID COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Phenol	ND	330
2-Chlorophenol	ND	330
Benzyl Alcohol	ND	330
2-Methylphenol	ND	330
4-Methylphenol	ND	330
2-Nitrophenol	ND	1650
2,4-Dimethylphenol	ND	330
Benzoic Acid	ND	1650
2,4-Dichlorophenol	ND	330
4-Chloro-3-methylphenol	ND	330
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	1650
2,4-Dinitrophenol	ND	1650
4-Nitrophenol	ND	1650
4,6-Dinitro-2-methylphenol	ND	1650
Pentachlorophenol	ND	1650
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	330
Aniline	ND	330
Bis(2-chloroethyl)ether	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
Bis(2-chloroisopropyl)ether	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
Bis(2-chloroethoxy)methane	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
2-Methylnaphthalene	380	330
Hexachlorocyclopentadiene	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1650

LABORATORY NUMBER: 102987-15
SAMPLE ID: COMPOSITE 2@1.0,5@1.0 & 6@1.0

EPA 8270

BASE/NEUTRAL COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	DETECTED (190)	330
4-Nitroaniline	ND	1650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	DETECTED (260)	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	DETECTED (240)	330
Benzidine	ND	330
Pyrene	DETECTED (180)	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1650
Benzo (a) anthracene	ND	330
Chrysene	ND	330
Bis (2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo (b) fluoranthene	DETECTED (240)	330
Benzo (k) fluoranthene	ND	330
Benzo (a) pyrene	ND	330
Indeno (1,2,3-cd) pyrene	ND	330
Dibenzo (a,h) anthracene	ND	330
Benzo (g,h,i) perylene	ND	330

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 102987-15
SAMPLE ID: COMPOSITE 2@1.0,5@1.0 & 6@1.0

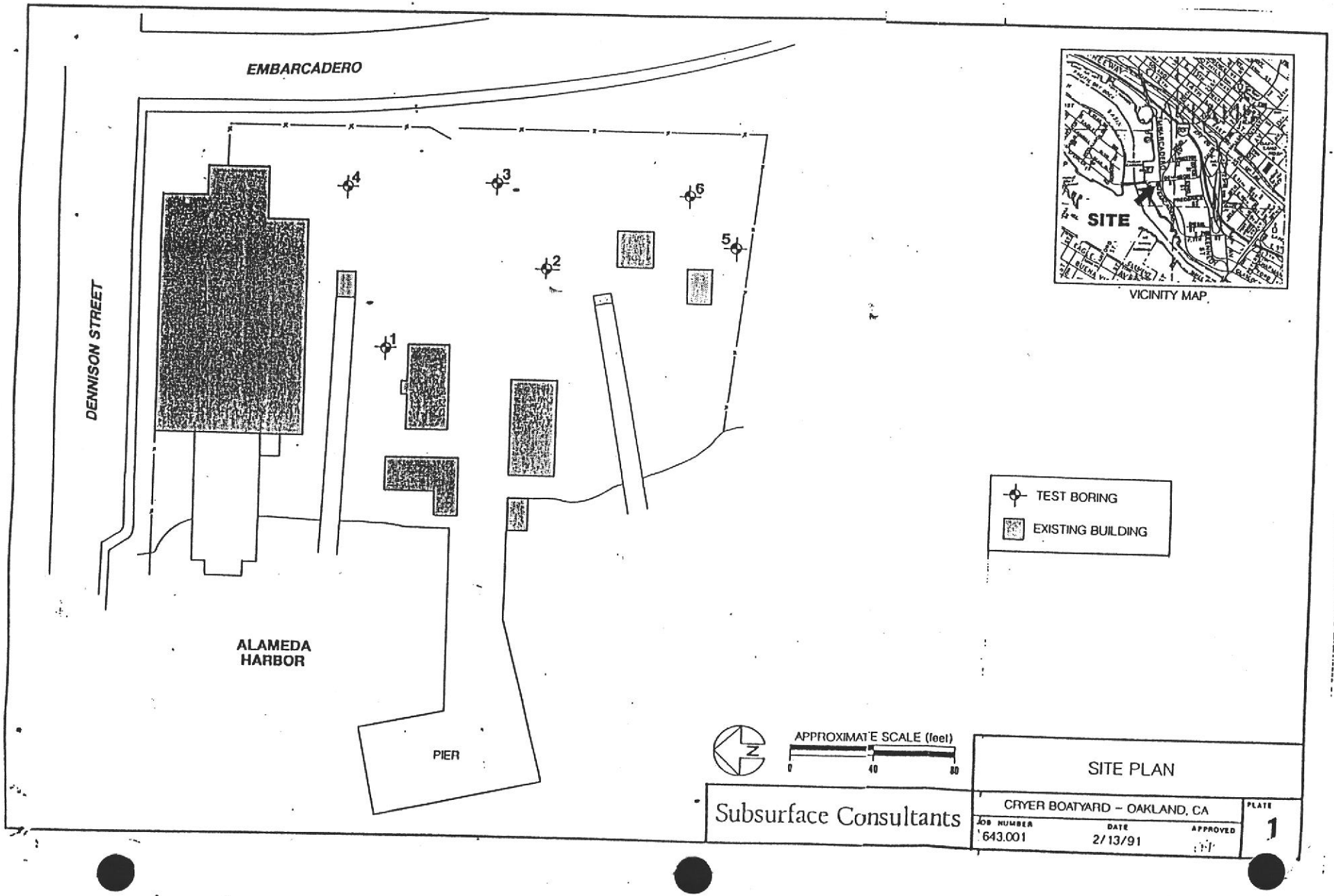
EPA 8270

COMPOUND	RESULT ug/kg	REPORTING LIMIT ug/kg
CHLORINATED PESTICIDES		
alpha-BHC	ND	330
beta-BHC	ND	330
gamma-BHC	ND	330
delta-BHC	ND	330
Heptachlor	ND	330
Aldrin	ND	330
Heptachlor Epoxide	ND	330
Endosulfan I	ND	330
4,4'-DDE	ND	330
Dieldrin	ND	330
Endrin	ND	330
Endosulfan II	ND	330
4,4'-DDD	ND	330
Endrin Aldehyde	ND	330
Endosulfan Sulfate	ND	330
4,4'-DDT	ND	330
Chlordane	ND	1650
Toxaphene	ND	1650
Methoxychlor	ND	1650
Aroclor 1016	ND	1650
Aroclor 1221	ND	1650
Aroclor 1232	ND	1650
Aroclor 1242	ND	1650
Aroclor 1248	ND	1650
Aroclor 1254	ND	1650
Aroclor 1260	ND	1650

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Compound	%Recovery	Compound	%Recovery
2-Fluorophenol	81 %	Nitrobenzene-d5	81 %
Phenol-d6	108 %	2-Fluorobiphenyl	77 %
2,4,6-Tribromophenol	93 %	Terphenyl-d14	54 %



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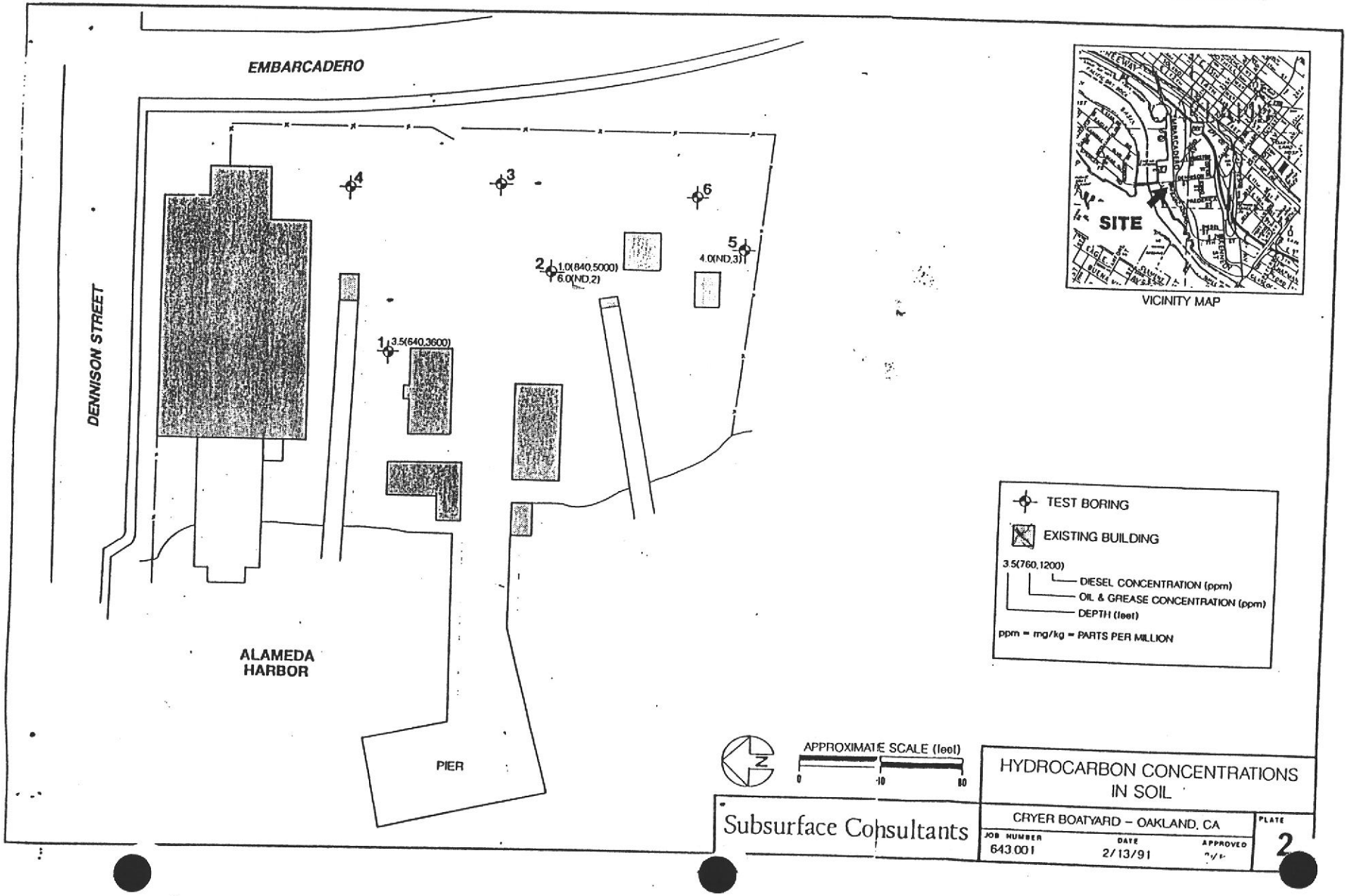
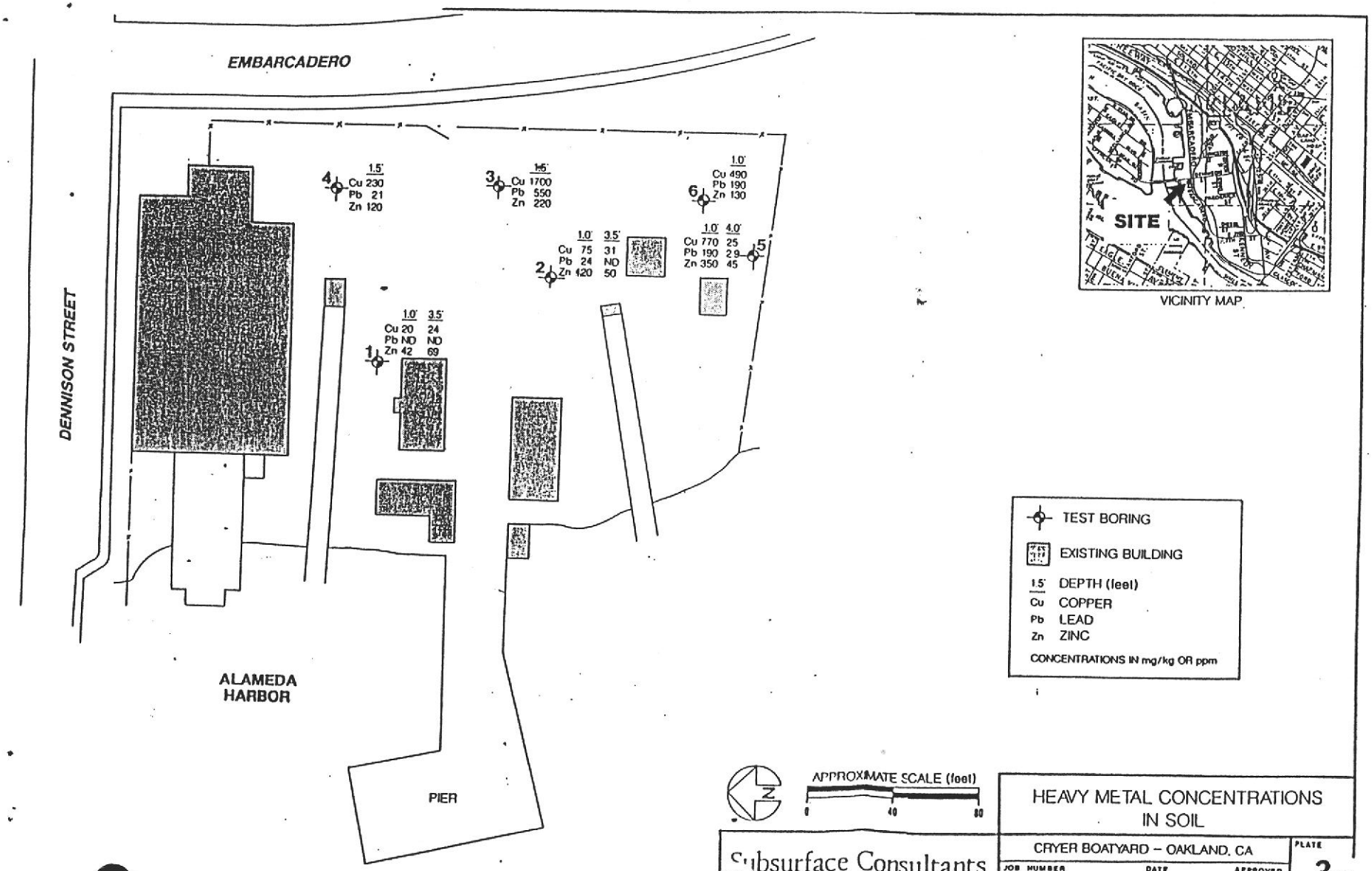
SITE PLAN

CRYER BOATYARD – OAKLAND, CA

JOB NUMBER	DATE	APPROVED	PLATE
643.001	2/13/91		1


EMBARCADERO
DENNISON STREET
ALAMEDA HARBOR
PIER
4
3
6
5
4.0(ND,3)
2
1.0(840,5000)
6.0(ND,2)
1
3.5(640,3600)
SITE
VICINITY MAP
TEST BORING
EXISTING BUILDING
3.5(760,1200)
DIESEL CONCENTRATION (ppm)
OIL & GREASE CONCENTRATION (ppm)
DEPTH (feet)
ppm = mg/kg = PARTS PER MILLION
N
APPROXIMATE SCALE (feet)
0
40
80
HYDROCARBON CONCENTRATIONS IN SOIL
Subsurface Consultants
CRYER BOATYARD – OAKLAND, CA
JOB NUMBER
643.001
DATE
2/13/91
APPROVED
PLATE
2



HEAVY METAL CONCENTRATIONS IN SOIL

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CRYER BOATYARD – OAKLAND, CA

JOB NUMBER	DATE	APPROVED	PLATE
643.001	2/13/91	CRF	3

LOG OF TEST BORING 1

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 2/8/91
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
			0	0		8	BROWN SILTY SAND (SM-SP) loose, moist (fill)
			41.2			3	MOTTLED BROWN AND GRAY SANDY CLAY (CL) medium stiff, moist (fill)
			30.8	5		4	GRAY AND BLACK CLAYEY SILT (MH) soft, moist (Bay Mud)
			0				
			0			4	GROUNDWATER LEVEL DURING DRILLING
				10			
			0			3	
				15			
			0			5	BORING BACKFILLED WITH CEMENT GROUT
				20			
				25			
				30			
				35			
				40			

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

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CRYER BOATYARD - OAKLAND, CA

JOB NUMBER 643.001 | DATE 2/13/91 | APPROVED CKF

PLATE 4

LOG OF TEST BORING 2

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 2/8/91
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
		150.7		0		26	BROWN SAND (SP) loose, moist
		30.8				14	LIGHT BROWN CLAYEY SAND (SC) medium dense, moist (fill)
		5.4		5		4	GROUNDWATER LEVEL DURING DRILLING
						6	BLACK CLAYEY SILT (MH) soft, moist (Bay Mud)
		0		10			GRAY CLAYEY SILT (MH) soft, moist (Bay Mud)
		0				5	
				15			BORING BACKFILLED WITH CEMENT GROUT

Subsurface Consultants	CRYER BOATYARD - OAKLAND, CA			PLATE
	JOB NUMBER 643.001	DATE 2/13/91	APPROVED CKF	5

LOG OF TEST BORING 3

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 2/8/91
— ELEVATION —

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
			1.8	0		37	MOTTLED BROWN SANDY CLAY (CL) medium stiff, moist (fill)
							GRAY CLAYEY SAND (SC)
						3	medium dense, moist (fill)
			0	5			GROUNDWATER LEVEL DURING DRILLING
							GRAY CLAYEY SILT (MH)
						3	soft, wet (fill)
							GRAY SAND (SP)
							loose, wet (fill)
				10		6	
							GRAY CLAYEY SILT (MH)
							soft, moist (Bay Mud)
				15			
			0			push	BORING BACKFILLED WITH CEMENT GROUT
				20			
				25			
				30			
				35			
				40			

Subsurface Consultants

CRYER BOATYARD - OAKLAND, CA

JOB NUMBER 643.001 | DATE 2/13/91 | APPROVED OKF

PLATE 6

LOG OF TEST BORING 4

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 2/8/91
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick
			0			16	BASE ROCK - 4" thick MOTTLED BROWN AND GRAY SILTY CLAY (CL) medium stiff, moist (fill)
			0	5		17	BROWN CLAYEY SAND (SC) medium dense, wet (fill)
			0			5	GRAY SAND (SP) loose, wet (fill)
							GRAY CLAYEY SILT (MH) soft, wet (fill)
				10		push	GROUNDWATER LEVEL DURING DRILLING
			11.5				GRAY SILTY SAND (SM) loose, wet (fill)
							GRAY CLAYEY SILT (MH) soft, moist (Bay Mud)
							GRAY BROWN PEAT (Pt) soft, moist
				15			GRAY CLAYEY SILT (MH) soft, moist (Bay Mud) BORING BACKFILLED WITH CEMENT GROUT

LOG OF TEST BORING 5

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 2/8/91
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			BROWN CLAYEY SAND (SC) medium dense, moist (fill)
			0			15	BROWN SILTY SAND (SM) medium dense, moist (fill)
			39.3	5		11	GRAY AND BROWN CLAYEY SAND (SC) medium dense, moist (fill)
						9	
							GRAY SAND (SP) loose, wet
			7.8	10		push	DARK GRAY CLAYEY SILT (MH) medium stiff, moist (Bay Mud)
			0			push	BORING BACKFILLED WITH CEMENT GROUT
				15			

Subsurface Consultants

CRYER BOATYARD - OAKLAND, CA

JOB NUMBER 643.001 | DATE 2/13/91 | APPROVED DLH

PLATE 7

LOG OF TEST BORING 6

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 2/8/91
ELEVATION ---

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
			1.8	0		6	ASPHALTIC CONCRETE - 2" thick
			23.6				RED BROWN CLAYEY SAND (SC) (fill)
						push	BLACK SANDY CLAY (CL) medium stiff, moist, contains metal slag (fill)
			0	5		push	GRAY CLAYEY SILT (MH) soft, moist (fill)
					▼		GROUNDWATER LEVEL DURING DRILLING
						push	GRAY CLAYEY SILT (MH) soft, moist (fill)
				10			BROWN GRAY CLAYEY SAND (SC) medium dense, wet (fill)
						push	GRAY CLAYEY SILT (MH) soft, moist (Bay Mud)
				15			BORING BACKFILLED WITH CEMENT GROUT

Subsurface Consultants	CRYER BOATYARD - OAKLAND, CA			PLATE
	JOB NUMBER 643.001	DATE 2/13/91	APPROVED CLC	8

GENERAL SOIL CATEGORIES			SYMBOLS	TYPICAL SOIL TYPES
COARSE GRAINED SOILS More than half is larger than No. 200 sieve	GRAVEL More than half coarse fraction is larger than No. 4 sieve size	Clean Gravel with little or no fines	GW	Well Graded Gravel, Gravel-Sand Mixtures
			GP	Poorly Graded Gravel, Gravel-Sand Mixtures
		Gravel with more than 12% fines	GM	Silty Gravel, Poorly Graded Gravel-Sand-Silt Mixtures
			GC	Clayey Gravel, Poorly Graded Gravel-Sand-Clay Mixtures
	SAND More than half coarse fraction is smaller than No. 4 sieve size	Clean sand with little or no fines	SW	Well Graded Sand, Gravelly Sand
			SP	Poorly Graded Sand, Gravelly Sand
		Sand with more than 12% fines	SM	Silty Sand, Poorly Graded Sand-Silt Mixtures
			SC	Clayey Sand, Poorly Graded Sand-Clay Mixtures
FINE GRAINED SOILS More than half is smaller than No. 200 sieve	SILT AND CLAY Liquid Limit Less than 50%		ML	Inorganic Silt and Very Fine Sand, Rock Flour, Silty or Clayey Fine Sand, or Clayey Silt with Slight Plasticity
			CL	Inorganic Clay of Low to Medium Plasticity, Gravelly Clay, Sandy Clay, Silty Clay, Lean Clay
			OL	Organic Clay and Organic Silty Clay of Low Plasticity
	SILT AND CLAY Liquid Limit Greater than 50%		MH	Inorganic Silt, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silt
			CH	Inorganic Clay of High Plasticity, Fat Clay
			OH	Organic Clay of Medium to High Plasticity, Organic Silt
HIGHLY ORGANIC SOILS			PT	Peat and Other Highly Organic Soils

UNIFIED SOIL CLASSIFICATION SYSTEM

Subsurface Consultants

CRYER BOATYARD - OAKLAND, CA

JOB NUMBER	DATE	APPROVED	PLATE
643.001	2/13/91	CEF	9

Subsurface Consultants

1/3

CHAIN OF CUSTODY RECORD
& ANALYTICAL TEST REQUEST

Project Name: CLYER SHIPYARD

SCI Job Number: 643.001

Project Contact at SCI: J. BOWERS

Sampled By: J. WOLFE

Analytical Laboratory: CURTIS + TOMPKINS

Analytical Turnaround: NORMAL

TEH: EPA 8015 MOD/3550
O+G: 5520 E+F

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
1 @ 1.0	S	T	2/8/91		TITLE 26 METALS	~~CASAM/TEH~~
1 @ 3.5	S	T			TITLE 26 METALS, O+G, TEH	
2 @ 1.0	S	T			TITLE 26 METALS, TEH, O+G	
2 @ 3.5	S	T			TITLE 26 METALS	
2 @ 6.0	S	T			O+G, TEH	
3 @ 1.5	S	T			TITLE 26 METALS	
4 @ 1.5	S	T			TITLE 26 METALS	
COMPOSITE	1 @ 1.0, 3 @ 1.5 AND 4 @ 1.5.				EPA 8270	

* * * * * *

Released by: [signature] Received by: _____ Date: 2-13-91

Released by: _____ Received by: _____ Date: _____

Received by Laboratory: [signature] Date: 2/12/91

Released by Laboratory: _____ Date: _____

Released by: _____ Date: _____

[1] Sample Type: W = Water, S = Soil, O = Other (specify)
[2] Container Type: V = VOA, P = Plastic, G = Glass, T = Brass Tube, O = Other (specify)

NOTES TO LABORATORY:
- Notify SCI if there are any anomalous peaks on GC or other scans
- Questions/clarifications - Contact SCI at (415) 268-0461

Subsurface Consultants

2/3

CHAIN OF CUSTODY RECORD
& ANALYTICAL TEST REQUEST

Project Name: CRYER SHIPYARD

SCI Job Number: 643.001

Project Contact at SCI: J. BOWERS

Sampled By: J. WOLFE

Analytical Laboratory: CURTIS & TOMPKINS

Analytical Turnaround: NORMAL

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
5c1.0	S	T	2/8/91		TITLE 26 METALS	
5c4.0	S	T	2/8/91		TITLE 26 METALS, O+G, TEH	
6c1.0	S	T	2/8/91		TITLE 26 METALS	
COMPOSITE	2c1.0, 5c1.0 AND 6c1.0				EPA 8270	

NOTE: TAKE SAMPLE FROM TOP END OF TUBE

* * * * * *

Released by: [signature] Received by: _____ Date: 2-13-91

Released by: _____ Received by: _____ Date: _____

Received by Laboratory: [signature] Date: 2/13

Released by Laboratory: _____ Date: _____

Released by: _____ Date: _____

[1] Sample Type: W = Water, S = Soil, O = Other (specify)
[2] Container Type: V = VOA, P = Plastic, G = Glass, T = Brass Tube, O = Other (specify)

NOTES TO LABORATORY:
- Notify SCI if there are any anomalous peaks on GC or other scans
- Questions/clarifications - Contact SCI at (415) 268-0461

Subsurface Consultants

3/3

CHAIN OF CUSTODY RECORD
& ANALYTICAL TEST REQUEST

Project Name: CRYER SHIPYARD

SCI Job Number: 643.001

Project Contact at SCI: J. BOWERS

Sampled By: J. WOLFE

Analytical Laboratory: CURTIS + TOMPKINS

Analytical Turnaround: NORMAL

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
BORING 1	W	6 - VOA's 2 - G LITER	2/8/91		EPA 8010	8020
BORING 2	W	6 - VOA's 2 - G LITER	2/8/91		EPA 8010	8020
BORING 3	W	6 - VOA's 2 - G LITER	2/8/91		EPA 8010	8020

* * * * * *

Released by: [signature] Received by: _____ Date: 2-13-91

Released by: _____ Received by: _____ Date: _____

Received by Laboratory: [signature] Date: 2/13/91

Released by Laboratory: // Date: _____

Released by: _____ Date: _____

[1] Sample Type: W = Water, S = Soil, O = Other (specify)
[2] Container Type: V = VOA, P = Plastic, G = Glass, T = Brass Tube, O = Other (specify)

NOTES TO LABORATORY:
- Notify SCI if there are any anomalous peaks on GC or other scans
- Questions/clarifications - Contact SCI at (415) 268-0461

Curtis & Tompkins, Ltd

LABORATORY NUMBER: 102987-15
CLIENT: SUBSURFACE CONSULTANTS
JOB #: 643.001
LOCATION: CRYER SHIPYARD
SAMPLE ID: COMPOSITE 2@1.0,5@1.0 & 6@1.0

DATE RECEIVED: 02/13/91
DATE REQUESTED: 02/19/91
DATE EXTRACTED: 02/15/91
DATE ANALYZED: 02/15/91
DATE REPORTED: 02/19/91

EPA 8270: Base/Neutral and Acid Extractables in Soils & Wastes
Extraction Method: EPA 3550 Sonication

ACID COMPOUNDS	RESULT ug/kg	REPORTING LIMIT ug/kg
Phenol	ND	330
2-Chlorophenol	ND	330
Benzyl Alcohol	ND	330
2-Methylphenol	ND	330
4-Methylphenol	ND	330
2-Nitrophenol	ND	1650
2,4-Dimethylphenol	ND	330
Benzoic Acid	ND	1650
2,4-Dichlorophenol	ND	330
4-Chloro-3-methylphenol	ND	330
2,4,6-Trichlorophenol	ND	330
2,4,5-Trichlorophenol	ND	1650
2,4-Dinitrophenol	ND	1650
4-Nitrophenol	ND	1650
4,6-Dinitro-2-methylphenol	ND	1650
Pentachlorophenol	ND	1650

BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	330
Aniline	ND	330
Bis(2-chloroethyl)ether	ND	330
1,3-Dichlorobenzene	ND	330
1,4-Dichlorobenzene	ND	330
1,2-Dichlorobenzene	ND	330
Bis(2-chloroisopropyl)ether	ND	330
N-Nitroso-di-n-propylamine	ND	330
Hexachloroethane	ND	330
Nitrobenzene	ND	330
Isophorone	ND	330
Bis(2-chloroethoxy)methane	ND	330
1,2,4-Trichlorobenzene	ND	330
Naphthalene	ND	330
4-Chloroaniline	ND	330
Hexachlorobutadiene	ND	330
2-Methylnaphthalene	380	330
Hexachlorocyclopentadiene	ND	330
2-Chloronaphthalene	ND	330
2-Nitroaniline	ND	1650

Curtis & Tompkins, L

LABORATORY NUMBER: 102987-15
SAMPLE ID: COMPOSITE 2@1.0,5@1.0 & 6@1.0

EPA 8270

BASE/NEUTRAL COMPOUNDS

	RESULT ug/kg	REPORTING LIMIT ug/kg
Dimethylphthalate	ND	330
Acenaphthylene	ND	330
2,6-Dinitrotoluene	ND	330
3-Nitroaniline	ND	1650
Acenaphthene	ND	330
Dibenzofuran	ND	330
2,4-Dinitrotoluene	ND	330
Diethylphthalate	ND	330
4-Chlorophenyl-phenylether	ND	330
Fluorene	DETECTED (190)	330
4-Nitroaniline	ND	1650
N-Nitrosodiphenylamine	ND	330
Azobenzene	ND	330
4-Bromophenyl-phenylether	ND	330
Hexachlorobenzene	ND	330
Phenanthrene	DETECTED (260)	330
Anthracene	ND	330
Di-n-butylphthalate	ND	330
Fluoranthene	DETECTED (240)	330
Benzidine	ND	330
Pyrene	DETECTED (180)	330
Butylbenzylphthalate	ND	330
3,3'-Dichlorobenzidine	ND	1650
Benzo (a) anthracene	ND	330
Chrysene	ND	330
Bis (2-ethylhexyl)phthalate	ND	330
Di-n-octylphthalate	ND	330
Benzo (b) fluoranthene	DETECTED (240)	330
Benzo (k) fluoranthene	ND	330
Benzo (a) pyrene	ND	330
Indeno (1,2,3-cd) pyrene	ND	330
Dibenzo (a,h) anthracene	ND	330
Benzo (g,h,i) perylene	ND	330

James P. Bowers, PE
R. William Rudolph, Jr., PE

March 1, 1991
SCI 643.001

Mr. Terry Bouquenoy
HydroChem Services, Inc.
Hunters Point Ship Yard
Building 418
San Francisco, California 94124

Status Report,
Preliminary Contamination Assessment
Former Cryer Boatyard
1899 Dennison Street
Oakland, California

Dear Mr. Bouquenoy:

This letter records the results of subsurface investigations and analytical tests performed at the referenced site. A plan showing the location of the site and pertinent structures is presented on Plate 1. The studies to date have been performed within the yard areas of the property; they have not addressed conditions within and beneath buildings.

In brief, the site has been used by the William Cryer & Son Company for the repair, maintenance, and construction of marine vessels for at least the past fifty years. The site is currently leased by the Oceanic Boat Works Company for ship building/repair operations. Our research to date has indicated that in the early 1900's the property may have been owned/utilized by the Standard Gas Engine Company.

The property north of the site, across Dennison Street, was previously a facility used to manufacture chemicals, some of which were used in the wood treatment industry. Significant contamination exists on the property and is currently under investigation.

Subsurface Investigation

Six test borings were drilled in areas of potential environmental concern. The locations of the borings are indicated on the Site Plan, Plate 1. The test borings extended to depths of approximately 15 feet below the groundsurface. The test borings

were drilled using 8-inch-diameter hollow stem auger drilling equipment. Our geologist observed drilling operations, prepared detailed logs of materials encountered, and obtained undisturbed samples of the soils encountered. Soil samples were retained in brass sample liners. The ends of the liners were covered with Teflon sheeting, capped, and sealed with duct tape. Samples were refrigerated on-site in ice chests and remained so until delivery to the analytical laboratory. Chain of Custody records accompanied the samples to the analytical laboratory. Copies of the test boring logs are presented on Plates 4 through 8. Chain-of-Custody documents are attached.

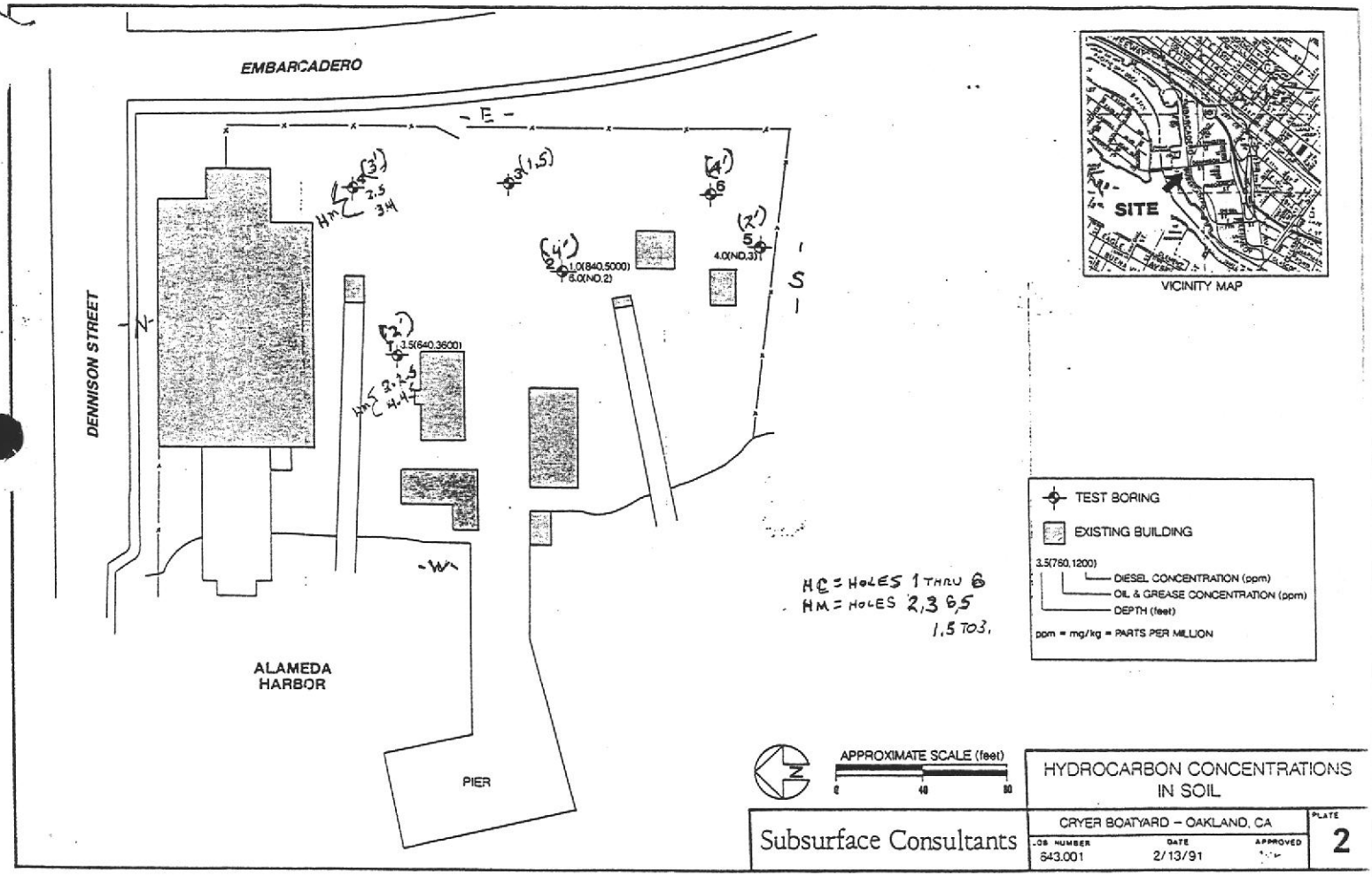
Grab groundwater samples were obtained from three temporary wells installed in Borings 1, 2 and 3. The wells were about 15 feet deep and consisted of 2-inch-diameter PVC well pipe. The wells were developed by bailing until the water was relatively clear. After development, groundwater samples were obtained from the wells using a pre-cleaned Teflon sampler. After sampling, the well casings were removed. Water samples were retained in pre-cleaned sample containers and refrigerated until delivery to the analytical laboratory.

Upon conclusion of drilling and sampling, all boreholes were backfilled with cement grout. Soils generated during drilling were placed in steel barrels and left on-site.

Soil and Groundwater Conditions

Our test borings indicate that the site is blanketed by a surface layer fill which is in turn underlain by soft clayey marine marsh soils, locally known as Bay Mud. The Bay Mud extends beyond the depths explored, about 15 feet below the groundsurface. The fill is composed of a variety of materials, primarily consisting of clayey soils. However, relatively clean sands, representing sand blast grit, blankets the surface over a large portion of the property. The sand blast grit varies in thickness, but on average is about one foot thick.

Groundwater was encountered at depths varying from of about 3 to 6 feet below the groundsurface during drilling. These levels likely do not represent stabilized groundwater conditions. Data regarding past and present groundwater flow directions is currently unavailable. However, the proximity of the site to Alameda Harbor would suggest that (1) shallow groundwater may flow toward the west, and (2) groundwater may be tidally influenced.


EMBARCADERO
DENNISON STREET
ALAMEDA HARBOR
PIER
- E -
- W -
N
S
HC = HOLES 1 THRU 6
HM = HOLES 2, 3 & 5
1, 5 TO 3.
TEST BORING
EXISTING BUILDING
3.5(760,1200)
DIESEL CONCENTRATION (ppm)
OIL & GREASE CONCENTRATION (ppm)
DEPTH (feet)
ppm = mg/kg = PARTS PER MILLION
SITE
VICINITY MAP
APPROXIMATE SCALE (feet)
0
40
80
HYDROCARBON CONCENTRATIONS IN SOIL
Subsurface Consultants
CRYER BOATYARD – OAKLAND, CA
JOB NUMBER 543.001
DATE 2/13/91
APPROVED
PLATE 2

Analytical Testing

Soil samples from the borings were in part selected for analytical testing based on visual/olfactory inspection and organic vapor meter (OVM) screening. The soil samples were analyzed by Curtis and Tompkins, Ltd., a laboratory certified by the Department of Health Services for the tests performed. Selected samples were analyzed for total extractable hydrocarbons (TEH), benzene, toluene, xylene, ethylbenzene (BTXE), total extractable hydrocarbons (TEH), total oil and grease (TOG), chlorinated hydrocarbons, (EPA 8010), Title 26 metals, and semi-volatile organics and selected pesticides (EPA 8270). The results of the analytical tests are presented in the following tables.

Conclusions

Based on the analytical data generated to date, we conclude that the on-site soils have been impacted by heavy metals (particularly copper, lead and zinc) and by petroleum hydrocarbons (oil and grease, and diesel). In addition, low concentrations of several polynuclear aromatic hydrocarbons (PNA's) were detected in a composite soil sample from Borings 2, 5 and 6. Analytical data from grab groundwater samples obtained from Borings 1, 2 and 3 suggest that the shallow groundwater has not been impacted significantly by volatile organic chemicals. The following paragraphs discuss these items in more detail.

Heavy Metal Contamination

The shallow fill materials appear to contain concentrations of copper, lead and zinc which are well above those which could be expected to represent background levels. Analysis by others of the sand blast grit blanketing much of the site has revealed that the materials contain relatively high concentrations of these metals. For completeness, we have presented a summary of this data below. The analysis was performed on a composite sample, made up of 3 individual samples of the sand bland grit.

Table 1. Hydrocarbon Concentrations in Soil

Boring and Depth[1]	TOG[2]	TEH[3]
1 @ 3.5'	640	3600
2 @ 1.0'	840	5000
2 @ 6.0'	ND[4]	2
5 @ 4.0'	ND	3

[1] Depth in feet
[2] Total oil and grease concentration in mg/kg, parts per million (ppm)
[3] Total extractable hydrocarbons (as diesel)
[4] None detected: see analytical test results for detection limits

Table 2. Selected Total Heavy Metal Concentrations in Soil

Boring and Depth[1]	Copper[2]	Lead[2]	Zinc[2]
1 @ 1.0'	20	ND	42
1 @ 3.5'	24	ND	69
2 @ 1.0'	75	24	120
2 @ 3.5'	31	ND	50
3 @ 1.5'	170	550	220
4 @ 1.5'	230	21	120
5 @ 1.0'	770	190	350
5 @ 4.0'	25	2.9	45
6 @ 1.0'	490	190	130

[1] Depth in feet
[2] Concentrations in mg/kg

Table 3. EPA 8270 Compounds in Soil Composites
(in ug/kg or parts per billion)

		Concentration
Composite 1 (Boring 1 @ 1', 3 @ 1.5' and 4 @ 1.5')	EPA 8270 Compounds	ND
Composite 2 (Boring 2 @ 1.0', 5 @ 1.0' and 6 @ 1.0')	2- Methylnaphthalene	380
	Fluorene	190
	Phenanthrene	260
	Fluoranthene	240
	Pyrene	180
	Benzo (b) fluoranthene	240
	All other 8270 compounds	ND

Table 4. Volatile Organic Chemical Concentrations in Groundwater

Boring	EPA 8010 Compounds	Benzene	Toluene	Xylene	Ethylbenzene
1	ND	ND	ND	ND	ND
2	ND	ND	ND	ND	ND
3	ND	ND	ND	ND	ND

Compound	Concentration (mg/kg)
Antimony	ND
Arsenic	8
Barium	200
Beryllium	ND
Cadmium	ND
Chromium (total)	140
Cobalt	33
Copper	2400
Lead	320
Mercury	0.85
Molybdenum	ND
Nickel	90
Selenium	ND
Silver	0.6
Vanadium	46
Zinc	2400

The concentrations of the metals in the sand blast grit are sufficiently high that removal of the materials from the site will be appropriate. The data generated by our study suggests that the heavy metal contamination is largely limited to the sand blast grit, and the upper 6 to 12 inches of the underlying clayey fill. Locally deeper areas of heavy metal contamination appear to exist, such as near Test Boring 3. Sand blast grit was not present in this area; the elevated metal concentrations may be associated with the fill and be unrelated to present on-site activities, or possibly, other past uses of the site.

Petroleum Hydrocarbons

The analytical data indicates that the soils in Borings 1 and 2 have been impacted by oil and grease, and diesel fuel. Oil and grease concentrations up to 840 mg/kg and diesel concentrations up to 5000 mg/kg have been detected. These concentrations are sufficiently high that they exceed current regulatory agency clean-up guidelines for hydrocarbon contamination. Accordingly, we judge that remediation of these contaminated soils will be required.

We judge that the vertical extent of hydrocarbon contamination does not extend deeper than the underlying Bay Mud. These soils typically possess very low permeability and hence, limit the migration of contaminants. The lateral extent of the hydrocarbon contamination has not been defined by the studies to date. Accordingly, we recommend that additional subsurface investigation and analytical testing be undertaken to define the lateral extent of contamination from petroleum hydrocarbons. We recommend that this work be completed prior to developing remediation strategies. Additionally, in accordance with regulatory agency guidelines, it will likely be necessary to install groundwater monitoring wells in areas of hydrocarbon contamination to evaluate impacts to groundwater quality.

Polynuclear Aromatic Hydrocarbons

Analytical test results indicate that relatively low concentrations of several polynuclear aromatic hydrocarbons (PNA's) exist in the composite sample from Borings 2, 5 and 6. PNA's are a class of hydrocarbons commonly found in coal tars, pitch, oils, and fire debris. Some PNA's are known or suspected carcinogens and are currently regulated as hazardous substances. Because the PNA data is from a composite sample, we are uncertain in which boring(s) the PNA's exist. We recommend that the individual samples making up the composite be analyzed for PNA's. Subsequently, additional test borings/analytical tests may be required to (1) evaluate the lateral and vertical extent of PNA contamination, and (2) draw conclusions regarding the need for remediation.

The studies performed to date were intended to serve as a preliminary means of screening the property for indications of significant contamination as a result of commonly encountered chemicals. The property has had a varied past with regard to industrial activity and the use of materials which are currently considered hazardous and/or toxic. Other areas of contamination may exist on-site in areas not investigated by the test borings drilled to date. Further study may modify the conclusions recorded herein.

If you have any questions regarding our services to date or conclusions, please call.

Yours very truly,

Subsurface Consultants, Inc.

James P. Bowers
Geotechnical Engineer 157 (expires 3/31/91)

CRF:JPB:sld

6 copies submitted:

Attachments:

Plate 1	-	Site Plan
Plate 2	-	Hydrocarbon Contamination in soil
Plate 3	-	Heavy Metal Concentrations in soil
Plates 4 thru 8	-	Boring Logs
Plate 9	-	Unified Soil Classification System
		Analytical Test Report
		Chain of Custody Documents

California Analytical Laboratories, Inc.
2544 Industrial Blvd
West Sacramento, California 95691
(916) 372-1393

Ticket Number : 22716

Date Received : 16-Oct-1985 14:00

Date Due :

ERM-WEST
1657 NORTH CALIFORNIA BLVD
SUITE 203
WALNUT CREEK, CA
94596

DAN VERWOOT
(415-946-0455)

Project ID,
EPA Case, RMA Lot : #147

P.O. Number :

Delivered by: : OTC

Storage Location :

Logged in by : ML

TEN WATER SAMPLES REC'D UNDER CHAIN OF CUSTODY IN DUPLICATE 40ML VOA VIALS AND 1QT AMBER GLASS BOTTLES TO BE ANALYZED FOR VOLATILE AROMATICS(602), ORGANO-CHLORINE PESTICIDES & PCB'S(608) AND PENTACHLOROPHENYL.

CAL ID	Ext. ID	Client's label info (EPA Tag No., EPA label)			Containers
		ppb			
22716-001	W1 - <1		1:45	EMBARCADERO COVE, OAKLAND	3 CONT
22716-002	W5 - 40		6:50	EMBARCADERO COVE, OAKLAND	3 CONT
22716-003	W6 - 110,000		9:40	EMBARCADERO COVE, OAKLAND	3 CONT
22716-004	W7 - 81		10:10	EMBARCADERO COVE, OAKLAND	3 CONT
22716-005	W8 - 12		12:30	EMBARCADERO COVE, OAKLAND	3 CONT
22716-006	W9 - 45,000		2:00	EMBARCADERO COVE, OAKLAND	3 CONT
22716-007	W11 - 18		11:00	EMBARCADERO COVE, OAKLAND	3 CONT
22716-008	W12 - 13		11:40	EMBARCADERO COVE, OAKLAND	3 CONT
22716-009	W13 - 12		1:15	EMBARCADERO COVE, OAKLAND	3 CONT
22716-010	W14 - 12		2:10	EMBARCADERO COVE, OAKLAND	3 CONT

RECEIVED
OCT 22 1985
ERM-WEST
WALNUT CREEK, CA

Samples not destroyed in testing are retained a maximum of thirty (30) days unless otherwise requested.

Supervisor: CJS Date Approved: Notebook:

California Analytical Laboratories, Inc.
2544 Industrial Boulevard • West Sacramento, CA 95691 • (916) 372-1393

November 18, 1985
Lab No. 22716
Received: 10/16/85
PO# Port of Oakland
#147

Dan Verwoot
ERM-West
1657 N. California Blvd
Suite 203
Walnut Creek, CA 94596

Ten water samples were received in various containers to be analyzed for organochlorine pesticides and PCB's, volatile aromatics and pentachlorophenol.

CAL I.D.	Sample I.D.		
22716-1	W1	1:45	Embarcadero Cove, Oakland
-2	W5	6:50	Embarcadero Cove, Oakland
-3	W6	9:40	Embarcadero Cove, Oakland
-4	W7	10:10	Embarcadero Cove, Oakland
-5	W8	12:30	Embarcadero Cove, Oakland
-6	W9	2:00	Embarcadero Cove, Oakland
-7	W11	11:00	Embarcadero Cove, Oakland
-8	W12	11:40	Embarcadero Cove, Oakland
-9	W13	1:15	Embarcadero Cove, Oakland
-10	W14	2:10	Embarcadero Cove, Oakland

RESULTS

Results for EPA Methods 602 and 608 are on the attached data sheets. PCP results follow:

CAL I.D.	ug/L (ppb) PCP found
22716-MB (Method Blank)	<1
-MS (10 ppb spike)	12
-1	<1
-2	39
-3	110000
-4	81
-5	12
-6	45000
-7	18
-8	13
-9	12
-10	12

Charles J. Soderquist, PhD
Vice President

Ben N. Buechler
GC Lab Manager

jb

ORGANOCHLORINE PESTICIDES AND PCB'S
EPA Method 608

Sample I.D. W12 11:40 Embarcadero Cove CAL I.D. 22716-8P

OC Compound	ug/L (ppb)
alpha-BHC	<0.01
gamma-BHC	<0.01
beta-BHC	<0.01
heptachlor	<0.01
delta-BHC	<0.01
aldrin	<0.01
heptachlor epoxide	<0.01
endosulfan I/II	<0.02
p,p'-DDE	<0.02
dieldrin	<0.02
endrin	<0.02
p,p'-DDD	<0.04
p,p'-DDT	<0.04
endrin aldehyde	<0.04
endosulfan sulfate	<0.04
methoxychlor	<0.20
PCB-1242	<0.20
PCB-1248	<0.20
PCB-1254	<0.20
PCB-1260	<0.20
chlordane	<0.20
toxaphene	<2.0

PREPARED BY _____

APPROVED BY _____

VOLATILE AROMATICS
EPA Method 602
Data Sheet

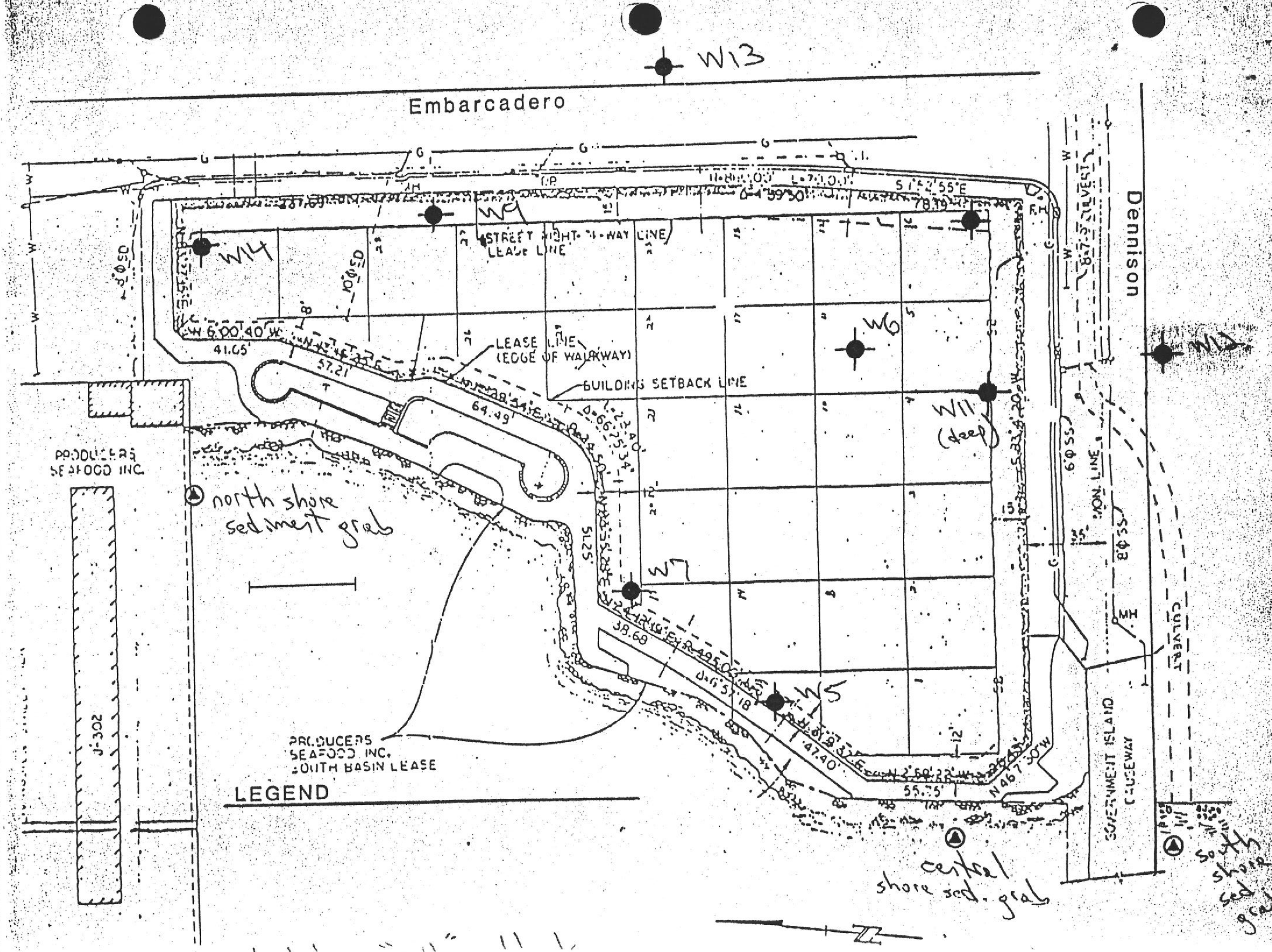
Sample I.D. W12 11:40 Embarcadero Cove CAL I.D. 22716-8

	ug/L (ppb)
benzene	<0.5
toluene	<0.5
chlorobenzene	<0.5
ethylbenzene	<0.5
xylene (total*)	<0.5
dichlorobenzene (total*)	<0.5

* (includes o, m & p isomers)

PREPARED BY _____

APPROVED BY _____



W13
Embarcadero
Dennison
W14
W9
W6
W12
W11 (deep)
W7
W5
STREET RIGHT-OF-WAY LINE
LEASE LINE
LEASE LINE (EDGE OF WALKWAY)
BUILDING SETBACK LINE
PRODUCERS SEAFOOD INC.
north shore sediment grab
PRODUCERS SEAFOOD INC. SOUTH BASIN LEASE
LEGEND
J-302
CULVERT
MON. LINE
GOVERNMENT ISLAND CAUSEWAY
central shore sed. grab
south shore sed grab

PORT of OAKLAND / PLANNING

66 Jack London Square, Oakland, Ca 444-3188

January 15, 1986

Dear Bob:

Per our recent telephone conversation, I am transmitting analytical test results for toxic materials taken from the well adjacent to your property. The significant information is highlighted in blue for your attention. Please call if you have any questions.

Neil Werner

Neil Werner

946-0455

Dan Ver

ERM-West, Inc.

Suite 260 • 1777 Botelho Drive • Walnut Creek, California 94596-5042 • (415) 946-0455 • Telefax (415) 946-9968

June 28, 1991

Mr. Thomas Gandesbery
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

SUBJECT: Hydrogeology and Ground Water Sampling Results,
Embarcadero Cove State Superfund Site, Oakland, California

Dear Mr. Gandesbery:

This letter report addresses your request, as the Regional Water Quality Control Board (RWQCB) representative, for a summary of hydrogeology and ground water sampling results at the Embarcadero Cove State Superfund Site in Oakland, California.

Background

A Remedial Action Order (RAO) for the Embarcadero Cove site was issued by the Department of Health Services (DHS) on July 9, 1987. The RAO required information on site hydrogeologic conditions and extent of chemical occurrence. Fieldwork for this additional investigation began in June 1988 and was followed by the issuance of a Remedial Investigation Report in May 1989. The site was graded and a chip-seal cap was constructed as an Interim Remedial Measure in March 1990. Quarterly ground water monitoring was conducted in 1990 and a tidal study was completed in December 1990.

At the February 14, 1991 meeting between RWQCB, DHS, the Port of Oakland (Port), Monsanto Company (Monsanto), and ERM-West, Inc. (ERM-West), you stated that site ground water data previously submitted by the Port has consisted only of chemical concentration tables. You requested that future reports contain an accompanying text as well as ground water elevations, potentiometric surface maps, gradient information, etc. This request was confirmed in your April 24, 1991 letter to Ms. Barbara Cook of DHS. Your letter also requested that additional remedial investigation work be conducted. A workplan to address the additional investigation will be submitted to DHS by July 1, 1991. This letter report and the accompanying figures and tables summarize hydrogeologic and ground water sampling data collected to date.

Hydrogeology

The site hydrogeology was described in the *Remedial Investigation Report for Embarcadero Cove State Superfund Site* (ERM-West, May 1989). No additional borings or wells have been installed since that report was prepared, but water levels in wells at the site were measured several times in 1989 and 1990. Table 1 presents ground water elevation data collected between August 1988 and December 1990. Wells W5, W6, W8, W9, W12R, W13, W14, and W16 through W22 are screened in the upper water-bearing zone (about 15 to 20 feet below ground surface). Wells W7, W11, and W20 are screened in the lower water-bearing zone (about 38 to 48 feet below ground surface). There are no wells numbered W1 through W4, W10 or W15. These locations were completed as borings only.

A study of tidal effects at the Embarcadero Cove Site was conducted by ERM-West for the Port. Tidal information for dates of ground water elevation measurements is provided in Table 2. The study concluded that the upper water-bearing zone is hydraulically connected to the Oakland Estuary (estuary); however, the degree of connection varies considerably depending on hydraulic conductivity of the screened interval and distance from the shoreline. The lower water-bearing zone experiences tidal loading, indicating it is affected by variations in weight on the stratum confining the aquifer under the estuary. Thus, there is no evidence of a hydraulic connection between the estuary and the lower water-bearing zone. The tidal study is presented as Appendix A to this report.

You had requested that we provide you with potentiometric surface maps for both the shallow and the lower water-bearing zones at the site. As we have reported in the past, the shallow water-bearing zone is very heterogeneous, and is probably more appropriately considered to be a perched water zone than an actual aquifer. As such, given that there can be no assurances that all the shallow wells are hydraulically connected, it is inappropriate to develop potentiometric contours for the shallow water-bearing zone.

Figures 1 through 4 are potentiometric surface maps for the lower water-bearing zone for four different sampling dates. Each map represents a different time in the tidal cycle. Comparison of the maps illustrates the differing gradients and directions of flow that result from the tidal cycle. Figures 1 and 2 represent measurement times approximately midway between high and low tide. Figure 3 shows the gradient approximately one hour before high tide, and Figure 4 shows the gradient shortly after low tide. The effects of tidal loading cause a major shift in direction of ground water flow. When the tide is high (Figures 1 and 3), the direction of flow is southeast. When the tide is low (Figures 2 and 4), the direction of flow is west. The gradients range from a low of about 0.0023 to the west for June 11, 1990 to a high of about 0.0035 to the southeast for September 3, 1989.

TABLE 1

GROUNDWATER ELEVATION DATA (FT ABOVE MLLW)

WELL	DATE AND TIME 8/11/88	Time	9/14/88	Time	10/11/88	Time	11/28/88	Time	12/23/88	Time	1/24/89(1)	Time
W5	6.11	0952	5.70	1047	3.66(2)	1225	4.93	0924	5.80	0955	7.80	1632
W6	4.48	0945	4.22	1113	3.95	1157	3.92	0930	4.22	0915	4.39	1540
W7	3.37	0938	3.75	1100	4.48	1131	3.41	0843	4.59	0825	2.88	0944
W8	4.36	1001	4.24	1122	4.06	1221	4.06	0903	4.26	0942	4.28	1620
W9	5.17	1017	4.88	1135	4.22	1215	4.65	0906	4.92	0920	4.94	1657
W11	3.00	0957	3.21	1051	3.84	1139	3.37	0835	3.89	0750	2.99	0956
W12R	(3)	(3)	(3)	(3)	(3)	(3)	4.94	0900	5.13	0950	5.00	1627
W13	5.38	1006	5.09	1126	4.75	1211	5.29	0918	5.21	0935	5.59	1616
W14	6.66	1014	6.12	1118	5.79	1203	6.72	0910	7.74	0850	7.88	1605
W16	2.81	0920	3.67	1104	4.46	1145	3.67	0850	4.54	0900	4.60	1526
W17	4.65	0926	4.24	1109	3.83	1149	3.57	0933	3.96	0912	4.83	1546
W18	2.70	0917	3.52	1102	4.26	1152	3.60	0853	4.23	0855	4.90	1521
W19	7.40	0929	6.92	1111	6.52	1155	9.67	0936	10.28	1000	9.58	1556
W20	3.35	0942	3.66	1057	4.27	1133	3.59	0840	4.37	0814	3.15	0949
W21	5.59	1010	5.16	1130	4.86	1207	5.13	0915	5.69	0931	5.96	1611
W22	3.54	0923	3.75	1107	3.83	1147	3.80	0848	4.15	0906	4.43	1533

(1) Wells W7, W11 and W20 were measured on 1/27/89
(2) Well not recovered from sampling
(3) Well had not been installed

TABLE 1

GROUNDWATER ELEVATION DATA (FT ABOVE MLLW)

WELL	DATE AND TIME											
	5/10/89	Time	9/3/89	Time	12/6/89	Time	6/11/90	Time	10/4/90	Time	12/4/90	Time
W5	7.80	1524	5.14	1502	5.49	1117	7.90	1007	7.42	1148	6.43	0804
W6	4.54	1441	4.11	1417	4.15	1038	4.77	0924	4.74	1600	3.93	1026
W7	3.21	1421	4.58	1345	3.17	1010	2.44	1027	3.34	1640	4.97	1040
W8	4.51	1514	4.37	1451	4.27	1110	4.56	0957	5.48	1322	3.89	0856
W9	5.42	1456	5.03	1445	5.18	1106	5.82	0940	6.38	1400	4.76	1007
W11	2.81	1410	4.01	1339	3.44	1017	2.60	1045	4.90	1300	3.48	0849
W12R	5.65	1519	4.17	1457	4.87	1115	4.93	1001	5.34	1250	4.41	0840
W13	5.21	1507	5.19	1441	5.50	1103	6.09	0950	5.77	1335	4.86	0903
W14	6.82	1452	5.88	1432	6.64	1055	7.41	0933	6.90	1415	6.01	0945
W16	3.39	1428	4.78	1406	3.94	1032	2.41	0906	4.13	1620	4.57	1020
W17	5.72	1436	4.18	1422	3.86	1035	4.37	0918	5.38	1650	4.45	1035
W18	2.51	1424	4.54	1359	3.96	1050	2.17	0904	4.65	1633	4.45	1045
W19	7.31	1445	7.08	1426	6.89	1045	7.92	0927	7.63	1545	6.88	1015
W20	3.31	1417	4.38	1350	3.54	1000	2.78	1033	3.87	1537	4.40	0958
W21	5.30	1503	5.38	1436	5.63	1100	6.29	0945	6.25	1348	4.60	0912
W22	3.59	1433	4.13	1411	4.12	1025	3.77	0913	5.93	1610	4.01	1034

TABLE 2

TIDAL DATA FOR DATES OF GROUNDWATER ELEVATION MEASUREMENTS (FT ABOVE MLLW)

DATE	TIME	HT	TIME	HT	TIME	HT	TIME	HT
	LOW		HIGH		LOW		HIGH	
8/11/88	0621	-0.4	1332	5.4	1812	2.7	0006*	6.5
9/14/88	0804	1.9	0236	5.0	2048	0.9	1434	5.9
10/11/88	0632	1.8	0113	5.1	1912	0.2	1252	6.1
11/28/88	0908	3.7	0441	5.4	2136	0.0	1434	5.9
12/23/88	0516	3.4	0107	5.6	1820	-1.1	1118	7.3
1/24/89	0718	2.6	0219	5.5	1940	0.0	1304	5.9
1/27/89	0938	2.1	0339	5.6	2109	1.7	1519	4.5
5/10/89	1053	-0.5	0346	6.0	2325	3.2	1841	5.1
9/3/89	0813	1.4	0229	5.2	2053	1.2	1447	5.8
12/6/89	1235	2.1	0632	6.0	0005*	1.1	1811	4.6
6/11/90	0844	-0.7	0144	6.1	2041	3.3	1627	5.0
10/4/90	0603	0.9	1231	6.5	1839	-0.2	0022	5.8
12/4/90	0632	3.2	0216	5.7	1948	-1.5	1240	7.5

*Following day

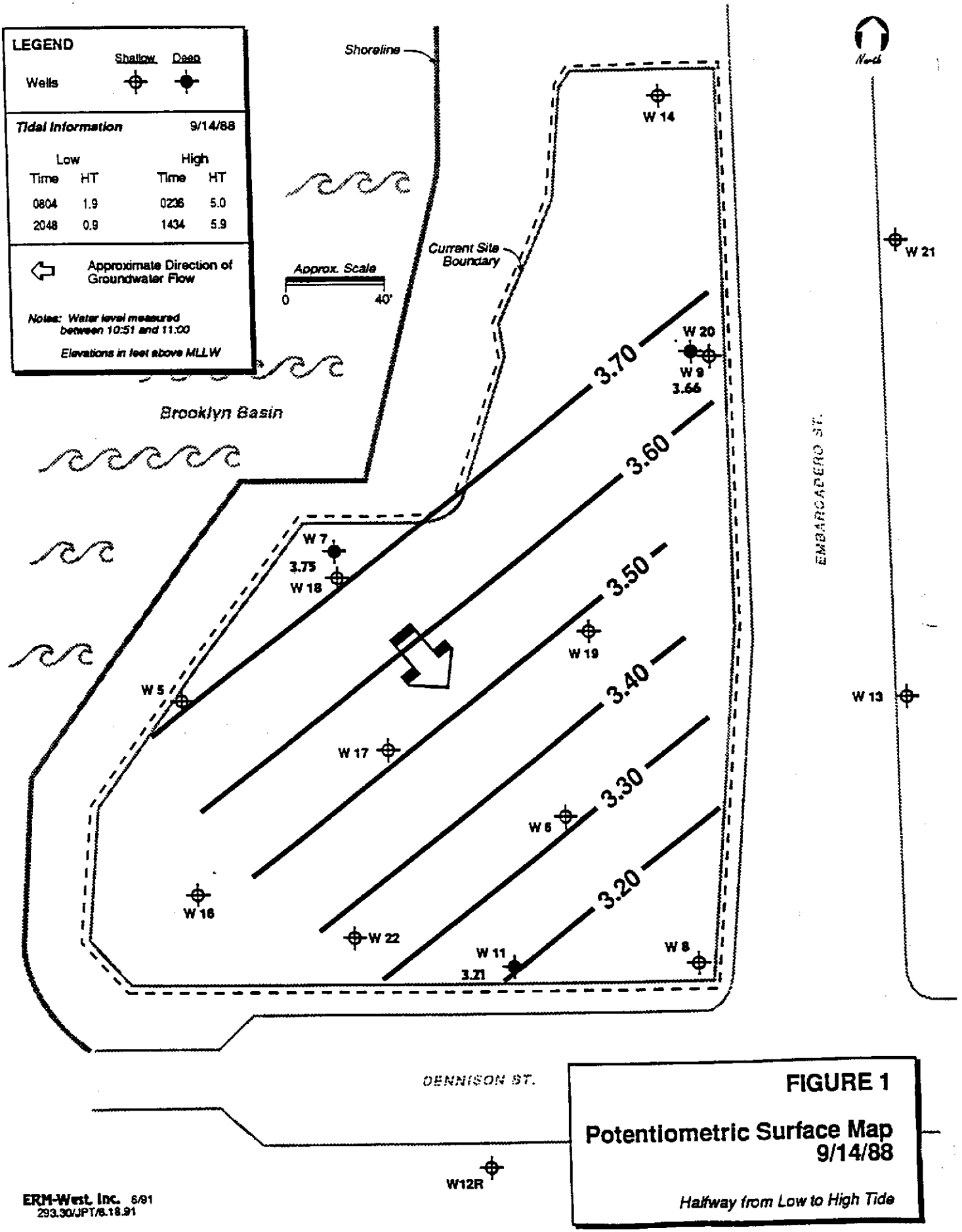


FIGURE 1

Potentiometric Surface Map 9/14/88

Halfway from Low to High Tide

ERM-West, Inc. 6/91
293.30/JPT/6.18.91

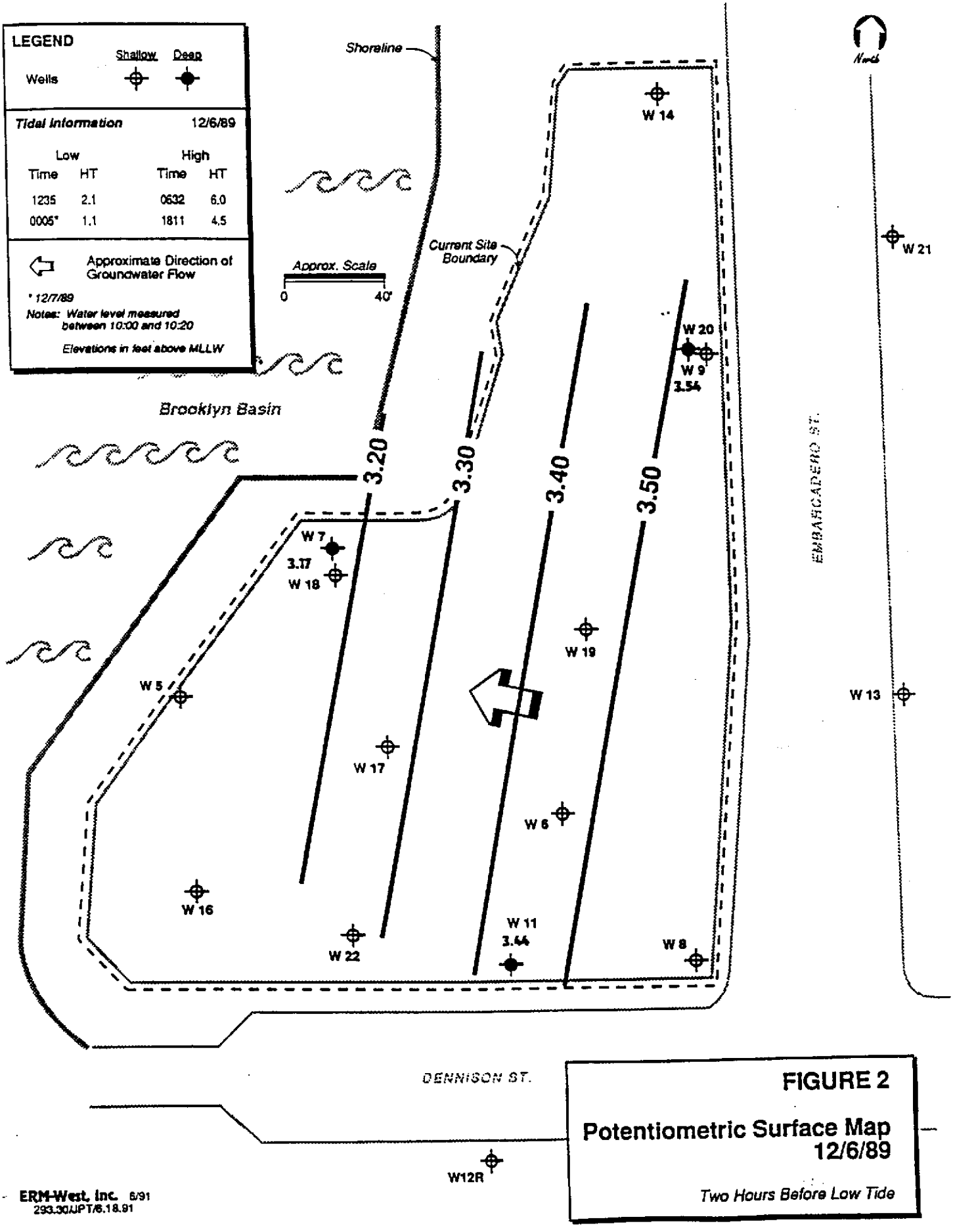


FIGURE 2

Potentiometric Surface Map 12/6/89

Two Hours Before Low Tide

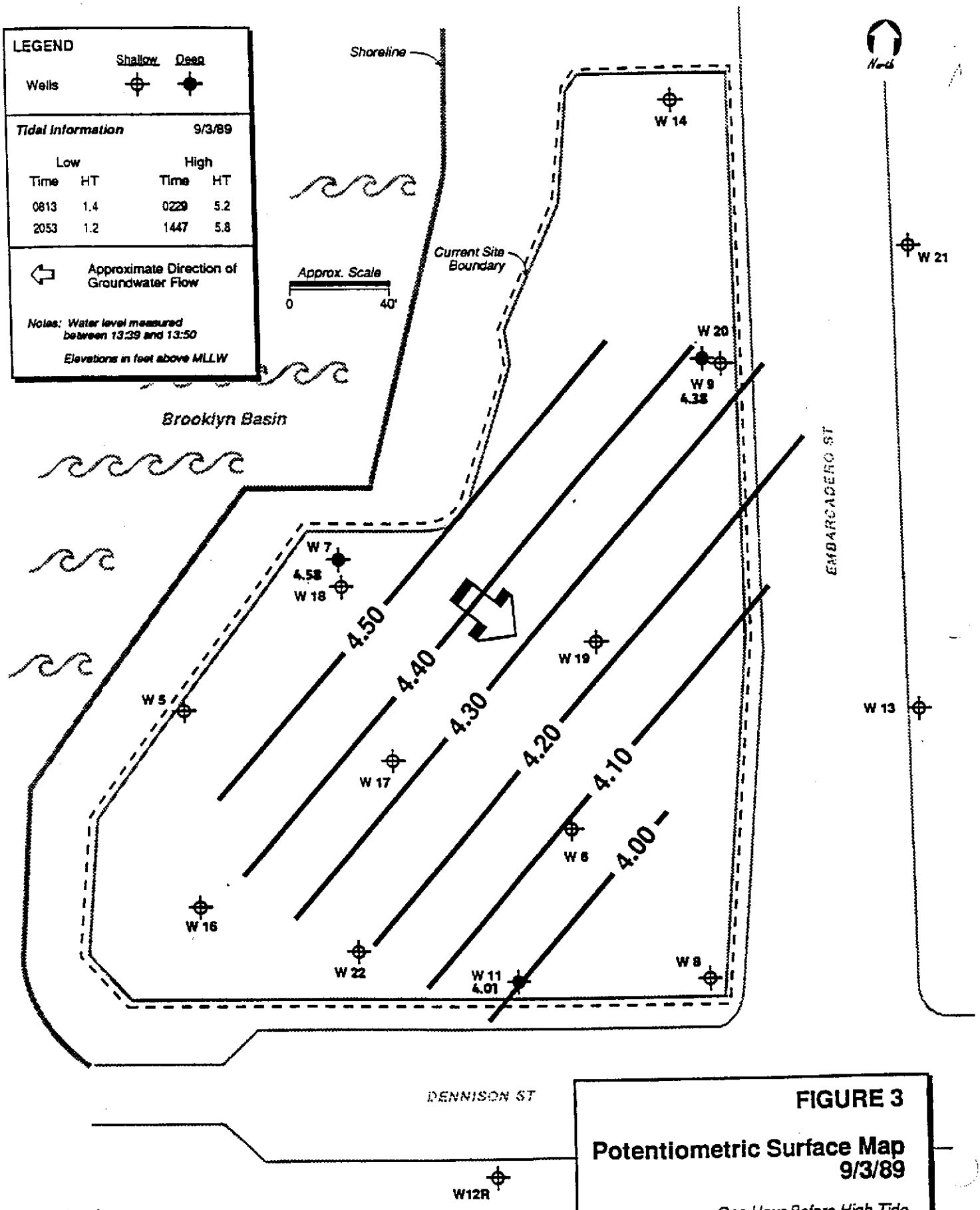


FIGURE 3

Potentiometric Surface Map 9/3/89

One Hour Before High Tide

ERM-West, Inc. 6/91
293.30/JPT/6.18.91

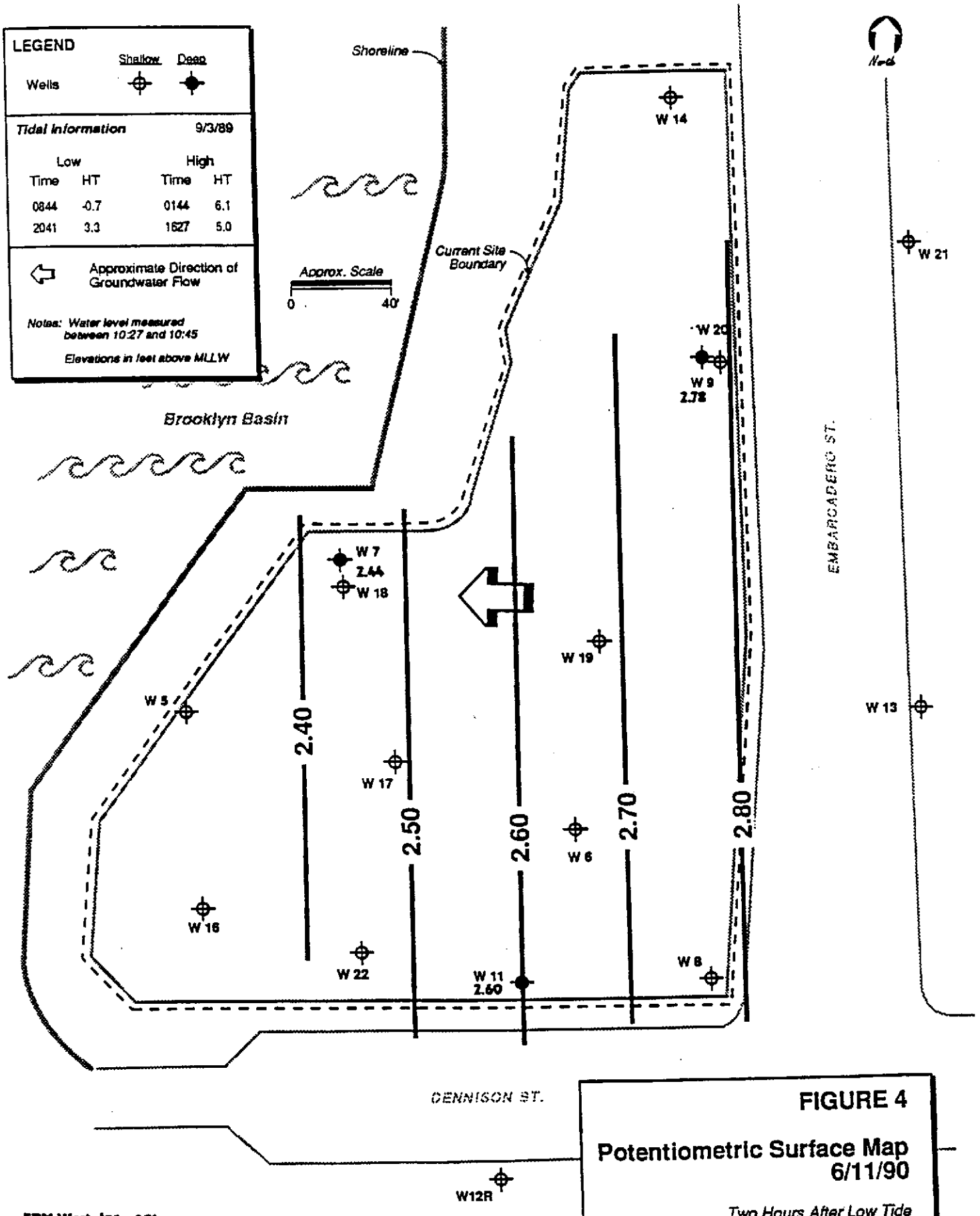


FIGURE 4

Potentiometric Surface Map 6/11/90

Two Hours After Low Tide

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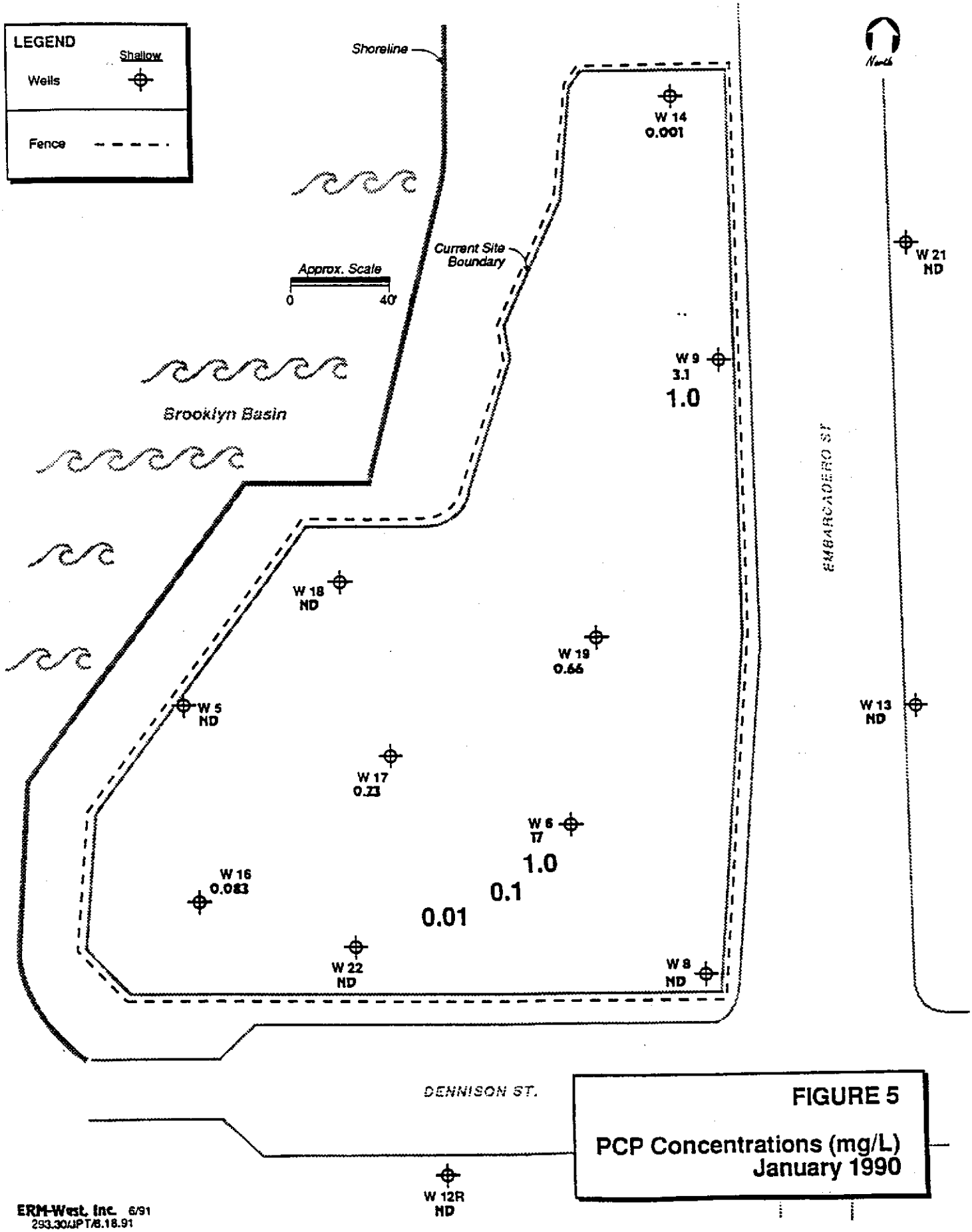


FIGURE 5

PCP Concentrations (mg/L)
January 1990

ERM-West, Inc. 6/91
293.30/JPT/6.18.91

TABLE 3

GROUNDWATER SAMPLING SCHEDULE

SAMPLING DATE	WELLS SAMPLED	ANALYSES PERFORMED
25-May-82	W5, W6	EPA Method 624 Purgeable Priority and Nonpriority Pollutants Acetone, Arsenic, Lead, Organochlorine Pesticides, PCBs
Feb-85	W5, W6, W7, W8, W9	EPA Method 602 Purgeable Aromatics EPA Method 604 Pentachlorophenol EPA Method 608 Pesticides and PCBs Acetone
1-Apr-85	W7	EPA Method 602 Purgeable Aromatics Acetone
Oct-85	W5, W6, W7, W8, W9, W11, W12, W13, W14	EPA Method 602 Purgeable Aromatics EPA Method 604 Pentachlorophenol EPA Method 608 Pesticides and PCBs
3-Apr-86	W5, W6, W9	Polychlorinated Dioxin/Furan
Jul-88 and Sep-88	W5, W7, W8, W11, W13, W14, W16, W17, W18, W21, W22	EPA Method 602 Purgeable Aromatics EPA Method 608 Pesticides and PCBs EPA Method 625 Phenols
Jul-88 and Sep-88	W20	EPA Methods 602, 608, 625 as above, plus EPA 8280 Dioxins and Furans
Jul-88 and Sep-88	W6, W9	EPA Methods 602, 608, 625 as above, plus EPA 601 Purgeable Halocarbons plus Total Petroleum Hydrocarbons (GC/FID)
Jul-88 and Sep-88	W19	EPA Methods 601, 602, 608, 625, Total Petroleum Hydrocarbons as above, plus EPA 8280 Dioxins and Furans
Nov-88	W5, W7, W11, W12R, W13, W14, W16, W17, W18, W21, W22	EPA Method 602 Purgeable Aromatics EPA Method 608 Pesticides and PCBs EPA Method 625 Phenols
Nov-88	W6, W8, W9	EPA Methods 602, 608, 625 as above, plus Acetone
Jan-90	W5, W7, W8, W11, W12R, W13, W14, W16, W17, W18, W19, W21, W22	EPA Method 608 Pesticides and PCBs EPA Method 625 Phenols
Jan-90	W6, W9, W20	EPA Methods 608 and 625 as above, plus EPA Method 8280 Dioxins and Furans
Jun-90	W8, W14, W16	EPA Method 625 Phenols

TABLE 3

GROUNDWATER SAMPLING SCHEDULE

SAMPLING DATE	WELLS SAMPLED	ANALYSES PERFORMED
Jun-90	W5, W7, W11, W12R, W13, W20, W21	EPA Method 625 as above, plus EPA Method 608 Pesticides and PCBs
Jun-90	W6, W9, W19	EPA Methods 608 and 625 as above, plus EPA Method 602 Purgeable Halocarbons plus Acetone
Sep-90 and Dec-90	W8, W14, W16	EPA Method 625 Phenols
Sep-90 and Dec-90	W5, W7, W11, W12R, W13, W20, W21	EPA Method 625 as above, plus EPA Method 608 Pesticides and PCBs

TABLE 4

PHENOLS IN GROUNDWATER (mg/l)

WELL	COMPOUND	CONCENTRATION									
		May-82	Feb-85	Oct-85	Jul-88	Sep-88	Nov-88	Jan-90	Jun-90	Sep-90	Dec-90
W5	Pentachlorophenol	0.033	0.051	0.039	ND	0.0043	0.0018	ND	ND	ND	ND
W6	Phenol	NA	NA	NA	0.15	0.046	0.16	ND	NA	NA	NA
	2-Methylphenol	NA	NA	NA	0.026	ND	ND	ND	NA	NA	NA
	4-Methylphenol	NA	NA	NA	0.046	ND	ND	ND	NA	NA	NA
	2,4-Dimethylphenol	NA	NA	NA	0.12	ND	ND	0.025	NA	NA	NA
	Pentachlorophenol	380	70	110	8.2	47	3.9	17	NA	NA	NA
	Tetrachlorophenol	NA	NA	NA	0.19	1.2	2.1	1.4	NA	NA	NA
W7	Pentachlorophenol		0.17	ND	0.033	0.0041	0.024	0.027	0.029	0.018	ND
	Tetrachlorophenol		NA	NA	0.0024	ND	ND	0.002	ND	NA	NA
W8	4-Nitrophenol		NA	NA	ND	ND	ND	ND	ND	ND	0.0019
	Pentachlorophenol		0.025	0.012	0.0068	ND	ND	ND	ND	ND	ND
W9	Pentachlorophenol		35	45	0.76	2	2.3	3.1	NA	NA	NA
W11	Pentachlorophenol			0.018	0.0016	ND	ND	ND	ND	ND	ND
W12	Pentachlorophenol			0.013	Well Destroyed						
W12R	No compounds detected										
W13	Pentachlorophenol			0.012	ND	ND	ND	ND	ND	ND	ND
W14	Pentachlorophenol			0.012	ND	ND	ND	0.001	ND	ND	ND
W16	4-Methylphenol				ND	0.013	0.018	ND	ND	ND	ND
	Pentachlorophenol				0.0044	0.003	0.0038	0.083	ND	ND	ND
	Tetrachlorophenol				ND	ND	ND	0.004	ND	NA	NA

ND = NOT DETECTED A = NOT ANALYZED

TABLE 4

PHENOLS IN GROUNDWATER (mg/l)

WELL	COMPOUND	CONCENTRATION									
		May-82	Feb-85	Oct-85	Jul-88	Sep-88	Nov-88	Jan-90	Jun-90	Sep-90	Dec-90
W17	2,4-Dichlorophenol				ND	ND	ND	0.007	NA	NA	NA
	2,4,5-Trichlorophenol				ND	ND	ND	0.006	NA	NA	NA
	2,4,6-Trichlorophenol				ND	ND	ND	0.005	NA	NA	NA
	Pentachlorophenol				ND	ND	ND	0.023	NA	NA	NA
	Tetrachlorophenol				ND	ND	ND	0.018	NA	NA	NA
W18	Pentachlorophenol				ND	0.0025	ND	ND	NA	NA	NA
W19	Phenol				0.0027	0.0026	ND	ND	NA	NA	NA
	2-Chlorophenol				0.0024	ND	ND	ND	NA	NA	NA
	2-Methylphenol				0.0033	0.0021	ND	ND	NA	NA	NA
	4-Methylphenol				0.0082	ND	ND	0.0006	NA	NA	NA
	2,4-Dimethylphenol				0.0044	0.001	ND	ND	NA	NA	NA
	2,4-Dichlorophenol				ND	ND	ND	0.003	NA	NA	NA
	2,4,5-Trichlorophenol				ND	0.001	ND	0.018	NA	NA	NA
	Pentachlorophenol				0.15	0.97	1.8	0.66	NA	NA	NA
	Tetrachlorophenol				ND	0.0021	0.068	0.066	NA	NA	NA
W20	Pentachlorophenol				0.0032	0.0065	0.022	0.025	0.031	0.017	0.013
W21	No compounds detected										
W22	No compounds detected										

NOTES:
All monitoring wells are listed in this table. Borings B1 through B4, B10, and B15 were not converted to monitoring wells.
Only those compounds that have been detected are listed.

ND = NOT DETECTED, NA = NOT ANALYZED

TABLE

DIOXINS AND FURANS IN GROUNDWATER (mg/l)

WELL:	W5	W6		W9	
DATE:	Apr-86	Apr-86	Jan-90	Apr-86	Jan-90
DIOXIN					
Tetrachlorodibenzodioxin (TCDD)	ND	ND	ND	ND	ND
2378 TCDD	ND	ND	ND	ND	ND
Pentachlorodibenzodioxin (PeCDD)	ND	ND	ND	ND	ND
Hexachlorodibenzodioxin (HxCDD)	ND	0.0985	0.000237	0.43	0.136
Heptachlorodibenzodioxin (HpCDD)	ND	2.00	0.00403	9.77	2.03
Octachlorodibenzodioxin (OCDD)	0.0505	3.07	0.0141	41.1	3.29
FURAN					
Tetrachlorodibenzofuran (TCDF)	ND	ND	ND	ND	ND
2378 TCDF	ND	ND	ND	ND	ND
Pentachlorodibenzofuran (PeCDF)	ND	ND	ND	ND	ND
Hexachlorodibenzofuran (HxCDF)	ND	0.281	0.000612	0.95	0.0356
Heptachlorodibenzofuran (HpCDF)	ND	2.66	0.00458	10.7	0.541
Octachlorodibenzofuran (OCDF)	ND	3.97	0.00875	18.6	1.57

WELL:	W19			W20			
DATE:	Jul-88	Sep-88	Nov-88	Jul-88	Sep-88	Nov-88	Jan-90
DIOXIN							
Tetrachlorodibenzodioxin (TCDD)	ND	ND	ND	ND	ND	ND	ND
2378 TCDD	ND	ND	ND	ND	ND	ND	ND
Pentachlorodibenzodioxin (PeCDD)	ND	ND	ND	ND	ND	ND	ND
Hexachlorodibenzodioxin (HxCDD)	ND	ND	ND	ND	ND	ND	0.0000062
Heptachlorodibenzodioxin (HpCDD)	0.0000031*	0.0000029	ND	ND	ND	ND	0.0000319
Octachlorodibenzodioxin (OCDD)	0.0000235	0.0000278	0.0000118	0.0000024	0.0000015	0.0000115	
FURAN							
Tetrachlorodibenzofuran (TCDF)	ND	ND	ND	ND	ND	ND	ND
2378 TCDF	ND	ND	ND	ND	ND	ND	ND
Pentachlorodibenzofuran (PeCDF)	ND	ND	ND	ND	ND	ND	ND
Hexachlorodibenzofuran (HxCDF)	ND	0.0000012*	ND	ND	ND	0.000002*	ND
Heptachlorodibenzofuran (HpCDF)	0.0000015*	0.0000028*	ND	ND	ND	0.000002*	0.0000032
Octachlorodibenzofuran (OCDF)	0.0000039	0.0000049	ND	ND	ND	0.0000039	0.0000075

*Maximum Possible Concentration

NOTE: All groundwater samples that have been analyzed for dioxins and furans are listed in this table.

The upper water-bearing zone elevation data indicate that selected wells are tidally influenced. The graphs for various wells are presented in the Tidal Study (Appendix A). The lower water-bearing zone exhibits marked changes in flow direction due to tidal loading. The net water movement at the site in the lower zone may be to the southeast, based upon the slightly higher gradients in that direction.

Groundwater Sampling Data

Groundwater sampling at the Embarcadero Cove Site has been conducted several times, beginning in 1982. The most recent sampling occurred in December 1990. Table 3 is a ground water sampling schedule that indicates sampling dates, wells sampled, and the analyses performed since sampling began.

Table 4 presents the sampling results for phenols in ground water. Only those compounds that have been detected are listed. Pentachlorophenol (PCP) concentrations are consistently highest in wells on the eastern side of the site, such as W6, W9, and W19. Groundwater from wells W6 and W9 contains visible amounts of petroleum hydrocarbons. Because PCP is more soluble in oil than in water, the presence of petroleum hydrocarbons in these wells probably accounts for the high PCP concentrations. Quarterly sampling conducted in 1990 showed no phenols in the off-site wells W12R, W13, and W21.

Figure 5 illustrates the PCP concentrations in the upper water-bearing zone using the January 1990 sampling results. This sampling date was chosen because it was the most comprehensive 1990 sampling and analysis event. The map may overstate the presence of PCP in ground water in the southwestern portion of the site because the concentration for well W16 appears to be anomalously high compared to other sampling events. In fact, PCP was not detected in three subsequent sampling events of W16 in 1990.

Samples from wells W7 and W20, in the lower water-bearing zone, have generally had reported PCP concentrations in the 0.010 mg/L to 0.030 mg/L range. PCP has not been detected in the six latest samplings of W11, the remaining lower water-bearing zone well.

Table 5 lists dioxin and furan results for ground water samples from wells W5, W6, W9, W19, and W20. Concentrations are orders of magnitude higher in wells W6 and W9 than the other wells; however, no tetrachloro- or pentachloro- dibenzodioxin or dibenzofuran have been detected in any water samples. Dioxins and furans occur as a contaminant in the manufacture of PCP, thus their presence in wells W6 and W9 is not unexpected. It is not clear if the decrease in dioxin and furan concentrations in these two wells between the 1986 and 1990 sampling events indicates a trend. Dioxin and furan concentrations are likely to be greater in samples that contain oil.

Table 6 presents volatile organic compounds and total petroleum hydrocarbons (TPH) in ground water. These compounds have not been detected in most wells, with the major exceptions being wells W6 and W9. A few compounds have also been detected in W19. W19 is in the vicinity of the former drum cleaning building.

Free product is present in wells W6 and W9. When measured with a fiberglass tape (prior to bailing as part of the groundwater monitoring program), the product is about two inches thick in W6 and about seven inches in W9. Figure 6 shows the estimated extent of free product based upon data from soil borings and wells.

Groundwater sample results for pesticides and PCBs are shown in Table 7. The most frequently detected pesticides in ground water at the site are DDT and DDD, chlordane, dieldrin, and endosulfan. Low concentrations of pesticides have occurred repeatedly in water samples from W5. DDD has also been detected in wells W6 and W9, and is most likely attributable to the presence of the free product in these wells. A portion of the free product typically emulsifies with the groundwater, thereby creating artificially high concentrations of oil-soluble and hydrophobic compounds in the water. Pesticides have not been consistently detected in the lower water-bearing zone wells.

Please contact me if you have any questions regarding this report.

Sincerely,

ERM-WEST, INC.

Richard Knapp, C.E.G.
Senior Geologist

RRK/293.30

Attachments

cc: Neil Werner, Port of Oakland
Larry Adams, Monsanto
Andrew Clark-Clough, Port of Oakland
Ted Park, DHS

TABLE 6

VOLATILE ORGANICS AND TPH IN GROUNDWATER (mg/l)

WELL	COMPOUND	CONCENTRATION						
		May-82	Feb-85	Oct-85	Jul-88	Sep-88	Nov-88	Jun-90
W15	No compounds detected							
W16	No compounds detected							
W17	No compounds detected							
W18	No compounds detected							
W19**	Benzene				0.0023	ND	0.0016	ND
	Ethylbenzene				ND	ND	ND	0.001
	1,3-Dichlorobenzene				ND	ND	ND	0.0052
	1,4-Dichlorobenzene				ND	ND	ND	0.0054
	Toluene				ND	ND	0.0011	ND
	Gasoline				ND	0.59	ND	NA
	Hydrocarbon Mixture				ND	2.2	2.6	NA
	Diesel				3.4	ND	ND	NA
W20	No compounds detected							
W21	No compounds detected							
W22	No compounds detected							

*Acetone was not detected in groundwater analyzed from well W7 in a special sampling on April 1, 1985. The acetone detection of February 1985 was attributed to inadequate decontamination of the bailer previously used to sample W6.
**Acetone was not detected in groundwater analyzed from well W19 on June 13, 1990

NOTES:
All monitoring wells are listed in this table. Borings B1 through B4, B10, and B15 were not converted to monitoring wells.
Only those compounds that have been detected are listed.

ND = NOT DETECTED, NA = NOT ANALYZED

TABLE 6

VOLATILE ORGANICS AND TPH IN GROUNDWATER (mg/l)

WELL	COMPOUND	CONCENTRATION						
		May-82	Feb-85	Oct-85	Jul-88	Sep-88	Nov-88	Jun-90
W5	Toluene	0.002	ND	ND	ND	ND	ND	NA
	Acetone	0.088	ND	NA	NA	NA	NA	NA
	Isopropanol	0.013	ND	NA	NA	NA	NA	NA
W6	Benzene	NA	NA	ND	ND	ND	0.029	ND
	Ethylbenzene	0.2	ND	ND	ND	0.15	ND	1.7
	Toluene	0.3	0.73	0.085	0.56	0.45	0.33	ND
	Acetone	330	140	NA	NA	NA	420	950
	Isopropanol	29	ND	NA	NA	NA	NA	NA
	Xylenes	2.6	0.83	0.21	NA	NA	1.0	NA
	Gasoline	NA	NA	NA	175	1100	600	NA
	Hydrocarbon Mixture	NA	NA	NA	190	200	ND	NA
W7*	Acetone		1.8	NA	NA	NA	NA	NA
W8	Acetone		0.69	NA	NA	NA	ND	NA
W9	Ethylbenzene		1.5	ND	11	ND	ND	ND
	Toluene		0.86	ND	ND	ND	ND	ND
	Acetone		0.37	NA	NA	NA	23	470
	Xylenes		3.2	ND	NA	NA	0.056	NA
	Gasoline		NA	NA	1800	810	400	NA
	Hydrocarbon Mixture		NA	NA	3200	940	ND	NA
W11	No compounds detected							
W12	No compounds detected							
W12R	No compounds detected							
W13	No compounds detected							

ND = NOT DETECTED NA = NOT ANALYZED

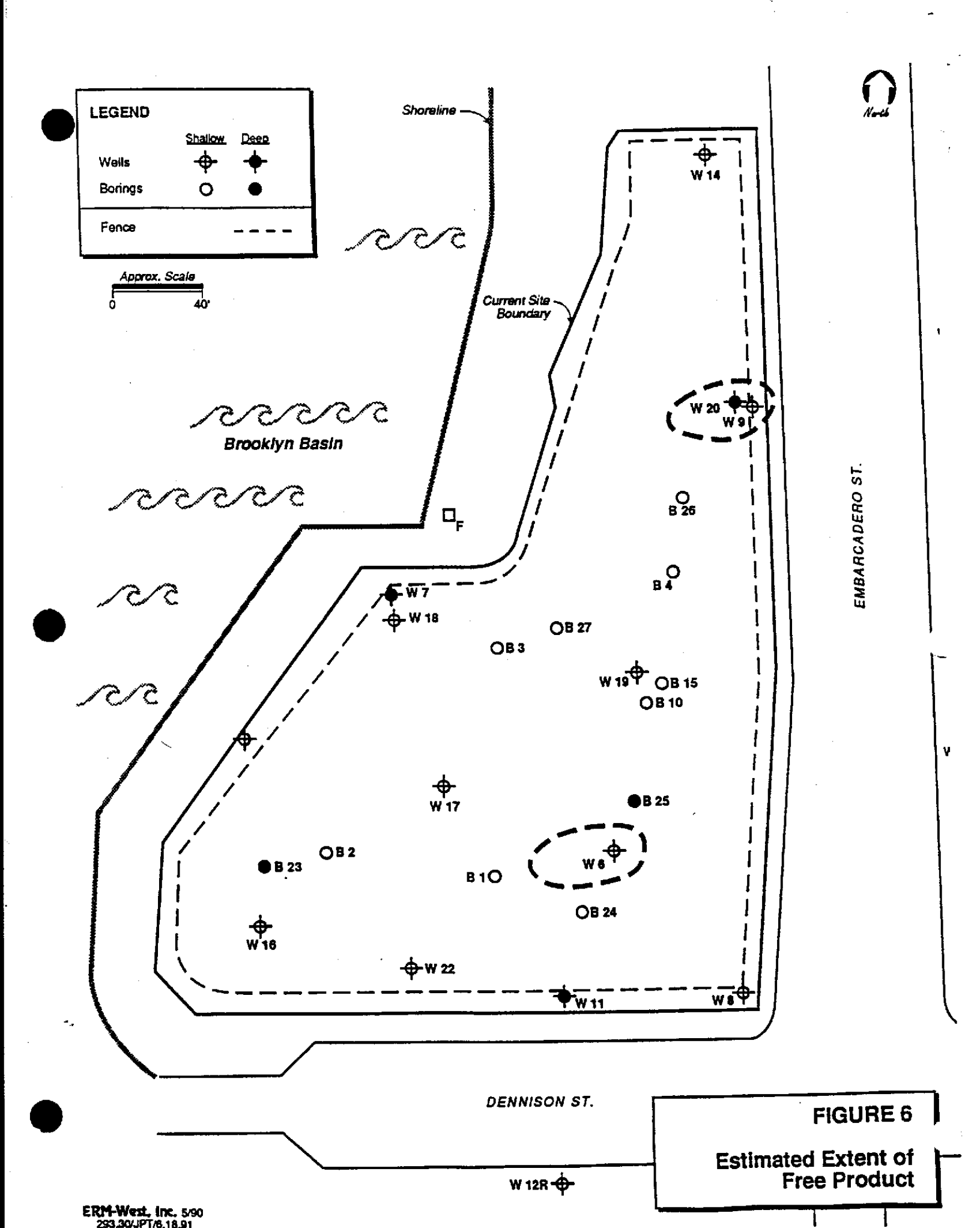


FIGURE 6

Estimated Extent of Free Product

ERM-West, Inc. 5/90
293.30/JPT/6.18.91

TABLE 7

PESTICIDES AND PCBS IN GROUNDWATER (mg/l)

WELL	COMPOUND	CONCENTRATION									
		May-82	Feb-85	Oct-85	Jul-88	Sep-88	Nov-88	Jan-90	Jun-90	Sep-90	Dec-90
W5	BHC	0.00011	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Chlordane (Total)	0.0069	0.0095	ND	NA	NA	NA	NA	NA	NA	NA
	alpha-Chlordane	NA	NA	NA	0.00025	0.00079	0.00058	0.00032	0.0015	0.00071	ND
	gamma-Chlordane	NA	NA	NA	0.00029	0.00088	0.00053	0.00018	0.0015	0.00070	ND
	DDT	0.0011	0.0032	ND	0.0013	0.00076	0.00014	0.00023	0.00073	ND	ND
	DDD	0.00092	0.0026	0.00045	ND	0.0011	0.00061	0.00036	0.0018	0.0010	ND
	DDE	0.00012	0.0002	ND	ND	ND	ND	ND	ND	ND	ND
	Dieldrin	0.00073	0.0009	0.00098	0.00078	0.00046	0.00057	0.00032	0.00053	0.00066	0.0016
	Endosulfan II	ND	ND	ND	0.00034	ND	ND	ND	ND	ND	ND
W6	BHC	0.024	ND	ND	ND	ND	ND	ND	NA	NA	NA
	DDD	2.5	2.79	0.24	ND	ND	0.41	0.26	NA	NA	NA
	DDE	0.12	ND	ND	ND	ND	ND	ND	NA	NA	NA
W7	Chlordane (Total)		0.0015	ND	NA	NA	NA	NA	NA	NA	NA
	alpha-Chlordane		NA	NA	ND	0.00026	ND	ND	ND	0.00011	ND
	gamma-Chlordane		NA	NA	ND	0.00025	ND	ND	ND	0.00011	ND
	DDT		ND	ND	ND	0.00055	ND	0.00025	ND	0.000085	ND
	DDD		ND	ND	ND	ND	ND	0.00014	ND	0.000077	ND
	DDE		ND	ND	ND	ND	ND	ND	ND	0.000028	ND
	Dieldrin		ND	ND	ND	0.00015	ND	ND	ND	0.0001	ND
	Aroclor 1260		0.0013	0.0026	0.0067	0.0042	ND	ND	ND	0.0012	ND
W8	Chlordane (Total)		0.00047	ND	NA	NA	NA	NA	NA	NA	NA
	DDD		ND	ND	ND	0.0002	ND	ND	NA	NA	NA
	Aroclor 1260		0.0012	ND	ND	ND	ND	ND	NA	NA	NA
W9	DDD		0.76	0.92	ND	0.016	0.24	0.093	NA	NA	NA
	Endosulfan I		ND	ND	0.00015	ND	ND	ND	NA	NA	NA
W11	DDT			ND	0.00035	ND	ND	ND	ND	ND	ND
	DDD			ND	0.00015	ND	ND	ND	ND	ND	ND
	Endosulfan I			ND	0.00005	ND	ND	ND	ND	ND	ND
W12	No Compounds Detected										
W12R	No Compounds Detected										

ND = NOT DETECTED, NA = NOT ANALYZED

TABLE 7

PESTICIDES AND PCBS IN GROUNDWATER (mg/l)

WELL	COMPOUND	CONCENTRATION								
		May-82	Feb-85	Oct-85	Jul-88	Sep-88	Nov-88	Jan-90	Jun-90	Sep-90	Dec-90
W13	No Compounds Detected										
W14	No Compounds Detected										
W16	DDT				ND	ND	ND	0.00077	NA	NA	NA
	DDD				ND	ND	ND	0.00090	NA	NA	NA
W17	alpha-Chlordane				ND	0.00051	ND	ND	NA	NA	NA
	DDD				0.00012	0.00013	ND	ND	NA	NA	NA
	Dieldrin				ND	ND	ND	0.00028	NA	NA	NA
	Endosulfan I				0.00006	ND	ND	ND	NA	NA	NA
	Methoxychlor				ND	ND	ND	0.0031	NA	NA	NA
W18	alpha-Chlordane				ND	0.00005	ND	ND	NA	NA	NA
	gamma-Chlordane				ND	0.00007	ND	ND	NA	NA	NA
	DDT				0.00016	ND	ND	ND	NA	NA	NA
	DDD				0.00017	0.00024	ND	ND	NA	NA	NA
W19	DDD				ND	0.00045	0.00015	ND	NA	NA	NA
W20	DDD				0.00017	ND	0.00017	0.00017	0.00015	ND	ND
W21	Endrin				ND	0.00026	ND	ND	ND	ND	ND
	Endosulfan I				ND	0.00021	ND	ND	ND	ND	ND
	Endosulfan II				ND	0.0002	ND	ND	ND	ND	ND
W22	No compounds detected										

NOTES:
All monitoring wells are listed in this table. Borings B1 through B4, B10, and B15 were not converted to monitoring wells.
Only those compounds that have been detected are listed.

ND = NOT DETECTED NA = NOT ANALYZED

8 7980

Section I

Chain of Custody and Analysis Request

page 1 of 1

Consultant: Steam Valve Machine Co.
Address: 98 Hegenberger Loop, Oakland, CA 94621-9091
Phone No. 5102635-9091 Fax No. (510)635-2223
Project Manager: Dennis Stopper
Alternate Contact: Dave Amito
Project No. 1899 Dennison P.O. No. (Same)

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

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: Mike Duffy - Soils Exploration Svcs.
Regulatory Agency:

Section II: Analysis Request

Laboratory Sample Identification	S = Soil A = Air W = Water Matrix	mod 8015 - Gas	mod 8015 - BTEX	mod 8015 - Diesel	8010	8240	CAM17	TCLP Metals:	Metals:	418.1 - TPH by IR	O & G	PCBs			Date Sampled	Time Sampled	Number of Containers	Preservative (yes or no)
1 Sample 1							X								3/5	11am	1	no
2 Sample 2							X								3/5	11am	1	no
3 Sample 3							X								3/5	11am	1	no
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Sampling Remarks
- ☐ Bio-remediation
- ☐ Underground storage tank
- ☐ Monitoring
- ☐ Recent Contamination
- ☐ Unknown Compounds

Relinquished by: Mike Duffy	Date/Time 3/5/93	Received by: Driver	Date/Time 3/5/93
Organization: Soils Exploration Svcs.		Organization: Aero Delivery	
Relinquished by: Aero Delivery	Date/Time 3/5	Received by: Atsanh	Date/Time
Organization:		Organization: Superior	
Relinquished by:	Date/Time	Received by:	Date/Time
Organization:		Organization:	

Lab please initial the following:
Samples Stored in Ice: no - refrigerated prior to pickup
Appropriate Containers: N/A
Samples Preserved: no
VOAs without Headspace: N/A
Comments: none

Section I

Chain of Custody and Analysis Request

page ___ of ___

Consultant ~~STEAM VALVE MACHINE CO., INC.~~
Address ~~98 HEGENBERGER LOOP~~
OAKLAND, CA 94621
Phone No. 510-635-9091 Fax No. 510-635-2223
Project Manager Terry Bouquenoy
Alternate Contact DAVE CURTO
Project No. 1899 Dawson P.O. No. (SAME)

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

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: Mike Duffy - Soils Exploration Svcs
Regulatory Agency: ___

Section II: Analysis Request

Laboratory Sample Identification	S = Soil A = Air W = Water Matrix	mod 8015 - Gas	mod 8015 - BTEX	mod 8015 - Diesel	8010	8240	CAM17	TCLP Metals:	Metals:	418.1 - TPH by IR	O & G	PCBs			Date Sampled	Time Sampled	Number of Containers	Preservative (yes or no)
1 Sample B-1 $\frac{2.0}{3.5}$							X											
2 Sample B-1 4.0-4.5							X											
3 Sample B-4 $\frac{2.5}{3.0}$							X											
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Sampling Remarks
- ☐ Bio-remediation
- ☐ Underground storage tank
- ☐ Monitoring
- ☐ Recent Contamination
- ☐ Unknown Compounds

Relinquished by	Date/Time	Received by	Date/Time
Mike Duffy	3-5-93	Driver	
Organization: Soils Exploration Svcs.		Organization: Aero Delivery	
Relinquished by: Aero Delivery	3-16-93	Received by:	
Organization:		Organization: Superior	
Relinquished by:		Received:	
Organization:	Date/Time	Organization:	Date/Time

Lab please initial the following:
Samples Stored in Ice No - Refrigerated
Appropriate Containers Yes
Samples Preserved ___
VOAs without Headspace ___
Comments ___

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

INVOICE

Steam Valve Machine
98 Hegenberger Loop
Oakland, CA 94621

Date: 03/23/93
Date Rcvd: 03/16/93
Date Rptd: 03/23/93
Our Job #: 88092
Invoice #: 88092

Steam Valve Machine Job # 1899 DENNISON

QTY/MATRIX	ANALYSIS			EXT. PRICE
3 Soil	sample(s) for CAM17	@	$170.00 (NORMAL)	510.00
TOTAL INVOICE				510.00

Please Send Payment To:
Superior Precision Analytical
P.O. Box 1545
Martinez, CA 94553

TERMS: NET 30
A charge of 1.5% per month may be applied to unpaid balances.

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

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 88092-1
CLIENT: Steam Valve Machine
CLIENT JOB NO.: 1899 Dennison

DATE RECEIVED:03/16/93
DATE REPORTED:03/23/93
CLIENT SAMPLE ID:B-1 2.0 to 2.5

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)	ND	5
Arsenic	(As)	1	1
Barium	(Ba)	270	5
Beryllium	(Be)	ND	0.5
Cadmium	(Cd)	ND	1
Chromium	(Cr)	16	5
Cobalt	(Co)	ND	10
Copper	(Cu)	18	10
Lead	(Pb)	7	5
Mercury	(Hg)	ND	0.05
Molybdenum	(Mo)	ND	10
Nickel	(Ni)	17	10
Selenium	(Se)	ND	1
Silver	(Ag)	ND	5
Thallium	(Tl)	ND	5
Vanadium	(V)	30	10
Zinc	(Zn)	41	20

mg/Kg = part per million (ppm)

QAQC Summary: Spike Recovery Range: 86%-117%
Duplicate RPD = < 7%

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

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 88092-2
CLIENT: Steam Valve Machine
CLIENT JOB NO.: 1899 Dennison

DATE RECEIVED:03/16/93
DATE REPORTED:03/23/93
CLIENT SAMPLE ID:B-1 4.0 to 4.5

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)	ND	5
Arsenic	(As)	2	1
Barium	(Ba)	280	5
Beryllium	(Be)	ND	0.5
Cadmium	(Cd)	ND	1
Chromium	(Cr)	18	5
Cobalt	(Co)	ND	10
Copper	(Cu)	18	10
Lead	(Pb)	9	5
Mercury	(Hg)	ND	0.05
Molybdenum	(Mo)	ND	10
Nickel	(Ni)	17	10
Selenium	(Se)	ND	1
Silver	(Ag)	ND	5
Thallium	(Tl)	ND	5
Vanadium	(V)	30	10
Zinc	(Zn)	42	20

mg/Kg = part per million (ppm)

QAQC Summary: Spike Recovery Range: 86%-117%
Duplicate RPD = < 7%

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

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 88092-3
CLIENT: Steam Valve Machine
CLIENT JOB NO.: 1899 Dennison

DATE RECEIVED:03/16/93
DATE REPORTED:03/23/93
CLIENT SAMPLE ID:B-4 2.5 to 3.0

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)	11	5
Arsenic	(As)	3	1
Barium	(Ba)	120	5
Beryllium	(Be)	ND	0.5
Cadmium	(Cd)	ND	1
Chromium	(Cr)	23	5
Cobalt	(Co)	10	10
Copper	(Cu)	23	10
Lead	(Pb)	7	5
Mercury	(Hg)	ND	0.05
Molybdenum	(Mo)	ND	10
Nickel	(Ni)	22	10
Selenium	(Se)	ND	1
Silver	(Ag)	ND	5
Thallium	(Tl)	ND	5
Vanadium	(V)	32	10
Zinc	(Zn)	54	20

mg/Kg = part per million (ppm)

QAQC Summary: Spike Recovery Range: 86%-117%
Duplicate RPD = < 7%

Richard Srna, Ph.D.

Laboratory Manager

KLEINFELDER

April 13, 1993
File: 11-4017-01

SUMMARY OF LABORATORY TEST RESULTS

Source: Source: 3/4"-Class II Recycled Aggregate Base Material

Submitted by: Gallagher & Burke, Inc. on 3/31/93

Lab No.: 3613

Grading Analysis (ASTM C-136)

Sieve Size	% Passing	Caltrans Specs., Sec. 26 3/4" Class-II AB (Operating Range)
1"	100	100
3/4"	95	90 - 100
#4	53	35 - 60
#30	23	10 - 30
#200	7.9	2 - 9

R-Value / Sand Equivalent / Duribility Index

Test Type	3/4" Class-II AB / Recycled	Caltrans Specs., Sec. 26
R-Value (CAL-301)	84	78 (Min.)
Expansion Pressure (psf)	0	-----
Sand Equivalent (CAL-217)	47	25 (Min.)
Durability Index, Coarse (CAL-229)	90	-----
Durability Index, Fine	61	35 (Min.)

Liquid Limit & Plasticity Index

Sample I.D.	Liquid Limit	Plasticity Index
3/4" Class-II AB / Recycled (Portion Passing #40 Sieve)	40	10

Maximum Dry Density & Optimum Moisture Content (ASTM D-1557)

Sample I.D.	Maximum Dry Density	Optimum Moisture %
3/4" Class-II AB / Recycled	132	7.7

Section I

Chain of Custody and Analysis Request

page___of___

Consultant: Stern Valve Machine
Address: 98 Hagen Bogert Loop
Oakland Ca 94261
Phone No. 510-635909 Fax No. 510 635-2223
Project Manager: TERRY R. BOUQUENOY
Alternate Contact: DAVE CURTS
Project No. 1899 DENNISON P.O. No. TERRY

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

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: SOILS EXPLORATION SERVICE
Regulatory Agency:

Section II: Analysis Request

635-9748

Laboratory Sample Identification	Matrix (S = Soil A = Air W = Water)	mod 8015 - Gas	mod 8015 - BTEX	mod 8015 - Diesel	8010	8240	CAM17 metals	TCLP Metals:	Metals:	418.1 - TPH by IR	O & G	PCBs			Date Sampled	Time Sampled	Number of Containers	Preservative (yes or no)
1 BORING #1		X	X	X														
2 BORING #2		X	X	X			X											
3 BORING #3		X	X	X			X											
4 BORING #4		X	X	X														
5 BORING #5		X	X	X			X											
6 BORING #6		X	X	X			X											
7																		
8																		
9																		
10																		
11																		
12																		

Sampling Remarks

- ☐ Bio-remediation
- ☐ Underground storage tank
- ☐ Monitoring
- ☐ Recent Contamination
- ☐ Unknown Compounds

Relinquished by / Organization	Date/Time	Received by / Organization	Date/Time
Relinquished by: Organization: SOILS EXPLORATION	9-27-93	Received by: Eric Callen Organization: AERO	9/27 11:25
Relinquished by: Eric Callen Organization: AERO	9/27 3:35	Received by: Organization:	Date/Time
Relinq[illegible] by: Organization:	Date/Time	Received by: [illegible] Organization:	9-27 3:30pm

Lab please initial the following:
Samples Stored in Ice: yes 4C
Appropriate Containers:
Samples Preserved:
VOAs without Headspace:
Comments:

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

SOILS EXPLORATION SERVICE
Attn: TERRY R. BOUQUENOY

Project 1899 DENNISEN
Reported 03-October-1993

ANALYSIS FOR CAM 17 METALS

California Administration Code Title 22, Paragraph 66700 & EPA Methods SW-846 6010 & 7000 series.

Chronology

Laboratory Number 90103

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
BORING #2	09/27/93	09/27/93	09/30/93	10/01/93		2
BORING #3	09/27/93	09/27/93	09/30/93	10/01/93		3
BORING #5	09/27/93	09/27/93	09/30/93	10/01/93		5
BORING #6	09/27/93	09/27/93	09/30/93	10/01/93		6

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

SOILS EXPLORATION SERVICE
Attn: TERRY R. BOUQUENOY

Project 1899 DENNISEN
Reported 03-October-1993

ANALYSIS FOR CAM 17 METALS

Laboratory Number	Sample Identification	Matrix
90103- 2	B0RING #2	Soil
90103- 3	B0RING #3	Soil
90103- 5	B0RING #5	Soil
90103- 6	B0RING #6	Soil

RESULTS OF ANALYSIS

Laboratory Number:		90103- 2	90103- 3	90103- 5	90103- 6
Antimony	(Sb):	ND<5	ND<5	ND<5	ND<5
Arsenic	(As):	3	4	ND<1	5
Barium	(Ba):	56	54	34	54
Beryllium	(Be):	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Cadmium	(Cd):	ND<0.5	0.6	ND<0.5	ND<0.5
Chromium	(Cr):	52	77	38	51 ?
Cobalt	(Co):	12	11	7	12
Copper	(Cu):	18	30	6	12 — above STLC - 5
Lead	(Pb):	ND<5	8	ND<5	ND<5 — above STLC - 5
Mercury	(Hg):	ND<0.05	0.13	ND<0.05	0.30
Molybdenum	(Mo):	ND<5	ND<5	ND<5	ND<5
Nickel	(Ni):	76	84	33	68 — above STLC - 20
Selenium	(Se):	ND<1	ND<1	ND<1	ND<1
Silver	(Ag):	ND<5	ND<5	ND<5	ND<5
Thallium	(Tl):	ND<5	ND<5	ND<5	ND<5
Vanadium	(V):	36	36	37	26 — above STLC - 24
Zinc	(Zn):	51	64	23	42
Concentration:		mg/Kg	mg/Kg	mg/Kg	mg/Kg

depth - 4 feet

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

ANALYSIS FOR CAM 17 METALS
Quality Assurance and Control Data - Soil

Laboratory Number 90103

Compound		Method Blank (mg/Kg)	PQL (mg/Kg)	Average Spike Recovery (%)	Limits (%)	RPD (%)
Antimony	(Sb):	ND<5	5	107%	75-125	3%
Arsenic	(As):	ND<1	1	87%	75-125	1%
Barium	(Ba):	ND<5	5	105%	75-125	0%
Beryllium	(Be):	ND<0.5	0.5	111%	75-125	0%
Cadmium	(Cd):	ND<0.5	0.5	116%	75-125	1%
Chromium	(Cr):	ND<5	5	107%	75-125	2%
Cobalt	(Co):	ND<5	5	115%	75-125	3%
Copper	(Cu):	ND<5	5	107%	75-125	0%
Lead	(Pb):	ND<5	5	114%	75-125	1%
Mercury	(Hg):	ND<0.05	0.05	116%	75-125	2%
Molybdenum	(Mo):	ND<5	5	108%	75-125	0%
Nickel	(Ni):	ND<5	5	112%	75-125	1%
Selenium	(Se):	ND<1	1	100%	75-125	3%
Silver	(Ag):	ND<5	5	105%	75-125	2%
Thallium	(Tl):	ND<5	5	113%	75-125	2%
Vanadium	(V):	ND<5	5	107%	75-125	1%
Zinc	(Zn):	ND<5	5	109%	75-125	5%

Definitions:

ND = Not Detected
PQL = Practical Quantitation Limit

RPD = Relative Percent Difference

QC File No. 90103

10/5/93
Senior Chemist
Account Manager

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

SOILS EXPLORATION SERVICE
Attn: TERRY R. BOUQUENOY

Project 1899 DENNISEN
Reported 10/04/93

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
90103- 1	BORING #1	09/27/93	10/01/93	Soil
90103- 2	BORING #2	09/27/93	10/01/93	Soil
90103- 3	BORING #3	09/27/93	10/01/93	Soil
90103- 4	BORING #4	09/27/93	10/01/93	Soil
90103- 5	BORING #5	09/27/93	10/01/93	Soil
90103- 6	BORING #6	09/27/93	10/01/93	Soil

RESULTS OF ANALYSIS

Laboratory Number:	90103- 1	90103- 2	90103- 3	90103- 4	90103- 5
Gasoline:	17	ND<1	ND<1	ND<1	ND<1
Benzene:	0.14	0.013	ND<.003	ND<.003	ND<.003
Toluene:	1.1	0.075	ND<.003	ND<.003	ND<.003
Ethyl Benzene:	0.38	0.021	ND<.003	ND<.003	ND<.003
Total Xylenes:	1.6	0.084	ND<.009	ND<.009	ND<.009
Diesel Range:	89	ND<10	ND<10	ND<10	ND<10
Concentration:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg

Laboratory Number:	90103- 6
Gasoline:	ND<1
Benzene:	ND<.003
Toluene:	ND<.003
Ethyl Benzene:	ND<.003
Total Xylenes:	ND<.009
Diesel Range:	26
Concentration:	mg/Kg

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

CERTIFICATE OF ANALYSIS
ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 90103

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = parts per million (ppm)

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 10mg/kg

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.003mg/kg

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	112/99	12%	70-130
Benzene:	98/102	4%	70-130
Toluene:	91/99	8%	70-130
Ethyl Benzene:	96/98	2%	70-130
Total Xylenes:	94/96	2%	70-130
Diesel Range:	114/119	4%	75-125

10/5/93

Senior Chemist

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

INVOICE

SOILS EXPLORATION SERVICE
98 HAGENBURGER LOOP
OAKLAND, CA 94261

Date: 10/04/93
Date Rcvd: 09/27/93
Date Rptd: 10/04/93
Our Job #: 90103
Invoice #: 90103

SOILS EXPLORATION SERVICE Job # 1899 DENNISEN

QTY/MATRIX	ANALYSIS			EXT. PRICE
6 Soil sample(s)	for DIESEL	@	$65.00 (NORMAL)	390.00
6 Soil sample(s)	for VPHBTXE	@	$75.00 (NORMAL)	450.00
4 Soil sample(s)	for CAM17	@	$170.00 (NORMAL)	680.00
TOTAL INVOICE				1520.00

Please Send Payment To:
Superior Precision Analytical
P.O. Box 1545
Martinez, CA 94553

TERMS: NET 30
A charge of 1.5% per month may be applied to unpaid balances.

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

SOILS EXPLORATION SERVICE
Attn: TERRY R. BOUQUENOIY

Project 1899 DENNISON
Reported 11/02/93

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
90405- 1	BORING #1	09/27/93	11/02/93	Soil
90405- 2	BORING #2	09/27/93	11/02/93	Soil
90405- 3	BORING #3	09/27/93	11/02/93	Soil
90405- 4	BORING #4	09/27/93	11/02/93	Soil
90405- 5	BORING #5	09/27/93	11/02/93	Soil
90405- 6	BORING #6	09/27/93	11/02/93	Soil

RESULTS OF ANALYSIS

Laboratory Number:	90405- 1	90405- 2	90405- 3	90405- 4	90405- 5
Oil and Grease:	ND<50	73	ND<50	ND<50	ND<50
Concentration:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg

Laboratory Number:	90405- 6
Oil and Grease:	ND<50
Concentration:	mg/Kg

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

CERTIFICATE OF ANALYSIS

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 90405

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = parts per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil and Grease:	78/84	7%	56-106

Senior Chemist

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

INVOICE

SOILS EXPLORATION SERVICE
98 HAGENBURGER LOOP
OAKLAND, CA 94261

Date: 11/02/93
Date Rcvd: 10/26/93
Date Rptd: 11/02/93
Our Job #: 90405
Invoice #: 90405

SOILS EXPLORATION SERVICE Job # 1899 DENNISON
SOILS EXPLORATION SERVICE Release # TERRY

QTY/MATRIX	ANALYSIS		EXT. PRICE
6 Soil sample(s) for OG	@	$45.00 (NORMAL)	270.00
TOTAL INVOICE			270.00

Please Send Payment To:
Superior Precision Analytical
P.O. Box 1545
Martinez, CA 94553

TERMS: NET 30
A charge of 1.5% per month may be applied to unpaid balances.

STEAM VALVE MACHINE CO., INC.

98 Hegenberger Loop
Oakland, CA 94621
Phone: 510-635-9091
Fax: 510-635-2223

October 26, 1993

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114
Martinez, California 94553

Attn: Steve

Dear Steve:

Per our phone conversation, accept this as written authorization to perform additional tests on the soil samples taken at 1899 Dennison Street, Oakland, CA.

Using Lab #90103-1 through 6; Borings #1 through 6, sampled 09/27/93, please test for oil and grease. You've quoted me a price for the new test of $240.

It is imperative we receive the results as quickly as possible.

Sincerely,

Terry Bouquenoy

Terry Bouquenoy
Transportation Manager

Pd. BY CHECK
9-27-93 650 00

SOILS EXPLORATION SERVICES, Inc.

P.O. Box 5993 - Vacaville, CA 95696
Contractors LIC.# C-57 - 582696
Phone 800- 995-SES1 -(7371) Fax - (707) 745-8212

CLIENT: Steam Valve (Terry) | DATE: 9/27/93 | DAY # 1 OF 1

JOB LOCATION: 1899 Dennison (Oakland | SES JOB #: 1957

HOURS start	HOURS stop	DESCRIPTION OF WORK	Footage Drilled	Drilling	Travel To/From Job Site	Clean-up Grout Decon	Stand By	Non-Chargeable Down Time	Non-Chargeable Shop Time
6:30	7:30	A.M. SHOP TIME						→	1.0
7:30	8:00	mob to site			.5				
8:00	8:30	mark holes Set-up		.5					
8:30	10:30	Drill-Sample-Move	20'	2.0					
10:30	11:30	Stand-by for Check							
11:30	12:00	mob to shop			.5				
		P.M. SHOP TIME						→	
TOTAL CHARGEABLE RIG HOURS									

EQUIPMENT				MATERIALS/SUPPLIES						
Rig Type & No. CME 45-C				Item	Length	Dia	Qty.	Item	Unit	QTY.
Flatbed Truck		5' Dry Core		Blank				Sample Liners		
k-up Truck		A.C. Cutter		Blank				Ready Mix		
out Mixer		Hand Pump		Slotted				Cement		
Steam Cleaner		Hydropunch II		Slotted				Visqueen		
Generator		Hydropunch Tips		Slip Caps				Bentonite Chips		
Grout Pump		CSS		Threaded Caps				Bent. Powder		
Water Tank		Cones/Barricades		Locking Caps				Bent. Pellets		
Night Lights				Well Boxes				Volclay Grout		
Cement Truck				Sand				AC Patch		
Air Compressor				Wood Plugs				Gloves		
Trailer				Monuments				Centralizers		
PPE Level								Drums		

CREW MEMBERS: NAME	SIGNATURE	SHOP HRS. AM	SHOP HRS. PM	DRILL HOURS	TOTAL	CHARGEABLE PER DIEMS
GENE BERNARD	Gene Bernard	1.0				

Terry R. Bouquenoy — CLIENT SIGNATURE
1899 — CLIENT JOB #
Gene Bernard — OPERATOR SIGNATURE

TERMS - NET DUE 30 DAYS. A LATE CHARGE OF 2% PER MONTH WILL BE ADDED TO ALL DELINQUENT ACCOUNTS. ALL DRILLING IS PERFORMED AT THE CLIENTS DIRECTION AND THE CLIENT ASSUMES FULL RESPONSIBILITY FOR UNDERGROUND UTILITIES, HAZARDS, AND ALL LIABILITY RESULTING FROM THE DRILLING SITE SELECTION.

JOB: CRYER YARD

LOC. 1899 DENNISON, OAKLAND

SUBJECT SOIL SAMPLES

DATE 9-27-93 0:800 - 011.00

BORING: #1

LOC. 80'S.E BLd. 20'N.SHEd.

SAMPLE BTX - GAS + DESIEL.

B.C. 4.4.4. 2'- 3.5'

BORING # 2.

LOC. 50'E 120'S. BLd.

SAMPLE B.T.X GAS+DESIEL, CAM 17.

B.C 4.8.3 4.0 TO 5.5

BORING # 3

L.O.C 50'E OR BORING # 2 120'S BLd.

SAMPLE B.T.X GAS + DESIEL, CAM 17

B.C 7.7.7. 1.5' TO 3.0'

BORING #4

LOC. 40'SSE. OF BLd.

SAMPLE B.T.X. GAS + DESIEL.

B.C 11. 15. 11. 3.0' TO 4.5'

BORING #5

LOC. 40'N 25'E OF FENCE

SAMPLE B.T.X GAS + DESIEL CAM 17.

B.C 5. 6. 4. 2.0' TO 3.5'

BORING #6

LOC, 30'W 30'N OF BACK GATE

SAMPLE B.T.X GAS + DESIEL CAM 17.

B.C 4. 2. 3. 4.0 TO 5.5

BORING # 1

SAMPLES REQ 1 BTX GAS + DESIL.

SAMPLE DEPTH 2.0'

SAMPLE LOCATION: 80' S.E OF BLD 20' N OF SHED.

BORING # 2

SAMPLES REQ: 2 1 BTX G.D
1 HEAVY METALS

SAMPLE DEPTH: 4.0'

SAMPLE LOCATION 50' E. 120' S BLd.

BORING # 3

SAMPLES REQ 2 1 BTX G.D
1 HEAVY METAL

SAMPLE DEPTH 1.5'

SAMPLE LOCATION. 50' E OF # 2 100' S.E BLd.

BORING # 4

SAMPLES REQ 1 BTX G.D

SAMPLE DEPTH 3'

SAMPLIE LOCATION: 40' S.S E BLd

BORING # 5

SAMPLES REQ. 2 1 BTX G.D
1 HEAVY METAL

SAMPLE LOCATION. 50' W 5' N OF POPERTY LINE FENCE.

SAMPLE DEPTH - 2'

BORING # 6

SAMPLE REQ 2 1 - BTX G.D
1 - HEAVY METAL.

SAMPLE DEPTH: 4'

SAMPLE LOCATION 40' N 30' W OF POPERTY LINE FENCE

MON.
10-25-93

TUES
10-26-93 CONTACT LAB TO RUN OIL, GREASE
STEVE / WRITHEN APPROVAL

10-26-93 MODULLA LOCAM

SITE REMIDIATION REPORT

(1) SITE HISTORY
(2) LAB ANNALIS TABLE) SOIL + GROUND H^{2O})

DESIEL:
CAM 17
OIL GREASE
(3) % THE EXCAUATION AREA)
DEPTH)
MANIFEST)

F.D.C
PLEASE REMOVE

(4) FINAL FINDINGS

AP-A
AP-B.

NEED GROUND H^2O READING

550
465
1015

CHECK FOR 500.00
TO ALEMEDA COUNTY DEPT
HAZ MAT DIVISON

50.00

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

B. The Following Services are Available for an Additional Fee:

1. Summary Tables with Data Qualifiers
2. Contour Maps
3. Electronic Data Deliverables
4. Data Archiving

III. LABORATORY CONTACT

Contact Katie Hill at (800) 521-6109 to make laboratory arrangements. **Please reference quotation number to ensure accurate invoicing.**

IV. TERMS AND CONDITIONS

A. This quotation is based on receiving the number of samples specified in item I. Fees may be revised if significantly fewer samples are received.

B. This quotation is valid for 30 days and may be renewed.

C. Upon credit approval, payment terms are net 30. A charge of 1.5% may be applied to unpaid balances.

V. QC CHECKLIST

A. When will project begin _____

B. Level of reporting: Standard_X_Level IV___ADEC___

C. Are there any special reporting requirements for any of the analysis? Yes___No_X_

If so, which analyses_____

D. Will any analyses require confirmations? Yes___ No_X_

E. Will any samples require less than 5 Day reporting? Yes___ No_X_

F. Is this project for the Corps of Engineers? Yes___ No_X_

G. Are travel blanks required? Yes___ No___

Superior Precision Analytical, Inc.

Katie Hill
Client Services

P.O. Box 1545
Martinez, CA 94553
(800) 521-6109 / fax (510) 229-0916

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

FAX COVER SHEET

DATE: 9-21-93

FAX NO: 510-635-2223

To: Terry Bogenville / Steam Valve

From: Katie Hill / Superior

RE: Quote

We are transmitting 3 page (s), including the cover sheet. If you experience any difficulty with this transmission, please call (510) 313-0857.
Original copy X *will* be sent. Original copy ___ *will not* be sent.

Terry -
Here is the quote you requested
Please contact me if you have
any questions.

Katie Hill

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

QUOTATION NUMBER 93-00274

Mr. Terry Bogenville
Steam Valve Machine Company
98 Hegenberger Loop
Oakland, CA 94621-1324
510-635-9091 Fax: 510-635-2223

September 21, 1993

Prices are based on Soil Samples for 5 day Reporting

I. COMPENSATION SCHEDULE

ANALYSIS	PRICE PER ANALYSIS	ESTIMATED SAMPLES
CAM 17 Metals	$170.00	3 Soil
EPA Method 8015M/8020 (gas/BTXE)	$75.00	6 Soil
EPA Method 8015M (diesel)	$75.00	3 Soil

All Samples are refrigerated for 30 days prior to disposal unless otherwise specified by client.

II. ADDED VALUE SERVICES

A. Prices Quoted Include the Following Items:

1. Assigned Project Manager
2. Technical Consultation
3. Sample Containers
4. Standard 5 Day Reporting
5. Courier Service
6. Level III Report Format
7. Disposal of Samples
8. Custom Chain-of-Custodies (if requested)
9. Pre-Printed Sample Labels (if requested)

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

B. The Following Services are Available for an Additional Fee:

1. Summary Tables with Data Qualifiers
2. Contour Maps
3. Electronic Data Deliverables
4. Data Archiving

III. LABORATORY CONTACT

Contact Katie Hill at (800) 521-6109 to make laboratory arrangements. **Please reference quotation number to ensure accurate invoicing.**

IV. TERMS AND CONDITIONS

A. This quotation is based on receiving the number of samples specified in item I. Fees may be revised if significantly fewer samples are received.

B. This quotation is valid for 30 days and may be renewed.

C. Upon credit approval, payment terms are net 30. A charge of 1.5% may be applied to unpaid balances.

V. QC CHECKLIST

A. When will project begin _____

B. Level of reporting: Standard_X_Level IV___ADEC___

C. Are there any special reporting requirements for any of the analysis? Yes___No_X_

If so, which analyses_____

D. Will any analyses require confirmations? Yes___ No_X_

E. Will any samples require less than 5 Day reporting? Yes___ No_X_

F. Is this project for the Corps of Engineers? Yes___ No_X_

G. Are travel blanks required? Yes___ No___

TEAM QUALITY CONTROL
PROJECT VERIFICATION

Please help us to provide an error free project to you, by reviewing our log-in information. This will insure tha we have properly interpreted your analytical requests. If changes are required, please contact me immediately, s that you will receive the service that you expect. Thank you for your assistance!

Your account manager

CLIENT INFORMATION

COMPANY:	SOILS EXPLORATION SERVICE	CONTACT:	TERRY R. BOUQUENOIY
ADDRESS:	98 HAGENBURGER LOOP OAKLAND, CA 94261	PROJECT NO.:	1899 DENNISON
TEL.:	510 6359748	PO NO.:	TERRY
BILL TO:	SOILS EXPLORATION SERVICE 98 HAGENBURGER LOOP OAKLAND, CA 94261	Quote NO.:	

LABORATORY INFORMATION - Martinez 1

DATE RECEIVED:	October 26, 1993	DATE DUE:	11/02/93 (Tuesday)
JOB NUMBER:	90405		

SAMPLE INFORMATION

Samples will be analyzed utilizing CALIFORNIA methods

LAB #	CLIENT IDENTIFICATION	MATRIX	ANALYSIS
1	BORING #1	SO	OG
2	BORING #2	SO	OG
3	BORING #3	SO	OG
4	BORING #4	SO	OG
5	BORING #5	SO	OG
6	BORING #6	SO	OG

COMMENTS: THIS IS AN ADDINTIONAL ANALYSIS TO JOB # 90103 1-6
CHECK FAX FOR PRICES.

See the next page for more

Sample condition: O.K.

COC Signed ?	Yes
All samples received ?	Yes
Proper temperature ?	Yes
ID's match COC ?	Yes
Received W/IN hold time ?	Yes
Headspace OK ?	N/A
Proper containers ?	Yes
Proper preservatives ?	N/A
Cooler Temperature:	4C°C
Preserved:	No

provided by David Henderson 4-24-96

Western Operations

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

Clayton
ENVIRONMENTAL
CONSULTANTS

Soil Investigation
of
Former Cryer Boat Yard
at
1899 Dennison Street
Oakland, California
for
Port of Oakland

Clayton Project No. 58560.25
May 22, 1995

This is for the opposite other side — owned by Port of Oakland

CONTENTS

Executive Summary

On January 5, 1995, Clayton Environmental Consultants, Inc. conducted a Phase I Environmental Site Assessment of the Former Cryer Boat Yard located at 1899 Dennison Street in Oakland, California (Clayton Report No. 58560.14 dated January 19, 1995). The assessment identified paint fragments on the site's soil and staining on the concrete floor of the winch-house located on the property. These conditions indicated that the soils at the site may have been contaminated.

On March 30, 1995, Clayton conducted a Phase II investigation at the site to investigate the possibility of soil contamination that may have originated from conditions observed during the Phase I Environmental Site Assessment.

The investigation consisted of collecting soil samples from eight locations on the property. The soil samples were analyzed for total petroleum hydrocarbons as diesel (TPH-D) and/or 17 California Title 22 Metals, for comparison to their respective Total Threshold Limit Concentration (TTLC).

The analytical results indicate that soils at the site have been contaminated by TPH-D, copper, lead, and mercury. According to the analytical report, however, the petroleum hydrocarbons found in the samples more closely match motor oil than diesel. The TPH-D contamination was found beneath the winch-house, beneath the western end of the building that extends onto the site from the adjacent property, and at the southwest portion of the property. At these three locations, the concentrations exceed the guidance threshold established by the Alameda County Health Care Services Agency.

The metal contamination appears to be primarily limited to the surface soils at the site. The metal concentrations of some of the soil samples collected at the site are high enough to classify the soils as a hazardous waste.

Clayton recommends that additional investigation be conducted at the site to determine the lateral and vertical extent of the metal and TPH-D contamination of the soils at the site. Once the extent and magnitude of the contamination has been identified, we recommend that a remedial action plan be developed and implemented.

1.0 INTRODUCTION

On January 5, 1995, Clayton Environmental Consultants, Inc. conducted a Phase I Environmental Assessment of the Former Cryer Boat Yard located at 1899 Dennison Street in Oakland, California (Clayton Report No. 58560.14 dated January 19, 1995). The assessment identified paint fragments on the site's soil. The assessment also identified staining on the soil and concrete floor of the winch-house located on the property. These conditions indicated there was a possibility of soil contamination at the site.

The Port of Oakland retained Clayton to conduct a Phase II Environmental Assessment of the Former Cryer Boat Yard located at 1899 Dennison Street in Oakland, California (Figure 1). The work was authorized by Mr. Neil Werner, Supervisor with the Port of Oakland, on March 17, 1995, by accepting the scope of work and estimated fees presented in Clayton's proposal 95-B-086 to Mr. Dan Schoenholz, dated March 8, 1995.

1.1 SITE DESCRIPTION

The site was formerly leased to the Cryer Boat Yard Company and was utilized as a small boat repair facility. The 1.8 acre site consists of eight buildings, two dry dock rails, and one wharf. The site is located on the waterfront of the Oakland Inner Harbor.

2.0 SCOPE OF WORK

Clayton performed two tasks: soil sampling and sample analysis. Each task is described in the following sections.

2.1 SOIL SAMPLE COLLECTION

Clayton installed eight boreholes (SB-1 through SB-8) at the site by power- and/or hand-augering. Figure 2 shows the borehole locations. Borings SB-1, SB-2, and SB-3 were installed in an area of the property that had a high concentration of visible paint fragments littering the soils. Soil samples were collected from borings SB-1, SB-2, and SB-3 at the surface and at 2.5 feet below ground surface (bgs) to determine the vertical migration of suspected metals in the soils. Groundwater was encountered at approximately 3 feet bgs at SB-3.

Boring SB-4 was located in an area of the property that did not have paint fragments littering the surface soils and was not suspected of having elevated metal concentrations. Thus, SB-4 was chosen to verify background metal concentrations of the site's soils. The groundwater was estimated to be at approximately 5- to 6 feet bgs, thus Clayton collected one soil sample at approximately 4 feet bgs from SB-4.

The Phase I Environmental Site Assessment report incorrectly identified the floor of the winch-house as being both bare soil, and concrete. The floor was actually a solid concrete slab. Clayton installed borings SB-5 and SB-6 at an angle so that they extended beneath the winch-house's solid concrete floor. Soil samples SB-5@1.5 and

SB-6@1.5 were collected at approximately 1.5 feet bgs and approximately 2 feet from the outside edge of the concrete floor. Clayton encountered groundwater in SB-6 at approximately 2 feet bgs.

One surface soil sample was collected at SB-7 to evaluate the potential of contamination that may have originated from the building located above SB-7.

Boring SB-8 was located in an area of the property that did not have visible paint fragments littering the surface soils and was not suspected of having elevated metal concentrations. Boring SB-4 was chosen to verify the background metal concentration of the site's soils. Based on our previous borings at the site, Clayton estimated the depth to groundwater to be approximately 4- to 5 feet bgs, thus Clayton collected a soil sample SB-8@3.5 at approximately 3.5 feet bgs.

All soil borings were backfilled with the excavated soil. The soil samples were collected in pre-cleaned brass tubes and capped with teflon and plastic end caps. The sampling equipment was washed and rinsed after each sampling. The soil samples were stored in a chilled cooler and transported to Clayton's state certified laboratory under strict chain-of-custody procedures.

2.2 ANALYSIS OF SOIL SAMPLES

Clayton analyzed the soil samples for 17 California Title 22 Metals, by USEPA Methods 6000 and 7000 series for comparison to Total Threshold Limit Concentration (TTLC) values. Additionally, Clayton analyzed the soil samples from areas that were suspected of being contaminated with petroleum for total petroleum hydrocarbons as diesel (TPH-D) using United States Environmental Protection Agency (USEPA) Method 8015, modified.

3.0 RESULTS

Detectable concentrations of TPH-D and metals were identified in the soil samples. A table summarizing the analytical results can be found in Appendix 1 (please note that the analytical report, Appendix 2, incorrectly identifies the surface soil samples as SB-X@5' instead of the correct SB-X@S). Elevated levels (greater than 100 milligrams per kilogram (mg/kg)) of TPH-D were found in soil samples SB-3@2.5 (460 mg/kg), SB-5@1.5 (530 mg/kg), SB-6@1.5 (240), and SB-7@S (360 mg/kg). The laboratory report indicates that the petroleum hydrocarbons identified in these samples more closely match motor oil than diesel.

Elevated concentrations of copper, lead, and/or mercury were also found in soil samples collected at the site. Soil sample SB-1@S was found to contain 3,900 mg/kg of copper, 530 mg/kg of lead, and 2.3 mg/kg mercury. Soil sample SB-2@S was found to contain 9,100 mg/kg of copper, 230 mg/kg of lead, and 2.1 mg/kg of mercury. Soil sample SB-2@2.5 was found to contain 59 mg/kg of lead. Soil sample SB-3@S was found to contain 3,100 mg/kg of copper and 520 mg/kg of lead. Soil sample SB-3@2.5 was found to contain 1,300 mg/kg of copper and 300 mg/kg of lead. Soil sample SB-6@1.5 was found to contain 1,100 mg/kg of copper, 220 mg/kg

of lead, and 20 mg/kg of mercury. Soil sample SB-7@S was found to contain 6,500 mg/kg of copper, 720 mg/kg of lead, and 25 mg/kg of mercury. Soil sample SB-8@3.5 was found to contain 280 mg/kg of lead. Appendix 1 shows the individual metal concentrations for each soil sample.

The California Department of Toxic Substances Control (DTSC) has established regulatory thresholds for specific metals, identified as the Total Threshold Limit Concentration (TTLC) and the Soluble Threshold Limit Concentration (STLC), above which, a solid waste is considered a hazardous waste for disposal purposes. The TTLC for copper is 2,500 mg/kg. The TTLC for lead is 1,000 mg/kg. The TTLC for mercury is 20 mg/kg. Additionally, the DTSC has established the Soluble Threshold Limit Concentration (STLC) for solids containing metals. The STLC for copper is 25 milligrams per litter (mg/L), the STLC for lead is 5 mg/L, the STLC for mercury is 0.2 mg/L.

The STLC for a soil sample can be conservatively estimated (giving the highest possible STLC) from the TTLC results by assuming all of the metal in the sample will be leached out of the sample during the extraction step, and that the solution is diluted by a factor of ten. This suggests that the maximum possible soluble concentration for a soil sample would be one tenth of the soil sample's TTLC result for any given metal.

4.0 CONCLUSIONS

The results indicate that the soils beneath the winch-house have been impacted by TPH-D, which likely originated from the winch and is probably motor oil and not diesel. The TPH-D concentrations in the soil samples collected from beneath the winch-house are in excess of the guidance threshold for TPH-D concentrations (100 mg/kg) used by Alameda County Health Care Services Agency (ACHCSA) (per the Tri-Regional Board guidelines). Soil sample SB-6@1.5 also contained elevated concentrations of copper, lead, and mercury (1,100 mg/kg, 220 mg/kg, and 20 mg/kg, respectively). The copper and lead concentrations are below the TTLC that the DTSC has established for classification as a hazardous waste. However, the soil sample could potentially have soluble copper and lead concentrations that exceed the DTSC's STLC for classification as a hazardous waste. The sample contained 20 mg/kg of mercury, equivalent to the DTSC's TTLC for classification as a California hazardous waste.

While the source of metal contamination in soil samples from SB-5 and SB-6 was not readily identifiable (no paint fragments were observed in the soil samples, nor on the immediately surrounding soils), Clayton suspects that the metals came from boat repair and servicing activities that appear to have been conducted in the general vicinity. Soil samples SB-5@1.5 and SB-6@1.5 do not provide enough information to fully estimate the lateral extent of the TPH-D soil contamination in the winch-house area. Since the groundwater is shallow (approximately 2 feet bgs), the vertical extent of the contamination of the TPH-D is expected to be no more than four to five feet deep.

Soil sample SB-7@S contained TPH-D concentrations that are in excess of the ACHCSA's guidance threshold. This soil sample also contained 6,500 mg/kg of copper and 25 mg/kg of mercury, which exceeds the regulatory thresholds for classification as a California hazardous waste. The soil sample contained 720 mg/kg of lead. This is below the TTLC for lead, but high enough to indicate that the sample may have soluble lead in excess of the STLC.

Soil sample SB-7@S was collected from beneath the building, where boats appear to be serviced and repaired. This building is currently occupied by the operators of the adjacent property. Clayton could not positively identify the source of contamination during the Phase I Environmental Assessment, nor during the soil sampling, except that there appeared to be boat servicing and repair activities in the building immediately above SB-7 that could generate the contaminants. At present, there is not enough information to determine the lateral and vertical extent of the soil contamination beneath the building.

Soil samples collected from the surface at SB-1, SB-2, and SB-3 contained copper concentrations in excess of the TTLC for classification as a California hazardous waste. These soil samples also contained lead in a high enough concentration to indicate that the samples could potentially have soluble lead concentrations that exceed the STLC for classification as a hazardous waste. Surface soil samples from SB-1 and SB-2 contained mercury in high enough concentrations to indicate that the samples could potentially have soluble mercury concentrations that exceed the STLC for classification as a hazardous waste. Soil sample SB-3@2.5 contained TPH-D that is in excess of the ACHCSA's guidance threshold. The source of the TPH-D was not readily identifiable.

The metal contamination appears to be primarily restricted to the surface soils, and appears to be the result of the paint fragments found at the site. During the site activities, Clayton observed the paint fragments over much of the property, but the highest visual concentrations were observed on the southern portion of the property in the vicinity of SB-1, SB-2, and SB-3. Clayton could not identify the source of TPH-D contamination in sample SB-3@2.5, nor is there enough information to determine the extent of TPH-D contamination on this portion of the property.

5.0 RECOMMENDATIONS

Clayton recommends that the soil samples with total metal concentrations that have total metal concentrations that are in excess of ten times the STLC value for any individual metal be analyzed to further characterize the site's soils.

Clayton also recommends that additional investigation be conducted at the site to determine the lateral and vertical extent of the metal and TPH-D contamination of the soils at the site. Once the extent and magnitude of the contamination has been identified, we recommend that a remedial action plan be developed and implemented.

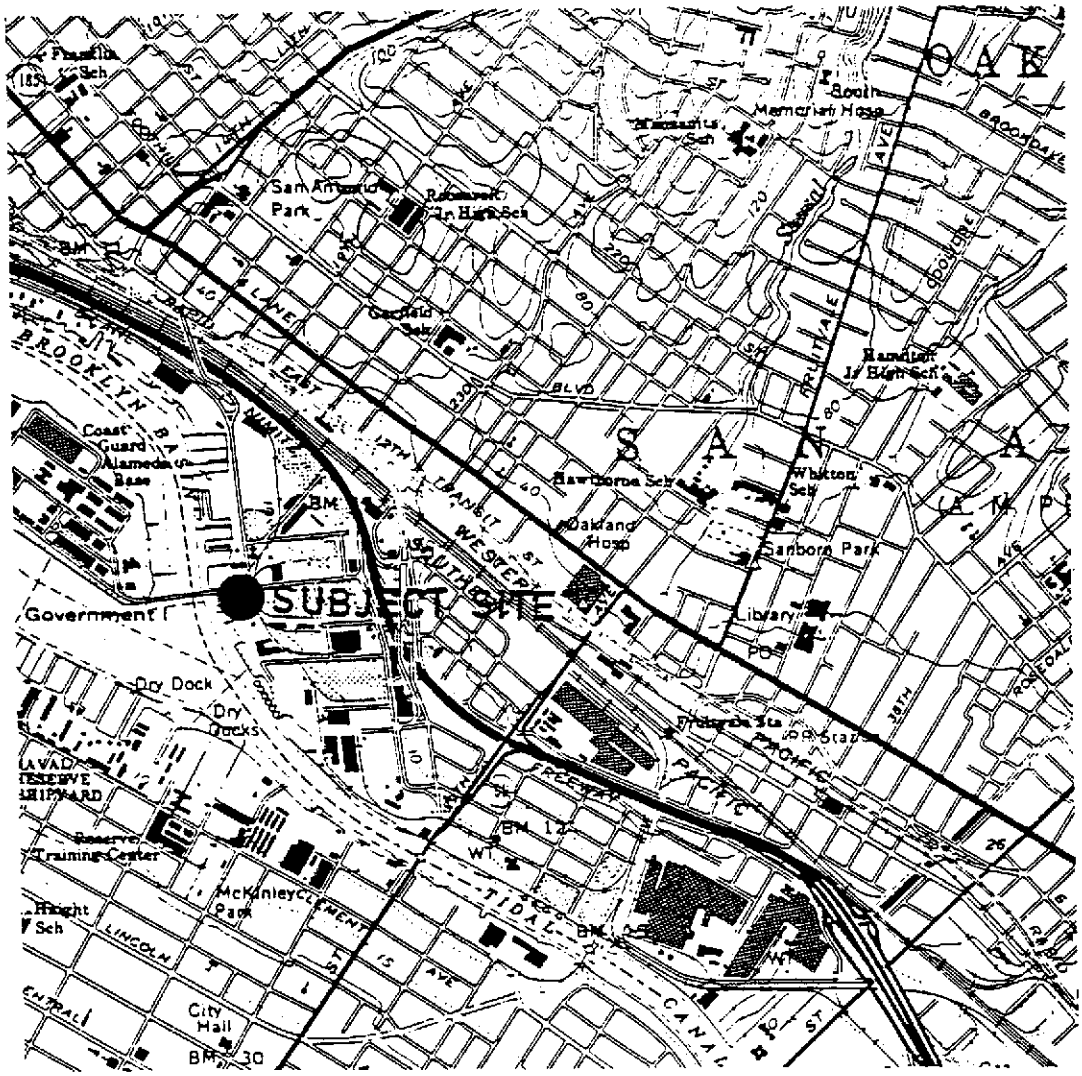
This report prepared by:

John B. Buzzone
Staff Environmental Engineer

This report reviewed by:

Richard D. Fehler
Director, Environmental Management Services
San Francisco Regional Office

May 22, 1995



QUADRANGLE LOCATION

OAKLAND EAST, CALIF.
SW/4 CONCORD 15' QUADRANGLE
N3745—W12207.5/7.5

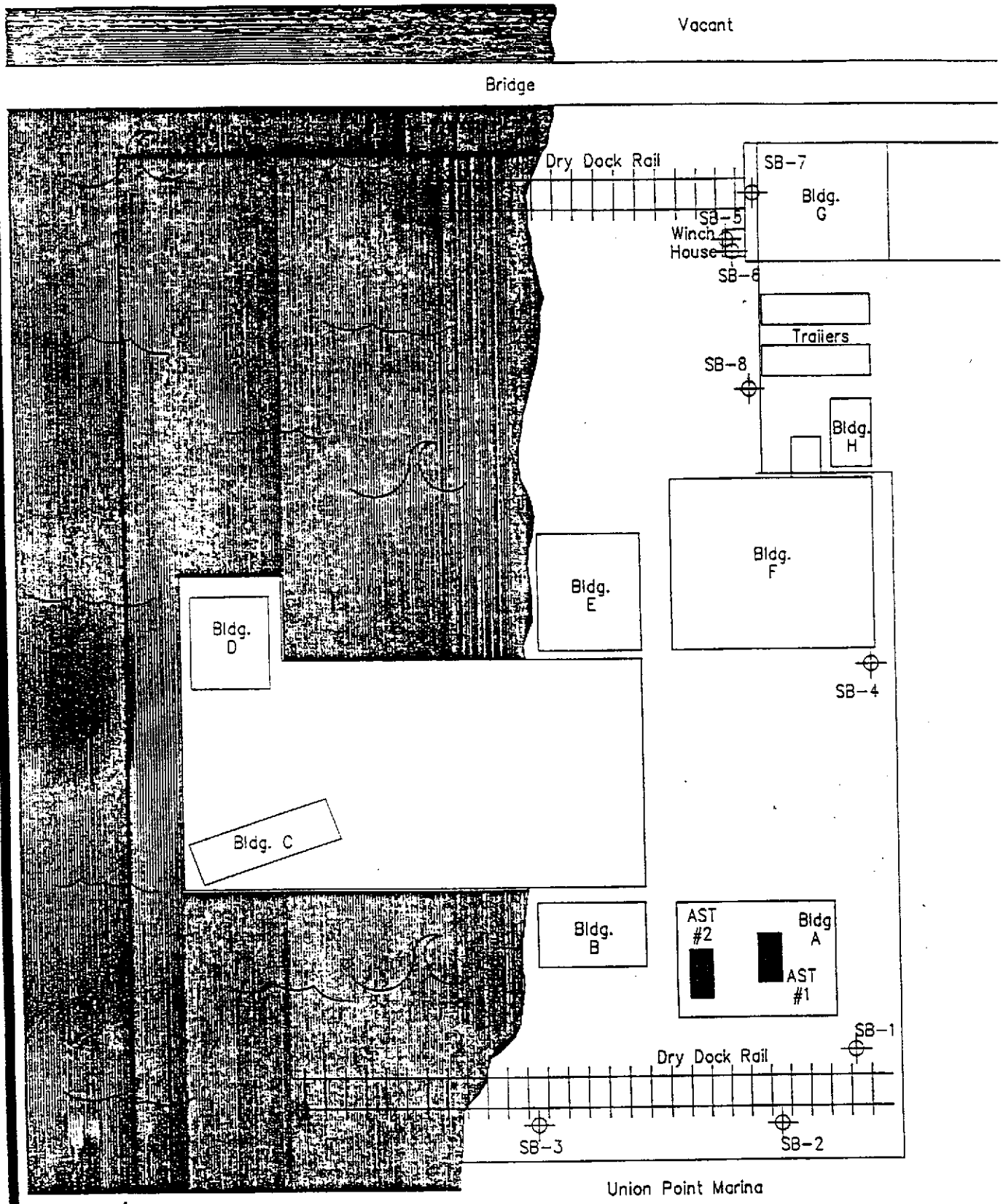
Site Location and Topographic Map
CRYER BOAT YARD
1899 Dennison Street
Oakland, California

Clayton Project No. 58560.14

Figure 1

5856014A-16

Clayton ENVIRONMENTAL CONSULTANTS



Site Map
CRYER BOAT YARD
1899 Dennison Street
Oakland, California

Clayton Project No. 58560.25

Figure 2

58560-25-17

Clayton ENVIRONMENTAL CONSULTANTS

APPENDIX A

ANALYTICAL RESULTS SUMMARY

Summary of Analytical Results

Sample ID	Depth (feet)	TPH-D	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SB-1@S	Surface	-	9	10	190	0.2	5.5	280	32	3,900	530	2.3	5	110	<1	<0.5	5	45	1,600
SB-1@2.5	2.5	18	3	<1	110	0.3	<0.5	54	11	49	29	<0.1	<1	50	<1	<0.5	<1	39	93
SB-2@S	Surface	-	6	6	280	0.5	2.1	150	42	9,100	230	2.1	3	87	<1	<0.5	9	73	1,200
SB-2@2.5	2.5	18	3	<1	61	0.2	<0.5	47	10	110	59	0.1	1	30	<1	<0.5	<1	37	120
SB-3@S	Surface	-	24	5	170	0.2	2.6	410	27	3,100	520	1.1	2	140	<1	<0.5	4	39	1,700
SB-3@2.5	2.5	460	14	6	130	0.1	0.6	94	16	1,300	300	0.5	<1	58	<1	<0.5	<1	37	520
SB-4@4	4	24	2	<1	160	0.4	<0.5	59	8	34	13	<0.1	<1	67	<1	<0.5	<1	37	69
SB-5@1.5	1.5	530	3	2	24	<0.1	<0.5	26	6	51	33	0.4	<1	20	<1	<0.5	<1	25	220
SB-6@1.5	1.5	240	12	14	75	<0.1	1.5	16	12	1,100	220	20	<1	45	<1	<0.5	<1	18	780
SB-7@S	Surface	360	12	26	66	<0.1	7.5	240	9	6,500	720	25	2	29	<1	<0.5	<1	9	1,300
SB-8@3.5	3.5	84	14	5	99	0.2	<0.5	48	13	500	280	0.6	<1	79	<1	<0.5	<1	48	200

Concentrations are in miligrams per kilogram
- = Not analyzed

Clayton
ENVIRONMENTAL
CONSULTANTS

APPENDIX B

ANALYTICAL REPORT

Western Operations

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

Clayton
ENVIRONMENTAL
CONSULTANTS

April 10, 1995

Mr. John Buzzone
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref.: 58560.25
Clayton Project No.: 95034.39

Dear Mr. Buzzone:

Attached is our analytical laboratory report for the samples received on March 30, 1995. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

Please note that any unused portion of the samples will be discarded after May 10, 1995, unless you have requested otherwise.

We appreciate the opportunity to assist you. If you have any questions concerning this report, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Harriotte A. Hurley, CIH
Director, Laboratory Services
San Francisco Regional Office

HAH/caa

Attachments

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-1 @ 5'
Lab Number: 9503439-01
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration	Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	9	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	10	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	190	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	0.2	0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	5.5	0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	280	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	32	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
[illegible]per	3900	1	mg/kg	04/03/95	04/05/95	EPA 3050	EPA 6010A
[illegible]ad	530	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	2.3	0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	5	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	110	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5	0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Thallium	5	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	45	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	1600	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-1 @ 2.5'
Lab Number: 9503439-02
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration		Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	3		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	110		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	0.3		0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	54		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	11		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
[illegible]er	49		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
[illegible]d	29		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	<0.1		0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	50		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
TPH-D	18	a	1	mg/kg	04/06/95	04/10/95	EPA 3550	EPA 8015*
Thallium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	39		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	93		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.
TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
* = Modified
a Sample does not match the typical diesel pattern.
Sample appears to be oil.

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-2 @ 5'
Lab Number: 9503439-03
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration	Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	6	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	6	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	280	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	0.5	0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	2.1	0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	150	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	42	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Copper	9100	1	mg/kg	04/03/95	04/05/95	EPA 3050	EPA 6010A
Lead	230	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	2.1	0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	3	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	87	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5	0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Thallium	9	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	73	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	1200	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-2 @ 2.5'
Lab Number: 9503439-04
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration		Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	3		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	61		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	0.2		0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	47		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	10		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
[redacted]er	110		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
[redacted]d	59		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	0.1		0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	30		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
TPH-D	18	a	1	mg/kg	04/06/95	04/10/95	EPA 3550	EPA 8015*
Thallium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	37		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	120		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.
TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
* = Modified
a Sample does not match the typical diesel pattern.
Sample appears to be oil.

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-3 @ 5'
Lab Number: 9503439-05
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration	Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	24	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	5	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	170	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	0.2	0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	2.6	0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	410	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	27	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
[illegible]per	3100	1	mg/kg	04/03/95	04/05/95	EPA 3050	EPA 6010A
Lead	520	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	1.1	0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	2	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	140	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5	0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Thallium	4	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	39	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	1700	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-3 @ 2.5'
Lab Number: 9503439-06
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration		Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	14		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	6		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	130		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	0.1		0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	0.6		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	94		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	16		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Copper	1300		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Lead	300		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	0.5		0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	58		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
TPH-D	460	a	1	mg/kg	04/06/95	04/10/95	EPA 3550	EPA 8015*
Thallium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	37		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	520		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.
TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
* = Modified
a Sample does not match the typical diesel pattern.
Sample appears to be oil.

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-4 @ 4'
Lab Number: 9503439-07
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration		Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	2		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	160		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	0.4		0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	59		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	8		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Copper	34		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Lead	13		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	<0.1		0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	67		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
TPH-D	24	a	1	mg/kg	04/06/95	04/10/95	EPA 3550	EPA 8015*
Thallium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	37		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	69		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.
TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
* = Modified
a Sample does not match the typical diesel pattern.
Sample appears to be oil.

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-5 @ 1.5'
Lab Number: 9503439-08
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration		Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	3		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	2		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	24		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	<0.1		0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	26		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	6		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Copper	51		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Lead	33		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	0.4		0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	20		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
TPH-D	530	a	1	mg/kg	04/06/95	04/10/95	EPA 3550	EPA 8015*
Thallium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	25		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	220		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.
TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
* = Modified
a Sample does not match the typical diesel pattern.
Sample appears to be oil.

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-6 @ 1.5'
Lab Number: 9503439-09
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration		Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	12		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	14		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	75		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	<0.1		0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	1.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	16		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	12		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Copper	1100		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Lead	220		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	20		0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	45		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
TPH-D	240	a	1	mg/kg	04/06/95	04/10/95	EPA 3550	EPA 8015*
Thallium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	18		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	780		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.
TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
* = Modified
a Sample does not match the typical diesel pattern.
Sample appears to be oil.

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-7 @ 5'
Lab Number: 9503439-10
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration	Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	12	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	26	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	66	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	<0.1	0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	7.5	0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	240	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	9	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Copper	6500	1	mg/kg	04/03/95	04/05/95	EPA 3050	EPA 6010A
Lead	720	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	25	0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	2	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	29	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5	0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
TPH-D	360 a	1	mg/kg	04/06/95	04/10/95	EPA 3550	EPA 8015*
Thallium	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	9	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	1300	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.
TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
* = Modified
a Sample does not match the typical diesel pattern.
Sample appears to be oil.

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: SB-8 @ 3.5'
Lab Number: 9503439-11
Sample Matrix/Media: SOIL

Date Sampled: 03/30/95
Date Received: 03/30/95

Analyte	Concentration		Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	14		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	5		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	99		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	0.2		0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	48		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	13		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Copper	500		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Lead	280		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	0.6		0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	79		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5		0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
TPH-D	84	a	1	mg/kg	04/06/95	04/10/95	EPA 3550	EPA 8015*
Thallium	<1		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	48		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	200		1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.
TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
* = Modified
a Sample does not match the typical diesel pattern.
Sample appears to be oil.

Clayton ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page 2 of 2
Project No.	
Batch No.	9503439
Ind. Code	W.P.
Date Logged In 3/31/95	By TB

REPORT RESULTS TO

Name John Buzzone | Title
Company | Dept.
Mailing Address
City, State, Zip
Telephone No. | Telefax No.

SEND INVOICE TO

Purchase Order No. | Client Job No. 58560.25
Name Port of Oakland | Dept.
Company
Address
City, State, Zip

Date Results Req.: 4/10/95
Rush Charges Authorized? ☐ Yes ☒ No
Phone / Fax Results ☐ ☐

Special Instructions: (method, limit of detection, etc.)

* Explanation of Preservative:

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	ANALYSIS REQUESTED (Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *) TPH-G	TPH-D									FOR LAB USE ONLY
SB-7@5	3/30/95	Soil	2" x 6" Brass core	1	X	X									-10A
SB-8@3.5'	↓	↓	↓	1	X	X									-11A

CHAIN OF CUSTODY

Collected by: John Buzzone (print) | Collector's Signature:
Relinquished by: | Date/Time 3/30/95 3:00p | Received by: | Date/Time
Relinquished by: | Date/Time | Received at Lab by: Tonya Black | Date/Time 3/30/95 3:0
Method of Shipment: Hand Delivered | Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive, Novi, MI 48375, (313) 344-1770
Raritan Center, 160 Fieldcrest Ave., Edison, NJ 08837, (908) 225-6040
400 Chastain Center Blvd., N.W., Suite 490, Kennesaw, GA 30144, (404) 499-7500
1252 Quarry Lane, Pleasanton, CA 94566, (510) 426-2657

2/92

DISTRIBUTION:
WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Retains

Analytical Results
for
Port of Oakland
Client Reference: 58560.25
Clayton Project No. 95034.39

Sample Identification: METHOD BLANK
Lab Number: 9503439-12
Sample Matrix/Media: SOIL

Date Sampled: --
Date Received: --

Analyte	Concentration	Method Detection Limit	Units	Date Prepared	Date Analyzed	Prep Method	Method Reference
Antimony	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Arsenic	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Barium	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Beryllium	<0.1	0.1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cadmium	<0.5	0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Chromium	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Cobalt	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Copper	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Lead	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Mercury	<0.1	0.1	mg/kg	04/07/95	04/07/95	EPA 7471	EPA 7471
Molybdenum	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Nickel	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Selenium	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Silver	<0.5	0.5	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
TPH-D	ND	1	mg/kg	04/06/95	04/07/95	EPA 3550	EPA 8015*
Thallium	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Vanadium	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A
Zinc	<1	1	mg/kg	04/03/95	04/04/95	EPA 3050	EPA 6010A

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.
TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
* = Modified

Clayton ENVIRONMENTAL CONSULTANTS

REQUEST FOR LABORATORY ANALYTICAL SERVICES

For Clayton Use Only	Page 1 of 2
Project No.	
Batch No.	9503439
Ind. Code	W.P.
Date Logged In 3/31/95	By TB

REPORT RESULTS TO

Name John Buzzone | Title | Dept.
Company
Mailing Address
City, State, Zip
Telephone No. | Telefax No.

SEND INVOICE TO

Purchase Order No. | Client Job No. 58560.25
Name Port of Oakland | Dept.
Company
Address
City, State, Zip

Date Results Req.: 4/10/95 | Rush Charges Authorized? ☐ Yes ☒ No | Phone / Fax Results ☐ ☐

Special Instructions: (method, limit of detection, etc.)

* Explanation of Preservative:

Samples are: (check if applicable)
☐ Drinking Water
☐ Collected in the State of New York

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request; Enter a 'P' if Preservative added. *)

CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	TTLC	TPH-D	FOR LAB USE ONLY
SB-1@5	3/30/95	Soil	2"x6" Brass Core	1	X		-01A
SB-1@2.5'				1	X	X	02
SB-2@5				1	X		03
SB-2@2.5'				1	X	X	04
SB-3@5				1	X		05
SB-3@2.5				1	X	X	06
SB-4@4'				1	X	X	07
SB-5@1.5'				1	X	X	08
SB-6@1.5'	↓	↓	↓	1	X	X	09 ✓

CHAIN OF CUSTODY

Collected by: John Buzzone (print) | Collector's Signature:
Relinquished by: | Date/Time 3/30/95 3:00pm
Relinquished by: | Date/Time
Method of Shipment: Hand delivered
Received by: | Date/Time
Received at Lab by: Tonya Black | Date/Time 3/30/95 3:0
Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)

Authorized by: _____ Date 3/30/95
(Client Signature Must Accompany Request)

Please return completed form and samples to one of the Clayton Environmental Consultants, Inc. labs listed below:

22345 Roethel Drive, Novi, MI 48375, (313) 344-1770
Raritan Center, 160 Fieldcrest Ave., Edison, NJ 08837, (908) 225-6040
400 Chastain Center Blvd., N.W., Suite 490, Kennesaw, GA 30144, (404) 499-7500
1252 Quarry Lane, Pleasanton, CA 94566, (510) 426-2657

2/92

DISTRIBUTION:
WHITE - Clayton Laboratory
YELLOW - Clayton Accounting
PINK - Client Retains

Chain of Custody and Analysis Request COC#: _____ Page 1 of 1

Company: STEAM VALVE MACHINE CO., INC
Address: 98 HEGENBERGER LOOP
City, State, Zip: OAKLAND, CA. 94621
Phone: 510-635-9091 Fax: 510-635-2223
Project Manager: STEPHEN J. COWLEY
Alternate Contact: DENNIS STOPPER.
Project No.: 1899 DENNISON ST OAKLAND P.O. No. 1375

TURN AROUND TIME
(circle one)
Same Day 72 Hrs.
24 Hrs. 48 Hrs.
Normal 5 Day

Superior Analytical Laboratory
P.O. Box 2648
Martinez, California 94553

Martinez I: (510) 313-0850
San Francisco: (415) 647-6821
Client Services: (800) 521-6109

Section II: Analysis Request

Sampler:
Regulatory Agency:

Sample Identification	Matrix S=Soil W=Water A=Air												Sample Depth	Date Sampled	Time Sampled	# of Containers	Preservatives	Sampling Remarks
1 **2 EA. SOIL																		Bioremediation UST Monitoring Recent Contamination Unknown Compounds COMMENTS: SEE ATACHED QUOTE: 96-02042, DTD 8-13-96 @ SEE ATTACHED WORK PLAN ** DTD 3SEPT '96
2 **4 EA. WATER																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Relinquished By: Stephen J Lowley
Organization: STEAM VALVE MACH. COMPANY. INC.
Date/Time 10/14/96 3:34

Reliquished By:
Organization:
Date/Time 10-14-96 1550 HRS.

Relinquished By:
Organization:
Date/Time

Received By: Dennis Clancy
Organization: SAC
Date/Time 10/14/96 3:59

Received By:
Organization:
Date/Time

Received By:
Laboratory:
Date/Time

Lab: Please initial the following:

Samples Stored in Ice: SDA 10-14-96
Appropriate Containers: SJC "
Samples Preserved: SJC
VOAs without headspace: N/A
Comments: