

COPY

# **BASELINE**

## ENVIRONMENTAL CONSULTING

20 March 1990  
S9-134.12

Ms. Michele Heffes  
Environmental Division  
Port of Oakland  
530 Water Street  
Jack London's Waterfront  
Oakland, California 94604-2064

**Subject: Report on Verification Sampling for Bioremediation Program at 801 Maritime Street, Oakland**

Dear Ms. Heffes:

In August 1989, BASELINE implemented a soils bioremediation program at 801 Maritime Street. The bioremediation methods are described in detail in a work plan, submitted on 7 August 1989 to the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) and to the Alameda County Department of Environmental Health. The purpose of this letter is to inform you that the program has been completed and to document the results of verification soil sampling activities conducted by BASELINE.

Verification sampling was performed in October and November 1989 to determine whether the treatment program had affected the site and to determine whether the program was completed. The following describes the sampling activities and results completed at the site.

### **Tank Removal Soil Sampling**

Approximately 400 cubic yards of soils were excavated from 801 Maritime Street in February 1989 as part of an underground tank removal project (see Figures 1 and 2 for the site location). At the time of tank removal, the excavated soils contained diesel hydrocarbons at concentrations up to 920 mg/kg. A fish bioassay and chemical analysis of the soils were conducted prior to bioremediation; the analytical results indicated that the soils were not hazardous waste, according to CCR Title 22 provisions.

All soil samples during tank removal and subsequent activities were collected in clean brass sleeves and transported to Chromalab, Inc. or Curtis and Tompkins, state-certified laboratories. Prior to each sampling event, sampling equipment were decontaminated with a TSP and water solution and then rinsed with deionized water. Strict chain-of-custody procedures were followed for transport of soil samples to the laboratory. The analytical results and laboratory results were contained in our 7 August 1989 submittal.



# PORT OF OAKLAND

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*Chief Executive Officer*

APR 9 2:38 PM  
April 5, 1990

Mr. Ed Howell  
Alameda County Department of  
Environmental Health  
80 Swan Way  
Room 200  
Oakland, CA 94621

**SUBJECT: VERIFICATION SAMPLING REPORT FOR A PILOT  
BIOREMEDIATION PROGRAM AT 801 MARITIME STREET,  
OAKLAND**

Dear Mr. Howell:

The purpose of this letter is to provide the Alameda County Department of Environmental Health (County) with information regarding the Port of Oakland's Pilot Bioremediation Program. In August 1989, a Pilot "Bioremediation Program for Soils from 801 Maritime Street" Report was submitted to the County and the Regional Water Quality Control Board (RWQCB). The August 1989 Report documents program implementation procedures. The Pilot Bioremediation Program involved treatment of approximately 400 cubic yards of soil generated from the removal of three underground storage tanks formerly located at 801 Maritime Street. The underground storage tank removal occurred in February 1989 and is documented in a Report on Tank Removal and Remediation Activities, 801 Maritime Street (Tank Removal Report) dated April 1989. The Tank Removal Report has previously been submitted to the County and the RWQCB.

The enclosed Report on Verification Sampling for a Pilot Bioremediation Program at 801 Maritime (Verification Report) now being submitted documents: 1) underground storage tank removal soil sampling; 2) pre - and post - treatment soil sampling; 3) treatment bed sampling; and 4) conclusions. As documented in the Verification Report: 1) the treatment area has not been affected by the treatment activities; and 2) the levels of diesel and BTXE hydrocarbons in the treated soils are below RWQCB - recommended detection limits.

Mr. Ed Howell  
County

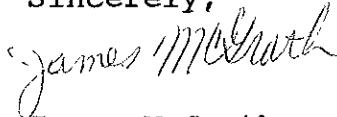
-2-

April 5, 1990

The Port is confident that the successful completion of this Pilot Bioremediation Program demonstrates to the RWQCB and the County that approval of a more extensive Port Bioremediation Program is appropriate.

If you have any questions regarding the Pilot Bioremediation Program, please contact Michele Heffes at 272-1178.

Sincerely,



James McGrath  
Manager, Environmental Department

JM/MH/jb

cc: Michele Heffes  
Neil Werner  
Thomas D. Clark  
John Glover  
Lester Feldman, RWQCB  
Yane Nordhav, Baseline Environmental Consulting

pc/801mbio2/ltrsII/files2

# BASELINE

Ms. Michele Heffes  
20 March 1990  
Page 2

*No! 4 samples taken  
POM-4 w/ 19.5 ppm TPH-D  
12,300 benzene*

## Pre- and Post-Treatment Soil Sampling

In February 1989, prior to commencement of bioremediation, three background samples of the native soils were collected at the 801 Maritime site (locations 1, 2, and 3 in Figure 3). The samples were analyzed for Total Petroleum Hydrocarbons, as diesel, TPHd and BTXE. No detectable levels of TPHd were identified in these samples.

Upon completion of the treatment program (in October 1989), soil samples were collected at locations 1 and 2 at depths of 0.3 to 0.9 foot below the ground surface; location 3 could not be sampled at that time due to the presence of a stockpile. Location 3 was sampled on 21 February 1990. The verification sampling of locations 1, 2, and 3 indicated no detectable levels of diesel hydrocarbons (detection limit of 1 mg/kg) or benzene, toluene, xylenes, or ethylbenzene (detection limit of 0.005 mg/kg).

## Treatment Bed Sampling

### Diesel Hydrocarbons

On 30 October 1989, 32 samples were collected from 8 treatment bed cells and composited into 8 samples (four samples per composite sample) for analysis for diesel hydrocarbons. Sampling locations were determined using random sampling techniques (Figure 4). Samples were collected at depths of 1 to 1.5 foot below the surface of the treatment bed (the maximum thickness of the beds was approximately 3 feet).

The composite samples did not contain detectable levels of diesel or motor oil hydrocarbons, with the exception of the four samples collected from cell number 8. This sample contained 1.5 mg/kg of diesel and 29 mg/kg of motor oil hydrocarbons. The soils in this area were bioremediated further. Sampling of soils at location 8 was repeated on 13 November 1989; no detectable levels of diesel hydrocarbons were identified in the samples collected at that date.

### Aromatic Hydrocarbons (BTXE)

On 19 December 1989, the treatment beds were sampled for BTXE. Twenty samples were collected using random sampling (Figure 4). The samples were not composited due to the volatility of BTXE. The samples did not contain detectable levels of BTXE.

## Conclusions

Based on the verification sampling, the following conclusions can be made: 1) the treatment area has not been affected by the treatment activities; and 2) the levels of diesel and BTXE hydrocarbons in the treated soils are below RWQCB-recommended detection limits.

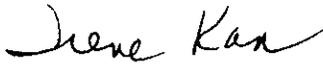
The soils have been hauled to the former Building L-615 site on Cooke Street (off Earhart Road) [8300 Earhart Road] in the Oakland International Airport Area for the use as fill at the ground surface.

# BASELINE

Ms. Michele Heffes  
20 March 1990  
Page 3

It has been a pleasure working with you on this project, if you have any questions please do not hesitate to contact us at your convenience. We recommend that a copy of this letter be submitted to the Regional Water Quality Control, Board San Francisco Bay Region and the Alameda County Department of Environment Health, Hazardous Materials Division.

Sincerely,



Irene Kan, M.P.H.  
Senior Associate



Yane Nordhav  
Principal  
Reg. Geologist No. 4009

IK/YN/crd:S9-134  
Attachments

TABLE 1

**BIOREMEDIATION PROGRAM  
VERIFICATION SOIL SAMPLING RESULTS**  
801 Maritime Street  
(mg/kg)

Sampling Location	Date	Sampling Depth (feet)	Diesel/Motor Oil	Benzene	Toluene	Xylenes	Ethylbenzene
BACKGROUND SAMPLES:							
1	10/30/89	0.3-0.9	ND	ND	ND	ND	ND
2	10/30/89	0.3-0.9	ND	ND	ND	ND	ND
3	02/21/90	0.5-1.0	ND	ND	ND	ND	ND
STOCKPILE SAMPLES:							
4	12/20/89	--	NA	ND	ND	ND	ND
8	10/30/89	--	1.5/29 <sup>1</sup>	NA	NA	NA	NA
8	11/13/89	--	ND	ND	ND	ND	ND
13	12/20/89	--	NA	ND	ND	ND	ND
17	12/20/89	--	NA	ND	ND	ND	ND
22	12/20/89	--	NA	ND	ND	ND	ND
28	12/20/89	--	NA	ND	ND	ND	ND
35	10/30/89	--	ND	ND	ND	ND	ND
41	12/20/89	--	NA	ND	ND	ND	ND
42	10/30/89	--	ND	ND	ND	ND	ND
47	10/30/89	--	ND	ND	ND	ND	ND
50	12/20/89	--	NA	ND	ND	ND	ND
67	12/20/89	--	NA	ND	ND	ND	ND
69	12/20/89	--	NA	ND	ND	ND	ND
71	10/30/89	--	ND	ND	ND	ND	ND
77	12/20/89	--	NA	ND	ND	ND	ND
85	10/30/89	--	ND	ND	ND	ND	ND
90	10/30/89	--	ND	ND	ND	ND	ND
92	12/20/89	--	NA	ND	ND	ND	ND
96	10/30/89	--	ND	ND	ND	ND	ND
97	12/20/89	--	NA	ND	ND	ND	ND

Notes: ND = None detected.  
NA = Not analyzed for.

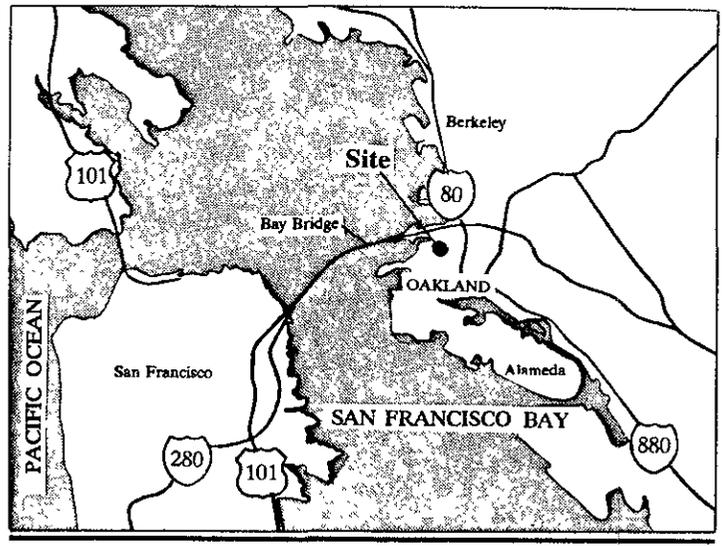
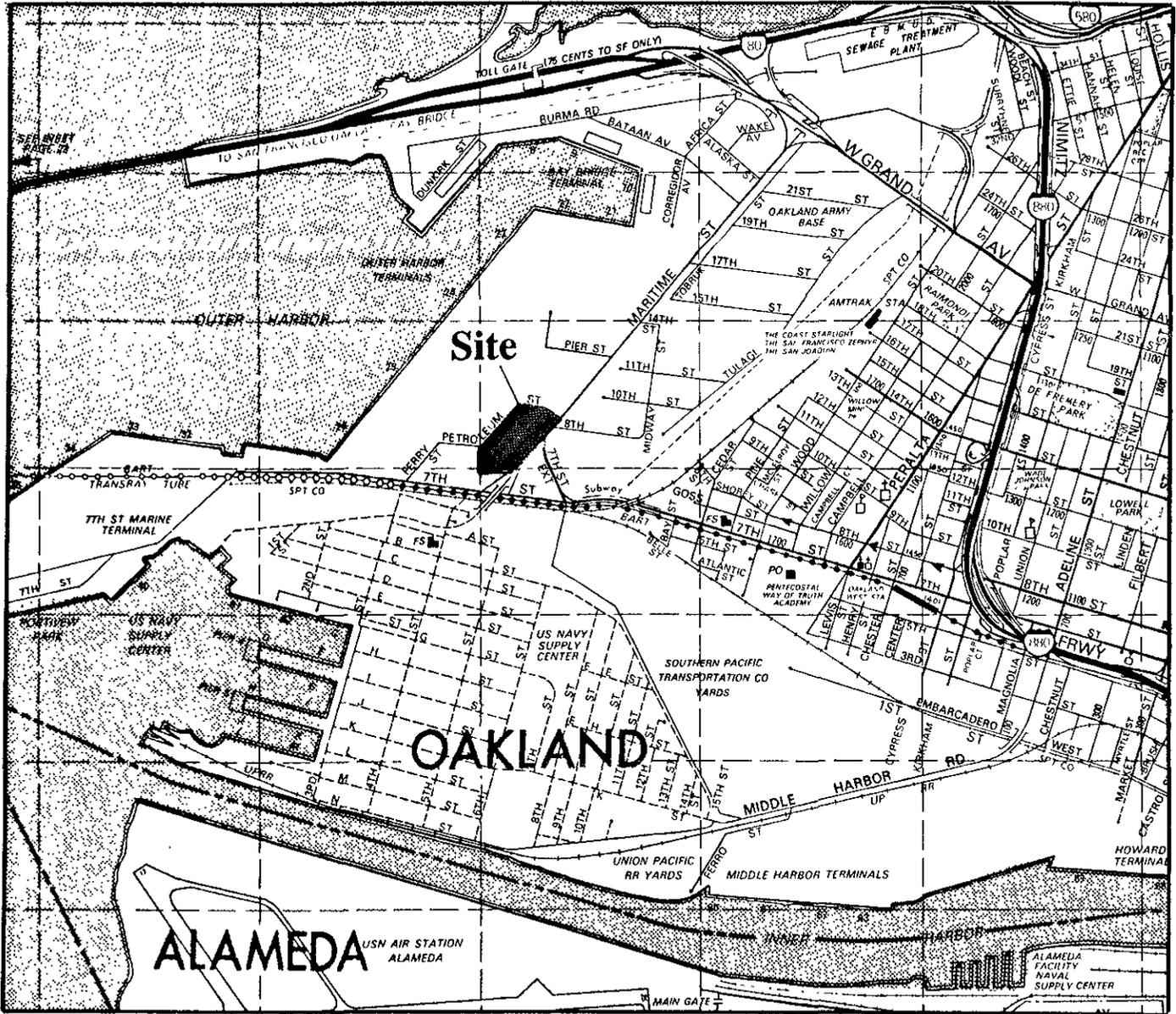
Background (site subsurface) sampling and treatment bed sampling locations are depicted in Figures 3 and 4, respectively.

The detection limit for diesel and motor oil by hydrocarbons is 1 mg/kg; the detection limit for BTXE is 0.005 mg/kg.

<sup>1</sup> Treatment bed location 8 was resampled on 13 November 1989 after additional bioremediation treatment was performed.

# REGIONAL LOCATION

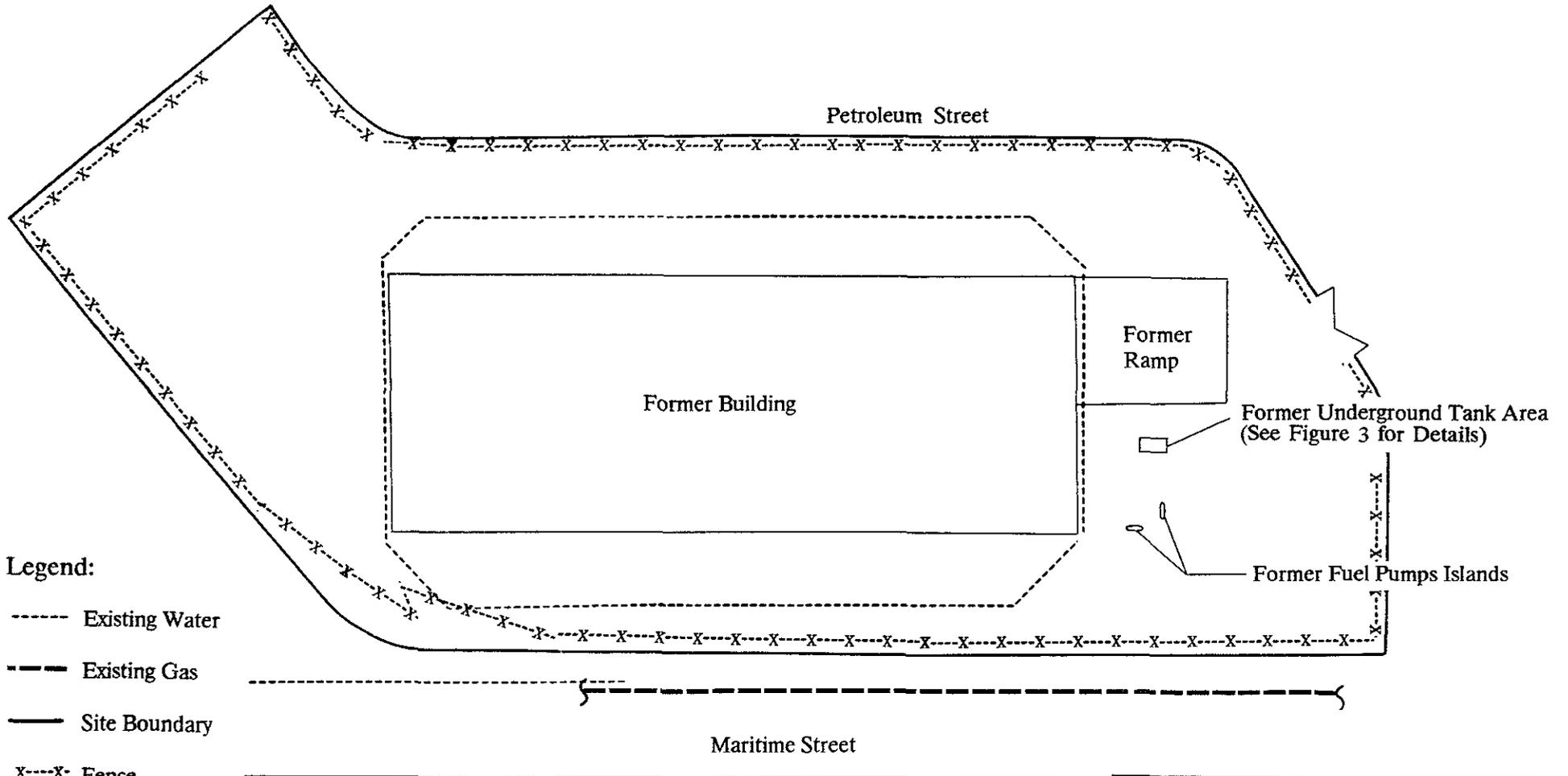
# Figure 1



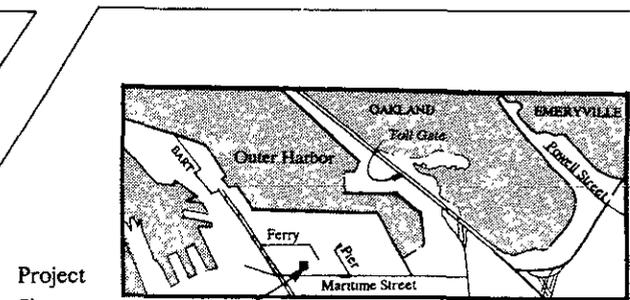
**Bioremediation Program**  
801 Maritime Soils  
Oakland, California

# SITE PLAN

Figure 2

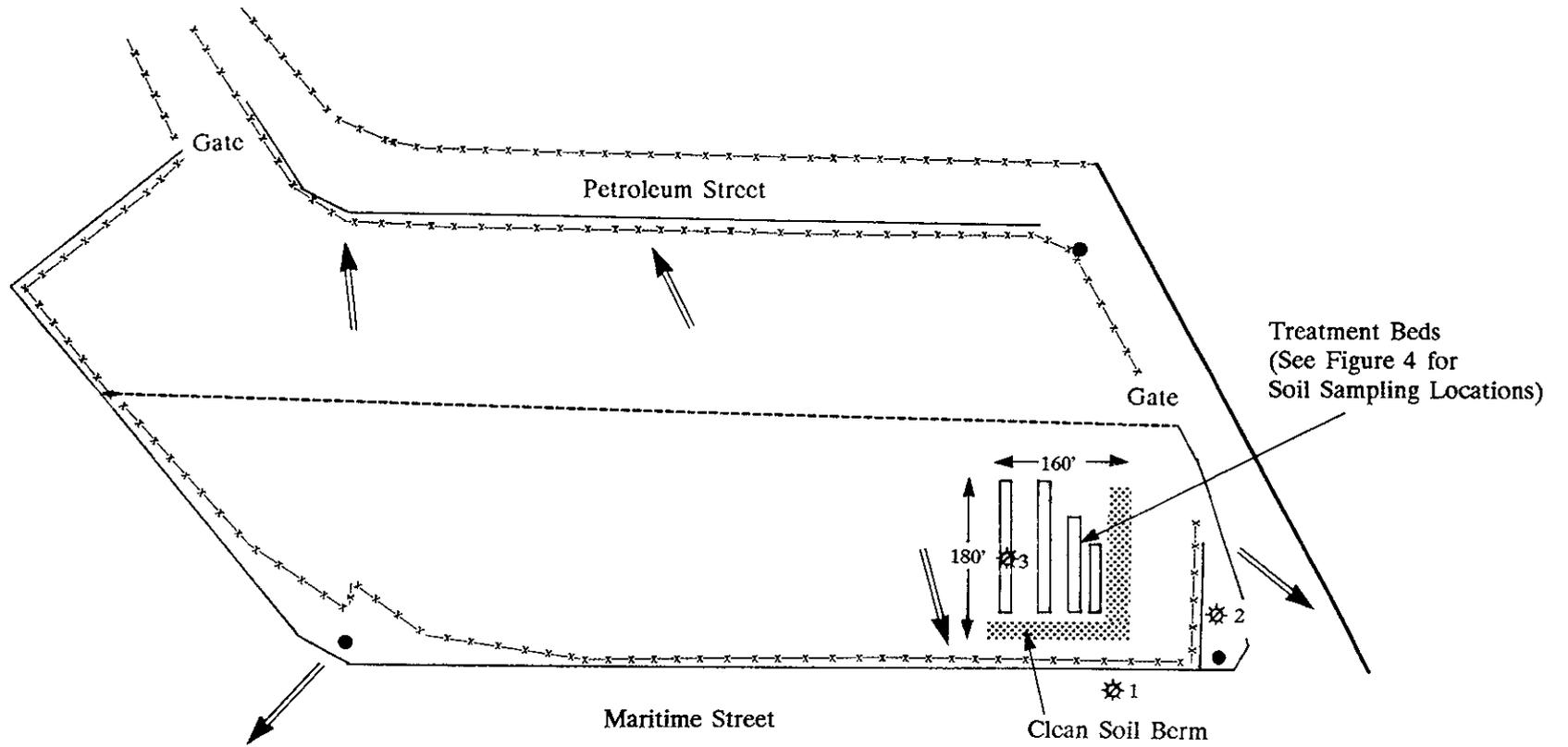


801 Maritime Street  
Oakland, California



# TREATMENT BED LOCATION Bioremediation Program

Figure 3

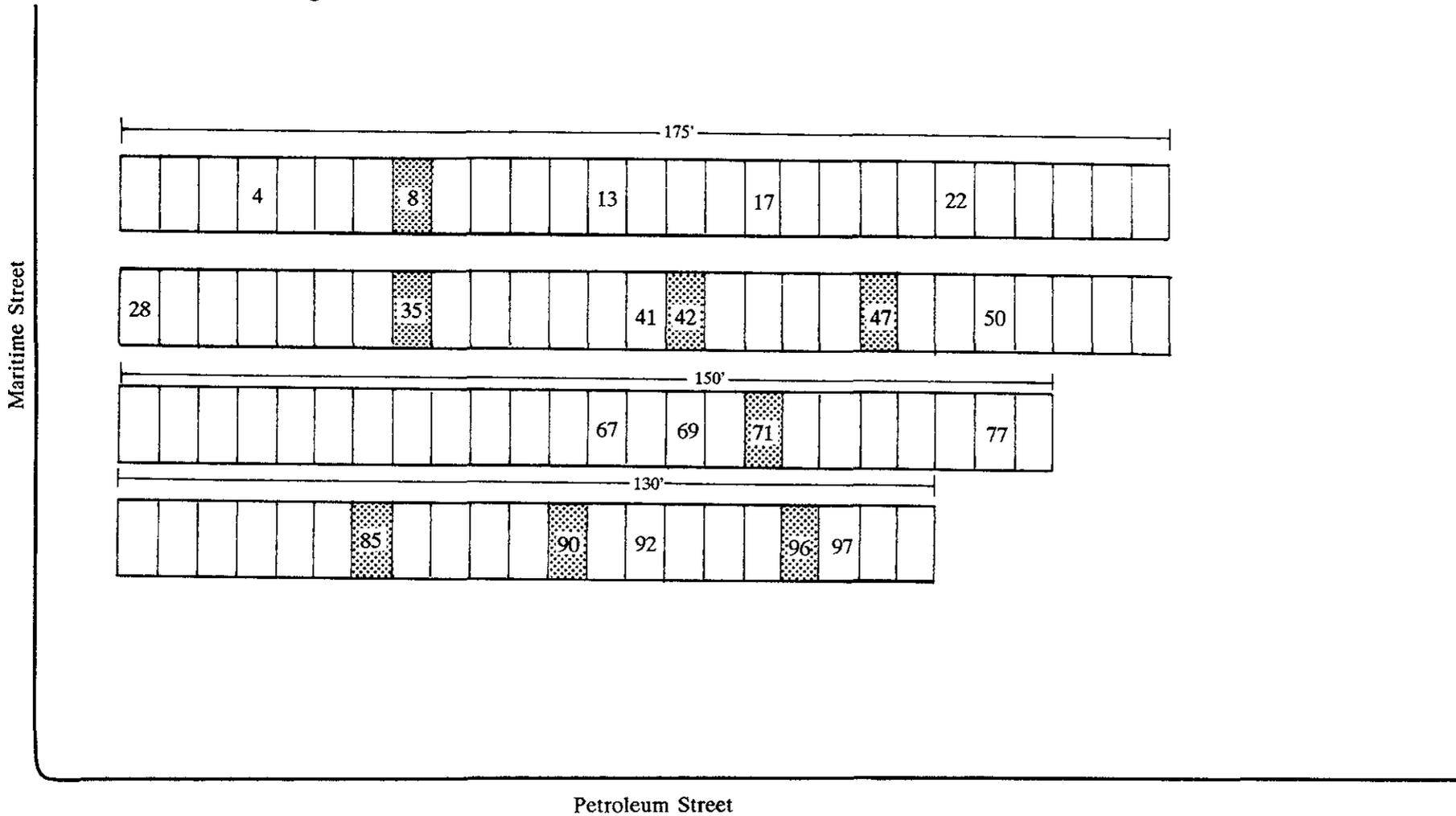


- Legend:**
- ← Direction of Surface Drainage
  - Drainage Divide
  - Storm Drain Inlet
  - ⊛ Background Sample Locations

801 Maritime Soils  
Oakland, California

# VERIFICATION SAMPLING LOCATIONS Bioremediation Program

Figure 4



## 801 Maritime Soils Oakland, California

Source: BASELINE Environmental Consulting, 1989

### Legend:

 Diesel and BTXE Hydrocarbon Sample Location  
(Four Samples Collected and Composited in  
Laboratory for Diesel Sample; One Sample Per  
Location for BTXE)

 4 BTXE Sample Location (One Sample Per Location)



Not to Scale

**BASELINE**

**ATTACHMENT A**  
**LABORATORY REPORTS**  
**CHAIN-OF-CUSTODY DOCUMENTS**

# CHROMALAB, INC.

Analytical Laboratory  
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste
- Drinking Water
- Waste Water
- Research and Method Development
- Consultation

November 1, 1989

ChromaLab File # 1089147-50

Baseline Environmental Consultants, Inc.

Attn: Irene Kan

Re: Ten RUSH composited soil samples for TEPH and BTEX analyses

Project No.: S9-134.12

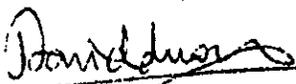
Project Location: 801 Maritime

Duration of Analysis: Oct. 31 - Nov. 1, 1989

Results:

Sample No.	Diesel (mg/Kg)	Motor Oil (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
8 abcd	1.5	29	---	---	---	---
35 abcd	N.D.	N.D.	---	---	---	---
42 abcd	N.D.	N.D.	---	---	---	---
47 abcd	N.D.	N.D.	---	---	---	---
71 abcd	N.D.	N.D.	---	---	---	---
79 abcd	N.D.	N.D.	---	---	---	---
85 abcd	N.D.	N.D.	---	---	---	---
96 abcd	N.D.	N.D.	---	---	---	---
1 a	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
2 a	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK SPIKE	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
RECOVERY	103.1%	---	86.6%	87.9%	100.6%	95.1%
DETECTION LIMIT	1.0	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	MOD.8015	MOD.80	8020	8020	8020	8020

ChromaLab, Inc.

  
David Duong  
Senior Chemist

  
Eric Tam  
Laboratory Director



BASELINE

5900 Hollis Street, Suite D  
Emeryville, CA 94608  
(415) 420-8686

### CHAIN OF CUSTODY RECORD

Turn-Around Time 24 hr

Lab CAROMA-labs

Contact Person P. MONETTE

Project No.		Project Name and Location						Analysis										Detection Limits
S9-134.12		601 Maritime						Mod. EPA 8015 & TEHA DIXIE										
Samplers: (Signature)																		Remarks
No. Station	Date	Time	Media	Depth	Compo- sites	No. of Con- tainers	Station Location											
42a	10-30-89	10:31	Soil	1- 1.5	} into one	1											TEN as 1 Mg/Kg	
42b	11	10:33	"	"		1												
42c	11	10:38	"	"		1												
42d	11	10:40	"	"		1												
47a	11	10:55	"	"	} into one	1												
47b	11	10:56	"	"		1												
47c	11	11:02	"	"		1												
47d	11	11:09	"	"		1												
2a (Back)	10-30-89	14:28	Soil	.3- .9	No	1						XX					left	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Condition of Samples upon Arrival at Laboratory:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	
<i>William K Scott</i>	10-30-89 16:44	<i>P. Monette</i>	10/30/89 16.44	Remarks:

**BASELINE**

5900 Hollis Street, Suite D  
Emeryville, CA 94608  
(415) 420-8686

**CHAIN OF CUSTODY RECORD**

Turn-Around Time 24h.  
Lab CHROMALabs  
Contact Person P. MOWETTE

Project No.		Project Name and Location					Analysis										Detection Limits
59134.12		801 Maritime					<del>                     Mtd. EPA 8015 &amp; 10X                      [Grid of 10 columns and 10 rows]                 </del>										TEH & 1 mg/kg
Samplers: (Signature)		No. Station	Date	Time	Media	Depth											
William K. [Signature]		71a	10-30-89	11:20	Soil	1-1.5	} into one	1									
		71b	11	11:22	11	11		1									
		71c	11	11:26	11	11		1									
		71d	11	11:28	11	11		1									
		79a	11	12:42	11	11	} into one	1									
		79b	11	12:43	11	11		1									
		79c	11	12:45	11	11		1									
		79d	11	12:48	11	11		1									

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Condition of Samples upon Arrival at Laboratory:  Remarks:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	
William K. [Signature]	10-30-89 16:44	[Signature]	10/30/89 16:44	

# BASELINE

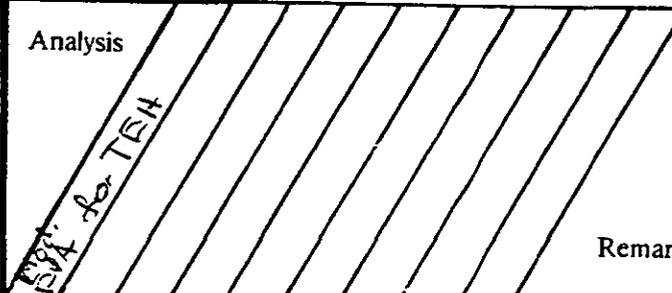
5900 Hollis Street, Suite D  
Emeryville, CA 94608  
(415) 420-8686

## CHAIN OF CUSTODY RECORD

Turn-Around Time 24hr

Lab CHROMALabs

Contact Person F. Monette

Project No.		Project Name and Location						Analysis										Remarks	Detection Limits
59-134.12		801 Maritime						EPA 816-TEH 											
Samplers: (Signature)																			
No. Station	Date	Time	Media	Depth	Compo- sites	No. of Con- tainers	Station Location										Remarks	Detection Limits	
78a	10-30-89	12:05	Soil	1-1.5	} into one	1												1	
78b	10-30-89	12:12	"	"		1											} HOLD		
78c	10-30-89	12:19	"	"		1													
78d	10-30-89	12:18	"	"		1													
90a	10-30-89	13:22	"	"	} into one	1												} HOLD	
90b	10-30-89	13:25	"	"		1													
90c	10-30-89	13:28	"	"		1													
90d	10-30-89	13:30	"	"		1													

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Condition of Samples upon Arrival at Laboratory:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	
<u>William K. Scott</u>	<u>10-30-89 16:44</u>	<u>F. Monette</u>	<u>10/30/89 16:44</u>	Remarks:

5900 Hollis Street, Suite D  
 Emeryville, CA 94608  
 (415) 420-8686

**CHAIN OF CUSTODY RECORD**

Turn-Around Time 24h

Lab CHROMALabs

Contact Person F Morello

Project No.		Project Name and Location						Analysis										Detection Limits
59-143.12		801 Maritime						Mod EPA 8015 & TEH										
Samplers: (Signature)		No. Station	Date	Time	Media	Depth	Compo-sites											No. of Con-tainers
<i>William K Scott</i>		85a	10-30-89	13:02	Soil	1-1.5	} into one	1							TEH at 1mg/kg			
		85b		13:04	"	"		1										
		85c		13:06	"	"		1										
		85d		13:08	"	"		1										
		96a		13:42	"	"	} into one	1										
		96b		13:44	"	"		1										
		96c		13:47	"	"		1										
		96d		13:49	"	"		1										

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Condition of Samples upon Arrival at Laboratory:
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Date / Time	Remarks :
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	
<i>William K Scott</i>	10-30-89 16:44	<i>[Signature]</i>	10/30/89 16:45	

# CHROMALAB, INC.

Analytical Laboratory  
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#238)
- Drinking Water (#955)
- Waste Water
- Consultation

November 13, 1989

ChromaLab File # 1189063

Baseline Environmental Consultants, Inc.

Attn: Irene Kan

Re: One rush composite soil sample for TPH/Diesel analysis

Project No.: S9.134.12

Project Name & Location: 801 Maritime

Date of Analysis: Nov. 13, 1989

Results:

<u>Sample No.</u>	<u>TPH/Diesel</u>
8 abcd (composite)	N.D.
BLANK	N.D.
SPIKE RECOVERY	93.4%
DETECTION LIMIT	1.0
METHOD OF ANALYSIS	3550/8015

ChromaLab, Inc.

  
David Duong  
Senior Chemist

  
Eric Tam  
Laboratory Director



**CHROMALAB, INC.**

Analytical Laboratory  
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste (#238)
- Drinking Water (#955)
- Waste Water
- Consultation

January 2, 1990

ChromaLab File No.: 1289091

1289092

BASELINE ENGINEERS, INC.

1289093

Attn: Irene Kan

RE: Twenty soil samples for BTEX analysis

Project No.: S9-134.12

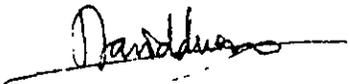
Project Location: B01 MARITIME

Analysis Duration: December 22, 1989 - January 2, 1990

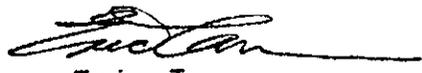
RESULTS:

Sample No.	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)
4	N.D.	N.D.	N.D.	N.D.
8	N.D.	N.D.	N.D.	N.D.
13	N.D.	N.D.	N.D.	N.D.
17	N.D.	N.D.	N.D.	N.D.
22	N.D.	N.D.	N.D.	N.D.
28	N.D.	N.D.	N.D.	N.D.
35	N.D.	N.D.	N.D.	N.D.
41	N.D.	N.D.	N.D.	N.D.
42	N.D.	N.D.	N.D.	N.D.
47	N.D.	N.D.	N.D.	N.D.
50	N.D.	N.D.	N.D.	N.D.
67	N.D.	N.D.	N.D.	N.D.
69	N.D.	N.D.	N.D.	N.D.
71	N.D.	N.D.	N.D.	N.D.
77	N.D.	N.D.	N.D.	N.D.
85	N.D.	N.D.	N.D.	N.D.
90	N.D.	N.D.	N.D.	N.D.
92	N.D.	N.D.	N.D.	N.D.
96	N.D.	N.D.	N.D.	N.D.
97	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	99.5%	109.0%	118.0%	90.9%
DUPLICATED				
SPIKE				
RECOVERY	106.7%	114.6%	105.7%	111.5%
DETECTION LIMIT	5	5	5	5
METHOD OF				
ANALYSIS	B020	B020	B020	B020

ChromaLab, Inc.



David Duong  
Senior Chemist



Eric Tam  
Laboratory Director

MAR-19-98 MON 14:23 415-831-8798

**BASELINE**

5900 Hollis Street, Suite D  
Emeryville, CA 94608  
(415) 420-8686

**CHAIN OF CUSTODY RECORD**

Turn-Around Time 17 day

Lab Chromalab

BASELINE Contract Person Irene Kam

Project No.		Project Name and Location						Analysis										Detection Limits
59-134.12		801 Maritime						STATE										
Samplers: (Signature)																		
No. Station	Date	Time Hrs	Media	Depth (Ft)	Compo-sites	No. of Con-tainers	Station Location				Remarks		Detection Limits					
4	12-20	1430	Soil	15-20	-	1							Refring Index					
8	"	1440	"	"	-	1							"					
13	"	1450	"	"	-	1							"					
17	"	1500	"	"	-	1							"					
22	"	1510	"	"	-	1							"					
28	"	1520	"	"	-	1							"					
35	"	1530	"	"	-	1							"					
41	"	1540	"	"	-	1							"					
42	"	1550	"	"	-	1							"					

Relinquished by: (Signature) <i>Steen Weidmann</i>	Date / Time	Received by: (Signature) <i>Cindy Pratt</i>	Date / Time 12-21-88 12:30	Condition of Samples upon Arrival at Laboratory:  cold
Relinquished by: (Signature) <i>Cindy Pratt</i>	Date / Time 12-21 4:21	Received by: (Signature) <i>[Signature]</i>	Date / Time 12/21/88 4:21 PM	
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	

MAR - 1 9 - 90 MON 14:25 415-831-8798

**BASELINE**

5900 Hollis Street, Suite D  
 Emeryville, CA 94608  
 (415) 420-8686

**CHAIN OF CUSTODY RECORD**

Turn-Around Time 10 day

Lab Chromalab

BASELINE Contract Person Jane Kay

Project No.		Project Name and Location						Analysis										Detection Limits
97-134.12		801 Maritime						<div style="writing-mode: vertical-rl; transform: rotate(180deg);">           Analysis            BTEX         </div>										<div style="writing-mode: vertical-rl; transform: rotate(180deg);">           Detection Limits         </div>
Samplers: (Signature)																		
No. Station	Date	Time	Media	Depth	Compos-ites	No. of Con-tainers	Station Location											
47	12-20	1600	S:1	1.5-2.0	-	1											Regim Bar	
50	"	1610	"	"	-	1											"	
67	"	1620	"	"	-	1											"	
69	"	1630	"	"	-	1											"	
71	"	1640	"	"	-	1											"	
77	"	1650	"	"	-	1											"	
85	"	1700	"	"	-	1											"	
90	"	1710	"	"	-	1											"	
92	"	1720	"	"	-	1											"	

Relinquished by: (Signature) <i>Aron Weisman</i>	Date / Time	Received by: (Signature) <i>Randy Pratt</i>	Date / Time 12-21 12:30	Condition of Samples upon Arrival at Laboratory:  <i>cold</i>
Relinquished by: (Signature) <i>Randy Pratt</i>	Date / Time 12-21 4:21	Received by: (Signature) <i>Jane Kay</i>	Date / Time 12/21/88 4:21 pm	
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

RECEIVED

MAR 15 1990

DATE RECEIVED: 02/21/90

DATE REPORTED: 03/09/90

PAGE 1 OF 3

BASELINE

LAB NUMBER: 19655

CLIENT: BASELINE ENVIRONMENTAL

REPORT ON: 1 SOIL SAMPLE

PROJECT #: S9.134.12

LOCATION: MARITIME (BIOREMEDIATION)

RESULTS: SEE ATTACHED

  
-----  
QA/QC Officer

  
-----  
Laboratory Director

LABORATORY NUMBER: 19655  
 CLIENT: BASELINE ENVIRONMENTAL  
 JOB #: S9.134.12  
 LOCATION: MARITIME (BIOREMEDIATION)

DATE RECEIVED: 02/21/90  
 DATE EXTRACTED: 03/02/90  
 DATE ANALYZED: 03/05/90  
 DATE REPORTED: 03/09/90  
 PAGE 2 OF 3

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

LAB ID	CLIENT ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	REPORTING LIMIT (mg/Kg)
19655-1	MB-3b	ND	ND	10

ND = Not Detected at or above reporting limit.

QA/QC SUMMARY

Duplicate: Relative % Difference	2
Spike: % Recovery	85

LABORATORY NUMBER: 19655  
 CLIENT: BASELINE ENVIRONMENTAL  
 JOB NUMBER: S9.134.12  
 JOB LOCATION: MARITIME (BIOREMEDIATION)

DATE RECEIVED: 02/21/90  
 DATE ANALYZED: 03/05/90  
 DATE REPORTED: 03/09/90  
 PAGE 3 OF 3

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020  
 Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/kg)	TOLUENE (ug/kg)	TOTAL XYLENES (ug/kg)	ETHYL BENZENE (ug/kg)	REPORTING LIMIT *
19655-1	MB-3b	ND	ND	ND	ND	5.0

ND = Not Detected.

\* Reporting Limit applies to all analytes.

QA/QC SUMMARY

%RPD	9
%RECOVERY	88

