PORT OF OAKLAND

CHARLES W. FOSTER
Executive Director

February 14, 1996

Mr. Barney Chan
Alameda County Health Care Agency
Environmental Protection Division
1131 Harbor Bay Pkwy., #250
Alameda, CA 94502-6577

SUBJECT: SUBSURFACE INVESTIGATION REPORT FOR KEEP ON TRUCKING AT 370 8TH STREET, OAKLAND, CALIFORNIA - FORMER UNDERGROUND TANK

Dear Mr. Chan:

Enclosed please find the Quarterly Groundwater Sampling Report for the second and third quarter of 1995 at the former underground tank site located at Keep on Trucking facilities.

If you have any questions or need additional information, please call me at (510) 272-1118.

Sincerely,

Susa Gates

Susa Gates

3335

no problem w/ area around 1K tank

Enclosure

cc with enclosure: Richard Padovani
Rick Hiett

Western Operations

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

Clayton
ENVIRONMENTAL
CONSULTANTS

July and November, 1995
Quarterly Groundwater Sampling Report
at
Former Underground Storage Tank Facility
Keep on Trucking Facility
370 8th Avenue
Oakland, California

Clayton Project No. 66258.02
February 8, 1996

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1.0 INTRODUCTION

Clayton Environmental Consultants, Inc. was retained by Port of Oakland to perform quarterly groundwater sampling and analysis at the Keep On Trucking Facility located at 370 8th Avenue in Oakland, California (Figure 1). On July 24 and November 10, 1995 Clayton collected third and fourth quarter 1995 groundwater samples from monitoring well MW-7. The monitoring well location is shown on Figure 2.

2.0 BACKGROUND

An approximately 1,000-gallons UST was removed in October 1994 by Environmental Investigations and Actions of Hayward, California. ERM-West, Inc. collected soil and groundwater samples from the sidewalls and base of the excavation. Total petroleum hydrocarbons quantitated as diesel (TPH-D) was identified in the soil samples collected from the excavation pit.

In April 1995, Clayton drilled three boreholes at the subject facility. As requested by the Alameda County Health Care Services Agency (ACHCSA) in their letter dated March 9, 1995 two of the boreholes were converted into temporary wells for collection of grab water samples. The third borehole was converted to monitoring well MW-7.

The TPH-D was detected at a concentration of 370 micrograms per liter (µg/l) in the groundwater sample from monitoring well MW-7 and 300,000 µg/l in the groundwater sample from the temporary well. Total petroleum hydrocarbons as gasoline (TPH-G) was also detected in the groundwater sample from the temporary well.

Subsequent groundwater sampling and analysis identified TPH-D in the groundwater samples from monitoring well MW-7. TPH-G and benzene, toluene, ethylbenzene and xylenes (BTEX) were not detected in the quarterly groundwater samples.

3.0 FIELD ACTIVITIES

Monitoring well MW-7 was purged using a 2-inch submersible pump on July 24, and November 10, 1995. Approximately four times the well volume was pumped from the well to ensure water representative of the aquifer was present in the well. The well volume was calculated using depth to groundwater and total well depth measurements which were recorded to the nearest 0.01 foot upon arrival at the site. The purging was continued until sufficient volume of water had been purged for pH, temperature, and electrical conductivity to stabilize.

The following parameters were noted during the sampling activities:

- Monitoring well identification
- Static water level

- Well depth
- Condition of water before purging (e.g., amount of free product)
- Purge rate and volume
- pH, temperature, and conductivity during purging
- Time purged
- Time of sample collection
- Sampling method
- Name of sampler
- Climatic conditions

The water sample was collected using a new disposable bailer. All other equipment coming into contact with groundwater was thoroughly cleaned and decontaminated before use at the site. Detail of the groundwater sampling event is provided in the water sampling field survey forms (Appendix A).

Groundwater samples obtained in the bailer were transferred into clean laboratory-supplied containers that were closed, labeled, placed immediately into an ice chest, and transported to Clayton's state-certified laboratory for analysis. One trip blank was furnished in accordance with Clayton's quality assurance/quality control (QA/QC) program.

Groundwater samples were collected in such a manner to minimize the volatilization of a sample due to agitation and/or transfer from bailer to sample container. To document and trace samples from time of collection to final analysis, a signed chain-of-custody record was completed by the sampler and accompanied the samples to the laboratory. The completed chain-of-custody is included with the analytical report from the laboratory (attached).

4.0 ANALYTICAL RESULTS

The groundwater sample from MW-7 was analyzed using the following United States Environmental Protection Agency (USEPA) Methods:

- Method 8015 (modified) for TPH-D
- Method 8015 (modified) for TPH-G
- Method 8020 for BTEX

The analytical results for the groundwater samples collected in April, July and November 1995 are summarized in attached Table. The analytical reports for the groundwater samples collected in July and November 1995 are included in Appendix B.

5.0 FINDINGS

Based on the analytical reports and our field observations our findings follow:

- TPH-D concentration ranged from 260 μg/L in the groundwater sample collected in July 1995 to 270 μg/L in groundwater sample collected in November, 1995.
- TPH-G or BTEX were not detected in the groundwater samples collected from monitoring well MW-7.

The next quarterly sampling event is scheduled for February 1996.

This report prepared by:

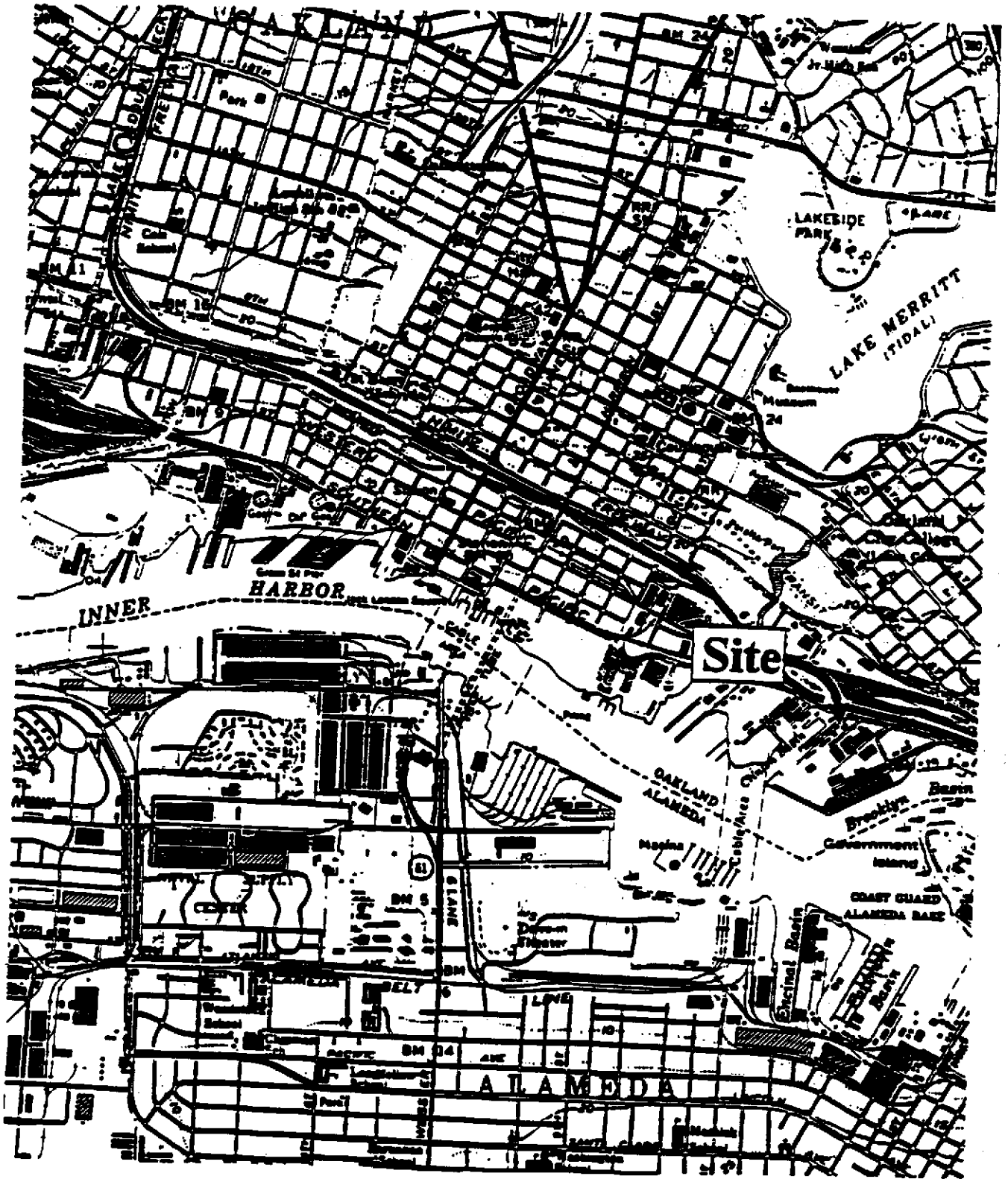
Dariush Dastmalchi, REA
Project Geologist

This report reviewed by:

Peter L. Schaefer, RG, CEG, CHG
Senior Project Geologist
Environmental Management and Remediation
San Francisco Regional Office

February 8, 1996

REGISTERED GEOLOGIST
PETER L. SCHAEFER
NO. 5612
STATE OF CALIFORNIA



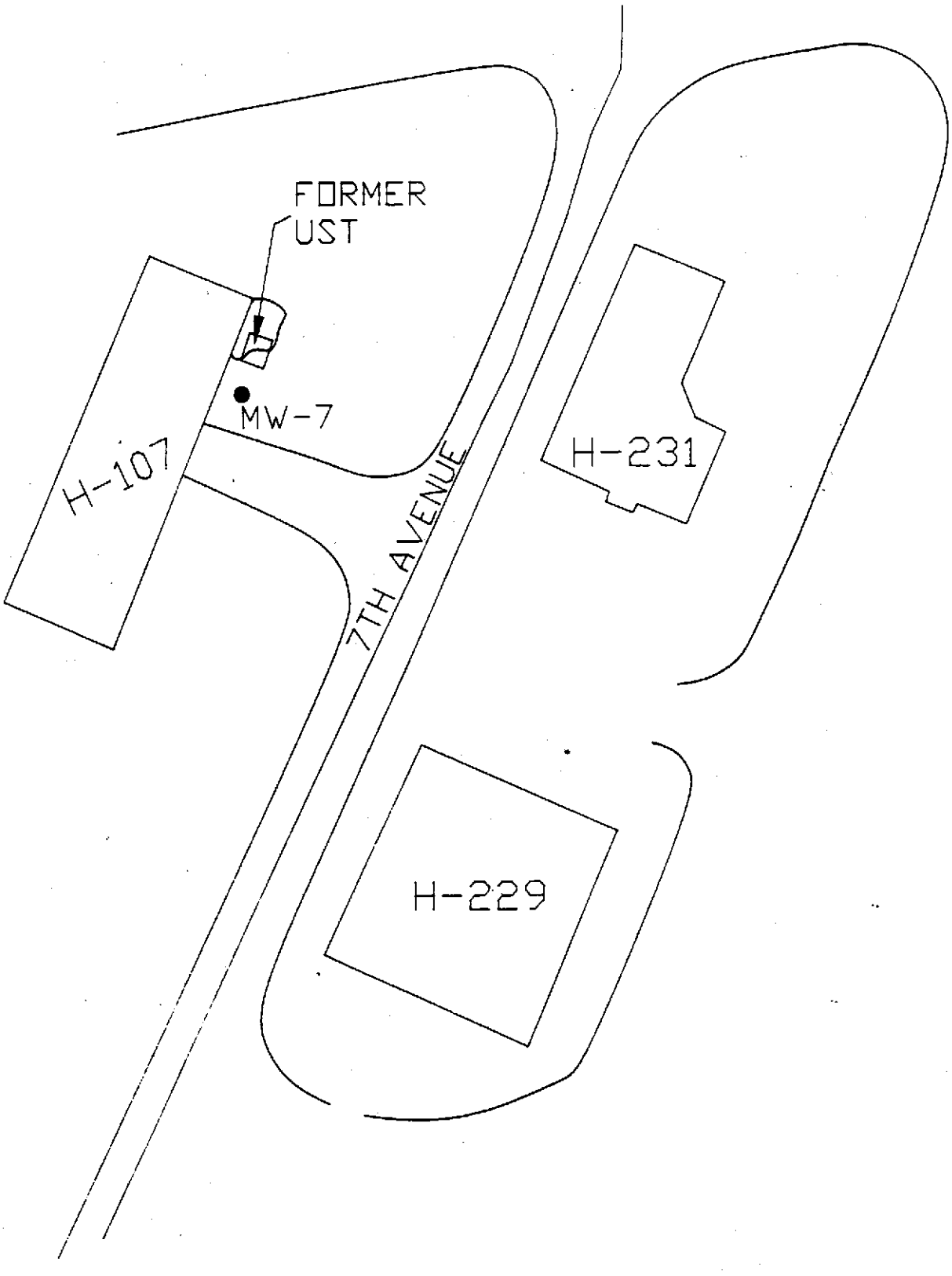
Site Location and Topographic Map
KEEP ON TRUCKING FACILITY
370 8th Street
Oakland, California

Clayton Project No. 58560.15

Figure 1

58560-15-16

Clayton ENVIRONMENTAL CONSULTANTS



LEGEND	FORMER UNDERGROUND STORAGE TANK FACILITY KEEP ON TRUCKING FACILITY 370 8TH AVENUE OAKLAND, CALIFORNIA Clayton Project No. 66258.02	Figure 2 02/08/96 66258007	Clayton ENVIRONMENTAL CONSULTANTS
● MONTORING WELL			

TABLE
Summary of Groundwater Analytical Results (ug/L)
April through November 1995

Monitoring Well	Sample Date	TPH-D	BTEX	TPH-G	Depth to Water	Casing Elevation	Groundwater Elevation
MW-7	10-Apr-95	370	ND	ND	4.41	10.67	6.26
	24-Jul-95	260	ND	ND	3.72	10.67	6.95
	10-Nov-95	270	ND	ND	4.78	10.67	5.89

TPH-D - Total Petroleum Hydrocarbons as Diesel
BTEX - Benzene, Toluene, Ethylbenzene, and Xylenes
TPH-G - Total Petroleum Hydrocarbons as Gasoline
TDS - Total Dissolved Solids

KEEPUST.XLS

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Project #: 06258.02 **Site:** P.C.C. - KEEP ON TRUCKING **Date:** NOV 16, 1995

Well #: MW-7 **Sampling Team:** R. SILVA

Sampling Method: DISPOSABLE BAILER

Field Conditions: CLEAR SKIES, COOL, WINDY

Describe Equipment D-Con Before Sampling This Well:

Total Depth of Well: 20.16 feet **Time:** 1010 **Depth to Water Before Pumping:** 4.78 feet

Height of Water Column		Diameter 2-inch (.16)	Diameter 4-inch (.65)		Volume		Purge Factor		Volume To Purge
15.38 feet	*	(.16)	.65	=	2.46 gal	*	4	=	9.84 gal

Depth Purging From: 19 feet **Time Purging Begins:** 1016

Notes on Initial Discharge: GRAYISH, SILTY, SULFUR ODOR

Time	Volume Purged	pH	Conductivity	T	Notes
1018	2-GAL	6.9	2000+	19.4	CLEAR, ODOR
1020	4-GAL	6.9	2000+	20.1	CLEAR, ODOR
1022	6-GAL	7.0	2000+	19.1	CLEAR, ODOR
1030	8-GAL	7.2	2000+	19.0	CLEAR, ODOR
1032	10-GAL	7.1	2000+	19.1	CLEAR, ODOR

PURGED DRY AFTER 7 GALLONS WERE REMOVED

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Project #: 58560.15 Site: P.O.D. - KEEP ON TRUCKING Date: JULY 24 1995

Well #: MW-7 Sampling Team: R. SILVA

Sampling Method: DISPOSABLE BAILER

Field Conditions: CLOUDY COOL, SLIGHT BREEZE

Describe Equipment D-Con Before Sampling This Well:

Total Depth of Well: 20.09 feet Time: 1111 Depth to Water Before Pumping: 3.72 feet

Height of Water Column: 16.37 feet * Diameter: 2-inch (.16) / 4-inch .65 = Volume: 2.62 gal * Purge Factor: 4 = Volume To Purge: 10.48 gal

Depth Purging From: 19½ feet Time Purging Begins: 1122

Notes on Initial Discharge: GRAYISH, SILTY

Time	Volume Purged	pH	Conductivity	T	Notes
1124	3-GAL	6.9	2000+	20.5	CLEAR
1125	6-GAL	6.8	2000+	18.9	CLEAR
1132	9-GAL	6.8	2000+	18.1	CLEAR, PURGED DRY
1140	12-GAL	6.9	2000+	19.0	CLEAR

APPENDIX B

GROUNDWATER SAMPLING ANALYTICAL REPORTS FOR SAMPLES COLLECTED IN JULY AND NOVEMBER 1995

Western Operations

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

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November 28, 1995

Mr. George Mead
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref.: 66258.02
Clayton Project No.: 95111.62

Dear Mr. Mead:

Attached is our analytical laboratory report for the samples received on November 10, 1995. Following the cover letter is the Quality Control Narrative detailing sample information/problems and a summary of the quality control issues. 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 December 28, 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,

Michael Lynch for

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

HAH/tjb

Attachments

QUALITY CONTROL NARRATIVE
for
Port of Oakland
Client Reference: 66258.02
Clayton Project No. 95111.62

Sample Information/Problems:

There were no problems with sample receipt.

Analytical Problems:

No problems were encountered with the sample analyses.

Quality Control:

The quality control data is summarized in the Quality Assurance Data Package, which follows the analytical report.

- MS/MSD: A matrix spike and matrix spike duplicate were analyzed where applicable, and all results were acceptable.
- LCS/LCSD: A laboratory control spike and duplicate were analyzed where applicable, and all results were acceptable.
- ICV/CCV: Response for all analytes met Clayton acceptance criteria.
- Surrogate Recoveries: All surrogate recoveries were acceptable. The surrogate recoveries, where applicable, are listed on the sample result pages.

Analytical Results
for
Port of Oakland
Client Reference: 66258.02
Clayton Project No. 95111.62

Sample Identification:	MW-7	Date Sampled:	11/10/95
Lab Number:	9511162-01A	Date Received:	11/10/95
Sample Matrix/Media:	WATER	Date Prepared:	11/21/95
Preparation Method:	EPA 5030	Date Analyzed:	11/21/95
Method Reference:	EPA 8015/8020	Analyst:	DTL

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	98	50 - 150

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

Analytical Results
for
Port of Oakland
Client Reference: 66258.02
Clayton Project No. 95111.62

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9511162-02A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	11/21/95
Preparation Method:	EPA 5030	Date Analyzed:	11/21/95
Method Reference:	EPA 8015/8020	Analyst:	DTL

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	95	50 - 150

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

Analytical Results
for
Port of Oakland
Client Reference: 66258.02
Clayton Project No. 95111.62

Sample Identification: See Below
Lab Number: 9511162
Sample Matrix/Media: WATER
Extraction Method: EPA 3510
Method Reference: EPA 8015 (Modified)

Date Received: 11/10/95
Date Extracted: 11/10/95
Date Analyzed: 11/15/95

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)		Method Detection Limit (ug/L)
-01	MW-7	11/10/95	270	a	50
-02	METHOD BLANK	--	ND		50

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

TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
a Unidentified hydrocarbons present in diesel and oil range; quantitation based on diesel.

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Quality Assurance Results Summary

Matrix Spike/Matrix Spike Duplicate Results

for

Clayton Project No. 95111.62

Quality Assurance Results Summary - Matrix Spike/Matrix Spike Duplicate
for
Clayton Project No. 95111.62

Clayton Lab Number:	9511098-LCS	Analytical Method:	EPA 8015
Ext./Prep. Method:	EPA 3510	Instrument ID:	02893
Date:	11/10/95	Date:	11/14/95
Analyst:	MBN	Time:	15:41
Std. Source:	E951025-01W	Analyst:	GUD
Sample Matrix/Media:	WATER	Units:	UG/L
		QC Batch No:	95111068

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	1,000	1,030	103	931	93	98	65	128	10	25

ND = Not detected at or above limit of detection
SOR = Spike out of range due to high sample concentration.

LCL = Lower Control Limit

UCL = Upper Control Limit

Quality Assurance Results Summary - Matrix Spike/Matrix Spike Duplicate
for
Clayton Project No. 95111.62

Clayton Lab Number: 9511196-01A
Ext./Prep. Method: EPA 5030
Date: / /
Analyst:
Std. Source: V951109-02W
Sample Matrix/Media: WATER

Analytical Method: EPA 8015/8020
Instrument ID: 05587
Date: 11/21/95
Time: 20:17
Analyst: DTL
Units: ug/L
QC Batch No: 9511212Z

Analyte		Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID)	ND	4.60	4.59	100	4.59	100	100	79	125	0.1	20
ETHYLBENZENE	(PID)	ND	5.47	5.37	98	5.42	99	99	91	123	1.0	20
GASOLINE	(FID)	ND	500	522	104	508	102	103	80	120	2.7	25
TOLUENE	(PID)	ND	24.2	24.0	99	24.0	99	99	84	118	0.2	20
TOTAL XYLENE	(PID)	ND	33.7	32.9	98	33.2	98	98	85	115	0.6	20

ND = Not detected at or above limit of detection
SOR = Spike out of range due to high sample concentration.

LCL = Lower Control Limit

UCL = Upper Control Limit

Western Operations

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

Clayton
ENVIRONMENTAL
CONSULTANTS

August 7, 1995

Mr. Dariush Dastmalchi
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref.: 58560.15
Clayton Project No.: 95072.00B

Dear Mr. Dastmalchi:

Attached is our analytical laboratory report for the samples received on July 25, 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 September 6, 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: 58560.15
Clayton Project No. 95072.00

Sample Identification:	MW-7	Date Sampled:	07/24/95
Lab Number:	9507200-06A	Date Received:	07/24/95
Sample Matrix/Media:	WATER	Date Prepared:	07/26/95
Preparation Method:	EPA 5030	Date Analyzed:	07/26/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	91	50 - 150

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

Analytical Results
for
Port of Oakland
Client Reference: 58560.15
Clayton Project No. 95072.00

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9507200-08A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	07/26/95
Preparation Method:	EPA 5030	Date Analyzed:	07/26/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	90	50 - 150

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

Analytical Results
for
Port of Oakland
Client Reference: 58560.15
Clayton Project No. 95072.00

Sample Identification: See Below
Lab Number: 9507200
Sample Matrix/Media: WATER
Extraction Method: EPA 3510
Method Reference: EPA 8015 (Modified)

Date Received: 07/24/95
Date Extracted: 07/26/95
Date Analyzed: 08/01/95

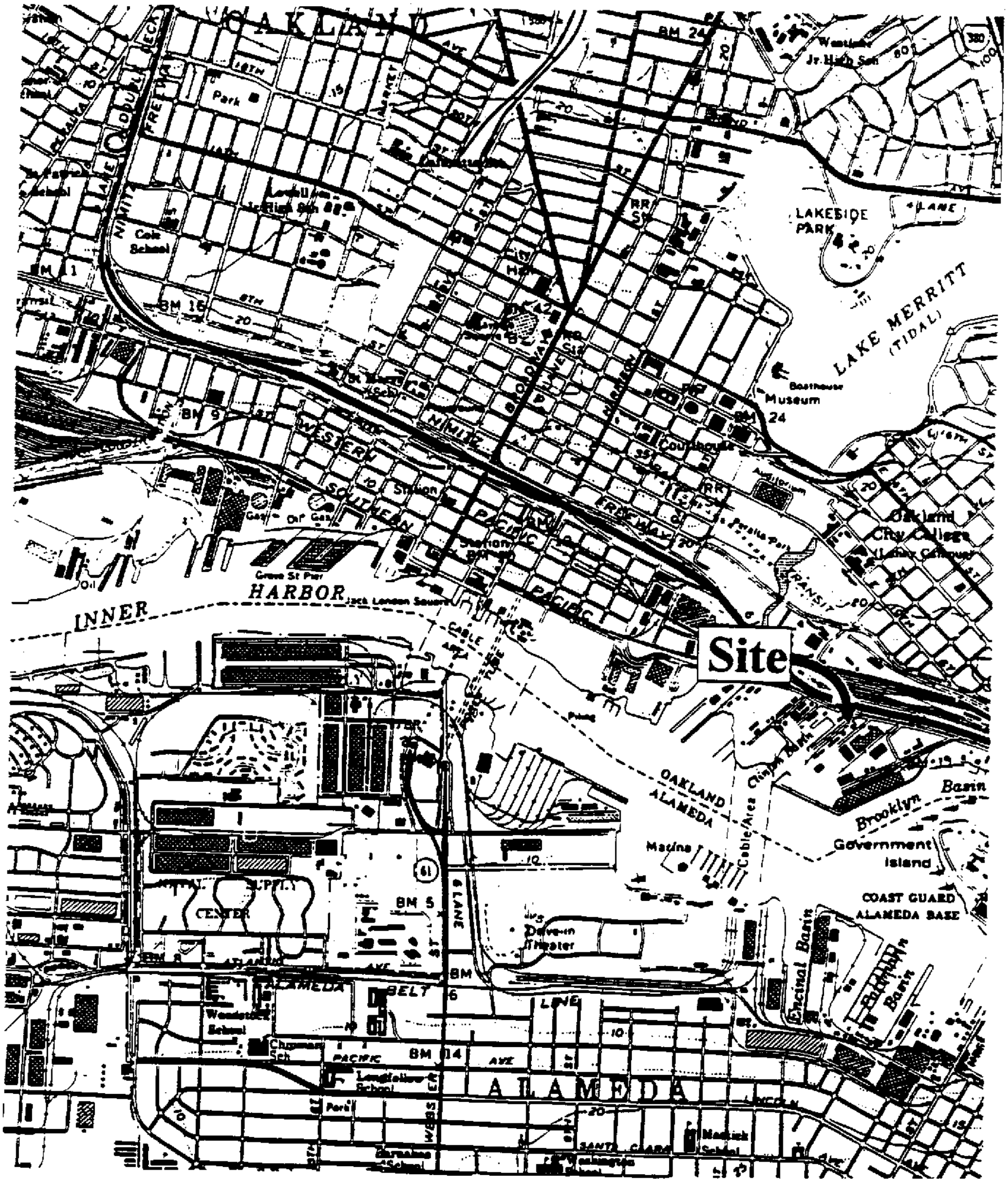
Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)		Method Detection Limit (ug/L)
-06	MW-7	07/24/95	260	a	50
-08	METHOD BLANK	--	ND		50

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

TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
a Unidentified hydrocarbons present in diesel range; quantitation based on diesel.

4/95

FIGURES



Site Location and Topographic Map
KEEP ON TRUCKING FACILITY
370 8th Street
Oakland, California

Clayton Project No. 58560.15

Figure

1

58560-15-16

Clayton
ENVIRONMENTAL
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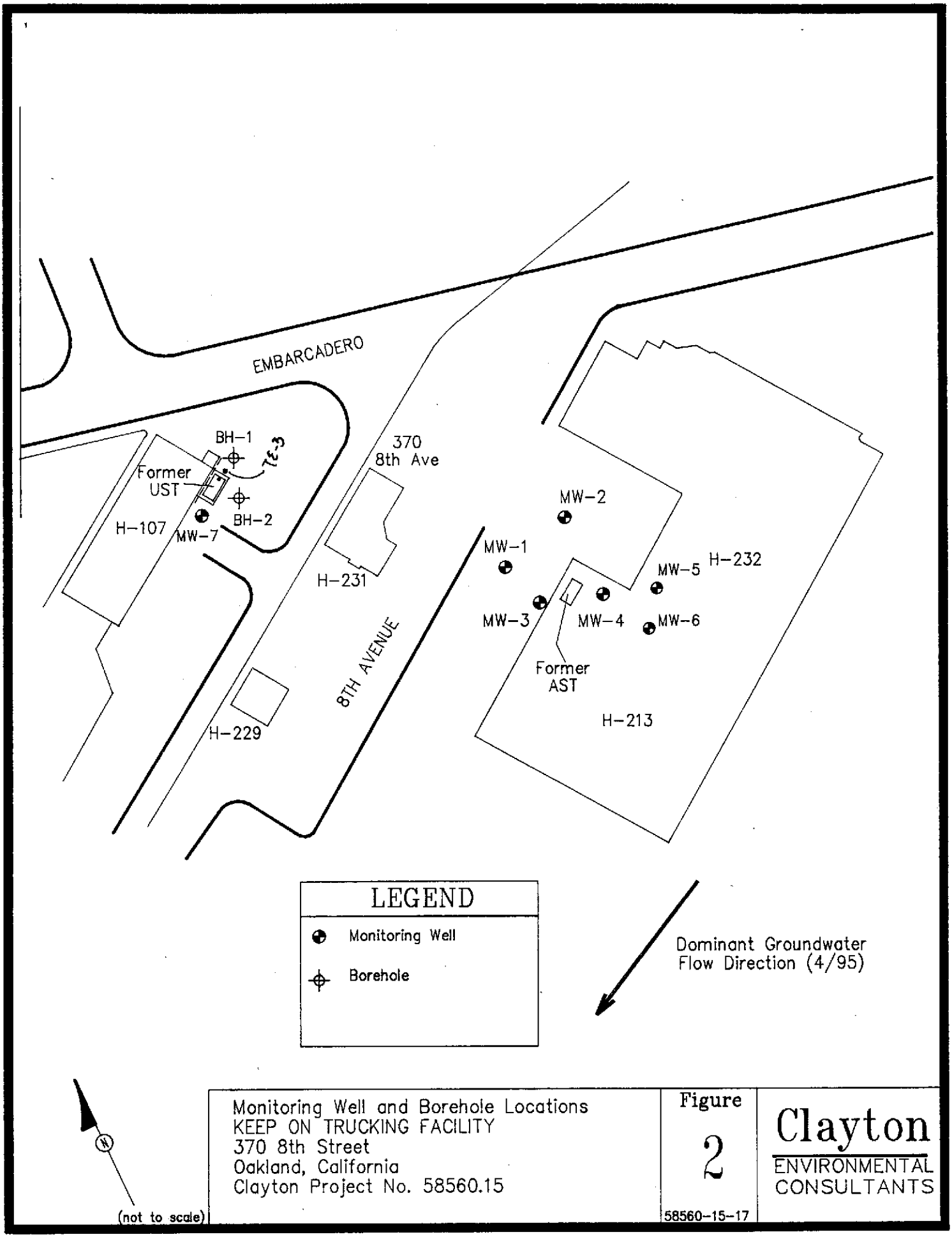

Monitoring Well and Borehole Locations
KEEP ON TRUCKING FACILITY
370 8th Street
Oakland, California
Clayton Project No. 58560.15

Figure
2
58560-15-17

Clayton
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Table 1
Analytical Summary for Groundwater Samples
Collected on March 29 and April 10, 1995
All concentrations in micrograms per liter (ug/L)

	Benzene	Ethylbenzene	Toluene	Xylenes	TPH-G	TPH-D	Depth to Water*
MW-7	ND	ND	ND	ND	ND	370	4.41
BH-1	ND	ND	ND	ND	ND	ND	NA
BH-2	ND	ND	ND	50	110,000	300,000	NA

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
NA	Not applicable
ND	Not detected at or above analytical detection limit
*	Depth to groundwater in feet below top of the well casing

Table 2
Analytical Summary for Soil Samples
Collected on March 29, 1995
All concentrations in milligrams per kilogram (mg/kg)

	Benzene	Ethylbenzene	Toluene	Xylenes	TPH-G	TPH-D
BH-1-20	ND	ND	ND	ND	ND	24
BH-2-4	ND	ND	ND	ND	0.4	43
MW-7-5	ND	ND	ND	ND	ND	41

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
NA	Not analyzed
ND	Not detected at or above analytical detection limit

APPENDIX A

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY'S APPROVAL LETTER

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

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH

ALAMEDA COUNTY-ENV. HEALTH DEPT.
ENVIRONMENTAL PROTECTION DIV.
1131 HARBOR BAY PKWY., #250
ALAMEDA CA 94502-6577
(510)567-6700

March 9, 1995
StID #3335

Ms. Susa Gates
Port of Oakland
530 Water St.
P.O. Box 2064
Oakland CA 94604-2064

Re: Comment on February 21, 1995 Work Plan for Limited Subsurface Investigation at 370 8th St., Oakland CA 94606

Dear Ms. Gates:

Our office has completed its review of the above referenced work plan for limited subsurface investigation at the Keep On Trucking site. This work plan was in response to the petroleum fuel release detected upon the removal of the 1000 gallon fuel tank on October 12, 1994.

This work plan calls for the installation of two borings and one monitoring well in the downgradient direction relative to the former tank. In general, this approach is acceptable however our office has the following additional requirements:

1. From the two proposed borings, our office requests that at least one soil sample (from the capillary fringe) and a groundwater sample be taken for analysis. Chemical analysis should be for the following analytes: TPHg, TPHd and BTEX.

2. This well along with all wells onsite should be surveyed to mean sea level. Please contact me at least 48 working hours prior to field activities.

It is hoped that the other field activities for the investigation of the above ground diesel fuel release may also be scheduled concurrently with this field work. You may contact me at (510) 567-6765 if you have any questions.

Sincerely,

Barney M. Chan

Barney M. Chan
Hazardous Materials Specialist

cc: J. Vargas, Clayton Env. Consultants, 1252 Quarry Lane, Pleasanton CA 94566
R. Padovani,KOT, 370 8th Ave., Oakland CA 94606
G. Coleman, files 2wpapKOT

APPENDIX B

ZONE 7 DRILLING PERMIT

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT Keep On Trucking
370 8th Street
Oakland, CA

CLIENT
Name Port of Oakland
Address 530 Water St. Voice
City Oakland Zip 94604-2064

APPLICANT
Name John Vargo - Clayton Environmental Consultants Inc Fax 426-0106
Address 1252 Quarry Lane Voice 426-2676
City Pleasanton, CA Zip 94566

TYPE OF PROJECT

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

PROPOSED WATER SUPPLY WELL USE

Domestic		Industrial		Other	
Municipal		Irrigation			

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	X
Cable		Other			

DRILLER'S LICENSE NO. C57- 384167

WELL PROJECTS

Drill Hole Diameter	8	in.	Maximum Depth	20	ft.
Casing Diameter	2	in.	Number	4	
Surface Seal Depth	4-6	ft.			

GEOTECHNICAL PROJECTS

Number of Borings	2		Maximum Depth	20	ft.
Hole Diameter	8	in.			

ESTIMATED STARTING DATE 3/29/95
ESTIMATED COMPLETION DATE 3/30/95

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

APPLICANT'S SIGNATURE John Vargo Date 3/27/95

FOR OFFICE USE

PERMIT NUMBER
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

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

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

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

E. WELL DESTRUCTION. See attached.

Approved _____ Date _____

91992

APPENDIX C

LITHOLOGIC BORING LOGS

Monitoring Well No. MW-7

PROJECT: Port of Oakland-Keep on Trucking
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 3/29/95
HOLE DIA.: 8 in.
FINAL GW: 4.41 ft.

LOGGED BY: Richard Silva
SAMPLER: Split Spoon
HOLE ELEV.: 10.07 MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FOOT
SILTY GRAVEL: brown (10 YR, 4/2), moist, fill material	Conc. / Fill		0		
SILTY CLAY: very dark gray (10 YR, 3/1), moist	CL		2		
▼ Groundwater stabilized in monitoring well at 4.41 ft bgs (4/10/95)					
SILTY CLAY: black (7.5 YR, 2/0), soft			5		4
PID reading = 0 ppm VOCs @ 5.5 ft bgs					
SILTY CLAY: dark gray (2.5 Y, 4/0), moist, "Bay Mud"			6		
SILTY CLAY: dark gray (2.5 Y, 4/0), hydrogen sulfide odor, soft, moist, "Bay Mud"			10		3
PID reading = 0 ppm VOCs @ 10.5 ft bgs			12		

WELL CONSTRUCTION DETAIL

- Christy Box
- Cement Grout Seal
- 2" Ø Sch.40 Blank PVC
- Bentonite Pellet Seal
- 2" Ø Sch.40 Slotted PVC (0.010")

Clayton Environmental Consultants
1252 Quarry Lane
Pleasanton, California

Notes:

Project No. 58580.18

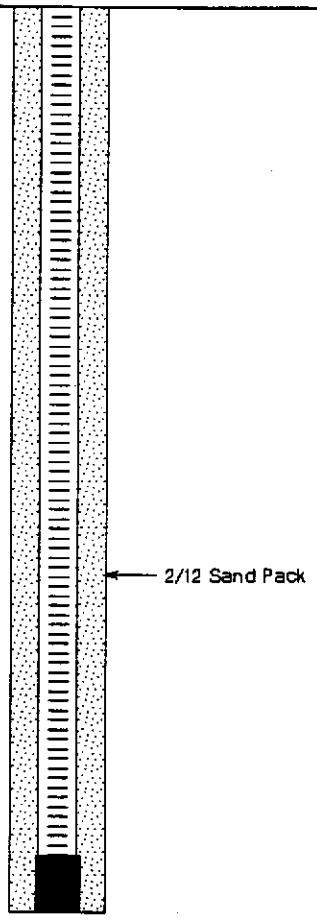
Monitoring Well No. MW-7

PROJECT: Port of Oakland-Keep on Trucking
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 3/29/95
HOLE DIA.: 8 in.
FINAL GW: 4.41 ft.

LOGGED BY: Richard Silva
SAMPLER: Split Spoon
HOLE ELEV.: 10.07 MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FOOT	WELL CONSTRUCTION DETAIL
SILTY CLAY: dark gray (2.5 Y, 4/0), hydrogen sulfide odor, moist, very soft, "Bay Mud" PID reading = 0 ppm VOCs @ 15.5 ft bgs	CL		15		2	
Bottom of Boring @ 20 ft bgs ⚳ Groundwater first encountered in boring at 20 ft bgs			20		31	



Prepared By/Date:

Approved By/Date:

Clayton Environmental Consultants
1252 Quarry Lane
Pleasanton, California

Notes:

Project No.
58580.18

Boring Log No. BH-1

PROJECT: Port of Oakland–Keep on Trucking
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: 25 ft.

DATE: 3/29/95
HOLE DIA.: 8 in.
FINAL GW: ft.

LOGGED BY: Richard Silva
SAMPLER: Split Spoon
HOLE ELEV.:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FOOT	REMARKS
	Conc.		0			
SILTY GRAVEL: brown (10 YR, 4/2), moist, fill material	Fill		1			
			2			
	CL		3			
			4			
SILTY CLAY: dark gray (2.5 Y, 4/0), moist, "Bay Mud"			5		3	
			6			
			7			
			8			
			9			
			10		7	
			11			
			12			
			13			
			14			

Clayton Environmental Consultants
1252 Quarry Lane
Pleasanton, California

Notes:

Project No. 58580.18

Boring Log No. BH-1

PROJECT: Port of Oakland-Keep on Trucking
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: 25 ft.

DATE: 3/29/95
HOLE DIA.: 8 in.
FINAL GW: ft.

LOGGED BY: Richard Silva
SAMPLER: Split Spoon
HOLE ELEV.:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FOOT	REMARKS
	CL		14			
			15		11	
			16			
			17			
			18			
			19			
			20			
			21			
			22			
			23			
			24			
			25			
▽ Groundwater first encountered at approximately 25 ft bgs Bottom of Boring @ 25 ft bgs			26			
Prepared By/Date:			27			
Approved By/Date:			28			

Clayton Environmental Consultants
1252 Quarry Lane
Pleasanton, California

Notes:

Project No.
58580.18

Boring Log No. BH-2

PROJECT: Port of Oakland-Keep on Trucking
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: ft.

DATE: 3/29/95
HOLE DIA.: 8 in.
FINAL GW: ft.

LOGGED BY: Richard Silva
SAMPLER: Split Spoon
HOLE ELEV.:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FOOT	REMARKS
	Conc.		0			
SILTY GRAVEL: black (7.5 YR, 2/0), fill material	Fill		1			
			2			
SILTY GRAVEL: black (7.5 YR, 2/0), fill material, wood chips There appears to have been floating product, diesel, on the perched water collecting in the boring.			3			
			4			
No free water in borehole	CL		5		5	
			6			
			7			
SILTY CLAY: dark gray (2.5 Y, 4/0), moist, "Bay Mud"			8			
			9			
			10		2	
			11			
			12			

Clayton Environmental Consultants
1252 Quarry Lane
Pleasanton, California

Notes:

Project No. 58580.18

Boring Log No. BH-2

PROJECT: Port of Oakland-Keep on Trucking
DATE: 3/29/95
LOGGED BY: Richard Silva
DRILL RIG: Hollow Stem Auger
HOLE DIA.: 8 In.
SAMPLER: Split Spoon
INITIAL GW DEPTH: ft.
FINAL GW: ft.
HOLE ELEV.:

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FOOT	REMARKS
			12			
	CL		13			
			14			
			15		3	
Bottom of Boring @ 15 ft bgs			16			
			17			
Prepared By/Date:			18			
			19			
Approved By/Date:			20			
			21			
			22			
			23			
			24			

Clayton Environmental Consultants
1252 Quarry Lane
Pleasanton, California

Notes:

Project No.
58560.18

APPENDIX D

DRILLING, WELL CONSTRUCTION, AND SAMPLING PROTOCOLS FOR BOREHOLE/MONITORING WELL INSTALLATION

DRILLING, WELL CONSTRUCTION, AND SAMPLING PROTOCOLS FOR BOREHOLE/MONITORING WELL INSTALLATION

BOREHOLE INSTALLATION

Clayton Environmental Consultants, Inc. acquires the proper governmental agency permits to bore, drill, or destroy all proposed boreholes and monitoring wells that intersect with groundwater aquifers and writes a health and safety plan.

Clayton subcontracts only with drillers who possess a current C-57 water well contractor's license issued by the State of California and whose personnel have attended the OSHA 40-hour Hazardous Materials Safety Training. Prior to starting work, a "tailgate" safety meeting including discussion of the safety hazards and precautions relevant to the particular job will be held with all personnel working on the job. Well drillers are identified on permit applications.

Borings are drilled dry by hollow- or solid-stem, continuous flight augers. Augers, drill rods, and other working components of the drilling rig are steam-cleaned before arriving onsite to prevent the introduction of contaminants. These components are also steam-cleaned between borings away from boring locations. Cleaned augers, rods, and other components are stored, and/or covered when not in use.

Our bore logs include a detailed description of subsurface stratigraphy. Clayton examines the soil brought to the surface by drilling operations, and samples undisturbed soil every 5 feet or as otherwise specified. Soil cuttings are screened for hydrocarbon contamination using a photoionization detector. Boring logs are filled out in the field by a professional geologist, civil engineer, engineering geologist who is registered by the State of California, or a technician who is trained and working under the supervision of one of the previously mentioned persons, using the Unified Soil Classification System.

SOIL SAMPLING

Soil samples are taken every 5 feet, at areas of obvious contamination, or as otherwise specified, with a California modified split-spoon sampler that is lined with three six-inch brass tubes. The sampler and rod are inserted into the borehole to the current depth and a hammer of known weight and height above the sampler are allowed to free-fall onto the rod, advancing the assembly 18 inches into undisturbed soil. Clayton uses the number of blows necessary to drive the sampler into the ground to help evaluate the consistency of materials encountered. The sampler is then pulled from the borehole and disassembled, and the three brass tubes are separated for inspection and labeling.

Clayton uses new brass liners or liners cleaned with a trisodium phosphate (TSP) solution, double rinsed with clean tap water, and air dried prior to each sampling. The sampler is also cleaned with TSP and rinsed with tap water between sampling events.

Soil samples selected for laboratory analysis are left in the brass liners, sealed with aluminum foil and plastic caps, taped for air tightness, labeled, and immediately placed into a pre-cooled ice

chest chilled to less than 4°C. Labels contain the following information: site name, date and time sampled, borehole number and depth, and the sampler's initials. The samples are transported under chain-of-custody to a state-certified laboratory. The laboratory analyzes soil samples within the prescribed holding time, storing them at temperatures below 4°C at all times.

Pending results of laboratory analysis, excess drilling and sampling cuttings are placed into Department of Transportation (DOT)-approved drums, labeled with the name of the site, address, and well number, and left at the site. Uncontaminated soil may be disposed of by the client. Soil found to contain levels of contaminants above local or state action levels will require that the client dispose of it in accordance with hazardous waste regulations. At the client's request, we will assist with the disposal of contaminated soil.

WELL CONSTRUCTION

Boreholes are converted to monitoring wells by placing 2-inch or 4-inch diameter well casing with flush-threaded joints and slotted screen into the borehole. Construction materials include polyvinyl chloride (PVC), stainless steel, or low carbon steel. The most suitable material for a particular installation will depend on the parameters to be monitored. All screens and casings used are in a contaminant-free condition when placed in the ground. No thread lubrication is used, other than teflon tape, for connecting the casing segments.

Wells extend at least 10 feet into the upper saturated zone, but do not extend through any clay layers greater than 5 feet that are below the shallow water table. The standard practice for wells installed at hydrocarbon contamination sites is to construct a well with a 20-foot long perforated interval extending 15 feet below and 5 feet above the water table in an unconfined aquifer. The top of the well is solid casing. The annular space of the borehole is backfilled with washed, kiln-dried sand to a point at least 1 foot above the slotted screen. A seal above the filter pack is formed by placing a 1- to 2-foot layer of bentonite pellets on top of the sand. The bentonite pellets are moistened by pouring clean tap water down the hole so that they can expand and seal the annulus. A neat cement grout is placed above the bentonite seal and brought to the ground surface.

Well casings are protected from surface contamination, accidental damage, and unauthorized entry or tampering with water-tight locking caps on the well casings. The caps are usually surrounded by a concrete vault. Wells are clearly identified with a metal tag or other device where the following information is recorded: well number, depth to water, depth of well, casing data including location of screened interval.

WELL DEVELOPMENT

The well seal in newly developed wells must set up for 48 to 72 hours prior to development. Since development of the well can volatilize contaminants present, the well must also settle for at least 48 to 72 hours between development and the first purging/sampling incident.

All monitoring wells are initially developed to clean the well and stabilize sand, gravel, and disturbed aquifer materials around the screened internal perforations. Wells are developed by pumping (or bailing) and surging until water turbidity and specific conductance stabilize. In some cases, where wells are installed in low permeability formations and the wells purge dry, the well

is allowed to recover and is purged dry three times. Clean tap water is introduced into the well if it does not recover rapidly enough.

Pending results by laboratory analysis, purge water from well development and sampling is placed into DOT-approved drums, labeled with the name of the site, address, well number, and left at the site. Uncontaminated water may be disposed of by the client. Water found to contain levels of contaminants above local or state action levels requires that the client dispose of it in accordance with hazardous waste requirements. At the client's request, we can assist with the disposal of contaminated purge water.

GROUNDWATER SAMPLING

To collect a representative sample of the groundwater, stagnant water within the well casing and filter material must be purged and fresh aquifer water allowed to replace it. The water is purged from the well by pumping or bailing at least three well volumes. Well volumes are calculated by measuring depth to groundwater to the nearest 0.01 foot upon arrival at the well before any purging has begun. Groundwater samples are collected only after purging has been of sufficient duration for pH, temperature, and electrical conductivity to stabilize. When purging low-yield wells, the wells are purged to dryness. When the well recovers to 80% of the depth measured upon arrival, samples are collected.

Field sampling logs maintained for each well include:

- Monitoring well identification
- Static water level, before and after pumping
- Well depth
- Condition of water prior to purging (e.g., amount of free product)
- Purge rate and volume
- pH, temperature, and conductivity during purging
- Time purged
- Time of sample collection
- Sampling method
- Name of sampler
- Climatic conditions

Water samples are collected using clean teflon bailers. All equipment that contacts samples is thoroughly cleaned before arrival at the site and between sampling events.

Water is collected in clean laboratory-supplied containers, labeled, placed immediately into an ice chest pre-cooled to 4°C, and transported to Clayton's laboratory for analysis. One trip blank will be furnished in accordance with our quality assurance/quality control (QA/QC) program.

All samples are collected in such a manner so as to minimize the volatilization of a sample due to agitation and/or transfer from bailer to sample container. Samples are collected so that contaminants most sensitive to volatilization are sampled first.

Preservatives are not added to any sample, unless instructed. If requested, they are supplied by Clayton's laboratory.

All sample containers are labeled in the field. Labels contain the following information: project name, sample identification number, project number, date and time of collection, and sampler's initials.

Under no circumstances are sealed sample containers opened by anyone other than the laboratory personnel who perform the requested analyses. If it is necessary for samples or sample chests to leave the immediate control of the sampler prior to delivery to the laboratory, for example during shipment by an overnight shipper, a custody seal is placed on each sample container and/or sample chest to ensure that the samples have not been tampered with during transportation. The custody seal is signed by the sampler, and the date and time that the seal was placed is recorded. The elapsed time between sample collection and delivery to the laboratory never exceeds 48 hours. Water samples are not held for more than 14 days prior to analysis and are kept at 4°C at all times.

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

REFERENCES

Groundwater Monitoring Guidelines, Revised February 1990. Alameda County District Groundwater Protection Program.

Leaking Underground Fuel Tank (LUFT) Field Manual: Guidelines for Site Assessment, Cleanup, and Underground Tank Closure, May 1988. State of California LUFT Task Force.

Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks, Revised November 1989. North Coast, San Francisco Bay, and Central Valley regions of the California State Water Quality Control Board.

Standards for the Construction and Destruction of Wells and Other Deep Excavations in Santa Clara County, Revised June 1989. Santa Clara Valley Water District.

APPENDIX E

WATER SAMPLING SURVEY FORM

CLAYTON ENVIRONMENTAL CONSULTANTS, INC.

WATER SAMPLING FIELD SURVEY FORM

Job # 5B560.18 Site: KEEP ON TRUCKING Date: APRIL 10, 1995

Well # MW-7 Sampling Team: R. SILVA

Sampling Method: DISPOSABLE BAILER

Field Conditions: CLEAR SKIES, WARM, SLIGHT BREEZE

Describe Equipment D-Con Before Sampling This Well: DISPOSABLE BAILER WAS WASHED WITH DETERGENT THEN TRIPLE RINSED

Total Depth of Well: 20.14 feet Time: 1035 Depth to Water Before Pumping: 4.41 feet

Volume Height of Water Column:		Diameter 2-inch	Diameter 4-inch	Volume		Purge Factor		To Purge
15.73	feet *	(.16)	.65	= 2.55 gal	*	4	=	10.08

Depth Purging From: 20 feet Time Surging Begins: 1040

Notes on Initial Discharge: BROWNISH, SILTY

Time	Volume Purged	pH	Conductivity	T	Notes
1042	2-GAL	6.8	2000+	16.2	CLOUDY
1044	4-GAL	6.8	2000+	17.5	CLEAR
1046	6-GAL	6.9	2000+	17.6	CLEAR
1048	8-GAL	6.9	2000+	18.0	CLEAR
1050	10-GAL	6.9	2000+	18.5	CLEAR
1052	12-GAL	6.8	2000+	18.5	CLEAR

APPENDIX F

LAND SURVEYOR REPORT

SURVEYING - MAPPING - GIS/CADD SERVICES
RIGHT OF WAY SERVICES

FAX TRANSMISSION

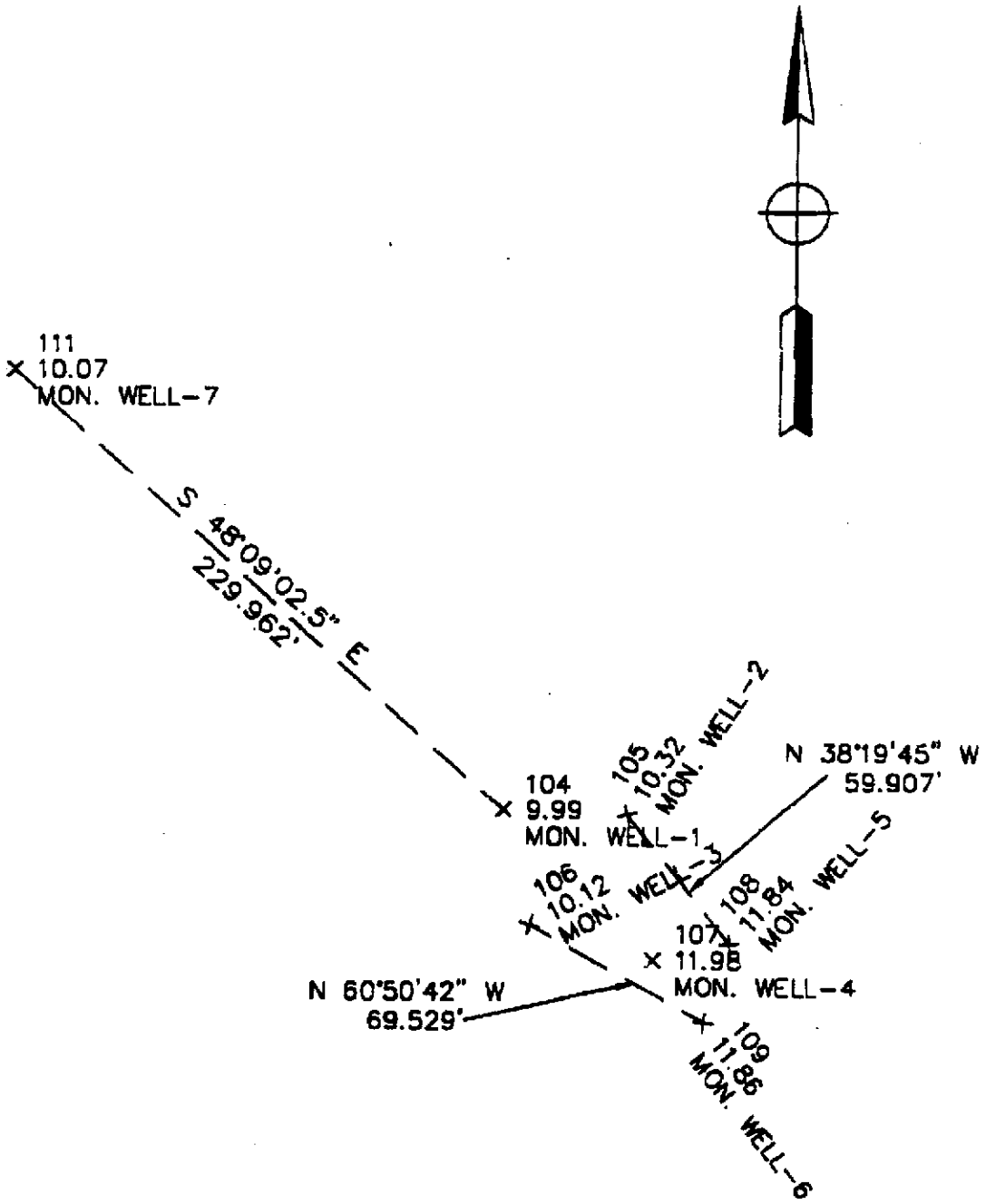
GEOTOPO INC.
1611 TELEGRAPH AVE. SUITE 488OAKLAND CA. 946125 10-763-2239510-763-6401

To:	Dariush Clayton Environmental	**Date:**	May 11, 1995
Fax #:	510-426-0106	**Pages:**	3, including this cover sheet.
From:	Ken Alcock		
Subject:	Monitoring wells		

COMMENTS:

Here is a plot of the Monitoring wells of 8th street and Embarcadero.

If you have any questions please call.



GEOTOPO SURVEYING & MAPPING 1611 TELEGRAPH STE 688 OAKLAND CA. 94612 (510)763-2236 FAX (510)763-8401	MONITORING WELLS OF 8TH AND EMBARCADERO	DRAWN BY: KRA	REVISIONS:
		CHECKED BY: WJP	
		SCALE: 1"=60'	
		DATE: 5/11/95	
		SHEET: 1 OF: 1	JOB NO: 94523

L:\DCA\P\94523\CLAYTON.DWG

File: CLAYTON.CR5

POINT	NORTHING	EASTING	ELEVATION	NOTE
100	2114637.9570	6054056.9620	10.3698	MON. REX
101	2114326.8919	6055235.6816	10.7800	MON. PIER
102	2115136.1660	6052732.3980	999999999.0000	MON. SHIP
103	2114627.8345	6053918.5118	10.1343	PT. SHORNA
104	2114476.8124	6053807.9116	9.9936	MON. WELL-1
105	2114475.2262	6053850.7894	10.3204	MON. WELL-2
106	2114436.2577	6053817.3194	10.1153	MON. WELL-3
107	2114424.1662	6053860.0530	11.9834	MON. WELL-4
108	2114429.8002	6053886.7021	11.8409	MON. WELL-5
109	2114402.3849	6053878.0394	11.8555	MON. WELL-6
110	2115136.1841	6052732.3499	10.3123	MON SHIP
111	2114630.2373	6053636.6120	10.0686	MON. WELL-7

APPENDIX G

ANALYTICAL REPORTS

Western Operations

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

Clayton
ENVIRONMENTAL
CONSULTANTS

April 12, 1995

Mr. Dariush Dastmalchi
CLAYTON ENVIRONMENTAL CONS.
1252 Quarry Lane
Pleasanton, CA 94566

Client Ref.: 58560.15
Clayton Project No.: 95034.19

Dear Mr. Dastmalchi:

Attached is our analytical laboratory report for the samples received on March 29, 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 12, 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
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	BH-1	Date Sampled:	03/29/95
Lab Number:	9503419-08C	Date Received:	03/29/95
Sample Matrix/Media:	WATER	Date Prepared:	04/04/95
Preparation Method:	EPA 5030	Date Analyzed:	04/04/95
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	101	50 - 150

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

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	BH-2	Date Sampled:	03/29/95
Lab Number:	9503419-09C	Date Received:	03/29/95
Sample Matrix/Media:	WATER	Date Prepared:	04/04/95
Preparation Method:	EPA 5030	Date Analyzed:	04/04/95
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX			
Benzene	71-43-2	ND	20
Ethylbenzene	100-41-4	ND	20
Toluene	108-88-3	ND	20
o-Xylene	95-47-6	ND	20
p,m-Xylenes	--	50	20
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	58	50 - 150

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

Note: Detection limit increased due to presence of heavier hydrocarbons.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9503419-12A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	04/04/95
Preparation Method:	EPA 5030	Date Analyzed:	04/04/95
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	88	50 - 150

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

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	MW-7 AT 5FT BGS	Date Sampled:	03/29/95
Lab Number:	9503419-01A	Date Received:	03/29/95
Sample Matrix/Media:	SOLID	Date Prepared:	04/05/95
Preparation Method:	EPA 5030	Date Analyzed:	04/05/95
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	127	50 - 150

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

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	BH-1 AT 20FT BGS	Date Sampled:	03/29/95
Lab Number:	9503419-04A	Date Received:	03/29/95
Sample Matrix/Media:	SOLID	Date Prepared:	04/05/95
Preparation Method:	EPA 5030	Date Analyzed:	04/05/95
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	92	50 - 150

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

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

ample Identification:	BH-2 AT 4FT BGS	Date Sampled:	03/29/95
ab Number:	9503419-05A	Date Received:	03/29/95
ample Matrix/Media:	SOLID	Date Prepared:	04/05/95
reparation Method:	EPA 5030	Date Analyzed:	04/05/95
ethod Reference:	EPA 8020	Analyst:	WAS

nalyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
TEX			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
urrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	96	50 - 150

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

esults are reported on a wet-weight basis, as received.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9503419-11A	Date Received:	--
Sample Matrix/Media:	SOLID	Date Prepared:	04/05/95
Preparation Method:	EPA 5030	Date Analyzed:	04/05/95
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	108	50 - 150

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

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification: See Below
Lab Number: 9503419
Sample Matrix/Media: SOLID
Extraction Method: EPA 3550
Method Reference: EPA 8015 (Modified)

Date Received: 03/29/95
Date Extracted: 04/06/95
Date Analyzed: 04/10/95

Lab Number	Sample Identification	Date Sampled	TPH-D (mg/kg)		Method Detection Limit (mg/kg)
-01	MW-7 AT 5FT BGS	03/29/95	41	a	1
-04	BH-1 AT 20FT BGS	03/29/95	24	a	1
-05	BH-2 AT 4FT BGS	03/29/95	43	a	1
-11	METHOD BLANK	--	ND		1

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.
a Unidentified hydrocarbons present in oil range; quantitation based on diesel.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification: See Below
Lab Number: 9503419
Sample Matrix/Media: WATER
Extraction Method: EPA 3510
Method Reference: EPA 8015 (Modified)

Date Received: 03/29/95
Date Extracted: 04/03/95
Date Analyzed: 04/10/95

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-08	BH-1	03/29/95	ND	50
-09	BH-2	03/29/95	300000	50
-12	METHOD BLANK	--	ND	50

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

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

Western Operations

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

Clayton
ENVIRONMENTAL
CONSULTANTS

July 7, 1995

Dariush Dastmalchi
CLAYTON ENVIRONMENTAL CONSULTANTS, INC.
1252 Quarry Lane
Pleasanton, CA 94566

ADDITIONAL REPORT
Client Ref.: 59007.00
Clayton Project No.: 95041.42

Dear Mr. Dastmalchi:

Attached is our additional analytical laboratory report for the samples received on April 10, 1995 and originally reported on April 24, 1995. As requested, results for TPH-Gasoline are provided for all samples previously analyzed for BTEX. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

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: 59007.00
Clayton Project No. 95041.42

Sample Identification:	MW-7	Date Sampled:	04/10/95
Lab Number:	9504142-01C	Date Received:	04/10/95
Sample Matrix/Media:	WATER	Date Prepared:	04/13/95
Preparation Method:	EPA 5030	Date Analyzed:	04/13/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	101	50 - 150

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

Analytical Results
for
Port of Oakland
Client Reference: 59007.00
Clayton Project No. 95041.42

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9504142-02A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	04/13/95
Preparation Method:	EPA 5030	Date Analyzed:	04/13/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	107	50 - 150

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

Analytical Results
for
Port of Oakland
Client Reference: 59007.00
Clayton Project No. 95041.42

Sample Identification: See Below
Lab Number: 9504142
Sample Matrix/Media: WATER
Extraction Method: EPA 3510
Method Reference: EPA 8015 (Modified)

Date Received: 04/10/95
Date Extracted: 04/14/95
Date Analyzed: 04/18/95

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-01	MW-7	04/10/95	370	50
-02	METHOD BLANK	--	ND	50

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

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

Western Operations

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

Clayton
ENVIRONMENTAL
CONSULTANTS

July 7, 1995

Mr. Dariush Dastmalchi
CLAYTON ENVIRONMENTAL CONS.
1252 Quarry Lane
Pleasanton, CA 94566

ADDITIONAL REPORT
Client Ref.: 58560.15
Clayton Project No.: 95034.19

Dear Mr. Dastmalchi:

Attached is our additional analytical laboratory report for the samples received on March 29, 1995 and originally reported on April 12, 1995. As requested, results for TPH-Gasoline are provided for all samples previously analyzed for BTEX. Also enclosed is a copy of the Chain-of-Custody record acknowledging receipt of these samples.

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,

Michael Lynch for

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

HAH/caa

Attachments

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	MW-7 AT 5FT BGS	Date Sampled:	03/29/95
Lab Number:	9503419-01A	Date Received:	03/29/95
Sample Matrix/Media:	SOLID	Date Prepared:	04/05/95
Preparation Method:	EPA 5030	Date Analyzed:	04/05/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Gasoline	--	ND	0.3
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	127	50 - 150

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

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	BH-1 AT 20FT BGS	Date Sampled:	03/29/95
Lab Number:	9503419-04A	Date Received:	03/29/95
Sample Matrix/Media:	SOLID	Date Prepared:	04/05/95
Preparation Method:	EPA 5030	Date Analyzed:	04/05/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Gasoline	--	ND	0.3
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	92	50 - 150

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

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	BH-2 AT 4FT BGS	Date Sampled:	03/29/95
Lab Number:	9503419-05A	Date Received:	03/29/95
Sample Matrix/Media:	SOLID	Date Prepared:	04/05/95
Preparation Method:	EPA 5030	Date Analyzed:	04/05/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Gasoline	--	0.4	0.3
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	96	50 - 150

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

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9503419-11A	Date Received:	--
Sample Matrix/Media:	SOLID	Date Prepared:	04/05/95
Preparation Method:	EPA 5030	Date Analyzed:	04/05/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (mg/kg)	Method Detection Limit (mg/kg)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.005
Ethylbenzene	100-41-4	ND	0.005
Toluene	108-88-3	ND	0.005
o-Xylene	95-47-6	ND	0.005
p,m-Xylenes	--	ND	0.005
Gasoline	--	ND	0.3
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	108	50 - 150

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

Results are reported on a wet-weight basis, as received.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	BH-1	Date Sampled:	03/29/95
Lab Number:	9503419-08C	Date Received:	03/29/95
Sample Matrix/Media:	WATER	Date Prepared:	04/04/95
Preparation Method:	EPA 5030	Date Analyzed:	04/04/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	101	50 - 150

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

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	BH-2	Date Sampled:	03/29/95
Lab Number:	9503419-09C	Date Received:	03/29/95
Sample Matrix/Media:	WATER	Date Prepared:	04/04/95
Preparation Method:	EPA 5030	Date Analyzed:	04/04/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	20
Ethylbenzene	100-41-4	ND	20
Toluene	108-88-3	ND	20
o-Xylene	95-47-6	ND	20
p,m-Xylenes	--	50	20
Gasoline	--	110000	3000
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	58	50 - 150

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

Note: Detection limit increased due to presence of heavier hydrocarbons.
a Purgeable hydrocarbons quantitated as gasoline may be due to heavier petroleum product.

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9503419-12A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	04/04/95
Preparation Method:	EPA 5030	Date Analyzed:	04/04/95
Method Reference:	EPA 8015/8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
BTEX/Gasoline			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
Gasoline	--	ND	50
Surrogates		Recovery (%)	QC Limits (%)
a,a,a-Trifluorotoluene	98-08-8	88	50 - 150

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

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification: See Below
Lab Number: 9503419
Sample Matrix/Media: SOLID
Extraction Method: EPA 3550
Method Reference: EPA 8015 (Modified)

Date Received: 03/29/95
Date Extracted: 04/06/95
Date Analyzed: 04/10/95

Lab Number	Sample Identification	Date Sampled	TPH-D (mg/kg)		Method Detection Limit (mg/kg)
-01	MW-7 AT 5FT BGS	03/29/95	41	a	1
-04	BH-1 AT 20FT BGS	03/29/95	24	a	1
-05	BH-2 AT 4FT BGS	03/29/95	43	a	1
-11	METHOD BLANK	--	ND		1

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.
a Unidentified hydrocarbons present in oil range; quantitation based on diesel.

Clayton
ENVIRONMENTAL
CONSULTANTS

Analytical Results
for
Clayton Environmental Consultants, Inc.
Client Reference: 58560.15
Clayton Project No. 95034.19

Sample Identification: See Below
Lab Number: 9503419
Sample Matrix/Media: WATER
Extraction Method: EPA 3510
Method Reference: EPA 8015 (Modified)

Date Received: 03/29/95
Date Extracted: 04/03/95
Date Analyzed: 04/10/95

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-08	BH-1	03/29/95	ND	50
-09	BH-2	03/29/95	300000	50
-12	METHOD BLANK	--	ND	50

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

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