MAY 1996
QUARTERLY GROUNDWATER SAMPLING REPORT
AT
FORMER UNDERGROUND STORAGE TANK
KEEP ON TRUCKING FACILITY (H-107)
370 8TH AVENUE
OAKLAND, CALIFORNIA

AUGUST 15, 1996
(REVISED)
SCI 133.005

CONTENTS

1.0 INTRODUCTION

Subsurface Consultants, Inc. (SCI) was retained to perform quarterly groundwater sampling and analysis at the Keep on Trucking Facility located at 370-8th Avenue in Oakland, California (Figure 1). On March 24, 1996 SCI collected groundwater samples from monitoring well MW-7 located near Building H-107. The monitoring well location is shown on Figure 2.

2.0 BACKGROUND

A 1,000-gallon capacity underground storage tank (UST) was removed in October 1994 by Environmental Investigations and Actions of Hayward, California. ERM-West, Inc. collected soil and groundwater samples from the excavation. Concentrations of total petroleum hydrocarbons quantitated as diesel (TPH-D) were detected in the soil samples collected from the excavation. Concentrations of total petroleum hydrocarbons as gasoline (TPH-G) was detected in the groundwater sample collected from the excavation.

In April 1995, Clayton Environmental Consultants (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 groundwater samples. The third borehole was completed as monitoring well MW-7.

TPH-D was detected at a concentration of 370 micrograms per liter (ug/L) in the groundwater sample collected from monitoring well MW-7 on April 10, 1995 and 300,000 ug/L in the groundwater sample collected from a temporary well on March 29, 1995. Concentrations of total petroleum hydrocarbons as gasoline (TPH-G) were also detected in the groundwater sample collected from a temporary well.

TPH-D concentrations in groundwater samples collected to date from monitoring well MW-7 range from 260 ug/L to 6,100 ug/L. Concentrations of TPH-G and benzene, toluene, ethylbenzene and total xylenes (BTEX) have not been detected in any groundwater samples collected during quarterly groundwater monitoring sampling events.

3.0 FIELD ACTIVITIES

Monitoring well MW-7 was purged using a 2-inch disposable bailer on May 24, 1996. Approximately four times the well volume was purged from the well to ensure that water representative of the aquifer was present in the well prior to sampling. 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. Purging of monitoring well MW-7 continued until pH, temperature, and electrical conductivity stabilized.

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)
- Dissolved Oxygen
- Purge rate and volume
- pH, temperature, and conductivity during purging
- Time purged
- Time of sample collection
- Sampling method
- Name of sampler
- Climatic conditions

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

Groundwater samples were obtained using a new bailer and transferred into clean, laboratory-supplied sample containers that were closed, labeled, placed immediately into an ice chest, and transported to Curtis & Tompkins, a state-certified laboratory, for analysis.

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

4.0 ANALYTICAL RESULTS

The groundwater sample from MW-7 was analyzed using the following Environmental Protection Agency Analytical Methods:

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

The analytical results for all quarterly monitoring events are summarized in Table 1. The laboratory analytical report for the current groundwater sampling event is included in Appendix B.

5.0 FINDINGS

Based on the laboratory analytical reports and SCI's field observations, our findings are as follows:

- TPH-D concentrations have ranged from 260 to 6100 ug/L during the monitoring program. TPH-D concentrations have been less than 750 ug/L for the past five groundwater sampling events, except for the February 20, 1996 event when TPH-D was detected at 6,100 ug/L.

- TPH-G or BTEX concentrations have not been detected in any groundwater samples collected from monitoring well MW-7 during any quarterly groundwater sampling event.

The next quarterly groundwater sampling event is scheduled for August 1996.

This report prepared by:

Jerlann N. Alexander, PE, REA
Project Manager

This report reviewed by:

R. William Rudolph, GE, REA
President

August 15, 1996

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

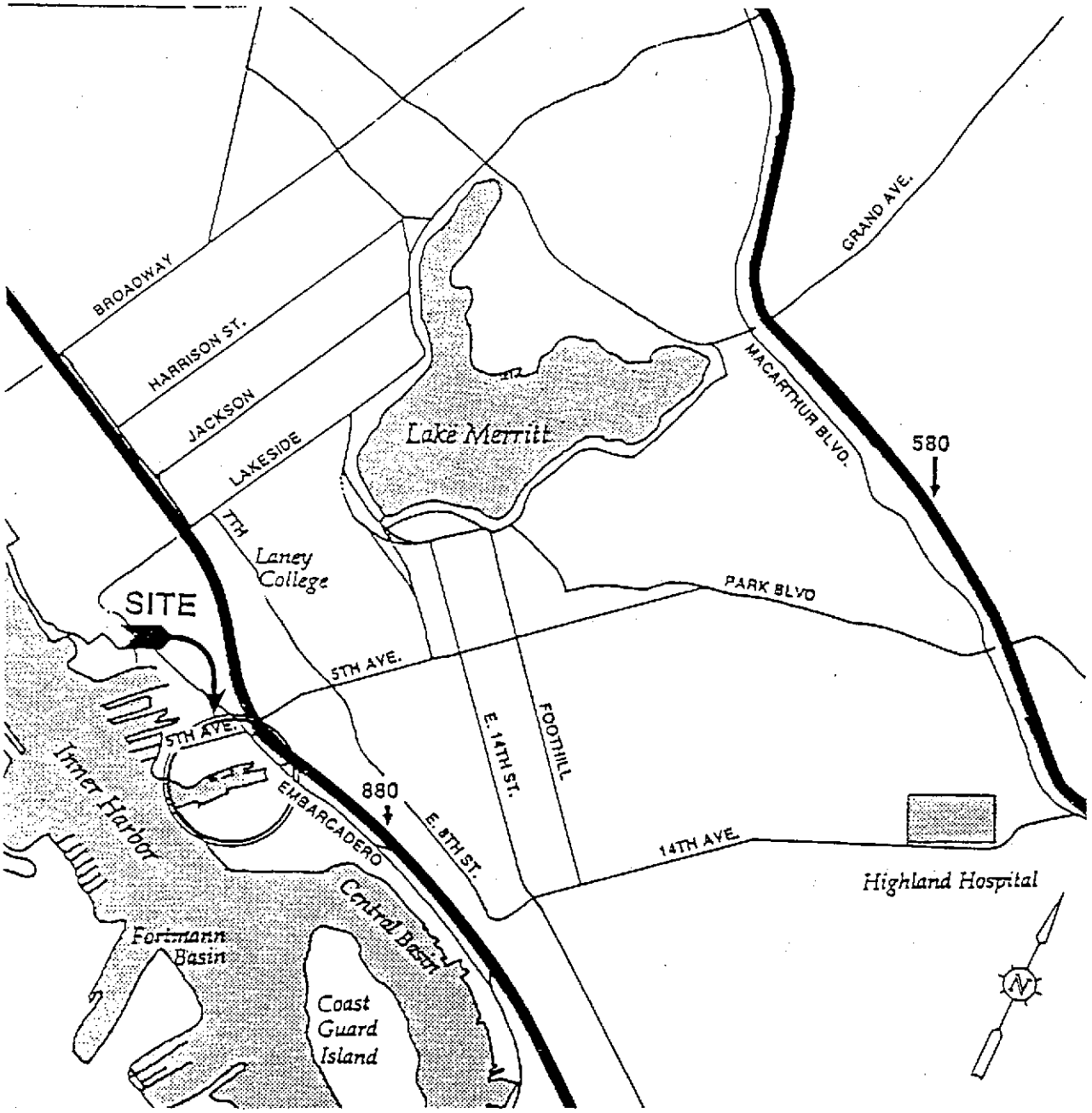
Keep on Trucking Facility (H-107)
Oakland, California
(SCI 133.005)

Monitoring Well	Sample Date	Depth to Water	Top of Casing Elevation (a)	Groundwater Elevation (a)	TPH as Diesel (ug/L)	TPH as Motor Oil (ug/L)	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)
MW-7	4/10/95	4.41	10.67	6.26	**370**	--	<50	<0.4	<0.3	<0.3	<0.4
	7/24/95	3.72	10.67	6.95	**260**	--	<50	<0.4	<0.3	<0.3	<0.4
	11/10/95	4.78	10.67	5.89	**270**	--	<50	<0.4	<0.3	<0.3	<0.4
	2/20/96	4.13	10.67	6.54	**6,100**	--	<50	<0.5	<0.5	<0.5	<1
	5/24/96	4.69	10.67	5.98	**750**	**750**	<50	<0.5	<0.5	<0.5	<0.5

TPH = Total petroleum hydrocarbons
ug/l = Micrograms per liter
-- = Not tested

Notes:

a. Elevations are based on the Port of Oakland Datum. Elevations based on this special datum may be converted to the mean sea level datum by subtracting 3.20 feet.

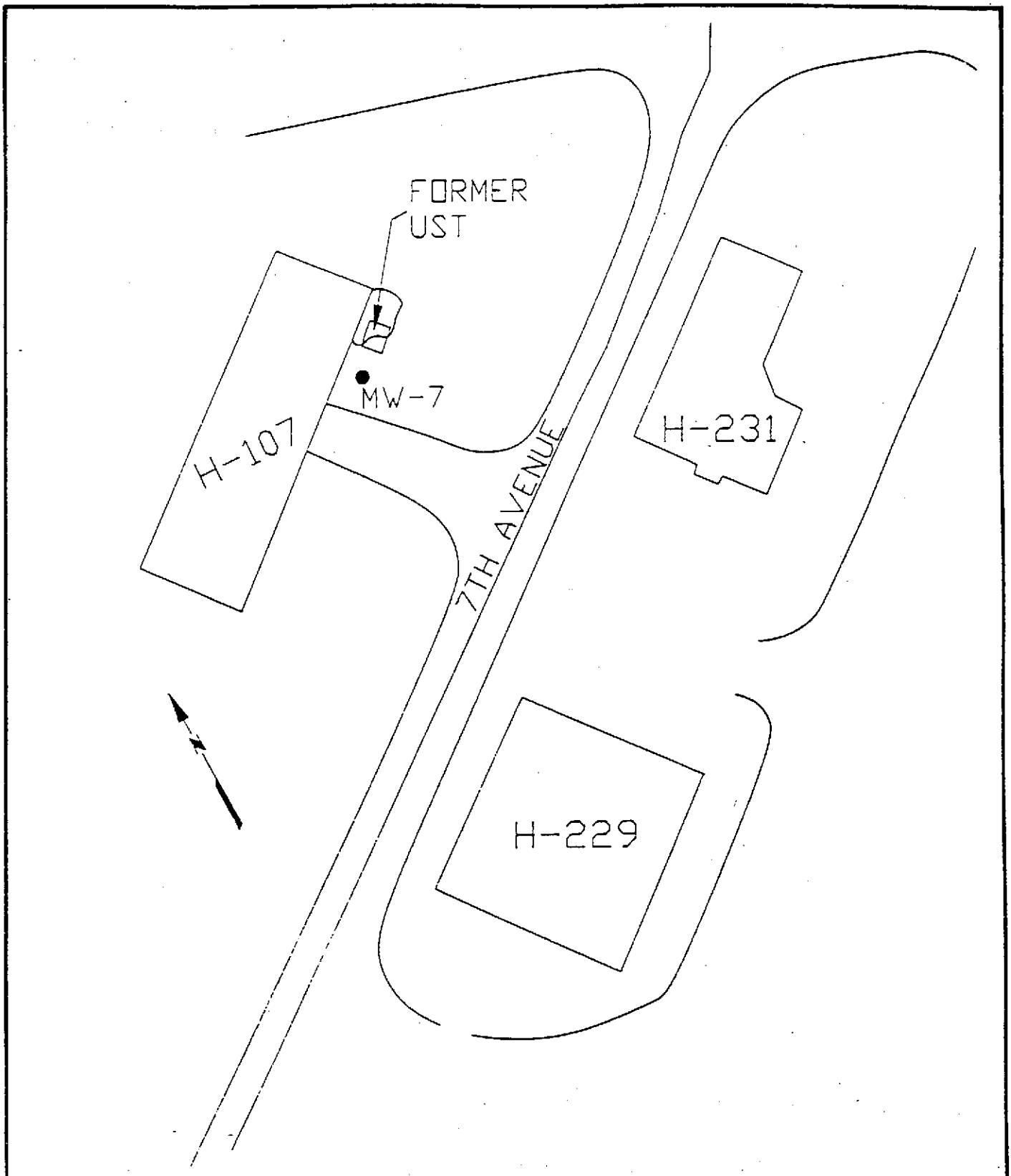


SITE VICINITY MAP

Subsurface Consultants

8TH AVENUE STUDY AREA–OAKLAND, CA

JOB NUMBER	DATE	APPROVED	PLATE
133.005	6/21/96	BP	1



MAP BASED ON FIGURE PREPARED BY
CLAYTON ENVIRONMENTAL CONSULTANTS

MONITORING WELL LOCATION

Subsurface Consultants

KEEP ON TRUCKING - OAKLAND, CA

JOB NUMBER	DATE	APPROVED
133.005	7/25/96	

PLATE 2

APPENDIX A

WATER SAMPLING FIELD SURVEY FORM

WELL SAMPLING FORM

Project Name: KOT
Well Number: MW-7
Job No.: 133.005
Well Casing Diameter: 2 inch
Sampled By: DWA
Date: 5/24/96
TOC Elevation:
Weather: Sunny

Depth to Casing Bottom (below TOC) 20.50 feet
Depth to Groundwater (below TOC) 4.69 feet
Feet of Water in Well 15.81 feet
Depth to Groundwater When 80% Recovered 7.85 feet
Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.5 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product none
Purge Method disposable bailer

FIELD MEASUREMENTS

~~moderate~~ slow recharge

D.O. = .7 ppm

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	~~Salinity S%~~	Comments
2	7.38	63.8	2320		clear/no odor
4	6.96	62.8	2660		
6	7.03	62.9	2710		
8	6.93	63.4	3090		

Total Gallons Purged 8 gallons
Depth to Groundwater Before Sampling (below TOC) 7.90' feet
Sampling Method disposable bailer
Containers Used 3 (40 ml) 1 (liter) (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED

PLATE

APPENDIX B

GROUNDWATER SAMPLING ANALYTICAL REPORT FOR SAMPLES COLLECTED IN MAY 1996

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 31-MAY-96
Lab Job Number: 125703
Project ID: 133.005
Location: KOT

Reviewed by: _____

Reviewed by: _____

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125703-001	MW-7	27798	05/24/96	05/25/96	05/25/96	

Matrix: Water

Analyte	Units	125703-001
Diln Fac:		1
Gasoline	ug/L	<50
Surrogate		
Trifluorotoluene	%REC	89
Bromobenzene	%REC	78

Curtis & Tompkins, Ltd.

Lab #: 125703

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27798
Units: ug/L
Dilu Fac: 1

Prep Date: 05/24/96
Analysis Date: 05/24/96

MB Lab ID: QC22553

Analyte	Result	
Gasoline	<50	
Surrogate	**%Rec**	**Recovery Limits**
Trifluorotoluene	89	69-120
Bromobenzene	75	70-122

Curtis & Tompkins, Ltd.

Lab #: 125703

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27798
Units: ug/L
Diln Fac: 1

Prep Date: 05/24/96
Analysis Date: 05/24/96

LCS Lab ID: QC22551

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2138	2006	107	80-120
Surrogate	**%Rec**	**Limits**		
Trifluorotoluene	95	69-120		
Bromobenzene	92	70-122		

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 1 outside limits

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125703-001	MW-7	27890	05/24/96	05/29/96	05/31/96	

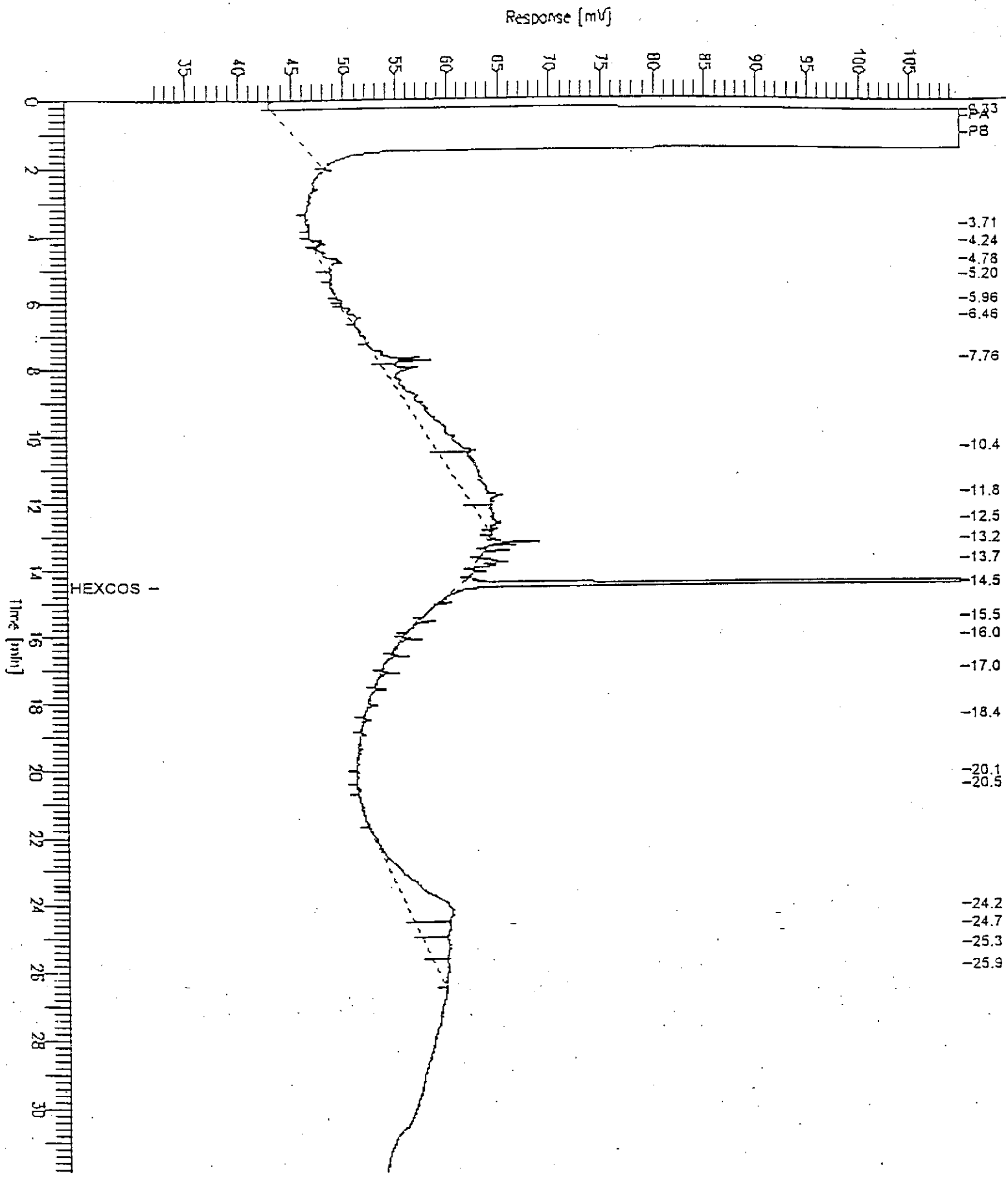
Matrix: Water

Analyte	Units	125703-001	
Diln Fac:		1	
Diesel C12-C22	ug/L	750	YH
Motor Oil C22-C50	ug/L	750	Y
Surrogate			
Hexacosane	%REC	102	

Y: Sample exhibits fuel pattern which does not resemble standard
H: Heavier hydrocarbons than indicated standard

Sample Name : 125703-001,27890
FileName : C:\GC15\CHB\1518014.raw
Method : DUAL
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: 32 mV

Sample #: 500:2.5 Page 1 of 1
Date : 5/31/96 05:34 AM
Time of Injection: 5/31/96 04:59 AM
Low Point : 32.00 mV High Point : 110.00 mV
Plot Scale: 78.0 mV



Curtis & Tompkins, Ltd.

Lab #: 125703 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

METHOD BLANK

Matrix: Water
Batch#: 27890
Units: ug/L
Diln Fac: 1

Prep Date: 05/29/96
Analysis Date: 05/30/96

MB Lab ID: QC22929

Analyte	Result
Diesel C12-C22	<50
Motor Oil C22-C50	<250

Surrogate	%Rec	Recovery Limits
Hexacosane	105	60-140

Curtis & Tompkins, Ltd.

Lab #: 125703

BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 27890
Units: ug/L
Diln Fac: 1

Prep Date: 05/29/96
Analysis Date: 05/30/96

BS Lab ID: QC22930

Analyte	Spike Added	BS	%Rec #	Limits
Diesel C12-C22	2475	2509	101	60-140
Surrogate	%Rec	Limits		
Hexacosane	100	60-140		

BSD Lab ID: QC22931

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	2602	105	60-140	4	<35
Surrogate	%Rec	Limits				
Hexacosane	100	60-140				

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125703-001	MW-7	27798	05/24/96	05/25/96	05/25/96	

Matrix: Water

Analyte	Units	125703-001
Diln Fac:		1
Benzene	ug/L	<0.5
Toluene	ug/L	<0.5
Ethylbenzene	ug/L	<0.5
m,p-Xylenes	ug/L	<0.5
o-Xylene	ug/L	<0.5
Surrogate		
Trifluorotoluene	%REC	98
Bromobenzene	%REC	87

Curtis & Tompkins, Ltd.

Lab #: 125703

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27798
Units: ug/L
Diln Fac: 1

Prep Date: 05/24/96
Analysis Date: 05/24/96

MB Lab ID: QC22553

Analyte	Result
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
m,p-Xylenes	<0.5
o-Xylene	<0.5

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	97	58-130
Bromobenzene	83	62-131

Curtis & Tompkins, Ltd.

Lab #: 125703

BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27798
Units: ug/L
Diln Fac: 1

Prep Date: 05/24/96
Analysis Date: 05/24/96

LCS Lab ID: QC22552

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	21.6	20	108	80-120
Toluene	22	20	110	80-120
Ethylbenzene	21.8	20	109	80-120
m,p-Xylenes	47	40	118	80-120
o-Xylene	23.5	20	118	80-120

Surrogate	%Rec	Limits
Trifluorotoluene	98	58-130
Bromobenzene	87	62-131

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 5 outside limits

Curtis & Tompkins, Ltd.

Lab #: 125703 BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 133.005
Location: KOT

Analysis Method: EPA 8020
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
Lab ID: 125578-002
Matrix: Water
Batch#: 27798
Units: ug/L
Diln Fac: 1

Sample Date: 05/13/96
Received Date: 05/15/96
Prep Date: 05/24/96
Analysis Date: 05/24/96

MS Lab ID: QC22554

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5000	22.4	112	75-125
Toluene	20	<0.5000	22.4	112	75-125
Ethylbenzene	20	<0.5000	22.1	111	75-125
m,p-Xylenes	40	<0.5000	45.9	115	75-125
o-Xylene	20	<0.5000	23	115	75-125

Surrogate	%Rec	Limits
Trifluorotoluene	99	58-130
Bromobenzene	89	62-131

MSD Lab ID: QC22555

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	24.2	121	75-125	8	<20
Toluene	20	24.1	121	75-125	7	<20
Ethylbenzene	20	23.7	119	75-125	7	<20
m,p-Xylenes	40	49.5	124	75-125	8	<20
o-Xylene	20	25	125	75-125	8	<20

Surrogate	%Rec	Limits
Trifluorotoluene	100	58-130
Bromobenzene	92	62-131

Column to be used to flag recovery and RPD values with an asterisk
*-Values outside of QC limits
RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

CHAIN OF CUSTODY FORM

125703

PAGE 1 OF 1

PROJECT NAME: KOT

JOB NUMBER: 133.005 LAB: Curtis & Tompkins

PROJECT CONTACT: Jeri Alexander TURNAROUND: Normal

SAMPLED BY: Dennis Alexander REQUESTED BY: Jeri Alexander

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	MATRIX: SOIL	MATRIX: WASTE	MATRIX: AIR	CONTAINERS: VOA	CONTAINERS: LITER	CONTAINERS: PINT	CONTAINERS: TUBE	METHOD PRESERVED: HCL	METHOD PRESERVED: H_2SO_4	METHOD PRESERVED: HNO_3	METHOD PRESERVED: ICE	METHOD PRESERVED: NONE	SAMPLING DATE: MONTH	SAMPLING DATE: DAY	SAMPLING DATE: YEAR	SAMPLING DATE: TIME	NOTES	ANALYSIS REQUESTED: TEH (C5 to C-50)	ANALYSIS REQUESTED: TVH	ANALYSIS REQUESTED: BTXE
01	MW-7	X				3	1			X			X		05	24	96	1045		X	X	X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
	5/24/96 3:00	Cynthia E. Schley	5/24/96 15:00
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Subsurface Consultants, Inc.
171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
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