May 23, 1996
SCI 946.002

Ms. Shirley Howkins
c/o Mr. Carlo Mormorunni
Fitzgerald, Abbott & Beardsley
1221 Broadway, 21st Floor
Oakland, California 94612-1837

Quarterly Groundwater Monitoring
April 1996 Event
2528 Adeline Street
Oakland, California

Dear Ms. Howkins:

This letter presents the results of the April 1996 groundwater monitoring event for the referenced site. Groundwater monitoring has been performed at the request of the Alameda County Health Care Services Agency (ACHCSA) due to the presence of petroleum hydrocarbons, heavy metals, and volatile organic compounds detected in groundwater beneath the site. The location of the site is presented on Plate 1.

Groundwater Sampling

On April 29, 1996, monitoring wells MW-1, MW-2 and MW-3 were gauged and sampled. In general, the events consisted of (1) measuring groundwater levels using an electric well sounder, (2) checking for free product, (3) purging water from each well until pH, conductivity and temperature had stabilized (approximately 3 well volumes), and (4) after the wells had recovered to at least 80 percent of their initial level, sampling the wells with new disposable bailers. The samples were retained in glass containers pre-cleaned by the supplier in accordance with EPA protocol. The containers were placed in an ice-filled cooler and remained iced until delivery to the analytical laboratory.

Analytical Testing

Analytical testing was performed by Curtis & Tompkins, Ltd., a laboratory certified by the State of California Department of Health Services for hazardous waste and water testing. Samples were analyzed for the following:

1. Total Volatile Hydrocarbons as gasoline and stoddard solvent (TVH, EPA 5030/8015),
2. Benzene, toluene, ethylbenzene, and total xylenes (BTEX, EPA 8020),
3. Total Extractable Hydrocarbons as diesel, kerosene and stoddard solvent (TEH, EPA 8015),
4. Oil and Grease (O&G, SMWW 17:5520 BF),
5. Volatile Organic Compounds (VOC, EPA 5030/8240),
6. Barium (EPA 6010A), and
7. Selenium (EPA 6010A).

Samples submitted for metals analysis were filtered by the laboratory prior to analysis. Water generated during sampling activities was stored on-site in 55-gallon drums for later disposal by others. A summary of the current and previous analytical test results are presented in Tables 1 through 3. Analytical test reports, Chain-of-Custody documents, and well sampling forms for this event are attached.

Conclusions

The groundwater level data indicates the local groundwater flow direction is toward the north-northwest at a gradient of approximately 0.02. A summary of groundwater level data is presented in Table 4.

The highest concentrations of petroleum hydrocarbons were detected in groundwater samples from monitoring well MW-1 with TVH at 2,000 micrograms per liter (ug/L), TEH at 240 ug/L, ethylbenzene at 65 ug/L and total xylenes at 16 ug/L. TVH was also detected in MW-2 at 75 ug/L. O&G was not detected above the laboratory reporting limits in any of the three wells.

Groundwater samples from monitoring well MW-2 indicated the highest concentrations of volatile organic compounds with 1,1-dichloroethene (1,1-DCE) at 400 ug/L, 1,1,1-trichloroethane (1,1,1-TCA) at 260 ug/L and 1,1-dichloroethane (1,1-DCA) at 91 ug/L. 1,1-DCE and 1,1,1-TCA were detected in groundwater samples obtained from MW-3 at concentrations of 14 ug/l and 12 ug/L, respectively. 1,1-DCE was detected in groundwater samples obtained from MW-1 at 6.2 ug/L.

Barium was detected in groundwater samples obtained from monitoring wells MW-1, MW-2 and MW-3 at concentrations of 130 ug/L, 120 ug/L and 82 ug/L, respectively. Selenium was detected in groundwater samples from monitoring wells MW-2 and MW-3 at concentrations of 18 ug/L and 9.5 ug/L, respectively.

In accordance with the monitoring plan, all wells will be monitored in July 1996.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

Samuel Won
Project Engineer

Jeriann N. Alexander, P.E., REA
Civil Engineer 40469 (expires 3/31/99)

SCW:JNA:RWR:sld

Attachments: Plate 1 - Site Plan
Table 1 - Petroleum Hydrocarbon Concentrations in Groundwater
Table 2 - Volatile Organic Compound Concentrations in Groundwater
Table 3 - Barium and Selenium Concentrations in Groundwater
Table 4 - Groundwater Elevation Data
Analytical Test Report
Chain-of-Custody Document
Well Sampling Forms

4 copies submitted

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TABLE 1
PETROLEUM HYDROCARBON CONCENTRATIONS
IN GROUNDWATER
2528 ADELINE STREET
OAKLAND, CALIFORNIA

Sample ID	Date	TVH as Stoddard Solvent (ug/L)	TVH as Gasoline (ug/L)	TEH as Diesel (ug/L)	TEH as Kerosene C10-C16 (ug/L)	O&G (mg/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
MW-1	4/3/95	**	730	**	310*	5.8	--	--	--	--
	4/29/96	2000*	2000*	240*	220*	<5	<0.5	<0.5	65	16
Former Well (abandoned)	3/31/95	**	2800	1600*	**	37	--	--	--	--
MW-2	8/15/95	**	83*	<50	<50	<5	--	--	--	--
	4/29/96	74*	75*	<50	<50	<5	<0.5	<0.5	<0.5	<0.5
MW-3	8/15/95	**	<50	<50	<50	<5	--	--	--	--
	4/29/96	<50	<50	<50	<50	<5	<0.5	<0.5	<0.5	<0.5

Stoddard solvent and gasoline hydrocarbon ranges overlap
Diesel and kerosene hydrocarbon ranges overlap
* = Sample chromatogram does not resemble standard pattern
** = Range not reported due to overlap of hydrocarbons
ug/L = micrograms per liter
mg/L = milligrams per liter
TVH = Total volatile hydrocarbons
TEH = Total extractable hydrocarbons
O&G = Oil and grease
-- = Test not requested
<50 = None detected above the laboratory reporting limit stated.

TABLE 2
VOLATILE ORGANIC COMPOUND
CONCENTRATIONS IN GROUNDWATER
2528 ADELINE STREET
OAKLAND, CALIFORNIA

SAMPLE ID	Date Sampled	Acetone (ug/L)	Carbon disulfide (ug/L)	1,1-DCA (ug/L)	1,1-DCE (ug/L)	2-Butanone (ug/L)	4-Methyl-2-pentanone (ug/L)	1,1,1 TCA (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl benzene (ug/L)	Total xylenes (ug/L)	cis-1,2-DCE (ug/L)	Other EPA 8240 Compounds
MW-1	4/3/95	<20	<5.0	<5.0	4.2	<10	<10	<5.0	3.1	39	13	75	<5.0	ND
	4/29/96	<20	<5.0	<5.0	6.2	<10	<10	<5.0	<5.0	<5.0	62	12	<5.0	ND
Former Well (Abandoned)	3/31/95	24	4.1	<5.0	<5.0	7.7	57	<5.0	4.5	49	34	270	<5.0	ND
MW-2	8/15/95	<50	<13	62	260	<25	<25	170	<13	<13	<13	<13	<13	ND
	4/29/96	<20	<5.0	91	400	<10	<10	260	<5.0	<5.0	<5.0	<5.0	<5.0	ND
MW-3	8/15/95	<20	<5.0	3.3	4.1	<10	<10	8.8	<5.0	<5.0	<5.0	<5.0	2.9	ND
	4/29/96	<20	<5.0	<5.0	14	<10	<10	12	<5.0	<5.0	<5.0	<5.0	<5.0	ND

1,1-DCE = 1,1-Dichloroethene
1,1-DCA = 1,1-Dichloroethane
1,1,1-TCA = 1,1,1-Trichloroethane
cis-1,2-DCE = cis-1,2-Dichloroethene
<20 = None detected at or above the stated detection limit
ND = Not detected at or above analytical detection limits. See analytical test reports for individual detection limits.
ug/L = micrograms per liter

TABLE 3
BARIUM AND SELENIUM CONCENTRATIONS IN GROUNDWATER
2528 ADELINE STREET
OAKLAND, CALIFORNIA

Sample ID	Date	Barium (ug/L)	Selenium (ug/L)
MW-1	4/3/95	160	11
	4/29/96	**130**	**<5.0**
Former Well (abandoned)	3/31/95	28,000	7.4
MW-2	8/15/95	180*	--
	4/29/96	**120**	**18**
MW-3	8/15/95	62*	--
	4/29/96	**82**	**9.5**

* = Sample not filtered prior to analysis
-- = Test not requested
ug/L = micrograms per liter
<5 = None detected at or above the laboratory stated detection limit.

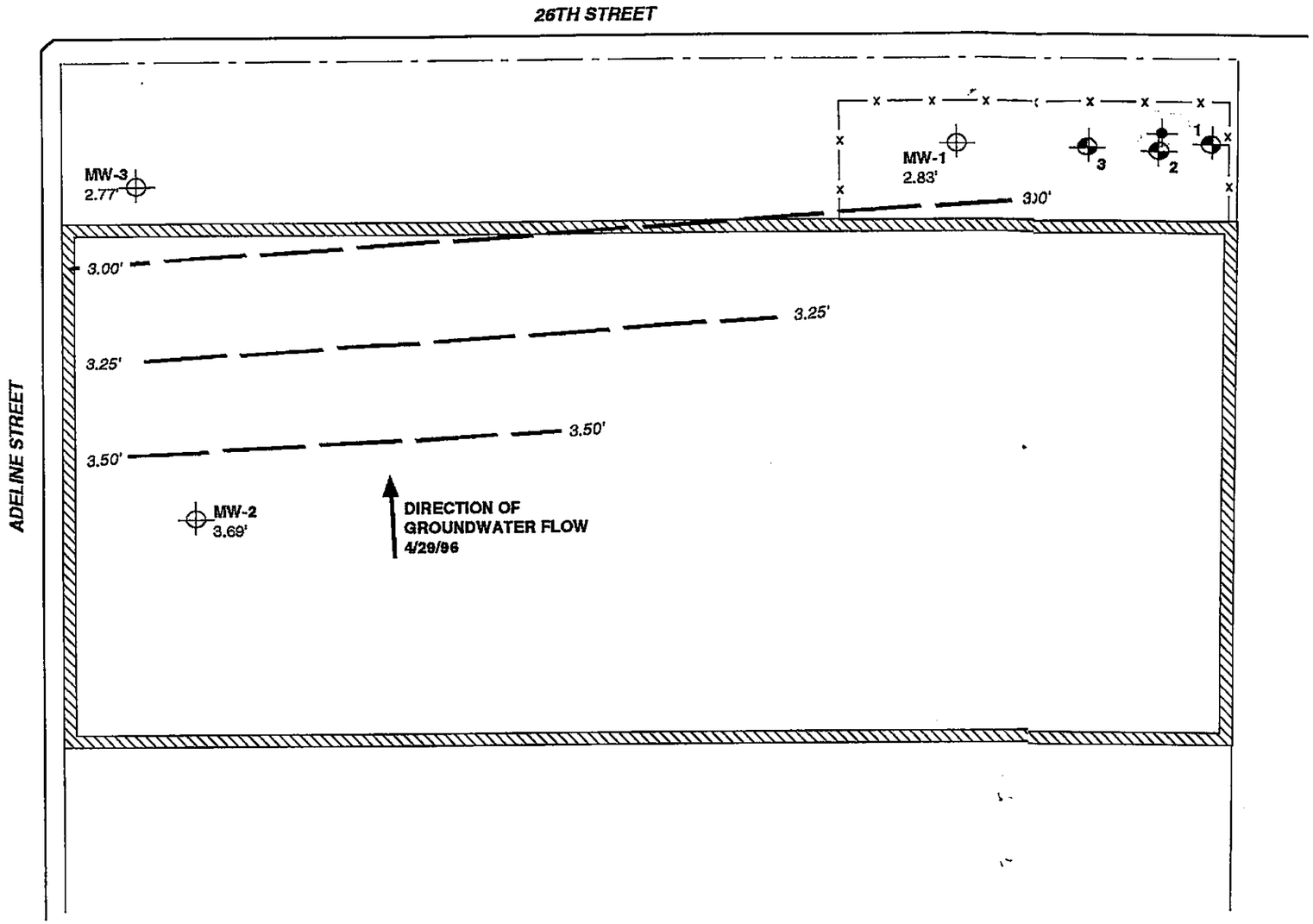
TABLE 4
GROUNDWATER ELEVATION DATA
2528 ADELINE STREET
OAKLAND, CALIFORNIA

Well Number	Date	TOC[1] Elevation (feet)	Groundwater Depths[2] (feet)	Groundwater Elevation[3] (feet)
MW-1	4/3/95	10.99	5.78	5.21
	8/14/95		8.04	2.95
	4/29/96		8.16	2.83
MW-2	8/14/95	9.12	6.42	2.70
	4/29/96		5.43	3.69
MW-3	8/14/95	9.93	7.48	2.45
	4/29/96		7.16	2.77

Notes:

1. TOC = Top of Casing
2. Measured below TOC
3. Reference Mean Sea Level

Curves - (510) 601-0337 - Created: Monday, May 13, 1996 12:47 PM - Page 2 of 2



VICINITY MAP

EXPLANATION

- PROPERTY BOUNDARY
- FENCE
- EXISTING STRUCTURE
- BORING LOCATION
- MONITORING WELL LOCATION
- FORMER WELL LOCATION

N

Subsurface Consultants

SITE PLAN

2528 ADELINE STREET - OAKLAND, CA

JOB NUMBER	DATE	APPROVED
946.001	5/13/96	

PLATE 1

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: 06-MAY-96
Lab Job Number: 125373
Project ID: 946.001
Location: 2528 Adeline St.

Reviewed by: _____

Reviewed by: _____

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 125373
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 946.001
LOCATION: 2528 ADELINE ST.

DATE SAMPLED: 04/29/96
DATE RECEIVED: 04/29/96
DATE ANALYZED: 05/02/96
DATE REPORTED: 05/06/96
BATCH NO: 27350

Total Volatile Hydrocarbons as Gasoline in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	TVH AS STODDARD SOLVENT (ug/L)	REPORTING LIMIT (ug/L)
125373-001	MW-1	2,000 Y	50
125373-002	MW-2	74 Y	50
125373-003	MW-3	ND	50
METHOD BLANK	N/A	ND	50

Y = Sample exhibts fuel pattern which does not resemble standard.

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: MS/MSD OF SAMPLE NO:125375-013

RPD, %	7
RECOVERY, %	84

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

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

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125373-001	MW-1	27350	04/29/96	05/02/96	05/02/96	
125373-002	MW-2	27350	04/29/96	05/02/96	05/02/96	
125373-003	MW-3	27350	04/29/96	05/02/96	05/02/96	

Analyte Diln Fac:	Units	125373-001 1	125373-002 1	125373-003 1
Gasoline	ug/L	2000 Y	75 Y,Z	<50
Surrogate				
Trifluorotoluene	%REC	97	97	97
Bromobenzene	%REC	93	83	82

Y: Sample exhibits fuel pattern which does not resemble standard
Z: Sample exhibits unknown single peak or peaks

BTXE

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125373-001	MW-1	27350	04/29/96	05/01/96	05/01/96	
125373-002	MW-2	27350	04/29/96	05/01/96	05/01/96	
125373-003	MW-3	27350	04/29/96	05/01/96	05/01/96	

Analyte Diln Fac:	Units	125373-001 1	125373-002 1	125373-003 1
Benzene	ug/L	<0.5	<0.5	<0.5
Toluene	ug/L	<0.5	<0.5	<0.5
Ethylbenzene	ug/L	65	<0.5	<0.5
m,p-Xylenes	ug/L	16	<0.5	<0.5
o-Xylene	ug/L	<0.5	<0.5	<0.5
Surrogate				
Trifluorotoluene	%REC	102	102	101
Bromobenzene	%REC	94	88	86

Curtis & Tompkins, Ltd.

Lab #: 125373

BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

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

METHOD BLANK

Matrix: Water
Batch#: 27350
Units: ug/L
Diln Fac: 1

Prep Date: 05/01/96
Analysis Date: 05/01/96

MB Lab ID: QC20692

Analyte	Result	
Gasoline	<50	
Surrogate	**%Rec**	**Recovery Limits**
Trifluorotoluene	89	69-120
Bromobenzene	74	70-122

Curtis & Tompkins, Ltd.

Lab #: 125373 BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8020
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27350
Units: ug/L
Diln Fac: 1

Prep Date: 05/01/96
Analysis Date: 05/01/96

MB Lab ID: QC20692

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	95	58-130
Bromobenzene	81	62-131

Curtis & Tompkins, Ltd.

Lab #: 125373 BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

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

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27350
Units: ug/L
Diln Fac: 1

Prep Date: 05/01/96
Analysis Date: 05/01/96

LCS Lab ID: QC20693

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	1908	2006	95	80-120
Surrogate	**%Rec**	**Limits**		
Trifluorotoluene	103	69-120		
Bromobenzene	99	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

Curtis & Tompkins, Ltd.

Lab #: 125373 BATCH QC REPORT

BTXE

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8020
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27350
Units: ug/L
Diln Fac: 1

Prep Date: 05/01/96
Analysis Date: 05/01/96

LCS Lab ID: QC20694

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	20.7	20	104	80-120
Toluene	21.4	20	107	80-120
Ethylbenzene	20.2	20	101	80-120
m,p-Xylenes	20.1	40	101	80-120
o-Xylene	21.5	20	108	80-120

Surrogate	%Rec	Limits
Trifluorotoluene	105	58-130
Bromobenzene	93	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 #: 125373 BATCH QC REPORT

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

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

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
Lab ID: 125375-013
Matrix: Water
Batch#: 27350
Units: ug/L
Diln Fac: 1

Sample Date: 04/26/96
Received Date: 04/26/96
Prep Date: 05/01/96
Analysis Date: 05/01/96

MS Lab ID: QC20695

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline	2000	<50.00	1622	81	75-125
Surrogate	**%Rec**	**Limits**			
Trifluorotoluene	93	69-120			
Bromobenzene	90	70-122			

MSD Lab ID: QC20696

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline	2000	1746	87	75-125	7	<20
Surrogate	**%Rec**	**Limits**				
Trifluorotoluene	93	69-120				
Bromobenzene	90	70-122				

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

CLIENT: Subsurface Consultants
PROJECT ID: 946.001
LOCATION: 2528 Adeline St.
MATRIX: Filtrate

DATE REPORTED: 05/06/96

Metals Analytical Report

				Barium					
Sample ID	Lab ID	Sample Date	Receive Date	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
MW-1	125373-001	04/29/96	04/29/96	130	10	1	27359	EPA 6010A	05/02/96
MW-2	125373-002	04/29/96	04/29/96	120	10	1	27359	EPA 6010A	05/02/96
MW-3	125373-003	04/29/96	04/29/96	82	10	1	27359	EPA 6010A	05/02/96

Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
PROJECT ID: 946.001
LOCATION: 2528 Adeline St.
MATRIX: Filtrate

DATE REPORTED: 05/06/96

Metals Analytical Report

Selenium

Sample ID	Lab ID	Sample Date	Receive Date	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
MW-1	125373-001	04/29/96	04/29/96	ND	5.0	1	27359	EPA 6010A	05/03/96
MW-2	125373-002	04/29/96	04/29/96	18	5.0	1	27359	EPA 6010A	05/02/96
MW-3	125373-003	04/29/96	04/29/96	9.5	5.0	1	27359	EPA 6010A	05/02/96

ND = Not detected at or above reporting limit

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CLIENT: Subsurface Consultants
JOB NUMBER: 125373

DATE REPORTED: 05/06/96

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Barium	ND	10	ug/L	1	27359	EPA 6010A	05/02/96
Selenium	ND	5	ug/L	1	27359	EPA 6010A	05/02/96

ND = Not Detected at or above reporting limit

Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 125373

DATE REPORTED: 05/06/96

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Barium	2000	2040	2010	ug/L	102	101	80-120	2	20	27359	EPA 6010A	05/02/96
Selenium	2000	2070	2090	ug/L	104	105	80-120	1	20	27359	EPA 6010A	05/02/96

Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8240
Prep Method: EPA 5030

Field ID: MW-1
Lab ID: 125373-001
Matrix: Water
Batch#: 27315
Units: ug/L
Diln Fac: 1

Sampled: 04/29/96
Received: 04/29/96
Extracted: 04/30/96
Analyzed: 04/30/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	6.2	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	62	5.0
Styrene	ND	5.0
m,p-Xylenes	12	5.0
o-Xylene	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	93	68-126
Toluene-d8	104	87-125
Bromofluorobenzene	91	79-122

Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8240
Prep Method: EPA 5030

Field ID: MW-2
Lab ID: 125373-002
Matrix: Water
Batch#: 27315
Units: ug/L
Diln Fac: 1

Sampled: 04/29/96
Received: 04/29/96
Extracted: 04/30/96
Analyzed: 04/30/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	400	25
1,1-Dichloroethane	91	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	260	25
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	95	68-126
Toluene-d8	102	87-125
Bromofluorobenzene	87	79-122

Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8240
Prep Method: EPA 5030

Field ID: MW-3
Lab ID: 125373-003
Matrix: Water
Batch#: 27345
Units: ug/L
Diln Fac: 1

Sampled: 04/29/96
Received: 04/29/96
Extracted: 05/01/96
Analyzed: 05/01/96

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	14	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	12	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%Recovery	Recovery Limits
1,2-Dichloroethane-d4	96	68-126
Toluene-d8	99	87-125
Bromofluorobenzene	81	79-122

Curtis & Tompkins, Ltd.

Lab #: 125373 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8240
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27315
Units: ug/L
Diln Fac: 1

Prep Date: 04/30/96
Analysis Date: 04/30/96

MB Lab ID: QC20543

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	93	68-126
Toluene-d8	100	87-125
Bromofluorobenzene	84	79-122

Curtis & Tompkins, Ltd.

Lab #: 125373 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8240
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 27345
Units: ug/L
Diln Fac: 1

Prep Date: 05/01/96
Analysis Date: 05/01/96

MB Lab ID: QC20671

Analyte	Result	Reporting Limit
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl Chloride	ND	10
Chloroethane	ND	10
Methylene Chloride	ND	20
Acetone	ND	20
Carbon Disulfide	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,1-Dichloroethane	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
cis-1,2-Dichloroethene	ND	5.0
Chloroform	ND	5.0
Freon 113	ND	5.0
1,2-Dichloroethane	ND	5.0
2-Butanone	ND	10
1,1,1-Trichloroethane	ND	5.0
Carbon Tetrachloride	ND	5.0
Vinyl Acetate	ND	50
Bromodichloromethane	ND	5.0
1,2-Dichloropropane	ND	5.0
cis-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Dibromochloromethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
Benzene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Bromoform	ND	5.0
2-Hexanone	ND	10
4-Methyl-2-Pentanone	ND	10
1,1,2,2-Tetrachloroethane	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Chlorobenzene	ND	5.0
Ethylbenzene	ND	5.0
Styrene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%Rec	Recovery Limits
1,2-Dichloroethane-d4	93	68-126
Toluene-d8	99	87-125
Bromofluorobenzene	80	79-122

Curtis & Tompkins, Ltd.

Lab #: 125373

BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8240
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27315
Units: ug/L
Diln Fac: 1

Prep Date: 04/30/96
Analysis Date: 04/30/96

LCS Lab ID: QC20542

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	61.7	50	123	51-180
Trichloroethene	47.43	50	95	73-141
Benzene	45.02	50	90	78-142
Toluene	50.5	50	101	76-150
Chlorobenzene	47.45	50	95	83-129

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	91	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	88	79-122

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 #: 125373 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8240
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 27345
Units: ug/L
Diln Fac: 1

Prep Date: 05/01/96
Analysis Date: 05/01/96

LCS Lab ID: QC20670

Analyte	Result	Spike Added	%Rec #	Limits
1,1-Dichloroethene	63.08	50	126	51-180
Trichloroethene	46.6	50	93	73-141
Benzene	45.22	50	90	78-142
Toluene	49.22	50	98	76-150
Chlorobenzene	47.12	50	94	83-129

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	91	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	85	79-122

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 #: 125373

BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8240
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: MW-1
Lab ID: 125373-001
Matrix: Water
Batch#: 27315
Units: ug/L
Diln Fac: 1

Sample Date: 04/29/96
Received Date: 04/29/96
Prep Date: 04/30/96
Analysis Date: 04/30/96

MS Lab ID: QC20564

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	6.221	65.09	118	51-180
Trichloroethene	50	<5.000	52.59	105	73-141
Benzene	50	4.067	48.25	88	78-142
Toluene	50	<5.000	50.73	101	76-150
Chlorobenzene	50	<5.000	45.38	91	83-129

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	95	68-126
Toluene-d8	106	87-125
Bromofluorobenzene	93	79-122

MSD Lab ID: QC20565

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	64.6	117	51-180	1	<14
Trichloroethene	50	52.39	105	73-141	0	<14
Benzene	50	48.47	89	78-142	0	<11
Toluene	50	50.87	102	76-150	0	<13
Chlorobenzene	50	46.03	92	83-129	1	<13

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	94	68-126
Toluene-d8	105	87-125
Bromofluorobenzene	92	79-122

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

Curtis & Tompkins, Ltd.

Lab #: 125373 BATCH QC REPORT

EPA 8240 Volatile Organics

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

Analysis Method: EPA 8240
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
Lab ID: 125342-002
Matrix: Water
Batch#: 27345
Units: ug/L
Diln Fac: 1

Sample Date: 04/25/96
Received Date: 04/26/96
Prep Date: 05/01/96
Analysis Date: 05/01/96

MS Lab ID: QC20750

Analyte	Spike Added	Sample	MS	%Rec #	Limits
1,1-Dichloroethene	50	<1.000	60.89	122	51-180
Trichloroethene	50	<1.000	42.46	85	73-141
Benzene	50	<1.000	42.63	85	78-142
Toluene	50	<1.000	46.54	93	76-150
Chlorobenzene	50	<1.000	45.92	92	83-129

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	98	68-126
Toluene-d8	101	87-125
Bromofluorobenzene	85	79-122

MSD Lab ID: QC20751

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
1,1-Dichloroethene	50	61.62	123	51-180	1	<14
Trichloroethene	50	43.63	87	73-141	3	<14
Benzene	50	43.36	87	78-142	2	<11
Toluene	50	47.59	95	76-150	2	<13
Chlorobenzene	50	46.19	92	83-129	1	<13

Surrogate	%Rec	Limits
1,2-Dichloroethane-d4	100	68-126
Toluene-d8	102	87-125
Bromofluorobenzene	85	79-122

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

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

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

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
125373-001	MW-1	27361	04/29/96	05/01/96	05/02/96	
125373-002	MW-2	27361	04/29/96	05/01/96	05/02/96	
125373-003	MW-3	27361	04/29/96	05/01/96	05/03/96	

Analyte Diln Fac:	Units	125373-001 1	125373-002 1	125373-003 1
Diesel Range	ug/L	240 YL	<50	<50
Kerosene C10-C16	ug/L	220 Y	<50	<50
Surrogate				
Hexacosane	%REC	110	103	104

Y: Sample exhibits fuel pattern which does not resemble standard
L: Lighter hydrocarbons than indicated standard

Curtis & Tompkins, Ltd.

Lab #: 125373 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

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

METHOD BLANK

Matrix: Water
Batch#: 27361
Units: ug/L
Diln Fac: 1

Prep Date: 05/01/96
Analysis Date: 05/02/96

MB Lab ID: QC20752

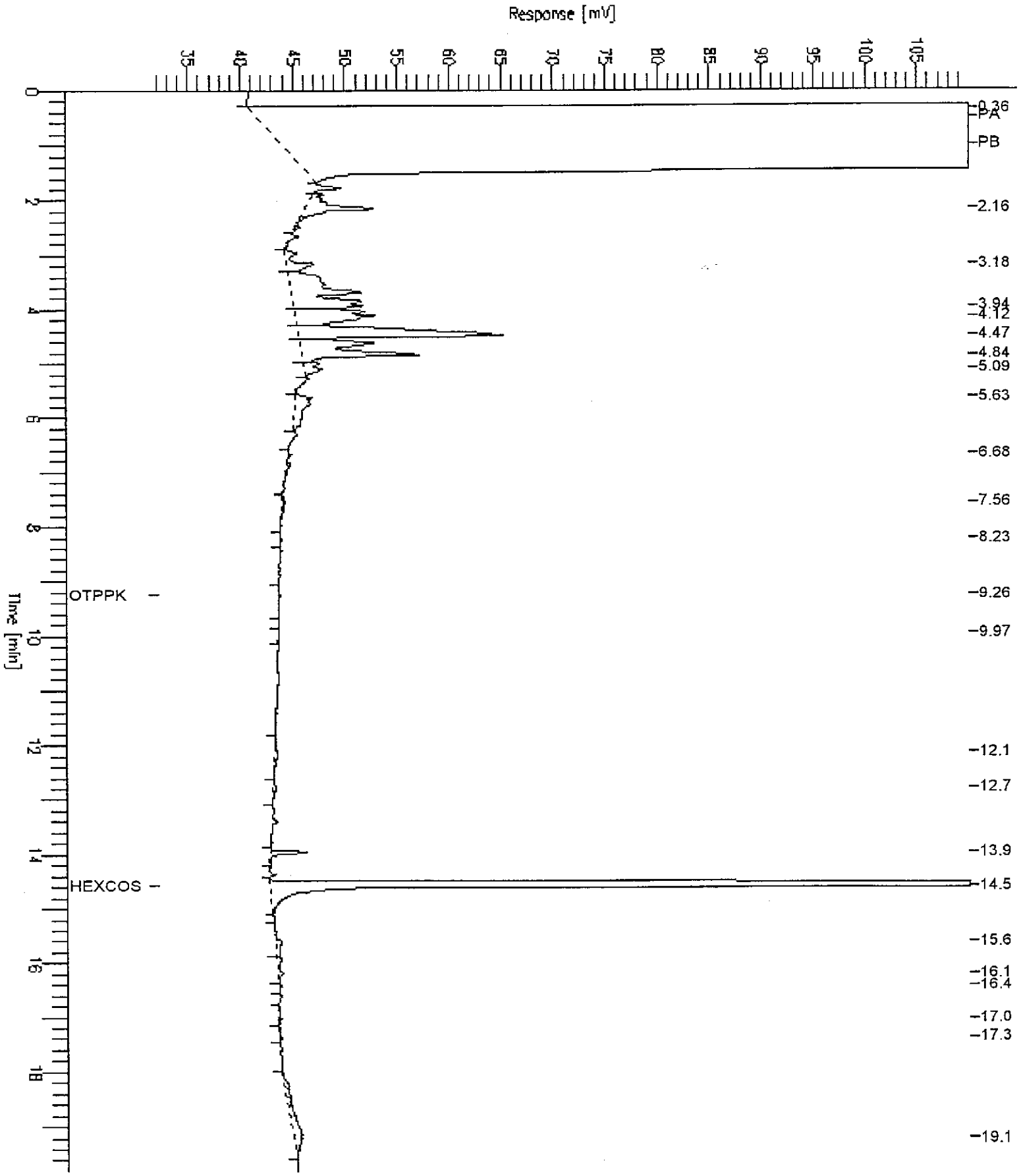
Analyte	Result
Diesel Range	<50
Kerosene C10-C16	<50

Surrogate	%Rec	Recovery Limits
Hexacosane	105	60-140

GC15 Channel B Surrogate

Sample Name : S,125373-001,27361
FileName : C:\GC15\CHB\122B048.raw
Method : DUALA
Start Time : 0.00 min End Time : 19.80 min
Scale Factor: 0.0 Plot Offset: 32 mV

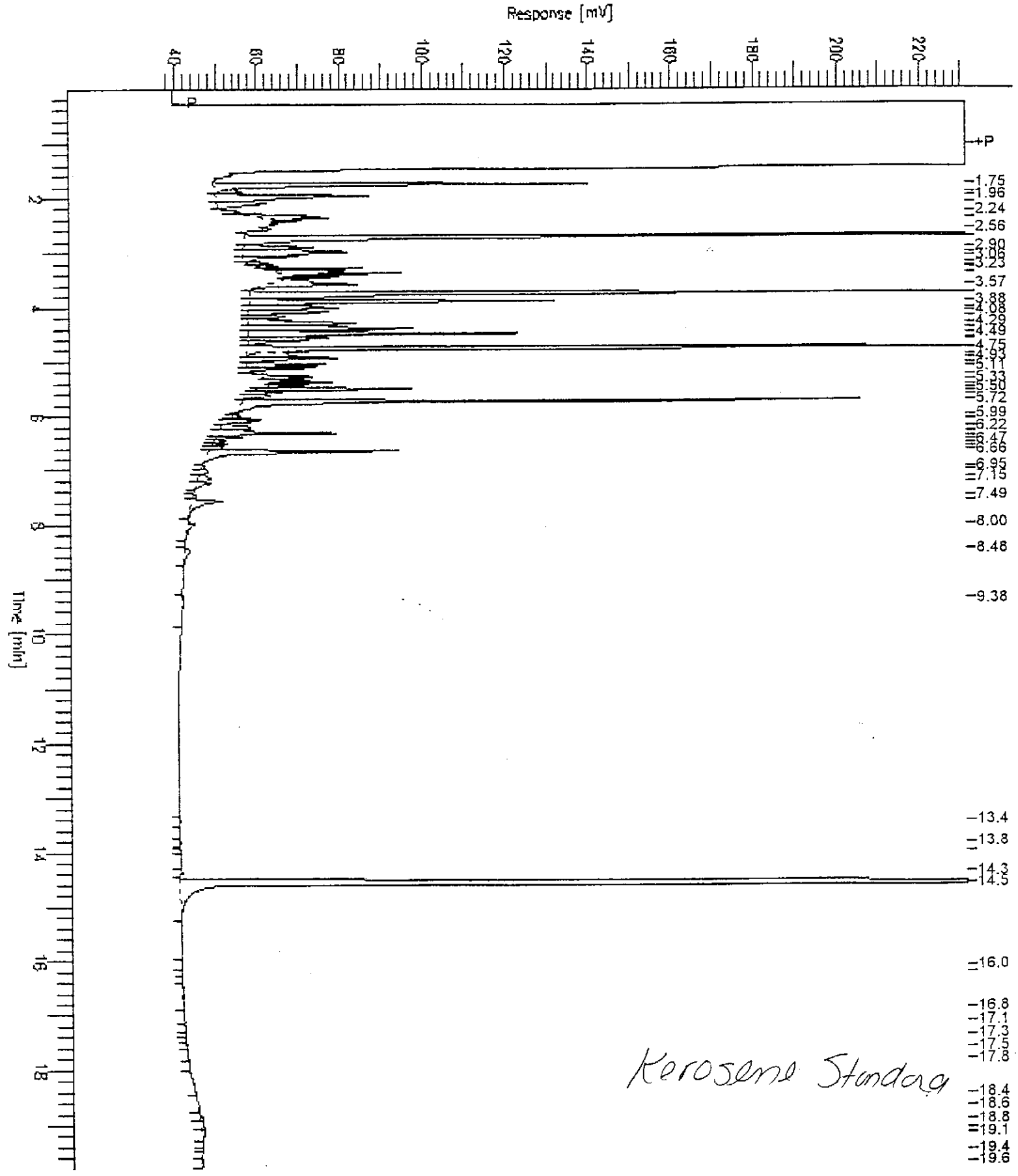
Sample #: 500:2.5 Page 1 of 1
Date : 5/2/96 11:34 PM
Time of Injection: 5/2/96 11:13 PM
Low Point : 32.00 mV High Point : 110.00 mV
Plot Scale: 78.0 mV



GC15 Channel A TEH

Sample Name : CCV,96WS1896,KEROSENE
FileName : C:\GC15\CHB\122B043.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min End Time : 19.80 min
Scale Factor: 0.0 Plot Offset: 36 mV

Sample #: 300MG/L
Date : 5/3/96 02:08 PM
Time of Injection: 5/2/96 08:53 PM
Low Point : 36.22 mV High Point : 231.05 mV
Plot Scale: 194.8 mV

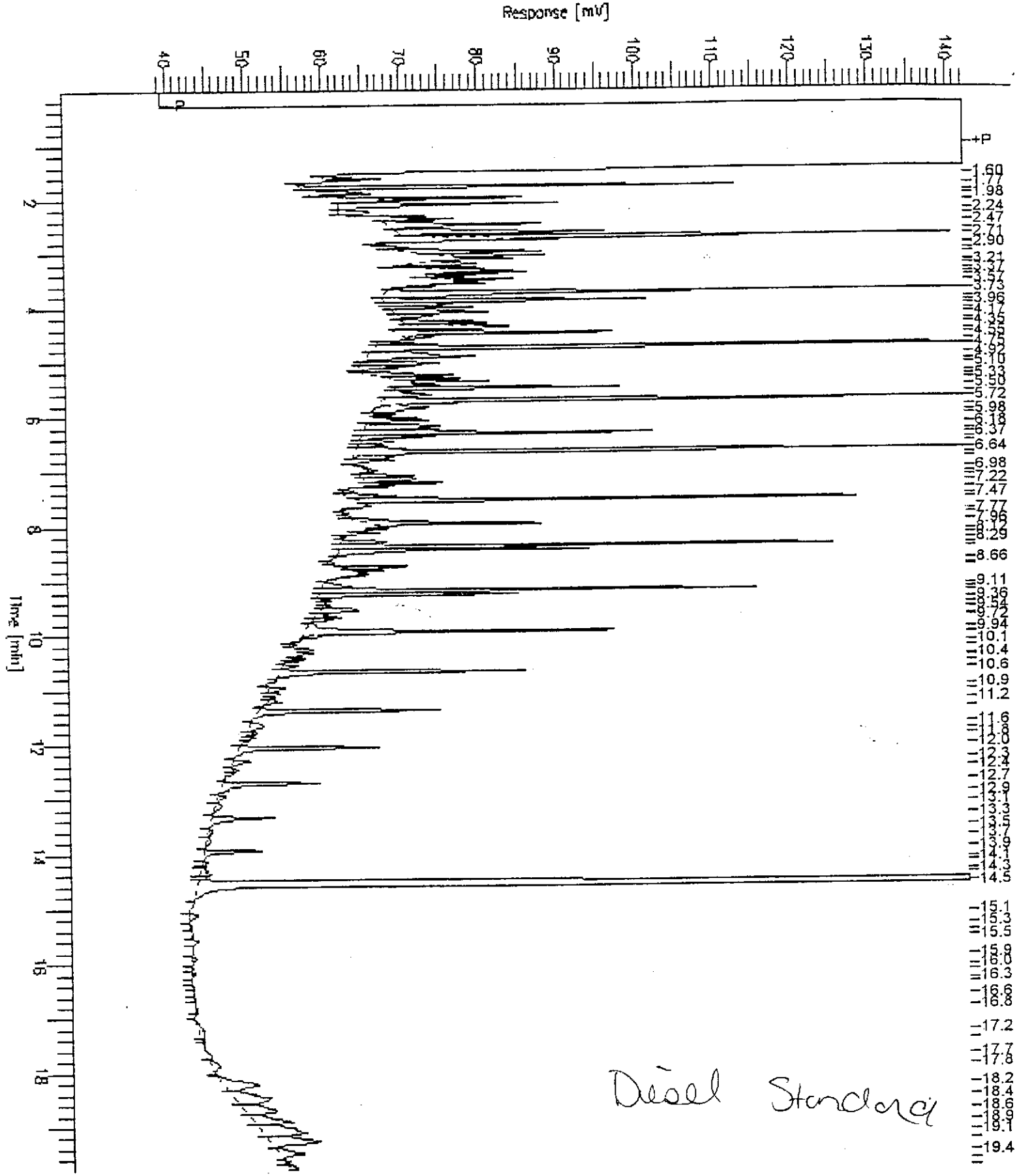


Kerosene Standard

GC15 Channel A TEH

Sample Name : CCV,96WS2288,DSL
FileName : C:\GC15\CHB\1228055.RAW
Method : BTEHJ.MTH
Start Time : 0.01 min End Time : 19.80 min
Scale Factor: 0.0 Plot Offset: 39 mV

Sample #: 500MG/L
Date : 5/3/96 01:58 PM
Time of Injection: 5/3/96 01:07 PM
Low Point : 38.55 mV High Point : 142.24 mV
Plot Scale: 103.7 mV



Diesel Standard

Curtis & Tompkins, Ltd.

Lab #: 125373 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 946.001
Location: 2528 Adeline St.

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

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 27361
Units: ug/L
Diln Fac: 1

Prep Date: 05/01/96
Analysis Date: 05/02/96

BS Lab ID: QC20753

Analyte	Spike Added	BS	%Rec #	Limits
Diesel Range	2475	2081	84	60-140
Surrogate	%Rec	Limits		
Hexacosane	106	60-140		

BSD Lab ID: QC20754

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel Range	2565	2157	87	60-140	4	<35
Surrogate	%Rec	Limits				
Hexacosane	103	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

Curtis & Tompkins, Ltd.

Client: Subsurface Consultants

Laboratory Login Number: 125373

Project Name: 2528 Adeline St.
Project Number: 946.001

Report Date: 03 May 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **METHOD: SMWW 17:5520BF**

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
125373-001	MW-1	Water	29-APR-96	29-APR-96	03-MAY-96	ND	mg/L	5	TR	27397
125373-002	MW-2	Water	29-APR-96	29-APR-96	03-MAY-96	ND	mg/L	5	TR	27397
125373-003	MW-3	Water	29-APR-96	29-APR-96	03-MAY-96	ND	mg/L	5	TR	27397

ND = Not Detected at or above Reporting Limit (RL).

Curtis & Tompkins, Ltd.

Q C B a t c h R e p o r t

Client: Subsurface Consultants
Project Name: 2528 Adeline St.
Project Number: 946.001

Laboratory Login Number: 125373
Report Date: 03 May 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **QC Batch Number: 27397**

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	03-MAY-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	88%	SMWW 17:5520BF	03-MAY-96
BSD	86%	SMWW 17:5520BF	03-MAY-96

		Control Limits
Average Spike Recovery	87%	80% - 120%
Relative Percent Difference	2.9%	< 20%

CHAIN OF CUSTODY FORM

125373

PAGE OF

PROJECT NAME: 2528 Adeline St.

JOB NUMBER: 946.001 LAB: Curtis & Tompkins

PROJECT CONTACT: Meg Mendoza TURNAROUND: Normal

SAMPLED BY: Dennis Alexander REQUESTED BY: Meg Mendoza

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR	CONTAINERS: VOA	LITER	PINT	TUBE	METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: TVH/BTXE & Stoddard	VOCs (8240)	TEH - Diesel, Kerosene	O&G	Barium (dissolved)	Selenium (dissolved)
-1	MW-1	X				6	3			X			X		04	29	96	1030	X	X	X	X	X	X	X
-2	MW-2	X				6	3			X			X		04	29	96	1115	X	X	X	X	X	X	X
-3	MW-3	X				6	3			X			X		04	29	96	0945	X	X	X	X	X	X	X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
Dennis Alexander	4/29/96 11:55 a.m.		4.29.96 11:55
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: X - Please filter and fix for Barium/Selenium analysis

Subsurface Consultants, Inc.

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