Weiss Associates Environmental and Geologic Services

5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: **510-450-6000**

August 5, 1998

Susan L. Hugo
Hazardous Materials Specialist
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RE: **Subsurface Investigation Report**
McGrath Steel Company
6655 Hollis Street
Emeryville, California
WA Job Number 184-1358-01

Dear Susan:

Weiss Associates (WA) prepared this letter report to present the results of the subsurface investigation for the subject property located at 6655 Hollis Street in Emeryville (Figure 1). WA performed the subsurface investigation according to the work plan WA submitted to your office on behalf of the property owner, McGrath Steel Company, on April 10, 1998. This report reflects WA's current understanding of site history and includes a summary of the subsurface investigation. This report is divided into the following sections: Site Description, Objective, Subsurface Investigation, and Results.

Site Description

The property is located at 6655 Hollis Street in Emeryville, California. The subject site consists of a commercial office building, parking lot and warehouse occupying a corner lot. The office building is located in the corner of the lot at the intersection of Hollis Street and 67th Street. The parking lot is located to the south of the office building and the warehouse is located to the west with a frontage on 67th Street. McGrath Steel removed two underground fuel tanks from beneath the Hollis Street sidewalk adjacent to the McGrath property. The Alameda County Health Care Services Agency (ACHCSA) subsequently requested a ground water investigation workplan.[1]

[1] ACHCSA, Letter to Mr. Robert Thomas of McGrath Steel Company from ACHCSA Senior Hazardous Materials Specialist Susan L. Hugo, 2 pages, February 13, 1997.

Objective

The objective of WA's subsurface investigation is to evaluate whether the former tanks may have been a source of hydrocarbons to the subsurface and, if so, assess the extent of hydrocarbons in ground water. WA's summary of the subsurface investigation and results are presented below.

Subsurface Investigation

On May 20, 1998, WA drilled 3 boreholes around the former location of the underground storage tanks (USTs) (Figure 2). The proposed scope of work included 7 boring locations. WA was unable to complete all seven borings due to the following circumstances:

- In our work plan, WA assumed ground water would be encountered at approximately 12-15 feet below ground surface (bgs). In borings B-1 and B-2 ground water was located at 22.5 and 22 feet bgs respectively requiring additional time to complete the borings.

- Due to the additional time required to complete borings B-1 and B-2, WA elected to install the borings in the following order: B-5, B-6, B-7 (to establish the down gradient extent of contamination), B-4 (source area boring), and B-3 (up/crossgradient boring). Establishing the downgradient extent of the contamination was the critical aspect of the investigation, establishing the source area boring was less critical, and completing the up/crossgradient boring was least critical since two such well had been completed (B-1 and B-2).

- In our work plan, WA assumed all borings could be completed using a direct push style drill rig. WA was unable to complete borings B-6 and B-7 due to the presence of an unconsolidated gravel layer consisting of angular gravel up to 2-inches in diameter. After repeated attempts to push through the gravel layer at B-6, the boring was abandon and WA began B-7. Boring B-7 was attempted several times and in two locations but the unconsolidated gravel layer prohibited the completion of the borings.

- Borings B-4 and B-3 were not attempted due to the delays associated with the conditions discussed above.

Permits

Prior to conducting the subsurface investigation, WA contacted Alameda County Public Works Agency to obtain a permit for the fieldwork. Alameda County Public Works Agency issued Drilling Permit 98WR195. WA contacted the City of Emeryville to obtain an Encroachment Permit for the work in the public right of way. The City of Emeryville issued Encroachment Permit No. 98-5-2. WA also contacted Underground Service Alert (USA) and was issued ticket number 121719 for installing the boreholes. Additionally, WA retained a private underground line locating company, Subtronic Corporation of Concord, to clear the borehole locations.

Borehole Drilling and Subsurface Sampling

Gregg Drilling and Testing Inc. of Martinez, California performed the drilling, under the supervision of a WA engineer. A WA field geologist logged the boreholes and collected the environmental samples. Three of the seven borings were completed (B-1, B-2, and B-5). Two borings, B-6 and B-7, were started but could not be advanced beyond approximately 2 feet below ground surface due to a layer of base rock and large angular gravel (up to 2 inches) that was impeded advancement of the direct push rig. The two additional borings proposed (B-4 and B-3) were not attempted.

Soil samples were collected by hydraulically advancing a 2-inch diameter carbon steel sampler lined with a polyethylene tube to the desired depth and removing it for sample collection. Soil cores were collected continuously in four-foot runs. The collected soil cores were screened visually by the field geologist for staining, odors or other indications of contamination. The field geologist, using the Unified Soil Classification System (USCS), classified the soil cores. The soil boring logs are included as Attachment A. Based on the field observation, one soil sample per boring was selected for chemical analysis. In the absence of any indications of contamination, a soil sample from just above the water table was selected for chemical analysis. Additional soil samples were collected, sent to the lab and placed on hold for possible chemical analysis. Samples were collected from the polyethylene tube section, cutting the sample tub to the desired length and capping the ends with Teflon sheets and tight fitting plastic end caps. The soil samples were given ID numbers and were placed in an iced cooler for transport to the laboratory under chain-of-custody procedures.

The ground water table was encountered at about 22 feet bgs in borings B-1 and B-2 and at approximately 16 feet bgs in boring B-5. WA collected a ground water grab sample using disposable bailers and decanting the water into clean sample containers. The sample containers were cleared of headspace and capped. The samples were given ID numbers and were placed in an iced cooler for transport to the laboratory under chain-of-custody procedures.

Table 1 summarizes the samples collected.

Table 1. Samples Collected, McGrath Steel, 6655 Hollis Street, Emeryville, California

Sample ID	Sample Type	Sample Depth (feet bgs)
B-1-10	Soil	10
B-1-23	Soil	23
B-2-5	Soil	5
B-2-10	Soil	10
B-2-19.5	Soil	19.5
B-5-8	Soil	8
B-5-12	Soil	12
B-1	Water	22.5
B-2	Water	22
B-5	Water	16

The downhole drilling equipment was steam cleaned prior to arrival on-site and at the completion of work. Between borings, the equipment was washed in an alconox water solution and triple rinsed. Upon completion of the fieldwork, the borings were grouted to the surface with a 3-5% bentonite/cement grout.

Results

The soil and ground water samples were submitted under chain-of-custody procedures to Curtis and Tompkins, Ltd., Analytical Laboratories (C&T) in Berkeley, California, a state of California Department of Health Services approved laboratory. The ground water samples from each boring were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and diesel (TPH-D), benzene, toluene, ethylbenzene and xylenes (BTEX), and methyl tertiary-butyl ether (MTBE). At least one soil sample from each boring was analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and diesel (TPH-D), benzene, toluene, ethylbenzene and xylenes (BTEX), and methyl tertiary-butyl ether (MTBE). The additional soil samples were placed on hold and not analyzed. Table 2 summarizes the analytical results.

Table 2. Sample Results for McGrath Steel, 6655 Hollis Street, Emeryville, California

Sample ID	Sample Type	Sample Depth (feet bgs)	TPH-G	TPH-D	B	E	T	X	MTBE
B-1-10	Soil	10	NA	NA	NA	NA	NA	NA	NA
B-1-23	**Soil**	**23**	**<1**	**<1**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.020**
B-2-5	Soil	5	NA	NA	NA	NA	NA	NA	NA
B-2-10	Soil	10	NA	NA	NA	NA	NA	NA	NA
B-2-19.5	**Soil**	**19.5**	**<1**	**<1**	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**<0.020**
B-5-8	Soil	8	NA	NA	NA	NA	NA	NA	NA
B-5-12	**Soil**	**12**	**27**	**2.8[b,c]**	**0.28**	**<0.130**	**0.600**	**0.49**	**3.8**
B-1	**Water**	**22.5**	**68[a]**	**120[b]**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<2**
B-2	**Water**	**22**	**71[a]**	**150[b]**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<2**
B-5	**Water**	**16**	**270,000**	**1,600[b,c]**	**21,000**	**6,000**	**34,000**	**36,000**	**59,000**

a = sample exhibits unknown single peak or peaks
b = sample exhibits fuel pattern which does not resemble standard
c = lighter hydrocarbons than indicated standard
Soil results in mg/kg
Water results in ug/L
NA = not analyzed
BOLD TEXT = samples that were analyzed.

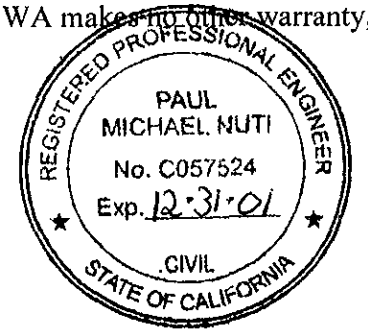
Borings B-1 and B-2 analytical results indicate that there is no fuel hydrocarbon contamination in soils or ground water in their vicinity. The single peaks reported are likely due to an unrelated occurrence such as lab contamination.

Boring B-5 analytical results indicate that there is little fuel hydrocarbon contamination in soils just above the water table in the vicinity of the boring. Boring B-5 analytical results indicate that there is gasoline range hydrocarbon contamination in ground water in the vicinity.

Copies of the laboratory report and chain-of-custody are included as Attachment B.

WA is prepared to answer any question you may have regarding this report. Please call Paul Nuti at (510) 450-6164 if you have any questions, or would like to discuss any aspect of this report.

Weiss Associates work for McGrath Steel Company was conducted under my supervision. To the best of my knowledge, the data contained herein are true and accurate and satisfy the scope of work prescribed by the client for this project. The data, findings, recommendations, specifications or professional opinions were prepared in accordance with generally accepted professional engineering practice. WA makes no other warranty, either expressed or implied.



8.5.98

Paul M. Nuti, P.E. Date
Registered Civil Engineer
CA License No. C 57524

Enclosures: Figure 1. Site Location Map – ,McGrath Steel, 6655 Hollis Street, Emeryville California
Figure 2. Site Plan – McGrath Steel, 6655 Hollis Street, Emeryville, California
Attachment A – Soil Boring Logs
Attachment B – Analytical Laboratory Report and Chain-Of-Custody

cc: Mr. Robert Thomas, McGrath Steel Company, 6655 Hollis Street, Emeryville, California, 94608
Mr. Denes Turcsanyi, 849 Santa Barbara Road, Berkeley, California, 94707

PMN:pmn
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Figure 1. Site Location Map—McGrath Steel, 6655 Hollis Street, Emeryville, California

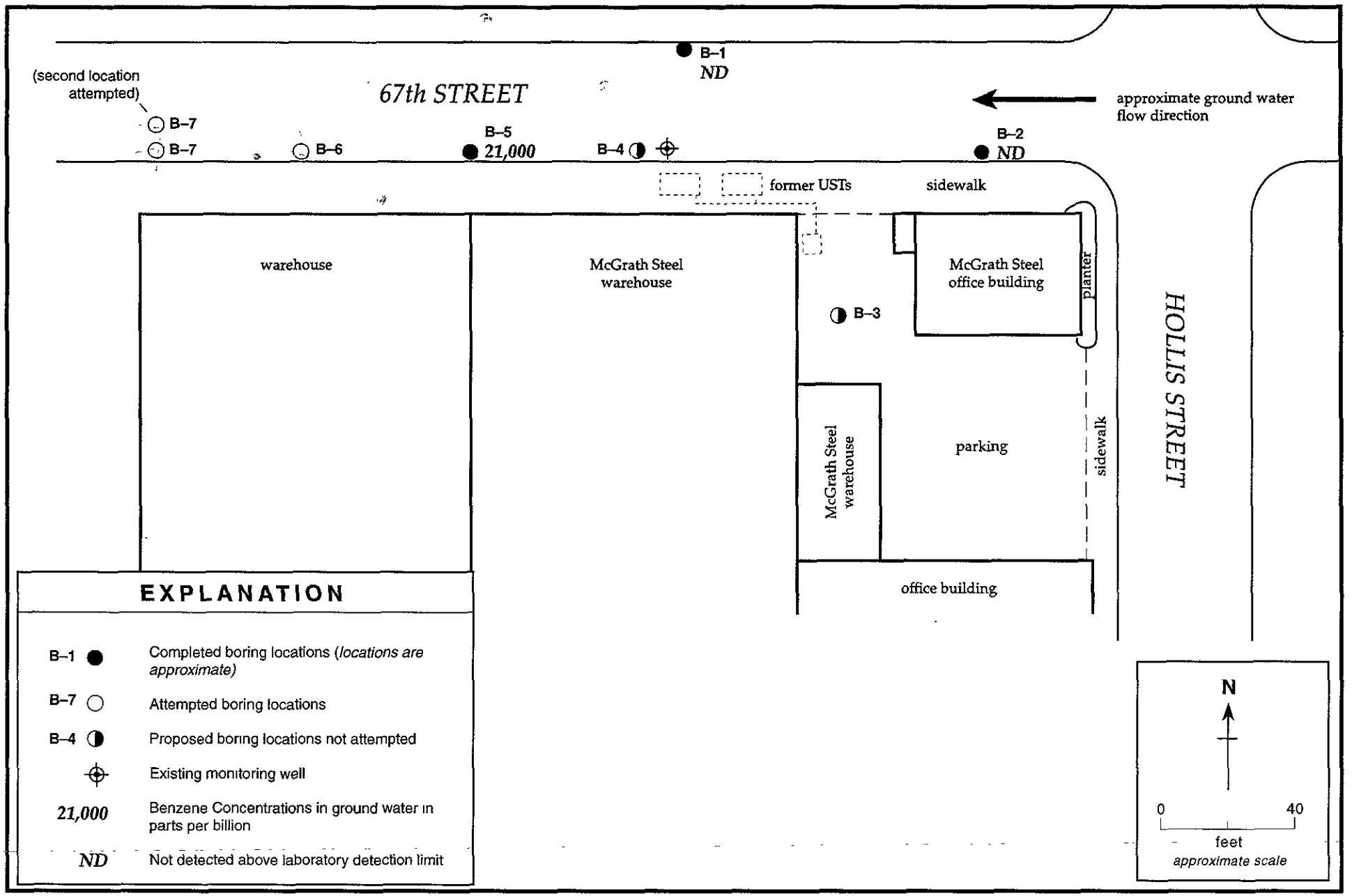
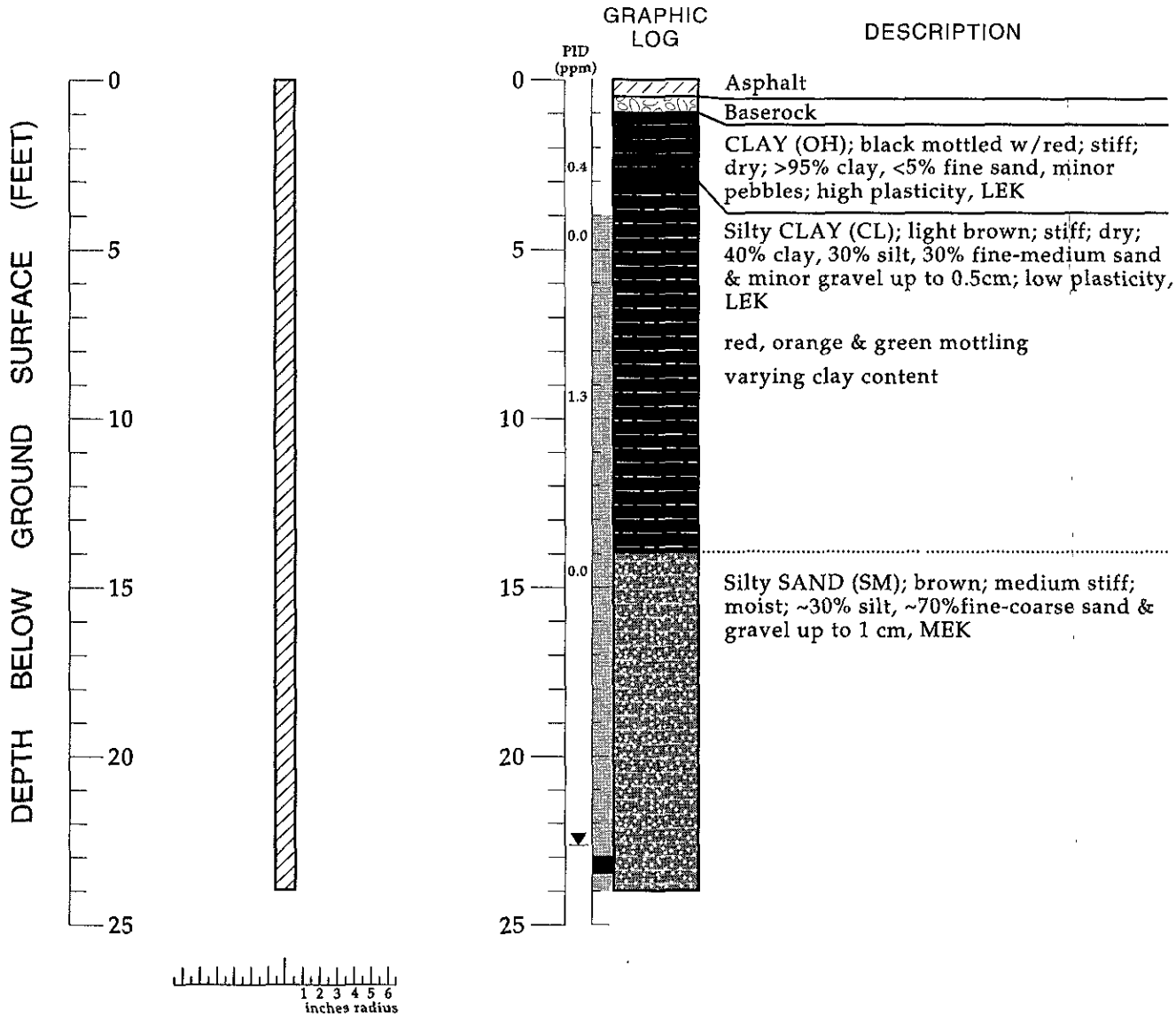


Figure 2. Site Plan—McGrath Steel, 6655 Hollis Street, Emeryville, California

ATTACHMENT A

SOIL BORING LOGS

BOREHOLE B-1



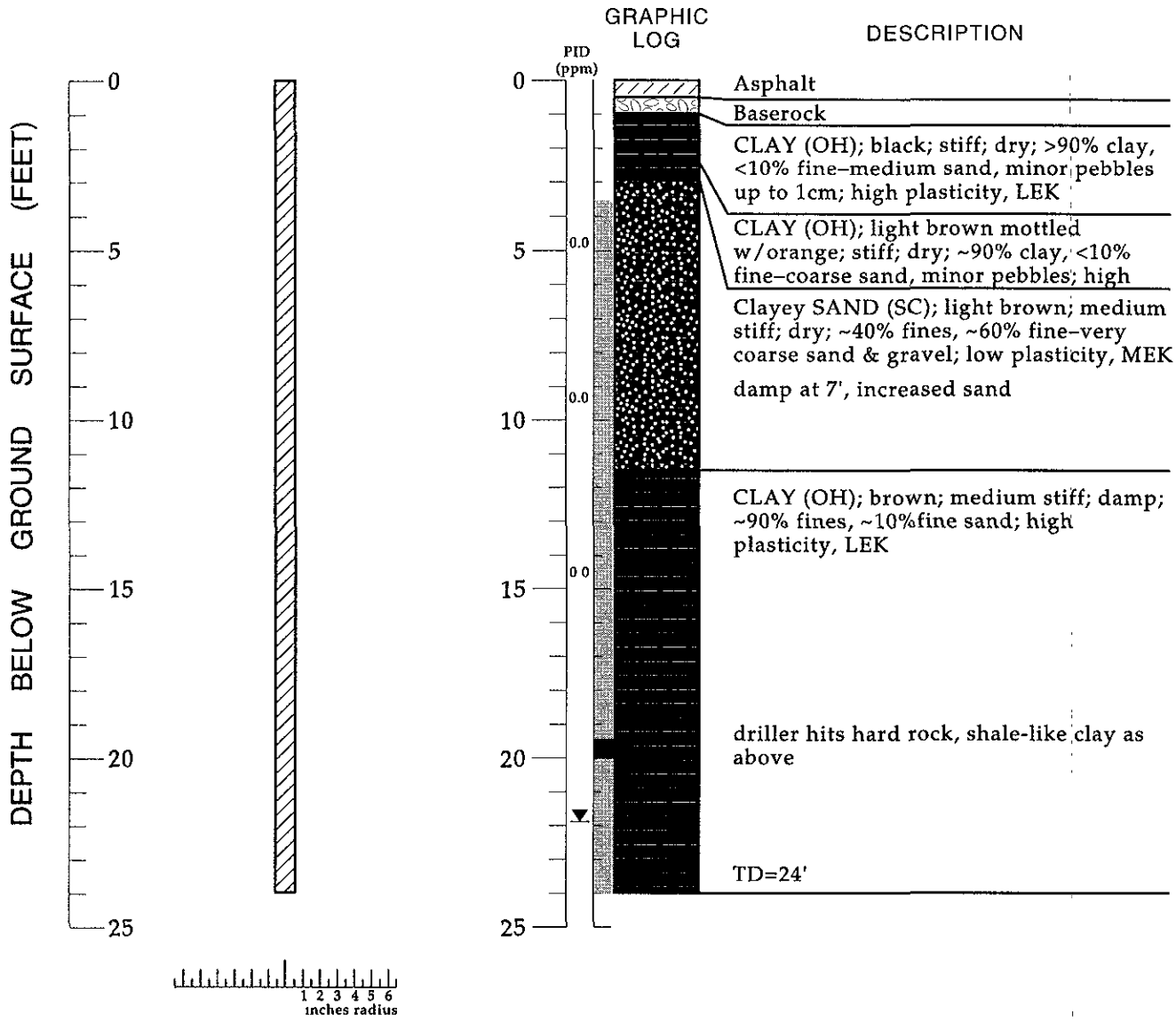
EXPLANATION

- ▼ Water level during drilling (May 20, 1998)
- —····— Contact (dotted where approximate)
- —?—?— Uncertain contact
- ////////// Gradational contact
- Location of recovered core
- Location of core sample sealed for chemical analysis
- K = Estimated hydraulic conductivity
- PID = Photoionization detector
- PPM = Parts per million

Logged By: Elizabeth Brogna
Supervisor: Paul Nuti
Drilling Company: Gregg Drilling, Martinez, CA
License Number: C-57485165
Driller: Dan Cooper
Drilling Method: Direct Push
Date Drilled: May 20, 1998
Well Head Completion: N/A
Type of Sampler: Continous Core
Ground Surface Elevation: Not available

Figure 1. Boring Log—Borehole B-1, McGrath Steel 6655 Hollis Street, Emeryville, California

BOREHOLE B-2



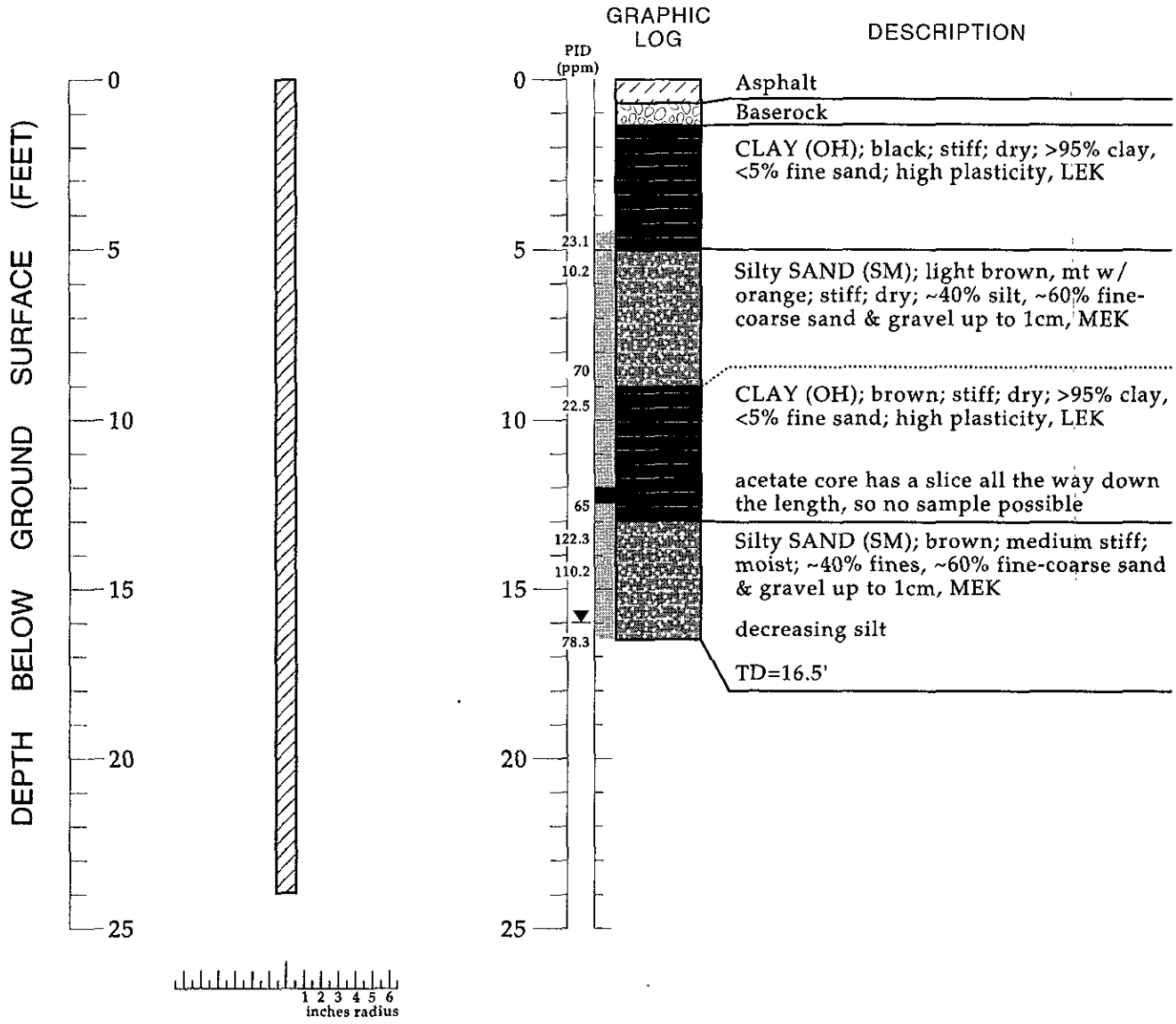
EXPLANATION

- ▼ Water level during drilling (May 20, 1998)
- Contact (dotted where approximate)
- —?—?— Uncertain contact
- Gradational contact
- Location of recovered core
- Location of core sample sealed for chemical analysis
- K = Estimated hydraulic conductivity
- PID = Photoionization detector
- PPM = Parts per million

Logged By: Elizabeth Brogna
Supervisor: Paul Nuti
Drilling Company: Gregg Drilling, Martinez, CA
License Number: C-57485165
Driller: Dan Cooper
Drilling Method: Direct Push
Date Drilled: May 20, 1998
Well Head Completion: N/A
Type of Sampler: Continous Core
Ground Surface Elevation: Not available

Figure 1. Boring Log—Borehole B-2, McGrath Steel 6655 Hollis Street, Emeryville, California

BOREHOLE B-5



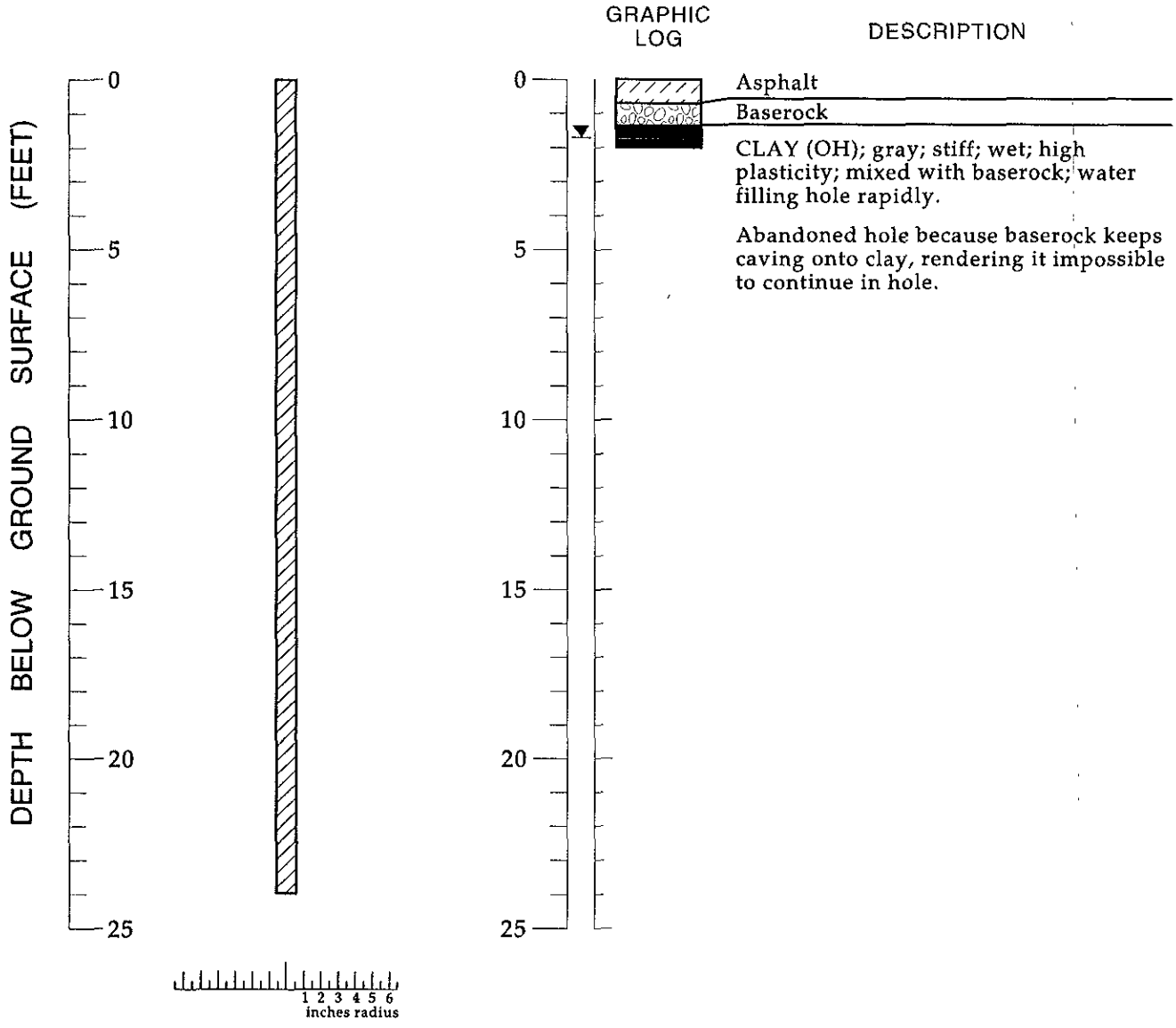
EXPLANATION

- ▼ Water level during drilling (May 20, 1998)
- ——····—— Contact (dotted where approximate)
- —?—?— Uncertain contact
- ////////// Gradational contact
- Location of recovered core
- Location of core sample sealed for chemical analysis
- K = Estimated hydraulic conductivity
- PID = Photoionization detector
- PPM = Parts per million

Logged By: Elizabeth Brogna
Supervisor: Paul Nuti
Drilling Company: Gregg Drilling, Martinez, CA
License Number: C-57485165
Driller: Dan Cooper
Drilling Method: Direct Push
Date Drilled: May 20, 1998
Well Head Completion: N/A
Type of Sampler: Continous Core
Ground Surface Elevation: Not available

Figure 1. Boring Log—Borehole B-5, McGrath Steel 6655 Hollis Street, Emeryville, California

BOREHOLE B-6



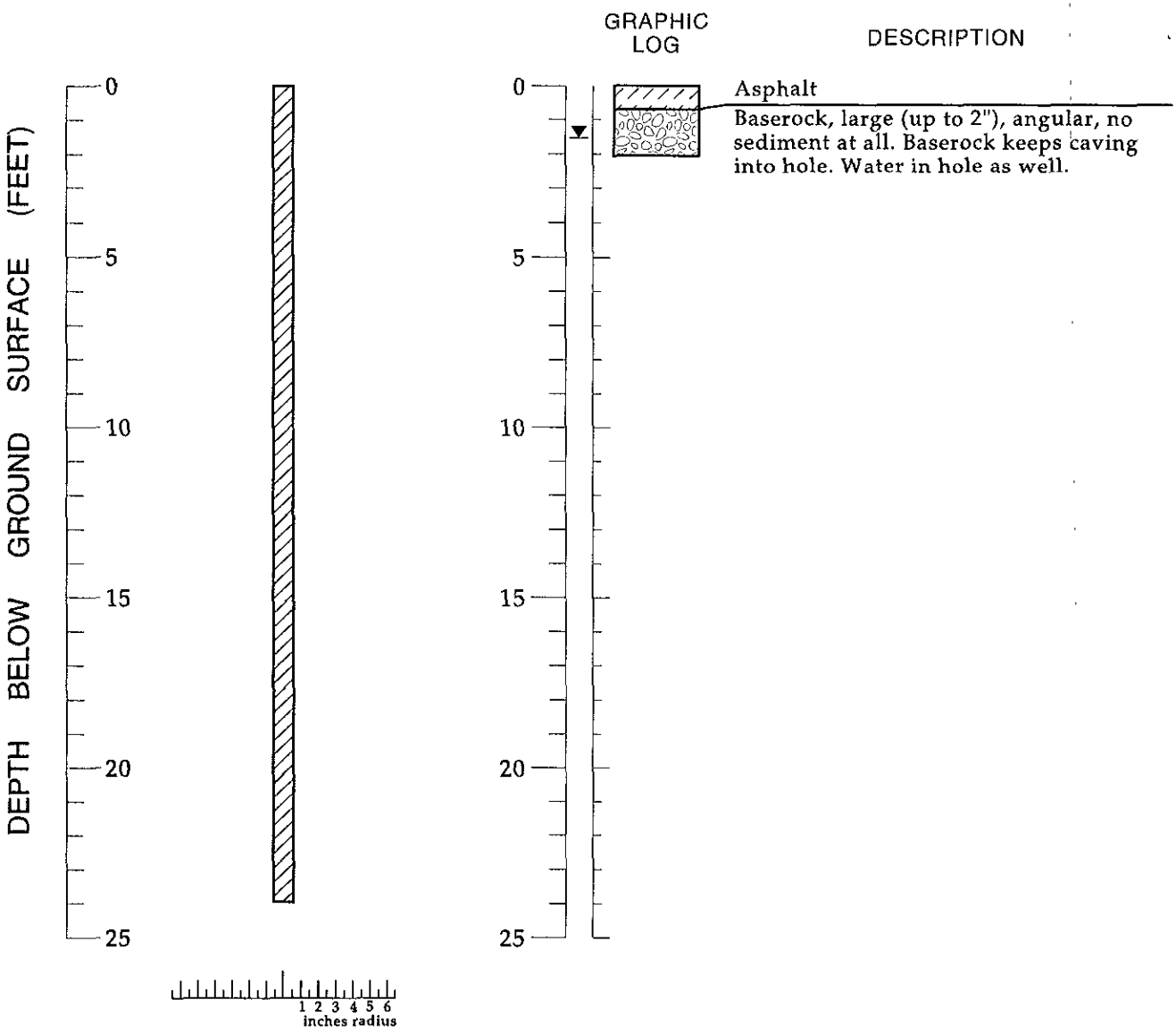
EXPLANATION

- ▼ Water level during drilling (May 20, 1998)
- Contact (dotted where approximate)
- —?—?— Uncertain contact
- Gradational contact
- Location of recovered core
- Location of core sample sealed for chemical analysis
- K = Estimated hydraulic conductivity

Logged By: Elizabeth Brogna
Supervisor: Paul Nuti
Drilling Company: Gregg Drilling, Martinez, CA
License Number: C-57485165
Driller: Dan Cooper
Drilling Method: Direct Push
Date Drilled: May 20, 1998
Well Head Completion: N/A
Type of Sampler: Continous Core
Ground Surface Elevation: Not available

Figure 1. Boring Log—Borehole B-6, McGrath Steel 6655 Hollis Street, Emeryville, California

BOREHOLE B-7



EXPLANATION

- ▼ Water level during drilling (May 20, 1998)
- —····— Contact (dotted where approximate)
- —?—?— Uncertain contact
- ////////// Gradational contact
- Location of recovered core
- Location of core sample sealed for chemical analysis
- K = Estimated hydraulic conductivity

Logged By: Elizabeth Brogna
Supervisor: Paul Nuti
Drilling Company: Gregg Drilling, Martinez, CA
License Number: C-57485165
Driller: Dan Cooper
Drilling Method: Direct Push
Date Drilled: May 20, 1998
Well Head Completion: N/A
Type of Sampler: Continous Core
Ground Surface Elevation: Not available

Figure 1. Boring Log—Borehole B-7, McGrath Steel 6655 Hollis Street, Emeryville, California

ATTACHMENT B

ANALYTICAL LABORATORY REPORT AND CHAIN-OF-CUSTODY

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

ANALYTICAL REPORT

Prepared for:

Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608

Date: 19-JUN-98
Lab Job Number: 133806
Project ID: 184-1358-1
Location: N/A

Reviewed by: Damara Moore

Reviewed by: _____

TVH-Total Volatile Hydrocarbons

Client: Weiss Associates
Project#: 184-1358-1

Analysis Method: EPA 8015M
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
133806-001	B-1	41174	05/20/98	05/30/98	05/30/98	
133806-002	B-2	41174	05/20/98	05/30/98	05/30/98	
133806-003	B-5	41210	05/20/98	06/02/98	06/02/98	

Matrix: Water

Analyte	Units	133806-001	133806-002	133806-003
Diln Fac:		1	1	400
Gasoline C7-C12	ug/L	68 Z	71 Z	270000
Surrogate				
Trifluorotoluene	%REC	111	113	108
Bromofluorobenzene	%REC	102	104	101

Z: Sample exhibits unknown single peak or peaks

BTXE

Client: Weiss Associates
Project#: 184-1358-1

Analysis Method: EPA 8020A
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
133806-001	B-1	41174	05/20/98	05/30/98	05/30/98	
133806-002	B-2	41174	05/20/98	05/30/98	05/30/98	
133806-003	B-5	41210	05/20/98	06/02/98	06/02/98	

Matrix: Water

Analyte	Units	133806-001	133806-002	133806-003
Diln Fac:		1	1	400
MTBE	ug/L	<2	<2	59000
Benzene	ug/L	<0.5	<0.5	21000
Toluene	ug/L	<0.5	<0.5	34000
Ethylbenzene	ug/L	<0.5	<0.5	6000
m,p-Xylenes	ug/L	<0.5	<0.5	26000
o-Xylene	ug/L	<0.5	<0.5	10000
Surrogate				
Trifluorotoluene	%REC	84	86	81
Bromofluorobenzene	%REC	83	83	81

TVH-Total Volatile Hydrocarbons

Client:	Weiss Associates	Analysis Method:	EPA 8015M
Project#:	184-1358-1	Prep Method:	EPA 5030

METHOD BLANK

Matrix:	Water	Prep Date:	05/30/98
Batch#:	41174	Analysis Date:	05/30/98
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC71766

Analyte	Result
Gasoline C7-C12	<50

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	107	59-162
Bromofluorobenzene	98	59-162

BATCH QC REPORT

Curtis & Tompkins, Ltd.

BTXE

Client:	Weiss Associates	Analysis Method:	EPA 8020A
Project#:	184-1358-1	Prep Method:	EPA 5030

METHOD BLANK

Matrix:	Water	Prep Date:	05/30/98
Batch#:	41174	Analysis Date:	05/30/98
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC71766

Analyte	Result
MTBE	<2.0
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
m,p-Xylenes	<0.5
o-Xylene	<0.5

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	82	53-124
Bromofluorobenzene	76	41-142

TVH-Total Volatile Hydrocarbons

Client:	Weiss Associates	Analysis Method:	EPA 8015M
Project#:	184-1358-1	Prep Method:	EPA 5030

METHOD BLANK

Matrix:	Water	Prep Date:	06/02/98
Batch#:	41210	Analysis Date:	06/02/98
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC71887

Analyte	Result
Gasoline C7-C12	<50

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	99	59-162
Bromofluorobenzene	86	59-162

BATCH QC REPORT

Curtis & Tompkins, Ltd.

BTXE

Client:	Weiss Associates	Analysis Method:	EPA 8020A
Project#:	184-1358-1	Prep Method:	EPA 5030

METHOD BLANK

Matrix:	Water	Prep Date:	06/02/98
Batch#:	41210	Analysis Date:	06/02/98
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC71887

Analyte	Result
MTBE	<2.0
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
m,p-Xylenes	<0.5
o-Xylene	<0.5

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	75	53-124
Bromofluorobenzene	69	41-142

BATCH QC REPORT

Curtis & Tompkins, Ltd.

BTXE

Client:	Weiss Associates	Analysis Method:	EPA 8020A
Project#:	184-1358-1	Prep Method:	EPA 5030

LABORATORY CONTROL SAMPLE

Matrix:	Water	Prep Date:	05/30/98
Batch#:	41174	Analysis Date:	05/30/98
Units:	ug/L		
Diln Fac:	1		

LCS Lab ID: QC71765

Analyte	Result	Spike Added	%Rec #	Limits
MTBE	16.95	20	85	65-135
Benzene	16.75	20	84	69-109
Toluene	18.19	20	91	72-116
Ethylbenzene	17.18	20	86	67-120
m,p-Xylenes	19.13	20	96	69-117
o-Xylene	18.22	20	91	75-122

Surrogate	%Rec	Limits
Trifluorotoluene	81	53-124
Bromofluorobenzene	79	41-142

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 6 outside limits

Lab #: 133806

BATCH QC REPORT

Curtis & Tompkins, Ltd.

TVH-Total Volatile Hydrocarbons

Client:	Weiss Associates	Analysis Method:	EPA 8015M
Project#:	184-1358-1	Prep Method:	EPA 5030

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix:	Water	Prep Date:	05/30/98
Batch#:	41174	Analysis Date:	05/30/98
Units:	ug/L		
Diln Fac:	1		

BS Lab ID: QC71767

Analyte	Spike Added	BS	%Rec #	Limits
Gasoline C7-C12	2000	1902	95	80-119

Surrogate	%Rec	Limits
Trifluorotoluene	139	59-162
Bromofluorobenzene	104	59-162

BSD Lab ID: QC71768

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	2018	101	80-119	6	12

Surrogate	%Rec	Limits
Trifluorotoluene	142	59-162
Bromofluorobenzene	109	59-162

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

TVH-Total Volatile Hydrocarbons

Client:	Weiss Associates	Analysis Method:	EPA 8015M
Project#:	184-1358-1	Prep Method:	EPA 5030

LABORATORY CONTROL SAMPLE

Matrix:	Water	Prep Date:	06/02/98
Batch#:	41210	Analysis Date:	06/02/98
Units:	ug/L		
Diln Fac:	1		

LCS Lab ID: QC71885

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	1985	2000	99	80-119

Surrogate	%Rec	Limits
Trifluorotoluene	136	59-162
Bromofluorobenzene	107	59-162

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

BTXE

Client:	Weiss Associates	Analysis Method:	EPA 8020A
Project#:	184-1358-1	Prep Method:	EPA 5030

LABORATORY CONTROL SAMPLE

Matrix:	Water	Prep Date:	06/02/98
Batch#:	41210	Analysis Date:	06/02/98
Units:	ug/Kg		
Diln Fac:	1		

LCS Lab ID: QC71886

Analyte	Result	Spike Added	%Rec #	Limits
MTBE	19.39	20	97	65-135
Benzene	18.04	20	90	69-109
Toluene	18.16	20	91	72-116
Ethylbenzene	17.87	20	89	67-120
m,p-Xylenes	19.4	20	97	69-117
o-Xylene	18.52	20	93	75-122

Surrogate	%Rec	Limits
Trifluorotoluene	79	53-124
Bromofluorobenzene	76	41-142

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 6 outside limits

Lab #: 133806 BATCH QC REPORT Curtis & Tompkins, Ltd. Page 1 of 1

BTXE

Client:	Weiss Associates	Analysis Method:	EPA 8020A
Project#:	184-1358-1	Prep Method:	EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID:	ZZZZZZ	Sample Date:	05/26/98
Lab ID:	133841-002	Received Date:	05/28/98
Matrix:	Water	Prep Date:	06/02/98
Batch#:	41210	Analysis Date:	06/02/98
Units:	ug/L		
Diln Fac:	1		

MS Lab ID: QC71888

Analyte	Spike Added	Sample	MS	%Rec #	Limits
MTBE	20	<2	21.31	107	65-135
Benzene	20	<0.5	19.5	98	55-125
Toluene	20	<0.5	19.51	98	65-126
Ethylbenzene	20	<0.5	19.06	95	60-129
m,p-Xylenes	20	<0.5	20.39	102	68-116
o-Xylene	20	<0.5	20.04	100	69-129

Surrogate	%Rec	Limits
Trifluorotoluene	86	53-124
Bromofluorobenzene	87	41-142

MSD Lab ID: QC71889

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
MTBE	20	21.83	109	65-135	2	20
Benzene	20	19.88	99	55-125	2	11
Toluene	20	20.33	102	65-126	4	11
Ethylbenzene	20	19.75	99	60-129	4	12
m,p-Xylenes	20	21.28	106	68-116	4	11
o-Xylene	20	20.58	103	69-129	3	12

Surrogate	%Rec	Limits
Trifluorotoluene	86	53-124
Bromofluorobenzene	86	41-142

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 6 outside limits
Spike Recovery: 0 out of 12 outside limits

TEH-Tot Ext Hydrocarbons

Client: Weiss Associates
Project#: 184-1358-1

Analysis Method: EPA 8015M
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
133806-001	B-1	41231	05/20/98	06/01/98	06/05/98	
133806-002	B-2	41231	05/20/98	06/01/98	06/05/98	
133806-003	B-5	41231	05/20/98	06/01/98	06/05/98	

Matrix: Water

Analyte	Units	133806-001	133806-002	133806-003
Diln Fac:		1	1	1
Diesel C12-C22	ug/L	120 Y	150 Y	1600 YL
Surrogate				
Hexacosane	%REC	80	78	67

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

TEH-Tot Ext Hydrocarbons

Client: Weiss Associates
Project#: 184-1358-1

Analysis Method: EPA 8015M
Prep Method: CA LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
133806-004	B-1-23'	41180	05/20/98	05/29/98	06/02/98	
133806-005	B-2-19.5'	41180	05/20/98	05/29/98	06/02/98	
133806-006	B-5-12'	41180	05/20/98	05/29/98	06/02/98	

Matrix: Soil

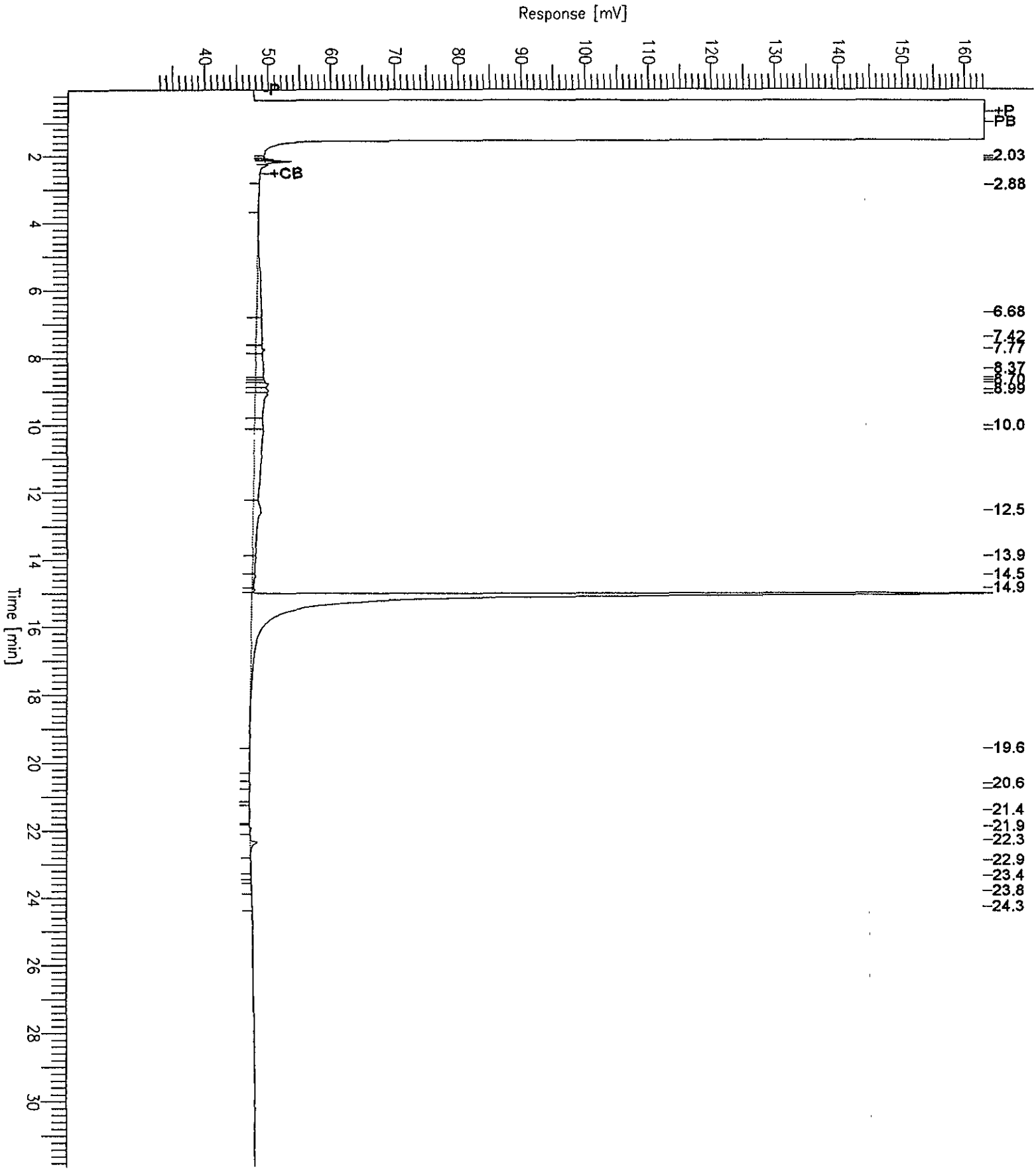
Analyte	Units	133806-004	133806-005	133806-006
Diln Fac:		1	1	1
Diesel C12-C22	mg/Kg	<1	<1	2.8YL
Surrogate				
Hexacosane	%REC	89	89	92

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

GC15 Channel B TEH

Sample Name : 133806-001,41231
FileName : C:\GC15\CHB\154B059.RAW
Method : B155TEH.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 33 mV

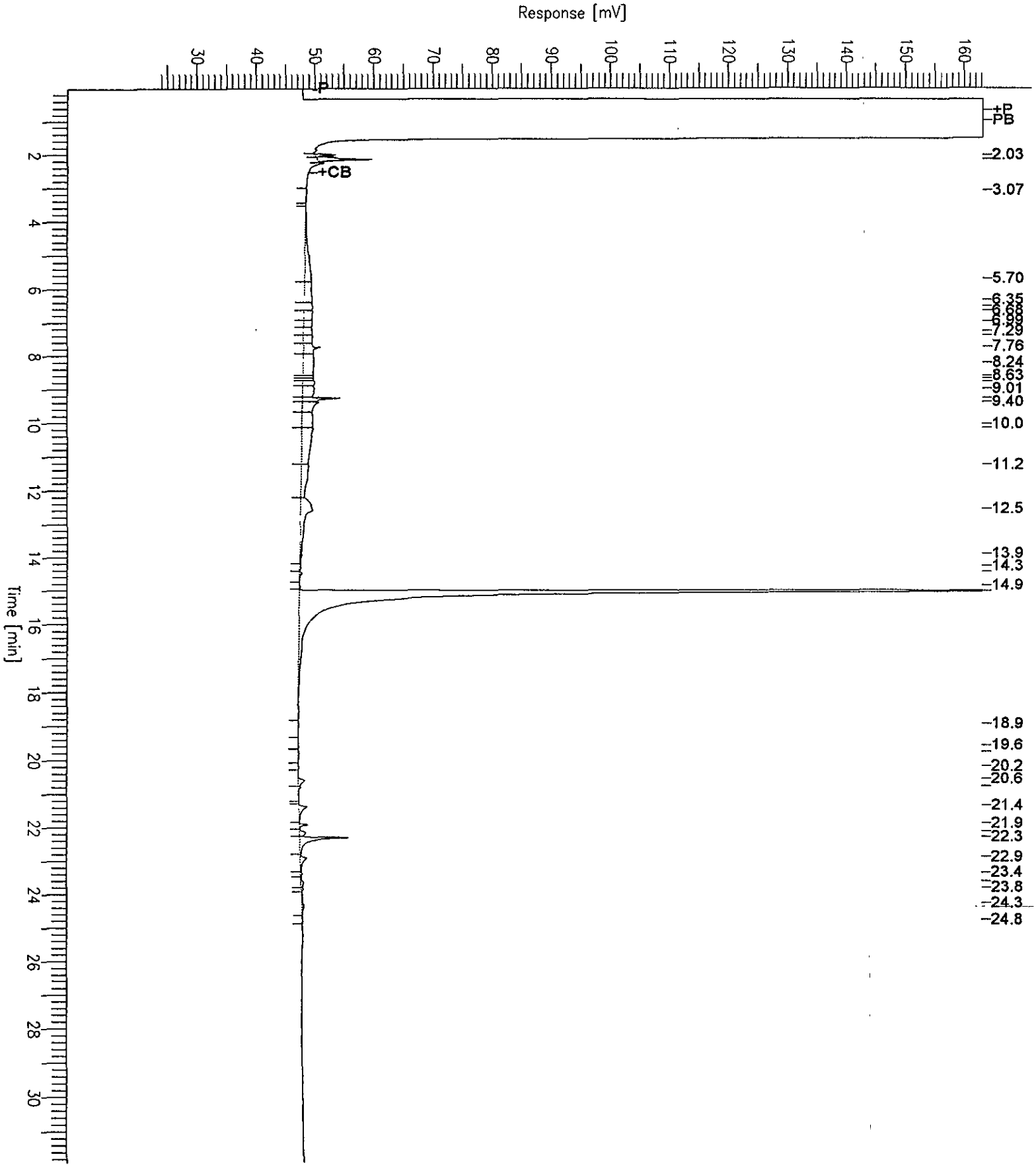
Sample #: 41231 Page 1 of 1
Date : 6/5/98 11:17 AM
Time of Injection: 6/5/98 09:18 AM
Low Point : 32.98 mV High Point : 163.27 mV
Plot Scale: 130.3 mV



GC15 Channel B TEH

Sample Name : 133806-002,41231
FileName : C:\GC15\CHB\154B060.RAW
Method : B155TEH.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 24 mV

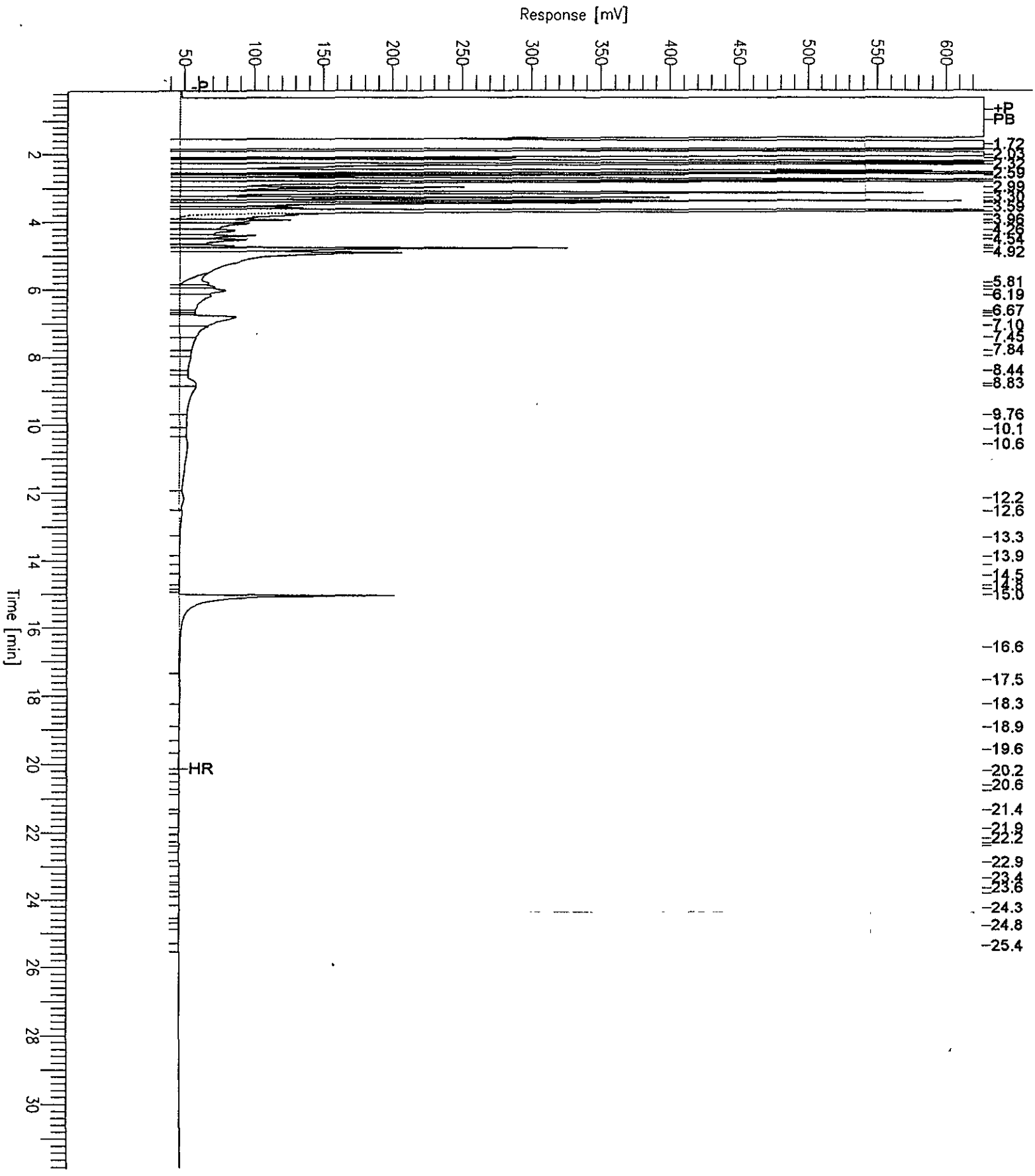
Sample #: 41231 Page 1 of 1
Date : 6/5/98 11:18 AM
Time of Injection: 6/5/98 10:01 AM
Low Point : 23.72 mV High Point : 163.31 mV
Plot Scale: 139.6 mV



GC15 Channel B TEH

Sample Name : 133806-003,41231
FileName : C:\GC15\CHB\154B061.RAW
Method : B155TEH.MTH
Start Time : 0.12 min End Time : 31.85 min
Scale Factor: 0.0 Plot Offset: 32 mV

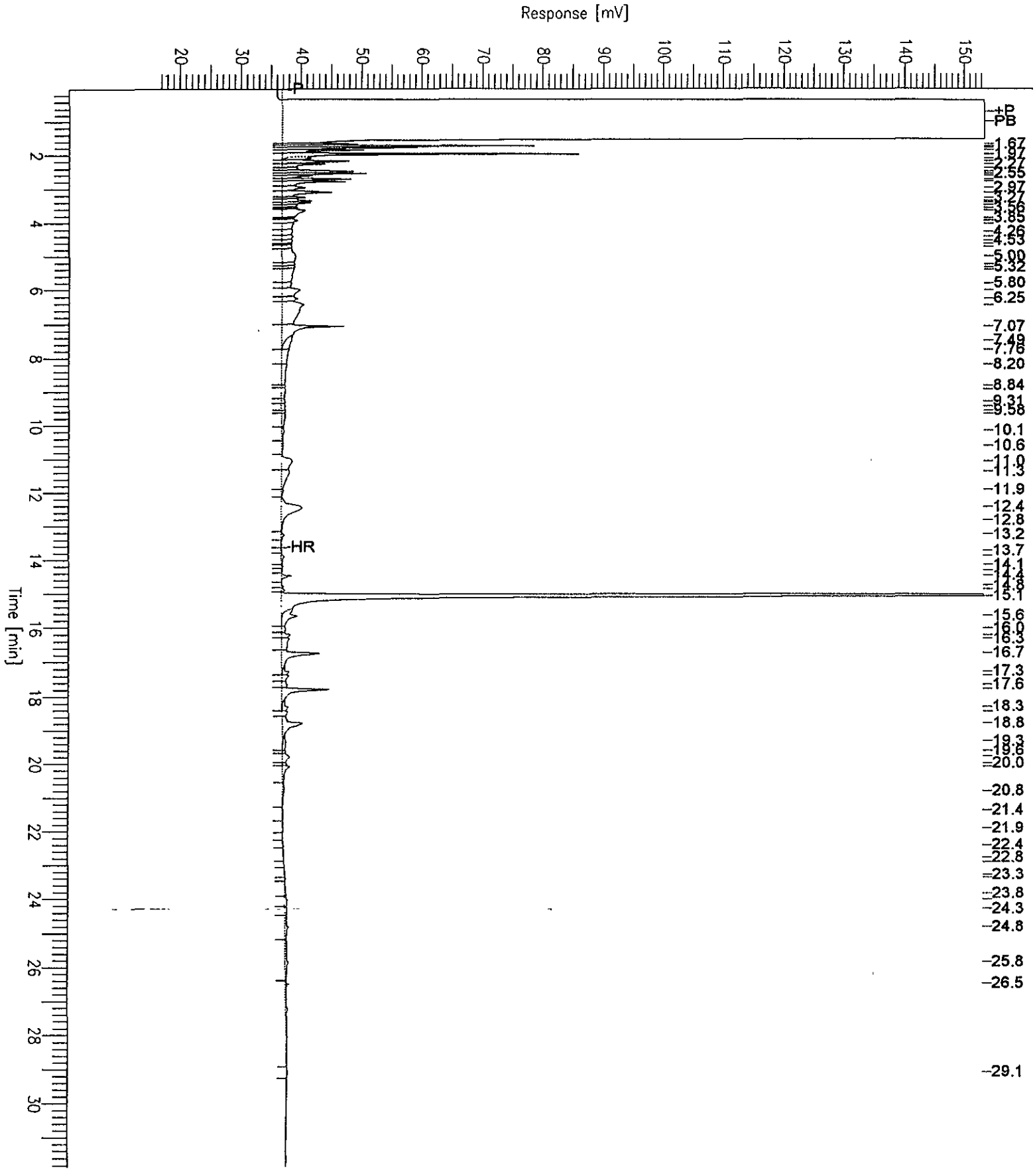
Sample #: 41231 Page 1 of 1
Date : 6/5/98 11:55 AM
Time of Injection: 6/5/98 10:44 AM
Low Point : 32.46 mV High Point : 628.30 mV
Plot Scale: 595.8 mV



GC15 Channel B TEH

Sample Name : 133806-006,41180
FileName : C:\GC15\CHB\151B063.RAW
Method : B152TEH.MTH
Start Time : 0.01 min End Time : 31.85 min
Scale Factor: 0.0 Plot Offset: 17 mV

Sample #: 41180 Page 1 of 1
Date : 6/2/98 04:27 PM
Time of Injection: 6/2/98 09:03 AM
Low Point : 16.97 mV High Point : 153.46 mV
Plot Scale: 136.5 mV

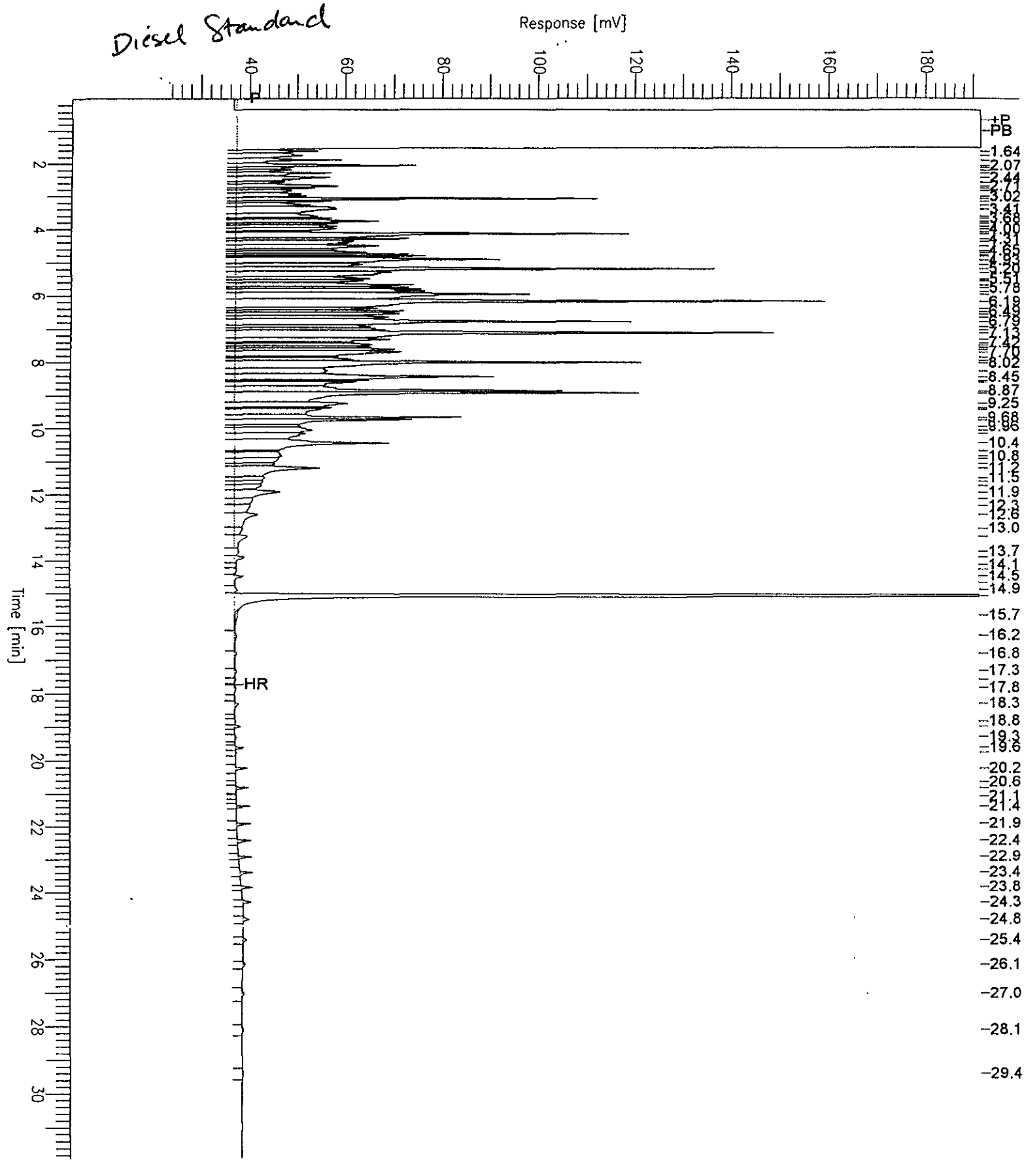


GC15 Channel B TEH

Sample Name : CCV,98WS5843,DS
FileName : C:\GC15\CHB\151B002.RAW
Method : B152TEH.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 22 mV

Sample #: 500MG/L Page 1 of 1
Date : 6/1/98 03:37 PM
Time of Injection: 5/31/98 01:31 PM
Low Point : 22.25 mV High Point : 191.55 mV
Plot Scale: 169.3 mV

Diesel Standard



TEH-Tot Ext Hydrocarbons	
Client: Weiss Associates	Analysis Method: EPA 8015M
Project#: 184-1358-1	Prep Method: CA LUFT

METHOD BLANK

Matrix:	Soil	Prep Date:	05/29/98
Batch#:	41180	Analysis Date:	06/02/98
Units:	mg/Kg		
Diln Fac:	1		

MB Lab ID: QC71798

Analyte	Result	
Diesel C12-C22	<1.0	
Surrogate	**%Rec**	**Recovery Limits**
Hexacosane	94	48-142

TEH-Tot Ext Hydrocarbons

Client:	Weiss Associates	Analysis Method:	EPA 8015M
Project#:	184-1358-1	Prep Method:	EPA 3520

METHOD BLANK

Matrix:	Water	Prep Date:	06/01/98
Batch#:	41231	Analysis Date:	06/04/98
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC71963

Analyte	Result	
Diesel C12-C22	<50	
Surrogate	**%Rec**	**Recovery Limits**
Hexacosane	80	53-136

TEH-Tot Ext Hydrocarbons	
Client: Weiss Associates	Analysis Method: EPA 8015M
Project#: 184-1358-1	Prep Method: CA LUFT

LABORATORY CONTROL SAMPLE	
Matrix: Soil	Prep Date: 05/29/98
Batch#: 41180	Analysis Date: 06/02/98
Units: mg/Kg	
Diln Fac: 1	

LCS Lab ID: QC71799

Analyte	Result	Spike Added	%Rec #	Limits
Diesel C12-C22	36.3	49.5	73	49-108
Surrogate	**%Rec**	**Limits**		
Hexacosane	87	48-142		

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: Weiss Associates	Analysis Method: EPA 8015M
Project#: 184-1358-1	Prep Method: EPA 3520

LABORATORY CONTROL SAMPLE	
Matrix: Water	Prep Date: 06/01/98
Batch#: 41231	Analysis Date: 06/09/98
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC71964

Analyte	Result	Spike Added	%Rec #	Limits
Diesel C12-C22	1822	2475	74	58-110
Surrogate	**%Rec**	**Limits**		
Hexacosane	92	53-136		

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:	Weiss Associates	Analysis Method:	EPA 8015M
Project#:	184-1358-1	Prep Method:	CA LUFT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID:	ZZZZZZ	Sample Date:	05/28/98
Lab ID:	133853-004	Received Date:	05/28/98
Matrix:	Soil	Prep Date:	05/29/98
Batch#:	41180	Analysis Date:	06/02/98
Units:	mg/Kg dry weight	Moisture:	19%
Diln Fac:	1		

MS Lab ID: QC71800

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Diesel C12-C22	61.11	<1.235	35.57	58	34-121
Surrogate	%Rec	Limits			
Hexacosane	71	48-142			

MSD Lab ID: QC71801

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	61.11	44	72	34-121	21	36
Surrogate	%Rec	Limits				
Hexacosane	83	48-142				

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

Lab #: 133806

BATCH QC REPORT

Curtis & Tompkins, Ltd.

TEH-Tot Ext Hydrocarbons

Client:	Weiss Associates	Analysis Method:	EPA 8015M
Project#:	184-1358-1	Prep Method:	EPA 3520

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID:	ZZZZZZ	Sample Date:	05/19/98
Lab ID:	133703-002	Received Date:	05/19/98
Matrix:	Water	Prep Date:	06/01/98
Batch#:	41231	Analysis Date:	06/09/98
Units:	ug/L		
Diln Fac:	1		

MS Lab ID: QC71965

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Diesel C12-C22	2475	<50	1897	76	58-110

Surrogate	%Rec	Limits
Hexacosane	98	53-136

MSD Lab ID: QC71966

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Diesel C12-C22	2475	1914	77	58-110	1	21

Surrogate	%Rec	Limits
Hexacosane	96	53-136

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

TVH-Total Volatile Hydrocarbons

Client: Weiss Associates
Project#: 184-1358-1
Analysis Method: EPA 8015M
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
133806-004	B-1-23'	41201	05/20/98	05/31/98	05/31/98	
133806-005	B-2-19.5'	41201	05/20/98	05/31/98	05/31/98	
133806-006	B-5-12'	41201	05/20/98	05/31/98	05/31/98	

Matrix: Soil

Analyte	Units	133806-004	133806-005	133806-006
Diln Fac:		1	1	1
Gasoline C7-C12	mg/Kg	<1	<1	27
Surrogate				
Trifluorotoluene	%REC	109	102	134
Bromofluorobenzene	%REC	100	94	117

BTXE

Client: Weiss Associates
Project#: 184-1358-1

Analysis Method: EPA 8020A
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
133806-004	B-1-23'	41201	05/20/98	05/31/98	05/31/98	
133806-005	B-2-19.5'	41201	05/20/98	05/31/98	05/31/98	
133806-006	B-5-12'	41209	05/20/98	06/01/98	06/01/98	

Matrix: Soil

Analyte	Units	133806-004	133806-005	133806-006
Diln Fac:		1	1	25
MTBE	ug/Kg	<20	<20	3800
Benzene	ug/Kg	<5	<5	280
Toluene	ug/Kg	<5	<5	600
Ethylbenzene	ug/Kg	<5	<5	<130
m,p-Xylenes	ug/Kg	<5	<5	340
o-Xylene	ug/Kg	<5	<5	150
Surrogate				
Trifluorotoluene	%REC	82	78	85
Bromofluorobenzene	%REC	77	74	84

TVH-Total Volatile Hydrocarbons

Client:	Weiss Associates	Analysis Method:	EPA 8015M
Project#:	184-1358-1	Prep Method:	EPA 5030

METHOD BLANK

Matrix:	Soil	Prep Date:	05/30/98
Batch#:	41201	Analysis Date:	05/30/98
Units:	mg/Kg		
Diln Fac:	1		

MB Lab ID: QC71859

Analyte	Result
Gasoline C7-C12	<1.0

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	110	53-157
Bromofluorobenzene	100	53-157

BTXE

Client:	Weiss Associates	Analysis Method:	EPA 8020A
Project#:	184-1358-1	Prep Method:	EPA 5030

METHOD BLANK

Matrix:	Soil	Prep Date:	05/30/98
Batch#:	41201	Analysis Date:	05/30/98
Units:	ug/Kg		
Diln Fac:	1		

MB Lab ID: QC71859

Analyte	Result
MTBE	<20
Benzene	<5.0
Toluene	<5.0
Ethylbenzene	<5.0
m,p-Xylenes	<5.0
o-Xylene	<5.0

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	84	53-126
Bromofluorobenzene	83	35-144

Lab #: 133806

BATCH QC REPORT

Curtis & Tompkins, Ltd.

BTXE

Client:	Weiss Associates	Analysis Method:	EPA 8020A
Project#:	184-1358-1	Prep Method:	EPA 5030

METHOD BLANK

Matrix:	Soil	Prep Date:	06/01/98
Batch#:	41209	Analysis Date:	06/01/98
Units:	ug/Kg		
Diln Fac:	1		

MB Lab ID: QC71882

Analyte	Result
MTBE	<20
Benzene	<5.0
Toluene	<5.0
Ethylbenzene	<5.0
m,p-Xylenes	<5.0
o-Xylene	<5.0

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	78	53-126
Bromofluorobenzene	74	35-144

Lab #: 133806 BATCH QC REPORT Curtis & Tompkins, Ltd.

TVH-Total Volatile Hydrocarbons

Client:	Weiss Associates	Analysis Method:	EPA 8015M
Project#:	184-1358-1	Prep Method:	EPA 5030

LABORATORY CONTROL SAMPLE

Matrix:	Soil	Prep Date:	05/30/98
Batch#:	41201	Analysis Date:	05/30/98
Units:	mg/Kg		
Diln Fac:	1		

LCS Lab ID: QC71857

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	9.42	10	94	78-120

Surrogate	%Rec	Limits
Trifluorotoluene	133	53-157
Bromofluorobenzene	100	53-157

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

BTXE

Client: Weiss Associates
Project#: 184-1358-1
Analysis Method: EPA 8020A
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 41201
Units: ug/Kg
Diln Fac: 1
Prep Date: 05/30/98
Analysis Date: 05/30/98

LCS Lab ID: QC71858

Analyte	Result	Spike Added	%Rec #	Limits
MTBE	95.9	100	96	65-135
Benzene	90.18	100	90	69-118
Toluene	92.57	100	93	73-118
Ethylbenzene	89.33	100	89	68-124
m,p-Xylenes	98.32	100	98	67-124
o-Xylene	93.01	100	93	73-127

Surrogate	%Rec	Limits
Trifluorotoluene	83	53-126
Bromofluorobenzene	82	35-144

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 6 outside limits

Lab #: 133806 BATCH QC REPORT Curtis & Tompkins, Ltd.

BTXE

Client: Weiss Associates
Project#: 184-1358-1
Analysis Method: EPA 8020A
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Soil
Batch#: 41209
Units: ug/Kg
Diln Fac: 1
Prep Date: 06/01/98
Analysis Date: 06/01/98

LCS Lab ID: QC71881

Analyte	Result	Spike Added	%Rec #	Limits
MTBE	95.09	100	95	65-135
Benzene	92.02	100	92	69-118
Toluene	94.45	100	94	73-118
Ethylbenzene	90.08	100	90	68-124
m,p-Xylenes	98.87	100	99	67-124
o-Xylene	93.95	100	94	73-127

Surrogate	%Rec	Limits
Trifluorotoluene	80	53-126
Bromofluorobenzene	77	35-144

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 6 outside limits

TVH-Total Volatile Hydrocarbons

Client:	Weiss Associates	Analysis Method:	EPA 8015M
Project#:	184-1358-1	Prep Method:	EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID:	ZZZZZZ	Sample Date:	05/18/98
Lab ID:	133704-003	Received Date:	05/19/98
Matrix:	Soil	Prep Date:	06/01/98
Batch#:	41201	Analysis Date:	06/01/98
Units:	mg/Kg dry weight	Moisture:	18%
Diln Fac:	1		

MS Lab ID: QC71860

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	12.2	<1.22	11.85	97	38-132

Surrogate	%Rec	Limits
Trifluorotoluene	137	53-157
Bromofluorobenzene	107	53-157

MSD Lab ID: QC71861

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	12.2	11.76	96	38-132	1	26

Surrogate	%Rec	Limits
Trifluorotoluene	140	53-157
Bromofluorobenzene	109	53-157

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

133806

Weiss Associates
Environmental and Geologic Services
5500 Shellmound Street, Emeryville, CA 94608
Phone: 510-450-6000 Fax: 510-547-5043
AguaTierra Associates Incorporated, DBA

Please send analytic results and a copy of the signed chain of custody form to:
Paul Nuti
Project ID: 184-1358-1

Lab Personnel:

PLEASE INCLUDE QA/QC DATA IF BOX IS CHECKED.

1) Specify analytic method and detection limit in report.
2) Notify us if there are any anomalous peaks in GC or other scans.
3) ANY QUESTIONS/CLARIFICATIONS: CALL US.

CHAIN-OF-CUSTODY RECORD AND ANALYTIC INSTRUCTIONS

Sampled by: CEB

Laboratory Name: Curtis + Tompkins

	No. of Containers	Sample ID	Container Type[1]	Sample Date	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analyze for	Analytic Method	Turn[5]	COMMENTS
1	2	B-1	W/Amber	5/20/98	32 oz.	N	Y	None	TPH-D	8015M	N	
	3	B-1	W/V		40 ml			HCL	TPH-G, BTEX, MTBE	8015M, 8020		
2	2	B-2	W/Amber		32 oz.			None	TPH-D	8015M		
	3	B-2	W/V		40 ml			HCL	TPH-G, BTEX, MTBE	8015M, 8020		
3	2	B-5	W/Amber		32 oz.			None	TPH-D	8015M		
	3	B-5	W/V		40 ml.			HCL	TPH-G, BTEX, MTBE	8015M, 8020		
-4	1	B-1-23'	soil		2"x6"			None	TPH-D, TPH-G, BTEX, MTBE	8015M, 8020		
-5	1	B-2-19.5'										
-6	1	B-5-12'										
-7	1	B-5-8'							HOLD	HOLD	HOLD	
-8	1	B-2-10'										
-9	1	B-2-5'										
-10	1	B-1-10'										

1 [signature] 5/22/98
Released by (Signature), Date

1 WA
Affiliation

2 [signature] 5/22/98
Received by (Signature), Date

2 C&T 11:00
Affiliation

3 _____
Released by (Signature), Date

3 _____
Affiliation

4 _____
Shipping Carrier, Method, Date

4 _____
Affiliation

5 _____
Released by (Signature), Date

5 _____
Affiliation

6 _____
Received by Lab Personnel, Date

6 _____
Affiliation, Telephone

x _____
Seal intact?

1 Sample Type Codes: W = Water, S = Soil, Describe Other; Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B - Clear/Brown Glass, Describe Other; Cap Codes: PT = Plastic, Teflon Lined 2 = Volume per container; 3 = Filtered YY/N); 4 = Refrigerated (Y/N)

5 Turnaround [N = Normal, W = 1 Week, R = 24 Hour, HOLD (write out)]

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