ecology and environment, inc.
12251 UNIVERSAL, TAYLOR, MICHIGAN 48180, TEL. (313) 946-0900
International Specialists in the Environment

US EPA RECORDS CENTER REGION 5
503907

MEMORANDUM

DATE: March 2, 1998

TO: Mark Ramaly, START Project Manager, E & E, Taylor, Michigan

FROM: Cheryl L. Elliott, START Chemist, E & E, Taylor, Michigan

THROUGH: Patrick Zwilling, START Assistant Program Manager, E & E, Chicago, Illinois
David Hendren, START Quality Assurance Officer, E & E, Chicago, Illinois

SUBJECT: Polychlorinated Biphenyl (PCB) Data Quality Assurance Review, MichCon "H", Detroit, Wayne County, Michigan

REFERENCE: Project TDD: S05-9801-020 Analytical TDD: S05-9802-803
Project PAN: 8J2001SIXX Analytical PAN: 8FAC01TAXX

The data quality assurance (QA) review of two solid-waste samples, collected from the MichCon "H" site, is complete. The samples were collected on February 6, 1998, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to Environmental Control Laboratories, Inc., (EC), Strongsville, Ohio, for analyses of PCBs. The laboratory analyses were performed according to the United States Environmental Protection Agency (U.S. EPA) Solid Waste-846 (SW-846) Method 8080 for the determination of PCB concentrations.

Sample Identification

START Identification No.	Laboratory Identification No.
S-1	9802-09003-001
S-2	9802-09003-002

recycled paper

Data Qualifications

I. Holding Time: Acceptable

The samples were collected on February 6, 1998, and received by the laboratory on February 9, 1998. The samples were extracted on February 9, 1998 and analyzed on February 10, 1998. All analyses were completed within the 14 days from collection to extraction and 40 days from extraction to analysis holding time specified in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01.

II. Instrument Performance: Acceptable

All raw chromatograms were reviewed for adequate peak resolution, and all had adequate resolution between peaks of each Aroclor standard. All retention time windows for the samples and check calibration standards were reported and compared to the standard chromatograms for agreement.

III. Calibration:

A. Initial Calibration: Acceptable

A five-point calibration was performed using an Aroclor 1016/1260 mixture. Percent standard deviations (%RSDs) for each peak of interest was less than or equal to 20%. A standard chromatogram of each of the remaining five reported Aroclors was obtained to aid in pattern recognition.

B. Continuing Calibration: Acceptable

Continuing calibrations were performed for all Aroclors of interest. Percent differences (%D) for all Aroclors were less than or equal to 15%.

IV. Method Blank: Acceptable

Method blanks were analyzed on each day in the proper sequence, and all target compounds were below the instrument detection limits.

V. Compound Identification: Acceptable

The sample chromatograms were compared with standard chromatograms, and sample S-1 appeared to have the associated fingerprint pattern of Aroclor-1254.

VI. Compound Quantitation and Reported Detection Limits: Acceptable

All reported detection limits have been correctly adjusted to reflect dilutions.

VII. Overall Assessment of Data: Acceptable

The overall usefulness of the data is based on the criteria outlined in OSWER Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 7.0, PCBs, and Section 2.7, Quality Assurance Requirements. Based upon the information provided, the data are acceptable for use as reported.

ENVIRONMENTAL CONTROL LABORATORIES INC.

21337 Drake Road
Strongsville, Ohio 44136
(440) 238-6100
FAX: (440) 238-6294

Ms. Karen Dieckhaus
Ecology & Environment

12251 Universal
Taylor, MI 48180

E. C. Lab #: 9802-09003
Received Date: 2/09/98
Report Date: 2/10/98

Purchase Order #:

Subject: KJ5103 / Proj #S05-9802-803 (rush)

Sample No: 001
Client I.D. S-1 (C-1)
Sample Date: 2/06/1998
Matrix: Solid

BNA Extract:
PCB Extract: 2/09/98
Pest Extract:

Analyte	Method	Detection Limit	Results	Units	Analysis Date
POLYCHLORINATED BIPHENYLS					2/10/98
PCB 1016	8082	1000	BDL	mg/Kg	2/10/98
PCB 1221	8082	1000	BDL	mg/Kg	2/10/98
PCB 1232	8082	1000	BDL	mg/Kg	2/10/98
PCB 1242	8082	1000	BDL	mg/Kg	2/10/98
PCB 1248	8082	1000	BDL	mg/Kg	2/10/98
PCB 1254	8082	1000	100000	mg/Kg	2/10/98
PCB 1260	8082	1000	BDL	mg/Kg	2/10/98
TCMX (SURR)			**	41 - 140%	2/10/98

** Surrogate recovery unavailable due to require dilution.

Note:BDL(Below Detection Limit)

Signed:
Robert S. Crookston
Laboratory Director

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Taylor, MI 48180

E. C. Lab #: 9802-09003
Received Date: 2/09/98
Report Date: 2/10/98

Purchase Order #:

Subject: KJ5103 / Proj #S05-9802-803 (rush)

Sample No: 002
Client I.D. S-2 (C-2)
Sample Date: 2/06/1998
Matrix: Solid

BNA Extract:
PCB Extract: 2/09/98
Pest Extract:

Analyte	Method	Detection Limit	Results	Units	Analysis Date
POLYCHLORINATED BIPHENYLS					2/10/98
PCB 1016	8082	1.0	BDL	mg/Kg	2/10/98
PCB 1221	8082	1.0	BDL	mg/Kg	2/10/98
PCB 1232	8082	1.0	BDL	mg/Kg	2/10/98
PCB 1242	8082	1.0	BDL	mg/Kg	2/10/98
PCB 1248	8082	1.0	BDL	mg/Kg	2/10/98
PCB 1254	8082	1.0	BDL	mg/Kg	2/10/98
PCB 1260	8082	1.0	BDL	mg/Kg	2/10/98
TCMX (SURR)			100	41 - 140%	2/10/98

Note:BDL(Below Detection Limit)

Signed: Robert S. Crookston
Laboratory Director

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Ecology & Environment

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E. C. Lab #: 9802-09003
Received Date: 2/09/98

QUALITY CONTROL REPORT (SPIKE DATA)

Analyte	Spike Recovery	Spike DUP Recovery	% RPD	Date	Batch #
PCB 1248	87	88	1.1	2/09/98	35892

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E. C. Lab #: 9802-09003
Received Date: 2/09/98

QUALITY CONTROL REPORT (BATCH BLANK)

Analyte	Result	Units	Date	Batch #
PCB 1016	<0.001	mg/Kg	2/09/98	35892
PCB 1221	<0.001	mg/Kg	2/09/98	35892
PCB 1232	<0.001	mg/Kg	2/09/98	35892
PCB 1242	<0.001	mg/Kg	2/09/98	35892
PCB 1248	<0.001	mg/Kg	2/09/98	35892
PCB 1254	<0.001	mg/Kg	2/09/98	35892
PCB 1260	<0.001	mg/Kg	2/09/98	35892

ecology and environment, inc.

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International Specialists in the Environment

Date: 2/12/98	Time: 1050
Project Code Number:	Total Number of Pages (including cover sheet): 3
To: Ralph Dollhopf	
Company:	
Fax Number:	
From: C. L. Elliott	Ecology & Environment Fax: (734)946-0488

recycled paper

January 30, 1997

I supervised Todd Dennis on an industrial cleanup job in Cleveland from January 22, 1997 through January 25, 1997 for more than 24 working hours. I observed Todd as he donned appropriate personal protective equipment, including a full face respirator and protective clothing; decontaminated equipment; and demonstrated the skills that he learned during his OSHA 40 hour HAZWOPER training.

Sincerely,

David Steinhoff
Field Manager/Supervisor
Ameriwaste Environmental
6111 Carey Drive
Valley View, OH 44125

ECOLOGY & ENVIRONMENT, INC.
LABORATORY DATA PACKAGE DELIVERABLE REQUIREMENTS

*** Note: E & E, Inc., requires the following information in order to perform data validation. The data validation is based on limits and guidelines specified in the U.S. EPA 1990 OSWER Directive 9360.4-01.

POLYCHLORINATED BIPHENYLS BY GC/ECD - QA LEVEL II

1. **Case Narrative:**
   - Observations and/or problems.
   - Methods used.

2. **Sample Holding times:**
   - Extraction dates.
   - Analysis dates.

3. **Analytical Results for:**

   Initial Calibration:
   - 3-point calibration for each reported Aroclor.
   - Response factors (RF).
   - Percent relative standard deviations (%RSD).

   Continuing Calibration:
   - Percent differences (%D).

   Method Blanks:
   - Detection limits.
   - Amount detected in blank.

   Matrix Spike/Matrix Spike Duplicate, if applicable:
   - Percent recoveries.
   - Relative percent differences (RPD).

   Surrogates:
   - Percent recoveries.
   - Control limits.

4. **Copies of Raw Data for all Analytical Results:**
   - Sample chromatograms.
   - Standard chromatograms.
   - Dissimilar column analysis or GC/MS required for all positive results.
   - Analytical run sequence.

5. **Compound Quantitation Calculations:**
   - Analyte concentrations.
   - Dry weights, if applicable.

NOTE: Provide a written calculation for each positive result.

NOTE: Results for soils/solids must be corrected for percent moisture.

6. **Chain-of-Custody:**
   - Photocopy of COC form.

ECOLOGY & ENVIRONMENT, INC.

ADDITIONAL TERMS AND CONDITIONS
APPLICABLE TO
SUBCONTRACTOR ANALYTICAL SERVICES
UNDER GOVERNMENT CONTRACTS

A. DISPOSAL - Unless otherwise directed by E & E, the seller shall be responsible for the disposition or ultimate disposal of any remaining sample materials in compliance with all applicable Federal, State, and Local laws and regulations. Also, upon E & E's request, the seller shall promptly provide at its' own expense all pertinent information and records to document that such disposition or ultimate disposal has been performed in compliance with governing regulations.

B. NOTIFICATION - The seller shall notify E & E immediately of any circumstances encountered which may impair the satisfactory performance of services in accordance with project specifications (including but not limited to holding time requirements, satisfactory QC spike recoveries and analysis of specified QA samples). Failure to notify E & E in a timely manner and to implement corrective actions as mutually agreed to shall warrant contract termination.

C. DELINQUENCY - It is understood that upon failure by the seller to perform any element of this Order, as outlined in the scope of work, design, specifications, methods of analysis, documentation, and timely delivery of articles or services hereunder, E & E shall make an equitable adjustment to the amount due according to the following schedule :

1. Failure to meet non-standard delivery date shall result in forfeiture of all surcharge or premium price differentials;

2. Failure to meet standard delivery date shall result in a penalty, applied to the total order cost, of 2% for each 24-hour period up to 10 calendar days, and 5% for each 24-hour period thereafter, up to a maximum of 75% total cost reduction.

CONTINUING CALIBRATION DATA REPORT

Ecology & Environment, Inc.
Project #: KJ5103

Section Includes.

- Continuing Calibration Information
  - 1248 Daily calibration check
  - 1016-1260 Daily calibration check
  - 1254 Calibration

Software Version: 4.0<4J28>
Date: 2/10/98 10:23 AM
Sample Name : 1ppm 1248
Data File : C:\TC4\PCB2\PCB3583.RAW Date: 2/10/98 09:50 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 36 Channel : A
Instrument : PCB Rack/Vial: 0/21 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.493	2547815.35	BB	1.0000e-06	2.5478	
2	3.106	43086.25	BB	1.0000e-06	0.0431	
3	5.213	260565.67	BB	1.0000e-06	0.2606	
0	8.700	0.00		----------	0.0000	TCMX(surrogate)
4	11.121	4523.72	BB	1.0000e-06	0.0045	
5	12.724	249062.63	BB	1.0000e-06	0.2491	
6	13.548	104488.48	BB	1.0000e-06	0.1045	
7	13.854	68357.76	BV	1.0000e-06	0.0684	
8	14.118	829150.38	VB	1.0000e-06	0.8292	
9	14.742	188594.05	BB	1.0000e-06	0.1886	
10	14.984	36593.25	BB	1.0000e-06	0.0366	
11	15.317	547439.49	BV	1.0000e-06	0.5474	
12	15.522	686034.93	VB	1.0000e-06	0.6860	
13	16.161	4695.35	BB	1.0000e-06	0.0047	
14	16.558	529961.48	BV	1.0000e-06	0.5300	
15	16.713	151818.46	VV	1.0000e-06	0.1518	
16	17.021	510302.68	VV	1.0000e-06	0.5103	
17	17.321	458372.28	VV	1.0000e-06	0.4584	
18	17.524	584695.16	VV	1.0000e-06	0.5847	
19	17.763	675088.46	VV	1.0000e-06	0.6751	
20	18.059	149297.87	VV	1.0000e-06	0.1493	
21	18.295	206933.35	VV	1.0000e-06	0.2069	
22	18.568	102821.79	VV	1.0000e-06	0.1028	
23	18.813	586630.46	VB	1.0000e-06	0.5866	
24	19.322	82813.85	BB	1.0000e-06	0.0828	
25	19.601	115258.19	BV	1.0000e-06	0.1153	
26	19.824	148298.29	VB	1.0000e-06	0.1483	
27	20.092	123345.77	BV	1.0000e-06	0.1233	
28	20.229	318281.37	VV	1.0000e-06	0.3183	
29	20.449	17769.27	VV	1.0000e-06	0.0178	
30	20.656	339394.16	VE	1.0000e-06	0.3394	
31	20.881	20975.65	EB	1.0000e-06	0.0210	
32	21.133	124708.39	BV	1.0000e-06	0.1247	
33	21.380	13424.59	VB	1.0000e-06	0.0134	
34	21.931	38868.06	BV	1.0000e-06	0.0389	
35	22.235	221982.67	VB	1.0000e-06	0.2220	
36	22.788	68963.18	BB	1.0000e-06	0.0690	
37	25.116	46998.87	BB	1.0000e-06	0.0470	
		11207411.61		0.0000	11.2074	

2-10-98

Av = 6126838
86%

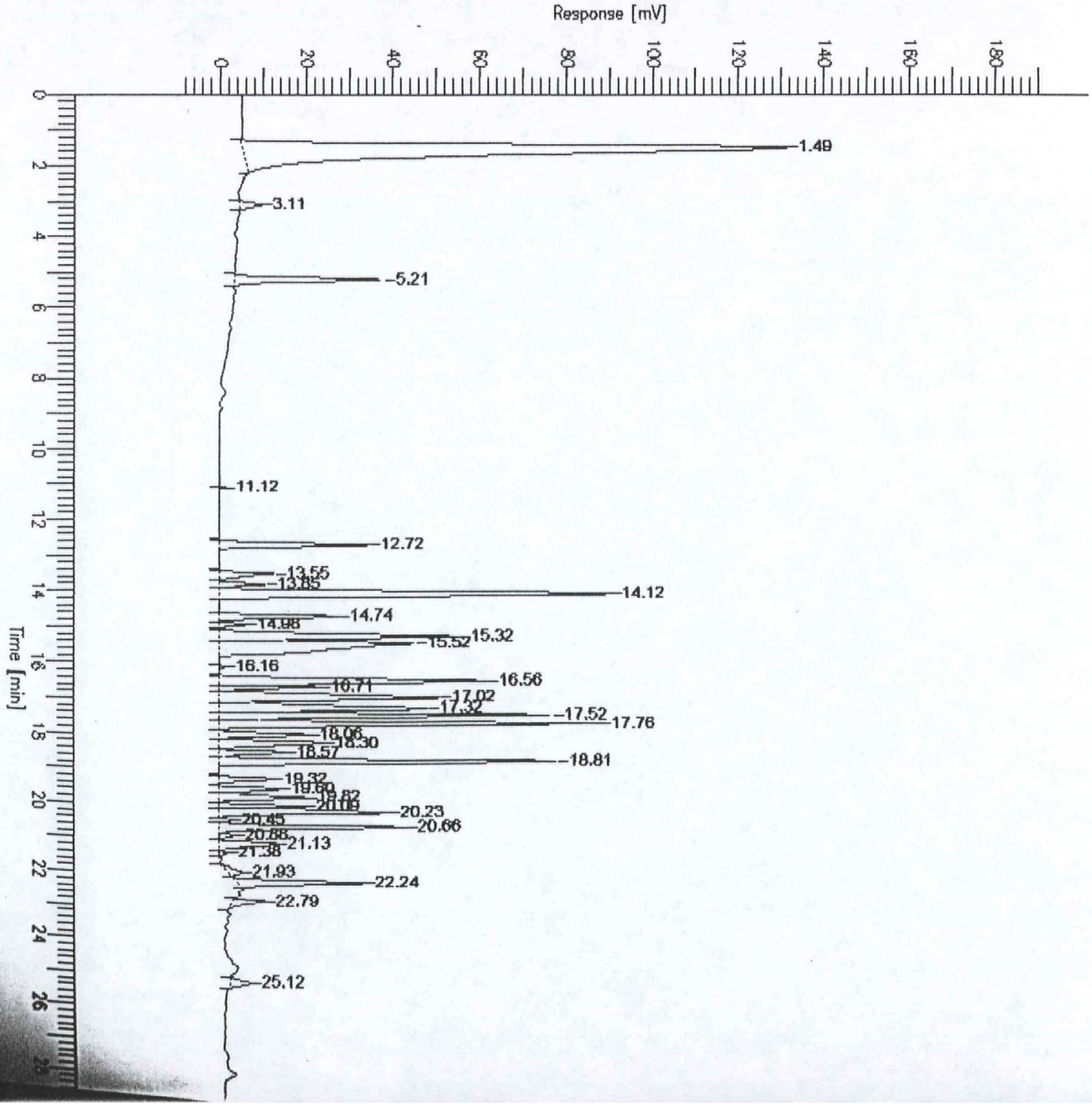
Missing Component Report

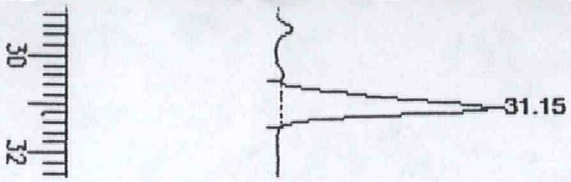
Component	Expected Retention (Calibration File)
TCMX(surrogate)	8.700

Chromatogram

Sample Name : 1ppm 1248
FileName : C:\TC4\PCB2\PCB3583.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -10 mV

Sample #: 221 Page 1 of 1
Date : 2/10/98 10:23 AM
Time of Injection: 2/10/98 09:50 AM
Low Point : -10.00 mV High Point : 190.00 mV
Plot Scale: 200.0 mV





Daily Calibration Check STD

Software Version: 4.044J28r
Date: 2/10/98 12:13 PM
Sample Name : 1ppm 1016-1260
Data File : C:\TC4\PCB2\PCB3585.RAW Date: 2/10/98 11:07 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 38 Channel : A
Instrument : PCB Rack/Vial: 0/23 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT STD RECOVERIES (%)

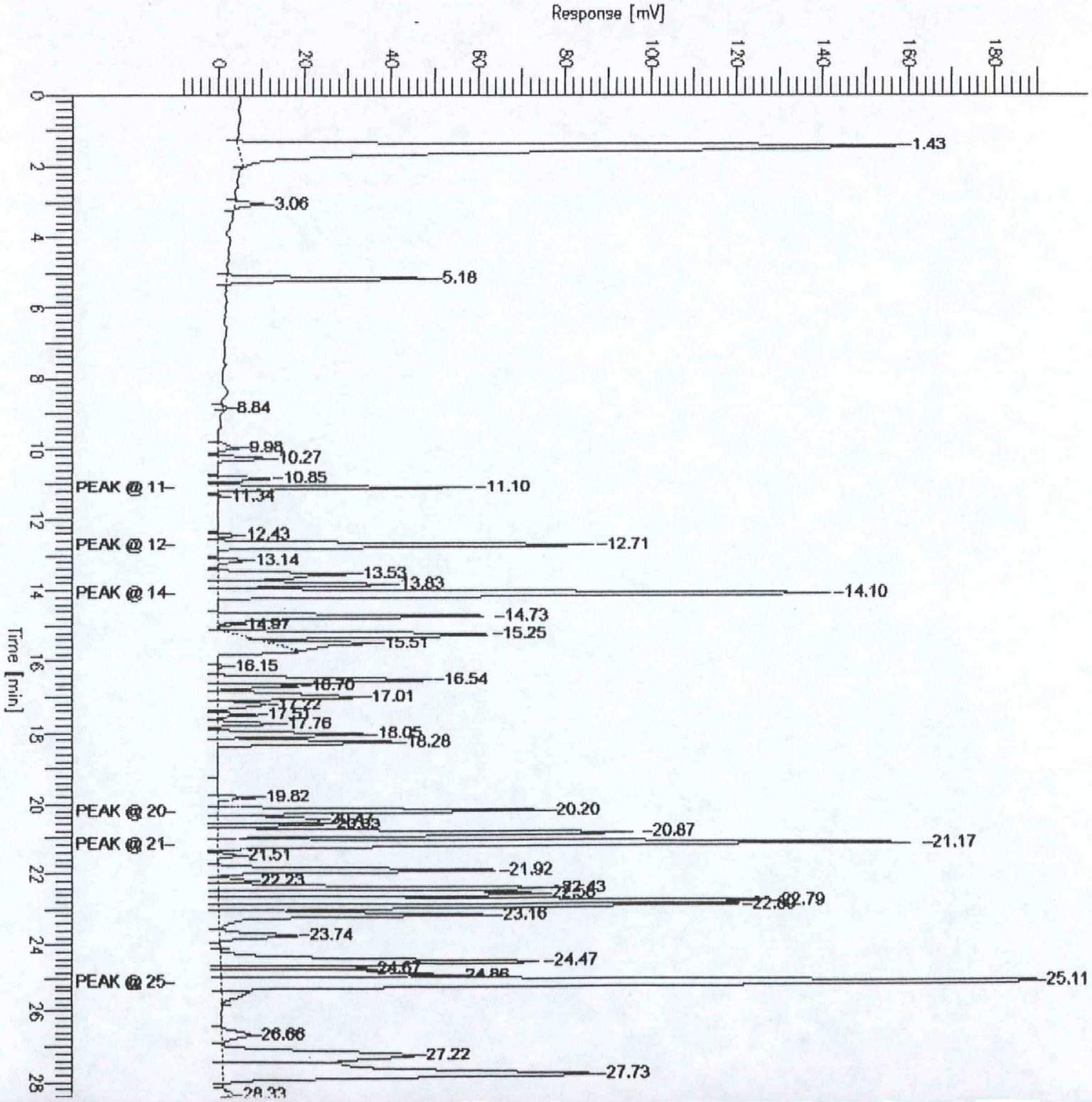
Peak #	Time [min]	Area [uV*sec]	BL	ppm for std peaks	Component Name
8	11.102	386231.34	BB	0.7552	peak @ 11.1 min
11	12.707	657209.63	BB	0.7548	peak @ 12.7 min
15	14.098	1308330.37	VV	0.7833	peak @ 14.1 min
30	20.203	606028.55	*BV	0.9434	peak @ 20.2 min
34	21.173	1314954.32	*VB	0.9098	peak @ 21.1 min
47	25.107	2519005.91	*VB	0.9699	peak @ 25.1 min
		6791760.11		5.1165	

$\frac{5.1165}{6} = 85\%$

Chromatogram

Sample Name : 1ppm 1016-1260
FileName : C:\TC4\PCB2\PCB3585.RAW
Method : PCBQ1D.MTH
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -10 mV

Sample #: 221 Page 1 of 1
Date : 2/10/98 12:13 PM
Time of Injection: 2/10/98 11:07 AM
Low Point : -10.00 mV High Point : 190.00 mV
Plot Scale: 200.0 mV



Software Version: 4.044J28
Date: 2/10/98 11:01 AM
Sample Name : 1ppm 1254
Data File : C:\TC4\PCB2\PCB3584.RAW Date: 2/10/98 10:29 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 37 Channel : A
Instrument : PCB Rack/Vial: 0/22 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.496	2697575.76	BB	1.0000e-06	2.6976	
2	3.102	97376.43	BB	1.0000e-06	0.0974	
3	5.210	522533.54	BB	1.0000e-06	0.5225	
4	5.561	5536.77	BB	1.0000e-06	0.0055	
5	8.417	14222.40	BB	1.0000e-06	0.0142	
6	8.861	5673.22	BB	1.0000e-06	0.0057	TCMX(surrogate)
7	14.140	12361.06	BB	1.0000e-06	0.0124	
8	15.325	327273.37	BV	1.0000e-06	0.3273	
9	15.511	73638.87	VB	1.0000e-06	0.0736	
10	16.558	186140.98	BB	1.0000e-06	0.1861	
11	17.022	54886.45	BB	1.0000e-06	0.0549	
12	17.324	56140.96	BV	1.0000e-06	0.0561	
13	17.525	331204.89	VB	1.0000e-06	0.3312	
14	17.761	96056.97	BB	1.0000e-06	0.0961	
15	18.060	622988.58	BV	1.0000e-06	0.6230	
16	18.288	793987.24	VV	1.0000e-06	0.7940	
17	18.567	278741.63	VB	1.0000e-06	0.2787	
18	18.807	52053.65	BB	1.0000e-06	0.0521	
19	19.321	218603.96	BB	1.0000e-06	0.2186	
20	19.596	286027.12	BV	1.0000e-06	0.2860	
21	19.828	529607.32	VB	1.0000e-06	0.5296	
22	20.229	1347825.94	BE	1.0000e-06	1.3478	
23	20.454	141396.36	EV	1.0000e-06	0.1414	
24	20.658	1228138.89	VV	1.0000e-06	1.2281	
25	20.883	491426.53	VV	1.0000e-06	0.4914	
26	21.179	829871.64	VE	1.0000e-06	0.8299	
27	21.389	23699.84	EV	1.0000e-06	0.0237	
28	21.522	50093.03	VB	1.0000e-06	0.0501	
29	21.731	8548.73	BV	1.0000e-06	0.0085	
30	21.928	213953.05	VB	1.0000e-06	0.2140	
31	22.238	571087.04	BV	1.0000e-06	0.5711	
32	22.422	369720.93	VV	1.0000e-06	0.3697	
33	22.585	406402.88	VV	1.0000e-06	0.4064	
34	22.787	1089154.28	VV	1.0000e-06	1.0892	
35	23.186	122896.19	VV	1.0000e-06	0.1229	
36	23.346	88734.97	VB	1.0000e-06	0.0887	
37	24.697	669208.36	BV	1.0000e-06	0.6692	
38	25.120	283299.27	VB	1.0000e-06	0.2833	
39	27.744	144541.53	BB	1.0000e-06	0.1445	

$A_s = 8526489$

$R_F = 0.00000117$

15342630.60 0.0000 15.3426

Missing Component Report

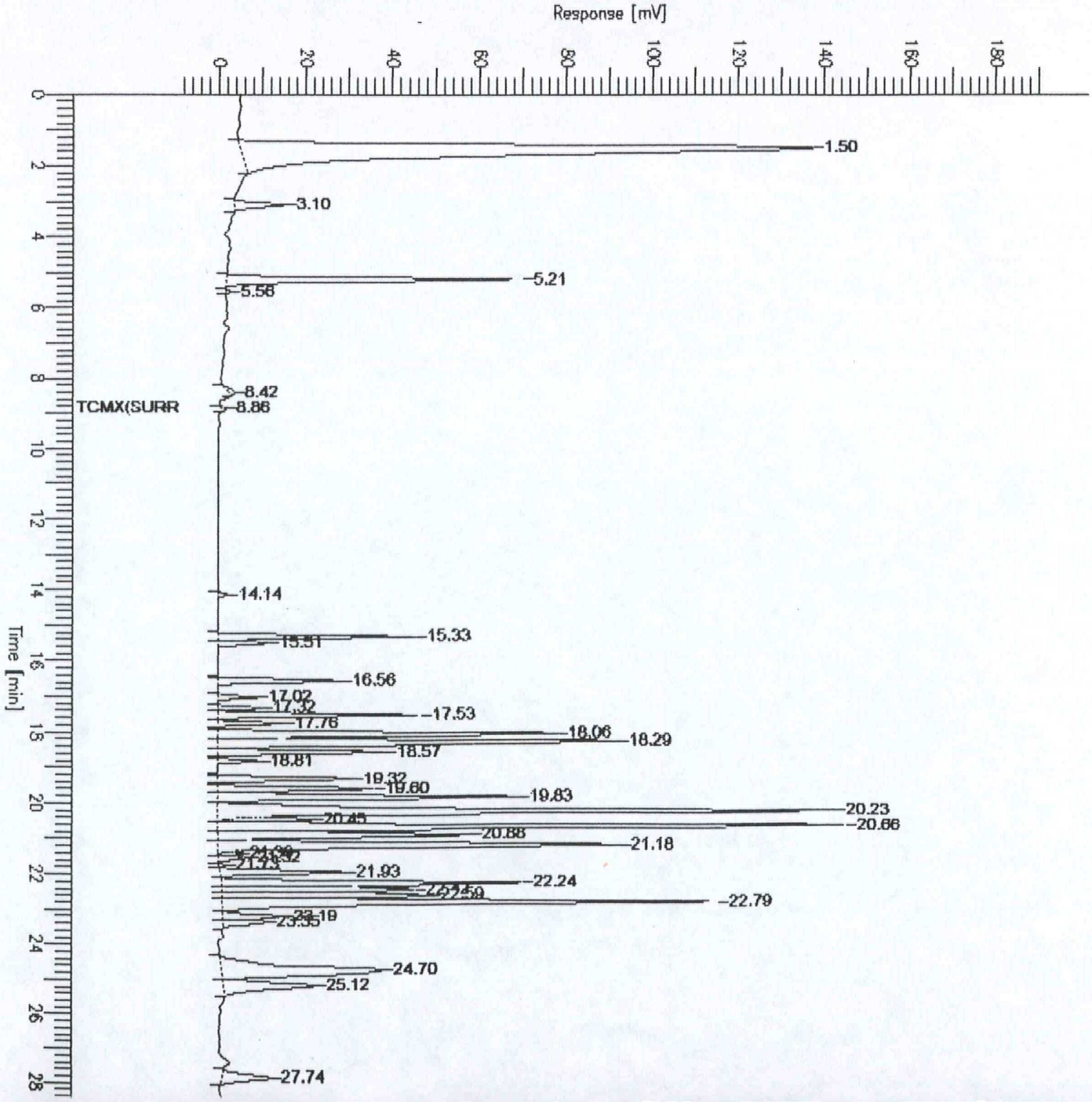
Component	Expected Retention (Calibration File)

All components were found

Chromatogram

Sample Name : 1ppm 1254
FileName : C:\TC4\PCB2\PCB3584.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -10 mV

Sample #: 221 Page 1 of 1
Date : 2/10/98 11:01 AM
Time of Injection: 2/10/98 10:29 AM
Low Point : -10.00 mV High Point : 190.00 mV
Plot Scale: 200.0 mV



Case Narrative

Two samples identified as Project KJ 5103 were received Monday, February 9, 1998. Each sample was to be analyzed for PCB. Each sample was prepared for PCB extract the day of receipt. Analysis via GC was conducted Tuesday, February 10, 1998. Faxed results were released to Ecology and Environment at 3 30 PM, February 10, 1998. The elevated PCB concentration found in sample 9802-09003-001 necessitated the use of a large dilution in order to quantitate results. As a consequence of the dilution, surrogate recoveries were not available. Normal protocol would require re-extraction of a second aliquot to meet surrogate acceptance criteria. Due to the turnaround requirements for the project re-extraction was not possible. Quantitation is based on the initial extraction and a 100,000X dilution for sample 9802-09003-001 and a 100X dilution for sample 9802-09003-002. The following pages detail the required Quality Control parameters.

RAW DATA REPORT

Ecology & Environment, Inc.
Project #: KJ5103

Section Includes:
Retention Times, Raw Chromatography

9802-09003-1	100,000X
	5,000X
	100X
9802-09003-2	5,000X
	100X

Software Version: 4.044J28
Date: 3/10/98 12:58 PM
Sample Name : 980209009-1 100,000x
Data File : C:\TC4\PCB2\PCB3587.RAW Date: 3/10/98 12:26 PM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 6 Channel : A
Instrument : PCB Rack/Vial: 0/2 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

10.0g → 10mL, 100,000X

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.415	2349449.02	BB	1.0000e-06	2.3494	~~a 13 (100,000)~~ KRE
2	3.062	17548.74	BB	1.0000e-06	0.0175	
3	5.178	293953.87	BB	1.0000e-06	0.2940	
4	8.843	5530.61	BB	1.0000e-06	0.0055	TCMX(surrogate) SURROGATE NOT REPORTED DUE TO HIGH DILUTION
5	15.312	287771.13	BV	1.0000e-06	0.2878	
6	15.498	76355.02	VB	1.0000e-06	0.0764	
7	16.547	183029.12	BB	1.0000e-06	0.1830	
8	17.012	81269.51	BB	1.0000e-06	0.0813	
9	17.312	91898.55	BV	1.0000e-06	0.0919	
10	17.510	379417.01	VV	1.0000e-06	0.3794	
11	17.746	137712.75	VV	1.0000e-06	0.1377	
12	18.049	605766.46	VV	1.0000e-06	0.6058	
13	18.279	813045.34	VV	1.0000e-06	0.8130	
14	18.556	342099.34	VB	1.0000e-06	0.3421	
15	18.796	74420.22	BB	1.0000e-06	0.0744	
16	19.309	214992.40	BB	1.0000e-06	0.2150	
17	19.584	310337.03	BV	1.0000e-06	0.3103	
18	19.816	532185.87	VV	1.0000e-06	0.5322	
19	20.219	1361835.93	VE	1.0000e-06	1.3618	
20	20.444	144670.28	EV	1.0000e-06	0.1447	
21	20.648	1303106.08	VV	1.0000e-06	1.3031	
22	20.872	463974.49	VV	1.0000e-06	0.4640	
23	21.168	857669.59	VE	1.0000e-06	0.8577	
24	21.372	28975.51	EV	1.0000e-06	0.0290	
25	21.514	42803.69	VB	1.0000e-06	0.0428	
26	21.712	10441.74	BV	1.0000e-06	0.0104	
27	21.916	209962.48	VV	1.0000e-06	0.2100	
28	22.227	620879.31	VV	1.0000e-06	0.6209	
29	22.414	362120.10	VV	1.0000e-06	0.3621	
30	22.570	379644.40	VV	1.0000e-06	0.3796	
31	22.773	1139941.85	VV	1.0000e-06	1.1399	
32	23.174	148381.31	VV	1.0000e-06	0.1484	
33	23.332	84566.89	VB	1.0000e-06	0.0846	
34	24.686	670220.77	BV	1.0000e-06	0.6702	
35	25.106	326191.12	VB	1.0000e-06	0.3262	
36	27.278	13669.19	BB	1.0000e-06	0.0137	
37	27.731	154659.80	BB	1.0000e-06	0.1547	
		15120496.49		0.0000	15.1205	

Av = 8754868
1.0 (100,000) =

100,000 ppm
1254

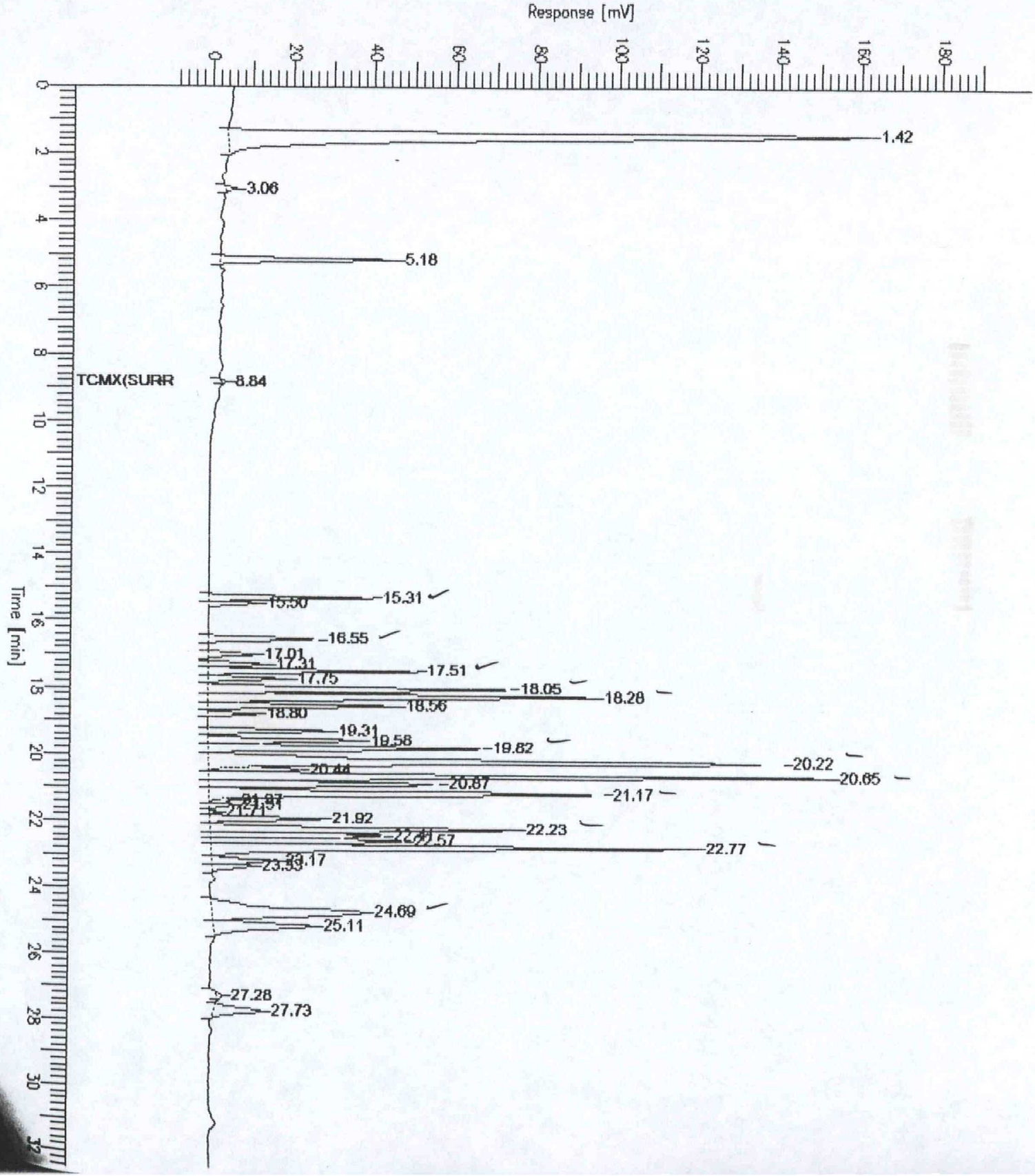
Missing Component Report
Component Expected Retention (Calibration File)

All components were found

Chromatogram

Name : 980209003-1 100,000x
Name : C:\TC4\PCB2\PCB3587.raw
thod : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -10 mV

Sample #: 222
Date : 2/10/98 12:58 PM
Time of Injection: 2/10/98 12:26 PM
Low Point : -10.00 mV High Point : 190.00 mV
Plot Scale: 200.0 mV



Software Version: 4.0x4J28>
Date: 2/9/98 11:13 PM
Sample Name : 980209009-1 5000x
Data File : C:\TC4\PCB2\PCB3563.RAW Date: 2/9/98 10:41 PM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 16 Channel : A
Instrument : PCB RaoM/Vial: 0/10 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.381	2317767.32	BB	1.0000e-06	2.3178	
2	3.028	36082.53	BB	1.0000e-06	0.0361	
3	5.150	226610.35	BB	1.0000e-06	0.2266	
0	8.700	0.00		----------	0.0000	TCMX(surrogate)
4	11.081	23731.45	BB	1.0000e-06	0.0237	
5	12.684	65828.45	BB	1.0000e-06	0.0658	
6	13.508	12739.33	BB	1.0000e-06	0.0127	
7	13.815	12763.43	BV	1.0000e-06	0.0128	
8	14.052	370805.62	VB	1.0000e-06	0.3708	
9	14.706	49766.04	BV	1.0000e-06	0.0498	
10	14.954	147852.48	VV	1.0000e-06	0.1479	
11	15.297	4119558.33	VV	1.0000e-06	4.1196	
12	15.482	2117787.00	VV	1.0000e-06	2.1178	
13	16.135	26840.80	VB	1.0000e-06	0.0268	
14	16.532	3396492.22	BV	1.0000e-06	3.3965	
15	16.998	1864478.55	VV	1.0000e-06	1.8645	
16	17.294	1914330.43	VV	1.0000e-06	1.9143	
17	17.495	5306766.47	VV	1.0000e-06	5.3068	
18	17.733	2448317.49	VV	1.0000e-06	2.4483	
19	18.046	8592868.02	VV	1.0000e-06	8.5929	
20	18.260	11499208.89	VV	1.0000e-06	11.4992	
21	18.540	5045522.12	VV	1.0000e-06	5.0455	
22	18.783	1797593.81	VV	1.0000e-06	1.7976	
23	19.293	3488912.62	VV	1.0000e-06	3.4889	
24	19.572	4921268.15	VV	1.0000e-06	4.9213	
25	19.806	8387623.07	VV	1.0000e-06	8.3876	
26	20.180	16919840.30	VV	1.0000e-06	16.9198	
27	20.428	2565636.88	VV	1.0000e-06	2.5656	
28	20.606	14582300.99	VV	1.0000e-06	14.5823	
29	20.858	6931753.32	VV	1.0000e-06	6.9318	
30	21.140	12875160.37	VE	1.0000e-06	12.8752	
31	21.349	648809.23	EV	1.0000e-06	0.6488	
32	21.499	1073632.95	VV	1.0000e-06	1.0736	
33	21.699	403008.64	VV	1.0000e-06	0.4030	
34	21.897	3707511.03	VV	1.0000e-06	3.7075	
35	22.206	9340984.94	VV	1.0000e-06	9.3410	
36	22.390	5080725.11	VV	1.0000e-06	5.0807	
37	22.559	5553117.58	VV	1.0000e-06	5.5531	
38	22.740	14302696.46	VV	1.0000e-06	14.3027	
39	23.152	2443190.17	VV	1.0000e-06	2.4432	
40	23.317	1587456.25	VV	1.0000e-06	1.5875	
41	23.720	237060.54	VB	1.0000e-06	0.2371	
42	24.664	10503679.31	BV	1.0000e-06	10.5037	
43	25.090	5800597.09	VB	1.0000e-06	5.8006	
44	26.625	63977.39	BB	1.0000e-06	0.0640	

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
45	27.263	997251.10	BV	1.0000e-06	0.9973	
46	27.697	3121585.31	VV	1.0000e-06	3.1216	
47	28.275	181044.84	VV	1.0000e-06	0.1810	
48	28.703	47764.50	VB	1.0000e-06	0.0478	
49	31.086	767464.44	BB	1.0000e-06	0.7675	
		1.88e+08		0.0000	187.9278	

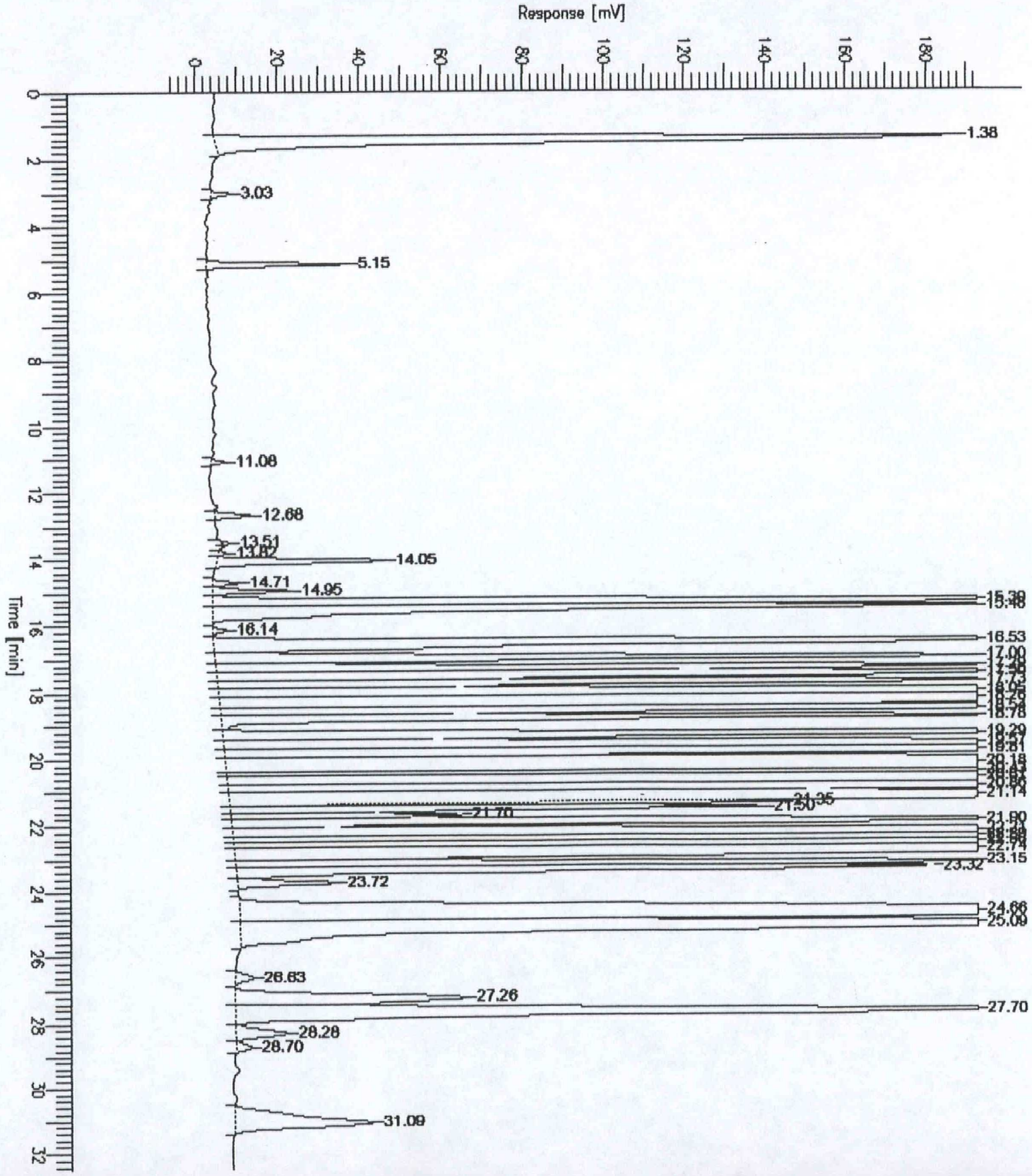
Missing Component Report

Component	Expected Retention (Calibration File)
TCMX(surrogate)	8.700

Chromatogram

Sample Name : 980209003-1 5000x
FileName : C:\TC4\PCB2\PCB3563.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -8 mV

Sample #: 220
Date : 2/9/98 11:13 PM
Time of Injection: 2/9/98 10:41 PM
Low Point : -7.56 mV High Point : 192.44 mV
Plot Scale: 200.0 mV



Software Version: 4.04J28>
Date: 2/9/98 06:38 PM
Sample Name : 980209003-1 100x
Data File : C:\TC4\PCB2\PCB3555.RAW Date: 2/9/98 06:05 PM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 8 Channel : A
Instrument : PCB Rack/Vial: 0/6 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.402	2255237.15	BB	1.0000e-06	2.2552	
2	3.135	267642.88	BB	1.0000e-06	0.2676	
3	3.597	96394.39	BB	1.0000e-06	0.0964	
4	3.939	4230.80	BB	1.0000e-06	0.0042	
5	4.492	40711.94	BB	1.0000e-06	0.0407	
6	5.178	173999.53	BV	1.0000e-06	0.1740	
7	5.395	120988.02	VB	1.0000e-06	0.1210	
8	7.248	5415.15	BB	1.0000e-06	0.0054	
9	7.622	14758.27	BB	1.0000e-06	0.0148	
10	8.618	31979.93	BB	1.0000e-06	0.0320	TCMX(surrogate)
11	9.245	5309.07	BB	1.0000e-06	0.0053	
12	9.989	108643.53	BV	1.0000e-06	0.1086	
13	10.277	183855.93	VV	1.0000e-06	0.1839	
14	10.587	28420.62	VV	1.0000e-06	0.0284	
15	10.859	209996.76	VV	1.0000e-06	0.2100	
16	11.110	827110.27	VV	1.0000e-06	0.8271	
17	11.348	71785.09	VB	1.0000e-06	0.0718	
18	12.441	128938.88	BV	1.0000e-06	0.1289	
19	12.716	1805786.10	VV	1.0000e-06	1.8058	
20	13.143	194057.95	VV	1.0000e-06	0.1941	
21	13.538	1101121.85	VV	1.0000e-06	1.1011	
22	13.841	715197.89	VV	1.0000e-06	0.7152	
23	14.107	9457046.59	VB	1.0000e-06	9.4570	
24	14.736	1479648.02	BV	1.0000e-06	1.4796	
25	14.982	3805523.97	VV	1.0000e-06	3.8055	
26	15.230	37212200.40	VV	1.0000e-06	37.2122	
27	16.159	1000998.49	VV	1.0000e-06	1.0010	
28	16.464	24298245.91	VV	1.0000e-06	24.2982	
29	16.937	1.25e+08	VV	1.0000e-06	124.5190	
30	19.230	2.56e+08	VV	1.0000e-06	255.8246	
31	23.754	6362028.50	VB	1.0000e-06	6.3620	
32	24.404	71817313.87	BB	1.0000e-06	71.8173	
33	26.654	2197525.05	BV	1.0000e-06	2.1975	
34	27.230	51435162.39	VV	1.0000e-06	51.4352	
35	28.328	5782192.33	VV	1.0000e-06	5.7822	
36	28.742	2113242.88	VV	1.0000e-06	2.1132	
37	29.505	786187.75	VB	1.0000e-06	0.7862	
38	30.416	502371.82	BV	1.0000e-06	0.5024	
39	31.124	24475438.67	VB	1.0000e-06	24.4754	
		6.31e+08		0.0000	631.4603	

Missing Component Report

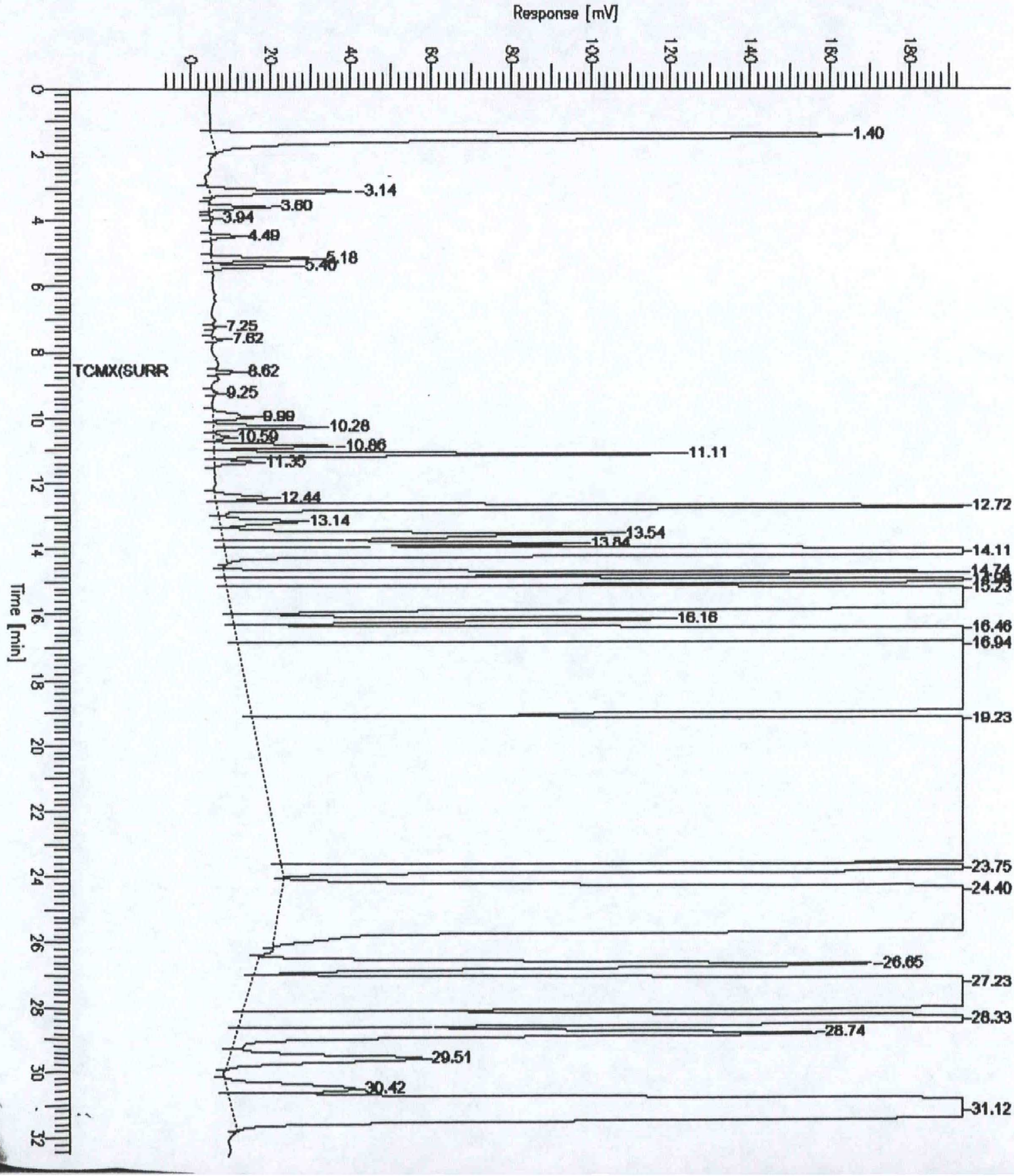
Component	Expected Retention (Calibration File)

All components were found

Chromatogram

Sample Name : 980209003-1 100x
FileName : C:\TC4\PCB2\PCB3555.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -6 mV

Sample #: 219 Page 1 of 1
Date : 2/9/98 06:38 PM
Time of Injection: 2/9/98 06:05 PM
Low Point : -6.31 mV High Point : 193.69 mV
Plot Scale: 200.0 mV



Software Version: 4.0x4J28x
Date: 3/10/98 12:29 AM
Sample Name : 980209003-2 5000x
Data File : C:\TC4\PCB2\PCB3565.RAW Date: 2/9/98 11:57 PM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 18 Channel : A
Instrument : PCB Rack/Vial: 0/11 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.370	2419620.38	BB	1.0000e-06	2.4196	
2	3.024	26943.45	BB	1.0000e-06	0.0269	
3	5.146	198876.70	BB	1.0000e-06	0.1989	
0	8.700	0.00		----------	0.0000	TCMX(surrogate)
4	15.288	15078.97	BB	1.0000e-06	0.0151	
5	16.526	8307.71	BB	1.0000e-06	0.0083	
6	17.487	19998.03	BB	1.0000e-06	0.0200	
7	18.026	36750.34	BV	1.0000e-06	0.0368	
8	18.253	54839.75	VV	1.0000e-06	0.0548	
9	18.533	20938.84	VB	1.0000e-06	0.0209	
10	19.293	9649.55	BB	1.0000e-06	0.0096	
11	19.558	14208.48	BV	1.0000e-06	0.0142	
12	19.796	30954.86	VB	1.0000e-06	0.0310	
13	20.195	76666.34	BB	1.0000e-06	0.0767	
14	20.625	73443.00	BV	1.0000e-06	0.0734	
15	20.852	20220.81	VB	1.0000e-06	0.0202	
16	21.140	47595.82	BB	1.0000e-06	0.0476	
17	21.899	6714.84	BB	1.0000e-06	0.0067	
18	22.204	34958.82	BB	1.0000e-06	0.0350	
19	22.551	7774.72	BV	1.0000e-06	0.0078	
20	22.749	53820.15	VB	1.0000e-06	0.0538	
21	24.653	8191.79	BB	1.0000e-06	0.0082	
		3185553.37		0.0000	3.1856	

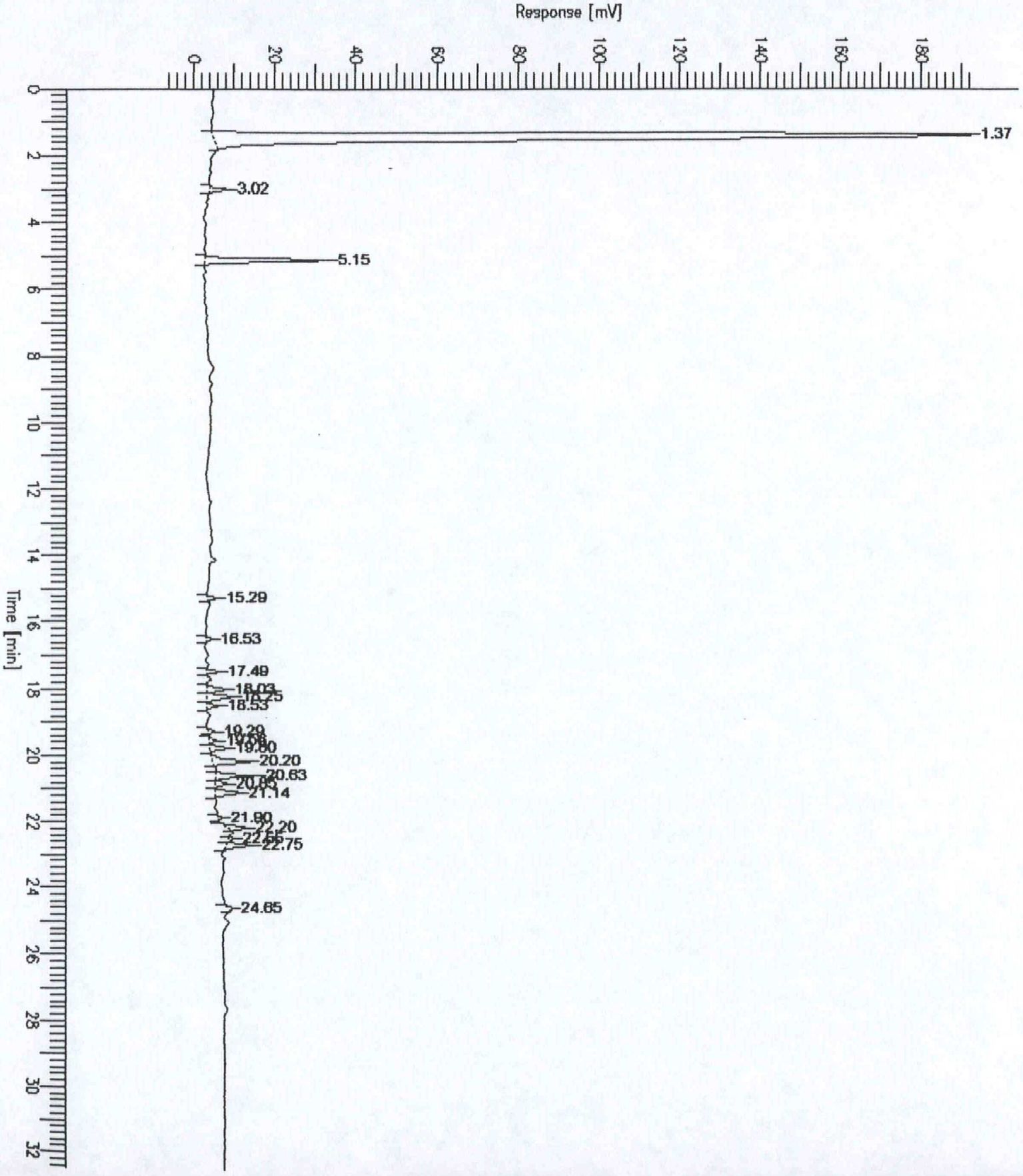
Missing Component Report

Component	Expected Retention (Calibration File)
TCMX(surrogate)	8.700

Chromatogram

Sample Name : 980209003-2 5000x
FileName : C:\TC4\PCB2\PCB3565.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -7 mV

Sample #: 220 Page 1 of 1
Date : 2/10/98 12:30 AM
Time of Injection: 2/9/98 11:57 PM
Low Point : -7.49 mV High Point : 192.51 mV
Plot Scale: 200.0 mV



Software Version: 4.0#4J28>
Date: 2/10/98 01:54 PM
Sample Name : 980209009-2 100x
Data File : C:\TC4\PCB2\PCB3588.RAW Date: 2/10/98 01:06 PM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 7 Channel : A
Instrument : PCB Rack/Vial: 0/3 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

10 g → 10 mL, 100X

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.447	2388175.21	BB	1.0000e-06	2.3882	
2	3.077	42782.00	BB	1.0000e-06	0.0428	
3	5.187	225075.28	BB	1.0000e-06	0.2251	
4	8.617	42282.01	BB	1.0000e-06	0.0423	TCMX(surrogate) 1.0 (100) = 100%
5	14.067	4640.25	BB	1.0000e-06	0.0046	
6	15.311	428251.11	BV	1.0000e-06	0.4283	
7	15.497	137035.04	VB	1.0000e-06	0.1370	
8	16.547	301733.64	BB	1.0000e-06	0.3017	
9	17.012	153742.27	BB	1.0000e-06	0.1537	
10	17.312	185762.87	BV	1.0000e-06	0.1858	
11	17.509	670474.10	VV	1.0000e-06	0.6705	
12	17.748	295234.62	VV	1.0000e-06	0.2952	
13	18.044	1119623.84	VV	1.0000e-06	1.1196	
14	18.274	1496654.01	VV	1.0000e-06	1.4967	
15	18.552	655782.98	VV	1.0000e-06	0.6558	
16	18.794	172649.69	VB	1.0000e-06	0.1726	
17	19.306	406032.03	BV	1.0000e-06	0.4060	
18	19.581	617338.20	VV	1.0000e-06	0.6173	
19	19.813	999678.90	VV	1.0000e-06	0.9997	
20	20.216	2559781.84	VB	1.0000e-06	2.5598	
21	20.441	306181.48	BV	1.0000e-06	0.3062	
22	20.646	2439766.92	VV	1.0000e-06	2.4398	
23	20.866	937540.48	VV	1.0000e-06	0.9375	
24	21.163	1704987.92	VB	1.0000e-06	1.7050	
25	21.368	64442.78	BV	1.0000e-06	0.0644	
26	21.510	122195.86	VV	1.0000e-06	0.1222	
27	21.712	37249.46	VV	1.0000e-06	0.0372	
28	21.912	463827.26	VV	1.0000e-06	0.4638	
29	22.224	1197505.25	VV	1.0000e-06	1.1975	
30	22.401	663141.34	VV	1.0000e-06	0.6631	
31	22.568	807322.82	VV	1.0000e-06	0.8073	
32	22.772	2244632.22	VV	1.0000e-06	2.2446	
33	23.171	337518.31	VV	1.0000e-06	0.3375	
34	23.329	193639.70	VV	1.0000e-06	0.1936	
35	23.734	26412.57	VB	1.0000e-06	0.0264	
36	24.682	1384538.39	BV	1.0000e-06	1.3845	
37	25.103	714859.37	VB	1.0000e-06	0.7149	
38	27.293	114600.63	BV	1.0000e-06	0.1146	
39	27.723	396364.86	VB	1.0000e-06	0.3964	
		27059457.50		0.0000	27.0595	

A_s = 1654782

1.9 (100) = 190 ppm 1254

Missing Component Report

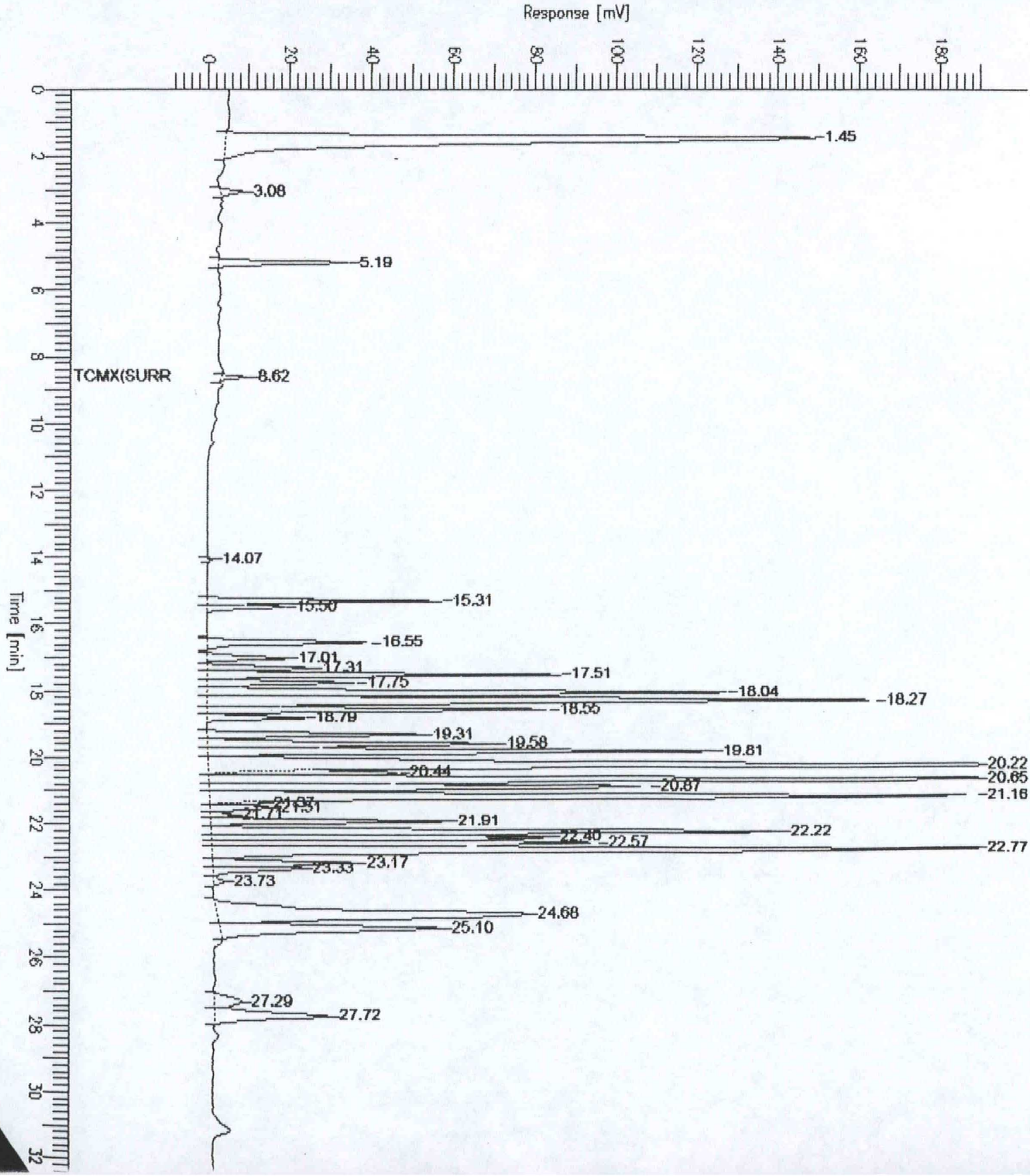
Component	Expected Retention (Calibration File)

All components were found

Chromatogram

Sample Name : 980209003-2 100x
FileName : C:\TC4\PCB2\PCB3588.RAW
Method : PCBQ1.MTH
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -10 mV

Sample #: 222 Page 1 of 1
Date : 2/10/98 01:54 PM
Time of Injection: 2/10/98 01:06 PM
Low Point : -10.00 mV High Point : 190.00 mV
Plot Scale: 200.0 mV



METHOD BLANK DATA REPORT

Ecology & Environment, Inc.
Project #: KJ5103

Section Includes.

Final and Raw Data from Method Blank Analysis

Software Version: 4.044J28
Date: 2/10/98 02:55 PM
Sample Name : blk sol 2-9-98
Data File : C:\TC4\PCB2\PCB3590.RAW Date: 2/10/98 02:22 PM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 9 Channel : A
Instrument : PCB Rack/Vial: 0/5 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.387	8384009.34	BB	----------	8.3840	
2	3.043	18878.61	BB	----------	0.0189	
3	3.583	10212.35	BB	----------	0.0102	
4	4.980	24454.27	BV	----------	0.0245	
5	5.166	204480.14	VB	----------	0.2045	
6	5.654	6112.23	BB	----------	0.0061	
7	7.053	366001.18	BB	----------	0.3660	
8	8.613	3892997.05	BB	----------	3.8930	TCMX(surrogate) S = 97 %
9	10.100	60373.30	BB	----------	0.0604	
10	10.843	9703.35	BB	----------	0.0097	
11	22.224	9423.86	BB	----------	0.0094	
		12986645.69		0.0000	12.9866	

Missing Component Report

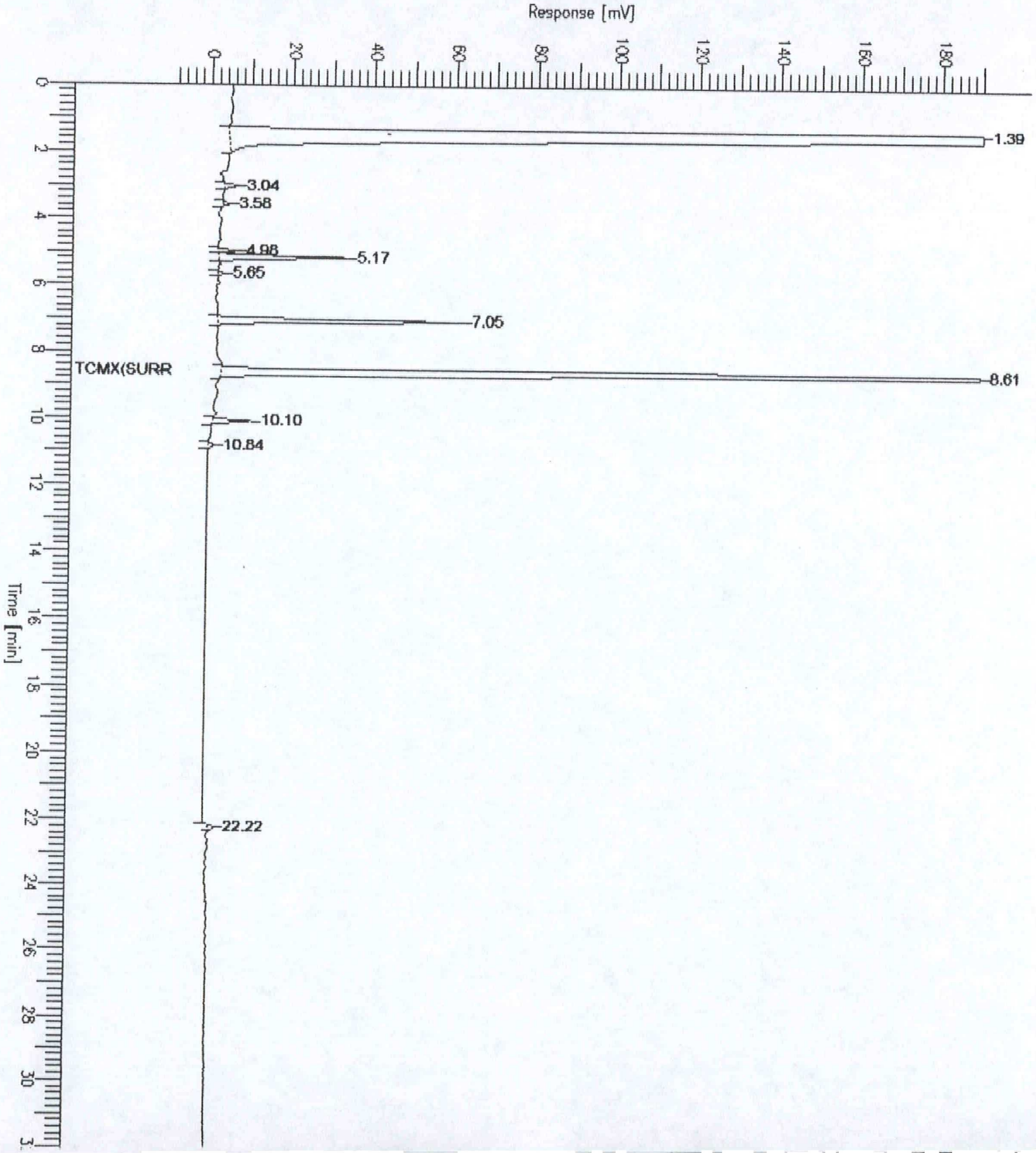
Component	Expected Retention (Calibration File)

All components were found

Chromatogram

Sample Name : blk sol 2-9-98
FileName : C:\TC4\PCB2\PCB3590.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -10 mV

Sample #: 222 Page 1 of 1
Date : 2/10/98 02:55 PM
Time of Injection: 2/10/98 02:22 PM
Low Point : -10.00 mV High Point : 190.00 mV
Plot Scale: 200.0 mV



PCB STDS

Software Version: 4.044J28
Date: 1/22/98 02:01 AM
Sample Name : 1ppm 1016
Data File : C:\TC4\PCB\PCB3426.RAW Date: 1/22/98 01:28 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 13 Channel : A
Instrument : PCB Rack/Vial: 0/10 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.341	1996568.15	BV	----------	1.9966	
2	1.610	5703561.03	VB	----------	5.7036	
3	3.029	28197.31	BB	----------	0.0282	
4	5.159	347159.81	BB	----------	0.3472	
0	8.700	0.00		----------	0.0000	TCMX(surrogate)
5	9.990	58348.70	BV	----------	0.0583	
6	10.278	94540.61	VB	----------	0.0945	
7	10.859	109162.52	BV	----------	0.1092	
8	11.112	458885.93	VV	----------	0.4589	
9	11.350	23768.67	VB	----------	0.0238	
10	12.445	68412.02	BV	----------	0.0684	
11	12.721	797163.44	VB	----------	0.7972	
12	13.148	107628.27	BV	----------	0.1076	
13	13.544	458674.11	VV	----------	0.4587	
14	13.844	407766.76	VV	----------	0.4078	
15	14.114	1583688.23	VB	----------	1.5837	
16	14.742	688651.69	BE	----------	0.6887	
17	14.981	51398.20	BV	----------	0.0514	
18	15.260	765379.94	VV	----------	0.7654	
19	15.519	721473.92	VB	----------	0.7215	
20	16.164	41366.60	BB	----------	0.0414	
21	16.555	520013.74	BV	----------	0.5200	
22	16.718	167599.75	VV	----------	0.1676	
23	17.022	406148.15	VV	----------	0.4061	
24	17.235	163128.27	VV	----------	0.1631	
25	17.528	75612.93	VV	----------	0.0756	
26	17.774	138986.47	VV	----------	0.1390	
27	18.071	28596.58	VB	----------	0.0286	
28	18.820	19782.56	BB	----------	0.0198	
29	22.243	31572.62	BB	----------	0.0316	
		16063236.99		0.0000	16.0632	

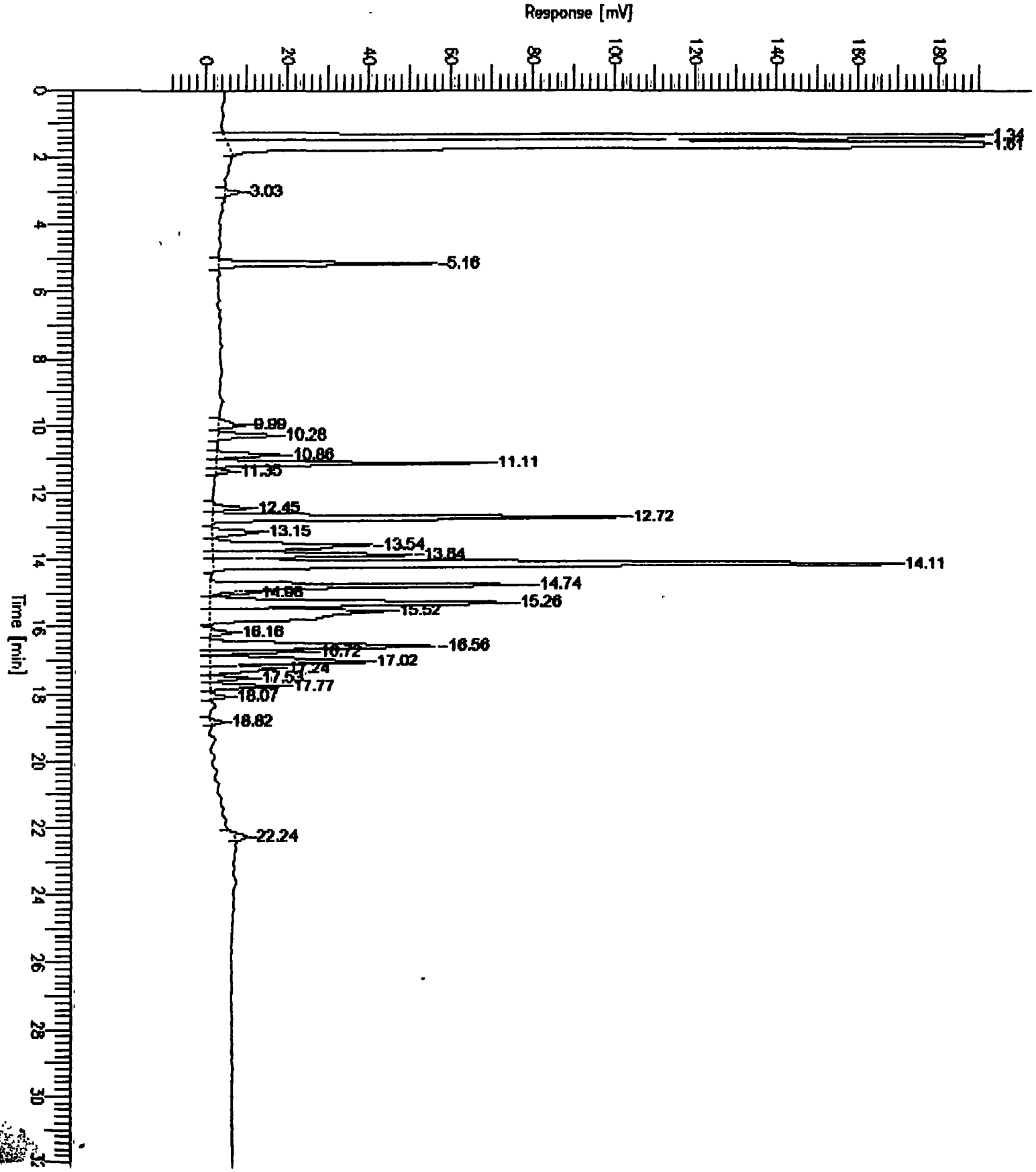
Missing Component Report

Component	Expected Retention (Calibration File)
TCMX(surrogate)	8.700

Chromatogram

Sample Name : 1ppm 1016
FileName : C:\TC4\PCB\PCB3426.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -9 mV

Sample #: 262 Page 1 of 1
Date : 1/22/98 02:01 AM
Time of Injection: 1/22/98 01:28 AM
Low Point : -8.68 mV High Point : 191.32 mV
Plot Scale: 200.0 mV



Software Version: 4.04&J28>
Date: 1/22/98 02:39 AM
Sample Name : 1ppm 1221
Data File : C:\TC4\PCB\PCB3427.RAW Date: 1/22/98 02:06 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 14 Channel : A
Instrument : PCB Rack/Vial: 0/11 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.336	2279512.78	BB	----------	2.2795	
2	5.155	358544.07	BB	----------	0.3585	
3	5.785	8797.32	BB	----------	0.0088	
4	7.607	184238.91	BB	----------	0.1842	
5	8.744	51465.46	BB	----------	0.0515	TCMX(surrogate)
6	9.870	49478.13	BV	----------	0.0495	
7	9.982	61498.38	VV	----------	0.0615	
8	10.271	301636.92	VB	----------	0.3016	
9	10.856	210193.43	BV	----------	0.2102	
10	11.107	589034.47	VV	----------	0.5890	
11	11.345	100325.90	VB	----------	0.1003	
12	12.366	54930.48	BV	----------	0.0549	
13	12.674	125470.77	VB	----------	0.1255	
14	13.635	56828.72	BV	----------	0.0568	
15	13.832	32678.93	VV	----------	0.0327	
16	14.121	118271.02	VB	----------	0.1183	
17	14.737	41054.20	BB	----------	0.0411	
18	15.251	30900.25	BB	----------	0.0309	
19	18.066	9784.76	BV	----------	0.0098	
20	18.296	10050.92	VB	----------	0.0101	
21	20.225	13787.77	BB	----------	0.0138	
22	20.887	12068.23	BV	----------	0.0121	
23	21.181	19974.85	VB	----------	0.0200	
24	22.242	14499.86	BB	----------	0.0145	
		4735026.52		0.0000	4.7350	

Missing Component Report

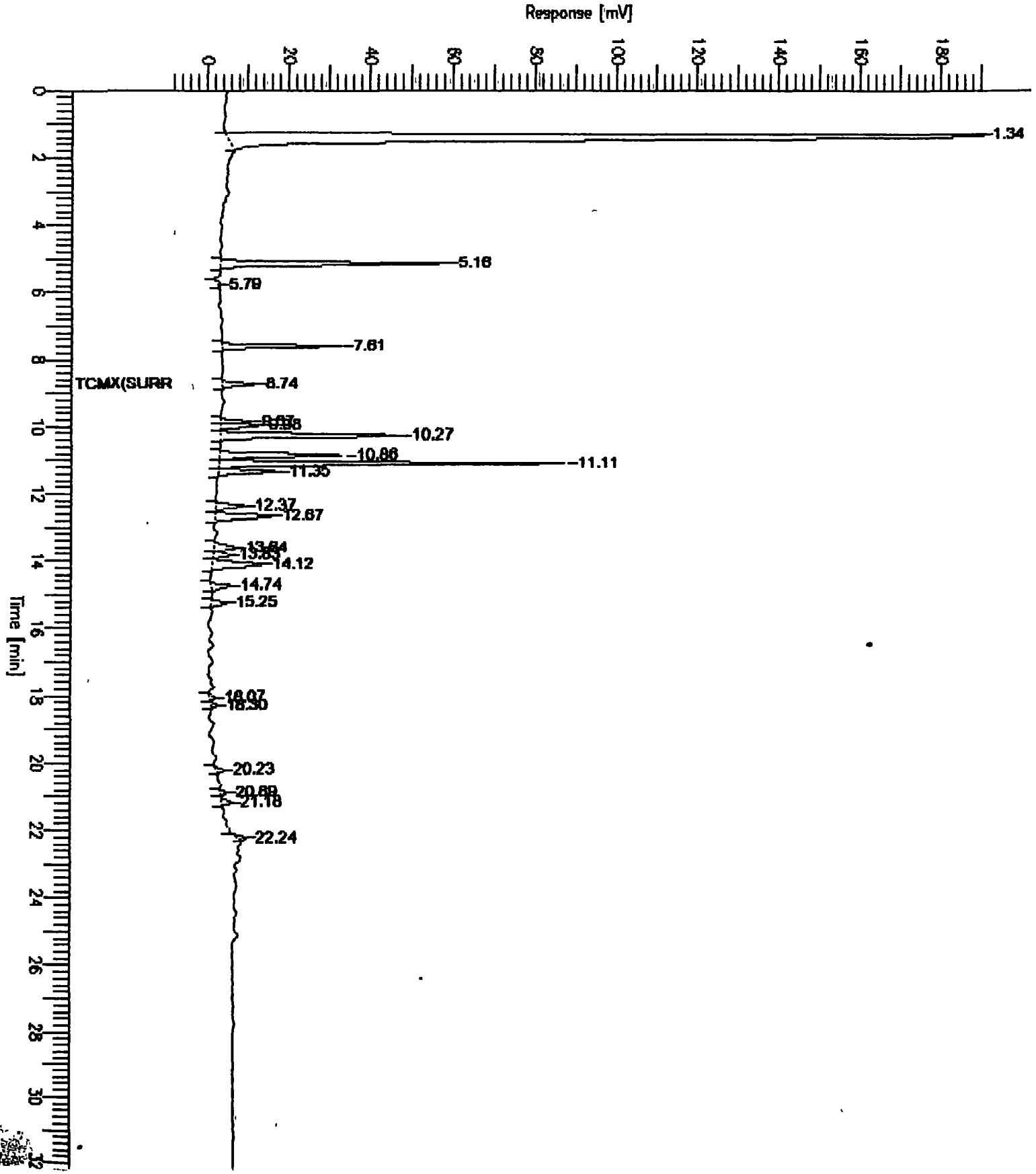
Component	Expected Retention (Calibration File)

All components were found

Chromatogram

Sample Name : 1ppm 1221
FileName : C:\TC4\PCB\PCB3427.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -9 mV

Sample #: 262 Page 1 of 1
Date : 1/22/98 02:39 AM
Time of Injection: 1/22/98 02:06 AM
Low Point : -9.33 mV High Point : 190.67 mV
Plot Scale: 200.0 mV



Software Version: 4.04J28►
Date: 1/22/98 03:17 AM
Sample Name : 1ppm 1232
Data File : C:\TC4\PCB\PCB3428.RAW Date: 1/22/98 02:44 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 15 Channel : A
Instrument : PCB Rack/Vial: 0/12 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.345	2317850.45	BB	----------	2.3179	
2	3.061	34811.91	BB	----------	0.0348	
3	5.162	284857.34	BB	----------	0.2849	
4	7.614	120678.93	BB	----------	0.1207	
5	8.750	31911.27	BB	----------	0.0319	TCMX(surrogate)
6	9.878	37418.83	BV	----------	0.0374	
7	9.989	58448.87	VV	----------	0.0584	
8	10.277	233772.05	VB	----------	0.2338	
9	10.859	180141.90	BV	----------	0.1801	
10	11.111	566389.85	VV	----------	0.5664	
11	11.349	73326.33	VB	----------	0.0733	
12	12.400	64614.68	BV	----------	0.0646	
13	12.717	451071.34	VB	----------	0.4511	
14	13.146	55368.13	BV	----------	0.0554	
15	13.547	259395.38	VV	----------	0.2594	
16	13.844	216232.09	VV	----------	0.2162	
17	14.112	833921.71	VB	----------	0.8339	
18	14.740	307505.56	BB	----------	0.3075	
19	15.259	299862.95	BB	----------	0.2999	
20	15.519	68895.41	BB	----------	0.0689	
21	16.163	17060.65	BB	----------	0.0171	
22	16.550	273195.46	BV	----------	0.2732	
23	16.718	80153.83	VV	----------	0.0802	
24	17.024	211995.66	VV	----------	0.2120	
25	17.322	188065.68	VV	----------	0.1881	
26	17.526	213837.77	VV	----------	0.2138	
27	17.766	266307.16	VV	----------	0.2663	
28	18.064	34803.41	VV	----------	0.0348	
29	18.302	57646.61	VV	----------	0.0576	
30	18.571	20029.03	VV	----------	0.0200	
31	18.817	229558.33	VB	----------	0.2296	
32	19.333	30864.58	BV	----------	0.0309	
33	19.601	27059.88	VV	----------	0.0271	
34	19.833	36343.79	VB	----------	0.0363	
35	20.091	29445.87	BV	----------	0.0294	
36	20.233	62086.69	VB	----------	0.0621	
37	20.660	57654.64	BB	----------	0.0577	
38	21.134	27416.02	BB	----------	0.0274	
39	22.240	68079.60	BB	----------	0.0681	
		8428079.64		0.0000	8.4281	

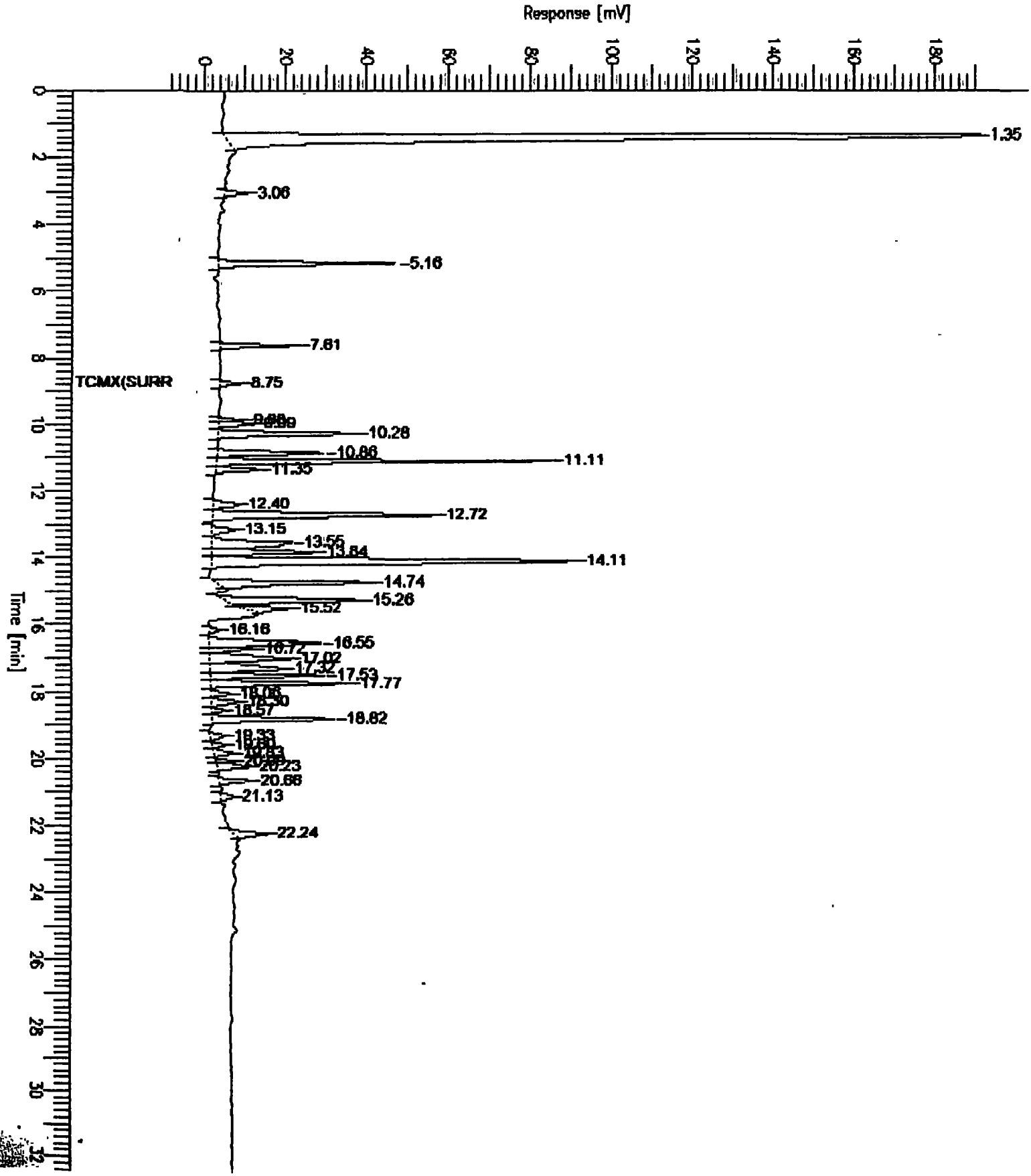
Missing Component Report

Component	Expected Retention (Calibration File)
All components were found	

Chromatogram

Sample Name : 1ppm 1232
FileName : C:\TC4\PCB\PCB3428.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -9 mV

Sample #: 262 Page 1 of 1
Date : 1/22/98 03:17 AM
Time of Injection: 1/22/98 02:44 AM
Low Point : -8.54 mV High Point : 191.46 mV
Plot Scale: 200.0 mV



Software Version: 4.04J28b
Date: 1/22/98 03:55 AM
Sample Name : 1ppm 1242
Data File : C:\TC4\PCB\PCB3429.RAW Date: 1/22/98 03:22 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 16 Channel : A
Instrument : PCB Rack/Vial: 0/13 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.341	2287804.78	BB	----------	2.2878	
2	3.020	9480.07	BB	----------	0.0095	
3	5.155	442794.29	BB	----------	0.4428	
0	8.700	0.00		----------	0.0000	TCMX(surrogate)
4	9.982	47637.99	BB	----------	0.0476	
5	10.268	78811.98	BB	----------	0.0788	
6	10.850	88905.01	BV	----------	0.0889	
7	11.101	370307.05	VV	----------	0.3703	
8	11.342	19270.13	VB	----------	0.0193	
9	12.436	51068.35	BV	----------	0.0511	
10	12.712	617161.16	VB	----------	0.6172	
11	13.143	81578.94	BV	----------	0.0816	
12	13.541	357958.41	VV	----------	0.3580	
13	13.839	313867.97	VV	----------	0.3139	
14	14.108	1224622.14	VB	----------	1.2246	
15	14.734	530024.18	BB	----------	0.5300	
16	14.977	37591.29	BV	----------	0.0376	
17	15.257	590957.75	VV	----------	0.5910	
18	15.510	555597.54	VB	----------	0.5556	
19	16.158	29501.05	BB	----------	0.0295	
20	16.547	443101.13	BV	----------	0.4431	
21	16.713	145240.09	VV	----------	0.1452	
22	17.017	360868.37	VV	----------	0.3609	
23	17.316	333044.40	VV	----------	0.3330	
24	17.519	366264.59	VV	----------	0.3663	
25	17.759	448167.00	VV	----------	0.4482	
26	18.057	79414.18	VV	----------	0.0794	
27	18.296	118158.20	VV	----------	0.1182	
28	18.560	50813.91	VV	----------	0.0508	
29	18.809	387051.45	VB	----------	0.3871	
30	19.321	55905.11	BV	----------	0.0559	
31	19.595	59081.48	VV	----------	0.0591	
32	19.824	69884.11	VB	----------	0.0699	
33	20.084	61917.27	BV	----------	0.0619	
34	20.226	115384.13	VB	----------	0.1154	
35	20.655	126658.57	BB	----------	0.1267	
36	21.123	44986.88	BB	----------	0.0450	
37	21.387	6787.29	BB	----------	0.0068	
38	22.233	112644.23	BB	----------	0.1126	
39	22.778	14879.00	BB	----------	0.0149	
		11135191.49		0.0000	11.1352	

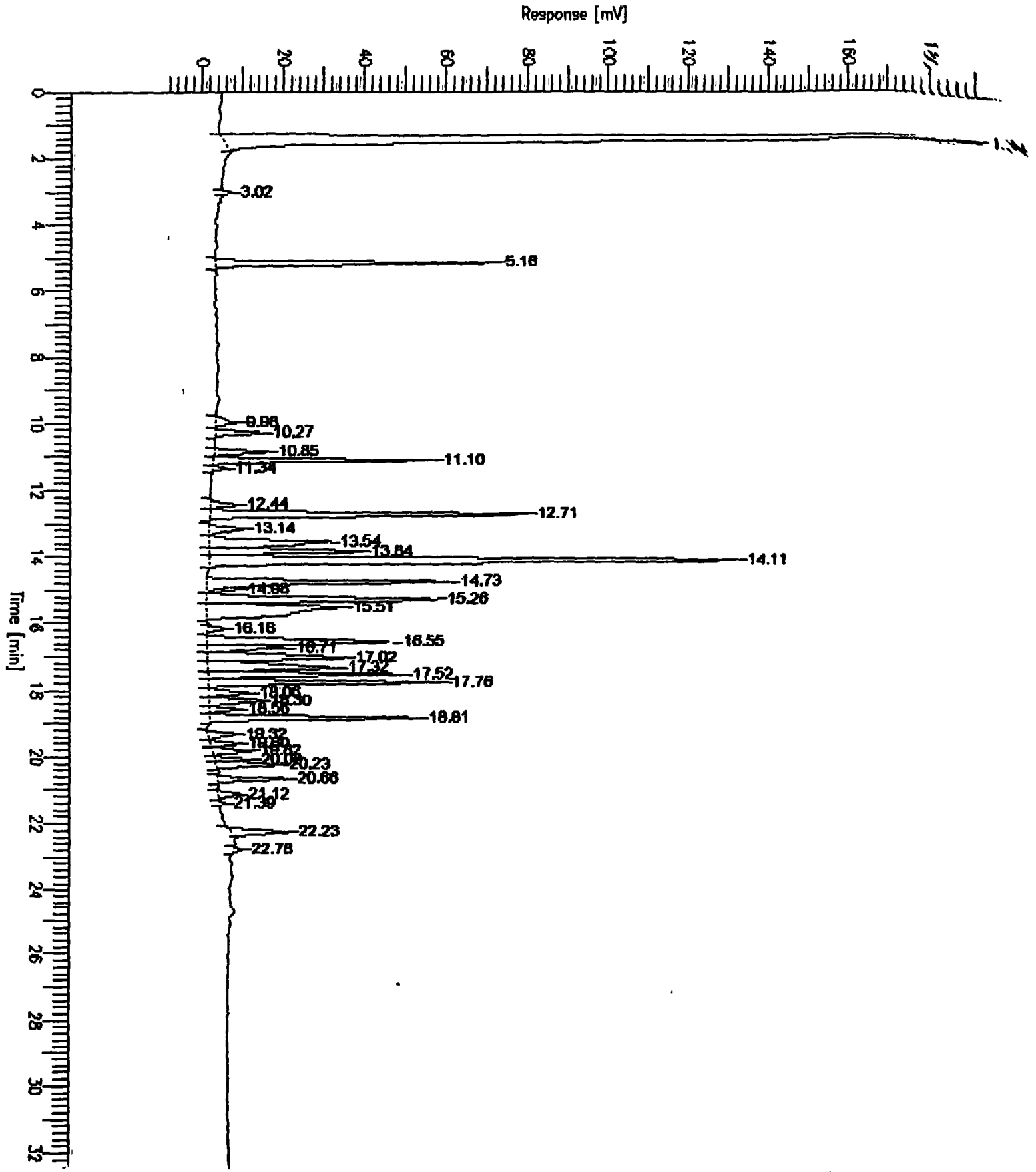
Missing Component Report

Component	Expected Retention (Calibration File)

Chromatogram

Sample Name : 1ppm 1242
FileName : C:\TC4\PCB\PCB3429.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -9 mV

Sample #: 262 Page 1 of 1
Date : 1/22/98 03:55 AM
Time of Injection: 1/22/98 03:22 AM
Low Point : -8.51 mV High Point : 191.49 mV
Plot Scale: 200.0 mV



Software Version: 4.04J28►
Date: 1/22/98 04:33 AM
Sample Name : 1ppm 1248
Data File : C:\TC4\PCB\PCB3430.RAW Date: 1/22/98 04:01 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 17 Channel : A
Instrument : PCB Rack/Vial: 0/14 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

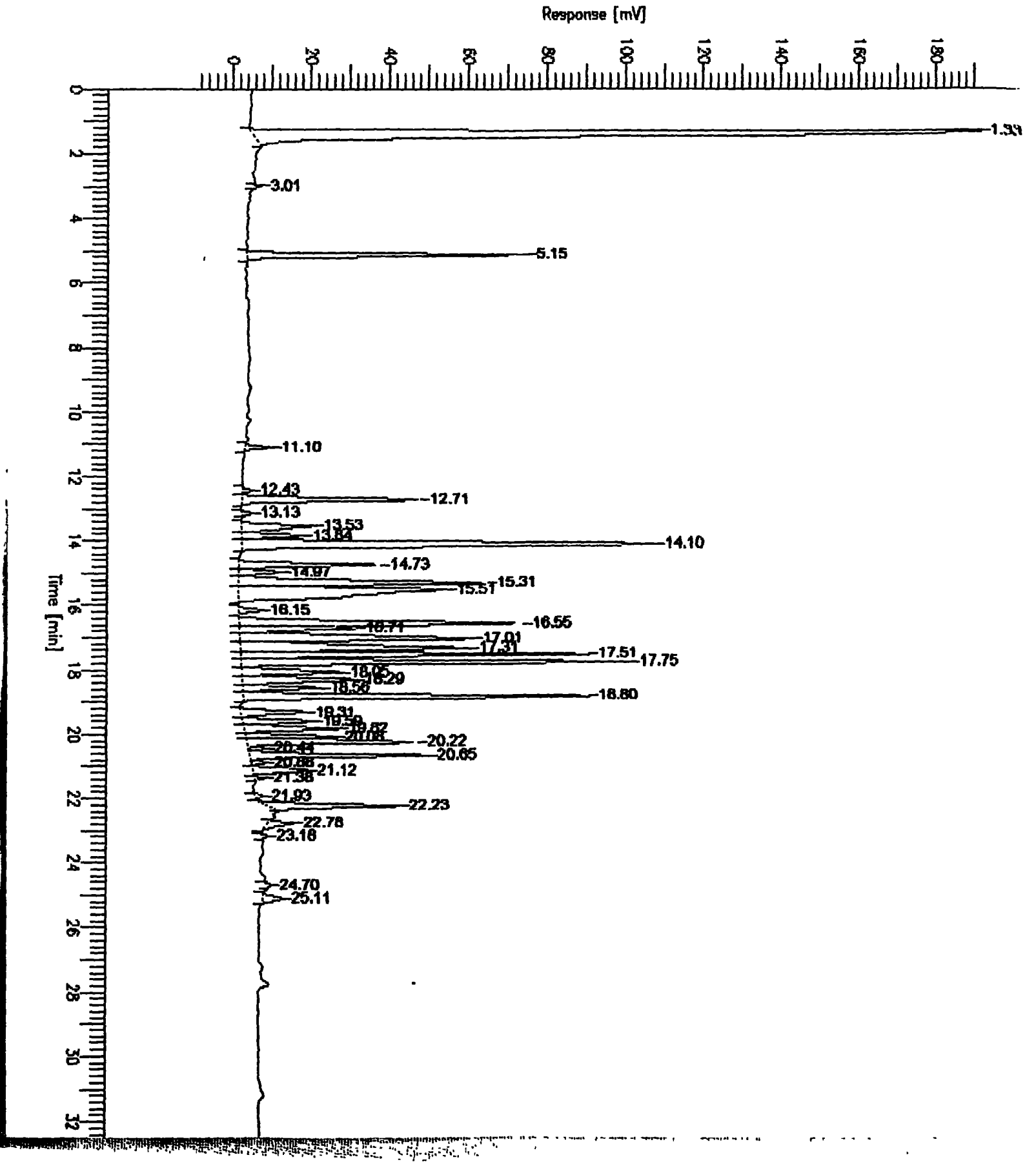
PCB QUANTITATION REPORT

Peak #	Time (min)	Area (uV*sec)	BL	Response Factor	Raw Amount	Component Name
1	1.333	2271966.69	BB	----------	2.2720	
2	3.008	8698.19	BB	----------	0.0087	
3	5.149	461412.68	BB	----------	0.4614	
0	8.700	0.00		----------	0.0000	TCMX(surrogate)
4	11.097	44407.26	BB	----------	0.0444	
5	12.434	14510.68	BV	----------	0.0145	
6	12.706	342028.89	VB	----------	0.3420	
7	13.129	15780.43	BB	----------	0.0158	
8	13.531	198089.85	BV	----------	0.1981	
9	13.836	118649.88	VV	----------	0.1186	
10	14.098	992259.71	VB	----------	0.9923	
11	14.728	272734.55	BV	----------	0.2727	
12	14.973	85573.20	VV	----------	0.0856	
13	15.305	658525.64	VV	----------	0.6585	
14	15.506	835363.10	VB	----------	0.8354	
15	16.152	44217.33	BB	----------	0.0442	
16	16.548	639013.67	BV	----------	0.6390	
17	16.706	207108.50	VV	----------	0.2071	
18	17.011	617470.40	VV	----------	0.6175	
19	17.311	559528.29	VV	----------	0.5595	
20	17.512	676228.74	VV	----------	0.6762	
21	17.753	789715.71	VV	----------	0.7897	
22	18.052	207425.25	VV	----------	0.2074	
23	18.288	277823.06	VV	----------	0.2778	
24	18.558	149033.20	VV	----------	0.1490	
25	18.803	680508.19	VB	----------	0.6805	
26	19.313	136477.55	BV	----------	0.1365	
27	19.591	162906.77	VV	----------	0.1629	
28	19.820	191298.00	VV	----------	0.1913	
29	20.082	161033.90	VV	----------	0.1610	
30	20.221	350587.24	VB	----------	0.3506	
31	20.440	25286.88	BV	----------	0.0253	
32	20.652	362096.52	VB	----------	0.3621	
33	20.875	22733.33	BV	----------	0.0227	
34	21.121	129261.00	VV	----------	0.1293	
35	21.380	16007.79	VB	----------	0.0160	
36	21.925	13378.66	BB	----------	0.0134	
37	22.230	252875.14	BB	----------	0.2529	
38	22.779	64879.22	BB	----------	0.0649	
39	23.175	9639.17	BB	----------	0.0096	
40	24.701	8305.89	BB	----------	0.0083	
41	25.112	49170.74	BB	----------	0.0492	
		13124010.86		0.0000	13.1240	

Chromatogram

Sample Name : 1ppm 1248
FileName : C:\TC4\PCB\PCB3430.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -8 mV

Sample #: 262 Page 1 of 1
Date : 1/22/98 04:33 AM
Time of Injection: 1/22/98 04:01 AM
Low Point : -8.18 mV High Point : 191.82 mV
Plot Scale: 200.0 mV



Software Version: 4.044J28►
Date: 1/22/98 05:11 AM
Sample Name : 1ppm 1254
Data File : C:\TC4\PCB\PCB3431.RAW Date: 1/22/98 04:39 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 18 Channel : A
Instrument : PCB Rack/Vial: 0/15 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

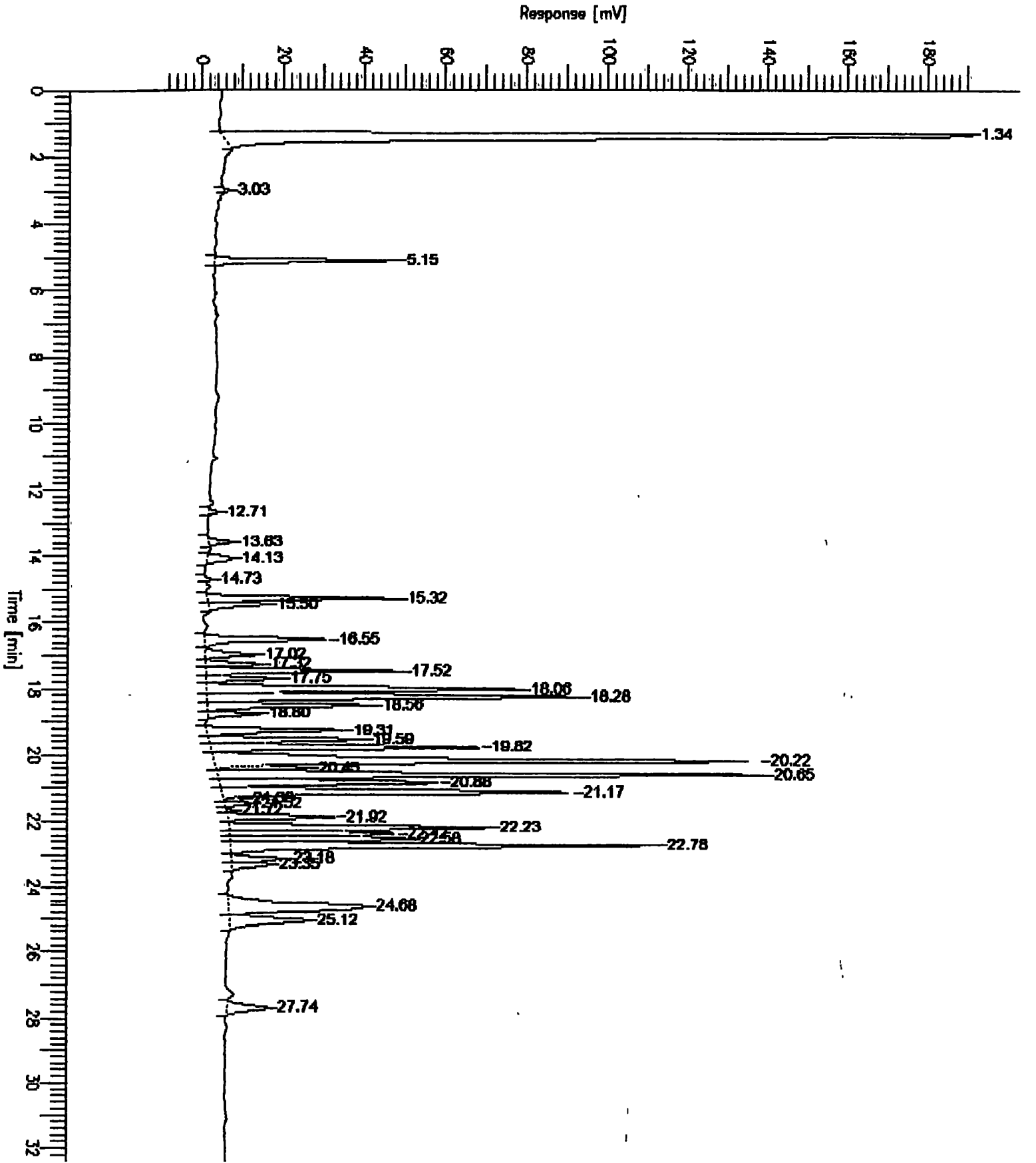
Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.337	2333783.17	BB	----------	2.3338	
2	3.030	5480.21	BB	----------	0.0055	
3	5.152	284152.87	BB	----------	0.2842	
0	8.700	0.00		----------	0.0000	TCMX(surrogate)
4	12.707	15196.74	BB	----------	0.0152	
5	13.627	44651.48	BB	----------	0.0447	
6	14.126	68108.43	BB	----------	0.0681	
7	14.730	8149.16	BB	----------	0.0081	
8	15.315	363397.76	BV	----------	0.3634	
9	15.503	106391.70	VB	----------	0.1064	
10	16.552	247038.85	BV	----------	0.2470	
11	17.018	109746.34	VV	----------	0.1097	
12	17.316	101825.37	VV	----------	0.1018	
13	17.516	363965.79	VV	----------	0.3640	
14	17.753	145363.91	VV	----------	0.1454	
15	18.055	647716.36	VV	----------	0.6477	
16	18.283	804293.75	VV	----------	0.8043	
17	18.560	313346.93	VV	----------	0.3133	
18	18.803	94020.00	VB	----------	0.0940	
19	19.314	271608.97	BV	----------	0.2716	
20	19.590	327140.08	VV	----------	0.3271	
21	19.821	539412.47	VV	----------	0.5394	
22	20.223	1300753.13	VE	----------	1.3008	
23	20.449	141091.63	EV	----------	0.1411	
24	20.651	1151955.56	VV	----------	1.1520	
25	20.876	461553.81	VV	----------	0.4616	
26	21.172	762600.50	VE	----------	0.7626	
27	21.382	25373.75	EV	----------	0.0254	
28	21.518	47530.96	VV	----------	0.0475	
29	21.724	8736.71	VV	----------	0.0087	
30	21.920	196457.72	VB	----------	0.1965	
31	22.233	539821.70	BV	----------	0.5398	
32	22.417	322675.48	VV	----------	0.3227	
33	22.676	377080.97	VV	----------	0.3771	
34	22.779	989795.41	VV	----------	0.9898	
35	23.181	113609.50	VV	----------	0.1136	
36	23.347	84792.32	VB	----------	0.0848	
37	24.603	598577.37	BV	----------	0.5986	
38	25.116	251729.60	VB	----------	0.2517	
39	27.737	127720.68	BB	----------	0.1277	
		14696647.18		0.0000	14.6966	

Missing Component Report
Component Expected Retention (Calibration File)

Chromatogram

Sample Name : 1ppm 1254
FileName : C:\TC4\PCB\PCB3431.raw
Method : pcbql
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -9 mV

Sample #: 263 Page 1 of 1
Date : 1/22/98 05:11 AM
Time of Injection: 1/22/98 04:39 AM
Low Point : -8.77 mV High Point : 191.23 mV
Plot Scale: 200.0 mV



Software Version: 4.04J28>
Date: 1/22/98 05:49 AM
Sample Name : 1ppm 1260
Data File : C:\TC4\PCB\PCB3432.RAW Date: 1/22/98 05:17 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 19 Channel : A
Instrument : PCB Rack/Vial: 0/16 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.338	2323524.43	BB	----------	2.3235	
2	3.012	10314.76	BB	----------	0.0103	
3	5.153	412635.83	BB	----------	0.4126	
0	8.700	0.00		----------	0.0000	TCMX(surrogate)
4	13.625	24761.71	BB	----------	0.0248	
5	14.142	39628.42	BB	----------	0.0396	
6	15.311	28321.05	BB	----------	0.0283	
7	17.516	5276.48	BB	----------	0.0053	
8	18.054	272009.24	BV	----------	0.2720	
9	18.280	326443.43	VB	----------	0.3264	
10	19.316	14190.89	BB	----------	0.0142	
11	19.580	8191.95	BB	----------	0.0082	
12	19.821	72527.27	BB	----------	0.0725	
13	20.204	594142.64	BV	----------	0.5941	
14	20.480	352851.19	VB	----------	0.3529	
15	20.873	775117.48	BV	----------	0.7751	
16	21.175	1280973.75	VB	----------	1.2810	
17	21.513	36955.14	BB	----------	0.0370	
18	21.922	529602.68	BV	----------	0.5296	
19	22.439	715814.54	VV	----------	0.7158	
20	22.577	593197.14	VV	----------	0.5932	
21	22.790	1086416.65	VV	----------	1.0864	
22	22.896	909078.73	VV	----------	0.9091	
23	23.167	625757.62	VV	----------	0.6258	
24	23.748	187223.50	VB	----------	0.1872	
25	24.465	840642.17	BV	----------	0.8406	
26	24.859	743482.35	VV	----------	0.7435	
27	25.108	2393154.17	VB	----------	2.3932	
28	26.653	98989.35	BV	----------	0.0990	
29	27.231	749328.14	VV	----------	0.7493	
30	27.736	1466857.41	VB	----------	1.4669	
31	28.319	22152.38	BB	----------	0.0222	
32	31.150	832526.74	BB	----------	0.8325	
		18372089.22		0.0000	18.3721	

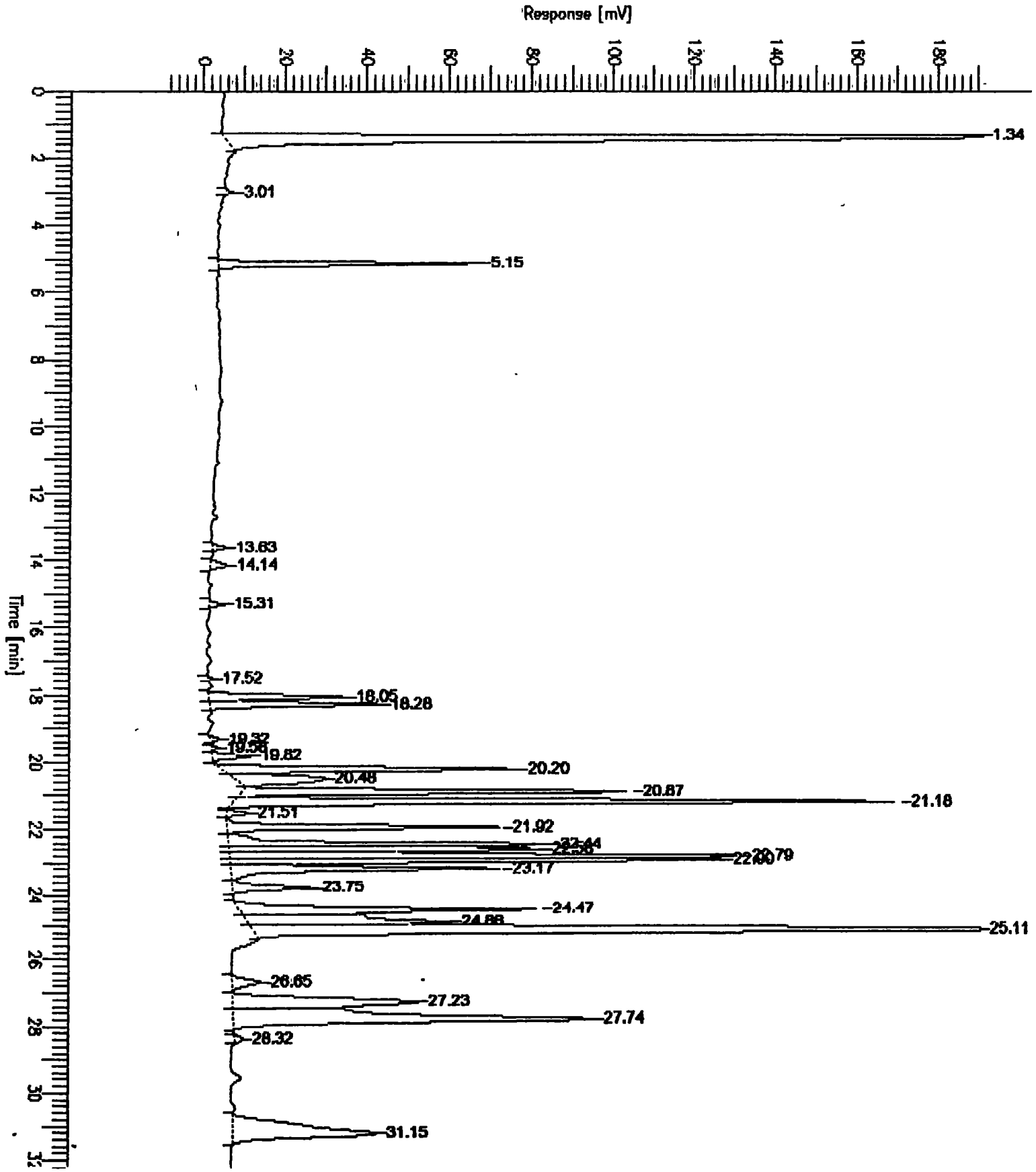
Missing Component Report

Component	Expected Retention (Calibration File)
TCMX(surrogate)	8.700

Chromatogram

Sample Name : 1ppm 1260
FileName : C:\TC4\PCB\PCB3432.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -9 mV

Sample #: 263 Page 1 of 1
Date : 1/22/98 05:50 AM
Time of Injection: 1/22/98 05:17 AM
Low Point : -8.78 mV High Point : 191.22 mV
Plot Scale: 200.0 mV



Software Version: 4.04J28>
Date: 1/22/98 05:28 AM
Sample Name : 1ppm 1262
Data File : C:\TC4\PCB\PCB3433.RAW Date: 1/22/98 05:55 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 20 Channel : A
Instrument : PCB Rack/Vial: 0/17 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.337	2279127.95	BB	----------	2.2791	
2	5.153	258455.83	BB	----------	0.2585	
0	8.700	0.00		----------	0.0000	TCMX(surrogate)
3	11.100	11879.27	BB	----------	0.0119	
4	12.711	25072.94	BB	----------	0.0251	
5	13.631	38015.12	BB	----------	0.0380	
6	14.129	75215.62	BB	----------	0.0752	
7	14.734	15049.51	BB	----------	0.0150	
8	15.293	25310.88	BB	----------	0.0253	
9	16.817	28465.79	BB	----------	0.0285	
10	17.321	10128.43	BV	----------	0.0101	
11	17.513	28659.29	VV	----------	0.0287	
12	17.752	16617.26	VB	----------	0.0166	
13	18.060	105214.62	BV	----------	0.1052	
14	18.284	134285.67	VB	----------	0.1343	
15	18.816	11233.56	BB	----------	0.0112	
16	19.332	6000.99	BB	----------	0.0060	
17	19.828	23636.87	BB	----------	0.0236	
18	20.200	491875.84	BB	----------	0.4919	
19	20.468	36185.62	BB	----------	0.0362	
20	20.876	633257.88	BV	----------	0.6333	
21	21.179	1077673.92	VB	----------	1.0777	
22	21.512	10705.14	BB	----------	0.0107	
23	21.922	352656.88	BB	----------	0.3527	
24	22.237	10716.40	BB	----------	0.0107	
25	22.443	449332.54	BB	----------	0.4493	
26	22.906	1841469.93	BV	----------	1.8415	
27	23.166	587350.71	VB	----------	0.5874	
28	23.749	317573.94	BB	----------	0.3176	
29	24.467	1431287.52	BV	----------	1.4313	
30	24.866	667285.28	VV	----------	0.6673	
31	25.111	3200016.94	VB	----------	3.2000	
32	26.653	274570.31	BV	----------	0.2746	
33	27.219	1497347.22	VV	----------	1.4973	
34	27.498	684020.73	VV	----------	0.6840	
35	27.733	1388217.35	VB	----------	1.3882	
36	29.511	70308.54	BB	----------	0.0703	
37	30.406	39453.10	BV	----------	0.0395	
38	31.137	1601354.50	VB	----------	1.6014	
		19755029.89		0.0000	19.7550	

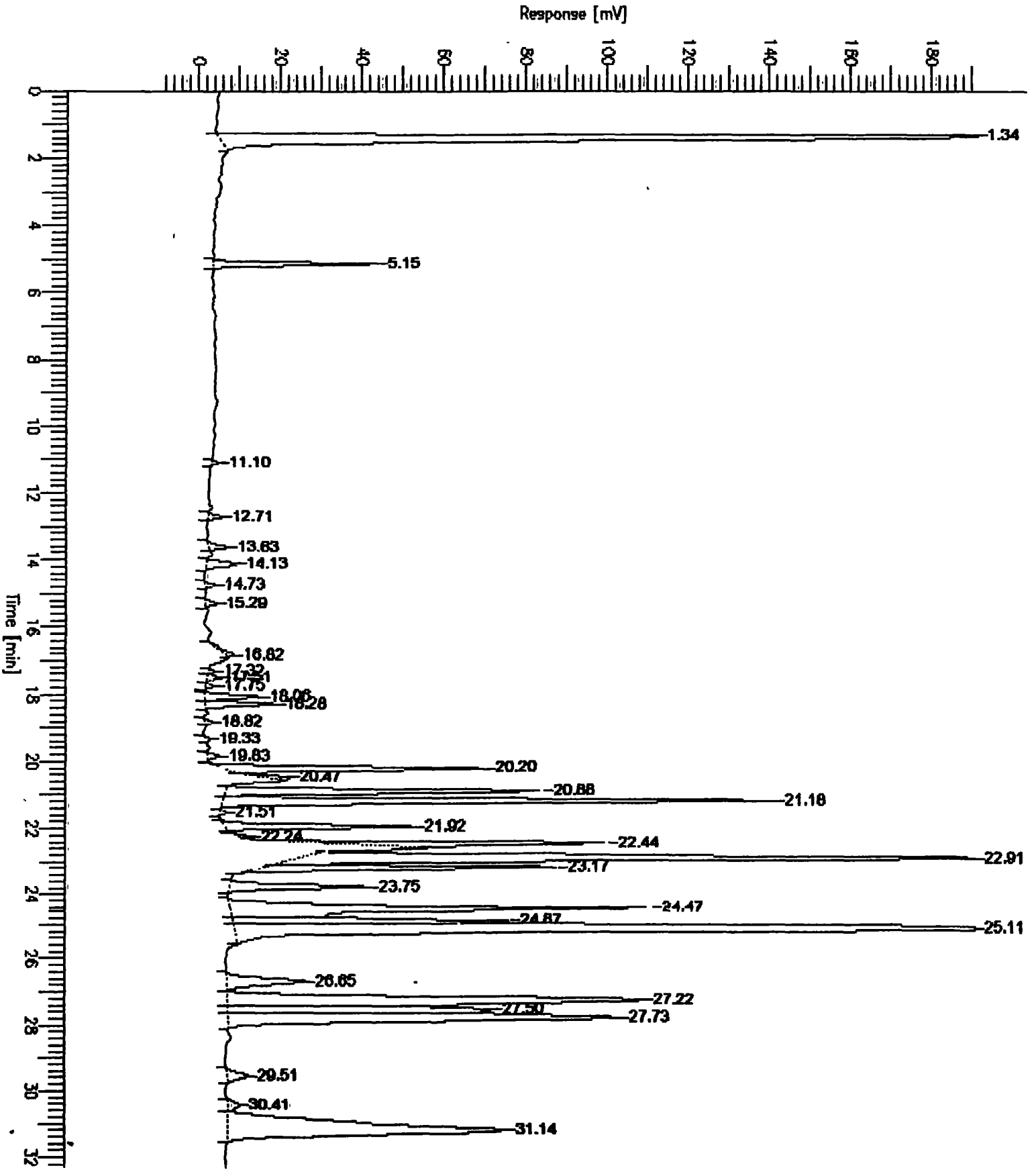
Missing Component Report

Component	Expected Retention (Calibration File)
TCMX(surrogate)	8.700

Chromatogram

Sample Name : 1ppm 1262
FileName : C:\TC4\PCB\PCB3433.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -8 mV

Sample #: 263 Page 1 of 1
Date : 1/22/98 06:28 AM
Time of Injection: 1/22/98 05:55 AM
Low Point : -8.40 mV High Point : 191.60 mV
Plot Scale: 200.0 mV



Software Version: 4.044J28>
Date: 1/22/98 07:06 AM
Sample Name : 1ppm 1268
Data File : C:\TC4\PCB\PCB3434.RAW Date: 1/22/98 06:34 AM
Sequence File: C:\TC4\DATA\PCB.SEQ Cycle: 21 Channel : A
Instrument : PCB Rack/Vial: 0/18 Operator:
Sample Amount : 1.0000 Dilution Factor : 1.00

PCB QUANTITATION REPORT

Peak #	Time [min]	Area [uV*sec]	BL	Response Factor	Raw Amount	Component Name
1	1.341	2397105.99	BB	----------	2.3971	
2	5.156	302401.04	BB	----------	0.3024	
0	8.700	0.00		----------	0.0000	TCMX(surrogate)
3	12.711	7582.12	BB	----------	0.0076	
4	13.632	49985.66	BB	----------	0.0500	
5	14.127	71551.46	BB	----------	0.0716	
6	14.734	17820.61	BB	----------	0.0178	
7	15.279	25559.35	BB	----------	0.0256	
8	15.510	5566.88	BB	----------	0.0056	
9	16.804	372678.31	BV	----------	0.3727	
10	17.325	66100.89	VV	----------	0.0661	
11	17.511	81832.27	VV	----------	0.0818	
12	17.755	59355.32	VB	----------	0.0594	
13	18.294	8909.68	BB	----------	0.0089	
14	18.809	54064.68	BB	----------	0.0541	
15	19.832	11358.17	BB	----------	0.0114	
16	20.223	29769.79	BB	----------	0.0298	
17	20.655	20596.12	BB	----------	0.0206	
18	21.169	24586.60	BB	----------	0.0246	
19	22.231	56545.21	BV	----------	0.0565	
20	22.440	61272.08	VB	----------	0.0613	
21	22.909	771665.14	BB	----------	0.7717	
22	23.166	40207.58	BB	----------	0.0402	
23	23.749	26446.18	BB	----------	0.0264	
24	24.336	1017315.44	BV	----------	1.0173	
25	24.862	266551.00	VV	----------	0.2666	
26	25.109	415846.65	VB	----------	0.4158	
27	26.654	273144.06	BV	----------	0.2731	
28	27.208	3999359.71	VV	----------	3.9994	
29	27.507	3408163.92	VB	----------	3.4082	
30	29.517	3131086.04	BB	----------	3.1311	
31	30.410	842196.77	BV	----------	0.8422	
32	31.136	1460524.72	VB	----------	1.4605	
		19377149.45		0.0000	19.3771	

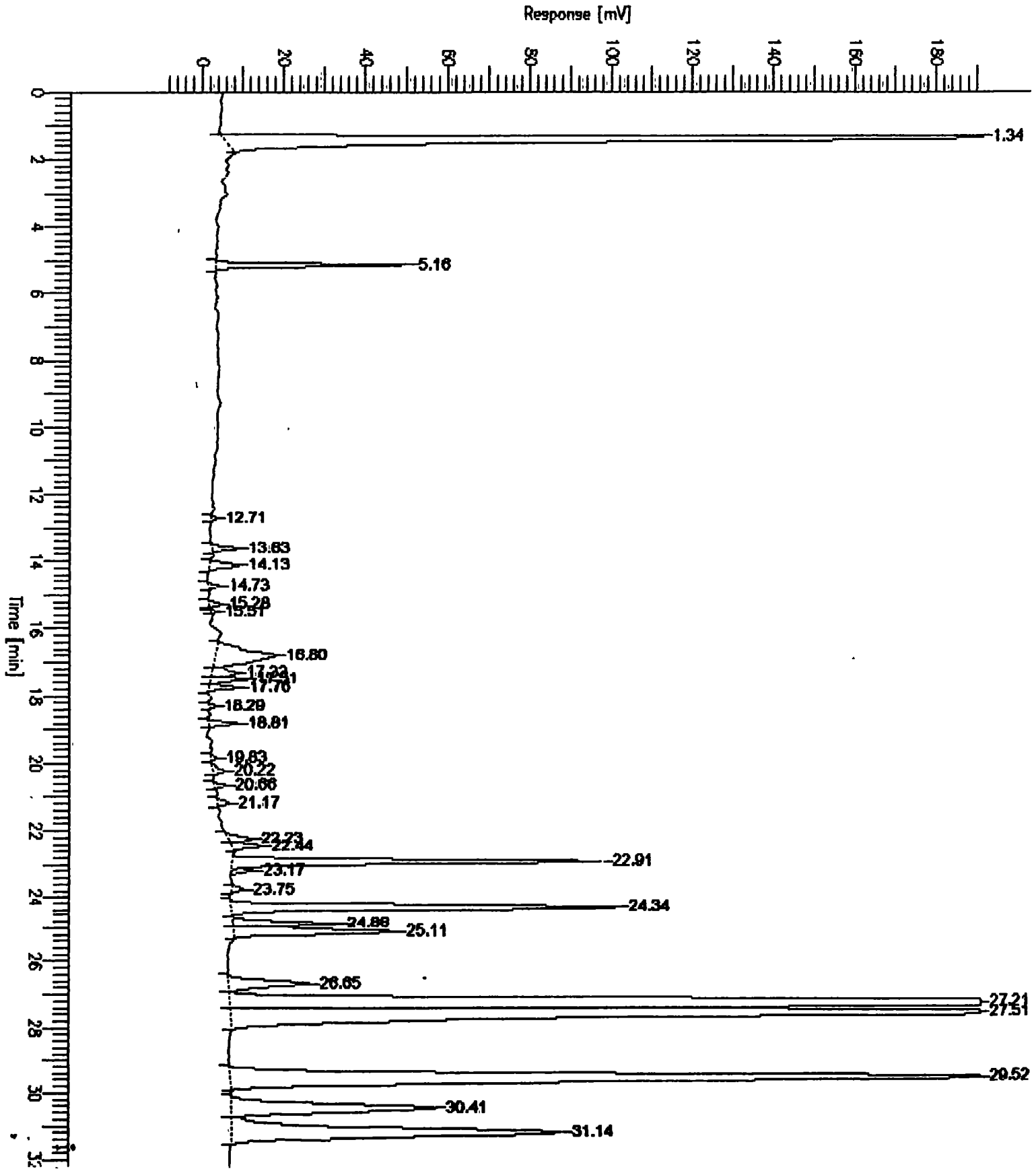
Missing Component Report

Component	Expected Retention (Calibration File)
TCMX(surrogate)	8.700

Chromatogram

Sample Name : 1ppm 1268
FileName : C:\TC4\PCB\PCB3434.raw
Method : pcbq1
Start Time : 0.00 min End Time : 32.49 min
Scale Factor: -1.0 Plot Offset: -8 mV

Sample #: 263 Page 1 of 1
Date : 1/22/98 07:06 AM
Time of Injection: 1/22/98 06:34 AM
Low Point : -8.40 mV High Point : 191.60 mV
Plot Scale: 200.0 mV



ENVIRONMENTAL CONTROL LABORATORIES INC.

21337 Drake Road
Strongsville, Ohio 44136
(440) 238-6100
FAX: (440) 238-6294

February 25, 1998

Ms. Cheryl Elliot
Ecology & Environment
12251 Universal
Taylor MI 48180

RE: PCB Standards

Enclosed is your copy of the PCB Standards per your request 2/25/98.

☆ U S GOVERNMENT PRINTING OFFICE 1993-747-251

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
77 West Jackson Boulevard
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME	Activity Code:
KJ5103	SOS-9802-803	

SAMPLERS: (Print Name and Sign) Michael Dieckhaus, Mark Ramaly

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Analyte: PCBs						TAG NUMBERS
S-1	2/6/98	1255		X	C-1	1	X						** Verbal Results
S-2	2/6/98	1245		X	C-2	1	X						Turnaround => As Soon
													As Possible!
													Hardcopy => 72 hr T.O.
													** QA Level II

No More Samples

Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Mark Ramaly	2/6/98 1630	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) / Date / Time

Ship To: EC Labs
21337 Drake Road
Strongsville, Ohio 44136

ATTN: Bob McGregor

Airbill Number: 9808372092 (Federal Express)

Chain of Custody Seal Numbers

FEDERAL EXPRESS

USE THIS AIRBILL FOR DANGEROUS GOODS SHIPMENTS ONLY WITHIN THE CONTINENTAL U S A ALASKA AND HAWAII
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO AND ALL NON U S LOCATIONS
QUESTIONS? CALL 800-238-5355 TOLL FREE.

PACKAGE TRACKING NUMBER 9808372092

8 1010M 9808372092

Sender's Federal Express Account Number: 1498-4916-5 Date: 2/6/98

1 From (Your Name) Please Print: Mark Ramaly
Your Phone Number (Very Important): (734) 946-0900
Company: ECOLOGY & ENVIRONMENT, INC
Department/Floor No
Street Address: 12251 UNIVERSAL
City: TAYLOR State: MI ZIP Required: 48180

2 To (Recipient's Name) Please Print: Bob McGregor
Recipient's Phone Number (Very Important): 216 238-6100
Company: EC Labs
Department/Floor No
Exact Street Address (We Cannot Deliver to P O Boxes or P O Zip + Codes): 21337 Drake Road
City: Strongsville State: OH ZIP Required: 44136

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice): KJ5103 / 8J2001SIXX, 24

3 PAYMENT 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct No Acct No Reqd 3 [ ] Bill 3rd Party FedEx Acct No Fill in Account Number below (reqd) 4 [ ] Bill Credit Card Fill in Credit Card Number below Exp Date 5 [ ] Cash/Check Acct /Credit Card No

H IF HOLD FOR PICK-UP, Print FEDEX Address Here (Not available at all locations)
Street Address
City State ZIP Required

4 SERVICES (Check only one box)
Priority Overnight Service (Delivery by next business morning†)
Standard Overnight Service (Delivery by next business afternoon†)
11 [X] Priority Two-Day Service (formerly Standard Air) (Delivery by second business day†)
51 [ ] Heavyweight Service (for Extra Large or any package over 150 lbs)
30 [ ]
70 [ ] HEAVYWEIGHT**
80 [ ] DEFERRED HEAVYWEIGHT**
†Delivery commitment may be later in some areas. **Call for delivery schedule

DELIVERY AND SPECIAL HANDLING (Check services required)
1 [ ] HOLD FOR PICK-UP (Fill in Box H)
2 [ ] DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) [ ] (Not available to all locations)
4 [X] DANGEROUS GOODS (Extra charge)
6 [ ] DRY ICE Lbs
• Dangerous Goods Shipper's Declaration not required
• Dry Ice 9 UN 1845
7 [ ] OTHER SPECIAL SERVICE
11 [ ]
12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

PACKAGES | WEIGHT in Pounds Only | YOUR DECLARED VALUE (See right)
Total Total Total
DIM SHIPMENT Chargeable Weight
Received at
Employee Stop
FedEx Emp No
Date Time

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY
Use of this airbill constitutes your agreement to the service conditions in our current Service Guide available upon request. See back of sender's copy of this airbill for information.
We will not be responsible for any claim in excess of $100 per package whether the result of loss, damage delay non-delivery misdelivery or misinformation, unless you declare a higher value pay an additional charge and document your actual loss for a timely claim. Maximum amount limitations found in the current Federal Express Service Guide apply. Your right to recover from Federal Express for any loss, including intrinsic value of the package loss of sales, income interest profit, attorney's fees, costs and other forms of damage whether direct, incidental, consequential or special is limited to the greater of $100 or the declared value specified to left. Recovery cannot exceed actual documented loss. The maximum Declared Value for FedEx Letter and FedEx Pak packages is $100.00
In the event of untimely delivery Federal Express will at your request and with some limitations, refund all transportation charges paid. See Service Guide for further information.

SIGNATURE RELEASE UNAVAILABLE

REVISION DATE 8/90 FORMAT #043 043

INSTRUCTIONS (Check only one box)
• Dangerous Goods as per attached Shipper's Declaration [ ]
• Dangerous Goods Shipper's Declaration not required [ ]
• Cargo Aircraft only [X]

9808372092 AIRBILL NUMBER

SHIPPER'S CERTIFICATION FOR RESTRICTED ARTICLES/DANGEROUS GOODS
CHECK ONE ➡ [ ] 49 CFR [X] IATA/ICAO (TYPE OR PRINT)

DANGEROUS GOODS IDENTIFICATION: PROPER SHIPPING NAME	CLASS OR DIVISION	UN OR ID NO	SUBSIDIARY RISK	QUANTITY AND TYPE OF PACKING	PACKING INST	AUTHORIZATION
Polychlorinated biphenyls	9	UN 2315	11	2 glass jars in an IP3 metal container in a 4G fiberboard box. Net Quantity = 80 ZZ. DOT Exemption Packaging Used	907	

ADDITIONAL HANDLING INFORMATION
NAERG #171 Attached. Memo Authorizing DOT Exemption Packaging Attached

TRANSPORT DETAILS	THIS SHIPMENT IS WITHIN THE LIMITATIONS PRESCRIBED FOR ➡	PASSENGER AIRCRAFT	CARGO AIRCRAFT ONLY	(DELETE-NONAPPLICABLE)
AIRPORT OF DEPARTURE	AIRPORT OF DESTINATION / SHIPMENT TYPE ➡	NON-RADIOACTIVE	RADIOACTIVE	(DELETE-NONAPPLICABLE)

IF ACCEPTABLE FOR PASSENGER AIRCRAFT, THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS OR TREATMENT

I HEREBY DECLARE THAT THE CONTENTS OF THIS CONSIGNMENT ARE FULLY AND ACCURATELY DESCRIBED ABOVE BY PROPER SHIPPING NAME AND ARE CLASSIFIED, PACKED, MARKED, AND LABELED, AND ARE IN ALL RESPECTS IN PROPER CONDITION FOR TRANSPORT BY AIR ACCORDING TO THE APPLICABLE INTERNATIONAL AND NATIONAL GOVERNMENT REGULATIONS.

NAME AND TITLE OF SHIPPER: Mark Ramaly, START (MARK RAMALY)
PLACE AND DATE: Ecology & Environment, Taylor Michigan
EMERGENCY TELEPHONE NUMBER: 716-684-8940
SIGNATURE OF SHIPPER: Mark A. Ramaly
SEE WARNING ON BACK

FEDERAL EXPRESS

INTER-OFFICE MEMORANDUM

DATE: April 16, 1993 **To: Ecology & Environment Inc.**

FROM: Dangerous Goods Administration

SUBJECT: Approval #0038

[illegible]
[illegible]
U.S. [illegible]
[illegible]

Federal Express requires "ANY" concentration of "PCB" to be shipped as regulated. The above-mentioned company is authorized to ship or receive shipments in accordance with the following conditions-

Proper Shipping Name and UN#- RQ, Polychlorinated biphenyls, UN 2315 (see exception below)

Hazard Class- Class 9

Packing Group- II

Label(s) Required- Class 9 & (2) Package Orientation Labels

Markings Required- "RQ, Polychlorinated biphenyls, UN 2315" and "Shipper and Recipient name and address"

Maximum Quantity and Packing Instructions- 1L, 907

Outer Packaging Required- ALL PAK UN 4G,(DOT E 9168 covered)

Expiration Date- NONE

Destinations Authorized- Domestic US,

Approved By- Gary Richardson

Dangerous Goods Administration

Any questions should be referred to the Dangerous Goods Administration at 901-369-3856 or 901-369-3854

Exception-Also covered under this approval, are materials classed as 3, 6.1, 8 etc., when they contain "polychlorinated biphenyls". In this scenario, "polychlorinated biphenyl" and "RQ" must appear below whatever proper shipping name used on the DG declaration and on the outside of the package. The package marking and labeling will be per IATA 4.2. The DG declaration's "Packaging Instructions" and "Packing Group" will also be according to section 4.2 in IATA. However, the only packaging authorized, is identified above.

Note: A copy of this approval must be attached to each shipper's declaration and accompany all Dangerous Goods shipments offered in accordance with the provisions of this approval

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- Some may burn but none ignite readily.
- Some may polymerize (P) explosively when heated or involved in a fire.
- Containers may explode when heated.
- Some may be transported hot.

HEALTH

- Inhalation of material may be harmful.
- Contact may cause burns to skin and eyes.
- Inhalation of Asbestos dust may have a damaging effect on the lungs.
- Fire may produce irritating, corrosive and/or toxic gases
- Runoff from fire control may cause pollution.

PUBLIC SAFETY

- CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Isolate spill or leak area immediately for at least 10 to 25 meters (30 to 60 feet) in all directions
- Keep unauthorized personnel away.
- Stay upwind.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions

EMERGENCY RESPONSE

Small Fires

- Dry chemical, CO_2, water spray or regular foam.

Large Fires

- Water spray, fog or regular foam.
- Move containers from fire area if you can do it without risk.
- Do not scatter spilled material with high pressure water streams.
- Dike fire-control water for later disposal.

Fire Involving Tanks

- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from the ends of tanks.

[illegible]

- Do not touch or walk through spilled material
- Stop leak if you can do it without risk
- Prevent dust cloud.
- Avoid inhalation of asbestos dust

Small Dry Spills

- With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Small Spills

- Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

Large Spills

- Dike far ahead of liquid spill for later disposal.
- Cover powder spill with plastic sheet or tarp to minimize spreading.
- Prevent entry into waterways, sewers, basements or confined areas.

[illegible]

- Move victim to fresh air. • Call emergency medical care
- Apply artificial respiration if victim is not breathing
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SturdeeSeal™

IMPORTANT INFORMATION CONCERNING SHIPMENT WITHOUT DIAMOND LABELS PURSUANT TO D.O.T. EXEMPTION E-9168

1. Shipper must place specific chemical name or generic commodity description, as appropriate, and U N Number on each package prior to shipping.

2. Exemption authorizes package transportation only by motor vehicle, rail freight, passenger aircraft or cargo-only aircraft.

3. Any incident involving loss of contents of the package must be promptly reported to the Office of Hazardous Materials Regulation (or OHMR)

4. THE BOTTLE MUST NOT CONTAIN MORE THAN 32 OUNCES OF LIQUID PACKED AT A MINIMUM FILL TEMPERATURE OF AT LEAST 50°F THE START OF THE BOTTLE SHOULDER PER PACKING INSTRUCTION ILLUSTRATION NO 2 IS THE MAXIMUM FILL LINE. OVERFILLING BOTTLE CAN RESULT IN SERIOUS ACCIDENT.

5. D O.T EXEMPTION E-9168 **DOES NOT** ELIMINATE THE SHIPPER'S RESPONSIBILITY TO PLACE A PROPER EXTERNAL PRODUCT IDENTIEICATION CODE ON THE PACKAGE AND **DOES NOT** ELIMINATE THE SHIPPER'S RESPONSIBILITY TO PROVIDE APPROPRIATE INSTRUCTIONS AND WARNINGS INSIDE THE HAZARDOUS MATERIALS SHIPPER SO THAT THE CONTAINER AND PRODUCT MAY BE PACKED, USED, UNPACKED AND DISCARDED SAFELY

6. **USE OF PACKAGING AUTHORIZED UNDER EXEMPTIONS CFR 49 TRANSPORTATION SECTION 173.22A.**
   (a) Except as provided in paragraph (b) of this section, no person may offer a hazardous material for transportation in a packaging the use of which is dependent upon an exemption issued under Subpart B of Part 107 of this title, unless that person is the holder of or a party to the exemption.
   (b) If any exemption authorizes the use of a packaging for the shipment or transportation of a hazardous material by any person or class of persons other than or in addition to the holder of the exemption, that person or a member of that class of persons may use the packaging for the purposes authorized in the exemption subject to the terms specified therein. However, no person may use a packaging under the authority of this paragraph unless he maintains a copy of the exemption at each facility where the packaging is being used in connection with the shipment or transportation of the hazardous material concerned Copies of exemptions may be obtained from the Office of Hazardous Materials Regulation, U S. Department of Transportation, Washington, D C 20590, Attention: Docket Section, or from All-Pak, Inc , Corporate One West, 1195 Washington Pike, Bridgeville, Pennsylvania 15017-2854

WARNING

ALL-PAK, INC. STRONGLY RECOMMENDS THAT THE USER TESTS HIS PRODUCT WITH THE PACKAGE AND THAT IT IS COMPATIBLE WITH THE COMPONENTS IN QUESTION. FAILURE TO DO THIS COULD RESULT IN AN ACCIDENT WHICH COULD CAUSE SERIOUS DAMAGE OR INJURY

HYDROFLUORIC ACID, OXIDIZERS AND OXIDIZING AGENTS, PYROPHORICS, ARSENIC TRICHLORIDE, NITROBENZENE AND WATER REACTIVE CHEMICALS ARE STRONGLY **NOT** RECOMMENDED FOR SHIPMENT IN THIS PACKAGE AND SHOULD **NOT** BE SHIPPED IN THIS PACKAGE. FAILURE TO FOLLOW THIS WARNING COULD CAUSE A VIOLENT AND SERIOUS ACCIDENT RESULTING IN DAMAGE OR SERIOUS INJURY

SHIPPERS USING THE ALTERNATIVE METHOD OF PACKING (VERMICULITE IN PLACE OF FOAM) MAY PACKAGE CERTAIN OXIDIZERS, OXIDIZING AGENTS. IT IS THE SHIPPERS RESPONSIBILITY TO FOLLOW ALL INSTRUCTIONS, CAUTIONS AND WARNINGS LISTED PERTAINING TO THE PACKAGE DOT-E-9168. FAILURE TO DO THIS COULD CAUSE SERIOUS DAMAGE OR INJURY.

ALL-PAK, INC. STRONGLY RECOMMENDS THAT NARROW MOUTH BOTTLES BE USED FOR THE SHIPMENT OF LIQUID MATERIAL AND WIDE MOUTH BOTTLES BE USED FOR VISCOUS AND SOLID MATERIALS. FAILURE TO FOLLOW THIS WARNING COULD RESULT IN A SERIOUS ACCIDENT.

BRANCHES:

ALL-PAK, INC.
4225 Genesee Street
Suite 200
Buffalo, NY 14225
(716) 632-5277
Fax (716) 633-7745

ALL-PAK, INC.
Unit N-2
4009 Market St.
Aston, PA 19014
(215) 497-9565
Fax: (215) 497-9570

ALL-PAK, INC.
2236 South Hamilton Road
Suite 102
Columbus, OH 43232
Phone (614) 866-2277
Fax (614) 866-3673

All-Pak®

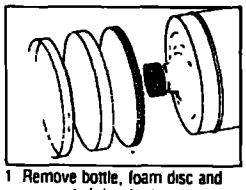
All-Pak, Inc , Corporate One West
1195 Washington Pike
Bridgeville, Pennsylvania 15017-2854
Phone (412) 257-3000
Fax (412) 257-3001

Rev 4/94

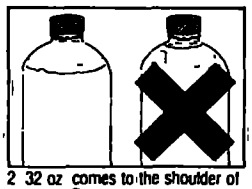
SturdeeSeal™

HAZARDOUS MATERIALS SHIPPER DOT EXEMPTION E-9168

ASSEMBLY INSTRUCTIONS

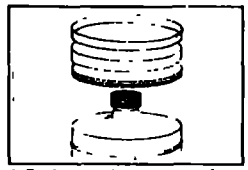


1 Remove bottle, foam disc and corrugated disc by tipping can *DO NOT* squeeze foam disc

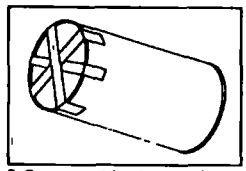


2 32 oz comes to the shoulder of bottle Do not overfill

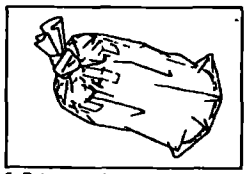
3 Put cap on *tight* then secure tape around the cap and neck of bottle (20 inch pound torque suggested.)



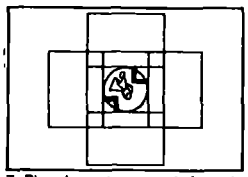
4 Put bottle in foam core neck up and replace corrugated disc foam disc and can lid



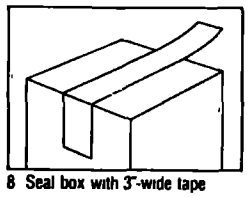
5 Secure can lid with strips of tape



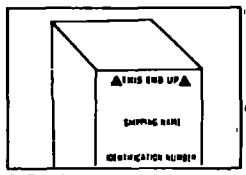
6 Put can in plastic bag twist the end and tie within itself



7 Place bag into corrugated insert, push die-cut corners into secure can



8 Seal box with 3"-wide tape



9 Put shipping name and identification number on box

ALTERNATIVE PACKAGE ASSEMBLY INSTRUCTIONS

FOAM CORE - SHIPPER PROVIDES PRIMARY CONTAINER

Follow general assembly instructions but when using your own container, place container(s) within core and secure with compatible cushioning material surrounding and separating containers in a sufficient quantity to prevent movement side to side and up and down.
Primary containers supplied via the user of this exemption must be capable of passing certain drop and internal pressure tests described within Exemption DOT-E - 9168.

VERMICULITE BLANKET & PILLOW, VERMICULITE, CELLULOSE WADDING

When using the alternative method of packing, the shipper must totally surround the primary container (top, bottom and sides) with a cushioning and absorbent material that is compatible with the material being shipped and in sufficient quantity to prevent movement and breakage in transit and capable of absorbing the total contents of the material being shipped. When using the vermiculite blanket and pillows be sure to have a pillow on top and bottom of the blanket.

— WARNING —

FAILURE TO FOLLOW INSTRUCTIONS CAN RESULT IN SERIOUS ACCIDENT OR INJURY! IF ANY COMPONENT FROM TOTAL PACKAGE IS MISSING OR DAMAGED, **DO NOT USE.**
RETURN PACKAGE TO ALL-PAK FOR REPLACEMENT. THIS PACKAGE IS NOT SOLD AS A STORAGE CONTAINER NOR FOR CONTAINMENT OF A PRODUCT IN WASTE DISPOSAL SITES. NO PART OF THIS PACKAGE IS TO BE RE- USED. **DO NOT** OVER FILL BOTTLE.

- For certain Class B Poisons, Corrosive Liquids and Flammable Liquids as defined in 49 CFR ET. SEQ. published in October 1983, Section 172.101 column 5, Part A, Items 173.118, 173.244, 173.345. THE SHIPPER MUST DETERMINE THE SUITABILITY OF THE STURDEESEAL SHIPPER FOR USE WITH HIS PRODUCT.
- This exemption by the Department of Transportation allows the shipper the determination to eliminate the hazard warning label for those items covered under the exemption when packaged as described.
- DOT-E 9168 is an approved package for shipping via ground transportation including UPS, rail, passenger aircraft or cargo-only aircraft.
- This package is acceptable for shipping PCB's via UPS but all markings on the outside of the carton that refer to the exemption must be covered over or removed. In addition the shipper must attach the EPA Warning Label to the outside of the carton and follow other instructions required by UPS.

Read Complete Brochure For Important Information, Instructions And Warnings Concerning Exemption E-9168

Shipper must determine suitability of SturdeeSeal Shipper for use with his product.

The name United Parcel Service, the initials UPS and the trademark are registered trade identification of United Parcel Service of America, Inc and used with permission

All-Pak®

All-Pak, Inc , Corporate One West
1195 Washington Pike
Bridgeville, Pennsylvania 15017-2854
Phone (412) 257-3000

INITIAL CALIBRATION DATA REPORT

Ecology & Environment, Inc.
Project #: KJ5103

Section Includes:
Initial Calibration, Retention Times, Response Factors, & %RSD.

Turbochrom Method File : C:\TC4\DATA\PCBQID.MTH
Created by : RP on : 11/5/97 04:26 PM
Edited by : kre on : 1/26/98 12:48 PM
Description : QUANT method for PCBs on DB608 column per method 8082

Number of Times Edited : 6
Number of Times Calibrated : 7

Global Information :
Default Sample Volume : 1.000 ul
Quantitation Units : ng
Void Time : 0.000 min
Correct amounts during calibration : YES
Reject outliers during calibration : NO
An External Standard calibration will be used
Unknown peaks will be quantitated using a response factor of 1.000000e+06

Component Information :

peak @ 11.1 min
Component Type : Single Peak Component
Retention Time : 11.108 min Search Window: 0.10 s, 3.00 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Area / Amount)
Calibration Levels:

Level Name	Amount	Area	Height	ISTD Resp.	ISTD Amt.	# Replicates
0.1 ppm	0.2000	64445.25	10155.56	----------	----------	1
0.25 ppm	0.5000	130639.02	20091.15	----------	----------	1
0.5 ppm	1.0000	244562.38	36895.98	----------	----------	1
0.75 ppm	1.5000	342641.44	51097.87	----------	----------	1
1.0 ppm	2.0000	444172.51	65809.86	----------	----------	1

Average Calibration Factor = 255716.106896

% RSD = 15.72 %

peak @ 12.7 min
Component Type : Single Peak Component
Retention Time : 12.718 min Search Window: 0.10 s, 3.00 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Area / Amount)
Calibration Levels:

Level Name	Amount	Area	Height	ISTD Resp.	ISTD Amt.	# Replicates
0.1 ppm	0.2000	120407.05	16216.45	----------	----------	1
0.25 ppm	0.5000	238839.05	31257.36	----------	----------	1
0.5 ppm	1.0000	435986.22	55738.32	----------	----------	1
0.75 ppm	1.5000	599778.87	76883.63	----------	----------	1
1.0 ppm	2.0000	767751.77	97644.85	----------	----------	1
1.25 ppm	2.5000	951266.29	118428.75	----------	----------	1
1.5 ppm	3.0000	1102075.25	137814.49	----------	----------	1

Average Calibration Factor = 435327.564230

% RSD = 19.2

peak @ 14.1 min
Component Type : Single Peak Component
Retention Time : 14.111 min Search Window: 0.10 s, 3.00 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Area / Amount)
Calibration Levels:

Level Name	Amount	Area	Height	ISTD Resp.	ISTD Amt.	# Replicates
0.1 ppm	0.2000	237422.30	26841.82	----------	----------	1
0.25 ppm	0.5000	481613.81	52261.06	----------	----------	1
0.5 ppm	1.0000	811689.39	91004.91	----------	----------	1
0.75 ppm	1.5000	1111687.13	123779.77	----------	----------	1
1.0 ppm	2.0000	1433350.18	159661.94	----------	----------	1
1.25 ppm	2.5000	1747411.13	193718.51	----------	----------	1

1.5 ppm	3.0000	2181913.98	231865.55	----------	----------	1

Average Calibration Factor = 835156.782953

21.5

peak @ 20.2 min
Component Type : Single Peak Component
Retention Time : 20.215 min Search Window: 0.20 s, 3.00 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Area / Amount)
Calibration Levels:

Level Name	Amount	Area	Height	ISTD Resp.	ISTD Amt.	# Replicates
0.1 ppm	0.2000	80124.21	10678.18	----------	----------	1
0.25 ppm	0.5000	159719.77	20877.54	----------	----------	1
0.5 ppm	1.0000	349357.62	41906.85	----------	----------	1
0.75 ppm	1.5000	486777.87	57604.16	----------	----------	1
1.0 ppm	2.0000	609160.48	74289.10	----------	----------	1
1.25 ppm	2.5000	750233.59	90951.59	----------	----------	1
1.5 ppm	3.0000	871346.14	105973.80	----------	----------	1
2.0 ppm	4.0000	1121442.40	134521.21	----------	----------	1

Average Calibration Factor = 321177.469897

12.0

peak @ 21.1 min
Component Type : Single Peak Component
Retention Time : 21.189 min Search Window: 0.10 s, 3.00 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Area / Amount)
Calibration Levels:

Level Name	Amount	Area	Height	ISTD Resp.	ISTD Amt.	# Replicates
0.1 ppm	0.2000	189733.43	25045.65	----------	----------	1
0.25 ppm	0.5000	388924.81	50898.63	----------	----------	1
0.5 ppm	1.0000	758912.20	96056.39	----------	----------	1
0.75 ppm	1.5000	1071219.27	133715.85	----------	----------	1
1.0 ppm	2.0000	1322842.38	169786.47	----------	----------	1
1.25 ppm	2.5000	1643738.27	207664.56	----------	----------	1
1.5 ppm	3.0000	1930816.60	245623.12	----------	----------	1
2.0 ppm	4.0000	2477152.98	318423.48	----------	----------	1

Average Calibration Factor = 722673.181400

14.8

peak @ 25.1 min
Component Type : Single Peak Component
Retention Time : 25.124 min Search Window: 0.10 s, 3.00 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Area / Amount)
Calibration Levels:

Level Name	Amount	Area	Height	ISTD Resp.	ISTD Amt.	# Replicates
0.1 ppm	0.2000	306304.61	29490.67	----------	----------	1
0.25 ppm	0.5000	697287.66	63621.33	----------	----------	1
0.5 ppm	1.0000	1336168.75	119496.85	----------	----------	1
0.75 ppm	1.5000	1878638.73	168104.54	----------	----------	1
1.0 ppm	2.0000	2475181.38	221292.70	----------	----------	1
1.25 ppm	2.5000	3075887.95	272155.83	----------	----------	1
1.5 ppm	3.0000	3655983.78	318993.47	----------	----------	1
2.0 ppm	4.0000	4749677.67	417375.05	----------	----------	1

Average Calibration Factor = 1.298590e+06

8. 9

Calibration Replicate Lists:

Component: peak @ 11.1 min

Level : 0.1 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
64445.25	10155.56	0.2000	----------	----------	1/22/98	04:47 PM	PCB3416.

Level : 0.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
130639.02	20091.15	0.5000	----------	----------	1/22/98	04:47 PM	PCB3417.

AVERAGE % RSD = 15.4

Level : 0.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
244562.38	36895.98	1.0000	----------	----------	1/22/98	04:47 PM	PCB3418.

Level : 0.75 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
342641.44	51097.87	1.5000	----------	----------	1/22/98	04:47 PM	PCB3419.

Level : 1.0 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
444172.51	65809.86	2.0000	----------	----------	1/22/98	04:47 PM	PCB3420.

Component: peak @ 12.7 min

Level : 0.1 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
120407.05	16216.45	0.2000	----------	----------	1/22/98	04:47 PM	PCB3416.

Level : 0.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
238839.05	31257.36	0.5000	----------	----------	1/22/98	04:47 PM	PCB3417.

Level : 0.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
435986.22	55738.32	1.0000	----------	----------	1/22/98	04:47 PM	PCB3418.

Level : 0.75 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
599778.87	76883.63	1.5000	----------	----------	1/22/98	04:47 PM	PCB3419.

Level : 1.0 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
767751.77	97644.85	2.0000	----------	----------	1/22/98	04:47 PM	PCB3420.

Level : 1.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
951266.29	118428.75	2.5000	----------	----------	1/22/98	04:47 PM	PCB3421.

Level : 1.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File

1102075.25	137814.49	3.0000	----------	----------	1/22/98	04:47 PM	PCB3422.

Component: peak @ 14.1 min

Level : 0.1 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
237422.30	26841.82	0.2000	----------	----------	1/22/98	04:47 PM	PCB3416.

Level : 0.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
481613.81	52261.06	0.5000	----------	----------	1/22/98	04:47 PM	PCB3417.

Level : 0.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
811689.39	91004.91	1.0000	----------	----------	1/22/98	04:47 PM	PCB3418.

Level : 0.75 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
1111687.13	123779.77	1.5000	----------	----------	1/22/98	04:47 PM	PCB3419.

Level : 1.0 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
1433350.18	159661.94	2.0000	----------	----------	1/22/98	04:47 PM	PCB3420.

Level : 1.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
1747411.13	193718.51	2.5000	----------	----------	1/22/98	04:47 PM	PCB3421.

Level : 1.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
2181913.98	231865.55	3.0000	----------	----------	1/22/98	04:47 PM	PCB3422.

Component: peak @ 20.2 min

Level : 0.1 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
80124.21	10678.18	0.2000	----------	----------	1/22/98	04:47 PM	PCB3416.

Level : 0.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
159719.77	20877.54	0.5000	----------	----------	1/22/98	04:47 PM	PCB3417.

Level : 0.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
349357.62	41906.85	1.0000	----------	----------	1/22/98	04:47 PM	PCB3418.

Level : 0.75 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
486777.87	57604.16	1.5000	----------	----------	1/22/98	04:47 PM	PCB3419.

Level : 1.0 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
609160.48	74289.10	2.0000	----------	----------	1/22/98	04:47 PM	PCB3420.

Level : 1.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
750233.59	90951.59	2.5000	----------	----------	1/22/98	04:47 PM	PCB3421.

Level : 1.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
871346.14	105973.80	3.0000	----------	----------	1/22/98	04:47 PM	PCB3422.

Level : 2.0 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
1121442.40	134521.21	4.0000	----------	----------	1/22/98	04:47 PM	PCB3423.

Component: peak @ 21.1 min

Level : 0.1 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
189733.43	25045.65	0.2000	----------	----------	1/22/98	04:47 PM	PCB3416.

Level : 0.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
388924.81	50898.63	0.5000	----------	----------	1/22/98	04:47 PM	PCB3417.

Level : 0.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
758912.20	96056.39	1.0000	----------	----------	1/22/98	04:47 PM	PCB3418.

Level : 0.75 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
1071219.27	133715.85	1.5000	----------	----------	1/22/98	04:47 PM	PCB3419.

Level : 1.0 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
1322842.38	169786.47	2.0000	----------	----------	1/22/98	04:47 PM	PCB3420.

Level : 1.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
1643738.27	207664.56	2.5000	----------	----------	1/22/98	04:47 PM	PCB3421.

Level : 1.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
1930816.60	245623.12	3.0000	----------	----------	1/22/98	04:47 PM	PCB3422.

Level : 2.0 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File

2477152.98	318423.48	4.0000	----------	----------	1/22/98	04:47 PM	PCB3423.

Component: peak @ 25.1 min

Level : 0.1 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
306304.61	29490.67	0.2000	----------	----------	1/22/98	04:47 PM	PCB3416.

Level : 0.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
697287.66	63621.33	0.5000	----------	----------	1/22/98	04:47 PM	PCB3417.

Level : 0.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
1336168.75	119496.85	1.0000	----------	----------	1/22/98	04:47 PM	PCB3418.

Level : 0.75 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
1878638.73	168104.54	1.5000	----------	----------	1/22/98	04:47 PM	PCB3419.

Level : 1.0 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
2475181.38	221292.70	2.0000	----------	----------	1/22/98	04:47 PM	PCB3420.

Level : 1.25 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
3075887.95	272155.83	2.5000	----------	----------	1/22/98	04:47 PM	PCB3421.

Level : 1.5 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
3655983.78	318993.47	3.0000	----------	----------	1/22/98	04:47 PM	PCB3422.

Level : 2.0 ppm

Area	Height	Vol Adj Amt	ISTD Response	ISTD Amount	Date/Time		File
4749677.67	417375.05	4.0000	----------	----------	1/22/98	04:47 PM	PCB3423.

NOTE BOOK DATA REPORT

Ecology & Environment, Inc.
Project #: KJ5103

Section Includes:
Analyst notebook information

Organic PCB 608/8080 Notebook

QC	Sample ID	Extraction Volume	Final Vol.	Surrogate Used	Prep.Date/ Analyst	Prep Comments	Analysis Date/ Analyst	Surrogate % Recovery
	9802-06008-1	1g	10mL	ORG436	2-6-98 RLG			
SMC	-1	↓	↓	↓	↓			
SMD	-1	↓	↓	↓	↓			
	Blank	—	10mL	ORG436	2.9.98 RLG			
	9802.09003.001	10.0g	↓	↓	↓	Mulch type sample w/oil very light.		
	.002	↓	↓	↓	↓	Sandy type sample.		

ENVIRONMENTAL CONTROL LABORATORIES INC.

21337 Drake Road
Strongsville, Ohio 44136
(440) 238-6100
FAX (440) 238-6294

Fax Cover Sheet

Date : February 22, 1998

Pages : 1

To : Karen Dieckhaus

Company : Ecology & Environment, Inc.

Fax Number : 313-946-0488

From : Bob McGregor

Subject : Request for Purchase Order on TDD/PAN S05-9802-803

2/17/98

Karen,

Recently we completed work on the work order referenced above I would like to submit invoice for this scope of work As is convenient for you, could you please see that we are sent a purchase order for this scope of work Pricing can be found on E. C. Labs' quotation # 980206. If there are any questions, please do not hesitate to call.

Thanks for your help,

Bob McGregor
E C Laboratories Inc

ecology and environment, inc.
12251 UNIVERSAL, TAYLOR, MICHIGAN 48180, TEL (313) 946-0900
International Specialists in the Environment

Date: 2-23-98	Time: 10:40
Project Code Number:	Total Number of Pages (including cover sheet): 2
To: Bob McGregor	
Company:	
Fax Number:	
From. K. Dieckhaus	Ecology & Environment Fax: (734)946-0488

The original copy of the P.O. was mailed to you on 2-17-98. Here is a copy. Call if you need anything more.

Data Qualifications

I. Holding Time: Acceptable

The samples were collected on January 21, 1998, and received by the laboratory on January 26, 1998. The samples were extracted on January 27, 1998, and analyzed on January 28, and 29, 1998, for SVOCs. All analyses were completed within the 14 days from collection to extraction and 40 days from extraction to analysis holding times specified in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01.

II. Gas Chromatography/Mass Spectrometry (GC/MS) Tuning: Acceptable

Decafluorotriphenylphosphine (DFTPP) standards were analyzed within the required 12-hour time limit for all sample analyses on the same instrument used to analyze the samples, and the ion abundance criteria were met for each DFTPP standard.

III. Calibration:

A. Initial Calibration: Acceptable

All response factors (RFs) were greater than zero, and relative response factors (RRFs) for all parameters were at least 0.05 for the initial calibration. All percent relative standard deviations (%RSDs) were within the acceptable range of less than or equal to 30%, except for 3-nitroaniline and benzidine. No positive results were reported for these compounds thus no action was taken.

B. Continuing Calibration: Qualified

All of the percent differences (%Ds) between the initial calibration and continuing calibration were within the recommended limits of less than or equal to 25%, except bis(2-ethylhaxyl)phthalate, 4-nirtophenol, benzidine, pyrene, benzoic acid, hexachlorobutadiene, butylbenzylphthalate. All positive results for these compounds have been flagged "J", as estimated.

IV. Internal Standards: Acceptable

All internal standard (IS) areas were within the specified limits (-50 to +100%) of the associated calibration standards. IS retention times (RTs) were within the plus-or-minus 30-second control limit.

V. Method Blank: Acceptable

A method blank was analyzed on the same instrument and in the proper frequency. All target analytes were below the instrument detection limits.

VI. Compound Identification: Acceptable

All relative retention times (RRTs) were within 0.06 units of the standard RRTs.

VII. Compound Quantitation and Reported Detection Limits: Acceptable

All reported values have been correctly adjusted to reflect all dilutions and dry weight factors.

ecology and environment, inc.

International Specialists in the Environmental Sciences

PURCHASE ORDER

SHIP TO
Ecology and Environment, Inc.
12251 Universal
Taylor, MI 48180

ATTENTION: Karen T. Dieckhaus

BILLING ADDRESS same as ship to

TO
EC Laboratories
21337 Drake Road
Strongsville, OH 44136

contact: Rob Crookston

Our order number must appear on all correspondance, invoices, packing lists, and packages. **NO 121621-55**

MAIL INVOICE IN DUPLICATE

PURCHASE REQ. NO.: TDD S05-9802-803 DATE: 2-6-98

SHIP VIA: FOB:

TERMS: DELIVERY REQUIRED:

ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT
A	Soil: PCBs - method 8082	2	$50.00	$100.00
B	Rush Turnaround Time	2	$62.50	$125.00
	Requires OSWER QA II			
	Turnaround Time: verbal - 72 hours (2-10-98)			
	hardcopy - 96 hours (2-11-98)			
	Lab shall be responsible for proper disposal of all			
	samples.			
	Invoice must reflect unit prices and appropriate			
	quantities as indicated herein and should reference			
	both the Purchase Order number and the TDD number			
	(both are found in the top right-hand corner of the			
	Purchase Order.)			
	KJ 5102 8FACOITAXX not to exceed $225.00		TOTAL	$225.00

White: Vendor Copy
Pink: Requisition/Receiving Copy
Green: Vendor File Copy
Yellow: Numerical File Copy

BUYER'S SIGNATURE

077110

ecology and environment, inc.

International Specialists in the Environmental Sciences

PURCHASE ORDER

SHIP TO
Ecology and Environment, Inc.
12251 Universal
Taylor, MI 48180

ATTENTION: Karen T. Dieckhaus

BILLING ADDRESS same as ship to

Our order number must appear on all correspondance, invoices, packing lists, and packages.

NO 121621-55

TO
EC Laboratories
21337 Drake Road
Strongsville, OH 44136
contact: Rob Crookston

MAIL INVOICE IN DUPLICATE

~~PURCHASE~~ TDD REQ. NO.: S05-9802-803 DATE: 2-6-98

SHIP VIA: FOB:

TERMS: DELIVERY REQUIRED:

ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT PRICE	AMOUNT
A	Soil: PCBs - method 8082	2	$50.00	$100.00
B	Rush Turnaround Time	2	$62.50	$125.00
	Requires OSWER QA II			
	Turnaround Time: vwrbal - 72 hours (2-10-98)			
	hardcopy - 96 hours (2-11-98)			
	Lab shall be responsible for proper disposal of all			
	samples.			
	Invoice must reflect unit prices and appropriate			
	quantities as indicated herein and should reference			
	both the Purchase Order number and the TDD number			
	(both are found in the top right-hand cotner of the			
	Purchase Order.)			
	KJ 5103 8FAC01TAXX not to exceed $225.00		TOTAL	$225.00

Sent to HQ 3/5/98

3/5/98

Mary Ann Spedalette
BUYER'S SIGNATURE

White: Vendor Copy
Pink: Requisition/Receiving Copy
Green: Vendor File Copy
Yellow: Numerical File Copy

077110

ENVIRONMENTAL CONTROL LABORATORIES

21337 DRAKE ROAD
STRONGSVILLE, OHIO 44136
216-238-6100 fax 216-238-6294

Invoice No. 30821

INVOICE

Customer

Name ECOLOGY & ENVIRONMENT
ACCOUNTS PAYABLE
Addres 12251 UNIVERSAL
City TAYLOR State MI ZIP 48180

DATE 2/27/98
ORDER # 20903

Purchase Order 121621-55 **Customer #** 921620

ITEM #	Qty	Description	Unit Price	TOTAL
A	2	SOIL. PCB's - METHOD 8082	$50 00	$100 00
B	2	RUSH TURNAROUND TIME	$62 50	$125 00
		TDD S05-9802-803		
		KJ5103		

OK To Pay
3/5/98

SubTotal	$225 00
Shipping & Handling	$0.00
Taxes	
TOTAL	$225 00

REMIT TO E C LABORATORIES
21845 DRAKE ROAD
STRONGSVILLE, OHIO 44136

NET 30

3-5-98

KJ5103-25, 8FAC01TAXX, $225.00, 27

RECEIVED
MAR 0 1998

Mich Con H

ecology and environment, inc.

PURCHASE REQUISITION

Vendor: EC Laboratories
Address: 21337 Drake Road
Strongsville, OH 44136

Contact: Rob Crookston Phone: 800-962-0118

Date: 2/6/98 PR No.:
Ship VIA: Fed Ex Date Required: 2/6/98
LIN: PO No.:
Contract No.: 68-W6-0011 Account: 27
Project TDD/PAN: KJ5103 S05-9802-803, 8FAC01TA

Ship to: Ecology and Environment, Inc
12251 Universal
Taylor, MI 48180
Attention: Karen T. Dieckhaus

Billing Address: Same

Item	Description	Quantity	Unit Price	Amount
A	Soil: PCB/8082	2	$ 50.00	$100.00
B	Rush T.A.T.	2	$ 62.50	$125.00
C	QA Level II Package	LOT		included
	Turnaround Time: Verbals 72 hours 2/10/98 COB			
	Hardcopy 96 hours 2/11/98			
	Total Project Cost			$225.00

Purpose/Justification (Continue on back if necessary):
Only technical bidders solicited.
Lowest bidder selected.

ALTERNATE SOURCES

Item	Vendor	Comment	Amount
A-C	E&E, ASC Laboratory	Higher bid	$ 250.00
A-C	NET Laboratories	Could not provide 72 hr T.A.T.	-
A-C	Clayton Laboratories	No Bid	-

Printed Name of Requestor: Karen T. Dieckhaus Signature of Requestor: Karen T. Dieckhaus

Approved by/Date:
1. 2/9/98 3.
2. 4.

ecology and environment, inc.

recycled paper

Analytical Bid Request/Analysis

From: Karen T. Diekhaus
12251 Universal Drive
Taylor, MI 48180

Phone #: (313) 946-0475
FAX #: (313) 946-0488

Please respond to this request by faxing the completed form to Ecology and Environment, Inc.

To. EC Labs B. McGregor
21337 Drake Road
Strongsville, Ohio 44136

Phone #: (216) 238-6100
FAX #: (216) 238-6294

3 page fax

Analytical TDD/PAN: 505-9802-803

Project TDD/PAN: 505-9801-020

RUSH Bid Deadline: 2/5/98 12:00 P.M.

Estimated Sample Receipt Date: 2/7/98

Number of Samples	Matrix	QA Level II Parameter/Method	Turnaround Time Verbal/FAX	Turnaround Time Hard Copy	MS/MSD	Detection Limits
2	Oil	PCBs	A.S.A.P.	72-hour	No	1 ppm
2	Soil	PCBs	A.S.A.P.	72-hour		
		OR				
* 2	Oil	PCBs	A.S.A.P	7 cal days		
2	Soil	PCBs	A.S.A.P.	7 cal. days		

See Attachments for Deliverable Requirements

This Section to be Completed by Laboratory

* Need costs for both 72-hour and 7 calendar day turnarounds, but one will be chosen.

Unit Price Breakdown

Parameter/ Method	Matrix	QA Level II Base Analysis Cost	Surcharges: Rush Turnaround	Surcharges: MS/MSD	Surcharges: Other	Total Unit Cost
PCBs	Oil	$ 35.00	$ 43.75	72 hour		$ 78.75 ea.
PCBs	Soil	$ 50.00	$ 62.50	72 hour		$ 112.50 ea.
PCBs	Oil	$ 35.00	$ 3.50	7 day		$ 38.50 ea
PCBs	Soil	$ 50.00	$ 5.00	7 day		$ 55.00 ea.

QA/QC Costs
Blank: _____ Sample Disposal: _____
QC Data Package: _____ Other: _____
Other Cost Not Listed Above: (explain on separate form if necessary) _____

Is Your Company Classified as:
Small Business: ☐ Y ☒ N ID#: _____
Small Disadvantaged Business: ☐ Y ☒ N ID#: _____
Woman-owned Business: ☐ Y ☒ N
What County is Your Business Located In? Cuyahoga

Robert M. [illegible]
Laboratory Signature

Bid Total
392.50 (72 Hour)
187.00 (7 day)

ecology and environment, inc.

Analytical Bid Request/Analysis

From: Karen T. Dieckhaus
12251 Universal Drive
Taylor, MI 48180

Phone #: (313) 946-0475
FAX #: (313) 946-0488

Please respond to this request by faxing the complete form to Ecology and Environment, Inc.

To: Ecology & Environment, Inc. ASC
4493 Walden Avenue
Lancaster, NY 14086
Attn: Caryn W.

Phone #: (716) 685-8080
FAX #: (716) 685-0852

Analytical TDD/PAN: 505-9802-803

Project TDD/PAN: 505-9801-020

RUSH Bid Deadline: 2/5/98 12:00 P.M.

Estimated Sample Receipt Date: 2/7/98

Number of Samples	Matrix	QA Level II Parameter/Method	Turnaround Time Verbal/FAX	Turnaround Time Hard Copy	MS/MSD	Detection Limits
2	Oil	PCBs	A.S.A.P.	72-hour	No	1 ppm
2	Soil	PCBs	A.S.A.P.	72-hour	↓	↓
		OR				
* 2	Oil	PCBs	A.S.A.P.	7 cal days	↓	↓
2	Soil	PCBs	A.S.A.P.	7 cal days	↓	↓

See Attachments for Deliverable Requirements

This Section to be Completed by Laboratory

* Need costs for both 72-hour and 7 calendar day turnarounds, but one be chosen.

Unit Price Breakdown

Parameter/ Method	Matrix	QA Level II Base Analysis Cost	Surcharges: Rush Turnaround	Surcharges: MS/MSD	Surcharges: Other	Total Unit Cost
8082	OIL	$ 70	72 h +25%			$87.50
8082	SOIL	100	↓			$125.00
8082	OIL	70	7 day			$ 70.00
8082	SOIL	100	↓			$100.00

QA/QC Costs
Blank: _____ Sample Disposal: _____
QC Data Package: _____ Other: _____
Other Cost Not Listed Above: (explain on separate form if necessary) _____

Is Your Company Classified as:
Small Business: ☐ Y ☒ N ID#: _____
Small Disadvantaged Business: ☒ Y ☒ N ID#: _____
Woman-owned Business: ☐ Y ☒ N
What County Is Your Business Located In? Erie NY

Caryn Strotowicz
Laboratory Signature

Bid Total

* 72 hr hardcopy for Saturday receipt of samples would be Wednesday 2/11
7 calendar day Monday 2/16

ecology and environment, inc.

Analytical Bid Request/Analysis

From: Karen T. Dieckhaus
12251 Universal Drive
Taylor, MI 48180

Phone #: (313) 946-0475
FAX #: (313) 946-0488

Please respond to this request by faxing the completed form to Ecology and Environment, Inc.
Phone #: ~~(248) 391-2050~~ 1-800-52-4951
FAX #: ~~(248) 391-9688~~ 332-5450

To: NET, Inc. (Auburn Hills)
1700 Harmon Road
Auburn Hills, MI 48326
Attn: ~~Ron Bill Rubin~~ Sue Schafer

3 page fax.

Analytical TDD/PAN: 505-9802-803

Project TDD/PAN: 505-9801-020

RUSH Bid Deadline: 2/5/98 12:00 P.M.

Estimated Sample Receipt Date: 2/7/98

Number of Samples	Matrix	QA Level II Parameter/Method	Turnaround Time Verbal/FAX	Turnaround Time Hard Copy	MS/MSD	Detection Limits
2	Oil	PCBs	A.S.A.P.	72-hour	No	1 ppm
2	Soil	PCBs	A.S.A.P.	72-hour		
		OR				
* 2	Oil	PCBs	A.S.A.P.	7 cal. days		
2	Soil	PCBs	A.S.A.P. (72 hr)	7 cal. days		

See Attachments for Deliverable Requirements

This Section to be Completed by Laboratory

* Need costs for both 72-hour and 7 calendar day turnaround, but one will be chosen.

Unit Price Breakdown

Parameter/ Method	Matrix	QA Level II Base Analysis Cost	Surcharges: Rush Turnaround	Surcharges: MS/MSD	Surcharges: Other	Total Unit Cost
2	oil	PCB				no bid
2	soil	PCB				no bid
2	oil	PCB	32.50 + 50%			48.75
2	soil	PCB	71.50 + 50%			110.

QA/QC Costs
Blank: N/C
QC Data Package: 15% 40.31

Sample Disposal: N/C
Other: N/C

Other Cost Not Listed Above: (explain on separate form if necessary)

Is Your Company Classified as:
Small Business: ☐ Y ☑ N ID#:
Small Disadvantaged Business: ☐ Y ☑ N ID#:
Woman-owned Business: ☐ Y ☑ N
What County is Your Business Located in? Oakland

Susan Schafer
Laboratory Signature

Bid Total 357.81

ecology and environment, inc.

Analytical Bid Request Analysis

From: Karen T. Dieckhaus
12251 Universal Drive
Taylor, MI 48180

Phone #: (313) 946-0475
FAX #: (313) 946-0488

Please respond to this request by faxing the completed form to Ecology and Environment, Inc.

To: Clayton Labs + Consultants
22345 Roethel Drive
Novi, MI 48375
Attn: Debbie Ranger

Phone #: (248) 344-2648
FAX #: (248) 344-2655

Analytical TDD/PAN: 505-9802-803

Project TDD/PAN: 505-9801-020

RUSH Bid Deadline: 2/5/98 12:00 P.M.

Estimated Sample Receipt Date: 2/7/98

Number of Samples	Matrix	QA Level II Parameter/Method	Turnaround Time Verbal/FAX	Turnaround Time Hard Copy	MS/MSD	Detection Limits
2	Oil	PCBs	A.S.A.P.	72-hour	No	1 ppm
2	Soil	PCBs	A.S.A.P.	72-hour	↓	↓
		OR				
* 2	Oil	PCBs	A.S.A.P.	7 cal days	↓	↓
2	Soil	PCBs	A.S.A.P.	7 cal days	↓	↓

See Attachments for Deliverable Requirements

This Section to be Completed by Laboratory

* Need costs for both 72-hour and 7 calendar day turnaround, but one will be chosen.

Unit Price Breakdown

Parameter/ Method	Matrix	QA Level II Base Analysis Cost	Surcharges: Rush Turnaround	Surcharges: MS/MSD	Surcharges: Other	Total Unit Cost
		BID	BID			

QA/QC Costs

Blank: _____ Sample Disposal: _____

QC Data Package: _____ Other: _____

Other Cost Not Listed Above: (explain on separate form if necessary) _____

Is Your Company Classified as:

Small Business: ☐ Y ☐ N ID#: _____

Small Disadvantaged Business: ☐ Y ☐ N ID#: _____

Woman-owned Business: ☐ Y ☐ N

What County Is Your Business Located In? _____

Laboratory Signature

Bid Total

9802-09003

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
77 West Jackson Boulevard
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: KJ5103

PROJECT NAME: SOS-9802-803

Activity Code:

SAMPLERS: (Print Name and Sign) Michael Dieckhaus, Mark Ramaly

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Analyte: PCBs	TAG NUMBERS
S-1	2/6/98	1255		X	C-1	1	X	
S-2	2/6/98	1245		X	C-2	1	X	

** Verbal Results Turnaround => As Soon As Possible!
Hardcopy => 72 hr T.O.

** QA Level II

Ecology + Environment Contact:
Karen Dieckhaus
734-946-0900 (Phone)
734-946-0488 (Fax)

No More Samples

Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Mark Ramaly	2/6/98 1630	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) / Date / Time
		[signature] 2/9/98 10:30 AM

Ship To: EC Labs
21337 Drake Road
Strongsville, Ohio 44136

ATTN: Bob McGregor

Airbill Number: 9808372092 (Federal Express)

Chain of Custody Seal Numbers

Distribution: White - Accompanies Shipment; Pink - Coordinator Field Files; Yellow - Laboratory File

Printed on Recycled Paper/Printed with Soy-Based Ink

5-26153

E.C. LABORATORIES
Sample Log-in Data Sheet

Chain of Custody: Present / Absent
Sample Tags: Present / Absent
Sample Transport: Cooler / Cardboard box Ice / Ambient

Client: E + E
Date received: 2/9/93
Carrier: ~~UPS~~ FedEx
EC Lab # 9302-09003

No. of samples submitted: 2

Total No. of containers: 2

Sample Containers										
	O&G									
	Plastic Qrts									
	Amber Qrts									
	Squat	1	1							
	VOC									
	500 ml Plastic									
	Other									
	Matrix	S-O								

Temp / pH Checked by N/A

H2SO4	
HNO3	
NaOH	

Temp.

Sample Tags match Chain of Custody: yes / no

Receiving Remarks:

Phone Log:

Form Prepared by.

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
77 West Jackson Boulevard
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

Activity Code:

PROJ. NO.: KJ5103

PROJECT NAME: SOS-9802-803

SAMPLERS: (Print Name and Sign) Michael Dieckhaus, Mark Ramaly

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Analyte: PCBs	TAG NUMBERS
S-1	2/6/98	1255		X	C-1	1	X	
S-2	2/6/98	1245		X	C-2	1	X	

No more samples

** Verbal Results Turnaround => As Soon As Possible!
Hardcopy => 72 hr T.O.

** QA Level II

Ecology + Environment Contact:
Karen Dieckhaus
734-946-0900 (Phone)
734-946-0488 (Fax)

Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Mark Ramaly	2/6/98 1630	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature) / Date / Time

Ship To: EC Labs
21337 Drake Road
Strongsville, Ohio 44136

ATTN: Bob McGregor

Airbill Number: 9808372092 (Federal Express)

Chain of Custody Seal Numbers

Distribution: White - Accompanies Shipment; Pink - Coordinator Field Files; Yellow - Laboratory File

Printed on Recycled Paper/Printed with Soy-Based Ink

5-26153