N00164.AR.000563
NSWC CRANE
5090.3a

MORRISON KNUDSEN CORPORATION

ENGINEERS & CONSTRUCTORS
MK FERGUSON PLAZA
1500 WEST 3RD STREET
CLEVELAND, OHIO U.S.A. 44113-1406
PHONE: (216) 523-5600
FAX: (216) 523-5922

July 7, 2000

Suzanne M. Volk
Indiana Department of Environmental Management
Office of Land Quality
100 N. Senate Avenue, Room N1101
Indianapolis, IN 46206-6015

Dear Ms. Volk:

In response to your request, please find enclosed the analytical data for the Crane Biofacility Toxicity testing for Windrow S001. Also enclosed are the leaching procedures and resultant extract analysis for the testing of Windrow S001 in the Toxicity Report. The data includes all injection reports from the primary column and secondary column, where appropriate. In addition, all calibration and continuing calibration check standards have been provided. Surrogate recoveries, lab blank spikes, and matrix spikes have been included as quality control checks. Finally extraction records have also been included for your review.

In response to your questions please find the following responses:

Question 1: Which extraction fluids were used? (There are two possible TCLP fluids and three possible SPLP fluids.

Response: TCLP extraction was performed using fluid # 1. The samples had an initial pH greater than five which indicated the use of 1N HCL in a subsample as specified in section 8.3.3 of the laboratory SOP. The pH of this subsample was less than five which indicated the use of fluid # 1 in the extraction. The pH of this fluid was 4.93 $\pm$ 0.05. The SPLP extraction was performed using SPLP fluid #1 which had a pH of 4.20 $\pm$ 0.05. This fluid was selected because the soil was from a site east of the Mississippi.

Question 2: Was particle reduction done? If so, how?

Response: Laboratory particle size reduction was not required for either the TCLP or the SPLP extraction since the samples met particle size requirements specified in the method. The samples that were analyzed were compost (soil, straw, and chicken manure) from a windrow which had already been processed for 26 days. Field personnel described the texture of the

sample matrix as "fine" on a scale of "course", "medium", or "fine".

Question 3: Was the extraction done by the ZHE method (normally reserved for volatiles or cyanide), or was the non-volatile extraction method used. (Both SOPs were provided in the QAPP)

Response: For this analysis, the non-volatile extraction method was used. The ZHE method was included in the QAPP in case volatile concentrations in pre-excavation samples exceeded clean-up objectives, and volatiles became a contaminant of concern. Pre-excavation samples showed only explosives exceeding Industrial clean-up objectives, and were therefore the only constituents being evaluated in windrow samples. If volatiles were to exceed clean-up objectives, then volatiles would be evaluated using the ZHE method provided.

Should you have any further questions regarding the analysis performed during the toxicity analysis, please feel free to contact me at (216) 523-3316.

Sincerely,

Alan Fosdick

Alan Fosdick
Washington Group International, Inc.

Total Analysis

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.01

Sample Amt: 2g % Moisture 19.71 Date Received: 05/12/98

Extraction Volume: 10ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 06/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	2240	
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	652	P
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

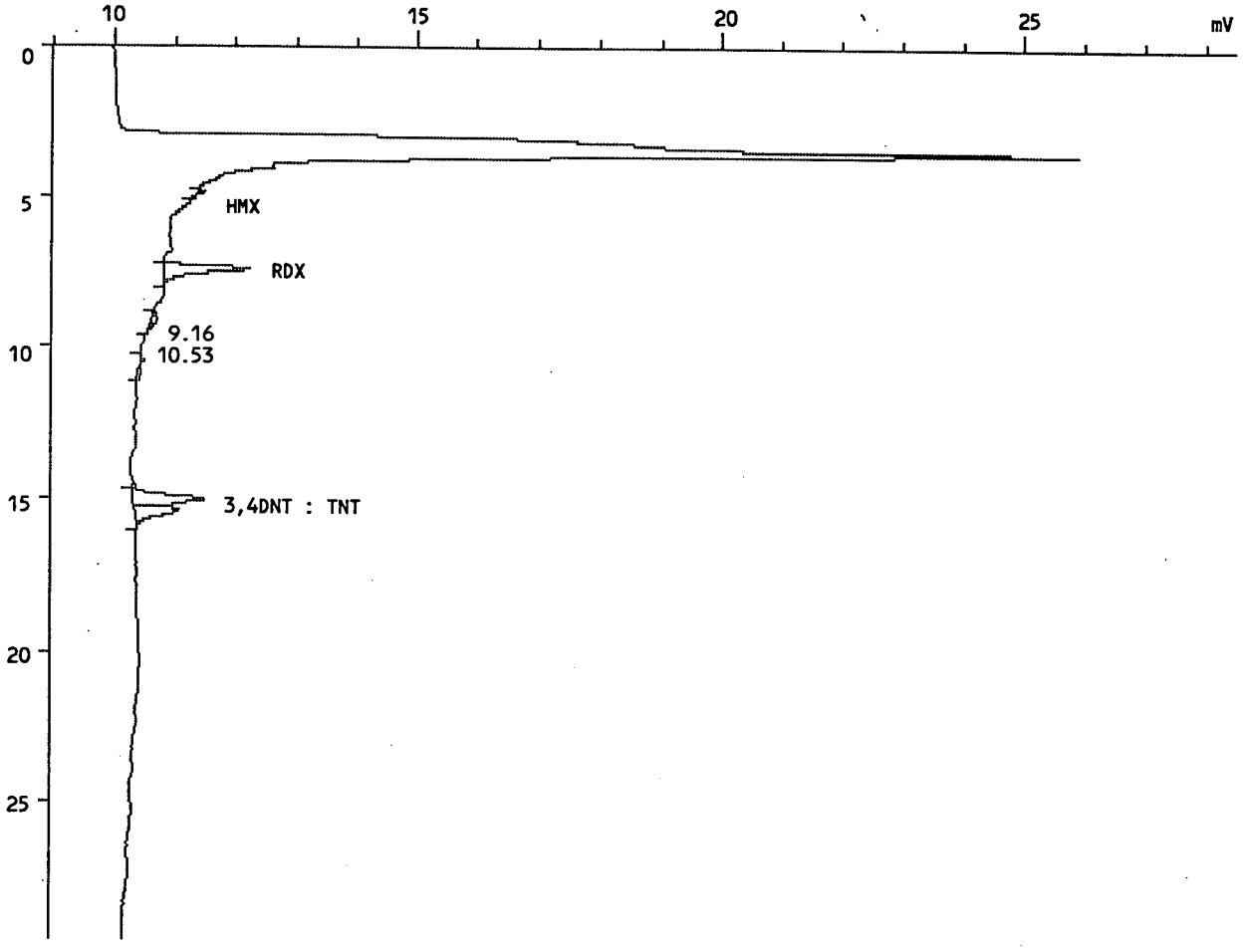
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0605A,5,1

Sample name.....: BIO-12/14-S001-3
Sample ID.....: 33925.01
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 06-Jun-98 at 03:08:58
Reported on 08-Jun-98 at 12:21:44



INJECTION REPORT

Injection F: <MC3> 5 5EX0605A,5,1

Acquired on 06-Jun-98 at 03:08:58
Modified on 08-Jun-82 at 12:00:50
Reported on 08-Jun-98 at 12:00:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 12
Calibration file..: 5EX0605 Last modified on 08-Jun-82 at 11:51:12
Method file.....: EXPLOS Last modified on 08-Jun-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-3
Sample ID.....: 33925.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

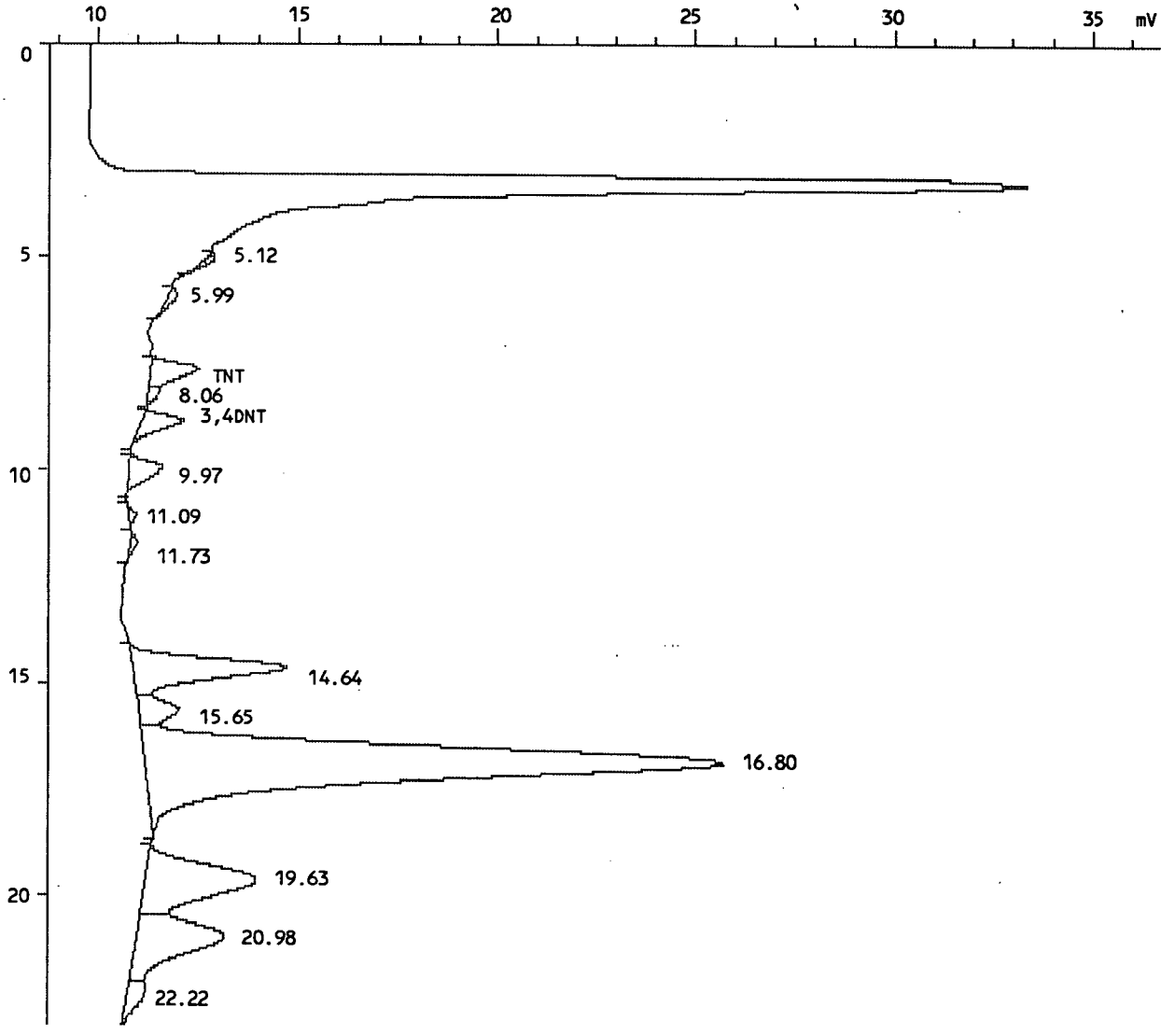
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.907	117	1102	150.203	HMX
2	7.461	1427	21518	2241.413	RDX *
5	15.061	1142	23756	2159.598	3,4DNT 108
6	15.445	729	15246	651.558	TNT *P
Total		3414	61622	5202.771	
Residual		169	2720	283.308	

LONG PLOT

Injection F: <MC3> 3 3CN0519A,3,1

Sample name.....: BIO-12/14-S001-3
Sample ID.....: 33925.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 20-May-98 at 05:33:55
Reported on 20-May-98 at 11:50:59



INJECTION REPORT

Injection F: <MC3> 3 3CN0519A,3,1

Acquired on 20-May-98 at 05:33:55
Modified on 20-May-82 at 11:49:46
Reported on 20-May-98 at 11:50:31

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 31
Calibration file..: 3CN0519A Last modified on 20-May-82 at 11:27:44
Method file.....: LCCN Last modified on 20-May-82 at 11:35:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-3
Sample ID.....: 33925.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

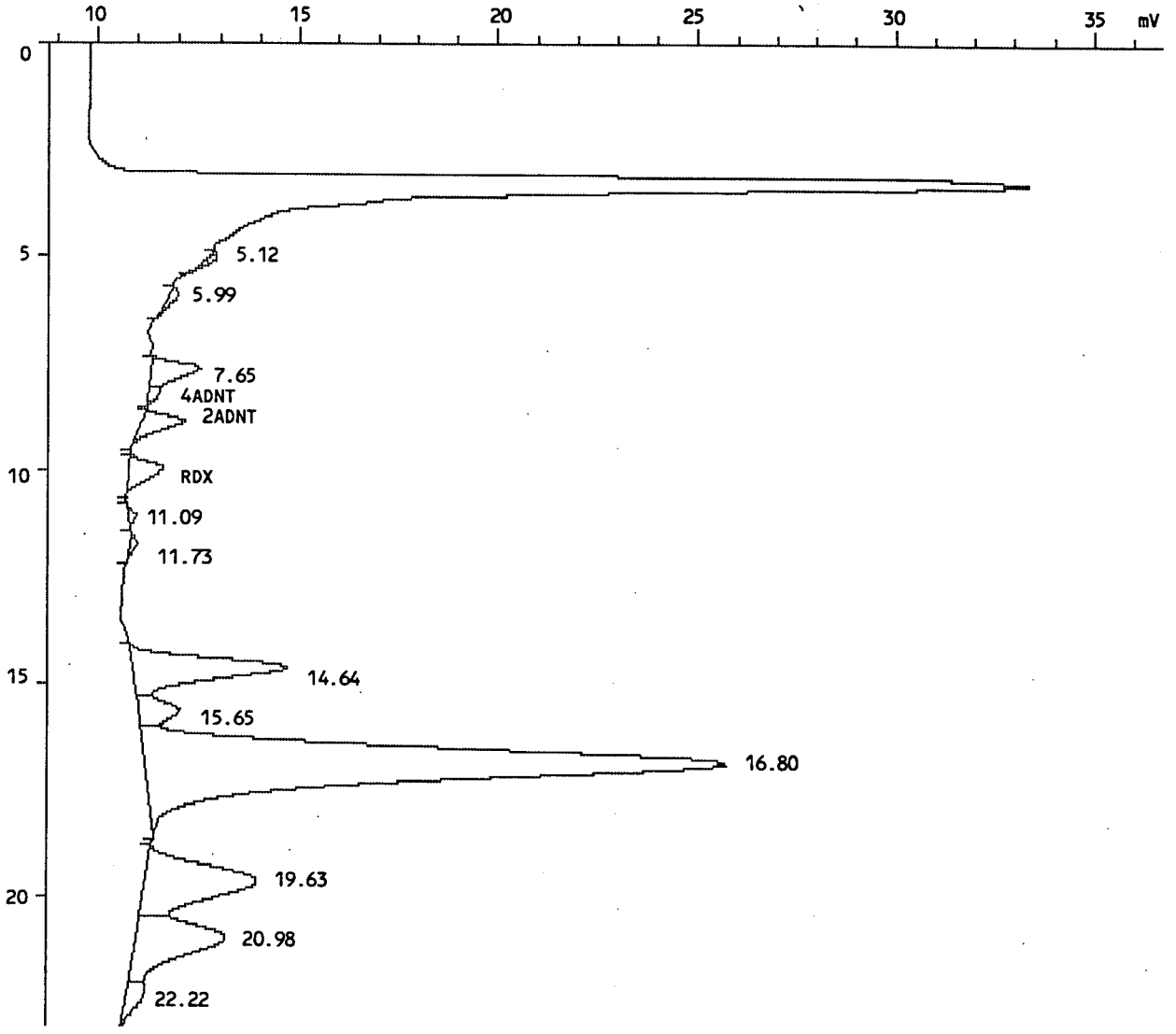
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.648	1202	29529	1117.682	TNT
5	8.896	1045	23999	1660.812	3,4DNT
Total		2247	53528	2778.494	
Residual		26997	1246348	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0519A,3,1

Sample name.....: BIO-12/14-S001-3
Sample ID.....: 33925.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 20-May-98 at 05:33:55
Reported on 20-May-98 at 11:52:45



INJECTION REPORT

Injection F: <MC3> 3 3CN0519A,3,1

Acquired on 20-May-98 at 05:33:55
Modified on 20-May-82 at 11:51:30
Reported on 20-May-98 at 11:51:54

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 31
Calibration file..: 3CN0519B Last modified on 20-May-82 at 11:29:36
Method file.....: LCCN Last modified on 20-May-82 at 11:35:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-3
Sample ID.....: 33925.01
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	8.064	304	5276	292.133	4ADNT
5	8.896	1045	23999	882.956	2ADNT
6	9.973	825	23986	1685.585	RDX
Total		2174	53261	2860.673	
Residual		27071	1246615	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.01

Sample Amt: 2g % Moisture 19.71 Date Received: 05/12/98

Extraction Volume: 10ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 05/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

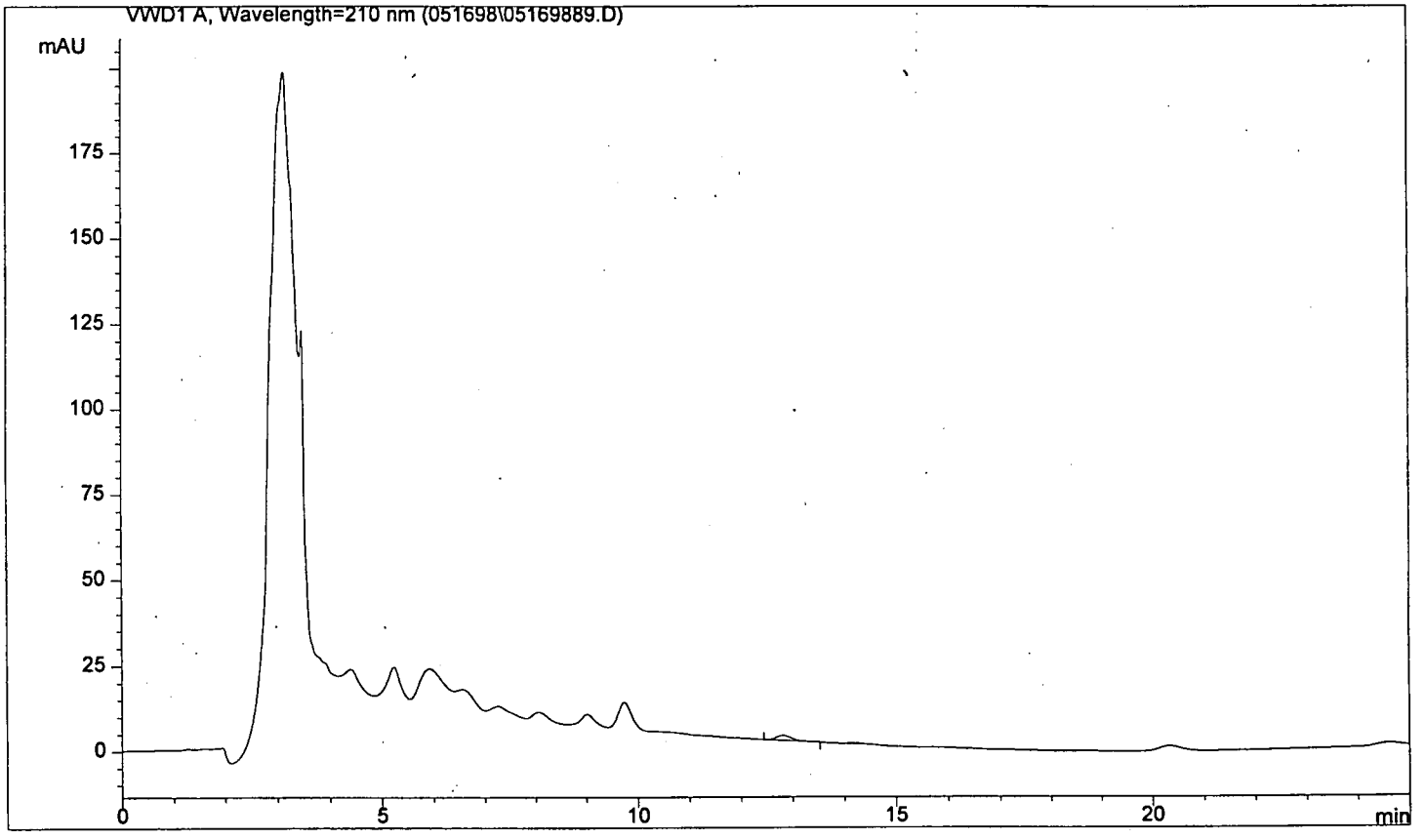
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN----------	250		U

FORM I

Injection Date	: Mon, 18. May. 1998	Seq Line	: 89
Sample Name	: 33925.01	Vial No.	: 89
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051698.M
Analysis Method : C:\HPCHEM\1\METHODS\051698.M
Last Changed : Fri, 29. May. 1998, 04:13:06 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Fri, 29. May. 1998,04:09:51 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
12.806	PBA	31.60284	0.00000	0.00000	
Totals:				0.00000	

019

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-5

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.02

Sample Amt: 2g % Moisture 21.84 Date Received: 05/12/98

Extraction Volume: 10ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 06/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

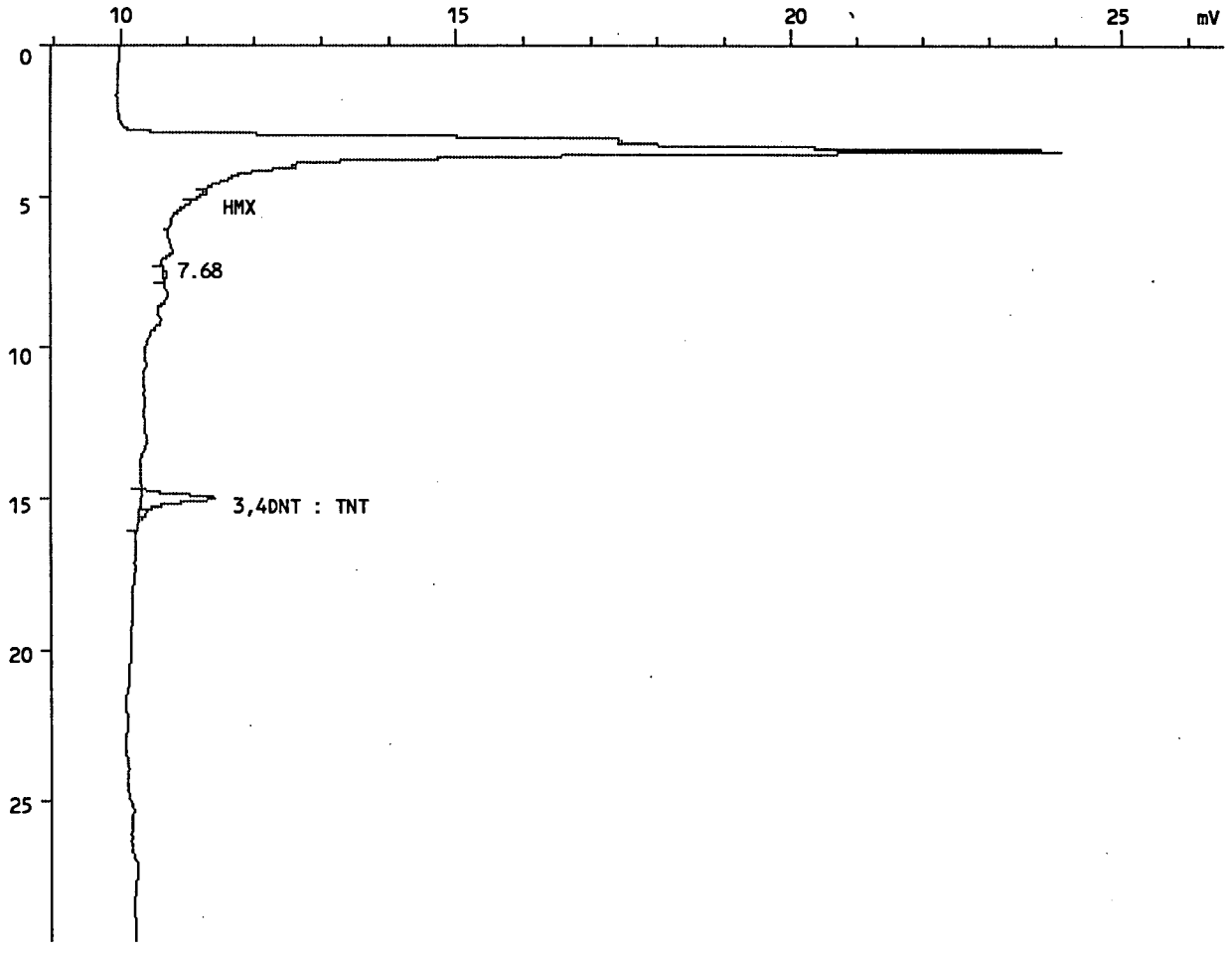
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0605A,6,1

Sample name.....: BIO-12/14-S001-5
Sample ID.....: 33925.02
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 06-Jun-98 at 03:53:41
Reported on 08-Jun-98 at 12:22:06



INJECTION REPORT

Injection F: <MC3> 5 5EX0605A,6,1

Acquired on 06-Jun-98 at 03:53:41
Modified on 08-Jun-82 at 12:07:02
Reported on 08-Jun-98 at 12:06:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 12
Calibration file..: 5EX0605 Last modified on 08-Jun-82 at 12:01:06
Method file.....: EXPLOS Last modified on 08-Jun-82 at 12:04:36
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-5
Sample ID.....: 33925.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

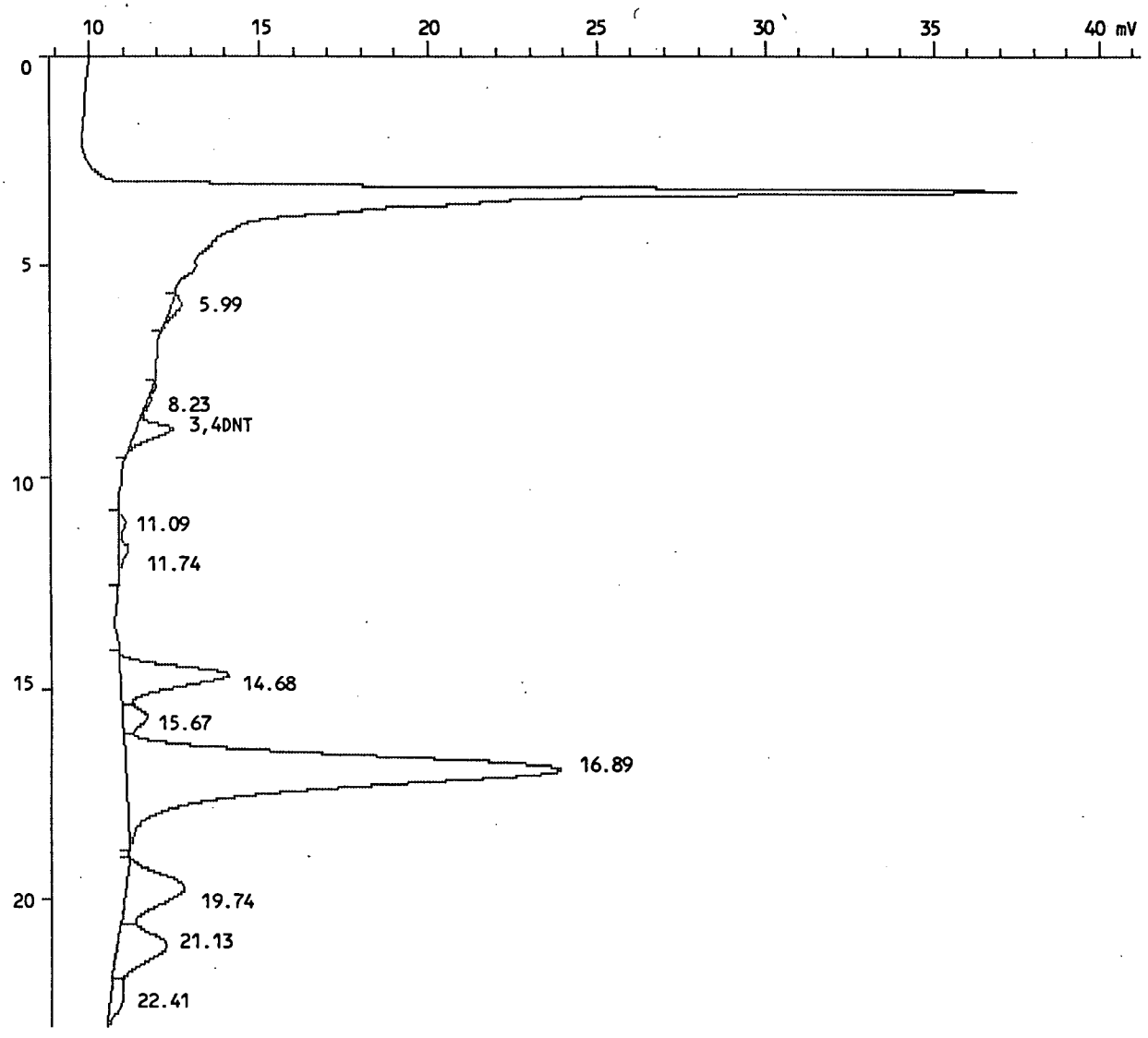
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.933	71	958	130.571	HMX
3	15.019	1106	22062	2005.603	3,4DNT 100
4	15.328	199	3133	133.873	TNT
Total		1376	26153	2270.046	
Residual		42	768	104.685	

LONG PLOT

Injection F: <MC3> 3 3CN0519A,4,1

Sample name.....: BIO-12/14-S001-5
Sample ID.....: 33925.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 20-May-98 at 06:18:16
Reported on 20-May-98 at 11:34:06



INJECTION REPORT

Injection F: <MC3> 3 3CN0519A,4,1

Acquired on 20-May-98 at 06:18:16
Modified on 20-May-82 at 11:32:02
Reported on 20-May-98 at 11:32:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 31
Calibration file..: 3CN0519A Last modified on 20-May-82 at 11:27:44
Method file.....: LCCN Last modified on 20-May-82 at 11:31:02
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-5
Sample ID.....: 33925.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

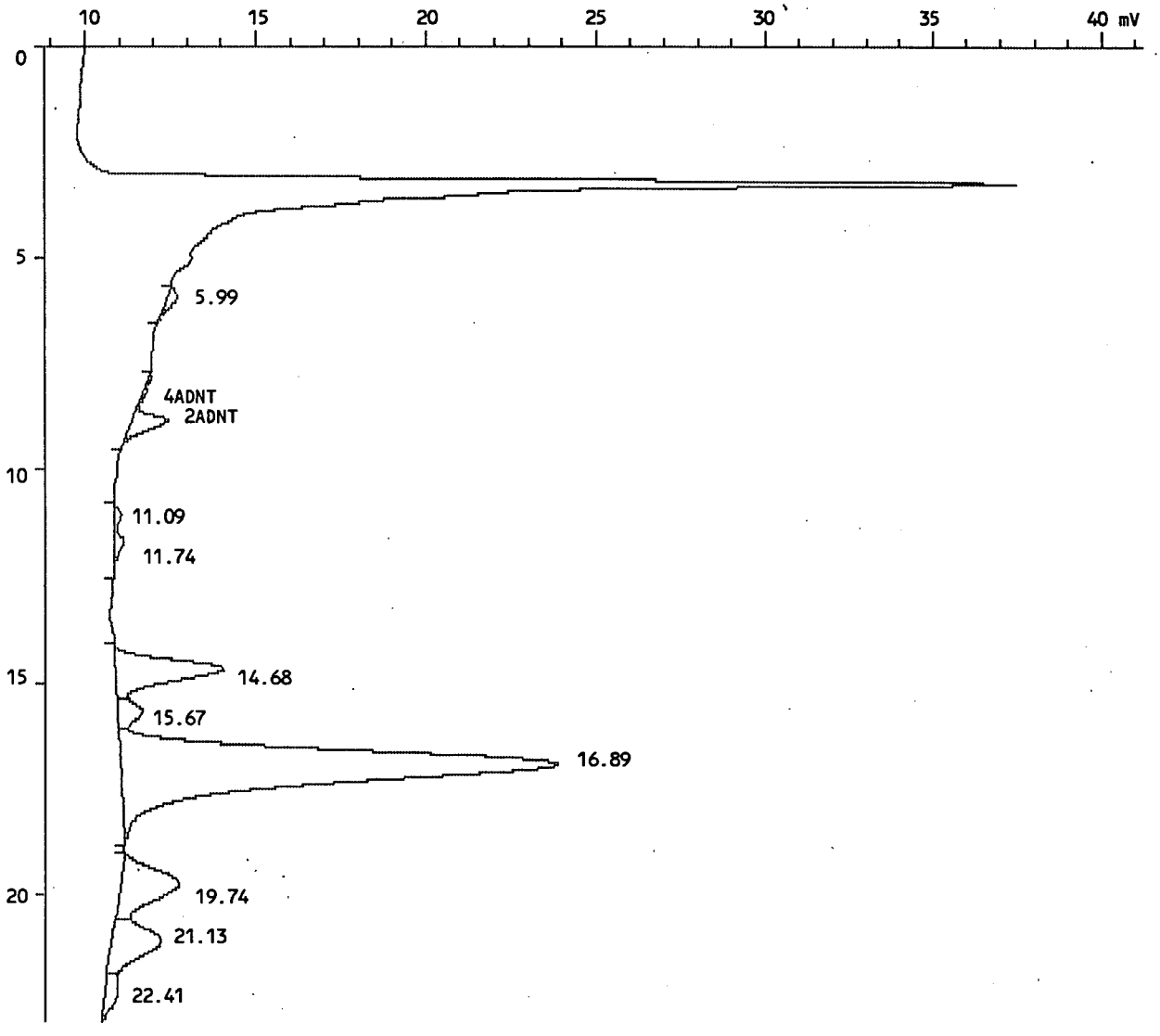
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.880	1064	26140	1809.012	3,4DNT
Total		1064	26140	1809.012	
Residual		21335	1017720	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0519A,4,1

Sample name.....: BIO-12/14-S001-5
Sample ID.....: 33925.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 20-May-98 at 06:18:16
Reported on 20-May-98 at 11:38:25



INJECTION REPORT

Injection F: <MC3> 3 3CN0519A,4,1

Acquired on 20-May-98 at 06:18:16
Modified on 20-May-82 at 11:36:08
Reported on 20-May-98 at 11:36:09

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 31
Calibration file..: 3CN0519B Last modified on 20-May-82 at 11:29:36
Method file.....: LCCN Last modified on 20-May-82 at 11:35:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-5
Sample ID.....: 33925.02
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.235	136	4389	243.004	4ADNT
3	8.880	1064	26140	961.745	2ADNT
Total		1200	30529	1204.749	
Residual		21199	1013332	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-5

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.02

Sample Amt: 2g % Moisture 21.84 Date Received: 05/12/98

Extraction Volume: 10ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 05/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

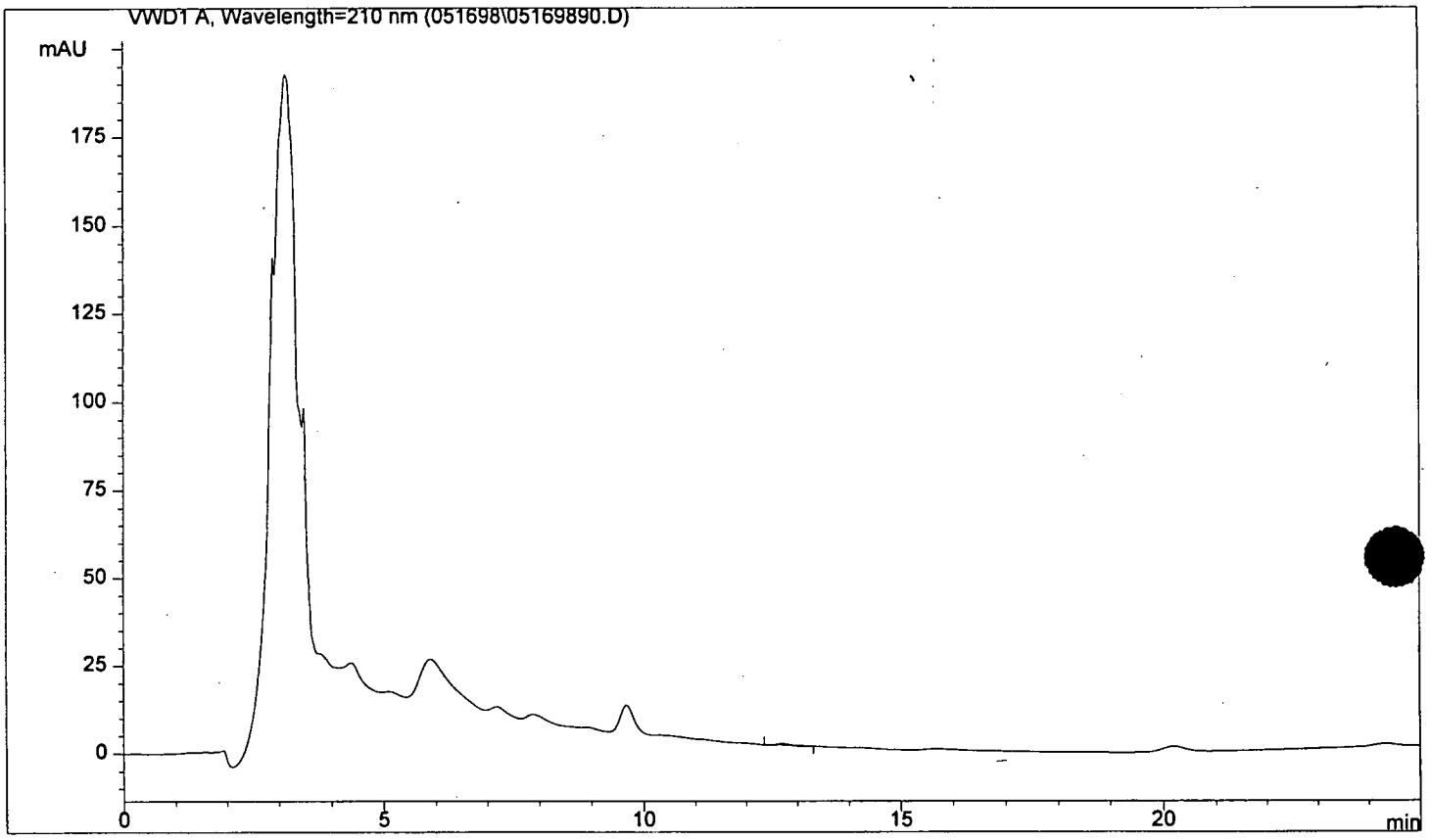
FORM I

Injection Date : Mon, 18. May. 1998
Sample Name : 33925.02
Acq Operator : SS

Seq Line : 90
Vial No. : 90
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 051698.M
Analysis Method : C:\HPCHEM\1\METHODS\051698.M
Last Changed : Fri, 29. May. 1998, 04:13:06 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Fri, 29. May. 1998,04:09:51 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
12.705	PB	7.84584	0.00000	0.00000	
Totals:				0.00000	

028

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-7

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.03

Sample Amt: 2g % Moisture 24.72 Date Received: 05/12/98

Extraction Volume: 10ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 06/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	196	J
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

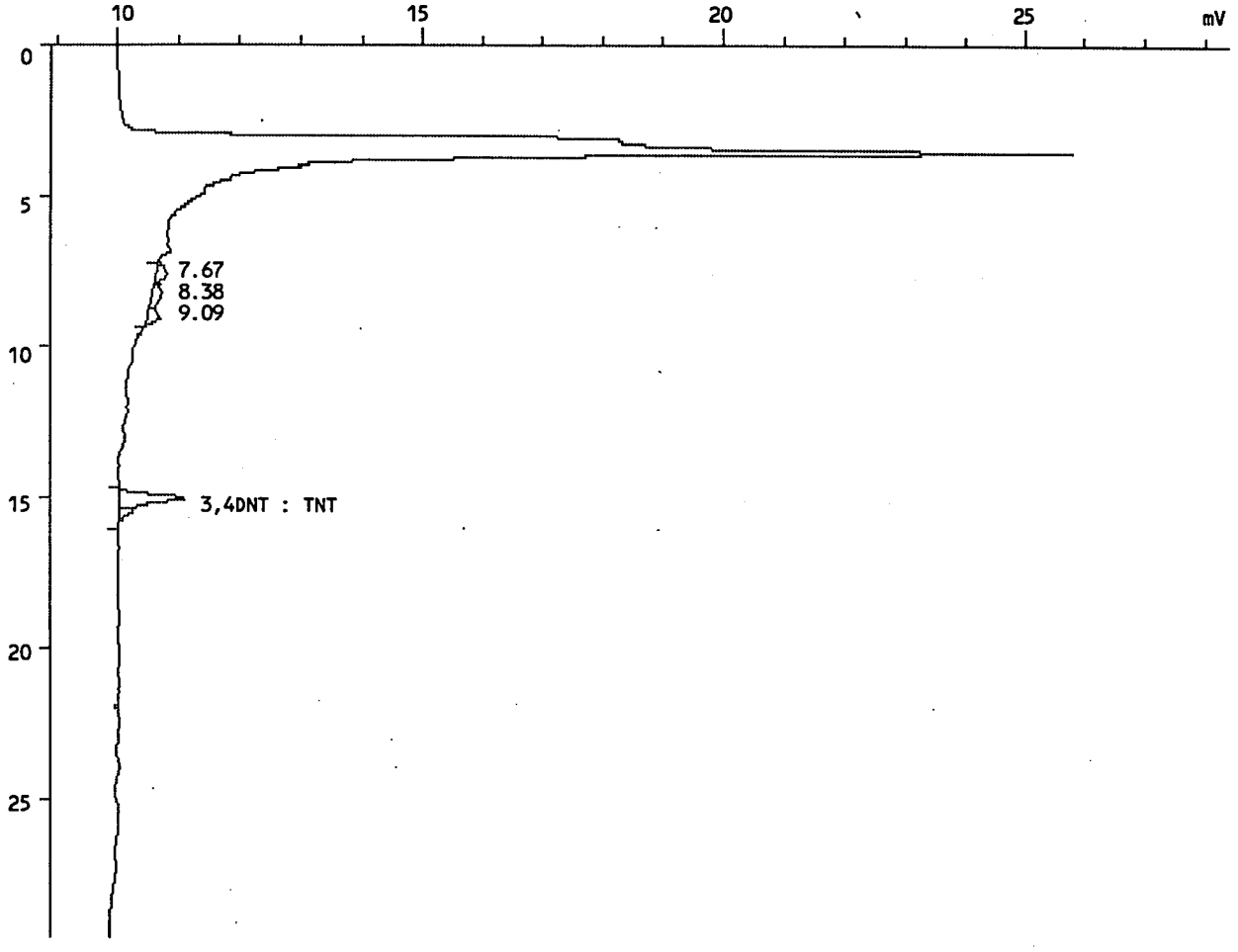
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0605A,7,1

Sample name.....: BIO-12/14-S001-7
Sample ID.....: 33925.03
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 06-Jun-98 at 04:38:25
Reported on 08-Jun-98 at 12:22:29



INJECTION REPORT

Injection F: <MC3> 5 5EX0605A,7,1

Acquired on 06-Jun-98 at 04:38:25
Modified on 08-Jun-82 at 12:01:06
Reported on 08-Jun-98 at 12:01:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 12
Calibration file..: 5EX0605 Last modified on 08-Jun-82 at 12:01:06
Method file.....: EXPLOS Last modified on 08-Jun-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-7
Sample ID.....: 33925.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

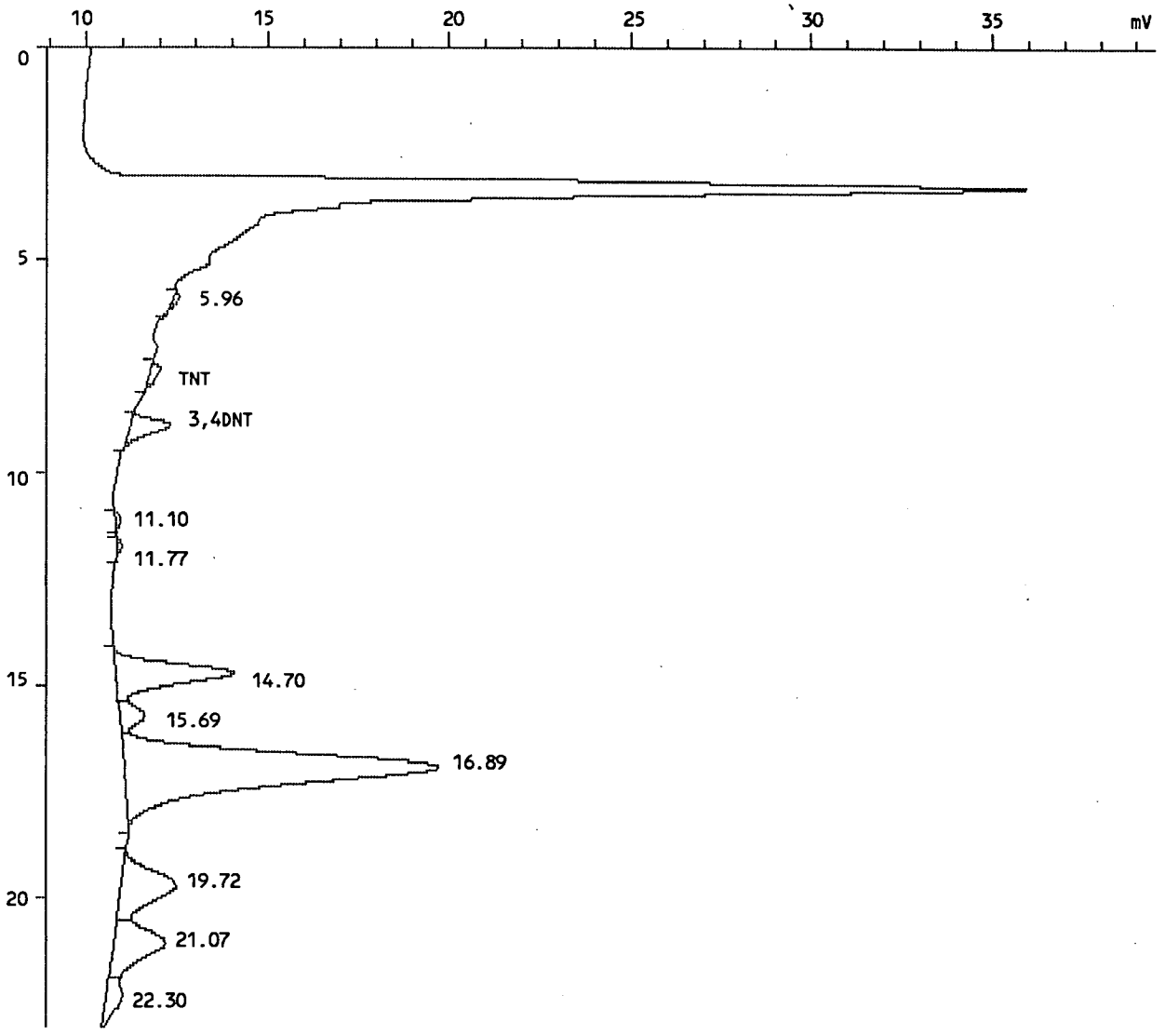
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	15.067	1070	21845	1985.915	3,4DNT qq
5	15.381	268	4590	196.171	TNT *J
Total		1338	26435	2182.086	
Residual		575	16672	-130.252	

LONG PLOT

Injection F: <MC3> 3 3CN0519A,5,1

Sample name.....: BIO-12/14-S001-7
Sample ID.....: 33925.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 20-May-98 at 07:02:37
Reported on 20-May-98 at 11:33:35



INJECTION REPORT

Injection F: <MC3> 3 3CN0519A,5,1

Acquired on 20-May-98 at 07:02:37
Modified on 20-May-82 at 11:32:16
Reported on 20-May-98 at 11:32:17

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 31
Calibration file..: 3CN0519A Last modified on 20-May-82 at 11:27:44
Method file.....: LCCN Last modified on 20-May-82 at 11:31:02
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-7
Sample ID.....: 33925.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

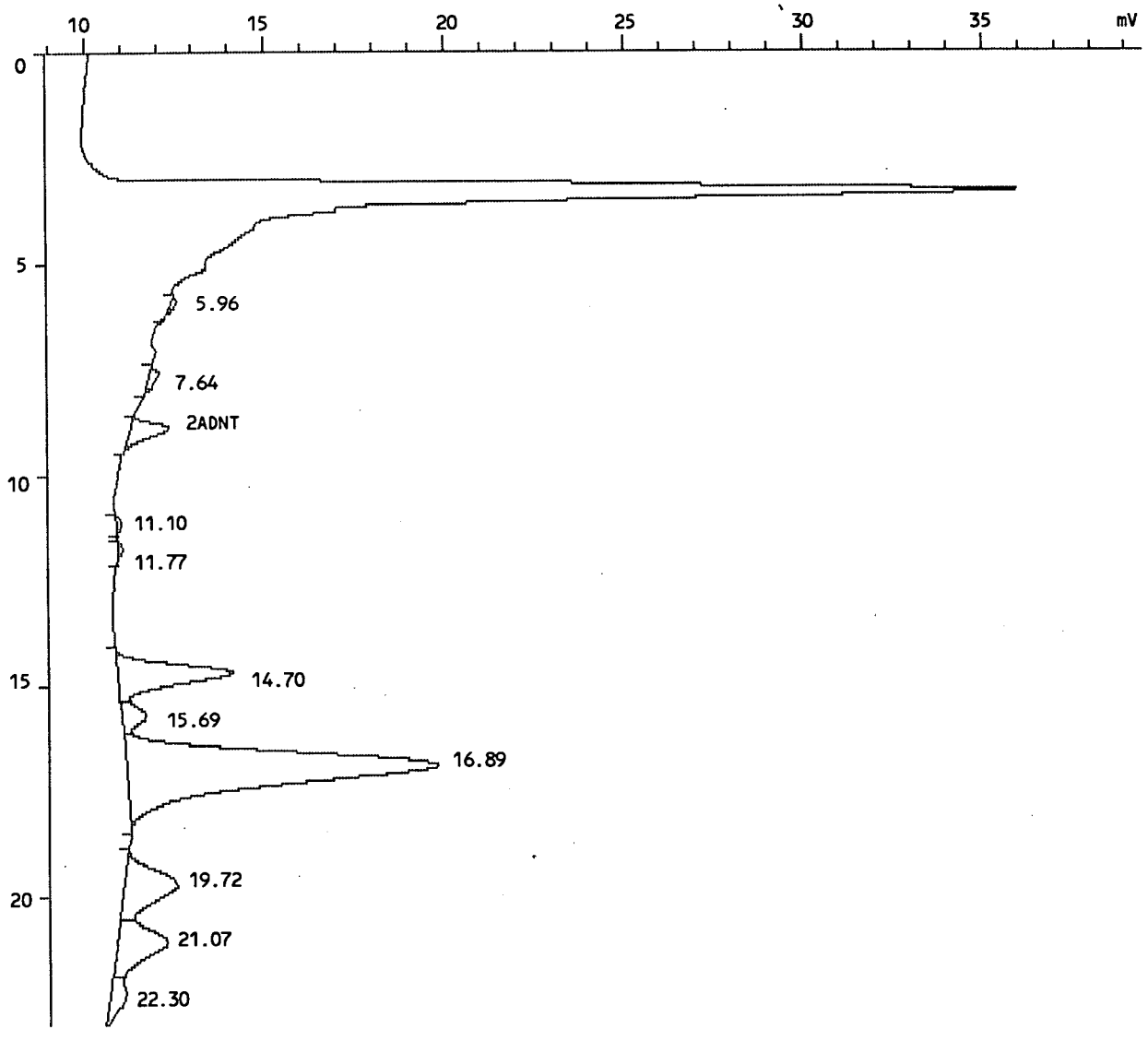
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.637	268	6278	237.622	TNT
3	8.901	1096	25004	1730.369	3,4DNT
Total		1363	31282	1967.991	
Residual		16462	755022	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0519A,5,1

Sample name.....: BIO-12/14-S001-7
Sample ID.....: 33925.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 20-May-98 at 07:02:37
Reported on 20-May-98 at 11:37:57



INJECTION REPORT

Injection F: <MC3> 3 3CN0519A,5,1

Acquired on 20-May-98 at 07:02:37
Modified on 20-May-82 at 11:36:22
Reported on 20-May-98 at 11:36:22

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 31
Calibration file..: 3CN0519B Last modified on 20-May-82 at 11:29:36
Method file.....: LCCN Last modified on 20-May-82 at 11:35:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-7
Sample ID.....: 33925.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.901	1096	25004	919.935	2ADNT
Total		1096	25004	919.935	
Residual		16730	761300	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-7

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.03

Sample Amt: 2g % Moisture 24.72 Date Received: 05/12/98

Extraction Volume: 10ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 05/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

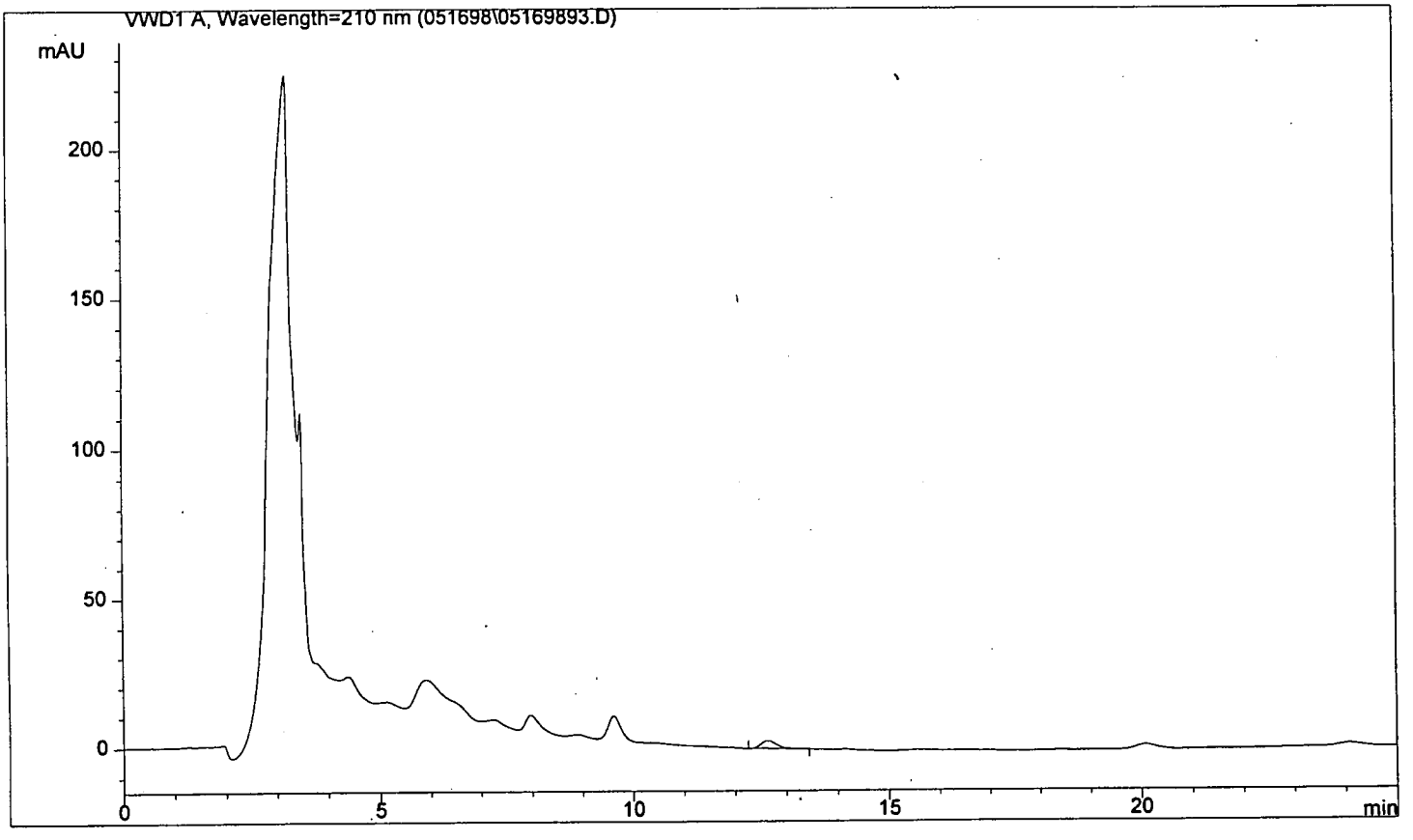
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Mon, 18. May. 1998	Seq Line	: 93
Sample Name	: 33925.03	Vial No.	: 93
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051698.M
Analysis Method : C:\HPCHEM\1\METHODS\051698.M
Last Changed : Fri, 29. May. 1998, 04:13:06 pm

PETN SOIL



==========
Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Fri, 29. May. 1998,04:09:51 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
12.635	PB	58.02097	0.00000	0.00000	
Totals:				0.00000	

037

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-9

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.04

Sample Amt: 2g % Moisture 25.02 Date Received: 05/12/98

Extraction Volume: 10ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 06/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	2200	U
121-82-4	RDX	1000	U
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	250	U
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

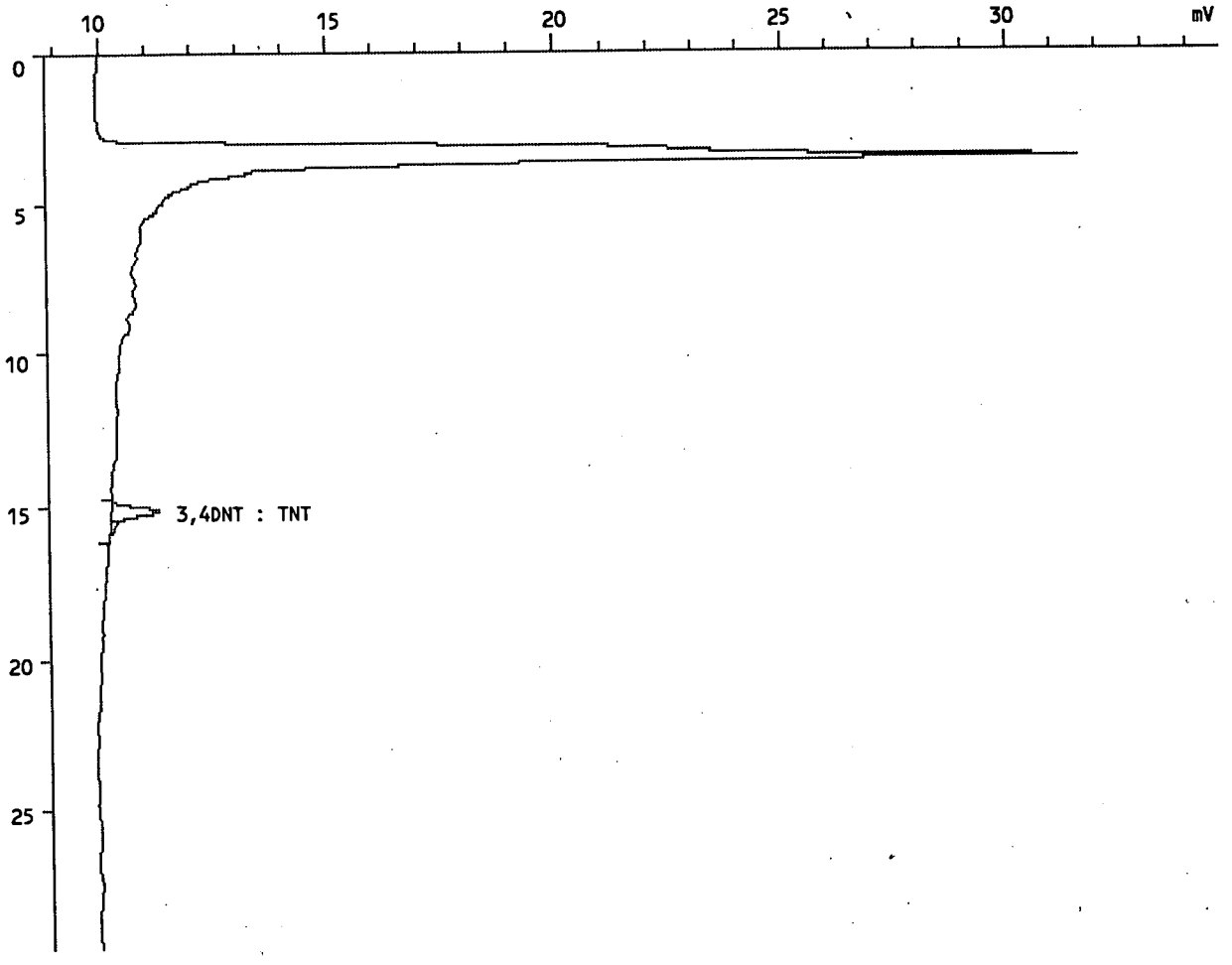
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0605A,8,1

Sample name.....: BIO-12/14-S001-9
Sample ID.....: 33925.04
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 06-Jun-98 at 05:23:10
Reported on 08-Jun-98 at 12:22:51



INJECTION REPORT

Injection F: <MC3> 5 5EX0605A,8,1

Acquired on 06-Jun-98 at 05:23:10
Modified on 08-Jun-82 at 12:01:22
Reported on 08-Jun-98 at 12:01:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 12
Calibration file..: 5EX0605 Last modified on 08-Jun-82 at 12:01:06
Method file.....: EXPLOS Last modified on 08-Jun-82 at 12:01:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-9
Sample ID.....: 33925.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

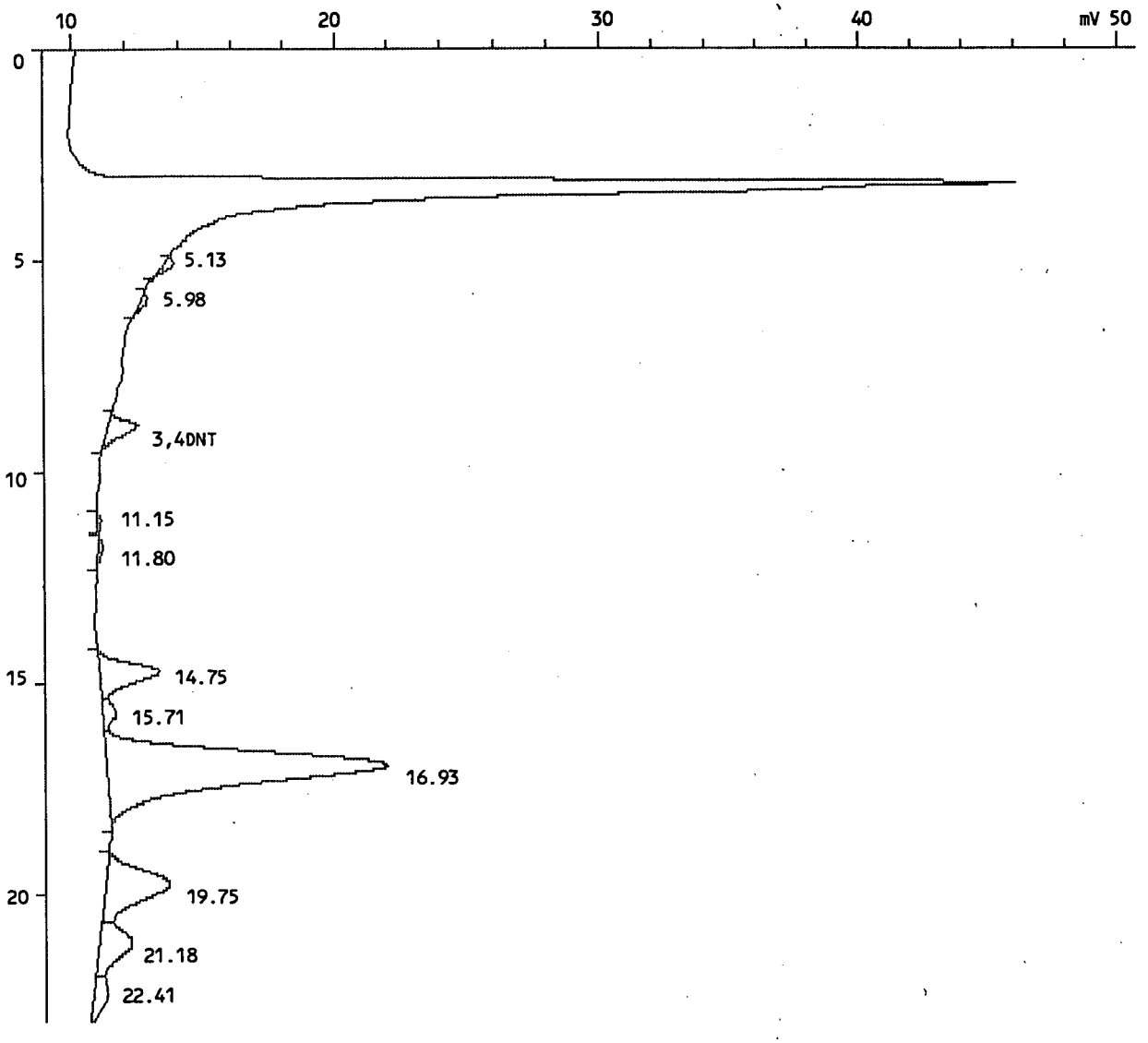
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	15.173	1094	21846	1986.006	3,4DNT 99
2	15.451	268	3925	167.732	TNT
Total		1362	25771	2153.737	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0519A,6,1

Sample name.....: BIO-12/14-S001-9
Sample ID.....: 33925.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 20-May-98 at 07:46:58
Reported on 20-May-98 at 11:33:14



INJECTION REPORT

Injection F: <MC3> 3 3CN0519A,6,1

Acquired on 20-May-98 at 07:46:58
Modified on 20-May-82 at 11:32:30
Reported on 20-May-98 at 11:32:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 31
Calibration file..: 3CN0519A Last modified on 20-May-82 at 11:27:44
Method file.....: LCCN Last modified on 20-May-82 at 11:31:02
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-9
Sample ID.....: 33925.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

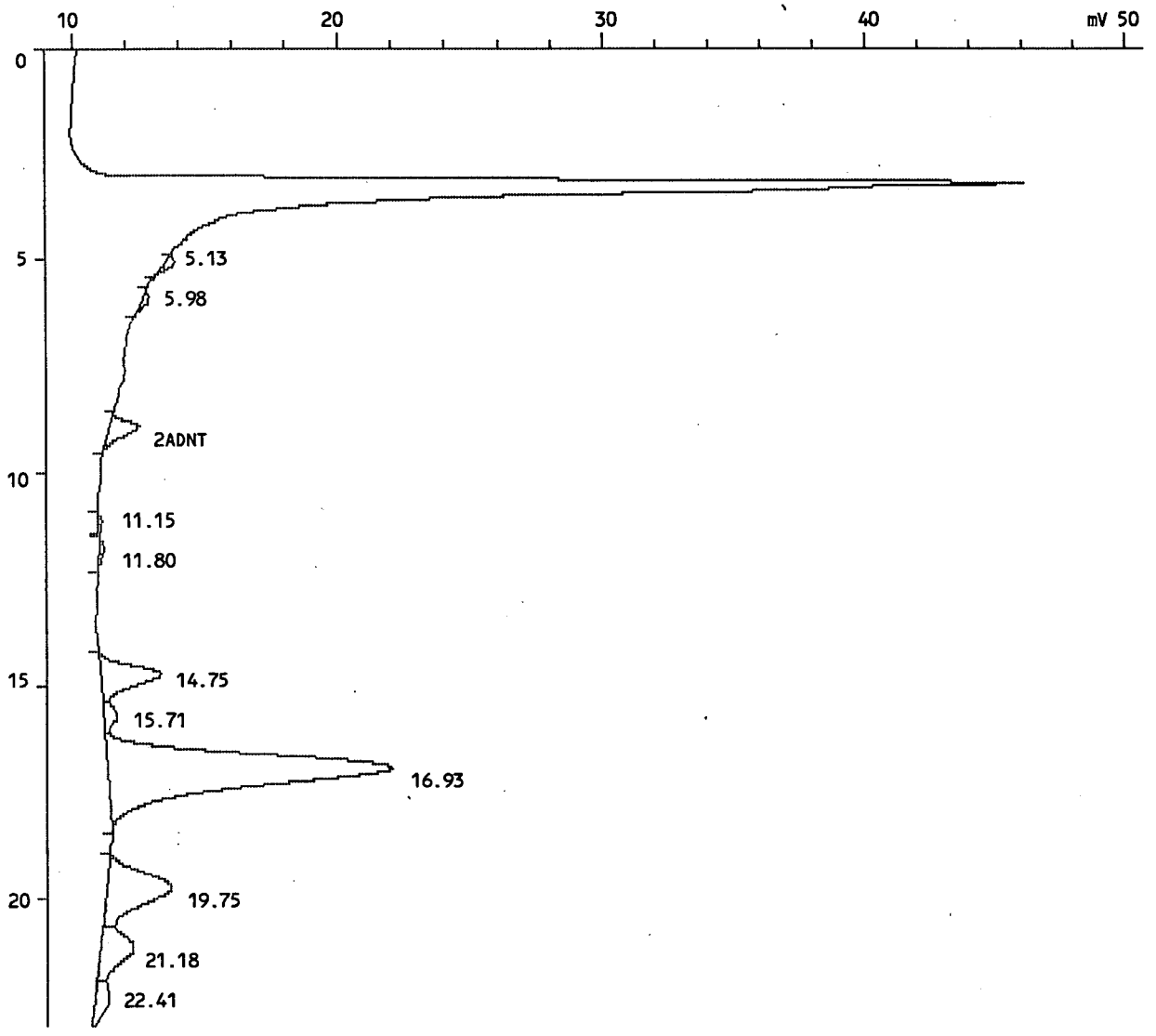
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.939	1119	27166	1879.970	3,4DNT
Total		1119	27166	1879.970	
Residual		18760	885252	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0519A,6,1

Sample name.....: BIO-12/14-S001-9
Sample ID.....: 33925.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 20-May-98 at 07:46:58
Reported on 20-May-98 at 11:37:36



INJECTION REPORT

Injection F: <MC3> 3 3CN0519A,6,1

Acquired on 20-May-98 at 07:46:58
Modified on 20-May-82 at 11:36:34
Reported on 20-May-98 at 11:36:35

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 31
Calibration file..: 3CN0519B Last modified on 20-May-82 at 11:29:36
Method file.....: LCCN Last modified on 20-May-82 at 11:35:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-9
Sample ID.....: 33925.04
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.939	1119	27166	999.469	2ADNT
Total		1119	27166	999.469	
Residual		18760	885252	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-9

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.04

Sample Amt: 2g % Moisture 25.02 Date Received: 05/12/98

Extraction Volume: 10ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 05/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

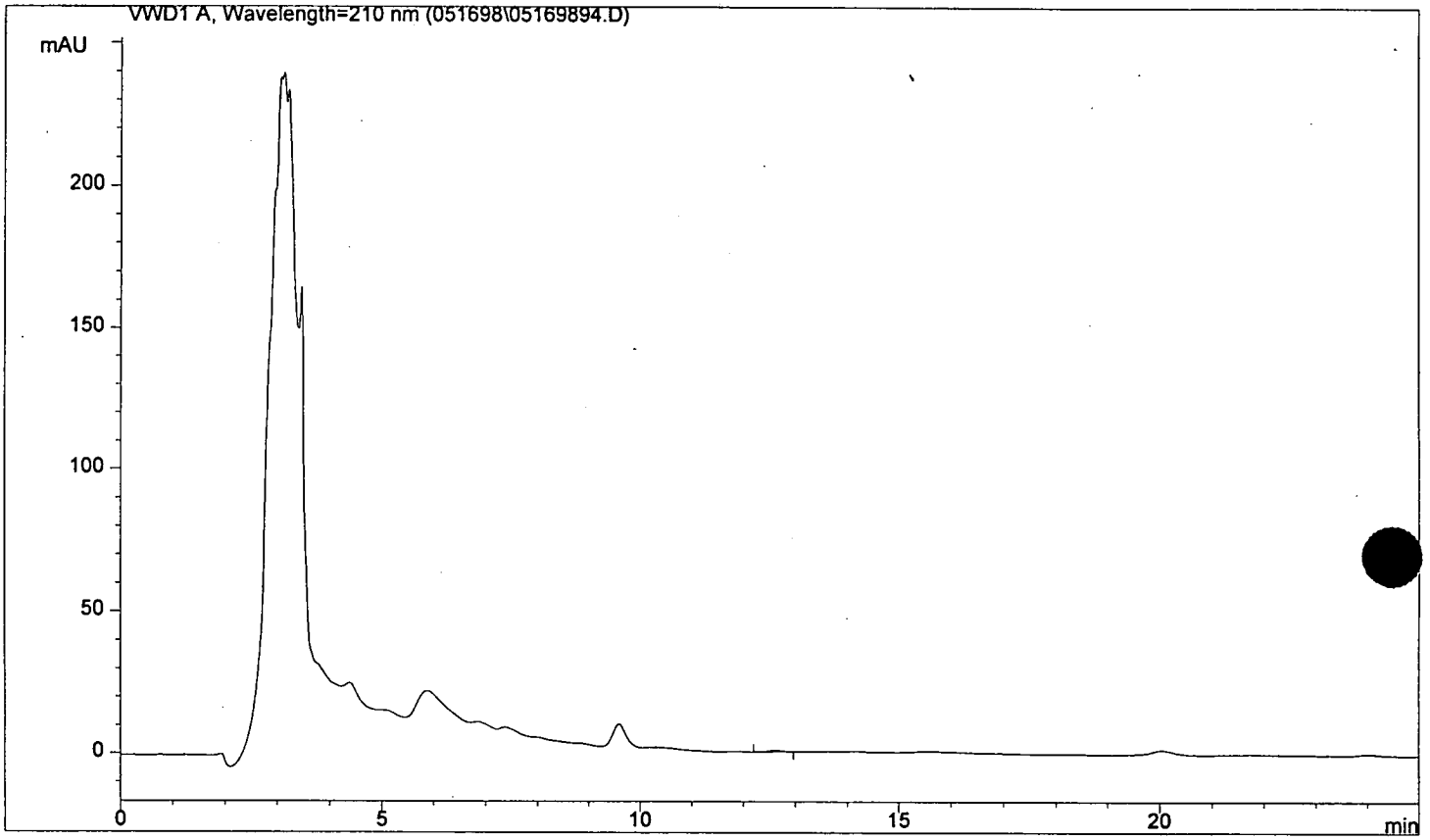
FORM I

Injection Date : Mon, 18. May. 1998
Sample Name : 33925.04
Acq Operator : SS

Seq Line : 94
Vial No. : 94
Inj. No. :
Inj. Vol. : 200 µl

Acq. Method : 051698.M
Analysis Method : C:\HPCHEM\1\METHODS\051698.M
Last Changed : Fri, 29. May. 1998, 04:13:06 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Fri, 29. May. 1998,04:09:51 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
12.608	PBA	10.93421	0.00000	0.00000	
Totals:				0.00000	

046

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-11

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.05

Sample Amt: 2g % Moisture 21.41 Date Received: 05/12/98

Extraction Volume: 10ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 06/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	6660	P
121-82-4	RDX	52900	E
99-35-4	TNB	250	U
99-65-0	DNB	250	U
479-45-8	TETRYL	650	U
98-95-3	NB	260	U
118-96-7	TNT	22700	E
1946-51-0	4ADNT	250	U
35572-78-2	2ADNT	250	U
606-20-2	26DNT	260	U
121-14-2	24DNT	250	U
88-72-2	2NT	250	U
99-99-0	4NT	250	U
99-08-1	3NT	250	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

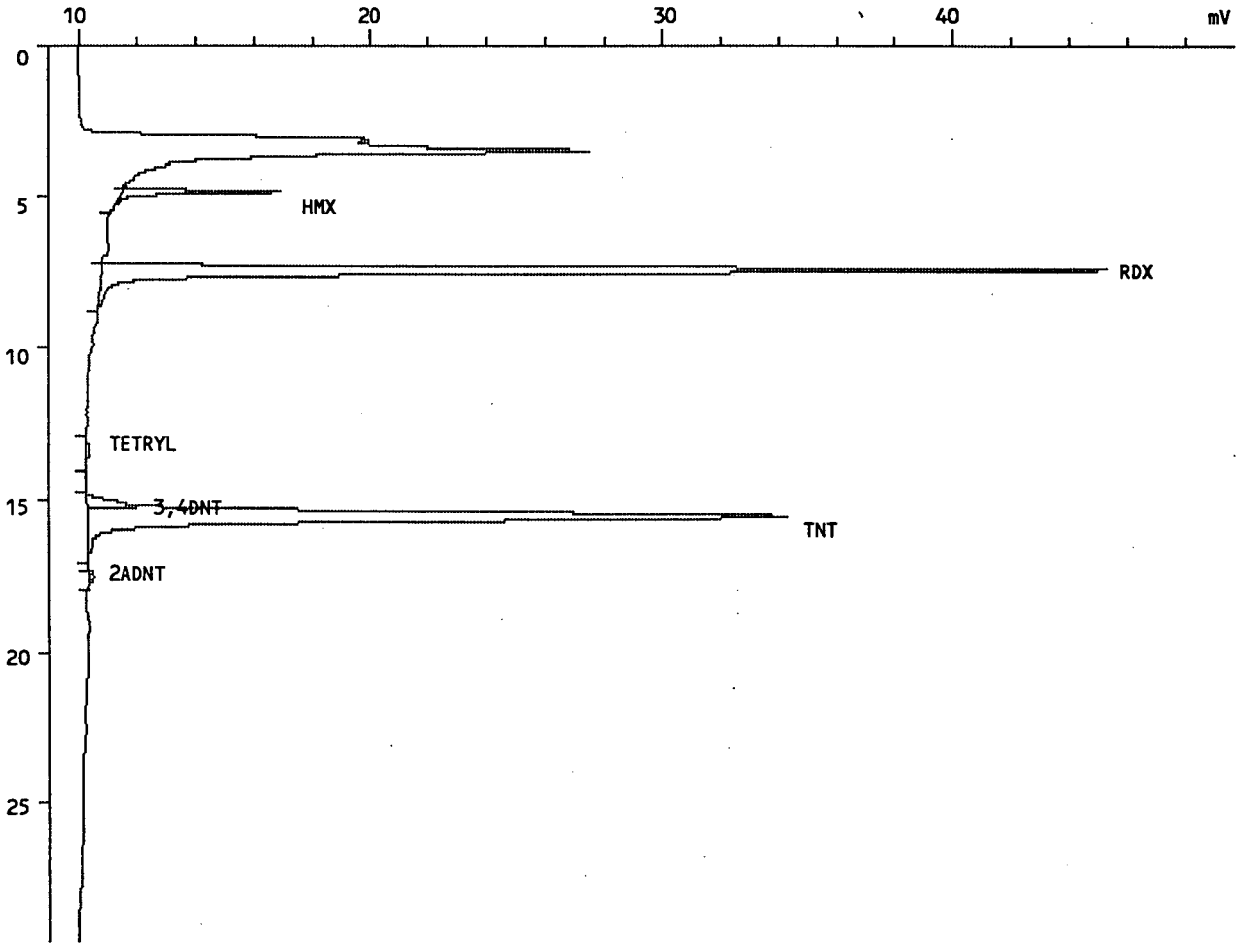
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0605A,9,1

Sample name.....: BIO-12/14-S001-11
Sample ID.....: 33925.05
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 06-Jun-98 at 06:07:54
Reported on 08-Jun-98 at 12:23:11



INJECTION REPORT

Injection F: <MC3> 5 5EX0605A,9,1

Acquired on 06-Jun-98 at 06:07:54
Modified on 08-Jun-82 at 12:01:40
Reported on 08-Jun-98 at 12:01:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 12
Calibration file..: 5EX0605 Last modified on 08-Jun-82 at 12:01:06
Method file.....: EXPLOS Last modified on 08-Jun-82 at 12:01:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-11
Sample ID.....: 33925.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

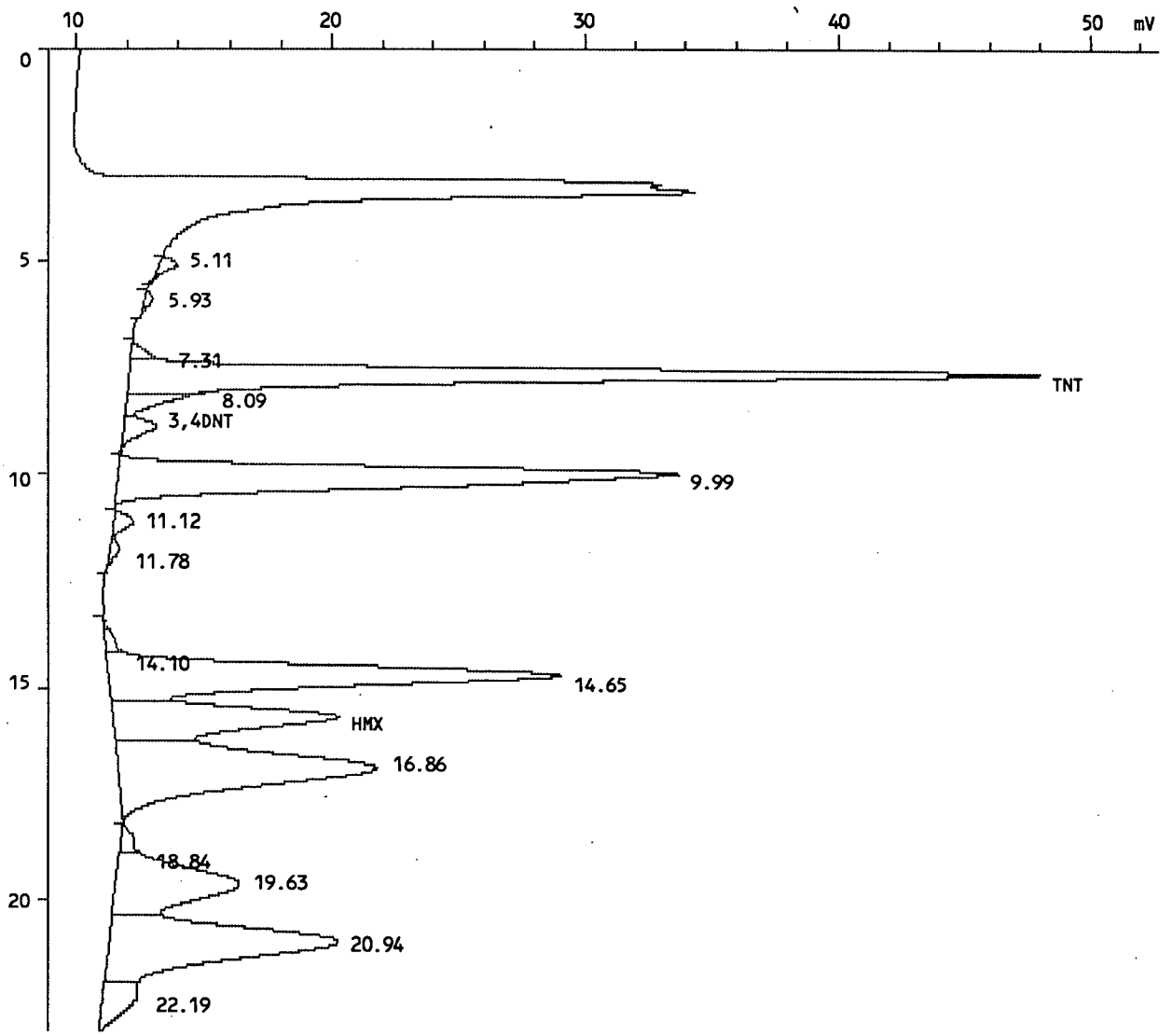
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.912	5521	48904	6662.608	HMX *P
2	7.483	34464	507690	52884.332	RDX *E
3	13.317	94	2878	214.155	TETRYL
4	15.211	1739	17481	1589.185	3,4DNT MA
5	15.541	23974	531667	22720.813	TNT *E
6	17.493	182	3252	176.341	2ADNT
Total		65974	1111871	84247.438	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0519A,7,1

Sample name.....: BIO-12/14-S001-11
Sample ID.....: 33925.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 20-May-98 at 08:31:20
Reported on 20-May-98 at 11:57:19



INJECTION REPORT

Injection F: <MC3> 3 3CN0519A,7,1

Acquired on 20-May-98 at 08:31:20
Modified on 20-May-82 at 11:56:56
Reported on 20-May-98 at 11:57:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 31
Calibration file..: 3CN0519A Last modified on 20-May-82 at 11:56:52
Method file.....: LCCN Last modified on 20-May-82 at 11:35:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-11
Sample ID.....: 33925.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

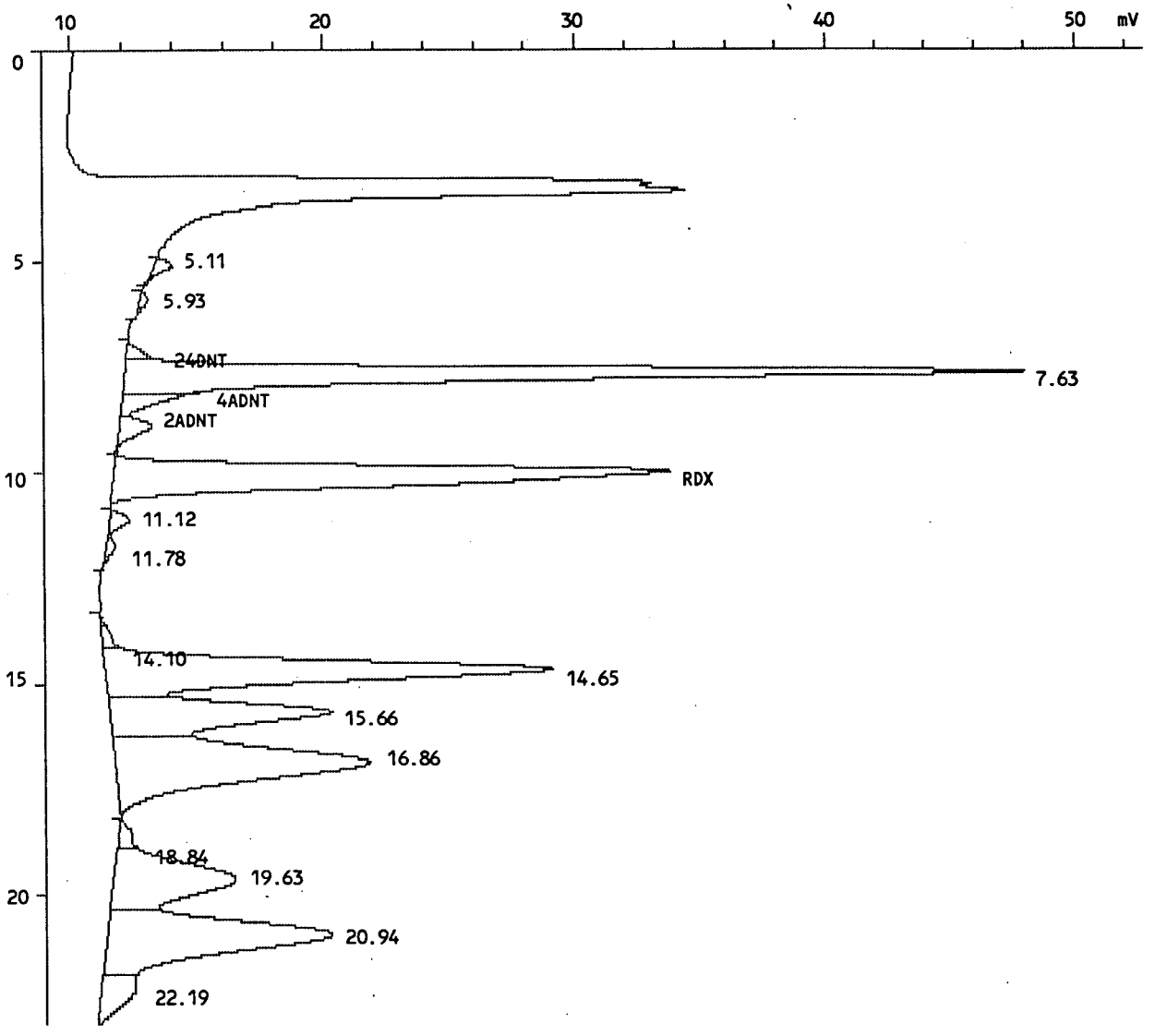
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.632	35866	736766	27886.658	TNT
6	8.885	1339	33614	2326.225	3,4DNT
12	15.664	8768	322147	30276.930	HMX
Total		45972	1092526	60489.813	
Residual		72435	2763416	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0519A,7,1

Sample name.....: BIO-12/14-S001-11
Sample ID.....: 33925.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 20-May-98 at 08:31:20
Reported on 20-May-98 at 11:58:45



INJECTION REPORT

Injection F: <MC3> 3 3CN0519A,7,1

Acquired on 20-May-98 at 08:31:20
Modified on 20-May-82 at 11:57:54
Reported on 20-May-98 at 11:57:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 31
Calibration file..: 3CN0519B Last modified on 20-May-82 at 11:29:36
Method file.....: LCCN Last modified on 20-May-82 at 11:35:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-11
Sample ID.....: 33925.05
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 10.000
Dilution.....: 2.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.312	1114	13498	388.662	24DNT
5	8.091	2949	48917	2708.595	4ADNT
6	8.885	1339	33614	1236.717	2ADNT
7	9.989	21991	679297	47736.953	RDX
Total		27393	775326	52070.926	
Residual		91015	3080616	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-11 5X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.05DL

Sample Amt: 2g % Moisture 21.41 Date Received: 05/12/98

Extraction Volume: 20ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 06/06/98

GPC Cleanup: (Y/N) N Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	6840	DP
121-82-4	RDX	53000	D
99-35-4	TNB	625	U
99-65-0	DNB	625	U
479-45-8	TETRYL	1620	U
98-95-3	NB	650	U
118-96-7	TNT	23600	D
1946-51-0	4ADNT	625	U
35572-78-2	2ADNT	625	U
606-20-2	26DNT	650	U
121-14-2	24DNT	625	U
88-72-2	2NT	625	U
99-99-0	4NT	625	U
99-08-1	3NT	625	U

SURROGATE AMOUNT SPIKED (ug/kg dry wt.) 2000
3,4-DNT

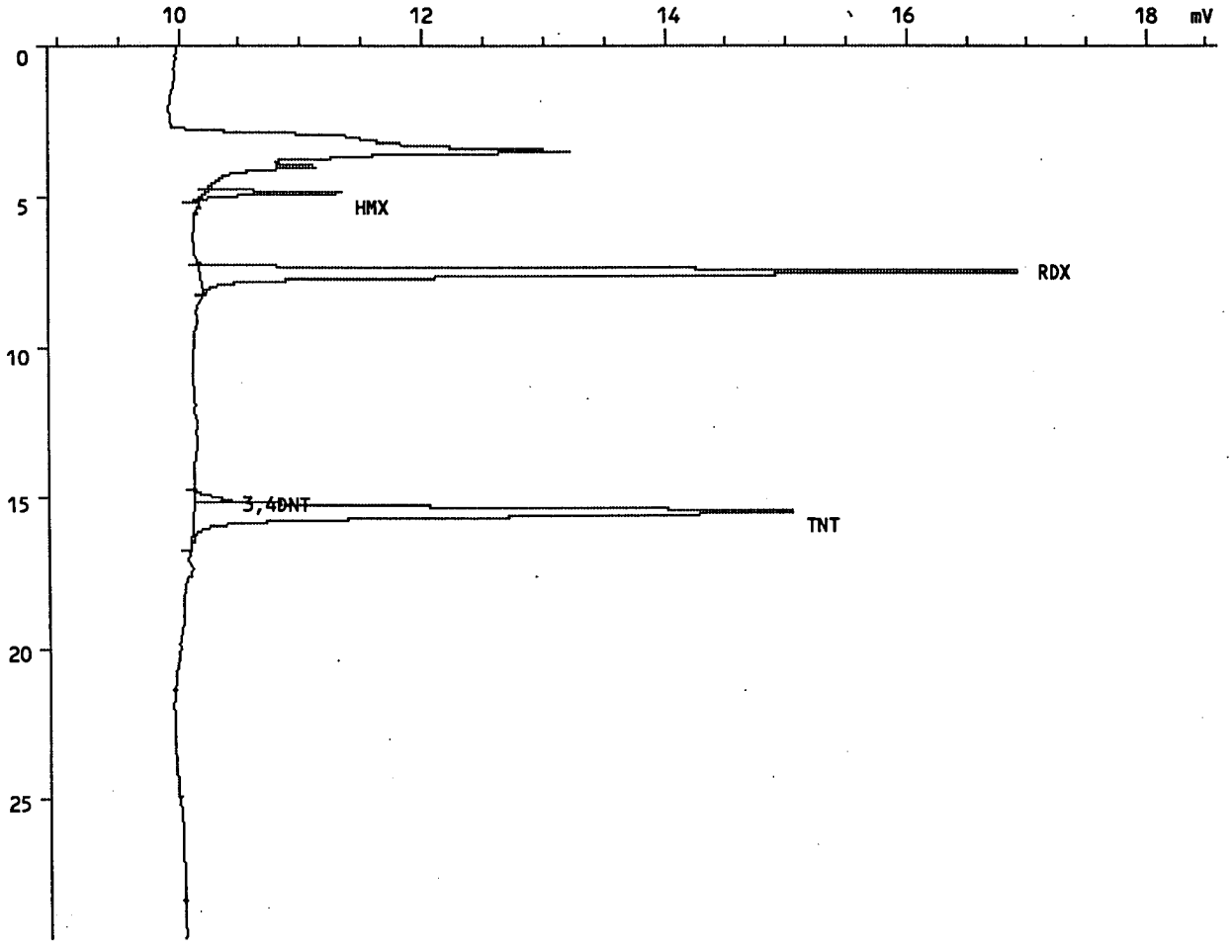
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0605A,10,1

Sample name.....: BIO-12/14-S001-11 5X
Sample ID.....: 33925.05DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 06-Jun-98 at 06:52:39
Reported on 08-Jun-98 at 12:23:38



INJECTION REPORT

Injection F: <MC3> 5 5EX0605A,10,1

Acquired on 06-Jun-98 at 06:52:39
Modified on 08-Jun-82 at 12:01:58
Reported on 08-Jun-98 at 12:01:56

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 12
Calibration file..: 5EX0605 Last modified on 08-Jun-82 at 12:01:06
Method file.....: EXPLOS Last modified on 08-Jun-82 at 12:01:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-11 5X
Sample ID.....: 33925.05DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 5.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

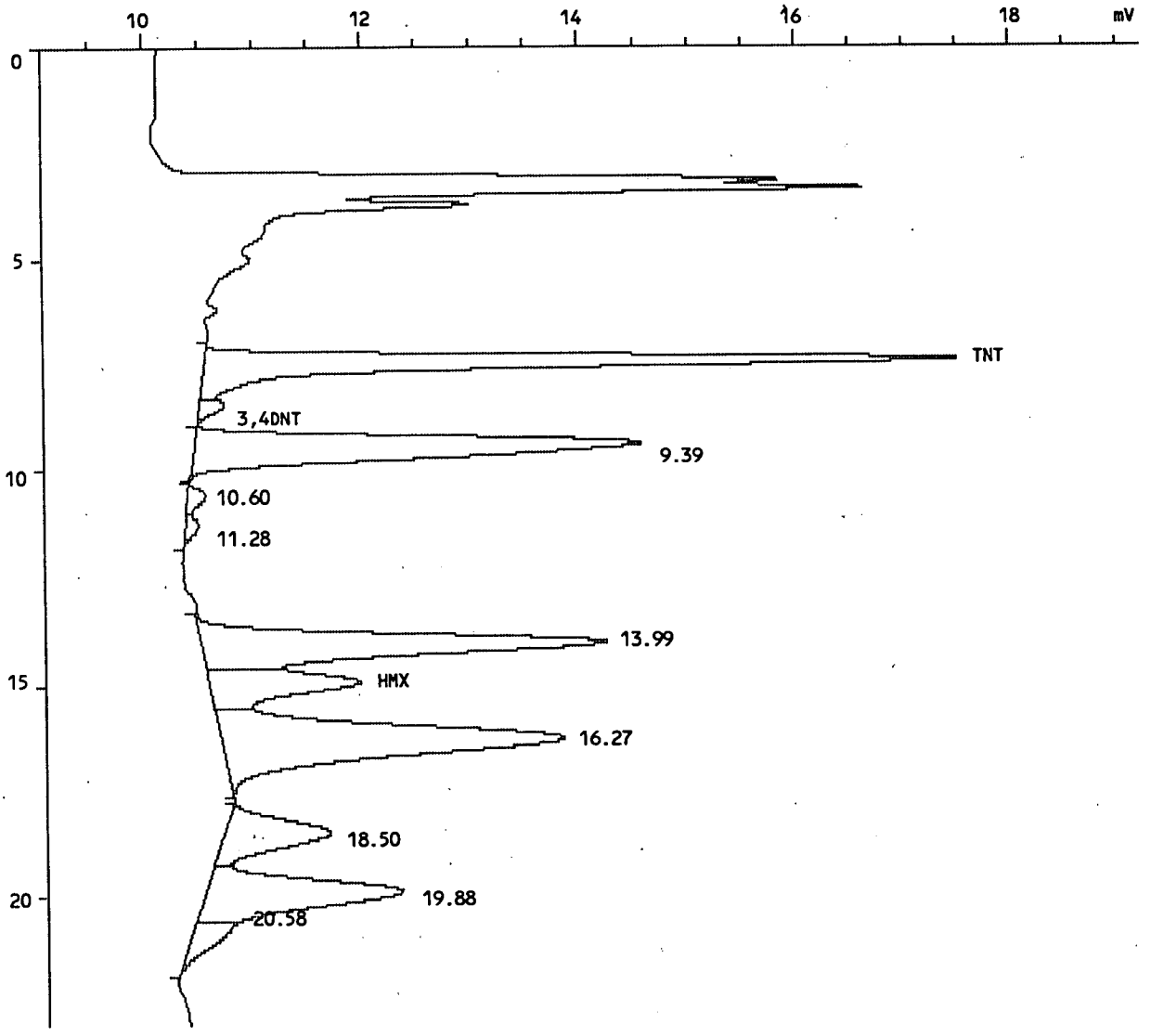
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.917	1134	10049	6845.357	HMX*DP
2	7.493	6734	101754	52996.930	RDX*D
3	15.163	303	2972	1350.906	3,4DNT D
4	15.525	4934	110266	23561.180	TNT*D
Total		13104	225041	84754.375	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0523B,1,1

Sample name.....: BIO-12/14-S001-11 5X
Sample ID.....: 33925.05DL
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 25-May-98 at 03:52:54
Reported on 09-Jun-98 at 12:17:26



INJECTION REPORT

Injection F: <MC3> 3 3CN0523B,1,1

Acquired on 25-May-98 at 03:52:54
Modified on 09-Jun-82 at 09:32:20
Reported on 09-Jun-98 at 09:32:26

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 7
Calibration file..: 3CN0523A Last modified on 08-Jun-82 at 17:31:12
Method file.....: LCCN Last modified on 08-Jun-82 at 17:28:50
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-11 5X
Sample ID.....: 33925.05DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 5.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

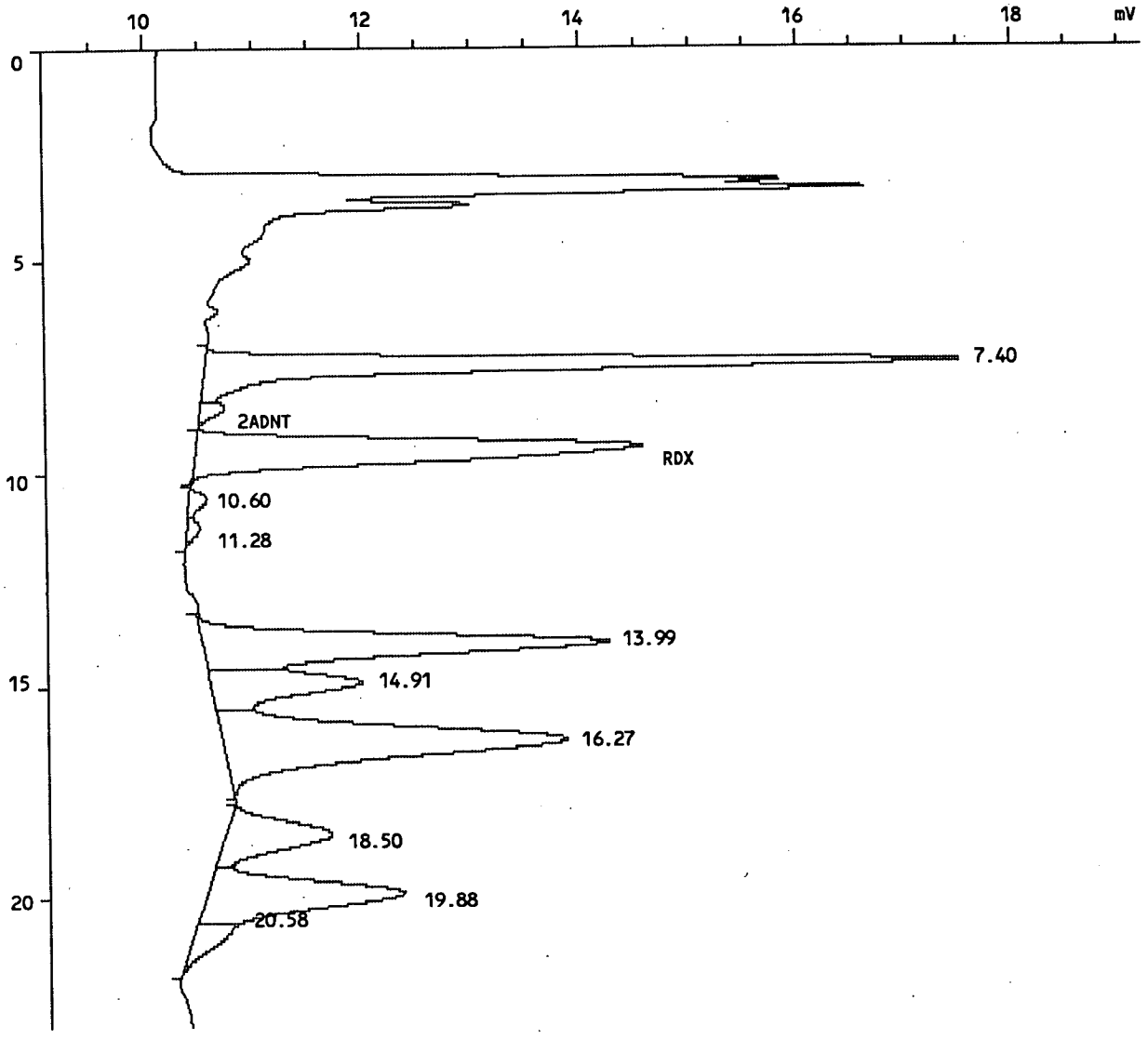
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.403	6942	148030	28196.219	TNT
2	8.453	248	5755	1973.526	3,4DNT
7	14.907	1379	48762	23902.797	HMX
Total		8569	202547	54072.539	
Residual		14452	563667	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0523B,1,1

Sample name.....: BIO-12/14-S001-11 5X
Sample ID.....: 33925.05DL
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 25-May-98 at 03:52:54
Reported on 09-Jun-98 at 12:19:12



INJECTION REPORT

Injection F: <MC3> 3 3CN0523B,1,1

Acquired on 25-May-98 at 03:52:54
Modified on 09-Jun-82 at 12:18:46
Reported on 09-Jun-98 at 12:18:50

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09,INJ:100, UV
Number of samples.: 7
Calibration file..: 3CN0523B Last modified on 04-Jun-82 at 15:10:22
Method file.....: LCCN Last modified on 09-Jun-82 at 12:17:24
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-11 5X
Sample ID.....: 33925.05DL
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 20.000
Dilution.....: 5.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.453	248	5755	1059.816	2ADNT
3	9.387	4100	137161	46213.262	RDX
Total		4348	142916	47273.078	
Residual		18674	623298	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-11

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33925

Matrix: (soil/water) SOIL Lab Sample ID: 33925.05

Sample Amt: 2g % Moisture 21.41 Date Received: 05/12/98

Extraction Volume: 10ml Date Extracted: 05/13/98

Extraction Method: SONC Date Analyzed: 05/18/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

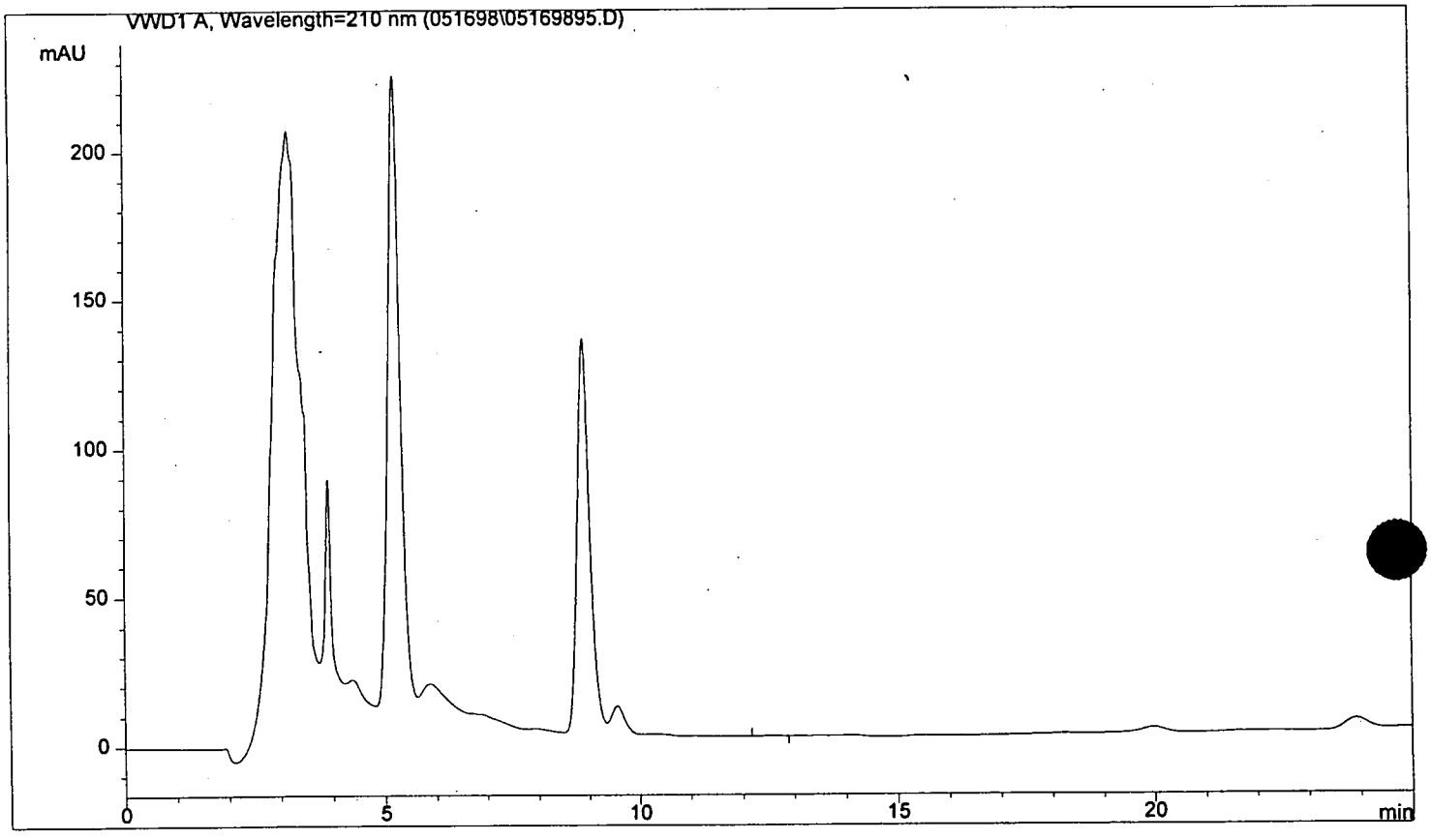
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Mon, 18. May. 1998	Seq Line	: 95
Sample Name	: 33925.05	Vial No.	: 95
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051698.M
Analysis Method : C:\HPCHEM\1\METHODS\051698.M
Last Changed : Fri, 29. May. 1998, 04:13:06 pm

PETN SOIL



==========
Customized Report: extstd.frp
==========

Sorted By Signal
Calib. Data Modified : Fri, 29. May. 1998,04:09:51 pm
Multiplier : 5.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/Kg]	Name
0.000		0.00000	0.00000	0.00000	PETN
12.563	PBA	5.51796	0.00000	0.00000	
Totals:				0.00000	

062

Calibration - Explosives
IN13 6/5/98
Primary Column

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1

Injection File Name Level 1 : 5EX0605,4
Injection File Name Level 2 : 5EX0605,5
Injection File Name Level 3 : 5EX0605,6
Injection File Name Level 4 : 5EX0605,7
Injection File Name Level 5 : 5EX0605,8

Calibration Date : 06/05/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	3700	365	89797	354	243808	369	360861	365	506592	384
RDX	2057	487	50198	475	131179	475	193824	470	270410	492
TNB	2742	908	72890	964	197250	1001	293748	992	409346	1039
DNB	1968	1215	55458	1366	148832	1409	219646	1387	306965	1448
TETRYL	2239	602	64967	699	154294	638	256963	706	346867	717
NB	2592	785	74251	901	196573	919	292141	907	394051	916
3,4-DNT	2614	515	68198	538	187996	570	272586	550	381609	578
TNT	2706	1002	79824	1181	212496	1207	317829	1204	442547	1257
4ADNT	1316	558	40494	684	110370	717	161020	694	226447	735
2ADNT	1947	825	54469	920	145369	944	215977	931	304244	988
26DNT	2549	657	65723	676	175923	693	261260	688	369194	730
24DNT	2585	1095	67593	1142	182906	1188	269838	1163	385375	1251
	1678	496	45111	533	117180	533	177593	538	245673	558
	1385	410	39413	466	103837	472	156437	474	219751	499
	1788	555	51500	641	137683	656	207780	662	286504	685

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1

Injection File Name Level 1 : 5EX0605,4
Injection File Name Level 2 : 5EX0605,5
Injection File Name Level 3 : 5EX0605,6
Injection File Name Level 4 : 5EX0605,7
Injection File Name Level 5 : 5EX0605,8

Calibration Date : 06/05/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	367	2.98	0.99930	376	0.000
RDX	480	1.88	0.99949	483	0.000
TNB	981	4.97	0.99944	1019	0.000
DNB	1365	6.54	0.99954	1423	0.000
TETRYL	672	7.42	0.99841	703	0.000
NB	886	6.38	0.99997	914	0.000
3,4-DNT	550	4.62	0.99934	568	0.000
[illegible]T	1170	8.37	0.99949	1233	0.000
[illegible]NT	678	10.32	0.99919	720	0.000
2ADNT	922	6.49	0.99910	964	0.000
26DNT	689	3.88	0.99905	711	0.000
24DNT	1168	4.94	0.99865	1215	0.000
2NT	532	4.20	0.99955	548	0.000
4NT	464	7.12	0.99920	488	0.000
3NT	640	7.80	0.99959	674	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/05/1998
Continuing Calibration #: 1
Continuing Cal Date : 06/06/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0605A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	238720	362	367	1.50	376	3.70
RDX	128594	466	480	2.94	483	3.51
TNB	191398	972	981	0.96	1019	4.63
DNB	144343	1367	1365	0.14	1423	3.95
TETRYL	139890	578	672	14.00	703	17.81
NB	194555	909	886	2.64	914	0.49
3,4-DNT	184934	560	550	1.90	568	1.31
TNT	209175	1188	1170	1.55	1233	3.63
4ADNT	109853	713	678	5.29	720	0.87
2ADNT	142122	923	922	0.14	964	4.26
26DNT	174143	686	689	0.43	711	3.61
24DNT	179051	1163	1168	0.44	1215	4.30
2NT	118673	539	532	1.44	548	1.65
[illegible]NT	104697	476	464	2.51	488	2.42
[illegible]T	135330	644	640	0.74	674	4.32

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ıjection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	10.140	254.000	660.000	990.000	1320.000
RDX	4.220	105.600	276.000	412.000	550.000
TNB	3.020	75.600	197.000	296.000	394.000
DNB	1.620	40.600	105.600	158.400	212.000
TETRYL	3.720	93.000	242.000	364.000	484.000
NB	3.300	82.400	214.000	322.000	430.000
3,4-DNT	5.080	126.800	330.000	496.000	660.000
TNT	2.700	67.600	176.000	264.000	352.000
4ADNT	2.360	59.200	154.000	232.000	308.000
2ADNT	2.360	59.200	154.000	232.000	308.000
26DNT	3.880	97.200	254.000	380.000	506.000
24DNT	2.360	59.200	154.000	232.000	308.000
2NT	3.380	84.600	220.000	330.000	440.000
4NT	3.380	84.600	220.000	330.000	440.000
3NT	3.220	80.400	210.000	314.000	418.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : CARB-08
Calibration Date : 06/05/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.90	4.91	4.90	4.89	4.88
RDX	7.46	7.46	7.45	7.42	7.42
TNB	9.91	9.93	9.90	9.86	9.87
DNB	12.16	12.18	12.16	12.09	12.12
TETRYL	12.96	12.98	12.94	12.85	12.91
NB	13.77	13.78	13.76	13.68	13.72
3,4-DNT	15.07	15.07	15.04	14.92	15.00
TNT	15.44	15.47	15.44	15.33	15.41
4ADNT	16.43	16.44	16.41	16.28	16.37
2ADNT	17.36	17.39	17.36	17.22	17.33
26DNT	18.11	18.10	18.06	17.93	18.03
24DNT	18.80	18.80	18.76	18.62	18.73
2NT	21.83	21.89	21.84	21.65	21.78
4NT	23.42	23.43	23.36	23.15	23.29
3NT	25.13	25.21	25.13	24.90	25.05

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
HMX	4.91	4.89	4.92
RDX	7.46	7.42	7.49
TNB	9.91	9.88	9.95
DNB	12.17	12.13	12.21
TETRYL	12.97	12.92	13.01
NB	13.76	13.72	13.82
3,4-DNT	15.04	14.99	15.10
TNT	15.45	15.40	15.49
4ADNT	16.43	16.37	16.48
2ADNT	17.38	17.31	17.43
26DNT	18.06	18.01	18.13
24DNT	18.75	18.70	18.83
2NT	21.79	21.73	21.91
4NT	23.31	23.25	23.45
3NT	25.09	25.00	25.23

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.90	0.014	0.043	4.86 - 4.94
RDX	7.45	0.026	0.078	7.37 - 7.52
TNB	9.90	0.030	0.091	9.81 - 9.99
DNB	12.15	0.037	0.112	12.04 - 12.26
TETRYL	12.94	0.048	0.145	12.80 - 13.09
NB	13.75	0.044	0.131	13.62 - 13.88
3,4-DNT	15.03	0.058	0.173	14.85 - 15.20
TNT	15.43	0.049	0.148	15.28 - 15.58

4ADNT	16.40	0.061	0.183	16.22 - 16.58
2ADNT	17.35	0.062	0.187	17.16 - 17.53
26DNT	18.05	0.066	0.199	17.85 - 18.25
24DNT	18.75	0.067	0.200	18.55 - 18.95
2NT	21.80	0.085	0.255	21.55 - 22.06
NT	23.33	0.101	0.304	23.03 - 23.64
T	25.09	0.111	0.332	24.76 - 25.42

Calibration - Explosives
IN 10 - 5/19/98
Secondary Column

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0519,4
Injection File Name Level 2 : 3CN0519,5
Injection File Name Level 3 : 3CN0519,6
Injection File Name Level 4 : 3CN0519,7
Injection File Name Level 5 : 3CN0519,8

Calibration Date : 05/19/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
TNB	11058	2404	56504	2457	143917	2503	295119	2566	580535	2524
26DNT	9348	1870	46723	1869	116466	1863	232797	1862	461786	1847
TNT	12171	2646	60613	2635	151819	2640	305617	2658	605184	2631
3,4DNT	9645	1378	49276	1408	121272	1470	244532	1482	490114	1485
TETRYL	9223	1025	45353	1008	123600	1099	272103	1209	563483	1252
HMX	7076	1011	37896	1083	93860	1073	191457	1094	371044	1060

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0519,9
Injection File Name Level 2 : 3CN0519,10
Injection File Name Level 3 : 3CN0519,11
Injection File Name Level 4 : 3CN0519,12
Injection File Name Level 5 : 3CN0519,13

Calibration Date : 05/19/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
NB	10490	2098	53029	2121	126302	2021	261027	2088	547190	2189
DNB	15692	3923	76953	3848	187049	3741	386357	3864	803028	4015
24DNT	18065	3613	85787	3431	207542	3321	430075	3441	890222	3561
4ADNT	17244	1874	82536	1794	201314	1751	410444	1785	841087	1828
2ADNT	28189	2819	134423	2688	329388	2635	667193	2669	1388708	2777
RDX	7445	1489	37476	1499	85450	1367	168899	1351	351558	1406

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0519,4
Injection File Name Level 2 : 3CN0519,5
Injection File Name Level 3 : 3CN0519,6
Injection File Name Level 4 : 3CN0519,7
Injection File Name Level 5 : 3CN0519,8

Calibration Date : 05/19/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
TNB	2491	2.51	0.99994	2531	0.000
26DNT	1862	0.49	0.99999	1851	0.000
TNT	2642	0.39	0.99999	2637	0.000
3,4DNT	1445	3.37	0.99999	1483	0.000
TETRYL	1119	9.75	0.99957	1236	0.000
HMX	1064	3.03	0.99986	1067	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0519,9
Injection File Name Level 2 : 3CN0519,10
Injection File Name Level 3 : 3CN0519,11
Injection File Name Level 4 : 3CN0519,12
Injection File Name Level 5 : 3CN0519,13

Calibration Date : 05/19/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
NB	2103	2.88	0.99962	2162	0.000
DNB	3878	2.60	0.99973	3974	0.000
24DNT	3473	3.32	0.99976	3527	0.000
4ADNT	1806	2.60	0.99988	1817	0.000
2ADNT	2718	2.84	0.99975	2750	0.000
RDX	1423	4.80	0.99970	1395	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/19/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/20/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0519A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	151209	2630	2491	5.58	2531	3.92
26DNT	127767	2044	1862	9.77	1851	10.44
TNT	168159	2925	2642	10.69	2637	10.91
3,4DNT	134815	1634	1445	13.12	1483	10.17
TETRYL	88230	784	1119	29.89	1236	36.56
HMX	102711	1174	1064	10.31	1067	9.97

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/19/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/20/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0519A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	115963	1855	2103	11.79	2162	14.20
DNB	195035	3901	3878	0.58	3974	1.84
24DNT	218394	3494	3473	0.60	3527	0.93
4ADNT	217281	1889	1806	4.59	1817	4.01
2ADNT	343979	2752	2718	1.25	2750	0.05
RDX	95255	1524	1423	7.14	1395	9.24

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
TNB	4.600	23.000	57.500	115.000	230.000
26DNT	5.000	25.000	62.500	125.000	250.000
TNT	4.600	23.000	57.500	115.000	230.000
3,4DNT	7.000	35.000	82.500	165.000	330.000
TETRYL	9.000	45.000	112.500	225.000	450.000
HMX	7.000	35.000	87.500	175.000	350.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
NB	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
24DNT	5.000	25.000	62.500	125.000	250.000
4ADNT	9.200	46.000	115.000	230.000	460.000
2ADNT	10.000	50.000	125.000	250.000	500.000
RDX	5.000	25.000	62.500	125.000	250.000

3CN0519
A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/19/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	6.25	6.24	6.27	6.27	6.27
26DNT	6.82	6.83	6.86	6.87	6.88
TNT	7.49	7.50	7.54	7.54	7.55
3,4DNT	8.66	8.68	8.72	8.75	8.76
TETRYL	12.18	12.23	12.33	12.37	12.40
HMX	15.03	15.03	15.17	15.27	15.32

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
TNB	6.32	6.26	6.28
26DNT	6.97	6.86	6.91
TNT	7.63	7.52	7.56
3,4DNT	8.90	8.72	8.78
TETRYL	12.59	12.26	12.36
	15.60	14.99	15.14

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.27	0.024	0.072	6.20 - 6.34
26DNT	6.88	0.047	0.140	6.74 - 7.02
TNT	7.54	0.043	0.129	7.41 - 7.67
3,4DNT	8.75	0.075	0.226	8.52 - 8.97
TETRYL	12.34	0.126	0.378	11.96 - 12.72
HMX	15.19	0.201	0.602	14.59 - 15.80

3CN0519
B STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/19/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.49	5.49	5.48	5.50	5.46
DNB	6.16	6.16	6.16	6.18	6.14
24DNT	7.26	7.26	7.26	7.29	7.25
4ADNT	8.12	8.12	8.12	8.15	8.11
2ADNT	8.80	8.79	8.78	8.82	8.78
RDX	9.92	9.91	9.92	9.95	9.91

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
NB	5.50	5.49	5.48
DNB	6.18	6.14	6.14
24DNT	7.28	7.22	7.24
4ADNT	8.14	8.05	8.08
2ADNT	8.81	8.70	8.72
RDX	9.94	9.79	9.81

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.49	0.014	0.042	5.44 - 5.53
DNB	6.16	0.014	0.043	6.11 - 6.20
24DNT	7.26	0.021	0.064	7.19 - 7.32
4ADNT	8.11	0.032	0.096	8.02 - 8.21
2ADNT	8.77	0.041	0.124	8.65 - 8.90
RDX	9.90	0.060	0.179	9.72 - 10.08

3CN0519
A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/19/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	6.25	6.24	6.27	6.27	6.27
26DNT	6.82	6.83	6.86	6.87	6.88
TNT	7.49	7.50	7.54	7.54	7.55
3,4DNT	8.66	8.68	8.72	8.75	8.76
TETRYL	12.18	12.23	12.33	12.37	12.40
HMX	15.03	15.03	15.17	15.27	15.32

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
TNB	6.32	6.26	6.28
26DNT	6.97	6.86	6.91
TNT	7.63	7.52	7.56
3,4DNT	8.90	8.72	8.78
TETRYL	12.59	12.26	12.36
HMX	15.60	14.99	15.14

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.27	0.024	0.072	6.20 - 6.34
26DNT	6.88	0.047	0.140	6.74 - 7.02
TNT	7.54	0.043	0.129	7.41 - 7.67
3,4DNT	8.75	0.075	0.226	8.52 - 8.97
TETRYL	12.34	0.126	0.378	11.96 - 12.72
HMX	15.19	0.201	0.602	14.59 - 15.80

3CN0519
B STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/19/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.49	5.49	5.48	5.50	5.46
DNB	6.16	6.16	6.16	6.18	6.14
24DNT	7.26	7.26	7.26	7.29	7.25
4ADNT	8.12	8.12	8.12	8.15	8.11
2ADNT	8.80	8.79	8.78	8.82	8.78
RDX	9.92	9.91	9.92	9.95	9.91

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
NB	5.50	5.49	5.48
DNB	6.18	6.14	6.14
24DNT	7.28	7.22	7.24
4ADNT	8.14	8.05	8.08
2ADNT	8.81	8.70	8.72
RDX	9.94	9.79	9.81

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.49	0.014	0.042	5.44 - 5.53
DNB	6.16	0.014	0.043	6.11 - 6.20
24DNT	7.26	0.021	0.064	7.19 - 7.32
4ADNT	8.11	0.032	0.096	8.02 - 8.21
2ADNT	8.77	0.041	0.124	8.65 - 8.90
RDX	9.90	0.060	0.179	9.72 - 10.08

Calibration - Explosives
IN 10 5/23/98
Secondary Column

(used for dilution of sample
BIO-12/14-S001-11-5X)

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0523,4
Injection File Name Level 2 : 3CN0523,5
Injection File Name Level 3 : 3CN0523,6
Injection File Name Level 4 : 3CN0523,7
Injection File Name Level 5 : 3CN0523,8

Calibration Date : 05/23/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
TNB	12102	2631	57881	2517	143472	2495	284570	2475	574221	2497
26DNT	9745	1949	45223	1809	112852	1806	225599	1805	454776	1819
TNT	12712	2763	58866	2559	147924	2573	299235	2602	604259	2627
3,4DNT	10658	1523	47638	1361	119186	1445	243222	1474	490633	1487
TETRYL	13450	1494	64447	1432	157849	1403	306097	1360	628457	1397
HMX	7305	1044	35002	1000	88878	1016	178277	1019	357530	1022

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0523,9
Injection File Name Level 2 : 3CN0523,10
Injection File Name Level 3 : 3CN0523,11
Injection File Name Level 4 : 3CN0523,12
Injection File Name Level 5 : 3CN0523,13

Calibration Date : 05/23/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
NB	9750	1950	52638	2106	130256	2084	269502	2156	553370	2213
DNB	14454	3614	74492	3725	188012	3760	384273	3843	801207	4006
24DNT	17073	3415	83775	3351	209272	3348	424821	3399	884243	3537
4ADNT	15711	1708	79303	1724	197928	1721	396844	1725	820580	1784
2ADNT	27063	2706	136420	2728	333111	2665	667500	2670	1403484	2807
RDX	8940	1788	38193	1528	88242	1412	164755	1318	343291	1373

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0523,4
Injection File Name Level 2 : 3CN0523,5
Injection File Name Level 3 : 3CN0523,6
Injection File Name Level 4 : 3CN0523,7
Injection File Name Level 5 : 3CN0523,8

Calibration Date : 05/23/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
TNB	2523	2.47	0.99999	2493	0.000
26DNT	1837	3.41	0.99999	1816	0.000
TNT	2625	3.12	0.99998	2619	0.000
3,4DNT	1458	4.18	0.99995	1481	0.000
TETRYL	1417	3.53	0.99988	1391	0.000
HMX	1020	1.53	1.00000	1021	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN10
olumn ID : LC-CN-09

Inj 1

Injection File Name Level 1 : 3CN0523,9
Injection File Name Level 2 : 3CN0523,10
Injection File Name Level 3 : 3CN0523,11
Injection File Name Level 4 : 3CN0523,12
Injection File Name Level 5 : 3CN0523,13

Calibration Date : 05/23/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
NB	2102	4.68	0.99987	2196	0.000
DNB	3789	3.86	0.99976	3963	0.000
24DNT	3410	2.25	0.99977	3502	0.000
4ADNT	1732	1.71	0.99985	1770	0.000
2ADNT	2715	2.12	0.99966	2775	0.000
RDX	1484	12.58	0.99960	1366	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/23/1998
Continuing Calibration #: 3
Continuing Cal Date : 05/25/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0523A,30
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	149087	2593	2523	2.78	2493	4.02
26DNT	120586	1929	1837	5.00	1816	6.26
TNT	159347	2771	2625	5.57	2619	5.79
3,4DNT	129258	1567	1458	7.47	1481	5.76
TETRYL	119869	1066	1417	24.82	1391	23.37
HMX	92657	1059	1020	3.83	1021	3.76

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/23/1998
Continuing Calibration #: 3
Continuing Cal Date : 05/25/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0523A,31
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	131572	2105	2102	0.16	2196	4.14
DNB	194259	3885	3789	2.53	3963	1.96
24DNT	215138	3442	3410	0.95	3502	1.70
4ADNT	201317	1751	1732	1.05	1770	1.08
2ADNT	340119	2721	2715	0.21	2775	1.95
RDX	84894	1358	1484	8.46	1366	0.60

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/23/1998
Continuing Calibration #: 4
Continuing Cal Date : 05/25/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0523B,6
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	149021	2592	2523	2.73	2493	3.97
26DNT	116960	1871	1837	1.84	1816	3.06
TNT	154534	2688	2625	2.38	2619	2.60
3,4DNT	124328	1507	1458	3.37	1481	1.72
TETRYL	138016	1227	1417	13.44	1391	11.77
HMX	94416	1079	1020	5.80	1021	5.73

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/23/1998
Continuing Calibration #: 4
Continuing Cal Date : 05/25/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0523B,7
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	131715	2107	2102	0.27	2196	4.04
DNB	195097	3902	3789	2.97	3963	1.54
24DNT	215094	3442	3410	0.93	3502	1.72
4ADNT	198932	1730	1732	0.15	1770	2.25
2ADNT	340676	2725	2715	0.37	2775	1.79
RDX	86081	1377	1484	7.18	1366	0.79

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
TNB	4.600	23.000	57.500	115.000	230.000
26DNT	5.000	25.000	62.500	125.000	250.000
TNT	4.600	23.000	57.500	115.000	230.000
3,4DNT	7.000	35.000	82.500	165.000	330.000
TETRYL	9.000	45.000	112.500	225.000	450.000
HMX	7.000	35.000	87.500	175.000	350.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

njection volume = 100uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
NB	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
24DNT	5.000	25.000	62.500	125.000	250.000
4ADNT	9.200	46.000	115.000	230.000	460.000
2ADNT	10.000	50.000	125.000	250.000	500.000
RDX	5.000	25.000	62.500	125.000	250.000

3CN0523
A STD

CALIBRATION FACTOR DATA
FORM 9E

PLOSIVE CALIBRATION - METHOD SW846-8330

nstrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/23/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	6.19	6.20	6.19	6.18	6.16
26DNT	6.76	6.77	6.75	6.76	6.73
TNT	7.41	7.42	7.41	7.41	7.39
3,4DNT	8.53	8.53	8.52	8.53	8.50
TETRYL	11.96	11.97	11.96	11.97	11.94
HMX	14.53	14.56	14.54	14.56	14.54

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
TNB	6.19	6.18	6.18	6.17
26DNT	6.77	6.76	6.78	6.77
TNT	7.41	7.40	7.42	7.40
3,4DNT	8.52	8.50	8.53	8.50
TRYL	11.91	11.87	11.93	11.86
MX	14.38	14.32	14.37	14.22

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.18	0.011	0.032	6.15 - 6.21
26DNT	6.76	0.014	0.041	6.72 - 6.80
TNT	7.41	0.010	0.031	7.38 - 7.44
3,4DNT	8.52	0.017	0.051	8.47 - 8.57
TETRYL	11.93	0.043	0.129	11.80 - 12.06
HMX	14.45	0.126	0.377	14.07 - 14.82

3CN0523
B STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/23/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.39	5.39	5.40	5.41	5.38
DNB	6.05	6.03	6.04	6.05	6.02
24DNT	7.07	7.07	7.08	7.09	7.06
4ADNT	7.86	7.84	7.86	7.87	7.83
2ADNT	8.47	8.47	8.48	8.49	8.45
RDX	9.49	9.50	9.52	9.52	9.48

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
NB	5.38	5.39	5.42	5.42
DNB	6.02	6.02	6.05	6.05
24DNT	7.06	7.05	7.09	7.10
4ADNT	7.83	7.82	7.87	7.89
2ADNT	8.44	8.42	8.46	8.49
RDX	9.44	9.40	9.44	9.44

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.40	0.016	0.047	5.35 - 5.44
DNB	6.04	0.014	0.043	5.99 - 6.08
24DNT	7.07	0.018	0.053	7.02 - 7.13
4ADNT	7.85	0.024	0.072	7.78 - 7.93
2ADNT	8.46	0.025	0.075	8.39 - 8.54
RDX	9.47	0.042	0.126	9.34 - 9.59

Calibration - PETN
LC 4 5/17/98
Primary Column

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID : NN

Inj 1

Injection File Name Level 1 : 051698,53
Injection File Name Level 2 : 051698,54
Injection File Name Level 3 : 051698,55
Injection File Name Level 4 : 051698,56
Injection File Name Level 5 : 051698,57

Calibration Date : 05/17/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	6.55147	3.05E0	54.4063	2.94E0	111.226	2.88E0	444.147	2.88E0	883.238	2.90E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID : NN

Inj 1

Injection File Name Level 1 : 051698,53
Injection File Name Level 2 : 051698,54
Injection File Name Level 3 : 051698,55
Injection File Name Level 4 : 051698,56
Injection File Name Level 5 : 051698,57

Calibration Date : 05/17/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	2.930193159	2.49	0.99999	2.90E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/17/98
Continuing Calibration #: 1
Continuing Cal Date : 05/17/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID : NN
Injection File Name : 051698,58
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	101.736	3.15E0	2.93E0	7.34	2.90E0	8.65

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/17/98
Continuing Calibration #: 3
Continuing Cal Date : 05/18/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID : NN
Injection File Name : 051698,78
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	111.969	2.86E0	2.93E0	2.47	2.90E0	1.28

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/17/98
Continuing Calibration #: 4
Continuing Cal Date : 05/18/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID : NN
Injection File Name : 051698,91
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	109.245	2.93E0	2.93E0	0.03	2.90E0	1.18

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/17/98
Continuing Calibration #: 5
Continuing Cal Date : 05/18/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID : NN
Injection File Name : 051698,96
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	112.388	2.85E0	2.93E0	2.83	2.90E0	1.65

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : LC4
olumn ID : NN
Calibration Date : 05/17/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	11.99	11.96	11.99	12.04	12.07

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	12.15	12.32	12.39	12.17	12.08

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.12	0.145	0.434	11.68 - 12.55

Analytical QC

Batch 33925

Total Explosives
(Toxicity Samples)

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Code: SWOK Case No: MKF-OH SDG No:33925

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-12/14-S001-3	108	0
2	BIO-12/14-S001-5	100	0
3	BIO-12/14-S001-7	99.3	0
4	BIO-12/14-S001-9	99.3	0
5	BIO-12/14-S001-11	79.4	0
6	BIO-12/14-S001-11 5X	67.5D	0
7	BL0513SD	104	0
8	LC0513SD	84.1	0
9	LD0513SD	90.3	0
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

S1 = 3,4-DNT (60-140)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

FORM II

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33925

Client Sample No: LC0513SD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		11200	118	57-137
RDX	9500		10600	112	77-113
TNB	9500		10100	106	64-125
DNB	9500		10600	112	82-118
TETRYL	9500		5320	56	23-124
NB	9500		10600	112	69-143
TNT	9500		8440	89	75-118
4ADNT	9500		11700	123	60-140
2ADNT	9500		10800	114	60-140
26DNT	9500		10300	108	78-117
24DNT	9500		11600	122	74-126
2NT	9500		10400	109	78-123
4NT	9500		10300	108	79-125
3NT	9500		9480	100	78-121

No of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33925

Client Sample No: LC0513SE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		3140	105	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33925

Client Sample No: LD0513SD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		11200	118	57-137
RDX	9500		10400	109	77-113
TNB	9500		10800	114	64-125
DNB	9500		10700	113	82-118
TETRYL	9500		8460	89	23-124
NB	9500		10500	110	69-143
TNT	9500		8830	93	75-118
4ADNT	9500		11200	118	60-140
2ADNT	9500		10900	115	60-140
26DNT	9500		10400	109	78-117
24DNT	9500		11700	123	74-126
2NT	9500		10700	113	78-123
4NT	9500		10400	109	79-125
3NT	9500		9640	101	78-121

# of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33925

Client Sample No: LD0513SE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		3100	103	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0513SD

Lab Code: SWOK Case No: MKF-OH SDG No:33925

Matrix: (soil/water) Soil

Date Extracted: 05/13/98 Extn. Method: SONC

Date Analyzed (1): 06/06/98 Date Analyzed(2): 05/20/98

Time Analyzed (1): 00:10:07 Time Analyzed(2): 04:05:13

Instrument ID (1): IN13 Instrument ID(2): IN10

LC Column ID (1): CARB-08 LC Column ID (2): LC-CN-09

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC'S.

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0513SD	LC0513SD	06/06/98	
2	LD0513SD	LD0513SD	06/06/98	
3	BIO-12/14-S001-3	33925.01	06/06/98	05/20/98
4	BIO-12/14-S001-5	33925.02	06/06/98	05/20/98
5	BIO-12/14-S001-7	33925.03	06/06/98	05/20/98
6	BIO-12/14-S001-9	33925.04	06/06/98	05/20/98
7	BIO-12/14-S001-11	33925.05	06/06/98	05/20/98
8	BIO-12/14-S001-11 5X	33925.05DL	06/06/98	05/25/98
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

FORM IV

4C

Lab Name: SWL-TULSA Contract:

Sample ID: BL0513SE

Lab Code: SWOK Case No: MKF-OH SDG No:33925

Matrix: (soil/water) Soil

Date Extracted: 05/13/98 Extn. Method: SONC

Date Analyzed (1): 05/18/98 Date Analyzed(2):

Time Analyzed (1): 09:24:56 Time Analyzed(2):

Instrument ID (1): LC4 Instrument ID(2):

LC Column ID (1): LC Column ID (2):

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC'S.

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0513SE	LC0513SE	05/18/98	
2	LD0513SE	LD0513SE	05/18/98	
3	BIO-12/14-S001-3	33925.01	05/18/98	
4	BIO-12/14-S001-5	33925.02	05/18/98	
	BIO-12/14-S001-7	33925.03	05/18/98	
	BIO-12/14-S001-9	33925.04	05/18/98	
7	BIO-12/14-S001-11	33925.05	05/18/98	
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

FORM IV

TCLP Analysis

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.01

Sample Amt: 1ml % Moisture 20.81 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

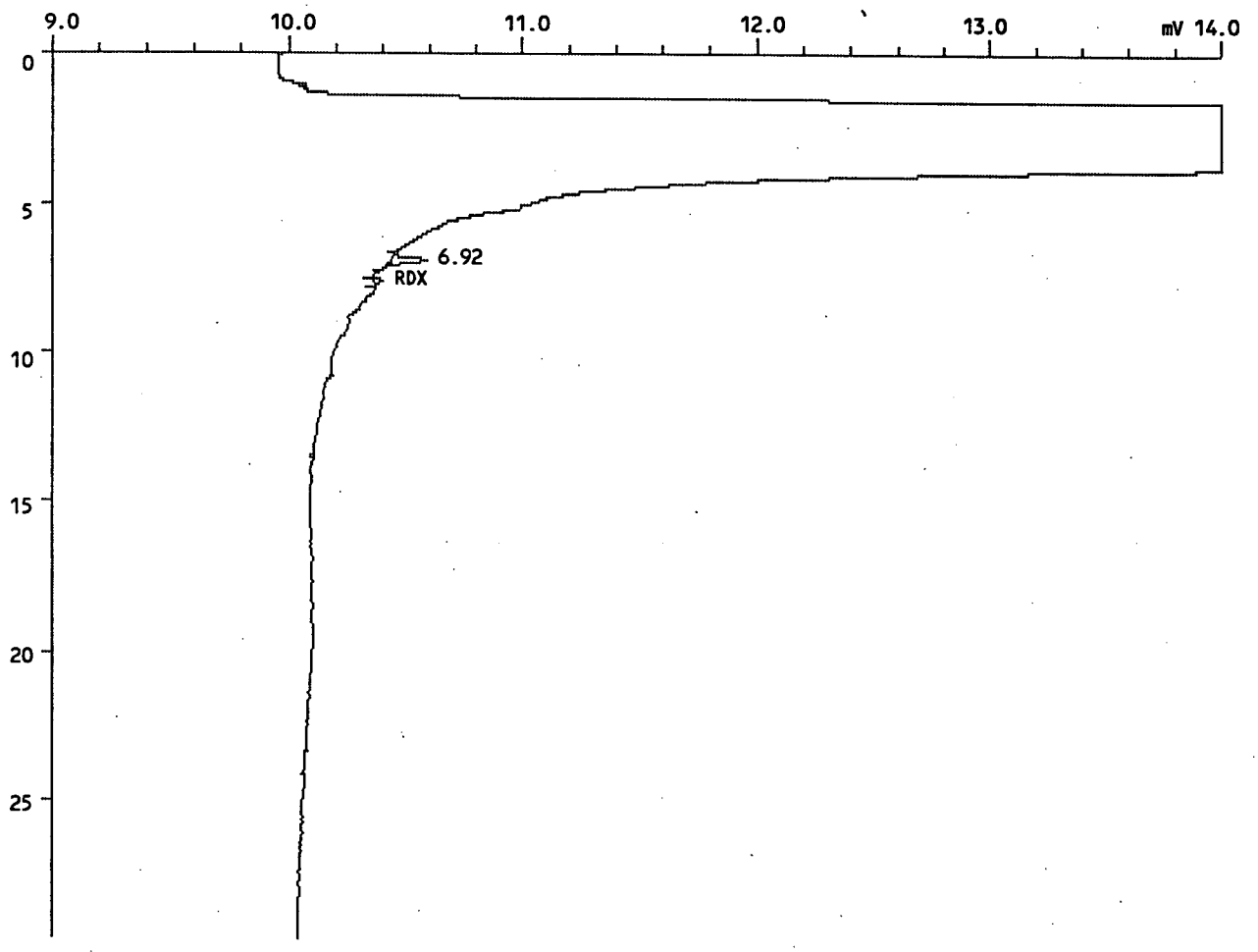
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0514WA,7,1

Sample name.....: BIO-12/14-S001-3
Sample ID.....: 33924.01
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 15-May-98 at 07:15:40
Reported on 21-May-98 at 10:39:18



INJECTION REPORT

Injection F: <MC3> 5 5E0514WA,7,1

Acquired on 15-May-98 at 07:15:40
Modified on 21-May-82 at 10:38:00
Reported on 21-May-98 at 10:38:58

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 5E0514W Last modified on 20-May-82 at 19:14:46
Method file.....: EXPLOS Last modified on 20-May-82 at 19:37:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-3
Sample ID.....: 33924.01
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
2	7.605	37	325	6.994	RDX
Total		37	325	6.994	
Residual		158	1920	41.373	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-3 RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.01RE

Sample Amt: 1ml % Moisture 20.81 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/21/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 2000
3,4-DNT

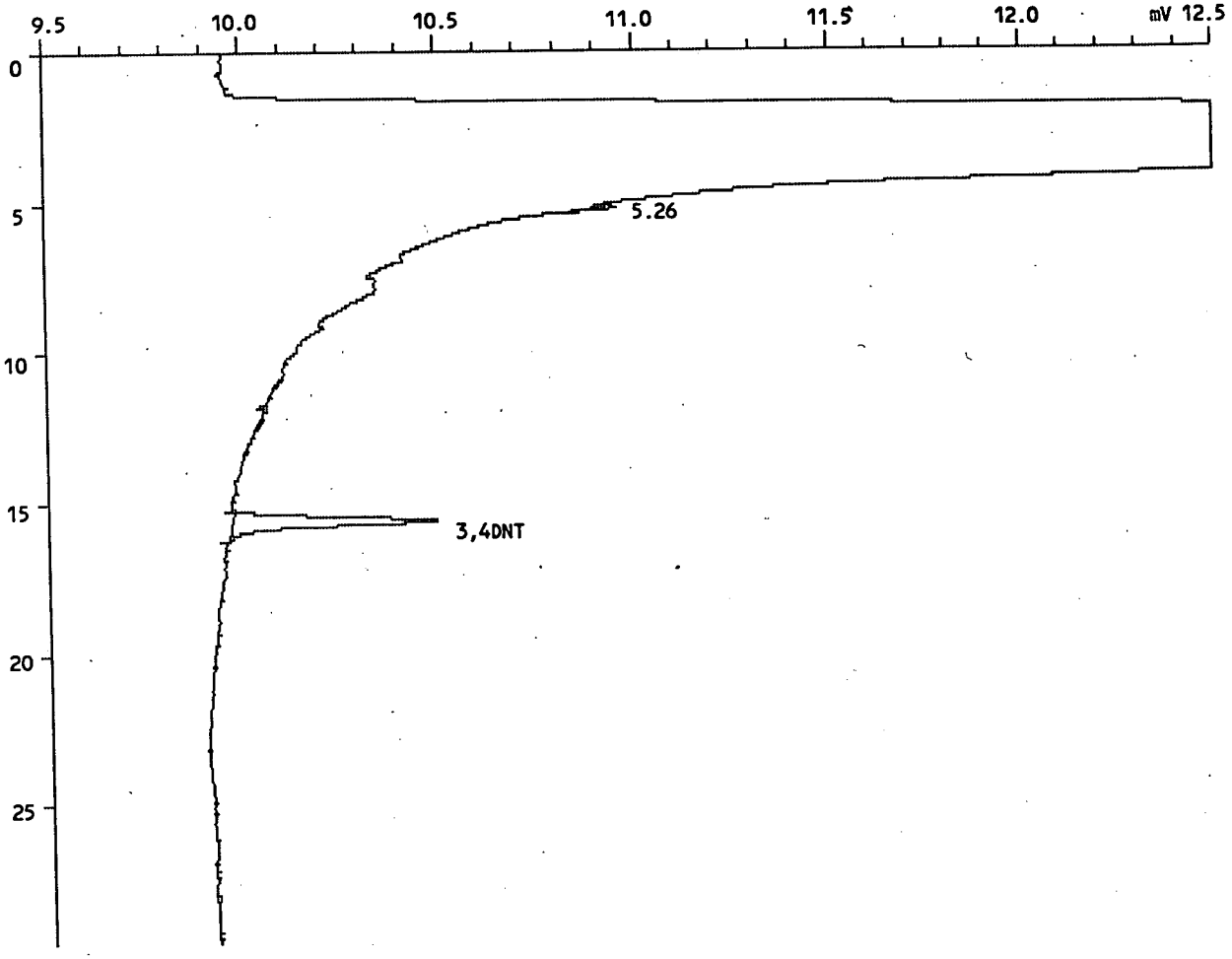
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0520WA,12,1

Sample name.....: BIO-12/14-S001-3 RE
Sample ID.....: 33924.01RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 21-May-98 at 21:13:04
Reported on 27-May-98 at 19:11:52



INJECTION REPORT

Injection F: <MC3> 5 5E0520WA,12,1

Acquired on 21-May-98 at 21:13:04
Modified on 27-May-82 at 19:10:48
Reported on 27-May-98 at 19:10:53

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 14
Calibration file..: 5E0520W Last modified on 27-May-82 at 19:10:48
Method file.....: EXPLOS Last modified on 27-May-82 at 19:05:14
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-3 RE
Sample ID.....: 33924.01RE
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
2	15.621	524	11031	199.472	3,4DNT 100%
Total		524	11031	199.472	
Residual		71	565	-0.883	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-3

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.01

Sample Amt: 1ml % Moisture 20.81 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

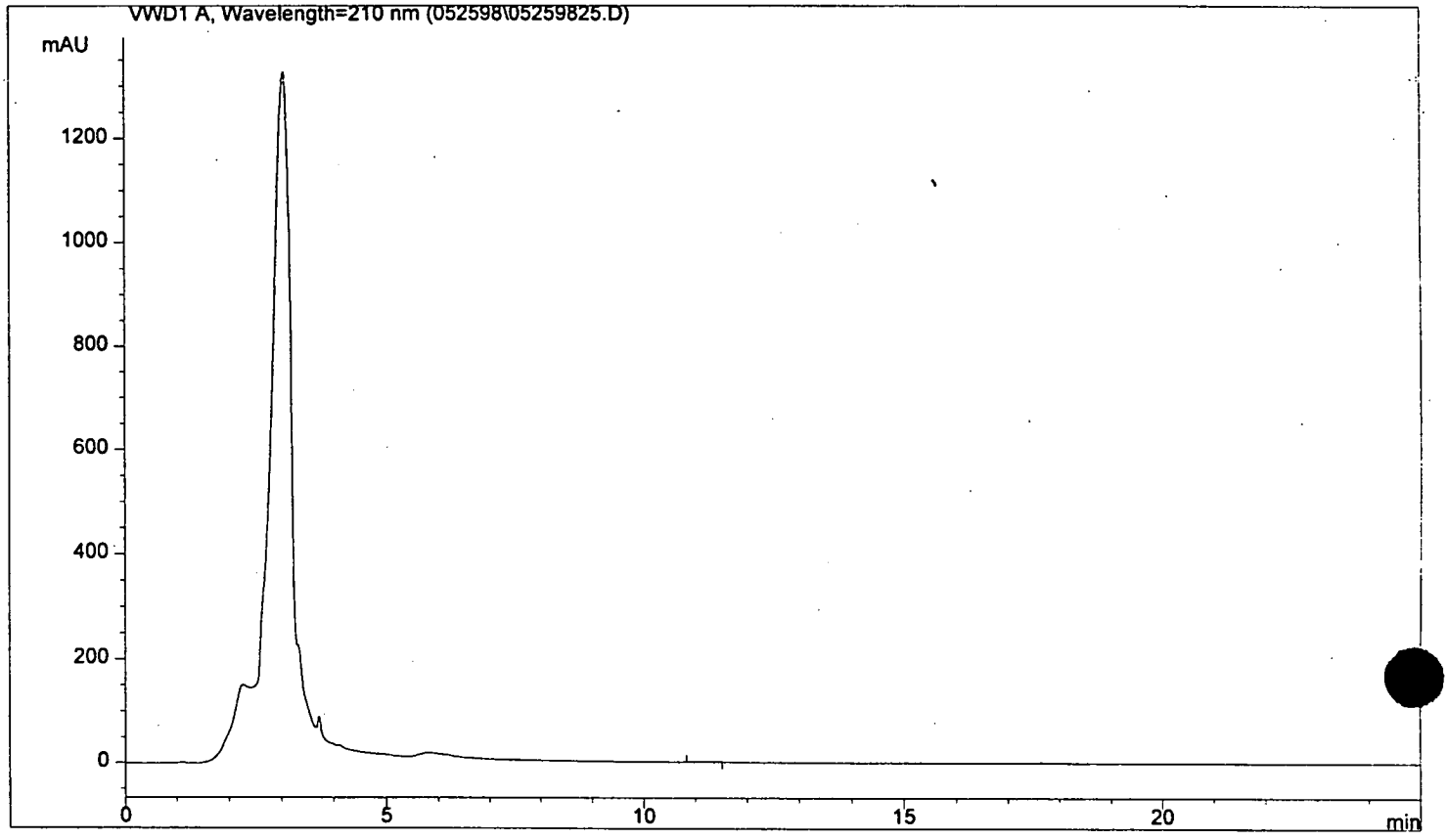
FORM I

Sample Name : 33924.01
Acq Operator : SS

Vial No. : 25
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 03:05:25 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
11.046	PBA	2.89501	0.00000	0.00000	
Totals:				0.00000	

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*** End of Report ***

24

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-3 - RE

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.01RE

Sample Amt: 1ml % Moisture 20.81 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/27/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

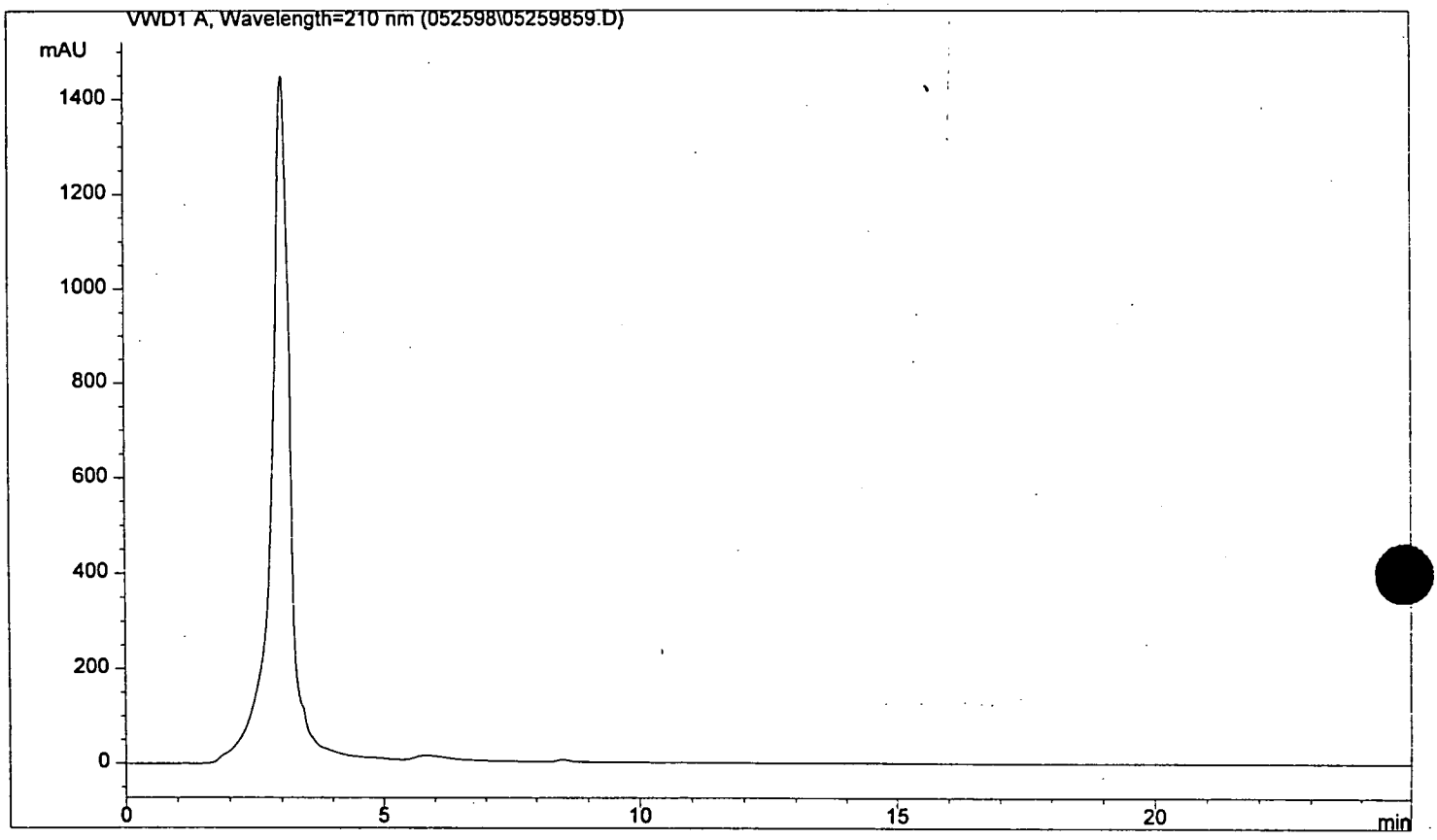
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

Injection Date	: Wed, 27. May. 1998	Seq Line	: 59
Sample Name	: 33924.01RE	Vial No.	: 59
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 06:52:03 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

26

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-5

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.02

Sample Amt: 1ml % Moisture 21.49 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

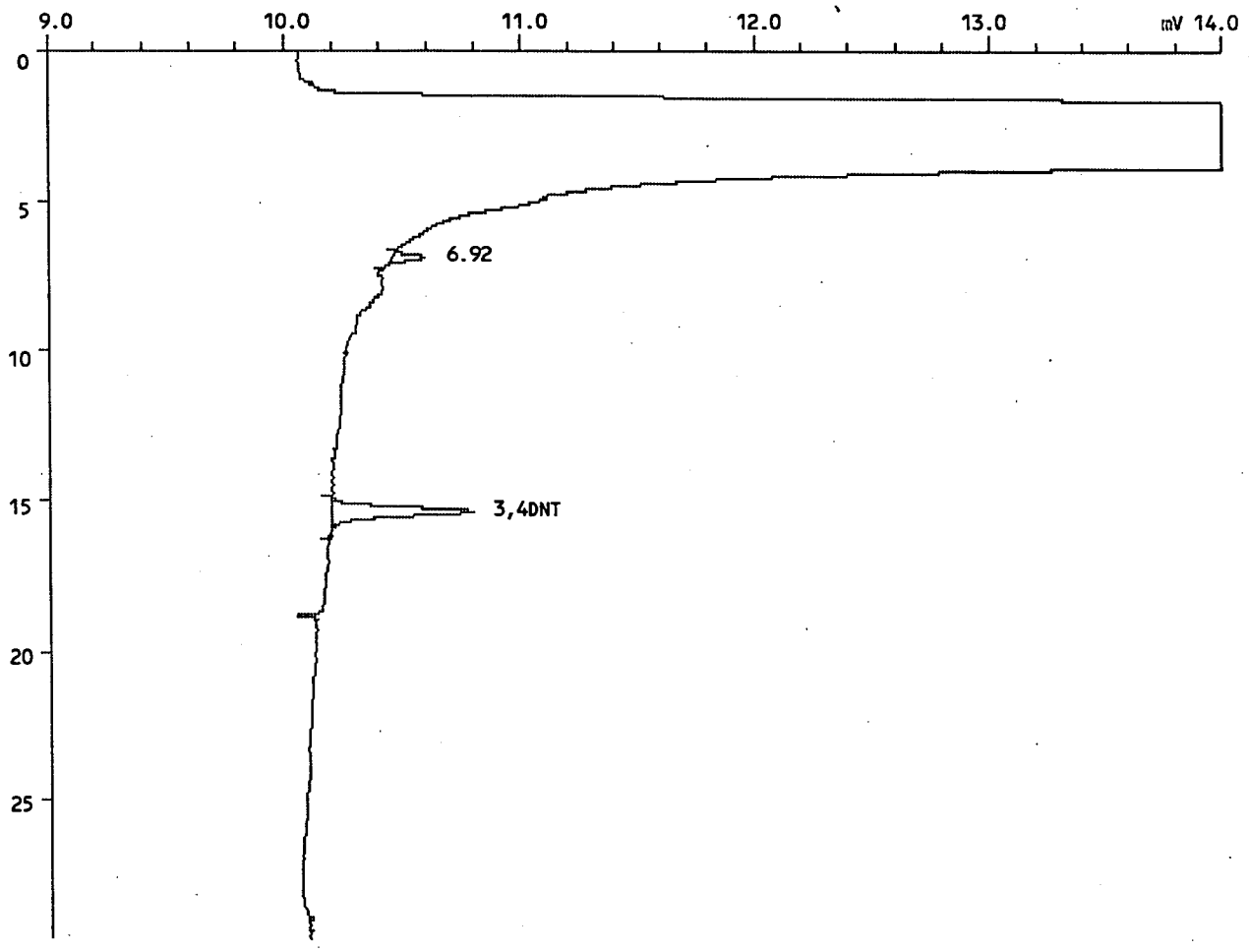
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0514WA,8,1

Sample name.....: BIO-12/14-S001-5
Sample ID.....: 33924.02
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 15-May-98 at 08:00:23
Reported on 20-May-98 at 19:28:14



INJECTION REPORT

Injection F: <MC3> 5 5E0514WA,8,1

Acquired on 15-May-98 at 08:00:23
Modified on 20-May-82 at 19:12:22
Reported on 20-May-98 at 19:12:23

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 5E0514W Last modified on 20-May-82 at 19:12:22
Method file.....: EXPLOS Last modified on 20-May-82 at 19:09:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-5
Sample ID.....: 33924.02
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
2	15.371	600	12808	249.176	3,4DNT 124
Total		600	12808	249.176	
Residual		147	1908	-2.982	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-5

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.02

Sample Amt: 1ml % Moisture 21.49 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

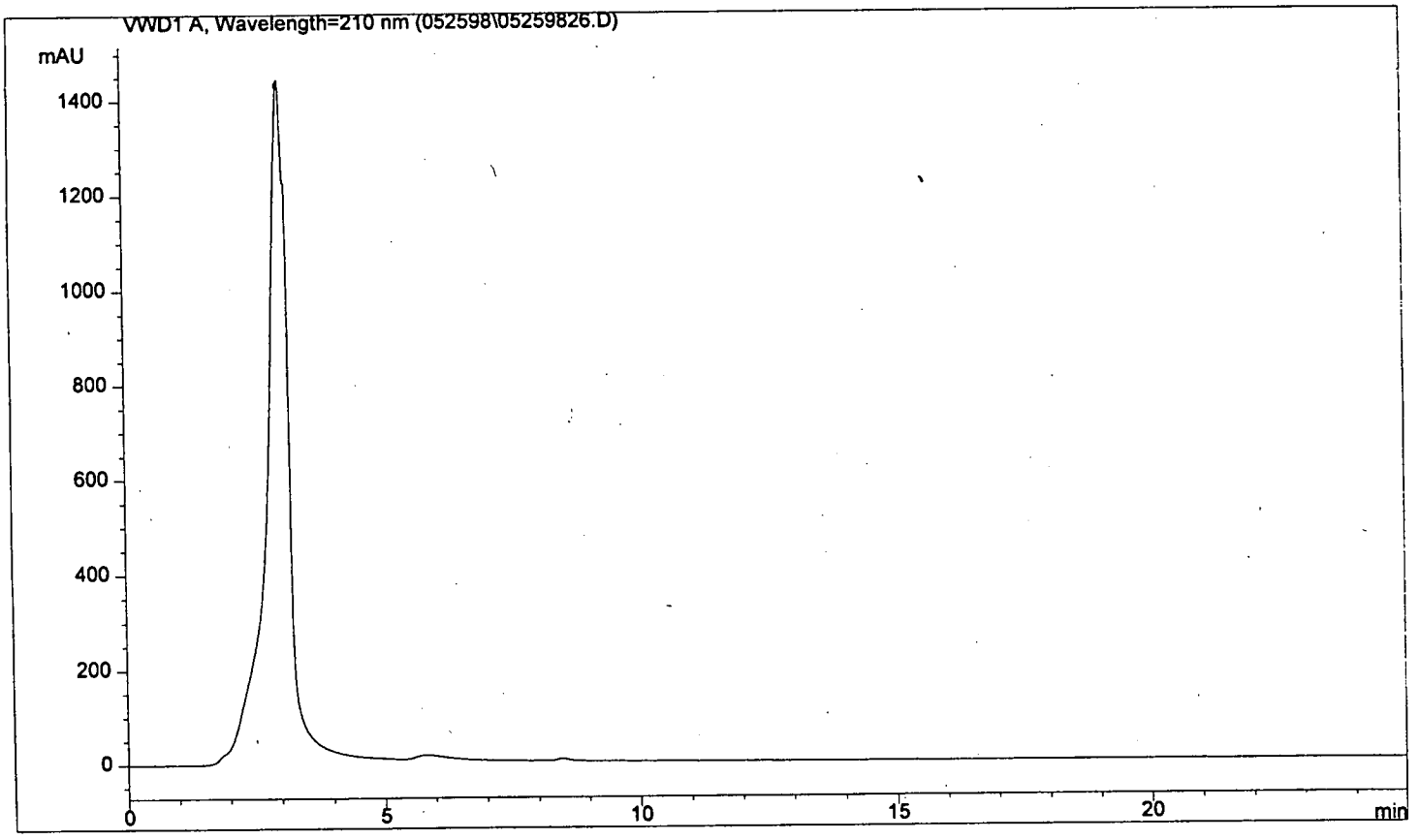
FORM I

Sample Name : 33924.02
Acq Operator : SS

Vial No. : 26
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 03:05:25 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-7

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.03

Sample Amt: 1ml % Moisture 22.57 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

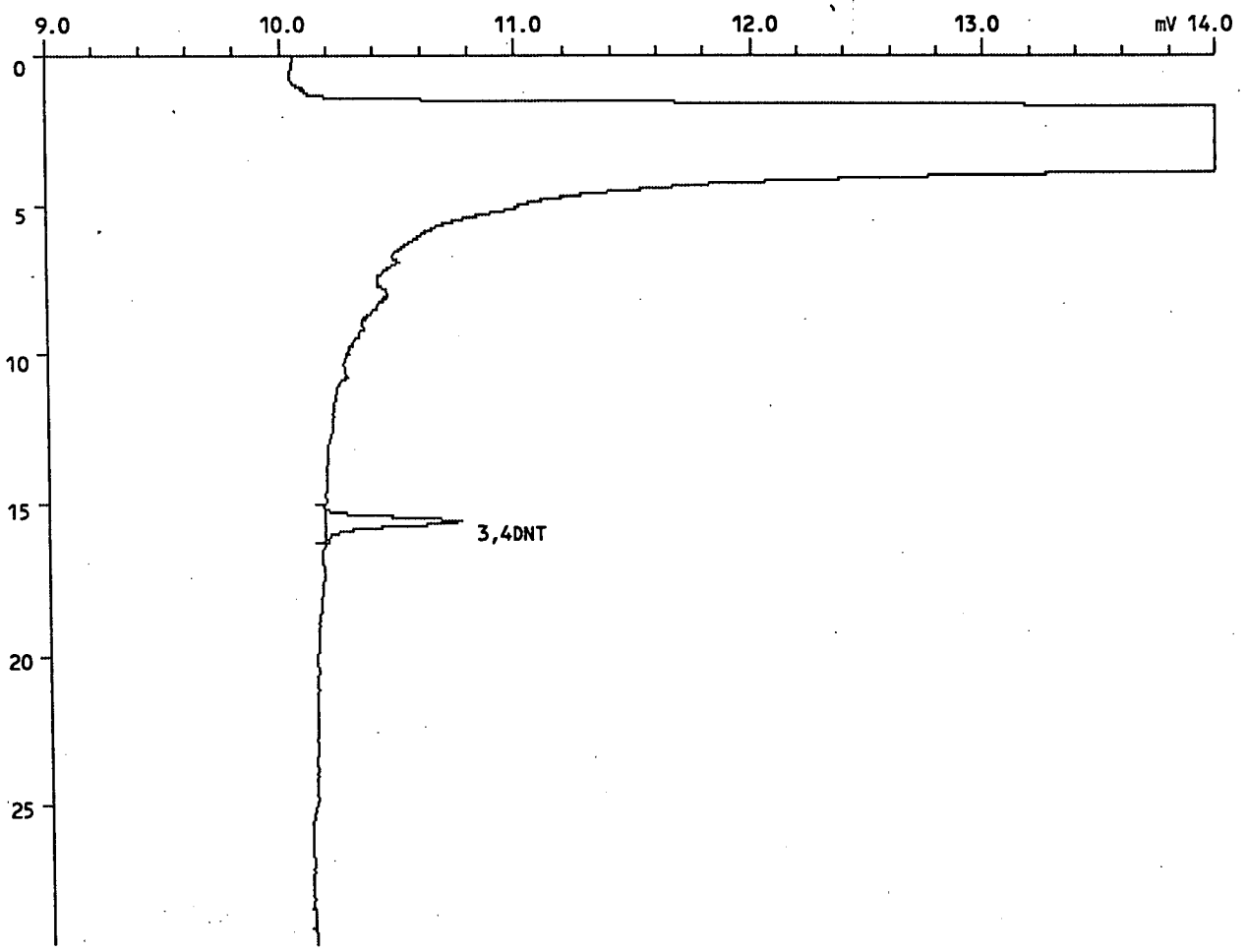
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0514WA,9,1

Sample name.....: BIO-12/14-S001-7
Sample ID.....: 33924.03
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 15-May-98 at 08:45:07
Reported on 20-May-98 at 19:27:55



INJECTION REPORT

Injection F: <MC3> 5 5E0514WA,9,1

Acquired on 15-May-98 at 08:45:07
Modified on 20-May-82 at 19:12:34
Reported on 20-May-98 at 19:12:36

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 5E0514W Last modified on 20-May-82 at 19:12:22
Method file.....: EXPLOS Last modified on 20-May-82 at 19:09:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-7
Sample ID.....: 33924.03
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
1	15.584	578	12652	246.138	3,4DNT 123
Total		578	12652	246.138	
Residual		0	0	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-7

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.03

Sample Amt: 1ml % Moisture 22.57 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

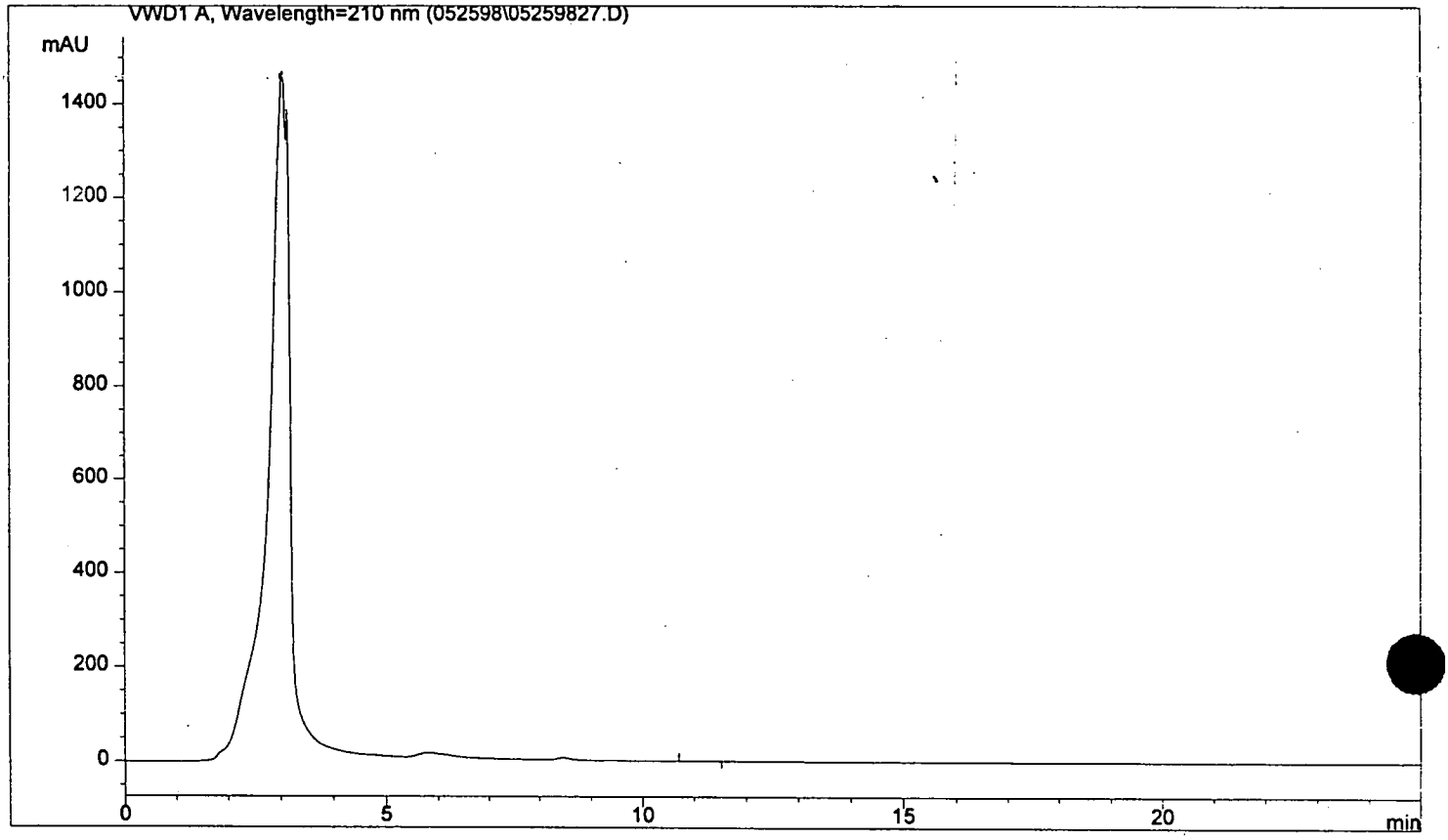
FORM I

Sample Name : 33924.03
Acq Operator : SS

Vial No. : 27
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 03:05:25 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
10.975	PBA	5.01833	0.00000	0.00000	
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-9

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.04

Sample Amt: 1ml % Moisture 25.28 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

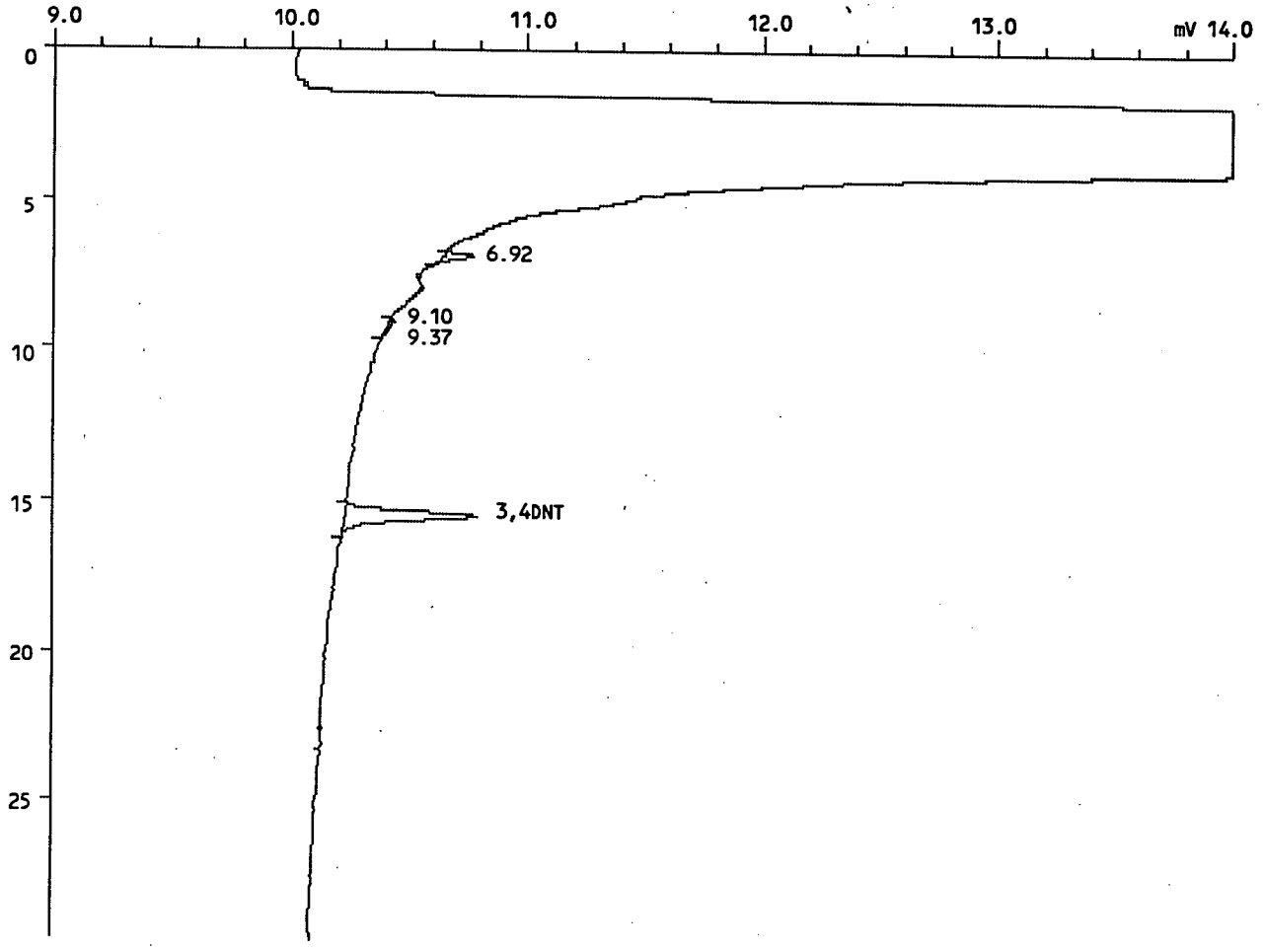
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0514WA,14,1

Sample name.....: BIO-12/14-S001-9
Sample ID.....: 33924.04
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 15-May-98 at 15:39:31
Reported on 20-May-98 at 19:25:49



INJECTION REPORT

Injection F: <MC3> 5 5E0514WA,14,1

Acquired on 15-May-98 at 15:39:31
Modified on 20-May-82 at 19:13:30
Reported on 20-May-98 at 19:13:31

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 5E0514W Last modified on 20-May-82 at 19:13:30
Method file.....: EXPLOS Last modified on 20-May-82 at 19:09:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-9
Sample ID.....: 33924.04
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
4	15.467	563	11990	233.275	3,4DNT 114
Total		563	11990	233.275	
Residual		177	2188	-3.419	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-9

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.04

Sample Amt: 1ml % Moisture 25.28 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN	20.0	U

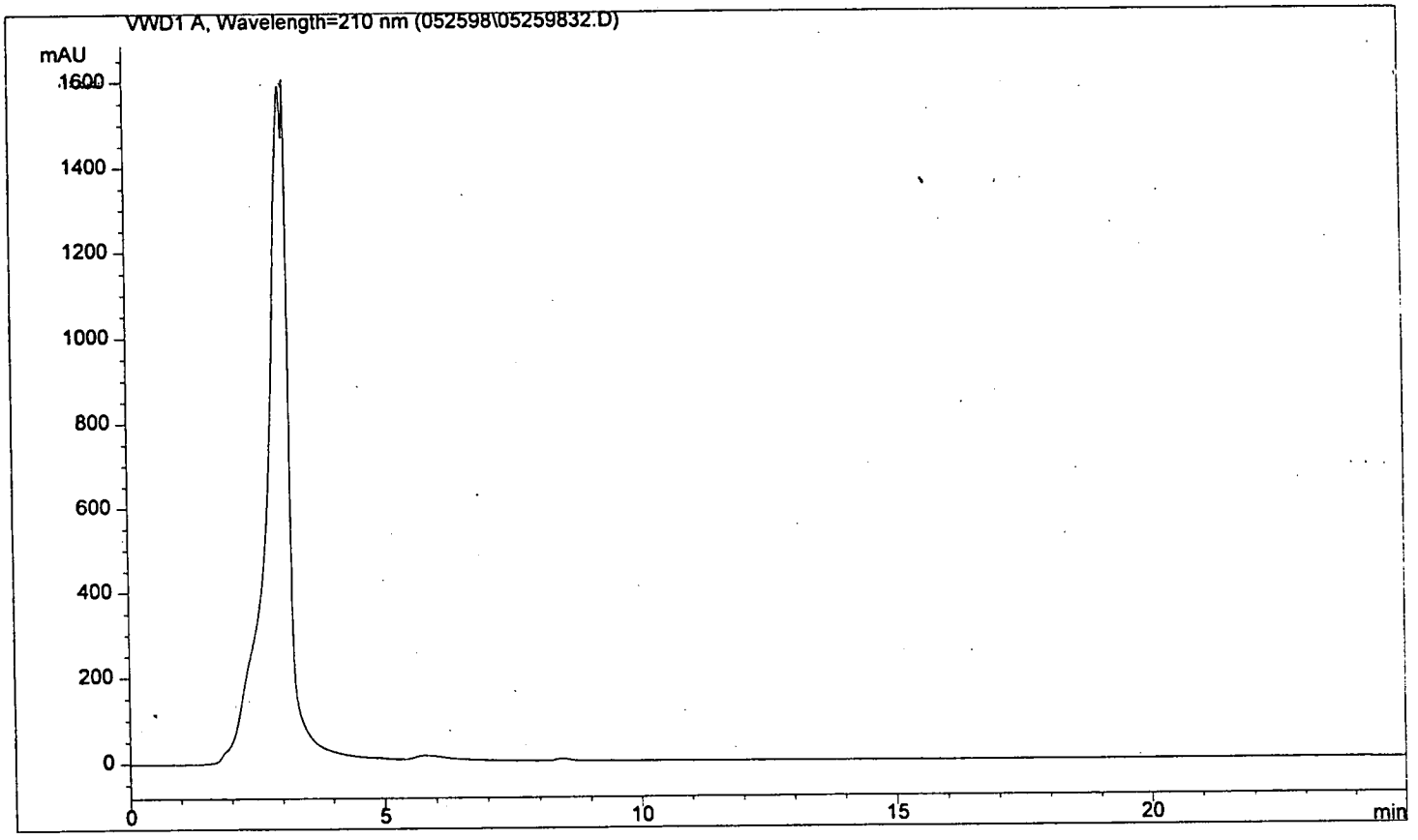
FORM I

Sample Name : 33924.04
Acq Operator : SS

Vial No. : 32
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 03:05:25 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-11

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.05

Sample Amt: 1ml % Moisture 21.88 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

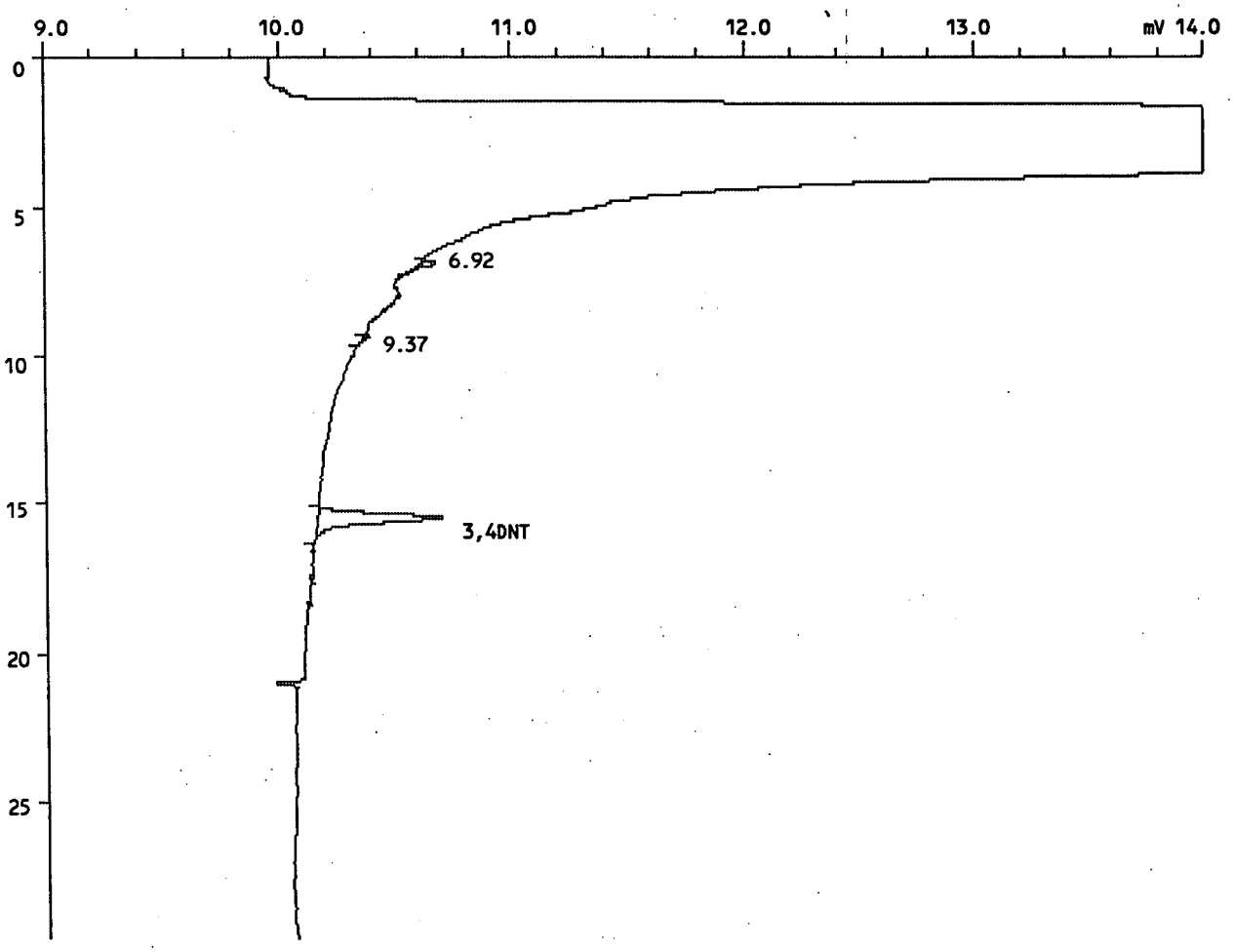
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0514WA,15,1

Sample name.....: BIO-12/14-S001-11
Sample ID.....: 33924.05
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 15-May-98 at 16:24:11
Reported on 20-May-98 at 19:24:40



INJECTION REPORT

Injection F: <MC3> 5 5E0514WA,15,1

Acquired on 15-May-98 at 16:24:11
Modified on 20-May-82 at 19:13:42
Reported on 20-May-98 at 19:13:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 5E0514W Last modified on 20-May-82 at 19:13:42
Method file.....: EXPLOS Last modified on 20-May-82 at 19:09:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-11
Sample ID.....: 33924.05
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
3	15.531	541	11722	228.058	3,4DNT 114
Total		541	11722	228.058	
Residual		98	1119	-1.748	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-11

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33924

Matrix: (soil/water) WATER Lab Sample ID: 33924.05

Sample Amt: 1ml % Moisture 21.88 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

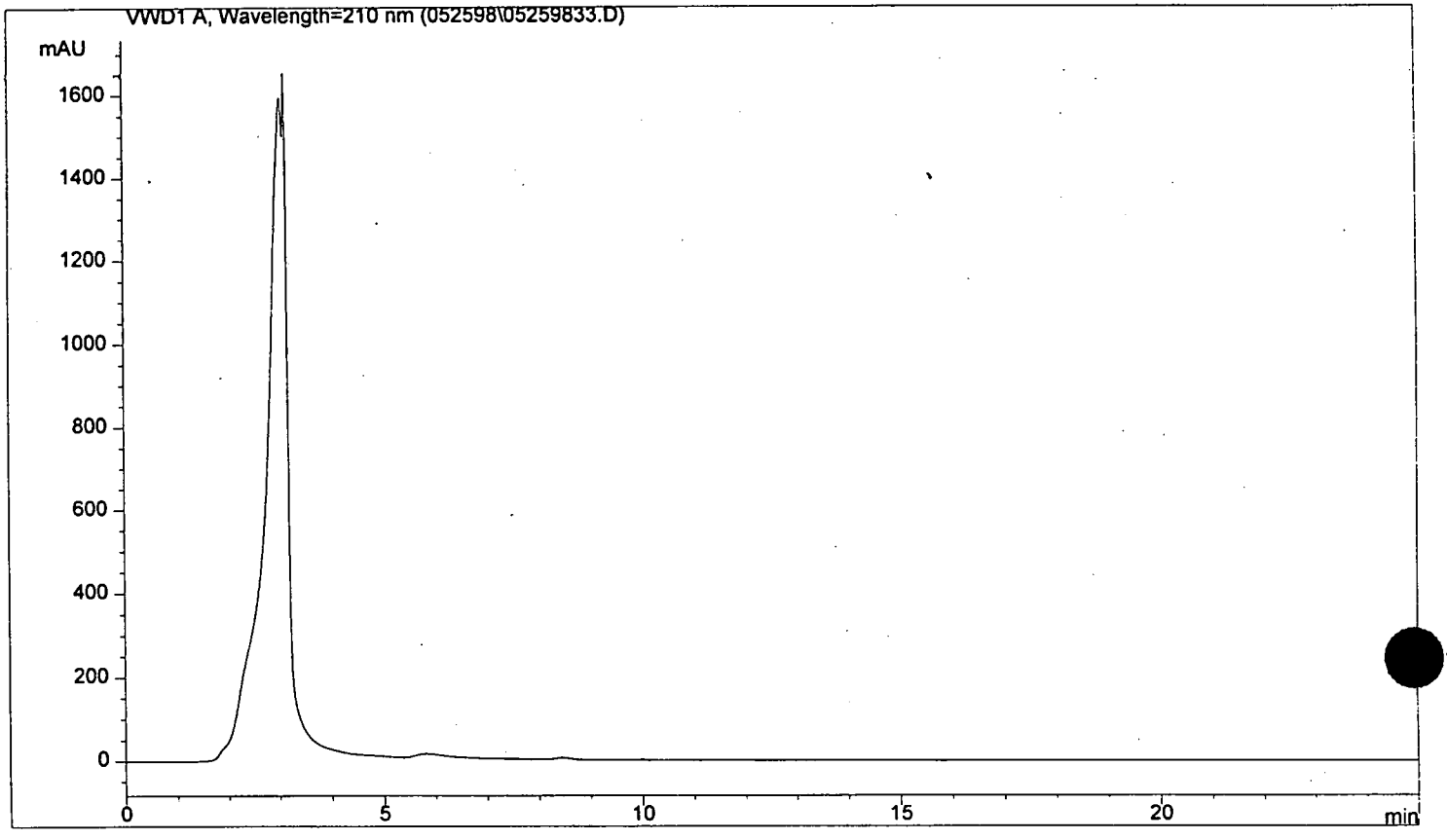
FORM I

Sample Name : 33924.05
Acq Operator : SS

Vial No. : 33
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 03:05:25 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

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Calibration - Explosives
IN 13 5/14/98
Primary Column

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1

Injection File Name Level 1 : 5E0514W,4
Injection File Name Level 2 : 5E0514W,5
Injection File Name Level 3 : 5E0514W,6
Injection File Name Level 4 : 5E0514W,7
Injection File Name Level 5 : 5E0514W,8

Calibration Date : 05/14/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	957	748	1297	408	55595	350	112582	354	232163	365
RDX	384	369	1538	592	58338	449	117473	452	237359	458
TNB	553	768	1701	945	86724	968	177209	990	361357	1009
DNB	371	976	1125	1172	62388	1311	127556	1343	261800	1378
TETRYL	417	463	968	428	61596	545	125626	556	267650	595
NB	580	853	1279	752	77069	907	156913	923	327007	962
3,4-DNT	649	507	1582	491	81113	507	167740	524	346999	542
TNT	813	1270	1686	1054	93303	1166	182825	1143	381325	1192
4ADNT	498	498	1335	530	79668	637	162881	652	341699	683
2ADNT	522	932	1040	743	60157	859	123087	879	255996	914
26DNT	694	723	1551	646	73241	637	149241	649	308425	670
24DNT	766	1368	1496	1069	85900	1227	175011	1250	363824	1299
2NT	408	364	1485	530	77727	536	157931	545	327959	565
4NT	268	335	772	386	44492	445	91029	455	189458	474
	320	400	1298	649	59515	626	120956	637	248018	653

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1

Injection File Name Level 1 : 5E0514W,4
Injection File Name Level 2 : 5E0514W,5
Injection File Name Level 3 : 5E0514W,6
Injection File Name Level 4 : 5E0514W,7
Injection File Name Level 5 : 5E0514W,8

Calibration Date : 05/14/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	445	38.40	0.99984	362	0.000
RDX	464	17.27	0.99996	457	0.000
TNB	936	10.36	0.99992	1004	0.000
DNB	1236	13.33	0.99987	1368	0.000
TETRYL	517	13.35	0.99936	585	0.000
NB	879	9.22	0.99975	952	0.000
3,4-DNT	514	3.78	0.99977	537	0.000
TNT	1165	6.74	0.99978	1181	0.000
[illegible]DNT	600	13.53	0.99966	675	0.000
[illegible]NT	866	8.58	0.99975	905	0.000
26DNT	665	5.20	0.99982	665	0.000
24DNT	1243	8.95	0.99977	1287	0.000
2NT	508	16.04	0.99979	560	0.000
4NT	419	13.66	0.99975	469	0.000
3NT	593	18.27	0.99990	648	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/14/98
Continuing Calibration #: 1
Continuing Cal Date : 05/15/98
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5E0514WA,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	56615	356	445	19.96	362	1.72
RDX	58776	452	464	2.54	457	0.97
TNB	88354	986	936	5.34	1004	1.77
DNB	63835	1341	1236	8.51	1368	1.99
TETRYL	59454	526	517	1.67	585	10.13
NB	77071	907	879	3.11	952	4.77
3,4-DNT	82895	518	514	0.73	537	3.57
TNT	93748	1172	1165	0.59	1181	0.81
4ADNT	80926	647	600	7.90	675	4.15
2ADNT	61588	880	866	1.65	905	2.81
26DNT	73231	637	665	4.25	665	4.23
24DNT	85874	1227	1243	1.27	1287	4.68
2NT	79050	545	508	7.29	560	2.69
4NT	45160	452	419	7.80	469	3.69
3NT	61786	650	593	9.68	648	0.29

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/14/98
Continuing Calibration #: 2
Continuing Cal Date : 05/15/98
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5E0514WA,21
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	55056	346	445	22.16	362	4.42
RDX	58164	447	464	3.56	457	2.00
TNB	88301	986	936	5.28	1004	1.83
DNB	63467	1333	1236	7.88	1368	2.55
TETRYL	58712	520	517	0.41	585	11.25
NB	77355	910	879	3.49	952	4.42
3,4-DNT	88337	552	514	7.34	537	2.76
TNT	88536	1107	1165	5.00	1181	6.32
4ADNT	82190	658	600	9.59	675	2.66
2ADNT	62351	891	866	2.91	905	1.61
26DNT	74071	644	665	3.16	665	3.13
24DNT	86620	1237	1243	0.42	1287	3.85
2NT	78409	541	508	6.42	560	3.48
4NT	44527	445	419	6.28	469	5.04
3NT	60025	632	593	6.56	648	2.56

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	1.280	3.180	159.000	318.000	636.000
RDX	1.040	2.600	130.000	260.000	518.000
TNB	0.720	1.800	89.600	179.000	358.000
DNB	0.380	0.960	47.600	95.000	190.000
TETRYL	0.900	2.260	113.000	226.000	450.000
NB	0.680	1.700	85.000	170.000	340.000
3,4-DNT	1.280	3.220	160.000	320.000	640.000
TNT	0.640	1.600	80.000	160.000	320.000
4ADNT	1.000	2.520	125.000	250.000	500.000
2ADNT	0.560	1.400	70.000	140.000	280.000
26DNT	0.960	2.400	115.000	230.000	460.000
24DNT	0.560	1.400	70.000	140.000	280.000
2NT	1.120	2.800	145.000	290.000	580.000
4NT	0.800	2.000	100.000	200.000	400.000
3NT	0.800	2.000	95.000	190.000	380.000

page1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : CARB-08
Calibration Date : 05/14/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.97	4.93	4.88	4.90	4.86
RDX	7.64	7.67	7.61	7.65	7.58
TNB	10.19	10.21	10.12	10.19	10.10
DNB	12.45	12.53	12.45	12.53	12.41
TETRYL	13.47	13.45	13.37	13.49	13.31
NB	14.10	14.17	14.06	14.17	14.01
3,4-DNT	15.49	15.54	15.41	15.57	15.33
TNT	15.88	15.96	15.82	15.96	15.75
4ADNT	16.94	16.99	16.87	17.06	16.78
2ADNT	17.94	18.04	17.86	18.06	17.77
26DNT	18.52	18.63	18.49	18.70	18.40
24DNT	19.28	19.40	19.22	19.44	19.13
2NT	22.35	22.47	22.27	22.54	22.17
4NT	23.97	24.03	23.81	24.10	23.71
3NT	25.62	25.94	25.62	25.94	25.52

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
HMX	4.89	4.90	4.87	4.87
RDX	7.59	7.63	7.57	7.58
TNB	10.13	10.16	10.07	10.10
DNB	12.45	12.49	12.38	12.43
TETRYL	13.34	13.41	13.27	13.35
NB	14.07	14.11	13.98	14.04
3,4-DNT	15.41	15.47	15.30	15.40
TNT	15.83	15.88	15.72	15.80
4ADNT	16.85	16.91	16.77	16.86
2ADNT	17.84	17.90	17.77	17.85
26DNT	18.49	18.55	18.37	18.47
24DNT	19.23	19.27	19.10	19.20
2NT	22.29	22.34	22.13	22.25
4NT	23.84	23.87	23.66	23.80
3NT	25.66	25.68	25.46	25.61

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.90	0.035	0.105	4.79 - 5.00
RDX	7.61	0.034	0.101	7.51 - 7.71
TNB	10.14	0.048	0.145	10.00 - 10.29
DNB	12.46	0.051	0.154	12.30 - 12.61
TETRYL	13.38	0.074	0.223	13.16 - 13.61
NB	14.08	0.066	0.197	13.88 - 14.28
3,4-DNT	15.44	0.090	0.271	15.16 - 15.71
TNT	15.85	0.085	0.256	15.59 - 16.10

page 2

4ADNT	16.89	0.095	0.284	16.61 - 17.18
2ADNT	17.89	0.106	0.319	17.57 - 18.21
26DNT	18.51	0.104	0.313	18.20 - 18.83
24DNT	19.25	0.112	0.335	18.92 - 19.59
2NT	22.31	0.132	0.395	21.92 - 22.71
4NT	23.87	0.144	0.431	23.44 - 24.30
[illegible]T	25.67	0.165	0.495	25.18 - 26.17

Calibration - Explosives

IN 13 5/21/98

Primary Column

(used for re-analysis of
33924.01 -
re-extracted/analyzed
due to surrogate
recovery)

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1

Injection File Name Level 1 : 5E0520W,4
Injection File Name Level 2 : 5E0520W,5
Injection File Name Level 3 : 5E0520W,6
Injection File Name Level 4 : 5E0520W,7
Injection File Name Level 5 : 5E0520W,8

Calibration Date : 05/21/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	336	263	1232	387	56524	355	117274	369	232002	365
RDX	426	412	1104	425	58412	449	122485	471	239188	462
TNB	561	779	1521	845	84927	948	180791	1010	359608	1004
DNB	337	887	1035	1078	61370	1289	132922	1399	261224	1375
TETRYL	439	488	946	419	56432	499	110566	489	246680	548
NB	509	749	1239	729	76601	901	163680	963	327889	964
3,4-DNT	837	654	1728	537	79649	498	177574	555	333282	521
TNT	482	753	1955	1222	84345	1054	196866	1230	393657	1230
4ADNT	388	388	2193	870	80105	641	171709	687	337803	676
2ADNT	298	532	776	554	62540	893	131368	938	259133	925
26DNT	362	377	1747	728	73566	640	151711	660	300788	654
24DNT	558	996	1878	1341	84676	1210	181123	1294	359280	1283
2NT	471	421	1713	612	76090	525	156057	538	324308	559
	295	369	894	447	43499	435	89950	450	187969	470
	432	540	1166	583	55137	580	118351	623	244887	644

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1
Injection File Name Level 1 : 5E0520W,4
Injection File Name Level 2 : 5E0520W,5
Injection File Name Level 3 : 5E0520W,6
Injection File Name Level 4 : 5E0520W,7
Injection File Name Level 5 : 5E0520W,8

Calibration Date : 05/21/1998
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	348	14.11	0.99995	365	0.000
RDX	444	5.64	0.99990	463	0.000
TNB	917	11.10	0.99988	1003	0.000
DNB	1206	18.12	0.99980	1376	0.000
TETRYL	489	9.47	0.99844	536	0.000
NB	861	13.34	0.99986	961	0.000
3,4-DNT	553	10.91	0.99928	527	0.000
TNT	1098	18.84	0.99930	1223	0.000
[illegible]NT	652	26.47	0.99984	676	0.000
2[illegible]NT	769	26.88	0.99992	926	0.000
26DNT	612	22.15	0.99997	654	0.000
24DNT	1225	11.11	0.99986	1282	0.000
2NT	531	13.19	0.99975	554	0.000
4NT	434	8.90	0.99966	465	0.000
3NT	594	6.84	0.99962	638	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/21/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/21/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5E0520WA,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	55207	347	348	0.17	365	4.90
RDX	57449	442	444	0.39	463	4.55
TNB	85682	956	917	4.25	1003	4.66
DNB	61394	1290	1206	6.98	1376	6.25
TETRYL	62555	554	489	13.29	536	3.35
NB	78245	921	861	6.90	961	4.24
3,4-DNT	82026	513	553	7.26	527	2.64
TNT	92000	1150	1098	4.74	1223	5.97
4ADNT	83536	668	652	2.45	676	1.17
2ADNT	62463	892	769	16.08	926	3.69
26DNT	70654	614	612	0.45	654	6.10
24DNT	84784	1211	1225	1.12	1282	5.51
2NT	76884	530	531	0.12	554	4.24
4NT	44306	443	434	2.07	465	4.65
3NT	57862	609	594	2.51	638	4.48

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/21/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/21/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5E0520WA,13
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	55350	348	348	0.09	365	4.66
RDX	57638	443	444	0.07	463	4.24
TNB	85015	949	917	3.44	1003	5.40
DNB	63812	1341	1206	11.19	1376	2.55
TETRYL	56714	502	489	2.71	536	6.30
NB	78456	923	861	7.18	961	3.98
3,4-DNT	81755	511	553	7.57	527	2.97
TNT	92371	1155	1098	5.16	1223	5.59
4ADNT	82160	657	652	0.76	676	2.80
2ADNT	61790	883	769	14.83	926	4.72
26DNT	70927	617	612	0.84	654	5.74
24DNT	84073	1201	1225	1.95	1282	6.31
2NT	76623	528	531	0.46	554	4.56
4NT	44069	441	434	1.52	465	5.16
3NT	55947	589	594	0.88	638	7.64

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	1.280	3.180	159.000	318.000	636.000
RDX	1.040	2.600	130.000	260.000	518.000
TNB	0.720	1.800	89.600	179.000	358.000
DNB	0.380	0.960	47.600	95.000	190.000
TETRYL	0.900	2.260	113.000	226.000	450.000
NB	0.680	1.700	85.000	170.000	340.000
3,4-DNT	1.280	3.220	160.000	320.000	640.000
TNT	0.640	1.600	80.000	160.000	320.000
4ADNT	1.000	2.520	125.000	250.000	500.000
2ADNT	0.560	1.400	70.000	140.000	280.000
26DNT	0.960	2.400	115.000	230.000	460.000
24DNT	0.560	1.400	70.000	140.000	280.000
2NT	1.120	2.800	145.000	290.000	580.000
4NT	0.800	2.000	100.000	200.000	400.000
3NT	0.800	2.000	95.000	190.000	380.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	1.280	3.180	159.000	318.000	636.000
RDX	1.040	2.600	130.000	260.000	518.000
TNB	0.720	1.800	89.600	179.000	358.000
DNB	0.380	0.960	47.600	95.000	190.000
TETRYL	0.900	2.260	113.000	226.000	450.000
NB	0.680	1.700	85.000	170.000	340.000
3,4-DNT	1.280	3.220	160.000	320.000	640.000
TNT	0.640	1.600	80.000	160.000	320.000
4ADNT	1.000	2.520	125.000	250.000	500.000
2ADNT	0.560	1.400	70.000	140.000	280.000
26DNT	0.960	2.400	115.000	230.000	460.000
24DNT	0.560	1.400	70.000	140.000	280.000
2NT	1.120	2.800	145.000	290.000	580.000
4NT	0.800	2.000	100.000	200.000	400.000
3NT	0.800	2.000	95.000	190.000	380.000

page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : CARB-08
Calibration Date : 05/21/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.88	4.89	4.89	4.88	4.86
RDX	7.58	7.58	7.59	7.59	7.57
TNB	10.06	10.09	10.11	10.11	10.08
DNB	12.40	12.43	12.46	12.48	12.43
TETRYL	13.22	13.22	13.27	13.32	13.25
NB	14.12	14.10	14.13	14.18	14.12
3,4-DNT	15.38	15.44	15.47	15.55	15.47
TNT	15.78	15.77	15.79	15.86	15.79
4ADNT	16.83	16.83	16.88	16.97	16.88
2ADNT	17.81	17.88	17.84	17.93	17.84
26DNT	18.52	18.51	18.56	18.65	18.56
24DNT	19.25	19.14	19.27	19.36	19.26
2NT	22.53	22.44	22.46	22.58	22.48
4NT	24.05	24.04	24.04	24.17	24.06
3NT	25.89	25.86	25.86	26.01	25.90

COMPONENT NAME	RT Cont CA1	RT Cont CA2
HMX	4.92	4.90
RDX	7.65	7.63
TNB	10.20	10.16
DNB	12.57	12.52
TETRYL	13.45	13.33
NB	14.30	14.21
3,4-DNT	15.71	15.60
TNT	16.01	15.93
4ADNT	17.07	17.00
2ADNT	18.03	17.96
26DNT	18.82	18.69
24DNT	19.52	19.40
2NT	22.80	22.62
4NT	24.39	24.20
3NT	26.25	26.03

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.89	0.018	0.055	4.83 - 4.94
RDX	7.60	0.029	0.087	7.51 - 7.68
TNB	10.12	0.049	0.146	9.97 - 10.26
DNB	12.47	0.060	0.180	12.29 - 12.65
TETRYL	13.29	0.081	0.243	13.05 - 13.54
NB	14.16	0.071	0.214	13.95 - 14.38
3,4-DNT	15.52	0.110	0.331	15.18 - 15.85
TNT	15.85	0.090	0.269	15.58 - 16.12

4ADNT	16.92	0.094	0.282	16.64 - 17.20
2ADNT	17.90	0.079	0.238	17.66 - 18.14
26DNT	18.61	0.111	0.332	18.28 - 18.95
24DNT	19.31	0.122	0.365	18.95 - 19.68
2NT	22.56	0.122	0.366	22.19 - 22.93
4NT	24.13	0.129	0.387	23.75 - 24.52
[illegible]NT	25.97	0.142	0.427	25.54 - 26.40

page 2

Calibration - PETN

LC4 5/25/98

Primary Column

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
umn ID :

Inj 1

Injection File Name Level 1 : 052598W,4
Injection File Name Level 2 : 052598W,5
Injection File Name Level 3 : 052598W,6
Injection File Name Level 4 : 052598W,7
Injection File Name Level 5 : 052598W,8

Calibration Date : 05/25/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	6.10623	3.28E0	50.6415	3.16E0	103.482	3.09E0	412.643	3.10E0	836.09	3.06E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

Inj 1

Injection File Name Level 1 : 052598W,4
Injection File Name Level 2 : 052598W,5
Injection File Name Level 3 : 052598W,6
Injection File Name Level 4 : 052598W,7
Injection File Name Level 5 : 052598W,8

Calibration Date : 05/25/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	3.14E0	2.69	0.99998	3.07E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/98
Continuing Calibration #: 1
Continuing Cal Date : 05/25/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052598W,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	115.486	2.77E0	3.14E0	11.70	3.07E0	9.75

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/98
Continuing Calibration #: 2
Continuing Cal Date : 05/26/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052598W,17
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.883	3.11E0	3.14E0	0.89	3.07E0	1.30

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/98
Continuing Calibration #: 3
Continuing Cal Date : 05/26/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052598W,28
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.98	3.11E0	3.14E0	0.98	3.07E0	1.21

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/98
Continuing Calibration #: 4
Continuing Cal Date : 05/26/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052598W,39
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	103.579	3.09E0	3.14E0	1.55	3.07E0	0.62

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : LC4
Column ID :
Calibration Date : 05/25/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	10.68	10.66	10.64	10.68	10.67

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	10.67	10.69	10.77	10.78	10.80

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	10.72	0.067	0.200	10.52 - 10.92

TCLP Extraction Log.

pH < 5.0
extraction fluid #1
used for all samples.

pH of fluid 4.93 ± 0.05

TCLP Extraction Log, Ref: SWL-IN-700

TCLP Extraction Log (700-ATT1.DOC) SWLO SOP rev. # 3.0 Book # IN700-LOG-1A Page 28

Type of Extraction (circle): (TCLP) / Zero Head Space

Analyst Initials: SMS Date: 051298 Time: 5 1700

Batch ID: 9805127002

#	SWL ID#	Particle Reduction Necessary?	INITIAL pH	ACID pH	FINAL pH	AMOUNT EXTRACTED	START TEMP & TIME	END TEMP & TIME
1	33924.01	NO	9.08	1.60	6.10	100g	1930 73°	1330 71°
2	.02		9.12	1.49	6.14			
3	.03		9.09	1.59	6.16			
4	.04		9.28	1.94	6.23			
5	.05		9.24	1.81	6.17			
6	TB051298B		4.94	—	5.01	—		
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

SMS 051398

COMMENTS: Extraction Fluid prepared 051398; pH meter calibrated 051298 slp 99.9 std 7 = 7.01; pH meter calibrated 051398 slp 101.1 std 7 = 7.05

Southwest Laboratory of Oklahoma, Inc.

Verified: _____

Analytical QC
Batch 33924
TCLP Explosives
(Toxicity Samples)

2E
EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No:33924

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-12/14-S001-3	0	0
2	BIO-12/14-S001-3RE	100	0
3	BIO-12/14-S001-5	124	0
4	BIO-12/14-S001-7	123	0
5	BIO-12/14-S001-7 MS	111	0
6	BIO-12/14-S001-7 MSD	122	0
7	BIO-12/14-S001-9	117	0
8	BIO-12/14-S001-11	114	0
9	BB0513WE	114	0
10	BL0520WE	105	0
11	TB051298C1	120	0
12	TB051298B	120	0
13	TC0513WE	146	0
14	LC0520WE	97.2	0
15	TD0513WE	118	0
16	LD0520WE	95.0	0
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34			
35			
36			
37			

S1 = 3,4DNT (60-140)
# Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

3F

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33924

Client Sample No: BIO-12/14-S001-7 MSD

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
HMX	400		348	87	44-154
RDX	150		132	88	66-139
TNB	225		206	92	56-129
DNB	125		122	98	76-122
TETRYL	413		326	79	76-120
NB	213		195	92	82-111
TNT	188		239	127	76-137
4ADNT	313		272	87	60-140
2ADNT	313		270	86	60-140
26DNT	288		247	86	80-118
24DNT	175		156	89	72-123
2NT	363		318	88	74-130
4NT	250		232	93	78-116
3NT	238		277	116	72-126

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	400	329	82	6	15	44-154
RDX	150	118	79	11	12	66-139
TNB	225	202	90	2	10	56-129
DNB	125	120	96	2	15	76-122
TETRYL	413	329	80	1	14	76-120
NB	213	201	94	3	13	82-111
TNT	188	241	128	1	15	76-137
4ADNT	313	280	89	3	40	60-140
2ADNT	313	273	87	1	40	60-140
26DNT	288	241	84	2	13	80-118
24DNT	175	155	89	1	14	72-123
2NT	363	318	88	0	15	74-130
4NT	250	224	90	4	14	78-116
3NT	238	268	113	3	15	72-126

No of Analyte recoveries out of QC Advisory Limits = 0
No of RPD's out of QC Limits 0

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33924

Client Sample No: BIO-12/14-S001-7

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
PETN	1200		1380	115	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	1200	1390	116	1	30	70-130

No of Analyte recoveries out of QC Advisory Limits = 0
No of RPD's out of QC Limits 0

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33924

Client Sample No: LC0520WE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
HMX	400		369	92	46-151
RDX	150		154	103	72-129
TNB	225		225	100	74-118
DNB	125		124	99	79-132
TETRYL	413		329	80	58-120
NB	213		226	106	68-135
TNT	188		265	141	61-145
4ADNT	313		241	77	60-140
2ADNT	313		267	85	60-140
26DNT	288		253	88	77-125
24DNT	175		162	93	70-134
2NT	363		333	92	73-131
4NT	250		237	95	73-116
3NT	238		289	121	71- 127

# of Analyte recoveries out of QC Advisory Limits = 0

3G

EXPLOSIVES WATER LABORATORY CONTROL SPIKE RECOVERY

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No: 33924

Client Sample ID: TC0513WF

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
PETN	1200	0.0	1380	115	70-130

No of analyte recoveries out of QC Limits = 0

FORM III

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33924

Client Sample No: LC0520WF

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
PETN	1200		1240	103	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33924

Client Sample No: LD0520WE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
HMX	400		373	93	46-151
RDX	150		159	106	72-129
TNB	225		228	101	74-118
DNB	125		121	97	79-132
TETRYL	413		302	73	58-120
NB	213		232	109	68-135
TNT	188		280	149*	61-145
4ADNT	313		268	86	60-140
2ADNT	313		275	88	60-140
26DNT	288		251	87	77-125
24DNT	175		164	94	70-134
2NT	363		325	90	73-131
4NT	250		228	91	73-116
3NT	238		286	120	71- 127

Number of Analyte recoveries out of QC Advisory Limits = 1

3G

EXPLOSIVES WATER LABORATORY CONTROL SPIKE RECOVERY

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No: 33924

Client Sample ID: TD0513WF

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
PETN	1200	0.0	1350	113	70-130

No of analyte recoveries out of QC Limits = 0

FORM III

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33924

Client Sample No: LD0520WF

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
PETN	1200		1240	103	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

4C

EXPLOSIVES METHOD BLANK SUMMARY

Lab Name: SWL-TULSA

Lab Code: SWOK Case No: MKF-OH SDG: 33924

Lab Sample ID:BB0513WE Matrix: WATER

Date Analyzed: 05/15/98 Date Analyzed :

Time Analyzed 03:32:07 Time Analyzed :

Instrument ID: IN13 Instrument ID :

LC Column ID: CARB-08 LC Column ID :

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	TB051298C1	TB051298C1	05/15/98	
02	TB051298B	TB051298B	05/15/98	
03	TC0513WE	TC0513WE	05/15/98	
04	TD0513WE	TD0513WE	05/15/94	
05	BIO-12/14-S001-3	33924.01	05/15/98	
06	BIO-12/14-S001-5	33924.02	05/15/98	
07	BIO-12/14-S001-7	33924.03	05/15/98	
08	BIO-12/14-S001-7 MS	33924.03 MS	05/15/98	
09	BIO-12/14-S001-7 MSD	33924.03 MSD	05/15/98	
10	BIO-12/14-S001-9	33924.04	05/15/98	
11	BIO-12/14-S001-11	33924.05	05/15/98	
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

COMMENTS:

Page _1_ of _1_

FORM IV

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0520WE

Lab Code: SWOK Case No: MKF-OH SDG No:33924

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 05/21/98 Date Analyzed(2):

Time Analyzed (1): 12:40:02 Time Analyzed(2):

Instrument ID (1): IN13 Instrument ID(2):

LC Column ID (1): CARB-08 LC Column ID (2):

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC'S.

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0520WE	LC0520WE	05/21/98	
2	LD0520WE	LD0520WE	05/21/98	
3	BIO-12/14-S001-3 RE	33924.01RE	05/21/98	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

4C

EXPLOSIVES METHOD BLANK SUMMARY

Lab Name: SWL-TULSA

Lab Code: SWOK Case No: MKF-OH SDG: 33924

Lab Sample ID: BL0513WF Matrix: WATER

Date Analyzed: 05/26/98 Date Analyzed :

Time Analyzed: 03:59:34 Time Analyzed :

Instrument ID: LC4 Instrument ID :

LC Column ID: LC Column ID :

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	TB0516C1	TB0516C1	05/26/98	
02	TB051298B	TB051298B	05/26/98	
03	TC0513WF	TC0513WF	05/26/98	
04	TD0513WF	TD0513WF	05/26/98	
05	BIO-12/14-S001-3	33924.01	05/26/98	
06	BIO-12/14-S001-5	33924.02	05/26/98	
07	BIO-12/14-S001-7	33924.03	05/26/98	
08	BIO-12/14-S001-7 MS	33924.03 MS	05/26/98	
09	BIO-12/14-S001-7 MSD	33924.03 MSD	05/26/98	
10	BIO-12/14-S001-9	33924.04	05/26/98	
11	BIO-12/14-S001-11	33924.05	05/26/98	
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

COMMENTS:

Page _1_ of _1_

FORM IV

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0520WF

Lab Code: SWOK Case No: MKF-OH SDG No:33924

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 05/26/98 Date Analyzed(2):

Time Analyzed (1): 22:39:12 Time Analyzed(2):

Instrument ID (1): LC4 Instrument ID(2):

LC Column ID (1): LC Column ID (2):

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC'S.

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0520WF	LC0520WF	05/26/98	
2	LD0520WF	LD0520WF	05/27/98	
3	BIO-12/14-S001-3	33924.01RE	05/27/98	
4				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

FORM IV

SPLP Analysis

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33926

Matrix: (soil/water) WATER Lab Sample ID: 33926.01

Sample Amt: 1ml % Moisture 20.41 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

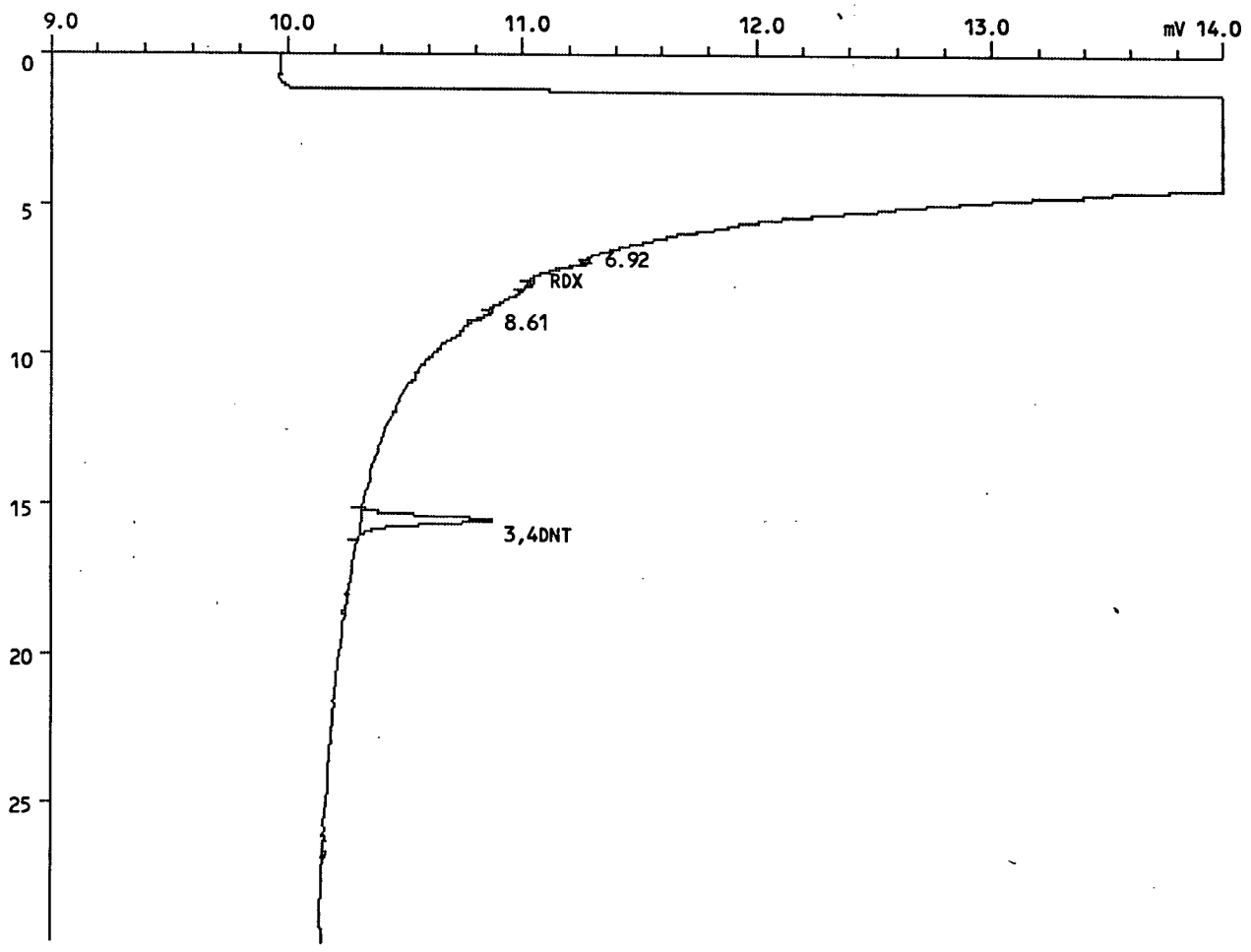
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0514WA,16,1

Sample name.....: BIO-12/14-S001-3
Sample ID.....: 33926.01
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 15-May-98 at 17:08:50
Reported on 20-May-98 at 19:22:28



INJECTION REPORT

Injection F: <MC3> 5 5E0514WA,16,1

Acquired on 15-May-98 at 17:08:50
Modified on 20-May-82 at 19:13:56
Reported on 20-May-98 at 19:13:57

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 5E0514W Last modified on 20-May-82 at 19:13:42
Method file.....: EXPLOS Last modified on 20-May-82 at 19:09:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-3
Sample ID.....: 33926.01
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
2	7.627	30	279	6.003	RDX
4	15.520	558	11633	226.319	3,4DNT 113
Total		588	11911	232.322	
Residual		92	955	20.572	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33926

Matrix: (soil/water) WATER Lab Sample ID: 33926.01

Sample Amt.: 1ml % Moisture 20.41 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

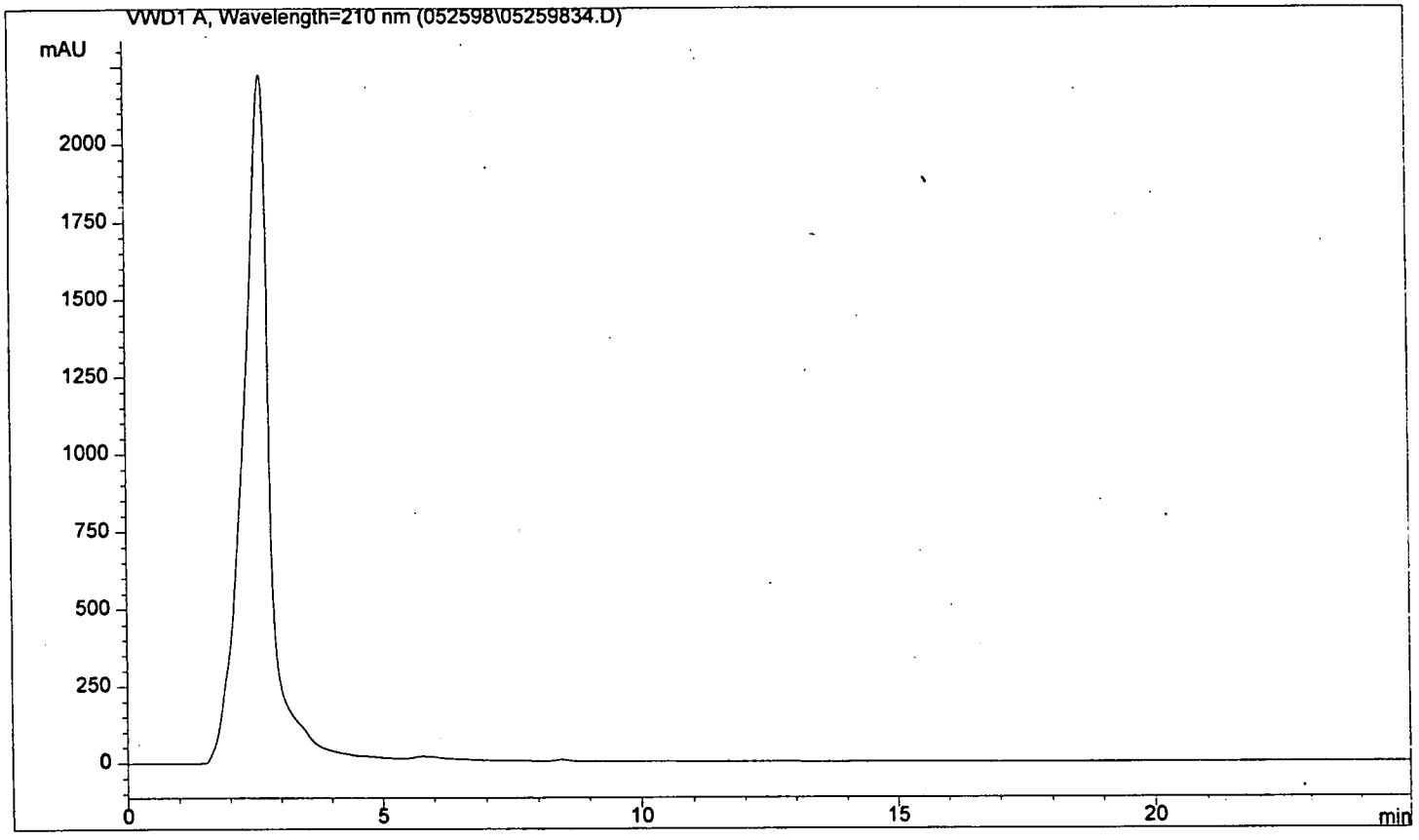
FORM I

Sample Name : 33926.01
Acq Operator : SS

Vial No. : 34
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 03:05:25 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

==========

*** End of Report ***

14

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-5

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33926

Matrix: (soil/water) WATER Lab Sample ID: 33926.02

Sample Amt: 1ml % Moisture 18.78 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

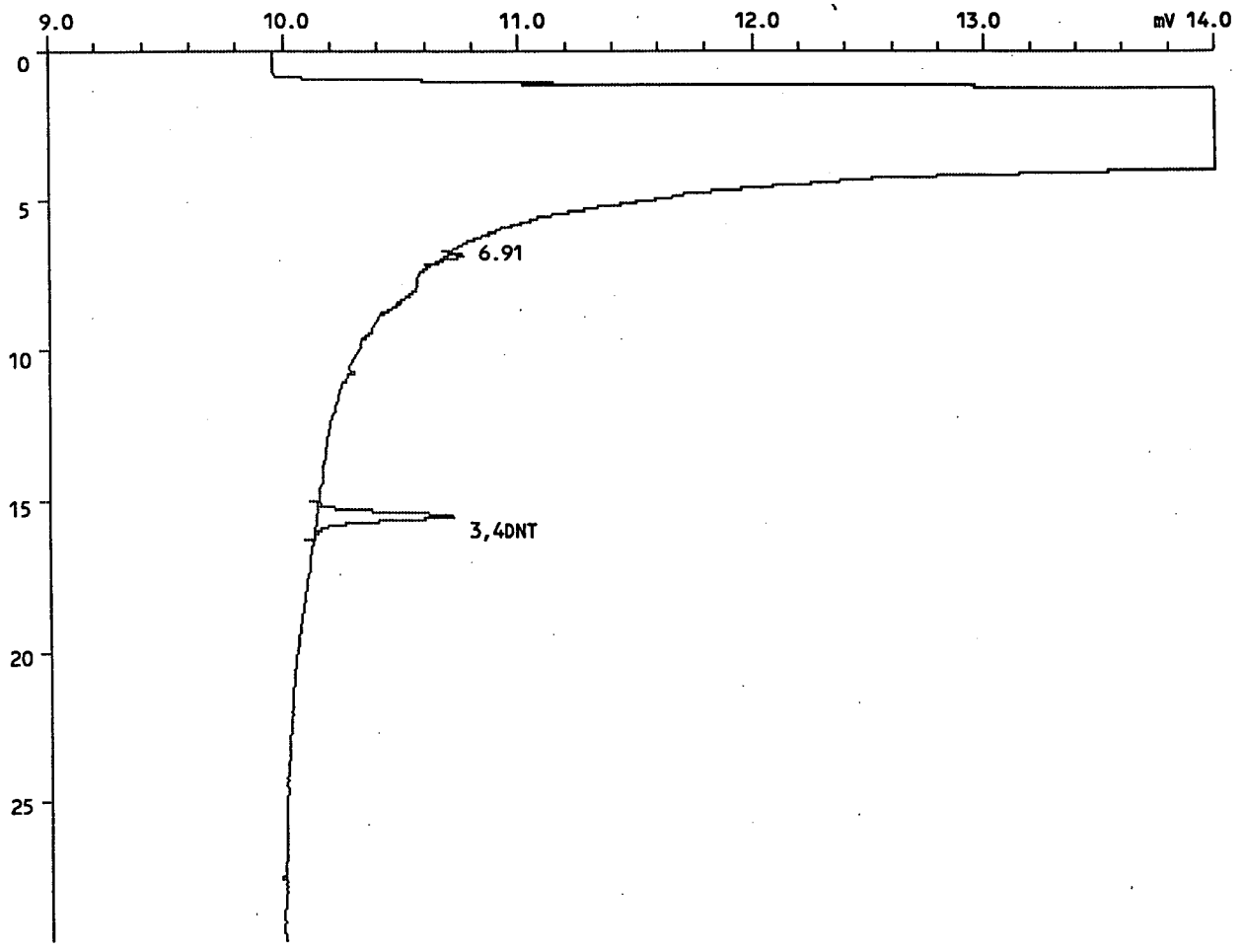
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0514WA,17,1

Sample name.....: BIO-12/14-S001-5
Sample ID.....: 33926.02
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 15-May-98 at 17:53:30
Reported on 20-May-98 at 19:19:12



INJECTION REPORT

Injection F: <MC3> 5 5E0514WA,17,1

Acquired on 15-May-98 at 17:53:30
Modified on 20-May-82 at 19:14:10
Reported on 20-May-98 at 19:14:10

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 5E0514W Last modified on 20-May-82 at 19:14:10
Method file.....: EXPLOS Last modified on 20-May-82 at 19:09:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-5
Sample ID.....: 33926.02
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
2	15.509	576	12013	233.709	3,4DNT 117
Total		576	12013	233.709	
Residual		80	968	-1.512	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-5

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33926

Matrix: (soil/water) WATER Lab Sample ID: 33926.02

Sample Amt: 1ml % Moisture 18.78 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

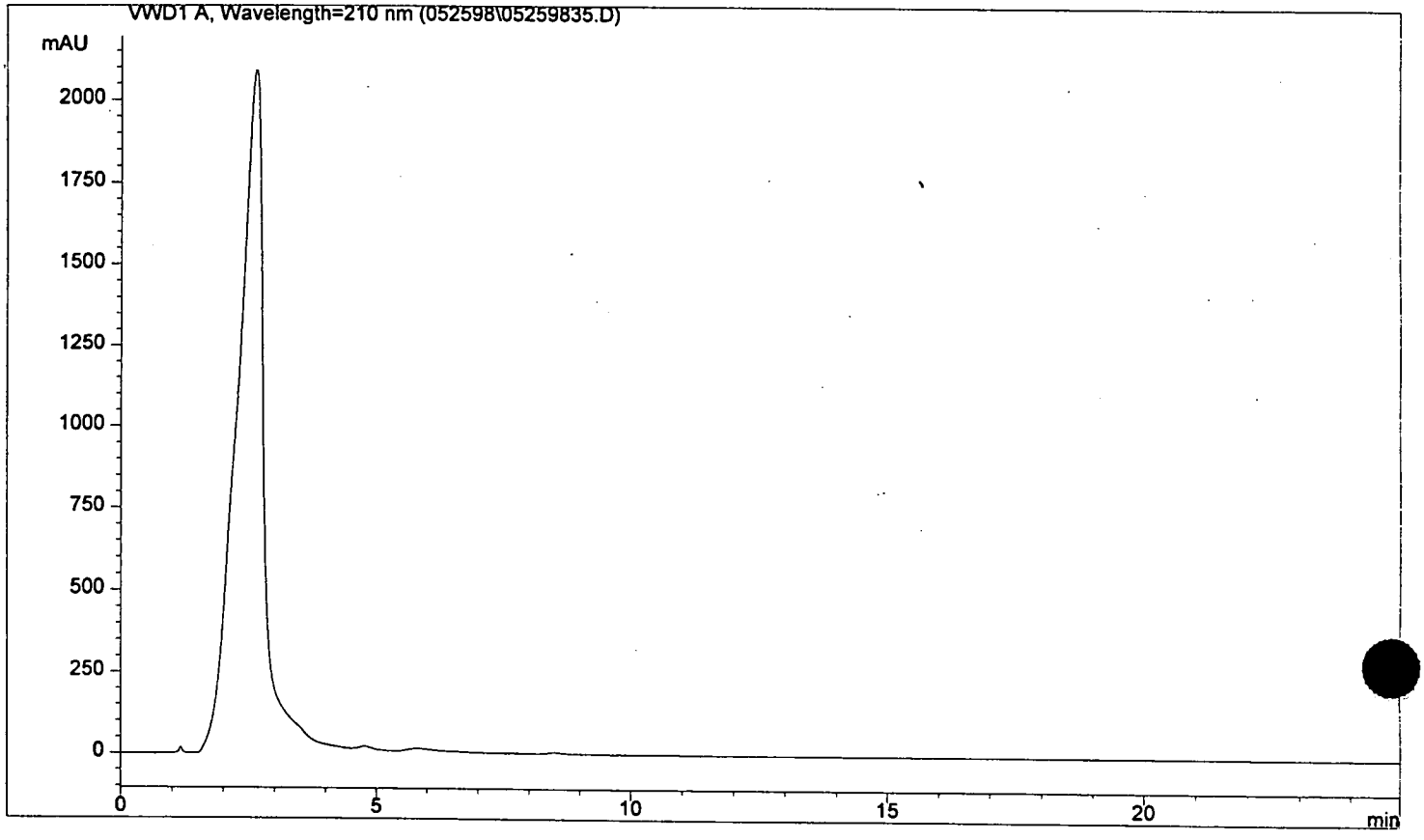
FORM I

Sample Name : 33926.02
Acq Operator : SS

Vial No. : 35
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 03:05:25 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

==========

*** End of Report ***

19

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-7

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33926

Matrix: (soil/water) WATER Lab Sample ID: 33926.03

Sample Amt: 1ml % Moisture 22.85 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

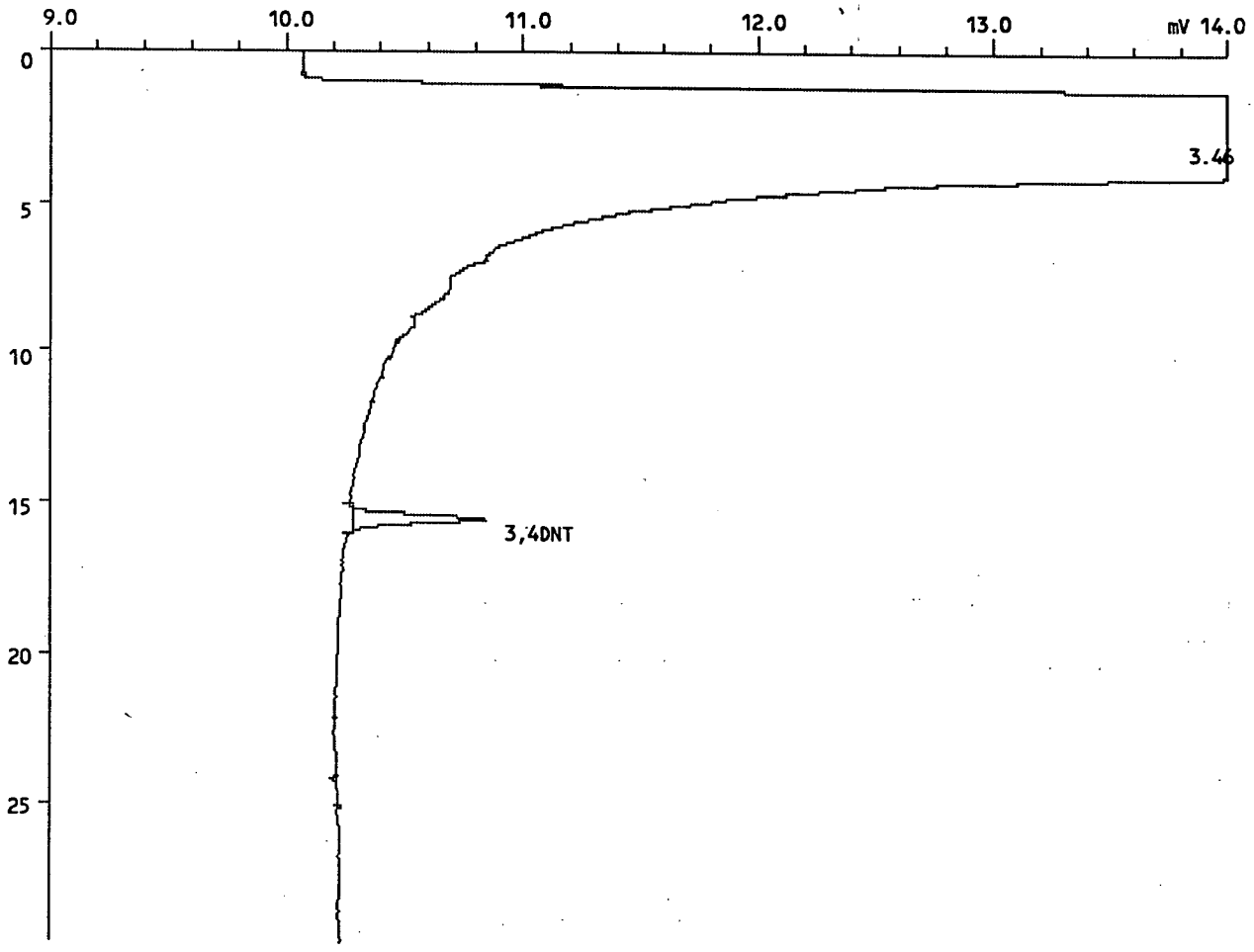
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0514WA,18,1

Sample name.....: BIO-12/14-S001-7
Sample ID.....: 33926.03
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 15-May-98 at 18:38:10
Reported on 20-May-98 at 19:18:41



INJECTION REPORT

Injection F: <MC3> 5 5E0514WA,18,1

Acquired on 15-May-98 at 18:38:10
Modified on 20-May-82 at 19:14:22
Reported on 20-May-98 at 19:14:23

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 5E0514W Last modified on 20-May-82 at 19:14:22
Method file.....: EXPLOS Last modified on 20-May-82 at 19:09:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-7
Sample ID.....: 33926.03
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
2	15.515	558	10975	213.527	3,4DNT 106
Total		558	10975	213.527	
Residual		4623	79868	-124.794	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-7

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33926

Matrix: (soil/water) WATER Lab Sample ID: 33926.03

Sample Amt: 1ml % Moisture 22.85 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

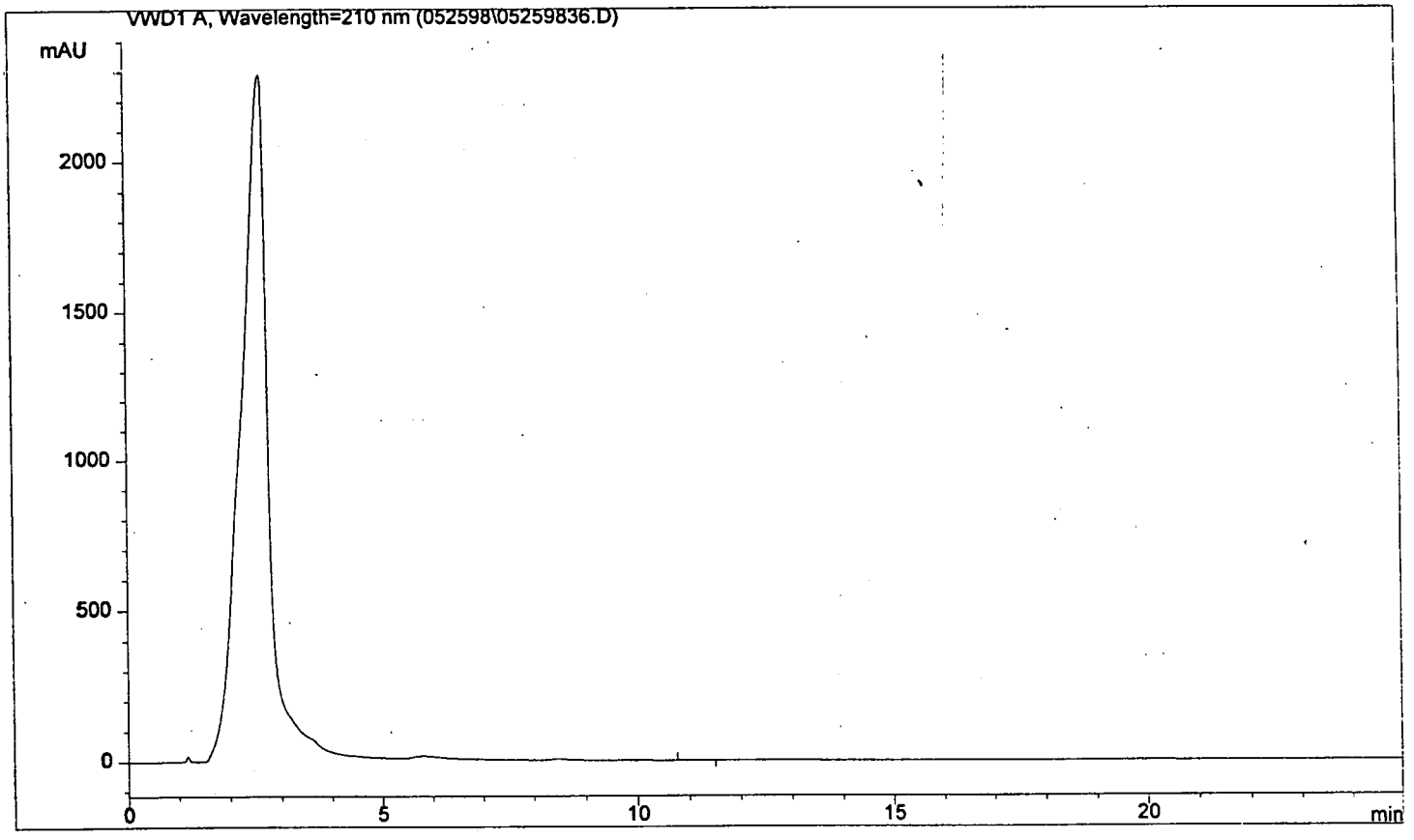
FORM I

Sample Name : 33926.03
Acq Operator : SS

Vial No. : 36
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 03:05:25 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
11.000	PP	3.34058	0.00000	0.00000	
Totals:				0.00000	

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*** End of Report ***

24

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-9

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33926

Matrix: (soil/water) WATER Lab Sample ID: 33926.04

Sample Amt: 1ml % Moisture 25.07 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

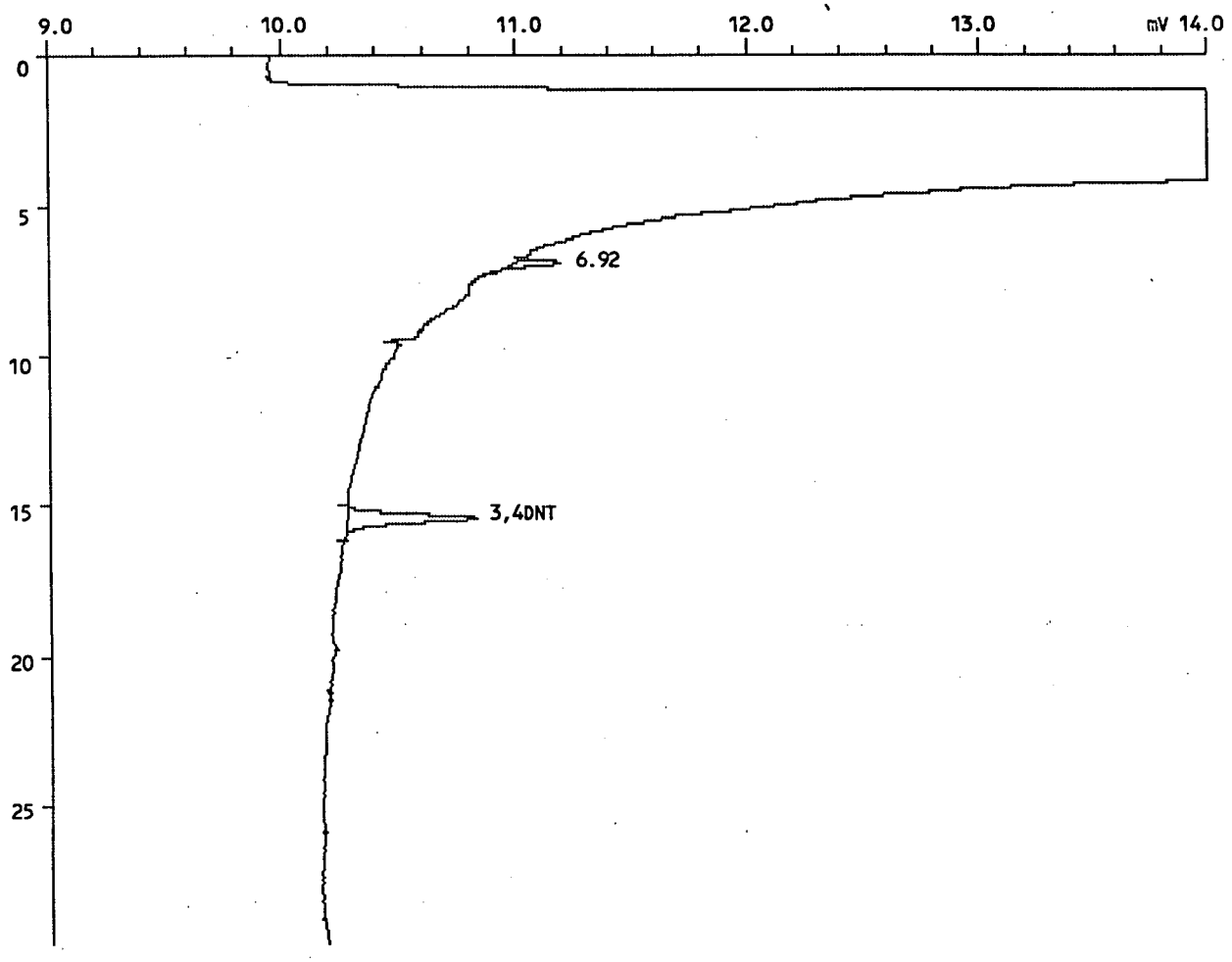
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0514WA,19,1

Sample name.....: BIO-12/14-S001-9
Sample ID.....: 33926.04
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 15-May-98 at 19:22:50
Reported on 20-May-98 at 19:18:11



INJECTION REPORT

Injection F: <MC3> 5 5E0514WA,19,1

Acquired on 15-May-98 at 19:22:50
Modified on 20-May-82 at 19:14:34
Reported on 20-May-98 at 19:14:36

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 5E0514W Last modified on 20-May-82 at 19:14:34
Method file.....: EXPLOS Last modified on 20-May-82 at 19:09:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-9
Sample ID.....: 33926.04
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
2	15.461	551	11264	219.141	3,4DNT ND
Total		551	11264	219.141	
Residual		220	2750	-4.296	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-9

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33926

Matrix: (soil/water) WATER Lab Sample ID: 33926.04

Sample Amt: 1ml % Moisture 25.07 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN	20.0	U

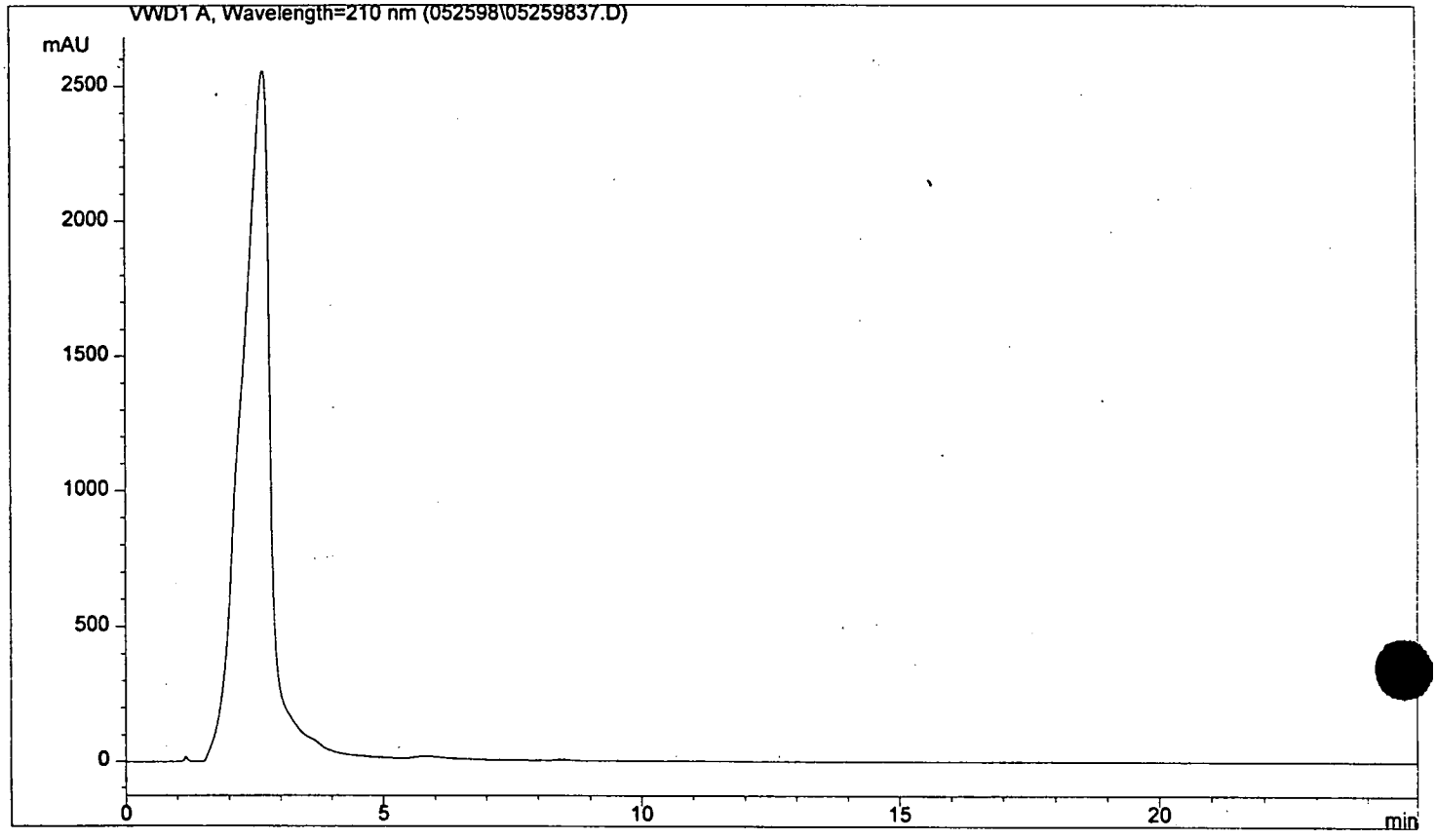
FORM I

Sample Name : 33926.04
Acq Operator : SS

Vial No. : 37
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 03:05:25 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

29

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-11

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33926

Matrix: (soil/water) WATER Lab Sample ID: 33926.05

Sample Amt: 1ml % Moisture 22.87 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/15/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
2691-41-0	HMX	13.0	U
121-82-4	RDX	14.0	U
99-35-4	TNB	7.30	U
99-65-0	DNB	4.00	U
479-45-8	TETRYL	10.0	U
98-95-3	NB	7.00	U
118-96-7	TNT	6.40	U
1946-51-0	4ADNT	7.00	U
35572-78-2	2ADNT	12.0	U
606-20-2	26DNT	9.40	U
121-14-2	24DNT	5.70	U
88-72-2	2NT	12.0	U
99-99-0	4NT	8.00	U
99-08-1	3NT	7.90	U

SURROGATE AMOUNT SPIKED (ug/L) 200
3,4-DNT

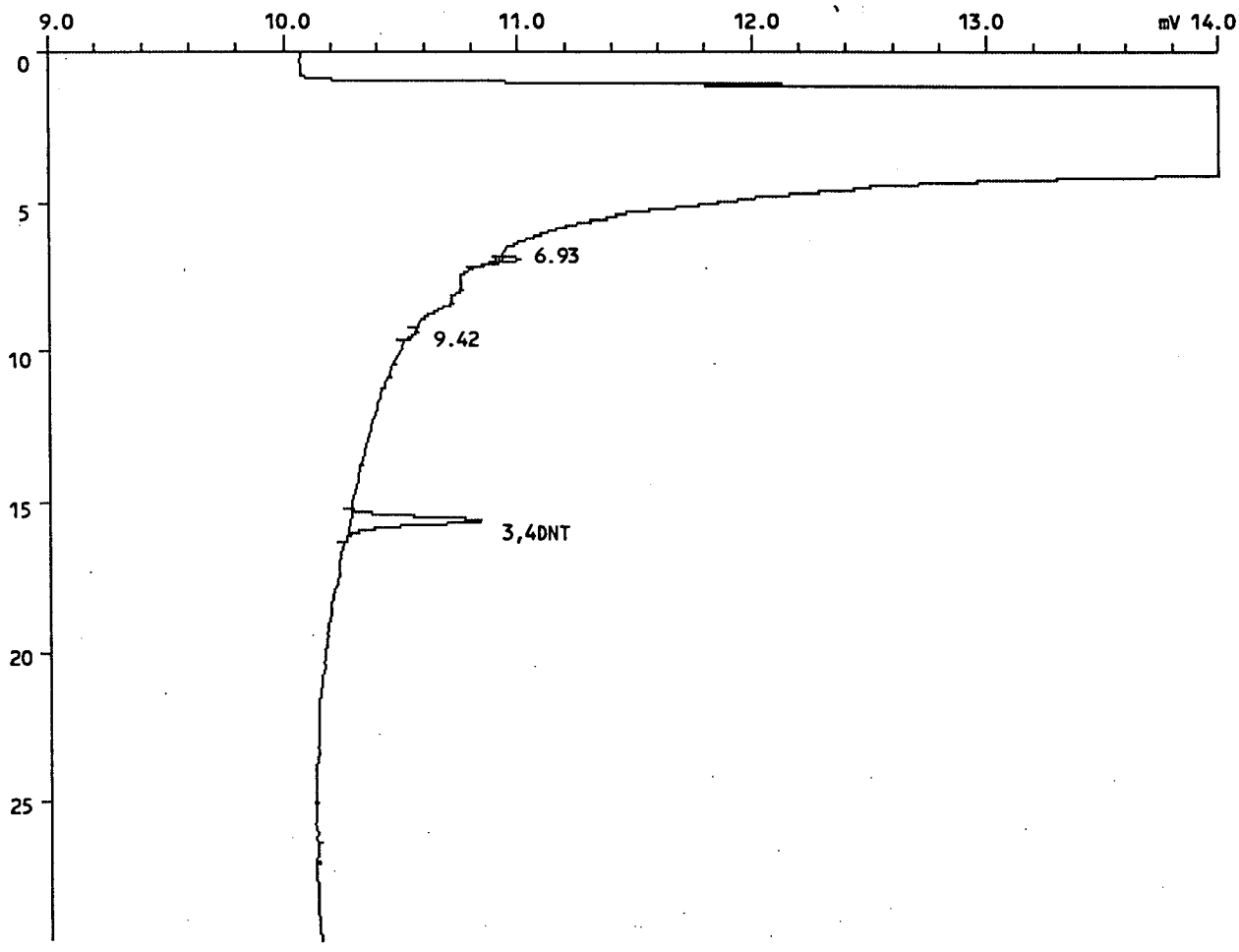
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0514WA,20,1

Sample name.....: BIO-12/14-S001-11
Sample ID.....: 33926.05
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 15-May-98 at 20:07:31
Reported on 20-May-98 at 19:17:10



INJECTION REPORT

Injection F: <MC3> 5 5E0514WA,20,1

Acquired on 15-May-98 at 20:07:31
Modified on 20-May-82 at 19:14:48
Reported on 20-May-98 at 19:14:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 5E0514W Last modified on 20-May-82 at 19:14:46
Method file.....: EXPLOS Last modified on 20-May-82 at 19:09:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-12/14-S001-11
Sample ID.....: 33926.05
Sample type.....: Sample
Sample amount.....: 1.0000
Number of injections.....: 1
Bottle Number.....: 1

Dilution factor amounts:
PERCENT MOISTURE.....: 0.000

User factors:
Volume (mL).....: 1.000
Dilution.....: 2.000
Amount (g or mL).....: 1.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
3	15.589	563	11466	223.071	3,4DNT
Total		563	11466	223.071	
Residual		147	1774	-2.773	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-12/14-S001-11

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33926

Matrix: (soil/water) WATER Lab Sample ID: 33926.05

Sample Amt: 1ml % Moisture 22.87 Date Received: 05/12/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/26/98

GPC Cleanup: (Y/N) N Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

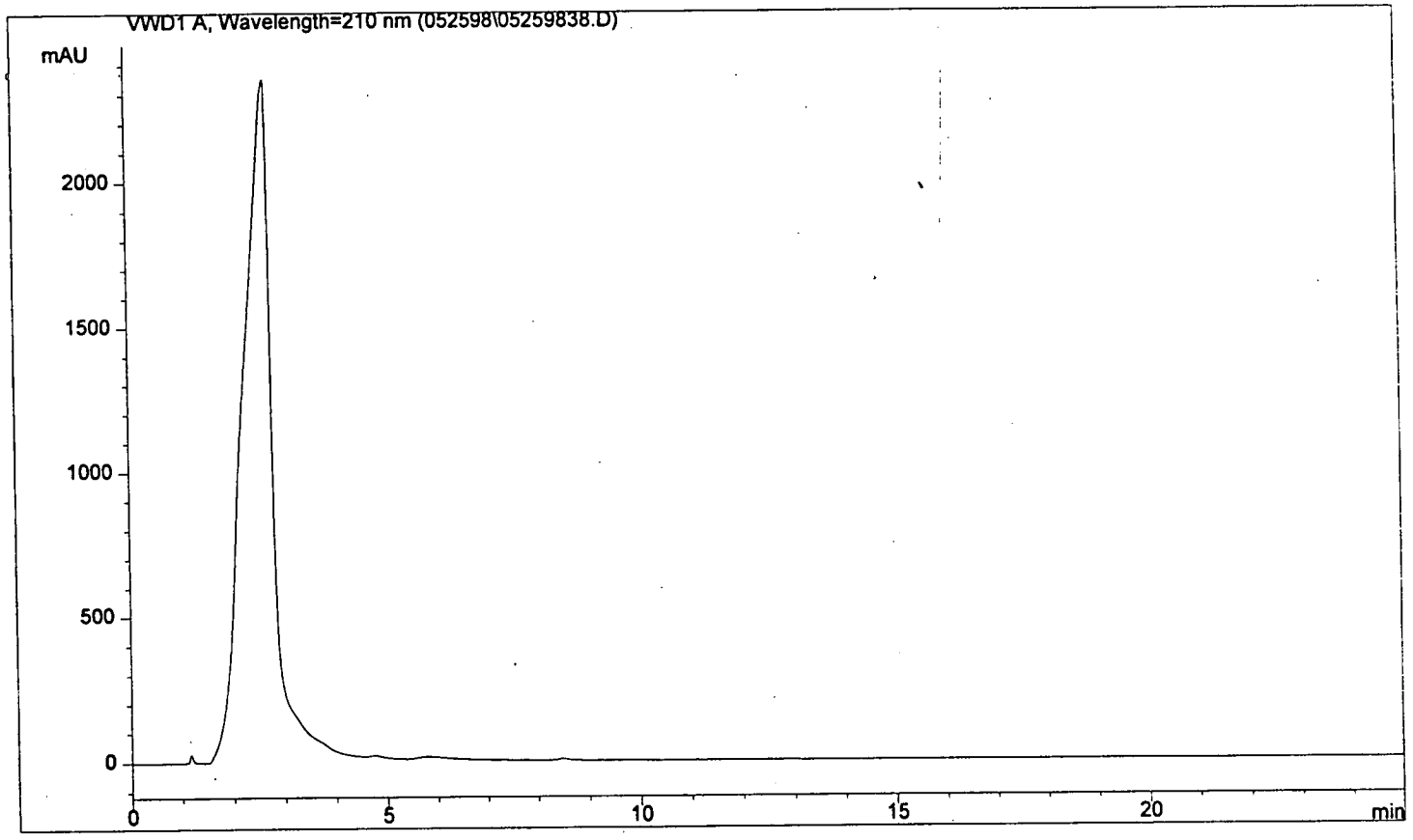
FORM I

Sample Name : 33926.05
Acq Operator : SS

Vial No. : 38
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052598W.M
Analysis Method : C:\HPCHEM\1\METHODS\052598W.M
Last Changed : Wed, 27. May. 1998, 03:05:25 pm

RE-ANALYZED PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 27. May. 1998,03:04:56 pm
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
0.000		0.00000	0.00000	0.00000	PETN
Totals:				0.00000	

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*** End of Report ***

34

Calibration - Explosives

IN13 5/14/98

Primary Column

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1

Injection File Name Level 1 : 5E0514W,4
Injection File Name Level 2 : 5E0514W,5
Injection File Name Level 3 : 5E0514W,6
Injection File Name Level 4 : 5E0514W,7
Injection File Name Level 5 : 5E0514W,8

Calibration Date : 05/14/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	CAL FACTOR Level 1	Area Level 2	CAL FACTOR Level 2	Area Level 3	CAL FACTOR Level 3	Area Level 4	CAL FACTOR Level 4	Area Level 5	CAL FACTOR Level 5
HMX	957	748	1297	408	55595	350	112582	354	232163	365
RDX	384	369	1538	592	58338	449	117473	452	237359	458
TNB	553	768	1701	945	86724	968	177209	990	361357	1009
DNB	371	976	1125	1172	62388	1311	127556	1343	261800	1378
TETRYL	417	463	968	428	61596	545	125626	556	267650	595
NB	580	853	1279	752	77069	907	156913	923	327007	962
3,4-DNT	649	507	1582	491	81113	507	167740	524	346999	542
TNT	813	1270	1686	1054	93303	1166	182825	1143	381325	1192
4ADNT	498	498	1335	530	79668	637	162881	652	341699	683
2ADNT	522	932	1040	743	60157	859	123087	879	255996	914
26DNT	694	723	1551	646	73241	637	149241	649	308425	670
24DNT	766	1368	1496	1069	85900	1227	175011	1250	363824	1299
2NT	408	364	1485	530	77727	536	157931	545	327959	565
4NT	268	335	772	386	44492	445	91029	455	189458	474
	320	400	1298	649	59515	626	120956	637	248018	653

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-08

Inj 1

Injection File Name Level 1 : 5E0514W,4
Injection File Name Level 2 : 5E0514W,5
Injection File Name Level 3 : 5E0514W,6
Injection File Name Level 4 : 5E0514W,7
Injection File Name Level 5 : 5E0514W,8

Calibration Date : 05/14/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Cal Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
HMX	445	38.40	0.99984	362	0.000
RDX	464	17.27	0.99996	457	0.000
TNB	936	10.36	0.99992	1004	0.000
DNB	1236	13.33	0.99987	1368	0.000
TETRYL	517	13.35	0.99936	585	0.000
NB	879	9.22	0.99975	952	0.000
3,4-DNT	514	3.78	0.99977	537	0.000
TNT	1165	6.74	0.99978	1181	0.000
[illegible]DNT	600	13.53	0.99966	675	0.000
[illegible]DNT	866	8.58	0.99975	905	0.000
26DNT	665	5.20	0.99982	665	0.000
24DNT	1243	8.95	0.99977	1287	0.000
2NT	508	16.04	0.99979	560	0.000
4NT	419	13.66	0.99975	469	0.000
3NT	593	18.27	0.99990	648	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/14/98
Continuing Calibration #: 1
Continuing Cal Date : 05/15/98
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5E0514WA,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	56615	356	445	19.96	362	1.72
RDX	58776	452	464	2.54	457	0.97
TNB	88354	986	936	5.34	1004	1.77
DNB	63835	1341	1236	8.51	1368	1.99
TETRYL	59454	526	517	1.67	585	10.13
NB	77071	907	879	3.11	952	4.77
3,4-DNT	82895	518	514	0.73	537	3.57
TNT	93748	1172	1165	0.59	1181	0.81
4ADNT	80926	647	600	7.90	675	4.15
2ADNT	61588	880	866	1.65	905	2.81
26DNT	73231	637	665	4.25	665	4.23
24DNT	85874	1227	1243	1.27	1287	4.68
2NT	79050	545	508	7.29	560	2.69
4NT	45160	452	419	7.80	469	3.69
3NT	61786	650	593	9.68	648	0.29

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/14/98
Continuing Calibration #: 2
Continuing Cal Date : 05/15/98
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5E0514WA,21
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	55056	346	445	22.16	362	4.42
RDX	58164	447	464	3.56	457	2.00
TNB	88301	986	936	5.28	1004	1.83
DNB	63467	1333	1236	7.88	1368	2.55
TETRYL	58712	520	517	0.41	585	11.25
NB	77355	910	879	3.49	952	4.42
3,4-DNT	88337	552	514	7.34	537	2.76
TNT	88536	1107	1165	5.00	1181	6.32
4ADNT	82190	658	600	9.59	675	2.66
2ADNT	62351	891	866	2.91	905	1.61
26DNT	74071	644	665	3.16	665	3.13
24DNT	86620	1237	1243	0.42	1287	3.85
2NT	78409	541	508	6.42	560	3.48
4NT	44527	445	419	6.28	469	5.04
3NT	60025	632	593	6.56	648	2.56

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ection volume = 200uL

Amount Units = ng

COMPONENT NAME	AMT ON COL Level 1	AMT ON COL Level 2	AMT ON COL Level 3	AMT ON COL Level 4	AMT ON COL Level 5
HMX	1.280	3.180	159.000	318.000	636.000
RDX	1.040	2.600	130.000	260.000	518.000
TNB	0.720	1.800	89.600	179.000	358.000
DNB	0.380	0.960	47.600	95.000	190.000
TETRYL	0.900	2.260	113.000	226.000	450.000
NB	0.680	1.700	85.000	170.000	340.000
3,4-DNT	1.280	3.220	160.000	320.000	640.000
TNT	0.640	1.600	80.000	160.000	320.000
4ADNT	1.000	2.520	125.000	250.000	500.000
2ADNT	0.560	1.400	70.000	140.000	280.000
26DNT	0.960	2.400	115.000	230.000	460.000
24DNT	0.560	1.400	70.000	140.000	280.000
2NT	1.120	2.800	145.000	290.000	580.000
4NT	0.800	2.000	100.000	200.000	400.000
3NT	0.800	2.000	95.000	190.000	380.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : CARB-08
Calibration Date : 05/14/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.97	4.93	4.88	4.90	4.86
RDX	7.64	7.67	7.61	7.65	7.58
TNB	10.19	10.21	10.12	10.19	10.10
DNB	12.45	12.53	12.45	12.53	12.41
TETRYL	13.47	13.45	13.37	13.49	13.31
NB	14.10	14.17	14.06	14.17	14.01
3,4-DNT	15.49	15.54	15.41	15.57	15.33
TNT	15.88	15.96	15.82	15.96	15.75
4ADNT	16.94	16.99	16.87	17.06	16.78
2ADNT	17.94	18.04	17.86	18.06	17.77
26DNT	18.52	18.63	18.49	18.70	18.40
24DNT	19.28	19.40	19.22	19.44	19.13
2NT	22.35	22.47	22.27	22.54	22.17
4NT	23.97	24.03	23.81	24.10	23.71
3NT	25.62	25.94	25.62	25.94	25.52

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
HMX	4.89	4.90	4.87	4.87
RDX	7.59	7.63	7.57	7.58
TNB	10.13	10.16	10.07	10.10
DNB	12.45	12.49	12.38	12.43
TETRYL	13.34	13.41	13.27	13.35
NB	14.07	14.11	13.98	14.04
3,4-DNT	15.41	15.47	15.30	15.40
TNT	15.83	15.88	15.72	15.80
4ADNT	16.85	16.91	16.77	16.86
2ADNT	17.84	17.90	17.77	17.85
26DNT	18.49	18.55	18.37	18.47
24DNT	19.23	19.27	19.10	19.20
2NT	22.29	22.34	22.13	22.25
4NT	23.84	23.87	23.66	23.80
3NT	25.66	25.68	25.46	25.61

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.90	0.035	0.105	4.79 - 5.00
RDX	7.61	0.034	0.101	7.51 - 7.71
TNB	10.14	0.048	0.145	10.00 - 10.29
DNB	12.46	0.051	0.154	12.30 - 12.61
TETRYL	13.38	0.074	0.223	13.16 - 13.61
NB	14.08	0.066	0.197	13.88 - 14.28
3,4-DNT	15.44	0.090	0.271	15.16 - 15.71
TNT	15.85	0.085	0.256	15.59 - 16.10

page 2

4ADNT	16.89	0.095	0.284	16.61 - 17.18
2ADNT	17.89	0.106	0.319	17.57 - 18.21
26DNT	18.51	0.104	0.313	18.20 - 18.83
24DNT	19.25	0.112	0.335	18.92 - 19.59
2NT	22.31	0.132	0.395	21.92 - 22.71
4NT	23.87	0.144	0.431	23.44 - 24.30
[illegible]T	25.67	0.165	0.495	25.18 - 26.17

Calibration - PETN
LC 4 5/25/98

Primary Column

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

Inj 1

Injection File Name Level 1 : 052598W,4
Injection File Name Level 2 : 052598W,5
Injection File Name Level 3 : 052598W,6
Injection File Name Level 4 : 052598W,7
Injection File Name Level 5 : 052598W,8

Calibration Date : 05/25/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

COMPONENT NAME	Area Level 1	RESP. FACT Level 1	Area Level 2	RESP. FACT Level 2	Area Level 3	RESP. FACT Level 3	Area Level 4	RESP. FACT Level 4	Area Level 5	RESP. FACT Level 5
PETN	6.10623	3.28E0	50.6415	3.16E0	103.482	3.09E0	412.643	3.10E0	836.09	3.06E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
Column ID :

Inj 1

Injection File Name Level 1 : 052598W,4
Injection File Name Level 2 : 052598W,5
Injection File Name Level 3 : 052598W,6
Injection File Name Level 4 : 052598W,7
Injection File Name Level 5 : 052598W,8

Calibration Date : 05/25/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt	Intercept
PETN	3.14E0	2.69	0.99998	3.07E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/98
Continuing Calibration #: 1
Continuing Cal Date : 05/25/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052598W,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	115.486	2.77E0	3.14E0	11.70	3.07E0	9.75

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/98
Continuing Calibration #: 2
Continuing Cal Date : 05/26/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052598W,17
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.883	3.11E0	3.14E0	0.89	3.07E0	1.30

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/98
Continuing Calibration #: 3
Continuing Cal Date : 05/26/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052598W,28
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.98	3.11E0	3.14E0	0.98	3.07E0	1.21

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/98
Continuing Calibration #: 4
Continuing Cal Date : 05/26/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052598W,39
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	103.579	3.09E0	3.14E0	1.55	3.07E0	0.62

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Injection volume = 200ul

Amount Units = ug/L

COMPONENT NAME	SPIKE AMT Level 1	SPIKE AMT Level 2	SPIKE AMT Level 3	SPIKE AMT Level 4	SPIKE AMT Level 5
PETN	20	160	320	1280	2560

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : LC4
Column ID :
Calibration Date : 05/25/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	10.68	10.66	10.64	10.68	10.67

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	10.67	10.69	10.77	10.78	10.80

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	10.72	0.067	0.200	10.52 - 10.92

SPLP Extraction
Log

East of Mississippi

extraction fluid #1
4.20 ± 0.05

TCLP Extraction Log, Ref: SWL-IN-700

TCLP Extraction Log (700-ATT1.DOC) SWLO SOP rev. # 3.0 Book # IN700-LOG-1.A Page 29

Type of Extraction (circle): (TCLP) / Zero Head Space

Analyst Initials: SMS Date: 051398 Time: ~~5~~ 17:00

Batch ID: 96051279 91

#	SWL ID#	Particle Reduction Necessary?	INITIAL pH	ACID pH	FINAL pH	AMOUNT EXTRACTED	START TEMP & TIME	END TEMP & TIME
1	33926.01	NO	9.13	1.66	8.94	100g	1930 73°	1330 71°
2	.02		9.22	1.78	8.97			
3	.03		9.06	1.56	8.85			
4	.04		9.28	1.61	8.97			
5	.05		9.20	1.73	8.84			
6	TB051298C1		4.15	—	5.17	—		
7								
8								
9								
11								
12								
13								
14								
15								
16				SMS				
17				051398				
18								
19								
20								
21								
22								
23								
24								
25								

COMMENTS:

Southwest Laboratory of Oklahoma, Inc.

Verified:

Analytical QC
Batch 33924
SPLP Explosives
(Toxicity Samples)

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33926

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-12/14-S001-3	113	0
2	BIO-12/14-S001-5	117	0
3	BIO-12/14-S001-7	107	0
4	BIO-12/14-S001-9	110	0
5	BIO-12/14-S001-11	112	0
6	BB0513WE	114	0
7	TB051298B	121	0
8	TB051298C1	120	0
9	TC0513WE	146*	0
10	TD0513WE	118	0
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

S1 = 3,4-DNT (60-140)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogates diluted out

FORM II

4

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33926

Client Sample No: TC0513WE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
HMX	400		390	98	46-151
RDX	150		129	86	72-129
TNB	225		203	90	74-118
DNB	125		120	96	79-132
TETRYL	413		215	52*	58-120
NB	213		224	105	68-135
TNT	188		246	131	61-145
4ADNT	313		310	99	60-140
2ADNT	313		293	94	60-140
26DNT	288		266	92	77-125
24DNT	175		160	91	70-134
2NT	363		322	89	73-131
4NT	250		228	91	73-116
3NT	238		269	113	71- 127

N f Analyte recoveries out of QC Advisory Limits = 1

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33926

Client Sample No: TD0513WE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
HMX	400		380	95	46-151
RDX	150		132	88	72-129
TNB	225		208	92	74-118
DNB	125		119	95	79-132
TETRYL	413		340	82	58-120
NB	213		195	92	68-135
TNT	188		245	130	61-145
4ADNT	313		293	94	60-140
2ADNT	313		273	87	60-140
26DNT	288		268	93	77-125
24DNT	175		152	87	70-134
2NT	363		322	89	73-131
4NT	250		228	91	73-116
3NT	238		272	114	71- 127

# of Analyte recoveries out of QC Advisory Limits = 0

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33926

Client Sample No: TC0513WF

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
PETN	1200		1380	115	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33926

Client Sample No: TD0513WF

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
PETN	1200		1350	112	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BB0513WE

Lab Code: SWOK Case No: MKF-OH SDG No:33926

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 05/15/98 Date Analyzed(2):

Time Analyzed (1): 03:32:07 Time Analyzed(2):

Instrument ID (1): IN13 Instrument ID(2):

LC Column ID (1): CARB-08 LC Column ID (2):

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC'S.

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	TC0513WE	TC0513WE	05/15/98	
2	TD0513WE	TD0513WE	05/15/98	
3	TB051298C1	TB051298C1	05/15/98	
4	TB051298B	TB051298B	05/15/98	
	BIO-12/14-S001-3	33926.01	05/15/98	
	BIO-12/14-S001-5	33926.02	05/15/98	
7	BIO-12/14-S001-7	33926.03	05/15/98	
8	BIO-12/14-S001-9	33926.04	05/15/98	
9	BIO-12/14-S001-11	33926.05	05/15/98	
10				
11				
12				
13				
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16				
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18				
19				
20				
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22				
23				
24				
25				

FORM IV

4C

ab Name: SWL-TULSA Contract:

ample ID: BL0513WF

ab Code: SWOK Case No: MKF-OH SDG No:33926

latrix: (soil/water) Water

ate Extracted: Extn. Method: DIRECT

ate Analyzed (1): 05/26/98 Date Analyzed(2):

ime Analyzed (1): 03:59:34 Time Analyzed(2):

nstrument ID (1): LC4 Instrument ID(2):

C Column ID (1): LC Column ID (2):

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND QC'S.

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	TC0513WF	TC0513WF	05/26/98	
2	TD0513WF	TD0513WF	05/26/98	
3	TB0516C1	TB0516C1	05/26/98	
4	TB051298B	TB051298B	05/26/98	
	BIO-12/14-S001-3	33926.01	05/26/98	
	BIO-12/14-S001-5	33926.02	05/26/98	
7	BIO-12/14-S001-7	33926.03	05/26/98	
8	BIO-12/14-S001-9	33926.04	05/26/98	
9	BIO-12/14-S001-11	33926.05	05/26/98	
10				
11				
12				
13				
14				
15				
16				
17				
18				
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23				
24				
25				

FORM IV