DEPARTMENT OF THE NAVY
CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
300 HIGHWAY 361
CRANE, INDIANA 47522-5000

IN REPLY REFER TO:
5090
Ser 095/9024
03 FEB 1999

1-1-1999

U.S. Environmental Protection Agency, Region V
Waste, Pesticides, & Toxics Division
Waste Management Branch
Illinois, Indiana, and Michigan Section
Attn: Ms. Carol Witt-Smith (DRP-8J)
77 West Jackson Blvd.
Chicago, IL 60604

Dear Ms. Witt-Smith:

Crane Division, Naval Surface Warfare Center (NAVSURFWARCENDIV Crane) submits for review and approval three copies of the Revised Draft Pilot Scale 30% Soil Loading Batch Report for Full Scale Bioremediation Operations as enclosure (1). Enclosure (2) is the required certification statement.

NAVSURFWARCENDIV Crane point of contact is Ms. Christine D. Freeman, Code 09511, telephone 812-854-4423.

Sincerely,

James M. Humsicker

JAMES M. HUMSICKER
Director, Environmental Protection Department
By direction of
the Commander

Encl:
(1) Revised Draft PS 30% Soil Loading Batch Report for FS Operations
(2) Certification Statement

Copy to:
ADMINISTRATIVE RECORD
COMNAVSEASYSCOM (SEA OOT) (w/o encls)
IDEM (S. Riddle)
MK Crane (D. Beall) (w/o encls)
SOUTHNAVFACENGCOM (Code 1864) (w/o encls)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Philip A. Keith, Acting for

SIGNATURE

JAMES HUNSICKER,
DIRECTOR, ENVIRONMENTAL PROTECTION DEPT.

TITLE

24 FEB 1999

DATE

Enclosure (2)

FINAL

30% Soil Loading Batch Report

Full-Scale Bioremediation
NSWC Crane
Crane, Indiana

Unit Identification Code: N00164
Contract No. N62467-93-D-1106

January 1999

Southern Division
Naval Facilities Engineering Command
North Charleston, South Carolina
29419-9010

RESPONSE TO COMMENTS
DRAFT 30% SOIL LOADING BATCH REPORT
DATED SEPTEMBER 1998
BIOREMEDIATION FACILITY SWMU 33/00
NAVAL SURFACE WAREFARE CENTER CRANE, INDIANA

Commentor: Carol Witt-Smith, Corrective Action Expert, USEPA Region V

General Comments in Cover Letter:

The main problem with the document is that no raw data was submitted with the report to support the recommendation to change from 25% to 30% soil loading. The Navy needs to include documentation to show that the approved Quality Assurance Plan and the Work Plan are being followed. Documentation and validation from field and laboratory analyses are required for those plans.

Also, soil that was used for the pilot scale test was placed in storage without retaining the location from the Mine Fill that it came from. In order to coordinate site and composting data, it is important to track where the soil came from, is stored, treated, stored, and disposed of. The U.S. EPA will still accept this evaluation only because of the extensive analytical testing required for a pilot scale evaluation. But, the Navy contractors should be tracking any winter storage from now on. We don't have a problem with mixing excavation area soils, but they should be tracked to know where they came from.

The Navy is still responsible for the third party validation of all the data. The report should include documentation that the validation was performed and the data is acceptable.

We should discuss at a core call a possible modification to the plan to add picric since we know its an expected degradation product when tetryl is detectable.

Response to General Comments:

The necessary raw data has been provided in the revised document.

Soil from Mine Fill A (MFA) has been excavated, screened, and used for formation of this 30% windrow. All excavated locations within MFA have been identified, and the soil has been stockpiled prior to formation of the windrow. As described in the Full-Scale Operational Plan (FS-OPS Plan), soil would be stockpiled prior to windrow formation, therefore, grid locations could not be tracked. The intent is that all treated soil would be tracked to identify backfill locations for each windrow. However, if the treated soil requires temporary staging in a stockpile tracking of individual windrows cannot be performed. All treated soil from a particular SWMU will be backfilled in the SWMU from which it

was excavated or other location approved by the Navy.

Validation has been performed by Morrison Knudsen Corporation on at least 10% of the samples as stated in 9.2.2 of the Full-Scale Quality Assurance Project Plan (FS-QAPP). Section 4.0 of the 30% report provides a detailed description of all discrepancies found during the validation of these samples. The text has been revised to state that the data is acceptable and meets all quality assurance objectives specified in section 3.0 of the FS-QAPP.

The addition of picric acid monitoring is an issue that needs discussion at a core call as suggested.

Comment 1: Page 1-2

a. Spell out United States, and the acronym should read (U.S. EPA).

b. Change "best" compost mix, to some other reference like "most economic and efficient" since several recipes performed equally but economics was a major selection reason.

Response 1:

a. The acronym used for U.S. EPA has been revised.

b. The text has been revised to state "most economical and efficient compost mix."

Comment 2: Page 3-2

In Appendix F, data is tabularized that shows RDX and 2,4,6TNT as increasing at the 40 and 60 day events. Add an explanation of why this is happening. Also, explain why the data increases for many parameters between days 10 and 20, and then seem to hold at that level.

Response 2:

2,4,6TNT levels slightly increase on Day 10 average windrow concentrations while RDX levels slightly increase on Day 40 and Day 60. The Windrow Explosive Concentrations Summary Report, which has been

added to Appendix F, summarizes each cross-section and each sampling location. From this data, location D1 on Day 10 has a concentration level for 2,4,6TNT which is extremely high in comparison to other sampling locations on this day. Likewise, RDX shows high concentrations at sampling location C2 on Day 40, and location D3 on Day 60. Using the Grubbs Test for Outlying Observations, these three data points would be statistical outliers. However, rather than rejecting this data, the values have been included to represent a worst case scenario. These elevated observations seen in isolated sample locations have resulted in higher averages on these particular days. The average values reported on these particular days, meet industrial clean-up objectives in all cases.

The data for Day 10 from the laboratory has been reviewed again. Form 1 data was found to be correct, however a discrepancy was discovered in the electronic transmittal of the data from the laboratory. Primary column concentration results were reported in the electronic transmission, which did not confirm on the secondary column. The electronic transmittal of the data was used to tabulate average values, which resulted in erroneously lower averages for Day 10. Consequently, it previously appeared that many parameters had concentrations that increased between Day 10 and Day 20. The laboratory electronic data has been revised. The revised data summaries have been provided for all parameters and Form 1 data has been submitted in Appendix K through Appendix Q.

The concentrations for most parameters hold at a constant level beginning at Day 10. This level is the reporting limit for the laboratory. For most parameters, undetectable levels of explosive compounds were reported throughout the windrow monitoring. As stated on page 3-2, "Percent reduction is only applicable to those compounds found to be present above the reporting limits during the Day 0 characterization." Therefore, percent reductions seen in the charts and data summaries for 135TNB, 13DNB, 24DNT, 26DNT, 2A46DT, 2NT, 3NT, 4NT, NB, PETN, and TETRYL are simply reductions due to the reporting limit differences between Day 0 and Day Last. These differences are due to high initial concentrations of RDX, TNT, and HMX, which required dilutions for accurate quantitation resulting in elevated reporting limits for all explosive compounds.

RESPONSE TO COMMENTS
DRAFT 30% SOIL LOADING BATCH REPORT
DATED SEPTEMBER 1998
BIOREMEDIATION FACILITY SWMU 33/00
NAVAL SURFACE WAREFARE CENTER CRANE, INDIANA

Comment 3: Appendix B

a. The graph needs to be modified that the numbers for days are directly under the data for that day.

b. Why does the chart stop at day 50 when data is collected until day 60. If the field sampling was stopped at some point, this needs to be noted with the chart.

c. Raw field data sheets need to be added to support the summary table. The U.S. EPA no longer receives this data daily and it must be included in reports.

Response 3:

a. The modified graph is enclosed.

b. Windrow processing field data stopped on Day 49 after field test kits demonstrated that undetectable levels of explosives were present in the windrow. By Day 49, windrow temperatures began falling and all field data demonstrated that the degradation was complete. On Day 60, the last analytical data was collected for this study, however no turning or collection of field data took place after Day 49.

c. Appendix I has been added which contains the field data summary sheets for all windrow processing field data.

Comment 4: Appendix C

a. The graph needs to be modified that the numbers for days are directly under the data for that day.

b. Raw field data sheets need to be added to support the summary table and charts.

c. Why does the chart stop at day 50 when data is collected until day 60. If the field sampling was stopped at some point, this needs to be noted with the chart.

RESPONSE TO COMMENTS
DRAFT 30% SOIL LOADING BATCH REPORT
DATED SEPTEMBER 1998
BIOREMEDIATION FACILITY SWMU 33/00
NAVAL SURFACE WAREFARE CENTER CRANE, INDIANA

Response 4:

a. The modified graph is enclosed.

b. Appendix I has been added which contains the field data summary sheets for all windrow processing field data.

c. Windrow processing field data stopped on Day 49 after field test kits demonstrated that undetectable levels of explosives were present in the windrow. By Day 49, windrow temperatures began falling and all field data demonstrated that the degradation was complete. On Day 60, the last analytical data was collected for this study, however no turning or collection of field data took place after Day 49.

Comment 5: Appendix D

a. The graph needs to be modified that the numbers for days are directly under the data for that day.

b. Raw field data sheets need to be added to support the summary table and charts.

c. Why does the chart stop at day 45 when data is collected until day 60. If the field sampling was stopped at some point, this needs to be noted with the chart.

d. Foot note why data is not included for Days 41 and 43, and beyond Day 43.

e. Explanations should be added to explain the biological conditions of the pile. Are the slumps in the graph at Day 20 through Day 40 from a shift to pre-anaerobic conditions? There needs to be a connection to the graphs.

f. Explain if the compound increases correlate with the onset of anaerobic conditions. Or what may be causing the increases.

Response 5:

a The modified graph is enclosed.

b. Appendix I has been added which contains the field data summary sheets for all windrow processing field data.

c. Windrow processing field data stopped on Day 49 after field test kits demonstrated that undetectable levels of explosives were present in the windrow. By Day 49, windrow temperatures began falling and all field data demonstrated that the degradation was complete. On Day 60, the last analytical data was collected for this study, however no turning or collection of field data took place after Day 49.

d. Collection of field data stopped at Day 49 with the exception of oxygen, which stopped at Day 43 after equipment difficulties. Data was not collected for post turning monitoring of oxygen on Day 41 due to an oxygen monitor that malfunctioned. Appropriate footnotes have been added to the chart.

e. In addition to monitoring temperature, oxygen, moisture, and pH, the texture of the windrow composite material is characterized by appearance. The technician subjectively evaluates the windrow based on the following textures: coarse, medium, and fine. By Day 23 the windrow texture reached the description of "fine." It is at this time where pre-turning oxygen monitoring values decreased to levels below four percent.

f: See Response 2. Compound increases are representing a worst case scenario and include the concentration of three statistical outliers which resulted in the appearance of increases in concentrations. However, as discussed in Response 2, these should not be interpreted as increases in overall windrow explosive compound concentration.

Comment 6: Appendix E

a. Raw field data sheets need to be added to support the summary table and charts.

b. There needs to be consistency on the significant digits used. This is a quality assurance issue. Why are 4 digits used sometimes, and 3 digits at others?

RESPONSE TO COMMENTS
DRAFT 30% SOIL LOADING BATCH REPORT
DATED SEPTEMBER 1998
BIOREMEDIATION FACILITY SWMU 33/00
NAVAL SURFACE WAREFARE CENTER CRANE, INDIANA

Response 6:

a. Appendix I has been added which contains the field data summary sheets for all windrow processing field data.

b. The data table has been revised to show three significant digits.

Comment 7: Appendix F

a. Why aren't the metals analysis included here and in the text?

b. The analytical data summaries and packages should have been included with the report. The Agency wants, at a minimum, the following for our independent check. The Agency could not request by specific sample numbers since we are not receiving that data. Therefore our selection are by sampling dates, and include all samples for that date.

(1) On-site and off-site analytical summaries for all parameters.

(2) The table should show the values for each of the samples and their cross-sections, the cross-section average, and the pile average. Giving the total average with no other data tells us nothing in order to evaluate reality ourselves to check that the recommendation is correct. A figure should coordinate with the tables to show cross-section locations.

(3) There should be tables also to show that the sample values compare to the three goal tables.

(4) Do not break up data summaries for a parameter from one page to the next.

(5) Complete data packages are needed for 2,4,6 TNT and RDX, for all data points, including supporting QC data and calibrations.

(6) Complete data packages for all parameters for Days 5, 10, 20, and 60 are needed. We need individual points and how MK summarized cross-sections, and pile data.

(7) An explanation why there are increases in concentration from Days 10 and 20 for nearly all the parameters should be explained.

(8) An explanation why there are increases in 2,4,6TNT and RDX after Day 20 should be added.

c. Is the increase in 1,3,5TNB possibly due to TNB forming from degradation?

d. Is ammonia or nitrate/nitrite content of the compost increasing with time?

e. Report the standard deviations for each average cross-sectional series of measurements.

f. As tetryl shows degradation, is picric acid forming? If this is possible, the plan may need modification to include picric acid testing. Picric acid leachability could be an environmental disposal issue. We need to discuss this further.

Response 7:

a. Metals, as well as volatiles were analyzed during initial characterization of pre-excavated material. In these initial characterization samples (ICS) metals and explosives were not found at levels which exceeded industrial clean-up objectives for any of the SWMU specific parameters for MFA. As stated in Section 1.4 of the approved FS-QAPP, "SWMU-specific constituents will be tested at Day 0 and end of cycle, if found at the excavation sites in excess of the remedial goals listed in Table 1-2," therefore, additional sampling of these compounds was not performed as part of bioremediation windrow monitoring.

b. Analytical data summaries and packages have been including for windrow monitoring which was performed on Day 0, 5, 10, 20, 30, 40, and 60. These summaries of analytical data have been organized in the following manner for each day of analysis: QC summary forms, Form 1 summary and chromatograms for each sample analyzed, analytical run logs and calibrations for each day of analysis for the analytical batch, and chain of custody record.

(1) Appendix I and J contain all on-site analytical summaries for all parameters. Appendix K through Q contain all off-site analytical summaries performed by Southwest Laboratories of Oklahoma.

(2) Appendix F has been appended to include values for each sample, the cross section, the cross-section average, and the pile average. A general figure for the sample locations for full-scale operations is included in Field SOP QAPP 3.0 shown as Figure 1. The size of this windrow was smaller, therefore only four cross sections were collected for this windrow as specified in the pilot-scale operations.

(3) A table showing the comparison of explosive compounds to the residential and industrial clean-up objectives has been added to Appendix F.

(4) The data summary for each parameter begins a new page, however information for every sample on each day of analysis could not be summarized on one page.

(5) Complete data packages for all parameters have been included in Appendix K through Q.

(6) Complete data packages for all parameters have been included in Appendix K through Q.

(7) See Response 2.

(8) See Response 2.

c. Undetectable concentrations of 1,3,5TNB are reported for all samples throughout windrow monitoring. Increases or decreases of this compound seen in the charts and data summaries are simply due to reporting limit differences between the various days of analysis. These differences are due to high initial concentrations of RDX, TNT, and HMX, which required dilutions for accurate quantitation resulting in elevated reporting limits for all compounds.

d. Monitoring of ammonia or nitrate/nitrite content of the compost was not required for approved full-scale operations. Therefore, it is not known if

ammonia or nitrate/nitirite content increases with time.

e. Standard deviation has been included in Appendix F.

f. Tetryl is not a common explosive seen in Day 0 analysis. In the 30% Windrow, tetryl was not detected throughout the entire windrow monitoring. Changes in the average tetryl value were due to reporting limit differences between Day 0 and Day Last results. These differences are due to high initial concentrations of RDX, TNT, and HMX, which require dilutions for accurate quantitation resulting in elevated reporting limits. As discussed in general comments, picric acid testing needs to be discuessed at a core call.

Comment 8: Appendix G

a. The table should have a summary of all the days values and then an evaluation of the % goal reached. Example:

Day 0	Concentration x	Day 5	Concentration y	% Reduction to Date
Day 0	Concentration x	Day 10	Concentration z	% Reduction to Date
Day 0	Concentration x	Day 20	Concentration a	% Reduction to Date
Day 0	Concentration x	Day 40	Concentration b	% Reduction to Date
Day 0	Concentration x	Day 60	Concentration c	% Reduction to Date

In this manner you can see clearly when the reduction goal is met. It also justifies the issue whether the increases in days 20, 40 or 60 are failing the reduction goal.

b. For 2,4,6TNT and RDX, the reduction values are deceptive since the values increase after Day 20. Are the reduction goals still met after that date?

c. Two copies of the Explosives summary report were included in the appendix. One should be deleted.

d. The chart should show the scatter of all the values and then line the average between dates.

e. All the explosives should have summary charts not just three of them. All the explosives are important. Also, it is important to discuss how degradation is happening and how you should see increases in some parameters as others are disappearing.

f. As tetryl shows degradation, is picric acid forming? If this is possible, the plan may need modification to include picric acid testing. Picric acid leachability could be an environmental disposal issue. We need to discuss this further.

g. From the charts and the text you are stating that all the goals are reached at Day 20. Can you effectively "freeze" the pile to make that decision, versus our issues that there are then increases and are you still meeting the goals after Day 20. Explain this.

Response 8:

a. A summary of the data for all days values and the evaluation of the % reduction reached has been provided in Appendix G.

b. Reduction goals for industrial clean-up objectives were met for these parameters for Day 20, Day 30, Day 40, and Day 60.

c. The explosive summary report has been removed from the revised report.

d. A chart showing the scatter of all the values and then a line average between dates has been provided for RDX, TNT, and HMX in Appendix G. Only analytes that were detected above the reporting limit have been included in this chart.

e. Explosive summary charts have been provided for all analytes in Appendix G as requested. However, in interpreting most of these charts it is important to note the reporting limit differences as discussed earlier.

f. See Response 7f.

g. During full-scale operation, decisions to collect Day Last samples will be based on field test kits. All explosive industrial clean-up objectives were reached by Day 20 and further monitoring after Day 20 demonstrated that industrial clean-up objectives continued to be met through Day 60.

Comment 9: Appendix H

a. The summary table is nice, but the actual data needs to be included to support the summary.

b. The chart should also correlate the samples with dates, location in pile, attach a cross section figure, etc.

c. The explosive summary report is repeated here too. Delete.

Response 9:

a. Actual data has been included in Appendix K through Q.

b. The sample numbering system established in Section 5.1.2 of the FS-QAPP provides for the sample date and cross section information in the sample identifier. The last four digits of the sample number provide the age of the windrow on the day of sample collection followed by a dash then the cross section location. The cross-section location is identified in Field SOP QAPP 3.0 shown as Figure 1.

c. The explosive summary report has been removed from the revised report.

FINAL

30% Soil Loading Batch Report

Full-Scale Bioremediation
NSWC Crane
Crane, Indiana

Unit Identification Code: N00164
Contract No. N62467-93-D-1106

January 1999

Southern Division
Naval Facilities Engineering Command
North Charleston, South Carolina
29419-9010

FINAL

30% SOIL LOADING BATCH REPORT

FULL-SCALE BIOREMEDIATION
NSWC CRANE
Crane, Indiana

January 5, 1999

CONTRACT N62467-93-D-1106
DELIVERY ORDER #0009
STATEMENT OF WORK #007

Prepared for

SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
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1/27/99
Date

APPROVAL:

R. Scott Newman
Program Manager

1/28/99
Date

EXECUTIVE SUMMARY

Full-scale bioremediation operation using a 15% chicken manure, 60% straw, and 25% contaminated soil by volume recipe has been determined to meet project objectives specified in the *Full-Scale Operational Plan for Soils Bioremediation Facility* [MK, 1998b]. A pilot-scale sized windrow consisting of 14% chicken manure, 56% straw, and 30% contaminated soil by volume was tested to determine if 30% soil loading would meet the same project objectives and to determine if the operational period of soil remediation could be shortened. The compost windrow was created as specified in the *Full-Scale Operational Plan for Soils Bioremediation Facility* [MK, 1998b].

The field data for the 30% soil loading windrow demonstrated progressively decreasing concentrations of RDX and TNT during composting operations. RDX and TNT concentrations for most sample locations reached non detectable levels by Day 40. Laboratory analytical values of explosive compounds on the final day of composting demonstrate that the performance goal of 90% contaminant reduction and the remedial goals described in the *Quality Assurance Project Plan for Full-Scale Operations* [MK, 1998c] were met.

Based on the results of temperature monitoring, the 30% soil loading windrow was able to maintain optimum temperatures for enhancing biodegradation. Levels of oxygen greater than 12% necessary to enhance the aerobic process occurred on most days after turning for the windrow. Optimum oxygen conditions were maintained for the windrow during composting activities. The pH values of Windrow N-30% were between 8.03 and 8.575 standard units, which are consistent with values obtained during pilot-scale operations.

Activities associated with the construction and monitoring of this windrow have been summarized in this document to demonstrate acceptable performance of full-scale operations. All analytical data have been reviewed and summarized to verify that the data quality objectives described in the *Quality Assurance Project Plan for Full-Scale Operations* [MK, 1998c] have been met.

Based on the success of the 30% soil loading windrow, it is recommended that future full-scale operations be performed using 30% soil loading. An increase in soil loading decreases the total operational period of the project by approximately one to two years and a cost savings of more than approximately $4,000,000 - $5,000,000 will be realized by the Navy.

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ACRONYMS AND ABBREVIATIONS

°C	Degrees Centigrade
2-ADNT	2-Amino-4,6-dinitrotoluene
4-ADNT	4-Amino-2,6-dinitrotoluene
CAAA	Crane Army Ammunition Activity
DQO	Data Quality Objective
FS-OP	Full-Scale Operational Plan for Soils Bioremediation Facility
FS-QAPP	Full-Scale Quality Assurance Project Plan
HMX	cyclotetremethylenetetranitramine
IM	Interim Measures
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MFA	Mine Fill A
MFB	Mine Fill B
MK	Morrison Knudsen Corporation
MS	matrix spike
MSD	matrix spike duplicate
nd	not detected
NSWC	Naval Surface Warfare Center
PD	percent difference
ppm	parts per million
PS-TTR	Pilot-Scale Treatability Test Report
PETN	Pentaerythritrol tetranitrate
QC	quality control
RDX	cyclotrimethylenetrinitramine
RSD	relative standard deviation
su	standard units
SOP	Standard Operating Procedure
SWMU	Solid Waste Management Unit
TNT	2,4,6-trinitrotoluene
U.S. EPA	United States Environmental Protection Agency
WHC	water holding capacity

1.0
INTRODUCTION

1.1 OBJECTIVES

This report summarizes the operational activities and remediation results for the 60 cubic yard pilot-scale windrow (using 30 percent soil loading) constructed during full-scale operations at Naval Surface Warfare Center (NSWC) Crane, Crane, Indiana. The purpose of this report is to verify that windrow composting using 30 percent soil loading (as opposed to 25 percent) can meet project objectives during full-scale operations.

1.2 BACKGROUND

NSWC Crane, located in southwestern Indiana, provides support for equipment, shipboard weapons systems, and ordnance. This site also supports Crane Army Ammunition Activity (CAAA) ,which includes production and renovation, storage, shipment, and demilitarization and disposal of conventional ammunition. Explosive-compounds contaminated soils resulting from the above operations have been identified at four Solid Waste Management Units (SWMUs): Ammunition Burning Ground (SWMU-03/10); Rockeye Munitions Facility (SWMU-10/15); Mine Fill A (MFA) - (SWMU-12/14); and Mine Fill B (MFB) - (SWMU-13/14).

On-site bioremediation of the explosive compounds contaminated soil utilizing a windrow composting process has been selected as the preferred treatment alternative for the Interim Measures (IM) at these four SWMUs: Ammunition Burning Ground SWMU 03/10; Rockeye Munitions Facility SWMU - 10/15; MFA - SWMU - 12/14; and MFB - SWMU-13/14. In this process, microbial degradation of organic contamination is performed by mixing contaminated soil with organic material. By optimizing the availability of organic material, temperature, moisture content, pH, and oxygen availability, microbial activity can be stimulated. The result is the production of residual organic and inorganic material with significantly reduced explosive compound contamination.

A pilot-scale test was completed at NSWC Crane to determine the compost mix which provided the optimum environment for micro-organism growth and degradation of

explosive compounds in contaminated soil. The results of the pilot testing were presented in the *Pilot-Scale Treatability Test Report* (PS-TTP) [MK, 1998a]. Recommendations from this report were incorporated in the *Full-Scale Operational Plan for Soils Bioremediation Facility* (FS-OP) [MK, 1998b] approved by the United States Environmental Protection Agency, Region V (U.S. EPA) and are currently used in treatment operations in full-scale activities. The amendment recipe identified as Mix 7B, consisting of 15% chicken manure, 60% straw, and 25% soil, was the recommended mix from pilot-scale operations and was determined to be the most economic and efficient compost mix for degradation of explosive compounds contaminated soil. The work is being undertaken by Morrison Knudsen Corporation (MK) for Southern Division, Naval Facilities Engineering Company (SOUTHNAVFACENGCOM), under Contract Number N62467-93-D-1106, Delivery Order 009, Statement of Work 007.

1.3 WINDROW DEVELOPMENT

A windrow using 30% soil loading was created on April 27, 1998 in the north building. The windrow, N-30%, was created using approximately 20 cubic yards of screened contaminated soil excavated from MFA. This soil from MFA is comprised of mixed clay, silt, and silty clay contaminated with explosive compounds 2,4,6- trinitrotoluene (TNT), cyclotrimethylenetrinitramine (RDX), and cyclotetremethylenetetranitramine (HMX). Soil excavation locations at MFA are provided in Figures E1-1 through E1-4 of Appendix E1 of the FS-OP [MK, 1998b].

The amendments to Windrow N-30% were loaded on a volume basis into a grinder/mixer to homogenize each mix. The amendments included 9.6 cubic yards of chicken manure, and 37.4 cubic yards of straw. This resulted in a compost windrow consisting of approximately 14% chicken manure, 56% straw, and 30% contaminated soil by volume. The windrow was created as specified in the FS-OP. A record of the compost recipe and suppliers of amendments is shown in Appendix A.

2.0
PROCESS MONITORING

After the contaminated soil was loaded into the windrow, the windrow turning machine (SCARAB®) mixed and reformed the windrow. The windrow was turned once a day to maintain proper aeration, temperature, oxygen, pH and moisture. In addition, water was added as needed to maintain optimal moisture content. These process parameters were monitored to evaluate and provide optimal conditions for contaminant degradation. The values of these process parameters were compared to those obtained for full-scale operations using 25% soil loading. A summary of the process parameters and significance of each parameter is described below.

2.1 TEMPERATURE

Temperature is a primary indicator of successful thermophilic composting. The process goal is to maintain an average windrow temperature near 55 degrees centigrade (°C) for approximately 2 weeks. Temperatures below 20°C inhibit the growth of many microbes and temperatures above 65°C can kill or reduce the activity of many microbes thus decreasing the availability of nutrients. The average windrow temperature should rise from 25 to 40°C within the first few days of formation, and continue rising to within the temperature range of 40 to 60°C, and maintain that temperature range for at least two weeks. This temperature profile indicates a healthy, metabolically active windrow. Temperature decrease over time below 50°C is viewed as an indicator that the windrow is nearing the end of its thermophilic cycle.

Windrow temperature was monitored twice daily, before and after each windrow turning according to the Field Standard Operating Procedure (SOP) 4, Section 3, of the *Quality Assurance Project Plan for Full-Scale Operations* (FS-QAPP) [MK, 1998c]. Temperature readings were taken using a hand-held temperature probe at six sampling/monitoring locations at each of four cross sections, for a total of 24 monitoring locations. These locations were selected to provide representative temperature profiles of the inner core and outer near-surface conditions. Ambient air temperature inside the buildings was monitored daily using a thermometer to determine any correlation between ambient temperature and windrow temperature of the windrow. Summaries of the average daily windrow temperature, average daily ambient temperature and graphs

for Windrow N-30% are presented in Appendix B. Average ambient temperatures ranged between 3 and 18°C for the Mix 7B windrow and the average ambient temperatures ranged between 8 and 20°C for Windrow N-30%. No correlation was found to exist between ambient temperature and windrow temperature for either windrow.

Pre-turn temperatures have been determined to be more useful for evaluation and comparison because they represent heat development over time. Average temperature is defined as the average of the 24 monitoring locations in Windrow N-30%. The windrow exhibited a rapid temperature increase to 47°C within two days. Temperatures continued to rise above 60°C and were maintained for approximately three weeks. In some cases, average temperature exceeded 68°C but was readily reduced to within the optimum operating range through aeration and/or moisture addition. Based on the results of temperature monitoring, Windrow N-30% was able to maintain optimum temperatures for enhancing biodegradation. In comparison, the Mix 7B windrow temperature increased to above 40°C during the first day of formaton. Average pre-turn temperatures continued to increase above 55°C within two days and maintained 55°C or higher for 16 days, with three drops below 55°C when moisture was added. The maximum average pre-turn temperature of the Mix 7B windrow was 67°C.

2.2 MOISTURE

Water holding capacity (WHC) is monitored to ensure optimum operating conditions for microbial growth and contamination degradation. WHC is the ratio of the percent moisture of the compost to the percent moisture of the compost at the point of saturation. The calculation for this value is shown in Section 4.5 of SOP 4.0 of the FS-QAPP.

The humidity inside the buildings was monitored daily using a hygrometer to determine any correlation between percent humidity and WHC of the windrow. The average daily relative humidity ranged from 70 to 95% for the Mix 7B windrow and the average daily relative humidity ranged from 22 to 100% for Windrow N-30%. No correlation was found to exist between percent humidity and water holding capacity for either windrow. Daily humidity data is presented in Appendix C.

The operating goal for composting moisture content is 40 to 60% maximum WHC. If moisture levels are excessively low or high, proper composting and explosive

compound degradation may be affected. Too little moisture inhibits microbial movement and nutrient availability in the compost windrow. Excessive moisture fills the void spaces needed for proper aeration, thus reducing oxygen levels and retarding aerobic microbial growth. Potable water from an on-site source was generally added when WHC levels fell below 45%.

WHC monitoring was performed three times a week according to the operations schedule prior to windrow turning, unless moisture was added on that day , in which case moisture was monitored after the addition of water and subsequent turning. However, there were two instances where monitoring was performed after the windrow was turned and no moisture was added. The initial addition of water to the windrow was based on visual observation of the windrow and subsequent additions were based on field laboratory measurements. Moisture level samples were collected from each of four cross sections as outlined in the FS-OP. Average WHC data for Windrow N-30% are provided in Appendix C.

Due to high levels of evaporation during the composting cycle, water was added numerous times during the composting activities to maintain moisture content at approximately 50% maximum WHC. Table 2-1 summarizes the moisture additions for Windrow N-30%. At no time during the process was leachate observed from the windrow. The average daily WHC ranged between 42% and 59% during the thirty day cycle of the Mix 7B windrow and the average daily WHC ranged between 42% and 64% during the forty-nine day cycle of Windrow N-30%.

2.3 OXYGEN

Oxygen levels of up to ambient atmospheric or about 21% are preferred in a compost windrow, and 5% is considered the minimum for rapid compost degradation. Oxygen levels below 1% indicate the potential for anaerobic conditions. If sufficient oxygen levels are not maintained, proper microbial degradation may not occur, thermophilic temperatures may not be maintained, and putrefaction of organic matter may occur. However, anaerobic conditions commonly exist in a compost windrow throughout most of each day, and depending on the density of the compost, aerobic conditions may occur for only one to two hours following turning.

The oxygen available to microbes in a compost windrow is the result of aeration by turning. Therefore, oxygen availability is a function of the air-filled pore volume within

TABLE 2-1 SUMMARY OF MOISTURE ADDITIONS TO WINDROW N-30%		
DATE OF ADDITION	WINDROW AGE (DAYS)	VOLUME ADDED (GALLONS)
4/28/98	1	150
4/29/98	2	150
4/30/98	3	100
5/6/98	9	100
5/8/98	11	100
5/14/98	17	100
5/19/98	22	50
5/22/98	25	100
5/23/98	26	100
5/27/98	30	150
6/2/98	36	100
6/9/98	43	50
6/10/98	44	100

the windrow, which is in turn a function of porosity and moisture content. As a compost windrow is turned and degrades, the porosity is reduced which in turn reduces available oxygen. Similarly, increasing the moisture content also reduces available oxygen.

Oxygen levels were monitored twice daily, before turning and within fifteen minutes after turning. The oxygen monitoring data for Windrow N-30% are provided in Appendix D. Oxygen level measurements were collected using a hand-held probe at the same locations as the temperature measurements in accordance with SOP 4, Section 3, of the FS- QAPP. Windrow N-30% exhibited excellent oxygenation levels. Levels of oxygen greater than 12% occurred on most days after turning and operations were able to maintain Windrow N-30% within the optimum oxygen conditions during initial activities. This was also the case with the Mix 7B Windrow. The graph presented in Appendix D demonstrates the progressive reduction in oxygen levels both before and after turning the windrow. The reduced oxygen levels shown after Day 21 are suggestive of the decreased porosity as the compost degrades.

2.4 pH

The pH of the compost windrow was measured to ensure that a near neutral pH environment is obtained during operation of the windrow. Samples were collected weekly for pH monitoring prior to windrow turning as outlined in SOP 4, Section 5, of the FS-QAPP. The pH of the compost windrow during pilot-scale operations normally remained within the range of 5.5 to 9 standard units (su). A low pH is indicative of the generation of organic acid which is a result of the degradation of organic material under anaerobic conditions. The pH values of Windrow N-30% were between 8.03 and 8.575 su and compared favorably with those of the Mix 7B Windrow. The pH of the windrow was not adjusted during composting activities. The data for Windrow N-30% pH monitoring is presented in Appendix E.

3.0
LABORATORY ANALYSIS

The constituents of concern for MFA include explosive compounds, metals and volatile organics. Analysis of the SWMU specific contaminants listed in Section 1.4.2.1 of the FS-QAPP was performed for all pre-excavated soil by Southwest Laboratory of Oklahoma, Inc.

3.1 METALS AND VOLATILES ANALYSIS

Samples of contaminated soil from MFA were collected and analyzed for metals (U.S. EPA Methods 6010 and 7470) and volatiles (U.S. EPA Method 8240) prior to excavation. Levels of site-specific total metals and volatiles contamination did not exceed any of the Industrial Use Cleanup Goals (Table 1-2 of the FS-QAPP) therefore, further metal and volatile analysis was not required during composting activities.

3.2 EXPLOSIVE COMPOUND ANALYSIS

Samples collected for explosive compound analysis by U.S. EPA Method 8330 prior to excavation showed levels which exceeded Industrial Use Cleanup Goals (Table 1-2 of the FS-QAPP). Soil exceeding the Industrial Use Cleanup Goals was screened, blended in the windrow, and submitted for analysis on the day of Windrow N-30% formation (Day 0). Samples were collected and submitted for laboratory analysis on Day 0, 5, 10, 20, 30, 40 and 60 (Day Last). Samples for explosive analysis were collected from each of the four cross sections. At each cross section, locations 1, 2, and 3 were sampled for a total of twelve samples per windrow as outlined in the FS-OP. The twelve samples were averaged to obtain a single Day 0 average concentration for each explosive compound, and a single Day Last average concentration for each explosive compound. The average concentration was calculated by using the numerical result when concentrations were above the reporting limits. Reporting limit is defined as the threshold value below which the laboratory reports a result of "less than" or "not detected". For those results which fell below the reporting limit, the value of the reporting limit was used in the calculation. Calculation of the average concentration in this manner represents a worst case scenario in calculative concentration and percent reduction of the target constituents. The same approach was used during the pilot-

scale operation [MK, 1998a]. A summary of the these results for Windrow N-30% is located in Appendix F.

Degradation of explosive compounds was evaluated in order to ensure the reduction cleanup goal (90-99% range) between Day 0 and Day Last was obtained and that Industrial Use Cleanup Goals were also achieved. By evaluating the average concentration of each explosive contaminant from Day 0 to Day Last, the percent reduction was calculated. Appendix G contains the reduction values for each contaminant in Windrow N-30%. Percent reduction is only applicable to those compounds found to be present above the reporting limits during the Day 0 characterization.

Windrow N-30% Day 0 samples contained very high levels of RDX, TNT and HMX and most of the Mix 7B 25% Windrow samples contained very high levels of RDX and HMX. The contaminant reduction goal of 90% was achieved at Day 10 for Windrow N-30%, for RDX, TNT, and HMX. The contaminant reduction goal of 90% for the Mix 7B 25% Windrow was also achieved at Day 10 for RDX, HMX, and TNT. These reduction goals may have been reached between Day 5 and Day 10 however, no analytical testing was performed between these days therefore results are not available.

Windrow N-30% achieved Industrial Cleanup Goals on Day 10 and met Residential Cleanup Goals on Day 20. Mix 7B 25% Windrow achieved Industrial Cleanup Goals on Day 10 during pilot-scale testing and met Residential Cleanup Goals on Day 20. However, during full-scale operations using 25% soil loading, the windrows are able to meet Industrial Cleanup Goals as early as Day 7. Industrial Cleanup Goals may have been reached between Day 5 and Day 10 however, no analytical testing was performed between these days therefore results are not available. Similar composting/treatment time could be expected for full-scale operations of 30% soil loading based on the review of contaminant reduction charts provided in Appendix G.

4.0
DATA QUALITY CONTROL

All data associated with Windrow N-30% monitoring were verified, and at least 10% of the samples were validated by MK personnel following the procedures outlined in Section 9.0 of the FS-QAPP. Data was compared with field and laboratory quality control (QC) sample data to assess the data's usability for supporting operational decisions. Results of this data verification and validation are presented in this section.

Data associated with the monitoring of Windrow N-30% were verified by reviewing chain-of-custody forms, sample preservation records, analytical holding times, requested turnaround times, and sample data in comparison to analytical quality assurance objectives. Data quality objectives (DQOs) were established to ensure the quality of the analytical data produced by the laboratory. These DQOs were evaluated by monitoring the precision, accuracy, representativeness, completeness, and comparability of the measured data and are outlined in Tables 3-1 through 3-8 of the FS-QAPP. In general, data is acceptable and meets the quality assurance objectives specified in Section 3.0 of the FS-QAPP.

4.1 PRECISION

Precision is a measure of the reproducibility of measurements under a given set of conditions. Precision is usually stated in terms of relative standard deviation (RSD) or percent difference (PD). Field duplicates and replicate samples were used to determine the precision of the sampling process. Laboratory matrix spikes (MS) and matrix spike duplicates (MSD) as well as laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) were used to determine the precision of the analytical process.

Field duplicates were collected at a frequency of 10% of the total number of samples collected. Eight field duplicates were collected, one each on Days 0, 5, 10, and 60, and two each on Days 20 and 40. Results of the field duplicate samples are shown in Appendix H. Field duplicates were evaluated based upon the PD, reporting limits, and the Industrial Cleanup Goals established in the FS-QAPP, since no other criteria has been established for field duplicates. Percent differences for sample concentrations

near or above the industrial cleanup levels were less than thirty percent and are considered acceptable for the matrix. Percent differences were also acceptable for most samples in which both the replicates showed concentrations above the reporting limits. A number of field duplicate pairs had one sample with an instrument response near or below the reporting limit, however, the replicate did not show the presence of these compounds. In these instances the PD's were not calculated as these results are well below the industrial cleanup standards.

Precision in the laboratory is assessed through the calculation of RPD's of the recovery of target compounds spiked into the samples (MS/MSD's) and laboratory obtained clean soil (LCS/LCSD's). Acceptable limits for the types of samples are established by historical method performance and are outlined in the FS-QAPP. MS/MSD samples were prepared by the laboratory with each analytical batch of samples processed. Matrix spike precision was acceptable for all analytical batches except the matrix spike recoveries for HMX and/or RDX which exceeded acceptable RPD values in the Day 0 and Day 5 analytical preparation batches. These excedences are attributed to the high concentrations of HMX and RDX found in the original samples relative to the amount spiked into the samples. Matrix spike recoveries for RDX, Tetryl, and TNT also exceeded acceptable RPD values in the Day 40 preparation batch. In this case, non-homogeneity of the sample matrix contributed to the increased variability seen in the recovery of RDX and TNT, and the variability of Tetryl recoveries were also due in part to degradation of the compound. The aqueous matrix spike recoveries for Tetryl exceeded acceptable RPD values in the Day 10 analysis, however results for the corresponding rinse blank were acceptable. All remaining analytes for Windrow N-30% had acceptable RPD values less than 40%. In all cases, acceptable RPD values were obtained in the analysis of the LCS/LCSD.

4.2 ACCURACY

Accuracy is a measure of the bias in a measurement system, and is defined as the closeness of the reported value to the true value. The accuracy of a measurement system is assessed by evaluating the results of quality control samples such as matrix spikes, analytical surrogates, and the use of field blanks and equipment rinsate blanks. Accuracy is expressed as a percent recovery of a compound from a sample spiked with known concentrations of target compounds. Accuracy for laboratory samples is also assessed through adherence to all sample handling, preservation and holding times. All samples were handled properly, preserved correctly, and adhered to the holding

times established for this project.

Field blank and equipment rinsate blank data are used to identify potential sources of error introduced during sampling or any source of contamination in the rinse water. Equipment rinsate blanks were collected at a frequency of one for every twenty samples collected. Six equipment rinsate blanks were collected for sample batches submitted to the laboratory. Each month a field blank was also collected from every source of deionized water used for equipment decontamination. Explosive compound contamination was not found in any rinsate blank or field blank. Based on these results, no explosive compound cross-contamination occurred during sample collection, shipping, or storage.

Laboratory accuracy was assessed against the criteria established in the approved FS-QAPP through the analysis of surrogates, laboratory control standards, sample matrix spikes, or standard reference materials, and the determination of their percent recoveries. Surrogate spikes are known amounts of non-target compounds which are introduced into all samples prior to extraction in order to evaluate the efficiency of the sample preparation and analysis. Surrogate recoveries were acceptable for greater than fifty percent of field samples analyzed. In cases where the surrogates did not meet the method criteria, sample matrix was attributed due to the high concentrations of target constituents which required subsequent dilution or other non-target interferences.

The LCS and LCSD are samples prepared in the laboratory and consist of clean soil or water spiked with known amounts of target analytes which is processed through the same preparation as field samples. Evaluation of the spike recoveries gives an indication of analysis accuracy in a clean matrix. Recoveries of all standard matrix spikes (laboratory control samples) were acceptable based on project DQOs.

Sample MS and MSD are field samples which have been spiked with a known amount of target analytes and processed through the preparation and analysis with the field samples. Two spiked aliquots (MS/MSD) were processed and the results compared to known concentrations of the spiking solution to determine recoveries. The recoveries of the matrix spike samples were varied. In some instances, elevated recoveries were likely due to low spiking concentrations used by the laboratory relative to the concentration of target and non-target analytes found initially in the sample. This was the case for HMX, TNT, and RDX due to the high sample concentrations of these

compounds. In the Day 0 analysis, three explosive contaminants 4-Amino-2,6-dinitrotoluene (4-ADNT), 2-Amino-4,6-dinitrotoluene (2-ADNT), and Pentaerythritrol tetranitrate (PETN) showed recoveries outside of criteria established in the FS-QAPP and are attributed to the dilution required for analysis based on levels of other explosive contaminants in the sample. Tetryl had low recoveries of 13% and 2% in the MS and MSD corresponding to Day 40 sample analysis, however, LCS recoveries were acceptable. Analysis of Tetryl on Day 20 and Day 60 showed acceptable MS/MSD recoveries and there was no Tetryl present in the samples. The low Tetryl recovery does not appear to have affected the usability of this data for evaluating the composting activities.

Laboratory method blanks can also be used to evaluate bias in the measurement. Method blanks were prepared and analyzed with the samples in order to evaluate potential target compounds or interferences from laboratory glassware, reagents and/or solvents used in the preparation and analysis of samples. Laboratory method blanks did not show the presence of any target analytes above the reporting limits. Results of the method blanks were acceptable for all analytes.

4.3 REPRESENTATIVENESS

The representativeness of the data is the degree to which data represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter which is controlled through sampling in accordance with the sampling program outlined in the FS-QAPP. All documentation from sampling and analysis demonstrates that the requirements of the FS-QAPP have been adhered to and proper sampling techniques and sample preservation procedures have been followed.

4.4 COMPLETENESS

Completeness is a measure of the amount of valid data obtained from an analytical data set compared to the amount that was expected to be obtained under normal sampling and analytical conditions. Completeness is based on only those samples collected and submitted for laboratory analysis. The completeness goal of 90% was met for these analyses. Day 20 samples required re-extraction and analysis by the laboratory because it was determined that the laboratory had switched samples BIO-N-30%-05-C1 and BIO-N-30%-05-B3. Data from the re-extraction was used for

determining concentrations and completeness.

4.5 COMPARABILITY

Comparability expresses the confidence with which one data set can be compared to another. Samples from the compost windrow were considered comparable because they were collected following the same sample collection procedures throughout windrow monitoring. Field SOPs were established to collect representative samples in a consistent manner. In addition, all samples were analyzed by the same analytical methods throughout this project as established by the laboratory SOPs. The analytical laboratory's QC program was designed to establish consistency in the performance of the analytical process.

5.0
CONCLUSION

The Windrow N-30% mix, consisting of 14% chicken manure, 56% straw, and 30% contaminated soil, has been successful in demonstrating at least 90% reduction of all contaminants as required by the FS-OP. The average degradation was 95%. The lowest degradation was seen with 2,4,6-TNT with 93% reduction, and the highest degradation occurred with RDX with 96% reduction. A possible cause could be that the initial explosive contaminant compounds concentration may have been higher thereby requiring additional treatment time.

Windrow N-30% was successful at achieving remediation goals for all explosive contaminants below the Industrial Use Cleanup Goals by Day 10. In this pilot-scale test the 30% mixture met Residential Cleanup Goals by Day 20. The observations presented here indicate that bioremediation by composting, utilizing the Mix 7B amendment recipe in combination with 30% soil loading, has met the desired performance goals of this project. Based on the success of the Windrow N-30% compost, it is recommended that future full-scale operations be performed using 30% soil loading for treatment of soil to meet Industrial Use Cleanup Goals. Further, confirmation samples should be collected for laboratory analysis between Day 5 and Day 10 of the windrow operation since results have shown Industrial Use Cleanup Goals are achieved at this time. However, full-scale operations using 30% soil loading will determine the exact duration for each windrow completion. A comparison can then be made between full-scale treatment using 30% soil loading versus full-scale treatment using 25% soil loading.

An increase in soil loading decreases the total operational period of the project by approximately one to two years. Also, there is a reduction in the amendment cost of approximately $3.00 per cubic yard of soil to be treated. Therefore, a potential savings of approximately $4,000,000 - $5,000,000 can be realized by the Navy by increased soil loading.

6.0
REFERENCES

MK, 1998a. *Pilot-Scale Treatability Test Report, Soils Bioremediation Facility - NSWC Crane, Crane, Indiana.* Delivery Order Number 0009, Contract Number N62467-93-D-1106. Prepared by Morrison Knudsen Corporation, Environmental Services Group. April 14, 1998.

MK, 1998b. *Full-Scale Operational Plan for Soils Bioremediation Facility, NSWC Crane, Crane, Indiana.* Delivery Order Number 0009, Contract Number N62467-93-D-1106. Prepared by Morrison Knudsen Corporation, Environmental Services Group. Revision 2, March 12, 1998.

MK, 1998c. *Quality Assurance Project Plan for Full-Scale Operations, Soils Bioremediation Facility, NSWC Crane, Crane, Indiana.* Delivery Order Number 0009, Contract Number N62467-93-D-1106. Prepared by Morrison Knudsen Corporation, Environmental Services Group. March 12, 1998.

APPENDIX A
WINDROW RECORD OF CONSTRUCTION RECIPE

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DESCRIPTION	PAGE
Record of Recipe	1 page

SOP 3.0 FIGURE 2a Revised 02/25/98

RECORD OF RECIPE (MIX NO. 7B)

Building # (Bldg 1) Nozzle Windrow # PS 30% soil PERFORMED BY: [illegible]

DATE: 4/27/98 INSPECTED BY: [illegible]

Design Quantity: (3 batches) Chicken Manure 9.3 CY 1670 Pounds
Straw 37.3 CY 7440 Pounds
Soil 20 CY 44000 Pounds

Batch Number	CHICKEN MANURE Supplier: WABASH VALLEY FARM		STRAW Supplier: DAYMOFF FARM		SOIL Location: MINE FILL A		TOTAL ACTUAL QUANTITY	
	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds	cubic yards	pounds
1	3.2	7150	12.5	3100	7	15400	22.7	25650
2	3.0	6280	12.25	2740	6	13200	21.25	22220
3	3.4	8350	12.65	3600	7	15400	23.05	27350
Total	9.6	21780 27700	37.4	9440	20	44000	67	75220

Comments: AMENDMENTS AND SOIL PLACED/BLENDED ON 4/27/98

APPENDIX B
TEMPERATURE SUMMARY RECORDS

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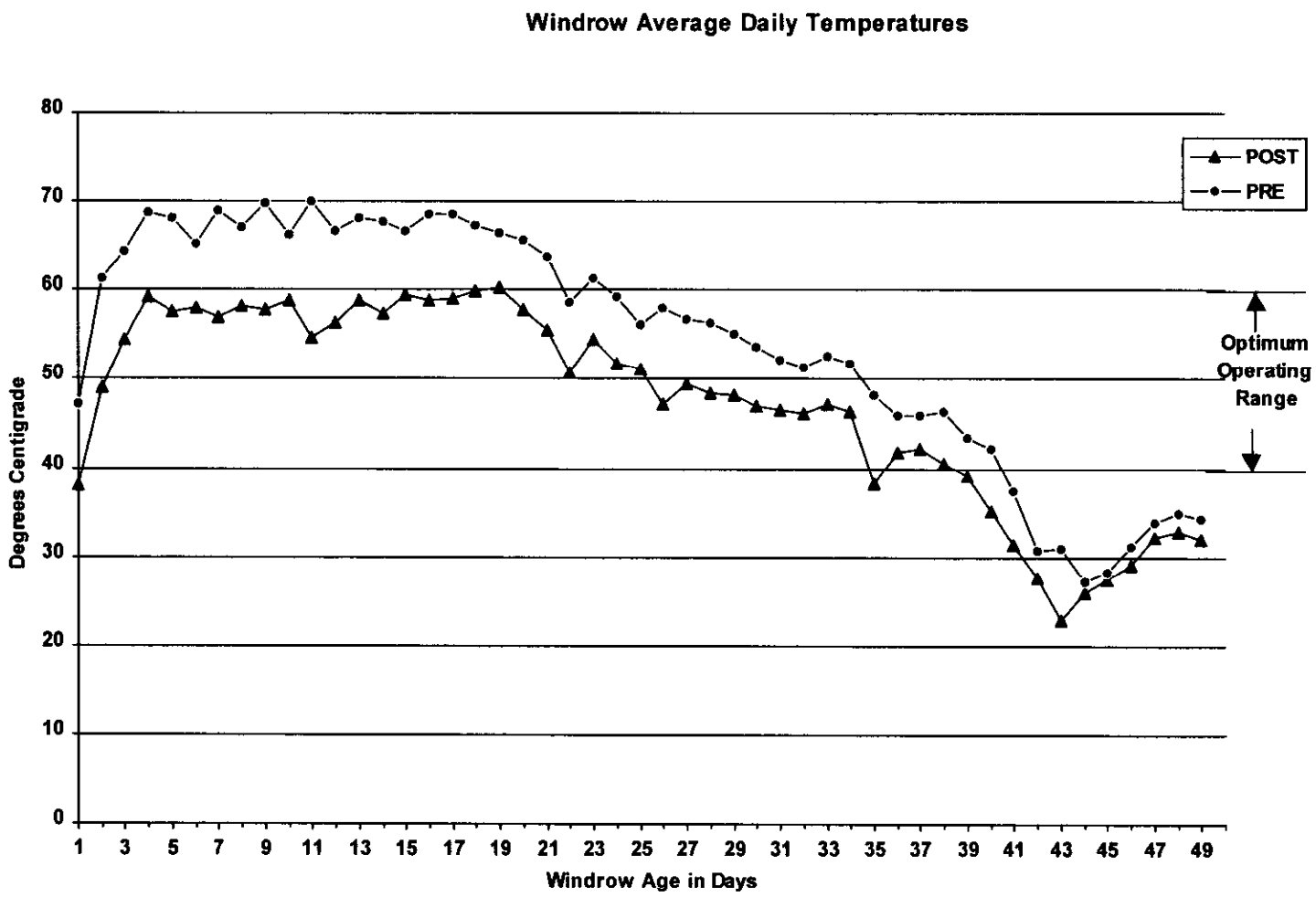
DESCRIPTION	PAGE
Windrow Average Daily Temperature Chart	1 page
Windrow Average Daily Temperature Data	2 pages
Average Ambient Daily Temperature Chart	1 page
Average Ambient Daily Temperature Data	1 page

NSWC Crane BioFacility Full Scale Windrow N-30%

Constructed April 27, 1998



Morrison Knudsen Corporation

Average Daily Windrow Temperature Summary Report

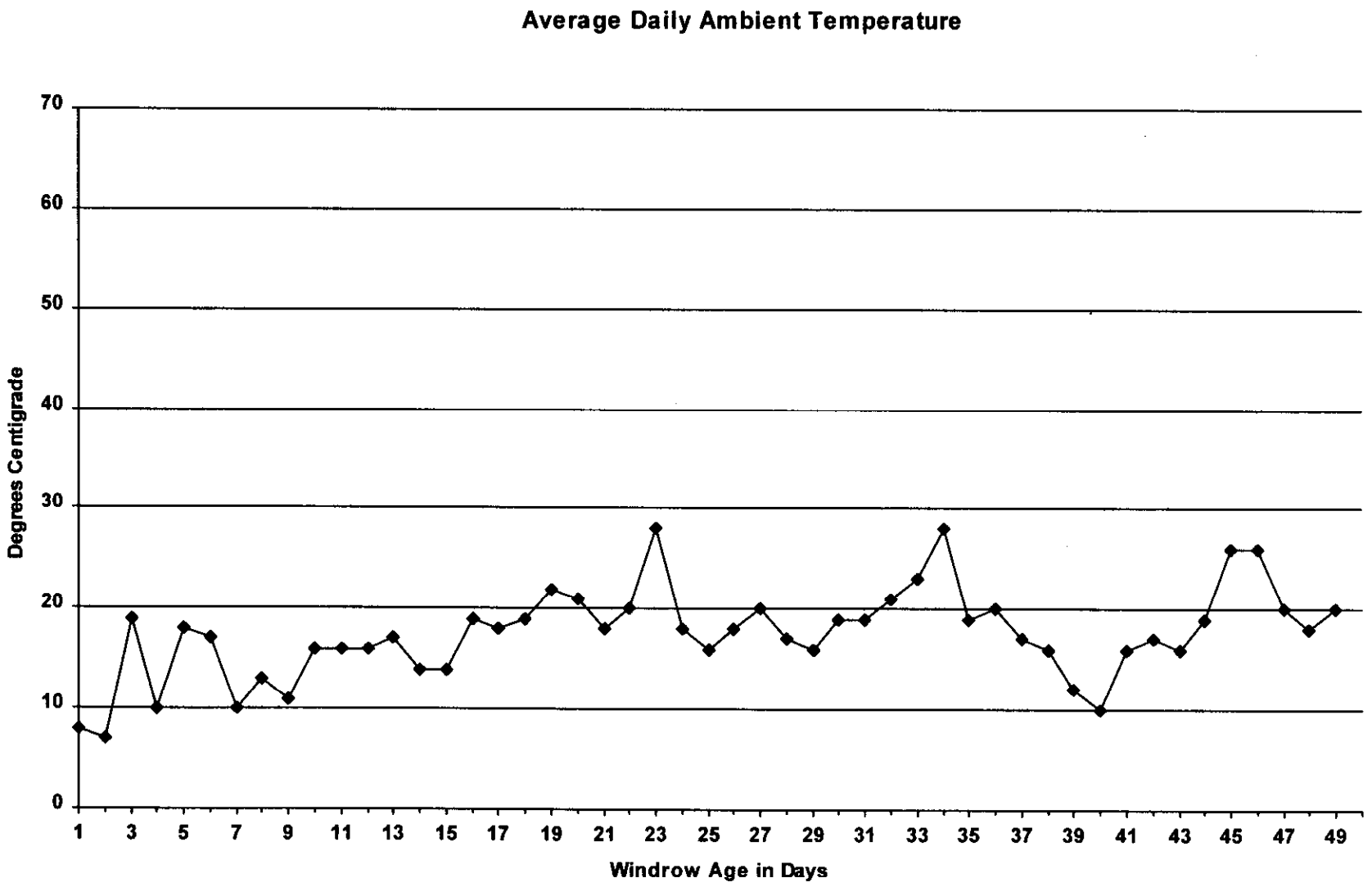
Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (Deg C)*	*POST-Turn (Deg C)*
N30%	4/27/98	4/27/98	0		21.75
		4/28/98	1	47.13	38.00
		4/29/98	2	61.29	49.05
		4/30/98	3	64.50	54.46
		5/1/98	4	68.79	59.21
		5/2/98	5	68.17	57.46
		5/3/98	6	65.29	57.95
		5/4/98	7	68.96	56.96
		5/5/98	8	67.13	58.25
		5/6/98	9	69.83	57.67
		5/7/98	10	66.29	58.75
		5/8/98	11	70.08	54.58
		5/9/98	12	66.63	56.25
		5/10/98	13	68.17	58.88
		5/11/98	14	67.79	57.29
		5/12/98	15	66.79	59.38
		5/13/98	16	68.63	58.88
		5/14/98	17	68.50	58.96
		5/15/98	18	67.33	59.79
		5/16/98	19	66.46	60.21
		5/17/98	20	65.63	57.71
		5/18/98	21	63.83	55.58
		5/19/98	22	58.54	50.63
		5/20/98	23	61.21	54.42
		5/21/98	24	59.17	51.75
		5/22/98	25	56.13	51.17
		5/23/98	26	57.92	47.13
		5/24/98	27	56.79	49.46
		5/25/98	28	56.29	48.50
		5/26/98	29	55.00	48.17
		5/27/98	30	53.54	47.04
		5/28/98	31	52.25	46.58
		5/29/98	32	51.29	46.13
		5/30/98	33	52.50	47.21
		5/31/98	34	51.79	46.25
		6/1/98	35	48.29	38.33
		6/2/98	36	45.96	41.75
		6/3/98	37	45.96	42.25
		6/4/98	38	46.42	40.50
		6/5/98	39	43.38	39.04
		6/6/98	40	42.25	35.08
		6/7/98	41	37.50	31.46

All average temperatures are in degrees centigrade

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (Deg C)*	*POST-Turn (Deg C)*
N30%	4/27/98	6/8/98	42	30.79	27.67
		6/9/98	43	30.88	22.79
		6/10/98	44	27.28	26.07
		6/11/98	45	28.17	27.38
		6/12/98	46	31.08	29.00
		6/13/98	47	33.79	32.17
		6/14/98	48	35.00	32.75
		6/15/98	49	34.33	32.00

All average temperatures are in degrees centigrade

NSWC Crane BioFacility Full Scale Windrow Monitoring Activity



Morrison Knudsen Corporation

Daily Ambient Temperature Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*Temperature (Deg C)*
N30%	4/27/98	4/27/98	0	11.00
		4/28/98	1	8.00
		4/29/98	2	7.00
		4/30/98	3	19.00
		5/1/98	4	10.00
		5/2/98	5	18.00
		5/3/98	6	17.00
		5/4/98	7	10.00
		5/5/98	8	13.00
		5/6/98	9	11.00
		5/7/98	10	16.00
		5/8/98	11	16.00
		5/9/98	12	16.00
		5/10/98	13	17.00
		5/11/98	14	14.00
		5/12/98	15	14.00
		5/13/98	16	19.00
		5/14/98	17	18.00
		5/15/98	18	19.00
		5/16/98	19	22.00
		5/17/98	20	21.00
		5/18/98	21	18.00
		5/19/98	22	20.00
		5/20/98	23	28.00
		5/21/98	24	18.00
		5/22/98	25	16.00
		5/23/98	26	18.00
		5/24/98	27	20.00
		5/25/98	28	17.00
		5/26/98	29	16.00
		5/27/98	30	19.00
		5/28/98	31	19.00
		5/29/98	32	21.00
		5/30/98	33	23.00
		5/31/98	34	28.00
		6/1/98	35	19.00
		6/2/98	36	20.00
		6/3/98	37	17.00
		6/4/98	38	16.00
		6/5/98	39	12.00
		6/6/98	40	10.00
		6/7/98	41	16.00
		6/8/98	42	17.00
		6/9/98	43	16.00
		6/10/98	44	19.00
		6/11/98	45	26.00
		6/12/98	46	26.00
		6/13/98	47	20.00
		6/14/98	48	18.00
		6/15/98	49	20.00

All temperatures are in degrees centigrade

APPENDIX C
MOISTURE SUMMARY RECORDS

TABLE OF CONTENTS

DESCRIPTION	PAGE
Windrow Daily WHC Summary Data	1 page
Windrow WHC Chart	1 page
Average Daily Percent Humidity Chart	1 page

Average Daily Windrow WHC Summary Report

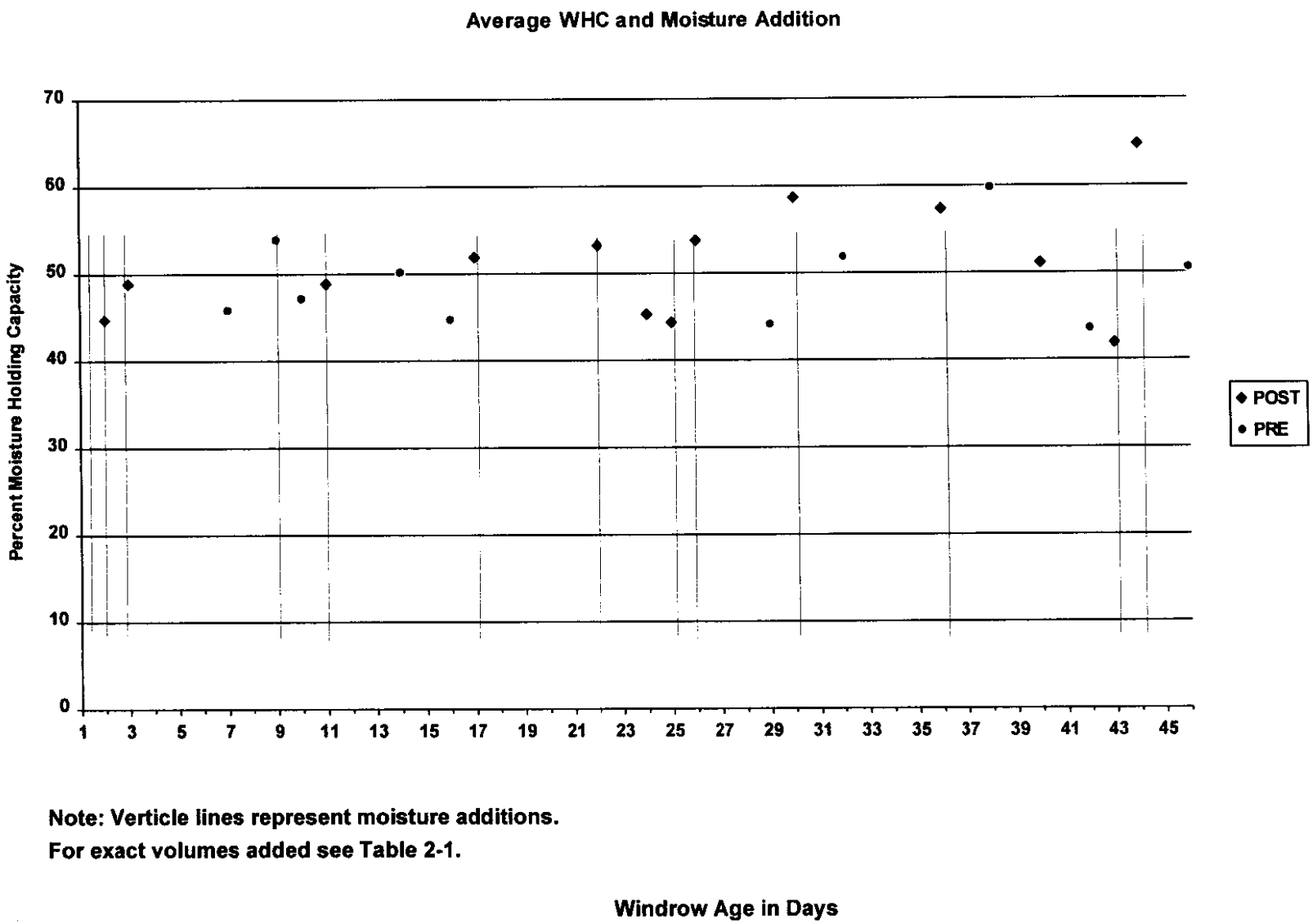
Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
N30%	4/27/98	4/27/98	0		42.38
		4/29/98	2		44.68
		4/30/98	3		48.90
		5/4/98	7	45.83	
		5/6/98	9	54.03	
		5/7/98	10	47.25	
		5/8/98	11		48.85
		5/11/98	14	50.13	
		5/13/98	16	44.65	
		5/14/98	17		51.88
		5/19/98	22		53.28
		5/21/98	24		45.35
		5/22/98	25		44.30
		5/23/98	26		53.80
		5/26/98	29	44.13	
		5/27/98	30		58.60
		5/29/98	32	51.95	
		6/2/98	36		57.45
		6/4/98	38	59.77	
		6/6/98	40		51.08
		6/8/98	42	43.67	
		6/9/98	43		41.85
		6/10/98	44		64.63
		6/12/98	46	50.50	

All average MWHC values are expressed in percent

Generated: *17-Dec-98*

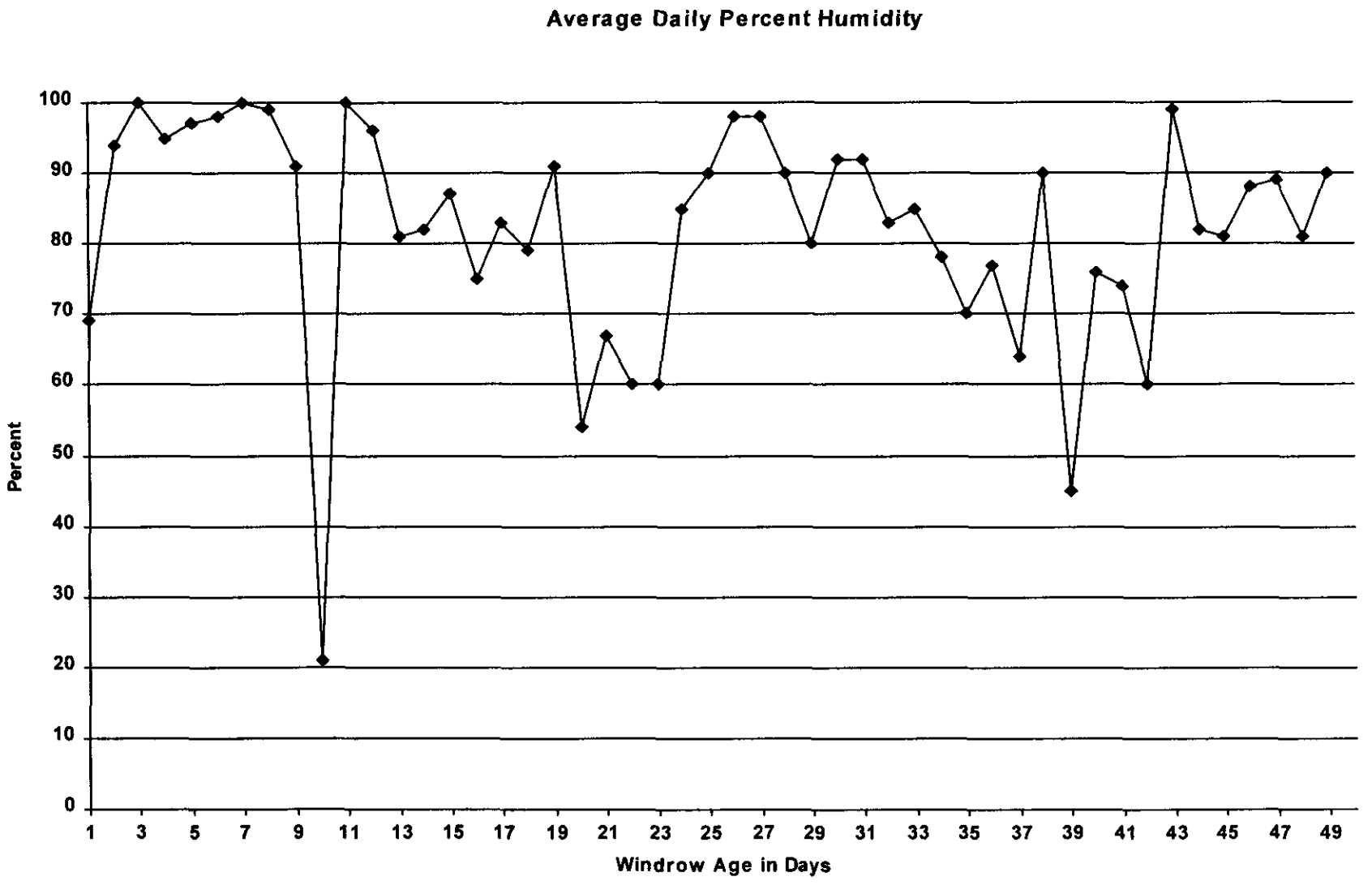
NSWC Crane BioFacility Full Scale Windrow N-30%

Constructed April 27, 1998



Note: Verticle lines represent moisture additions.
For exact volumes added see Table 2-1.

NSWC Crane Full Scale Windrow Monitoring Activity



Morrison Knudsen Corporation

APPENDIX D
OXYGEN SUMMARY RECORDS

TABLE OF CONTENTS

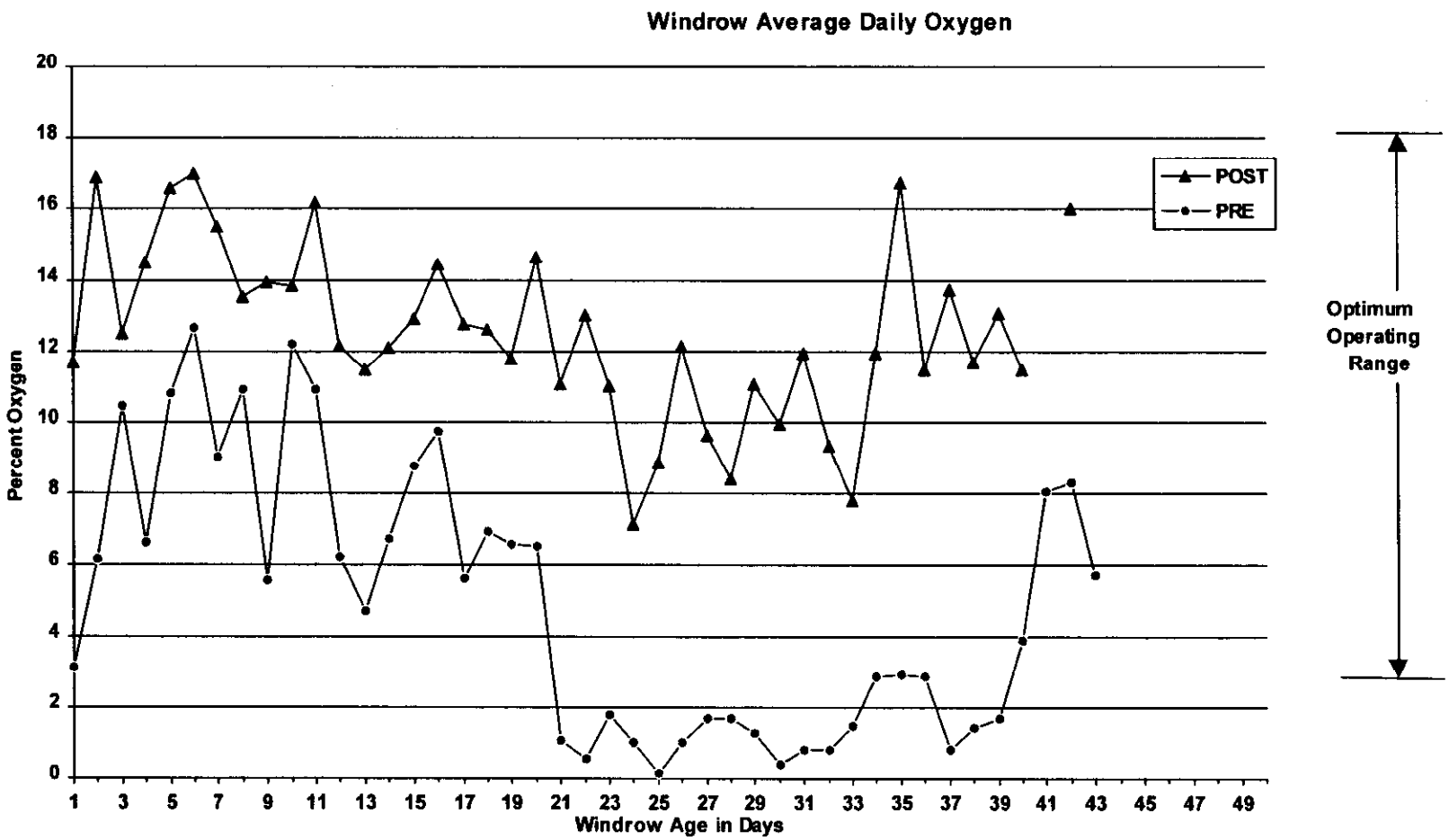
DESCRIPTION **PAGE**

Windrow Daily Oxygen Summary Chart . . . . . 1 page

Windrow Daily Oxygen Summary Data . . . . . 2 pages

NSWC Crane BioFacility Full Scale Windrow N-30%

Constructed April 27, 1998



Note: Post-turning oxygen was not monitored on Day 41 or Day 43 due to equipment malifunction. Oxygen monitoring was not performed after Day 43 due to off-site repairs of the oxygen probe.

Morrison Knudsen Corporation

Average Daily Windrow Oxygen Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
N30%	4/27/98	4/27/98	0		19.75
		4/28/98	1	3.13	11.71
		4/29/98	2	6.17	16.91
		4/30/98	3	10.46	12.50
		5/1/98	4	6.63	14.50
		5/2/98	5	10.79	16.58
		5/3/98	6	12.67	17.00
		5/4/98	7	9.04	15.50
		5/5/98	8	10.92	13.54
		5/6/98	9	5.58	13.92
		5/7/98	10	12.21	13.83
		5/8/98	11	10.92	16.17
		5/9/98	12	6.21	12.13
		5/10/98	13	4.71	11.46
		5/11/98	14	6.75	12.08
		5/12/98	15	8.79	12.92
		5/13/98	16	9.75	14.42
		5/14/98	17	5.63	12.75
		5/15/98	18	6.92	12.63
		5/16/98	19	6.58	11.79
		5/17/98	20	6.54	14.67
		5/18/98	21	1.08	11.08
		5/19/98	22	0.58	13.00
		5/20/98	23	1.79	11.04
		5/21/98	24	1.04	7.17
		5/22/98	25	0.17	8.88
		5/23/98	26	1.04	12.17
		5/24/98	27	1.67	9.67
		5/25/98	28	1.67	8.42
		5/26/98	29	1.29	11.08
		5/27/98	30	0.42	9.96
		5/28/98	31	0.83	11.96

All average Oxygen values are expressed as a percent

Generated: *17-Dec-98*

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (%)*	*POST-Turn (%)*
N30%	4/27/98	5/29/98	32	0.79	9.33
		5/30/98	33	1.46	7.79
		5/31/98	34	2.83	11.92
		6/1/98	35	2.92	16.75
		6/2/98	36	2.83	11.50
		6/3/98	37	0.83	13.71
		6/4/98	38	1.42	11.71
		6/5/98	39	1.71	13.08
		6/6/98	40	3.88	11.50
		6/7/98	41	8.05	
		6/8/98	42	8.29	16.00
		6/9/98	43	5.71	

All average Oxygen values are expressed as a percent

Generated: *17-Dec-98*

APPENDIX E
pH SUMMARY RECORDS

TABLE OF CONTENTS

DESCRIPTION **PAGE**

Windrow Daily pH Summary Data . . . . . 1 page

Average Daily Windrow PH Summary Report

Windrow Number	*Construction Date*	*Date Monitored*	*Age (Days)*	*PRE-Turn (STD Units)*	*POST-Turn (STD Units)*
N30%	4/27/98	4/27/98	0		8.30
		5/6/98	9	8.03	
		5/13/98	16	8.47	
		5/21/98	24		8.53
		5/27/98	30		8.58
		6/5/98	39	8.53	
		6/9/98	43		8.43

All average PH values are expressed in standard units

Generated: *15-Dec-98*

APPENDIX F
LABORATORY ANALYTICAL DATA

TABLE OF CONTENTS

DESCRIPTION	PAGE
Average Windrow Explosive Summary Report	3 pages
Windrow Explosive Concentrations Summary Report	45 pages
Comparison of Average Windrow Explosive Values to Clean-up Goals	1 page

Average Windrow Explosive Summary Report

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*
N30%	135TNB	4/27/98	4/27/98	0	5417
		4/27/98	5/2/98	5	1250
		4/27/98	5/7/98	10	250
		4/27/98	5/17/98	20	250
		4/27/98	5/27/98	30	250
		4/27/98	6/6/98	40	250
		4/27/98	6/26/98	60	250
	13DNB	4/27/98	4/27/98	0	5417
		4/27/98	5/2/98	5	1250
		4/27/98	5/7/98	10	250
		4/27/98	5/17/98	20	250
		4/27/98	5/27/98	30	250
		4/27/98	6/6/98	40	250
		4/27/98	6/26/98	60	250
	246TNT	4/27/98	4/27/98	0	23243
		4/27/98	5/2/98	5	2558
		4/27/98	5/7/98	10	4138
		4/27/98	5/17/98	20	335
		4/27/98	5/27/98	30	339
		4/27/98	6/6/98	40	1641
		4/27/98	6/26/98	60	1452
	24DNT	4/27/98	4/27/98	0	5417
		4/27/98	5/2/98	5	1250
		4/27/98	5/7/98	10	250
		4/27/98	5/17/98	20	250
		4/27/98	5/27/98	30	250
		4/27/98	6/6/98	40	250
		4/27/98	6/26/98	60	250
	26DNT	4/27/98	4/27/98	0	5633
		4/27/98	5/2/98	5	1300
		4/27/98	5/7/98	10	260
		4/27/98	5/17/98	20	260
		4/27/98	5/27/98	30	260
		4/27/98	6/6/98	40	260
		4/27/98	6/26/98	60	260
	2A46DT	4/27/98	4/27/98	0	5055

Windrow	Compound	Construction Date	Date Monitored	Age (Days)	Avg. Conc. (UG/KG)
N30%	2A46DT	4/27/98	5/2/98	5	1250
		4/27/98	5/7/98	10	250
		4/27/98	5/17/98	20	250
		4/27/98	5/27/98	30	250
		4/27/98	6/6/98	40	250
		4/27/98	6/26/98	60	250
	2NT	4/27/98	4/27/98	0	5417
		4/27/98	5/2/98	5	1250
		4/27/98	5/7/98	10	250
		4/27/98	5/17/98	20	250
		4/27/98	5/27/98	30	250
		4/27/98	6/6/98	40	250
		4/27/98	6/26/98	60	250
	3NT	4/27/98	4/27/98	0	5417
		4/27/98	5/2/98	5	1250
		4/27/98	5/7/98	10	250
		4/27/98	5/17/98	20	250
		4/27/98	5/27/98	30	250
		4/27/98	6/6/98	40	250
		4/27/98	6/26/98	60	250
	4A26DT	4/27/98	4/27/98	0	4311
		4/27/98	5/2/98	5	1265
		4/27/98	5/7/98	10	250
		4/27/98	5/17/98	20	250
		4/27/98	5/27/98	30	250
		4/27/98	6/6/98	40	250
		4/27/98	6/26/98	60	250
	4NT	4/27/98	4/27/98	0	5417
		4/27/98	5/2/98	5	1250
		4/27/98	5/7/98	10	250
		4/27/98	5/17/98	20	250
		4/27/98	5/27/98	30	250
		4/27/98	6/6/98	40	250
		4/27/98	6/26/98	60	250
	HMX	4/27/98	4/27/98	0	36023
		4/27/98	5/2/98	5	21475
		4/27/98	5/7/98	10	2000
		4/27/98	5/17/98	20	2200
		4/27/98	5/27/98	30	2200

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*
N30%	HMX	4/27/98	6/6/98	40	2453
		4/27/98	6/26/98	60	2590
	NB	4/27/98	4/27/98	0	5633
		4/27/98	5/2/98	5	1300
		4/27/98	5/7/98	10	257
		4/27/98	5/17/98	20	260
		4/27/98	5/27/98	30	260
		4/27/98	6/6/98	40	260
		4/27/98	6/26/98	60	260
	PETN	4/27/98	4/27/98	0	5417
		4/27/98	5/2/98	5	1250
		4/27/98	5/7/98	10	281
		4/27/98	5/17/98	20	250
		4/27/98	5/27/98	30	250
		4/27/98	6/6/98	40	250
		4/27/98	6/26/98	60	250
	RDX	4/27/98	4/27/98	0	263058
		4/27/98	5/2/98	5	58783
		4/27/98	5/7/98	10	11258
		4/27/98	5/17/98	20	1977
		4/27/98	5/27/98	30	1036
		4/27/98	6/6/98	40	4066
		4/27/98	6/26/98	60	7773
	TETRYL	4/27/98	4/27/98	0	14042
		4/27/98	5/2/98	5	3250
		4/27/98	5/7/98	10	650
		4/27/98	5/17/98	20	650
		4/27/98	5/27/98	30	650
		4/27/98	6/6/98	40	650
		4/27/98	6/26/98	60	650

Windrow Explosive Concentrations Summary Report

Windrow Number N30%

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
135TNB	4/27/98	4/27/98	0	A	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			A	4583
135TNB	4/27/98	4/27/98	0	B	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			B	6250
135TNB	4/27/98	4/27/98	0	C	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			C	4583
135TNB	4/27/98	4/27/98	0	D	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			D	6250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	5417
					Standard Deviation		1946
135TNB	4/27/98	5/2/98	5	A	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			A	1250
135TNB	4/27/98	5/2/98	5	B	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			B	1250
135TNB	4/27/98	5/2/98	5	C	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			C	1250
135TNB	4/27/98	5/2/98	5	D	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			D	1250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1250
					Standard Deviation		0
135TNB	4/27/98	5/7/98	10	A	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			A	250
135TNB	4/27/98	5/7/98	10	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			B	250
135TNB	4/27/98	5/7/98	10	C	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			C	250

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
135TNB	4/27/98	5/7/98	10	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					10	250
					Standard Deviation		0
135TNB	4/27/98	5/17/98	20	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
135TNB	4/27/98	5/17/98	20	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
135TNB	4/27/98	5/17/98	20	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		C	250
135TNB	4/27/98	5/17/98	20	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					20	250
					Standard Deviation		0
135TNB	4/27/98	5/27/98	30	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
135TNB	4/27/98	5/27/98	30	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
135TNB	4/27/98	5/27/98	30	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		C	250
135TNB	4/27/98	5/27/98	30	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					30	250
					Standard Deviation		0
135TNB	4/27/98	6/6/98	40	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
135TNB	4/27/98	6/6/98	40	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
135TNB	4/27/98	6/6/98	40	C	1	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
135TNB	4/27/98	6/6/98	40	C	2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			C	250
135TNB	4/27/98	6/6/98	40	D	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					40	250
					Standard Deviation		0
135TNB	4/27/98	6/26/98	60	A	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			A	250
135TNB	4/27/98	6/26/98	60	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			B	250
135TNB	4/27/98	6/26/98	60	C	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			C	250
135TNB	4/27/98	6/26/98	60	D	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					60	250
					Standard Deviation		0

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
13DNB	4/27/98	4/27/98	0	A	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			A	4583
13DNB	4/27/98	4/27/98	0	B	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			B	6250
13DNB	4/27/98	4/27/98	0	C	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			C	4583
13DNB	4/27/98	4/27/98	0	D	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			D	6250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	5417
					Standard Deviation		1946
13DNB	4/27/98	5/2/98	5	A	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			A	1250
13DNB	4/27/98	5/2/98	5	B	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			B	1250
13DNB	4/27/98	5/2/98	5	C	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			C	1250
13DNB	4/27/98	5/2/98	5	D	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			D	1250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1250
					Standard Deviation		0
13DNB	4/27/98	5/7/98	10	A	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			A	250
13DNB	4/27/98	5/7/98	10	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			B	250
13DNB	4/27/98	5/7/98	10	C	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			C	250
13DNB	4/27/98	5/7/98	10	D	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				10		250
					Standard Deviation		0
13DNB	4/27/98	5/17/98	20	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
13DNB	4/27/98	5/17/98	20	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
13DNB	4/27/98	5/17/98	20	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
13DNB	4/27/98	5/17/98	20	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				20		250
					Standard Deviation		0
13DNB	4/27/98	5/27/98	30	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
13DNB	4/27/98	5/27/98	30	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
13DNB	4/27/98	5/27/98	30	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
13DNB	4/27/98	5/27/98	30	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				30		250
					Standard Deviation		0
13DNB	4/27/98	6/6/98	40	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
13DNB	4/27/98	6/6/98	40	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
13DNB	4/27/98	6/6/98	40	C	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	C		250
13DNB	4/27/98	6/6/98	40	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				40		250
					Standard Deviation		0
13DNB	4/27/98	6/26/98	60	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
13DNB	4/27/98	6/26/98	60	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
13DNB	4/27/98	6/26/98	60	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
13DNB	4/27/98	6/26/98	60	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				60		250
					Standard Deviation		0

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
246TNT	4/27/98	4/27/98	0	A	1	31300	
					2	3680	
					3	1300	
			Average Concentration for Cross Section			A	12093
246TNT	4/27/98	4/27/98	0	B	1	32700	
					2	53000	
					3	4650	
			Average Concentration for Cross Section			B	30117
246TNT	4/27/98	4/27/98	0	C	1	57200	
					2	5180	
					3	11300	
			Average Concentration for Cross Section			C	24560
246TNT	4/27/98	4/27/98	0	D	1	27600	
					2	20100	
					3	30900	
			Average Concentration for Cross Section			D	26200
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	23243
					Standard Deviation		18972
246TNT	4/27/98	5/2/98	5	A	1	733	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			A	1078
246TNT	4/27/98	5/2/98	5	B	1	256	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			B	919
246TNT	4/27/98	5/2/98	5	C	1	628	
					2	19000	
					3	LT 1250	
			Average Concentration for Cross Section			C	6959
246TNT	4/27/98	5/2/98	5	D	1	LT 1250	
					2	1330	
					3	LT 1250	
			Average Concentration for Cross Section			D	1277
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	2558
					Standard Deviation		5189
246TNT	4/27/98	5/7/98	10	A	1	250	
					2	2500	
					3	397	
			Average Concentration for Cross Section			A	1049
246TNT	4/27/98	5/7/98	10	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			B	250
246TNT	4/27/98	5/7/98	10	C	1	LT 250	
					2	LT 250	
					3	LT 259	
			Average Concentration for Cross Section			C	253
246TNT	4/27/98	5/7/98	10	D	1	44500	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section		D	15000
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					10	4138
					Standard Deviation		12727
246TNT	4/27/98	5/17/98	20	A	1	1030	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	510
246TNT	4/27/98	5/17/98	20	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
246TNT	4/27/98	5/17/98	20	C	1	246	
					2	292	
					3	448	
				Average Concentration for Cross Section		C	329
246TNT	4/27/98	5/17/98	20	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					20	335
					Standard Deviation		226
246TNT	4/27/98	5/27/98	30	A	1	268	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	256
246TNT	4/27/98	5/27/98	30	B	1	LT 250	
					2	287	
					3	948	
				Average Concentration for Cross Section		B	495
246TNT	4/27/98	5/27/98	30	C	1	344	
					2	LT 250	
					3	274	
				Average Concentration for Cross Section		C	289
246TNT	4/27/98	5/27/98	30	D	1	273	
					2	414	
					3	259	
				Average Concentration for Cross Section		D	315
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					30	339
					Standard Deviation		198
246TNT	4/27/98	6/6/98	40	A	1	164	
					2	392	
					3	836	
				Average Concentration for Cross Section		A	464
246TNT	4/27/98	6/6/98	40	B	1	LT 250	
					2	271	
					3	LT 250	
				Average Concentration for Cross Section		B	257
246TNT	4/27/98	6/6/98	40	C	1	219	
					2	16200	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
			Average Concentration for Cross Section		C		5556
246TNT	4/27/98	6/6/98	40	D	1	156	
					2	397	
					3	302	
			Average Concentration for Cross Section		D		285
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				40		1641
					Standard Deviation		4589
246TNT	4/27/98	6/26/98	60	A	1	695	
					2	384	
					3	148	
			Average Concentration for Cross Section		A		409
246TNT	4/27/98	6/26/98	60	B	1	213	
					2	144	
					3	359	
			Average Concentration for Cross Section		B		239
246TNT	4/27/98	6/26/98	60	C	1	380	
					2	102	
					3	479	
			Average Concentration for Cross Section		C		320
246TNT	4/27/98	6/26/98	60	D	1	191	
					2	223	
					3	14100	
			Average Concentration for Cross Section		D		4838
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				60		1452
					Standard Deviation		3987

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
24DNT	4/27/98	4/27/98	0	A	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			A	4583
24DNT	4/27/98	4/27/98	0	B	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			B	6250
24DNT	4/27/98	4/27/98	0	C	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			C	4583
24DNT	4/27/98	4/27/98	0	D	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			D	6250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	5417
					Standard Deviation		1946
24DNT	4/27/98	5/2/98	5	A	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			A	1250
24DNT	4/27/98	5/2/98	5	B	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			B	1250
24DNT	4/27/98	5/2/98	5	C	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			C	1250
24DNT	4/27/98	5/2/98	5	D	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			D	1250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1250
					Standard Deviation		0
24DNT	4/27/98	5/7/98	10	A	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			A	250
24DNT	4/27/98	5/7/98	10	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			B	250
24DNT	4/27/98	5/7/98	10	C	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			C	250
24DNT	4/27/98	5/7/98	10	D	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				10		250
					Standard Deviation		0
24DNT	4/27/98	5/17/98	20	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
24DNT	4/27/98	5/17/98	20	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
24DNT	4/27/98	5/17/98	20	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
24DNT	4/27/98	5/17/98	20	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				20		250
					Standard Deviation		0
24DNT	4/27/98	5/27/98	30	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
24DNT	4/27/98	5/27/98	30	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
24DNT	4/27/98	5/27/98	30	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
24DNT	4/27/98	5/27/98	30	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				30		250
					Standard Deviation		0
24DNT	4/27/98	6/6/98	40	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
24DNT	4/27/98	6/6/98	40	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
24DNT	4/27/98	6/6/98	40	C	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	C		250
24DNT	4/27/98	6/6/98	40	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				40		250
					Standard Deviation		0
24DNT	4/27/98	6/26/98	60	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
24DNT	4/27/98	6/26/98	60	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
24DNT	4/27/98	6/26/98	60	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
24DNT	4/27/98	6/26/98	60	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				60		250
					Standard Deviation		0

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
26DNT	4/27/98	4/27/98	0	A	1	LT 6500	
					2	LT 6500	
					3	LT 1300	
			Average Concentration for Cross Section			A	4767
26DNT	4/27/98	4/27/98	0	B	1	LT 6500	
					2	LT 6500	
					3	LT 6500	
			Average Concentration for Cross Section			B	6500
26DNT	4/27/98	4/27/98	0	C	1	LT 6500	
					2	LT 6500	
					3	LT 1300	
			Average Concentration for Cross Section			C	4767
26DNT	4/27/98	4/27/98	0	D	1	LT 6500	
					2	LT 6500	
					3	LT 6500	
			Average Concentration for Cross Section			D	6500
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	5633
					Standard Deviation		2024
26DNT	4/27/98	5/2/98	5	A	1	LT 1300	
					2	LT 1300	
					3	LT 1300	
			Average Concentration for Cross Section			A	1300
26DNT	4/27/98	5/2/98	5	B	1	LT 1300	
					2	LT 1300	
					3	LT 1300	
			Average Concentration for Cross Section			B	1300
26DNT	4/27/98	5/2/98	5	C	1	LT 1300	
					2	LT 1300	
					3	LT 1300	
			Average Concentration for Cross Section			C	1300
26DNT	4/27/98	5/2/98	5	D	1	LT 1300	
					2	LT 1300	
					3	LT 1300	
			Average Concentration for Cross Section			D	1300
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1300
					Standard Deviation		0
26DNT	4/27/98	5/7/98	10	A	1	LT 260	
					2	LT 260	
					3	LT 260	
			Average Concentration for Cross Section			A	260
26DNT	4/27/98	5/7/98	10	B	1	LT 260	
					2	LT 260	
					3	LT 260	
			Average Concentration for Cross Section			B	260
26DNT	4/27/98	5/7/98	10	C	1	LT 260	
					2	LT 260	
					3	LT 260	
			Average Concentration for Cross Section			C	260
26DNT	4/27/98	5/7/98	10	D	1	LT 260	
					2	LT 260	
					3	LT 260	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	D		260
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				10		260
					Standard Deviation		0
26DNT	4/27/98	5/17/98	20	A	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	A		260
26DNT	4/27/98	5/17/98	20	B	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	B		260
26DNT	4/27/98	5/17/98	20	C	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	C		260
26DNT	4/27/98	5/17/98	20	D	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	D		260
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				20		260
					Standard Deviation		0
26DNT	4/27/98	5/27/98	30	A	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	A		260
26DNT	4/27/98	5/27/98	30	B	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	B		260
26DNT	4/27/98	5/27/98	30	C	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	C		260
26DNT	4/27/98	5/27/98	30	D	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	D		260
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				30		260
					Standard Deviation		0
26DNT	4/27/98	6/6/98	40	A	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	A		260
26DNT	4/27/98	6/6/98	40	B	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	B		260
26DNT	4/27/98	6/6/98	40	C	1	LT 260	
					2	LT 260	
					3	LT 260	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section		C	260
26DNT	4/27/98	6/6/98	40	D	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section		D	260
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					40	260
					Standard Deviation		0
26DNT	4/27/98	6/26/98	60	A	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section		A	260
26DNT	4/27/98	6/26/98	60	B	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section		B	260
26DNT	4/27/98	6/26/98	60	C	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section		C	260
26DNT	4/27/98	6/26/98	60	D	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section		D	260
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					60	260
					Standard Deviation		0

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
2A46DT	4/27/98	4/27/98	0	A	1	1910	
					2	LT 6250	
					3	LT 1250	
				Average Concentration for Cross Section		A	3137
2A46DT	4/27/98	4/27/98	0	B	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
				Average Concentration for Cross Section		B	6250
2A46DT	4/27/98	4/27/98	0	C	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
				Average Concentration for Cross Section		C	4583
2A46DT	4/27/98	4/27/98	0	D	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
				Average Concentration for Cross Section		D	6250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	5055
					Standard Deviation		2168
2A46DT	4/27/98	5/2/98	5	A	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
				Average Concentration for Cross Section		A	1250
2A46DT	4/27/98	5/2/98	5	B	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
				Average Concentration for Cross Section		B	1250
2A46DT	4/27/98	5/2/98	5	C	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
				Average Concentration for Cross Section		C	1250
2A46DT	4/27/98	5/2/98	5	D	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
				Average Concentration for Cross Section		D	1250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1250
					Standard Deviation		0
2A46DT	4/27/98	5/7/98	10	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
2A46DT	4/27/98	5/7/98	10	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
2A46DT	4/27/98	5/7/98	10	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		C	250
2A46DT	4/27/98	5/7/98	10	D	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				10		250
					Standard Deviation		0
2A46DT	4/27/98	5/17/98	20	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
2A46DT	4/27/98	5/17/98	20	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
2A46DT	4/27/98	5/17/98	20	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
2A46DT	4/27/98	5/17/98	20	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				20		250
					Standard Deviation		0
2A46DT	4/27/98	5/27/98	30	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
2A46DT	4/27/98	5/27/98	30	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
2A46DT	4/27/98	5/27/98	30	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
2A46DT	4/27/98	5/27/98	30	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				30		250
					Standard Deviation		0
2A46DT	4/27/98	6/6/98	40	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
2A46DT	4/27/98	6/6/98	40	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
2A46DT	4/27/98	6/6/98	40	C	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section		C	250
2A46DT	4/27/98	6/6/98	40	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					40	250
					Standard Deviation		0
2A46DT	4/27/98	6/26/98	60	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
2A46DT	4/27/98	6/26/98	60	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
2A46DT	4/27/98	6/26/98	60	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		C	250
2A46DT	4/27/98	6/26/98	60	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					60	250
					Standard Deviation		0

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
2NT	4/27/98	4/27/98	0	A	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			A	4583
2NT	4/27/98	4/27/98	0	B	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			B	6250
2NT	4/27/98	4/27/98	0	C	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			C	4583
2NT	4/27/98	4/27/98	0	D	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			D	6250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	5417
					Standard Deviation		1946
2NT	4/27/98	5/2/98	5	A	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			A	1250
2NT	4/27/98	5/2/98	5	B	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			B	1250
2NT	4/27/98	5/2/98	5	C	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			C	1250
2NT	4/27/98	5/2/98	5	D	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			D	1250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1250
					Standard Deviation		0
2NT	4/27/98	5/7/98	10	A	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			A	250
2NT	4/27/98	5/7/98	10	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			B	250
2NT	4/27/98	5/7/98	10	C	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			C	250
2NT	4/27/98	5/7/98	10	D	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					10	250
					Standard Deviation		0
2NT	4/27/98	5/17/98	20	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
2NT	4/27/98	5/17/98	20	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
2NT	4/27/98	5/17/98	20	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		C	250
2NT	4/27/98	5/17/98	20	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					20	250
					Standard Deviation		0
2NT	4/27/98	5/27/98	30	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
2NT	4/27/98	5/27/98	30	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
2NT	4/27/98	5/27/98	30	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		C	250
2NT	4/27/98	5/27/98	30	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					30	250
					Standard Deviation		0
2NT	4/27/98	6/6/98	40	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
2NT	4/27/98	6/6/98	40	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
2NT	4/27/98	6/6/98	40	C	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
			Average Concentration for Cross Section		C		250
2NT	4/27/98	6/6/98	40	D	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section		D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				40		250
					Standard Deviation		0
2NT	4/27/98	6/26/98	60	A	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section		A		250
2NT	4/27/98	6/26/98	60	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section		B		250
2NT	4/27/98	6/26/98	60	C	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section		C		250
2NT	4/27/98	6/26/98	60	D	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section		D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				60		250
					Standard Deviation		0

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
3NT	4/27/98	4/27/98	0	A	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			A	4583
3NT	4/27/98	4/27/98	0	B	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			B	6250
3NT	4/27/98	4/27/98	0	C	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			C	4583
3NT	4/27/98	4/27/98	0	D	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			D	6250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	5417
					Standard Deviation		1946
3NT	4/27/98	5/2/98	5	A	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			A	1250
3NT	4/27/98	5/2/98	5	B	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			B	1250
3NT	4/27/98	5/2/98	5	C	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			C	1250
3NT	4/27/98	5/2/98	5	D	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			D	1250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1250
					Standard Deviation		0
3NT	4/27/98	5/7/98	10	A	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			A	250
3NT	4/27/98	5/7/98	10	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			B	250
3NT	4/27/98	5/7/98	10	C	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			C	250
3NT	4/27/98	5/7/98	10	D	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration
				Average Concentration for Cross Section	D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				10	250
					Standard Deviation	0
3NT	4/27/98	5/17/98	20	A	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	A	250
3NT	4/27/98	5/17/98	20	B	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	B	250
3NT	4/27/98	5/17/98	20	C	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	C	250
3NT	4/27/98	5/17/98	20	D	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				20	250
					Standard Deviation	0
3NT	4/27/98	5/27/98	30	A	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	A	250
3NT	4/27/98	5/27/98	30	B	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	B	250
3NT	4/27/98	5/27/98	30	C	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	C	250
3NT	4/27/98	5/27/98	30	D	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				30	250
					Standard Deviation	0
3NT	4/27/98	6/6/98	40	A	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	A	250
3NT	4/27/98	6/6/98	40	B	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	B	250
3NT	4/27/98	6/6/98	40	C	1	LT 250
					2	LT 250
					3	LT 250

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration
				Average Concentration for Cross Section	C	250
3NT	4/27/98	6/6/98	40	D	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				40	250
					Standard Deviation	0
3NT	4/27/98	6/26/98	60	A	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	A	250
3NT	4/27/98	6/26/98	60	B	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	B	250
3NT	4/27/98	6/26/98	60	C	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	C	250
3NT	4/27/98	6/26/98	60	D	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				60	250
					Standard Deviation	0

Compound Construction SampleDate DaysOld CrossSection Location Concentration

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
4A26DT	4/27/98	4/27/98	0	A	1	2170	
					2	LT 6250	
					3	1640	
			Average Concentration for Cross Section			A	3353
4A26DT	4/27/98	4/27/98	0	B	1	3860	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			B	5453
4A26DT	4/27/98	4/27/98	0	C	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			C	4583
4A26DT	4/27/98	4/27/98	0	D	1	3550	
					2	1760	
					3	LT 6250	
			Average Concentration for Cross Section			D	3853
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	4311
					Standard Deviation		2152
4A26DT	4/27/98	5/2/98	5	A	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			A	1250
4A26DT	4/27/98	5/2/98	5	B	1	LT 1250	
					2	1270	
					3	416	
			Average Concentration for Cross Section			B	979
4A26DT	4/27/98	5/2/98	5	C	1	LT 1250	
					2	LT 1250	
					3	2240	
			Average Concentration for Cross Section			C	1580
4A26DT	4/27/98	5/2/98	5	D	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			D	1250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1265
					Standard Deviation		390
4A26DT	4/27/98	5/7/98	10	A	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			A	250
4A26DT	4/27/98	5/7/98	10	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			B	250
4A26DT	4/27/98	5/7/98	10	C	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			C	250
4A26DT	4/27/98	5/7/98	10	D	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				10		250
					Standard Deviation		0
4A26DT	4/27/98	5/17/98	20	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
4A26DT	4/27/98	5/17/98	20	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
4A26DT	4/27/98	5/17/98	20	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
4A26DT	4/27/98	5/17/98	20	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				20		250
					Standard Deviation		0
4A26DT	4/27/98	5/27/98	30	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
4A26DT	4/27/98	5/27/98	30	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
4A26DT	4/27/98	5/27/98	30	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
4A26DT	4/27/98	5/27/98	30	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				30		250
					Standard Deviation		0
4A26DT	4/27/98	6/6/98	40	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
4A26DT	4/27/98	6/6/98	40	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
4A26DT	4/27/98	6/6/98	40	C	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	C		250
4A26DT	4/27/98	6/6/98	40	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				40		250
					Standard Deviation		0
4A26DT	4/27/98	6/26/98	60	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
4A26DT	4/27/98	6/26/98	60	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
4A26DT	4/27/98	6/26/98	60	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
4A26DT	4/27/98	6/26/98	60	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				60		250
					Standard Deviation		0

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
4NT	4/27/98	4/27/98	0	A	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			A	4583
4NT	4/27/98	4/27/98	0	B	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			B	6250
4NT	4/27/98	4/27/98	0	C	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			C	4583
4NT	4/27/98	4/27/98	0	D	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			D	6250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	5417
					Standard Deviation		1946
4NT	4/27/98	5/2/98	5	A	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			A	1250
4NT	4/27/98	5/2/98	5	B	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			B	1250
4NT	4/27/98	5/2/98	5	C	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			C	1250
4NT	4/27/98	5/2/98	5	D	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			D	1250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1250
					Standard Deviation		0
4NT	4/27/98	5/7/98	10	A	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			A	250
4NT	4/27/98	5/7/98	10	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			B	250
4NT	4/27/98	5/7/98	10	C	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			C	250
4NT	4/27/98	5/7/98	10	D	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration
				Average Concentration for Cross Section	D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				10	250
					Standard Deviation	0
4NT	4/27/98	5/17/98	20	A	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	A	250
4NT	4/27/98	5/17/98	20	B	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	B	250
4NT	4/27/98	5/17/98	20	C	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	C	250
4NT	4/27/98	5/17/98	20	D	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				20	250
					Standard Deviation	0
4NT	4/27/98	5/27/98	30	A	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	A	250
4NT	4/27/98	5/27/98	30	B	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	B	250
4NT	4/27/98	5/27/98	30	C	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	C	250
4NT	4/27/98	5/27/98	30	D	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				30	250
					Standard Deviation	0
4NT	4/27/98	6/6/98	40	A	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	A	250
4NT	4/27/98	6/6/98	40	B	1	LT 250
					2	LT 250
					3	LT 250
				Average Concentration for Cross Section	B	250
4NT	4/27/98	6/6/98	40	C	1	LT 250
					2	LT 250
					3	LT 250

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	C		250
4NT	4/27/98	6/6/98	40	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				40		250
					Standard Deviation		0
4NT	4/27/98	6/26/98	60	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	A		250
4NT	4/27/98	6/26/98	60	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	B		250
4NT	4/27/98	6/26/98	60	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	C		250
4NT	4/27/98	6/26/98	60	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section	D		250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				60		250
					Standard Deviation		0

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
HMX	4/27/98	4/27/98	0	A	1	42600	
					2	17400	
					3	6980	
				Average Concentration for Cross Section		A	22327
HMX	4/27/98	4/27/98	0	B	1	56500	
					2	56100	
					3	20900	
				Average Concentration for Cross Section		B	44500
HMX	4/27/98	4/27/98	0	C	1	66400	
					2	22800	
					3	16100	
				Average Concentration for Cross Section		C	35100
HMX	4/27/98	4/27/98	0	D	1	51200	
					2	37300	
					3	38000	
				Average Concentration for Cross Section		D	42167
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	36023
					Standard Deviation		19105
HMX	4/27/98	5/2/98	5	A	1	19600	
					2	21500	
					3	32500	
				Average Concentration for Cross Section		A	24533
HMX	4/27/98	5/2/98	5	B	1	13200	
					2	30300	
					3	23500	
				Average Concentration for Cross Section		B	22333
HMX	4/27/98	5/2/98	5	C	1	14100	
					2	32300	
					3	24700	
				Average Concentration for Cross Section		C	23700
HMX	4/27/98	5/2/98	5	D	1	11400	
					2	15700	
					3	18900	
				Average Concentration for Cross Section		D	15333
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	21475
					Standard Deviation		7379
HMX	4/27/98	5/7/98	10	A	2	2870	
					3	3240	
				Average Concentration for Cross Section		A	3055
HMX	4/27/98	5/7/98	10	B	1	530	
					2	3120	
					3	871	
				Average Concentration for Cross Section		B	1507
HMX	4/27/98	5/7/98	10	C	1	660	
					2	LT 2200	
					3	LT 2200	
				Average Concentration for Cross Section		C	1687
HMX	4/27/98	5/7/98	10	D	1	LT 2200	
					2	LT 2200	
					3	1910	
				Average Concentration for Cross Section		D	2103

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				10		2000
					Standard Deviation		946
HMX	4/27/98	5/17/98	20	A	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section		A		2200
HMX	4/27/98	5/17/98	20	B	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section		B		2200
HMX	4/27/98	5/17/98	20	C	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section		C		2200
HMX	4/27/98	5/17/98	20	D	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section		D		2200
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				20		2200
					Standard Deviation		0
HMX	4/27/98	5/27/98	30	A	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section		A		2200
HMX	4/27/98	5/27/98	30	B	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section		B		2200
HMX	4/27/98	5/27/98	30	C	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section		C		2200
HMX	4/27/98	5/27/98	30	D	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section		D		2200
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				30		2200
					Standard Deviation		0
HMX	4/27/98	6/6/98	40	A	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section		A		2200
HMX	4/27/98	6/6/98	40	B	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section		B		2200
HMX	4/27/98	6/6/98	40	C	1	LT 2200	
					2	5240	
					3	LT 2200	
			Average Concentration for Cross Section		C		3213
HMX	4/27/98	6/6/98	40	D	1	LT 2200	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
HMX	4/27/98	6/6/98	40	D	2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section			D	2200
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					40	2453
					Standard Deviation		878
HMX	4/27/98	6/26/98	60	A	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section			A	2200
HMX	4/27/98	6/26/98	60	B	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section			B	2200
HMX	4/27/98	6/26/98	60	C	1	LT 2200	
					2	LT 2200	
					3	LT 2200	
			Average Concentration for Cross Section			C	2200
HMX	4/27/98	6/26/98	60	D	1	LT 2200	
					2	LT 2200	
					3	6880	
			Average Concentration for Cross Section			D	3760
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					60	2590
					Standard Deviation		1351

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
NB	4/27/98	4/27/98	0	A	1	LT 6500	
					2	LT 6500	
					3	LT 1300	
			Average Concentration for Cross Section			A	4767
NB	4/27/98	4/27/98	0	B	1	LT 6500	
					2	LT 6500	
					3	LT 6500	
			Average Concentration for Cross Section			B	6500
NB	4/27/98	4/27/98	0	C	1	LT 6500	
					2	LT 6500	
					3	LT 1300	
			Average Concentration for Cross Section			C	4767
NB	4/27/98	4/27/98	0	D	1	LT 6500	
					2	LT 6500	
					3	LT 6500	
			Average Concentration for Cross Section			D	6500
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	5633
					Standard Deviation		2024
NB	4/27/98	5/2/98	5	A	1	LT 1300	
					2	LT 1300	
					3	LT 1300	
			Average Concentration for Cross Section			A	1300
NB	4/27/98	5/2/98	5	B	1	LT 1300	
					2	LT 1300	
					3	LT 1300	
			Average Concentration for Cross Section			B	1300
NB	4/27/98	5/2/98	5	C	1	LT 1300	
					2	LT 1300	
					3	LT 1300	
			Average Concentration for Cross Section			C	1300
NB	4/27/98	5/2/98	5	D	1	LT 1300	
					2	LT 1300	
					3	LT 1300	
			Average Concentration for Cross Section			D	1300
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1300
					Standard Deviation		0
NB	4/27/98	5/7/98	10	A	1	LT 250	
					2	LT 250	
					3	LT 260	
			Average Concentration for Cross Section			A	253
NB	4/27/98	5/7/98	10	B	1	LT 260	
					2	LT 260	
					3	LT 260	
			Average Concentration for Cross Section			B	260
NB	4/27/98	5/7/98	10	C	1	LT 260	
					2	LT 260	
					3	LT 260	
			Average Concentration for Cross Section			C	260
NB	4/27/98	5/7/98	10	D	1	LT 250	
					2	LT 250	
					3	LT 260	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	D		253
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				10		257
					Standard Deviation		5
NB	4/27/98	5/17/98	20	A	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	A		260
NB	4/27/98	5/17/98	20	B	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	B		260
NB	4/27/98	5/17/98	20	C	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	C		260
NB	4/27/98	5/17/98	20	D	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	D		260
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				20		260
					Standard Deviation		0
NB	4/27/98	5/27/98	30	A	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	A		260
NB	4/27/98	5/27/98	30	B	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	B		260
NB	4/27/98	5/27/98	30	C	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	C		260
NB	4/27/98	5/27/98	30	D	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	D		260
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				30		260
					Standard Deviation		0
NB	4/27/98	6/6/98	40	A	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	A		260
NB	4/27/98	6/6/98	40	B	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	B		260
NB	4/27/98	6/6/98	40	C	1	LT 260	
					2	LT 260	
					3	LT 260	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	C		260
NB	4/27/98	6/6/98	40	D	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	D		260
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				40		260
					Standard Deviation		0
NB	4/27/98	6/26/98	60	A	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	A		260
NB	4/27/98	6/26/98	60	B	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	B		260
NB	4/27/98	6/26/98	60	C	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	C		260
NB	4/27/98	6/26/98	60	D	1	LT 260	
					2	LT 260	
					3	LT 260	
				Average Concentration for Cross Section	D		260
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				60		260
					Standard Deviation		0

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
PETN	4/27/98	4/27/98	0	A	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			A	4583
PETN	4/27/98	4/27/98	0	B	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			B	6250
PETN	4/27/98	4/27/98	0	C	1	LT 6250	
					2	LT 6250	
					3	LT 1250	
			Average Concentration for Cross Section			C	4583
PETN	4/27/98	4/27/98	0	D	1	LT 6250	
					2	LT 6250	
					3	LT 6250	
			Average Concentration for Cross Section			D	6250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	5417
					Standard Deviation		1946
PETN	4/27/98	5/2/98	5	A	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			A	1250
PETN	4/27/98	5/2/98	5	B	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			B	1250
PETN	4/27/98	5/2/98	5	C	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			C	1250
PETN	4/27/98	5/2/98	5	D	1	LT 1250	
					2	LT 1250	
					3	LT 1250	
			Average Concentration for Cross Section			D	1250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	1250
					Standard Deviation		0
PETN	4/27/98	5/7/98	10	A	1	LT 625	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			A	375
PETN	4/27/98	5/7/98	10	B	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			B	250
PETN	4/27/98	5/7/98	10	C	1	LT 250	
					2	LT 250	
					3	LT 250	
			Average Concentration for Cross Section			C	250
PETN	4/27/98	5/7/98	10	D	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					10	281
					Standard Deviation		108
PETN	4/27/98	5/17/98	20	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
PETN	4/27/98	5/17/98	20	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
PETN	4/27/98	5/17/98	20	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		C	250
PETN	4/27/98	5/17/98	20	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					20	250
					Standard Deviation		0
PETN	4/27/98	5/27/98	30	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
PETN	4/27/98	5/27/98	30	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
PETN	4/27/98	5/27/98	30	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		C	250
PETN	4/27/98	5/27/98	30	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					30	250
					Standard Deviation		0
PETN	4/27/98	6/6/98	40	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
PETN	4/27/98	6/6/98	40	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
PETN	4/27/98	6/6/98	40	C	1	LT 250	
					2	LT 250	
					3	LT 250	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section		C	250
PETN	4/27/98	6/6/98	40	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					40	250
					Standard Deviation		0
PETN	4/27/98	6/26/98	60	A	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		A	250
PETN	4/27/98	6/26/98	60	B	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		B	250
PETN	4/27/98	6/26/98	60	C	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		C	250
PETN	4/27/98	6/26/98	60	D	1	LT 250	
					2	LT 250	
					3	LT 250	
				Average Concentration for Cross Section		D	250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					60	250
					Standard Deviation		0

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
RDX	4/27/98	4/27/98	0	A	1	273000	
					2	118000	
					3	67700	
			Average Concentration for Cross Section			A	152900
RDX	4/27/98	4/27/98	0	B	1	400000	
					2	475000	
					3	129000	
			Average Concentration for Cross Section			B	334667
RDX	4/27/98	4/27/98	0	C	1	510000	
					2	150000	
					3	125000	
			Average Concentration for Cross Section			C	261667
RDX	4/27/98	4/27/98	0	D	1	357000	
					2	281000	
					3	271000	
			Average Concentration for Cross Section			D	303000
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	263058
					Standard Deviation		148625
RDX	4/27/98	5/2/98	5	A	1	36300	
					2	28700	
					3	119000	
			Average Concentration for Cross Section			A	61333
RDX	4/27/98	5/2/98	5	B	1	37400	
					2	91600	
					3	96700	
			Average Concentration for Cross Section			B	75233
RDX	4/27/98	5/2/98	5	C	1	18800	
					2	87200	
					3	78900	
			Average Concentration for Cross Section			C	61633
RDX	4/27/98	5/2/98	5	D	1	16600	
					2	40300	
					3	53900	
			Average Concentration for Cross Section			D	36933
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	58783
					Standard Deviation		34330
RDX	4/27/98	5/7/98	10	A	1	1340	
					2	2330	
					3	3700	
			Average Concentration for Cross Section			A	2457
RDX	4/27/98	5/7/98	10	B	1	710	
					2	4570	
					3	857	
			Average Concentration for Cross Section			B	2046
RDX	4/27/98	5/7/98	10	C	1	355	
					2	2570	
					3	2790	
			Average Concentration for Cross Section			C	1905
RDX	4/27/98	5/7/98	10	D	1	112000	
					2	2780	
					3	1090	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section		D	38623
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					10	11258
					Standard Deviation		31751
RDX	4/27/98	5/17/98	20	A	1	LT 1000	
					2	LT 1000	
					3	LT 1000	
				Average Concentration for Cross Section		A	1000
RDX	4/27/98	5/17/98	20	B	1	LT 1000	
					2	12500	
					3	1220	
				Average Concentration for Cross Section		B	4907
RDX	4/27/98	5/17/98	20	C	1	LT 1000	
					2	LT 1000	
					3	LT 1000	
				Average Concentration for Cross Section		C	1000
RDX	4/27/98	5/17/98	20	D	1	LT 1000	
					2	LT 1000	
					3	LT 1000	
				Average Concentration for Cross Section		D	1000
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					20	1977
					Standard Deviation		3315
RDX	4/27/98	5/27/98	30	A	1	LT 1000	
					2	LT 1000	
					3	LT 1000	
				Average Concentration for Cross Section		A	1000
RDX	4/27/98	5/27/98	30	B	1	LT 1000	
					2	LT 1000	
					3	1430	
				Average Concentration for Cross Section		B	1143
RDX	4/27/98	5/27/98	30	C	1	LT 1000	
					2	LT 1000	
					3	LT 1000	
				Average Concentration for Cross Section		C	1000
RDX	4/27/98	5/27/98	30	D	1	LT 1000	
					2	LT 1000	
					3	LT 1000	
				Average Concentration for Cross Section		D	1000
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					30	1036
					Standard Deviation		124
RDX	4/27/98	6/6/98	40	A	1	1420	
					2	LT 1000	
					3	LT 1000	
				Average Concentration for Cross Section		A	1140
RDX	4/27/98	6/6/98	40	B	1	LT 1000	
					2	772	
					3	LT 1000	
				Average Concentration for Cross Section		B	924
RDX	4/27/98	6/6/98	40	C	1	1480	
					2	36800	
					3	LT 1000	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section		C	13093
RDX	4/27/98	6/6/98	40	D	1	1680	
					2	636	
					3	LT 1000	
				Average Concentration for Cross Section		D	1105
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					40	4066
					Standard Deviation		10313
RDX	4/27/98	6/26/98	60	A	1	2290	
					2	7170	
					3	2230	
				Average Concentration for Cross Section		A	3897
RDX	4/27/98	6/26/98	60	B	1	5570	
					2	1660	
					3	4160	
				Average Concentration for Cross Section		B	3797
RDX	4/27/98	6/26/98	60	C	1	5650	
					2	5490	
					3	5530	
				Average Concentration for Cross Section		C	5557
RDX	4/27/98	6/26/98	60	D	1	2400	
					2	3320	
					3	47800	
				Average Concentration for Cross Section		D	17840
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					60	7773
					Standard Deviation		12728

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
TETRYL	4/27/98	4/27/98	0	A	1	LT 16200	
					2	LT 16200	
					3	LT 3250	
			Average Concentration for Cross Section			A	11883
TETRYL	4/27/98	4/27/98	0	B	1	LT 16200	
					2	LT 16200	
					3	LT 16200	
			Average Concentration for Cross Section			B	16200
TETRYL	4/27/98	4/27/98	0	C	1	LT 16200	
					2	LT 16200	
					3	LT 3250	
			Average Concentration for Cross Section			C	11883
TETRYL	4/27/98	4/27/98	0	D	1	LT 16200	
					2	LT 16200	
					3	LT 16200	
			Average Concentration for Cross Section			D	16200
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					0	14042
					Standard Deviation		5041
TETRYL	4/27/98	5/2/98	5	A	1	LT 3250	
					2	LT 3250	
					3	LT 3250	
			Average Concentration for Cross Section			A	3250
TETRYL	4/27/98	5/2/98	5	B	1	LT 3250	
					2	LT 3250	
					3	LT 3250	
			Average Concentration for Cross Section			B	3250
TETRYL	4/27/98	5/2/98	5	C	1	LT 3250	
					2	LT 3250	
					3	LT 3250	
			Average Concentration for Cross Section			C	3250
TETRYL	4/27/98	5/2/98	5	D	1	LT 3250	
					2	LT 3250	
					3	LT 3250	
			Average Concentration for Cross Section			D	3250
	AVERAGE CONCENTRATION FOR WINDROW ON DAY					5	3250
					Standard Deviation		0
TETRYL	4/27/98	5/7/98	10	A	1	LT 650	
					2	LT 650	
					3	LT 650	
			Average Concentration for Cross Section			A	650
TETRYL	4/27/98	5/7/98	10	B	1	LT 650	
					2	LT 650	
					3	LT 650	
			Average Concentration for Cross Section			B	650
TETRYL	4/27/98	5/7/98	10	C	1	LT 650	
					2	LT 650	
					3	LT 650	
			Average Concentration for Cross Section			C	650
TETRYL	4/27/98	5/7/98	10	D	1	LT 650	
					2	LT 650	
					3	LT 650	

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration
				Average Concentration for Cross Section	D	650
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				10	650
					Standard Deviation	0
TETRYL	4/27/98	5/17/98	20	A	1	LT 650
					2	LT 650
					3	LT 650
				Average Concentration for Cross Section	A	650
TETRYL	4/27/98	5/17/98	20	B	1	LT 650
					2	LT 650
					3	LT 650
				Average Concentration for Cross Section	B	650
TETRYL	4/27/98	5/17/98	20	C	1	LT 650
					2	LT 650
					3	LT 650
				Average Concentration for Cross Section	C	650
TETRYL	4/27/98	5/17/98	20	D	1	LT 650
					2	LT 650
					3	LT 650
				Average Concentration for Cross Section	D	650
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				20	650
					Standard Deviation	0
TETRYL	4/27/98	5/27/98	30	A	1	LT 650
					2	LT 650
					3	LT 650
				Average Concentration for Cross Section	A	650
TETRYL	4/27/98	5/27/98	30	B	1	LT 650
					2	LT 650
					3	LT 650
				Average Concentration for Cross Section	B	650
TETRYL	4/27/98	5/27/98	30	C	1	LT 650
					2	LT 650
					3	LT 650
				Average Concentration for Cross Section	C	650
TETRYL	4/27/98	5/27/98	30	D	1	LT 650
					2	LT 650
					3	LT 650
				Average Concentration for Cross Section	D	650
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				30	650
					Standard Deviation	0
TETRYL	4/27/98	6/6/98	40	A	1	LT 650
					2	LT 650
					3	LT 650
				Average Concentration for Cross Section	A	650
TETRYL	4/27/98	6/6/98	40	B	1	LT 650
					2	LT 650
					3	LT 650
				Average Concentration for Cross Section	B	650
TETRYL	4/27/98	6/6/98	40	C	1	LT 650
					2	LT 650
					3	LT 650

Compound	Construction Date	SampleDate	DaysOld	CrossSection	Location	Concentration	
				Average Concentration for Cross Section	C		650
TETRYL	4/27/98	6/6/98	40	D	1	LT 650	
					2	LT 650	
					3	LT 650	
				Average Concentration for Cross Section	D		650
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				40		650
					Standard Deviation		0
TETRYL	4/27/98	6/26/98	60	A	1	LT 650	
					2	LT 650	
					3	LT 650	
				Average Concentration for Cross Section	A		650
TETRYL	4/27/98	6/26/98	60	B	1	LT 650	
					2	LT 650	
					3	LT 650	
				Average Concentration for Cross Section	B		650
TETRYL	4/27/98	6/26/98	60	C	1	LT 650	
					2	LT 650	
					3	LT 650	
				Average Concentration for Cross Section	C		650
TETRYL	4/27/98	6/26/98	60	D	1	LT 650	
					2	LT 650	
					3	LT 650	
				Average Concentration for Cross Section	D		650
	AVERAGE CONCENTRATION FOR WINDROW ON DAY				60		650
					Standard Deviation		0

Comparison of Average Windrow Explosive Values to Clean-up Goals

	DAY 0	DAY 5	DAY 10	DAY 20	DAY 30	DAY 40	DAY 60	Residential Clean-Up Objectives	Industrial Clean-Up Objectives	Ecological Clean-Up Objectives
PETN	5.42	1.25	0.28	0.25	0.25	0.25	0.25	TBD	TBD	TBD
TNT	23.24	2.56	4.14	0.34	0.34	1.64	1.45	15	64	NL
RDX	263.06	58.78	11.26	1.98	1.04	4.07	7.77	4	17	NL
HMX	36.02	21.48	2.00	2.20	2.20	2.45	2.59	3300	34,000	NL
Tetryl	14.04	3.25	0.65	0.65	0.65	0.65	0.65	650	6800	NL
TNB	5.42	1.25	0.25	0.25	0.25	0.25	0.25	3.3	34	0.00946
DNB	5.42	1.25	0.25	0.25	0.25	0.25	0.25	6.5	68	0.00748
NB	5.63	1.30	0.26	0.26	0.26	0.26	0.26	18	94	0.0148
4A26DT	4.31	1.27	0.25	0.25	0.25	0.25	0.25	65	680	NL
2A46DT	5.06	1.25	0.25	0.25	0.25	0.25	0.25	130	1400	NL
24DNT	5.42	1.25	0.25	0.25	0.25	0.25	0.25	130	1400	0.033
26DNT	5.63	1.30	0.26	0.26	0.26	0.26	0.26	65	680	0.000029
2NT	5.42	1.25	0.25	0.25	0.25	0.25	0.25	650	6800	NL
3NT	5.42	1.25	0.25	0.25	0.25	0.25	0.25	650	6800	NL
4NT	5.42	1.25	0.25	0.25	0.25	0.25	0.25	650	6800	NL

Note: All units in MG/KG

APPENDIX G
EXPLOSIVE REDUCTION SUMMARY

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Average Windrow Explosive Summary Report

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	135TNB	4/27/98	4/27/98	0	5417	
N30%	135TNB	4/27/98	5/2/98	5	1250	
			135TNB	***Percent Reduction***		76
N30%	13DNB	4/27/98	4/27/98	0	5417	
N30%	13DNB	4/27/98	5/2/98	5	1250	
			13DNB	***Percent Reduction***		76
N30%	246TNT	4/27/98	4/27/98	0	23243	
N30%	246TNT	4/27/98	5/2/98	5	2558	
			246TNT	***Percent Reduction***		88
N30%	24DNT	4/27/98	4/27/98	0	5417	
N30%	24DNT	4/27/98	5/2/98	5	1250	
			24DNT	***Percent Reduction***		76
N30%	26DNT	4/27/98	4/27/98	0	5633	
N30%	26DNT	4/27/98	5/2/98	5	1300	
			26DNT	***Percent Reduction***		76
N30%	2A46DT	4/27/98	4/27/98	0	5055	
N30%	2A46DT	4/27/98	5/2/98	5	1250	
			2A46DT	***Percent Reduction***		75
N30%	2NT	4/27/98	4/27/98	0	5417	
N30%	2NT	4/27/98	5/2/98	5	1250	
			2NT	***Percent Reduction***		76
N30%	3NT	4/27/98	4/27/98	0	5417	
N30%	3NT	4/27/98	5/2/98	5	1250	
			3NT	***Percent Reduction***		76
N30%	4A26DT	4/27/98	4/27/98	0	4311	
N30%	4A26DT	4/27/98	5/2/98	5	1265	
			4A26DT	***Percent Reduction***		70
N30%	4NT	4/27/98	4/27/98	0	5417	
N30%	4NT	4/27/98	5/2/98	5	1250	
			4NT	***Percent Reduction***		76
N30%	HMX	4/27/98	4/27/98	0	36023	

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	HMX	4/27/98	5/2/98	5	21475	
			HMX	***Percent Reduction***		40
N30%	NB	4/27/98	4/27/98	0	5633	
N30%	NB	4/27/98	5/2/98	5	1300	
			NB	***Percent Reduction***		76
N30%	PETN	4/27/98	4/27/98	0	5417	
N30%	PETN	4/27/98	5/2/98	5	1250	
			PETN	***Percent Reduction***		76
N30%	RDX	4/27/98	4/27/98	0	263058	
N30%	RDX	4/27/98	5/2/98	5	58783	
			RDX	***Percent Reduction***		77
N30%	TETRYL	4/27/98	4/27/98	0	14042	
N30%	TETRYL	4/27/98	5/2/98	5	3250	
			TETRYL	***Percent Reduction***		76

Average Windrow Explosive Summary Report

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	135TNB	4/27/98	4/27/98	0	5417	
N30%	135TNB	4/27/98	5/7/98	10	250	
			135TNB	***Percent Reduction***		95
N30%	13DNB	4/27/98	4/27/98	0	5417	
N30%	13DNB	4/27/98	5/7/98	10	250	
			13DNB	***Percent Reduction***		95
N30%	246TNT	4/27/98	4/27/98	0	23243	
N30%	246TNT	4/27/98	5/7/98	10	4138	
			246TNT	***Percent Reduction***		82
N30%	24DNT	4/27/98	4/27/98	0	5417	
N30%	24DNT	4/27/98	5/7/98	10	250	
			24DNT	***Percent Reduction***		95
N30%	26DNT	4/27/98	4/27/98	0	5633	
N30%	26DNT	4/27/98	5/7/98	10	260	
			26DNT	***Percent Reduction***		95
N30%	2A46DT	4/27/98	4/27/98	0	5055	
N30%	2A46DT	4/27/98	5/7/98	10	250	
			2A46DT	***Percent Reduction***		95
N30%	2NT	4/27/98	4/27/98	0	5417	
N30%	2NT	4/27/98	5/7/98	10	250	
			2NT	***Percent Reduction***		95
N30%	3NT	4/27/98	4/27/98	0	5417	
N30%	3NT	4/27/98	5/7/98	10	250	
			3NT	***Percent Reduction***		95
N30%	4A26DT	4/27/98	4/27/98	0	4311	
N30%	4A26DT	4/27/98	5/7/98	10	250	
			4A26DT	***Percent Reduction***		94
N30%	4NT	4/27/98	4/27/98	0	5417	
N30%	4NT	4/27/98	5/7/98	10	250	
			4NT	***Percent Reduction***		95
N30%	HMX	4/27/98	4/27/98	0	36023	

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	HMX	4/27/98	5/7/98	10	2000	
			HMX	***Percent Reduction***		94
N30%	NB	4/27/98	4/27/98	0	5633	
N30%	NB	4/27/98	5/7/98	10	257	
			NB	***Percent Reduction***		95
N30%	PETN	4/27/98	4/27/98	0	5417	
N30%	PETN	4/27/98	5/7/98	10	281	
			PETN	***Percent Reduction***		94
N30%	RDX	4/27/98	4/27/98	0	263058	
N30%	RDX	4/27/98	5/7/98	10	11258	
			RDX	***Percent Reduction***		95
N30%	TETRYL	4/27/98	4/27/98	0	14042	
N30%	TETRYL	4/27/98	5/7/98	10	650	
			TETRYL	***Percent Reduction***		95

Average Windrow Explosive Summary Report

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	135TNB	4/27/98	4/27/98	0	5417	
N30%	135TNB	4/27/98	5/17/98	20	250	
			135TNB	***Percent Reduction***		95
N30%	13DNB	4/27/98	4/27/98	0	5417	
N30%	13DNB	4/27/98	5/17/98	20	250	
			13DNB	***Percent Reduction***		95
N30%	246TNT	4/27/98	4/27/98	0	23243	
N30%	246TNT	4/27/98	5/17/98	20	335	
			246TNT	***Percent Reduction***		98
N30%	24DNT	4/27/98	4/27/98	0	5417	
N30%	24DNT	4/27/98	5/17/98	20	250	
			24DNT	***Percent Reduction***		95
N30%	26DNT	4/27/98	4/27/98	0	5633	
N30%	26DNT	4/27/98	5/17/98	20	260	
			26DNT	***Percent Reduction***		95
N30%	2A46DT	4/27/98	4/27/98	0	5055	
N30%	2A46DT	4/27/98	5/17/98	20	250	
			2A46DT	***Percent Reduction***		95
N30%	2NT	4/27/98	4/27/98	0	5417	
N30%	2NT	4/27/98	5/17/98	20	250	
			2NT	***Percent Reduction***		95
N30%	3NT	4/27/98	4/27/98	0	5417	
N30%	3NT	4/27/98	5/17/98	20	250	
			3NT	***Percent Reduction***		95
N30%	4A26DT	4/27/98	4/27/98	0	4311	
N30%	4A26DT	4/27/98	5/17/98	20	250	
			4A26DT	***Percent Reduction***		94
N30%	4NT	4/27/98	4/27/98	0	5417	
N30%	4NT	4/27/98	5/17/98	20	250	
			4NT	***Percent Reduction***		95
N30%	HMX	4/27/98	4/27/98	0	36023	

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	HMX	4/27/98	5/17/98	20	2200	
			HMX	***Percent Reduction***		93
N30%	NB	4/27/98	4/27/98	0	5633	
N30%	NB	4/27/98	5/17/98	20	260	
			NB	***Percent Reduction***		95
N30%	PETN	4/27/98	4/27/98	0	5417	
N30%	PETN	4/27/98	5/17/98	20	250	
			PETN	***Percent Reduction***		95
N30%	RDX	4/27/98	4/27/98	0	263058	
N30%	RDX	4/27/98	5/17/98	20	1977	
			RDX	***Percent Reduction***		99
N30%	TETRYL	4/27/98	4/27/98	0	14042	
N30%	TETRYL	4/27/98	5/17/98	20	650	
			TETRYL	***Percent Reduction***		95

Average Windrow Explosive Summary Report

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	135TNB	4/27/98	4/27/98	0	5417	
N30%	135TNB	4/27/98	5/27/98	30	250	
			135TNB	***Percent Reduction***		95
N30%	13DNB	4/27/98	4/27/98	0	5417	
N30%	13DNB	4/27/98	5/27/98	30	250	
			13DNB	***Percent Reduction***		95
N30%	246TNT	4/27/98	4/27/98	0	23243	
N30%	246TNT	4/27/98	5/27/98	30	339	
			246TNT	***Percent Reduction***		98
N30%	24DNT	4/27/98	4/27/98	0	5417	
N30%	24DNT	4/27/98	5/27/98	30	250	
			24DNT	***Percent Reduction***		95
N30%	26DNT	4/27/98	4/27/98	0	5633	
N30%	26DNT	4/27/98	5/27/98	30	260	
			26DNT	***Percent Reduction***		95
N30%	2A46DT	4/27/98	4/27/98	0	5055	
N30%	2A46DT	4/27/98	5/27/98	30	250	
			2A46DT	***Percent Reduction***		95
N30%	2NT	4/27/98	4/27/98	0	5417	
N30%	2NT	4/27/98	5/27/98	30	250	
			2NT	***Percent Reduction***		95
N30%	3NT	4/27/98	4/27/98	0	5417	
N30%	3NT	4/27/98	5/27/98	30	250	
			3NT	***Percent Reduction***		95
N30%	4A26DT	4/27/98	4/27/98	0	4311	
N30%	4A26DT	4/27/98	5/27/98	30	250	
			4A26DT	***Percent Reduction***		94
N30%	4NT	4/27/98	4/27/98	0	5417	
N30%	4NT	4/27/98	5/27/98	30	250	
			4NT	***Percent Reduction***		95
N30%	HMX	4/27/98	4/27/98	0	36023	

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	HMX	4/27/98	5/27/98	30	2200	
			HMX	***Percent Reduction***		93
N30%	NB	4/27/98	4/27/98	0	5633	
N30%	NB	4/27/98	5/27/98	30	260	
			NB	***Percent Reduction***		95
N30%	PETN	4/27/98	4/27/98	0	5417	
N30%	PETN	4/27/98	5/27/98	30	250	
			PETN	***Percent Reduction***		95
N30%	RDX	4/27/98	4/27/98	0	263058	
N30%	RDX	4/27/98	5/27/98	30	1036	
			RDX	***Percent Reduction***		99
N30%	TETRYL	4/27/98	4/27/98	0	14042	
N30%	TETRYL	4/27/98	5/27/98	30	650	
			TETRYL	***Percent Reduction***		95

Average Windrow Explosive Summary Report

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	135TNB	4/27/98	4/27/98	0	5417	
N30%	135TNB	4/27/98	6/6/98	40	250	
			135TNB	***Percent Reduction***		95
N30%	13DNB	4/27/98	4/27/98	0	5417	
N30%	13DNB	4/27/98	6/6/98	40	250	
			13DNB	***Percent Reduction***		95
N30%	246TNT	4/27/98	4/27/98	0	23243	
N30%	246TNT	4/27/98	6/6/98	40	1641	
			246TNT	***Percent Reduction***		92
N30%	24DNT	4/27/98	4/27/98	0	5417	
N30%	24DNT	4/27/98	6/6/98	40	250	
			24DNT	***Percent Reduction***		95
N30%	26DNT	4/27/98	4/27/98	0	5633	
N30%	26DNT	4/27/98	6/6/98	40	260	
			26DNT	***Percent Reduction***		95
N30%	2A46DT	4/27/98	4/27/98	0	5055	
N30%	2A46DT	4/27/98	6/6/98	40	250	
			2A46DT	***Percent Reduction***		95
N30%	2NT	4/27/98	4/27/98	0	5417	
N30%	2NT	4/27/98	6/6/98	40	250	
			2NT	***Percent Reduction***		95
N30%	3NT	4/27/98	4/27/98	0	5417	
N30%	3NT	4/27/98	6/6/98	40	250	
			3NT	***Percent Reduction***		95
N30%	4A26DT	4/27/98	4/27/98	0	4311	
N30%	4A26DT	4/27/98	6/6/98	40	250	
			4A26DT	***Percent Reduction***		94
N30%	4NT	4/27/98	4/27/98	0	5417	
N30%	4NT	4/27/98	6/6/98	40	250	
			4NT	***Percent Reduction***		95
N30%	HMX	4/27/98	4/27/98	0	36023	

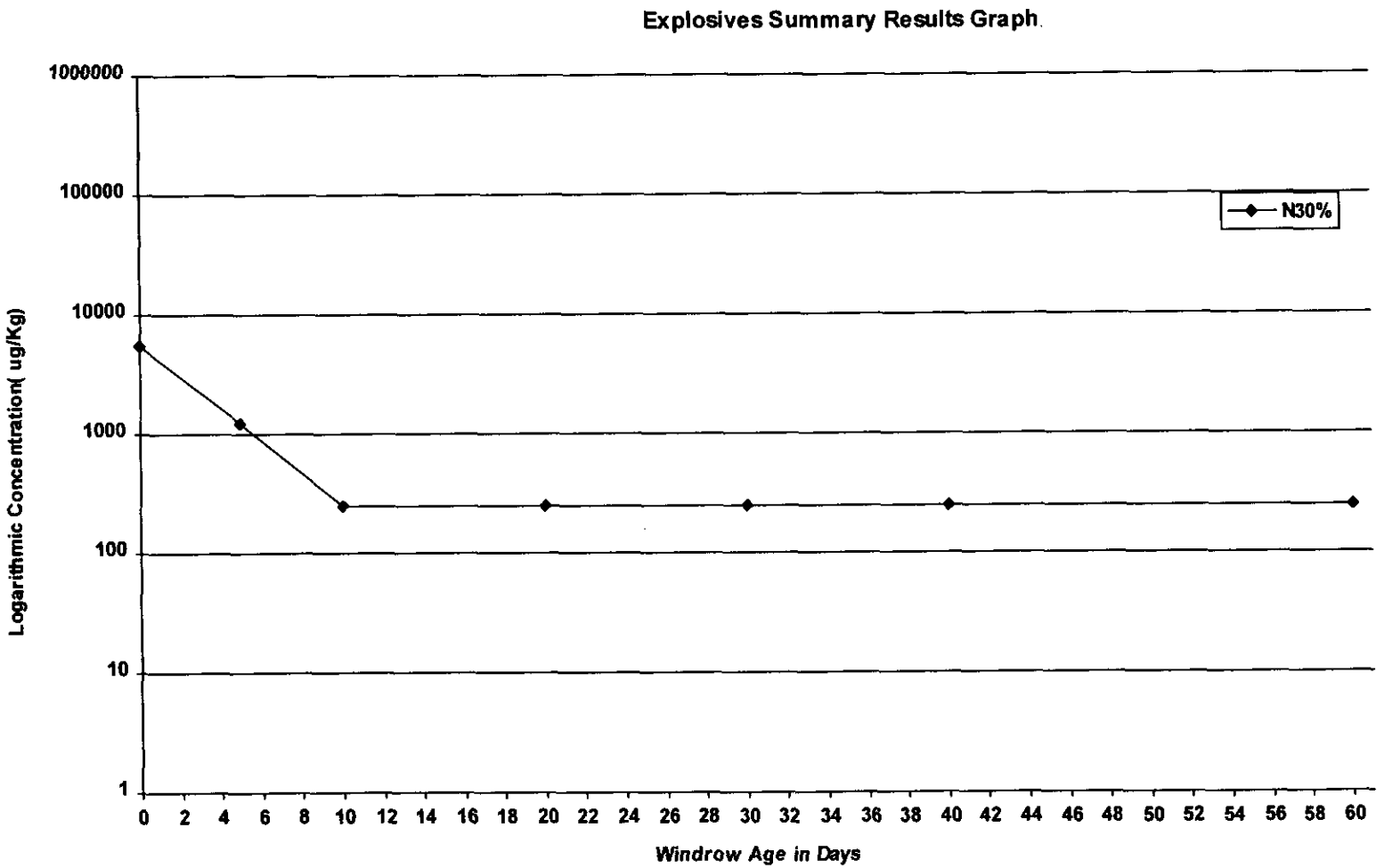
Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	HMX	4/27/98	6/6/98	40	2453	
			HMX	***Percent Reduction***		93
N30%	NB	4/27/98	4/27/98	0	5633	
N30%	NB	4/27/98	6/6/98	40	260	
			NB	***Percent Reduction***		95
N30%	PETN	4/27/98	4/27/98	0	5417	
N30%	PETN	4/27/98	6/6/98	40	250	
			PETN	***Percent Reduction***		95
N30%	RDX	4/27/98	4/27/98	0	263058	
N30%	RDX	4/27/98	6/6/98	40	4066	
			RDX	***Percent Reduction***		98
N30%	TETRYL	4/27/98	4/27/98	0	14042	
N30%	TETRYL	4/27/98	6/6/98	40	650	
			TETRYL	***Percent Reduction***		95

Average Windrow Explosive Summary Report

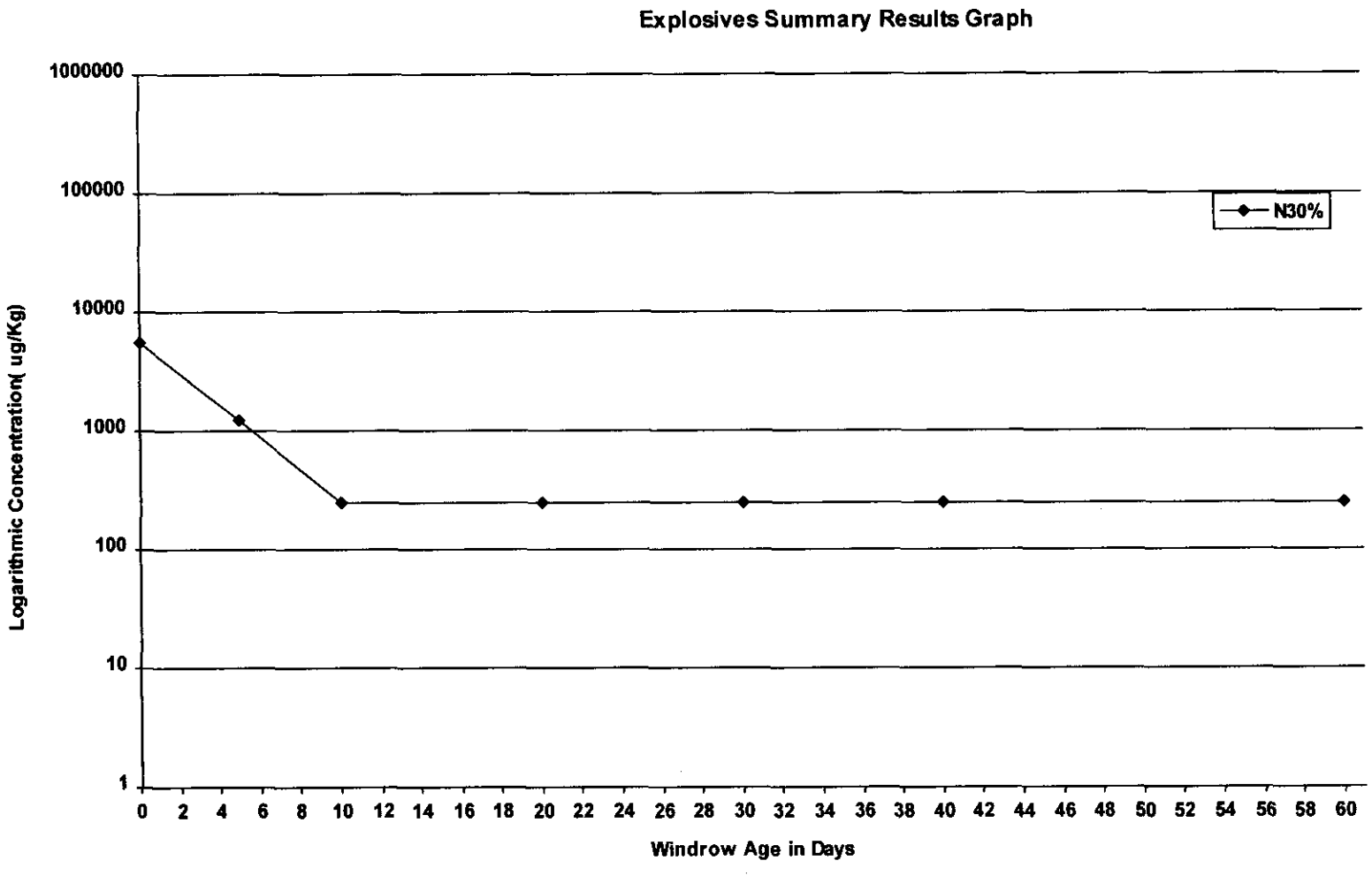
Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	135TNB	4/27/98	4/27/98	0	5417	
N30%	135TNB	4/27/98	6/26/98	60	250	
			135TNB	***Percent Reduction***		95
N30%	13DNB	4/27/98	4/27/98	0	5417	
N30%	13DNB	4/27/98	6/26/98	60	250	
			13DNB	***Percent Reduction***		95
N30%	246TNT	4/27/98	4/27/98	0	23243	
N30%	246TNT	4/27/98	6/26/98	60	1452	
			246TNT	***Percent Reduction***		93
N30%	24DNT	4/27/98	4/27/98	0	5417	
N30%	24DNT	4/27/98	6/26/98	60	250	
			24DNT	***Percent Reduction***		95
N30%	26DNT	4/27/98	4/27/98	0	5633	
N30%	26DNT	4/27/98	6/26/98	60	260	
			26DNT	***Percent Reduction***		95
N30%	2A46DT	4/27/98	4/27/98	0	5055	
N30%	2A46DT	4/27/98	6/26/98	60	250	
			2A46DT	***Percent Reduction***		95
N30%	2NT	4/27/98	4/27/98	0	5417	
N30%	2NT	4/27/98	6/26/98	60	250	
			2NT	***Percent Reduction***		95
N30%	3NT	4/27/98	4/27/98	0	5417	
N30%	3NT	4/27/98	6/26/98	60	250	
			3NT	***Percent Reduction***		95
N30%	4A26DT	4/27/98	4/27/98	0	4311	
N30%	4A26DT	4/27/98	6/26/98	60	250	
			4A26DT	***Percent Reduction***		94
N30%	4NT	4/27/98	4/27/98	0	5417	
N30%	4NT	4/27/98	6/26/98	60	250	
			4NT	***Percent Reduction***		95
N30%	HMX	4/27/98	4/27/98	0	36023	

Windrow	*Compound*	*Construction Date*	*Date Monitored*	*Age (Days)*	*Avg. Conc. (UG/KG)*	
N30%	HMX	4/27/98	6/26/98	60	2590	
			HMX	***Percent Reduction***		92
N30%	NB	4/27/98	4/27/98	0	5633	
N30%	NB	4/27/98	6/26/98	60	260	
			NB	***Percent Reduction***		95
N30%	PETN	4/27/98	4/27/98	0	5417	
N30%	PETN	4/27/98	6/26/98	60	250	
			PETN	***Percent Reduction***		95
N30%	RDX	4/27/98	4/27/98	0	263058	
N30%	RDX	4/27/98	6/26/98	60	7773	
			RDX	***Percent Reduction***		97
N30%	TETRYL	4/27/98	4/27/98	0	14042	
N30%	TETRYL	4/27/98	6/26/98	60	650	
			TETRYL	***Percent Reduction***		95

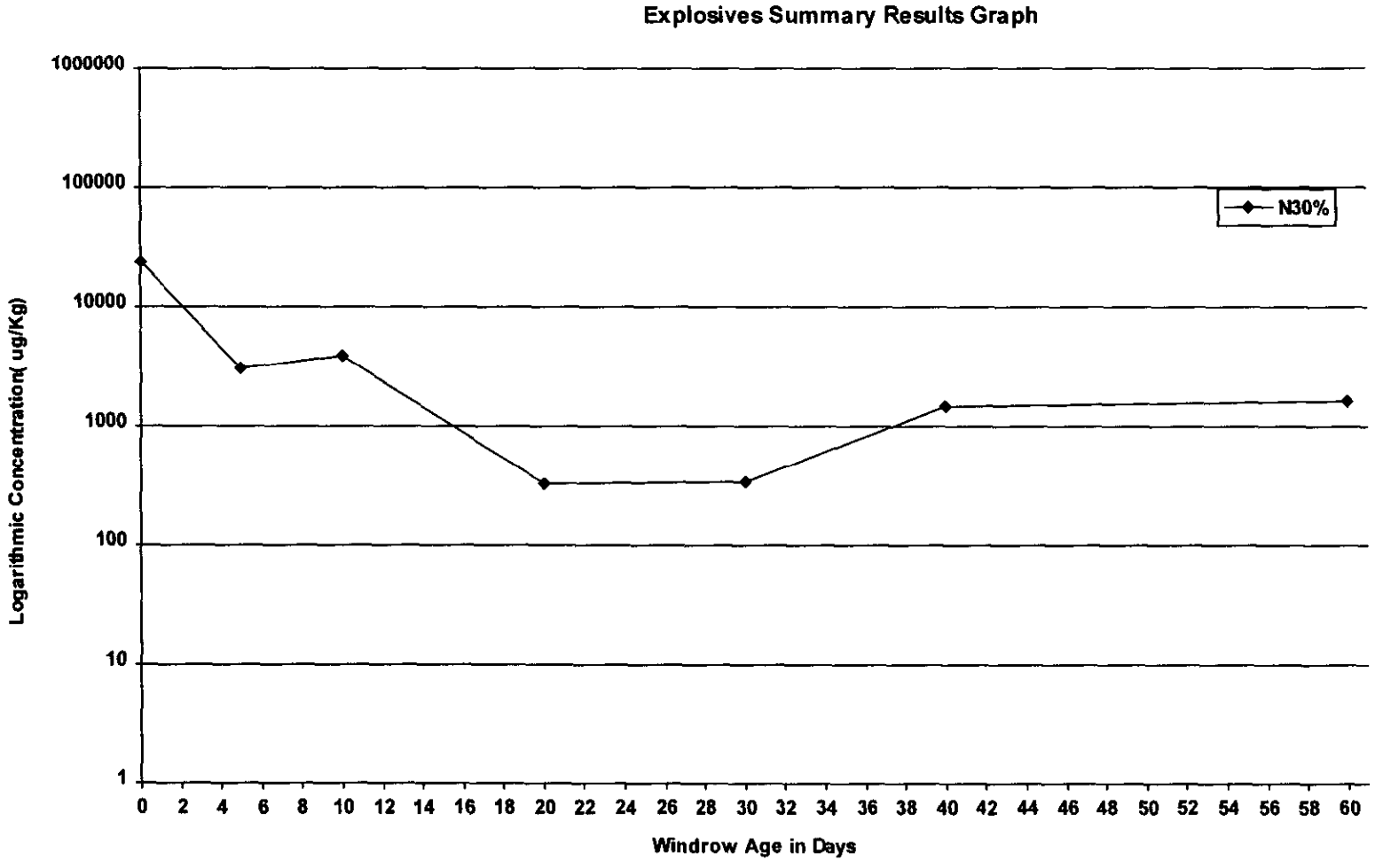
NSWC Crane BioFacility Full Scale Operations
Average 135TNB Concentrations (UG/KG)



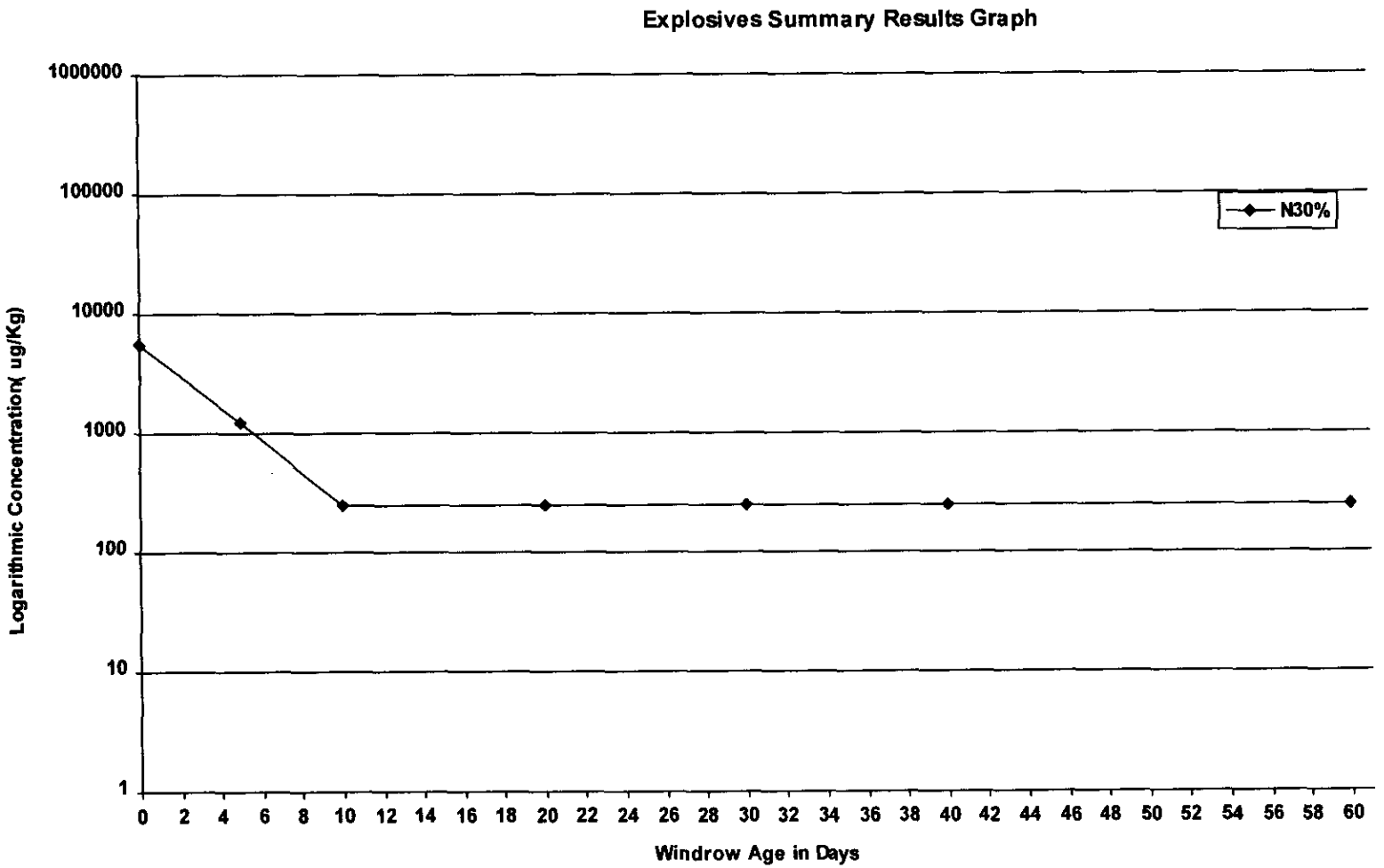
NSWC Crane BioFacility Full Scale Operations
Average 13DNB Concentrations (UG/KG)



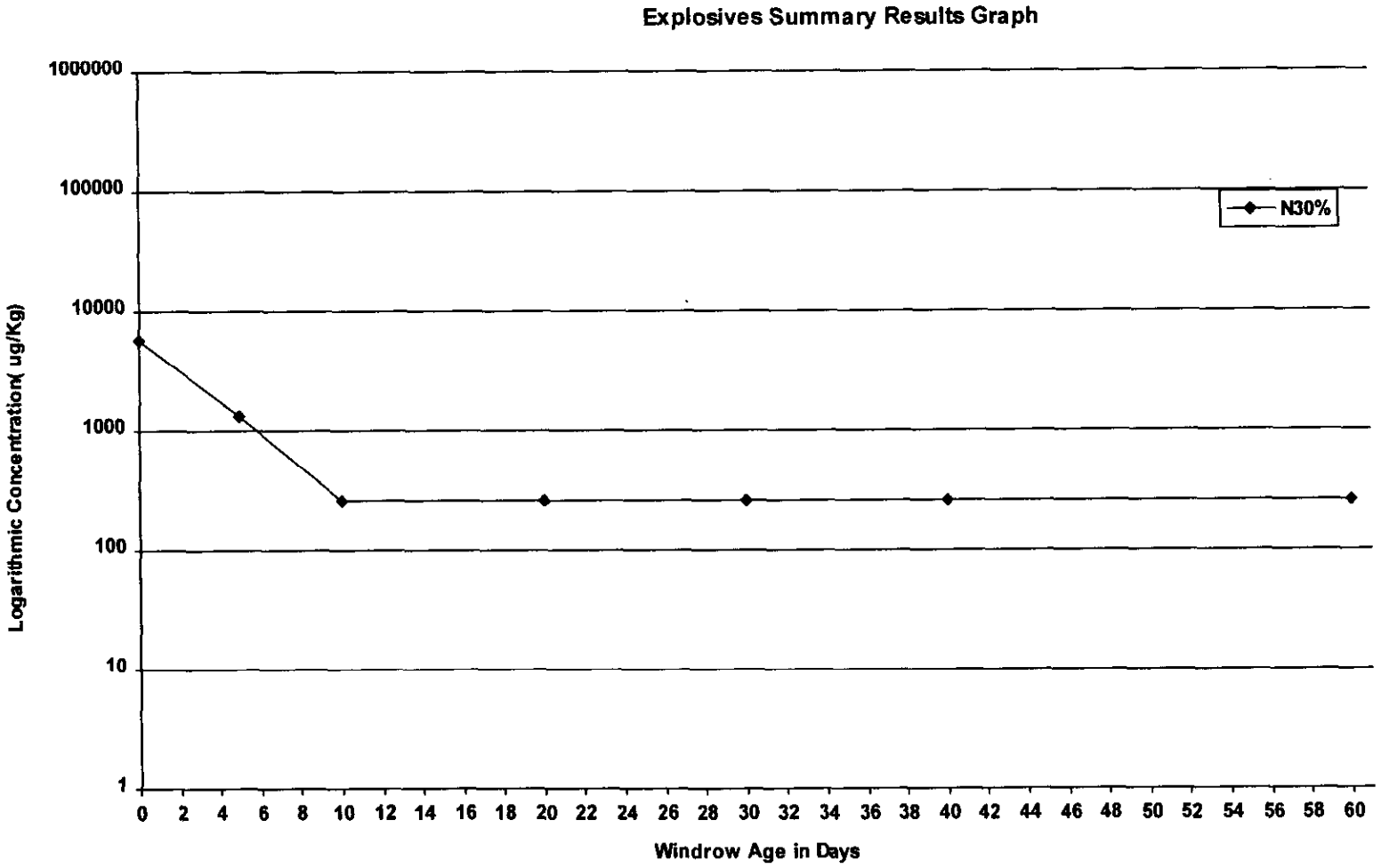
NSWC Crane BioFacility Full Scale Operations
Average 246TNT Concentrations (UG/KG)



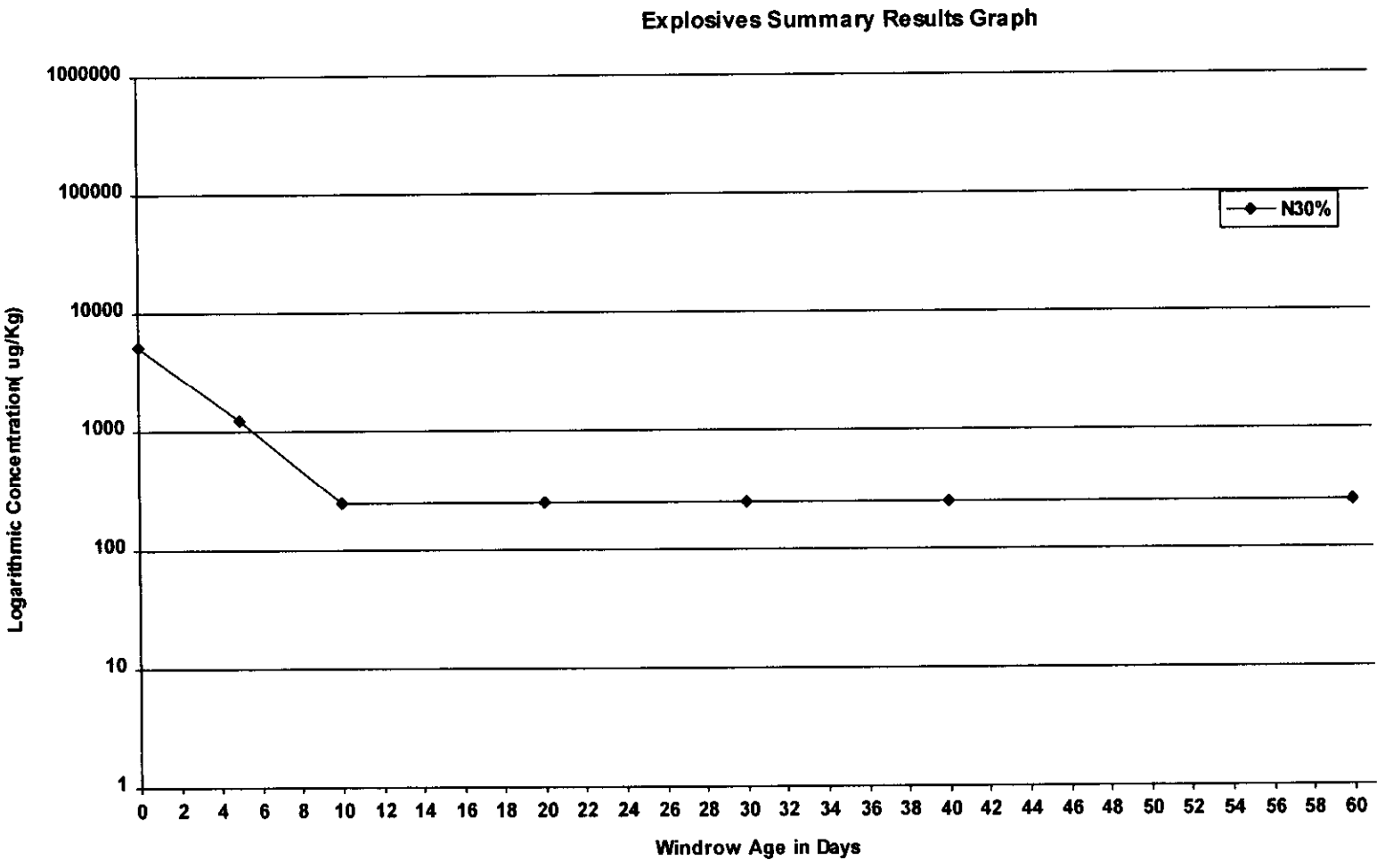
NSWC Crane BioFacility Full Scale Operations
Average 24DNT Concentrations (UG/KG)



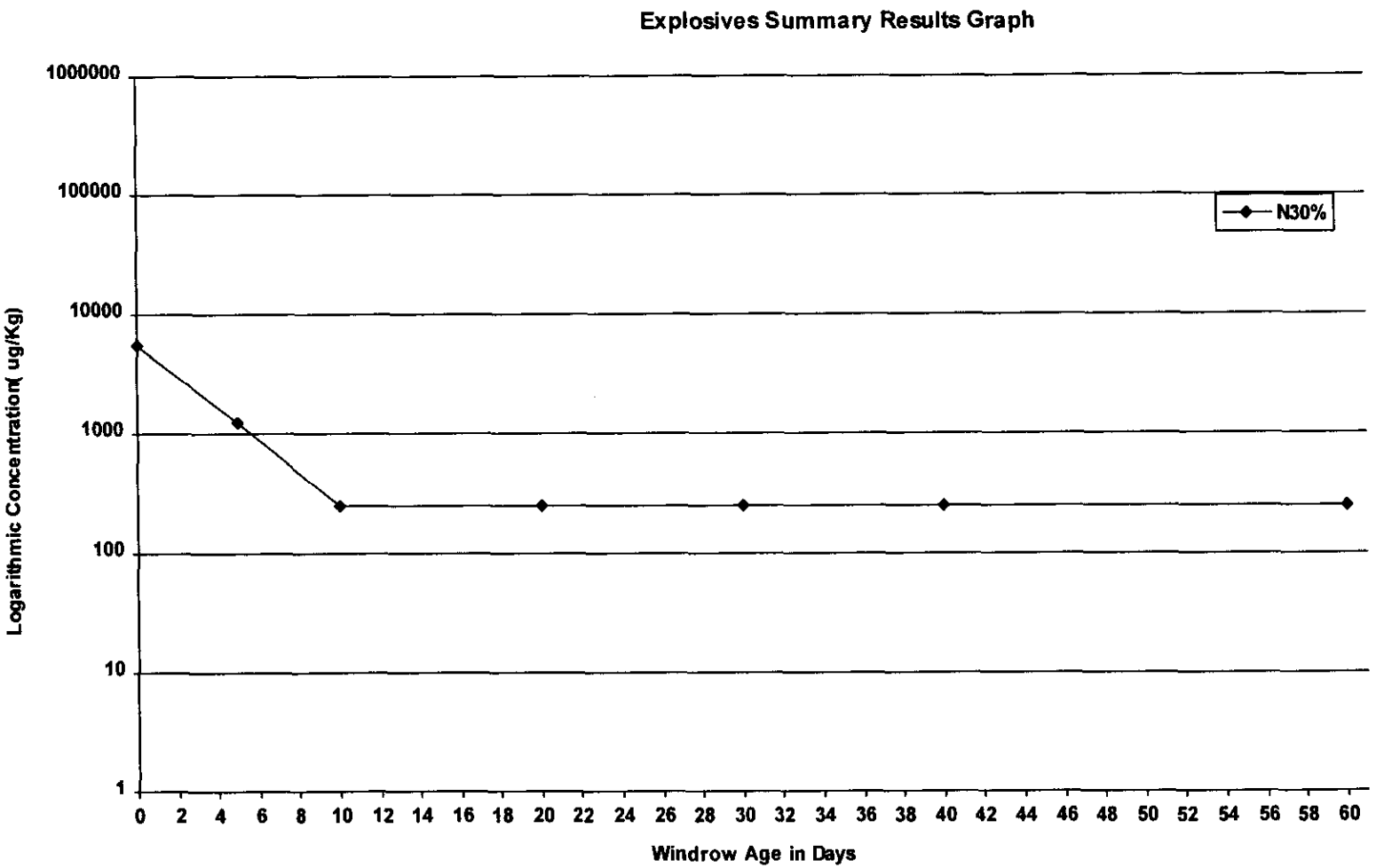
NSWC Crane BioFacility Full Scale Operations
Average 26DNT Concentrations (UG/KG)



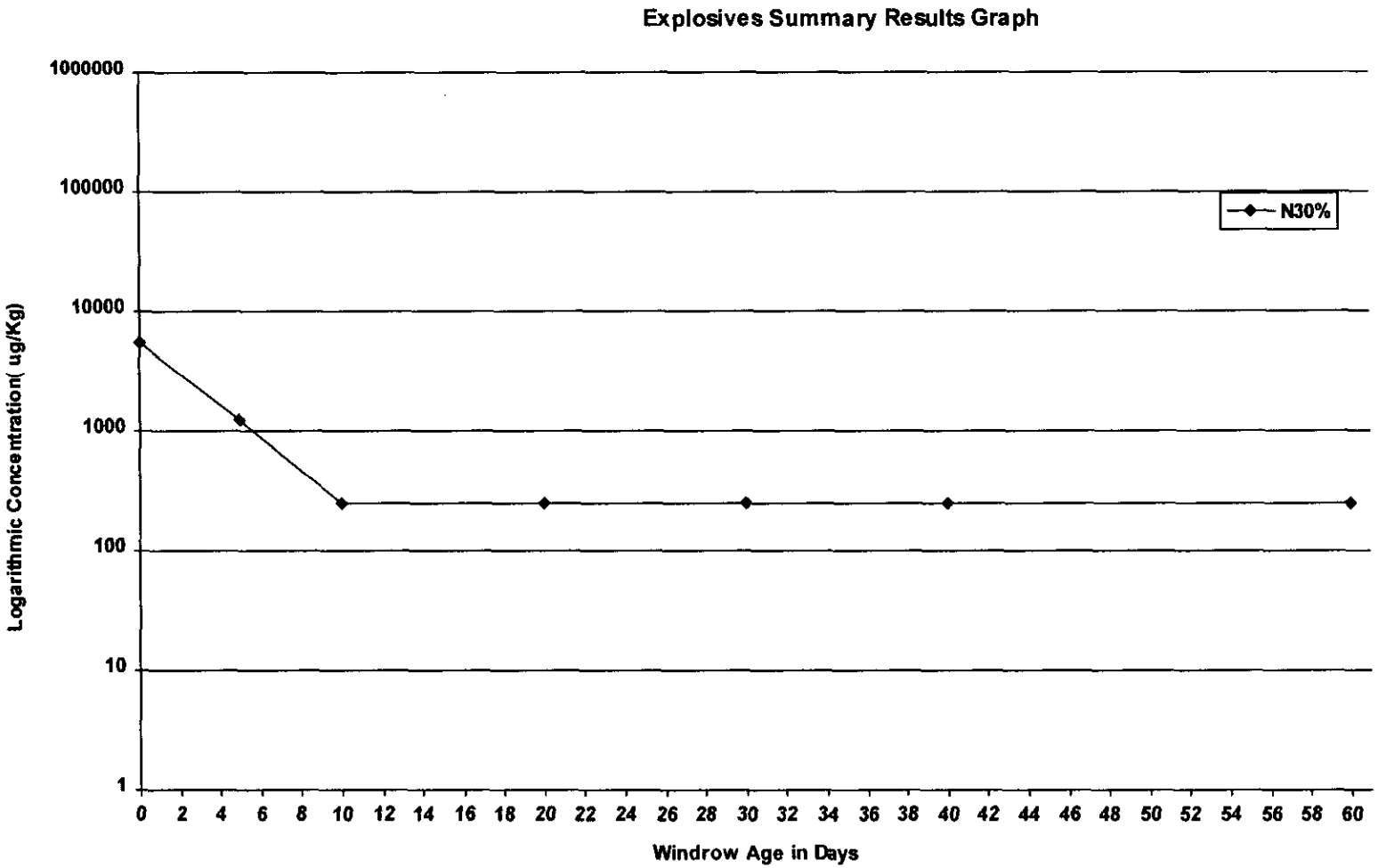
NSWC Crane BioFacility Full Scale Operations
Average 2A46DT Concentrations (UG/KG)



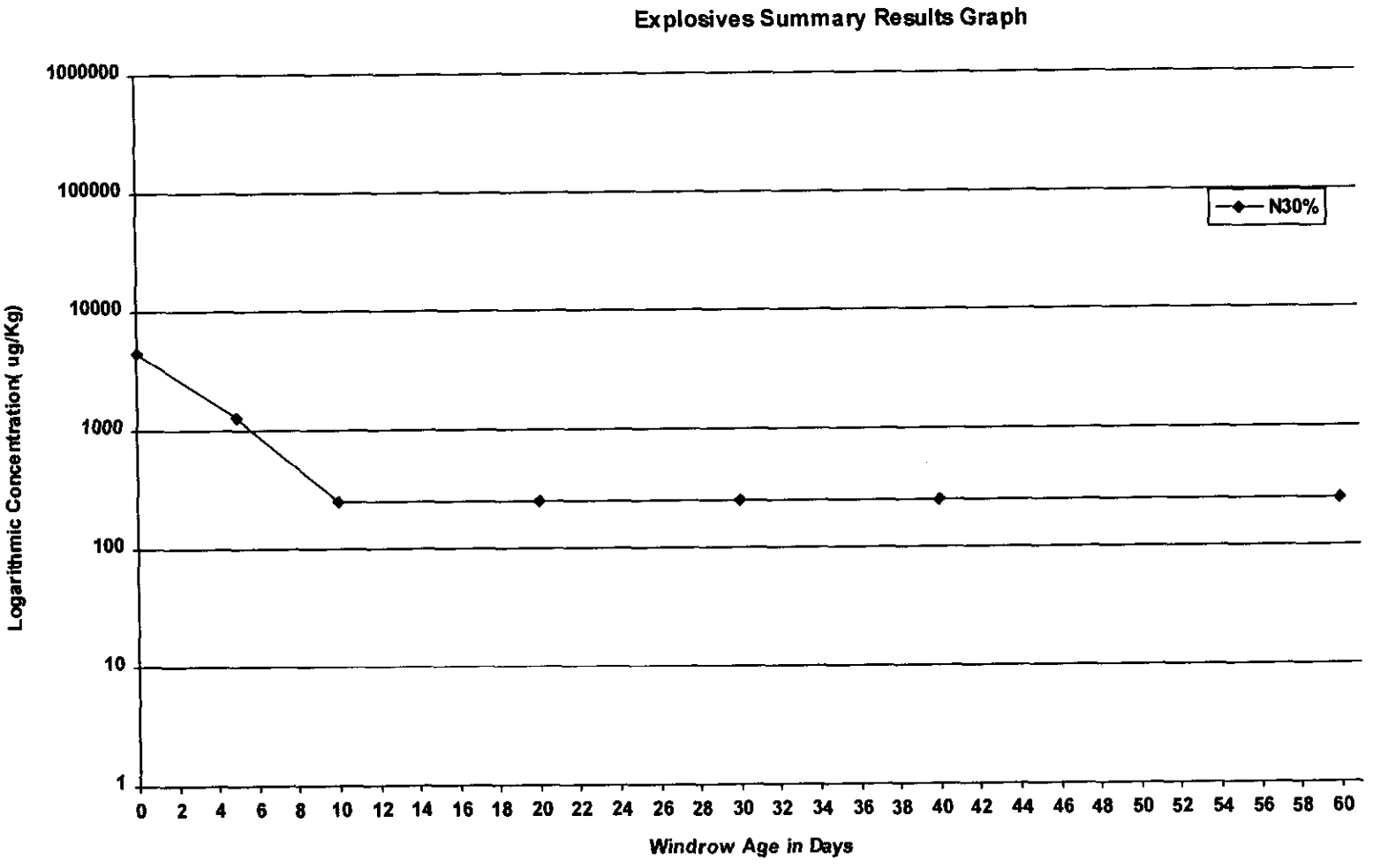
NSWC Crane BioFacility Full Scale Operations
Average 2NT Concentrations (UG/KG)



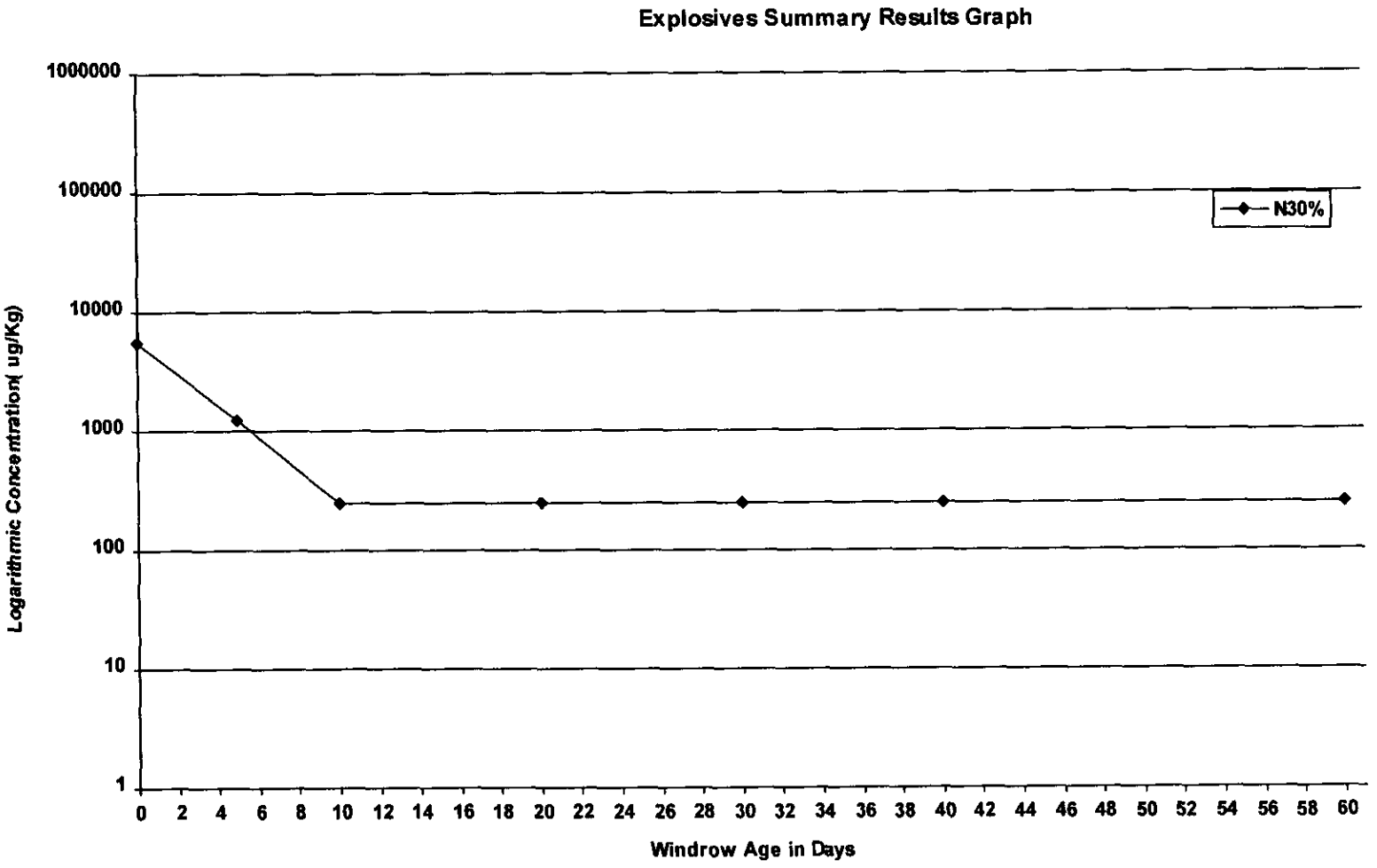
NSWC Crane BioFacility Full Scale Operations
Average 3NT Concentrations (UG/KG)



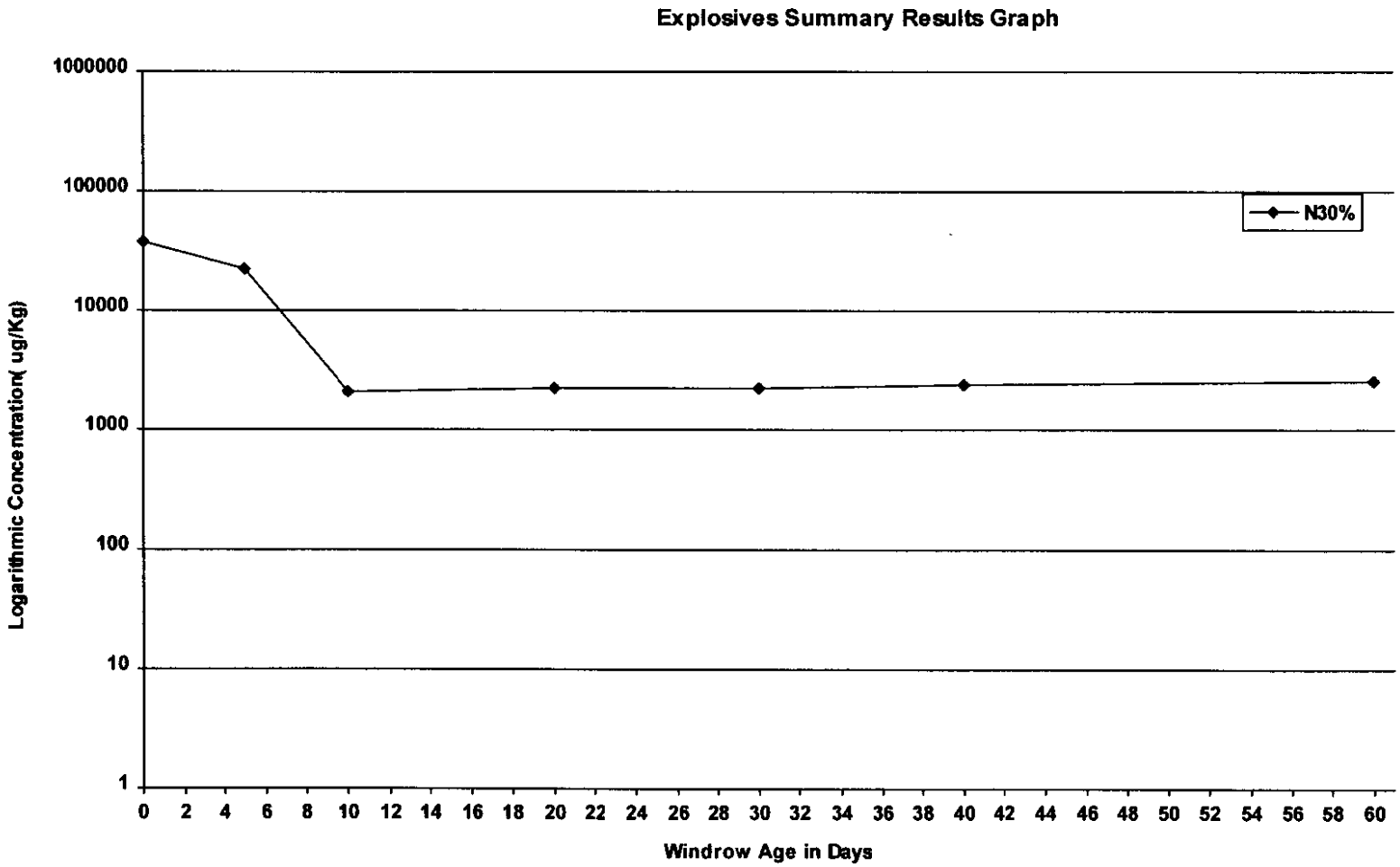
NSWC Crane BioFacility Full Scale Operations
Average 4A26DT Concentrations (UG/KG)



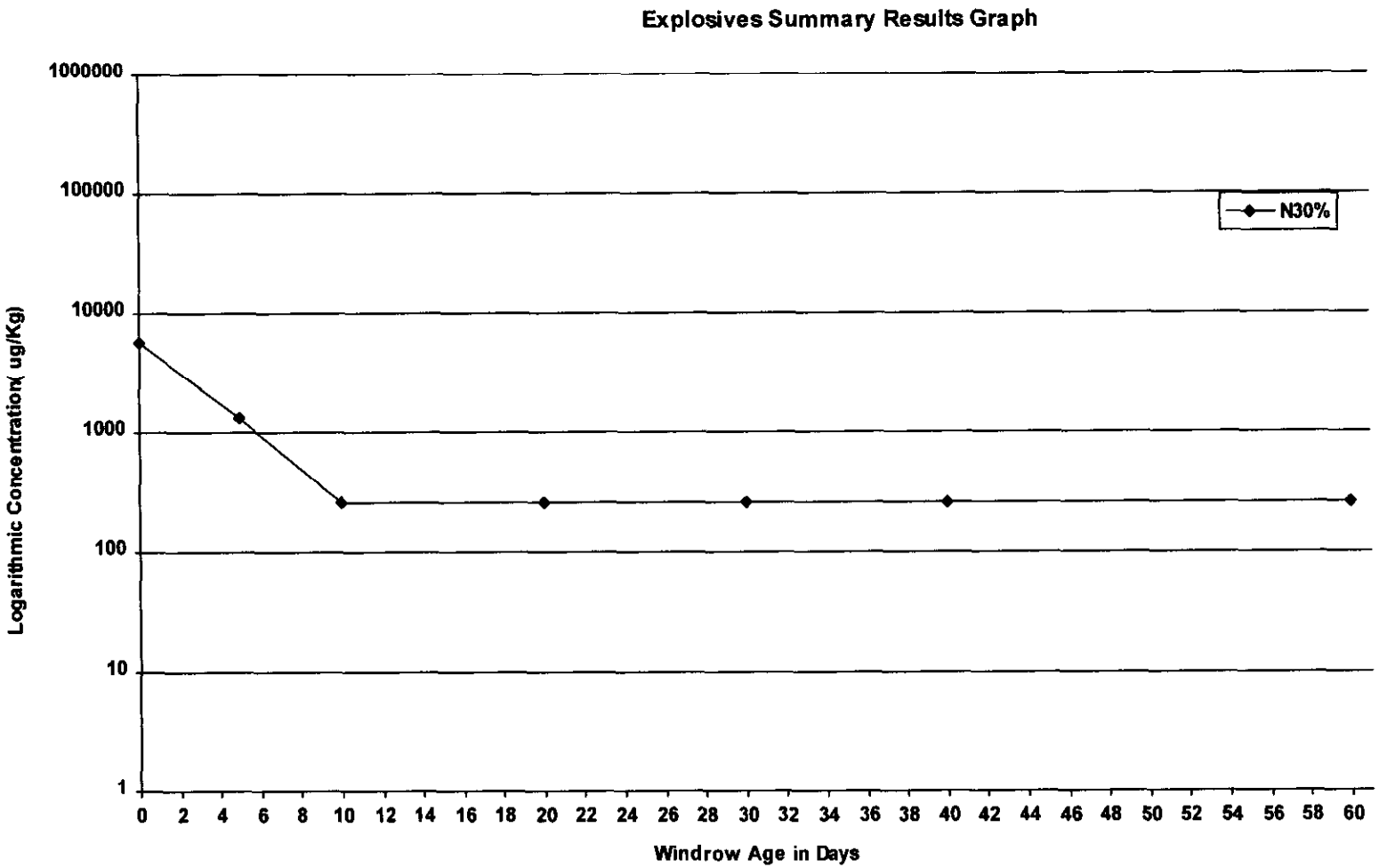
NSWC Crane BioFacility Full Scale Operations
Average 4NT Concentrations (UG/KG)



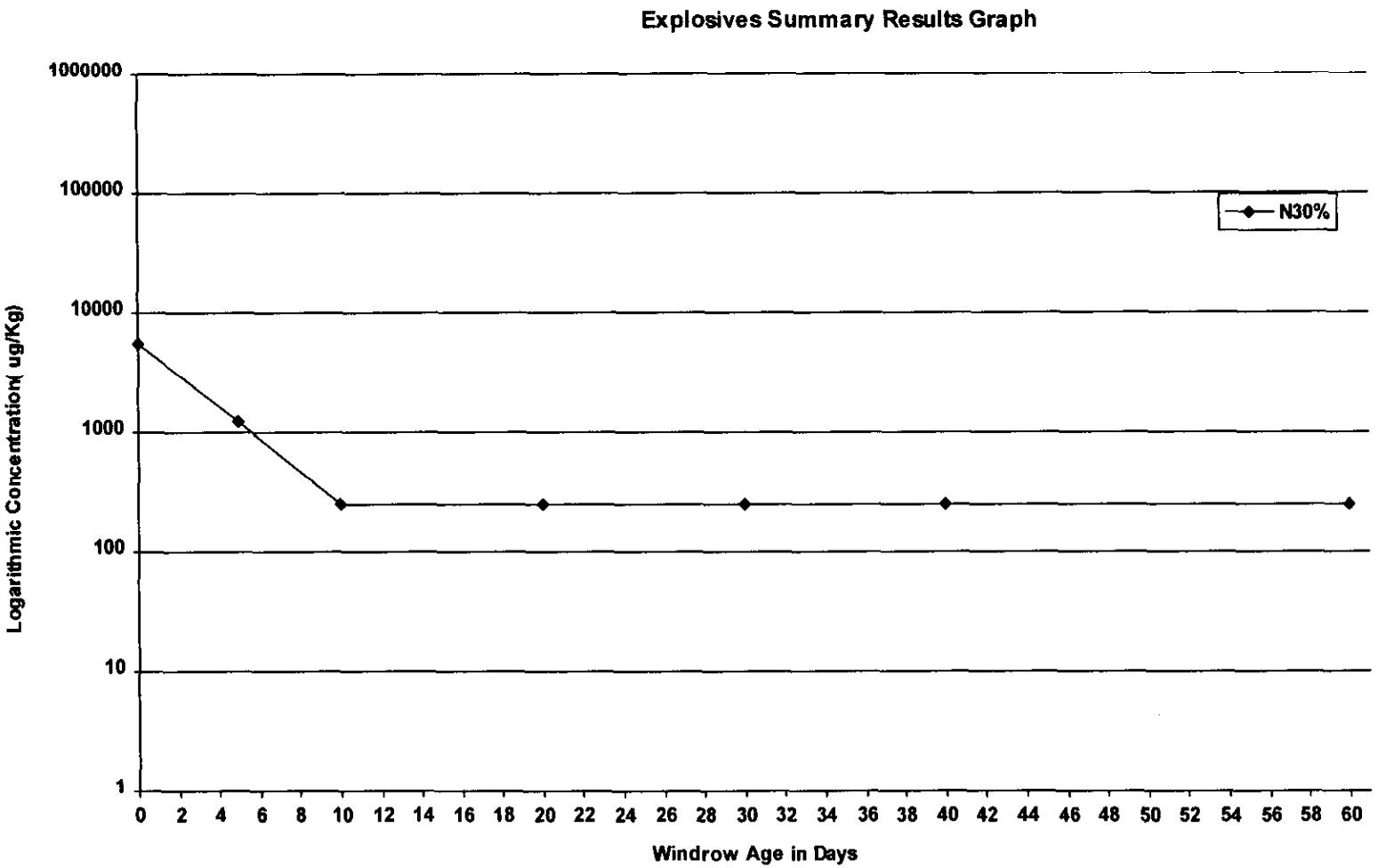
NSWC Crane BioFacility Full Scale Operations
Average HMX Concentrations (UG/KG)



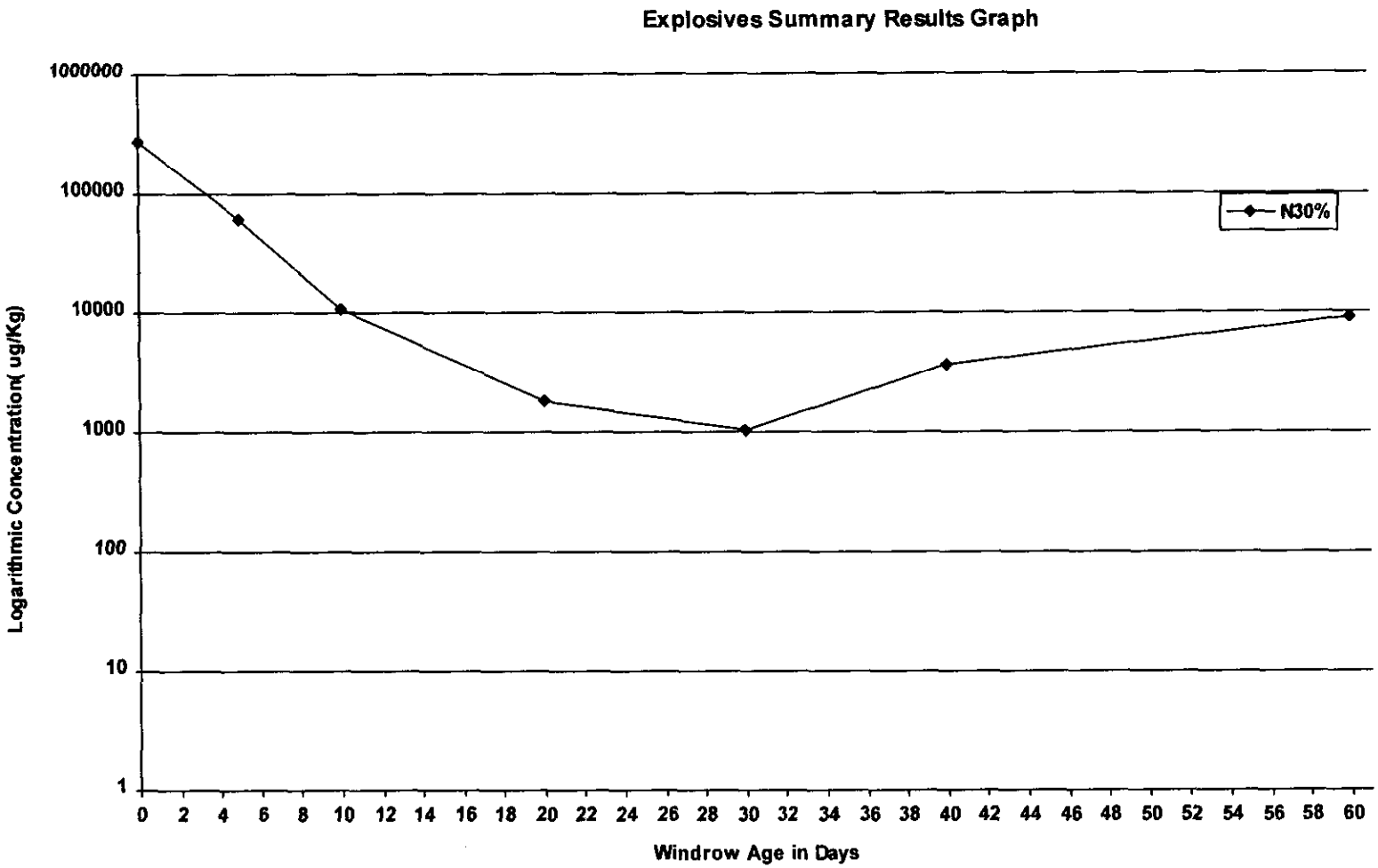
NSWC Crane BioFacility Full Scale Operations
Average NB Concentrations (UG/KG)



NSWC Crane BioFacility Full Scale Operations
Average PETN Concentrations (UG/KG)

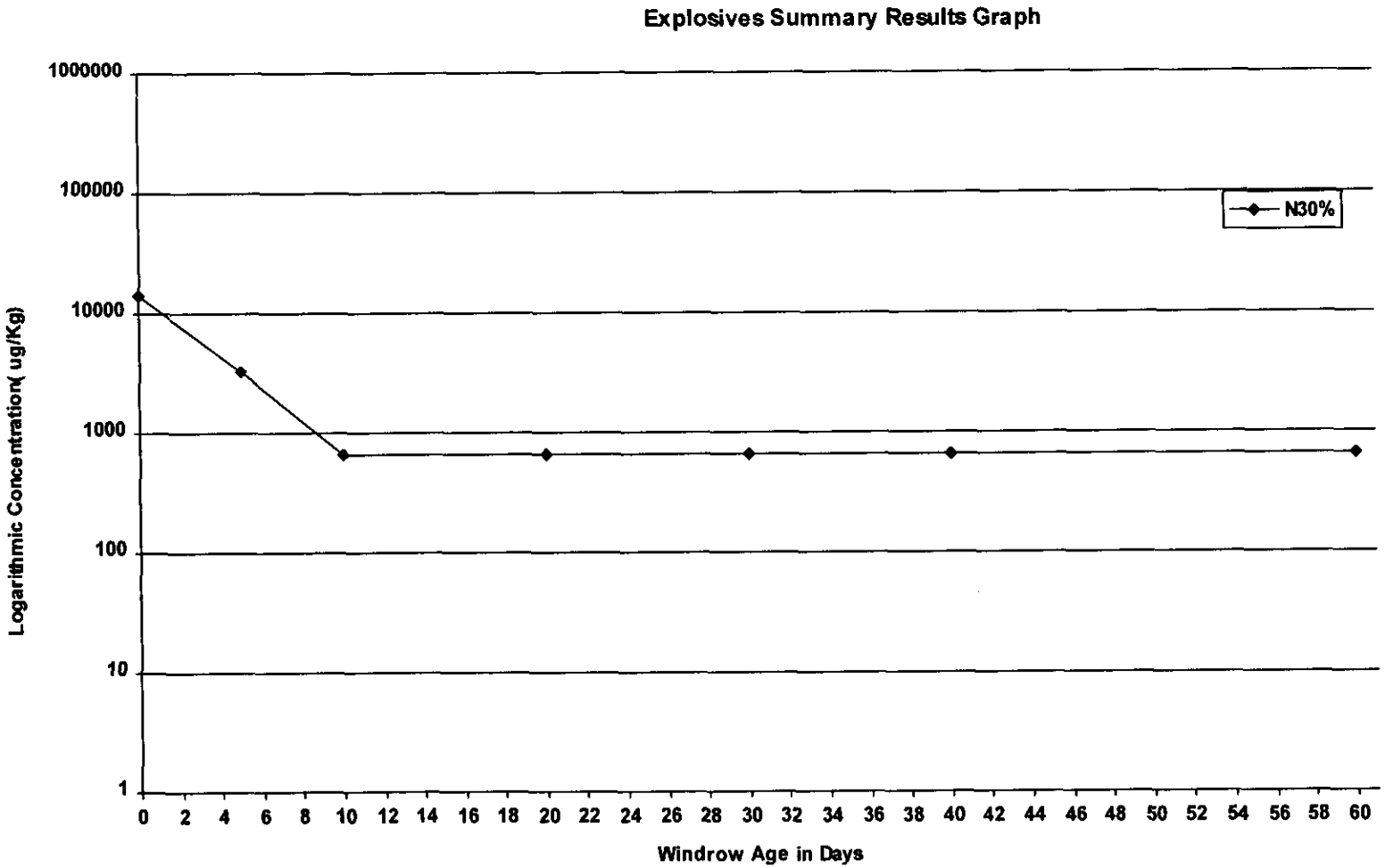


NSWC Crane BioFacility Full Scale Operations
Average RDX Concentrations (UG/KG)



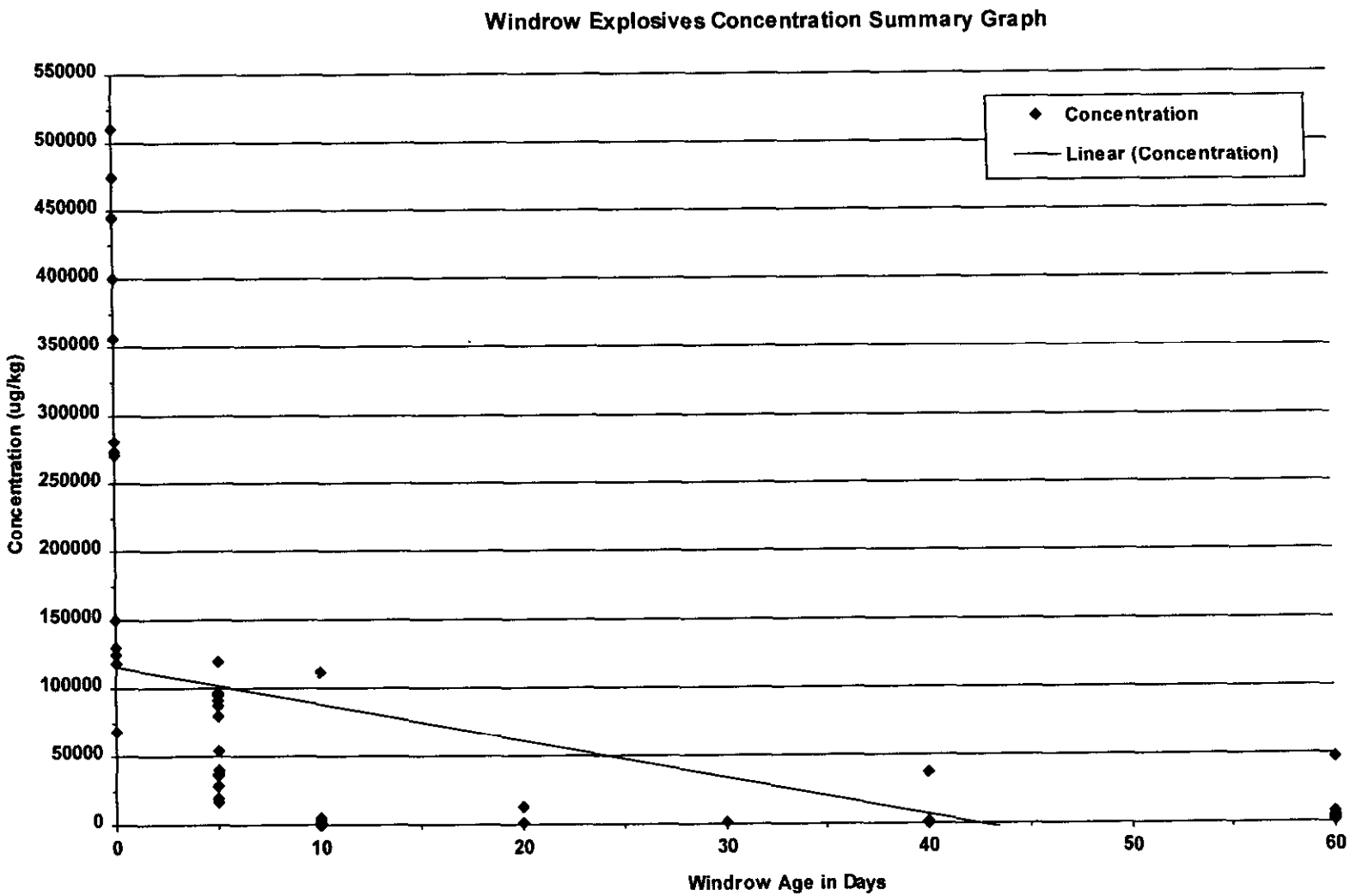
NSWC Crane BioFacility Full Scale Operations

Average TETRYL Concentrations (UG/KG)



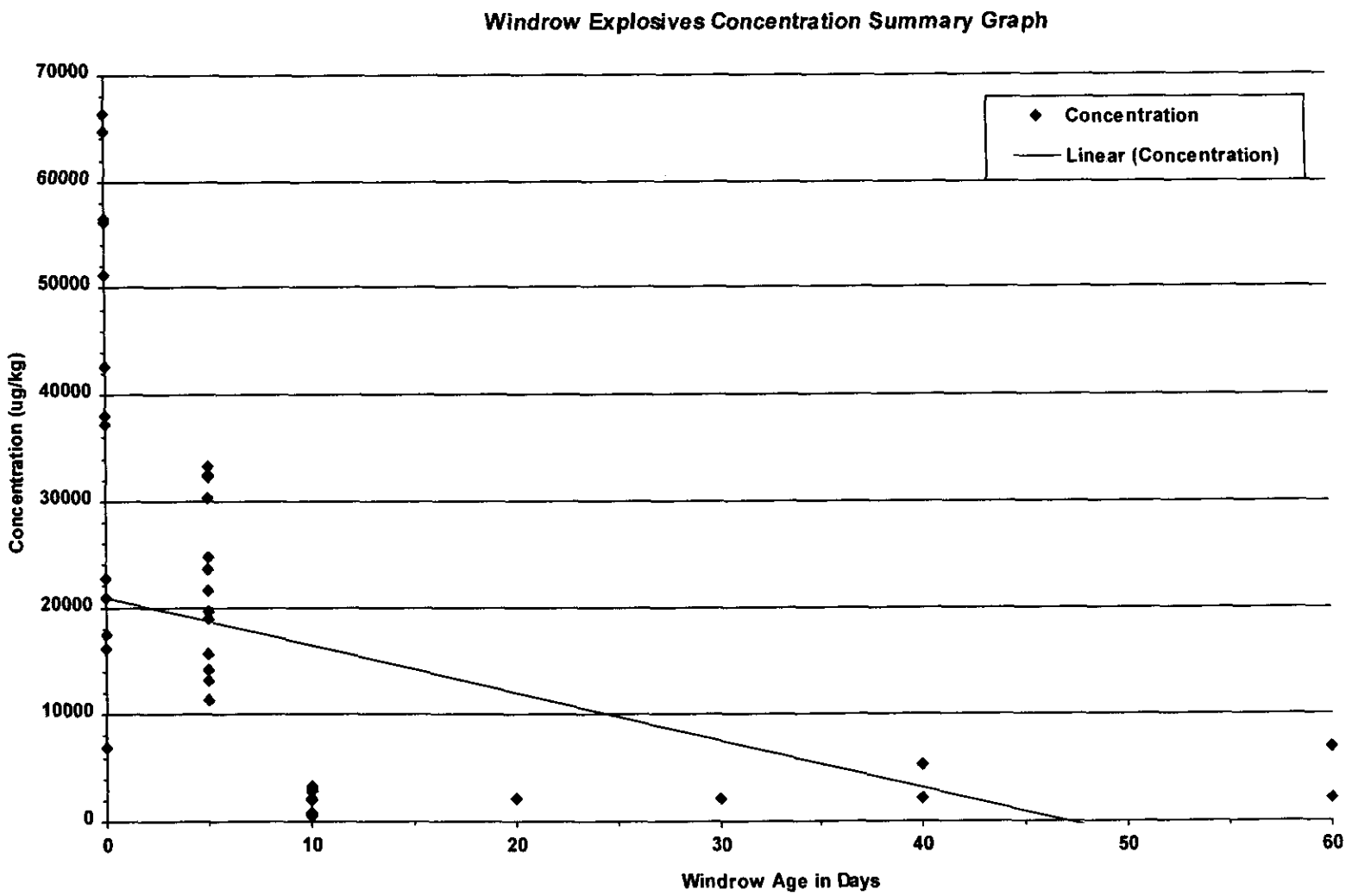
NSWC Crane BioFacility Full Scale Operations

Scatter Diagram of all Concentrations of RDX (UG/KG)



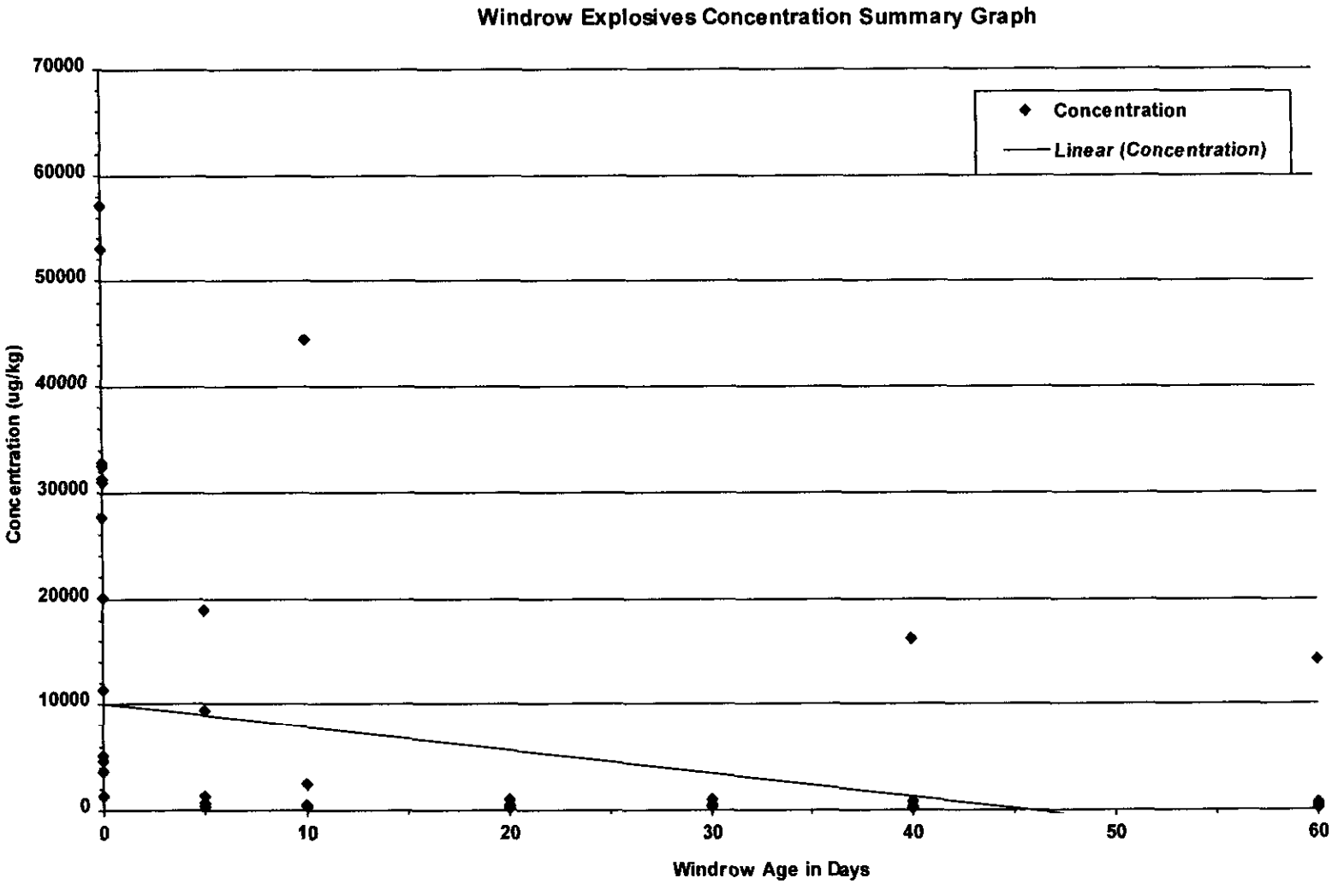
NSWC Crane BioFacility Full Scale Operations

Scatter Diagram of all Concentrations of HMX (UG/KG)



NSWC Crane BioFacility Full Scale Operations

Scatter Diagram of all Concentrations of TNT (UG/KG)



APPENDIX H
FIELD PRECISION SUMMARY

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DESCRIPTION **PAGE**

PERCENT DIFFERENCE OF FIELD DUPLICATES . . . . . 4 pages

FIELD PRECISION SUMMARY
PERCENT DIFFERENCE (PD) OF FIELD DUPLICATES

Compound	Sample Number BION30%00-D1			Sample Number BION30%05-C2		
	Sample (ug/kg)	Duplicate (ug/kg)	PD	Sample (ug/kg)	Duplicate (ug/kg)	PD
135TNB	LT 6250	LT 6250	NA	LT 1250	LT 1250	NA
13DNB	LT 6250	LT 6250	NA	LT 1250	LT 1250	NA
246TNT	27600	32400	14.81	19000	9470 J	100.63
24DNT	LT 6250	LT 6250	NA	LT 1250	LT 1250	NA
26DNT	LT 6500	LT 6500	NA	LT 1300	LT 1300	NA
2A46DT	LT 6250	LT 6250	NA	LT 1250	LT 1250	NA
2NT	LT 6250	LT 6250	NA	LT 1250	LT 1250	NA
3NT	LT 6250	LT 6250	NA	LT 1250	LT 1250	NA
4A26DT	3550	LT 6250	NA	LT 1250	LT 1250	NA
4NT	LT 6250	LT 6250	NA	LT 1250	LT 1250	NA
HMX	51200	64800	20.99	32300	33200	2.71
NB	LT 6500	LT 6500	NA	LT 1300	LT 1300	NA
PETN	LT 6250	LT 6250	NA	LT 1250	LT 1250	NA
RDX	357000	445000	19.78	87200	94500	7.72
TETRYL	LT 16200	LT 16200	NA	LT 3250	LT 3250	NA

LT = Less than
NA = Not Applicable
J = Estimated
P = Greater than 40% difference between primary and confirmation column

FIELD PRECISION SUMMARY
PERCENT DIFFERENCE (PD) OF FIELD DUPLICATES

Compound	Sample Number BION30%10B3			Sample Number BION30%20A1		
	Sample (ug/kg)	Duplicate (ug/kg)	PD	Sample (ug/kg)	Duplicate (ug/kg)	PD
135TNB	LT 250	LT 250	NA	LT 250	LT 250	NA
13DNB	LT 250	LT 250	NA	LT 250	LT 250	NA
246TNT	LT 250	568 P	NA	LT 250	LT 250	NA
24DNT	LT 250	LT 250	NA	LT 250	LT 250	NA
26DNT	LT 260	LT 260	NA	LT 260	LT 260	NA
2A46DT	LT 250	LT 250	NA	LT 250	LT 250	NA
2NT	LT 250	LT 250	NA	LT 250	LT 250	NA
3NT	LT 250	LT 250	NA	LT 250	LT 250	NA
4A26DT	LT 250	LT 250	NA	LT 250	LT 250	NA
4NT	LT 250	LT 250	NA	LT 250	LT 250	NA
HMX	LT 2200 (871 JP)	3030 P	NA	LT 2200	LT 2200	NA
NB	LT 260	LT 260	NA	LT 260	LT 260	NA
PETN	LT 250	LT 250	NA	LT 250	LT 250	NA
RDX	LT 1100 (857 J)	4820	NA	LT 1100 (448 JP)	LT 1000	NA
TETRYL	LT 650	LT 650	NA	LT 650	LT 650	NA

LT = Less than
NA = Not Applicable
J = Estimated
P = Greater than 40% difference between primary and confirmation column

FIELD PRECISION SUMMARY
PERCENT DIFFERENCE (PD) OF FIELD DUPLICATES

Compound	Sample Number BION30%20D2			Sample Number BION30%40A1		
	Sample (ug/kg)	Duplicate (ug/kg)	PD	Sample (ug/kg)	Duplicate (ug/kg)	PD
135TNB	LT 250	LT 250	NA	LT 250	LT 250	NA
13DNB	LT 250	LT 250	NA	LT 250	LT 250	NA
246TNT	LT 250	283	NA	LT 250 (164 JP)	LT 250	NA
24DNT	LT 250	LT 250	NA	LT 250	LT 250	NA
26DNT	LT 260	LT 260	NA	LT 260	LT 260	NA
2A46DT	LT 250	LT 250	NA	LT 250	LT 250	NA
2NT	LT 250	LT 250	NA	LT 250	LT 250	NA
3NT	LT 250	LT 250	NA	LT 250	LT 250	NA
4A26DT	LT 250	LT 250	NA	LT 250	LT 250	NA
4NT	LT 250	LT 250	NA	LT 250	LT 250	NA
HMX	LT 2200	LT 2200	NA	LT 2200	LT 2200	NA
NB	LT 260	LT 260	NA	LT 260	LT 260	NA
PETN	LT 250	LT 250	NA	LT 250	LT 250	NA
RDX	LT 1000	LT 1000	NA	1420	LT 1000	NA
TETRYL	LT 650	LT 650	NA	LT 650	LT 650	NA

LT = Less than
NA = Not Applicable
J = Estimated
P = Greater than 40% difference between primary and confirmation column

FIELD PRECISION SUMMARY
PERCENT DIFFERENCE (PD) OF FIELD DUPLICATES

Compound	Sample Number BION30%40D2			Sample Number BION30%60B3		
	Sample (ug/kg)	Duplicate (ug/kg)	PD	Sample (ug/kg)	Duplicate (ug/kg)	PD
135TNB	LT 250	LT 250	NA	LT 250	LT 250	NA
13DNB	LT 250	LT 250	NA	LT 250	LT 250	NA
246TNT	397 P	343 P	15.74	359	LT 250 (138 J)	NA
24DNT	LT 250	LT 250	NA	LT 250	LT 250	NA
26DNT	LT 260	LT 260	NA	LT 260	LT 260	NA
2A46DT	LT 250	LT 250	NA	LT 250	LT 250	NA
2NT	LT 250	LT 250	NA	LT 250	LT 250	NA
3NT	LT 250	LT 250	NA	LT 250	LT 250	NA
4A26DT	LT 250	LT 250	NA	LT 250	LT 250	NA
4NT	LT 250	LT 250	NA	LT 250	LT 250	NA
HMX	LT 2200	LT 2200	NA	LT 2200	LT 2200	NA
NB	LT 260	LT 260	NA	LT 260	LT 260	NA
PETN	LT 250	LT 250	NA	LT 250	LT 250	NA
RDX	LT 1000 (636 J)	LT 1000	NA	4160 P	3520 P	18.2
TETRYL	LT 650	LT 650	NA	LT 650	LT 650	NA

LT = Less than
NA = Not Applicable
J = Estimated
P = Greater than 40% difference between primary and confirmation column

APPENDIX I
WINDROW PROCESS DATA - FIELD DATA DAILY LOG

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DESCRIPTION	PAGE
Field Data Daily Log	50 pages

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 4/27/98

ıe 0

Relative Humidity: 50.0%

Inspected By:

ındrow Height: 6

Ambient Temperature: 11

Performed By: MAM

Windrow Length: 38

Windrow Width: 17.5

Texture: COARSE

	Start Time	Finish Time
Time Turned: 12:55		
Pre-Turn:		
Moisture Added: 0		
Post-Turn:	13:05	13:19

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
POST	A	1	21	21	20	19			
		2	19	21	20	20		42.5	8.1
		3	22	23	20	19			
	B	1	22	22	20	19			
		2	21	22	20	20		38.7	8.2
		3	21	21	20	20			
	C	1	22	23	19	19			
		2	22	23	20	20		45.9	8.4
		3	21	21	20	20			
	D	1	22	22	19	20			
		2	23	23	20	20		42.4	8.5
		3	22	22	20	20			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 4/28/98

1

Relative Humidity: 69.0%

Inspected By: MAM

Windrow Height: 6

Ambient Temperature: 8

Performed By: KAP KAP

Windrow Length: 35

Windrow Width: 15

Texture: MEDIUM

Time Turned: 9:40

Moisture Added: 150

	Start Time	Finish Time
Pre-Turn:	8:20	8:42
Post-Turn:	9:30	9:45

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	41	36	0	0			
		2	43	45	2	3			
		3	54	52	11	7			
	B	1	51	48	1	6			
		2	44	45	1	2			
		3	61	55	7	3			
	C	1	39	35	1	1			
		2	56	50	6	2			
		3	49	47	15	2			
	D	1	48	44	1	0			
		2	53	52	2	2			
		3	42	41	0	0			
POST	A	1	34	35	12	11			
		2	40	41	10	10			
		3	41	41	15	12			
	B	1	34	35	14	13			
		2	41	41	8	9			
		3	39	41	14	17			
	C	1	36	37	15	12			
		2	40	40	8	7			
		3	37	37	14	14			
	D	1	36	36	12	13			
		2	40	39	9	11			
		3	35	36	11	10			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 4/29/98

Line 2

Relative Humidity: 94.0%

Inspected By: RAE

Windrow Height: 6

Ambient Temperature: 7

Performed By: KAP KAP

Windrow Length: 21

Windrow Width: 12

Texture: COARSE

	Start Time	Finish Time
Pre-Turn:	9:10	9:21
Post-Turn:	12:20	12:35

Time Turned: 12:10

Moisture Added: 150

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	61	65	3	0			
		2	63	64	15	16			
		3	63	63	4	12			
	B	1	58	55	4	0			
		2	59	54	2	0			
		3	65	64	15	3			
	C	1	59	54	0	0			
		2	67	64	6	1			
		3	58	54	15	18			
	D	1	66	60	12	1			
		2	65	60	1	1			
		3	63	67	17	2			
POST	A	1	37	40	19	19			
		2	44	40	19	18		42.1	
		3	50	51	16	17			
	B	1	46	49	17	16			
		2	48	48	17	16		43.1	
		3	51	50	17	16			
	C	1	50	53	16	16			
		2						45.6	
		3	52	51	17	17			
	D	1	52	52	16	16			
		2	54	53	17	17		47.9	
		3	53	55	16	17			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 4/30/98

Windrow Number: 3

Relative Humidity: 100.0%

Inspected By: MAM

Windrow Height: 6

Ambient Temperature: 19

Performed By: RAE RAE

Windrow Length: 20

Windrow Width: 12

Texture: COARSE

Time Turned: 13:05

Moisture Added: 100

	Start Time	Finish Time
Pre-Turn:	8:01	8:15
Post-Turn:	13:15	13:30

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	63	63	0	1			
		2	54	66	17	15			
		3	64	67	15	14			
	B	1	63	61	1	0			
		2	63	69	12	12			
		3	65	67	16	15			
	C	1	65	62	1	1			
		2	67	68	14	15			
		3	63	66	16	18			
	D	1	65	63	0	1			
		2	66	69	16	16			
		3	68	61	16	19			
POST	A	1	52	54	7	6			
		2	54	55	16	13		50.6	
		3	46	55	18	15			
	B	1	57	59	7	6			
		2	57	57	17	12		46.9	
		3	45	54	18	13			
	C	1	56	57	12	8			
		2	54	57	17	11		52.2	
		3	53	55	18	13			
	D	1	57	57	8	6			
		2	52	55	17	13		45.9	
		3	53	56	17	12			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/1/98

'e 4

Relative Humidity: 95.0%

Inspected By: RAE

.ndrow Height: 4

Ambient Temperature: 10

Performed By: KAP KAP

Windrow Length: 35

Windrow Width: 15

Texture: COARSE

Time Turned: 1:25

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:51	8:04
Post-Turn:	1:25	1:40

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	68	63	0	0			
		2	72	71	7	7			
		3	69	71	17	15			
	B	1	67	64	2	1			
		2	71	73	6	7			
		3	70	72	14	8			
	C	1	68	64	9	3			
		2	70	71	7	8			
		3	73	70	12	4			
	D	1	63	60	0	0			
		2	70	71	10	8			
		3	73	67	11	3			
POST	A	1	60	59	14	13			
		2	59	61	15	17			
		3	55	58	17	17			
	B	1	59	60	12	11			
		2	61	50	14	15			
		3	55	60	17	16			
	C	1	60	60	11	11			
		2	60	61	15	15			
		3	61	62	16	15			
	D	1	60	60	13	12			
		2	59	61	15	15			
		3	60	60	16	16			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/2/98

ıe 5

Relative Humidity: 97.0%

Inspected By: RAE

ındrow Height: 4

Ambient Temperature: 18

Performed By: JAD JAD

Windrow Length: 35

Windrow Width: 16

Texture: COARSE

Time Turned: 10:53

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:30	7:50
Post-Turn:	10:59	11:05

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	68	64	14	4			
		2	66	70	14	14			
		3	68	74	14	10			
	B	1	68	65	8	4			
		2	69	73	13	8			
		3	68	72	15	12			
	D	1	65	64	14	5			
		2	72	74	8	5			
		3	55	64	16	15			
	E	1	73	68	8	3			
		2	63	70	18	14			
		3	71	72	12	11			
POST	A	1	57	56	17	15			
		2	60	60	14	16			
		3	43	52	19	18			
	B	1	57	56	17	17			
		2	60	60	15	14			
		3	57	60	18	18			
	C	1	56	58	16	16			
		2	60	60	16	16			
		3	59	59	18	17			
	D	1	57	58	17	16			
		2	57	58	17	17			
		3	59	60	17	17			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/3/98

Relative Humidity: 98.0%

Inspected By: RAE

Ambient Temperature: 17

Performed By: JAD JAD

Windrow Height: 4.5

Windrow Length: 35

Windrow Width: 16

Texture: COARSE

Time Turned: 9:10

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	6:41	6:59
Post-Turn:	9:15	9:22

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	61	64	12	11			
		2	56	62	14	17			
		3	66	69	14	15			
	B	1	57	68	14	4			
		2	63	67	14	15			
		3	68	69	12	15			
	C	1	58	63	14	9			
		2	65	67	5	14			
		3	69	72	12	15			
	D	1	65	62	20	5			
		2	66	68	11	15			
		3	70	72	12	15			
POST	A	2	57	57	18	18			
		3	60	60	18	17			
	B	1	59	58	13	14			
		2	58	59	17	17			
		3	59	60	19	18			
	C	1	59	60	14	14			
		2	59	60	19	16			
		3	54	57	19	19			
	D	1	58	58	16	16			
		2	60	61	17	18			
		3	52	50	18	19			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/4/98

ıe 7

Relative Humidity: 100.0%

Inspected By: RAE

ındrow Height: 5

Ambient Temperature: 10

Performed By: KAP KAP

Windrow Length: 35

Windrow Width: 17

Texture: COARSE

		Start Time	***Finish Time***
Time Turned:	9:10	**Pre-Turn:**	7:36	7:50
Moisture Added:	0	**Post-Turn:**	9:15	9:25

			Temperature (C)		**Oxygen (%)**		**MWHC (%)**		
Pre or Post	**Cross Section**	**Location**	**1 Foot**	**2/3 Feet**	**1 Foot**	**2/3 Feet**	**1 Foot**	**2/3 Feet**	**pH**
PRE	A	1	72	68	4	4			
		2	63	66	15	16		45.9	
		3	70	71	10	4			
	B	1	69	64	1	1			
		2	71	74	15	12		50.6	
		3	68	71	16	14			
	C	1	70	64	0	0			
		2	69	71	15	16		39.5	
		3	66	69	16	15			
	D	1	70	64	3	1			
		2	71	73	15	5		47.3	
		3	69	72	12	7			
POST	A	1	54	55	15	14			
		2	49	52	18	18			
		3	58	59	16	16			
	B	1	56	58	14	14			
		2	57	58	17	17			
		3	57	58	18	17			
	C	1	59	61	11	11			
		2	58	59	18	17			
		3	56	56	16	18			
	D	1	61	60	11	12			
		2	57	57	17	15			
		3	56	56	16	16			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/5/98

e 8

Relative Humidity: 99.0%

Inspected By: PAC

indrow Height: 5

Ambient Temperature: 13

Performed By: KAP KAP

Windrow Length: 35

Windrow Width: 15

Texture: COARSE

	Start Time	Finish Time
Pre-Turn:	7:37	8:10
Post-Turn:	10:43	11:05

Time Turned: 10:40

Moisture Added: 0

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	59	60	15	4			
		2	67	71	16	11			
		3	67	71	11	12			
	B	1	67	66	6	4			
		2	69	71	11	15			
		3	66	70	16	12			
	C	1	68	66	3	3			
		2	60	72	18	7			
		3	69	72	14	11			
	D	1	60	61	13	9			
		2	66	71	18	10			
		3	71	71	12	11			
POST	A	1	53	55	12	12			
		2	54	57	17	15			
		3	59	58	15	15			
	B	1	56	57	11	11			
		2	57	59	16	15			
		3	60	61	16	14			
	C	1	59	60	10	9			
		2	58	60	16	15			
		3	59	59	16	14			
	D	1	60	60	8	8			
		2	59	59	16	14			
		3	59	60	16	14			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/6/98

'e 9

Relative Humidity: 91.0%

Inspected By: PAC

.ndrow Height: 5

Ambient Temperature: 11

Performed By: KAP KAP

Windrow Length: 30

Windrow Width: 10

Texture: COARSE

	Start Time	Finish Time
Pre-Turn:	6:34	6:47
Post-Turn:	9:37	9:48

Time Turned: 9:35

Moisture Added: 100

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	70	68	1	1			
		2	65	70	15	8		58.7	8
		3	73	71	12	4			
	B	1	69	68	1	1			
		2	70	68	16	2		53.5	8
		3	70	73	15	3			
	C	1	68	68	0	0			
		2	69	70	15	3		50.7	8.1
		3	73	72	12	2			
	D	1	68	67	0	0			
		2	74	71	8	5		53.2	8
		3	70	71	8	2			
POST	A	1	55	58	13	12			
		2	59	59	13	12			
		3	57	58	18	16			
	B	1	59	60	12	11			
		2	60	60	14	12			
		3	57	59	18	16			
	C	1	59	60	12	11			
		2	60	60	14	13			
		3	54	57	18	16			
	D	1	59	58	11	11			
		2	59	60	13	13			
		3	45	52	18	17			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/7/98

ıe 10

Relative Humidity: 21.0%

Inspected By: KAP

.ndrow Height: 4

Ambient Temperature: 16

Performed By: RAE RAE

Windrow Length: 18

Windrow Width: 10

Texture: COARSE

Time Turned: 2:40

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:46	7:51
Post-Turn:	2:45	3:01

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	61	64	17	13			
		2	63	59	17	19		52.2	
		3	51	71	18	9			
	B	1	67	69	1	0			
		2	69	67	8	17		42.2	
		3	68	61	11	19			
	C	1	67	65	4	18			
		2	73	73	8	12		41.6	
		3	62	68	19	16			
	D	1	62	64	19	17			
		2	69	72	7	13		53	
		3	73	73	5	6			
POST	A	1	55	59	16	16			
		2	60	61	14	13			
		3	51	55	15	13			
	B	1	58	60	12	10			
		2	59	59	15	14			
		3	59	58	16	16			
	C	1	61	61	12	13			
		2	59	60	15	14			
		3	59	60	16	15			
	D	1	61	62	10	8			
		2	57	60	14	15			
		3	58	58	16	14			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/8/98

ıe 11

Relative Humidity: 100.0%

Inspected By: KAP

ındrow Height: 4

Ambient Temperature: 16

Performed By: RAE RAE

Windrow Length: 60

Windrow Width: 17

Texture: COARSE

Time Turned: 10:20

Moisture Added: 100

	Start Time	Finish Time
Pre-Turn:	8:37	8:47
Post-Turn:	10:26	10:32

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	63	62	15	15			
		2	63	69	15	13			
		3	65	70	17	14			
	B	1	73	71	3	4			
		2	72	73	9	10			
		3	70	72	10	15			
	C	1	71	72	11	10			
		2	73	73	5	11			
		3	68	71	15	14			
	D	1	67	69	9	18			
		2	74	74	6	10			
		3	73	74	9	4			
POST	A	1	58	58	14	14			
		2	45	44	19	19		49.3	
		3	56	56	15	16			
	B	1	57	58	14	14			
		2	49	51	18	18		47.8	
		3	55	56	16	17			
	C	1	56	57	15	14			
		2	53	54	17	17		47.4	
		3	56	57	16	16			
	D	1	53	54	19	16			
		2	55	56	17	18		50.9	
		3	58	58	13	16			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/9/98

ıge 12

Relative Humidity: 96.0%

Inspected By: PAC

ındrow Height: 4

Ambient Temperature: 16

Performed By: KAP MAC

Windrow Length: 35

Windrow Width: 15

Texture: COARSE

Time Turned: 9:05

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	8:12	8:27
Post-Turn:	9:08	9:15

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	66	65	8	7			
		2	69	68	4	0			
		3	66	69	1	0			
	B	1	64	68	3	11			
		2	67	69	11	10			
		3	68	68	7	6			
	C	1	63	62	1	3			
		2	69	67	12	2			
		3	67	66	9	17			
	D	1	66	65	3	3			
		2	67	67	5	9			
		3	67	66	13	4			
POST	A	1	53	52	11	12			
		2	51	52	17	16			
		3	58	57	12	12			
	B	1	54	57	10	9			
		2	54	57	16	15			
		3	58	58	13	13			
	C	1	58	59	7	7			
		2	57	58	15	13			
		3	57	58	14	13			
	D	1	58	58	7	6			
		2	57	57	14	13			
		3	56	56	13	13			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/10/98

ge 13

Relative Humidity: 81.0%

Inspected By: PAC

ndrow Height: 5

Ambient Temperature: 17

Performed By: KAP KAP

Windrow Length: 25

Windrow Width: 15

Texture: COARSE

Time Turned: 8:32

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:39	7:49
Post-Turn:	8:34	8:44

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	65	63	0	0			
		2	65	69	6	5			
		3	71	67	5	3			
	B	1	64	64	0	1			
		2	70	71	10	7			
		3	71	70	6	4			
	C	1	67	66	7	4			
		2	72	70	9	6			
		3	71	69	7	4			
	D	1	68	66	8	3			
		2	72	68	8	5			
		3	68	69	3	2			
POST	A	1	57	58	8	6			
		2	56	58	16	15			
		3	60	60	13	11			
	B	1	60	61	6	5			
		2	58	59	16	15			
		3	59	60	14	13			
	C	1	61	61	5	5			
		2	58	57	16	15			
		3	59	60	14	12			
	D	1	60	60	5	5			
		2	57	58	16	15			
		3	57	59	14	15			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/11/98

ıe 14

Relative Humidity: 82.0%

Inspected By: MAM

.ındrow Height: 4

Ambient Temperature: 14

Performed By: KAP KAP

Windrow Length: 15

Windrow Width: 10

Texture: COARSE

	Start Time	Finish Time
Pre-Turn:	8:02	8:13
Post-Turn:	13:20	13:30

Time Turned: 13:10

Moisture Added: 0

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	68	65	1	0			
		2	72	69	9	3		51.5	
		3	65	67	12	6			
	B	1	64	64	0	0			
		2	71	70	13	5		50	
		3	70	71	13	8			
	C	1	65	64	0	0			
		2	70	70	12	11		50	
		3	69	70	11	9			
	D	1	65	64	0	0			
		2	68	68	14	3		49	
		3	69	69	16	16			
POST	A	1	55	59	7	6			
		2	55	58	19	11			
		3	58	60	17	10			
	B	1	59	61	16	6			
		2	56	56	18	12			
		3	56	59	18	10			
	C	1	61	61	6	6			
		2	55	63	17	11			
		3	53	57	17	11			
	D	1	58	60	14	6			
		2	56	58	16	9			
		3	52	49	18	9			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/12/98

ne 15

Relative Humidity: 87.0%

Inspected By: PAC

ndrow Height: 5

Ambient Temperature: 14

Performed By: MAM MAM

Windrow Length: 28

Windrow Width: 18.5

Texture: MEDIUM

Time Turned: 7:57

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:40	7:55
Post-Turn:	8:07	8:22

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	67	64	10	2			
		2	64	71	16	5			
		3	67	71	16	4			
	B	1	69	65	5	1			
		2	63	71	18	5			
		3	69	70	15	3			
	C	1	63	62	9	2			
		2	70	71	15	4			
		3	66	69	16	4			
	D	1	53	55	17	3			
		2	71	70	13	3			
		3	69	73	12	13			
POST	A	1	60	61	10	6			
		2	55	60	17	13			
		3	59	61	18	13			
	B	1	60	61	12	6			
		2	60	60	18	12			
		3	58	60	18	12			
	C	1	60	60	13	6			
		2	59	60	17	11			
		3	58	60	17	12			
	D	1	58	59	18	6			
		2	60	60	15	9			
		3	58	58	18	13			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/13/98

ıe 16

Relative Humidity: 75.0%

Inspected By: PAC

ındrow Height: 4

Ambient Temperature: 19

Performed By: RAE RAE

Windrow Length: 18

Windrow Width: 16

Texture: MEDIUM

Time Turned: 8:39

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:50	8:02
Post-Turn:	9:10	9:21

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	69	68	2	3			
		2	73	74	15	19		47.1	8.4
		3	50	65	18	12			
	B	1	70	68	12	4			
		2	72	73	5	19		46.9	8.4
		3	65	69	16	14			
	C	1	65	67	3	7			
		2	72	72	7	8		44.6	8.6
		3	73	72	5	8			
	D	1	66	66	13	8			
		2	64	69	7	15		40	8.5
		3	72	73	9	5			
POST	A	1	62	63	10	10			
		2	58	61	16	14			
		3	45	52	18	17			
	B	1	60	61	12	12			
		2	61	62	15	14			
		3	55	57	17	17			
	C	1	60	60	12	14			
		2	61	61	14	14			
		3	58	59	17	16			
	D	1	58	59	14	13			
		2	61	61	13	14			
		3	59	59	16	17			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/14/98

ıe 17

Relative Humidity: 83.0%

Inspected By: PAC

.ndrow Height: 4

Ambient Temperature: 18

Performed By: KAP KAP

Windrow Length: 28

Windrow Width: 15

Texture: MEDIUM

Time Turned: 8:21

Moisture Added: 100

	Start Time	Finish Time
Pre-Turn:	7:17	7:28
Post-Turn:	8:23	8:34

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	68	67	1	1			
		2	71	69	9	4			
		3	71	68	8	2			
	B	1	67	65	10	5			
		2	72	70	8	4			
		3	71	69	11	5			
	C	1	69	66	5	2			
		2	69	70	10	4			
		3	72	69	10	4			
	D	1	70	65	6	2			
		2	67	61	16	1			
		3	71	67	5	2			
POST	A	1	60	61	6	6			
		2	59	59	15	13		51.6	
		3	59	60	15	14			
	B	1	60	60	10	9			
		2	59	60	17	16		56.7	
		3	60	60	16	14			
	C	1	60	59	9	8			
		2	59	59	17	16		50.8	
		3	59	58	15	14			
	D	1	58	60	9	7			
		2	54	58	17	15		48.4	
		3	57	57	15	13			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/15/98

Age 18

Relative Humidity: 79.0%

Inspected By: MAM

Windrow Height: 3

Ambient Temperature: 19

Performed By: KAP KAP

Windrow Length: 18

Windrow Width: 12

Texture: MEDIUM

Time Turned: 8:18

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:45	7:54
Post-Turn:	8:24	8:32

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	65	65	14	4			
		2	69	70	3	2			
		3	72	68	3	1			
	B	1	66	64	4	1			
		2	72	70	4	1			
		3	68	69	11	4			
	C	1	62	64	18	18			
		2	72	70	3	1			
		3	67	67	10	16			
	D	1	55	60	20	14			
		2	71	69	3	1			
		3	72	69	7	3			
POST	A	1	60	60	11	10			
		2	61	61	13	12			
		3	54	56	15	14			
	B	1	61	61	10	9			
		2	61	61	14	13			
		3	58	60	15	14			
	C	1	61	61	11	12			
		2	60	61	13	12			
		3	60	60	15	15			
	D	1	61	62	12	10			
		2	58	59	13	12			
		3	59	59	15	13			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/16/98

Day 19

Relative Humidity: 91.0%

Inspected By: PAC

Windrow Height: 4.5

Ambient Temperature: 22

Performed By: MAM MAM

Windrow Length: 26

Windrow Width: 18.5

Texture: MEDIUM

Time Turned: 7:15

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	6:48	7:05
Post-Turn:	7:25	7:38

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	62	63	7	0			
		2	66	68	15	1			
		3	72	71	12	1			
	B	1	62	62	14	1			
		2	69	69	15	1			
		3	70	71	12	2			
	C	1	63	62	12	0			
		2	70	69	14	1			
		3	67	68	13	1			
	D	1	65	63	5	0			
		2	65	66	16	1			
		3	65	67	14	0			
POST	A	1	57	52	14	15			
		2	59	60	13	10			
		3	61	62	13	10			
	B	1	57	60	13	12			
		2	60	61	15	10			
		3	62	62	13	10			
	C	1	59	61	12	11			
		2	61	61	13	8			
		3	61	62	13	11			
	D	1	61	61	13	9			
		2	62	62	11	8			
		3	60	61	14	12			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/17/98

'e 20

Relative Humidity: 54.0%

Inspected By: PAC

indrow Height: 4

Ambient Temperature: 21

Performed By: MAM MAM

Windrow Length: 28

Windrow Width: 18.5

Texture: MEDIUM

Time Turned: 9:50

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	8:20	8:38
Post-Turn:	10:00	10:15

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	65	62	5	3			
		2	71	70	7	3			
		3	57	67	13	2			
	B	1	63	63	9	4			
		2	69	69	11	4			
		3	61	67	16	3			
	C	1	60	61	10	3			
		2	70	69	11	1			
		3	65	68	11	3			
	D	1	63	60	10	8			
		2	69	70	6	2			
		3	67	69	10	2			
POST	A	1	58	57	14	11			
		2	58	59	16	14			
		3	53	56	17	16			
	B	1	59	59	13	12			
		2	58	58	17	15			
		3	56	59	17	15			
	C	1	59	59	12	10			
		2	57	58	17	15			
		3	58	58	17	15			
	D	1	58	59	13	11			
		2	56	57	17	16			
		3	57	59	17	15			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/18/98

'e 21

Relative Humidity: 67.0%

Inspected By: RAE

.ndrow Height: 4

Ambient Temperature: 18

Performed By: KAP KAP

Windrow Length: 12

Windrow Width: 10

Texture: MEDIUM

Time Turned: 1:06

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:33	7:45
Post-Turn:	1:08	1:18

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	63	62	1	1			
		2	67	68	2	2			
		3	68	68	1	1			
	B	1	62	63	1	1			
		2	70	69	2	2			
		3	63	65	1	0			
	C	1	62	63	1	1			
		2	66	64	1	1			
		3	61	61	1	0			
	D	1	60	60	1	1			
		2	63	63	1	1			
		3	60	61	1	1			
POST	A	1	56	54	10	9			
		2	56	55	17	15			
		3	52	51	15	14			
	B	1	57	57	8	6			
		2	57	57	15	13			
		3	53	55	13	11			
	C	1	57	58	7	5			
		2	56	57	14	13			
		3	56	56	11	8			
	D	1	56	57	8	8			
		2	53	54	15	14			
		3	57	57	9	8			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/19/98

ıe 22

Relative Humidity: 60.0%

Inspected By: MAM

ındrow Height: 5

Ambient Temperature: 20

Performed By: RAE RAE

Windrow Length: 18

Windrow Width: 12

Texture: MEDIUM

Time Turned: 7:00

Moisture Added: 50

	Start Time	Finish Time
Pre-Turn:	6:29	6:38
Post-Turn:	7:08	7:14

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	58	58	0	0			
		2	48	52	1	1			
		3	57	56	0	1			
	B	1	60	60	0	0			
		2	58	59	1	1			
		3	57	58	1	1			
	C	1	60	60	0	0			
		2	60	61	1	0			
		3	60	60	1	1			
	D	1	59	60	0	0			
		2	62	62	1	1			
		3	60	60	1	1			
POST	A	1	52	51	16	14			
		2	36	42	18	17		46.9	
		3	50	50	12	12			
	B	1	55	55	10	10			
		2	46	48	17	17		65	
		3	51	51	10	10			
	C	1	55	55	11	10			
		2	50	52	16	16		49	
		3	50	51	14	10			
	D	1	53	54	12	11			
		2	52	53	14	13		52.2	
		3	50	53	12	10			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/20/98

Day 23

Relative Humidity: 60.0%

Inspected By: PAC

Windrow Height: 4.5

Ambient Temperature: 28

Performed By: MAM MAM

Windrow Length: 25

Windrow Width: 18

Texture: FINE

Time Turned: 14:30

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	13:27	13:45
Post-Turn:	14:40	14:49

			Temperature (C)		Oxygen (%)		MWHC (%)		
Pre or Post	**Cross Section**	**Location**	**1 Foot**	**2/3 Feet**	**1 Foot**	**2/3 Feet**	**1 Foot**	**2/3 Feet**	**pH**
PRE	A	1	58	58	1	1			
		2	66	62	5	1			
		3	62	58	2	0			
	B	1	60	60	0	0			
		2	66	63	4	1			
		3	64	60	5	1			
	C	1	62	60	0	0			
		2	63	61	10	2			
		3	61	59	3	1			
	D	1	62	60	0	0			
		2	62	61	2	1			
		3	62	59	2	1			
POST	A	1	41	50	14	13			
		2	54	55	12	10			
		3	55	54	13	12			
	B	1	54	56	13	11			
		2	55	56	11	9			
		3	54	54	13	11			
	C	1	57	58	11	10			
		2	55	56	12	10			
		3	54	54	11	11			
	D	1	58	58	11	9			
		2	53	55	10	8			
		3	55	55	11	9			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/21/98

Time 24

Relative Humidity: 85.0%

Inspected By: MAM

Windrow Height: 4.8

Ambient Temperature: 18

Performed By: RAD RAD

Windrow Length: 22

Windrow Width: 18

Texture: FINE

Time Turned: 8:16

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:28	7:42
Post-Turn:	8:26	8:39

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	51	51	1	0			
		2	62	59	1	1			
		3	60	55	1	0			
	B	1	60	58	0	0			
		2	62	59	3	1			
		3	60	58	2	1			
	C	1	59	58	1	0			
		2	64	59	2	1			
		3	61	62	2	2			
	D	1	59	59	0	0			
		2	64	60	2	2			
		3	62	58	1	1			
POST	A	1	41	51	12	8			
		2	54	55	9	6		43.7	8.5
		3	50	50	8	6			
	B	1	50	52	6	7			
		2	52	55	10	6		42.5	8.5
		3	52	52	7	5			
	C	1	55	56	7	5			
		2	52	52	9	6		48.8	8.5
		3	46	53	6	7			
	D	1	56	56	5	5			
		2	52	52	10	6		46.4	8.6
		3	47	51	9	7			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/22/98

Windrow Number: 25

Relative Humidity: 90.0%

Inspected By: PAC

Windrow Height: 5

Ambient Temperature: 16

Performed By: KAP KAP

Windrow Length: 18

Windrow Width: 14

Texture: MEDIUM

Time Turned: 9:59

Moisture Added: 100

	Start Time	Finish Time
Pre-Turn:	8:38	8:48
Post-Turn:	10:00	10:11

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	53	54	0	0			
		2	54	53	0	0			
		3	53	54	0	0			
	B	1	56	56	0	0			
		2	57	56	0	0			
		3	55	55	0	0			
	C	1	57	58	0	2			
		2	58	57	0	0			
		3	57	57	0	0			
	D	1	60	59	1	1			
		2	57	58	0	0			
		3	57	56	0	0			
POST	A	1	52	52	7	8			
		2	41	43	14	12		39.6	
		3	53	53	9	8			
	B	1	53	54	8	7			
		2	47	49	12	10		45.5	
		3	53	53	8	9			
	C	1	55	55	8	9			
		2	50	50	11	10		45	
		3	51	53	6	8			
	D	1	55	56	7	9			
		2	51	51	10	10		47.1	
		3	48	50	7	6			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/23/98

'e 26

Relative Humidity: 98.0%

Inspected By: PAC

ındrow Height: 4

Ambient Temperature: 18

Performed By: RAE RAE

Windrow Length: 12

Windrow Width: 10

Texture: MEDIUM

Time Turned: 7:28

Moisture Added: 100

	Start Time	Finish Time
Pre-Turn:	7:00	7:10
Post-Turn:	7:32	7:46

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	60	60	10	8			
		2	49	51	0	0			
		3	57	59	2	0			
	B	1	55	58	0	0			
		2	60	59	0	0			
		3	58	58	0	0			
	C	1	58	58	0	0			
		2	63	63	2	2			
		3	57	57	0	0			
	D	1	55	55	0	0			
		2	62	62	0	1			
		3	58	58	0	0			
POST	A	1	51	52	10	10			
		2	47	46	11	11		57.1	
		3	29	33	17	16			
	B	1	53	52	12	10			
		2	48	50	10	11		52.1	
		3	38	36	16	16			
	C	1	51	53	10	10			
		2	51	52	11	10		53.1	
		3	43	46	15	16			
	D	1	49	50	11	11			
		2	52	52	10	10		52.9	
		3	48	49	12	16			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/24/98

Age 27

Relative Humidity: 98.0%

Inspected By: PAC

Windrow Height: 4.3

Ambient Temperature: 20

Performed By: RAD RAD

Windrow Length: 25

Windrow Width: 18

Texture: FINE

Time Turned: 7:12

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	6:40	6:58
Post-Turn:	7:14	7:26

			Temperature (C)		Oxygen (%)		MWHC (%)		
Pre or Post	**Cross Section**	**Location**	**1 Foot**	**2/3 Feet**	**1 Foot**	**2/3 Feet**	**1 Foot**	**2/3 Feet**	**pH**
PRE	A	1	45	48	3	0			
		2	59	56	5	1			
		3	55	55	2	0			
	B	1	62	55	0	0			
		2	55	62	10	1			
		3	61	56	1	0			
	C	1	60	56	1	0			
		2	61	56	10	0			
		3	62	57	1	1			
	D	1	62	56	0	0			
		2	62	54	4	0			
		3	57	51	0	0			
POST	A	1	38	46	13	11			
		2	50	51	13	10			
		3	46	48	10	5			
	B	1	48	51	12	10			
		2	51	52	13	10			
		3	48	49	9	5			
	C	1	51	52	11	9			
		2	51	51	13	11			
		3	49	50	8	6			
	D	1	53	53	9	8			
		2	50	50	12	10			
		3	49	50	8	6			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/25/98

Day: 28

Relative Humidity: 90.0%

Inspected By: PAC

Windrow Height: 4.3

Ambient Temperature: 17

Performed By: RAD RAD

Windrow Length: 25

Windrow Width: 18

Texture: FINE

Time Turned: 7:13

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	6:50	7:02
Post-Turn:	7:15	7:28

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	46	50	4	1			
		2	61	57	6	1			
		3	55	53	0	0			
	B	1	56	55	0	0			
		2	63	59	6	1			
		3	55	52	0	0			
	C	1	57	55	0	0			
		2	62	58	10	1			
		3	57	55	0	0			
	D	1	57	55	0	0			
		2	61	58	7	2			
		3	59	55	1	0			
POST	A	1	35	49	12	9			
		2	49	49	11	10			
		3	45	47	8	5			
	B	1	50	52	9	8			
		2	49	50	12	10			
		3	47	49	6	5			
	C	1	52	52	8	7			
		2	49	51	13	9			
		3	47	47	7	6			
	D	1	52	52	7	6			
		2	49	49	12	9			
		3	46	47	7	6			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/26/98

'e 29

Relative Humidity: 80.0%

Inspected By: PAC

ndrow Height: 4.5

Ambient Temperature: 16

Performed By: MAM MAM

Windrow Length: 25

Windrow Width: 20.5

Texture: FINE

Time Turned: 8:00

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:30	7:48
Post-Turn:	8:10	8:23

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	55	58	2	0			
		2	48	49	2	1		44.2	
		3	53	54	2	0			
	B	1	57	59	3	1			
		2	52	53	3	1		40	
		3	54	56	2	1			
	C	1	59	60	2	0			
		2	53	53	1	0		42.3	
		3	54	56	1	1			
	D	1	58	57	1	0			
		2	53	55	2	1		50	
		3	56	58	3	1			
POST	A	1	45	48	13	12			
		2	48	48	12	11			
		3	48	48	11	10			
	B	1	46	49	12	10			
		2	48	48	12	11			
		3	47	48	10	9			
	C	1	49	51	11	10			
		2	48	48	14	13			
		3	48	49	13	11			
	D	1	50	51	10	9			
		2	47	48	12	12			
		3	48	48	10	8			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/27/98

Age 30

Relative Humidity: 92.0%

Inspected By: RAE

Windrow Height: 5

Ambient Temperature: 19

Performed By: KAP KAP

Windrow Length: 23

Windrow Width: 16

Texture: MEDIUM

Time Turned: 8:42

Moisture Added: 150

	Start Time	Finish Time
Pre-Turn:	7:32	7:43
Post-Turn:	8:46	8:59

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	49	50	0	0			
		2	56	55	2	1			
		3	53	53	0	1			
	B	1	51	52	0	0			
		2	58	56	2	1			
		3	53	52	0	0			
	C	1	52	53	0	0			
		2	57	57	1	1			
		3	53	53	0	0			
	D	1	53	53	0	0			
		2	55	54	1	0			
		3	53	54	0	0			
POST	A	1	47	48	8	8			
		2	43	46	17	14		56.9	8.5
		3	47	47	8	8			
	B	1	49	49	10	11			
		2	44	46	15	12		61.9	8.6
		3	47	47	8	7			
	C	1	49	50	9	7			
		2	47	48	12	11		55.6	8.6
		3	46	47	9	8			
	D	1	47	49	8	7			
		2	48	48	11	11		60	8.6
		3	45	45	11	9			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/28/98

Day: 31

Relative Humidity: 92.0%

Inspected By: PAC

Windrow Height: 5

Ambient Temperature: 19

Performed By: KAP KAP

Windrow Length: 23

Windrow Width: 16

Texture: MEDIUM

Time Turned: 6:58

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	6:27	6:43
Post-Turn:	6:59	7:11

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	51	51	0	0			
		2	53	51	1	0			
		3	53	52	1	1			
	B	1	53	52	0	0			
		2	55	53	0	1			
		3	54	52	1	0			
	C	1	53	51	0	0			
		2	54	54	5	1			
		3	54	52	1	0			
	D	1	51	50	0	0			
		2	53	52	7	1			
		3	51	49	0	0			
POST	A	1	45	46	9	8			
		2	42	45	19	17			
		3	46	46	12	12			
	B	1	47	48	9	8			
		2	45	47	18	15			
		3	47	46	12	11			
	C	1	48	49	7	7			
		2	47	47	17	14			
		3	46	47	12	11			
	D	1	49	49	7	7			
		2	47	47	15	15			
		3	46	46	13	12			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/29/98

'e 32

Relative Humidity: 83.0%

Inspected By: PAC

.indrow Height: 5

Ambient Temperature: 21

Performed By: KAP KAP

Windrow Length: 21

Windrow Width: 14

Texture: MEDIUM

Time Turned: 7:30

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	6:33	6:43
Post-Turn:	7:32	7:42

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	50	50	0	0			
		2	53	52	2	2		52.8	
		3	50	49	1	0			
	B	1	51	51	0	0			
		2	54	53	2	1		50.1	
		3	50	51	0	0			
	C	1	50	50	0	0			
		2	54	54	2	2		48.1	
		3	51	51	0	1			
	D	1	51	51	0	0			
		2	51	52	2	2		56.8	
		3	51	51	1	1			
POST	A	1	45	46	6	7			
		2	41	43	15	12			
		3	46	46	7	7			
	B	1	47	48	7	6			
		2	44	46	13	12			
		3	46	46	7	6			
	C	1	48	48	8	7			
		2	47	47	13	12			
		3	45	46	9	7			
	D	1	49	48	7	9			
		2	47	47	13	13			
		3	46	45	11	10			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/30/98

Age 33

Relative Humidity: 85.0%

Inspected By: PAC

Windrow Height: 4

Ambient Temperature: 23

Performed By: JAD JAD

Windrow Length: 25

Windrow Width: 16

Texture: MEDIUM

Time Turned: 8:05

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:45	8:00
Post-Turn:	8:20	8:35

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	51	50	3	1			
		2	53	53	3	3			
		3	52	50	1	1			
	B	1	53	52	1	1			
		2	54	55	1	0			
		3	52	52	2	2			
	C	1	52	51	0	0			
		2	54	55	1	1			
		3	52	52	2	1			
	D	1	52	52	1	2			
		2	55	53	3	2			
		3	54	51	2	1			
POST	A	1	42	45	11	9			
		2	47	47	9	9			
		3	45	45	8	5			
	B	1	47	48	9	8			
		2	47	48	10	8			
		3	45	48	5	4			
	C	1	49	49	9	8			
		2	49	49	8	9			
		3	48	48	6	4			
	D	1	49	48	9	8			
		2	48	48	11	9			
		3	47	47	6	5			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 5/31/98

Windrow Number: 34

Relative Humidity: 78.0%

Inspected By: PAC

Windrow Height: 4

Ambient Temperature: 28

Performed By: JAD JAD

Windrow Length: 25

Windrow Width: 16

Texture: MEDIUM

Time Turned: 8:25

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:58	8:13
Post-Turn:	8:27	8:40

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	50	51	6	2			
		2	51	52	9	2			
		3	50	50	1	1			
	B	1	52	52	1	1			
		2	52	53	9	1			
		3	51	52	1	0			
	C	1	52	51	0	0			
		2	55	54	14	2			
		3	53	53	1	1			
	D	1	51	49	0	0			
		2	54	53	12	2			
		3	52	50	1	1			
POST	A	1	41	44	15	14			
		2	45	46	16	13			
		3	45	46	10	8			
	B	1	46	47	14	13			
		2	46	47	14	13			
		3	46	47	8	7			
	C	1	48	48	16	12			
		2	46	47	17	13			
		3	47	47	7	7			
	D	1	48	47	13	11			
		2	46	46	17	13			
		3	47	47	9	6			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/1/98

'e 35

Relative Humidity: 70.0%

Inspected By: PAC

ındrow Height: 4

Ambient Temperature: 19

Performed By: RAE RAE

Windrow Length: 12

Windrow Width: 16

Texture: MEDIUM

Time Turned: 8:35

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:46	8:01
Post-Turn:	8:40	8:50

			Temperature (C)		Oxygen (%)		MWHC (%)		
Pre or Post	*Cross Section*	*Location*	*1 Foot*	*2/3 Feet*	*1 Foot*	*2/3 Feet*	*1 Foot*	*2/3 Feet*	*pH*
PRE	A	1	51	51	2	2			
		2	32	41	8	4			
		3	49	49	3	4			
	B	1	51	51	2	2			
		2	44	48	3	3			
		3	49	49	1	1			
	C	1	52	48	2	1			
		2	49	51	4	3			
		3	49	49	2	2			
	D	1	50	48	2	1			
		2	51	51	5	9			
		3	48	48	2	2			
POST	A	1	39	41	16	16			
		2	40	40	14	15			
		3	27	28	19	19			
	B	1	39	40	16	16			
		2	41	41	16	16			
		3	28	36	18	18			
	C	1	41	42	16	16			
		2	41	41	16	18			
		3	37	37	18	18			
	D	1	41	42	16	16			
		2	41	41	16	16			
		3	38	38	18	19			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/2/98

ıe 36

Relative Humidity: 77.0%

Inspected By: PAC

.ndrow Height: 5

Ambient Temperature: 20

Performed By: KAP KAP

Windrow Length: 21

Windrow Width: 17

Texture: *MEDIUM*

Time Turned: 7:53

Moisture Added: 100

	Start Time	Finish Time
Pre-Turn:	6:51	7:00
Post-Turn:	7:55	8:10

			Temperature (C)		Oxygen (%)		MWHC (%)		
Pre or Post	***Cross Section***	***Location***	***1 Foot***	***2/3 Feet***	***1 Foot***	***2/3 Feet***	***1 Foot***	***2/3 Feet***	***pH***
PRE	A	1	45	45	0	0			
		2	45	46	5	3			
		3	45	45	5	4			
	B	1	46	47	0	0			
		2	47	47	3	2			
		3	45	45	4	5			
	C	1	47	47	1	0			
		2	48	47	4	4			
		3	45	44	5	6			
	D	1	47	47	0	0			
		2	47	47	3	4			
		3	45	44	4	6			
POST	A	1	41	42	10	8			
		2	42	42	14	14		59.1	
		3	40	41	15	12			
	B	1	43	43	6	7			
		2	42	43	14	12		57.1	
		3	41	41	14	12			
	C	1	44	44	6	6			
		2	40	41	16	13		59.1	
		3	41	41	13	12			
	D	1	44	44	7	6			
		2	40	40	16	16		54.5	
		3	41	41	14	13			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/3/98

e 37

Relative Humidity: 64.0%

Inspected By: PAC

ndrow Height: 5

Ambient Temperature: 17

Performed By: KAP KAP

Windrow Length: 21

Windrow Width: 17

Texture: MEDIUM

Time Turned: 7:45

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:25	7:36
Post-Turn:	7:46	7:58

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	45	46	0	0			
		2	46	47	1	2			
		3	44	45	1	3			
	B	1	46	47	0	0			
		2	47	48	1	4			
		3	44	44	0	1			
	C	1	47	47	0	0			
		2	48	48	0	1			
		3	43	44	1	1			
	D	1	48	49	0	0			
		2	48	48	0	1			
		3	42	42	2	1			
POST	A	1	41	41	15	14			
		2	43	43	13	14			
		3	42	42	13	14			
	B	1	42	43	13	13			
		2	42	43	14	15			
		3	42	42	12	12			
	C	1	44	44	12	12			
		2	40	41	16	15			
		3	42	42	11	12			
	D	1	44	44	13	15			
		2	42	42	16	17			
		3	42	41	12	16			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/4/98

'e 38

Relative Humidity: 90.0%

Inspected By: MAM

indrow Height: 4

Ambient Temperature: 16

Performed By: KAP KAP

Windrow Length: 12

Windrow Width: 10

Texture: MEDIUM

Time Turned: 10:48

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	10:21	10:34
Post-Turn:	10:49	11:00

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	45	46	1	1			
		2	47	47	2	1		63	
		3	45	45	1	2			
	B	1	46	47	1	1			
		2	48	48	1	2		62.7	
		3	44	45	2	2			
	C	1	47	48	1	1			
		2	49	49	1	2		57.8	
		3	44	44	1	2			
	D	1	47	47	1	2			
		2	48	48	1	2		55.6	
		3	46	44	1	2			
POST	A	1	38	40	9	9			
		2	38	39	16	14			
		3	40	40	11	12			
	B	1	41	43	6	7			
		2	40	41	14	14			
		3	39	39	12	12			
	C	1	43	44	7	8			
		2	42	42	12	13			
		3	38	38	15	13			
	D	1	43	42	8	10			
		2	42	42	15	14			
		3	40	38	14	16			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/5/98

e 39

Relative Humidity: 45.0%

Inspected By: PAC

ndrow Height: 3

Ambient Temperature: 12

Performed By: KAP KAP

Windrow Length: 13

Windrow Width: 9

Texture: MEDIUM

Time Turned: 9:29

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:49	8:01
Post-Turn:	9:30	9:43

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	45	45	0	1			
		2	41	44	2	7			8.5
		3	42	42	1	5			
	B	1	45	46	0	1			
		2	45	46	1	2			8.6
		3	41	42	1	1			
	C	1	44	44	0	1			
		2	46	46	0	1			8.5
		3	40	40	1	2			
	D	1	44	44	1	3			
		2	46	45	1	4			8.5
		3	39	39	3	2			
POST	A	1	40	41	14	10			
		2	38	38	12	15			
		3	39	39	13	15			
	B	1	41	42	9	10			
		2	39	39	13	14			
		3	37	38	14	14			
	C	1	42	42	10	10			
		2	40	40	12	14			
		3	35	36	15	15			
	D	1	42	42	11	12			
		2	40	40	13	15			
		3	33	34	17	17			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/6/98

Age 40

Relative Humidity: 76.0%

Inspected By: PAC

Windrow Height: 3

Ambient Temperature: 10

Performed By: PAC PAC

Windrow Length: 24

Windrow Width: 15

Texture: FINE

Time Turned: 8:45

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:50	8:00
Post-Turn:	8:50	9:00

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	43	44	1	1			
		2	35	39	7	3			
		3	43	42	5	5			
	B	1	42	43	6	1			
		2	42	43	6	3			
		3	43	43	5	6			
	C	1	43	43	1	1			
		2	43	43	4	2			
		3	43	42	6	7			
	D	1	43	42	3	1			
		2	43	43	3	2			
		3	42	42	7	7			
POST	A	1	33	35	10	6			
		2	29	28	17	15		52.5	
		3	30	34	11	9			
	B	1	36	38	5	1			
		2	32	31	16	17		55.8	
		3	37	39	12	12			
	C	1	39	39	3	4			
		2	34	34	14	14		45.1	
		3	39	38	12	17			
	D	1	38	37	5	12			
		2	36	35	18	17		50.9	
		3	36	35	14	15			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/7/98

ıe 41

Relative Humidity: 74.0%

Inspected By: PAC

ı ındrow Height: 4.5

Ambient Temperature: 16

Performed By: PAC PAC

Windrow Length: 21

Windrow Width: 15

Texture: FINE

Time Turned: 10:05

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	9:35	9:59
Post-Turn:	10:13	10:21

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	37	37	9	4			
		2	37	37	8	1			
		3	38	38	16	17			
	B	1	37	38	6	3			
		2	37	37	19				
		3	39	38	9	3			
	C	1	39	39	11	4			
		2	36	36					
		3	38	38	4	3			
	D	1	39	39	11	4			
		2	36	36					
		3	37	37	12	9			
POST	A	1	32	32					
		2	32	31					
		3	31	32					
	B	1	32	32					
		2	31	32					
		3	31	31					
	C	1	31	32					
		2	31	31					
		3	32	31					
	D	1	31	32					
		2	32	31					
		3	32	30					

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/8/98

ıe 42

Relative Humidity: 60.0%

Inspected By: PAC

.indrow Height: 5

Ambient Temperature: 17

Performed By: RAE RAE

Windrow Length: 17

Windrow Width: 12

Texture: FINE

Time Turned: 10:00

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	8:14	8:23
Post-Turn:	10:08	10:25

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	32	33	7	5			
		2	25	27	15	10		37.7	
		3	32	32	6	4			
	B	1	33	33	2	8			
		2	29	29	8	12		46	
		3	32	32	6	8			
	C	1	34	33	5	6			
		2	30	30	8	15		50	
		3	31	31	10	10			
	D	1	33	33	1	6			
		2	29	28	11	15		41	
		3	29	29	12	9			
POST	A	1	30	29	17	18			
		2	29	29	15	18			
		3	22	24	18	18			
	B	1	28	29	15	17			
		2	26	27	17	13			
		3	26	26	17	18			
	C	1	29	30	18	16			
		2	28	28	13	15			
		3	26	29	16	14			
	D	1	27	28	15	16			
		2	27	27	15	15			
		3	30	30	14	16			

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/9/98

Age 43

Relative Humidity: 99.0%

Inspected By: PAC

Windrow Height: 4

Ambient Temperature: 16

Performed By: KAP KAP

Windrow Length: 18

Windrow Width: 16

Texture: FINE

Time Turned: 1:06

Moisture Added: 50

	Start Time	Finish Time
Pre-Turn:	8:52	9:08
Post-Turn:	1:07	1:23

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	30	31	7	6			
		2	28	29	6	2			
		3	30	30	5	8			
	B	1	31	31	3	3			
		2	30	31	6	4			
		3	30	30	10	9			
	C	1	32	32	2	3			
		2	31	32	7	8			
		3	31	31	9	5			
	D	1	33	33	5	6			
		2	33	33	2	8			
		3	29	30	8	5			
POST	A	1	21	22					
		2	23	23				38	8.3
		3	22	23					
	B	1	22	22					
		2	23	24				41.3	8.5
		3	22	23					
	C	1	22	23					
		2	24	25				40.4	8.5
		3	23	23					
	D	1	23	23					
		2	23	24				47.7	8.4
		3	22	22					

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/10/98

'e 44

Relative Humidity: 82.0%

Inspected By: PAC

ındrow Height: 5

Ambient Temperature: 19

Performed By: RAE RAE

Windrow Length: 15

Windrow Width: 12

Texture: FINE

Time Turned: 13:40

Moisture Added: 100

	Start Time	Finish Time
Pre-Turn:	7:52	8:02
Post-Turn:	13:41	13:54

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	29.2	29.7					
		2	24.5	24.6					
		3	27.9	28.7					
	B	1	28	28.9					
		2	24.9	25.3					
		3	28.7	28					
	C	1	27.6	27.8					
		2	25.9	26.2					
		3	27.7	27.8					
	D	1	27.1	27.7					
		2	26.8	27.1					
		3	27.5	27.1					
POST	A	1	25.6	26.3					
		2	26	26.2				70.3	
		3	26.4	25.4					
	B	1	26.9	27.2					
		2	25.9	26.6				71.1	
		3	25.1	25.3					
	C	1	26.1	26.4					
		2	26	26.2				65	
		3	26.2	26.4					
	D	1	26	25.2					
		2	26.8	26				52.1	
		3	26.4	25.2					

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/11/98

Windrow Number: 45

Relative Humidity: 81.0%

Inspected By: RAE

Windrow Height: 4

Ambient Temperature: 26

Performed By: MAM MAM

Windrow Length: 18

Windrow Width: 12

Texture: FINE

Time Turned: 9:40

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	9:00	9:10
Post-Turn:	9:50	10:00

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	28	29					
		2	28	27					
		3	29	27					
	B	1	28	29					
		2	28	29					
		3	29	28					
	C	1	28	27					
		2	28	28					
		3	29	28					
	D	1	28	27					
		2	28	28					
		3	29	29					
POST	A	1	27	26					
		2	28	28					
		3	28	28					
	B	1	28	26					
		2	28	28					
		3	28	28					
	C	1	28	26					
		2	28	28					
		3	28	28					
	D	1	26	25					
		2	28	28					
		3	26	27					

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/12/98

'e 46

Relative Humidity: 88.0%

Inspected By: PAC

ındrow Height: 5

Ambient Temperature: 26

Performed By: MAM MAM

Windrow Length: 20

Windrow Width: 20

Texture: FINE

Time Turned: 10:20

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	8:00	8:10
Post-Turn:	10:30	10:40

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	31	31					
		2	32	31				46.9	
		3	31	30					
	B	1	31	32					
		2	31	31				55.1	
		3	31	30					
	C	1	30	31					
		2	32	32				54.2	
		3	30	30					
	D	1	32	33					
		2	31	31				45.8	
		3	31	31					
POST	A	1	28	30					
		2	28	28					
		3	29	29					
	B	1	30	31					
		2	28	29					
		3	28	29					
	C	1	29	29					
		2	29	29					
		3	28	28					
	D	1	30	30					
		2	29	30					
		3	30	30					
	E	1	28	29					
		2	28	29					
		3	29	29					

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/13/98

'e 47

Relative Humidity: 89.0%

Inspected By: PAC

indrow Height: 4

Ambient Temperature: 20

Performed By: MAM MAM

Windrow Length: 19

Windrow Width: 18.5

Texture: *FINE*

Time Turned: 7:30

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:10	7:20
Post-Turn:	7:40	7:50

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	33	33					
		2	34	34					
		3	33	34					
	B	1	35	32					
		2	34	34					
		3	34	35					
	C	1	34	33					
		2	34	33					
		3	35	34					
	D	1	34	34					
		2	33	34					
		3	34	34					
POST	A	1	33	32					
		2	32	32					
		3	33	33					
	B	1	32	32					
		2	32	33					
		3	33	33					
	C	1	31	32					
		2	32	32					
		3	32	33					
	D	1	31	30					
		2	32	31					
		3	33	33					

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/14/98

ıe 48

Relative Humidity: 81.0%

Inspected By: PAC

ındrow Height: 4

Ambient Temperature: 18

Performed By: MAM MAM

Windrow Length: 22

Windrow Width: 18

Texture: FINE

Time Turned: 8:25

Moisture Added: 0

	Start Time	Finish Time
Pre-Turn:	7:20	7:30
Post-Turn:	8:35	8:45

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	34	33					
		2	35	36					
		3	35	35					
	B	1	36	33					
		2	35	36					
		3	35	36					
	C	1	36	34					
		2	34	35					
		3	36	36					
	D	1	35	35					
		2	34	34					
		3	36	36					
POST	A	1	33	34					
		2	29	32					
		3	33	33					
	B	1	33	33					
		2	32	33					
		3	33	34					
	C	1	34	34					
		2	33	33					
		3	32	33					
	D	1	32	32					
		2	33	33					
		3	32	33					

NSWC CRANE
WINDROW PROCESS DATA - DAILY LOG

Windrow Number: N30%

Date Monitored: 6/15/98

ıe 49

Relative Humidity: 90.0%

Inspected By: MAM

ındrow Height: 4

Ambient Temperature: 20

Performed By: KAP KAP

Windrow Length: 17

Windrow Width: 10

Texture: FINE

	Start Time	Finish Time
Pre-Turn:	8:10	8:22
Post-Turn:	9:39	9:49

Time Turned: 9:38

Moisture Added: 0

Pre or Post	Cross Section	Location	Temperature (C) 1 Foot	Temperature (C) 2/3 Feet	Oxygen (%) 1 Foot	Oxygen (%) 2/3 Feet	MWHC (%) 1 Foot	MWHC (%) 2/3 Feet	pH
PRE	A	1	35	36					
		2	35	35					
		3	35	34					
	B	1	36	32					
		2	35	35					
		3	35	35					
	C	1	35	30					
		2	35	36					
		3	35	34					
	D	1	35	30					
		2	32	34					
		3	35	35					
POST	A	1	28	33					
		2	25	30					
		3	28	34					
	B	1	31	30					
		2	29	33					
		3	32	29					
	C	1	31	33					
		2	32	34					
		3	33	34					
	D	1	34	37					
		2	34	37					
		3	31	36					

APPENDIX J
FIELD EXPLOSIVE TEST KIT DATA

TABLE OF CONTENTS

DESCRIPTION	PAGE
RDX Test Kit Data	5 pages
TNT Test Kit Data	5 pages

Chevalier

RDX SOIL TEST KIT WORKSHEET

SAMPLE #	ABSORBANCE	RDX CONC., PPM $\frac{RDX_{abs} - 0.014}{0.0225} \times 1.1$
30% - OU - A1	out of range	—
30% - OU - A2	oor	—
30% - OU - A1 1/40	0.047	1.47 x 1.1 x 40 = 64.5
- A2 1/40	0.048	1.5 x 1.1 x 40 = 66.5
- A3 1/20	0.046	1.4 x 1.1 x 20 = 31.3
B1 - 1/20	0.258	10.84 x 1.1 x 20 = 238.6
B2 - 1/20	0.11	4.27 x 1.1 x 20 = 93.9
B3 - 1/20	0.0163	2.18 x 1.1 x 20 = 47.9
C1 - 1/20	0.451	19.4 x 1.1 x 20 = 427.3
C2 - 1/20	0.158	6.4 x 1.1 x 20 = 140.8
~~D1~~ C3 - 1/20	0.132	5.2 x 1.1 x 20 = 115.4
D1 - 1/20	0.15	6.0 x 1.1 x 20 = 133.0
D2 - 1/20	0.336	14.3 x 1.1 x 20 = 314.8
D3 1/20	0.135	5.4 x 1.1 x 20 = 118.3
method	0.031	0.8 x 1.1 = 0.8
dilution vial blank	0.037	1.0 ~~x 1.1 x 20~~
A1 1/40 dup	0.085	3.2 x 1.1 x 40 = 138.8
method	0.033	0.8 x 1.1 = 0.9
A1 1/40 dup	0.101	3.9 x 1.1 x 40 = 170

1) Abs "background" 0.000 2) Abs "control" 0.195 3) Abs "Nitrate/Nitrite" _____

Chev.

TNT SOIL TEST KIT WORKSHEET

Abs background 0.002 Abs control 0.337

1	2	3	4	5	6
SAMPLE #	Abs initial	Abs sample	Abs initial x2	Abs final (Column 3 - Column 4)	TNT CONC ppm (Column 5/0.0323) x5
30%-00-A1	0.016	0.096	0.032	0.064	1.98 x5 = 9.9
-A2	0.014	0.113	0.028	0.085	2.63 x5 = 13.2
-A3	0.02	0.058	0.04	0.018	0.6 x5 = 2.8 n2
B1	0.012	0.134	0.024	0.11	3.4 x5 = 17.0
B2	0.011	0.069	0.022	0.047	1.5 x5 = 7.3
B3	0.015	0.048	0.03	0.018	0.6 x5 = 2.8
C1	0.014	0.151	0.028	0.123	3.8 x5 = 19.0
C2	0.017	0.056	0.034	0.022	0.7 x5 = 3.4
C3	0.014	0.048	0.028	0.02	0.6 x5 = 3.1
D1	0.015	0.062	0.03	0.033	1.0 x5 = 5.1
D2	0.017	0.196	0.034	0.162	5.0 x5 = 25.1
D3	0.017	0.058	0.034	0.024	0.7 x5 = 3.7
B2dup	0.012	0.071	0.024	0.047	1.5 x5 = 7.3
Method	0.001	0.002	0.002	—	—

Orev.

RDX SOIL TEST KIT WORKSHEET

SAMPLE #	ABSORBANCE	RDX CONC., PPM $\frac{RDX_{abs} - 0.014}{0.0225} \times 1.1$
30%-05 - A1	0.417	17.9 x 1.1 = 19.7
A2 1/2	0.293	12.4 x 1.1 x 2 = 27.3
Method	0.013	–
A3 1/2	0.627	27.2 x 1.1 x 2 = 59.9
B1 1/2	0.265	11.2 x 1.1 x 2 = 24.5
B2 1/2	0.725	31.6 x 1.1 x 2 = 69.5
B3 1/2	0.722	31.5 x 1.1 x 2 = 69.2
C1 1/2	0.249	10.4 x 1.1 x 2 = 23
C2 1/2	0.328	13.9 x 1.1 x 2 = 30.7
C3 1/2	0.701	30.5 x 1.1 x 2 = 67.2
D1 1/2	0.208	8.6 x 1.1 x 2 = ~~18~~ 19
D2 1/2	0.346	14.8 x 1.1 x 2 = 32.5
D3 1/2	0.553	24 x 1.1 x 2 = 52.7
C3 1/5	0.253	10.6 x 1.1 x 5 = 58.4
A1 dup	0.403	17.3 x 1.1 = 19.0

1) Abs "background" 0.002 2) Abs "control" ~~0.270~~ let develop too long 0.276 3) Abs "Nitrate/Nitrite" _____

Chevalier

TNT SOIL TEST KIT WORKSHEET

Abs background 0.001 Abs control 0.348

1	2	3	4	5	6
SAMPLE #	Abs initial	Abs sample	Abs initial x 2	Abs final (Column 3 - Column 4)	TNT CONC ppm (Column 5/0.0323) X 5
30% -05-A1	0.007	0.02			nd
A2	0.006	0.017			nd
A3	0.011	0.025			nd
B1	0.008	0.017			nd
B2	0.006	0.018			nd
B3	0.007	0.035	0.014	0.021	nd
C1	0.006	0.014			nd
C2	0.004	0.015			nd
C3	0.009	0.026			nd
D1	0.004	0.01			nd
D2	0.005	0.026			nd
D3	0.005	0.014			nd
dup B3	0.008	0.039	0.016	0.023	0.71x5=3.6 nd
method	0.002	0.003			nd

Chen.

RDX SOIL TEST KIT WORKSHEET

SAMPLE #	ABSORBANCE	RDX CONC., PPM $\frac{RDX_{abs} - 0.014}{0.0225} \times 1.1$
30%-10-A1	0.02	0.27 x 1.1 = 0.29 nd
A2	0.072	2.6 x 1.1 = 2.8
A3	0.290	12.3 x 1.1 = 13.5
B1	0.019	nd
B2	0.14	5.6 x 1.1 = 6.2
B3	0.032	0.8 x 1.1 = 0.9
C1	0.02	nd
C2	0.192	7.9 x 1.1 = 8.7
C3	0.143	5.7 x 1.1 = 6.3
D1	0.021	nd
D2	0.079	2.9 x 1.1 = 3.2
D3	0.069	2.4 x 1.1 = 2.7
dup A1	0.022	nd
method	0.014	nd

1) Abs "background" 0.000 2) Abs "control" 0.258 3) Abs "Nitrate/Nitrite" _____

Char. 5/14/98

TNT SOIL TEST KIT WORKSHEET

Abs background 0.001 Abs control 0.332

1	2	3	4	5	6
SAMPLE #	Abs initial	Abs sample	Abs initial x 4.2	Abs final (Column 3 - Column 4)	TNT CONC ppm (Column 5/0.0323) x 5
30%-10-A1	0.002	0.009	.004	.005	nd
A2	0.004	0.013			nd
A3	0.006	0.015			nd
B1	0.003	0.01			nd
B2	0.004	0.011			nd
B3	0.004	0.014			nd
C1	0.004	0.012			nd.
C2	0.004	0.014			nd
C3	0.004	0.016	0.008	0.008	0.25x5=1.2 nd
D1	0.004	0.01			nd
D2	0005	0.013			nd
D3	0.006	0.013			nd
dup A1	0.006	0.014			nd
method	0.003	0.004			nd

6/15/98 SOTO Day 40

new

RDX SOIL TEST KIT WORKSHEET

SAMPLE #	ABSORBANCE	RDX CONC., PPM $\frac{RDX_{abs} - 0.014}{0.0225} \times 1.1$
A1	0.02	0.27 × 1.1 = 0.29 nd
B2	0.016	nd
C1	0.06	2.0 × 1.1 = 2.3
D1	0.024	0.44 × 1.1 = 0.5 nd
A2	0.025	nd
B1	0.02	nd
C2	0.012	nd
D2	0.014	nd
1/48 A3	0.02	nd
B3	0.017	nd
C3	0.016	nd
D3	0.013	nd
method	0.016	nd
B2 dup.	0.015	nd

1) Abs "background" 0.001 6/16 0.000 2) Abs "control" 0.224 3) Abs "Nitrate/Nitrite" _____

6/18/98 N13046 Day 40

TNT SOIL TEST KIT WORKSHEET

reviewed

Abs background 0.000 Abs control 0.332

1	2	3	4	5	6
SAMPLE #	Abs initial	Abs sample	Abs initial x 2	Abs final (Column 3 - Column 4)	TNT CONC ppm (Column 5/0.0323) x 5
A1	0.006	0.05	0.012	0.038	1.18x5=5.9
A2	0.005	0.013			nd
A3	0.002	0.011			nd
B1	0.006	0.026			nd
B2	0.002	0.009			nd
B3	0.002	0.013			nd
C1	0.014	0.037			nd
C2	0.011	0.026			nd
C3	0.007	0.015			nd
D1	0.016	0.041			nd
D2	0.004	0.016			nd
D3	0.002	0.012			nd
B2 dup	0.003	0.012			nd
method	0.001	0.002			nd

Day 60

RDX SOIL TEST KIT WORKSHEET

Inter results

SAMPLE #	ABSORBANCE	RDX CONC., PPM $\frac{RDX_{abs} - 0.014}{0.0225}$ x1.1
A1	0.016	~~0.8~~ nd
A2	0.027	~~1.3~~ nd
A3	0.015	nd
Method	0.017	nd
B1	0.03	0.8
B2	0.031	0.8
B3	0.019	nd
B3-FD	0.082	3.3
C1	0.021	nd
C2	0.023	nd
C3	0.037	1.1
D1	0.021	nd
D2	0.024	nd
D3	0.026	nd

1) Abs "background" 0.009 2) Abs "control" 0.208 3) Abs "Nitrate/Nitrite" _____

Day 60

Abs background 0.000

Abs control ~~0.019~~ 22 0.319

1	2	3	4	5	6
SAMPLE #	Abs initial	Abs sample	Abs initial ~~x4~~ x2	Abs final (Column 3 - Column 4)	TNT CONC ppm x5 (Column 5/0.0323)
A-1	0.006	0.016	0.012	0.004	ND ~~0.62~~
Method	0.003	0.005	0.006	0.001	ND
A-2	0.004	0.013	0.008	0.005	ND
A-3	0.007	0.017	0.014 ~~0.05~~	0.003	ND
B-1	0.001	0.011	0.002	0.009	ND
B-2	0.010	0.037	0.02	0.017	ND
B-3	0.011	0.026	0.022	0.004	ND
B-3FD	0.013	0.031	0.026	0.005	ND
C-1	0.006	0.017	0.012	0.005	ND
C-2	0.016	0.027	0.032	-0.005	ND
C-3	0.004	0.015	0.008	0.007	ND
D-1	0.003	0.010	0.006	0.004	ND
D-2	0.004	0.013	0.008	0.005	ND
D-3	0.003	0.016	0.006	0.01	ND

APPENDIX K
RAW DATA FOR LABORATORY ANALYSIS DAY 0

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Analytical Run Logbook and Calibration for Instrument IN13 on 5/7/98 (soil analysis)	4 pages
Analytical Run Logbook and Calibration for Instrument IN12 on 5/1/98 (water analysis)	4 pages
Analytical Run Logbook and Calibration for Instrument IN10 on 5/3/98 (soil analysis)	7 pages
Analytical Run Logbook and Calibration for Instrument IN10 on 5/7/98 (soil analysis)	7 pages
Analytical Run Logbook and Calibration for Instrument IN10 on 5/3/98 (water analysis)	3 pages
Analytical Run Logbook and Calibration for Instrument LC4 on 5/3/98 (soil analysis)	5 pages
Analytical Run Logbook and Calibration for Instrument LC4 on 5/3/98 (water analysis)	3 pages
Analytical Run Logbook and Calibration for Instrument LC4 on 5/11/98 (soil analysis)	4 pages
Chain of Custody Record	1 page

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-00-A1 50X	68.1	0
2	BIO-N-30%-00-A2 50X	73.5	0
3	BIO-N-30%-00-A3 50X	68.1	0
4	BIO-N-30%-00-A3 10X	212*	0
5	BIO-N-30%-00-B1 50X	60.9	0
6	BIO-N-30%-00-B2 50X	61.7	0
7	BIO-N-30%-00-B3 50X	44.3*	0
8	BIO-N-30%-00-B3 MS 5	80.7	0
9	BIO-N-30%-00-B3 MSD	72.6	0
10	BIO-N-30%-00-C1 50X	65.8	0
11	BIO-N-30%-00-C2 50X	71.7	0
12	BIO-N-30%-00-C3 50X	35.5*	0
13	BIO-N-30%-00-C3 10X	124	0
14	BIO-N-30%-00-D1 50X	53.5*	0
15	BIO-N-30%-00-D1FD 50	56.0*	0
16	BIO-N-30%-00-D2 50X	43.4*	0
17	BIO-N-30%-00-D3 50X	43.0*	0
18	BIOR042798	104	0
19	BIOR042798 MS	126	0
20	BIOR042798 MSD	134	0
21	BL0429SF	120	0
22	BL0501WA	114	0
23	LC0429SF	123	0
24	LC0501WA	125	0
25	LD0429SF	122	0
26	LD0501WA	124	0
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

page _ 1

FORM II

01

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: BIO-N-30%-00-B3 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500	20900	25100	44*	54-128
RDX	9500	129000	114000	158*	66-109
TNB	9500		8990	95	57-130
DNB	9500		11500	121	74-122
TETRYL	9500		3100	33	32-119
NB	9500		9010	95	70-135
TNT	9500	4650	14100	100	44-124
4ADNT	9500		12800	135	60-140
2ADNT	9500		13600	143*	60-140
26DNT	9500		10100	106	58-125
24DNT	9500		9830	103	59-120
2NT	9500		8720	92	79-124
4NT	9500		7520	79	74-128
3NT	9500		7670	81	79-121

. of Analyte recoveries out of QC Advisory Limits = 3

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	32900	126	96*	30	54-128
RDX	9500	169000	421*	91*	30	66-109
TNB	9500	8460	89	6	30	57-130
DNB	9500	12500	132*	9	45	74-122
TETRYL	9500	2170	23*	35*	30	32-119
NB	9500	8600	91	5	35	70-135
TNT	9500	16800	128*	25	30	44-124
4ADNT	9500	14400	152*	12	40	60-140
2ADNT	9500	14200	149*	4	40	60-140
26DNT	9500	13000	137*	26	35	58-125
24DNT	9500	10200	107	4	35	59-120
2NT	9500	8020	84	8	35	79-124
4NT	9500	7750	82	3	35	74-128
3NT	9500	7310	77*	5	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 3
No of RPD's out of QC Limits 3

TA SM 5/22/95

3F

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: BIOR042798 MSD

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
HMX	400		360	90	44-145
RDX	150		165	110	66-139
TNB	225		198	88	56-129
DNB	125		104	83	76-122
TETRYL	413		318	77	76-120
NB	213		192	90	82-111
TNT	188		250	133	76-137
4ADNT	313		276	88	60-140
2ADNT	313		273	87	60-140
26DNT	288		257	89	80-118
24DNT	175		156	89	72-123
2NT	363		317	87	74-130
4NT	250		228	91	78-116
3NT	238		279	117	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	370	93	3	15	44-145
RDX	150	159	106	4	12	66-139
TNB	225	210	93	6	10	56-129
DNB	125	108	86	4	15	76-122
TETRYL	413	332	80	4	14	76-120
NB	213	203	95	6	13	82-111
TNT	188	263	140*	5	15	76-137
4ADNT	313	291	93	5	40	60-140
2ADNT	313	286	91	5	40	60-140
26DNT	288	268	93	4	13	80-118
24DNT	175	160	91	3	14	72-123
2NT	363	323	89	2	15	74-130
4NT	250	231	92	1	14	78-116
3NT	238	283	119	2	15	72-126

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

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: BIO-N-30%-00-B3

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000			0*	70-130

No of Analyte recoveries out of QC Advisory Limits = 1

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000		0*	100*		70-130

No of Analyte recoveries out of QC Advisory Limits = 1
No of RPD's out of QC Limits 1

3F

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: BIOR042798

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
PETN	10000		9930	99	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	REC.
PETN	10000	9990	100	1*		70-130

No of Analyte recoveries out of QC Advisory Limits = 0
No of RPD's out of QC Limits 1

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: LC0429SF

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		9650	102	77-113
TNB	9500		10700	113	64-125
DNB	9500		10800	114	82-118
TETRYL	9500		10700	113	23-124
NB	9500		10500	110	69-143
TNT	9500		10100	106	75-118
4ADNT	9500		10400	109	60-140
2ADNT	9500		10300	108	60-140
26DNT	9500		10300	108	78-117
24DNT	9500		10400	109	74-126
2NT	9500		10500	110	78-123
4NT	9500		10500	110	79-125
3NT	9500		10700	113	78-121

# of Analyte recoveries out of QC Advisory Limits = 0

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: LC0429SG

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		3440	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:33783

Client Sample No: LC0501WA

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		167	111	72-129
TNB	225		209	93	74-118
DNB	125		106	85	76-132
TETRYL	413		317	77	58-120
NB	213		195	92	68-135
TNT	188		255	136	61-145
4ADNT	313		281	90	60-140
2ADNT	313		279	89	60-140
26DNT	288		263	91	77-125
24DNT	175		161	92	70-134
2NT	363		332	92	73-131
4NT	250		237	95	73-116
3NT	238		292	123	71-127

. of Analyte recoveries out of QC Advisory Limits = 0

3G

WATER EXPLOSIVES CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: LC0501WB

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
PETN	1200		1210	101	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:33783

Client Sample No: LD0429SF

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		11100	117	57-137
RDX	9500		9500	100	77-113
TNB	9500		10500	110	64-125
DNB	9500		10700	113	82-118
TETRYL	9500		10100	106	23-124
NB	9500		10400	109	69-143
TNT	9500		10000	105	75-118
4ADNT	9500		10200	107	60-140
2ADNT	9500		10200	107	60-140
26DNT	9500		10200	107	78-117
24DNT	9500		10300	108	74-126
2NT	9500		10400	109	78-123
4NT	9500		10400	109	79-125
3NT	9500		10600	112	78-121

1 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:33783

Client Sample No: LD0429SG

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		3130	104	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:33783

Client Sample No: LD0501WA

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
HMX	400		360	90	46-151
RDX	150		165	110	72-129
TNB	225		202	90	74-118
DNB	125		104	83	76-132
TETRYL	413		317	77	58-120
NB	213		190	89	68-135
TNT	188		251	134	61-145
4ADNT	313		275	88	60-140
2ADNT	313		272	87	60-140
26DNT	288		256	89	77-125
24DNT	175		156	89	70-134
2NT	363		319	88	73-131
4NT	250		229	92	73-116
3NT	238		289	121	71-127

. of Analyte recoveries out of QC Advisory Limits = 0

3G

WATER EXPLOSIVES CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Client Sample No: LD0501WB

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
PETN	1200		1210	101	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0429SF

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Matrix: (soil/water) Soil

Date Extracted: 04/29/98 Extn. Method: SONC

Date Analyzed (1): 05/02/98 Date Analyzed(2): 05/03/98

Time Analyzed (1): 21:22:50 Time Analyzed(2): 15:25:12

Instrument ID (1): IN12 Instrument ID(2): IN10

LC Column ID (1): CARB-07 LC Column ID (2): LC-CN-10

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

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0429SF	LC0429SF	05/02/98	
2	LD0429SF	LD0429SF	05/02/98	
3	BIO-N-30%-00-A1 50X	33783.01	05/03/98	05/03/98
4	BIO-N-30%-00-A2 50X	33783.02	05/03/98	05/03/98
5	BIO-N-30%-00-A3 50X	33783.03	05/03/98	05/08/98
	BIO-N-30%-00-B1 50X	33783.04	05/03/98	05/03/98
7	BIO-N-30%-00-B2 50X	33783.05	05/03/98	05/03/98
8	BIO-N-30%-00-B3 50X	33783.06	05/03/98	05/03/98
9	BIO-N-30%-00-B3 MS 5	33783.07MS	05/03/98	
10	BIO-N-30%-00-B3 MSD	33783.08MSD	05/03/98	
11	BIO-N-30%-00-C1 50X	33783.09	05/03/98	05/03/98
12	BIO-N-30%-00-C2 50X	33783.10	05/03/98	05/03/98
13	BIO-N-30%-00-C3 50X	33783.11	05/03/98	05/08/98
14	BIO-N-30%-00-D1 50X	33783.12	05/03/98	05/04/98
15	BIO-N-30%-00-D1FD 50	33783.13	05/03/98	05/04/98
16	BIO-N-30%-00-D2 50X	33783.14	05/03/98	05/04/98
17	BIO-N-30%-00-D3 50X	33783.15	05/03/98	05/04/98
18	BIO-N-30%-00-A3 10X	33783.03	05/09/98	05/08/98
19	BIO-N-30%-00-C3 10X	33783.11	05/09/98	05/08/98
20				
21				
22				
23				
24				
25				

FORM IV

4C

Lab Name: SWL-TULSA Contract:

Sample ID: BL0429SG

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Matrix: (soil/water) Soil

Date Extracted: 04/29/98 Extn. Method: SONC

Date Analyzed (1): 05/03/98 Date Analyzed(2):

Time Analyzed (1): 09:01:37 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	LC0429SG	LC0429SG	05/03/98	
2	LD0429SG	LD0429SG	05/03/98	
3	BIO-N-30%-00-A1	33783.01	05/03/98	05/03/98
4	BIO-N-30%-00-A2	33783.02	05/03/98	05/03/98
	BIO-N-30%-00-B1	33783.04	05/03/98	05/03/98
	BIO-N-30%-00-B2	33783.05	05/03/98	05/03/98
7	BIO-N-30%-00-B3	33783.06	05/03/98	05/03/98
8	BIO-N-30%-00-B3	33783.07MS	05/03/98	
9	BIO-N-30%-00-B3	33783.08MSD	05/03/98	
10	BIO-N-30%-00-C1	33783.09	05/03/98	05/03/98
11	BIO-N-30%-00-C2	33783.10	05/03/98	05/03/98
12	BIO-N-30%-00-D1	33783.12	05/03/98	05/04/98
13	BIO-N-30%-00-D1FD	33783.13	05/03/98	05/04/98
14	BIO-N-30%-00-D2	33783.14	05/03/98	05/04/98
15	BIO-N-30%-00-D3	33783.15	05/03/98	05/04/98
16	BIO-N-30%-00-A3	33783.03	05/12/98	05/08/98
17	BIO-N-30%-00-C3	33783.11	05/12/98	05/08/98
18				
19				
20				
21				
22				
23				
24				
25				

FORM IV

4C

Lab Name: SWL-TULSA Contract:

Sample ID: BL0501WA

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 05/02/98 Date Analyzed(2):

Time Analyzed (1): 02:02:57 Time Analyzed(2):

Instrument ID (1): IN12 Instrument ID(2):

LC Column ID (1): CARB-07 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	BIOR042798	33783.16	05/13/98	
2				
3				
4				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

4C

Lab Name: SWL-TULSA Contract:

Sample ID: BL0501WB

Lab Code: SWOK Case No: MKF-OH SDG No:33783

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 05/03/98 Date Analyzed(2):

Time Analyzed (1): 00:34:35 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	LC0501WB	LC0501WB	05/03/98	
2	LD0501WB	LD0501WB	05/03/98	
3	BIOR042798	33783.16	05/03/98	
4	BIOR042798	33783.16MS	05/03/98	
	BIOR042798	33783.16MSD	05/03/98	
7				
8				
9				
10				
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FORM IV

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A1
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.01

Sample Amt: 2g % Moisture 39.87 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	42600	J
121-82-4	RDX	273000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	31300	
1946-51-0	4ADNT	2170	JP
35572-78-2	2ADNT	1910	J
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

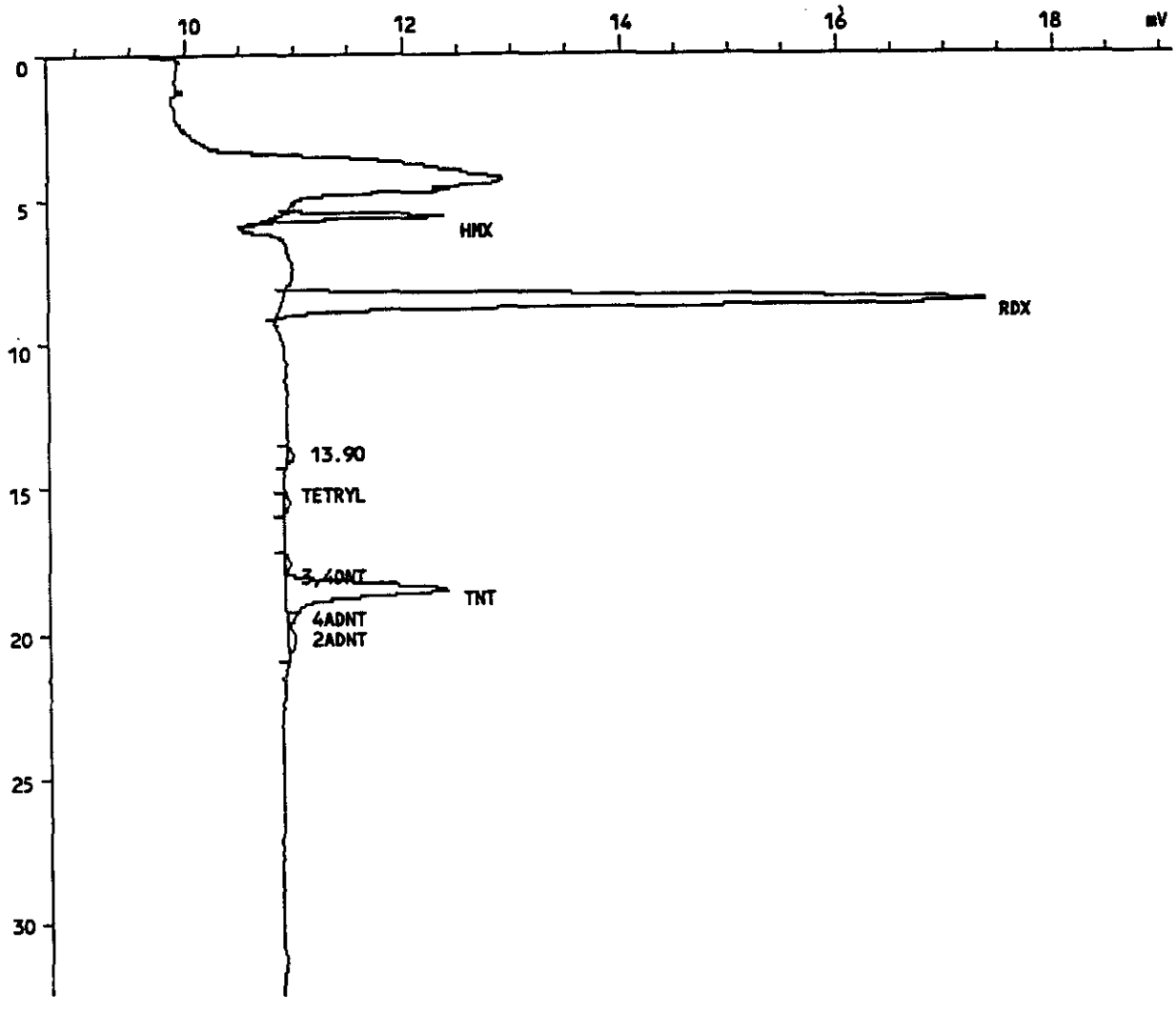
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,5,1

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 00:21:20
Reported on 05-May-98 at 19:04:53



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,5,1

Acquired on 03-May-98 at 00:21:20
Modified on 05-May-82 at 18:51:24
Reported on 05-May-98 at 18:51:24

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

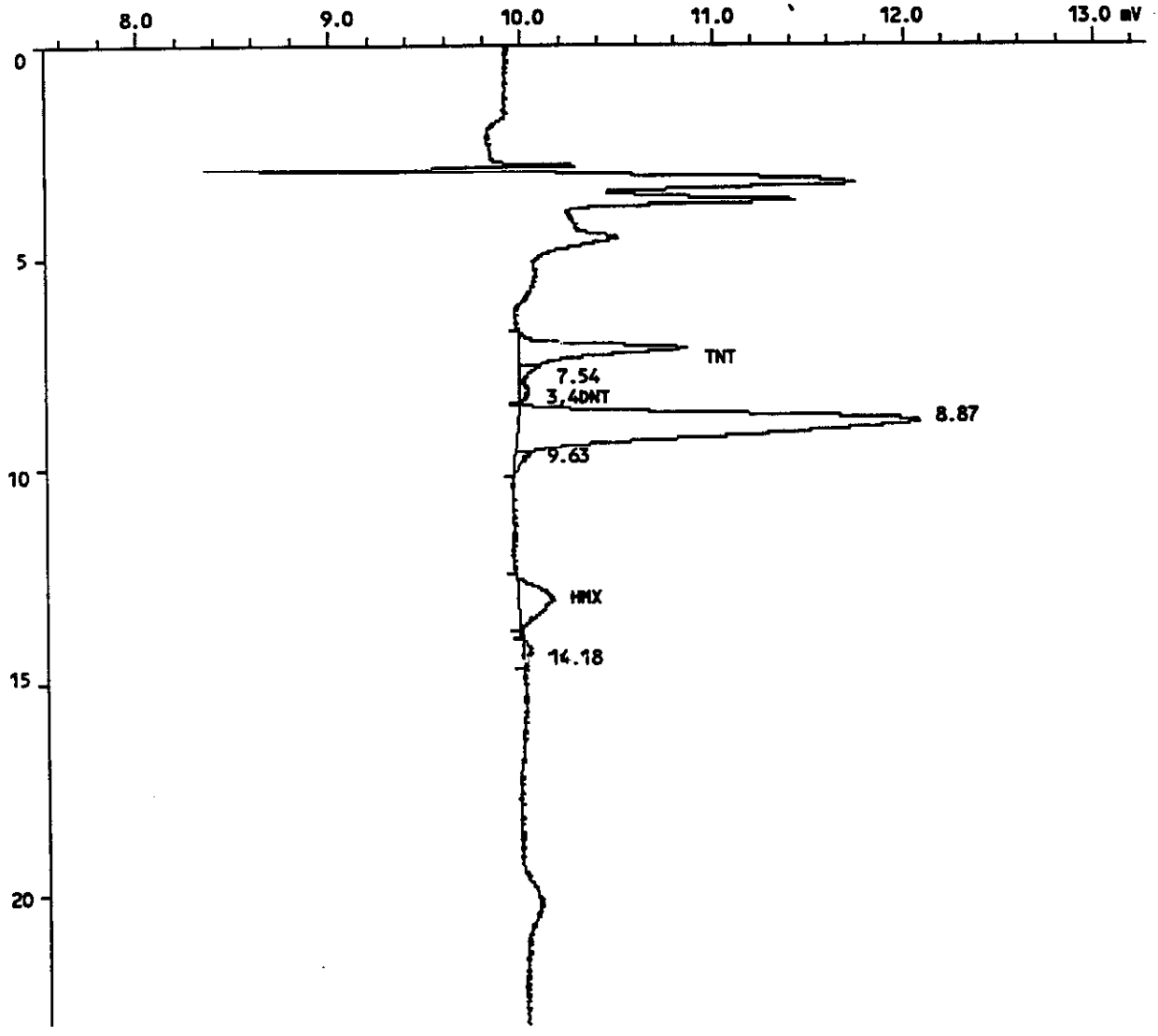
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.605	1581	18831	42643.203	HMX * T
2	8.549	6509	179314	272845.813	RDX *
4	15.387	49	1611	2121.441	TETRYL
5	17.696	49	1253	1362.188	3,4DNT 68
6	18.485	1489	47252	31309.418	TNT *
7	19.173	126	2358	2168.531	4ADNT * JP
8	20.101	75	3031	1910.517	2ADNT * J
Total		9878	253650	354361.094	
Residual		71	1850	2814.778	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,2,1

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 17:12:18
Reported on 06-May-98 at 09:45:24



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,2,1

Acquired on 03-May-98 at 17:12:18
Modified on 06-May-82 at 09:37:18
Reported on 06-May-98 at 09:37:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

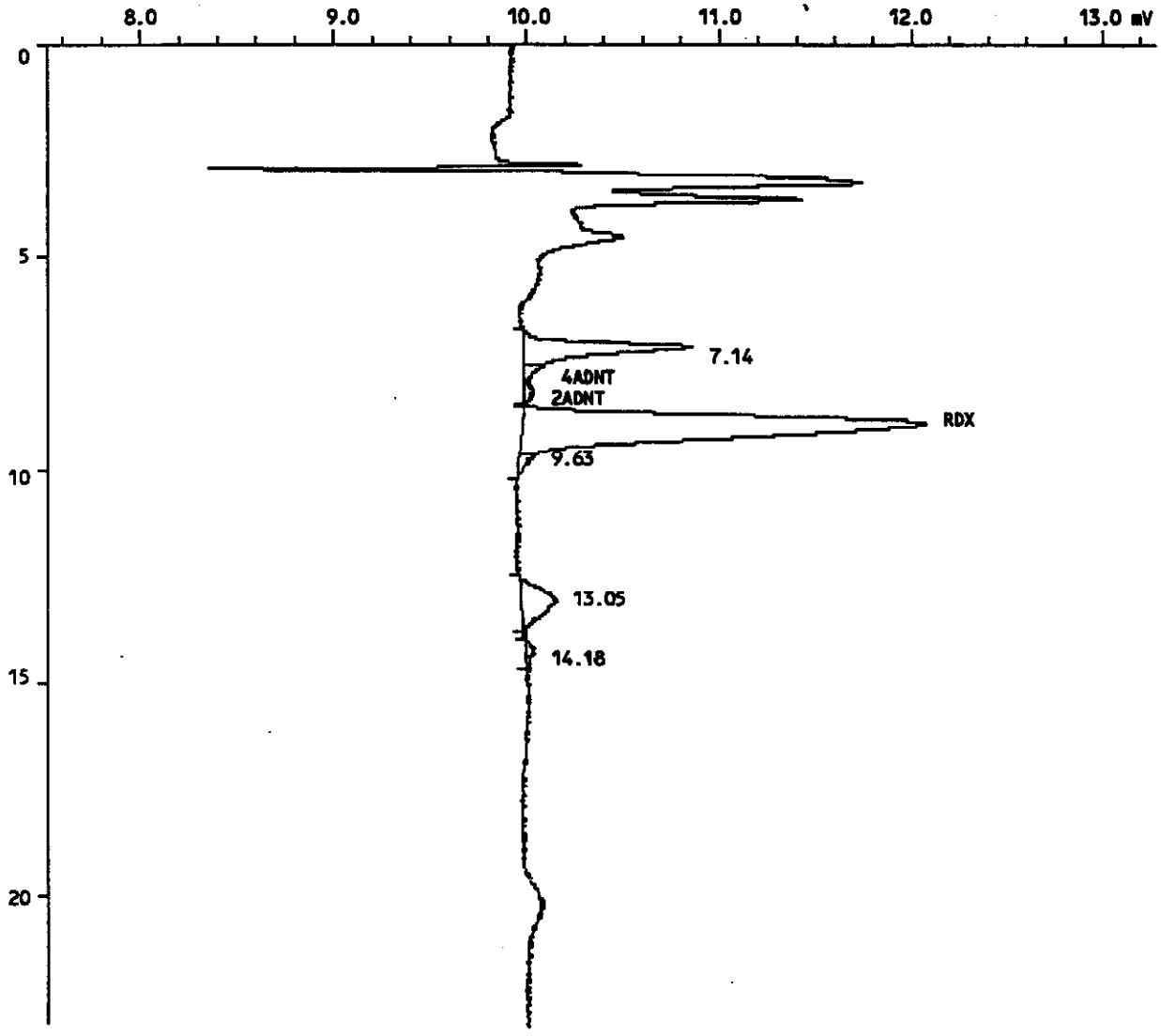
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.141	869	15814	30225.260	TNT
3	8.133	50	988	3597.126	3,4DNT
6	13.051	187	7631	33035.844	HMX
Total		1107	24433	66858.234	
Residual		2347	74457	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,2,1

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 17:12:18
Reported on 06-May-98 at 11:00:19



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,2,1

Acquired on 03-May-98 at 17:12:18
Modified on 06-May-82 at 10:51:50
Reported on 06-May-98 at 10:51:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A1 50X
Sample ID.....: 33783.01
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.541	112	1329	4162.834	4ADNT
3	8.133	50	988	1888.663	2ADNT
4	8.875	2102	70828	257556.688	RDX
Total		2265	73145	263608.188	
Residual		1188	25746	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.01

Sample Amt: 2g % Moisture 39.87 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

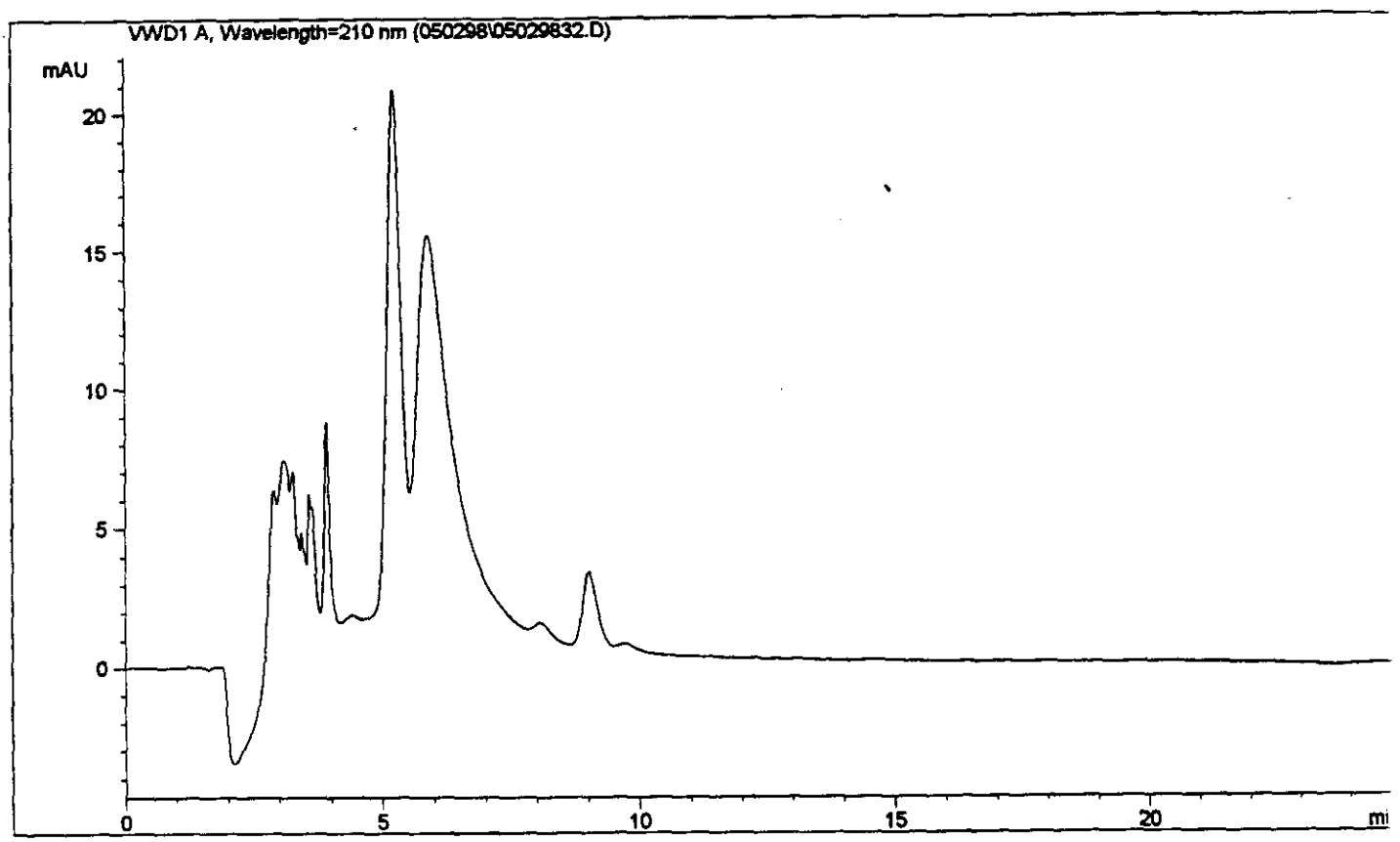
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 32
Sample Name	: 33783.01	Vial No.	: 32
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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
Totals:				0.00000	

==========

*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A2
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.02

Sample Amt: 2g % Moisture 37.64 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	17400	J
121-82-4	RDX	118000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	3680	J
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

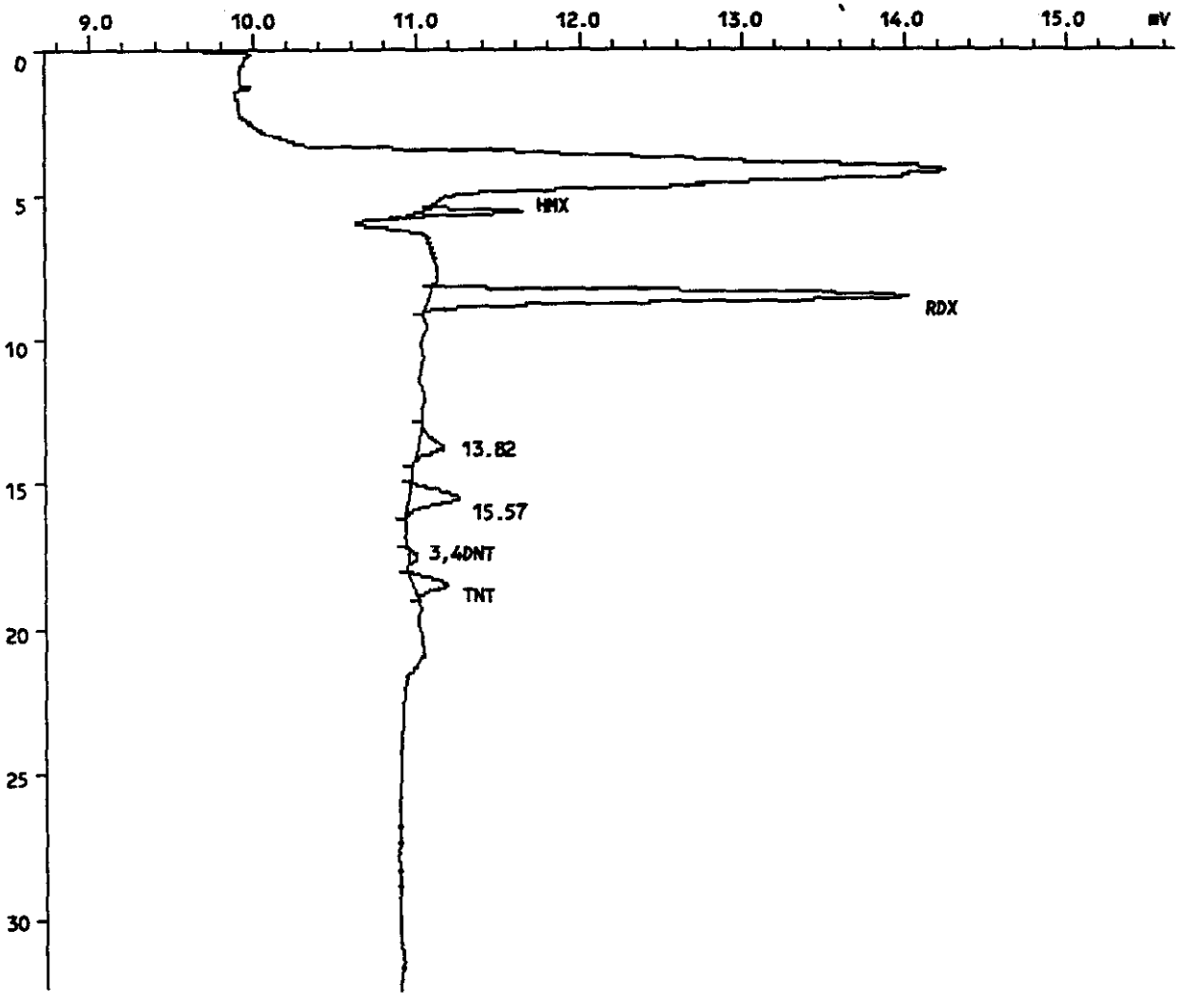
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,6,1

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 01:05:57
Reported on 05-May-98 at 19:04:30



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,6,1

Acquired on 03-May-98 at 01:05:57
Modified on 05-May-82 at 18:51:40
Reported on 05-May-98 at 18:51:42

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

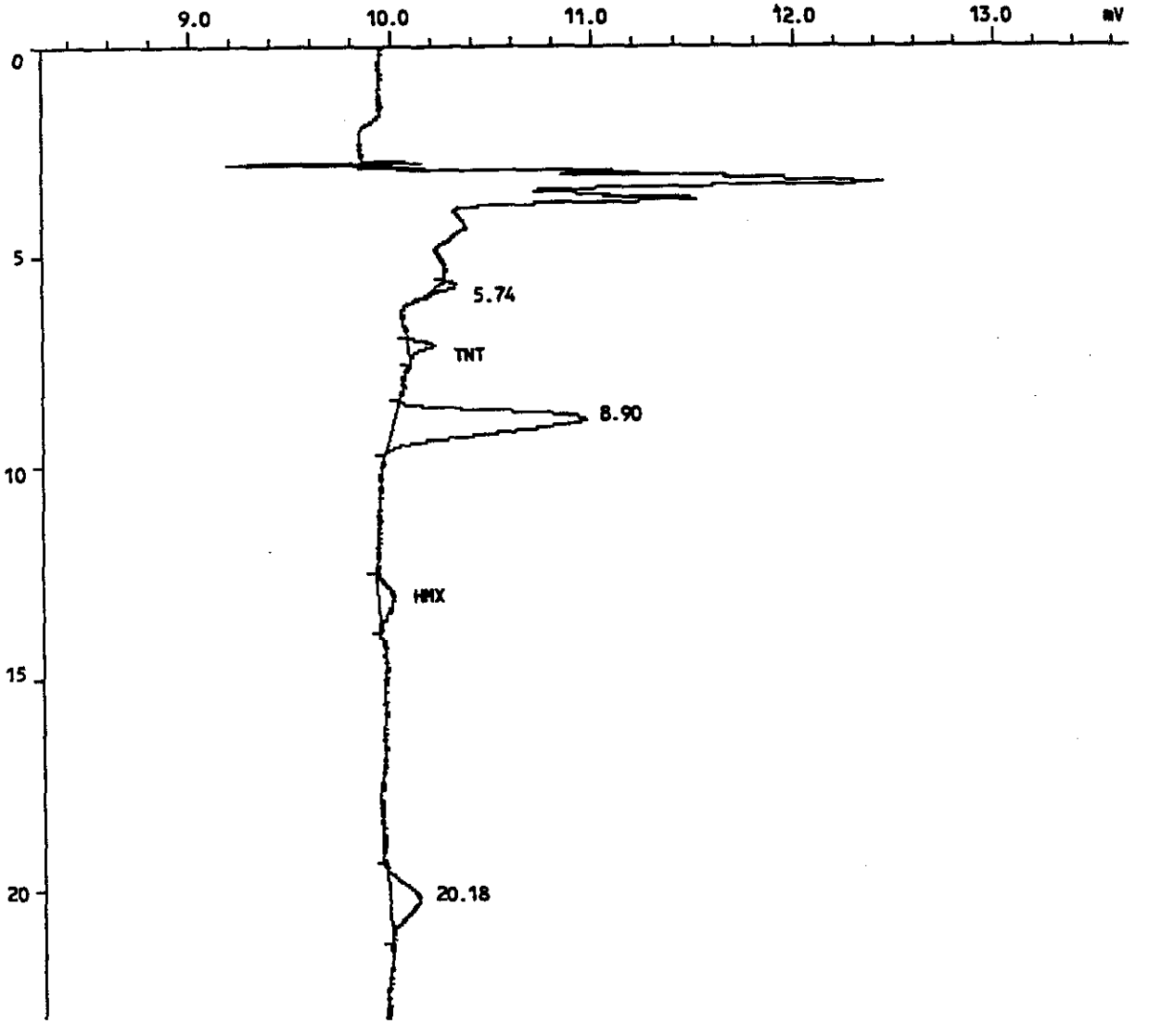
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.595	668	7674	17378.182	HMX * J
2	8.528	2940	77863	118477.164	RDX *
5	17.595	60	1352	1469.584	3,4DNT
6	18.475	204	5550	3677.318	TNT * J
Total		3872	92439	141002.234	
Residual		464	15795	24033.883	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,3,1

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 17:56:39
Reported on 06-May-98 at 09:45:46



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,3,1

Acquired on 03-May-98 at 17:56:39
Modified on 06-May-82 at 09:37:04
Reported on 06-May-98 at 09:37:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

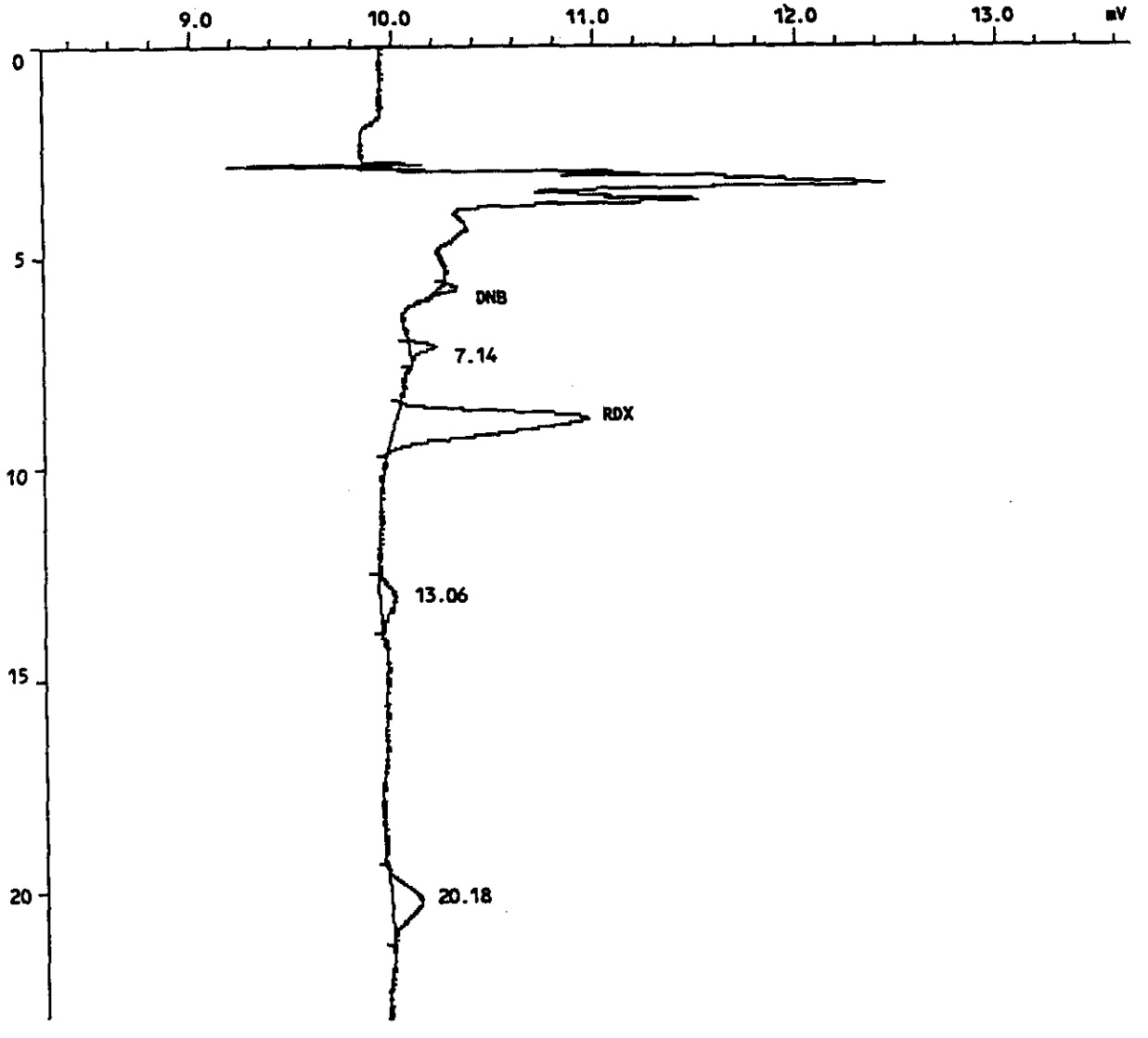
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.136	135	2041	3900.937	TNT
4	13.061	80	3153	13648.065	HMX
Total		215	5194	17549.002	
Residual		1196	41439	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,3,1

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 17:56:39
Reported on 06-May-98 at 11:00:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,3,1

Acquired on 03-May-98 at 17:56:39
Modified on 06-May-82 at 10:51:38
Reported on 06-May-98 at 10:51:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A2 50X
Sample ID.....: 33783.02
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.739	95	1337	1838.967	DNB
3	8.896	951	32690	118872.391	RDX
Total		1045	34027	120711.359	
Residual		366	12606	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.02

Sample Amt: 2g % Moisture 37.64 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

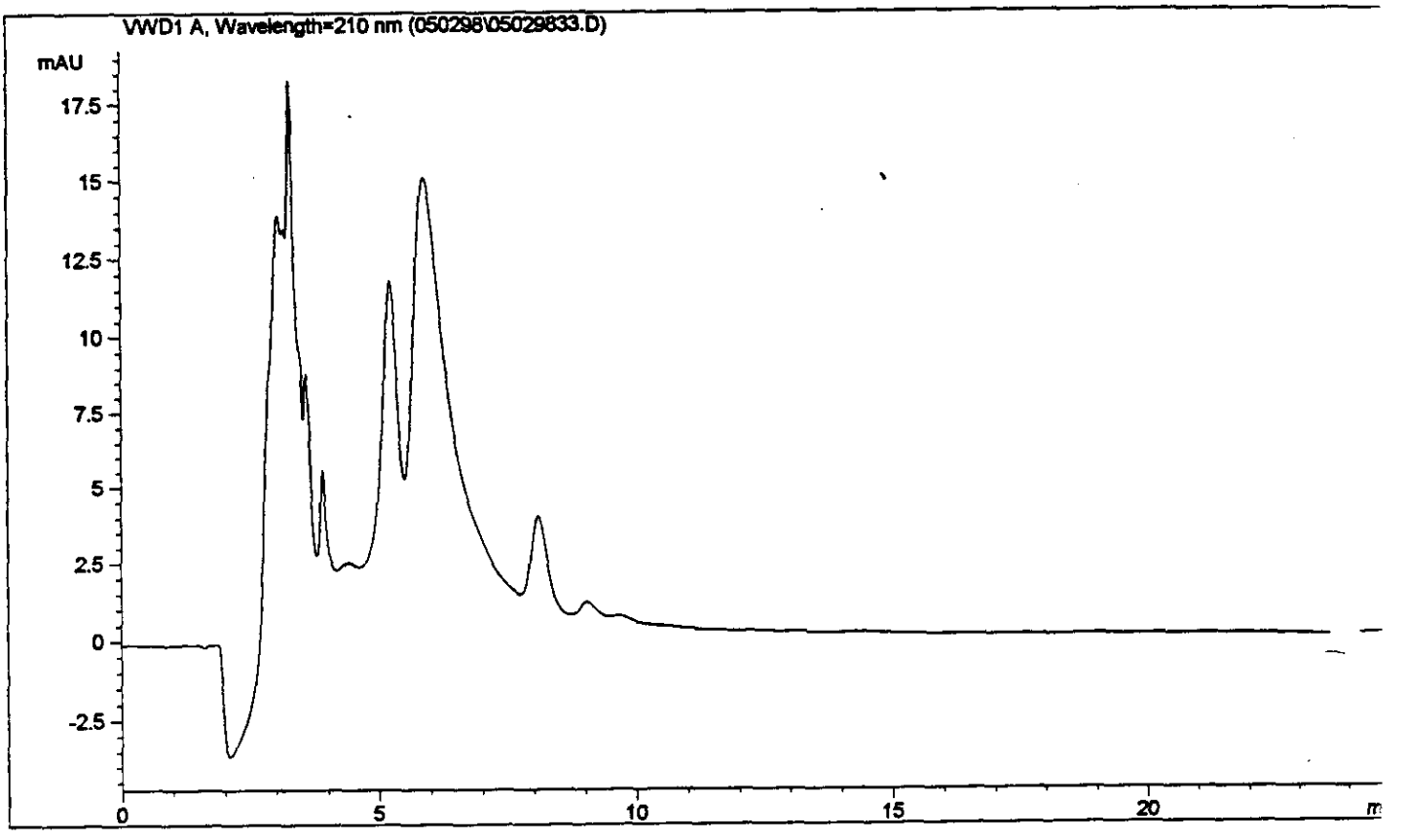
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 33
Sample Name	: 33783.02	Vial No.	: 33
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



Customized Report: extstd.frp

Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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
Totals:				0.00000	

*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A3
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.03

Sample Amt: 2g % Moisture 47.09 Date Received: 04/29/98

Extraction Volume: 20ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	6980	J
121-82-4	RDX	67700	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1300	P
1946-51-0	4ADNT	1640	P
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

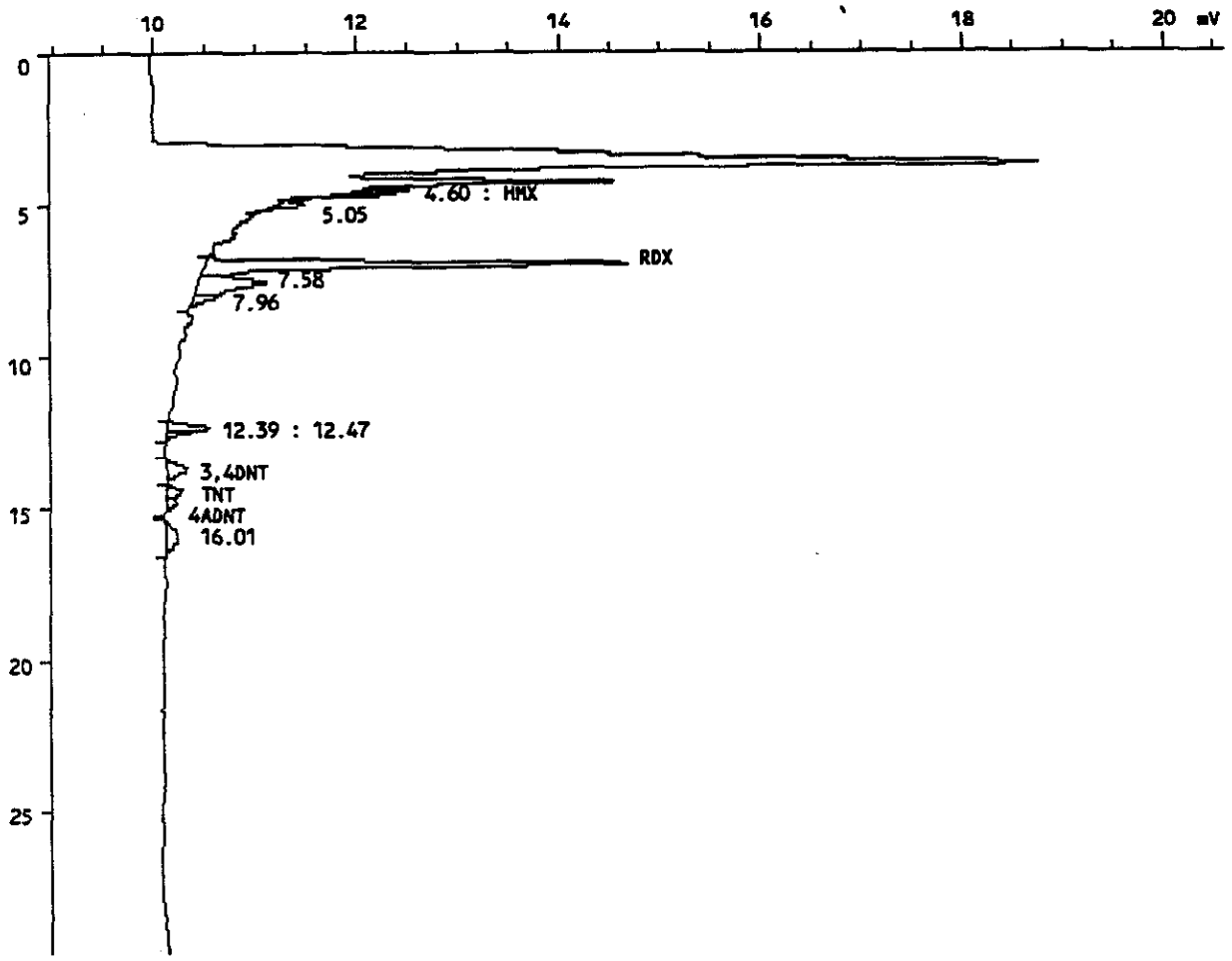
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,24,1

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 14:45:58
Reported on 11-May-98 at 19:50:46



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,24,1

Acquired on 09-May-98 at 14:45:58
Modified on 11-May-82 at 19:50:12
Reported on 11-May-98 at 19:50:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 12:15:20
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

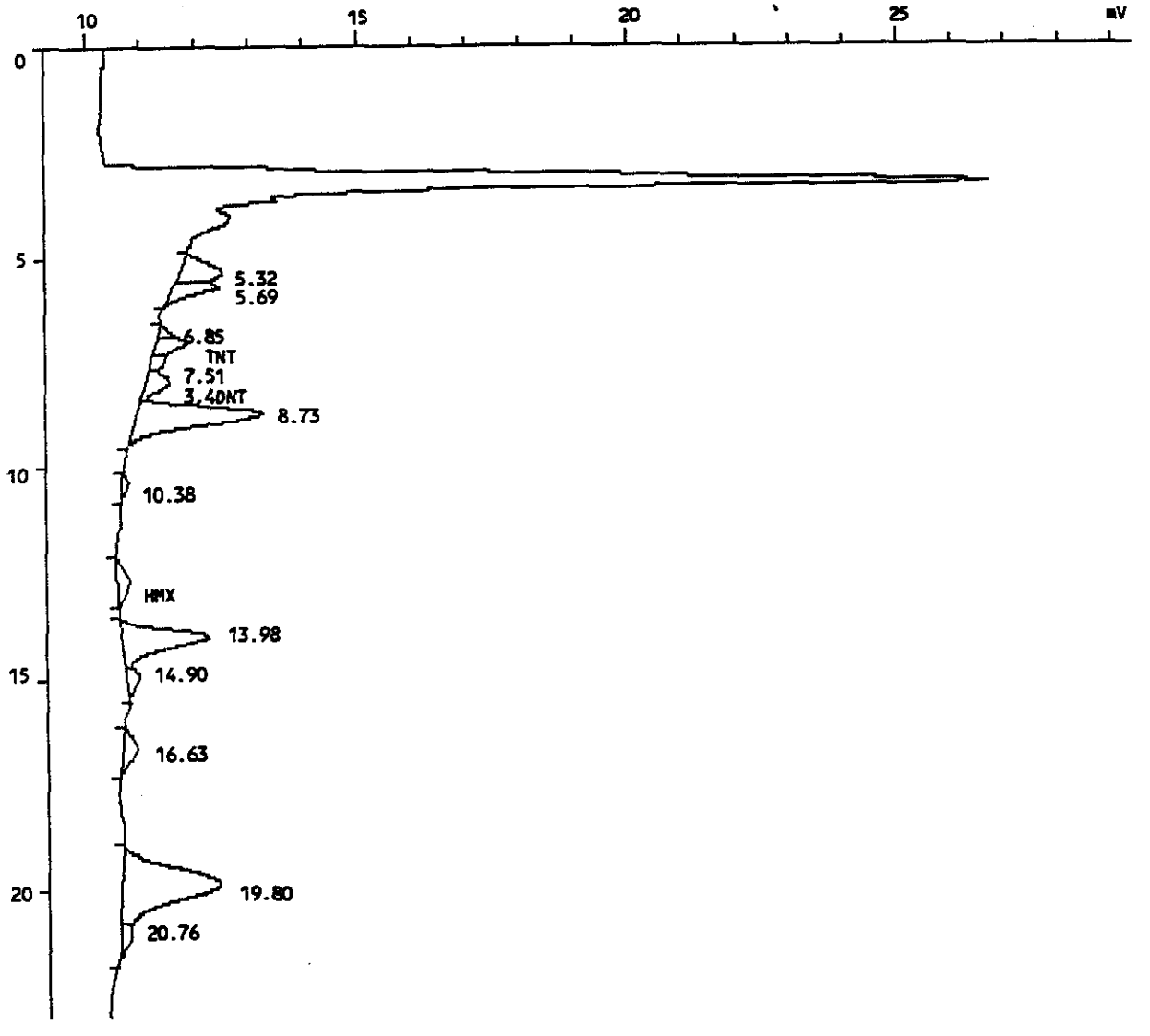
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	4.736	773	4702	6976.499	HMX * J
4	6.981	4174	57568	67726.633	RDX *
9	13.739	203	4604	4239.358	3,4DNT 212
10	14.491	149	2519	1301.273	TNT *P
11	14.869	97	2159	1637.771	4ADNT *P
Total		5397	71552	81881.539	
Residual		2657	40394	47842.730	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,19,1

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 17:16:13
Reported on 11-May-98 at 20:12:31



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,19,1

Acquired on 08-May-98 at 17:16:13
Modified on 11-May-82 at 20:11:44
Reported on 11-May-98 at 20:12:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 20:10:24
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 9

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

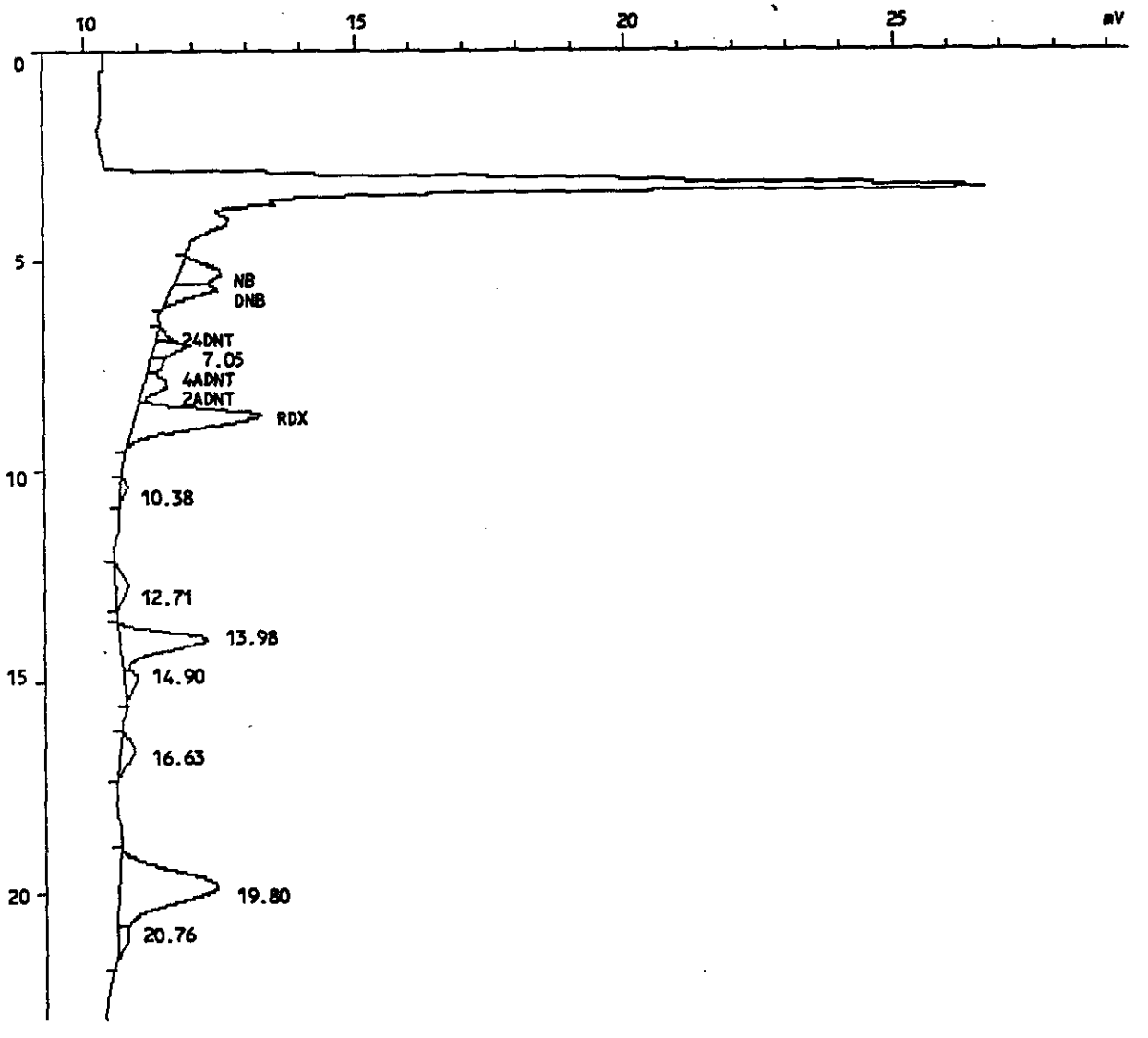
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.045	576	11771	4305.472	TNT
6	7.979	442	12105	8280.002	3,4DNT
9	12.709	221	8997	7782.698	HMX
Total		1238	32873	20368.172	
Residual		8823	294915	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,19,1

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 17:16:13
Reported on 11-May-98 at 20:13:20



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,19,1

Acquired on 08-May-98 at 17:16:13
Modified on 11-May-82 at 20:13:00
Reported on 11-May-98 at 20:13:03

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-A3 10X
Sample ID.....: 33783.03
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 9

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.323	817	21694	11056.883	NB
2	5.691	855	18057	4967.518	DNB
3	6.853	286	2623	814.916	24DNT
5	7.509	270	5143	3222.577	4ADNT
6	7.979	442	12105	4629.202	2ADNT
7	8.725	2315	71958	52332.984	RDX
Total		4986	131580	77024.078	
Residual		5076	196208	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.03

Sample Amt: 2g % Moisture 47.09 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

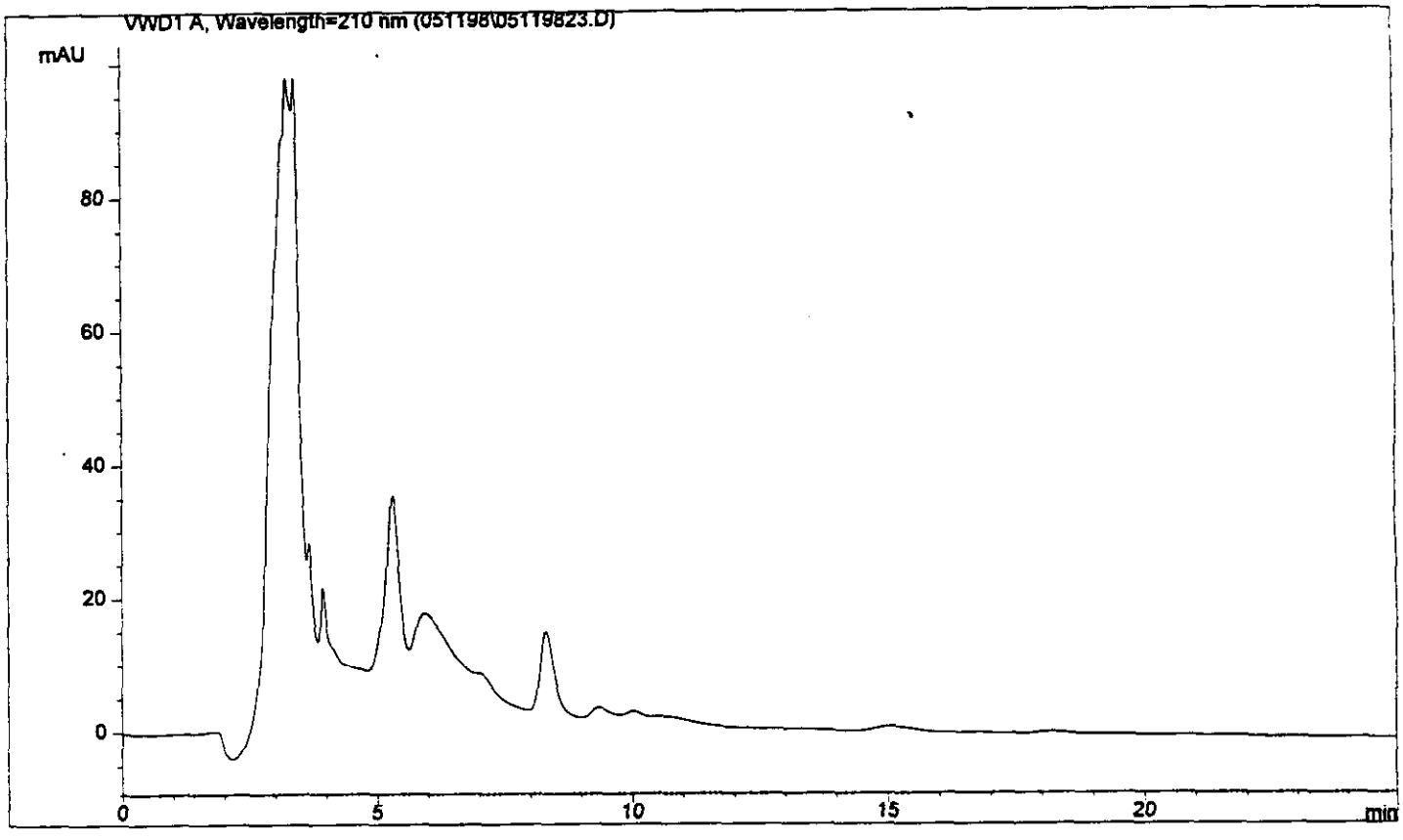
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	1250	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 23
Sample Name	: 33783.03	Vial No.	: 23
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B1
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.04

Sample Amt: 2g % Moisture 26.72 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	56500	
121-82-4	RDX	400000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	32700	
1946-51-0	4ADNT	3860	PJ
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

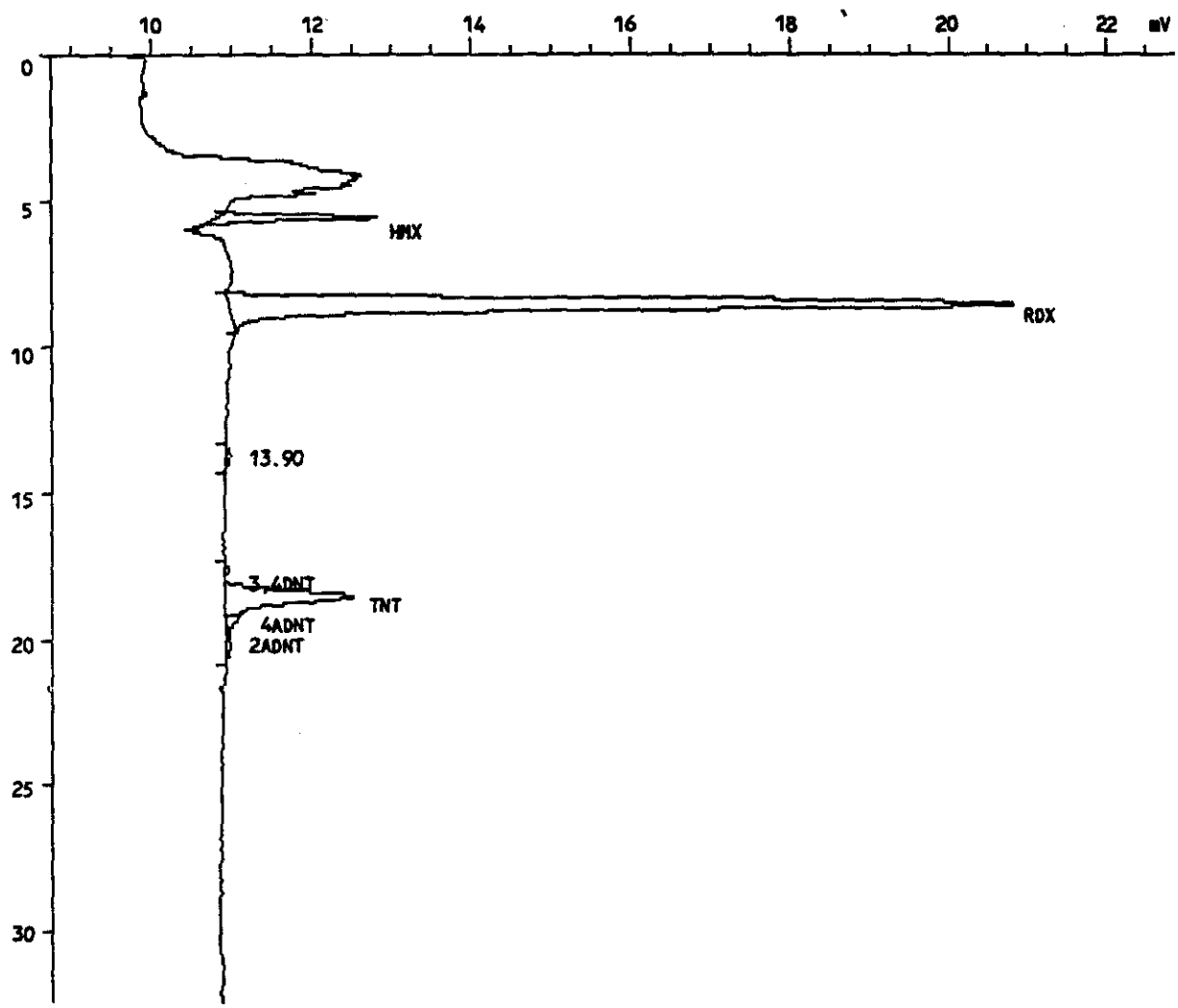
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,8,1

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 02:35:12
Reported on 05-May-98 at 19:03:38



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,8,1

Acquired on 03-May-98 at 02:35:12
Modified on 05-May-82 at 18:52:12
Reported on 05-May-98 at 18:52:12

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

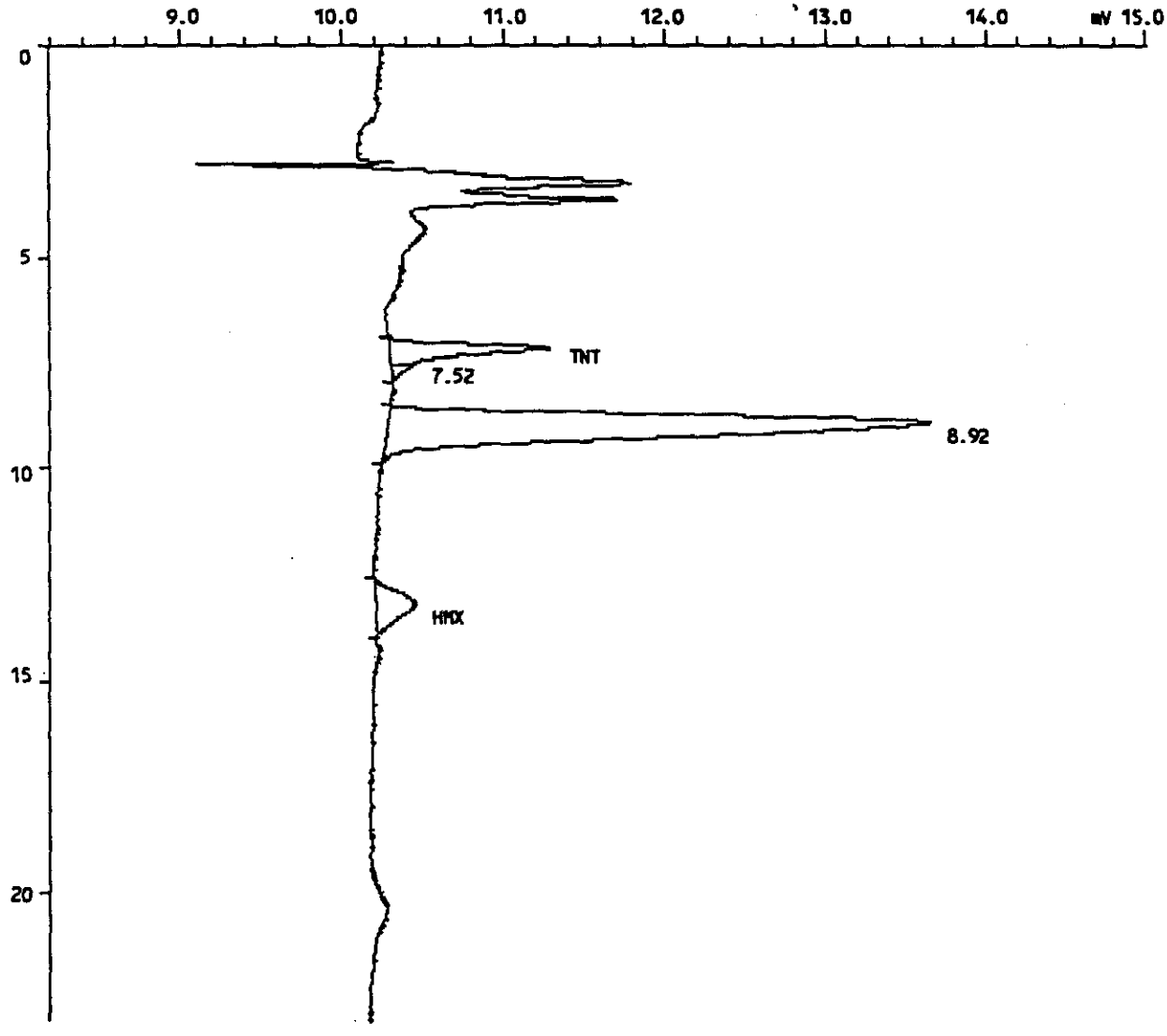
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.616	2048	24966	56535.754	HMX*
2	8.560	9826	262685	399703.000	RDX*
4	17.685	54	1120	1217.252	3,4DNT 61%
5	18.512	1599	49368	32711.389	TNT*
6	19.136	180	4199	3862.459	4ADNT *TJ
7	20.155	62	2532	1596.032	2ADNT
Total		13770	344870	495625.875	
Residual		55	1670	2541.076	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,5,1

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 19:25:21
Reported on 06-May-98 at 10:38:47



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,5,1

Acquired on 03-May-98 at 19:25:21
Modified on 06-May-82 at 09:36:38
Reported on 06-May-98 at 09:36:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

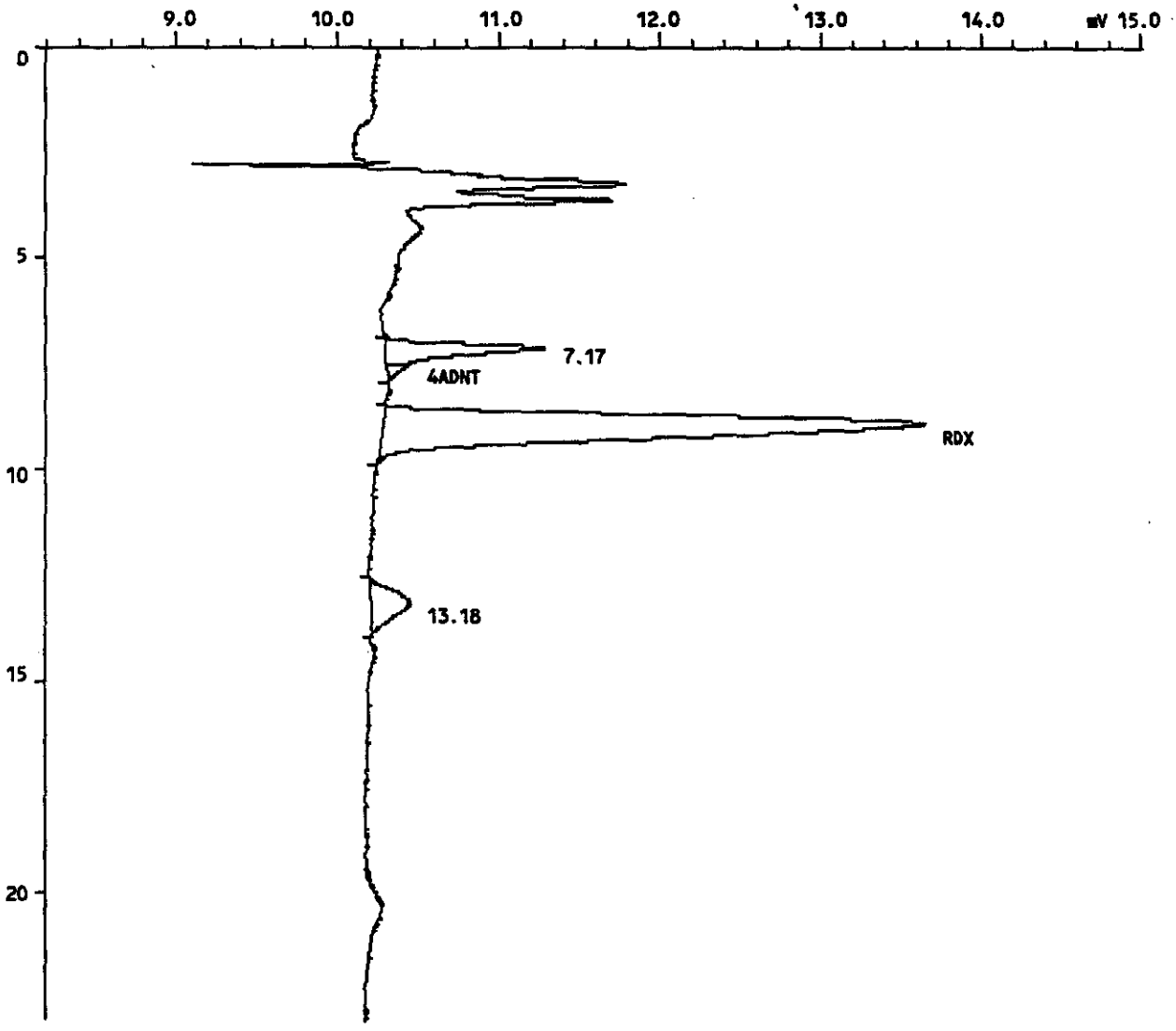
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.168	986	17189	32853.715	TNT
4	13.184	246	10248	44363.734	HMX
Total		1232	27437	77217.453	
Residual		3510	115562	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,5,1

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 19:25:21
Reported on 06-May-98 at 11:01:28



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,5,1

Acquired on 03-May-98 at 19:25:21
Modified on 06-May-82 at 10:51:10
Reported on 06-May-98 at 10:51:11

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B1 50X
Sample ID.....: 33783.04
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.520	147	1831	5736.746	4ADNT
3	8.923	3363	113731	413567.969	RDX
Total		3510	115562	419304.719	
Residual		1232	27437	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B1

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.04

Sample Amt: 2g % Moisture 26.72 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

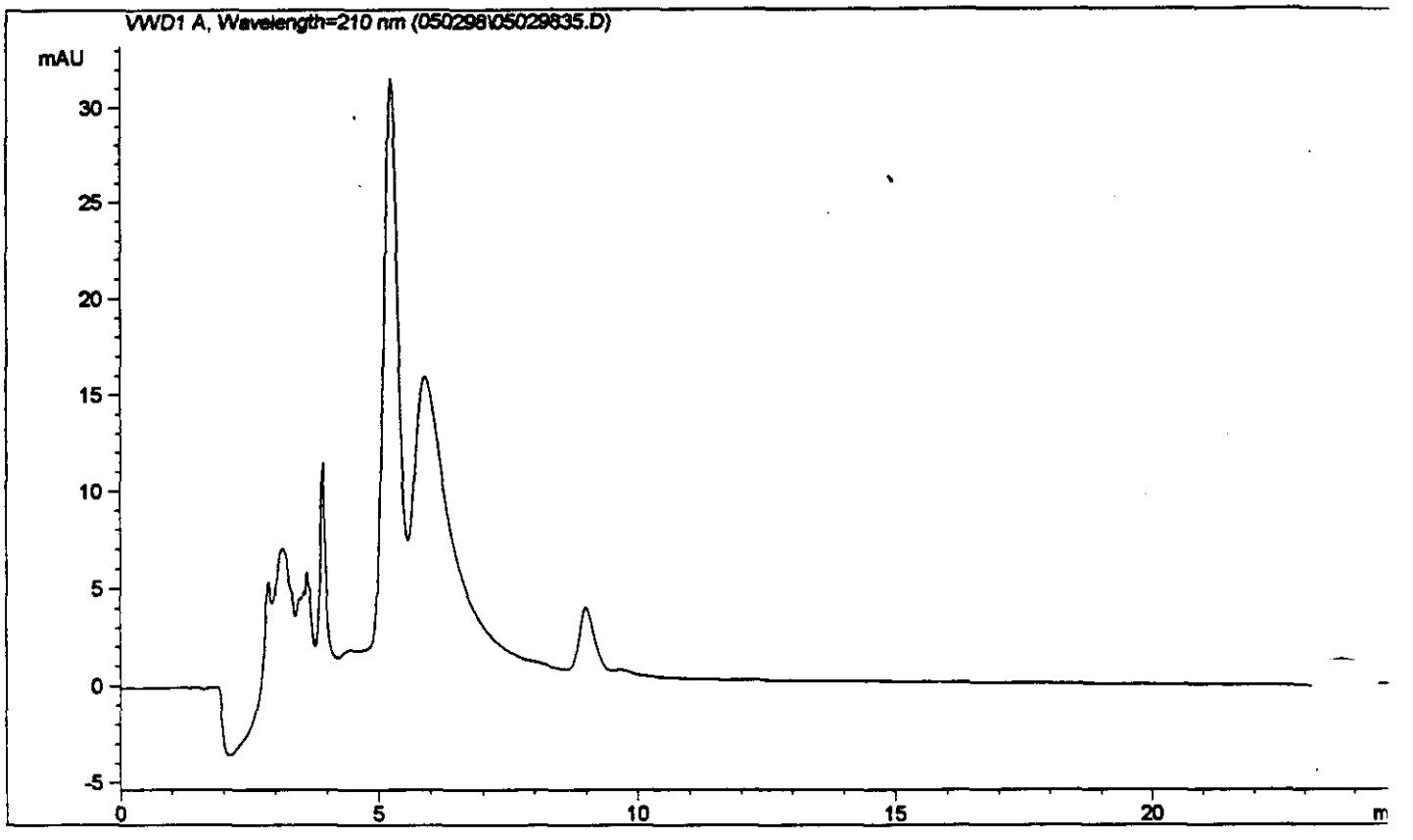
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 35
Sample Name	: 33783.04	Vial No.	: 35
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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
Totals:				0.00000	

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*** End of Report ***

53

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B2
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.05

Sample Amt: 2g % Moisture 37.66 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	56100	
121-82-4	RDX	475000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	53000	
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

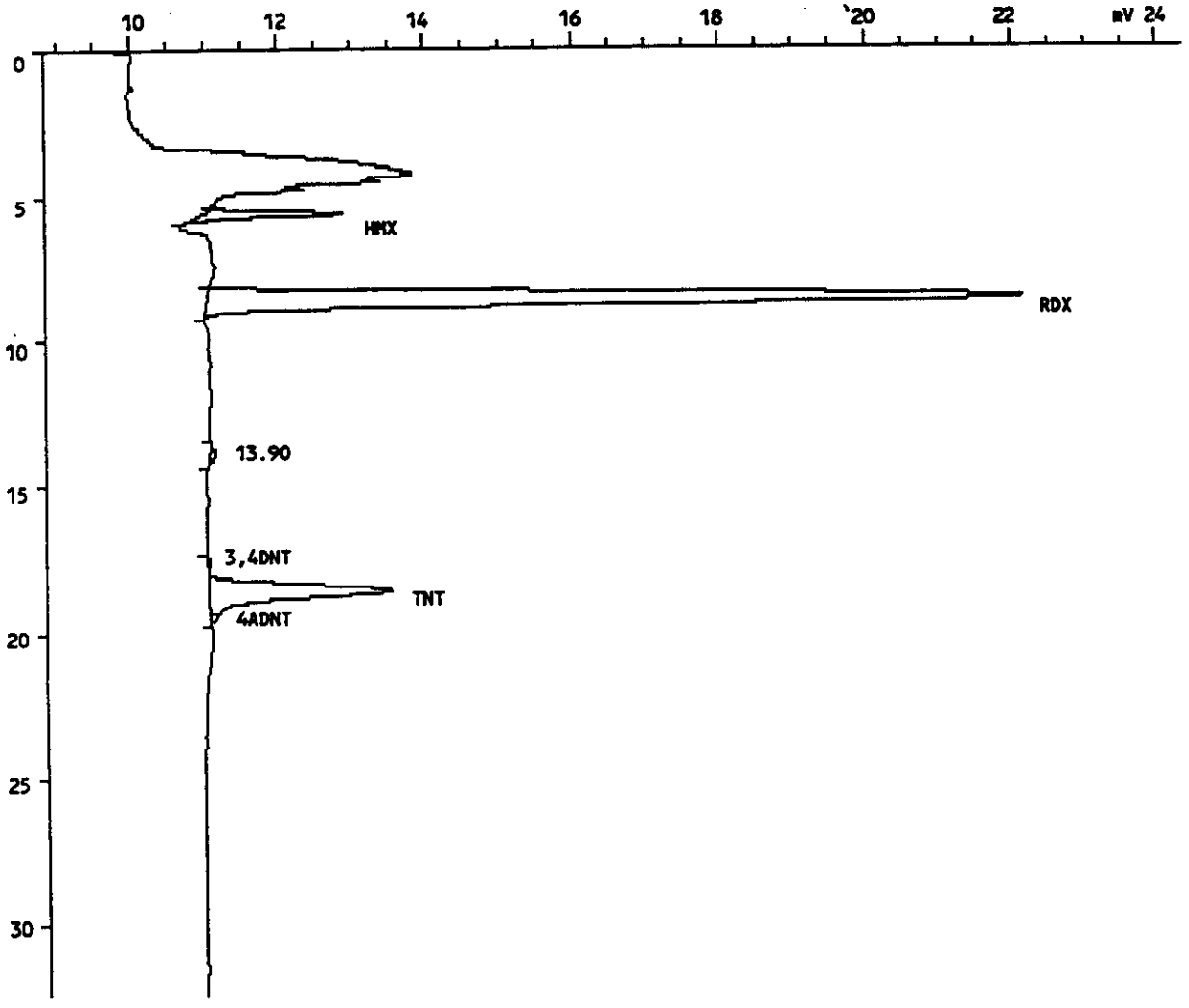
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,9,1

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 03:19:50
Reported on 05-May-98 at 19:03:16



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,9,1

Acquired on 03-May-98 at 03:19:50
Modified on 05-May-82 at 18:52:28
Reported on 05-May-98 at 18:52:28

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

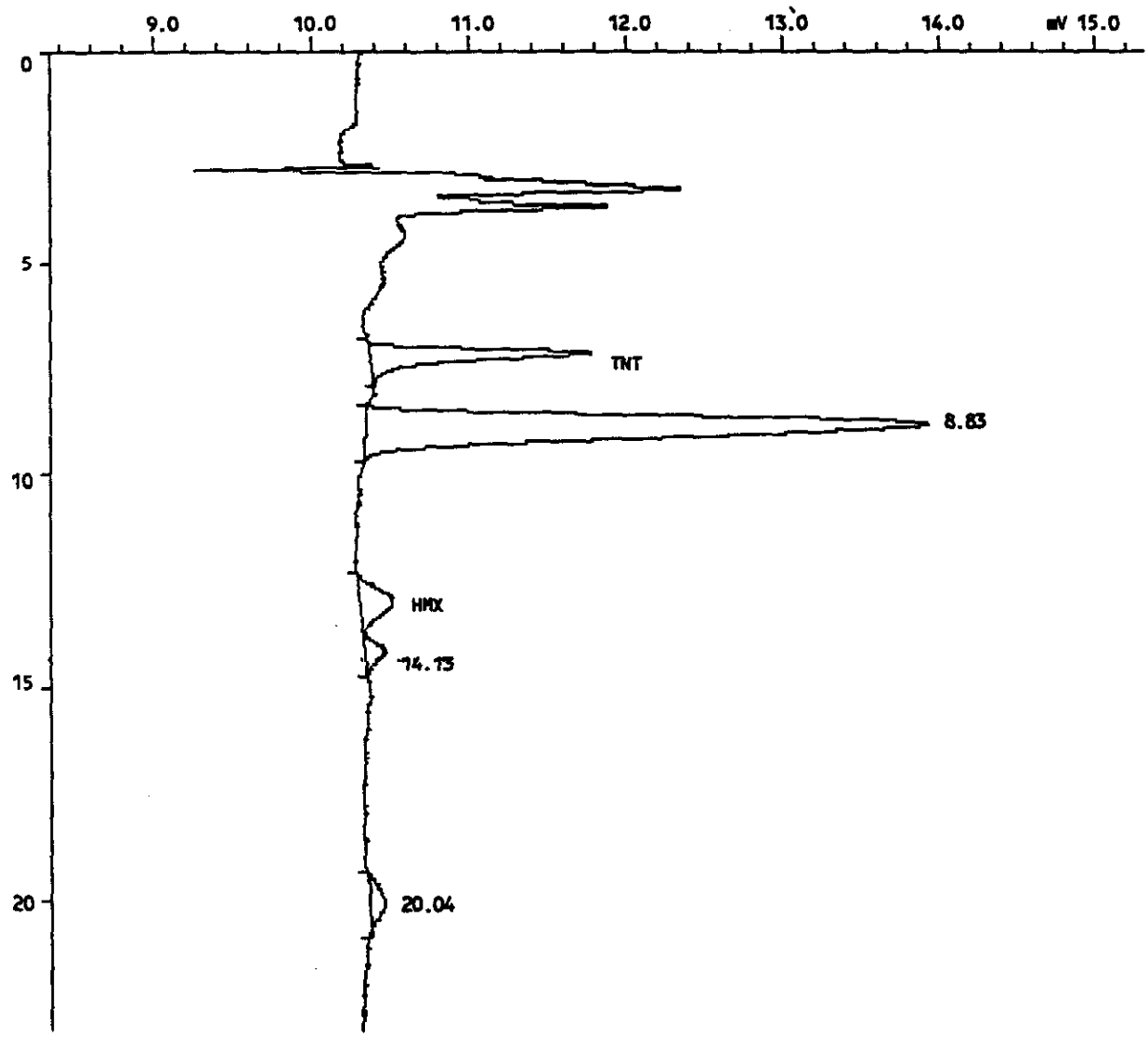
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	1973	24782	56119.762	HMX
2	8.560	11119	312104	474899.313	RDX
4	17.573	51	1136	1234.578	3,4DNT
5	18.517	2488	80049	53040.578	TNT
6	19.280	122	1767	1625.202	4ADNT
Total		15753	419838	586919.375	
Residual		87	2393	3640.978	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,6,1

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 20:09:42
Reported on 06-May-98 at 10:39:09



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,6,1

Acquired on 03-May-98 at 20:09:42
Modified on 06-May-82 at 09:36:24
Reported on 06-May-98 at 09:36:24

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

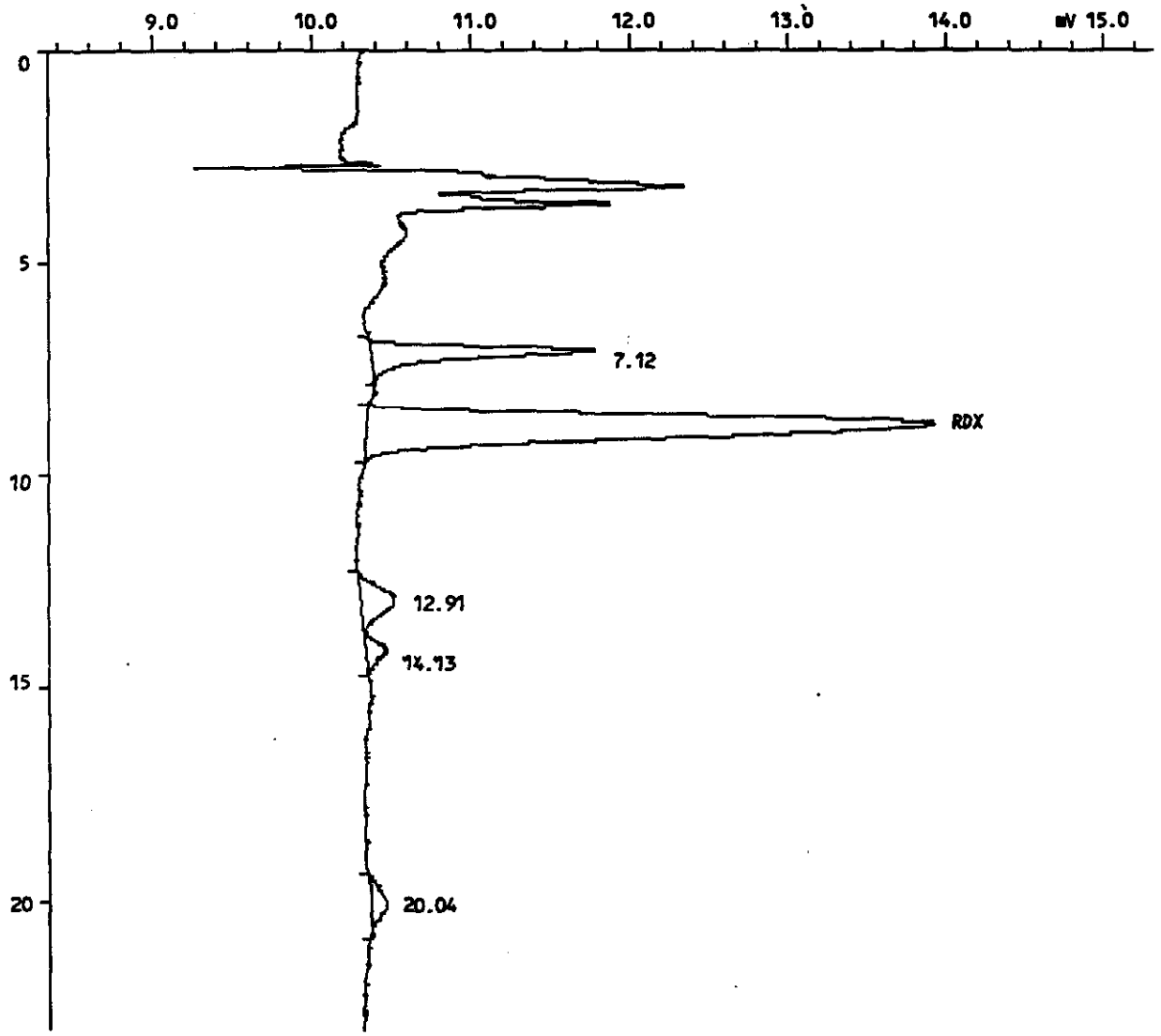
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.120	1407	26198	50072.719	TNT
3	12.912	213	9135	39543.949	HMX
Total		1620	35333	89616.672	
Residual		3820	130674	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,6,1

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 20:09:42
Reported on 06-May-98 at 11:01:53



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,6,1

Acquired on 03-May-98 at 20:09:42
Modified on 06-May-82 at 10:50:58
Reported on 06-May-98 at 10:50:58

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B2 50X
Sample ID.....: 33783.05
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).....: 20.000
Dilution.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.832	3580	122016	443693.813	RDX
Total		3580	122016	443693.813	
Residual		1860	43991	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B2

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.05

Sample Amt: 2g % Moisture 37.66 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

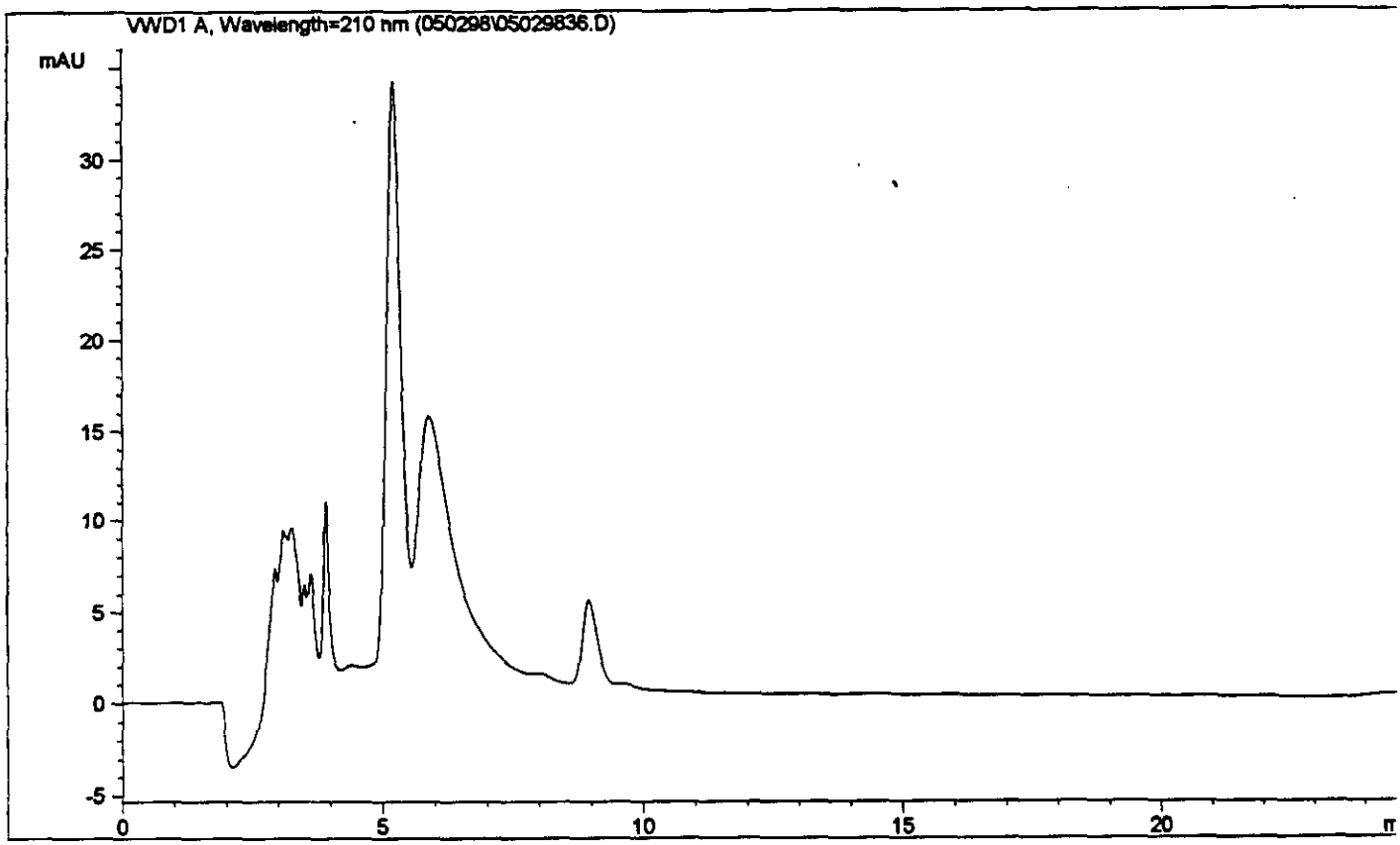
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 36
Sample Name	: 33783.05	Vial No.	: 36
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B3
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.06

Sample Amt: 2g % Moisture 43.89 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	20900	JP
121-82-4	RDX	129000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	4650	J
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

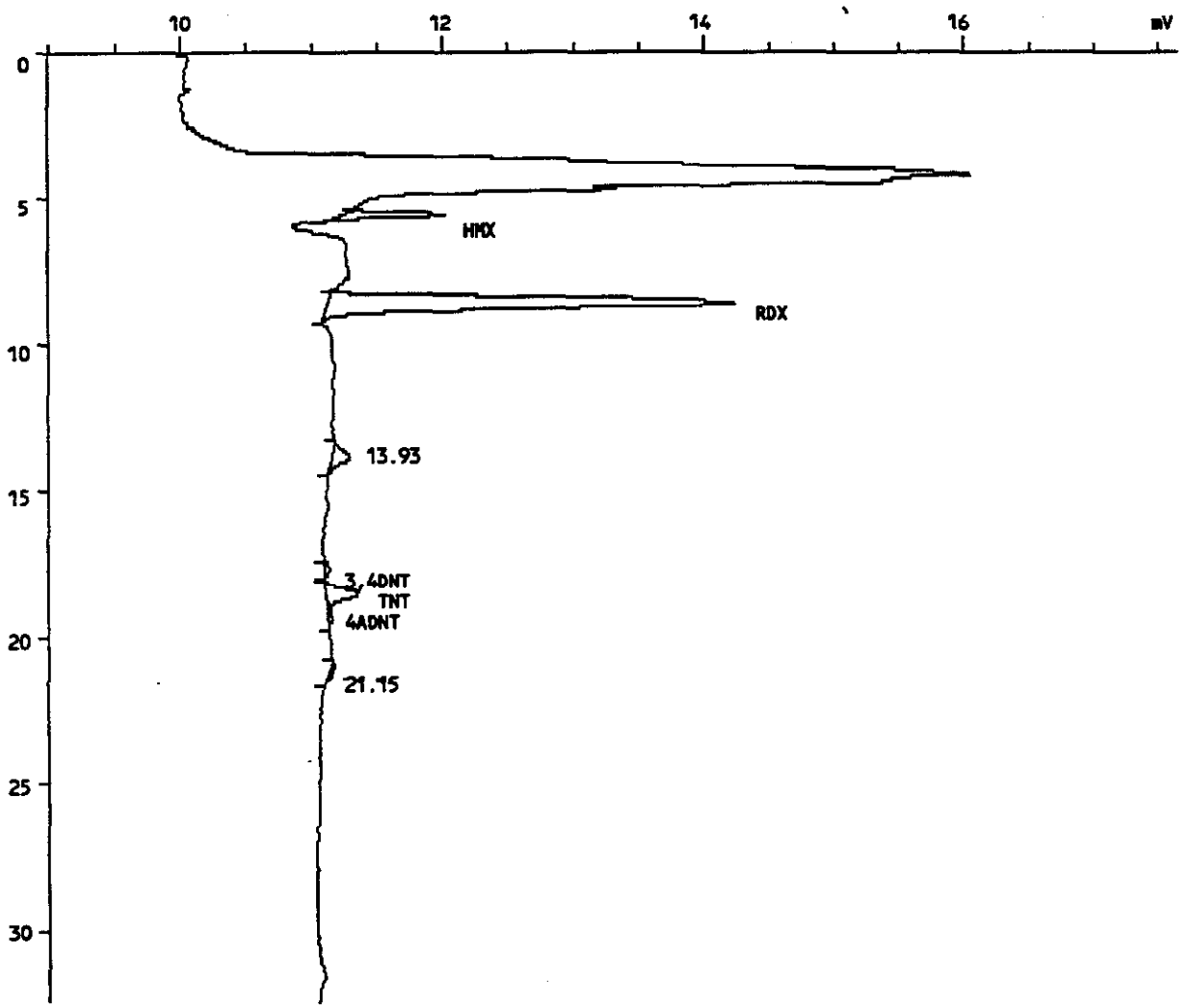
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,10,1

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 04:04:27
Reported on 05-May-98 at 19:00:28



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,10,1

Acquired on 03-May-98 at 04:04:27
Modified on 05-May-82 at 18:52:44
Reported on 05-May-98 at 18:52:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

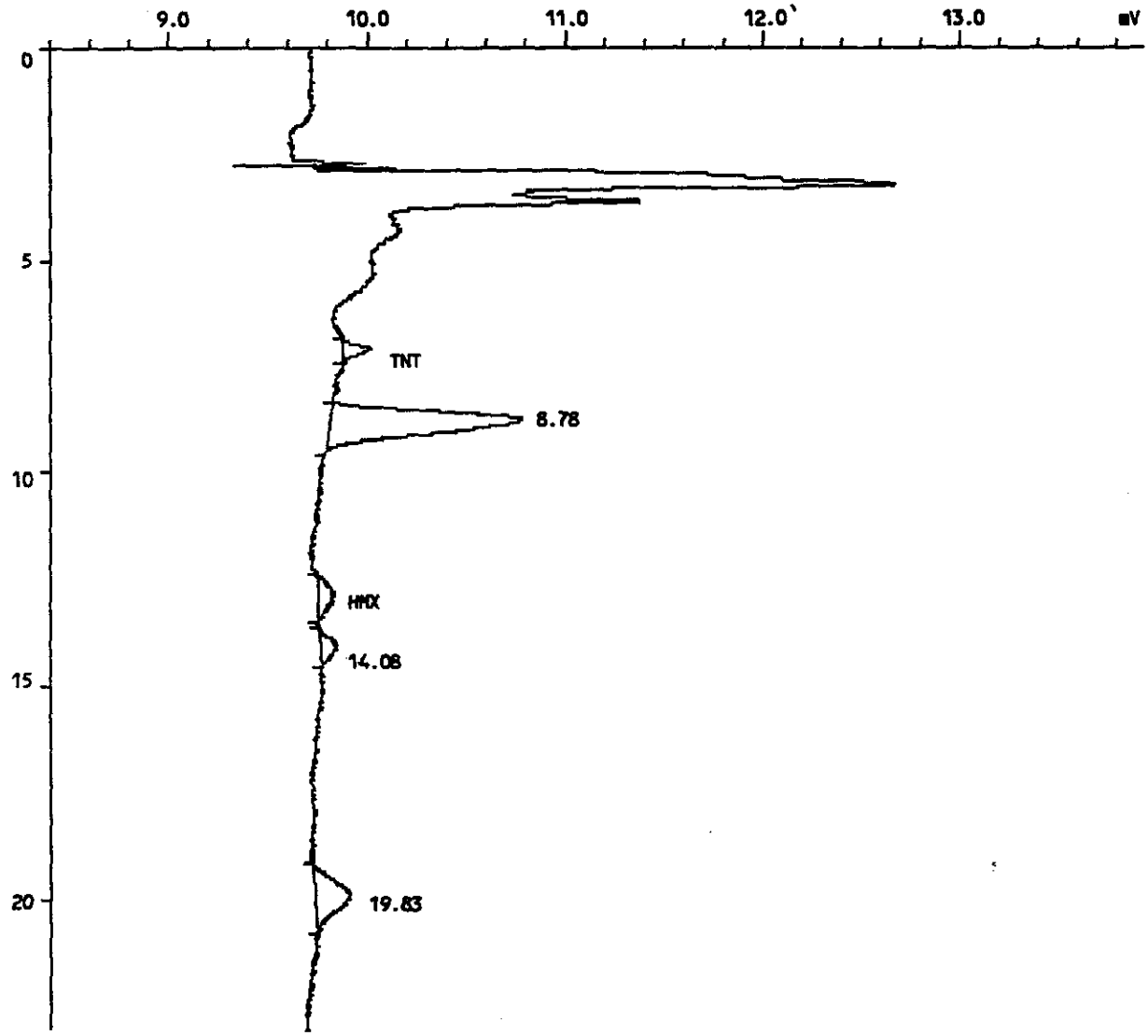
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	823	9219	20875.717	HMX * J
2	8.576	3106	84879	129152.328	RDX *
4	17.659	40	816	886.464	3,4DNT 44%
5	18.528	251	7017	4649.788	TNT * J
6	19.376	34	922	847.845	4ADNT
Total		4255	102852	156412.141	
Residual		175	5228	7393.022	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,7,1

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 20:54:03
Reported on 06-May-98 at 10:39:33



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,7,1

Acquired on 03-May-98 at 20:54:03
Modified on 06-May-82 at 09:36:10
Reported on 06-May-98 at 09:36:11

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

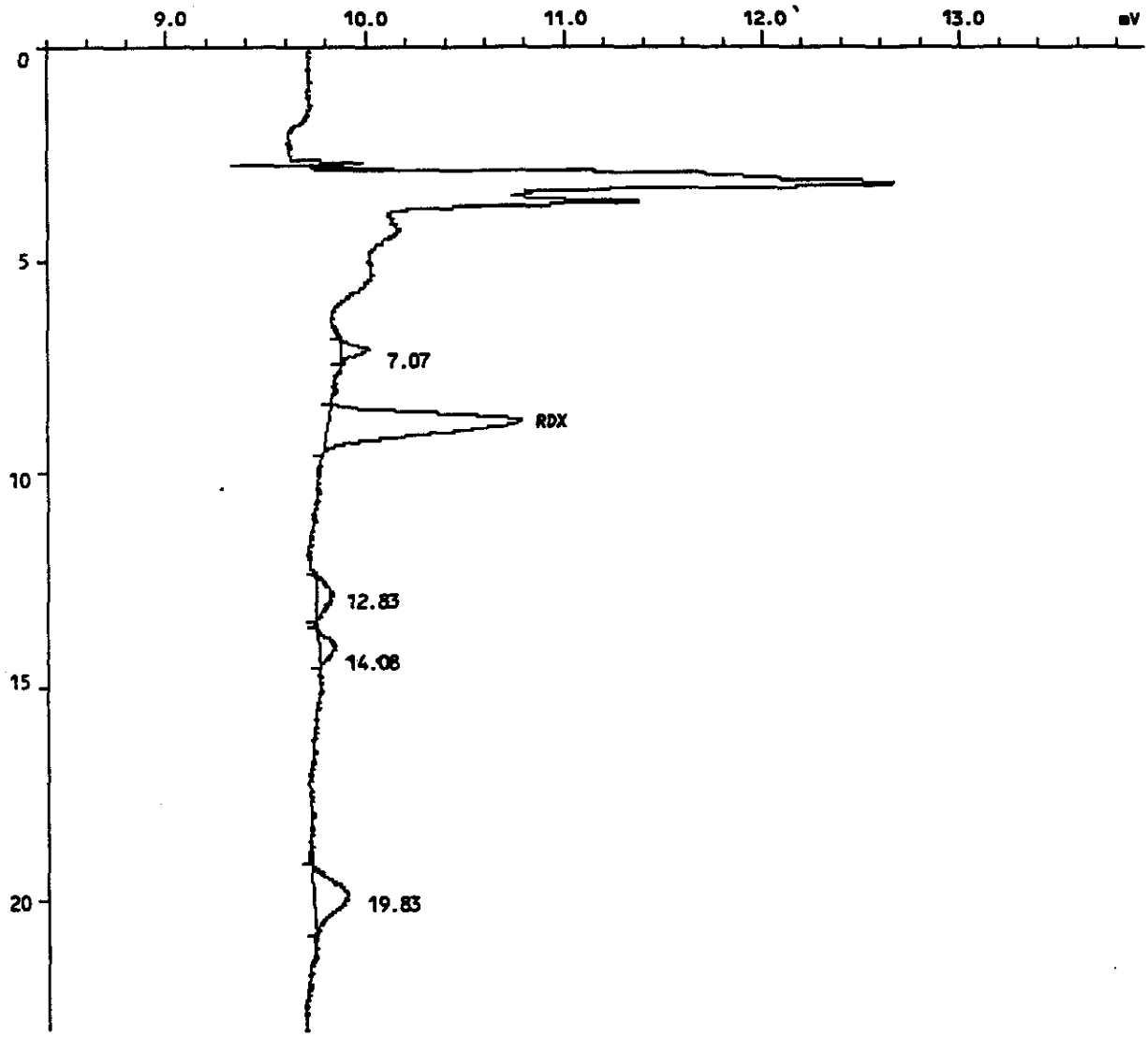
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.067	144	2138	4086.292	TNT
3	12.832	82	2839	12289.926	HMX
Total		226	4977	16376.217	
Residual		1234	43381	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,7,1

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 20:54:03
Reported on 06-May-98 at 11:18:24



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,7,1

Acquired on 03-May-98 at 20:54:03
Modified on 06-May-82 at 10:50:46
Reported on 06-May-98 at 10:50:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-B3 50X
Sample ID.....: 33783.06
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.784	972	32670	118798.281	RDX
Total		972	32670	118798.281	
Residual		487	15688	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.06

Sample Amt: 2g % Moisture 43.89 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

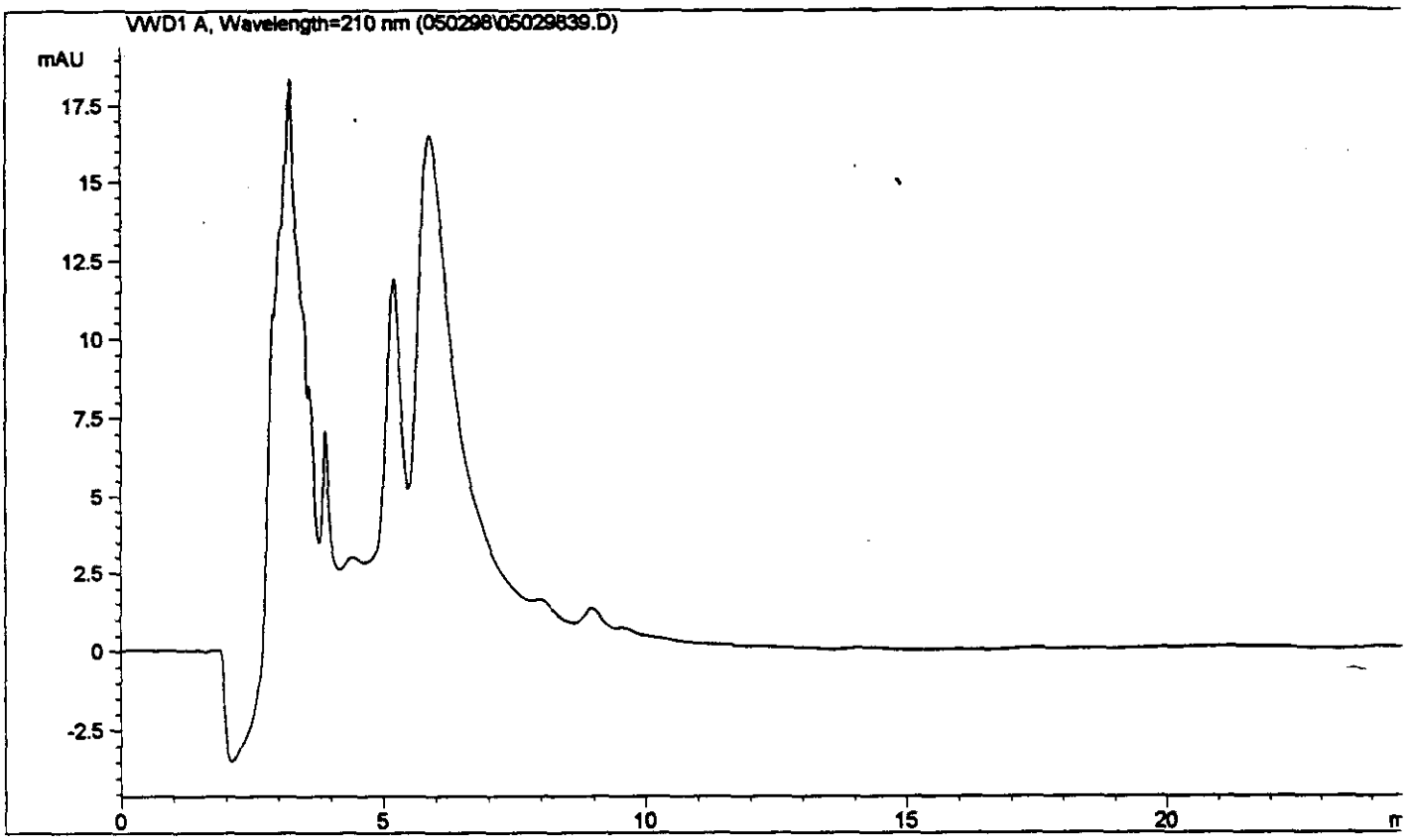
FORM I

Injection Date : Sun, 3. May. 1998
Sample Name : 33783.06
Acq Operator : SS

Seq Line : 39
Vial No. : 39
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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

Totals: 0.00000

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C1
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.09

Sample Amt: 2g % Moisture 36.53 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	66400	
121-82-4	RDX	510000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	57200	
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

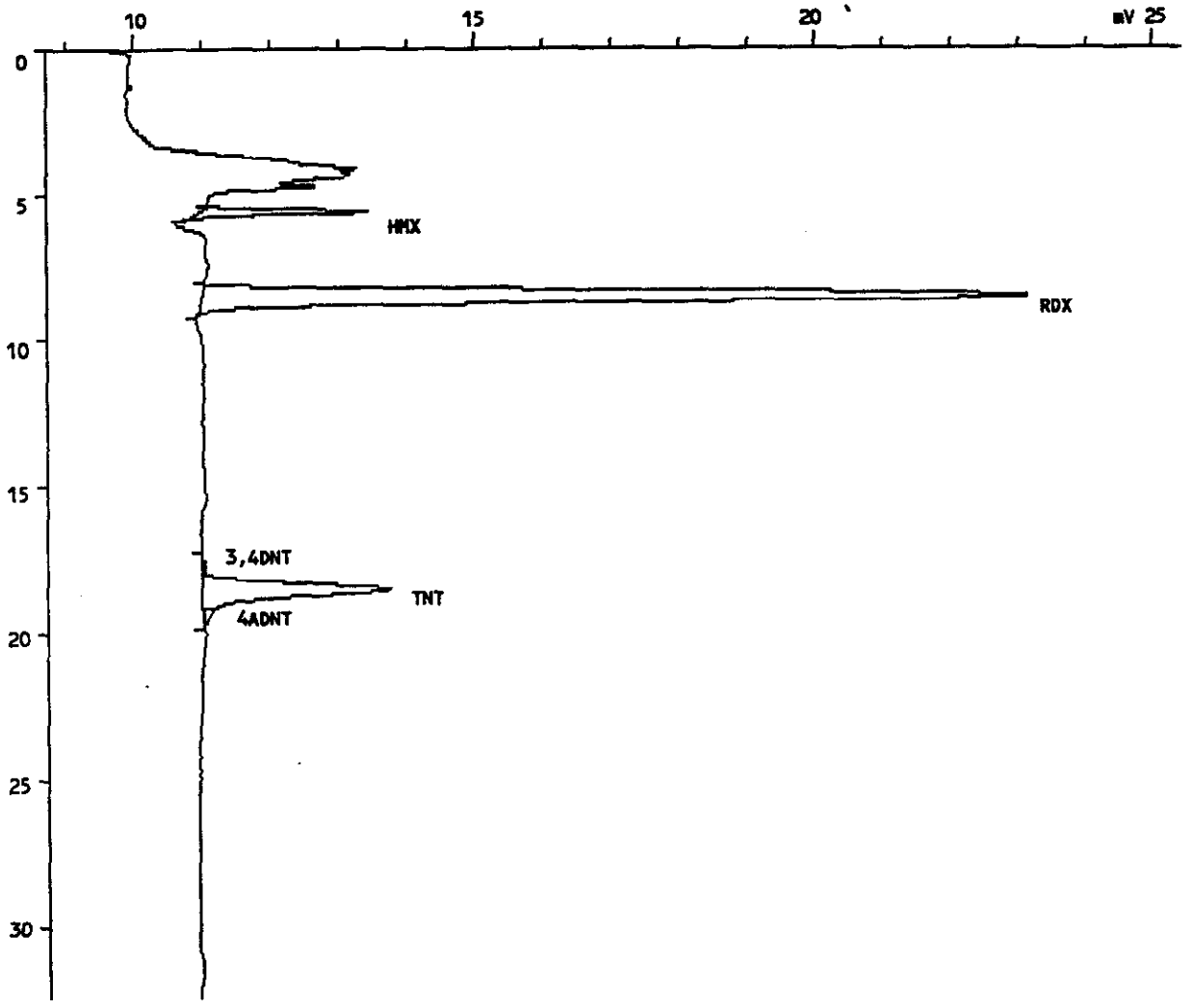
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,15,1

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 07:47:35
Reported on 05-May-98 at 18:59:23



7

INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,15,1

Acquired on 03-May-98 at 07:47:35
Modified on 05-May-82 at 18:53:46
Reported on 05-May-98 at 18:53:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

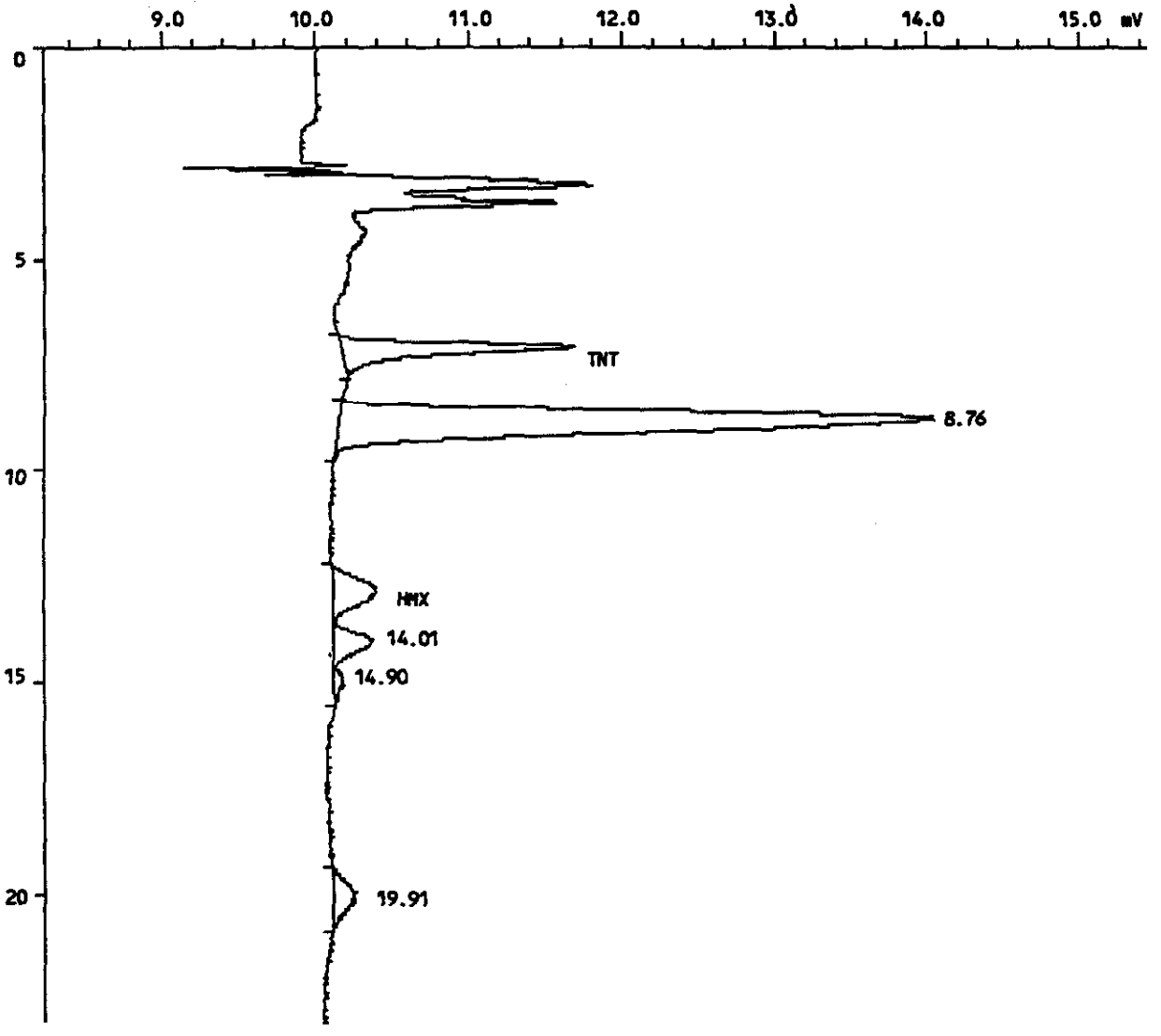
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	2492	29348	66458.609	HMX *
2	8.549	12158	334870	509540.000	RDX *
3	17.547	50	1211	1315.889	3,4DNT
4	18.485	2736	86390	57242.090	TNT *
5	19.099	213	4027	3704.243	4ADNT
Total		17649	455845	638260.813	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,8,1

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 21:38:24
Reported on 06-May-98 at 10:45:56



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,8,1

Acquired on 03-May-98 at 21:38:24
Modified on 06-May-82 at 09:35:58
Reported on 06-May-98 at 09:35:58

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

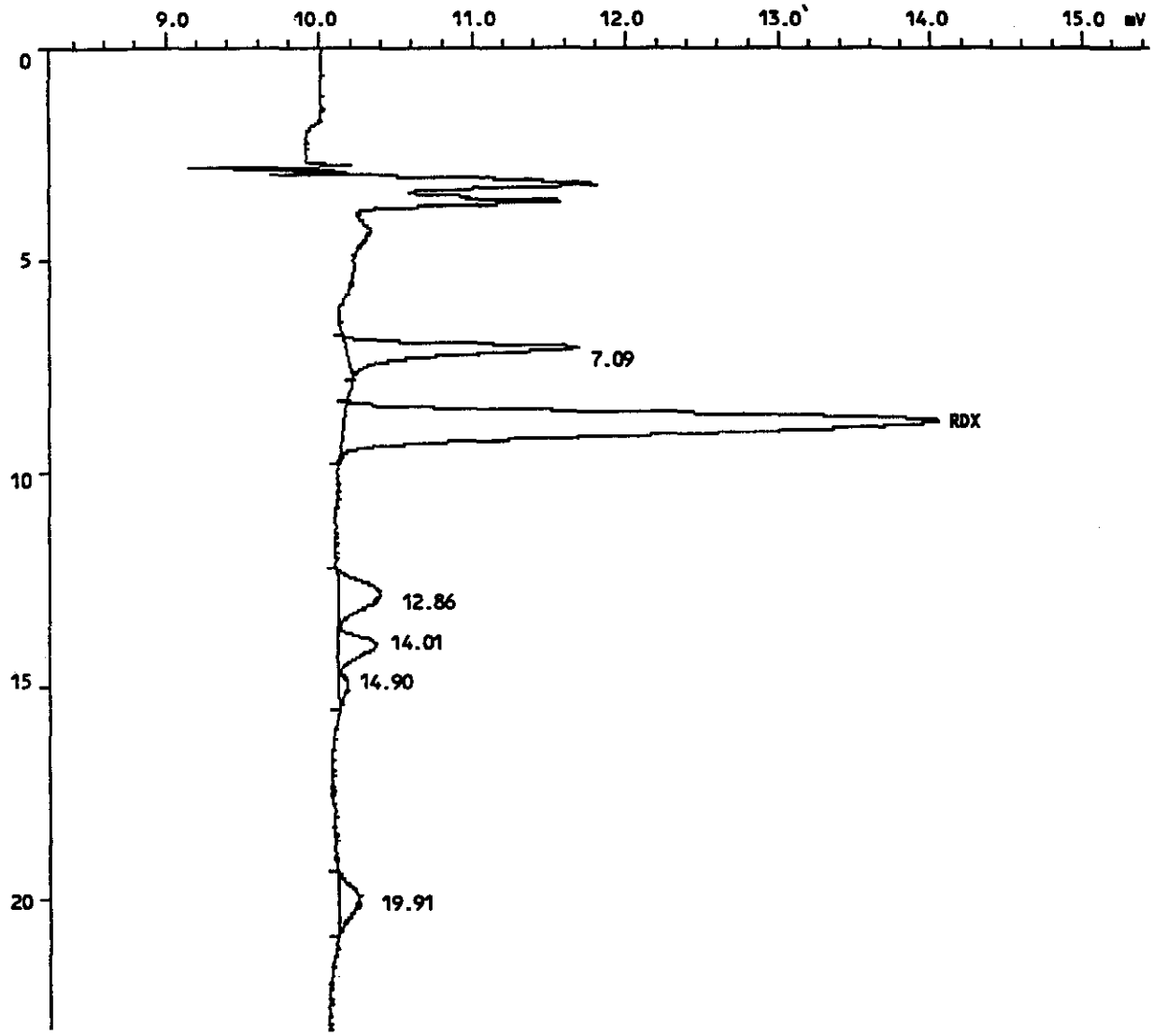
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.088	1513	27814	53161.766	TNT
3	12.859	288	12337	53407.609	HMX
Total		1802	40151	106569.375	
Residual		4361	147588	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,8,1

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 21:38:24
Reported on 06-May-98 at 11:02:27



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,8,1

Acquired on 03-May-98 at 21:38:24
Modified on 06-May-82 at 10:50:32
Reported on 06-May-98 at 10:50:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C1 50X
Sample ID.....: 33783.09
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.763	3891	130755	475473.094	RDX
Total		3891	130755	475473.094	
Residual		2271	56984	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.09

Sample Amt: 2g % Moisture 36.53 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

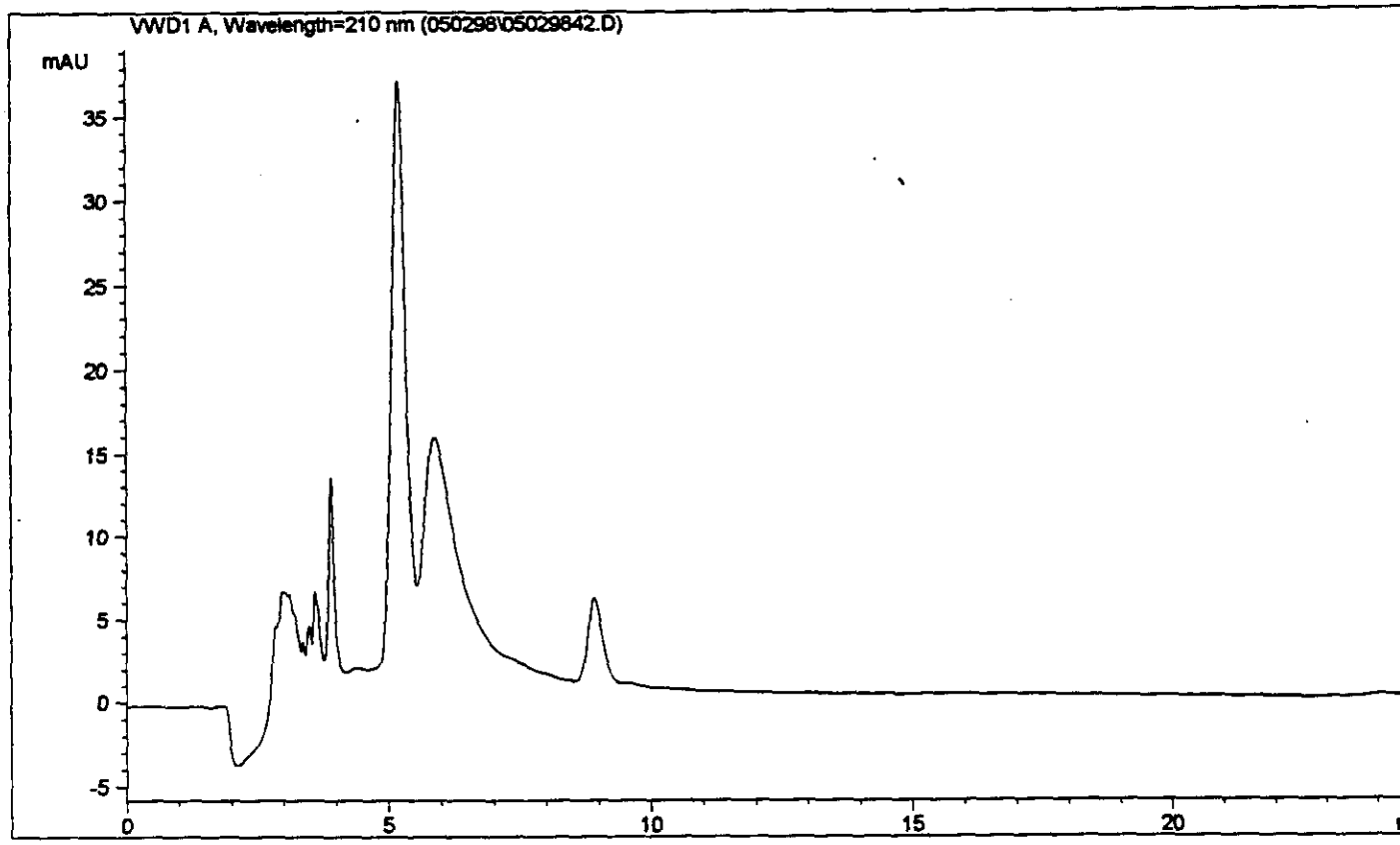
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 42
Sample Name	: 33783.09	Vial No.	: 42
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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

Totals: 0.00000

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C2
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.10

Sample Amt: 2g % Moisture 38.68 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	22800	J
121-82-4	RDX	150000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	5180	J
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

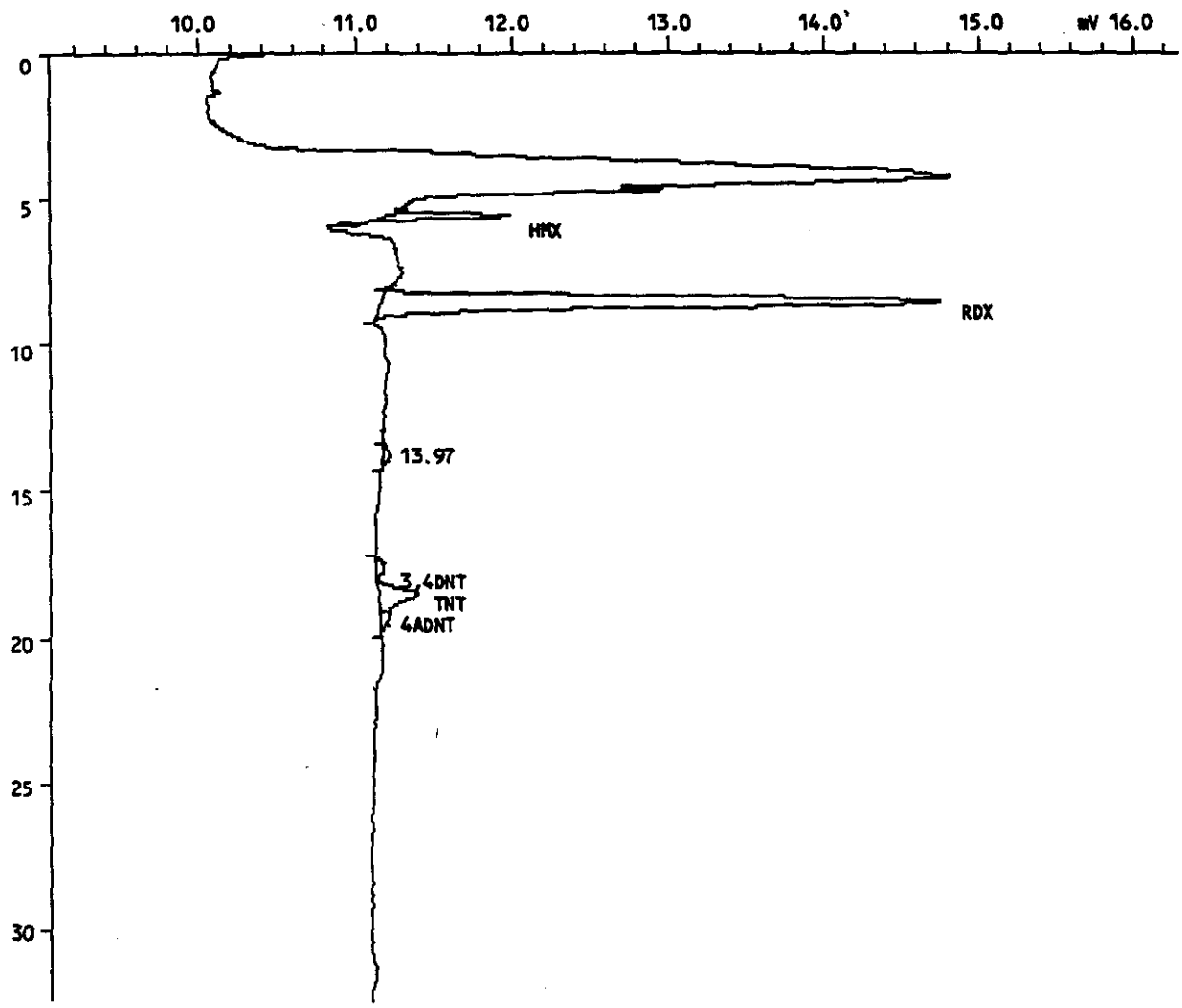
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,16,1

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 08:32:13
Reported on 05-May-98 at 18:58:29



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,16,1

Acquired on 03-May-98 at 08:32:13
Modified on 05-May-82 at 18:54:02
Reported on 05-May-98 at 18:54:02

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

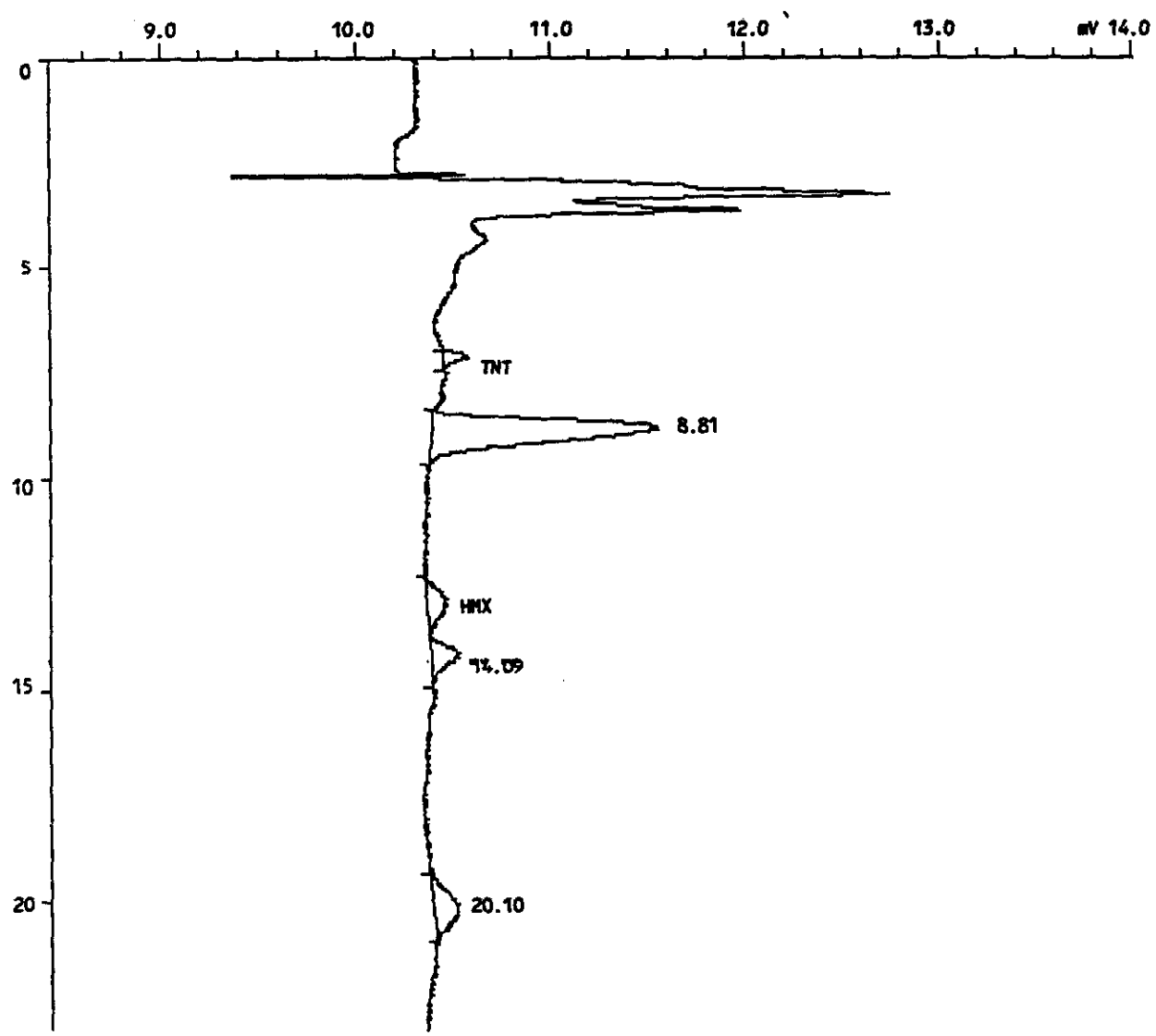
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.611	847	10069	22802.188	HMX *
2	8.571	3597	98254	149503.875	RDX *
4	17.675	48	1319	1433.414	3,4DNT
5	18.528	256	7811	5175.864	TNT *
6	19.051	66	1954	1796.846	4ADNT
Total		4813	119407	180712.172	
Residual		44	1259	1916.422	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,11,1

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 23:51:31
Reported on 06-May-98 at 10:46:27



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,11,1

Acquired on 03-May-98 at 23:51:31
Modified on 06-May-82 at 09:35:44
Reported on 06-May-98 at 09:35:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

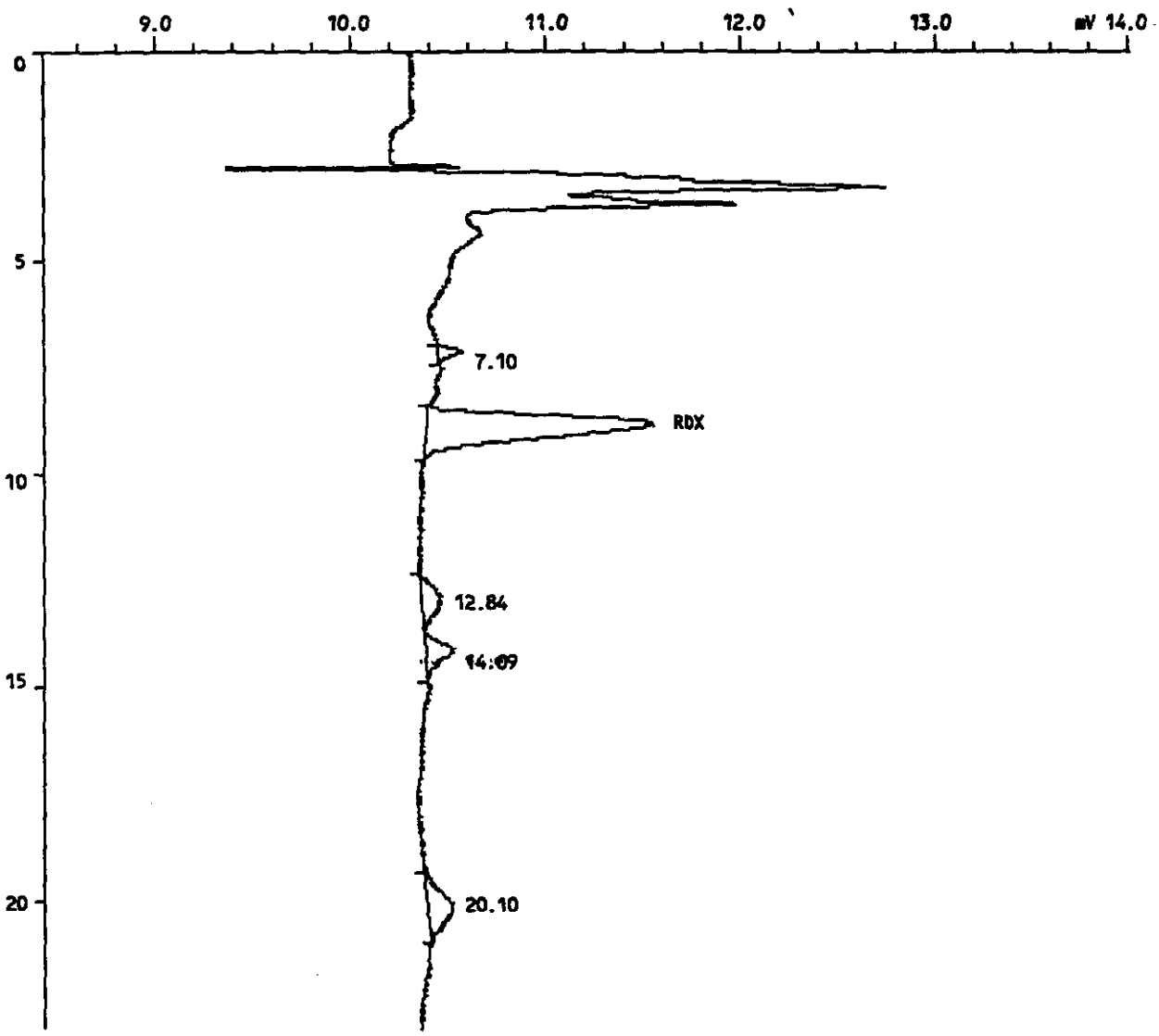
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.104	126	1655	3163.489	TNT
3	12.843	102	3951	17103.164	HMX
Total		228	5606	20266.652	
Residual		1429	49524	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,11,1

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 03-May-98 at 23:51:31
Reported on 06-May-98 at 11:02:56



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,11,1

Acquired on 03-May-98 at 23:51:31
Modified on 06-May-82 at 10:50:18
Reported on 06-May-98 at 10:50:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C2 50X
Sample ID.....: 33783.10
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.805	1160	38838	141229.953	RDX
Total		1160	38838	141229.953	
Residual		497	16292	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.10

Sample Amt: 2g % Moisture 38.68 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

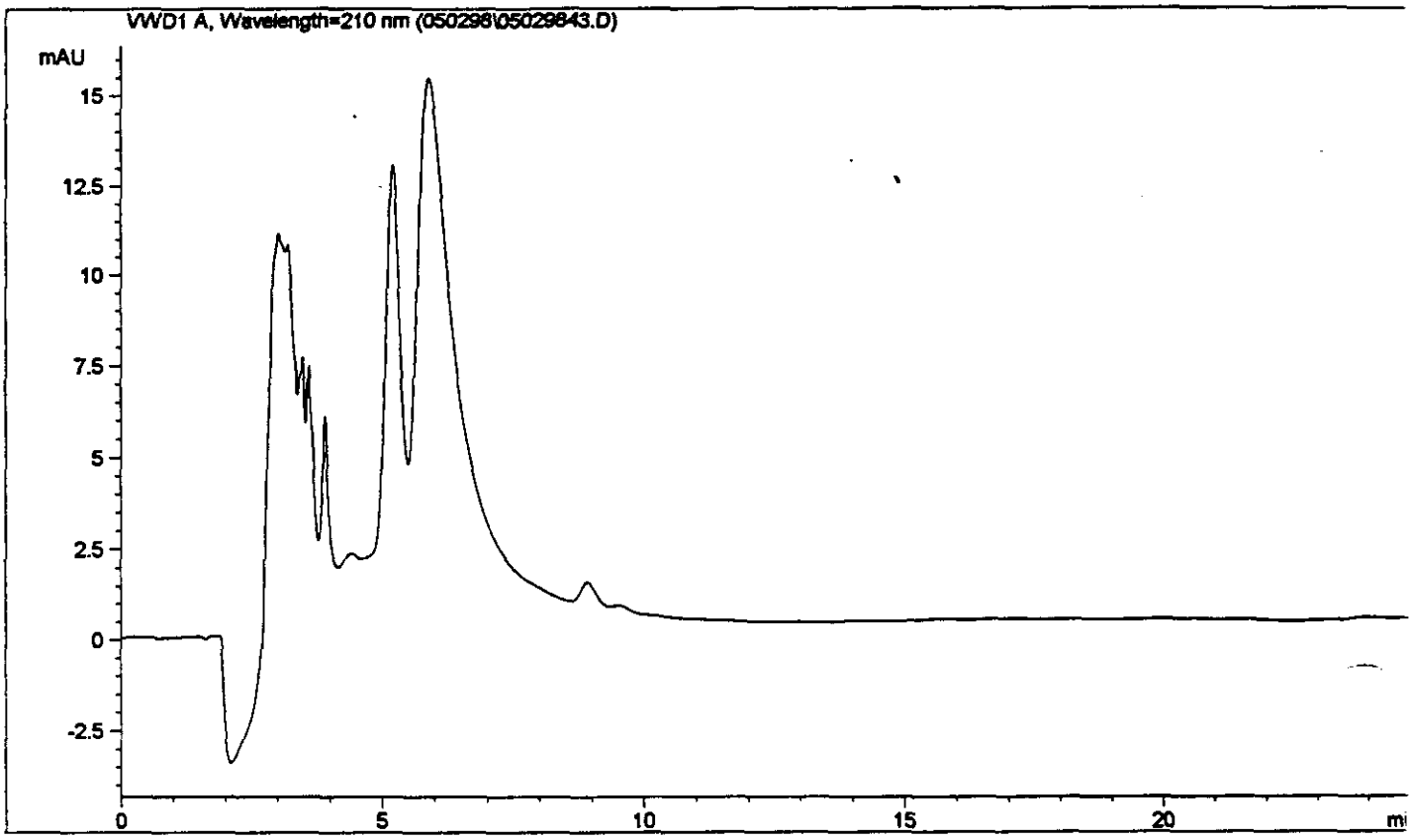
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 43
Sample Name	: 33783.10	Vial No.	: 43
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-C3
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.11

Sample Amt: 2g % Moisture 37.31 Date Received: 04/29/98

Extraction Volume: 20ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	16100	
121-82-4	RDX	125000	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	11300	
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

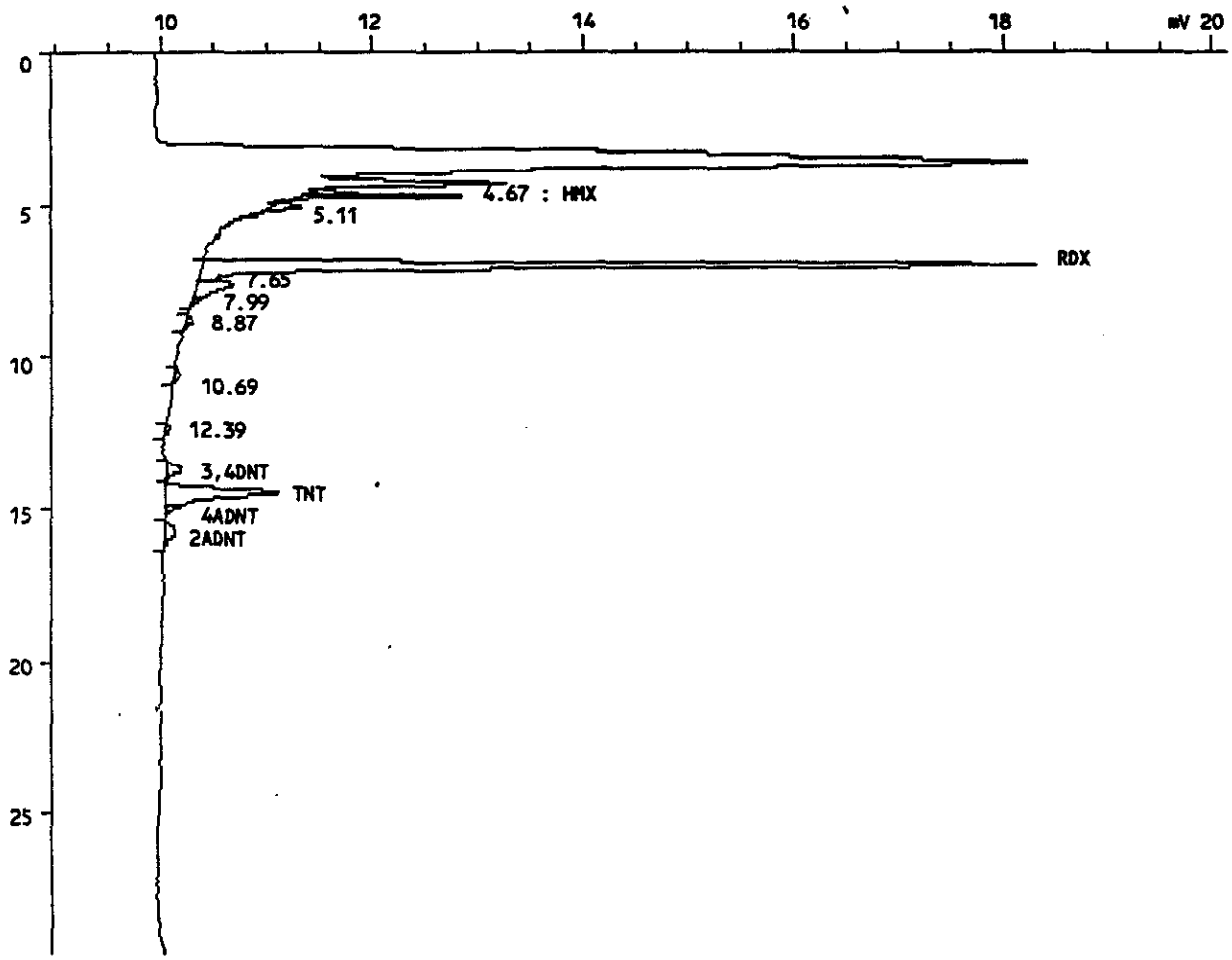
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,25,1

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 15:30:38
Reported on 11-May-98 at 19:51:40



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,25,1

Acquired on 09-May-98 at 15:30:38
Modified on 11-May-82 at 19:51:20
Reported on 11-May-98 at 19:51:22

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 12:15:20
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

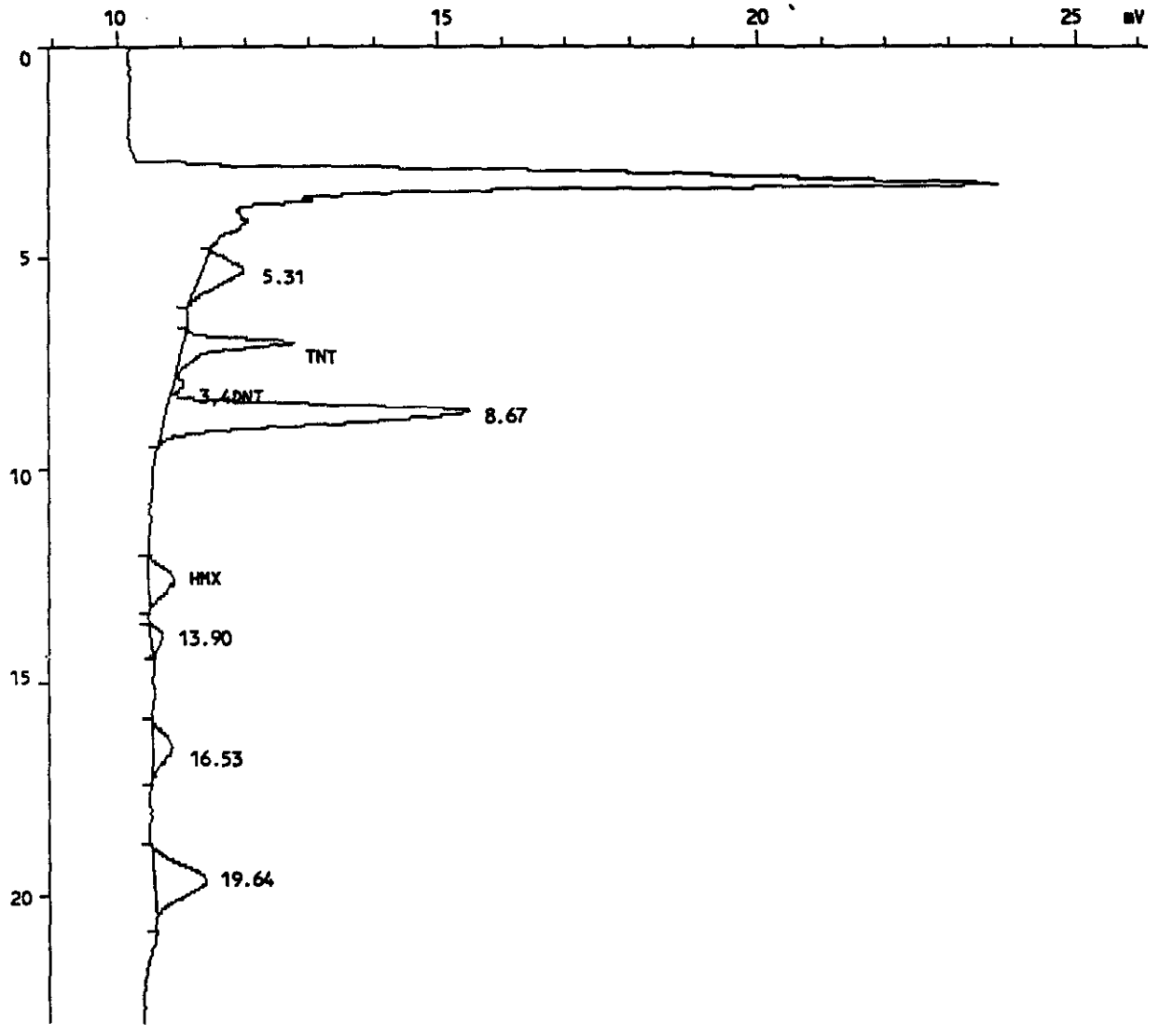
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	4.752	1595	10878	16139.197	HMX *
4	6.997	7948	106639	125458.117	RDX *
10	13.760	146	2694	2480.489	3,4DNT 124
11	14.528	1068	21928	11326.549	TNT *
12	14.901	188	1779	1349.921	4ADNT
13	15.765	100	2826	1509.598	2ADNT
Total		11044	146744	158263.859	
Residual		1539	19617	25154.125	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,18,1

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 16:31:49
Reported on 11-May-98 at 20:26:55



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,18,1

Acquired on 08-May-98 at 16:31:49
Modified on 11-May-82 at 20:26:28
Reported on 11-May-98 at 20:26:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 20:10:24
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 8

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

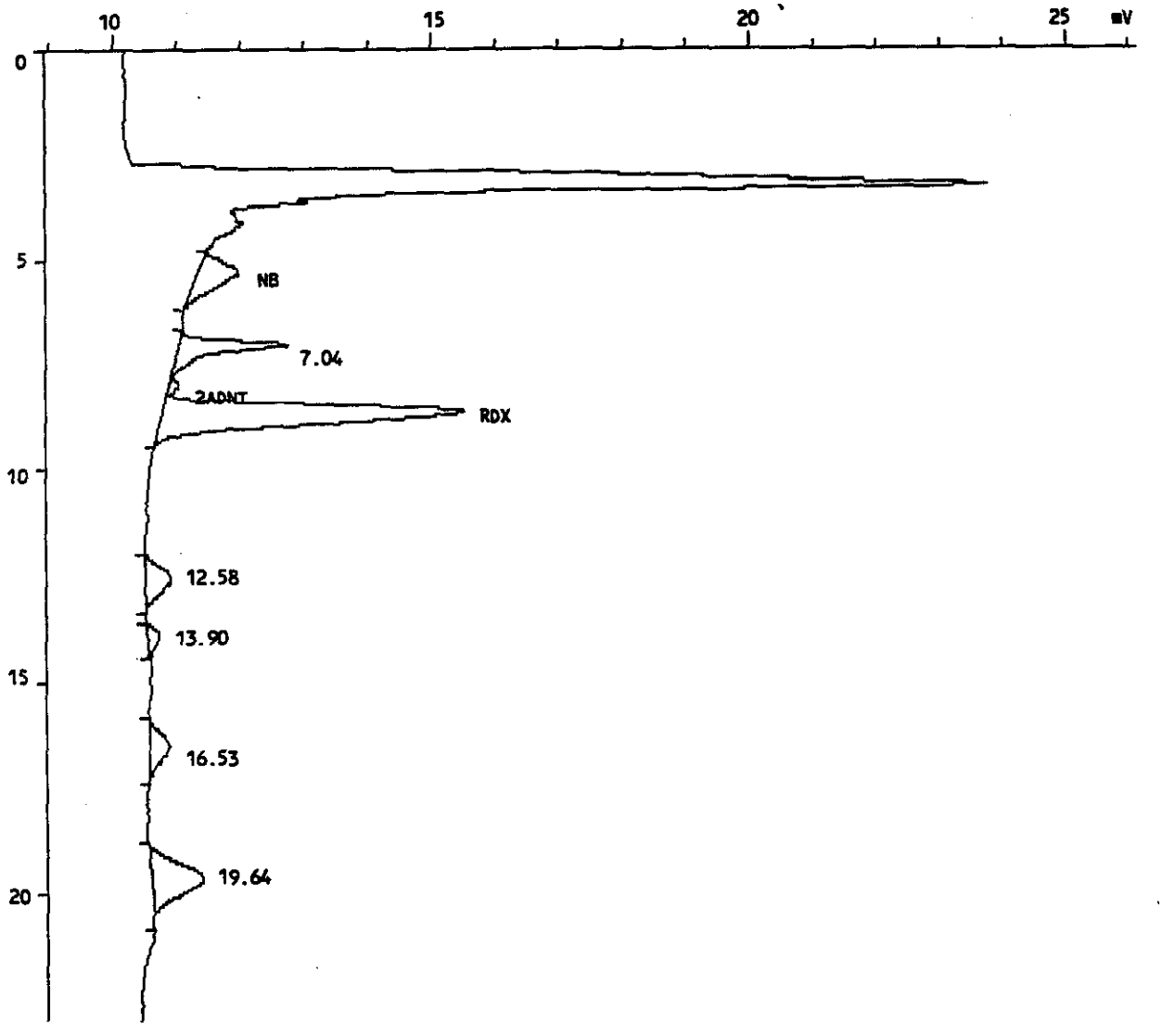
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.040	1698	33080	12099.322	TNT
3	8.000	153	2787	1906.017	3,4DNT
5	12.581	398	16535	14303.760	HMX
Total		2248	52401	28309.100	
Residual		6672	231596	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,18,1

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 16:31:49
Reported on 11-May-98 at 20:27:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,18,1

Acquired on 08-May-98 at 16:31:49
Modified on 11-May-82 at 20:27:24
Reported on 11-May-98 at 20:27:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-C3 10X
Sample ID.....: 33783.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 8

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.312	658	27052	13788.137	NB
3	8.000	153	2787	1065.620	2ADNT
4	8.667	4706	145160	105570.664	RDX
Total		5516	174999	120424.422	
Residual		3403	108999	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

b Name: SWL-TULSA Contract:

BIO-N-30%-00-C3

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.11

Sample Amt: 2g % Moisture 37.31 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

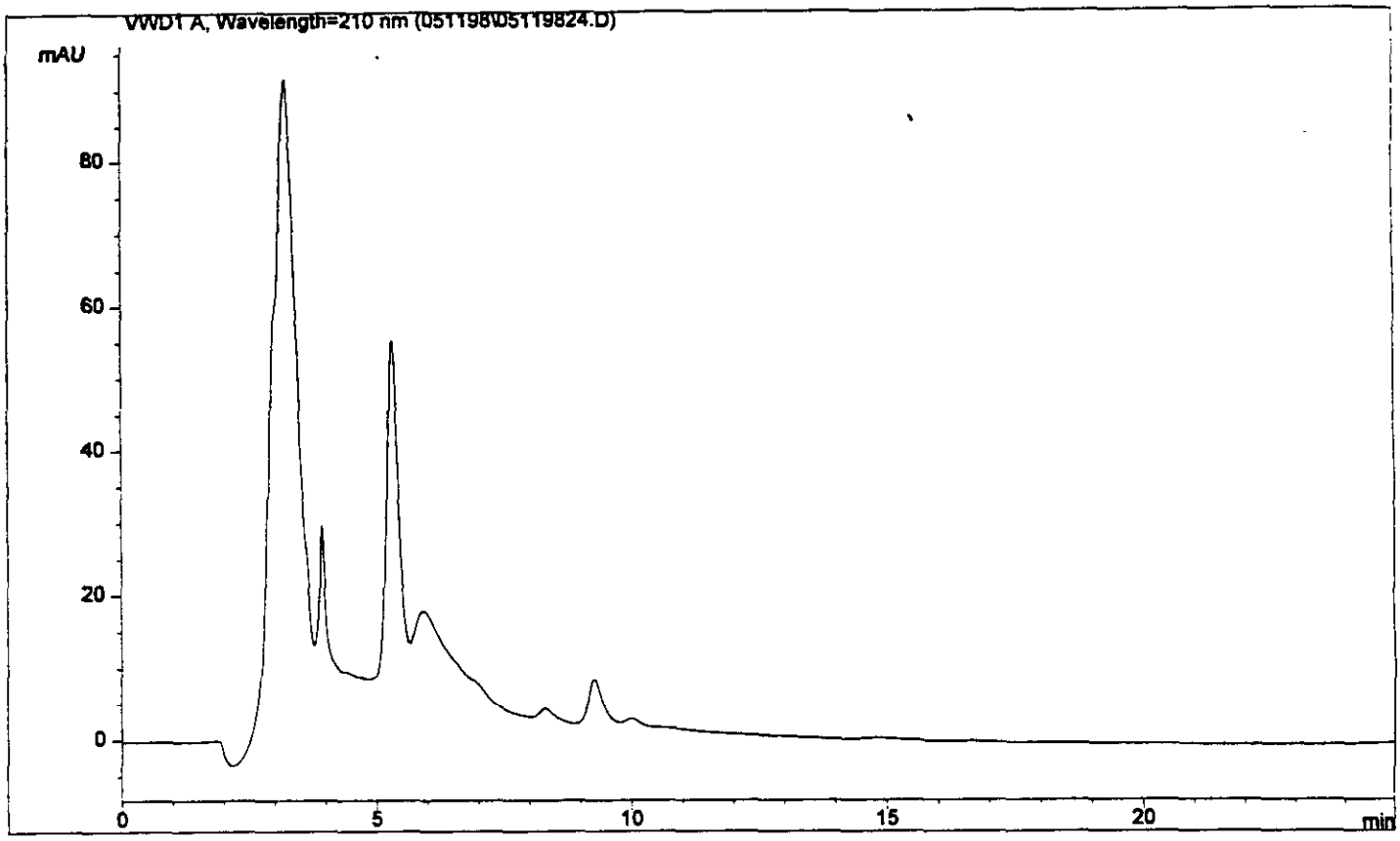
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	1250	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 24
Sample Name	: 33783.11	Vial No.	: 24
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

98

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.12

Sample Amt: 2g % Moisture 40.05 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	51200	J
121-82-4	RDX	357000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	27600	
1946-51-0	4ADNT	3550	JP
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

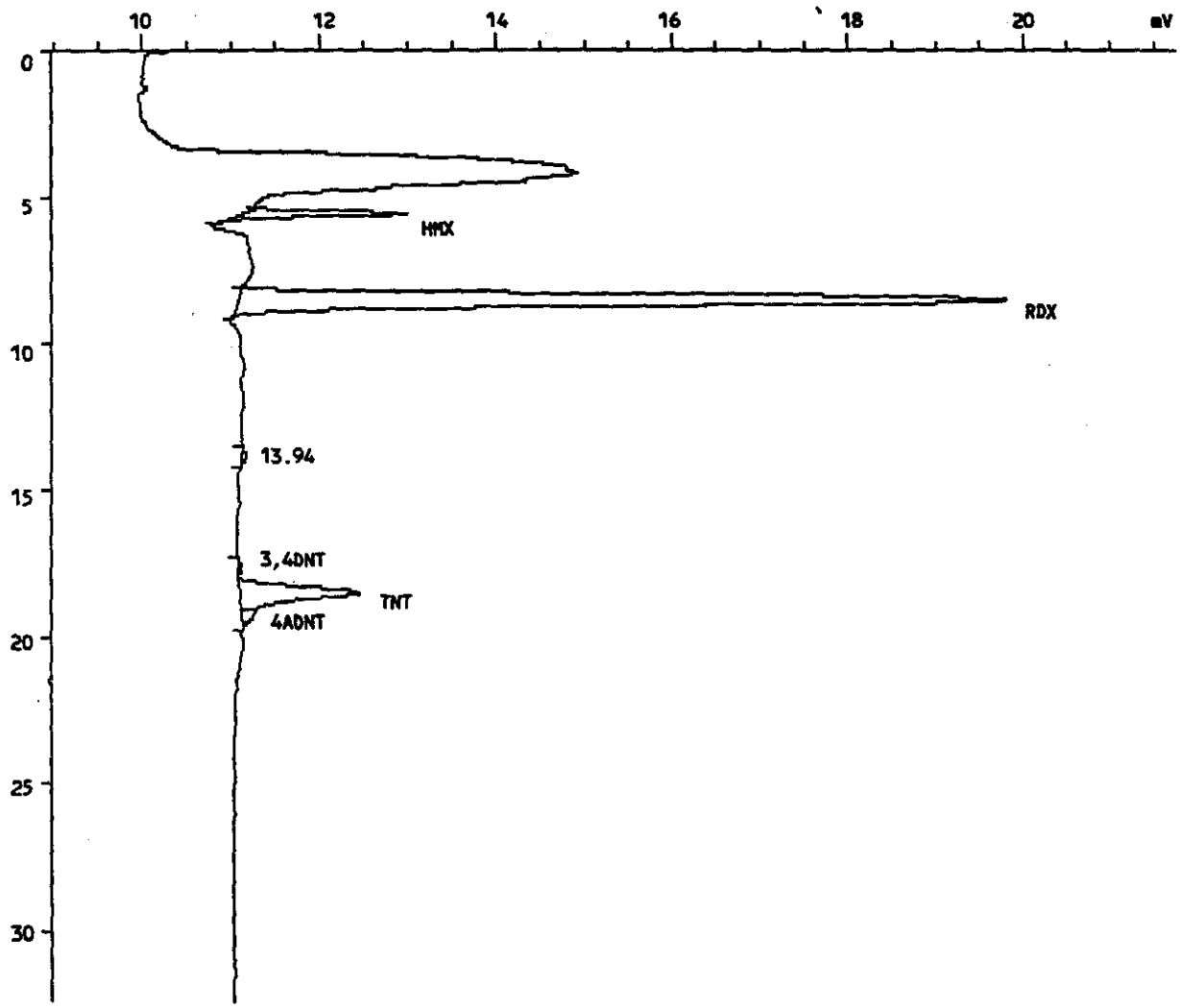
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,18,1

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 10:01:28
Reported on 06-May-98 at 12:08:16



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,18,1

Acquired on 03-May-98 at 10:01:28
Modified on 06-May-82 at 12:07:54
Reported on 06-May-98 at 12:08:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 19:25:20
Method file.....: EXPLOS Last modified on 06-May-82 at 11:50:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

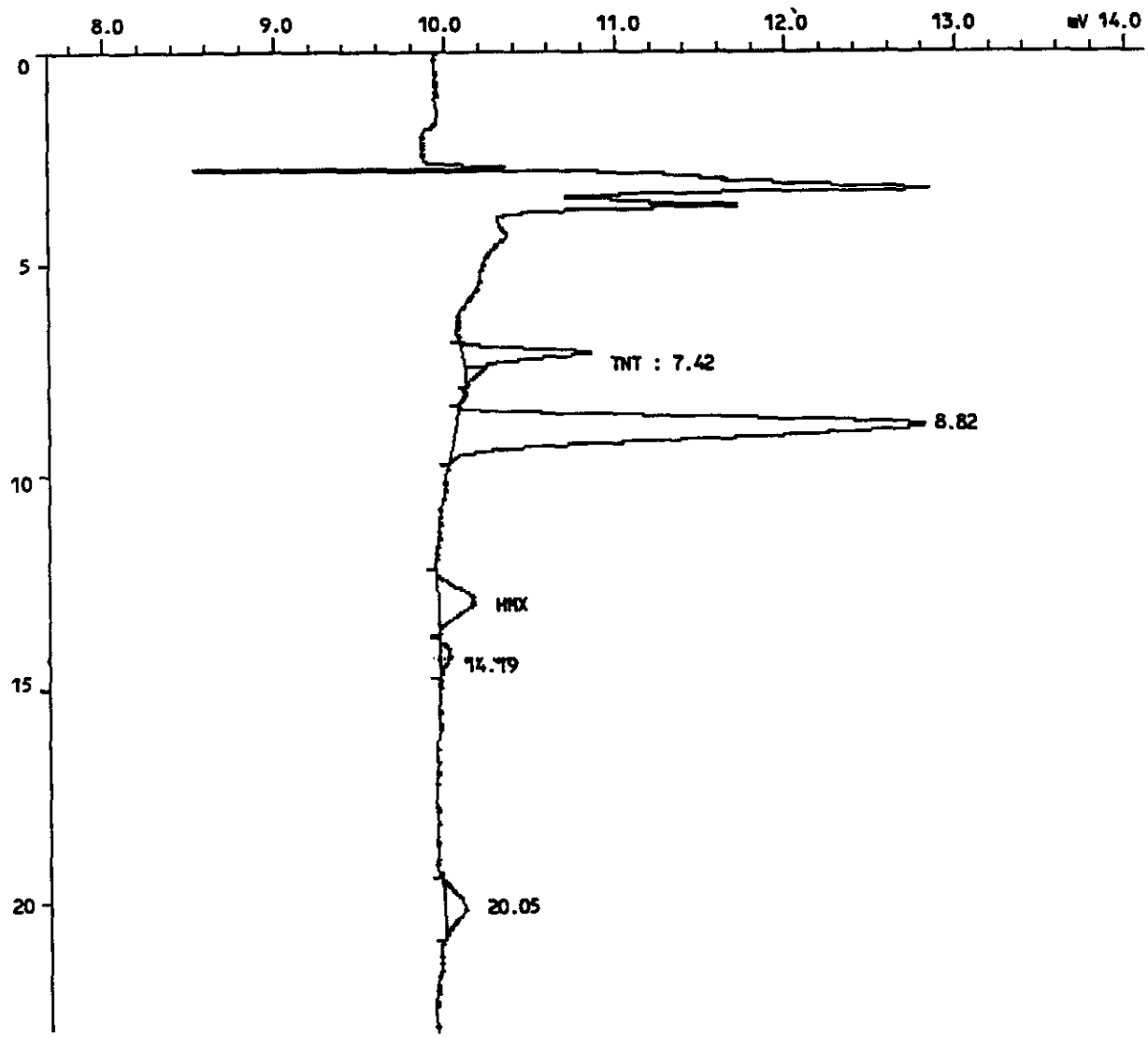
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.616	1876	22631	51247.449	HMX-* J
2	8.560	8704	234477	356781.281	RDX-*
4	17.600	43	985	1070.462	3,4DNT 53%
5	18.533	1344	41665	27607.107	TNT-*
6	19.115	178	3861	3550.928	4ADNT-* JP
Total		12146	303618	440257.219	
Residual		53	1299	1976.747	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,13,1

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 01:20:18
Reported on 06-May-98 at 10:47:09



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,13,1

Acquired on 04-May-98 at 01:20:18
Modified on 06-May-82 at 09:35:18
Reported on 06-May-98 at 09:35:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

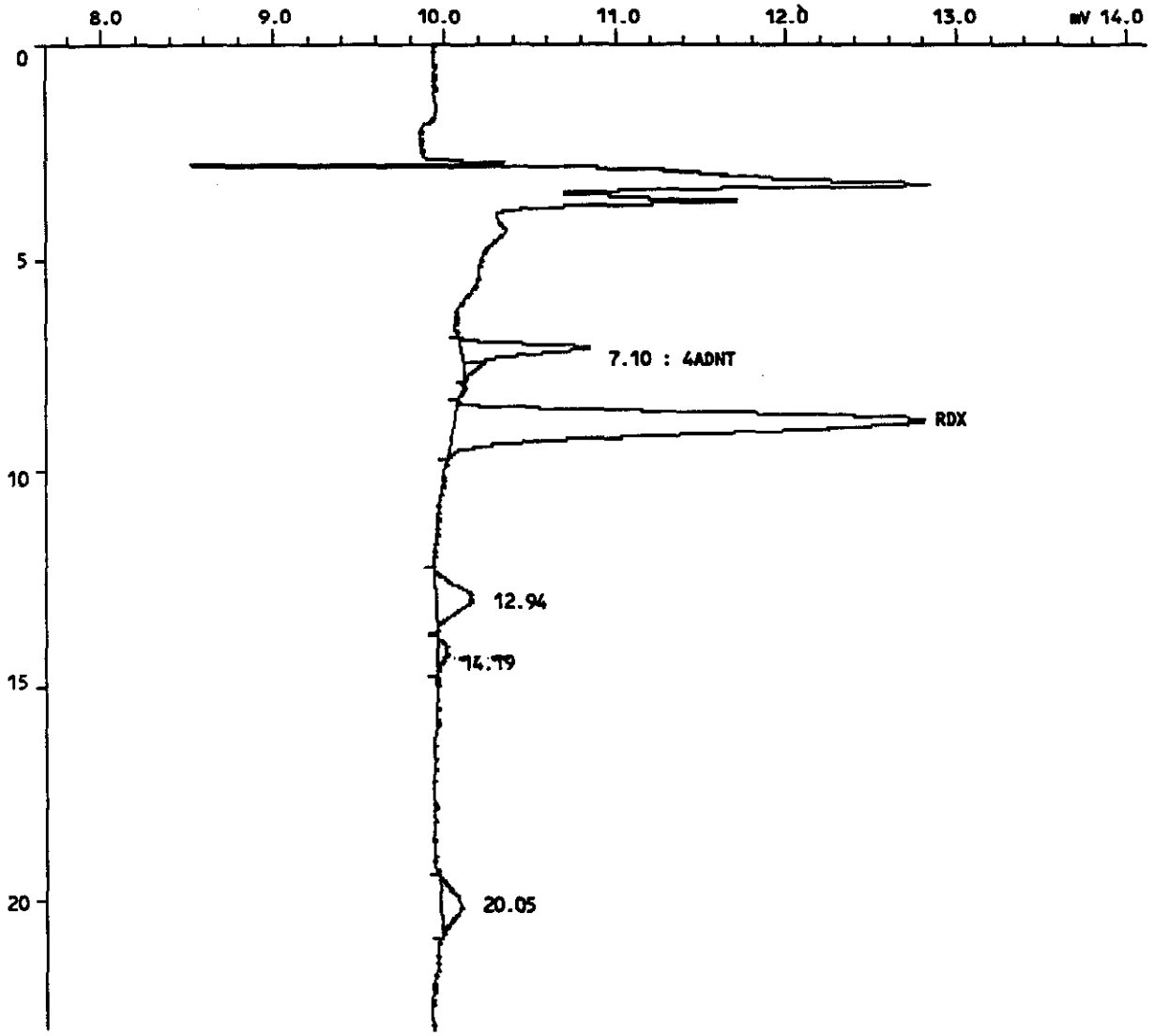
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.099	756	12637	24153.955	TNT
4	12.939	219	9204	39844.605	HMX
Total		975	21841	63998.563	
Residual		3088	101336	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,13,1

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 01:20:18
Reported on 06-May-98 at 11:04:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,13,1

Acquired on 04-May-98 at 01:20:18
Modified on 06-May-82 at 10:49:52
Reported on 06-May-98 at 10:49:53

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1 50X
Sample ID.....: 33783.12
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.424	128	1606	5030.029	4ADNT
3	8.816	2757	91985	334489.156	RDX
Total		2885	93590	339519.188	
Residual		1178	29587	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.12

Sample Amt: 2g % Moisture 40.05 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

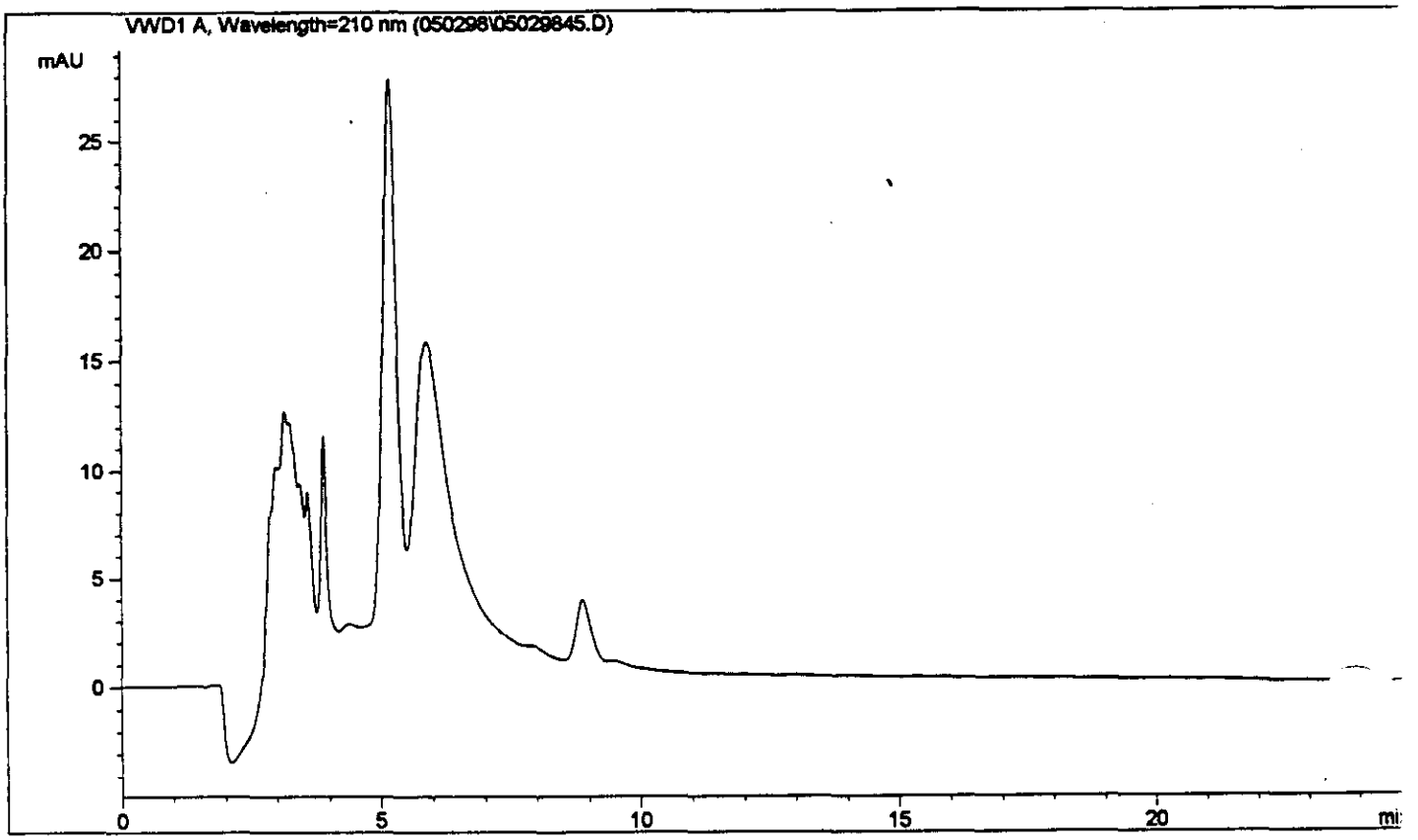
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 45
Sample Name	: 33783.12	Vial No.	: 45
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1
FD 50

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.13

Sample Amt: 2g % Moisture 46.19 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	64800	
121-82-4	RDX	445000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	32400	
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

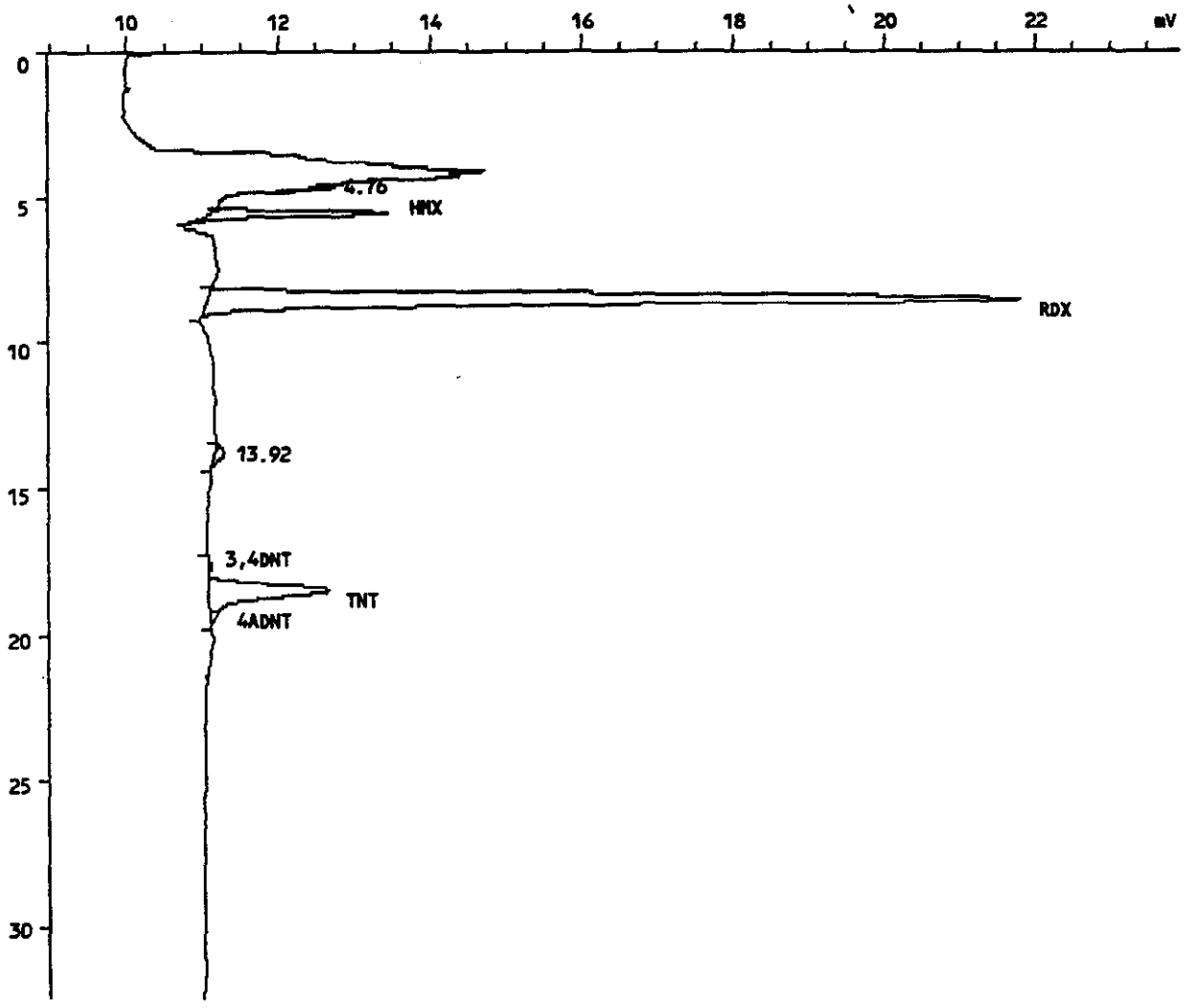
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,19,1

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 10:46:05
Reported on 05-May-98 at 18:57:24



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,19,1

Acquired on 03-May-98 at 10:46:05
Modified on 05-May-82 at 18:54:48
Reported on 05-May-98 at 18:54:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

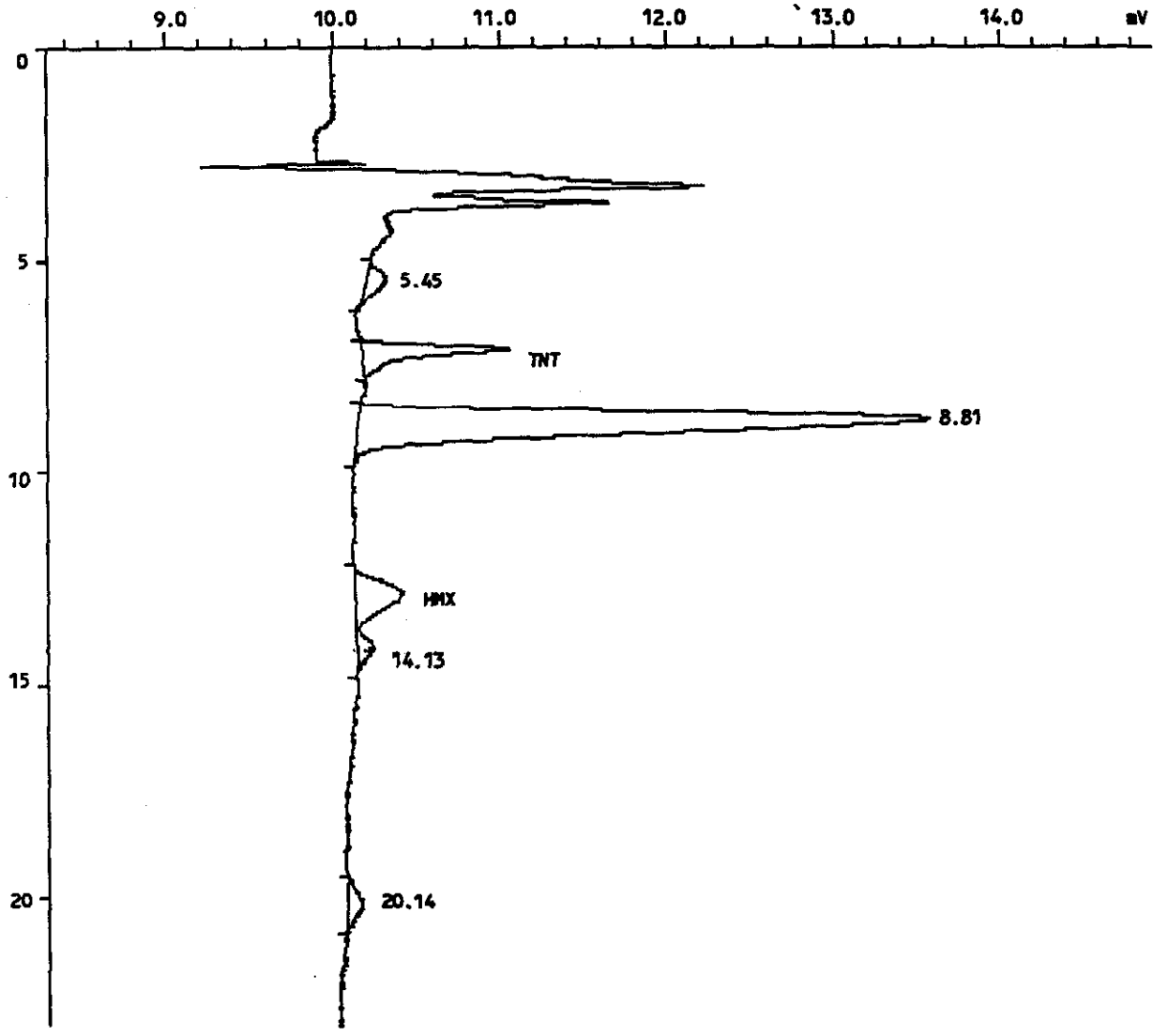
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.600	2417	28623	64816.777	HMX
3	8.544	10726	292431	444964.313	RDX
5	17.579	45	1031	1120.311	3,4DNT
6	18.517	1563	48926	32418.613	TNT
7	19.131	130	2501	2300.581	4ADNT
Total		14881	373512	545620.563	
Residual		671	8038	15226.292	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,14,1

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 02:04:42
Reported on 06-May-98 at 10:47:36



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,14,1

Acquired on 04-May-98 at 02:04:42
Modified on 06-May-82 at 09:35:04
Reported on 06-May-98 at 09:35:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

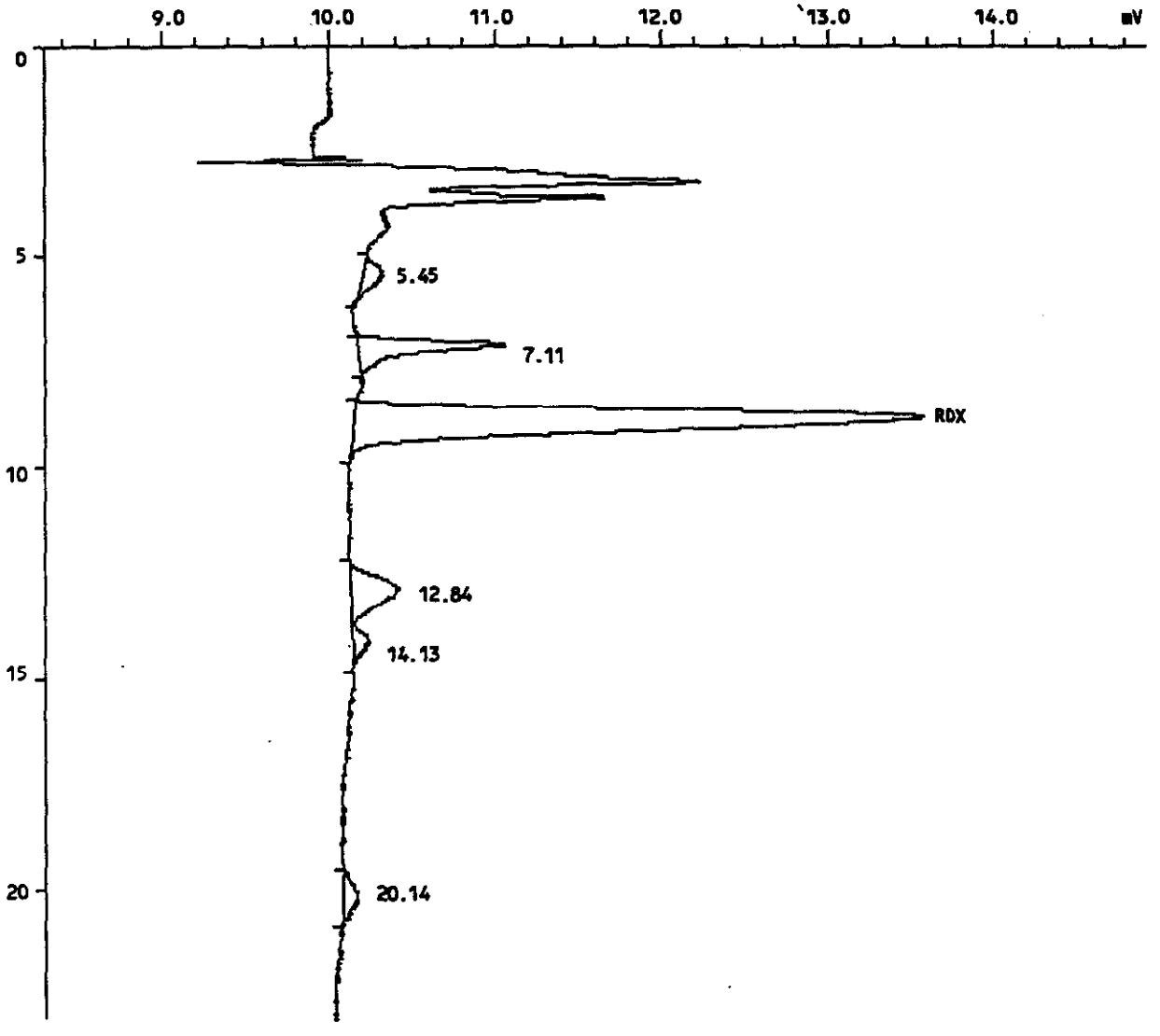
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.109	881	16174	30914.191	TNT
4	12.843	288	12698	54970.266	HMX
Total		1170	28872	85884.453	
Residual		3735	124827	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,14,1

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 02:04:42
Reported on 06-May-98 at 11:05:18



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,14,1

Acquired on 04-May-98 at 02:04:42
Modified on 06-May-82 at 10:49:40
Reported on 06-May-98 at 10:49:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D1FD 50X
Sample ID.....: 33783.13
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	8.811	3425	113792	413787.656	RDX
Total		3425	113792	413787.656	
Residual		1480	39908	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D1 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.13

Sample Amt: 2g % Moisture 46.19 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

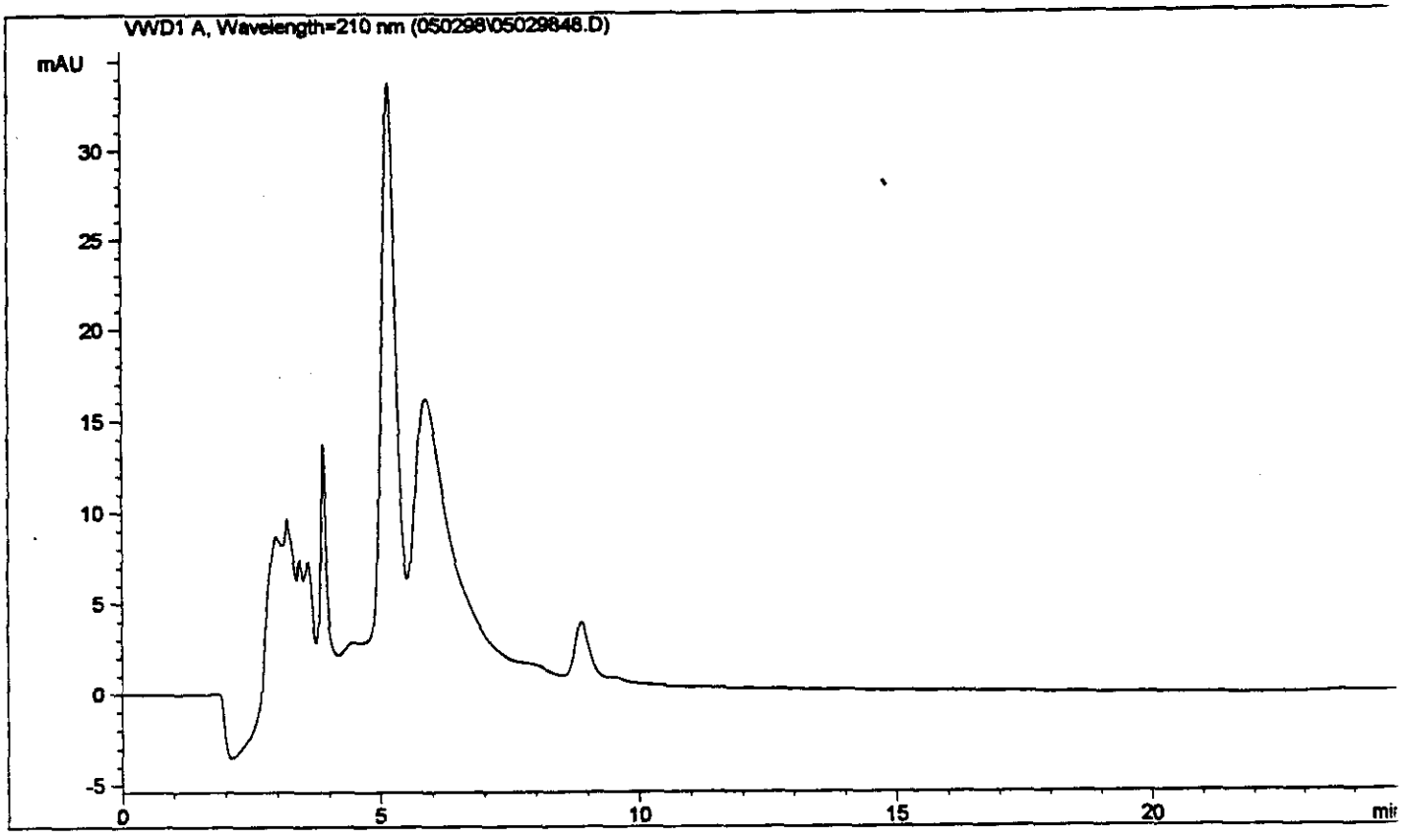
FORM I

Injection Date : Sun, 3. May. 1998
Sample Name : 33783.13
Acq Operator : SS

Seq Line : 48
Vial No. : 48
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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

Totals: 0.00000

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D2
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.14

Sample Amt: 2g % Moisture 46.55 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	37300	J
121-82-4	RDX	281000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	20100	
1946-51-0	4ADNT	1760	J
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

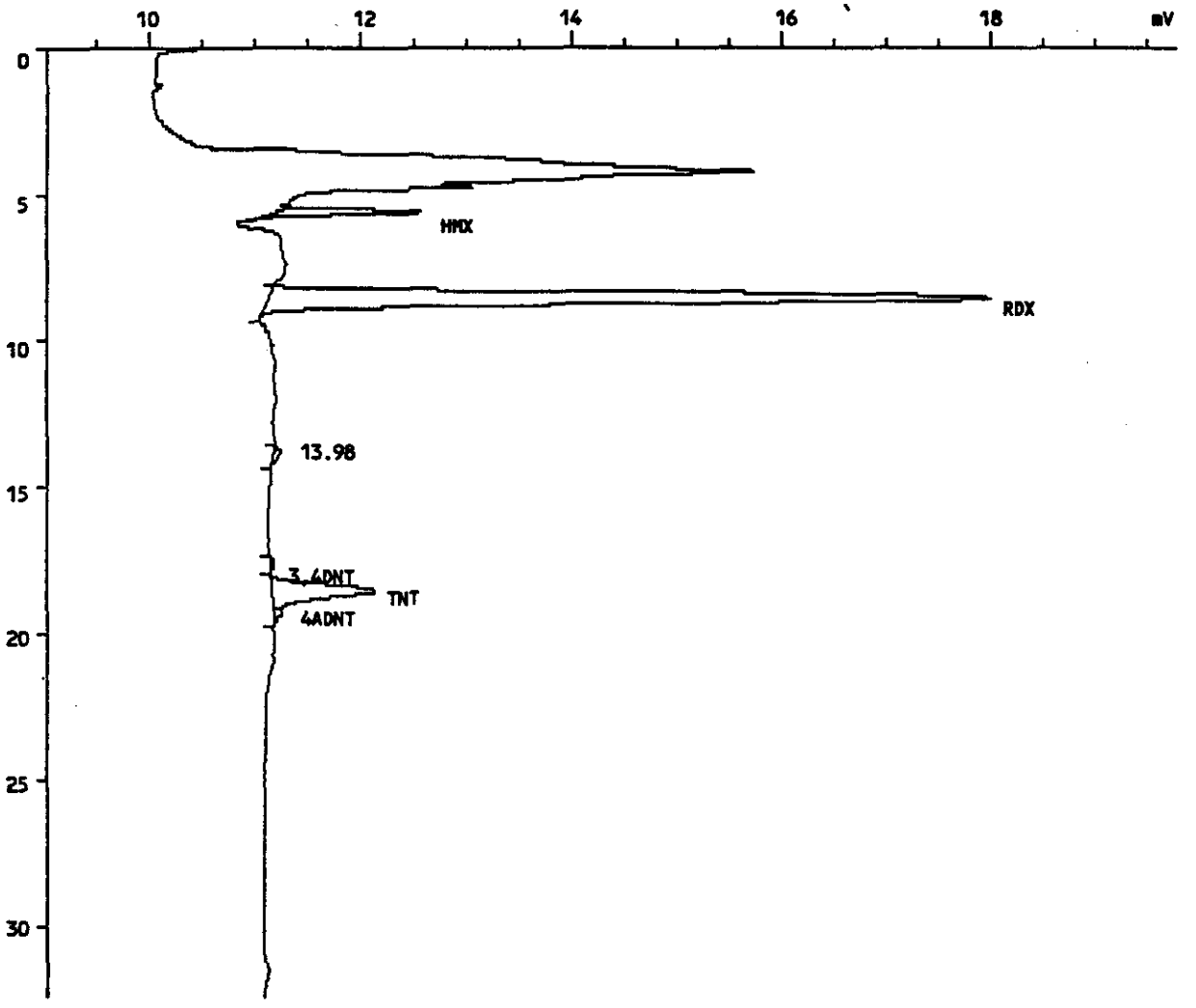
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,20,1

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 11:30:43
Reported on 05-May-98 at 18:56:43



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,20,1

Acquired on 03-May-98 at 11:30:43
Modified on 05-May-82 at 18:55:04
Reported on 05-May-98 at 18:55:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

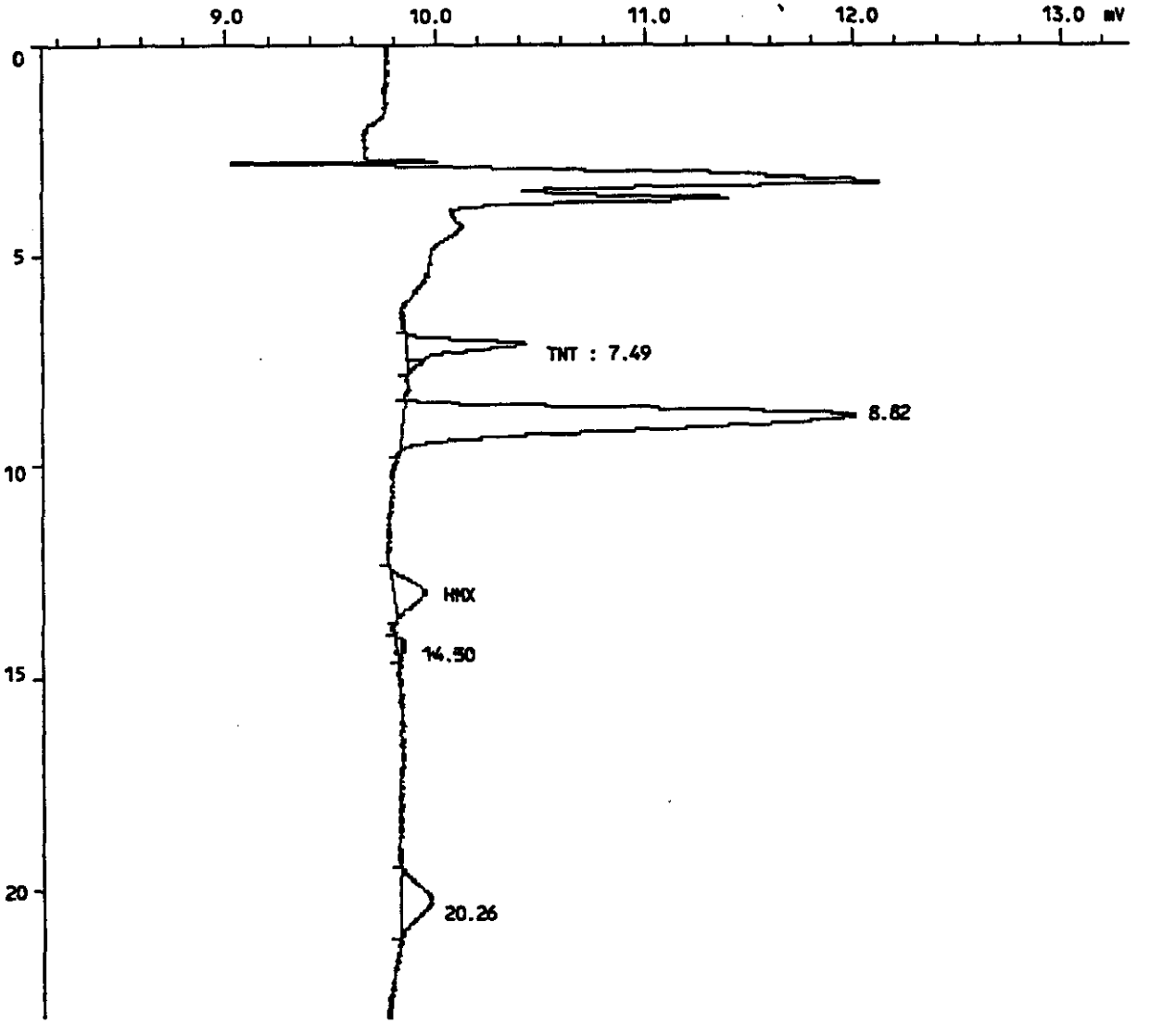
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.621	1422	16490	37342.293	HMX * J
2	8.581	6878	184947	281416.875	RDX *
4	17.675	42	799	868.585	3,4DNT-13
5	18.544	992	30340	20103.400	TNT *
6	19.147	97	1917	1763.549	4ADNT * J
Total		9432	234494	341494.719	
Residual		74	1746	2656.255	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,15,1

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 02:49:06
Reported on 06-May-98 at 10:47:57



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,15,1

Acquired on 04-May-98 at 02:49:06
Modified on 06-May-82 at 09:34:50
Reported on 06-May-98 at 09:34:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

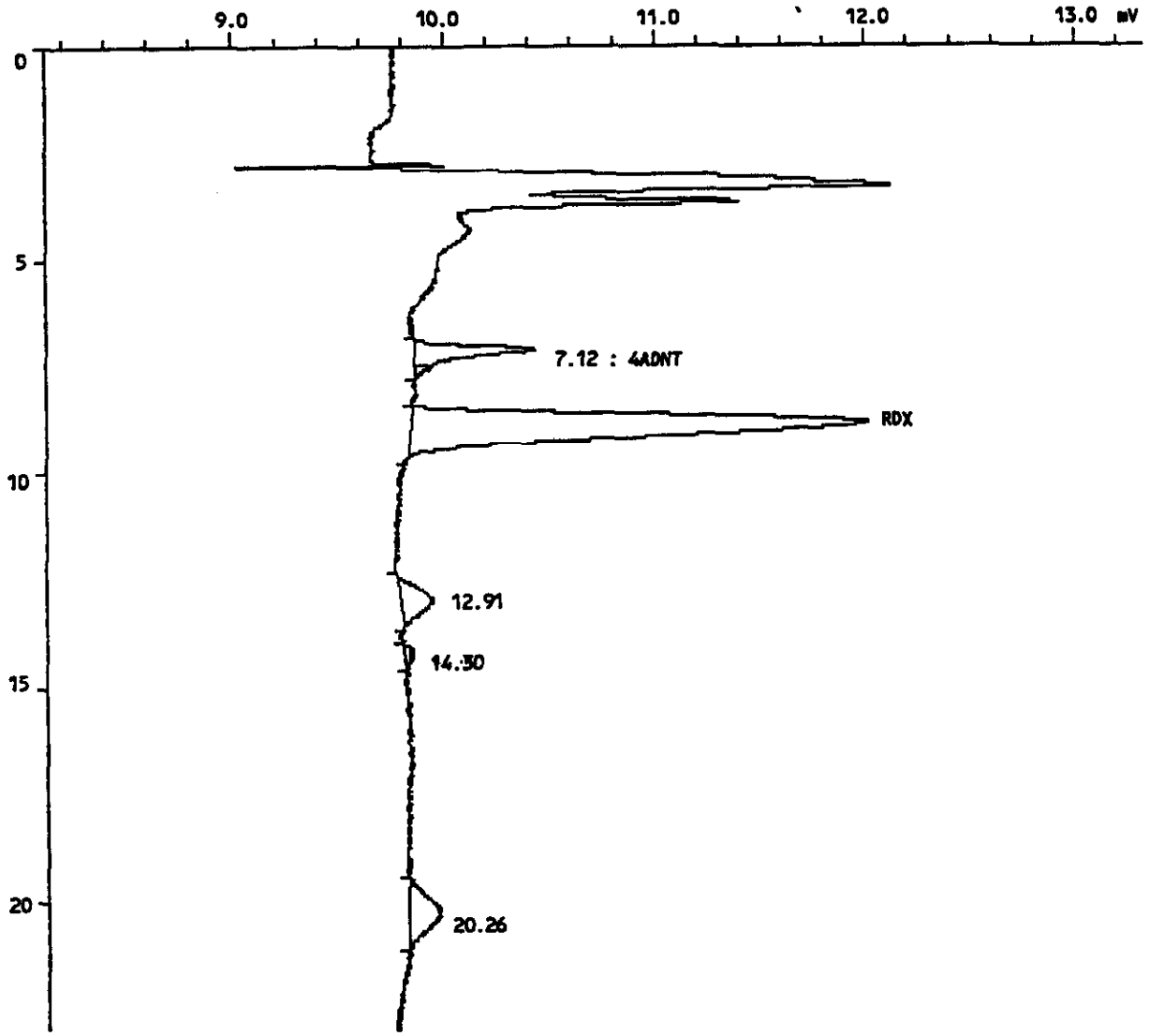
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.120	575	9935	18988.223	TNT
4	12.907	153	5999	25970.352	HMX
Total		728	15934	44958.574	
Residual		2431	80548	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,15,1

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 02:49:06
Reported on 06-May-98 at 11:13:51



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,15,1

Acquired on 04-May-98 at 02:49:06
Modified on 06-May-82 at 10:49:26
Reported on 06-May-98 at 10:49:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D2 50X
Sample ID.....: 33783.14
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.488	81	717	2246.270	4ADNT
3	8.816	2165	71673	260627.438	RDX
Total		2246	72390	262873.719	
Residual		913	24093	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.14

Sample Amt: 2g % Moisture 46.55 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

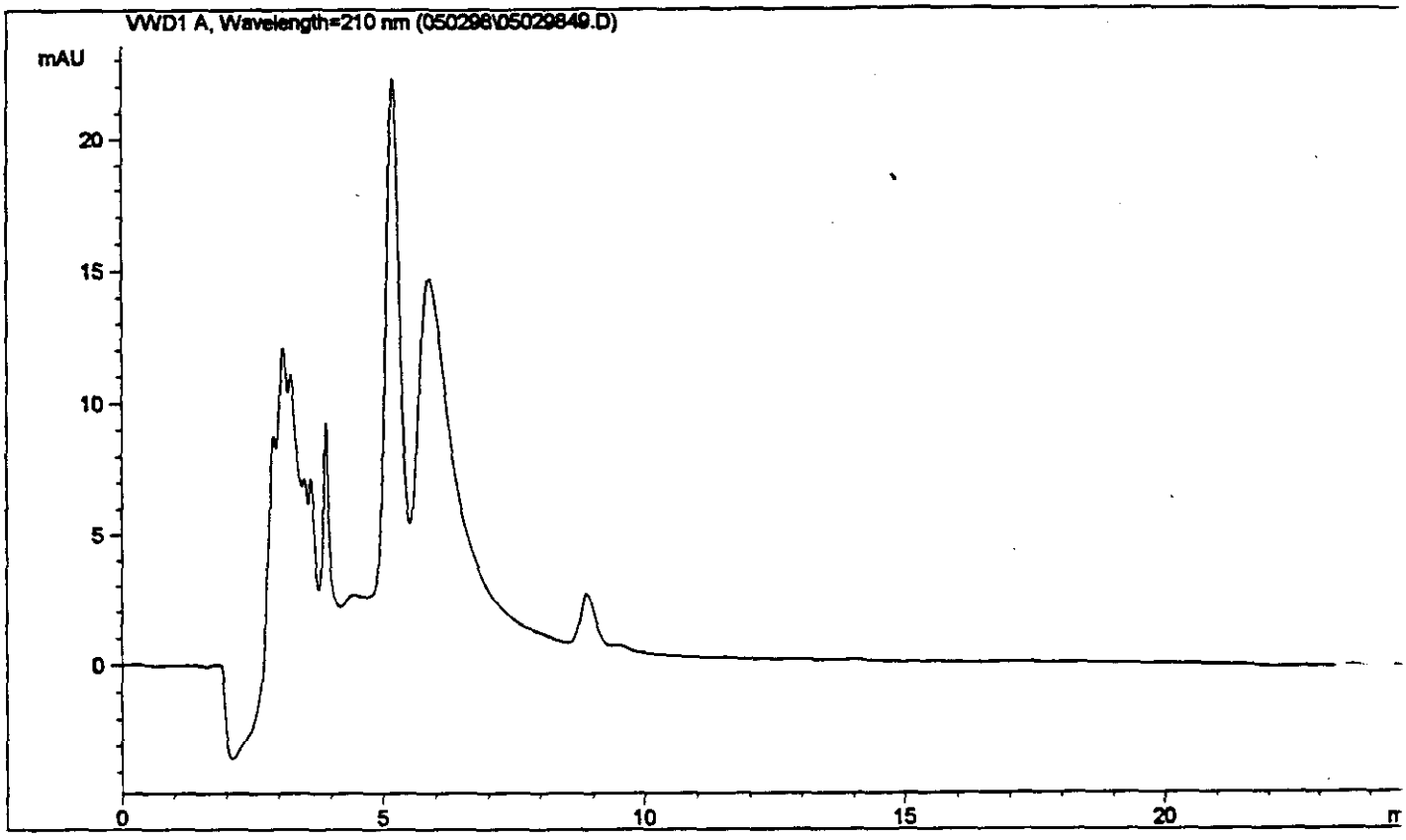
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 49
Sample Name	: 33783.14	Vial No.	: 49
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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

Totals: 0.00000

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*** End of Report ***

12

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D3
50X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.15

Sample Amt: 2g % Moisture 44.68 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	38000	J
121-82-4	RDX	271000	
99-35-4	TNB	6250	U
99-65-0	DNB	6250	U
479-45-8	TETRYL	16200	U
98-95-3	NB	6500	U
118-96-7	TNT	30900	
1946-51-0	4ADNT	6250	U
35572-78-2	2ADNT	6250	U
606-20-2	26DNT	6500	U
121-14-2	24DNT	6250	U
88-72-2	2NT	6250	U
99-99-0	4NT	6250	U
99-08-1	3NT	6250	U

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

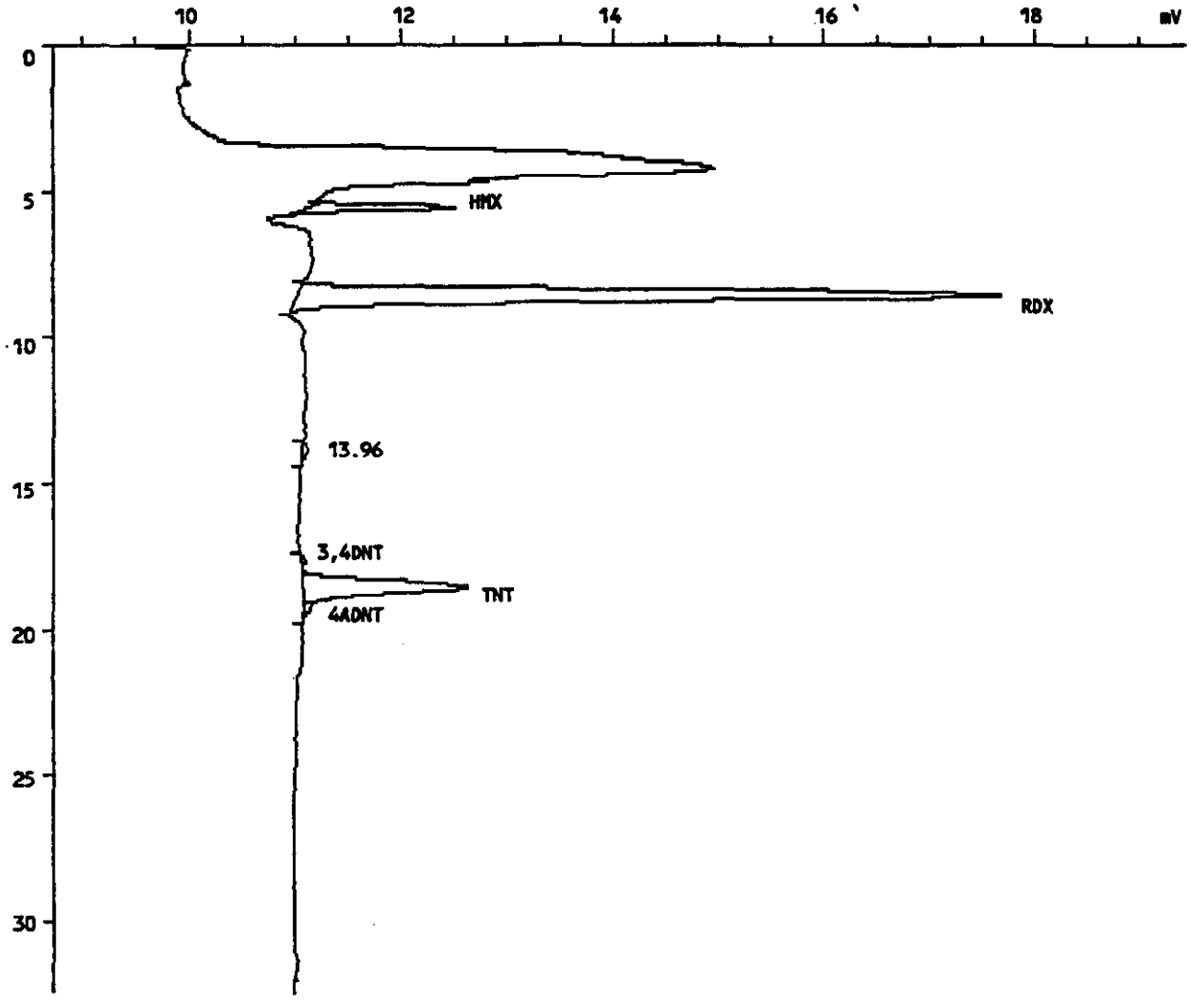
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0502A,21,1

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-May-98 at 12:15:20
Reported on 05-May-98 at 18:55:56



INJECTION REPORT

Injection F: <MC3> 2 2EX0502A,21,1

Acquired on 03-May-98 at 12:15:20
Modified on 05-May-82 at 18:55:18
Reported on 05-May-98 at 18:55:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 2EX0502 Last modified on 05-May-82 at 12:19:50
Method file.....: EXPLOS Last modified on 05-May-82 at 18:49:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

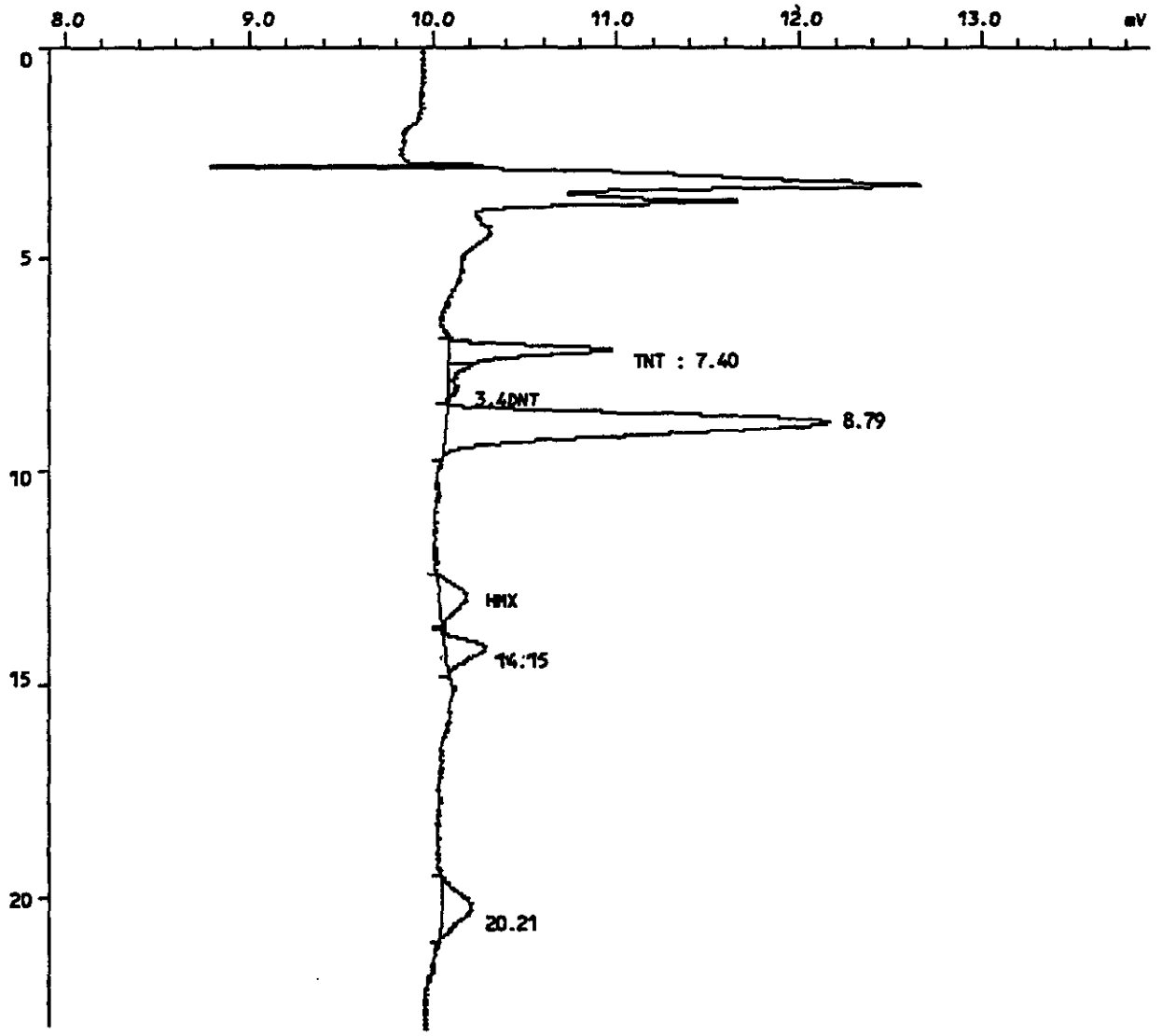
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.600	1446	16769	37972.875	HMX * J
2	8.560	6660	177890	270678.188	RDX *
4	17.600	34	791	859.474	3,4DNT 43
5	18.549	1554	46652	30911.740	TNT *
6	19.109	114	1793	1649.024	4ADNT
Total		9808	243894	342071.313	
Residual		50	1225	1863.292	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,16,1

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 03:33:30
Reported on 06-May-98 at 10:48:24



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,16,1

Acquired on 04-May-98 at 03:33:30
Modified on 06-May-82 at 09:34:38
Reported on 06-May-98 at 09:34:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502A Last modified on 04-May-82 at 10:51:06
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

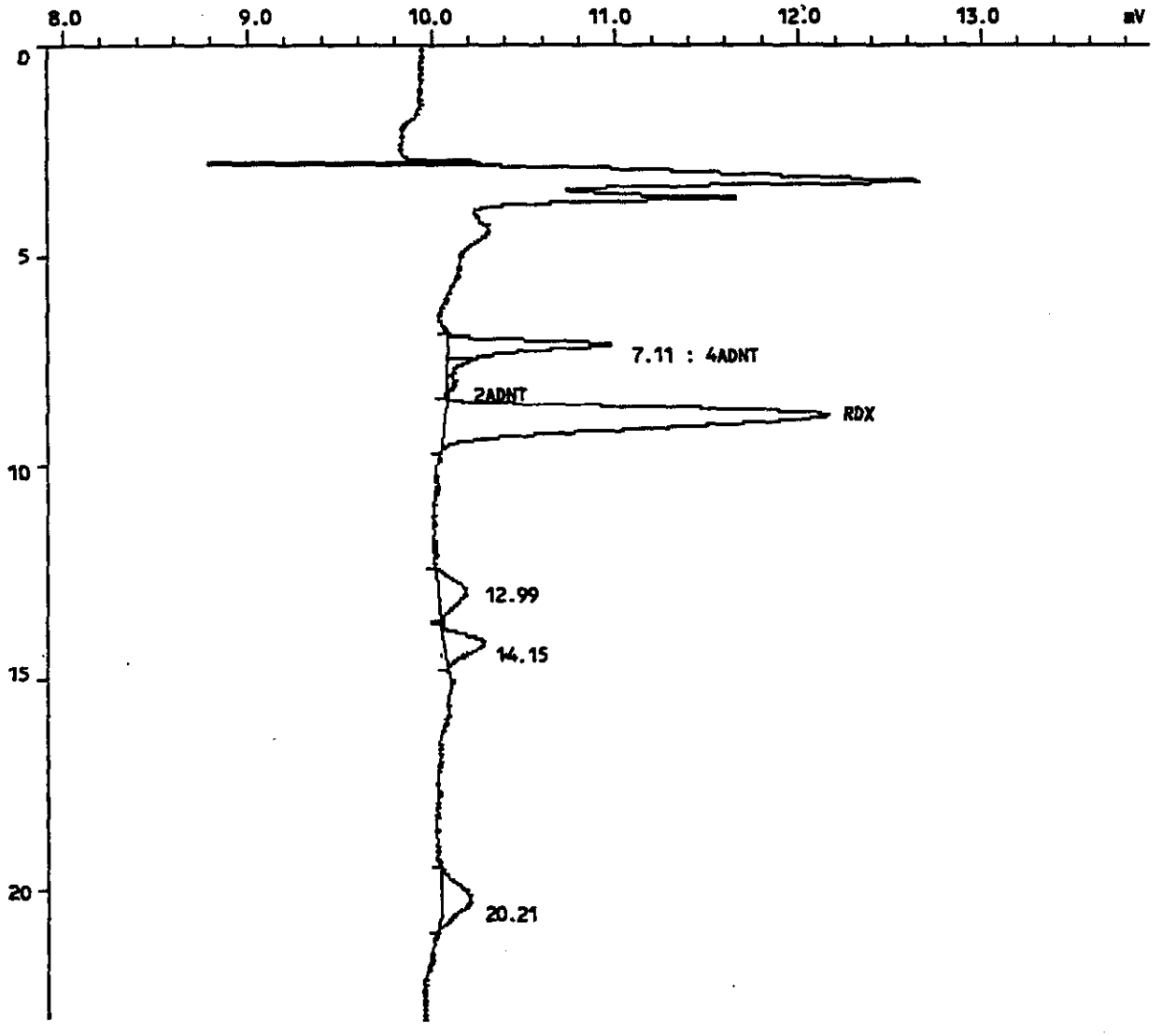
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.109	893	14959	28590.670	TNT
3	7.979	56	986	3591.168	3,4DNT
5	12.992	151	6002	25980.766	HMX
Total		1099	21946	58162.602	
Residual		2655	85555	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0502B,16,1

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 04-May-98 at 03:33:30
Reported on 06-May-98 at 11:14:18



INJECTION REPORT

Injection F: <MC3> 3 3CN0502B,16,1

Acquired on 04-May-98 at 03:33:30
Modified on 06-May-82 at 10:49:14
Reported on 06-May-98 at 10:49:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0502B Last modified on 04-May-82 at 10:51:44
Method file.....: LCCN Last modified on 06-May-82 at 09:33:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-00-D3 50X
Sample ID.....: 33783.15
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.....: 50.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.403	164	2043	6400.679	4ADNT
3	7.979	56	986	1885.535	2ADNT
4	8.795	2099	69040	251053.266	RDX
Total		2318	72069	259339.484	
Residual		1436	35432	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-00-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) SOIL Lab Sample ID: 33783.15

Sample Amt: 2g % Moisture 44.68 Date Received: 04/29/98

Extraction Volume: 10ml Date Extracted: 04/29/98

Extraction Method: SONC Date Analyzed: 05/03/98

GPC Cleanup: (Y/N) N Dilution Factor: 50.00

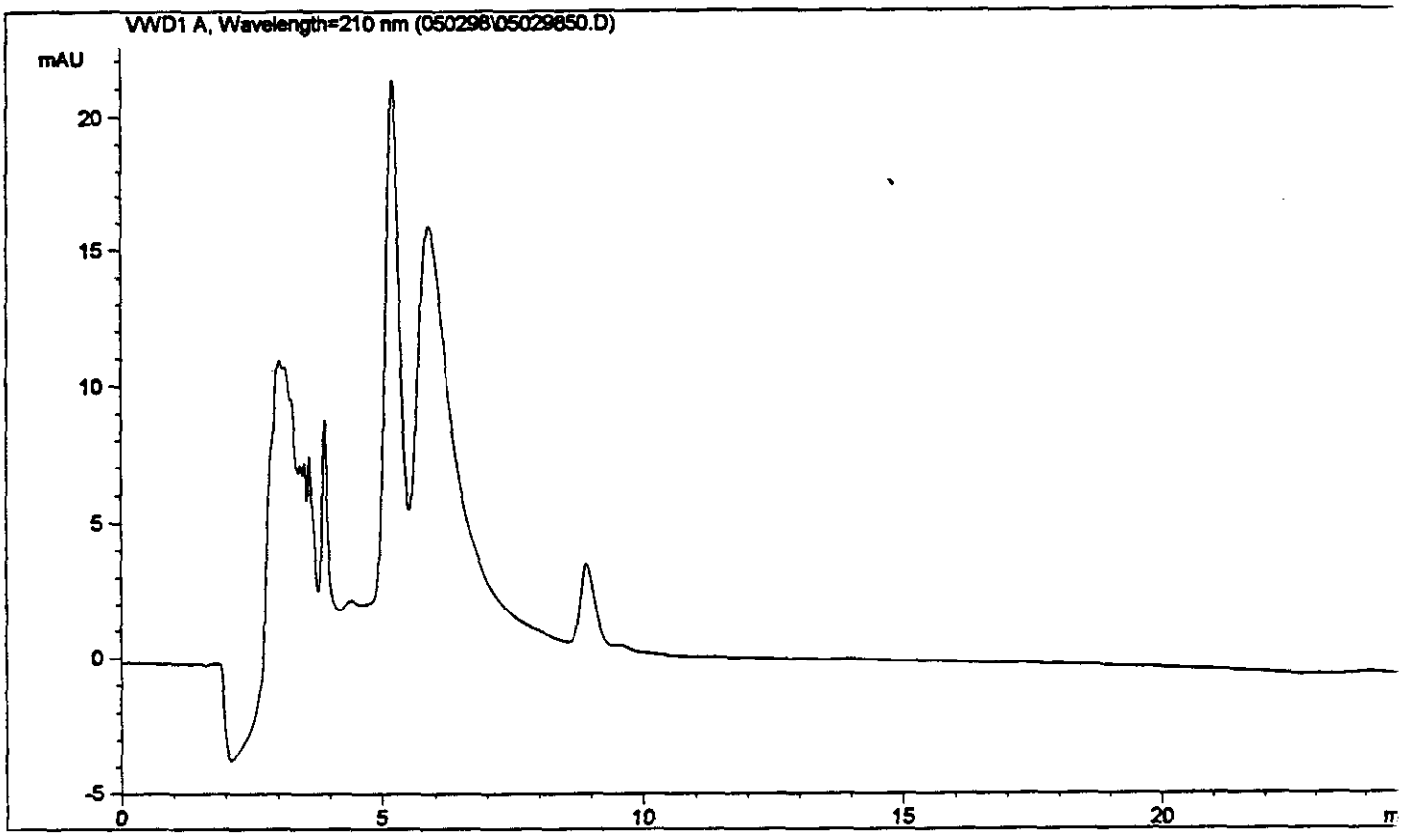
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	6250	U

FORM I

Injection Date	: Sun, 3. May. 1998	Seq Line	: 50
Sample Name	: 33783.15	Vial No.	: 50
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 050298.M
Analysis Method : C:\HPCHEM\1\METHODS\050298.M
Last Changed : Wed, 13. May. 1998, 09:54:38 am

PETN



Customized Report: extstd.frp

Sorted By Signal
Calib. Data Modified : Wed, 13. May. 1998,09:54:25 am
Multiplier : 10.000000
Dilution : 50.000000
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
Totals:				0.00000	

*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOR042798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) WATER Lab Sample ID: 33783.16

Sample Amt: 1ml % Moisture Date Received: 04/29/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/02/98

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

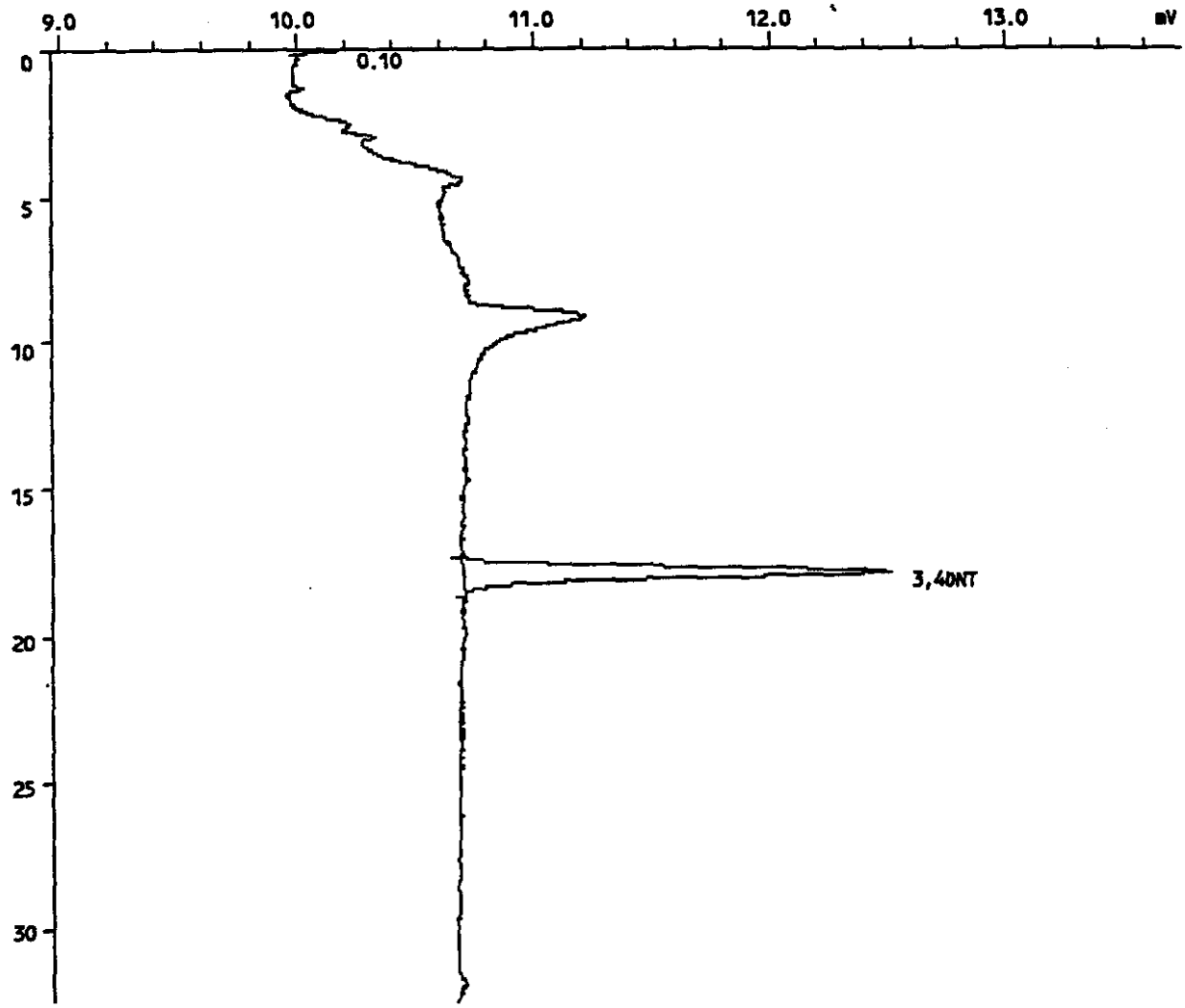
FORM I

LONG PLOT

Injection F: <MC3> 2 2E0501W,13,1

Sample name.....: BIOR042798
Sample ID.....: 33783.16
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 02-May-98 at 05:01:27
Reported on 07-May-98 at 09:14:44



INJECTION REPORT

Injection F: <MC3> 2 2E0501W,13,1

Acquired on 02-May-98 at 05:01:27
Modified on 07-May-82 at 09:11:28
Reported on 07-May-98 at 09:11:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2E0501W Last modified on 07-May-82 at 09:07:02
Method file.....: EXPLOS Last modified on 07-May-82 at 09:10:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIOR042798
Sample ID.....: 33783.16
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	17.824	1814	47888	207.037	3,4DNT
Total		1814	47888	207.037	
Residual		128	542	2.343	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIOR042798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33783

Matrix: (soil/water) WATER Lab Sample ID: 33783.16

Sample Amt: 1ml % Moisture Date Received: 04/29/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/03/98

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

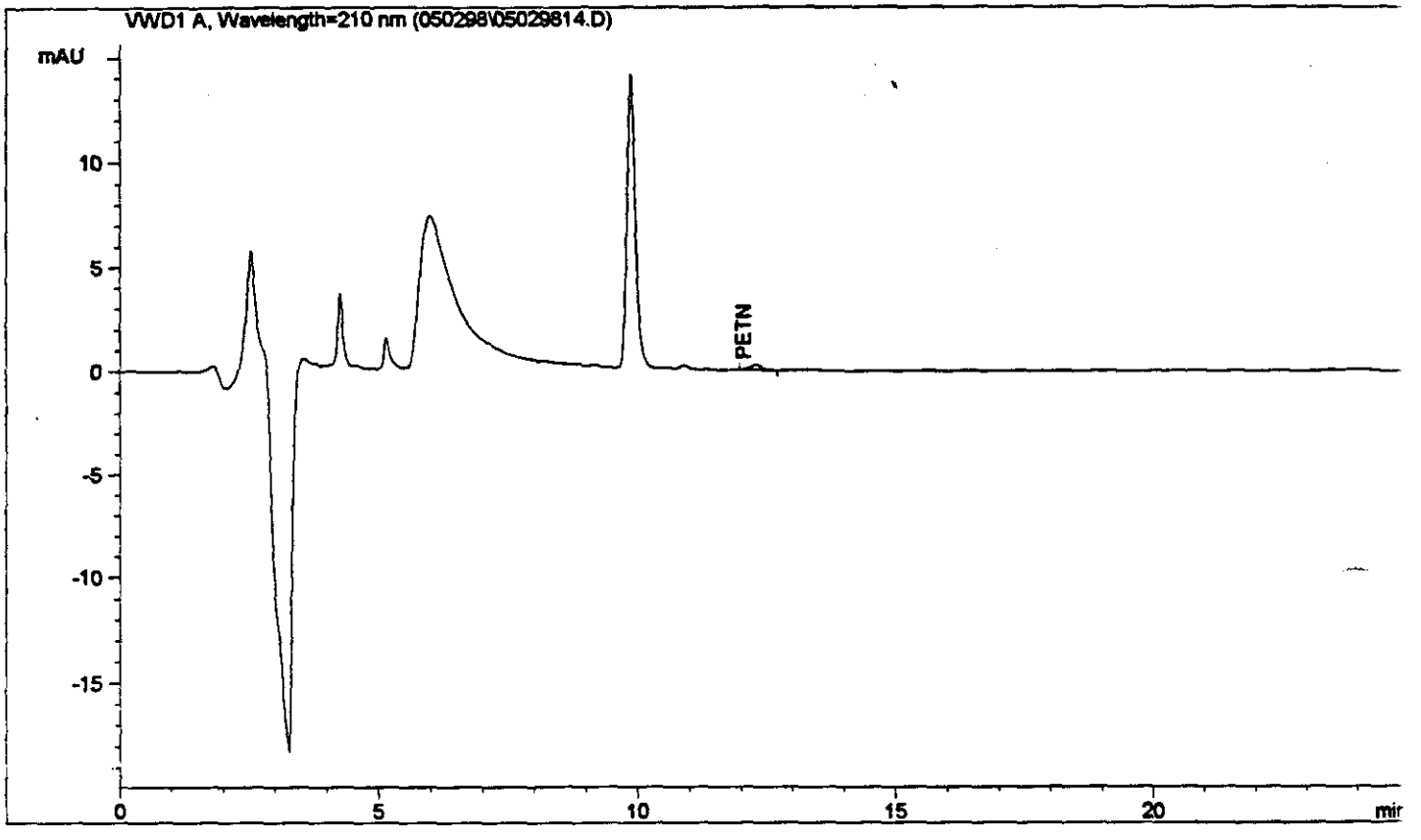
FORM I

Injection Date : Sun, 3. May. 1998
Sample Name : 33783.16
Acq Operator : SS

Seq Line : 14
Vial No. : 14
Inj. No. : 1
Inj. Vol. : 200

Acq. Method : 050298W.M
Analysis Method : C:\HPCHEM\1\METHODS\050298W.M
Last Changed : Thu, 7. May. 1998, 11:40:35 am

PETN



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Thu, 7. May. 1998, 11:40:35 am
Multiplier : 1.000000
Dilution : 2.000000
Uncalibrated Peaks : not reported

Signal Description : VWD1 A, Wavelength=210 nm

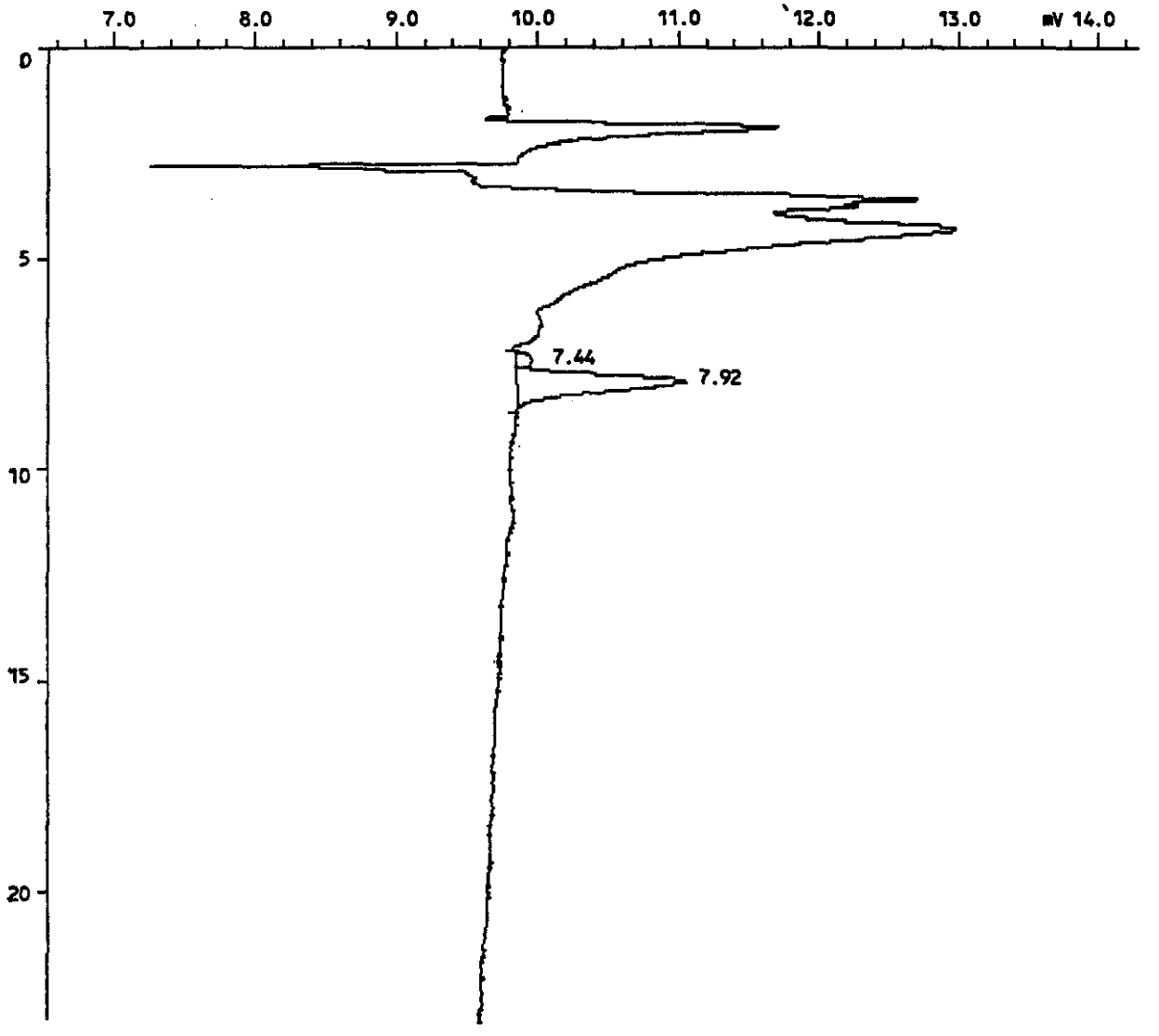
RT [min]	Type	Area	Amt/Area	Amount [ug/L]	Name
12.295	BP	3.89251	3.22071	25.07327	PETN
Totals:				25.07327	

LONG PLOT

Injection F: <MC3> 3 3PC0512,9,1

Sample name.....: BIOR042798
Sample ID.....: 33783.16
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 13-May-98 at 00:58:10
Reported on 13-May-98 at 10:55:23



ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: IN13 Column ID: CARB-06

Dates of Anlayses: 05/07/98 to 05/09/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	05/07/98	10:18
EXP L1 SOIL STD	2-219:IA1	05/07/98	12:32
EXP L2 SOIL STD	2-218:IA2	05/07/98	13:17
EXP L3 SOIL STD	2-217:IA3	05/07/98	14:02
EXP L4 SOIL STD	2-216:IA4	05/07/98	14:46
EXP L5 SOIL STD	2-215:IA5	05/07/98	15:31
EXP L3 SOIL STD	2-217:CA4	05/09/98	13:16
BIO-N-30%-00-A3 10X	33783.03	05/09/98	14:45
BIO-N-30%-00-C3 10X	33783.11	05/09/98	15:30
EXP L3 SOIL STD	2-217:CA5	05/09/98	16:15

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-06

Inj 1

Injection File Name Level 1 : 5EX0507,4
Injection File Name Level 2 : 5EX0507,5
Injection File Name Level 3 : 5EX0507,6
Injection File Name Level 4 : 5EX0507,7
Injection File Name Level 5 : 5EX0507,8

Calibration Date : 05/07/1998
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	3070	303	86593	341	228418	346	340786	344	463335	351
RDX	1396	331	45744	433	124796	452	188079	457	248447	452
TNB	3050	1010	65041	860	182698	927	272939	922	363472	923
DNB	1858	1147	47508	1170	127863	1211	191748	1211	258819	1221
TETRYL	1982	533	44411	478	117462	485	171726	472	243575	503
NB	2746	832	66098	802	178122	832	265900	826	354217	824
3,4-DNT	2743	540	67977	536	182412	553	269296	543	358172	543
TNT	2636	976	63145	934	172246	979	256164	970	345817	982
4ADNT	1791	759	37100	627	98571	640	148025	638	194088	630
2ADNT	2244	951	53734	908	146055	948	216916	935	288500	937
26DNT	2242	578	57637	593	156264	615	234025	616	311263	615
24DNT	2669	1131	71439	1207	193842	1259	290768	1253	387419	1258
2NT	1916	567	44975	532	120373	547	180571	547	240624	547
NT	1361	403	38137	451	102223	465	154018	467	205469	46[illegible]
T	1722	535	45121	561	121601	579	183845	585	244007	5[illegible]

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-06

Inj 1
Injection File Name Level 1 : 5EX0507,4
Injection File Name Level 2 : 5EX0507,5
Injection File Name Level 3 : 5EX0507,6
Injection File Name Level 4 : 5EX0507,7
Injection File Name Level 5 : 5EX0507,8

Calibration Date : 05/07/1998
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	337	5.78	0.99990	348	0.000
RDX	425	12.56	0.99994	453	0.000
TNB	928	5.74	0.99990	922	0.000
DNB	1192	2.67	0.99996	1215	0.000
TETRYL	494	4.99	0.99896	491	0.000
NB	823	1.50	0.99996	825	0.000
3,4-DNT	543	1.14	0.99994	544	0.000
TNT	968	2.03	0.99993	977	0.000
DNT	659	8.54	0.99994	634	0.000
ADNT	936	1.83	0.99995	937	0.000
26DNT	603	2.86	0.99998	615	0.000
24DNT	1222	4.51	0.99997	1256	0.000
2NT	548	2.28	0.99998	547	0.000
4NT	450	6.10	0.99998	466	0.000
3NT	569	3.75	0.99997	583	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 4
Continuing Cal Date : 05/09/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-06
Injection File Name : 5EX0507B,22
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	229081	347	337	2.99	348	0.29
RDX	125006	453	425	6.60	453	0.01
TNB	183359	931	928	0.25	922	0.96
DNB	133044	1260	1192	5.71	1215	3.66
TETRYL	116442	481	494	2.63	491	2.03
NB	177880	831	823	0.97	825	0.74
3,4-DNT	180458	547	543	0.73	544	0.52
TNT	167126	950	968	1.94	977	2.84
4ADNT	101964	662	659	0.51	634	4.45
2ADNT	143532	932	936	0.39	937	0.55
26DNT	155952	614	603	1.75	615	0.16
24DNT	191408	1243	1222	1.75	1256	1.01
2NT	121220	551	548	0.56	547	0.78
4NT	103340	470	450	4.30	466	0.74
3NT	122184	582	569	2.28	583	0.24

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 5
Continuing Cal Date : 05/09/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-06
Injection File Name : 5EX0507B,26
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	232086	352	337	4.35	348	1.02
RDX	125955	456	425	7.41	453	0.77
TNB	185413	941	928	1.37	922	2.09
DNB	134483	1274	1192	6.85	1215	4.78
TETRYL	115906	479	494	3.08	491	2.48
NB	178309	833	823	1.21	825	0.98
3,4-DNT	183811	557	543	2.60	544	2.39
TNT	170010	966	968	0.25	977	1.16
4ADNT	102582	666	659	1.12	634	5.09
2ADNT	145893	947	936	1.24	937	1.08
26DNT	158033	622	603	3.11	615	1.18
24DNT	194427	1263	1222	3.36	1256	0.55
2NT	120609	548	548	0.05	547	0.28
4NT	102522	466	450	3.47	466	0.06
3NT	122920	585	569	2.90	583	0.36

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	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-06
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.76	4.74	4.75	4.76	4.77
RDX	7.03	6.95	6.97	7.02	7.03
TNB	9.52	9.41	9.42	9.48	9.50
DNB	11.52	11.44	11.44	11.49	11.55
TETRYL	11.94	11.81	11.79	11.87	11.94
NB	13.07	12.99	12.96	13.03	13.10
3,4-DNT	13.90	13.77	13.72	13.82	13.90
TNT	14.62	14.52	14.49	14.58	14.66
4ADNT	15.05	14.89	14.83	14.94	15.02
2ADNT	15.82	15.71	15.66	15.77	15.86
26DNT	16.98	16.85	16.78	16.90	17.01
24DNT	17.59	17.47	17.40	17.52	17.63
2NT	20.66	20.49	20.36	20.51	20.65
4NT	22.05	21.88	21.73	21.88	22.04
3NT	23.70	23.55	23.40	23.52	23.68

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	4.74	4.80	4.73	4.77	4.76
RDX	6.97	7.06	6.96	7.04	7.02
TNB	9.38	9.54	9.38	9.50	9.48
DNB	11.36	11.60	11.39	11.54	11.51
TETRYL	11.69	11.98	11.73	11.89	11.82
NB	12.86	13.14	12.89	13.08	13.04
3,4-DNT	13.62	13.95	13.64	13.87	13.81
TNT	14.42	14.69	14.41	14.60	14.56
4ADNT	14.80	15.09	14.80	15.01	14.94
2ADNT	15.65	15.91	15.63	15.82	15.76
26DNT	16.78	17.03	16.72	16.96	16.89
24DNT	17.41	17.65	17.35	17.59	17.52
2NT	20.42	20.69	20.32	20.65	20.53
4NT	21.81	22.11	21.73	22.05	21.93
3NT	23.46	23.76	23.38	23.70	23.58

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.76	0.020	0.060	4.70 - 4.82
RDX	7.01	0.039	0.116	6.89 - 7.12
TNB	9.46	0.058	0.175	9.29 - 9.64
DNB	11.48	0.075	0.225	11.26 - 11.71
TETRYL	11.85	0.094	0.282	11.56 - 12.13
NB	13.02	0.090	0.271	12.75 - 13.29
3,4-DNT	13.80	0.113	0.338	13.46 - 14.14
TNT	14.55	0.095	0.285	14.27 - 14.84

page 2

4ADNT	14.94	0.107	0.320	14.62 - 15.26
2ADNT	15.76	0.096	0.288	15.47 - 16.05
26DNT	16.89	0.106	0.318	16.57 - 17.21
24DNT	17.51	0.104	0.312	17.20 - 17.82
2NT	20.53	0.132	0.397	20.13 - 20.92
4NT	21.92	0.139	0.417	21.50 - 22.34
3NT	23.57	0.133	0.400	23.17 - 23.97

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 05/01/98 to 05/02/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	05/02/98	15:23
EXP L1 SOIL STD	2-219:IA1	05/02/98	17:37
EXP L2 SOIL STD	2-218:IA2	05/02/98	18:21
EXP L3 SOIL STD	2-217:IA3	05/02/98	19:06
EXP L4 SOIL STD	2-216:IA4	05/02/98	19:51
EXP L5 SOIL STD	2-215:IA5	05/02/98	20:38
BL0429SF	BL0429SF	05/02/98	21:22
LC0429SF	LC0429SF	05/02/98	22:52
LD0429SF	LD0429SF	05/02/98	23:36
BIO-N-30%-00-A1 50X	33783.01	05/03/98	00:21
BIO-N-30%-00-A2 50X	33783.02	05/03/98	01:05
BIO-N-30%-00-A3 50X	33783.03	05/03/98	01:50
BIO-N-30%-00-B1 50X	33783.04	05/03/98	02:35
BIO-N-30%-00-B2 50X	33783.05	05/03/98	03:19
BIO-N-30%-00-B3 50X	33783.06	05/03/98	04:04
EXP L3 SOIL STD	2-217:CA1	05/03/98	04:49
BIO-N-30%-00-B3 MS 5	33783.07MS	05/03/98	06:18
BIO-N-30%-00-B3 MSD	33783.08MSD	05/03/98	07:02
BIO-N-30%-00-C1 50X	33783.09	05/03/98	07:47

FORM VIII

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 05/01/98 to 05/02/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-00-C2 50X	33783.10	05/03/98	08:32
BIO-N-30%-00-C3 50X	33783.11	05/03/98	09:16
BIO-N-30%-00-D1 50X	33783.12	05/03/98	10:01
BIO-N-30%-00-D1FD 50	33783.13	05/03/98	10:46
BIO-N-30%-00-D2 50X	33783.14	05/03/98	11:30
BIO-N-30%-00-D3 50X	33783.15	05/03/98	12:15
EXP L3 SOIL STD	2-217:CA2	05/03/98	12:59

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0502,4
Injection File Name Level 2 : 2EX0502,5
Injection File Name Level 3 : 2EX0502,6
Injection File Name Level 4 : 2EX0502,7
Injection File Name Level 5 : 2EX0502,8

Calibration Date : 05/02/1998
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	10647	1050	277491	1092	742836	1126	1114701	1126	1487192	1127
RDX	7076	1677	165236	1565	452885	1641	688186	1670	914111	1662
TNB	9398	3112	252411	3339	689084	3498	1031680	3485	1381279	3506
DNB	7832	4835	204222	5030	560536	5308	832082	5253	1117816	5273
TETRYL	6684	1797	173477	1865	473542	1957	700101	1923	941647	1946
NB	13295	4029	344198	4177	953115	4454	1426772	4431	1913429	4450
3,4-DNT	10931	2152	283691	2237	782366	2371	1171327	2362	1571272	2381
TNT	9680	3585	245691	3634	677299	3848	1019405	3861	1385816	3937
4ADNT	6232	2641	156277	2640	430145	2793	640517	2761	847977	2753
2ADNT	8857	3753	226340	3823	627094	4072	942942	4064	1267958	4117
26DNT	8868	2286	222394	2288	599513	2360	894331	2354	1200910	2373
24DNT	11821	5009	305315	5157	839938	5454	1274098	5492	1718823	5581
2NT	8617	2549	209982	2482	564646	2567	846186	2564	1137501	2585
	7995	2365	202352	2392	544955	2477	816344	2474	1095401	2490
	8942	2777	224357	2791	599191	2853	911102	2902	1216241	2910

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
olumn ID : CARB-07

Inj 1
Injection File Name Level 1 : 2EX0502,4
Injection File Name Level 2 : 2EX0502,5
Injection File Name Level 3 : 2EX0502,6
Injection File Name Level 4 : 2EX0502,7
Injection File Name Level 5 : 2EX0502,8

Calibration Date : 05/02/1998
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	1104	3.04	0.99999	1126	0.000
RDX	1643	2.79	0.99991	1660	0.000
TNB	3388	4.98	0.99996	3495	0.000
DNB	5140	3.94	0.99995	5267	0.000
TETRYL	1898	3.50	0.99992	1939	0.000
NB	4308	4.52	0.99993	4440	0.000
3,4-DNT	2300	4.41	0.99994	2371	0.000
TNT	3773	4.08	0.99984	3897	0.000
)NT	2718	2.65	0.99992	2759	0.000
..DNT	3966	4.17	0.99990	4089	0.000
26DNT	2332	1.80	0.99997	2364	0.000
24DNT	5339	4.56	0.99986	5529	0.000
2NT	2549	1.56	0.99996	2574	0.000
4NT	2440	2.32	0.99997	2481	0.000
3NT	2846	2.15	0.99994	2897	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/02/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/03/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0502A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	742184	1125	1104	1.85	1126	0.10
RDX	448313	1624	1643	1.13	1660	2.14
TNB	689055	3498	3388	3.24	3495	0.07
DNB	555231	5258	5140	2.30	5267	0.17
TETRYL	462396	1911	1898	0.69	1939	1.45
NB	948329	4431	4308	2.86	4440	0.18
3,4-DNT	779194	2361	2300	2.64	2371	0.41
TNT	676200	3842	3773	1.82	3897	1.40
4ADNT	431626	2803	2718	3.14	2759	1.59
2ADNT	626384	4067	3966	2.56	4089	0.54
26DNT	598943	2358	2332	1.11	2364	0.25
24DNT	845200	5488	5339	2.81	5529	0.73
2NT	563902	2563	2549	0.54	2574	0.43
4NT	542826	2467	2440	1.14	2481	0.56
3NT	604823	2880	2846	1.18	2897	0.60

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/02/1998
Continuing Calibration #: 2
.tinuing Cal Date : 05/03/1998
.tinuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0502A,22
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	743701	1127	1104	2.06	1126	0.11
RDX	454984	1648	1643	0.34	1660	0.69
TNB	684410	3474	3388	2.54	3495	0.61
DNB	557274	5277	5140	2.68	5267	0.19
TETRYL	463687	1916	1898	0.97	1939	1.17
NB	941920	4401	4308	2.17	4440	0.86
3,4-DNT	782671	2372	2300	3.10	2371	0.04
TNT	677924	3852	3773	2.08	3897	1.15
4ADNT	432751	2810	2718	3.41	2759	1.86
2ADNT	629352	4087	3966	3.05	4089	0.06
26DNT	601672	2369	2332	1.57	2364	0.21
24DNT	846675	5498	5339	2.98	5529	0.56
2NT	560920	2550	2549	0.01	2574	0.96
4NT	544135	2473	2440	1.39	2481	0.32
3NT	603007	2871	2846	0.88	2897	0.89

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

strument ID : IN12
olumn ID : CARB-07
Calibration Date : 05/02/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.62	5.60	5.59	5.59	5.62
RDX	8.62	8.54	8.53	8.53	8.52
TNB	11.63	11.62	11.62	11.61	11.59
DNB	14.24	14.18	14.18	14.17	14.16
TETRYL	15.46	15.40	15.39	15.39	15.38
NB	16.16	16.13	16.12	16.11	16.11
3,4-DNT	17.72	17.62	17.61	17.60	17.60
TNT	18.58	18.50	18.49	18.48	18.48
4ADNT	19.30	19.18	19.17	19.16	19.17
2ADNT	20.29	20.20	20.19	20.18	20.20
26DNT	21.62	21.56	21.54	21.53	21.55
24DNT	22.33	22.28	22.25	22.24	22.26
2NT	26.30	26.27	26.22	26.20	26.24
4NT	28.15	28.08	28.03	28.01	28.06
3NT	30.36	30.30	30.25	30.24	30.28

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	5.61	5.61	5.62	5.63	5.63
RDX	8.55	8.56	8.58	8.60	8.58
TNB	11.63	11.65	11.67	11.71	11.66
DNB	14.20	14.22	14.25	14.29	14.23
TETRYL	15.42	15.45	15.49	15.55	15.44
NB	16.16	16.18	16.20	16.26	16.18
3,4-DNT	17.65	17.68	17.72	17.79	17.66
TNT	18.53	18.57	18.59	18.67	18.54
4ADNT	19.23	19.26	19.31	19.39	19.24
2ADNT	20.25	20.28	20.33	20.41	20.26
26DNT	21.60	21.64	21.68	21.76	21.61
24DNT	22.31	22.35	22.39	22.48	22.33
2NT	26.30	26.35	26.39	26.50	26.32
4NT	28.12	28.18	28.21	28.34	28.12
3NT	30.35	30.41	30.44	30.58	30.36

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.61	0.014	0.041	5.57 - 5.65
RDX	8.56	0.033	0.099	8.46 - 8.66
TB	11.64	0.035	0.104	11.53 - 11.74
NB	14.21	0.042	0.125	14.09 - 14.34
TETRYL	15.44	0.053	0.159	15.28 - 15.59
NB	16.16	0.047	0.142	16.02 - 16.30
3,4-DNT	17.66	0.063	0.188	17.48 - 17.85
TNT	18.54	0.061	0.183	18.36 - 18.73

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4ADNT	19.24	0.075	0.226	19.01 - 19.47
2ADNT	20.26	0.072	0.215	20.04 - 20.47
26DNT	21.61	0.072	0.217	21.39 - 21.82
24DNT	22.32	0.073	0.218	22.10 - 22.54
2NT	26.31	0.089	0.267	26.04 - 26.58
4NT	28.13	0.096	0.289	27.84 - 28.42
T	30.36	0.102	0.305	30.05 - 30.66

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 05/01/98 to 05/02/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLANK	INST.BLK.	05/01/98	20:05
EXP HIGH WATER L1 ST	2-199:IA1	05/01/98	22:19
EXP HIGH WATER L2 ST	2-198:IA2	05/01/98	23:04
EXP HIGH WATER L3 ST	2-197:IA3	05/01/98	23:49
EXP HIGH WATER L4 ST	2-196:IA4	05/02/98	00:33
EXP HIGH WATER L5 ST	2-195:IA5	05/02/98	01:18
BL0501WA	BL0501WA	05/02/98	02:02
LC0501WA	LC0501WA	05/02/98	03:32
LD0501WA	LD0501WA	05/02/98	04:16
BIOR042798	33783.16	05/02/98	05:01
BIOR042798 MS	33783.16MS	05/02/98	05:46
BIOR042798 MSD	33783.16MSD	05/02/98	06:30
EXP HIGH WATER L3 ST	2-197:CA1	05/02/98	07:15

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2E0501W,4
Injection File Name Level 2 : 2E0501W,5
Injection File Name Level 3 : 2E0501W,6
Injection File Name Level 4 : 2E0501W,7
Injection File Name Level 5 : 2E0501W,8

Calibration Date : 05/01/1998
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	1302	1017	3880	1220	181386	1141	389120	1224	777284	1222
RDX	1104	1062	3931	1512	196914	1515	417558	1606	843916	1629
TNB	2328	3233	6108	3393	299959	3348	652072	3643	1329695	3714
DNB	2325	6118	5108	5321	240938	5062	521063	5485	1062036	5590
TETRYL	2238	2487	5084	2250	238831	2114	527823	2336	1073568	2386
NB	2749	4043	6893	4055	332945	3917	732790	4311	1496918	4403
3,4-DNT	2755	2152	7374	2290	356175	2226	778906	2434	1577226	2464
TNT	2493	3895	6490	4056	318202	3978	695546	4347	1418212	4432
4ADNT	2276	2276	6255	2482	302634	2421	665583	2662	1358831	2718
2ADNT	2097	3745	5335	3811	252119	3602	554327	3959	1133729	4049
26DNT	2166	2256	5462	2276	258374	2247	558142	2427	1127897	2452
24DNT	2863	5113	7275	5196	348987	4986	756271	5402	1550872	5539
NT	2360	2107	6752	2411	347070	2394	739496	2550	1503142	2[illegible]
NT	1518	1898	4028	2014	230609	2306	488079	2440	991226	2[illegible]
NT	1800	2250	5173	2587	275844	2904	591609	3114	1202789	3[illegible]

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2E0501W,4
Injection File Name Level 2 : 2E0501W,5
Injection File Name Level 3 : 2E0501W,6
Injection File Name Level 4 : 2E0501W,7
Injection File Name Level 5 : 2E0501W,8

Calibration Date : 05/01/1998
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	1165	7.70	0.99985	1219	0.000
RDX	1465	15.80	0.99984	1620	0.000
TNB	3466	5.88	0.99968	3685	0.000
DNB	5515	7.10	0.99970	5547	0.000
TETRYL	2314	6.10	0.99956	2365	0.000
NB	4146	4.89	0.99959	4365	0.000
3,4-DNT	2313	5.78	0.99970	2448	0.000
IT	4142	5.68	0.99965	4396	0.000
ADNT	2512	7.17	0.99961	2695	0.000
2ADNT	3833	4.60	0.99959	4013	0.000
26DNT	2331	4.26	0.99977	2438	0.000
24DNT	5247	4.24	0.99965	5489	0.000
2NT	2411	7.89	0.99981	2575	0.000
4NT	2227	11.64	0.99984	2463	0.000
3NT	2804	13.70	0.99978	3144	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/01/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/02/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2E0501W,16
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	191288	1203	1165	3.29	1219	1.29
RDX	207084	1593	1465	8.76	1620	1.65
TNB	322892	3604	3466	3.96	3685	2.20
DNB	258876	5439	5515	1.39	5547	1.95
TETRYL	238136	2107	2314	8.94	2365	10.87
NB	363074	4271	4146	3.04	4365	2.13
3,4-DNT	398001	2488	2313	7.53	2448	1.60
TNT	346128	4327	4142	4.47	4396	1.59
4ADNT	327194	2618	2512	4.21	2695	2.86
2ADNT	274474	3921	3833	2.29	4013	2.29
26DNT	277267	2411	2331	3.41	2438	1.11
24DNT	373294	5333	5247	1.63	5489	2.85
2NT	360239	2484	2411	3.06	2575	3.52
4NT	238326	2383	2227	7.01	2463	3.25
3NT	283783	2987	2804	6.54	3144	4.99

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

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Page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN12
Column ID : CARB-07
Calibration Date : 05/01/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.49	5.46	5.49	5.45	5.43
RDX	8.73	8.60	8.63	8.58	8.55
TNB	11.75	11.72	11.74	11.68	11.66
DNB	14.33	14.35	14.40	14.32	14.30
TETRYL	15.50	15.54	15.60	15.52	15.50
NB	16.32	16.37	16.39	16.30	16.29
3,4-DNT	17.81	17.84	17.88	17.78	17.77
TNT	18.61	18.67	18.72	18.64	18.63
4ADNT	19.46	19.48	19.58	19.47	19.47
2ADNT	20.48	20.53	20.60	20.50	20.50
26DNT	21.76	21.82	21.89	21.79	21.79
24DNT	22.49	22.58	22.62	22.52	22.52
2NT	26.49	26.57	26.65	26.54	26.54
4NT	28.37	28.43	28.49	28.37	28.37
3NT	30.52	30.62	30.73	30.61	30.61

COMPONENT NAME	RT Cont CA1
HMX	5.46
RDX	8.60
TNB	11.71
DNB	14.35
TETRYL	15.55
NB	16.33
3,4-DNT	17.82
TNT	18.66
4ADNT	19.52
2ADNT	20.54
26DNT	21.81
24DNT	22.55
2NT	26.56
4NT	28.39
3NT	30.63

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.46	0.025	0.074	5.39 - 5.54
RDX	8.62	0.061	0.183	8.43 - 8.80
TNB	11.71	0.034	0.102	11.61 - 11.81
DNB	14.34	0.032	0.095	14.24 - 14.43
TETRYL	15.53	0.037	0.111	15.42 - 15.64
NB	16.33	0.037	0.112	16.22 - 16.45
3,4-DNT	17.82	0.040	0.119	17.70 - 17.93
TNT	18.65	0.040	0.119	18.54 - 18.77

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page 2

4ADNT	19.50	0.046	0.137	19.36 - 19.63
2ADNT	20.53	0.045	0.134	20.39 - 20.66
26DNT	21.81	0.044	0.133	21.68 - 21.94
24DNT	22.55	0.048	0.143	22.40 - 22.69
2NT	26.56	0.052	0.157	26.40 - 26.72
NT	28.40	0.047	0.140	28.26 - 28.54
3NT	30.62	0.064	0.193	30.43 - 30.81

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: IN10 Column ID: LC-CN-10

Dates of Anlayses: 05/03/98 to 05/04/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
EXP L1A STD	2-146:IA1	05/03/98	08:01
EXP L2A STD	2-145:IA2	05/03/98	08:46
EXP L3A STD	2-205:IA3	05/03/98	09:30
EXP L4A STD	2-143:IA4	05/03/98	10:14
EXP L5A STD	2-142:IA5	05/03/98	10:59
EXP L1B STD	1-151:IB1	05/03/98	11:43
EXP L2B STD	2-150:IB2	05/03/98	12:27
EXP L3B STD	2-206:IB3	05/03/98	13:12
EXP L4B STD	2-148:IB4	05/03/98	13:56
EXP L5B STD	2-147:IB5	05/03/98	14:40
BL0429SF	BL0429SF	05/03/98	15:25
BIO-N-30%-00-A1 50X	33783.01	05/03/98	17:12
BIO-N-30%-00-A2 50X	33783.02	05/03/98	17:56
BIO-N-30%-00-B1 50X	33783.04	05/03/98	19:25
BIO-N-30%-00-B2 50X	33783.05	05/03/98	20:09
BIO-N-30%-00-B3 50X	33783.06	05/03/98	20:54
BIO-N-30%-00-C1 50X	33783.09	05/03/98	21:38
EXP L3A STD	2-205:CA1	05/03/98	22:22
EXP L3B STD	2-206:CB1	05/03/98	23:07

FORM VIII

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: IN10 Column ID: LC-CN-10

Dates of Anlayses: 05/03/98 to 05/04/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-00-C2 50X	33783.10	05/03/98	23:51
BIO-N-30%-00-D1 50X	33783.12	05/04/98	01:20
BIO-N-30%-00-D1FD 50	33783.13	05/04/98	02:04
BIO-N-30%-00-D2 50X	33783.14	05/04/98	02:49
BIO-N-30%-00-D3 50X	33783.15	05/04/98	03:33
EXP L3A STD	2-205:CA2	05/04/98	04:17
EXP L3B STD	2-206:CB2	05/04/98	05:02

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0502,4
Injection File Name Level 2 : 3CN0502,5
Injection File Name Level 3 : 3CN0502,6
Injection File Name Level 4 : 3CN0502,7
Injection File Name Level 5 : 3CN0502,8

Calibration Date : 05/03/1998
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	11125	2418	57431	2497	143675	2499	291984	2539	593137	2579
26DNT	8947	1789	42714	1709	106881	1710	219914	1759	441837	1767
TNT	12323	2679	58769	2555	147369	2563	301882	2625	610823	2656
3,4DNT	9018	1288	45652	1304	114418	1387	236223	1432	479741	1454
TETRYL	12753	1417	67470	1499	147144	1308	295131	1312	623191	1385
HMX	10174	1453	37673	1076	93517	1069	188984	1080	382946	1094

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0502,9
Injection File Name Level 2 : 3CN0502,10
Injection File Name Level 3 : 3CN0502,11
Injection File Name Level 4 : 3CN0502,12
Injection File Name Level 5 : 3CN0502,13

Calibration Date : 05/03/1998
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	9103	1821	47881	1915	123595	1978	261152	2089	501913	2008
DNB	13282	3321	70481	3524	184725	3695	385477	3855	756037	3780
24DNT	15533	3107	77166	3087	201328	3221	424450	3396	821134	3285
4ADNT	14243	1548	70239	1527	181986	1582	397846	1730	732525	1592
2ADNT	24908	2491	126148	2523	329373	2635	684858	2739	1344292	2689
RDX	6626	1325	33548	1342	86787	1389	180355	1443	344377	1378

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3CN0502,4
Injection File Name Level 2 : 3CN0502,5
Injection File Name Level 3 : 3CN0502,6
Injection File Name Level 4 : 3CN0502,7
Injection File Name Level 5 : 3CN0502,8

Calibration Date : 05/03/1998
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	2506	2.38	0.99996	2567	0.000
26DNT	1747	2.06	0.99997	1763	0.000
TNT	2616	2.11	0.99995	2645	0.000
3,4DNT	1373	5.41	0.99993	1445	0.000
TETRYL	1384	5.76	0.99942	1369	0.000
HMX	1155	14.49	0.99992	1090	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN10
lumn ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3CN0502,9
Injection File Name Level 2 : 3CN0502,10
Injection File Name Level 3 : 3CN0502,11
Injection File Name Level 4 : 3CN0502,12
Injection File Name Level 5 : 3CN0502,13

Calibration Date : 05/03/1998
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	1962	5.14	0.99970	2021	0.000
DNB	3635	5.90	0.99989	3789	0.000
24DNT	3219	3.98	0.99977	3302	0.000
4ADNT	1596	4.97	0.99884	1619	0.000
2ADNT	2615	4.06	0.99990	2695	0.000
RDX	1375	3.33	0.99965	1391	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/03/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0502B,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	147438	2564	2506	2.30	2567	0.11
26DNT	118074	1889	1747	8.14	1763	7.17
TNT	160348	2789	2616	6.62	2645	5.43
3,4DNT	125488	1521	1373	10.79	1445	5.23
TETRYL	110033	978	1384	29.34	1369	28.56
HMX	102310	1169	1155	1.28	1090	7.24

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/03/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0502B,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	123944	1983	1962	1.07	2021	1.90
DNB	196538	3931	3635	8.14	3789	3.75
24DNT	216737	3468	3219	7.73	3302	5.03
4ADNT	201603	1753	1596	9.84	1619	8.26
2ADNT	345880	2767	2615	5.80	2695	2.69
RDX	93282	1493	1375	8.53	1391	7.33

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/04/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0502B,17
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	141826	2467	2506	1.59	2567	3.92
26DNT	119639	1914	1747	9.58	1763	8.59
TNT	161974	2817	2616	7.70	2645	6.50
3,4DNT	126769	1537	1373	11.92	1445	6.31
TETRYL	91996	818	1384	40.92	1369	40.27
HMX	102945	1177	1155	1.90	1090	7.91

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/04/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0502B,18
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	123351	1974	1962	0.59	2021	2.37
DNB	194191	3884	3635	6.85	3789	2.51
24DNT	212469	3400	3219	5.61	3302	2.96
4ADNT	198522	1726	1596	8.17	1619	6.61
2ADNT	342639	2741	2615	4.81	2695	1.72
RDX	90635	1450	1375	5.45	1391	4.29

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ıjection 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

jection 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

A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/03/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	5.93	5.93	5.91	5.92	5.90
26DNT	6.59	6.58	6.56	6.57	6.55
TNT	7.10	7.11	7.09	7.10	7.09
3,4DNT	8.18	8.17	8.15	8.16	8.14
TETRYL	11.20	11.20	11.17	11.19	11.16
HMX	13.05	12.96	12.96	12.97	12.96

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
TNB	5.93	5.94	5.96
26DNT	6.58	6.61	6.64
TNT	7.10	7.13	7.16
3,4DNT	8.16	8.21	8.27
TETRYL	11.15	11.20	11.34
HMX	12.90	12.99	13.18

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	5.93	0.017	0.051	5.88 - 5.98
26DNT	6.58	0.026	0.079	6.51 - 6.66
TNT	7.11	0.024	0.073	7.04 - 7.18
3,4DNT	8.18	0.042	0.126	8.06 - 8.31
TETRYL	11.20	0.059	0.176	11.02 - 11.38
HMX	12.99	0.086	0.258	12.74 - 13.25

B 8D

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN10
olumn ID : LC-CN-10
Calibration Date : 05/03/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.26	5.26	5.25	5.27	5.24
DNB	5.81	5.82	5.80	5.83	5.80
24DNT	6.83	6.83	6.80	6.84	6.80
4ADNT	7.56	7.57	7.55	7.60	7.55
2ADNT	8.08	8.10	8.06	8.12	8.06
RDX	8.86	8.82	8.80	8.86	8.80

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
NB	5.28	5.27	5.26
DNB	5.84	5.82	5.82
24DNT	6.85	6.84	6.84
4ADNT	7.61	7.61	7.60
2ADNT	8.12	8.12	8.12
RDX	8.85	8.86	8.84

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.26	0.013	0.038	5.22 - 5.30
DNB	5.82	0.013	0.038	5.78 - 5.86
24DNT	6.83	0.017	0.050	6.78 - 6.88
4ADNT	7.58	0.025	0.074	7.51 - 7.65
2ADNT	8.10	0.026	0.079	8.02 - 8.18
RDX	8.84	0.027	0.082	8.75 - 8.92

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: IN10 Column ID: LC-CN-10

Dates of Anlayses: 05/03/98 to 05/04/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
PETN L1 WATER STD	2-210:IA1	05/12/98	20:32
PETN L2 WATER STD	2-209:IA2	05/12/98	21:16
PETN L3 WATER STD	2-208:IA3	05/12/98	22:00
PETN L4 WATER STD	2-207:IA4	05/12/98	22:45
PETN L5 WATER STD	2-180:IA5	05/12/98	23:29
BL0501WA	BL0501WA	05/13/98	00:13
BIOR042798	33783.16	05/13/98	00:58
PETN L3 WATER STD	2-208:CA1	05/13/98	01:42

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3PC0512,3
Injection File Name Level 2 : 3PC0512,4
Injection File Name Level 3 : 3PC0512,5
Injection File Name Level 4 : 3PC0512,6
Injection File Name Level 5 : 3PC0512,7

Calibration Date : 05/12/1998
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
PETN	2079	1040	16328	1021	40071	1252	169441	1324	339001	1324

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3PC0512,3
Injection File Name Level 2 : 3PC0512,4
Injection File Name Level 3 : 3PC0512,5
Injection File Name Level 4 : 3PC0512,6
Injection File Name Level 5 : 3PC0512,7

Calibration Date : 05/12/1998
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
PETN	1192	12.66	0.99993	1323	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/12/1998
ontinuing Calibration #: 1
ontinuing Cal Date : 05/13/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3PC0512,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
PETN	40799	1275	1192	6.96	1323	3.60

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
PETN	2.000	16.000	32.000	128.000	256.000

3PC0512

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/12/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	14.78	14.88	14.82	14.90	14.86

COMPONENT NAME	RT Cont Cal
PETN	14.94

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	14.86	0.057	0.170	14.69 - 15.03

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: IN10 Column ID: LC-CN-10

Dates of Anlayses: 05/03/98 to 05/04/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
EXP L1A STD	2-146:IA1	05/07/98	12:26
EXP L2A STD	2-145:IA2	05/07/98	13:10
EXP L3A STD	2-205:IA3	05/07/98	13:54
EXP L4A STD	2-143:IA4	05/07/98	14:39
EXP L5A STD	2-142:IA5	05/07/98	15:23
EXP L1B STD	1-151:IB1	05/07/98	16:07
EXP L2B STD	2-150:IB2	05/07/98	16:52
EXP L3B STD	2-206:IB3	05/07/98	17:36
EXP L4B STD	2-148:IB4	05/07/98	18:20
EXP L5B STD	2-147:IB5	05/07/98	19:05
EXP L3A STD	2-205:CA2	05/08/98	10:36
EXP L3B STD	2-206:CB2	05/08/98	11:21
BIO-N-30%-00-C3 10X	33783.11	05/08/98	16:31
BIO-N-30%-00-A3 10X	33783.03	05/08/98	17:16
EXP L3A STD	2-205:CA3	05/08/98	18:00
EXP L3B STD	2-206:CB3	05/08/98	18:45

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0507,4
Injection File Name Level 2 : 3CN0507,5
Injection File Name Level 3 : 3CN0507,6
Injection File Name Level 4 : 3CN0507,7
Injection File Name Level 5 : 3CN0507,8

Calibration Date : 05/07/1998
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	11774	2560	61483	2673	147926	2573	293362	2551	609551	2650
26DNT	9203	1841	46266	1851	116327	1861	236585	1893	461912	1848
TNT	12139	2639	62673	2725	158324	2753	320719	2789	635846	2765
3,4DNT	9546	1364	49176	1405	123574	1498	251297	1523	500959	1518
TETRYL	10982	1220	61836	1374	113142	1006	220482	980	563813	1253
HMX	8061	1152	40242	1150	100568	1149	205329	1173	404648	1156

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0507,9
Injection File Name Level 2 : 3CN0507,10
Injection File Name Level 3 : 3CN0507,11
Injection File Name Level 4 : 3CN0507,12
Injection File Name Level 5 : 3CN0507,13

Calibration Date : 05/07/1998
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	10361	2072	47515	1901	119475	1912	253954	2032	497380	1990
DNB	15729	3932	73645	3682	186650	3733	386757	3868	782901	3915
24DNT	16713	3343	81074	3243	204192	3267	420522	3364	841807	3367
4ADNT	16141	1754	77826	1692	192571	1675	384276	1671	723604	1573
2ADNT	26527	2653	130686	2614	335017	2680	686424	2746	1410699	2822
RDX	7609	1522	34589	1384	86243	1380	178769	1430	379035	1516

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3CN0507,4
Injection File Name Level 2 : 3CN0507,5
Injection File Name Level 3 : 3CN0507,6
Injection File Name Level 4 : 3CN0507,7
Injection File Name Level 5 : 3CN0507,8

Calibration Date : 05/07/1998
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	2601	2.16	0.99979	2629	0.000
26DNT	1859	1.10	0.99991	1857	0.000
TNT	2734	2.12	0.99998	2768	0.000
3,4DNT	1462	4.96	0.99997	1517	0.000
TETRYL	1167	14.48	0.99214	1202	0.000
HMX	1156	0.87	0.99996	1159	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0507,9
Injection File Name Level 2 : 3CN0507,10
Injection File Name Level 3 : 3CN0507,11
Injection File Name Level 4 : 3CN0507,12
Injection File Name Level 5 : 3CN0507,13

Calibration Date : 05/07/1998
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	1981	3.76	0.99984	1993	0.000
DNB	3826	2.93	0.99993	3896	0.000
24DNT	3317	1.74	0.99997	3361	0.000
4ADNT	1673	3.90	0.99949	1598	0.000
2ADNT	2703	3.04	0.99988	2800	0.000
RDX	1446	4.79	0.99946	1494	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	162019	2818	2601	8.32	2629	7.20
26DNT	121706	1947	1859	4.77	1857	4.86
TNT	164689	2864	2734	4.76	2768	3.46
3,4DNT	129363	1568	1462	7.29	1517	3.36
TETRYL	142839	1270	1167	8.84	1202	5.66
HMX	104926	1199	1156	3.73	1159	3.46

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	133840	2141	1981	8.09	1993	7.42
DNB	207071	4141	3826	8.25	3896	6.30
24DNT	222696	3563	3317	7.43	3361	6.01
4ADNT	207103	1801	1673	7.65	1598	12.67
2ADNT	353952	2832	2703	4.77	2800	1.14
RDX	95434	1527	1446	5.58	1494	2.23

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 3
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,20
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	162521	2826	2601	8.65	2629	7.53
26DNT	124518	1992	1859	7.20	1857	7.29
TNT	168918	2938	2734	7.45	2768	6.12
3,4DNT	131764	1597	1462	9.28	1517	5.27
TETRYL	139066	1236	1167	5.96	1202	2.87
HMX	106956	1222	1156	5.74	1159	5.46

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
ontinuing Calibration #: 3
ontinuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,21
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	125652	2010	1981	1.48	1993	0.85
DNB	204044	4081	3826	6.66	3896	4.75
24DNT	221543	3545	3317	6.87	3361	5.46
4ADNT	210697	1832	1673	9.52	1598	14.62
2ADNT	354957	2840	2703	5.06	2800	1.42
RDX	94423	1511	1446	4.46	1494	1.14

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

3CN0507
A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	5.87	5.88	5.88	5.86	5.85
26DNT	6.50	6.52	6.51	6.49	6.48
TNT	7.01	7.03	7.03	7.00	6.99
3,4DNT	8.02	8.05	8.05	8.01	8.00
TETRYL	10.90	10.95	10.96	10.89	10.90
HMX	12.45	12.61	12.60	12.52	12.52

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
TNB	5.89	5.89	5.90
26DNT	6.54	6.54	6.57
TNT	7.05	7.05	7.07
3,4DNT	8.09	8.08	8.12
TETRYL	11.03	10.99	11.04
HMX	12.73	12.64	12.69

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	5.88	0.017	0.050	5.83 - 5.93
26DNT	6.52	0.029	0.088	6.43 - 6.61
TNT	7.03	0.026	0.079	6.95 - 7.11
3,4DNT	8.05	0.044	0.131	7.92 - 8.18
TETRYL	10.96	0.060	0.180	10.78 - 11.14
HMX	12.60	0.093	0.280	12.32 - 12.88

3CN0507
β STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.24	5.24	5.24	5.22	5.22
DNB	5.79	5.80	5.78	5.77	5.77
24DNT	6.77	6.79	6.77	6.75	6.75
4ADNT	7.50	7.53	7.50	7.49	7.47
2ADNT	8.00	8.04	8.00	7.98	7.97
RDX	8.72	8.75	8.70	8.69	8.68

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
NB	5.25	5.26	5.26
DNB	5.79	5.81	5.80
24DNT	6.79	6.80	6.80
4ADNT	7.53	7.55	7.54
2ADNT	8.03	8.06	8.04
RDX	8.74	8.76	8.74

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.24	0.016	0.047	5.20 - 5.29
DNB	5.79	0.016	0.047	5.74 - 5.83
24DNT	6.78	0.021	0.062	6.71 - 6.84
4ADNT	7.51	0.028	0.085	7.43 - 7.60
2ADNT	8.02	0.032	0.096	7.92 - 8.11
RDX	8.72	0.029	0.086	8.64 - 8.81

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/03/98 to 05/03/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	05/03/98	04:48
L1 2-214:IA1	L1 2-214:IA1	05/03/98	06:12
L2 2-213:IA2	L2 2-213:IA2	05/03/98	06:40
L3 2-212:IA3	L3 2-212:IA3	05/03/98	07:09
L4 2-211:IA4	L4 2-211:IA4	05/03/98	07:37
L5 2-185:IA5	L5 2-185:IA5	05/03/98	08:05
ICV 2-192	ICV 2-192	05/03/98	08:33
BL0429SG	BL0429SG	05/03/98	09:01
LC0429SG	LC0429SG	05/03/98	09:57
LD0429SG	LD0429SG	05/03/98	10:26
BIO-N-30%-00-A1	33783.01	05/03/98	10:54
BIO-N-30%-00-A2	33783.02	05/03/98	11:22
BIO-N-30%-00-B1	33783.04	05/03/98	12:18
BIO-N-30%-00-B2	33783.05	05/03/98	12:46
L3 2-212:CA1	L3 2-212:CA1	05/03/98	13:15
BIO-N-30%-00-B3	33783.06	05/03/98	14:11
BIO-N-30%-00-B3	33783.07MS	05/03/98	14:39
BIO-N-30%-00-B3	33783.08MSD	05/03/98	15:07
BIO-N-30%-00-C1	33783.09	05/03/98	15:35

FORM VIII

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/03/98 to 05/03/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-00-C2	33783.10	05/03/98	16:04
BIO-N-30%-00-D1	33783.12	05/03/98	17:00
L3 2-212:CA2	L3 2-212:CA2	05/03/98	17:28
BIO-N-30%-00-D1FD	33783.13	05/03/98	18:25
BIO-N-30%-00-D2	33783.14	05/03/98	18:53
BIO-N-30%-00-D3	33783.15	05/03/98	19:21
L3 2-212:CA3	L3 2-212:CA3	05/03/98	21:13

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

Inj 1

Injection File Name Level 1 : 050298,22
Injection File Name Level 2 : 050298,23
Injection File Name Level 3 : 050298,24
Injection File Name Level 4 : 050298,25
Injection File Name Level 5 : 050298,26

Calibration Date : 05/03/98
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	5.97601	3.35E0	48.5675	3.29E0	99.1429	3.23E0	409.041	3.13E0	828.958	3.09E0

CALIBRATION FACTOR DATA
FORM 9B

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

	Inj 1
Injection File Name Level 1 :	050298,22
Injection File Name Level 2 :	050298,23
Injection File Name Level 3 :	050298,24
Injection File Name Level 4 :	050298,25
Injection File Name Level 5 :	050298,26

Calibration Date : 05/03/98
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	3.21724961	3.38	0.99998	3.10E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/98
Continuing Calibration #: 1
Continuing Cal Date : 05/03/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 050298,37
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	98.8513	3.24E0	3.22E0	0.62	3.10E0	4.48

210A

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/98
Continuing Calibration #: 2
Continuing Cal Date : 05/03/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 050298,46
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	99.7312	3.21E0	3.22E0	0.27	3.10E0	3.55

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/03/98
tinuing Calibration #: 3
ntinuing Cal Date : 05/03/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 050298,54
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	97.1303	3.29E0	3.22E0	2.40	3.10E0	6.33

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 : 05/03/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	12.25	12.22	12.28	12.21	12.22

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
PETN	12.18	12.07	12.21

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.20	0.063	0.188	12.02 - 12.39

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/03/98 to 05/03/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	05/02/98	20:21
L1 2-210:IA1	L1 2-210:IA1	05/02/98	21:45
L2 2-209:IA2	L2 2-209:IA2	05/02/98	22:13
L3 2-208:IA3	L3 2-208:IA3	05/02/98	22:41
L4 2-207:IA4	L4 2-207:IA4	05/02/98	23:10
L5 2-180:IA5	L5 2-180:IA5	05/02/98	23:38
ICV 2-190	ICV 2-190	05/03/98	00:06
BL0501WB	BL0501WB	05/03/98	00:34
LC0501WB	LC0501WB	05/03/98	01:30
LD0501WB	LD0501WB	05/03/98	01:59
BIOR042798	33783.16	05/03/98	02:27
BIOR042798	33783.16MS	05/03/98	02:55
BIOR042798	33783.16MSD	05/03/98	03:23
L3 2-208:CA1	L3 2-208:CA1	05/03/98	03:51

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
ıstrument ID: LC4
ɔlumn ID :

Inj 1

Injection File Name Level 1 : 050298W,4
Injection File Name Level 2 : 050298W,5
Injection File Name Level 3 : 050298W,6
Injection File Name Level 4 : 050298W,7
Injection File Name Level 5 : 050298W,8

Calibration Date : 05/02/98
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	5.89737	3.39E0	49.2058	3.25E0	100.799	3.17E0	404.432	3.16E0	816.867	3.13E0

CALIBRATION FACTOR DATA
FORM 9B

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

Inj 1

Injection File Name Level 1 : 050298W,4
Injection File Name Level 2 : 050298W,5
Injection File Name Level 3 : 050298W,6
Injection File Name Level 4 : 050298W,7
Injection File Name Level 5 : 050298W,8

Calibration Date : 05/02/98
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	3.22E0	3.21	0.99999	3.14E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/02/98
ntinuing Calibration #: 1
ntinuing Cal Date : 05/03/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 050298W,17
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	100.995	3.17E0	3.22E0	1.70	3.14E0	0.88

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

njection 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

nstrument ID : LC4
Column ID :
Calibration Date : 05/02/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	12.17	12.19	12.19	12.19	12.17

COMPONENT NAME	RT Cont CAl
PETN	12.29

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.20	0.046	0.139	12.06 - 12.34

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33783
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/03/98 to 05/03/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	05/11/98	21:27
L1 2-214:IA1	L1 2-214:IA1	05/11/98	22:51
L2 2-213:IA2	L2 2-213:IA2	05/11/98	23:19
L3 2-224:IA3	L3 2-224:IA3	05/11/98	23:48
L4 2-211:IA4	L4 2-211:IA4	05/12/98	00:16
L5 2-185:IA5	L5 2-185:IA5	05/12/98	00:44
L3 2-224:CA1	L3 2-224:CA1	05/12/98	05:54
BIO-N-30%-00-A3	33783.03	05/12/98	07:46
BIO-N-30%-00-C3	33783.11	05/12/98	08:14
L3 2-224:CA2	L3 2-224:CA2	05/12/98	11:03
L3 2-224:CA3	L3 2-224:CA3	05/12/98	15:45
L3 2-224:CA4	L3 2-224:CA4	05/12/98	19:48
L3 2-224:CA5	L3 2-224:CA5	05/13/98	00:01

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

	Inj 1
Injection File Name Level 1 :	051198,4
Injection File Name Level 2 :	051198,5
Injection File Name Level 3 :	051198,6
Injection File Name Level 4 :	051198,7
Injection File Name Level 5 :	051198,8

Calibration Date : 05/11/98
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	6.03863	3.31E0	49.5231	3.23E0	101.4	3.16E0	416.092	3.08E0	836.72	3.06E0

CALIBRATION FACTOR DATA
FORM 9B

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

	Inj 1
Injection File Name Level 1 :	051198,4
Injection File Name Level 2 :	051198,5
Injection File Name Level 3 :	051198,6
Injection File Name Level 4 :	051198,7
Injection File Name Level 5 :	051198,8

Calibration Date : 05/11/98
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	3.17E0	3.35	0.99999	3.06E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 1
Continuing Cal Date : 05/12/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	98.2126	3.26E0	3.17E0	2.88	3.06E0	6.32

2d 1

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 2
tinuing Cal Date : 05/12/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,30
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.473	3.12E0	3.17E0	1.39	3.06E0	1.90

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ıjection 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
Column ID :
Calibration Date : 05/11/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	12.57	12.61	12.59	12.61	12.61

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	12.83	12.68	12.44	12.38	12.73

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.65	0.163	0.490	12.16 - 13.14

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

BIO-010

Project No.: 4329-0009-007-35

Project Name: NSWC Crane Biofacility

Samplers: (Signature) Ryan Ewin

Sampler: (Print) Ryan Ewin

Analysis Required: 8330 Explosives

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	8330 Explosives	Remarks
Compost	CSA SL1	4/27/98	1419	BIO-N-30%-00-A1	✓		✓	MS/MSD
	CSA SL2		1423	BIO-N-30%-00-A2	✓		✓	at ~~A3~~ D1
	CSA SL3		1409	BIO-N-30%-00-A3	✓		✓	
	CSB SL1		1425	BIO-N-30%-00-B1	✓		✓	Full-Scale
	CSB SL2		1410	BIO-N-30%-00-B2	✓		✓	Compost
	CSB SL3		1444	BIO-N-30%-00-B3	✓		✓	
	CSC SL1		1540	BIO-N-30%-00-C1	✓		✓	
	CSC SL2		1529	BIO-N-30%-00-C2	✓		✓	
	CSC SL3		1533	BIO-N-30%-00-C3	✓		✓	
	CSD SL1		1458	BIO-N-30%-00-D1	✓		✓	
	CSD SL1		1458	BIO-N-30%-00-D1-FD	✓		✓	
	CSD SL2		1506	BIO-N-30%-00-D2	✓		✓	
	CSD SL3		1447	BIO-N-30%-00-D3	✓		✓	
liquid	Rinse Blank		1519	BIOR0427 98		✓	✓	RE
~~"~~	~~Trip Blank~~	~~4/28/98~~	~~1530~~	~~BIOT042898~~				
								South West Labs

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Ryan Ewin	4/28/98 1530				
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company:	Date/Time 4/29/98 0915	Total No. Samples This Shipping Container: / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

APPENDIX L
RAW DATA FOR LABORATORY ANALYSIS DAY 5

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Laboratory Quality Control Data Summary	5 pages
Analytical Raw Data and Chromatograms	59 pages
Analytical Run Logbook and Calibration for Instrument IN13 on 5/7/98 (soil analysis)	5 pages
Analytical Run Logbook and Calibration for Instrument IN10 on 5/7/98 (soil analysis)	8 pages
Analytical Run Logbook and Calibration for Instrument LC4 on 5/11/98 (soil analysis)	5 pages
Chain of Custody Record	1 page

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-05-A1 10X	130	0
2	BIO-N-30%-05-A2 10X	126	0
3	BIO-N-30%-05-A3 10X	89.7	0
4	BIO-N-30%-05-B1 10X	96.6	0
5	BIO-N-30%-05-B2 10X	86.2	0
6	BIO-N-30%-05-B3 10X	95.6	0
7	BIO-N-30%-05-C1 10X	85.4	0
8	BIO-N-30%-05-C2 10X	104	0
9	BIO-N-30%-05-C2FD 10	88.4	0
10	BIO-N-30%-05-C3 10X	93.8	0
11	BIO-N-30%-05-D1 10X	103	0
12	BIO-N-30%-05-D1 10X	73.4	0
13	BIO-N-30%-05-D1 10X	86.6	0
14	BIO-N-30%-05-D2 10X	102	0
15	BIO-N-30%-05-D3 10X	217*	0
16	BL0505SE	109	0
17	LC0505SE	121	0
18	LD0505SE	106	0
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

page _ 1

FORM II

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Client Sample No: BIO-N-30%-05-D1 10X

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500	11400	25800	152*	54-128
RDX	9500	16600	41500	262*	66-109
TNB	9500		9260	98	57-130
DNB	9500		11100	117	74-122
TETRYL	9500		8660	91	32-119
NB	9500		10000	105	70-135
TNT	9500		8940	94	44-124
4ADNT	9500		11100	117	60-140
2ADNT	9500		9110	96	60-140
26DNT	9500		9660	102	58-125
24DNT	9500		9490	100	59-120
2NT	9500		10100	106	79-124
4NT	9500		9790	103	74-128
3NT	9500		10600	112	79-121

1 of Analyte recoveries out of QC Advisory Limits = 2

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	23400	126	19	30	54-128
RDX	9500	30700	148*	56*	30	66-109
TNB	9500	9220	97	1	30	57-130
DNB	9500	11400	120	3	45	74-122
TETRYL	9500	7900	83	9	30	32-119
NB	9500	10200	107	2	35	70-135
TNT	9500	9900	104	10	30	44-124
4ADNT	9500	11800	124	6	40	60-140
2ADNT	9500	10300	108	12	40	60-140
26DNT	9500	10200	107	5	35	58-125
24DNT	9500	9970	105	5	35	59-120
2NT	9500	9990	105	1	35	79-124
4NT	9500	10200	107	4	35	74-128
3NT	9500	10000	105	6	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 2
No of RPD's out of QC Limits 1

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Client Sample No: BIO-N-30%-05-D1

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000		2910	97	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000	3200	107	10	30	70-130

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

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Client Sample No: LC0505SE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		10900	115	57-137
RDX	9500		9990	105	77-113
TNB	9500		9760	103	64-125
DNB	9500		11100	117	82-118
TETRYL	9500		9120	96	23-124
NB	9500		10400	109	69-143
TNT	9500		9160	96	75-118
4ADNT	9500		11400	120	60-140
2ADNT	9500		10000	105	60-140
26DNT	9500		10100	106	78-117
24DNT	9500		10200	107	74-126
2NT	9500		10200	107	78-123
4NT	9500		10500	110	79-125
3NT	9500		10500	110	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:33847

Client Sample No: LC0505SF

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		3180	106	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:33847

Client Sample No: LD0505SF

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

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Client Sample No: LD0505SE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		9630	101	57-137
RDX	9500		8880	94	77-113
TNB	9500		8650	91	64-125
DNB	9500		9580	101	82-118
TETRYL	9500		9350	98	23-124
NB	9500		9240	97	69-143
TNT	9500		8100	85	75-118
4ADNT	9500		9530	100	60-140
2ADNT	9500		8780	92	60-140
26DNT	9500		8950	94	78-117
24DNT	9500		8860	93	74-126
2NT	9500		9040	95	78-123
4NT	9500		9300	98	79-125
3NT	9500		9290	98	78-121

of Analyte recoveries out of QC Advisory Limits = 0

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0505SE

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Matrix: (soil/water) Soil

Date Extracted: 05/05/97 Extn. Method: SONC

Date Analyzed (1): 05/08/98 Date Analyzed(2): 05/08/98

Time Analyzed (1): 17:52:05 Time Analyzed(2): 03:57:32

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

LC Column ID (1): CARB-06 LC Column ID (2): LC-CN-10

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

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0505SE	LC0505SE	05/08/98	
2	LD0505SE	LD0505SE	05/08/98	
3	BIO-N-30%-05-A1 10X	33847.01	05/08/98	05/08/98
4	BIO-N-30%-05-A2 10X	33847.02	05/08/98	05/08/98
5	BIO-N-30%-05-A3 10X	33847.03	05/08/98	05/08/98
	BIO-N-30%-05-B1 10X	33847.04	05/08/98	05/08/98
7	BIO-N-30%-05-B2 10X	33847.05	05/08/98	05/08/98
8	BIO-N-30%-05-B3 10X	33847.06	05/09/98	05/08/98
9	BIO-N-30%-05-C1 10X	33847.07	05/09/98	05/08/98
10	BIO-N-30%-05-C2 10X	33847.08	05/09/98	05/08/98
11	BIO-N-30%-05-C2FD 10	33847.09	05/09/98	05/08/98
12	BIO-N-30%-05-C3 10X	33847.10	05/09/98	05/08/98
13	BIO-N-30%-05-D1 10X	33847.11	05/09/98	05/08/98
14	BIO-N-30%-05-D1 10X	33847.12MS	05/09/98	
15	BIO-N-30%-05-D1 10X	33847.13MSD	05/09/98	
16	BIO-N-30%-05-D2 10X	33847.14	05/09/98	05/08/98
17	BIO-N-30%-05-D3 10X	33847.15	05/09/98	05/08/98
18				
19				
20				
21				
22				
23				
24				
25				

FORM IV

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0505SF

Lab Code: SWOK Case No: MKF-OH SDG No:33847

Matrix: (soil/water) Soil

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

Date Analyzed (1): 05/12/98 Date Analyzed(2):

Time Analyzed (1): 08:42:56 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	LC0505SF	LC0505SF	05/12/98	
2	LD0505SF	LD0505SF	05/12/98	
3	BIO-N-30%-05-A1	33847.01	05/12/98	
4	BIO-N-30%-05-A2	33847.02	05/12/98	
	BIO-N-30%-05-A3	33847.03	05/12/98	
	BIO-N-30%-05-B1	33847.04	05/12/98	
7	BIO-N-30%-05-B2	33847.05	05/12/98	
8	BIO-N-30%-05-B3	33847.06	05/12/98	
9	BIO-N-30%-05-C1	33847.07	05/12/98	
10	BIO-N-30%-05-C2	33847.08	05/12/98	
11	BIO-N-30%-05-C2FD	33847.09	05/12/98	
12	BIO-N-30%-05-C3	33847.10	05/12/98	
13	BIO-N-30%-05-D1	33847.11	05/12/98	
14	BIO-N-30%-05-D1	33847.12MS	05/12/98	
15	BIO-N-30%-05-D1	33847.13MSD	05/12/98	
16	BIO-N-30%-05-D2	33847.14	05/12/98	
17	BIO-N-30%-05-D3	33847.15	05/12/98	
18				
19				
20				
21				
22				
23				
24				
25				

FORM IV

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-A1
10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.01

Sample Amt: 2g % Moisture 46.51 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	19600	
121-82-4	RDX	36300	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	733	JP
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

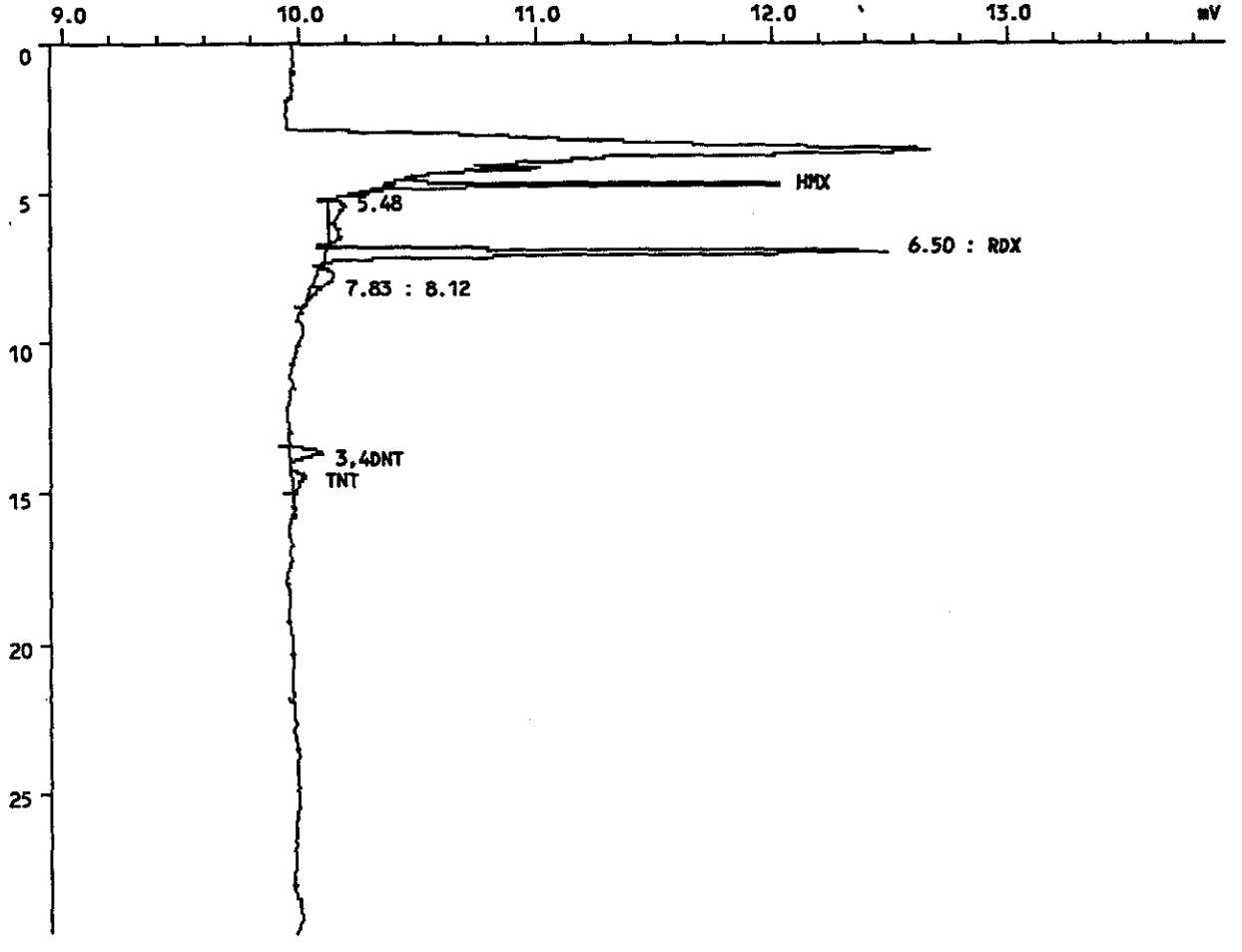
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,5,1

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 08-May-98 at 20:50:45
Reported on 11-May-98 at 11:54:36



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,5,1

Acquired on 08-May-98 at 20:50:45
Modified on 11-May-82 at 11:44:46
Reported on 11-May-98 at 11:44:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

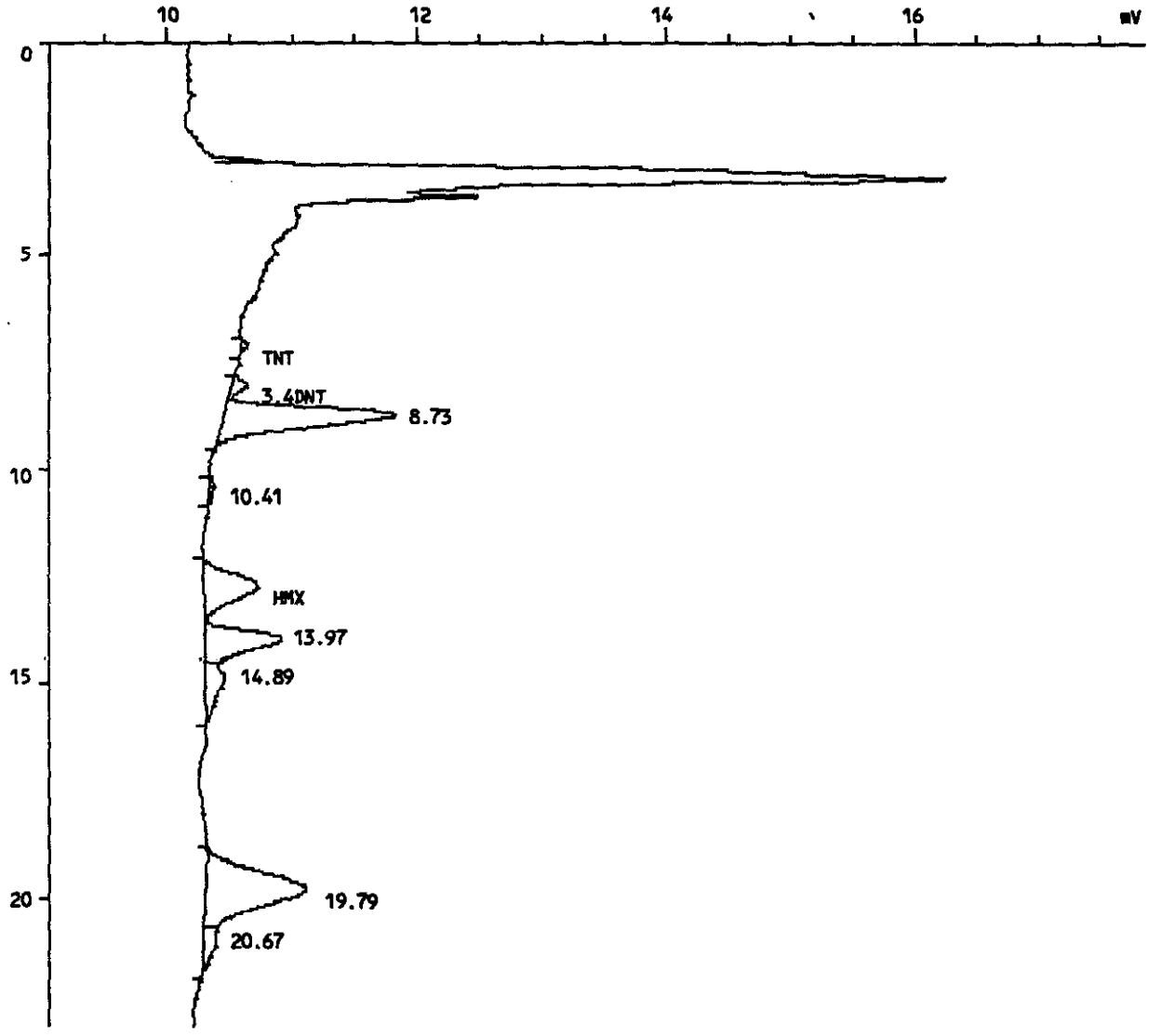
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.757	1689	13201	19586.779	HMX *
4	6.992	2377	30866	36312.391	RDX *
7	13.643	143	2820	2596.239	3,4DNT
8	14.421	56	1419	732.952	TNT *JP
Total		4264	48306	59228.363	
Residual		271	7202	9652.160	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,3,1

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 05:26:15
Reported on 11-May-98 at 14:29:54



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,3,1

Acquired on 08-May-98 at 05:26:15
Modified on 11-May-82 at 14:24:38
Reported on 11-May-98 at 14:24:35

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

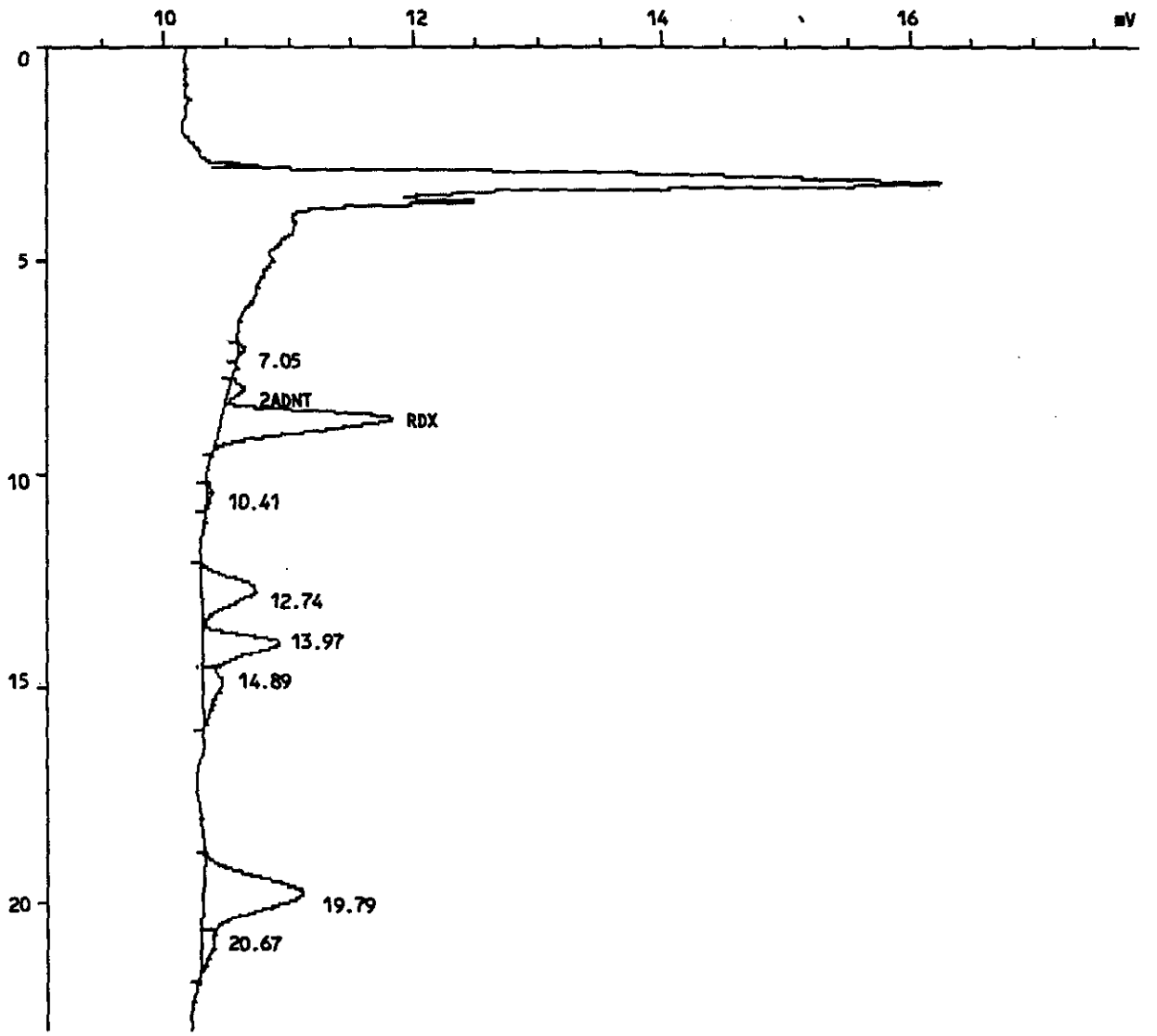
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.051	60	761	278.216	TNT
2	8.043	131	2728	1866.146	3,4DNT
5	12.736	437	18666	16146.763	HMX
Total		628	22155	18291.125	
Residual		3143	121445	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,3,1

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 05:26:15
Reported on 11-May-98 at 14:58:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,3,1

Acquired on 08-May-98 at 05:26:15
Modified on 11-May-82 at 14:52:40
Reported on 11-May-98 at 14:52:36

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A1 10X
Sample ID.....: 33847.01
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.043	131	2728	1043.329	2ADNT
3	8.731	1377	42249	30726.572	RDX
Total		1508	44977	31769.900	
Residual		2263	98622	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA		Contract:			BIO-N-30%-05-A1
Lab Code: SWOK		Case No: MKF-OH		SDG:	33847
Matrix: (soil/water)	SOIL			Lab Sample ID:	33847.01
Sample Amt: 2g	% Moisture	46.51		Date Received:	05/05/98
Extraction Volume:	10ml			Date Extracted:	05/05/98
Extraction Method:	SONC			Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N			Dilution Factor:	10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/Kg	Q
75-11-5	PETN		1250.0	U

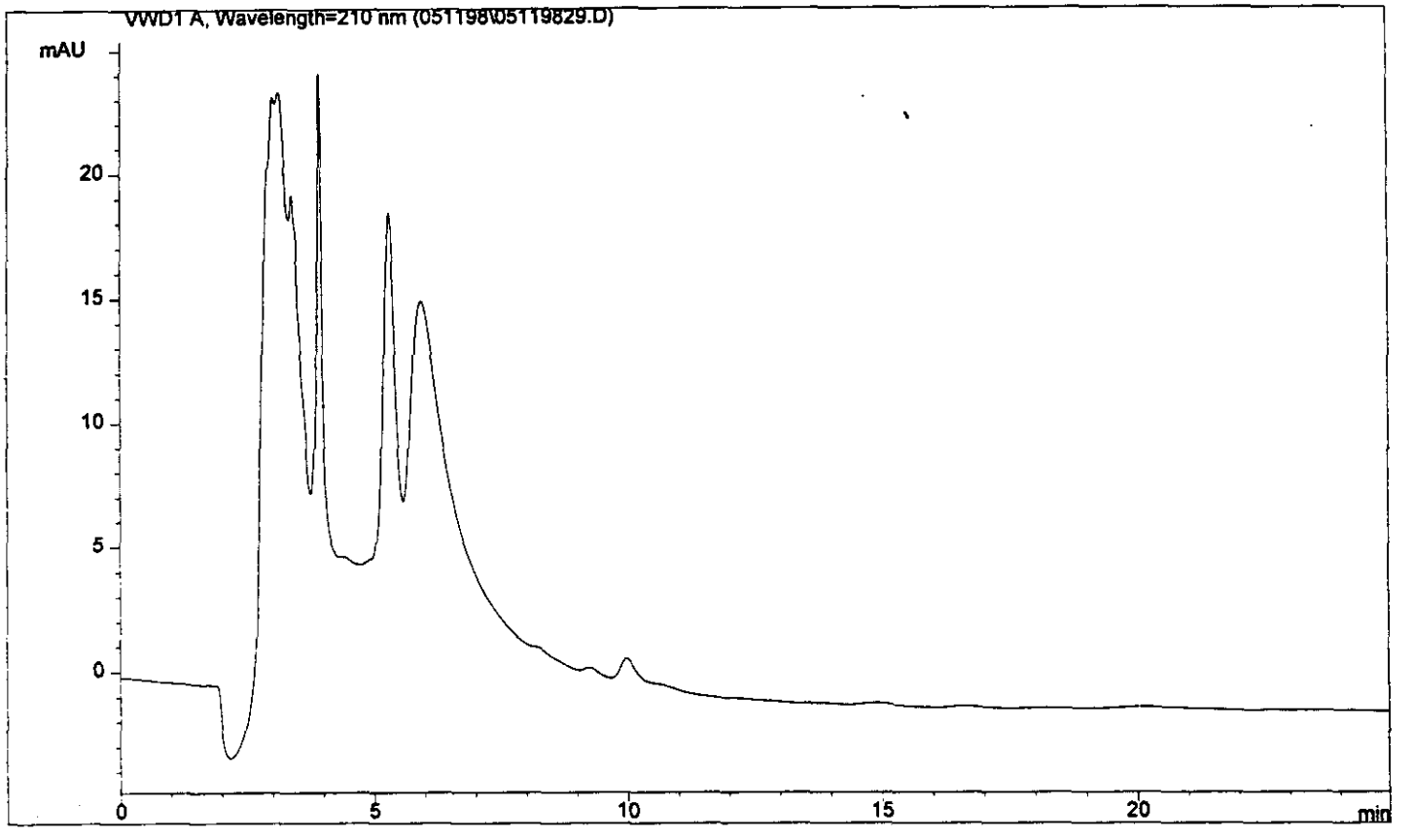
FORM I

020

Injection Date	: Tue, 12. May. 1998	Seq Line	: 29
Sample Name	: 33847.01	Vial No.	: 29
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

021

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-A2
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.02

Sample Amt: 2g % Moisture 50.18 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	21500	
121-82-4	RDX	28700	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

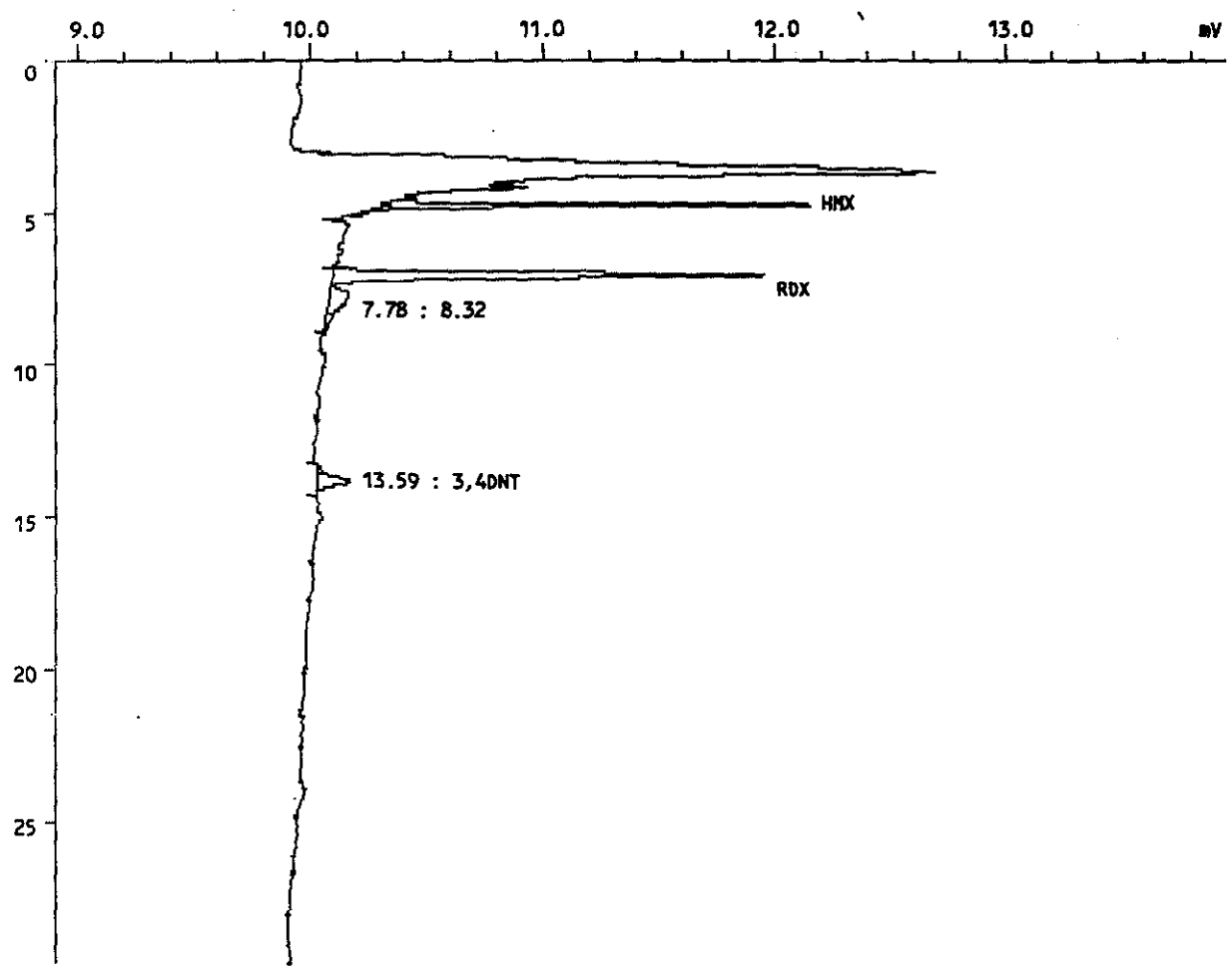
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,6,1

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 08-May-98 at 21:35:25
Reported on 11-May-98 at 15:31:46



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,6,1

Acquired on 08-May-98 at 21:35:25
Modified on 11-May-82 at 15:31:22
Reported on 11-May-98 at 15:31:29

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 12:15:20
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

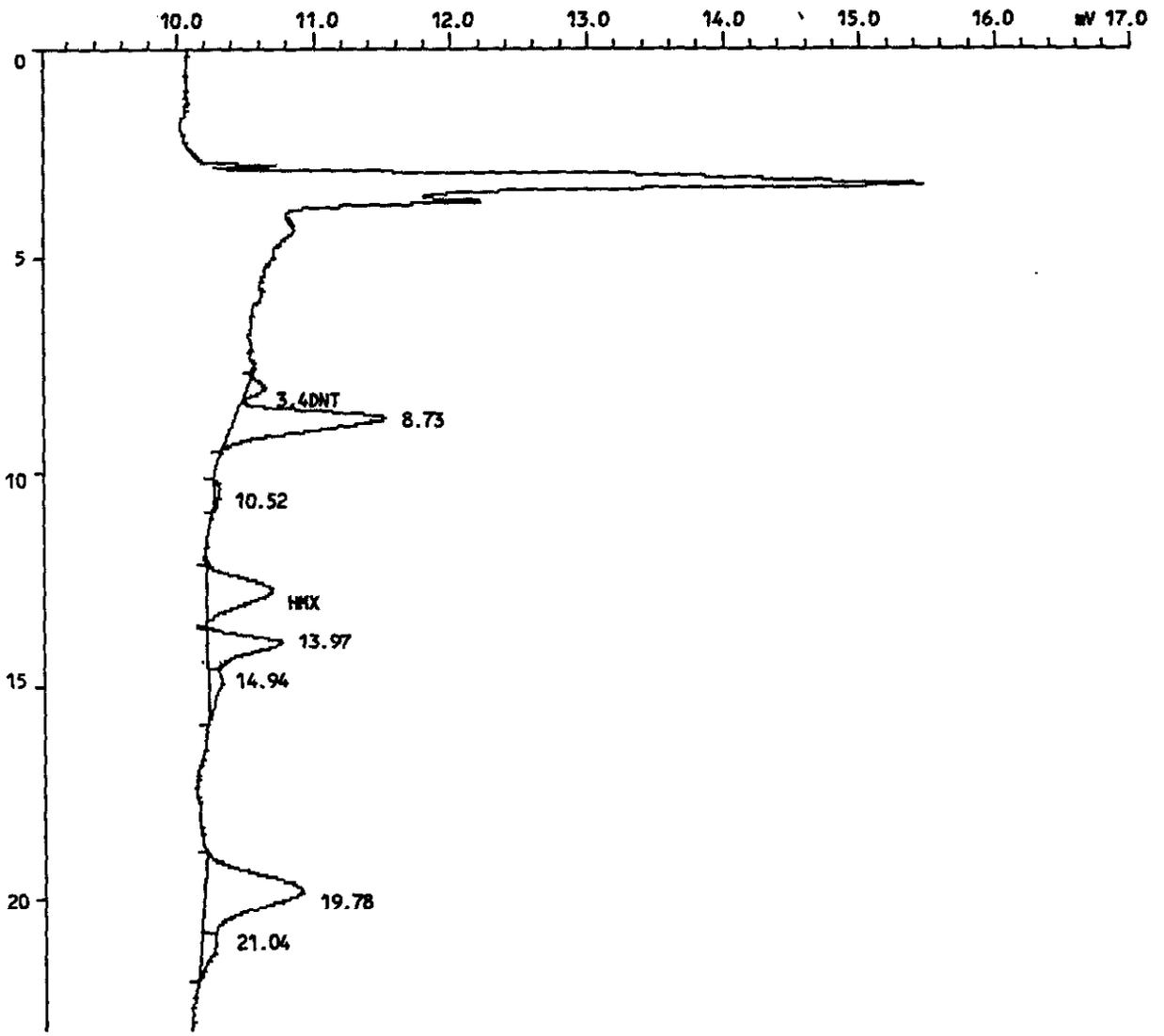
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.763	1857	14504	21519.379	HMX *
2	7.045	1855	24379	28680.840	RDX *
6	13.861	145	2738	2520.776	3,4DNT 126%
Total		3857	41620	52720.996	
Residual		148	4146	4877.615	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,4,1

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 06:10:36
Reported on 11-May-98 at 14:30:22



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,4,1

Acquired on 08-May-98 at 06:10:36
Modified on 11-May-82 at 14:24:52
Reported on 11-May-98 at 14:24:49

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

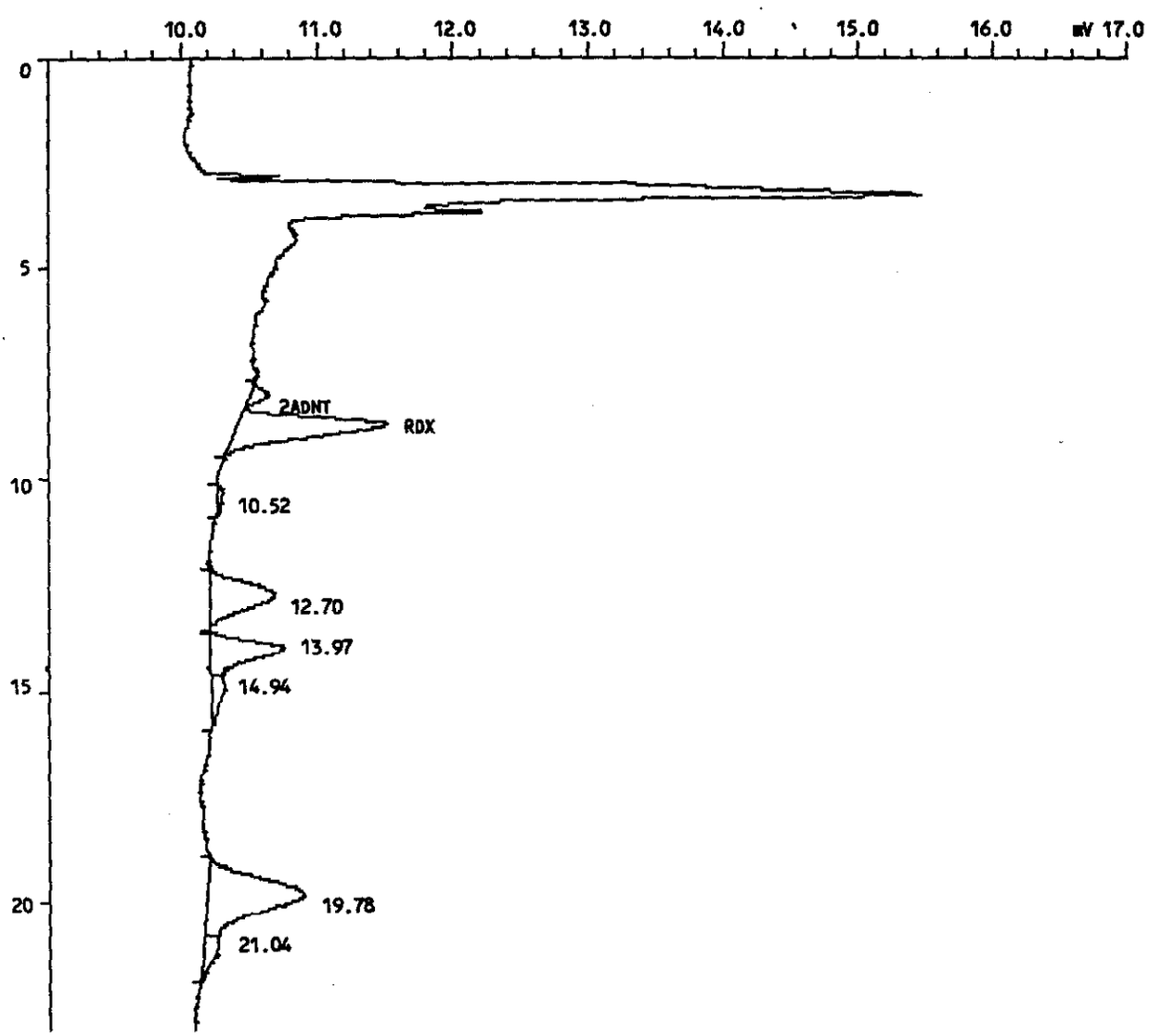
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.059	145	2951	2018.305	3,4DNT
4	12.704	483	19888	17204.143	HMX
Total		628	22839	19222.447	
Residual		2636	100218	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,4,1

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 06:10:36
Reported on 11-May-98 at 14:58:42



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,4,1

Acquired on 08-May-98 at 06:10:36
Modified on 11-May-82 at 14:52:54
Reported on 11-May-98 at 14:52:50

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A2 10X
Sample ID.....: 33847.02
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.059	145	2951	1128.398	2ADNT
2	8.725	1101	33547	24397.498	RDX
Total		1247	36497	25525.896	
Residual		2017	86560	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:			BIO-N-30%-05-A2
Lab Code: SWOK		Case No: MKF-OH		SDG:	33847
Matrix: (soil/water)	SOIL		Lab Sample ID:		33847.02
Sample Amt: 2g	% Moisture	50.18	Date Received:		05/05/98
Extraction Volume:	10ml		Date Extracted:		05/05/98
Extraction Method:	SONC		Date Analyzed:		05/09/98
GPC Cleanup: (Y/N)	N		Dilution Factor:		10.00

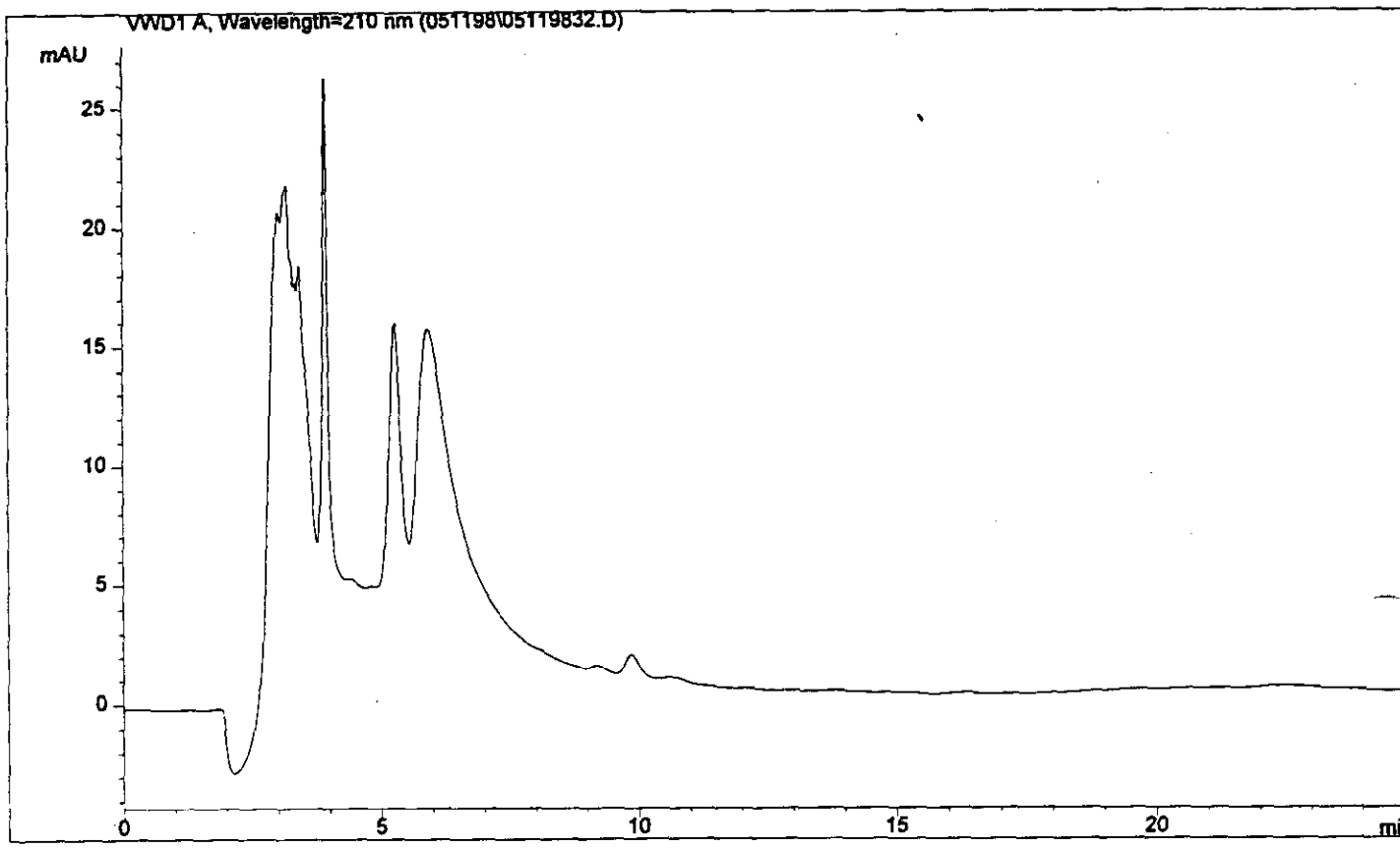
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/Kg	Q
75-11-5	PETN		1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 32
Sample Name	: 33847.02	Vial No.	: 32
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-A3
10X

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.03

Sample Amt: 2g % Moisture 35.43 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	32500	
121-82-4	RDX	119000	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

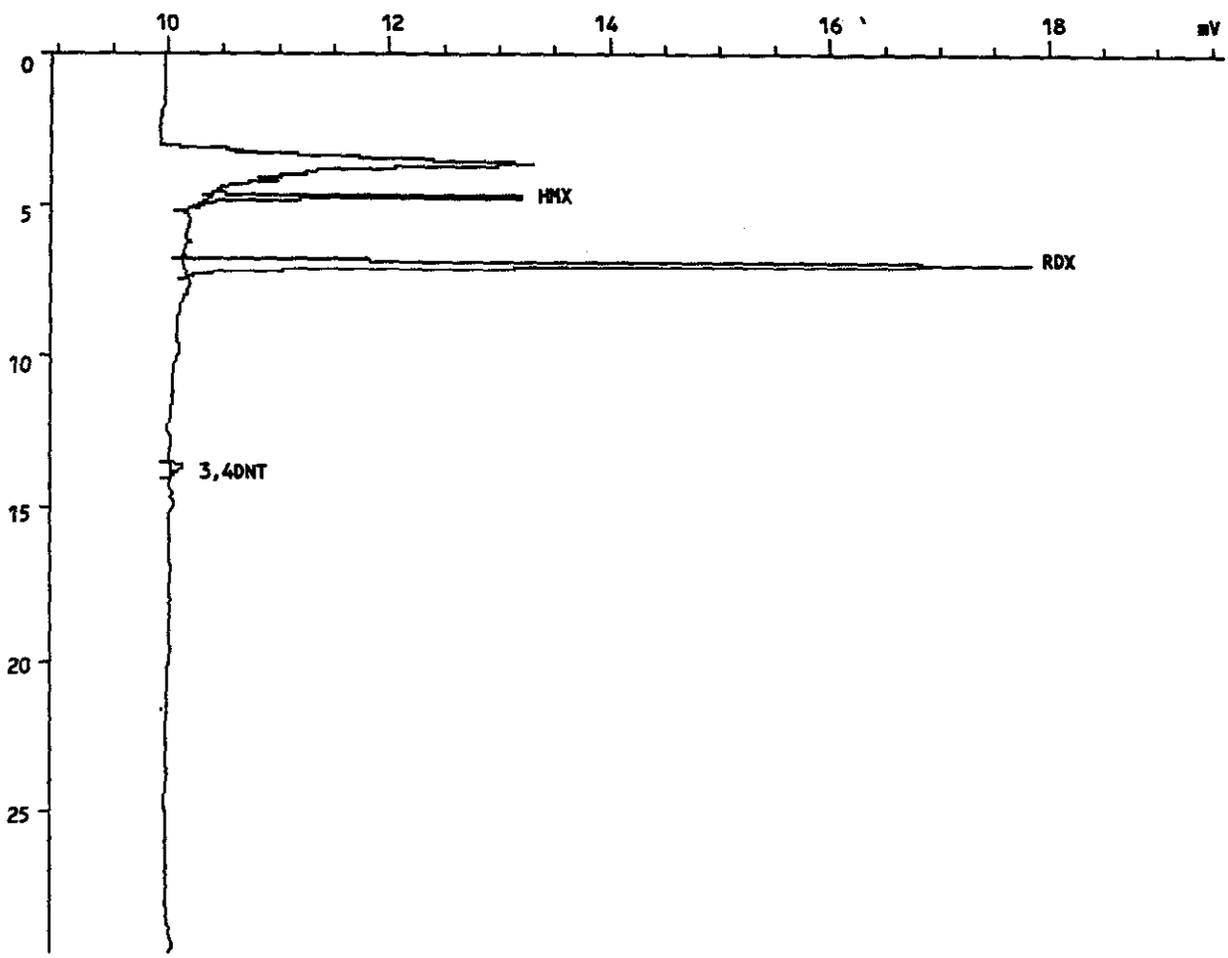
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,7,1

Sample name.....: BIO-N-30%-05-A3 10X
Sample ID.....: 33847.03
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 08-May-98 at 22:20:06
Reported on 11-May-98 at 11:55:29



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,7,1

Acquired on 08-May-98 at 22:20:06
Modified on 11-May-82 at 11:45:32
Reported on 11-May-98 at 11:45:29

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-A3 10X
Sample ID.....: 33847.03
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

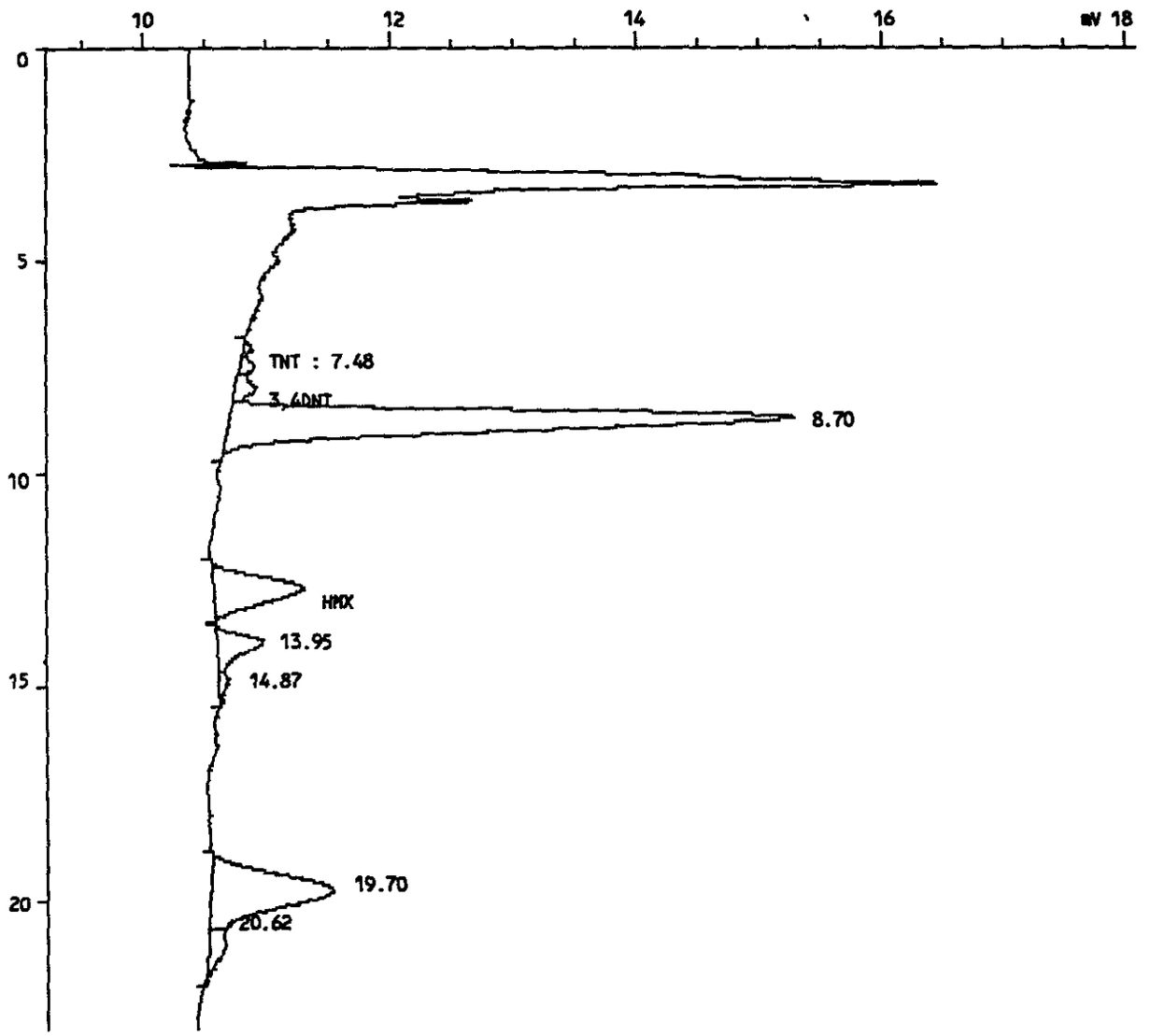
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.768	2869	21924	32527.902	HMX
2	7.008	7673	101491	119401.023	RDX
3	13.728	120	1948	1793.563	3,4DNT
Total		10662	125362	153722.484	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,5,1

Sample name.....: BIO-30%-05-A3 10X
Sample ID.....: 33847.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 06:54:57
Reported on 11-May-98 at 14:30:48



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,5,1

Acquired on 08-May-98 at 06:54:57
Modified on 11-May-82 at 14:25:06
Reported on 11-May-98 at 14:25:03

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-30%-05-A3 10X
Sample ID.....: 33847.03
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

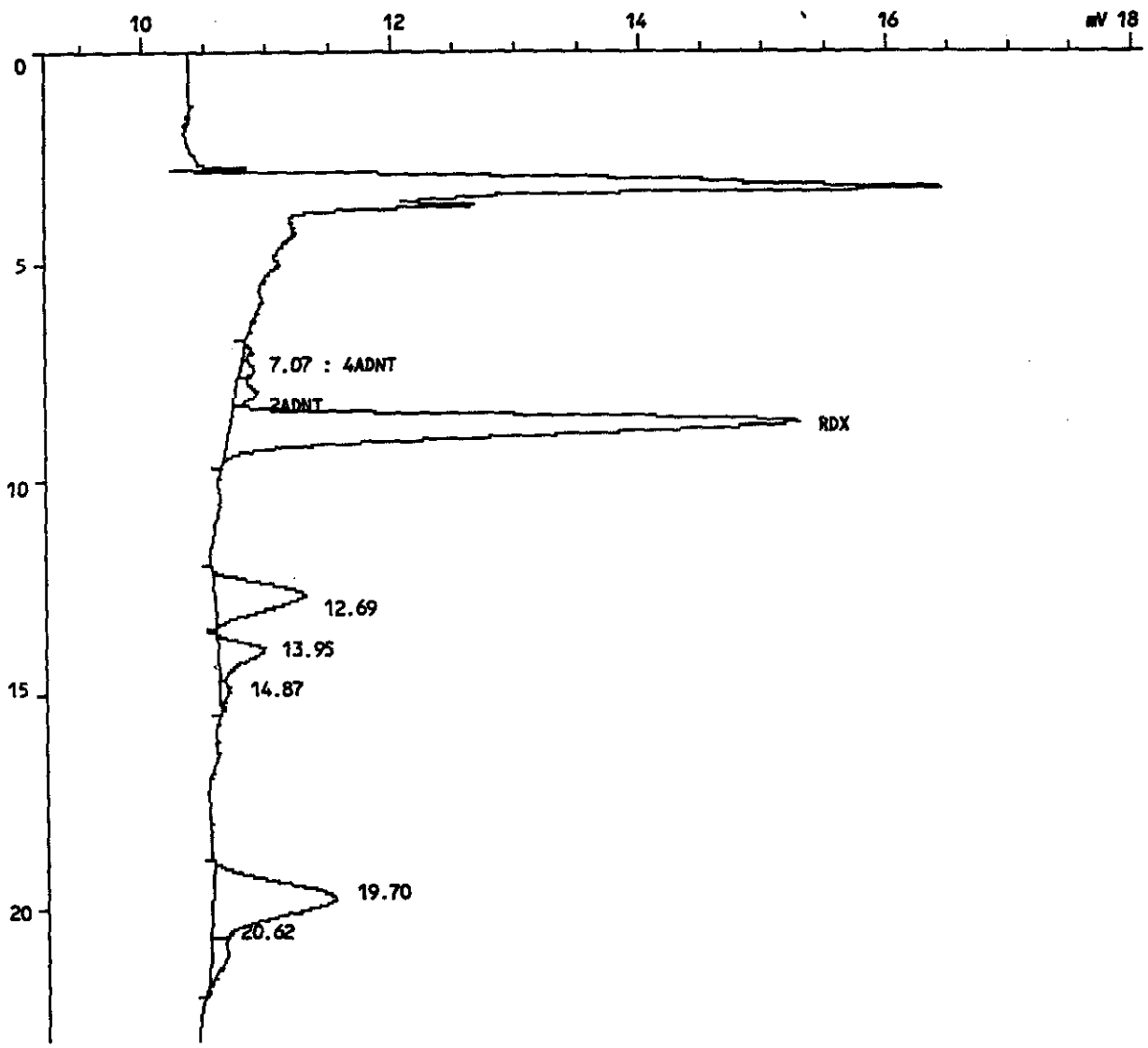
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.072	71	1030	376.744	TNT
3	8.011	177	4725	3231.932	3,4DNT
5	12.688	733	30120	26055.648	HMX
Total		980	35875	29664.324	
Residual		6323	220900	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,5,1

Sample name.....: BIO-30%-05-A3 10X
Sample ID.....: 33847.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 06:54:57
Reported on 11-May-98 at 14:59:11



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,5,1

Acquired on 08-May-98 at 06:54:57
Modified on 11-May-82 at 14:53:08
Reported on 11-May-98 at 14:53:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-30%-05-A3 10X
Sample ID.....: 33847.03
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.483	129	2379	1490.820	4ADNT
3	8.011	177	4725	1806.916	2ADNT
4	8.704	4588	143501	104364.391	RDX
Total		4894	150605	107662.125	
Residual		2409	106170	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-05-A3

Lab Name: SWL-TULSA	Contract:		
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.03
Sample Amt: 2g	% Moisture 35.43	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

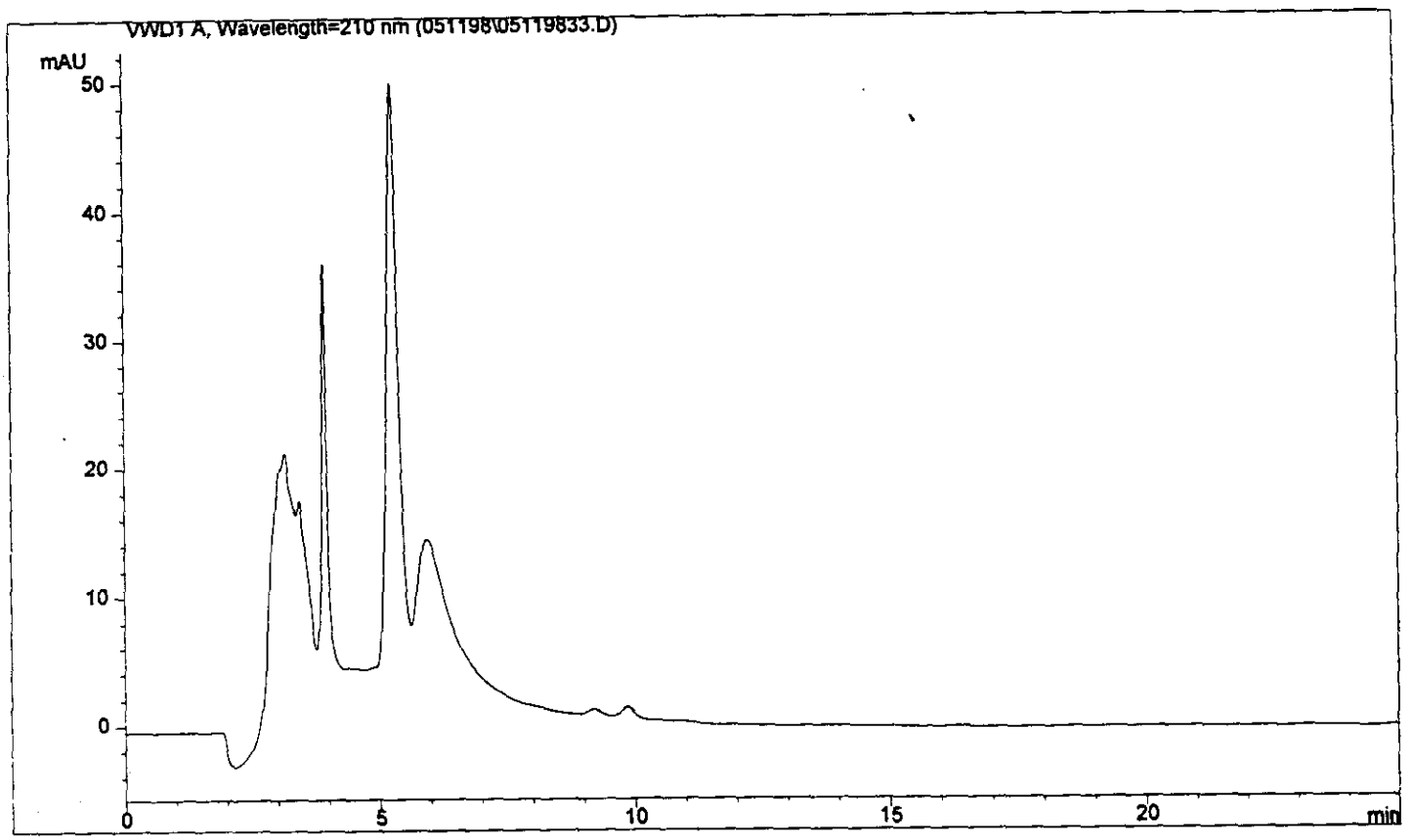
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 33
Sample Name	: 33847.03	Vial No.	: 33
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

039

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-B1
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.04

Sample Amt: 2g % Moisture 37.91 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	13200	
121-82-4	RDX	37400	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	256	J
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

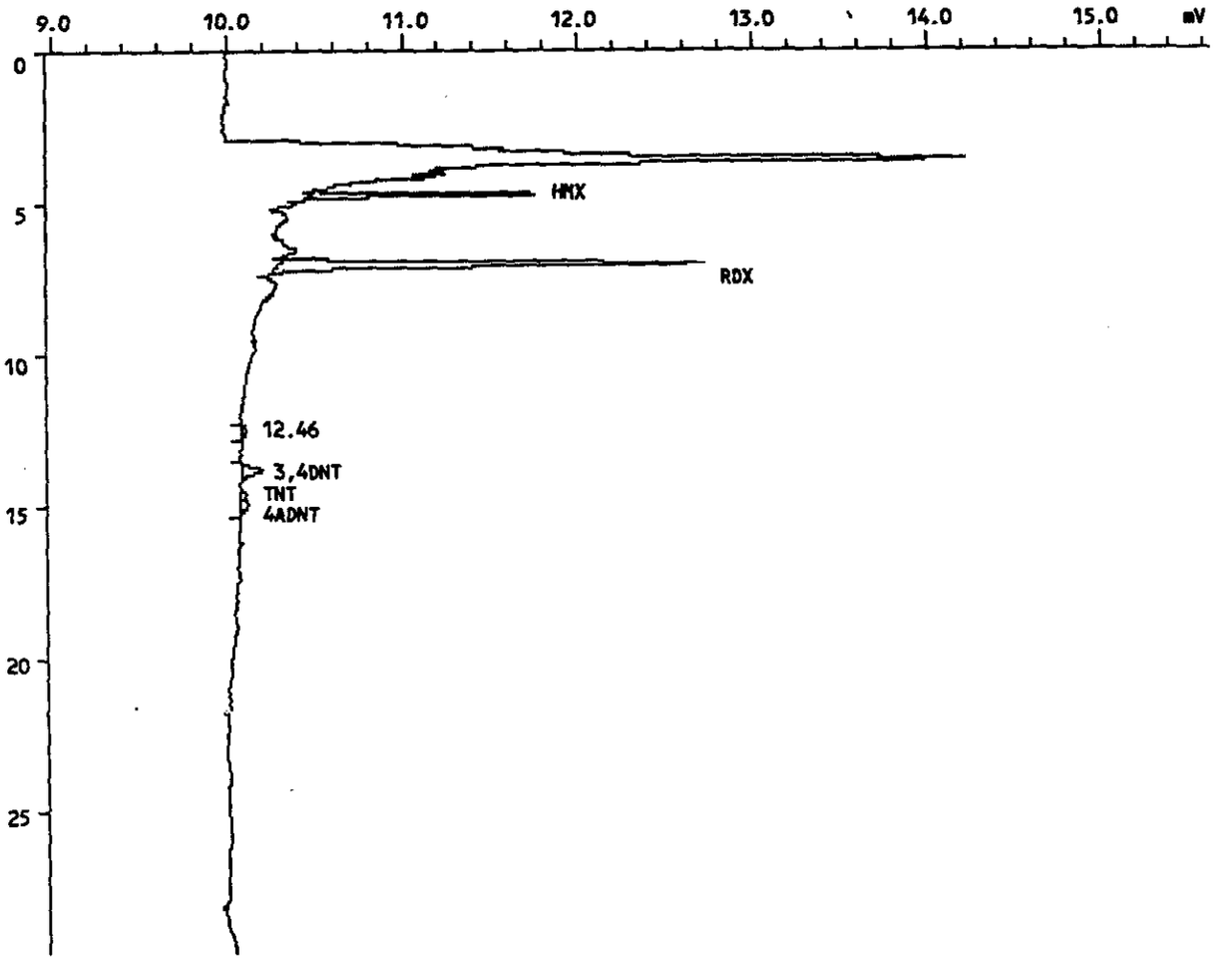
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,8,1

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 08-May-98 at 23:04:48
Reported on 11-May-98 at 11:55:53



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,8,1

Acquired on 08-May-98 at 23:04:48
Modified on 11-May-82 at 11:45:46
Reported on 11-May-98 at 11:45:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

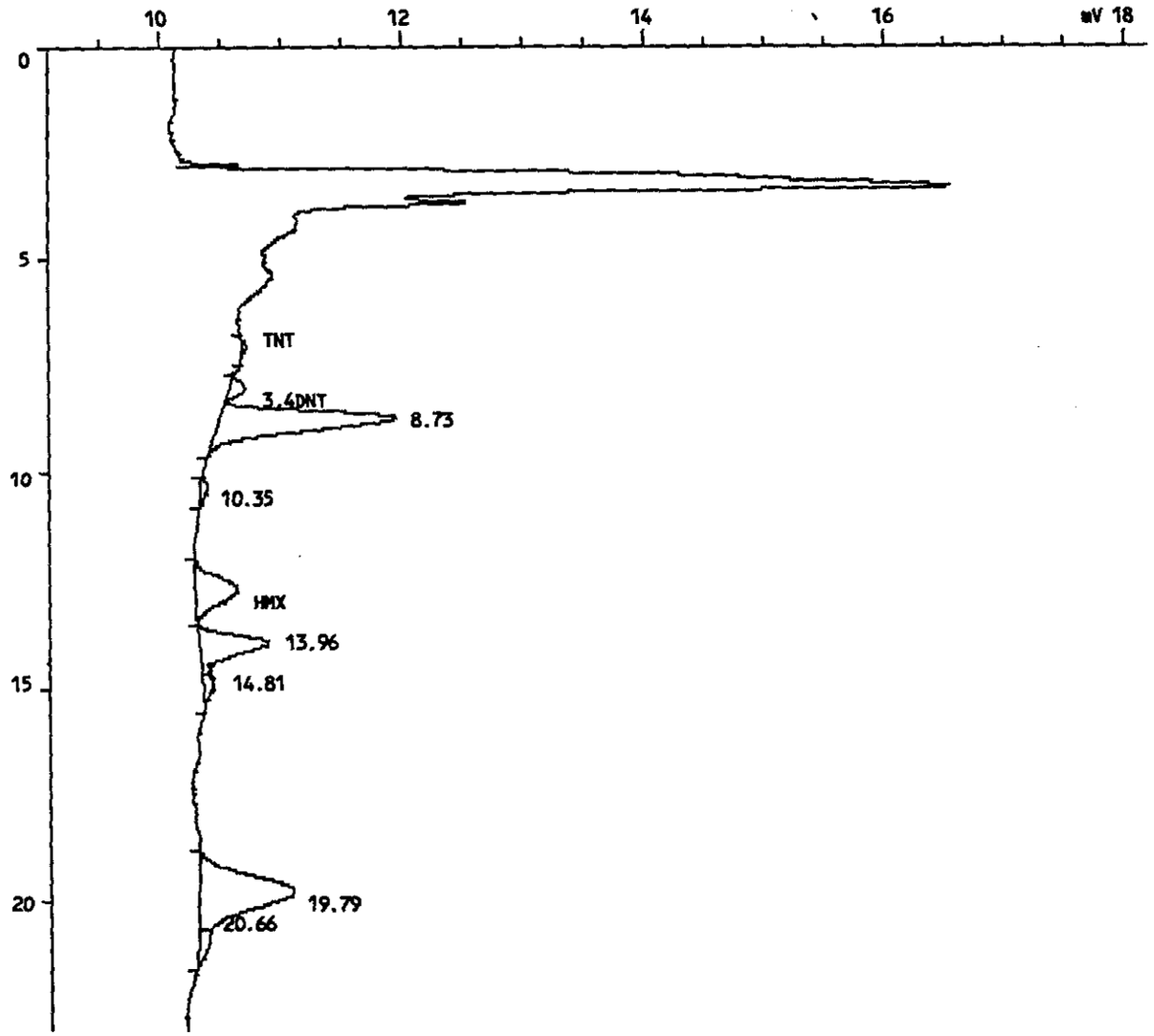
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.768	1293	8894	13195.359	HMX *
2	7.024	2439	31753	37356.672	RDX *
4	13.829	118	2099	1932.905	3,4DNT
5	14.613	37	495	255.575	TNT * J
6	14.981	46	1066	808.514	4ADNT
Total		3933	44306	53549.027	
Residual		31	586	689.947	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,6,1

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 07:39:18
Reported on 11-May-98 at 14:31:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,6,1

Acquired on 08-May-98 at 07:39:18
Modified on 11-May-82 at 14:25:20
Reported on 11-May-98 at 14:25:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

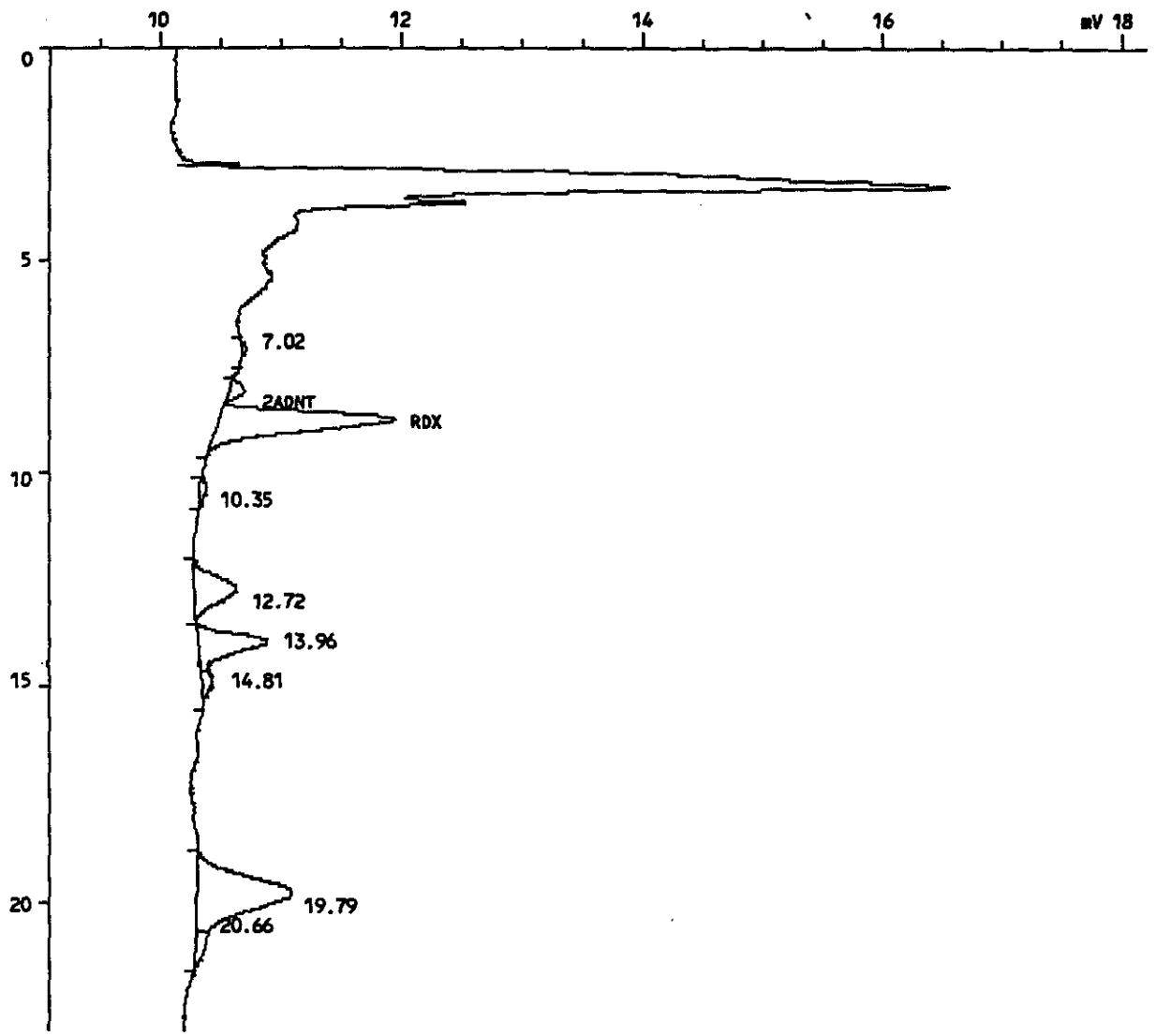
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.019	56	784	286.782	TNT
2	8.037	139	2791	1909.126	3,4DNT
5	12.720	348	14129	12222.662	HMX
Total		543	17705	14418.570	
Residual		3112	115091	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,6,1

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 07:39:18
Reported on 11-May-98 at 14:59:37



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,6,1

Acquired on 08-May-98 at 07:39:18
Modified on 11-May-82 at 14:53:22
Reported on 11-May-98 at 14:53:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B1 10X
Sample ID.....: 33847.04
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.037	139	2791	1067.358	2ADNT
3	8.731	1460	45224	32889.867	RDX
Total		1599	48015	33957.227	
Residual		2056	84781	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:			BIO-N-30%-05-B1
Lab Code: SWOK		Case No: MKF-OH		SDG:	33847
Matrix: (soil/water)	SOIL			Lab Sample ID:	33847.04
Sample Amt: 2g	% Moisture	37.91		Date Received:	05/05/98
Extraction Volume:	10ml			Date Extracted:	05/05/98
Extraction Method:	SONC			Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N			Dilution Factor:	10.00

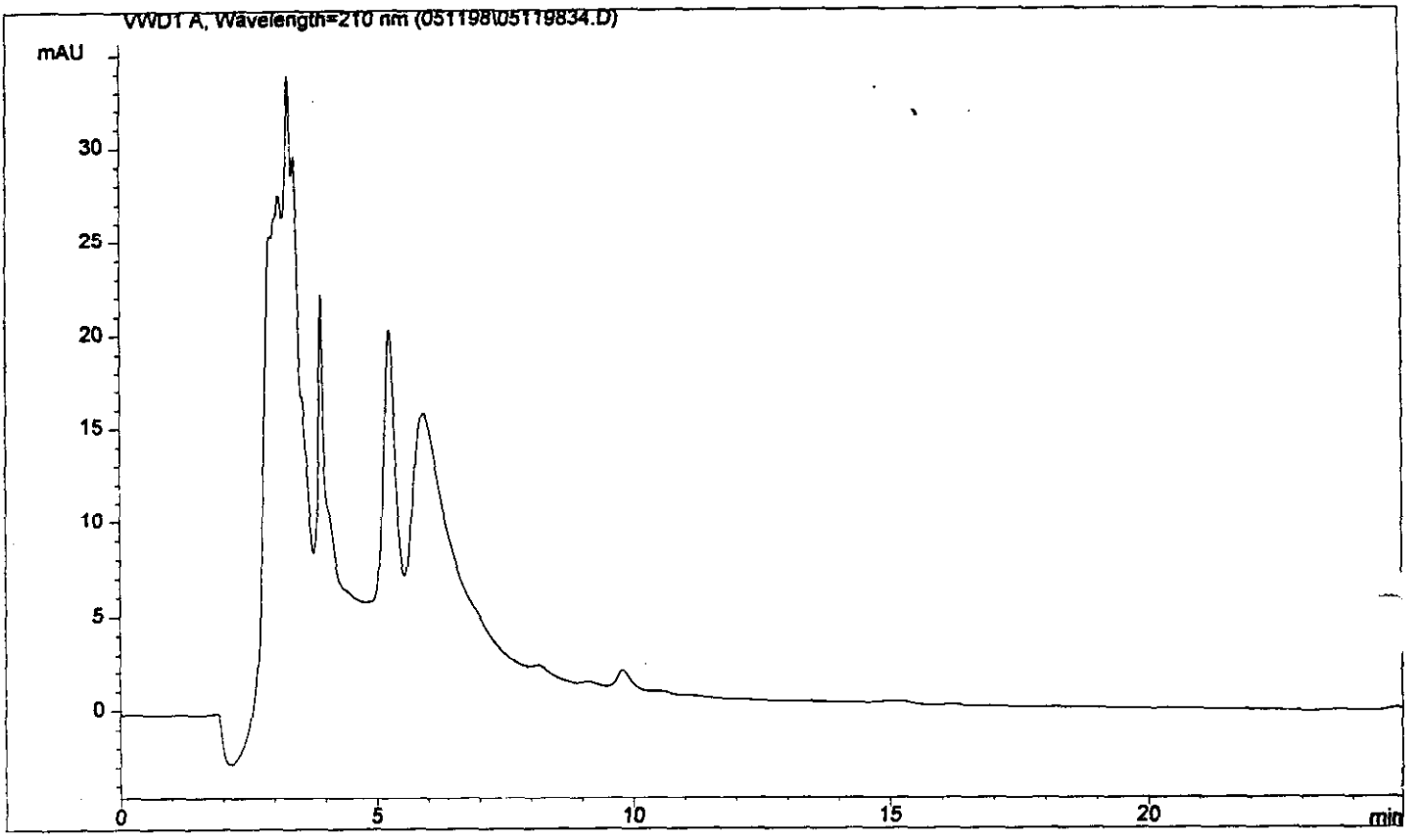
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 34
Sample Name	: 33847.04	Vial No.	: 34
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

042

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-B2
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:B&VWST-A SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.05

Sample Amt: 2g % Moisture 48.25 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/08/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	30300	
121-82-4	RDX	91600	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1270	P
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

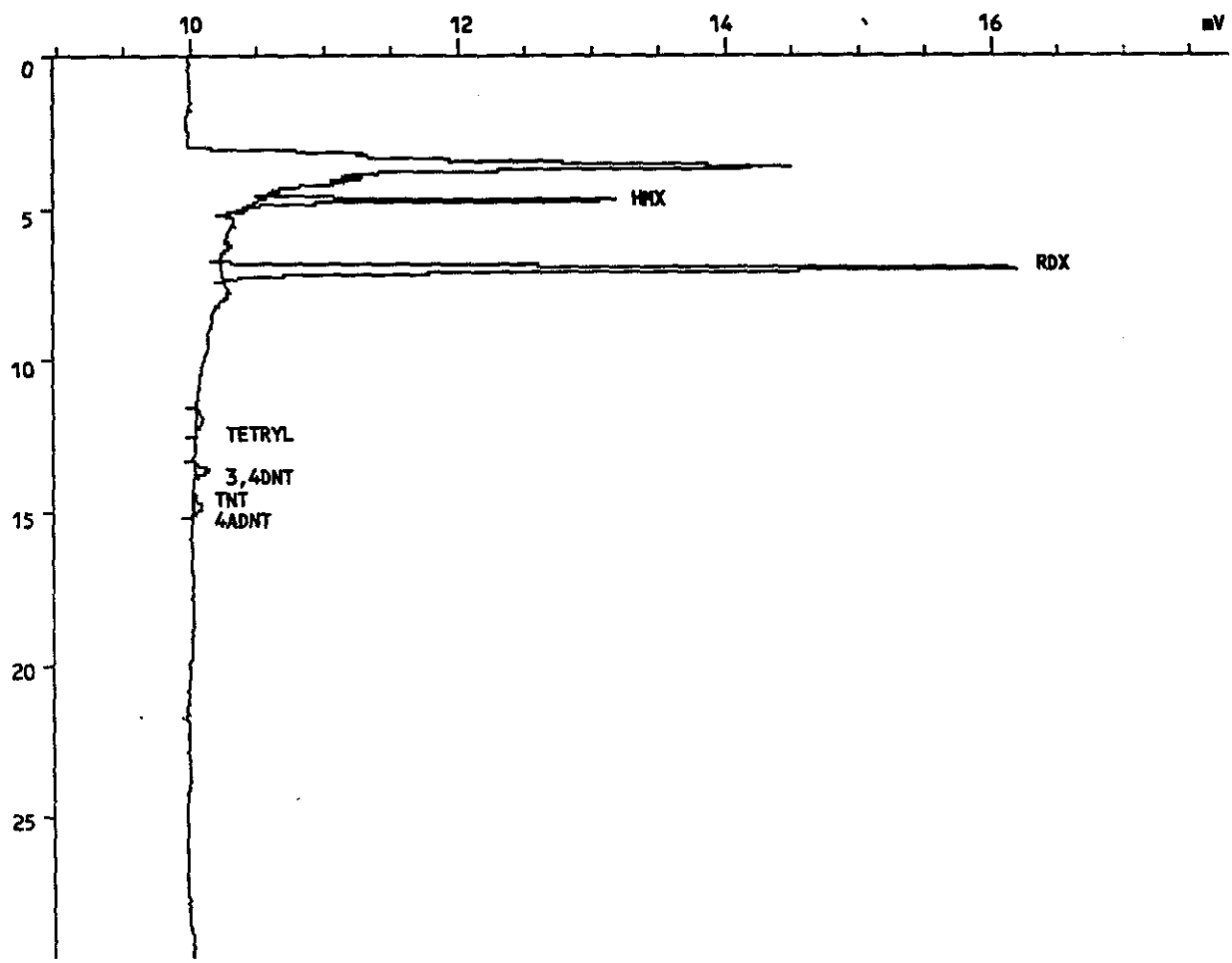
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,9,1

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 08-May-98 at 23:49:29
Reported on 11-May-98 at 11:56:27



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,9,1

Acquired on 08-May-98 at 23:49:29
Modified on 11-May-82 at 11:46:02
Reported on 11-May-98 at 11:46:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

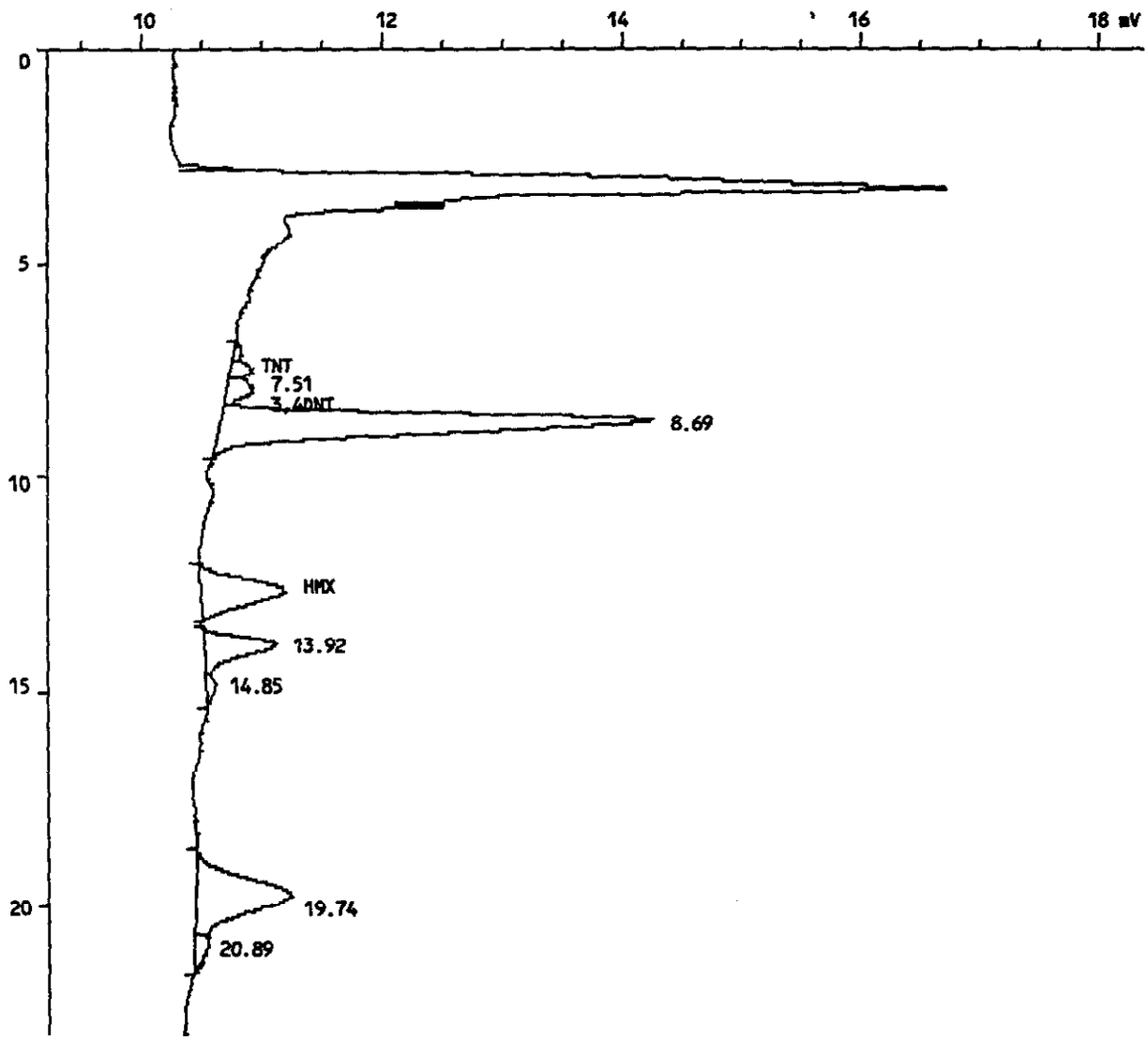
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.741	2683	20448	30338.766	HMX *
2	6.976	5946	77877	91620.117	RDX *
3	12.000	54	1413	1430.565	TETRYL
4	13.648	111	1871	1723.280	3,4DNT
5	14.443	22	282	145.503	TNT
6	14.821	81	1677	1272.743	4ADNT *
Total		8896	103569	126530.969	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,7,1

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 08:23:39
Reported on 11-May-98 at 14:31:51



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,7,1

Acquired on 08-May-98 at 08:23:39
Modified on 11-May-82 at 14:25:36
Reported on 11-May-98 at 14:25:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

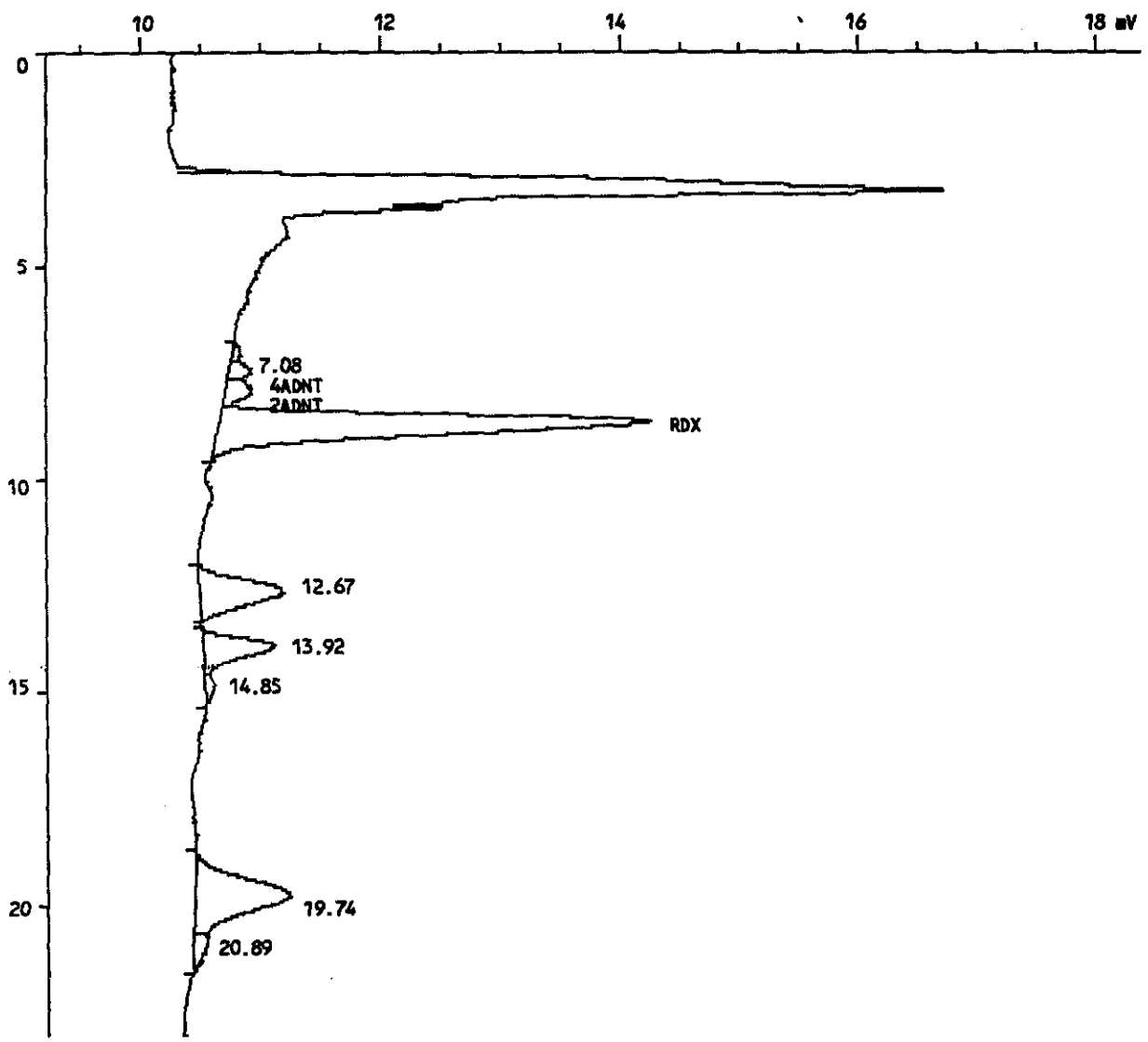
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.083	77	1283	469.154	TNT
3	7.973	223	6318	4321.163	3,4DNT
5	12.667	695	27905	24138.896	HMX
Total		995	35505	28929.213	
Residual		5415	184924	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,7,1

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 08:23:39
Reported on 11-May-98 at 15:00:03



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,7,1

Acquired on 08-May-98 at 08:23:39
Modified on 11-May-82 at 14:53:36
Reported on 11-May-98 at 14:53:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B2 10X
Sample ID.....: 33847.05
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).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.515	192	3634	2277.047	4ADNT
3	7.973	223	6318	2415.885	2ADNT
4	8.688	3602	111444	81050.352	RDX
Total		4017	121396	85743.281	
Residual		2392	99033	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-B2
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.05
Sample Amt: 2g	% Moisture 48.25	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

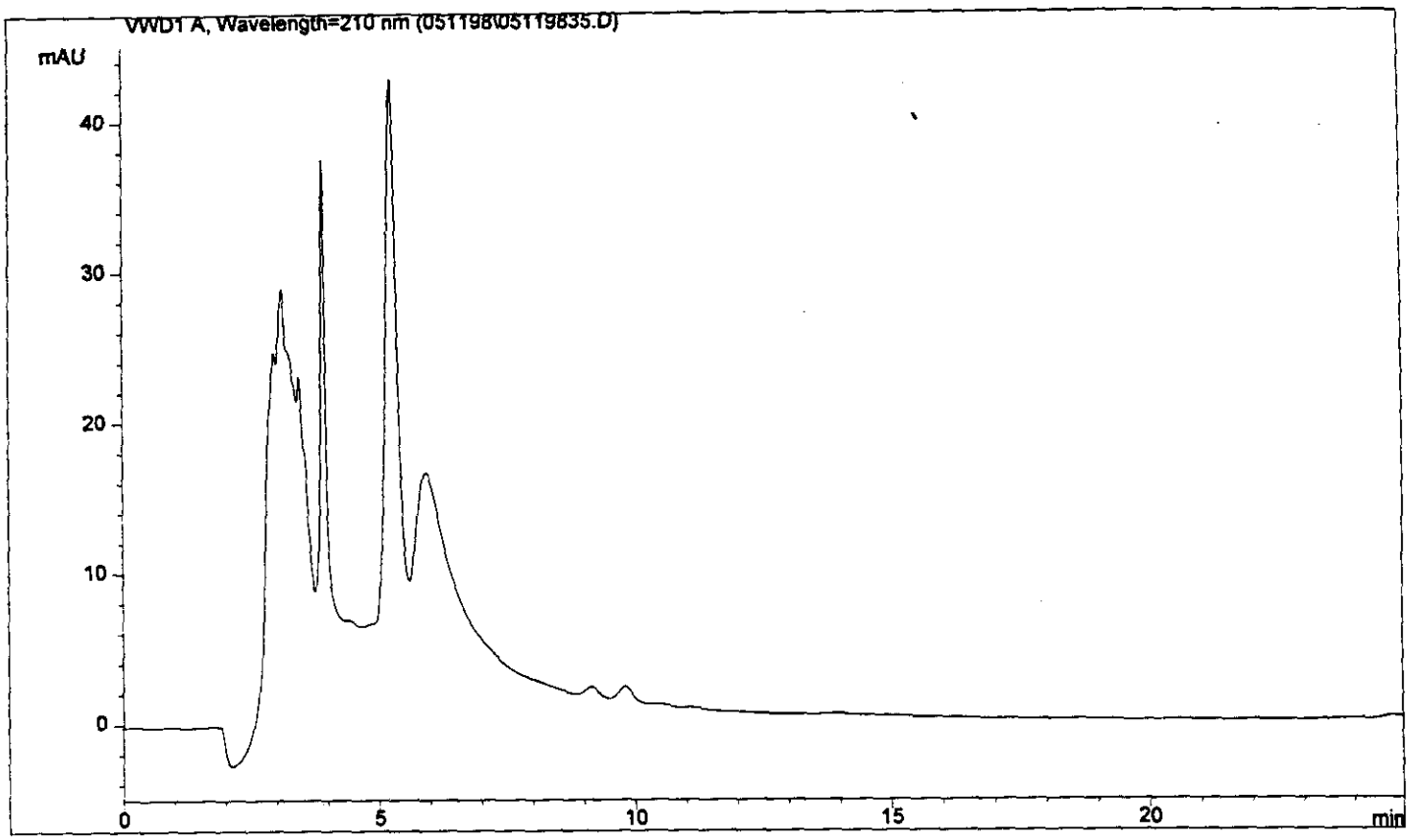
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 35
Sample Name	: 33847.05	Vial No.	: 35
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

057

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-B3
10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.06

Sample Amt: 2g % Moisture 34.02 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	23500	
121-82-4	RDX	96700	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	416	J
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

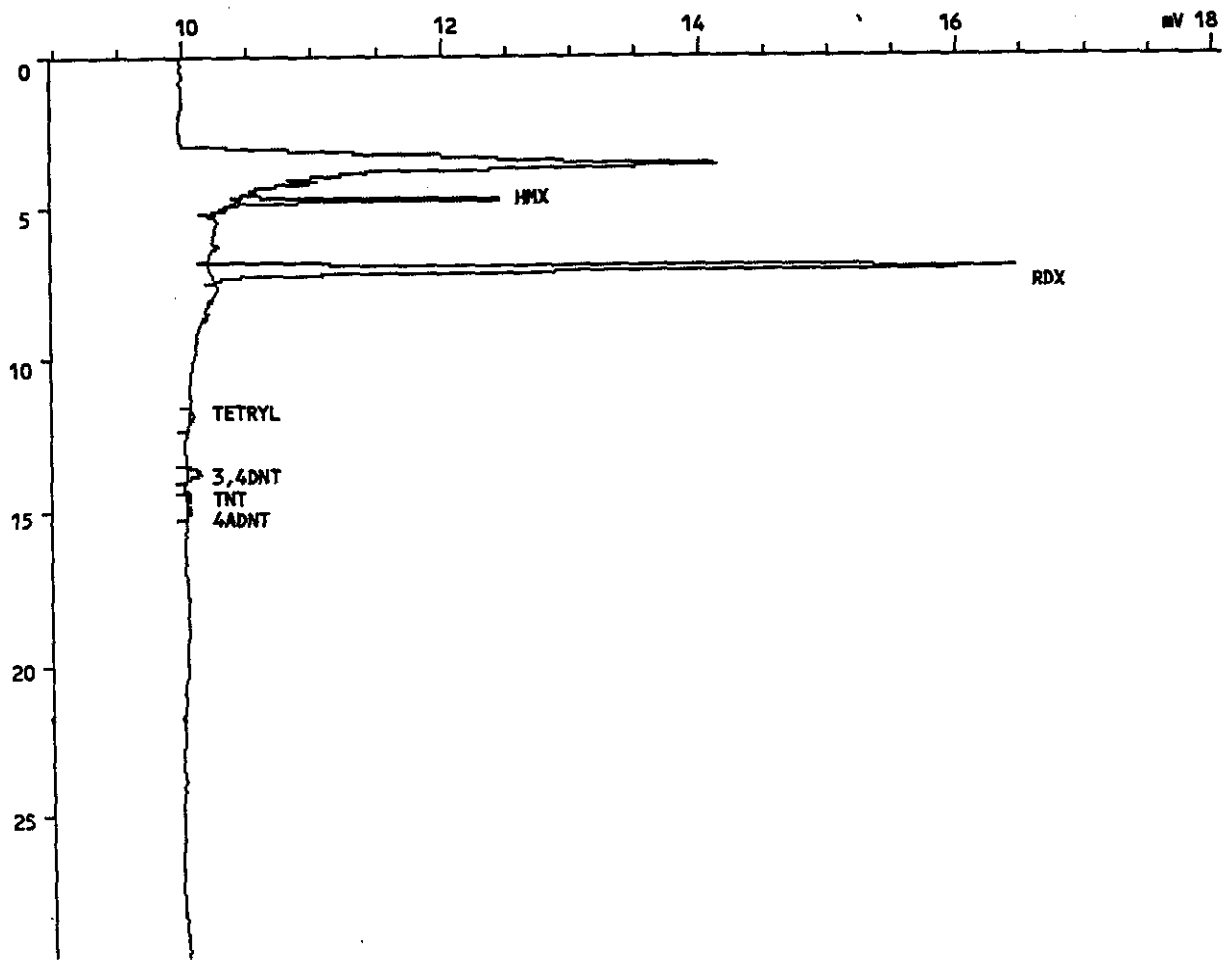
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,10,1

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 00:34:11
Reported on 11-May-98 at 11:56:54



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,10,1

Acquired on 09-May-98 at 00:34:11
Modified on 11-May-82 at 11:46:18
Reported on 11-May-98 at 11:46:17

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

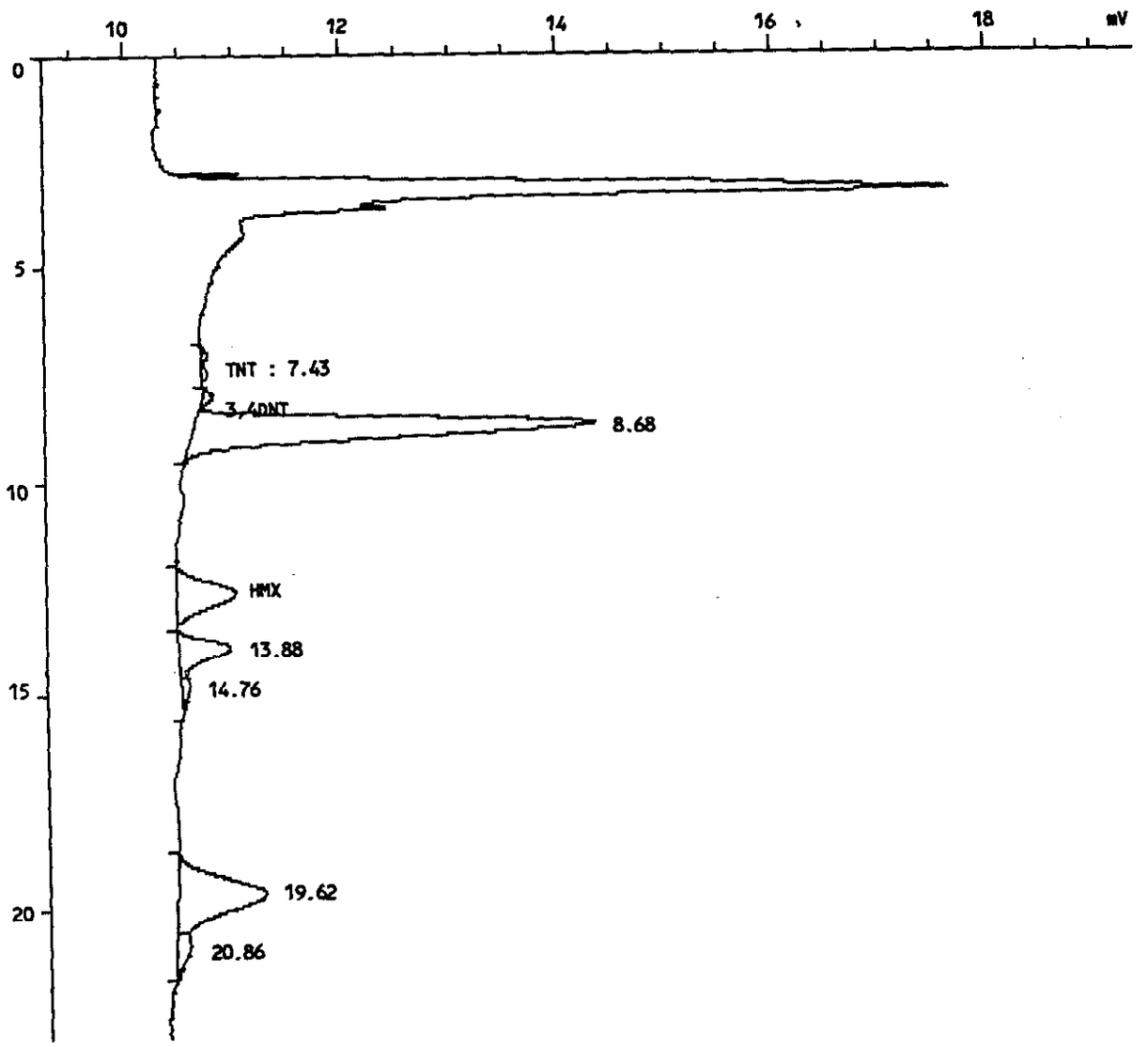
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.757	2056	15844	23507.035	HMX*
2	7.013	6235	82236	96748.820	RDX *
3	11.941	38	814	823.810	TETRYL
4	13.755	115	2077	1912.324	3,4DNT
5	14.496	31	426	220.133	TNT
6	14.949	31	548	415.566	4ADNT *
Total		8507	101945	123627.703	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,8,1

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 09:08:00
Reported on 11-May-98 at 14:32:42



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,8,1

Acquired on 08-May-98 at 09:08:00
Modified on 11-May-82 at 14:25:50
Reported on 11-May-98 at 14:25:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

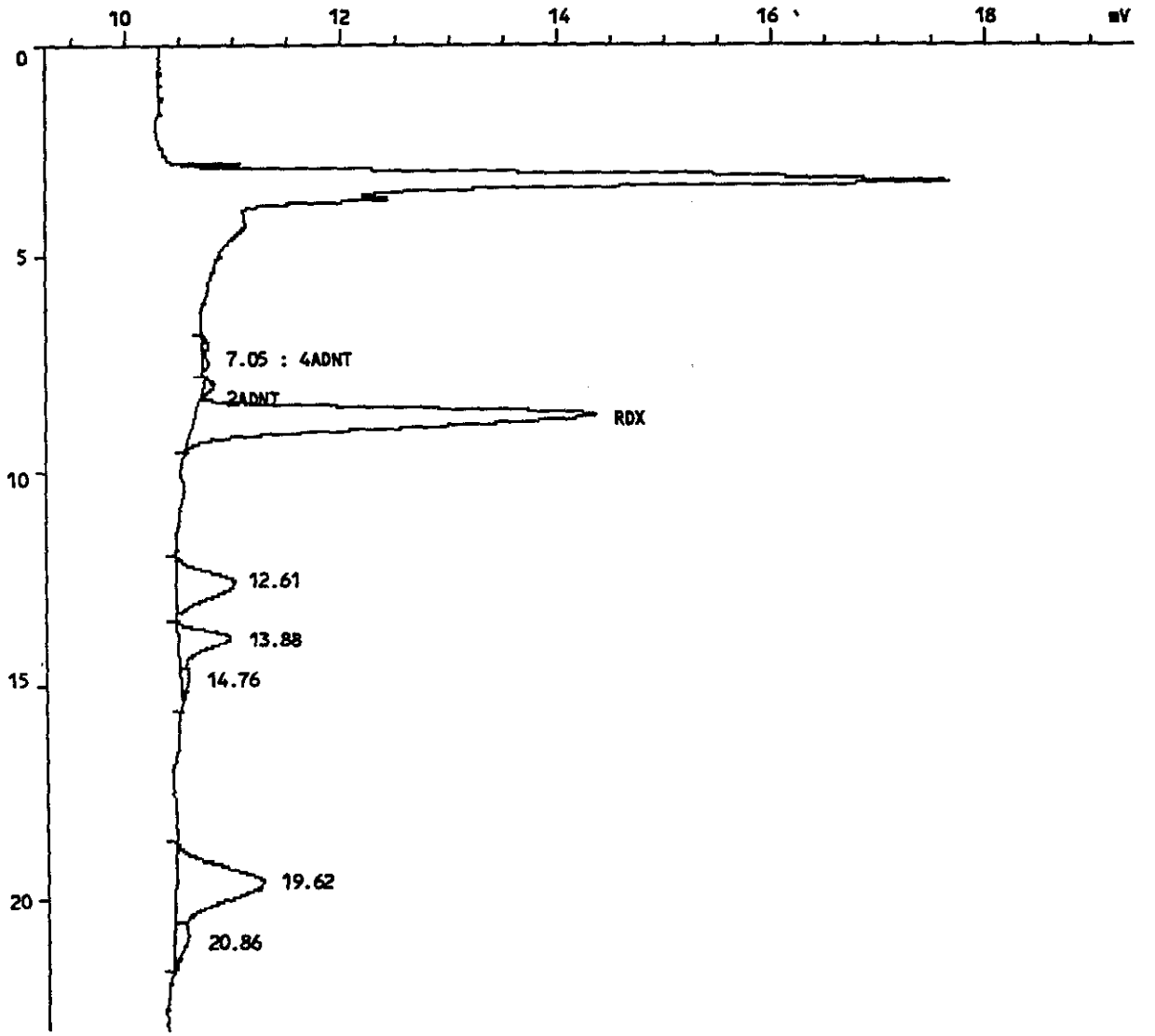
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	7.051	68	959	350.737	TNT
3	8.016	104	1772	1212.010	3,4DNT
5	12.613	548	22797	19720.676	HMX
Total		721	25528	21283.422	
Residual		5307	184551	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,8,1

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 09:08:00
Reported on 11-May-98 at 15:00:28



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,8,1

Acquired on 08-May-98 at 09:08:00
Modified on 11-May-82 at 14:53:50
Reported on 11-May-98 at 14:53:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-B3 10X
Sample ID.....: 33847.06
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
2	7.429	55	825	516.980	4ADNT
3	8.016	104	1772	677.613	2ADNT
4	8.683	3717	114385	83188.891	RDX
Total		3877	116982	84383.484	
Residual		2152	93097	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-B3
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.06
Sample Amt: 2g	% Moisture 34.02	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

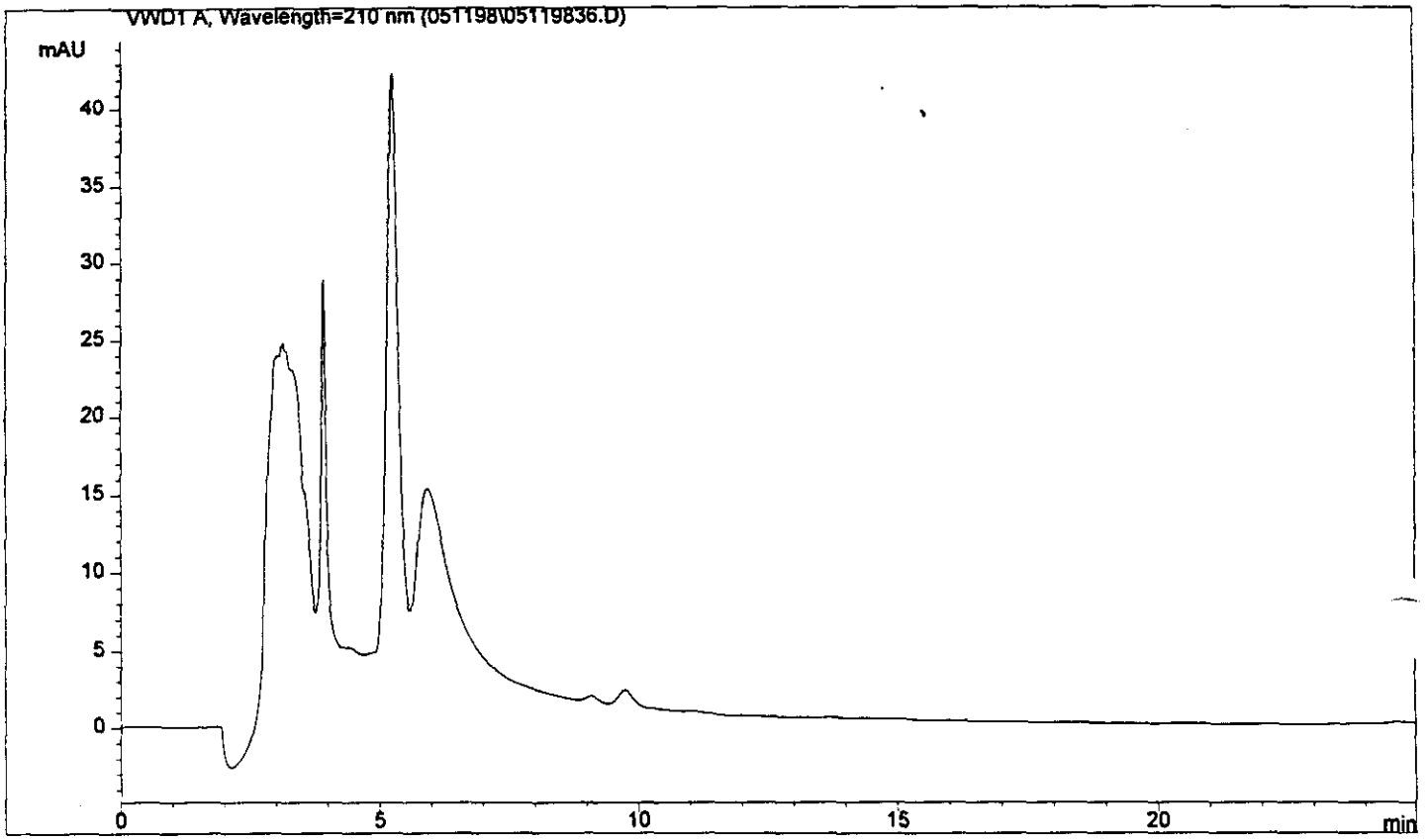
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 36
Sample Name	: 33847.06	Vial No.	: 36
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-C1
10X

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.07

Sample Amt: 2g % Moisture 35.51 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	14100	
121-82-4	RDX	18800	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	628	JP
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

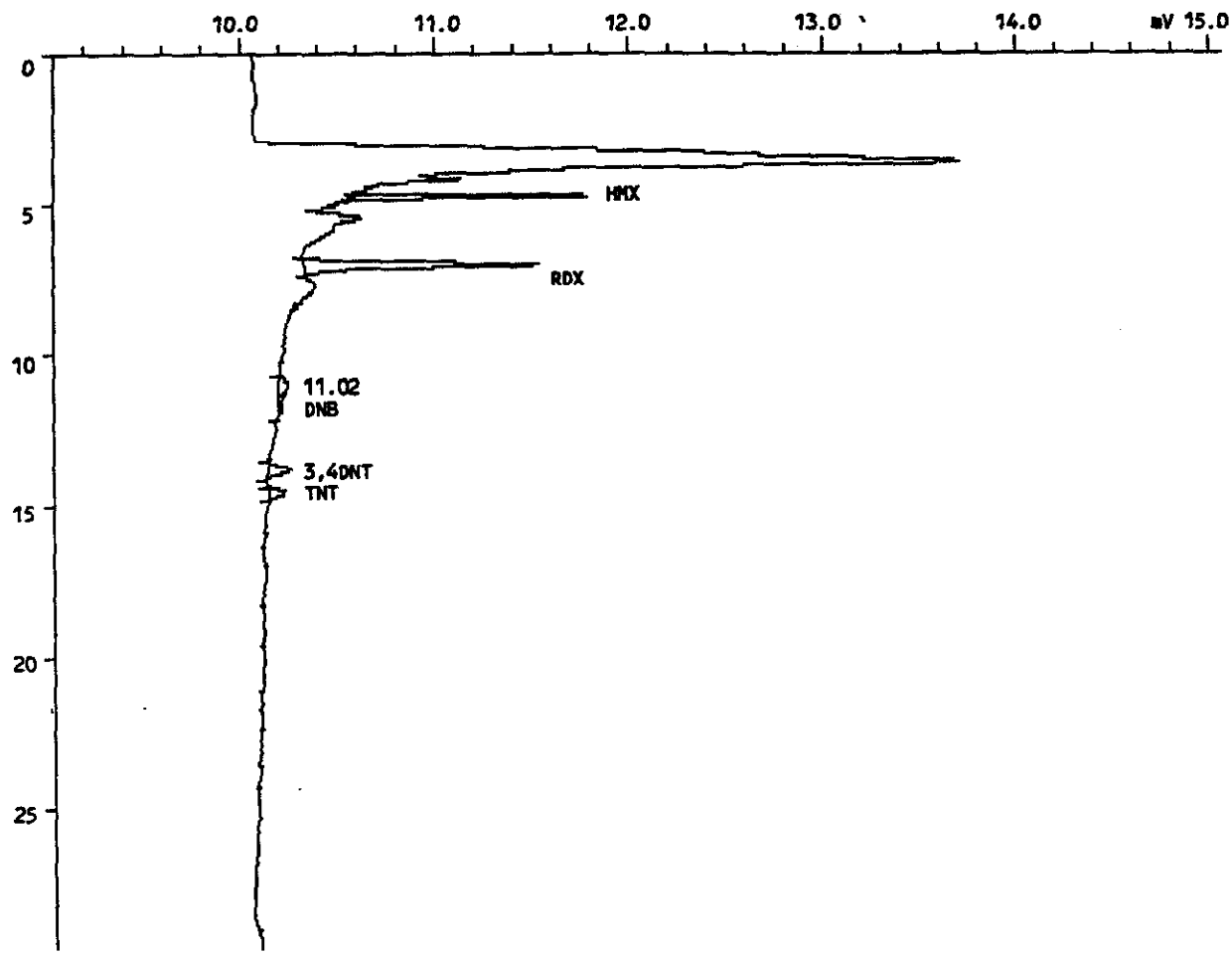
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,13,1

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 02:48:18
Reported on 11-May-98 at 11:58:13



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,13,1

Acquired on 09-May-98 at 02:48:18
Modified on 11-May-82 at 11:46:36
Reported on 11-May-98 at 11:46:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

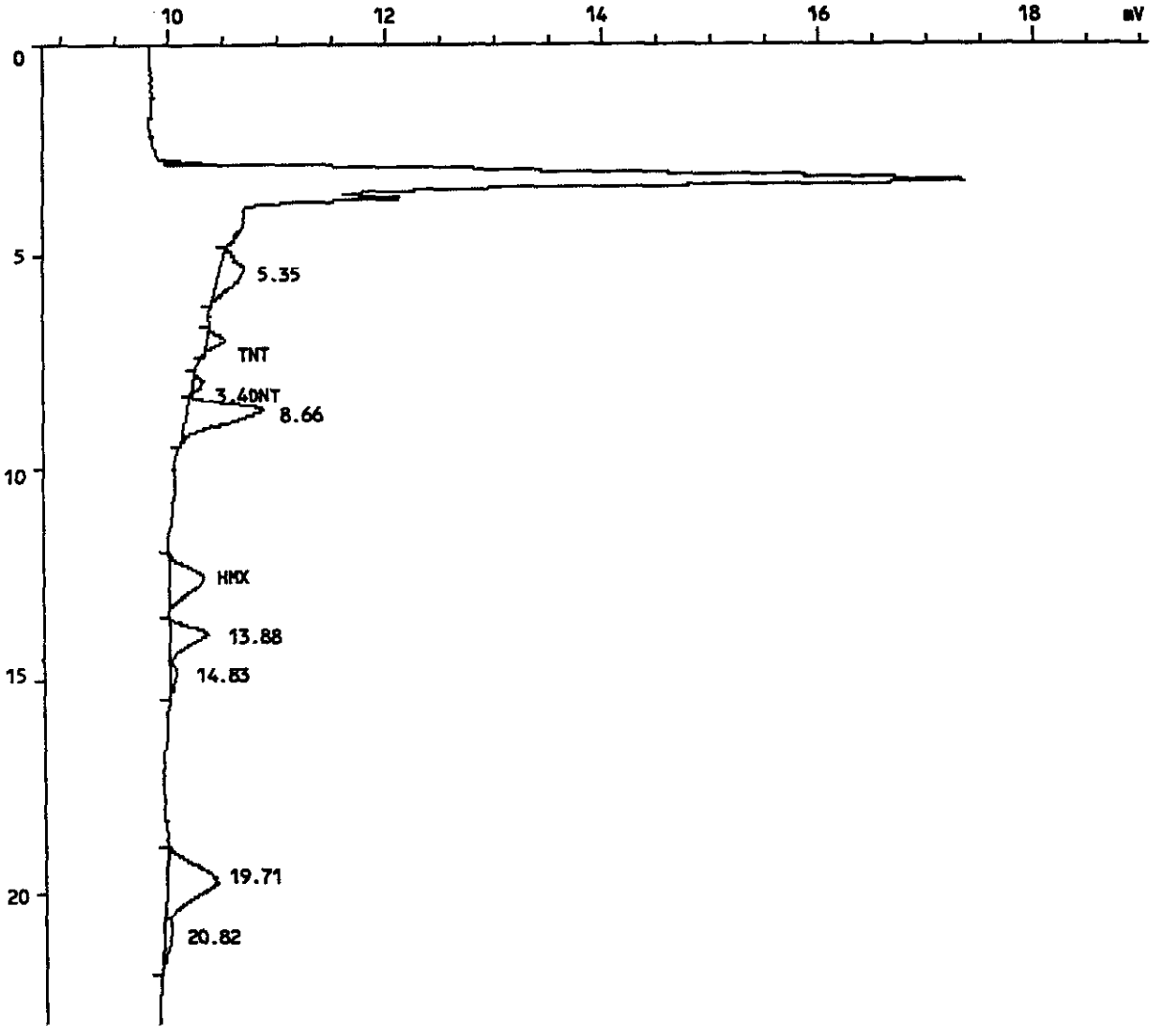
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.773	1234	9524	14129.949	HMX *
2	7.040	1204	15948	18762.100	RDX *
4	11.355	28	726	304.614	DNB
5	13.808	114	1855	1708.404	3,4DNT
6	14.565	79	1216	628.115	TNT * JP
Total		2659	29269	35533.180	
Residual		51	1287	1513.953	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,9,1

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 09:52:21
Reported on 11-May-98 at 14:33:09



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,9,1

Acquired on 08-May-98 at 09:52:21
Modified on 11-May-82 at 14:26:04
Reported on 11-May-98 at 14:26:01

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

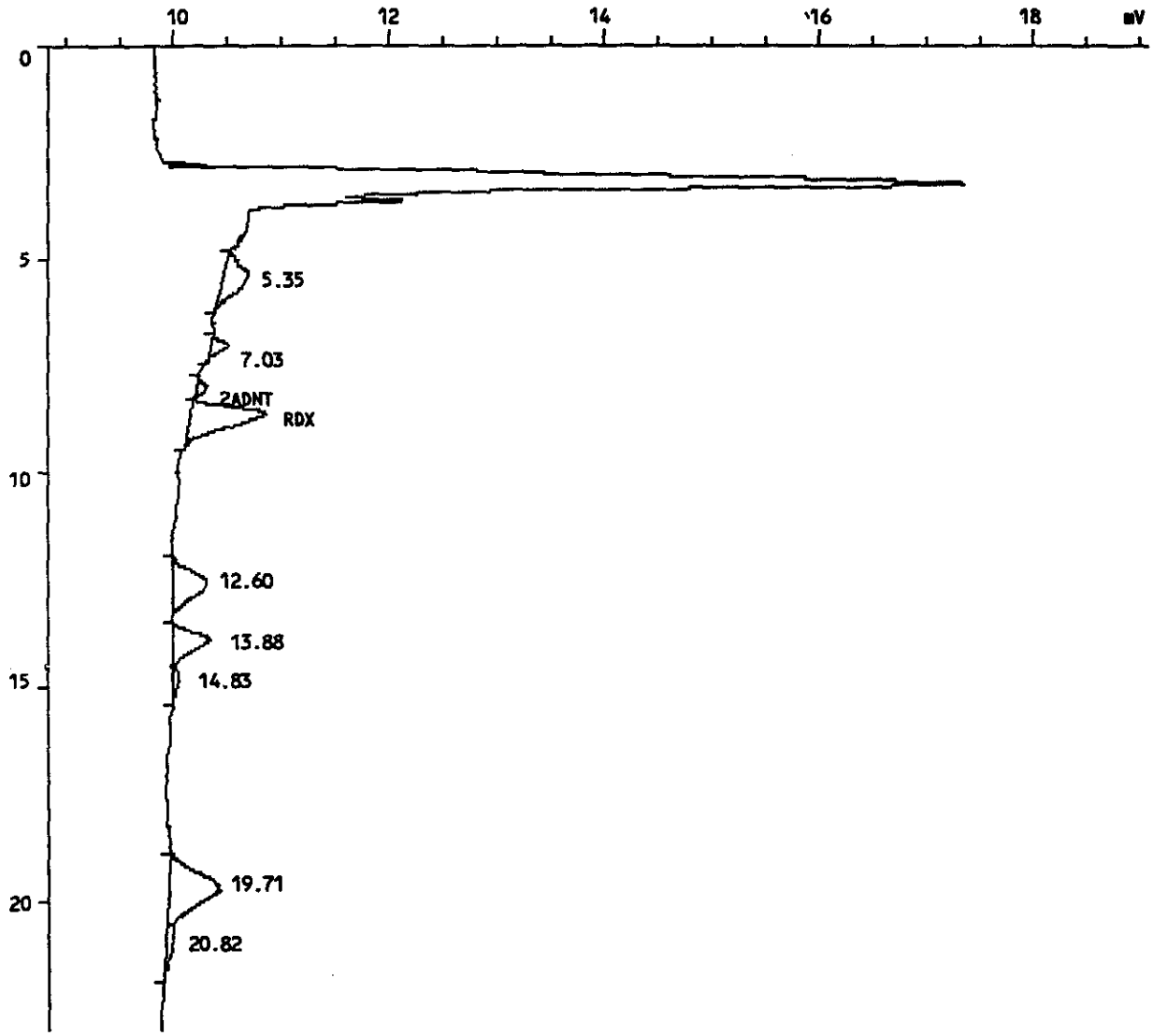
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
2	7.029	170	2940	1075.420	TNT
3	8.027	91	1475	1009.037	3,4DNT
5	12.597	326	13348	11546.859	HMX
Total		586	17764	13631.316	
Residual		1872	71284	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,9,1

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 09:52:21
Reported on 11-May-98 at 15:00:53



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,9,1

Acquired on 08-May-98 at 09:52:21
Modified on 11-May-82 at 14:54:06
Reported on 11-May-98 at 14:54:02

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C1 10X
Sample ID.....: 33847.07
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
3	8.027	91	1475	564.134	2ADNT
4	8.661	697	21250	15454.579	RDX
Total		787	22725	16018.714	
Residual		1671	66322	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

				EPA SAMPLE NO:	
Lab Name: SWL-TULSA		Contract:		BIO-N-30%-05-C1	
Lab Code: SWOK		Case No: MKF-OH	SDG:	33847	
Matrix: (soil/water)	SOIL		Lab Sample ID:	33847.07	
Sample Amt: 2g	% Moisture	35.51	Date Received:	05/05/98	
Extraction Volume:	10ml		Date Extracted:	05/05/98	
Extraction Method:	SONC		Date Analyzed:	05/09/98	
GPC Cleanup: (Y/N)	N		Dilution Factor:	10.00	

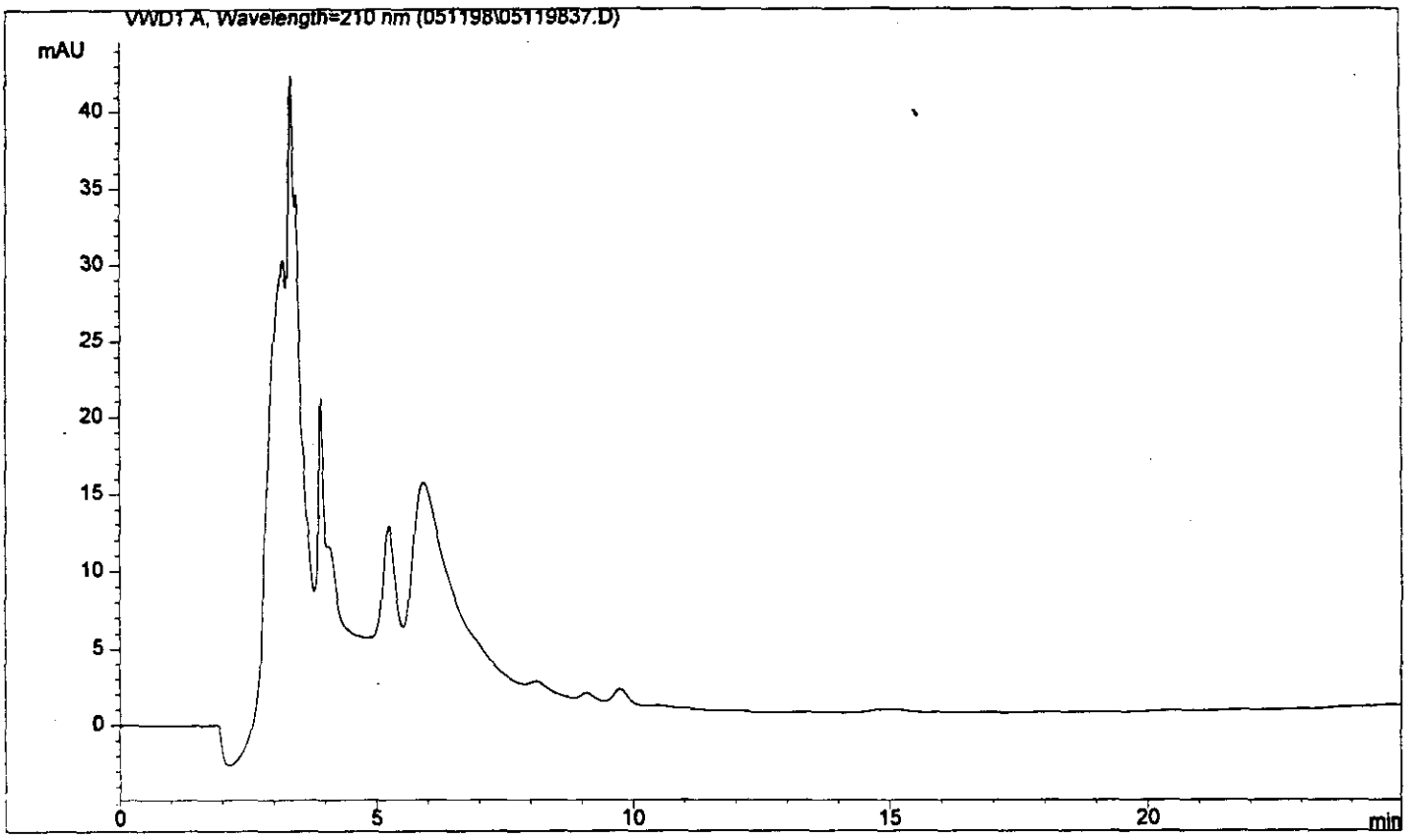
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/Kg	Q
75-11-5	PETN		1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 37
Sample Name	: 33847.07	Vial No.	: 37
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

075

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-C2
10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.08

Sample Amt: 2g % Moisture 56.99 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	32300	
121-82-4	RDX	87200	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	19000	
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

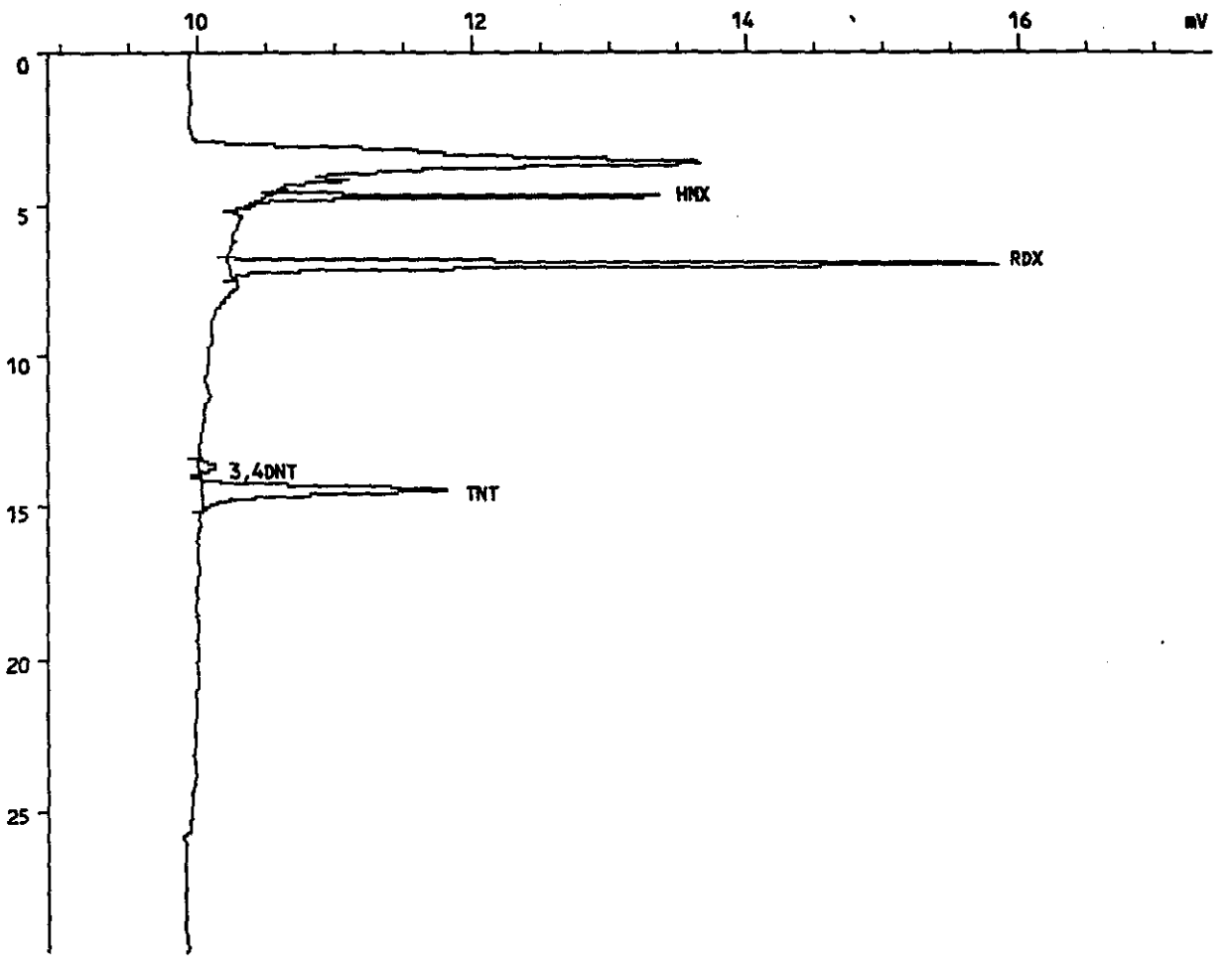
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,14,1

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 03:33:01
Reported on 11-May-98 at 11:58:38



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,14,1

Acquired on 09-May-98 at 03:33:01
Modified on 11-May-82 at 11:46:52
Reported on 11-May-98 at 11:46:49

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

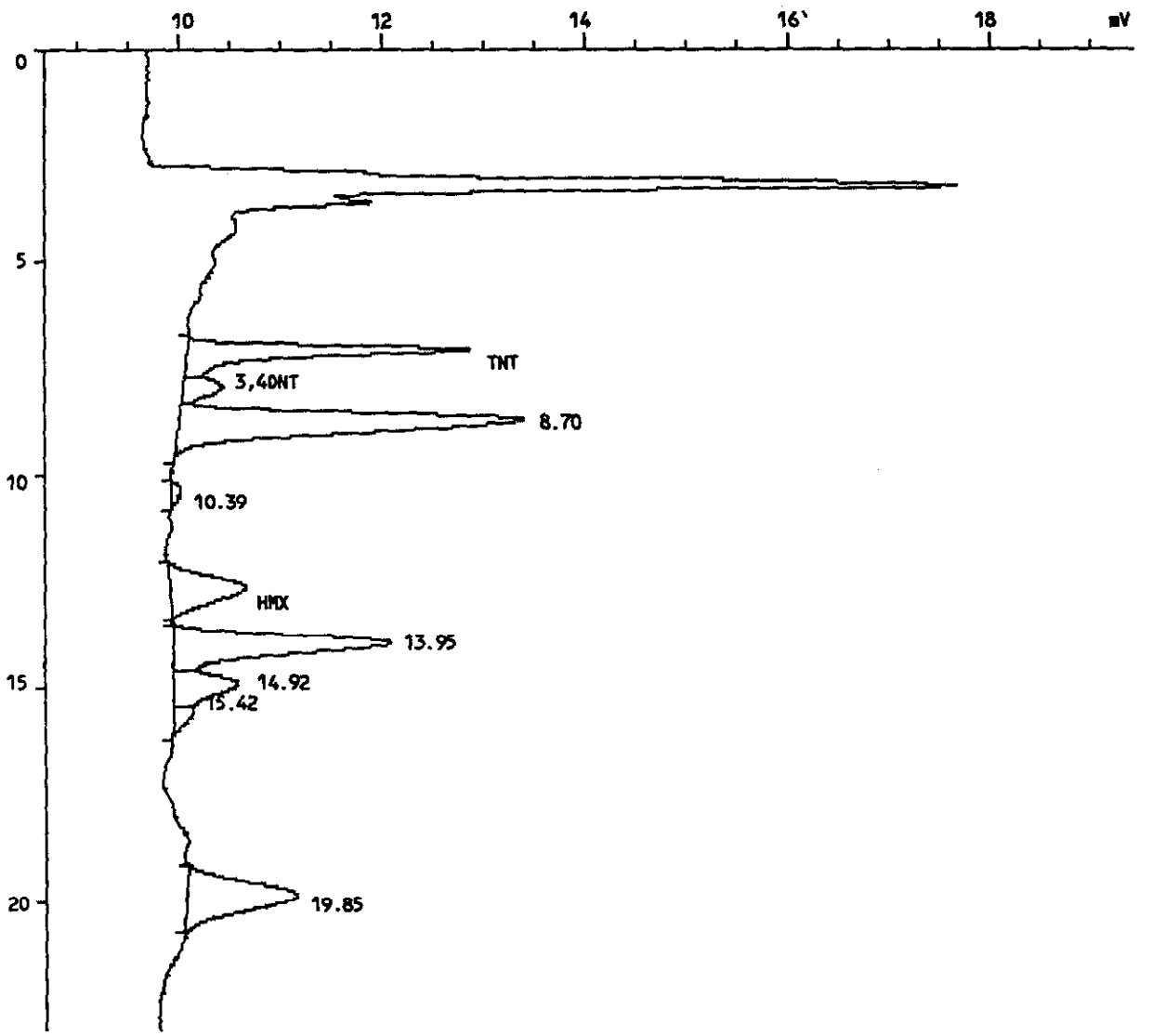
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.747	2880	21760	32285.330	HMX *
2	6.987	5602	74152	87237.117	RDX *
3	13.691	128	2262	2082.794	3,4DNT
4	14.459	1790	36706	18959.887	TNT *
Total		10401	134880	140565.125	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,12,1

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 12:05:25
Reported on 11-May-98 at 14:33:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,12,1

Acquired on 08-May-98 at 12:05:25
Modified on 11-May-82 at 14:26:20
Reported on 11-May-98 at 14:26:16

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 2

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

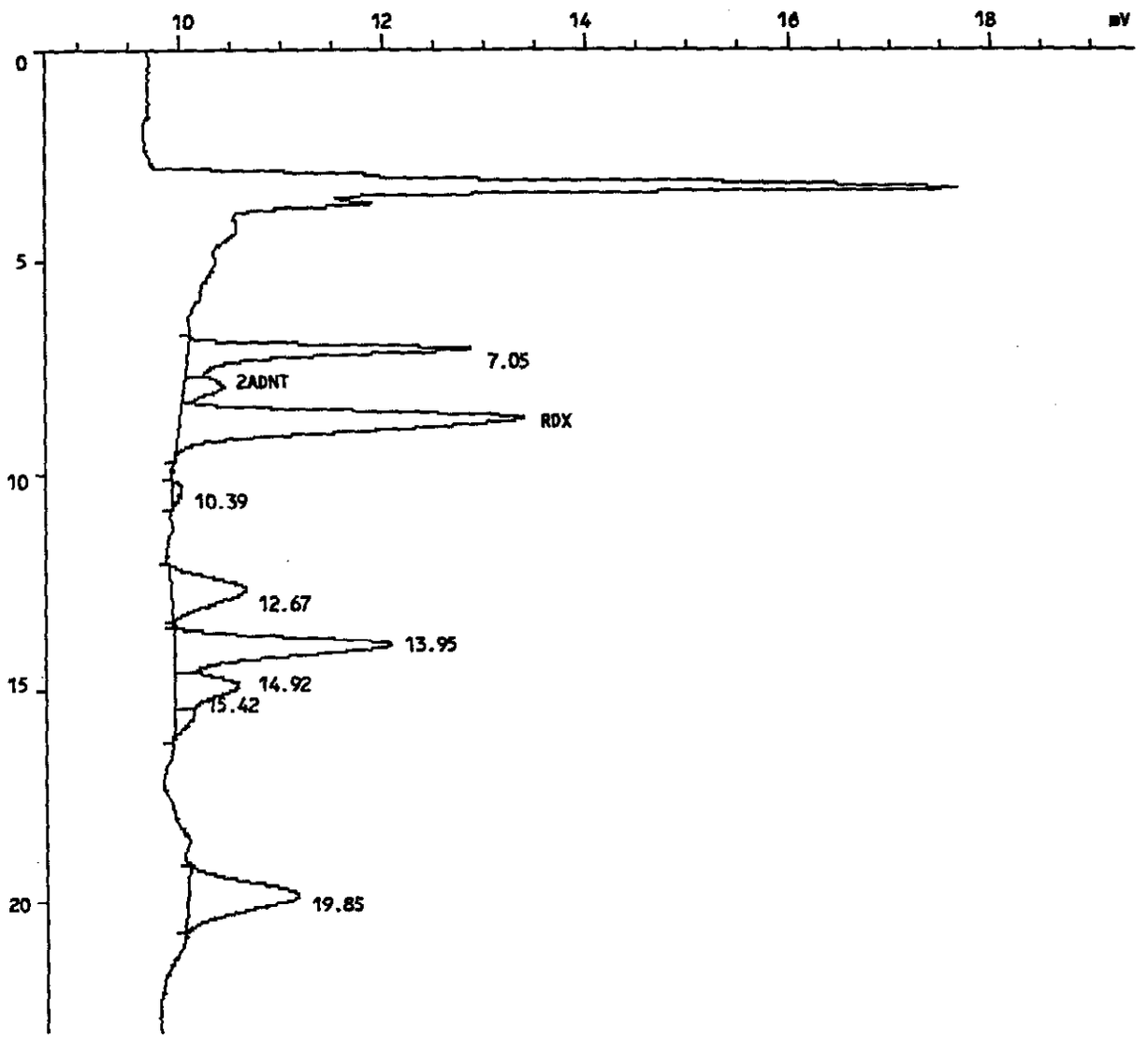
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.051	2774	51741	18925.186	TNT
2	7.947	394	10234	7000.030	3,4DNT
5	12.672	746	29869	25838.293	HMX
Total		3913	91845	51763.508	
Residual		7544	250867	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,12,1

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 12:05:25
Reported on 11-May-98 at 15:01:23



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,12,1

Acquired on 08-May-98 at 12:05:25
Modified on 11-May-82 at 14:54:20
Reported on 11-May-98 at 14:54:16

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2 10X
Sample ID.....: 33847.08
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 2

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.947	394	10234	3913.592	2ADNT
3	8.704	3373	105280	76567.234	RDX
Total		3767	115514	80480.828	
Residual		7690	227198	0.000	

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-05-C2

Lab Name: SWL-TULSA	Contract:		
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.08
Sample Amt: 2g	% Moisture 56.99	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

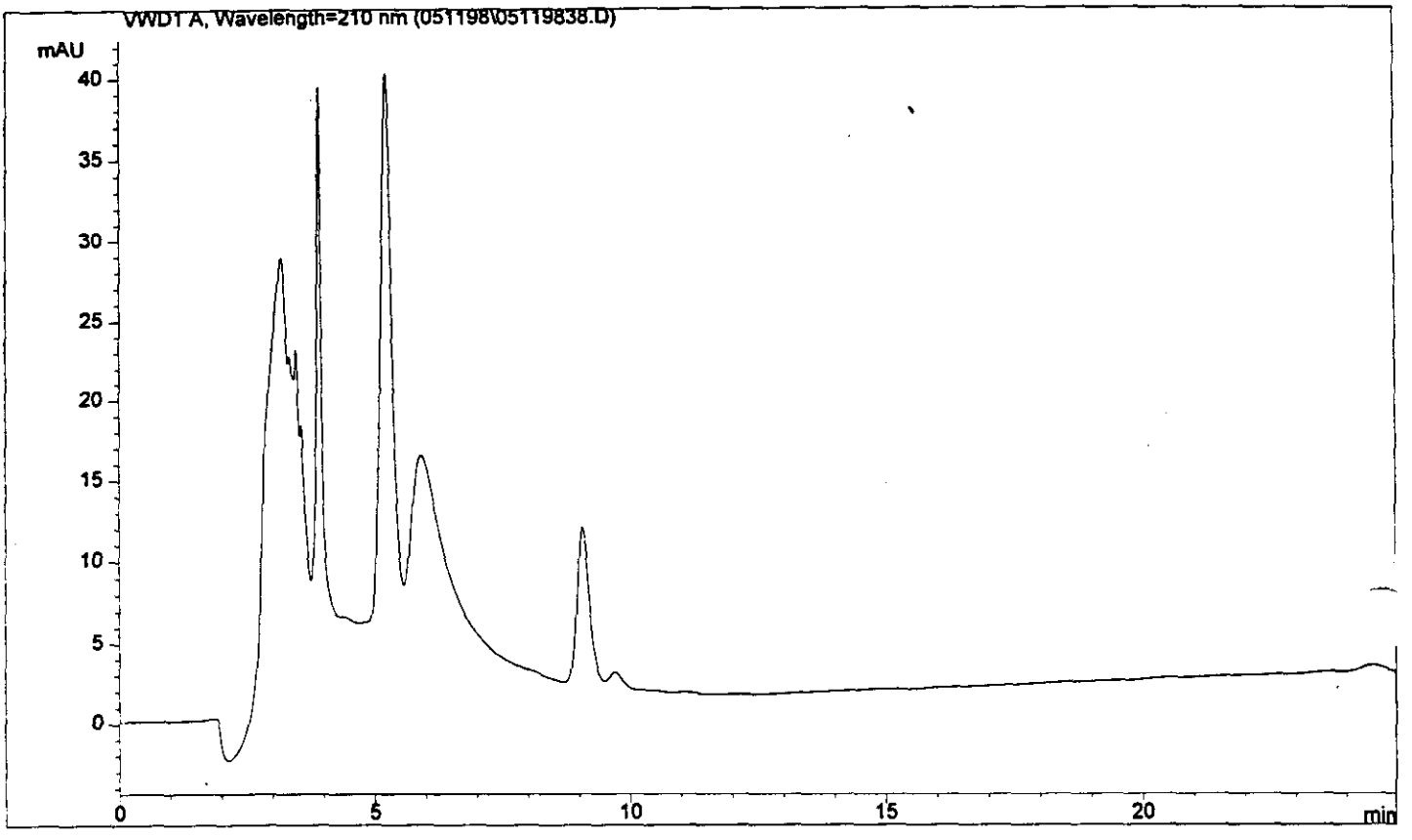
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 38
Sample Name	: 33847.08	Vial No.	: 38
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-C2
FD 10

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.09

Sample Amt: 2g % Moisture 32.74 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	33200	
121-82-4	RDX	94500	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	9470	J
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

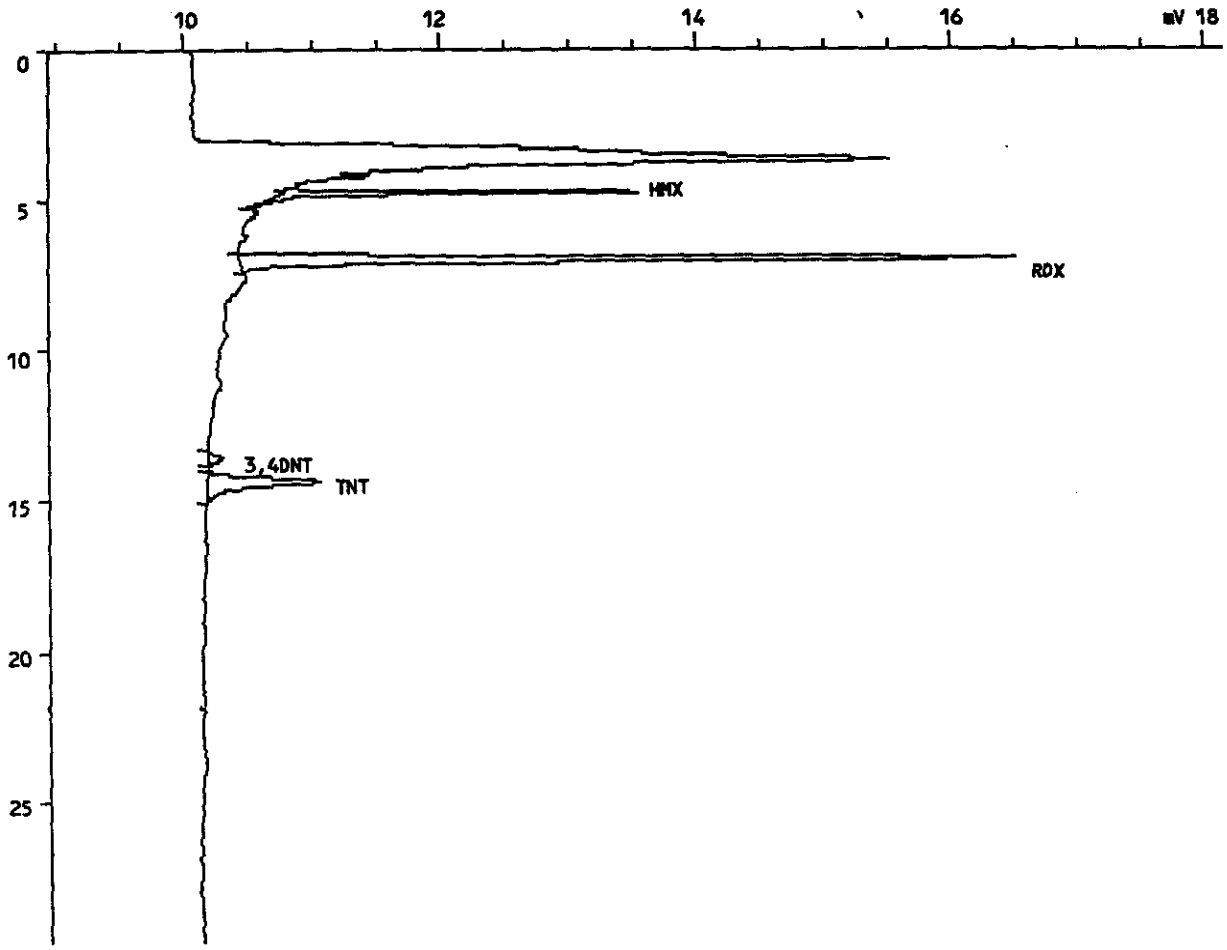
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,15,1

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 04:17:45
Reported on 11-May-98 at 11:59:05



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,15,1

Acquired on 09-May-98 at 04:17:45
Modified on 11-May-82 at 11:47:06
Reported on 11-May-98 at 11:47:05

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

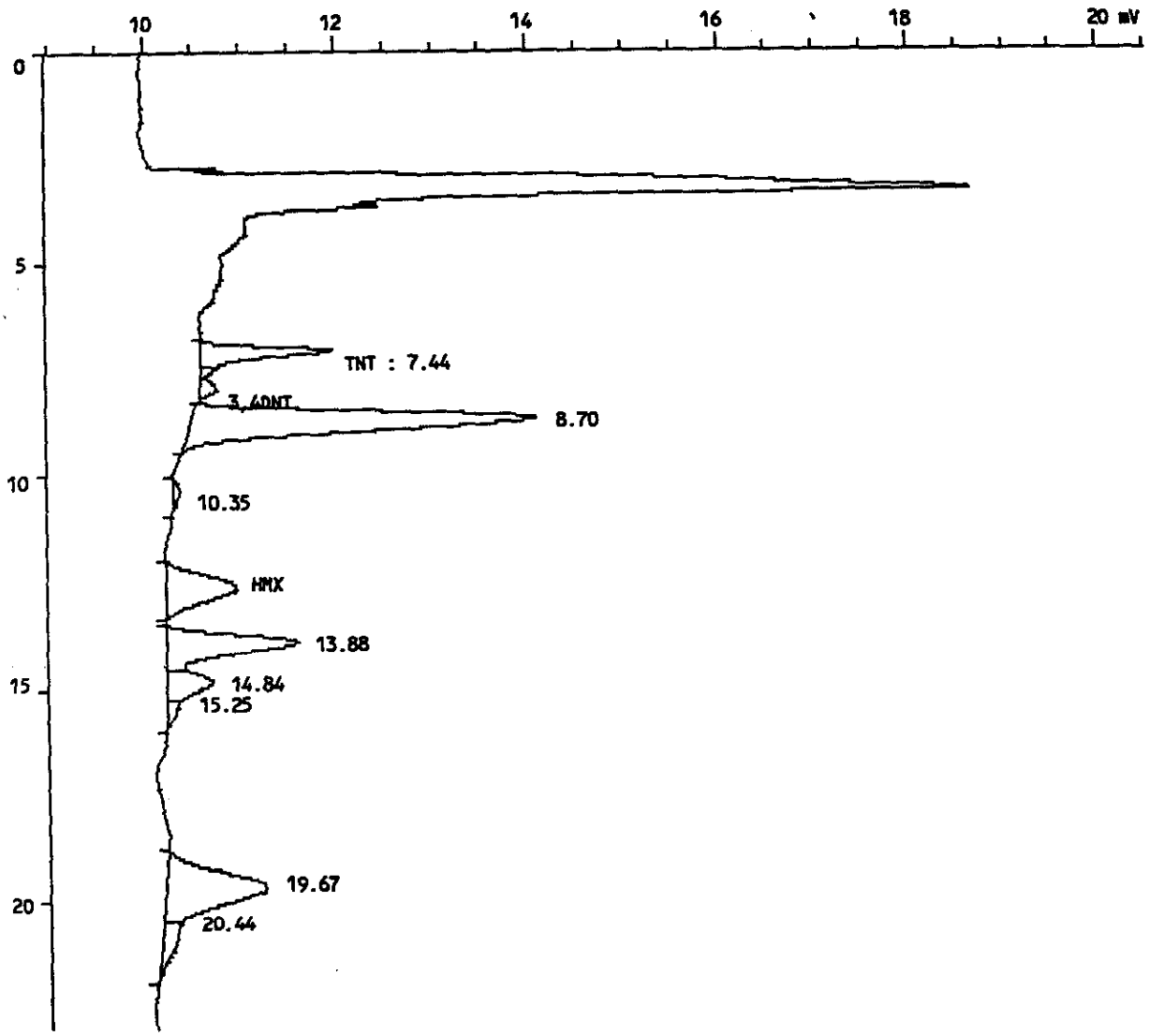
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.768	2820	22386	33213.660	HMX
2	7.013	6069	80362	94543.500	RDX
3	13.659	119	1920	1767.843	3,4DNT
4	14.405	888	18333	9469.611	TNT
Total		9896	123001	138994.609	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,13,1

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 12:49:49
Reported on 11-May-98 at 14:34:40



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,13,1

Acquired on 08-May-98 at 12:49:49
Modified on 11-May-82 at 14:26:34
Reported on 11-May-98 at 14:26:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 3

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

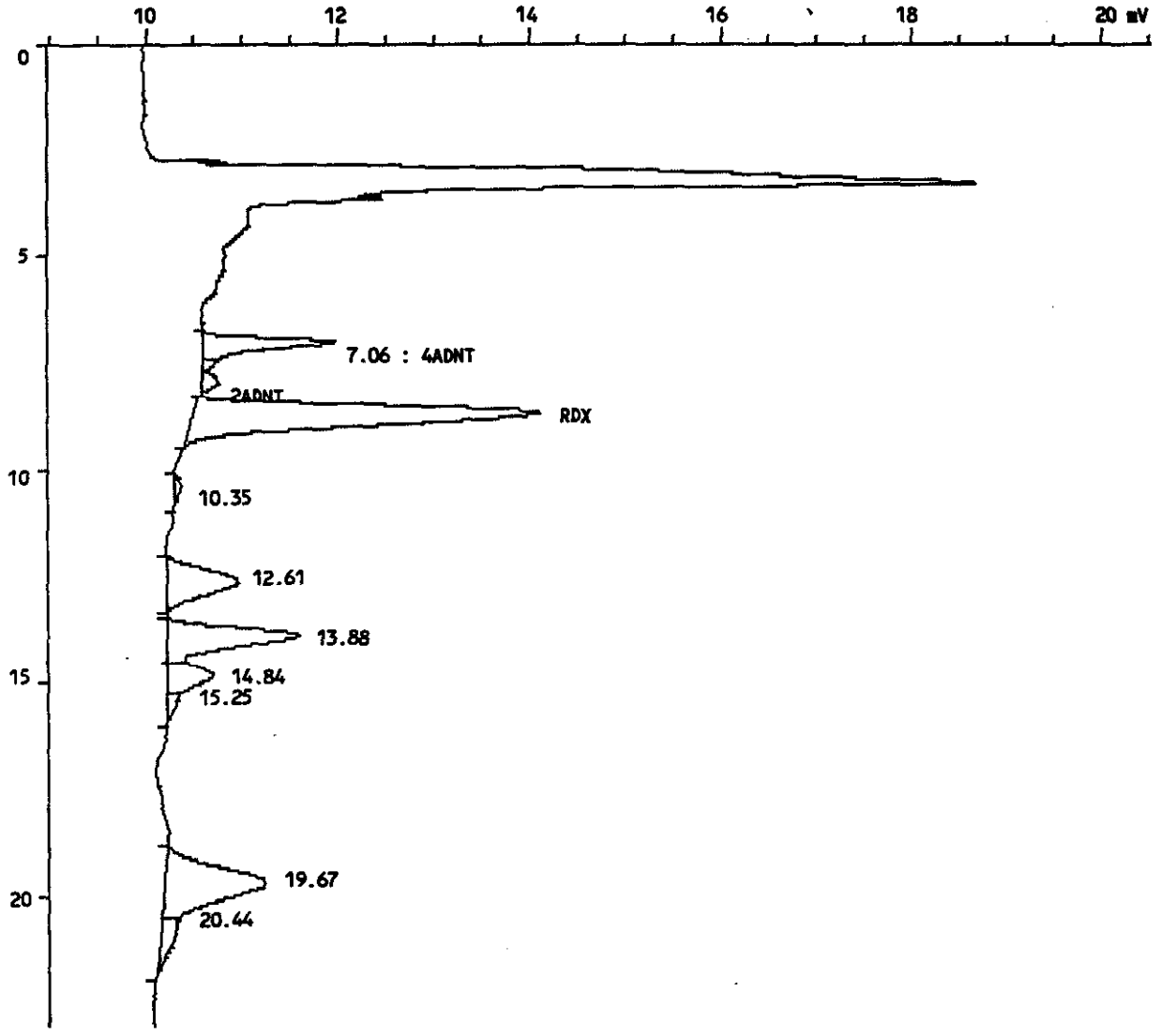
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.056	1367	23514	8600.457	TNT
3	7.984	177	3635	2486.094	3,4DNT
6	12.613	741	29678	25672.764	HMX
Total		2285	56826	36759.313	
Residual		7119	238480	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,13,1

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 12:49:49
Reported on 11-May-98 at 15:01:47



089

INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,13,1

Acquired on 08-May-98 at 12:49:49
Modified on 11-May-82 at 14:54:34
Reported on 11-May-98 at 14:54:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C2FD 10X
Sample ID.....: 33847.09
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 3

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.440	157	1718	1076.471	4ADNT
3	7.984	177	3635	1389.931	2ADNT
4	8.699	3591	109340	79520.164	RDX
Total		3925	114693	81986.563	
Residual		5479	180613	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-C2FD
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.09
Sample Amt: 2g	% Moisture 32.74	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

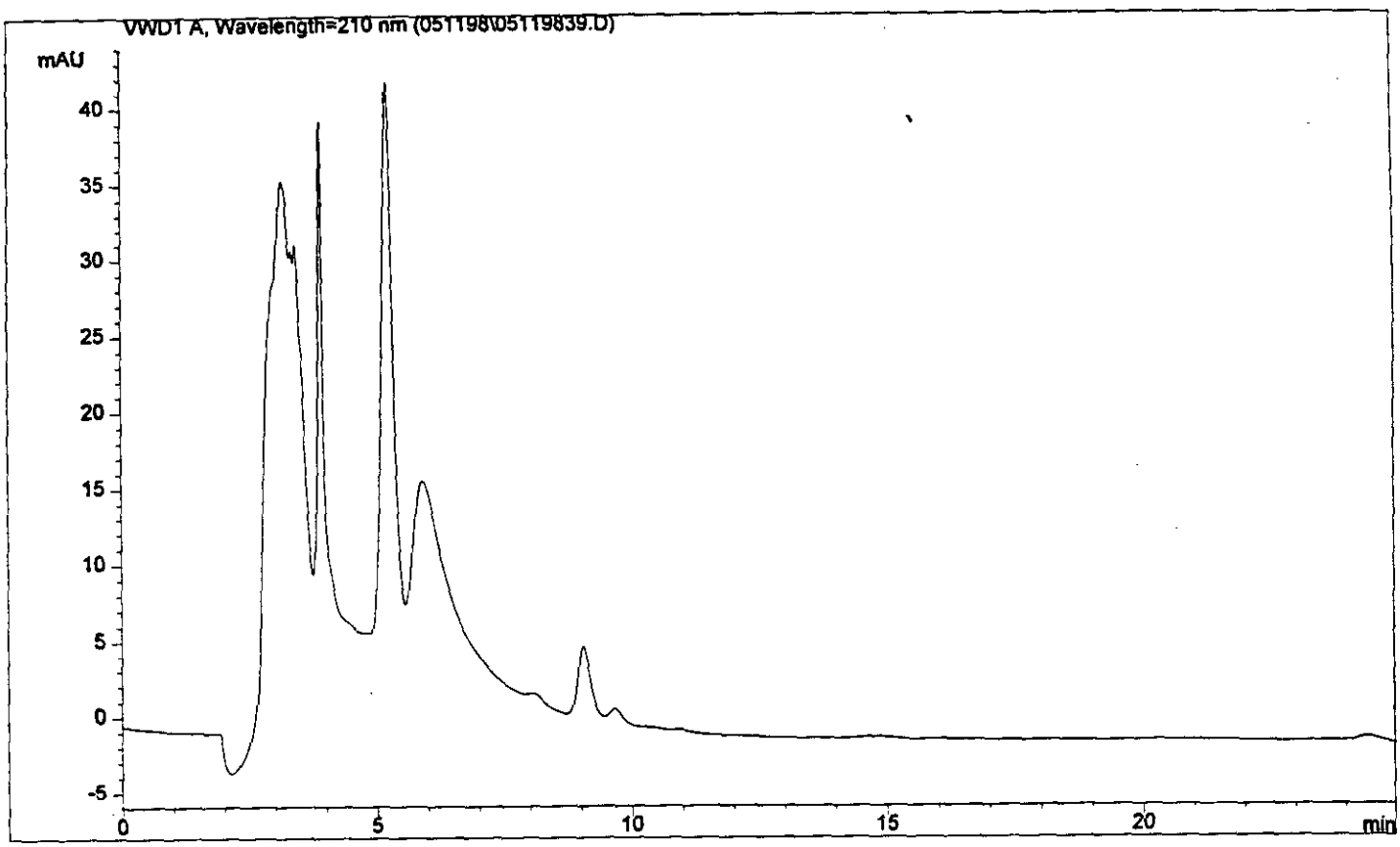
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 39
Sample Name	: 33847.09	Vial No.	: 39
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-C3
10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.10

Sample Amt: 2g % Moisture 30.19 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	24700	
121-82-4	RDX	78900	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	2240	P
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

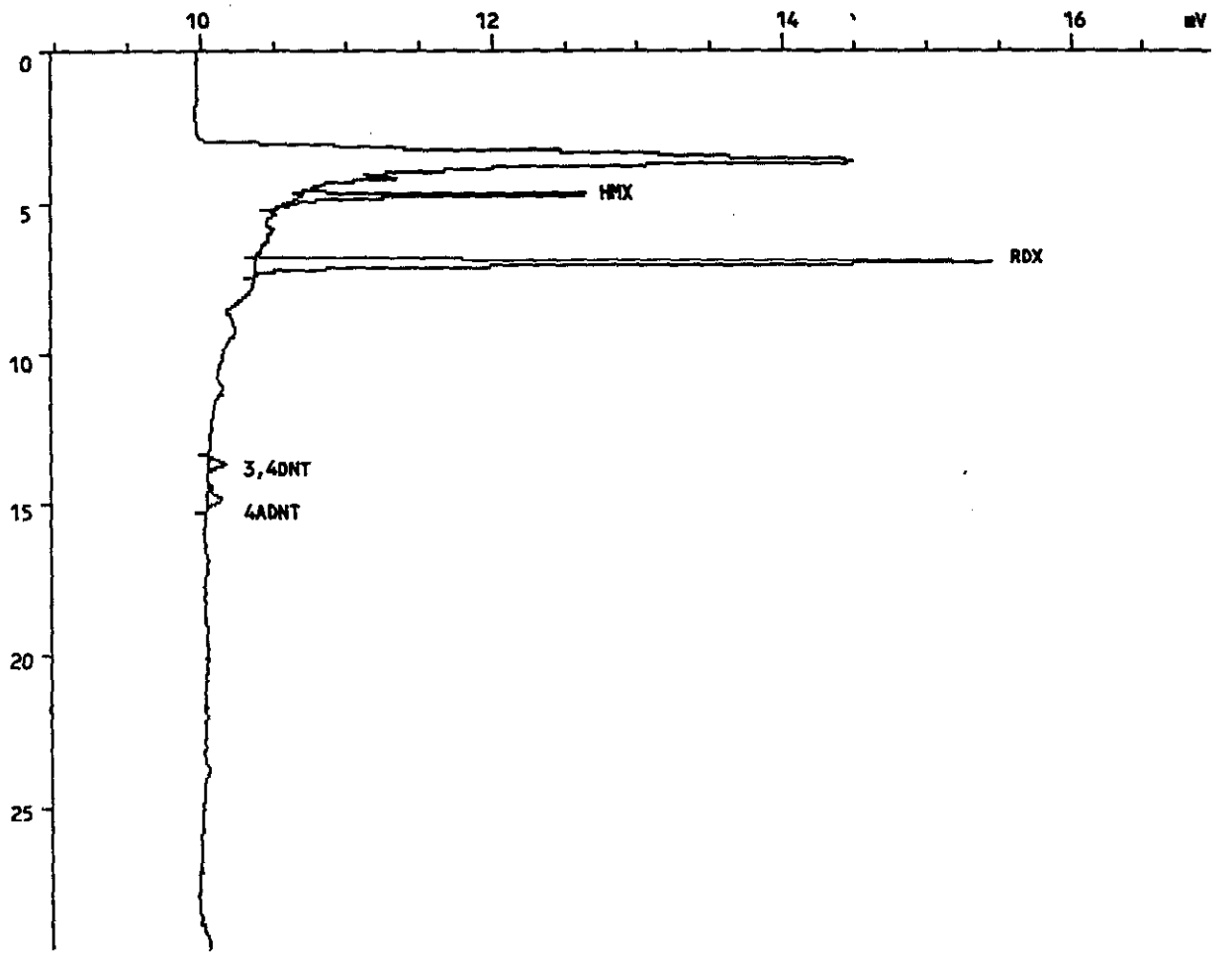
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,16,1

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 05:02:29
Reported on 11-May-98 at 11:59:29



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,16,1

Acquired on 09-May-98 at 05:02:29
Modified on 11-May-82 at 11:47:22
Reported on 11-May-98 at 11:47:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

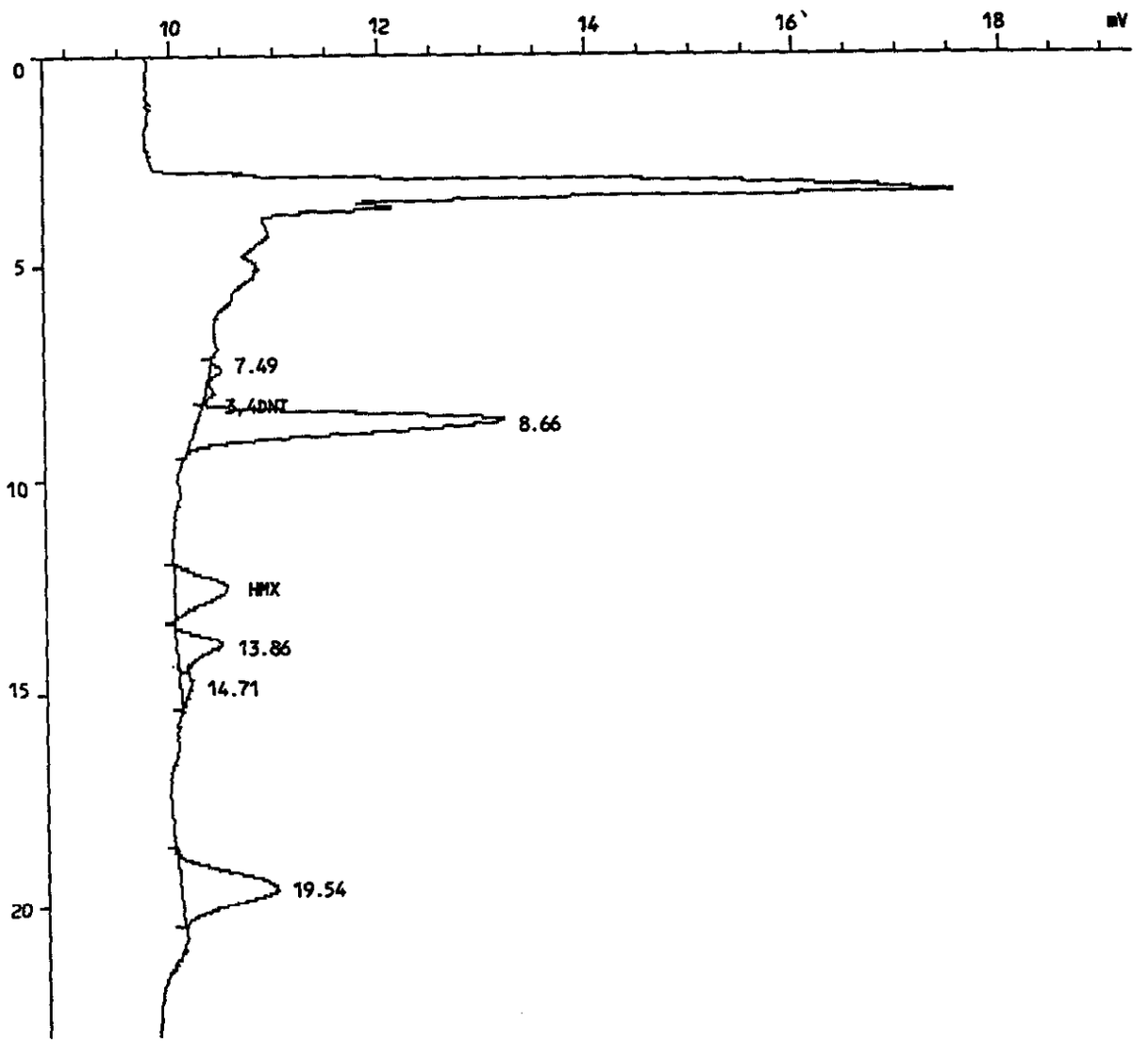
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.757	1982	16673	24737.051	HMX*
2	6.992	5065	67057	78890.945	RDX *
3	13.675	119	2038	1876.755	3,4DNT
4	14.821	110	2946	2235.546	4ADNT *P
Total		7275	88715	107740.305	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,14,1

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 13:34:13
Reported on 11-May-98 at 14:36:21



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,14,1

Acquired on 08-May-98 at 13:34:13
Modified on 11-May-82 at 14:26:48
Reported on 11-May-98 at 14:26:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 4

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

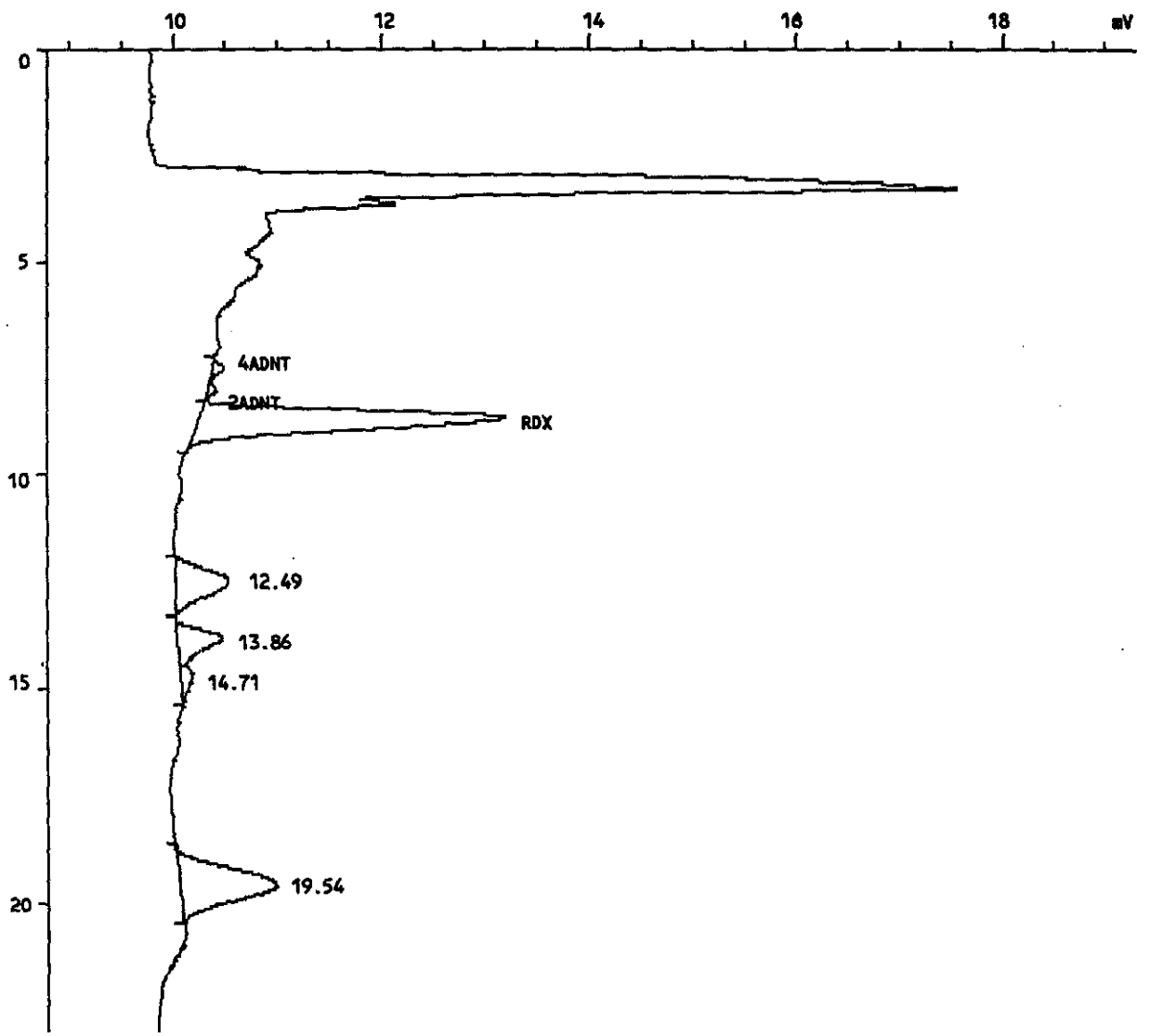
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.005	99	1680	1148.956	3,4DNT
4	12.491	516	21491	18590.607	HMX
Total		615	23171	19739.564	
Residual		4796	171037	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,14,1

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 13:34:13
Reported on 11-May-98 at 15:02:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,14,1

Acquired on 08-May-98 at 13:34:13
Modified on 11-May-82 at 14:54:48
Reported on 11-May-98 at 14:54:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-C3 10X
Sample ID.....: 33847.10
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 4

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.488	125	2064	1293.314	4ADNT
2	8.005	99	1680	642.361	2ADNT
3	8.661	2954	90698	65962.117	RDX
Total		3179	94442	67897.789	
Residual		2012	85593	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA		Contract:			BIO-N-30%-05-C3
Lab Code: SWOK		Case No: MKF-OH		SDG:	33847
Matrix: (soil/water)	SOIL			Lab Sample ID:	33847.10
Sample Amt: 2g	% Moisture	30.19		Date Received:	05/05/98
Extraction Volume:	10ml			Date Extracted:	05/05/98
Extraction Method:	SONC			Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N			Dilution Factor:	10.00

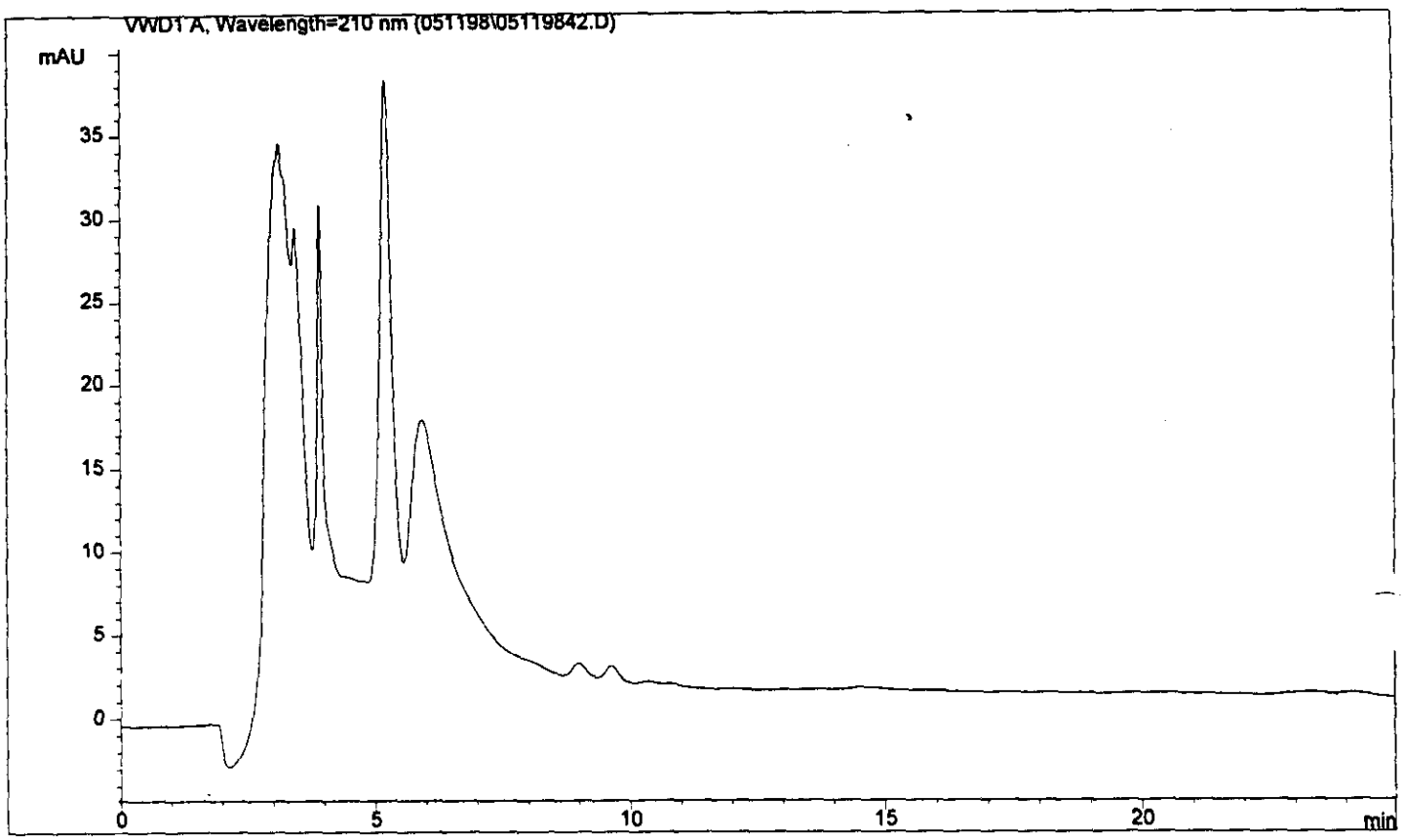
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/Kg	Q
75-11-5	PETN		1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 42
Sample Name	: 33847.10	Vial No.	: 42
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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

Totals: 0.00000

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-D1
10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.11

Sample Amt: 2g % Moisture 29.44 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	11400	
121-82-4	RDX	16600	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

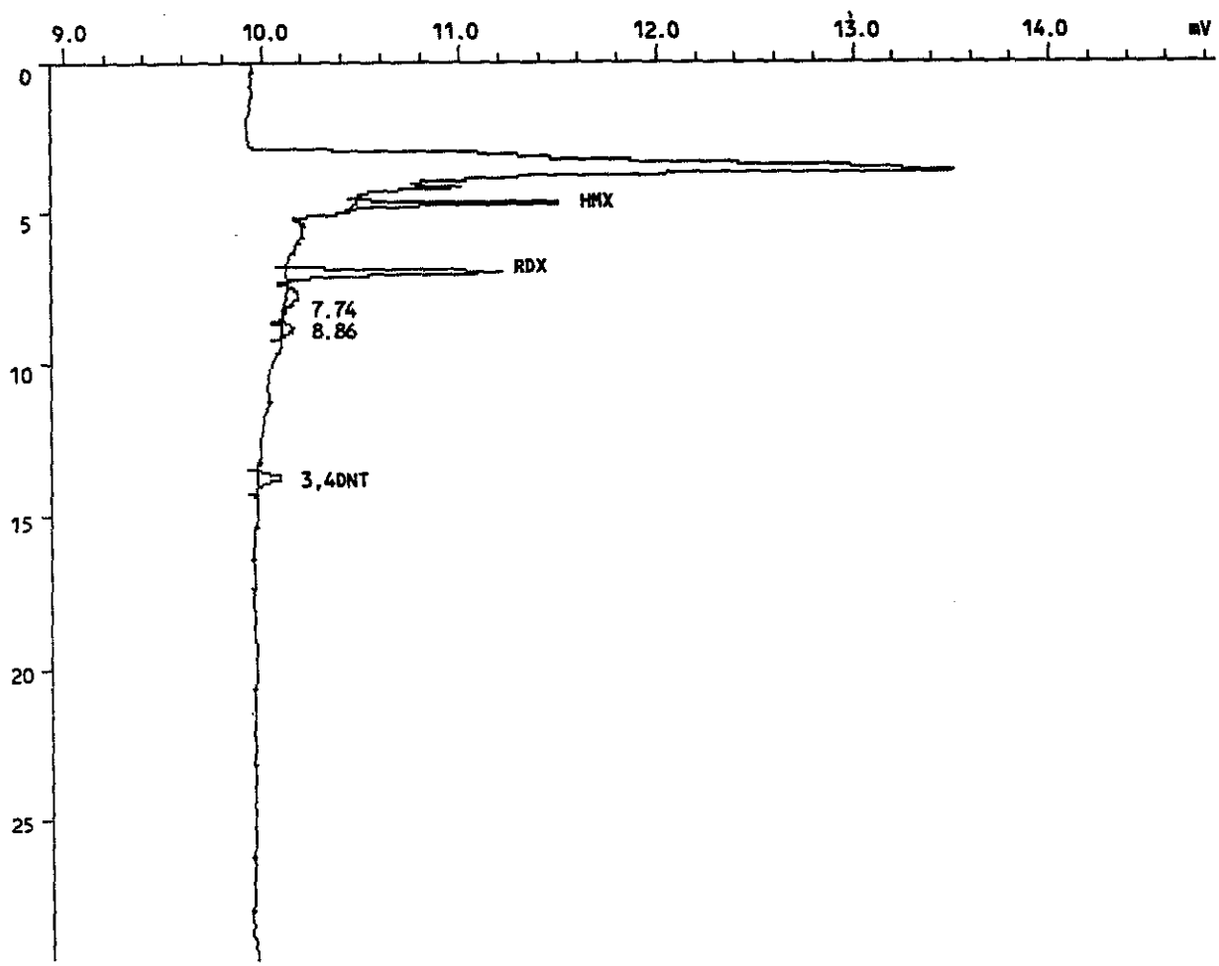
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,17,1

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 05:47:13
Reported on 11-May-98 at 15:48:36



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,17,1

Acquired on 09-May-98 at 05:47:13
Modified on 11-May-82 at 15:47:56
Reported on 11-May-98 at 15:48:15

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 12:15:20
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

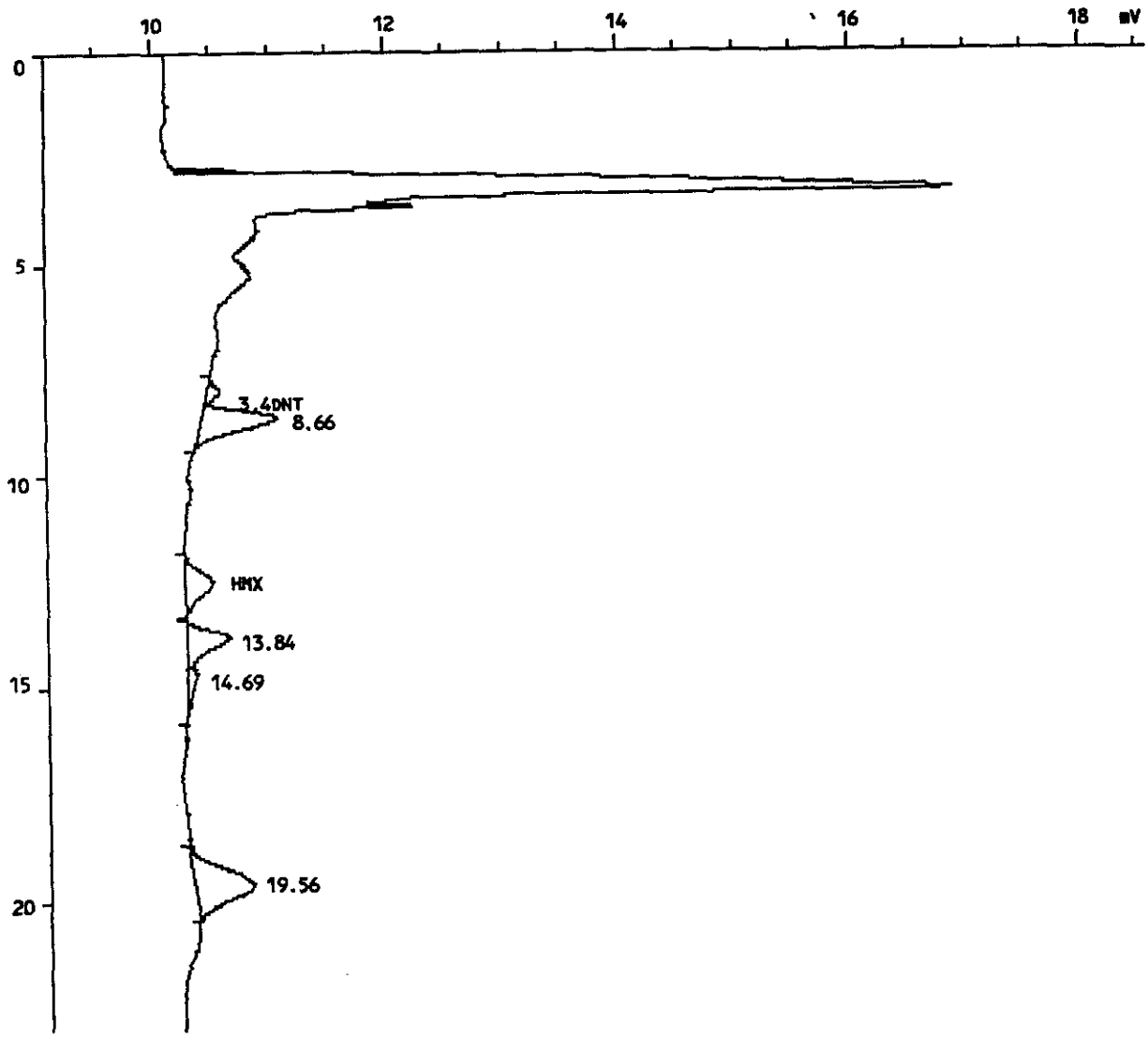
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.768	1037	7722	11456.431	HMX*
2	7.013	1092	14102	16590.836	RDX *
5	13.803	124	2234	2057.159	3,4DNT 162%
Total		2253	24058	30104.426	
Residual		136	3654	4298.747	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,15,1

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 14:18:37
Reported on 11-May-98 at 14:37:40



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,15,1

Acquired on 08-May-98 at 14:18:37
Modified on 11-May-82 at 14:27:02
Reported on 11-May-98 at 14:26:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 5

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

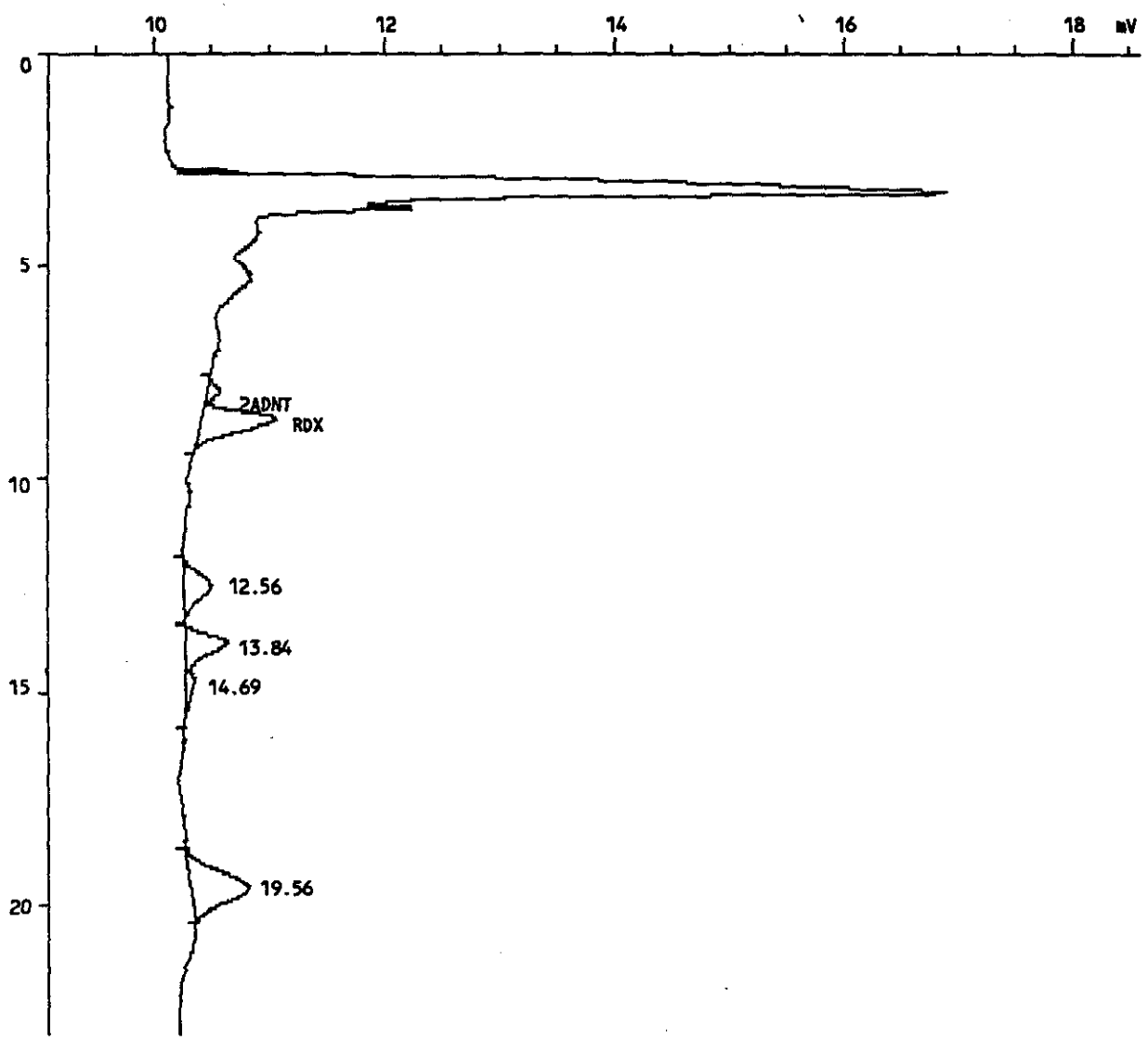
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.995	121	2244	1534.950	3,4DNT
3	12.560	242	9854	8523.852	HMX
Total		363	12098	10058.802	
Residual		1773	70232	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,15,1

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 14:18:37
Reported on 11-May-98 at 15:02:41



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,15,1

Acquired on 08-May-98 at 14:18:37
Modified on 11-May-82 at 14:55:04
Reported on 11-May-98 at 14:54:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D1 10X
Sample ID.....: 33847.11
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 5

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.995	121	2244	858.163	2ADNT
2	8.656	656	20461	14880.564	RDX
Total		777	22705	15738.728	
Residual		1196	48754	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA		Contract:			BIO-N-30%-05-D1
Lab Code: SWOK		Case No: MKF-OH		SDG:	33847
Matrix: (soil/water)	SOIL			Lab Sample ID:	33847.11
Sample Amt: 2g	% Moisture	29.44		Date Received:	05/05/98
Extraction Volume:	10ml			Date Extracted:	05/05/98
Extraction Method:	SONC			Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N			Dilution Factor:	10.00

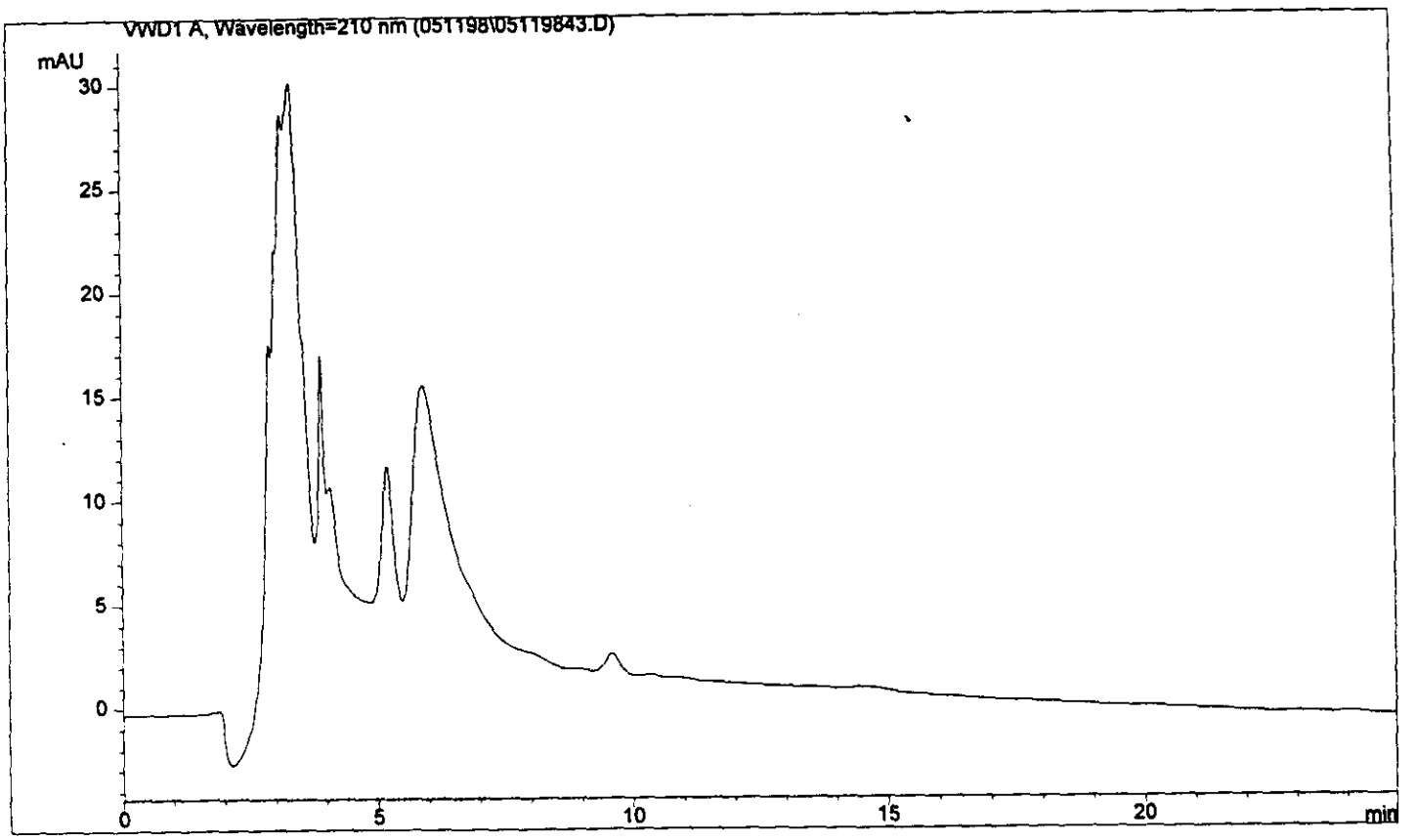
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 43
Sample Name	: 33847.11	Vial No.	: 43
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

110

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-D2
10X

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.14

Sample Amt: 2g % Moisture 30.55 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	15700	
121-82-4	RDX	40300	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1330	P
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

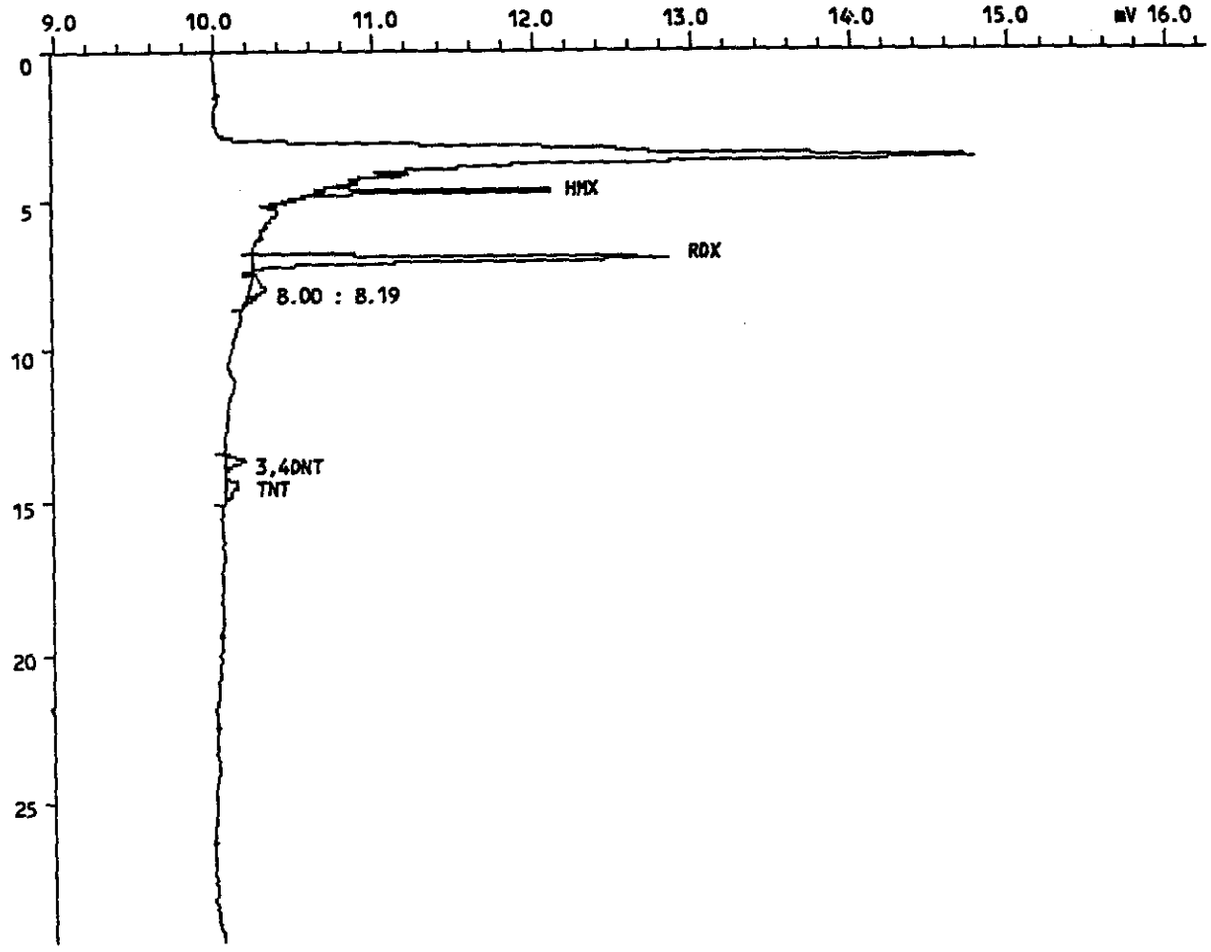
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,20,1

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 08:01:27
Reported on 11-May-98 at 12:01:14



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,20,1

Acquired on 09-May-98 at 08:01:27
Modified on 11-May-82 at 11:48:36
Reported on 11-May-98 at 11:48:34

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 11:38:44
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

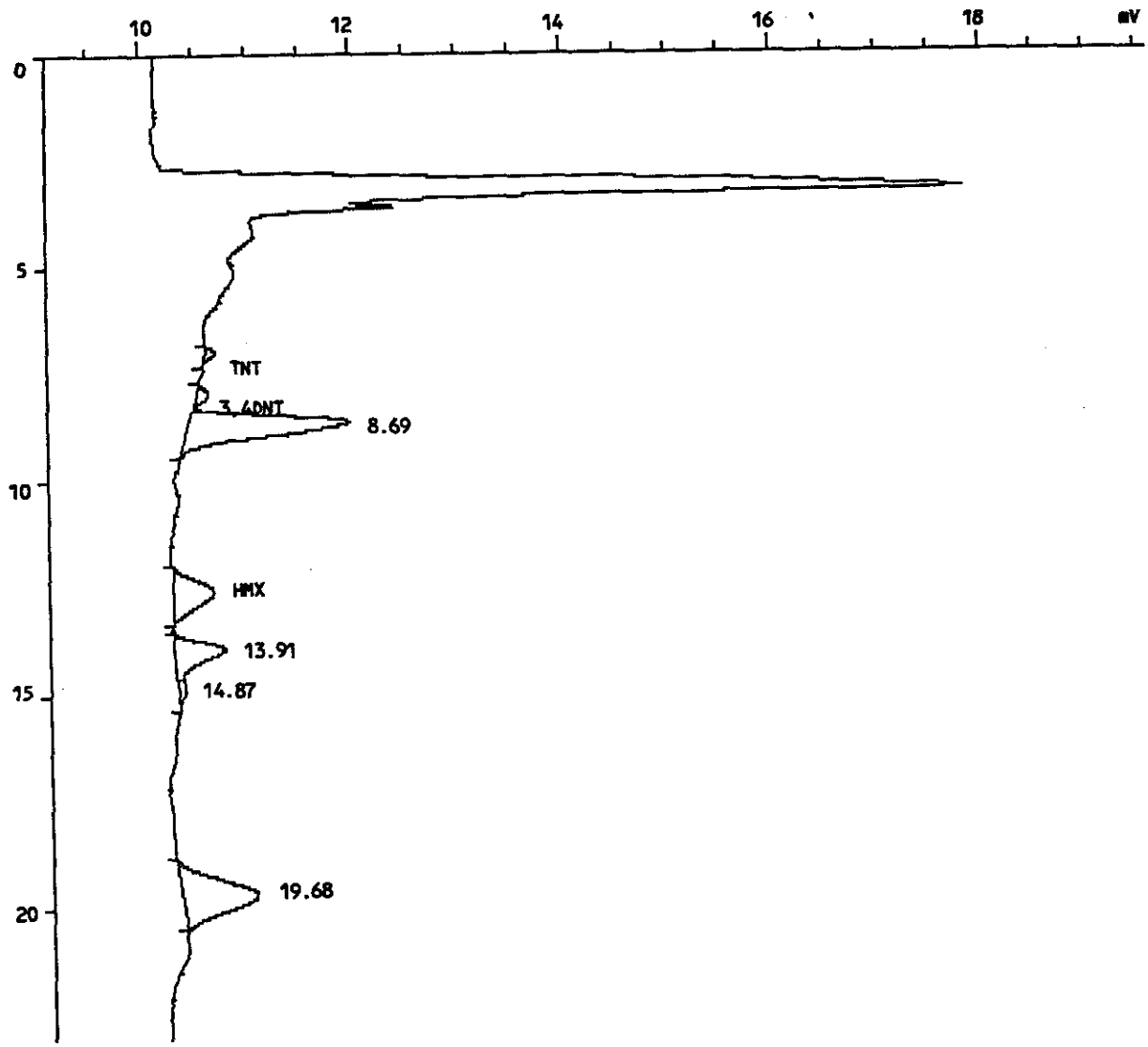
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.752	1488	10595	15719.321	HMX*
2	6.997	2612	34239	40281.715	RDX *
5	13.696	118	2212	2036.625	3,4DNT
6	14.453	90	2573	1329.120	TNT *P
Total		4309	49619	59366.781	
Residual		183	4058	4774.308	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,16,1

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 15:03:01
Reported on 11-May-98 at 14:38:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,16,1

Acquired on 08-May-98 at 15:03:01
Modified on 11-May-82 at 14:27:16
Reported on 11-May-98 at 14:27:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 6

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

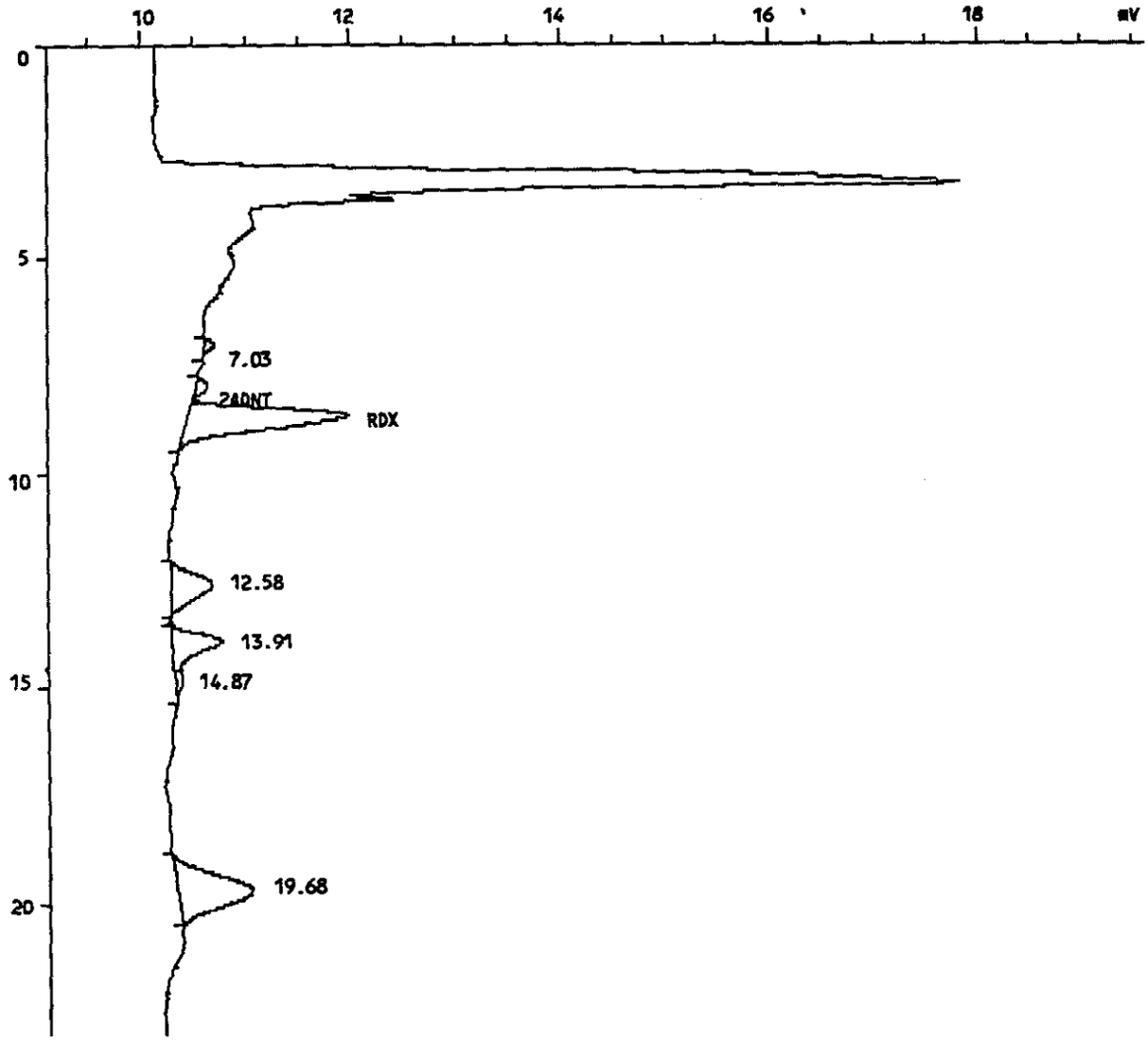
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.035	105	1476	539.886	TNT
2	8.000	128	2508	1715.723	3,4DNT
4	12.581	398	16171	13988.935	HMX
Total		631	20156	16244.543	
Residual		3027	112223	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,16,1

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 15:03:01
Reported on 11-May-98 at 15:03:07



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,16,1

Acquired on 08-May-98 at 15:03:01
Modified on 11-May-82 at 14:55:16
Reported on 11-May-98 at 14:55:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D2 10X
Sample ID.....: 33847.14
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 6

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.000	128	2508	959.230	2ADNT
3	8.688	1527	47362	34445.059	RDX
Total		1655	49870	35404.289	
Residual		1782	69346	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-D2
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.14
Sample Amt: 2g	% Moisture 30.55	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

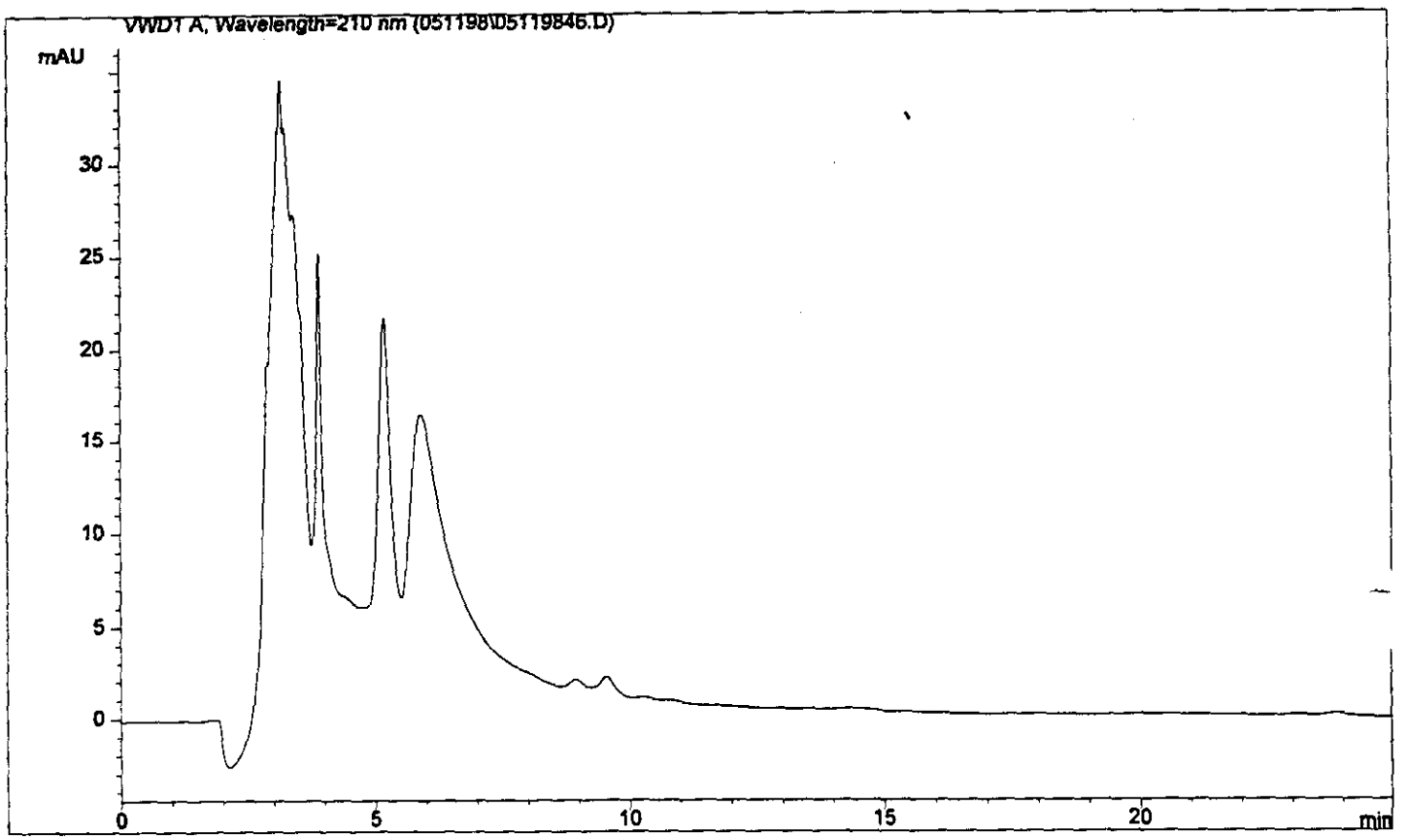
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 46
Sample Name	: 33847.14	Vial No.	: 46
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-05-D3
10X

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33847

Matrix: (soil/water) SOIL Lab Sample ID: 33847.15

Sample Amt: 2g % Moisture 29.70 Date Received: 05/05/98

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

Extraction Method: SONC Date Analyzed: 05/09/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	18900	
121-82-4	RDX	53900	
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	1250	U
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

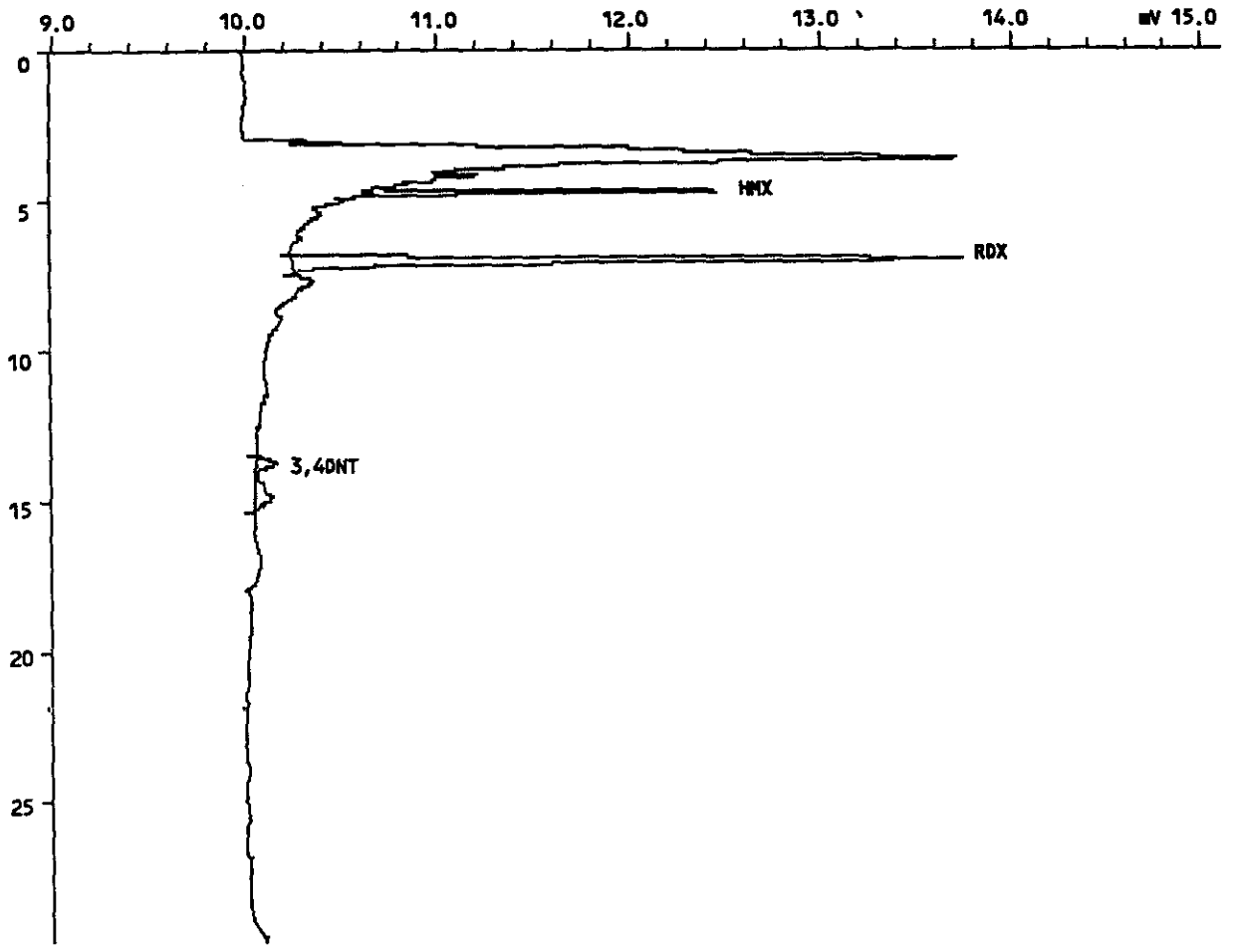
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0507B,21,1

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06, INJ:200,COL#1

Acquired on 09-May-98 at 08:46:12
Reported on 11-May-98 at 12:01:40



INJECTION REPORT

Injection F: <MC3> 5 5EX0507B,21,1

Acquired on 09-May-98 at 08:46:12
Modified on 11-May-82 at 11:48:52
Reported on 11-May-98 at 15:04:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-06,INJ:200,COL#1
Number of samples.: 27
Calibration file..: 5EX0507 Last modified on 11-May-82 at 12:15:20
Method file.....: EXPLOS Last modified on 11-May-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

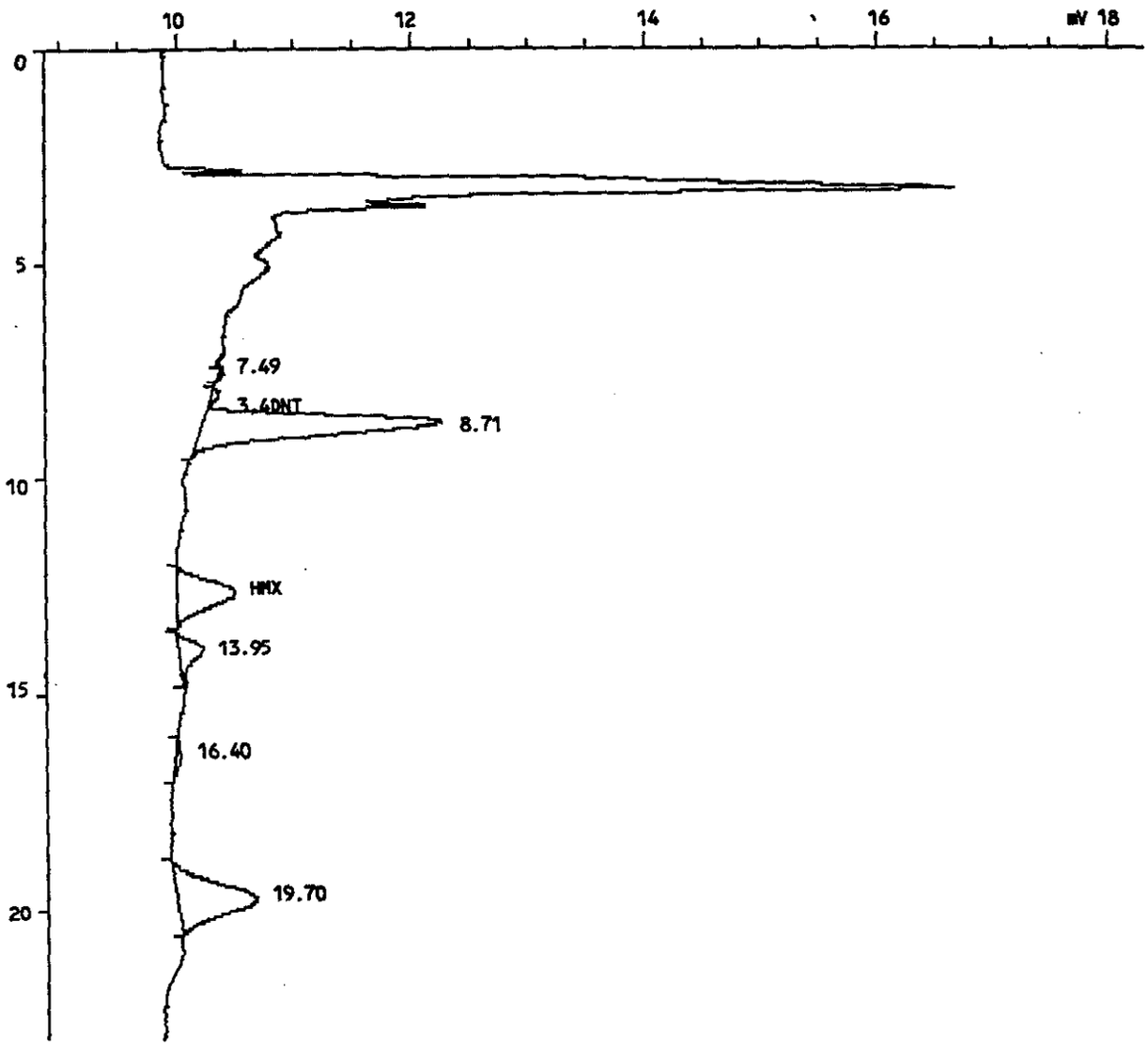
Peak	RT mins	Hght uV	Area uVs	ug/kg	Peak name
1	4.768	1855	12755	18924.773	HMX
2	7.008	3500	45815	53900.031	RDX
3	13.776	111	4715	4341.534	3,4DNT
Total		5467	63285	77166.336	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,17,1

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 15:47:25
Reported on 11-May-98 at 14:40:52



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,17,1

Acquired on 08-May-98 at 15:47:25
Modified on 11-May-82 at 14:27:30
Reported on 11-May-98 at 14:27:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507A Last modified on 11-May-82 at 12:32:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 7

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

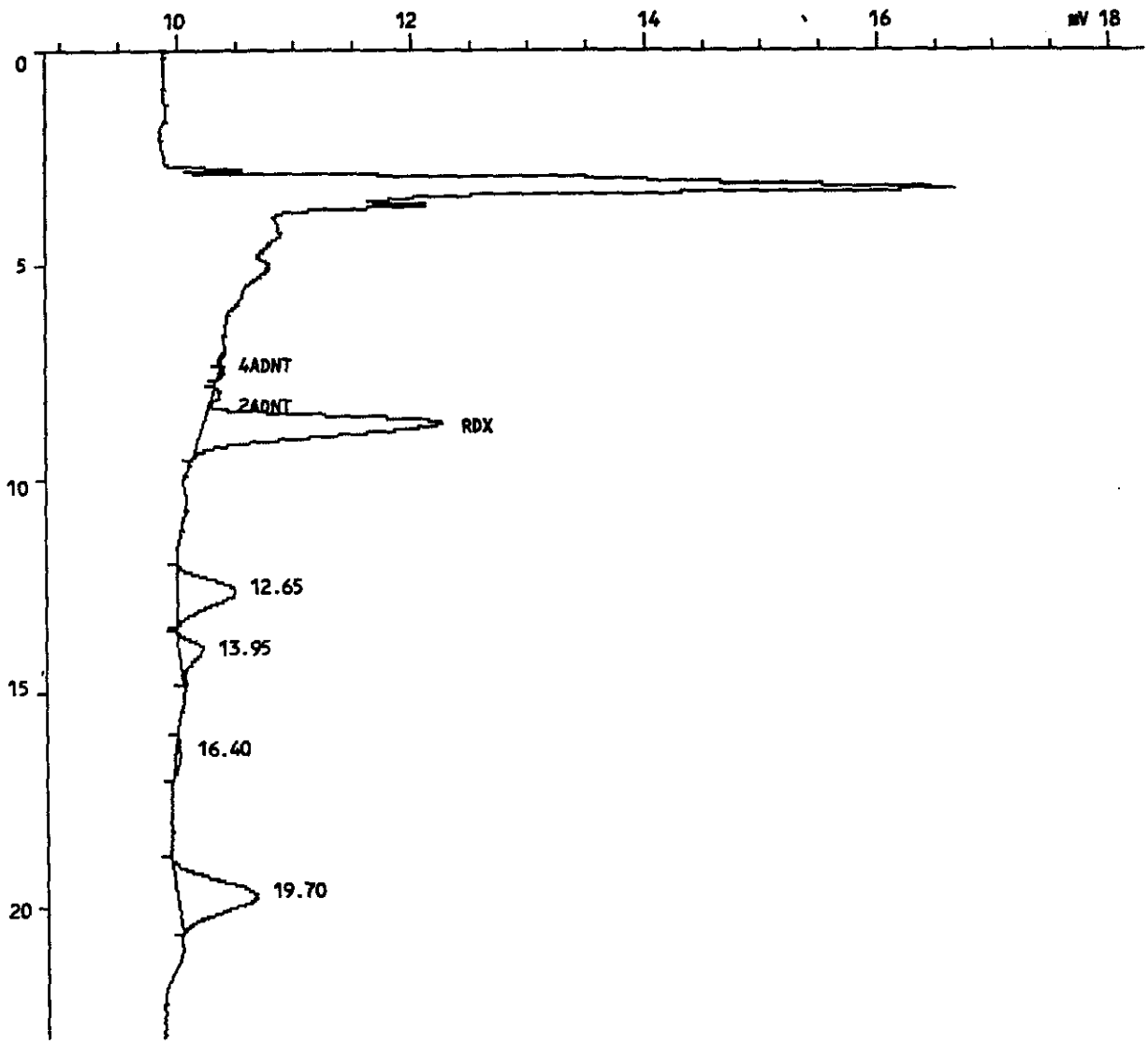
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.059	88	1399	956.572	3,4DNT
4	12.645	510	21770	18831.766	HMX
Total		598	23168	19788.338	
Residual		3261	118669	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0507B,17,1

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10, INJ:100, UV

Acquired on 08-May-98 at 15:47:25
Reported on 11-May-98 at 15:03:34



INJECTION REPORT

Injection F: <MC3> 3 3CN0507B,17,1

Acquired on 08-May-98 at 15:47:25
Modified on 11-May-82 at 14:55:30
Reported on 11-May-98 at 14:55:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-10,INJ:100, UV
Number of samples.: 30
Calibration file..: 3CN0507B Last modified on 11-May-82 at 14:44:06
Method file.....: LCCN Last modified on 11-May-82 at 14:17:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-05-D3 10X
Sample ID.....: 33847.15
Sample type.....: Sample
Sample amount.....: 2.0000
Number of injections.....: 1
Bottle Number.....: 7

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

User factors:
Volume (mL).....: 20.000
Dilution.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.488	52	574	359.794	4ADNT
2	8.059	88	1399	534.802	2ADNT
3	8.709	2073	64221	46706.098	RDX
Total		2213	66194	47600.695	
Residual		1460	63491	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

Lab Name: SWL-TULSA	Contract:		BIO-N-30%-05-D3
Lab Code: SWOK	Case No: MKF-OH	SDG:	33847
Matrix: (soil/water)	SOIL	Lab Sample ID:	33847.15
Sample Amt: 2g	% Moisture 29.7	Date Received:	05/05/98
Extraction Volume:	10ml	Date Extracted:	05/05/98
Extraction Method:	SONC	Date Analyzed:	05/09/98
GPC Cleanup: (Y/N)	N	Dilution Factor:	10.00

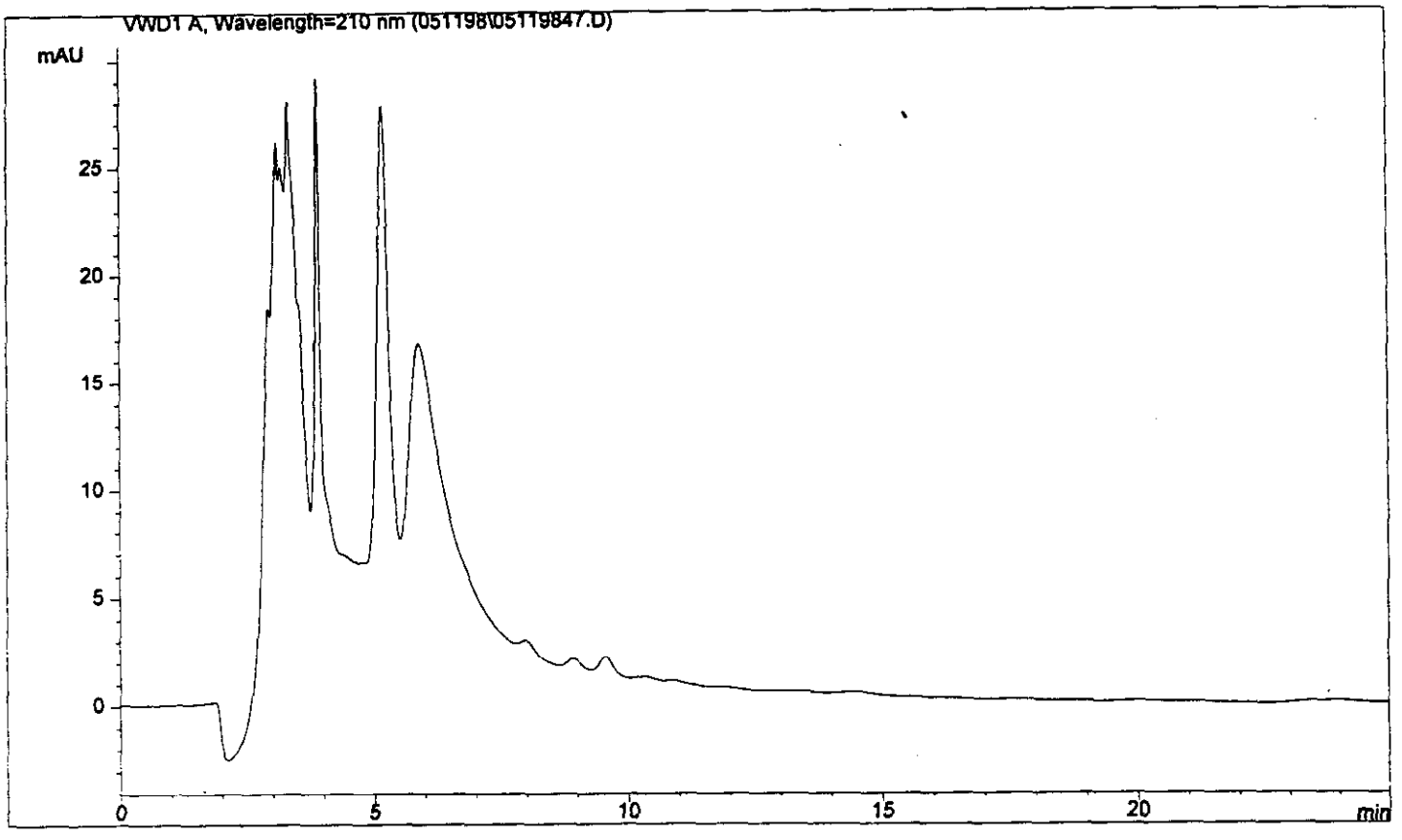
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/Kg	Q
75-11-5	PETN	1250.0	U

FORM I

Injection Date	: Tue, 12. May. 1998	Seq Line	: 47
Sample Name	: 33847.15	Vial No.	: 47
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 051198.M
Analysis Method : C:\HPCHEM\1\METHODS\051198.M
Last Changed : Fri, 15. May. 1998, 06:50:11 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Fri, 15. May. 1998,06:50:05 pm
Multiplier : 10.000000
Dilution : 10.000000
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
Totals:				0.00000	

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*** End of Report ***

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ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33847
Instrument ID: IN13 Column ID: CARB-06

Dates of Anlayses: 05/07/98 to 05/09/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	05/07/98	10:18
EXP L1 SOIL STD	2-219:IA1	05/07/98	12:32
EXP L2 SOIL STD	2-218:IA2	05/07/98	13:17
EXP L3 SOIL STD	2-217:IA3	05/07/98	14:02
EXP L4 SOIL STD	2-216:IA4	05/07/98	14:46
EXP L5 SOIL STD	2-215:IA5	05/07/98	15:31
EXP L3 SOIL STD	2-217:CA2	05/08/98	12:52
BL0505SE	BL0505SE	05/08/98	17:52
LC0505SE	LC0505SE	05/08/98	19:21
LD0505SE	LD0505SE	05/08/98	20:06
BIO-N-30%-05-A1 10X	33847.01	05/08/98	20:50
BIO-N-30%-05-A2 10X	33847.02	05/08/98	21:35
BIO-N-30%-05-A3 10X	33847.03	05/08/98	22:20
BIO-N-30%-05-B1 10X	33847.04	05/08/98	23:04
BIO-N-30%-05-B2 10X	33847.05	05/08/98	23:49
BIO-N-30%-05-B3 10X	33847.06	05/09/98	00:34
EXP L3 SOIL STD	2-217:CA3	05/09/98	01:18
BIO-N-30%-05-C1 10X	33847.07	05/09/98	02:48
BIO-N-30%-05-C2 10X	33847.08	05/09/98	03:33

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33847
Instrument ID: IN13 Column ID: CARB-06

Dates of Anlayses: 05/07/98 to 05/09/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-05-C2FD 10	33847.09	05/09/98	04:17
BIO-N-30%-05-C3 10X	33847.10	05/09/98	05:02
BIO-N-30%-05-D1 10X	33847.11	05/09/98	05:47
BIO-N-30%-05-D1 10X	33847.12MS	05/09/98	06:31
BIO-N-30%-05-D1 10X	33847.13MSD	05/09/98	07:16
BIO-N-30%-05-D2 10X	33847.14	05/09/98	08:01
BIO-N-30%-05-D3 10X	33847.15	05/09/98	08:46
EXP L3 SOIL STD	2-217:CA4	05/09/98	13:16

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-06

Inj 1

Injection File Name Level 1 : 5EX0507,4
Injection File Name Level 2 : 5EX0507,5
Injection File Name Level 3 : 5EX0507,6
Injection File Name Level 4 : 5EX0507,7
Injection File Name Level 5 : 5EX0507,8

Calibration Date : 05/07/1998
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	3070	303	86593	341	228418	346	340786	344	463335	351
RDX	1396	331	45744	433	124796	452	188079	457	248447	452
TNB	3050	1010	65041	860	182698	927	272939	922	363472	923
DNB	1858	1147	47508	1170	127863	1211	191748	1211	258819	1221
TETRYL	1982	533	44411	478	117462	485	171726	472	243575	503
NB	2746	832	66098	802	178122	832	265900	826	354217	824
3,4-DNT	2743	540	67977	536	182412	553	269296	543	358172	543
TNT	2636	976	63145	934	172246	979	256164	970	345817	982
4ADNT	1791	759	37100	627	98571	640	148025	638	194088	630
2ADNT	2244	951	53734	908	146055	948	216916	935	288500	937
26DNT	2242	578	57637	593	156264	615	234025	616	311263	615
24DNT	2669	1131	71439	1207	193842	1259	290768	1253	387419	1258
2NT	1916	567	44975	532	120373	547	180571	547	240624	547
4NT	1361	403	38137	451	102223	465	154018	467	205469	467
T	1722	535	45121	561	121601	579	183845	585	244007	584

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-06

Inj 1
Injection File Name Level 1 : 5EX0507,4
Injection File Name Level 2 : 5EX0507,5
Injection File Name Level 3 : 5EX0507,6
Injection File Name Level 4 : 5EX0507,7
Injection File Name Level 5 : 5EX0507,8

Calibration Date : 05/07/1998
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	337	5.78	0.99990	348	0.000
RDX	425	12.56	0.99994	453	0.000
TNB	928	5.74	0.99990	922	0.000
DNB	1192	2.67	0.99996	1215	0.000
TETRYL	494	4.99	0.99896	491	0.000
NB	823	1.50	0.99996	825	0.000
3,4-DNT	543	1.14	0.99994	544	0.000
NT	968	2.03	0.99993	977	0.000
.DNT	659	8.54	0.99994	634	0.000
2ADNT	936	1.83	0.99995	937	0.000
26DNT	603	2.86	0.99998	615	0.000
24DNT	1222	4.51	0.99997	1256	0.000
2NT	548	2.28	0.99998	547	0.000
4NT	450	6.10	0.99998	466	0.000
3NT	569	3.75	0.99997	583	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-06
Injection File Name : 5EX0507A,14
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	229953	348	337	3.39	348	0.09
RDX	124511	451	425	6.18	453	0.39
TNB	183268	930	928	0.20	922	0.91
DNB	131003	1241	1192	4.09	1215	2.07
TETRYL	120634	498	494	0.88	491	1.50
NB	176942	827	823	0.44	825	0.21
3,4-DNT	178717	542	543	0.24	544	0.45
TNT	169034	960	968	0.82	977	1.73
4ADNT	101136	657	659	0.31	634	3.61
2ADNT	143365	931	936	0.51	937	0.67
26DNT	156086	615	603	1.84	615	0.07
24DNT	191569	1244	1222	1.84	1256	0.93
2NT	119804	545	548	0.62	547	0.39
4NT	101864	463	450	2.81	466	0.70
3NT	122477	583	569	2.53	583	0.00

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 3
ontinuing Cal Date : 05/09/1998
ontinuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-06
Injection File Name : 5EX0507B,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	228215	346	337	2.61	348	0.67
RDX	123552	448	425	5.36	453	1.16
TNB	181231	920	928	0.92	922	0.21
DNB	128876	1220	1192	2.40	1215	0.41
TETRYL	136918	566	494	14.50	491	15.20
NB	184501	862	823	4.73	825	4.49
3,4-DNT	186326	565	543	4.00	544	3.79
TNT	170667	970	968	0.14	977	0.78
4ADNT	104025	675	659	2.54	634	6.57
2ADNT	147126	955	936	2.10	937	1.94
26DNT	157948	622	603	3.06	615	1.12
24DNT	193059	1254	1222	2.63	1256	0.16
2NT	120256	547	548	0.24	547	0.02
4NT	102594	466	450	3.55	466	0.01
3NT	120331	573	569	0.73	583	1.75

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 4
Continuing Cal Date : 05/09/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-06
Injection File Name : SEX0507B,22
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	229081	347	337	2.99	348	0.29
RDX	125006	453	425	6.60	453	0.01
TNB	183359	931	928	0.25	922	0.96
DNB	133044	1260	1192	5.71	1215	3.66
TETRYL	116442	481	494	2.63	491	2.03
NB	177880	831	823	0.97	825	0.74
3,4-DNT	180458	547	543	0.73	544	0.52
TNT	167126	950	968	1.94	977	2.84
4ADNT	101964	662	659	0.51	634	4.45
2ADNT	143532	932	936	0.39	937	0.55
26DNT	155952	614	603	1.75	615	0.16
24DNT	191408	1243	1222	1.75	1256	1.01
2NT	121220	551	548	0.56	547	0.78
4NT	103340	470	450	4.30	466	0.74
3NT	122184	582	569	2.28	583	0.24

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	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

5EX0507
page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

nstrument ID : IN13
Column ID : CARB-06
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.76	4.74	4.75	4.76	4.77
RDX	7.03	6.95	6.97	7.02	7.03
TNB	9.52	9.41	9.42	9.48	9.50
DNB	11.52	11.44	11.44	11.49	11.55
TETRYL	11.94	11.81	11.79	11.87	11.94
NB	13.07	12.99	12.96	13.03	13.10
3,4-DNT	13.90	13.77	13.72	13.82	13.90
TNT	14.62	14.52	14.49	14.58	14.66
4ADNT	15.05	14.89	14.83	14.94	15.02
2ADNT	15.82	15.71	15.66	15.77	15.86
26DNT	16.98	16.85	16.78	16.90	17.01
24DNT	17.59	17.47	17.40	17.52	17.63
2NT	20.66	20.49	20.36	20.51	20.65
4NT	22.05	21.88	21.73	21.88	22.04
3NT	23.70	23.55	23.40	23.52	23.68

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	4.74	4.80	4.73	4.77	4.76
RDX	6.97	7.06	6.96	7.04	7.02
TNB	9.38	9.54	9.38	9.50	9.48
DNB	11.36	11.60	11.39	11.54	11.51
TETRYL	11.69	11.98	11.73	11.89	11.82
NB	12.86	13.14	12.89	13.08	13.04
3,4-DNT	13.62	13.95	13.64	13.87	13.81
TNT	14.42	14.69	14.41	14.60	14.56
4ADNT	14.80	15.09	14.80	15.01	14.94
2ADNT	15.65	15.91	15.63	15.82	15.76
26DNT	16.78	17.03	16.72	16.96	16.89
24DNT	17.41	17.65	17.35	17.59	17.52
2NT	20.42	20.69	20.32	20.65	20.53
4NT	21.81	22.11	21.73	22.05	21.93
3NT	23.46	23.76	23.38	23.70	23.58

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.76	0.020	0.060	4.70 - 4.82
RDX	7.01	0.039	0.116	6.89 - 7.12
TNB	9.46	0.058	0.175	9.29 - 9.64
DNB	11.48	0.075	0.225	11.26 - 11.71
TETRYL	11.85	0.094	0.282	11.56 - 12.13
NB	13.02	0.090	0.271	12.75 - 13.29
3,4-DNT	13.80	0.113	0.338	13.46 - 14.14
TNT	14.55	0.095	0.285	14.27 - 14.84

DEX050 1
page 2

4ADNT	14.94	0.107	0.320	14.62 - 15.26
2ADNT	15.76	0.096	0.288	15.47 - 16.05
26DNT	16.89	0.106	0.318	16.57 - 17.21
24DNT	17.51	0.104	0.312	17.20 - 17.82
2NT	20.53	0.132	0.397	20.13 - 20.92
4NT	21.92	0.139	0.417	21.50 - 22.34
3NT	23.57	0.133	0.400	23.17 - 23.97

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33847
Instrument ID: IN10 Column ID: LC-CN-10

Dates of Anlayses: 05/07/98 to 05/08/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
EXP L1A STD	2-146:IA1	05/07/98	12:26
EXP L2A STD	2-145:IA2	05/07/98	13:10
EXP L3A STD	2-205:IA3	05/07/98	13:54
EXP L4A STD	2-143:IA4	05/07/98	14:39
EXP L5A STD	2-142:IA5	05/07/98	15:23
EXP L1B STD	1-151:IB1	05/07/98	16:07
EXP L2B STD	2-150:IB2	05/07/98	16:52
EXP L3B STD	2-206:IB3	05/07/98	17:36
EXP L4B STD	2-148:IB4	05/07/98	18:20
EXP L5B STD	2-147:IB5	05/07/98	19:05
BL0505SE	BL0505SE	05/08/98	03:57
BIO-N-30%-05-A1 10X	33847.01	05/08/98	05:26
BIO-N-30%-05-A2 10X	33847.02	05/08/98	06:10
BIO-30%-05-A3 10X	33847.03	05/08/98	06:54
BIO-N-30%-05-B1 10X	33847.04	05/08/98	07:39
BIO-N-30%-05-B2 10X	33847.05	05/08/98	08:23
BIO-N-30%-05-B3 10X	33847.06	05/08/98	09:08
BIO-N-30%-05-C1 10X	33847.07	05/08/98	09:52
EXP L3A STD	2-205:CA2	05/08/98	10:36

FORM VIII

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33847
Instrument ID: IN10 Column ID: LC-CN-10

Dates of Anlayses: 05/07/98 to 05/08/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
EXP L3B STD	2-206:CB2	05/08/98	11:21
BIO-N-30%-05-C2 10X	33847.08	05/08/98	12:05
BIO-N-30%-05-C2FD 10	33847.09	05/08/98	12:49
BIO-N-30%-05-C3 10X	33847.10	05/08/98	13:34
BIO-N-30%-05-D1 10X	33847.11	05/08/98	14:18
BIO-N-30%-05-D2 10X	33847.14	05/08/98	15:03
BIO-N-30%-05-D3 10X	33847.15	05/08/98	15:47
EXP L3A STD	2-205:CA3	05/08/98	18:00
EXP L3B STD	2-206:CB3	05/08/98	18:45

page 2

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0507,4
Injection File Name Level 2 : 3CN0507,5
Injection File Name Level 3 : 3CN0507,6
Injection File Name Level 4 : 3CN0507,7
Injection File Name Level 5 : 3CN0507,8

Calibration Date : 05/07/1998
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	11774	2560	61483	2673	147926	2573	293362	2551	609551	2650
26DNT	9203	1841	46266	1851	116327	1861	236585	1893	461912	1848
TNT	12139	2639	62673	2725	158324	2753	320719	2789	635846	2765
3,4DNT	9546	1364	49176	1405	123574	1498	251297	1523	500959	1518
TETRYL	10982	1220	61836	1374	113142	1006	220482	980	563813	1253
HMX	8061	1152	40242	1150	100568	1149	205329	1173	404648	1156

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1

Injection File Name Level 1 : 3CN0507,9
Injection File Name Level 2 : 3CN0507,10
Injection File Name Level 3 : 3CN0507,11
Injection File Name Level 4 : 3CN0507,12
Injection File Name Level 5 : 3CN0507,13

Calibration Date : 05/07/1998
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	10361	2072	47515	1901	119475	1912	253954	2032	497380	1990
DNB	15729	3932	73645	3682	186650	3733	386757	3868	782901	3915
24DNT	16713	3343	81074	3243	204192	3267	420522	3364	841807	3367
4ADNT	16141	1754	77826	1692	192571	1675	384276	1671	723604	1573
2ADNT	26527	2653	130686	2614	335017	2680	686424	2746	1410899	2822
RDX	7609	1522	34589	1384	86243	1380	178769	1430	379035	1516

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3CN0507,4
Injection File Name Level 2 : 3CN0507,5
Injection File Name Level 3 : 3CN0507,6
Injection File Name Level 4 : 3CN0507,7
Injection File Name Level 5 : 3CN0507,8

Calibration Date : 05/07/1998
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	2601	2.16	0.99979	2629	0.000
26DNT	1859	1.10	0.99991	1857	0.000
TNT	2734	2.12	0.99998	2768	0.000
3,4DNT	1462	4.96	0.99997	1517	0.000
TETRYL	1167	14.48	0.99214	1202	0.000
HMX	1156	0.87	0.99996	1159	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-10

Inj 1
Injection File Name Level 1 : 3CN0507,9
Injection File Name Level 2 : 3CN0507,10
Injection File Name Level 3 : 3CN0507,11
Injection File Name Level 4 : 3CN0507,12
Injection File Name Level 5 : 3CN0507,13

Calibration Date : 05/07/1998
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	1981	3.76	0.99984	1993	0.000
DNB	3826	2.93	0.99993	3896	0.000
24DNT	3317	1.74	0.99997	3361	0.000
4ADNT	1673	3.90	0.99949	1598	0.000
2ADNT	2703	3.04	0.99988	2800	0.000
RDX	1446	4.79	0.99946	1494	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	159008	2765	2601	6.31	2629	5.20
26DNT	129601	2074	1859	11.57	1857	11.67
TNT	173560	3018	2734	10.40	2768	9.03
3,4DNT	131830	1598	1462	9.33	1517	5.33
TETRYL	105159	935	1167	19.87	1202	22.21
HMX	98353	1124	1156	2.77	1159	3.02

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	124330	1989	1981	0.41	1993	0.21
DNB	194219	3884	3826	1.53	3896	0.29
24DNT	211842	3389	3317	2.19	3361	0.84
4ADNT	195294	1698	1673	1.51	1598	6.24
2ADNT	343065	2745	2703	1.54	2800	1.97
RDX	90000	1440	1446	0.44	1494	3.59

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 2
ntinuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	162019	2818	2601	8.32	2629	7.20
26DNT	121706	1947	1859	4.77	1857	4.86
TNT	164689	2864	2734	4.76	2768	3.46
3,4DNT	129363	1568	1462	7.29	1517	3.36
TETRYL	142839	1270	1167	8.84	1202	5.66
HMX	104926	1199	1156	3.73	1159	3.46

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 2
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	133840	2141	1981	8.09	1993	7.42
DNB	207071	4141	3826	8.25	3896	6.30
24DNT	222696	3563	3317	7.43	3361	6.01
4ADNT	207103	1801	1673	7.65	1598	12.67
2ADNT	353952	2832	2703	4.77	2800	1.14
RDX	95434	1527	1446	5.58	1494	2.23

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 3
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,20
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	162521	2826	2601	8.65	2629	7.53
26DNT	124518	1992	1859	7.20	1857	7.29
TNT	168918	2938	2734	7.45	2768	6.12
3,4DNT	131764	1597	1462	9.28	1517	5.27
TETRYL	139066	1236	1167	5.96	1202	2.87
HMX	106956	1222	1156	5.74	1159	5.46

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/07/1998
Continuing Calibration #: 3
Continuing Cal Date : 05/08/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-10
Injection File Name : 3CN0507B,21
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	125652	2010	1981	1.48	1993	0.85
DNB	204044	4081	3826	6.66	3896	4.75
24DNT	221543	3545	3317	6.87	3361	5.46
4ADNT	210697	1832	1673	9.52	1598	14.62
2ADNT	354957	2840	2703	5.06	2800	1.42
RDX	94423	1511	1446	4.46	1494	1.14

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

A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

nstrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	5.87	5.88	5.88	5.86	5.85
26DNT	6.50	6.52	6.51	6.49	6.48
TNT	7.01	7.03	7.03	7.00	6.99
3,4DNT	8.02	8.05	8.05	8.01	8.00
TETRYL	10.90	10.95	10.96	10.89	10.90
HMX	12.45	12.61	12.60	12.52	12.52

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
TNB	5.89	5.89	5.90
26DNT	6.54	6.54	6.57
TNT	7.05	7.05	7.07
3,4DNT	8.09	8.08	8.12
TETRYL	11.03	10.99	11.04
HMX	12.73	12.64	12.69

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	5.88	0.017	0.050	5.83 - 5.93
26DNT	6.52	0.029	0.088	6.43 - 6.61
TNT	7.03	0.026	0.079	6.95 - 7.11
3,4DNT	8.05	0.044	0.131	7.92 - 8.18
TETRYL	10.96	0.060	0.180	10.78 - 11.14
HMX	12.60	0.093	0.280	12.32 - 12.88

β STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-10
Calibration Date : 05/07/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.24	5.24	5.24	5.22	5.22
DNB	5.79	5.80	5.78	5.77	5.77
24DNT	6.77	6.79	6.77	6.75	6.75
4ADNT	7.50	7.53	7.50	7.49	7.47
2ADNT	8.00	8.04	8.00	7.98	7.97
RDX	8.72	8.75	8.70	8.69	8.68

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
NB	5.25	5.26	5.26
DNB	5.79	5.81	5.80
24DNT	6.79	6.80	6.80
4ADNT	7.53	7.55	7.54
2ADNT	8.03	8.06	8.04
RDX	8.74	8.76	8.74

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.24	0.016	0.047	5.20 - 5.29
DNB	5.79	0.016	0.047	5.74 - 5.83
24DNT	6.78	0.021	0.062	6.71 - 6.84
4ADNT	7.51	0.028	0.085	7.43 - 7.60
2ADNT	8.02	0.032	0.096	7.92 - 8.11
RDX	8.72	0.029	0.086	8.64 - 8.81

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33847
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/11/98 to 05/13/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	05/11/98	21:27
L1 2-214:IA1	L1 2-214:IA1	05/11/98	22:51
L2 2-213:IA2	L2 2-213:IA2	05/11/98	23:19
L3 2-224:IA3	L3 2-224:IA3	05/11/98	23:48
L4 2-211:IA4	L4 2-211:IA4	05/12/98	00:16
L5 2-185:IA5	L5 2-185:IA5	05/12/98	00:44
ICV 2-223	ICV 2-223	05/12/98	01:12
L3 2-224:CA1	L3 2-224:CA1	05/12/98	05:54
BL0505SF	BL0505SF	05/12/98	08:42
LC0505SF	LC0505SF	05/12/98	09:39
LD0505SF	LD0505SF	05/12/98	10:07
BIO-N-30%-05-A1	33847.01	05/12/98	10:35
L3 2-224:CA2	L3 2-224:CA2	05/12/98	11:03
BIO-N-30%-05-A2	33847.02	05/12/98	12:00
BIO-N-30%-05-A3	33847.03	05/12/98	12:28
BIO-N-30%-05-B1	33847.04	05/12/98	12:56
BIO-N-30%-05-B2	33847.05	05/12/98	13:24
BIO-N-30%-05-B3	33847.06	05/12/98	13:52
BIO-N-30%-05-C1	33847.07	05/12/98	14:20

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33847
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/11/98 to 05/13/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-05-C2	33847.08	05/12/98	14:49
BIO-N-30%-05-C2FD	33847.09	05/12/98	15:17
L3 2-224:CA3	L3 2-224:CA3	05/12/98	15:45
BIO-N-30%-05-C3	33847.10	05/12/98	16:41
BIO-N-30%-05-D1	33847.11	05/12/98	17:09
BIO-N-30%-05-D1	33847.12MS	05/12/98	17:38
BIO-N-30%-05-D1	33847.13MSD	05/12/98	18:06
BIO-N-30%-05-D2	33847.14	05/12/98	18:34
BIO-N-30%-05-D3	33847.15	05/12/98	19:20
L3 2-224:CA4	L3 2-224:CA4	05/12/98	19:48

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

	Inj 1
Injection File Name Level 1 :	051198,4
Injection File Name Level 2 :	051198,5
Injection File Name Level 3 :	051198,6
Injection File Name Level 4 :	051198,7
Injection File Name Level 5 :	051198,8

Calibration Date : 05/11/98
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	6.03863	3.31E0	49.5231	3.23E0	101.4	3.16E0	416.092	3.08E0	836.72	3.06E0

CALIBRATION FACTOR DATA
FORM 9B

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

	Inj 1
Injection File Name Level 1 :	051198,4
Injection File Name Level 2 :	051198,5
Injection File Name Level 3 :	051198,6
Injection File Name Level 4 :	051198,7
Injection File Name Level 5 :	051198,8

Calibration Date : 05/11/98
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	3.17E0	3.35	0.99999	3.06E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 1
tinuing Cal Date : 05/12/98
ntinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	98.2126	3.26E0	3.17E0	2.88	3.06E0	6.32

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 2
ntinuing Cal Date : 05/12/98
ntinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,30
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.473	3.12E0	3.17E0	1.39	3.06E0	1.90

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 3
Continuing Cal Date : 05/12/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,40
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	100.77	3.18E0	3.17E0	0.27	3.06E0	3.62

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/11/98
Continuing Calibration #: 4
tinuing Cal Date : 05/12/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051198,48
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	101.247	3.16E0	3.17E0	0.20	3.06E0	3.14

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ection 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 :
Calibration Date : 05/11/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	12.57	12.61	12.59	12.61	12.61

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	12.83	12.68	12.44	12.38	12.73

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	1~~1.57~~ 12.60	~~3.646~~ 0.130	10~~.938~~ 0.389	0~~.63 - 22.51~~ 12.21 - 12.99

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

BIO-011

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

Project No.: 4329-0009-007-35

Project Name: NSWC Crane Biofacility

Samplers: (Signature)

Sampler: (Print) Ryan Erwin

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	8330 Explosives	Remarks
Compost	CS A SL1	5/2/98	659	BIO N-30% DS-A1	✓		✓	FD at C2
	CS A SL2		710	BIO N-30% DS-A2	✓		✓	
	CS A SL3		643	BIO-N-30% DS-A3	✓		✓	
	CS B SL1		732	BIO-N-30% DS-B1	✓		✓	
	CS B SL2		743	BIO-N-30% DS-B2	✓		✓	
	CS B SL3		719	BIO-N-30% DS-B3	✓		✓	
	CS C SL1		815	BIO-N-30% DS-C1	✓		✓	
	CS C SL2		806	BIO-N-30% DS-C2	✓		✓	
	CS C SL2		806	BIO-N-30% DS-C2-FD	✓		✓	
	CS C SL3		753	BIO-N-30% DS-C3	✓		✓	
	CS D SL1		831	BIO-N-30% DS-D1	✓		✓	
	CS D SL2		837	BIO-N-30% DS-D2	✓		✓	
	CS D SL3		821	BIO-N-30% DS-D3	✓		✓	

South West Labs

Relinquished By: (Signature) / Company	Date/Time	Received By: (Signature) / Company	Relinquished By: (Signature) / Company	Date/Time	Received By: (Signature) / Company
Ryan Erwin	5/4/98 1530				
Relinquished By: (Signature) / Company	Date/Time	Received By: (Signature) / Company	Relinquished By: (Signature) / Company	Date/Time	Received By: (Signature) / Company
Relinquished By: (Signature) / Company	Date/Time	Received By: (Signature) / Company	Received for Laboratory By: (Signature) / Company: C. Miller	Date/Time 5-5-98 9:45	Total No. Samples This Shipping Container / Company
Relinquished By: (Signature) / Company	Date/Time	Received By: (Signature) / Company	Relinquished By: (Signature) / Company	Date/Time	Received By: (Signature) / Company

68

2301, 2302

APPENDIX M
RAW DATA FOR LABORATORY ANALYSIS DAY 10

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Analytical Run Logbook and Calibration for Instrument IN12 on 5/18/98 (soil analysis)	4 pages
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Analytical Run Logbook and Calibration for Instrument IN10 on 5/29/98 (soil analysis)	6 pages
Analytical Run Logbook and Calibration for Instrument IN10 on 6/04/98 (soil analysis)	6 pages
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2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

J Code: SWOK Case No: MKF-OH SDG No:33910

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-10-A1	73.6	0
2	BIO-N-30%-10-1A MS	57.4*	0
3	BIO-N-30%-10-A1 MSD	82.7	0
4	BIO-N-30%-10-A2	80.0	0
5	BIO-N-30%-10-A3	81.3	0
6	BIO-N-30%-10-B1	73.2	0
7	BIO-N-30%-10-B2	85.5	0
8	BIO-N-30%-10-B3	80.4	0
9	BIO-N-30%-10-B3FD	83.8	0
10	BIO-N-30%-10-C1	86.2	0
11	BIO-N-30%-10-C2	82.6	0
12	BIO-N-30%-10-C3	81.5	0
13	BIO-N-30%-10-D1 10X	71.2	0
14	BIO-N-30%-10-D2	69.2	0
15	BIO-N-30%-10-D3	84.0	0
16	BIO-RB050798	132	0
17	BIO-RB050798 MS	157*	0
18	BIO-RB050798 MSD	128	0
19	BL0511SA	88.4	0
20	BL0511WD	129	0
21	LC0511SA	94.6	0
22	LC0511WD	159*	0
23	LD0511SA	96.3	0
24	LD0511WD	151*	0
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

page _ 1

FORM II

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

L-' Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: BIO-N-30%-10-A1 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500		7810	82	54-128
RDX	9500	1340	6150	51*	66-109
TNB	9500		5960	63	57-130
DNB	9500		6150	65*	74-122
TETRYL	9500		3140	33	32-119
NB	9500		5780	61*	70-135
TNT	9500		5880	62	44-124
4ADNT	9500		5960	63	60-140
2ADNT	9500		5260	55*	60-140
26DNT	9500		6750	71	58-125
24DNT	9500		5820	61	59-120
2NT	9500		6580	69*	79-124
4NT	9500		6480	68*	74-128
3NT	9500		5440	57*	79-121

N of Analyte recoveries out of QC Advisory Limits = 7

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	9610	101	21	30	54-128
RDX	9500	7760	68	29	30	66-109
TNB	9500	8200	86	32*	30	57-130
DNB	9500	8640	91	34	45	74-122
TETRYL	9500	4310	45	32*	30	32-119
NB	9500	8400	88	37*	35	70-135
TNT	9500	7180	76	20	30	44-124
4ADNT	9500	8450	89	35	40	60-140
2ADNT	9500	7550	80	36	40	60-140
26DNT	9500	9440	99	33	35	58-125
24DNT	9500	8380	88	36*	35	59-120
2NT	9500	9460	100	36*	35	79-124
4NT	9500	9270	98	35*	35	74-128
3NT	9500	7900	83	37*	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 7
No of RPD's out of QC Limits 7

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: BIO-N-30%-10-A1

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000		2300	77	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000	2350	78	2	30	70-130

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

3F

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: BIO-RB050798 MSD

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
HMX	400		380	95	44-154
RDX	150		141	94	66-139
TNB	225		223	99	56-129
DNB	125		116	93	76-122
TETRYL	413		102	25*	76-120
NB	213		267	125*	82-111
TNT	188		275	146*	76-137
4ADNT	313		312	100	60-140
2ADNT	313		300	96	60-140
26DNT	288		295	102	80-118
24DNT	175		171	98	72-123
2NT	363		336	93	74-130
4NT	250		272	109	78-116
3NT	238		292	123	72-126

1 of Analyte recoveries out of QC Advisory Limits = 3

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	400	380	95	0	15	44-154
RDX	150	139	93	1	12	66-139
TNB	225	221	98	1	10	56-129
DNB	125	115	92	1	15	76-122
TETRYL	413	224	54*	75*	14	76-120
NB	213	241	113*	10	13	82-111
TNT	188	284	151*	3	15	76-137
4ADNT	313	307	98	2	40	60-140
2ADNT	313	298	95	1	40	60-140
26DNT	288	287	100	2	13	80-118
24DNT	175	174	99	2	14	72-123
2NT	363	320	88	5	15	74-130
4NT	250	234	94	15*	14	78-116
3NT	238	293	123	0	15	72-126

No of Analyte recoveries out of QC Advisory Limits = 3
No of RPD's out of QC Limits 2

3F

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: BIO-RB050798

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	1430	119	3	30	70-130

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

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: LC0511SB

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		3000	100	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:33910

Client Sample No: LC0511WD

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
HMX	400		376	94	46-151
RDX	150		132	88	72-129
TNB	225		223	99	74-118
DNB	125		117	94	76-132
TETRYL	413		128	31*	58-120
NB	213		245	115	68-135
TNT	188		264	140	61-145
4ADNT	313		313	100	60-140
2ADNT	313		301	96	60-140
26DNT	288		296	103	77-125
24DNT	175		168	96	70-134
2NT	363		344	95	73-131
4NT	250		269	108	73-116
3NT	238		294	124	71-127

# of 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:33910

Client Sample No: LC0511WE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
PETN	1200		1330	111	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:33910

Client Sample No: LD0511SA

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		10700	113	57-137
RDX	9500		7880	83	77-113
TNB	9500		7980	84	64-125
DNB	9500		8670	91	82-118
TETRYL	9500		4590	48	23-124
NB	9500		9020	95	69-143
TNT	9500		7570	80	75-118
4ADNT	9500		8940	94	60-140
2ADNT	9500		8000	84	60-140
26DNT	9500		9660	102	78-117
24DNT	9500		8760	92	74-126
2NT	9500		9840	104	78-123
4NT	9500		9920	104	79-125
3NT	9500		8420	89	78-121

N f 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:33910

Client Sample No: LD0511SB

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		2920	97	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:33910

Client Sample No: LD0511WD

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
HMX	400		370	93	46-151
RDX	150		142	95	72-129
TNB	225		224	100	74-118
DNB	125		113	90	76-132
TETRYL	413		228	55*	58-120
NB	213		218	102	68-135
TNT	188		260	138	61-145
4ADNT	313		308	98	60-140
2ADNT	313		298	95	60-140
26DNT	288		292	101	77-125
24DNT	175		174	99	70-134
2NT	363		320	88	73-131
4NT	250		252	101	73-116
3NT	238		295	124	71-127

# of Analyte recoveries out of QC Advisory Limits = 1

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Job Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Client Sample No: LD0511WE

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
PETN	1200		1330	111	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0511SA

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Matrix: (soil/water) Soil

Date Extracted: 05/11/98 Extn. Method: SONC

Date Analyzed (1): 05/19/98 Date Analyzed(2): 05/30/98

Time Analyzed (1): 01:22:56 Time Analyzed(2): 05:56:48

Instrument ID (1): IN12 Instrument ID(2): IN10

LC Column ID (1): CARB-07 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	LC0511SA	LC0511SA	05/19/98	
2	LD0511SA	LD0511SA	05/19/98	
3	BIO-N-30%-10-A1	33910.01	05/19/98	05/30/98
4	BIO-N-30%-10-1A MS	33910.02MS	05/19/98	
[illegible]	BIO-N-30%-10-A1 MSD	33910.03MSD	05/19/98	
	BIO-N-30%-10-A2	33910.04	05/19/98	05/30/98
7	BIO-N-30%-10-A3	33910.05	05/19/98	05/30/98
8	BIO-N-30%-10-B1	33910.06	05/19/98	05/30/98
9	BIO-N-30%-10-B2	33910.07	05/20/98	05/30/98
10	BIO-N-30%-10-B3	33910.08	05/20/98	05/30/98
11	BIO-N-30%-10-B3FD	33910.09	05/20/98	05/30/98
12	BIO-N-30%-10-C1	33910.10	05/20/98	06/05/98
13	BIO-N-30%-10-C2	33910.11	05/20/98	06/05/98
14	BIO-N-30%-10-C3	33910.12	05/20/98	06/05/98
15	BIO-N-30%-10-D1 10X	33910.13	05/20/98	06/05/98
16	BIO-N-30%-10-D2	33910.14	05/20/98	06/05/98
17	BIO-N-30%-10-D3	33910.15	05/20/98	06/05/98
18				
19				
20				
21				
22				
23				
24				
25				

FORM IV

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0511SB

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Matrix: (soil/water) Soil

Date Extracted: 05/11/98 Extn. Method: SONC

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

Time Analyzed (1): 00:02:31 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	LC0511SB	LC0511SB	05/21/98	
2	LD0511SB	LD0511SB	05/21/98	
3	BIO-N-30%-10-A1	33910.01	05/21/98	
4	BIO-N-30%-10-A1	33910.02MS	05/21/98	
5	BIO-N-30%-10-A1	33910.03MSD	05/21/98	
	BIO-N-30%-10-A2	33910.04	05/21/98	
7	BIO-N-30%-10-A3	33910.05	05/21/98	
8	BIO-N-30%-10-B1	33910.06	05/21/98	
9	BIO-N-30%-10-B2	33910.07	05/21/98	
10	BIO-N-30%-10-B3	33910.08	05/21/98	
11	BIO-N-30%-10-B3FD	33910.09	05/21/98	
12	BIO-N-30%-10-C1	33910.10	05/21/98	
13	BIO-N-30%-10-C2	33910.11	05/21/98	
14	BIO-N-30%-10-C3	33910.12	05/21/98	
15	BIO-N-30%-10-D1	33910.13	05/21/98	
16	BIO-N-30%-10-D2	33910.14	05/21/98	
17	BIO-N-30%-10-D3	33910.15	05/21/98	
18				
19				
20				
21				
22				
23				
24				
25				

page 1

FORM IV

4C

Lab Name: SWL-TULSA Contract:

L-' Sample ID: BL0511WD

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 05/13/98 Date Analyzed(2):

Time Analyzed (1): 02:09:07 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	LC0511WD	LC0511WD	05/13/98	
2	LD0511WD	LD0511WD	05/13/98	
3	BIO-RB050798	33910.16	05/13/98	
4	BIO-RB050798 MS	33910.16MS	05/13/98	
	BIO-RB050798 MSD	33910.16MSD	05/13/98	
7				
8				
9				
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25				

page 1

FORM IV

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0511WE

Lab Code: SWOK Case No: MKF-OH SDG No:33910

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 05/15/98 Date Analyzed(2):

Time Analyzed (1): 14:33:40 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	LC0511WE	LC0511WE	05/15/98	
2	LD0511WE	LD0511WE	05/15/98	
3	BIO-RB050798	33910.16	05/15/98	
4	BIO-RB050798	33910.16MS	05/15/98	
5	BIO-RB050798	33910.16MSD	05/15/98	
6				
7				
8				
9				
10				
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12				
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17				
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24				
25				

FORM IV

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.01

Sample Amt: 2g % Moisture 27.49 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/19/98

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	1340	
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

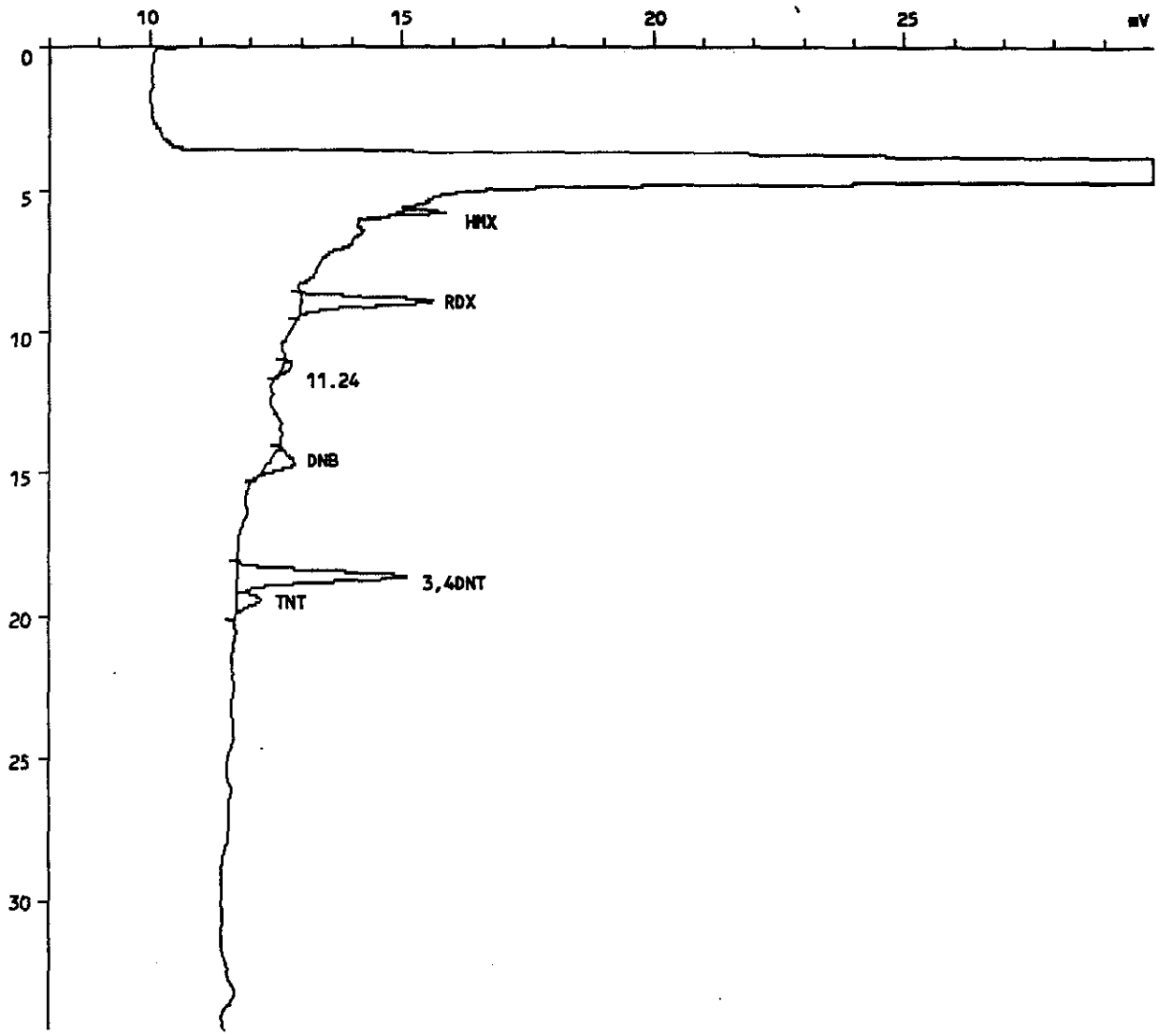
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0518A,5,1

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 19-May-98 at 04:21:26
Reported on 05-Jun-98 at 12:02:34



INJECTION REPORT

Injection F: <MC3> 2 2EX0518A,5,1

Acquired on 19-May-98 at 04:21:26
Modified on 05-Jun-82 at 11:58:44
Reported on 05-Jun-98 at 11:58:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 52
Calibration file..: 2EX0518 Last modified on 05-Jun-82 at 11:56:40
Method file.....: EXPLOS Last modified on 05-Jun-82 at 11:57:04
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
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

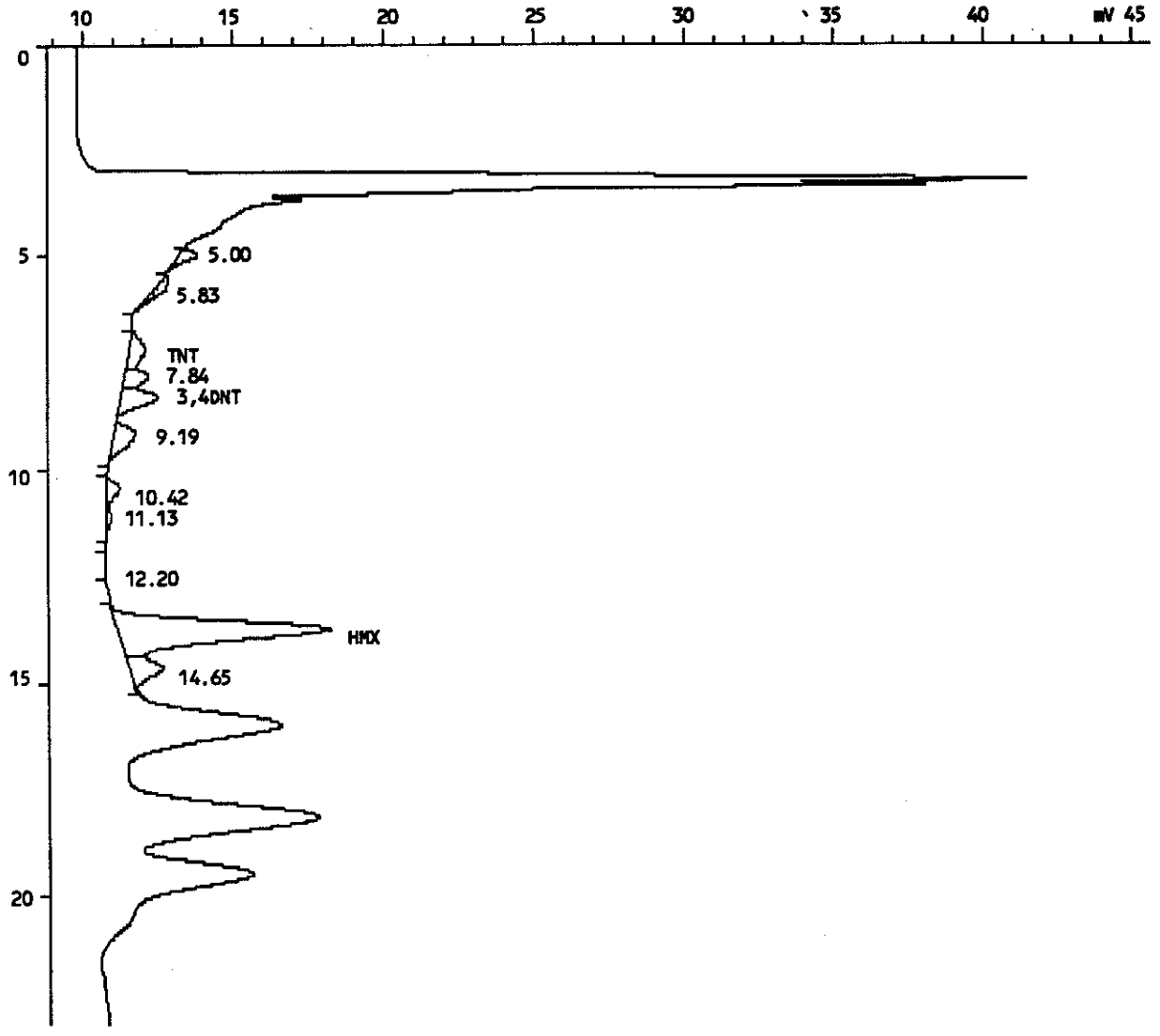
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.771	1028	9850	399.429	HMX
2	8.907	2649	57537	1339.932	RDX *
4	14.715	582	19724	145.650	DNB
5	18.576	3369	90325	1472.047	3,4DNT 74
6	19.429	506	13817	129.636	TNT
Total		8134	191252	3486.695	
Residual		204	4798	111.735	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,3,1

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 07:25:31
Reported on 04-Jun-98 at 12:41:12



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,3,1

Acquired on 30-May-98 at 07:25:31
Modified on 04-Jun-82 at 12:32:42
Reported on 04-Jun-98 at 12:32:40

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.: 19
Calibration file..: 3CN0530A Last modified on 04-Jun-82 at 12:30:50
Method file.....: LCCN Last modified on 04-Jun-82 at 12:30:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
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

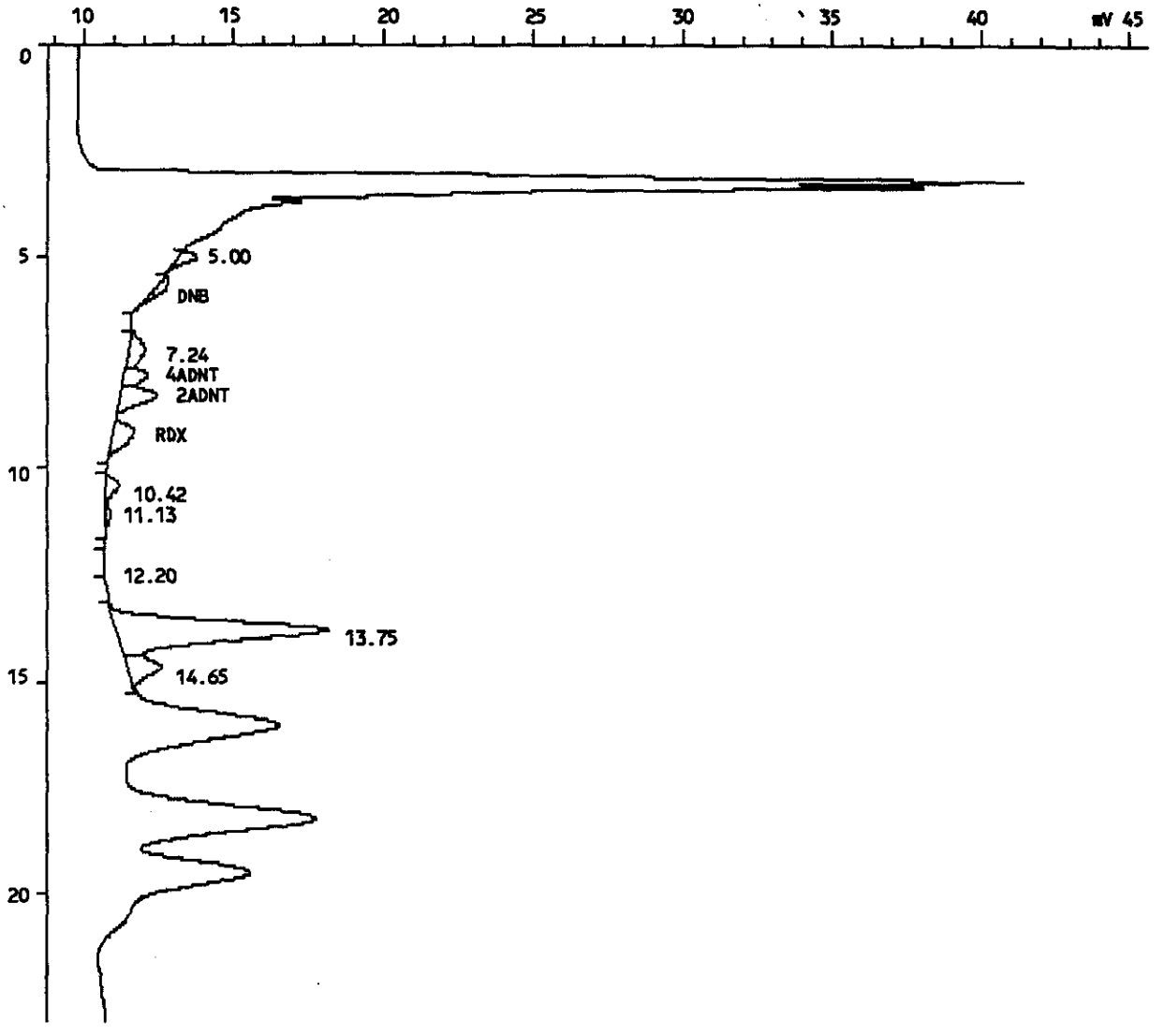
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.243	619	20889	736.295	TNT
5	8.309	1273	30692	2077.972	3,4DNT
10	13.749	7044	214776	18063.598	HMX
Total		8935	266357	20877.865	
Residual		4452	110023	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,3,1

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 07:25:31
Reported on 04-Jun-98 at 12:54:59



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,3,1

Acquired on 30-May-98 at 07:25:31
Modified on 04-Jun-82 at 12:48:44
Reported on 04-Jun-98 at 12:48:42

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.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 12:46:30
Method file.....: LCCN Last modified on 04-Jun-82 at 12:47:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A1
Sample ID.....: 33910.01
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
2	5.835	473	12853	293.845	DNB
4	7.840	818	17104	878.456	4ADNT
5	8.309	1273	30692	1051.084	2ADNT
6	9.189	755	23750	1414.506	RDX
Total		3318	84398	3637.891	
Residual		10068	291982	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.01

Sample Amt: 2g % Moisture 27.49 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

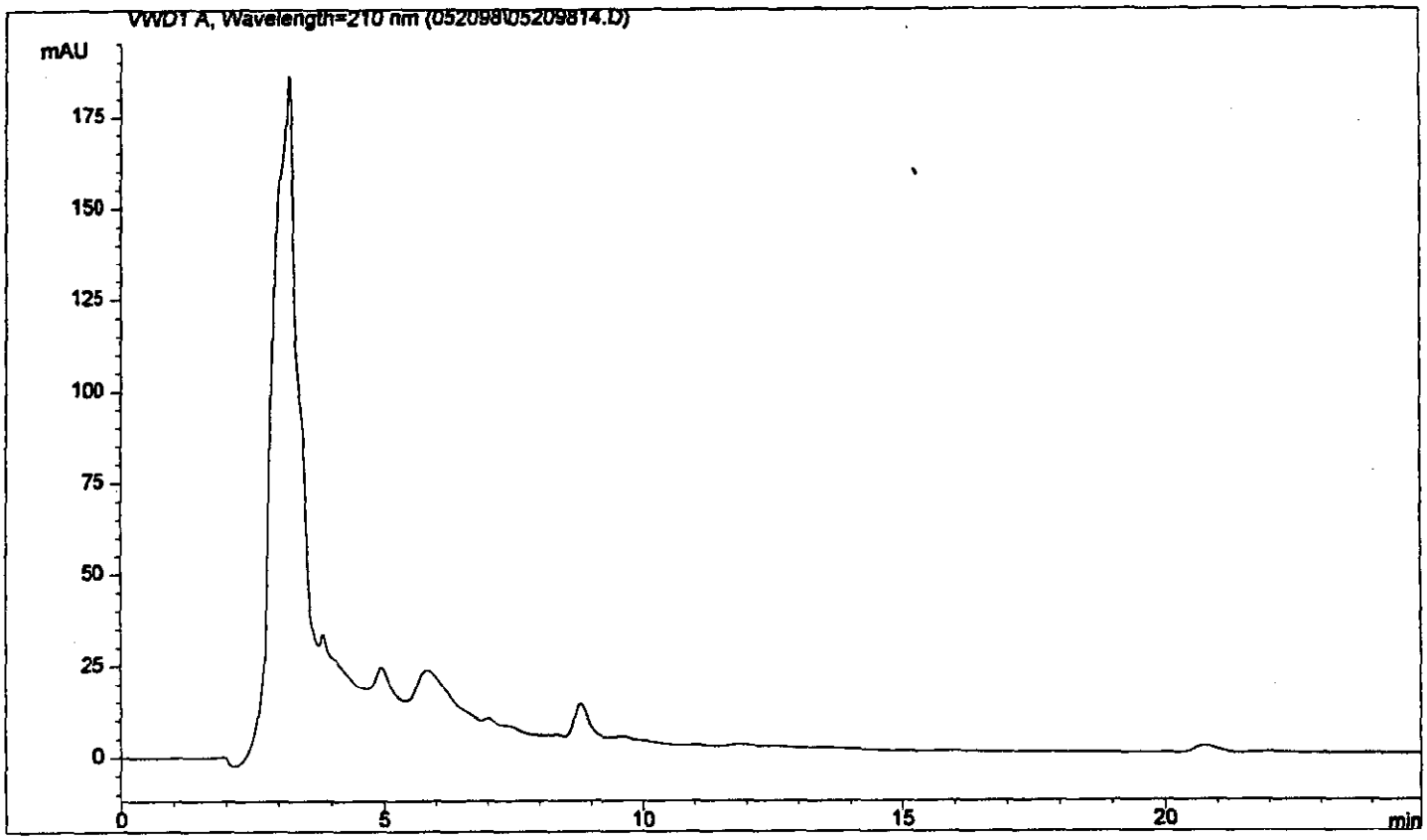
FORM I

Sample Name : 33910.01
Acq Operator : SS

Vial No. : 14
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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
Totals:				0.00000	

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*** End of Report ***

** 29

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.04

Sample Amt: 2g % Moisture 20.88 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/19/98

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	2870	P
121-82-4	RDX	2330	
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	2500	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

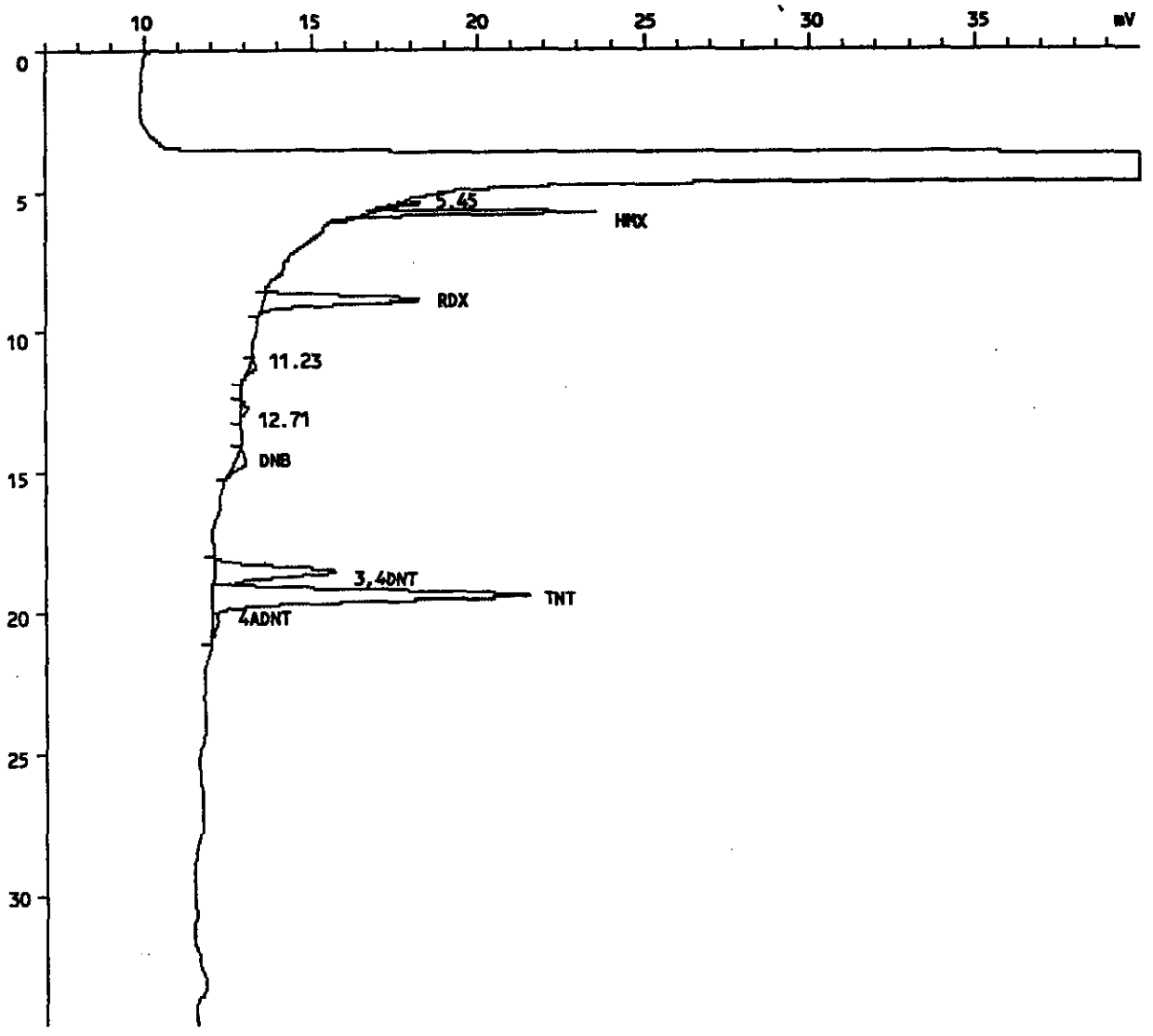
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0518A,8,1

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 19-May-98 at 06:35:19
Reported on 05-Jun-98 at 12:07:45



INJECTION REPORT

Injection F: <MC3> 2 2EX0518A,8,1

Acquired on 19-May-98 at 06:35:19
Modified on 05-Jun-82 at 11:59:40
Reported on 05-Jun-98 at 11:59:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 52
Calibration file..: 2EX0518 Last modified on 05-Jun-82 at 11:56:40
Method file.....: EXPLOS Last modified on 05-Jun-82 at 11:57:04
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
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

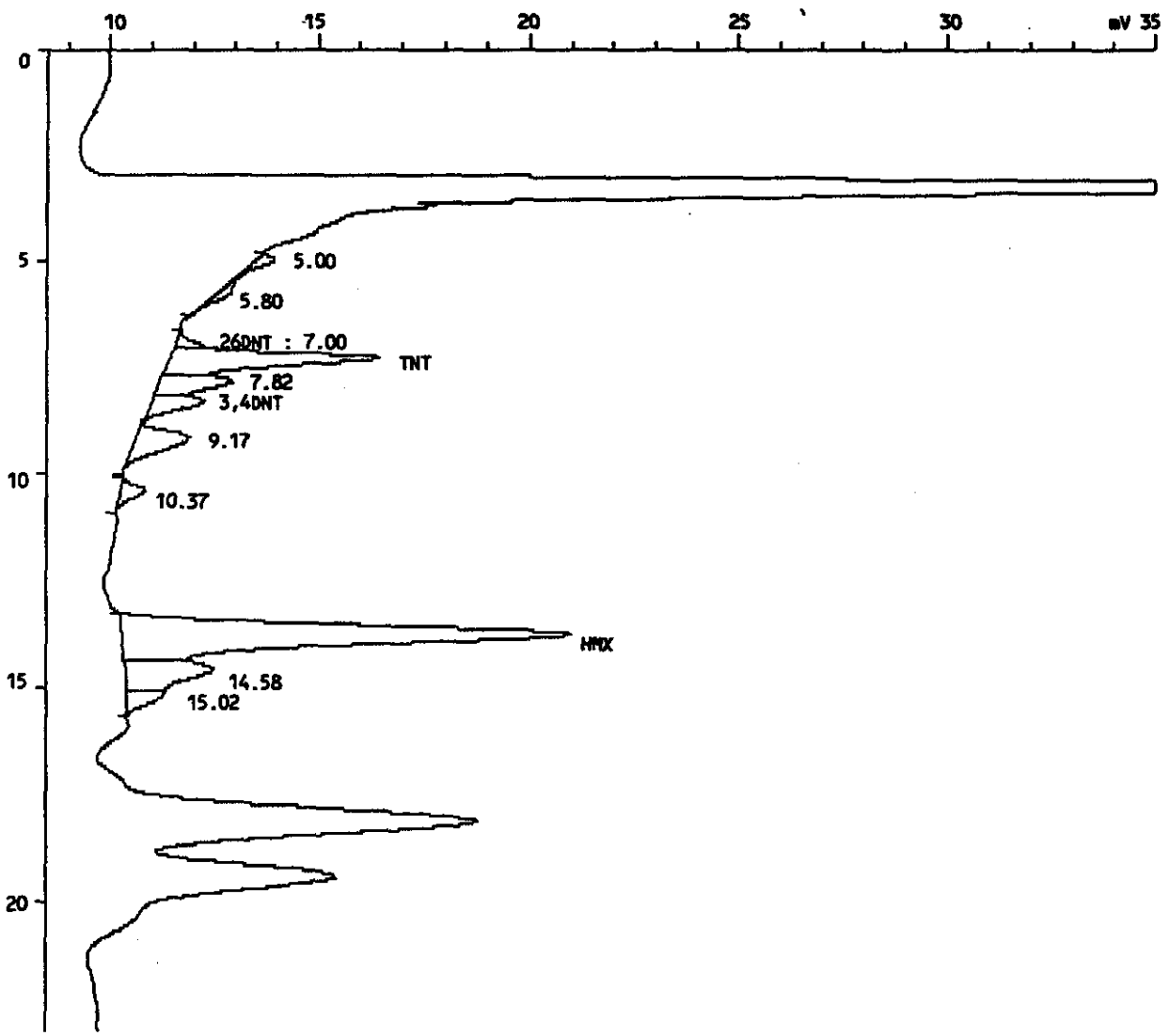
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.765	7091	70694	2866.736	HMX*P
3	8.885	4675	100151	2332.342	RDX*
6	14.688	404	14681	108.409	DNB
7	18.528	3658	98187	1600.184	3,4DNT SD
8	19.376	9473	266596	2501.367	TNT *P
9	20.320	180	6377	95.461	4ADNT
Total		25480	556685	9504.499	
Residual		1242	16887	393.278	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,4,1

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 30-May-98 at 08:09:52
Reported on 05-Jun-98 at 14:12:17



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,4,1

Acquired on 30-May-98 at 08:09:52
Modified on 05-Jun-82 at 14:11:12
Reported on 05-Jun-98 at 14:11:35

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.: 19
Calibration file..: 3CN0530A Last modified on 05-Jun-82 at 14:09:44
Method file.....: LCCN Last modified on 05-Jun-82 at 14:11:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
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

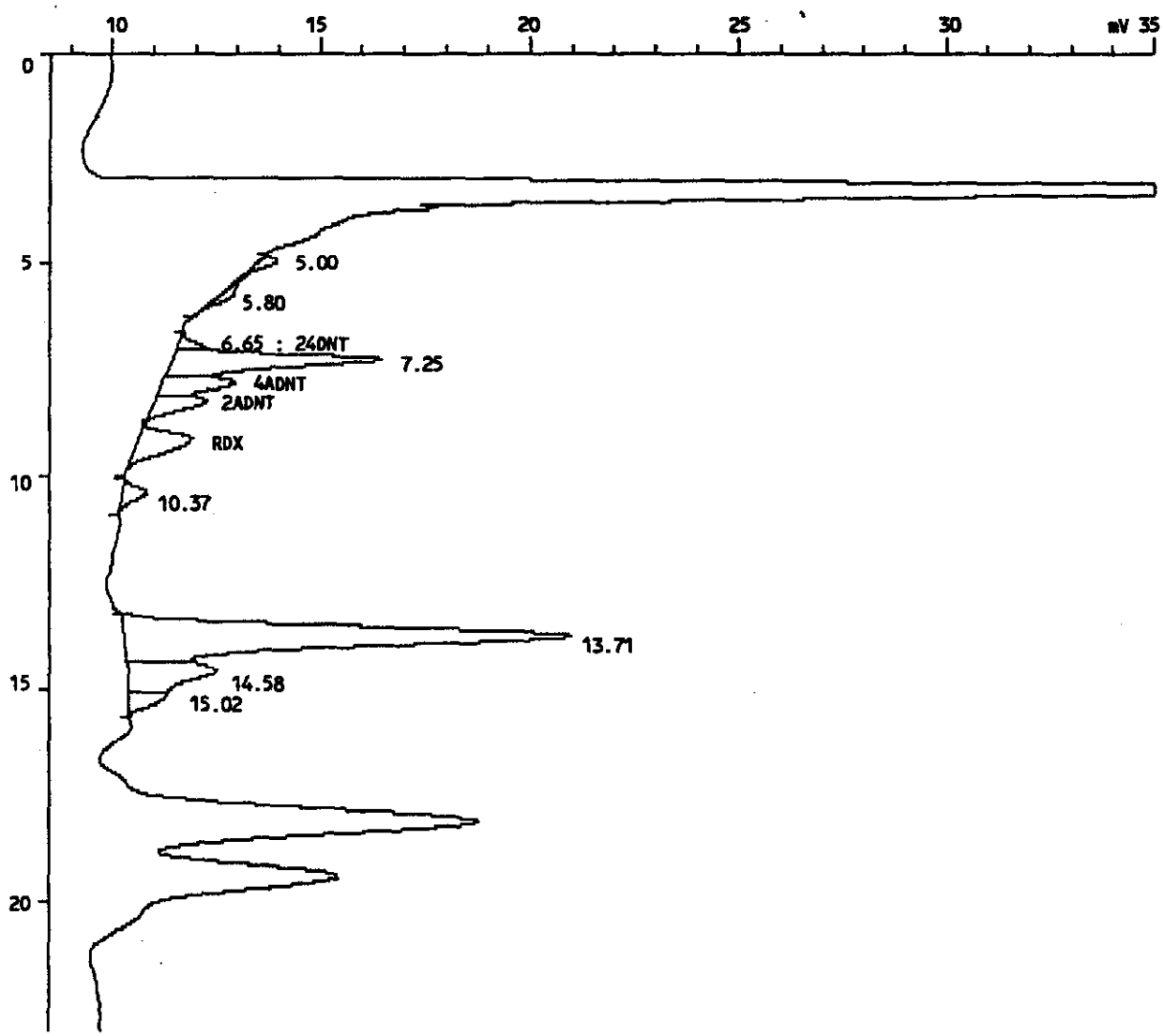
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	6.645	1	-60	-2.982	26DNT
5	7.248	5060	108560	3826.591	TNT
7	8.288	1259	28168	1907.117	3,4DNT
10	13.712	10650	337011	28344.043	HMX
Total		16970	473679	34074.770	
Residual		8388	206907	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,4,1

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 30-May-98 at 08:09:52
Reported on 05-Jun-98 at 14:13:14



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,4,1

Acquired on 30-May-98 at 08:09:52
Modified on 05-Jun-82 at 14:12:48
Reported on 05-Jun-98 at 14:12:48

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.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 13:10:50
Method file.....: LCCN Last modified on 05-Jun-82 at 14:11:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A2
Sample ID.....: 33910.04
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
4	7.003	744	6972	181.898	24DNT
6	7.819	1760	37024	1901.578	4ADNT
7	8.288	1259	28168	964.662	2ADNT
8	9.173	1277	39700	2364.508	RDX
Total		5039	111864	5412.646	
Residual		20319	568722	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.04

Sample Amt: 2g % Moisture 20.88 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

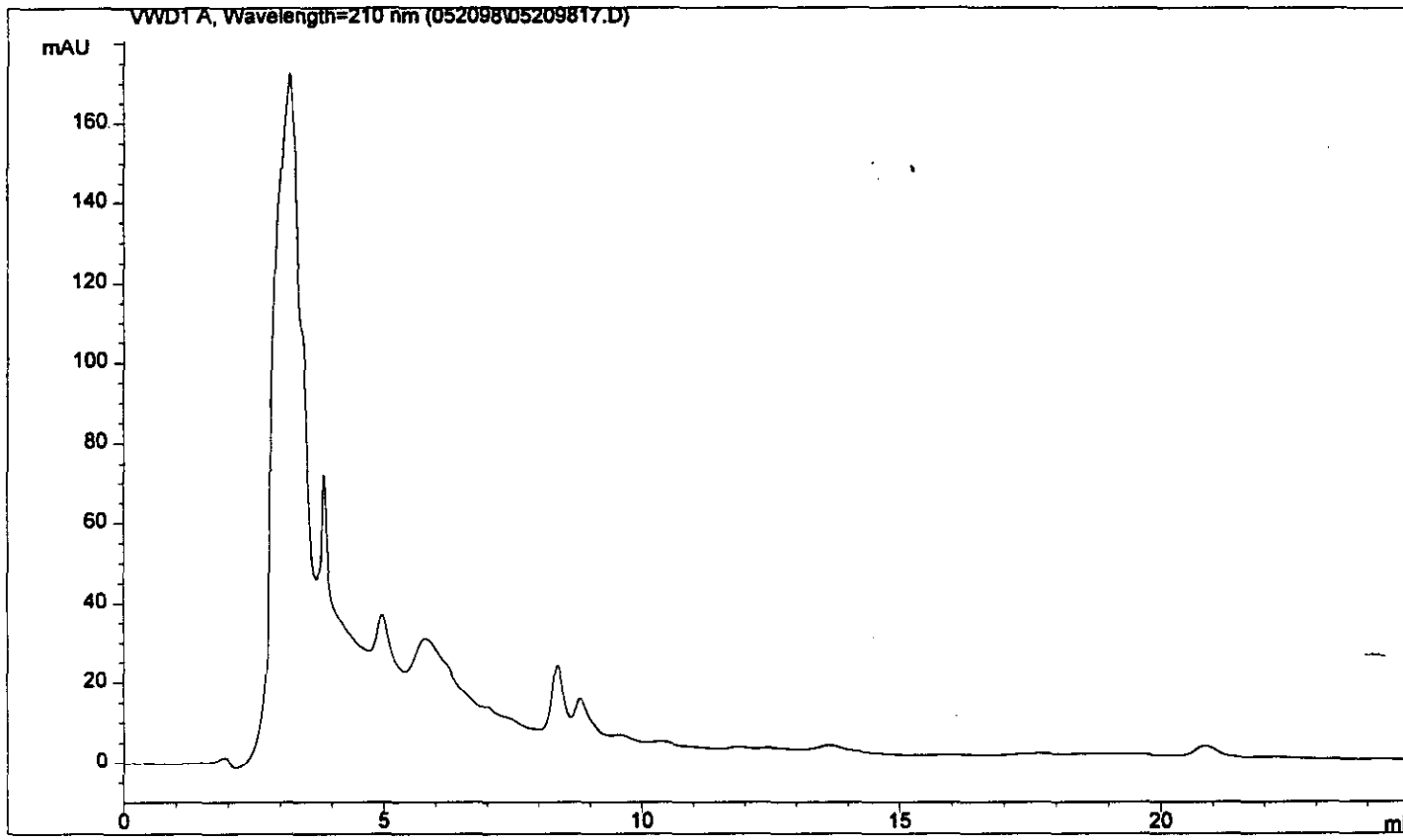
FORM I

Sample Name : 33910.04
Acq Operator : SS

Vial No. : 17
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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

Totals: 0.00000

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.05

Sample Amt: 2g % Moisture 23.70 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/19/98

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	3240	P
121-82-4	RDX	3700	
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	397	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

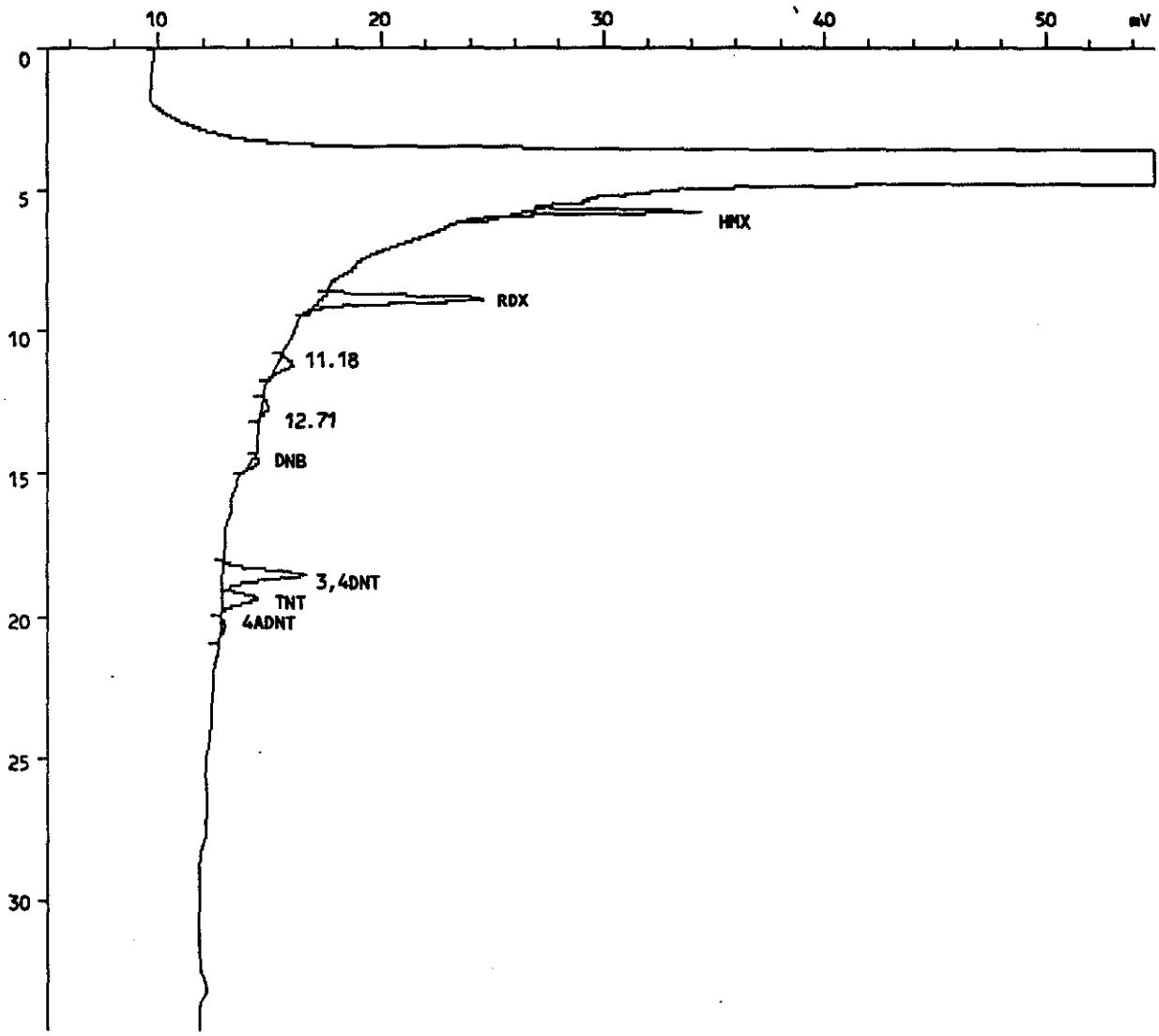
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0518A,9,1

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 19-May-98 at 07:19:56
Reported on 05-Jun-98 at 12:03:28



INJECTION REPORT

Injection F: <MC3> 2 2EX0518A,9,1

Acquired on 19-May-98 at 07:19:56
Modified on 05-Jun-82 at 11:59:56
Reported on 05-Jun-98 at 11:59:56

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 52
Calibration file..: 2EX0518 Last modified on 05-Jun-82 at 11:56:40
Method file.....: EXPLOS Last modified on 05-Jun-82 at 11:57:04
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
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

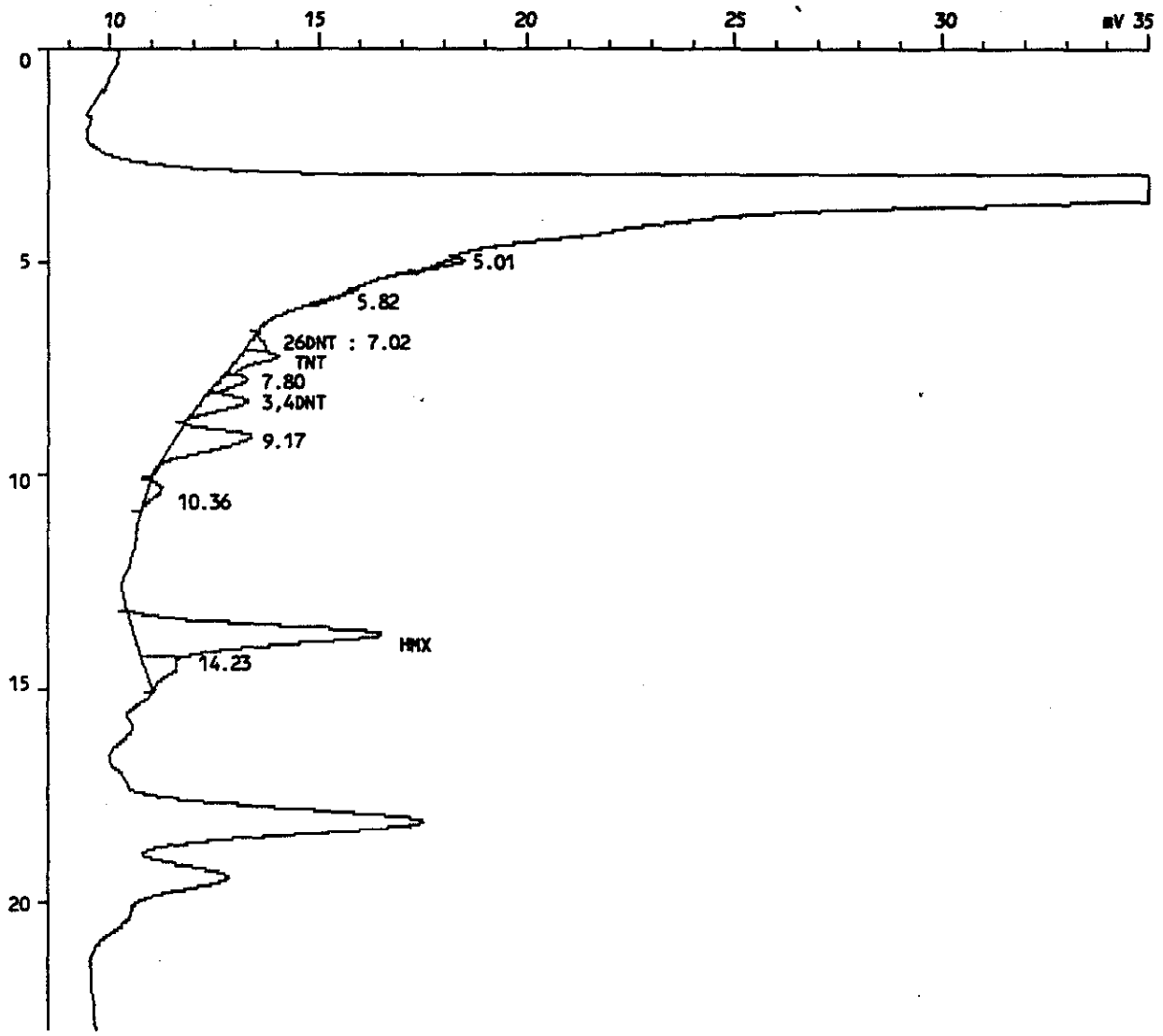
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.760	8188	79778	3235.127	HMX *P
2	8.885	7388	158692	3695.679	RDX *
5	14.683	315	6892	50.890	DNB
6	18.528	3670	99784	1626.202	3,4DNT SI
7	19.376	1588	42348	397.331	TNT *P
8	20.325	226	6631	99.273	4ADNT
Total		21375	394125	9104.503	
Residual		1057	28283	658.674	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,5,1

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 30-May-98 at 08:54:13
Reported on 05-Jun-98 at 14:17:57



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,5,1

Acquired on 30-May-98 at 08:54:13
Modified on 05-Jun-82 at 14:17:24
Reported on 05-Jun-98 at 14:17:26

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.: 19
Calibration file..: 3CN0530A Last modified on 05-Jun-82 at 14:09:44
Method file.....: LCCN Last modified on 05-Jun-82 at 14:11:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
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

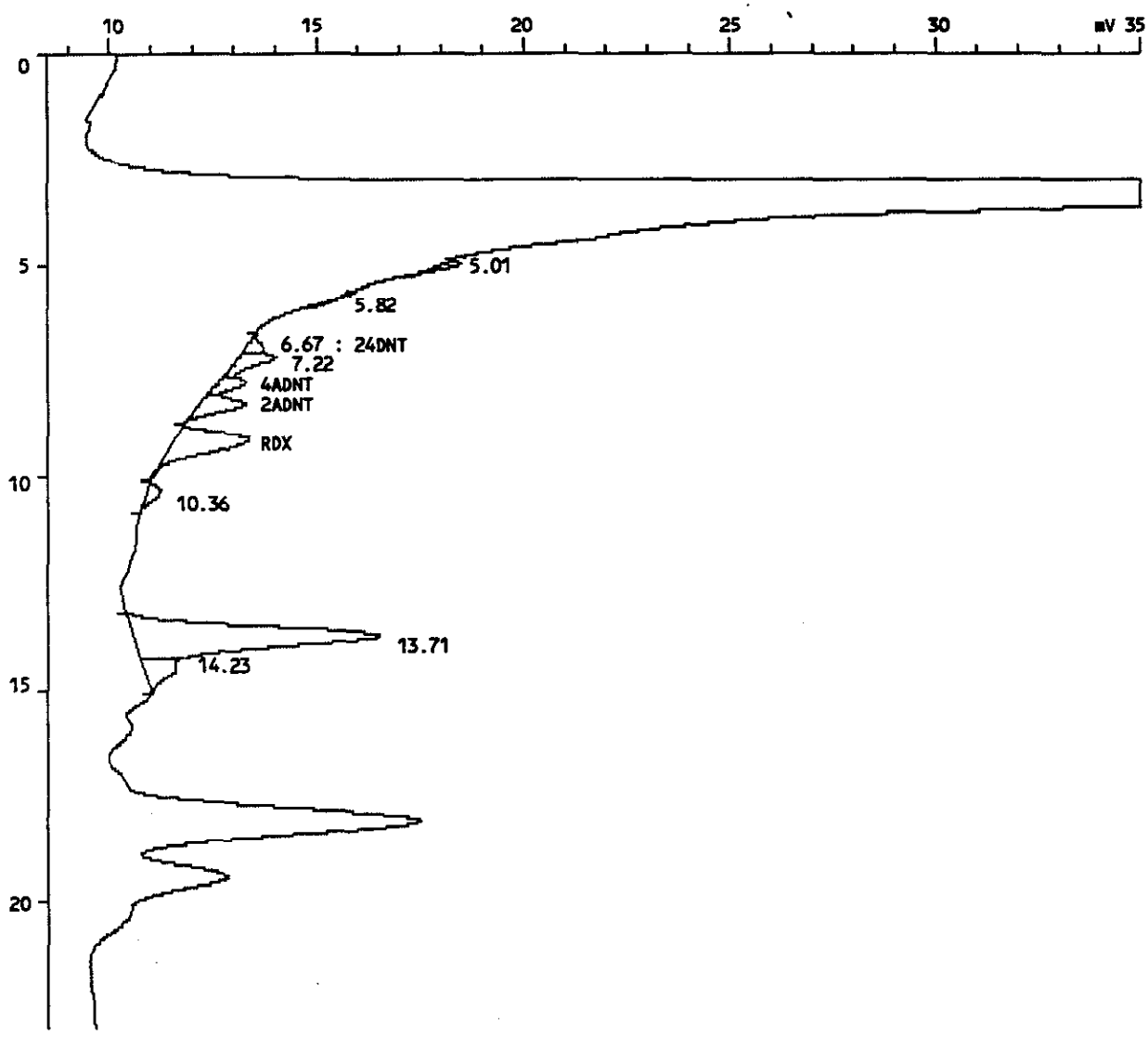
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	6.667	12	-3	-0.156	26DNT
5	7.216	981	21562	760.015	TNT
7	8.293	1137	25680	1738.692	3,4DNT
10	13.707	5942	192036	16151.068	HMX
Total		8072	239275	18649.619	
Residual		5315	120419	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,5,1

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 30-May-98 at 08:54:13
Reported on 05-Jun-98 at 14:16:55



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,5,1

Acquired on 30-May-98 at 08:54:13
Modified on 05-Jun-82 at 14:16:34
Reported on 05-Jun-98 at 14:16:34

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.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 13:10:50
Method file.....: LCCN Last modified on 05-Jun-82 at 14:11:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-A3
Sample ID.....: 33910.05
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	7.024	500	6425	167.630	24DNT
6	7.803	739	14080	723.145	4ADNT
7	8.293	1137	25680	879.469	2ADNT
8	9.173	1858	57798	3442.422	RDX
Total		4234	103984	5212.667	
Residual		9153	255710	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.05

Sample Amt: 2g % Moisture 23.70 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN		625	U

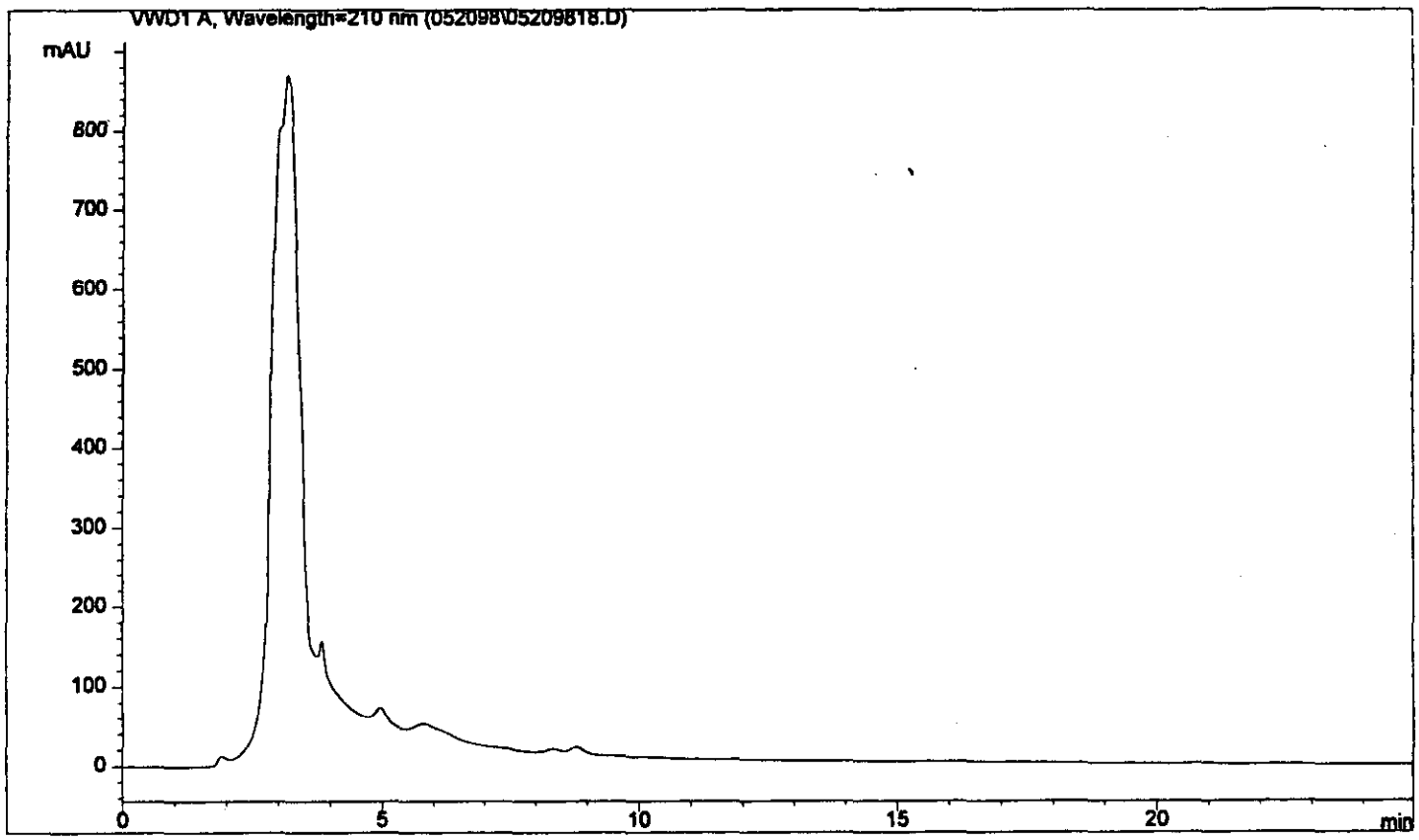
FORM I

Sample Name : 33910.05
Acq Operator : SS

Vial No. : 18
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-10-B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.06

Sample Amt: 2g % Moisture 27.52 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/19/98

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~~ 530 JP	U
121-82-4	RDX	710	J
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

CMW 12/10/98

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

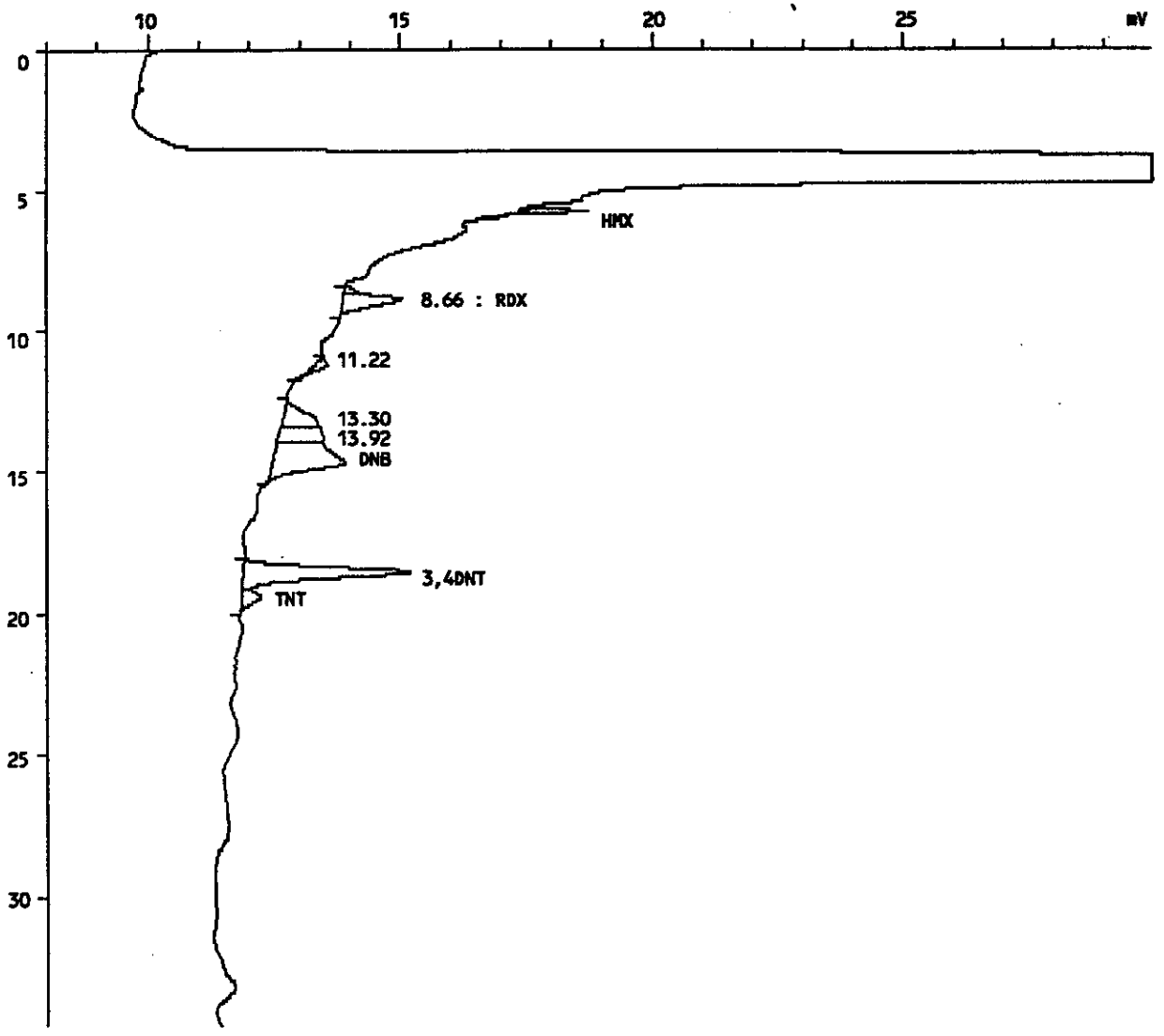
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0518A,10,1

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 19-May-98 at 08:04:34
Reported on 05-Jun-98 at 12:01:08



INJECTION REPORT

Injection F: <MC3> 2 2EX0518A,10,1

Acquired on 19-May-98 at 08:04:34
Modified on 05-Jun-82 at 12:00:14
Reported on 05-Jun-98 at 12:00:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 52
Calibration file..: 2EX0518 Last modified on 05-Jun-82 at 11:56:40
Method file.....: EXPLOS Last modified on 05-Jun-82 at 11:57:04
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
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

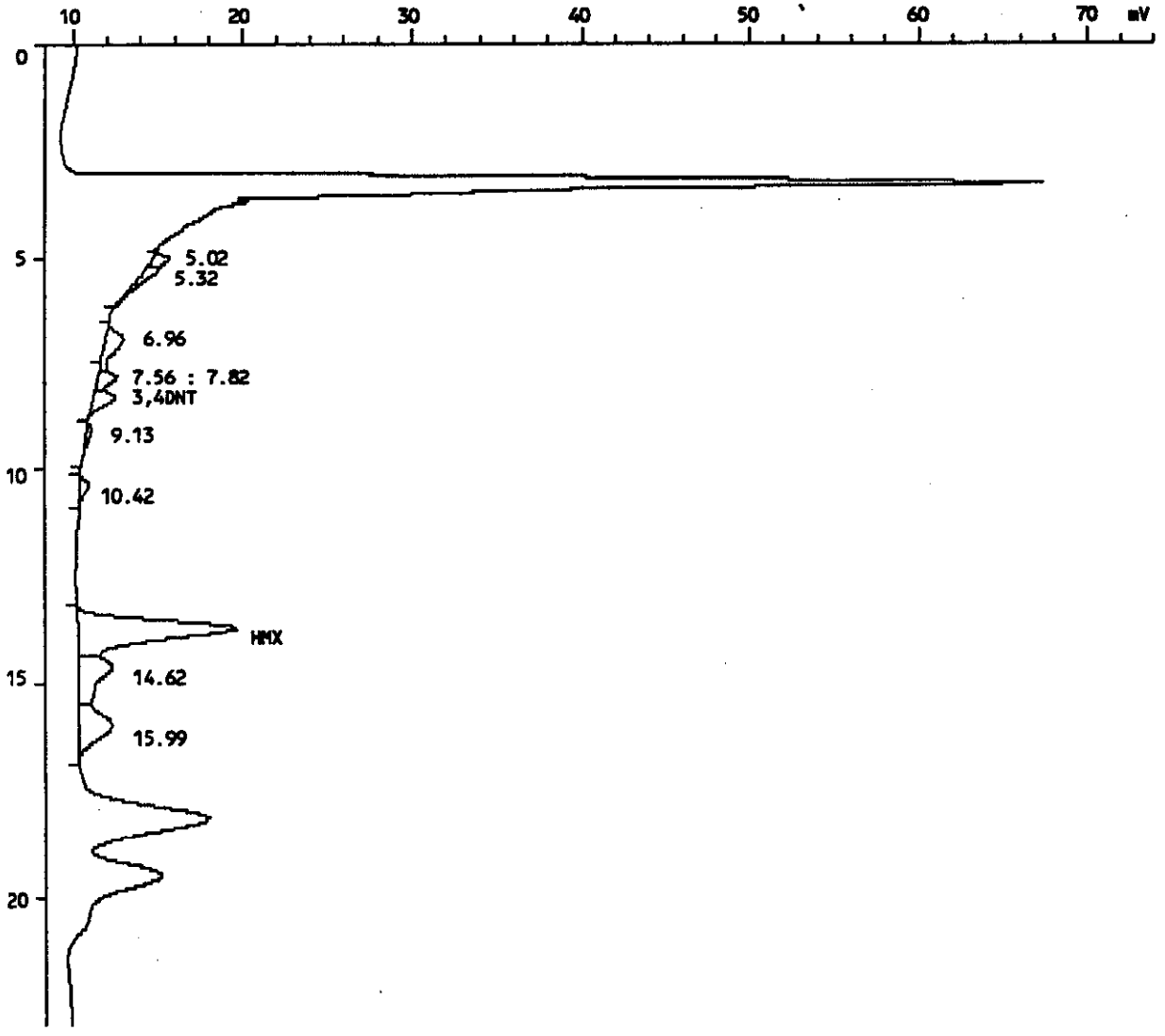
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.771	1517	13059	529.544	HMX
3	8.912	1174	30470	709.603	RDX *J
7	14.693	1463	79394	586.276	DNB
8	18.576	3312	89836	1464.086	3,4DNT 73
9	19.445	389	11184	104.937	TNT
Total		7856	223943	3394.447	
Residual		2286	65157	1571.890	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,6,1

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 09:38:34
Reported on 04-Jun-98 at 13:16:47



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,6,1

Acquired on 30-May-98 at 09:38:34
Modified on 04-Jun-82 at 13:16:12
Reported on 04-Jun-98 at 13:16:18

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.: 19
Calibration file..: 3CN0530A Last modified on 04-Jun-82 at 13:15:48
Method file.....: LCCN Last modified on 04-Jun-82 at 13:15:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
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

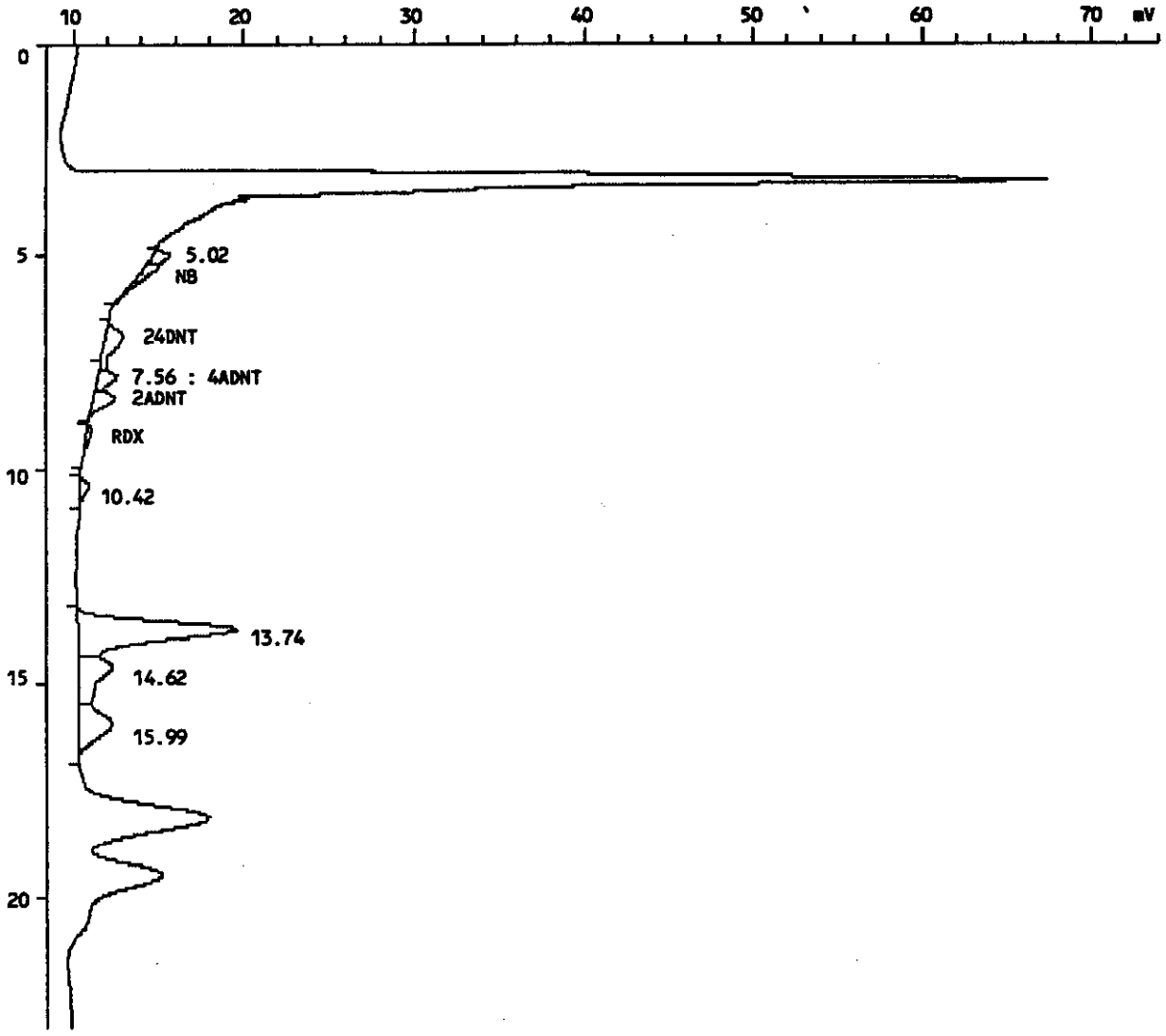
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
6	8.315	1329	30693	2078.039	3,4DNT
9	13.744	9342	290534	24435.133	HMX
Total		10671	321226	26513.172	
Residual		9908	313871	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,6,1

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 09:38:34
Reported on 04-Jun-98 at 13:05:05



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,6,1

Acquired on 30-May-98 at 09:38:34
Modified on 04-Jun-82 at 13:11:26
Reported on 04-Jun-98 at 13:13:10

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.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 13:10:50
Method file.....: LCCN Last modified on 04-Jun-82 at 13:01:44
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B1
Sample ID.....: 33910.06
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	5.317	954	26336	1263.115	NB
3	6.960	1084	35224	918.967	24DNT
5	7.824	1184	24400	1253.212	4ADNT
6	8.315	1329	30693	1051.118	2ADNT
7	9.125	322	9782	582.596	RDX
Total		4872	126434	5069.008	
Residual		15707	508663	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.06

Sample Amt: 2g % Moisture 27.52 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	625	U

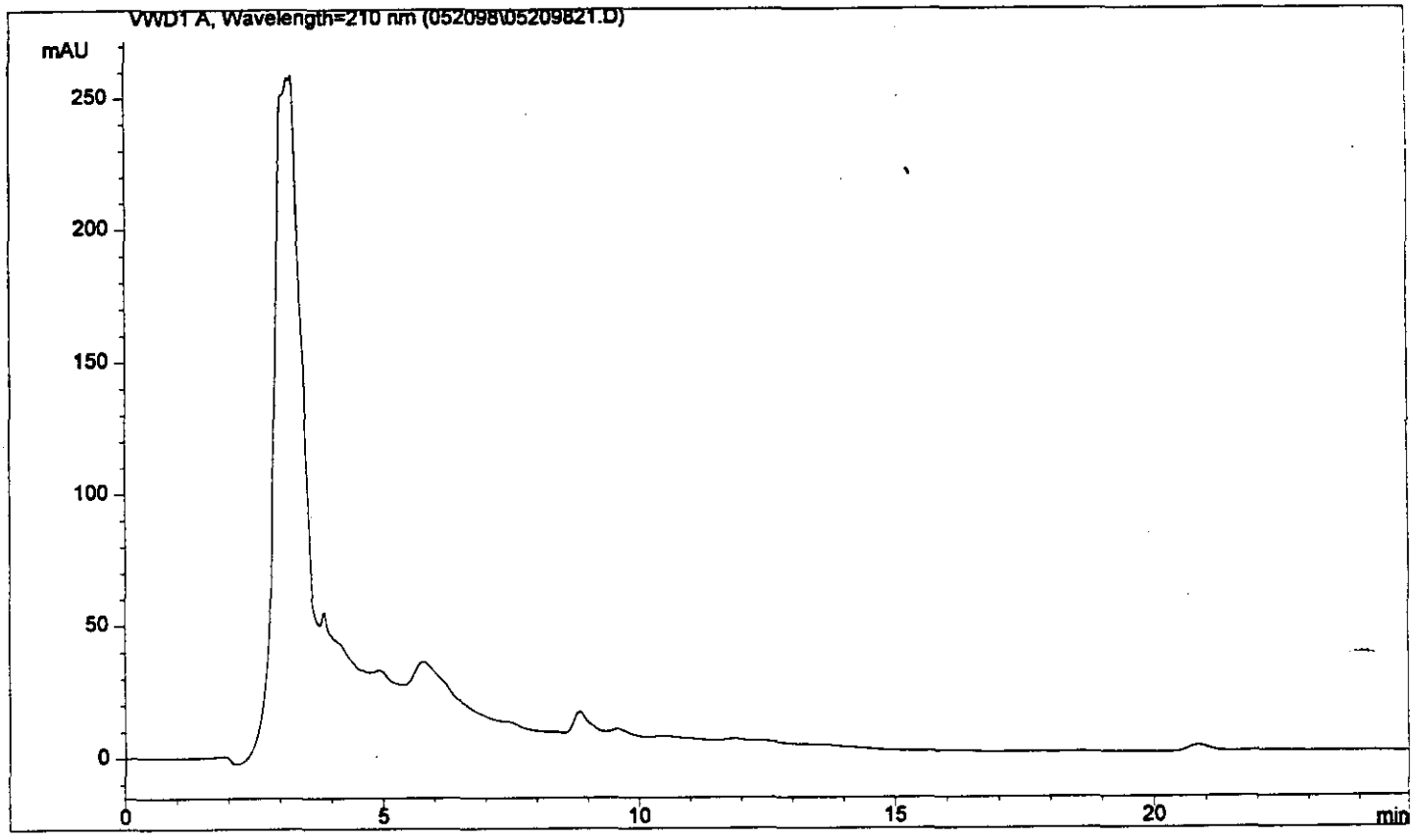
FORM I

Sample Name : 33910.06
Acq Operator : SS

Vial No. : 21
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.07

Sample Amt: 2g % Moisture 24.28 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

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	3120	P
121-82-4	RDX	4570	
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

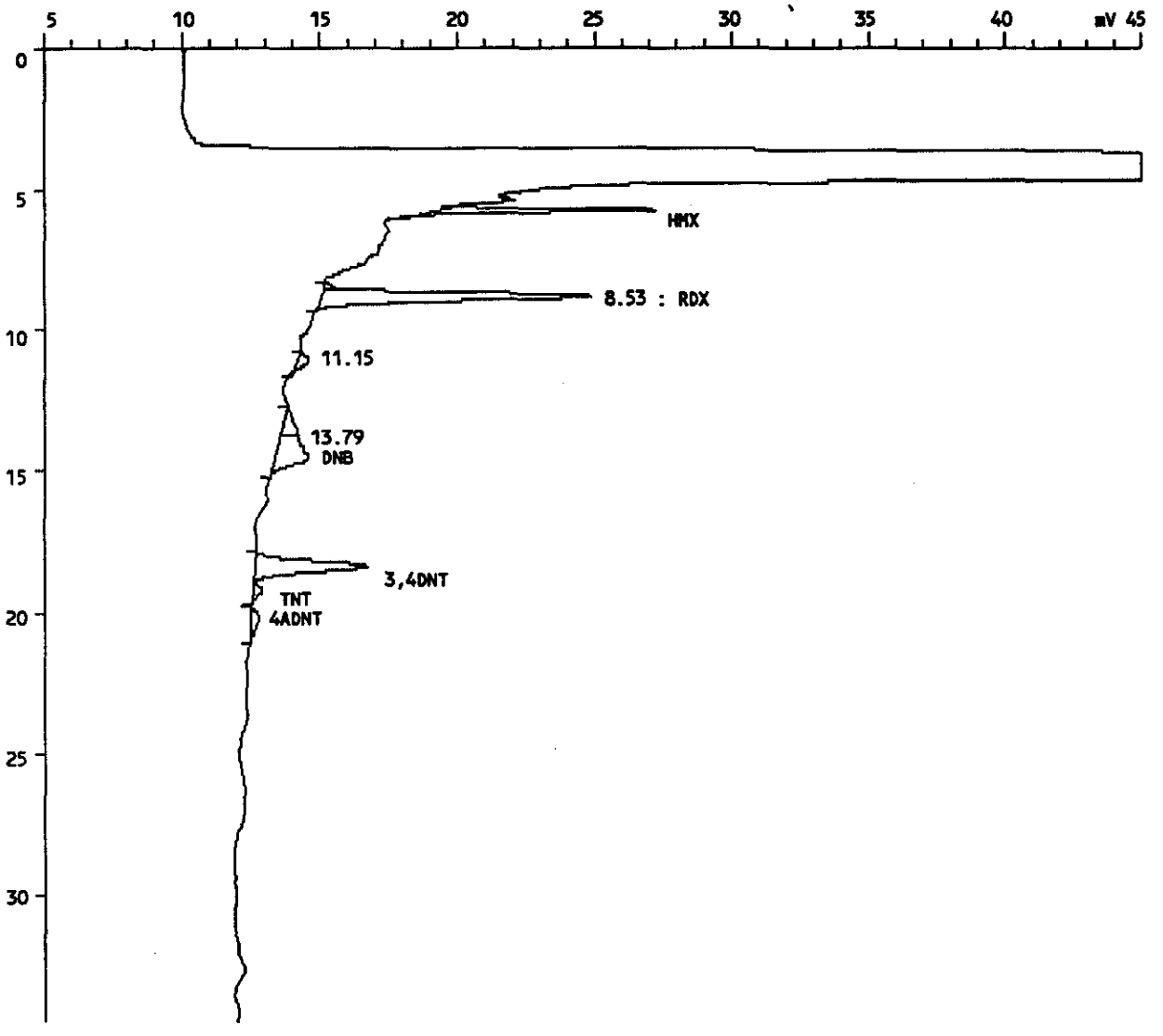
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,1,1

Sample name.....: BIO-N-30%-10-B2
Sample ID.....: 33910.07
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 01:42:24
Reported on 05-Jun-98 at 12:41:03



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,1,1

Acquired on 20-May-98 at 01:42:24
Modified on 05-Jun-82 at 12:22:20
Reported on 05-Jun-98 at 12:22:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B2
Sample ID.....: 33910.07
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	5.744	8191	76768	3118.127	HMX *?
3	8.827	9853	195608	4572.418	RDX *
6	14.576	1221	63262	481.889	DNB
7	18.336	4051	103530	1710.117	3,4DNT SW
8	19.243	324	7804	73.933	TNT
9	20.139	266	11416	171.097	4ADNT
Total		23906	458389	10127.581	
Residual		1471	37159	917.152	

INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,7,1

Acquired on 30-May-98 at 10:22:55
Modified on 04-Jun-82 at 12:33:40
Reported on 04-Jun-98 at 12:33:38

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.: 19
Calibration file..: 3CN0530A Last modified on 04-Jun-82 at 12:30:50
Method file.....: LCCN Last modified on 04-Jun-82 at 12:30:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B2
Sample ID.....: 33910.07
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	6.608	41	173	8.563	26DNT
6	8.293	1402	33902	2295.321	3,4DNT
10	13.680	7153	235548	19810.592	HMX
Total		8596	269623	22114.477	
Residual		7125	197874	0.000	

INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,7,1

Acquired on 30-May-98 at 10:22:55
Modified on 04-Jun-82 at 12:49:44
Reported on 04-Jun-98 at 12:49:43

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.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 12:46:30
Method file.....: LCCN Last modified on 04-Jun-82 at 12:47:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B2
Sample ID.....: 33910.07
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	7.045	768	28151	734.449	24DNT
5	7.808	964	20795	1068.036	4ADNT
6	8.293	1402	33902	1161.024	2ADNT
7	9.168	2388	76904	4580.317	RDX
Total		5522	159752	7543.826	
Residual		10199	307745	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.07

Sample Amt: 2g % Moisture 24.28 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

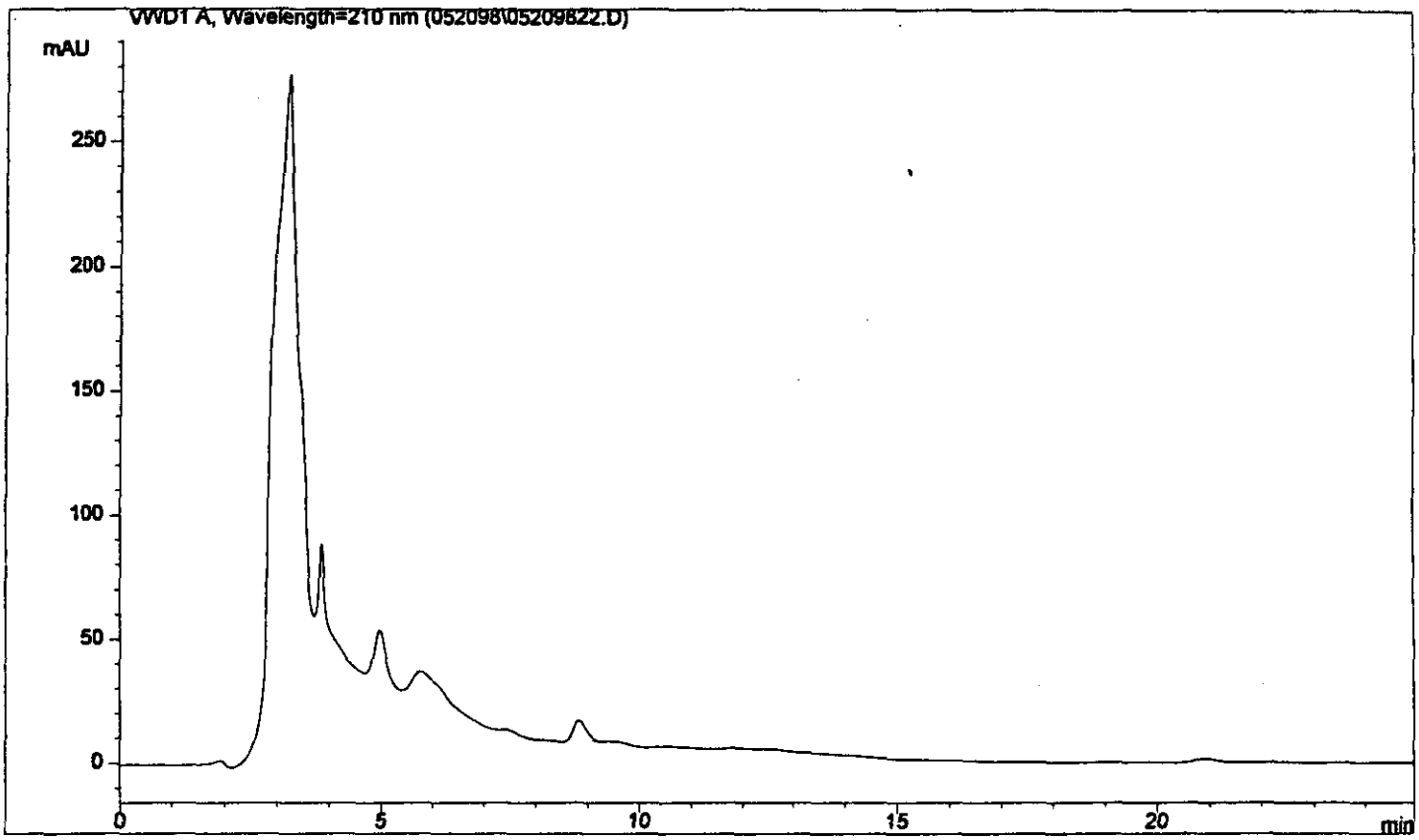
FORM I

Sample Name : 33910.07
Acq Operator : SS

Vial No. : 22
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.08

Sample Amt: 2g % Moisture 23.34 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

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	857	J
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

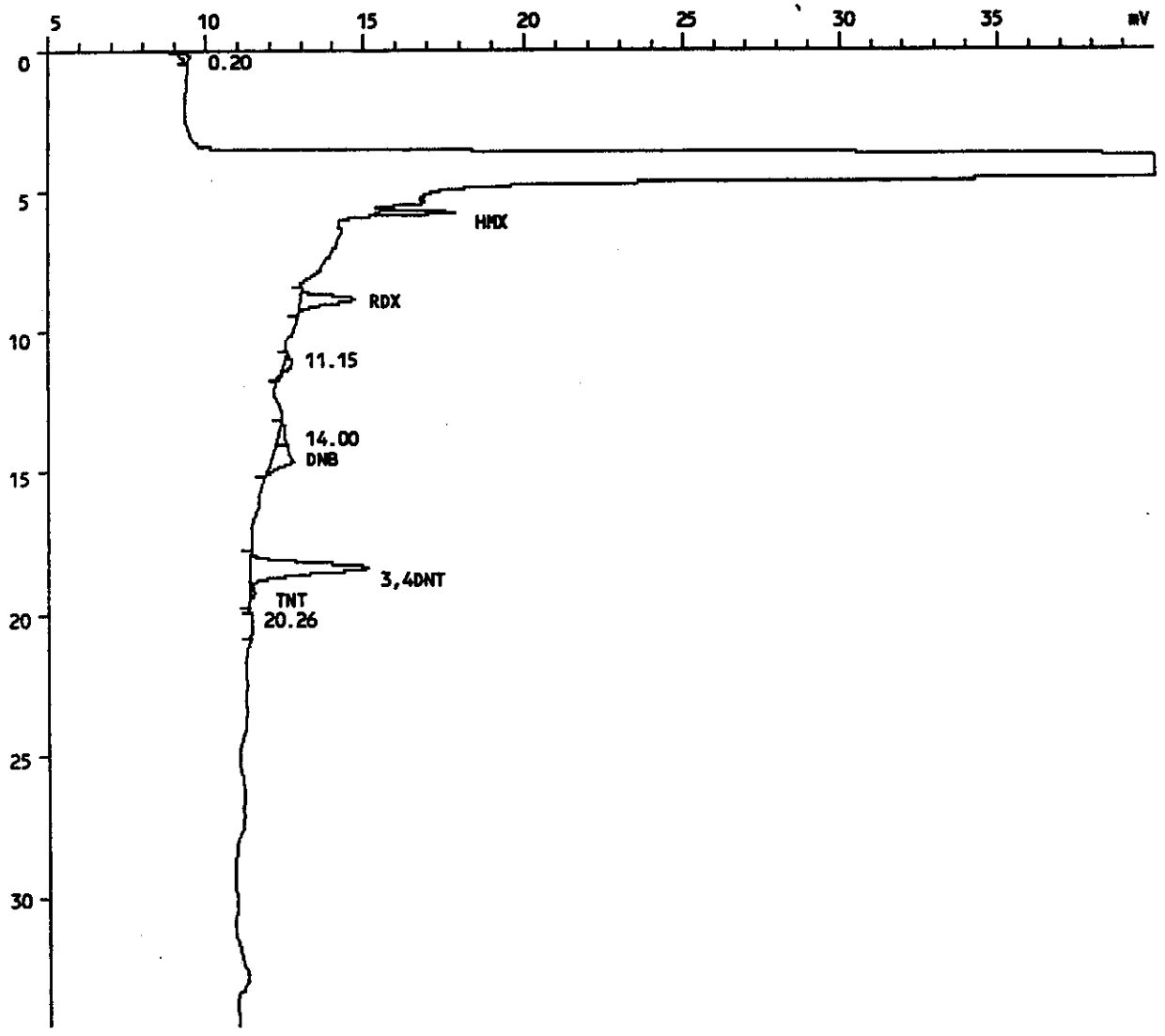
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,2,1

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 02:27:01
Reported on 05-Jun-98 at 12:24:11



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,2,1

Acquired on 20-May-98 at 02:27:01
Modified on 05-Jun-82 at 12:22:04
Reported on 05-Jun-98 at 14:24:22

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 05-Jun-82 at 14:23:36
Method file.....: EXPLOS Last modified on 05-Jun-82 at 13:48:26
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
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

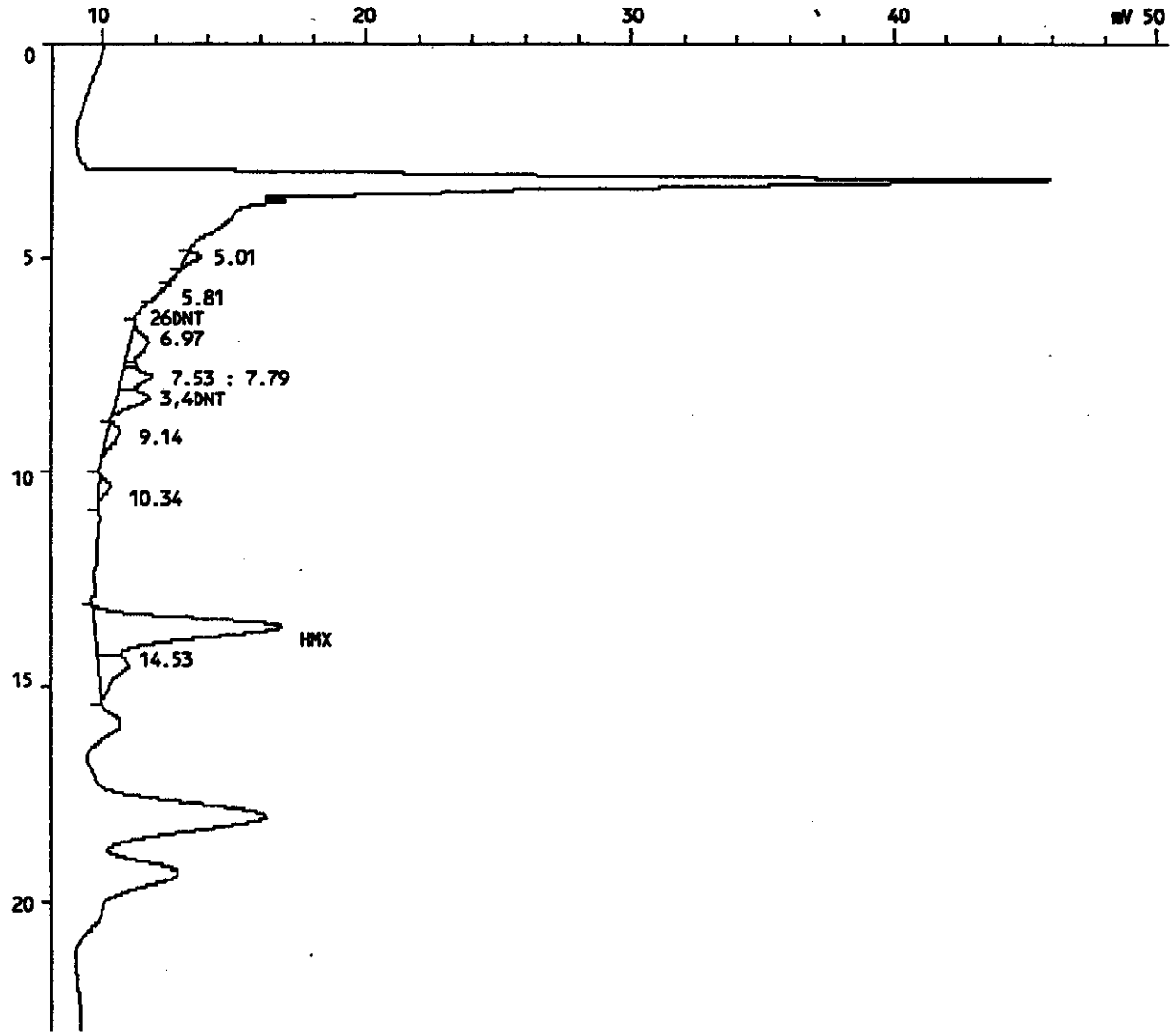
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.760	2508	21440	870.829	HMX
3	8.859	1721	36684	857.494	RDX *J
6	14.635	729	32043	244.082	DNB
7	18.389	3669	97324	1607.592	3,4DNT SD
8	19.269	147	3213	30.434	TNT
Total		8774	190703	3610.430	
Residual		1019	23528	516.139	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,8,1

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 11:07:17
Reported on 04-Jun-98 at 12:43:23



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,8,1

Acquired on 30-May-98 at 11:07:17
Modified on 04-Jun-82 at 12:33:54
Reported on 04-Jun-98 at 12:33:53

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.: 19
Calibration file..: 3CN0530A Last modified on 04-Jun-82 at 12:30:50
Method file.....: LCCN Last modified on 04-Jun-82 at 12:30:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
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

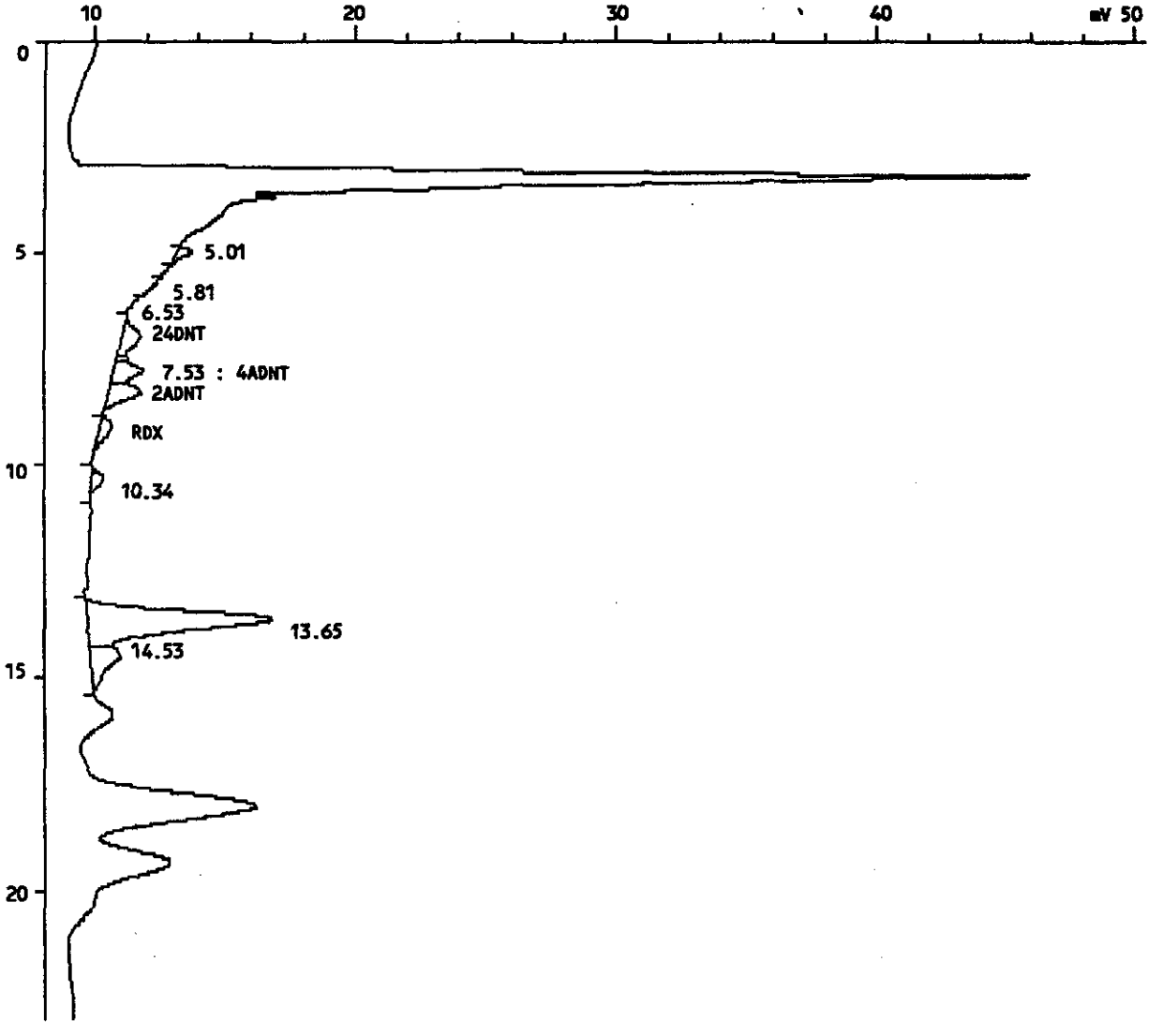
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	6.528	11	23	1.154	26DNT
7	8.267	1312	31896	2159.495	3,4DNT
11	13.653	7111	227279	19115.123	HMX
Total		8434	259198	21275.771	
Residual		5203	132345	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,8,1

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 11:07:17
Reported on 04-Jun-98 at 12:56:54



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,8,1

Acquired on 30-May-98 at 11:07:17
Modified on 04-Jun-82 at 12:50:00
Reported on 04-Jun-98 at 12:49:58

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.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 12:46:30
Method file.....: LCCN Last modified on 04-Jun-82 at 12:47:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3
Sample ID.....: 33910.08
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	6.971	728	23228	605.996	24DNT
6	7.792	1166	25992	1334.978	4ADNT
7	8.267	1312	31896	1092.320	2ADNT
8	9.136	475	15892	946.524	RDX
Total		3680	97008	3979.819	
Residual		9956	294535	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.08

Sample Amt: 2g % Moisture 23.34 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

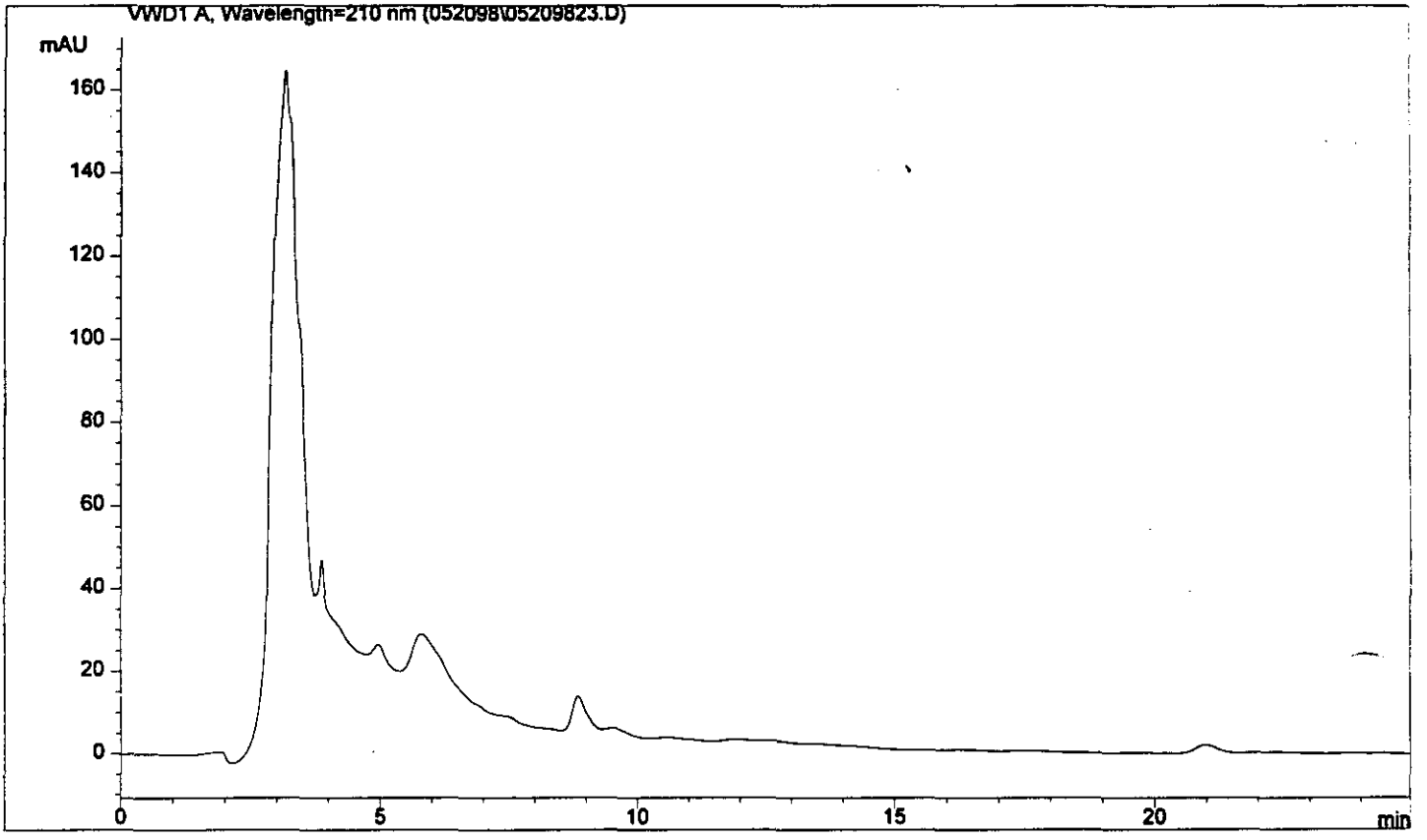
FORM I

Sample Name : 33910.08
Acq Operator : SS

Vial No. : 23
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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

Totals: 0.00000

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3 FD

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.09

Sample Amt: 2g % Moisture 24.67 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

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	3030	P
121-82-4	RDX	4820	
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	568	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

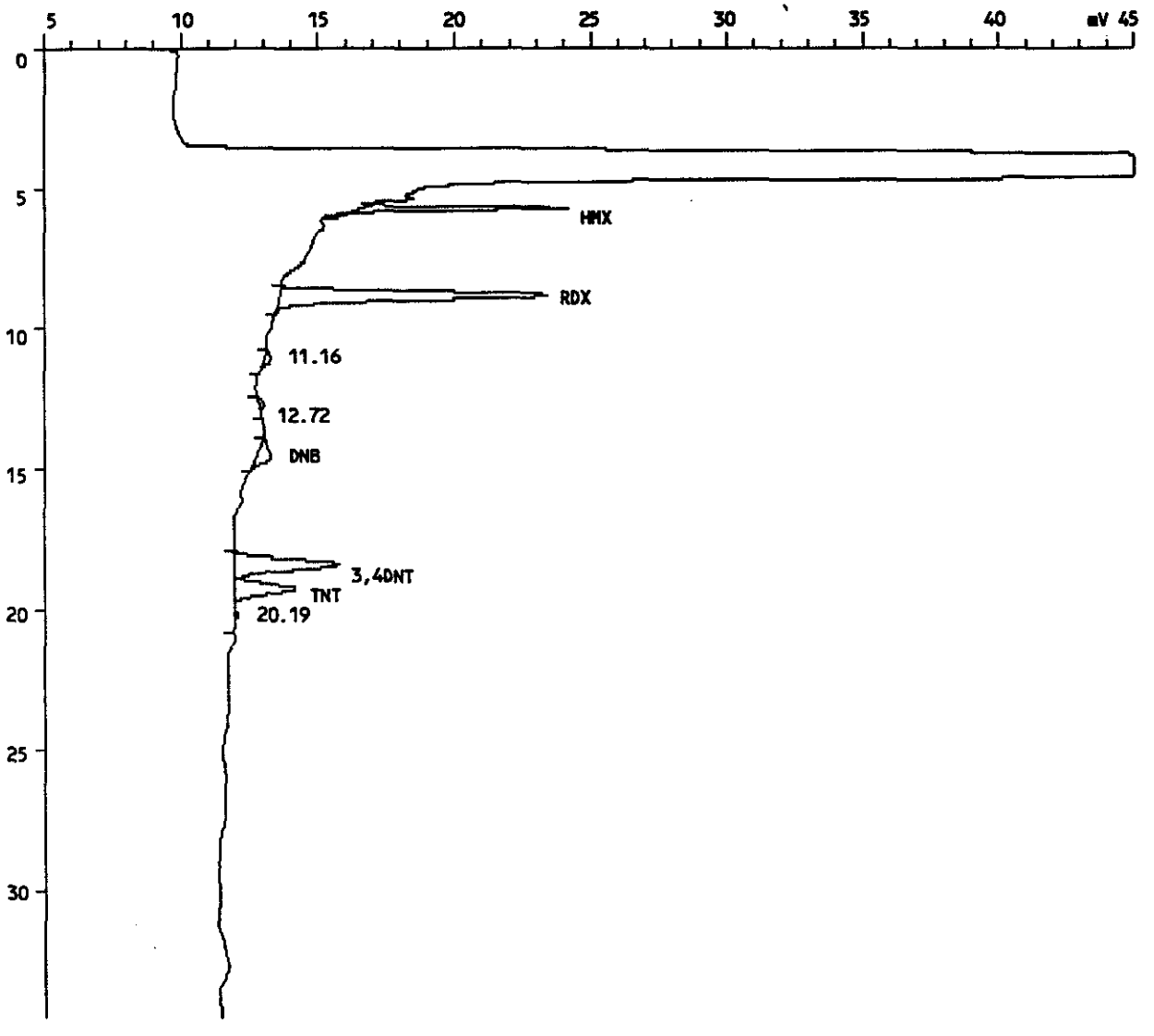
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,3,1

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 03:11:39
Reported on 05-Jun-98 at 12:24:56

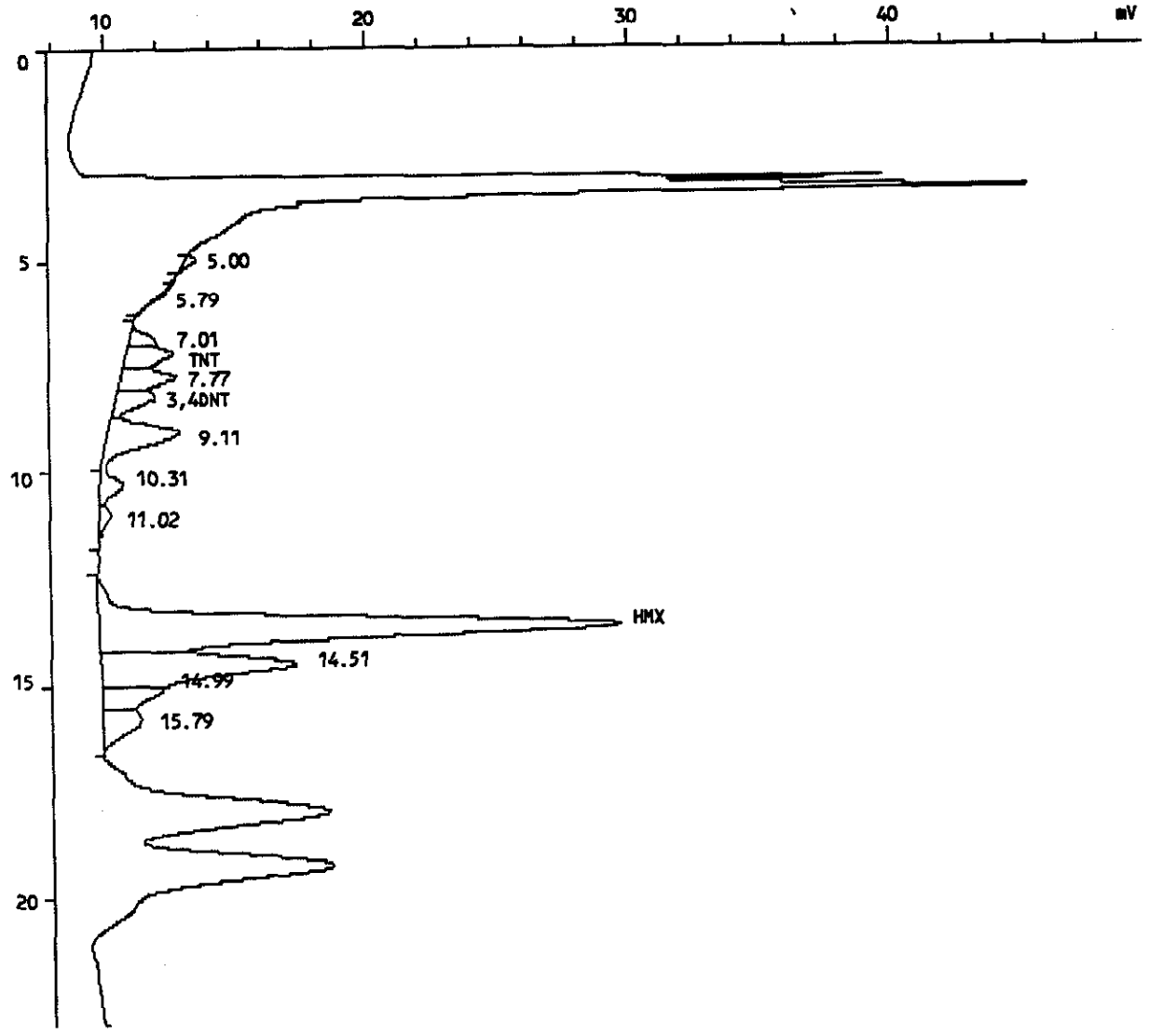


LONG PLOT

Injection F: <MC3> 3 3CN0530A,9,1

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 11:51:38
Reported on 04-Jun-98 at 12:43:47



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,3,1

Acquired on 20-May-98 at 03:11:39
Modified on 05-Jun-82 at 12:21:48
Reported on 05-Jun-98 at 12:21:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
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	5.755	7760	74566	3028.686	HMX *P
2	8.848	9866	206434	4825.478	RDX *
5	14.645	568	20759	158.125	DNB
6	18.389	3816	101408	1675.066	3,4DNT SY
7	19.253	2268	59999	568.388	TNT *P
Total		24278	463166	10255.742	
Residual		562	14573	284.690	

INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,9,1

Acquired on 30-May-98 at 11:51:38
Modified on 04-Jun-82 at 12:34:10
Reported on 04-Jun-98 at 12:34:07

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.: 19
Calibration file..: 3CN0530A Last modified on 04-Jun-82 at 12:30:50
Method file.....: LCCN Last modified on 04-Jun-82 at 12:30:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
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

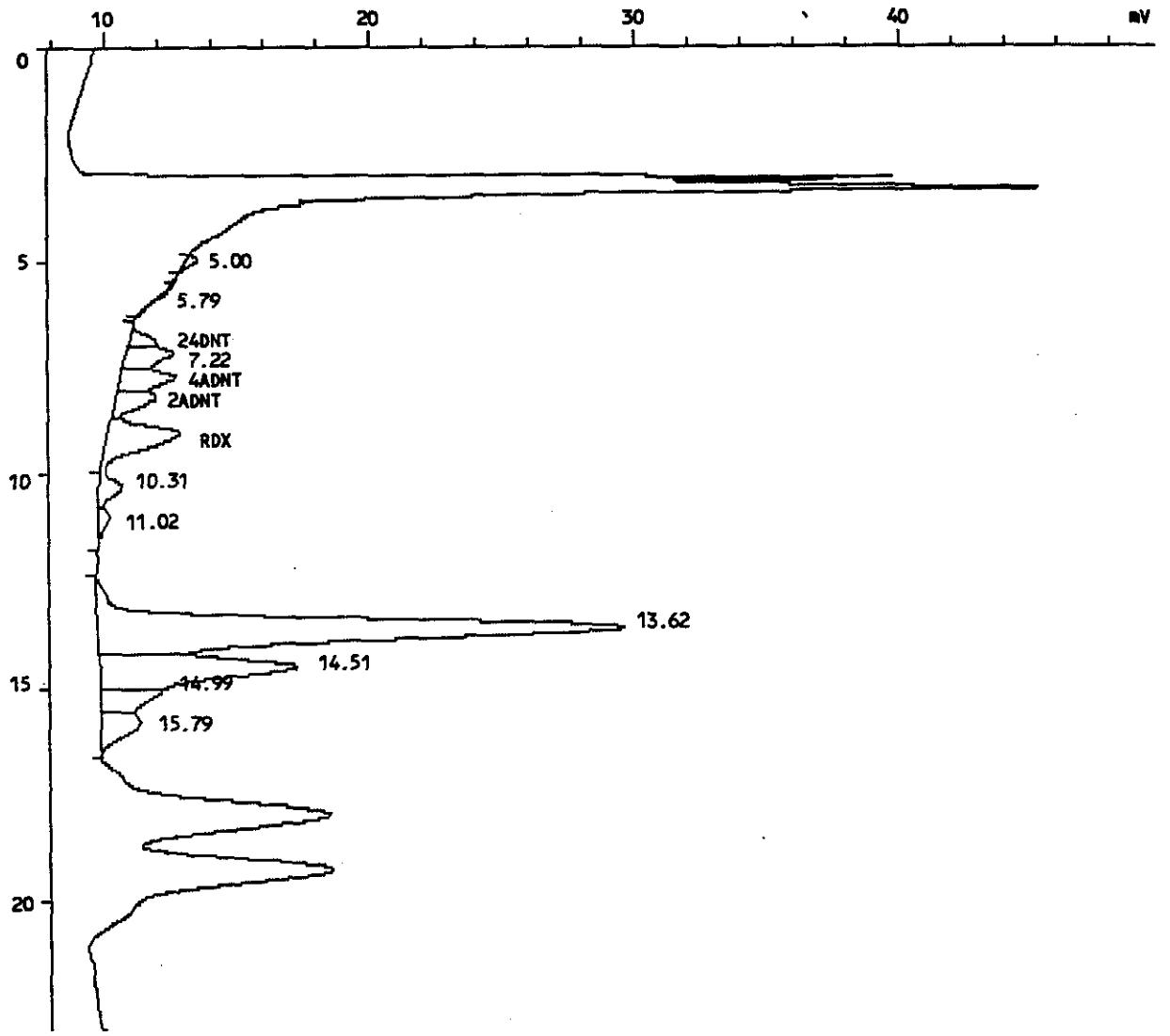
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	7.221	1826	46602	1642.651	TNT
6	8.235	1543	40890	2768.428	3,4DNT
10	13.616	19893	650518	54711.320	HMX
Total		23262	738009	59122.398	
Residual		19610	591812	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0530A,9,1

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100,UV

Acquired on 30-May-98 at 11:51:38
Reported on 04-Jun-98 at 12:57:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0530A,9,1

Acquired on 30-May-98 at 11:51:38
Modified on 04-Jun-82 at 12:50:14
Reported on 04-Jun-98 at 12:50:12

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.: 19
Calibration file..: 3CN0530B Last modified on 04-Jun-82 at 12:46:30
Method file.....: LCCN Last modified on 04-Jun-82 at 12:47:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-B3FD
Sample ID.....: 33910.09
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	7.013	1133	18727	488.578	24DNT
5	7.771	2133	50355	2586.310	4ADNT
6	8.235	1543	40890	1400.332	2ADNT
7	9.115	2767	99940	5952.348	RDX
Total		7577	209912	10427.566	
Residual		35295	1119909	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-B3
FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.09

Sample Amt: 2g % Moisture 24.67 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

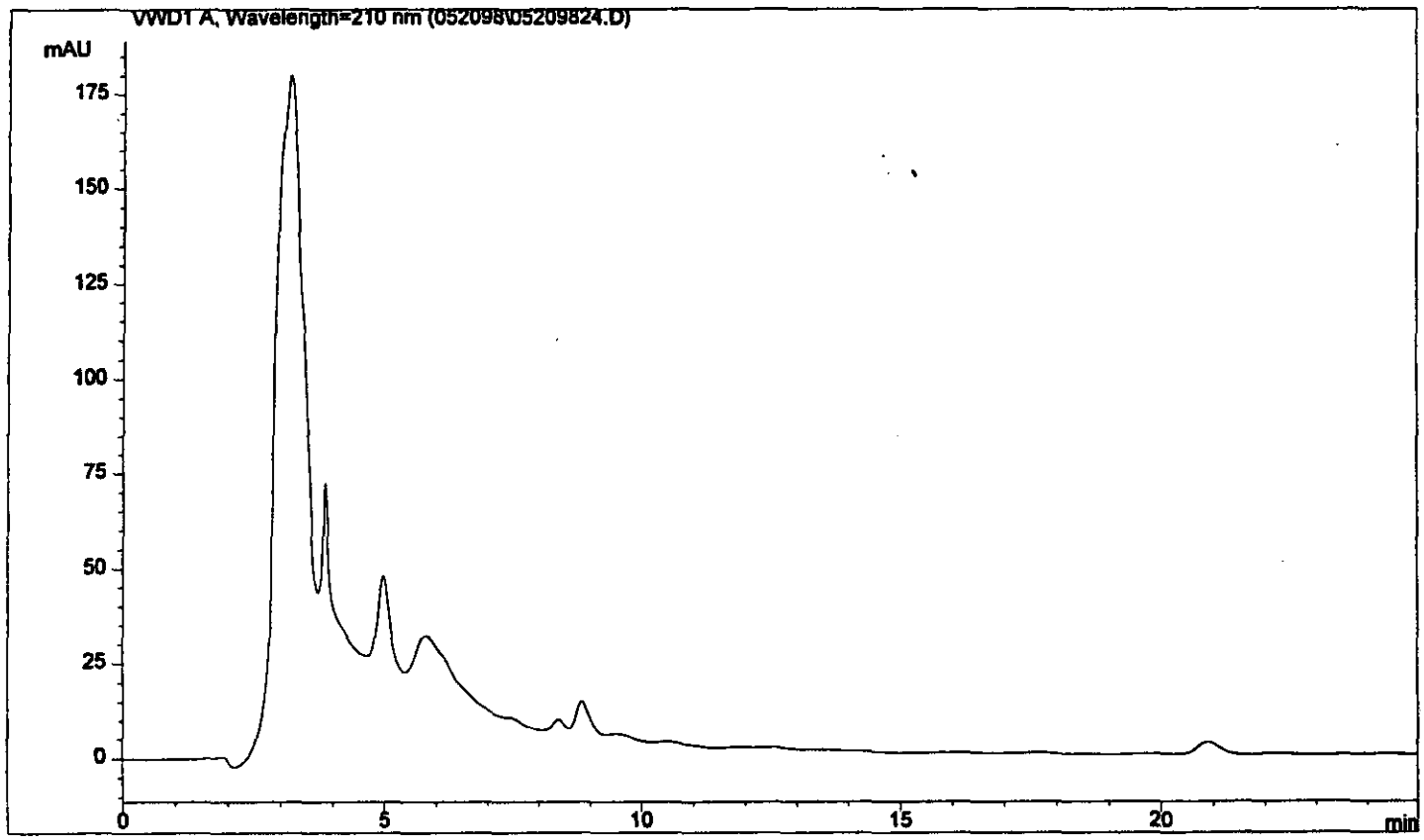
FORM I

Sample Name : 33910.09
Acq Operator : SS

Vial No. : 24
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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

Totals: 0.00000

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-C1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.10

Sample Amt: 2g % Moisture 27.73 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

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

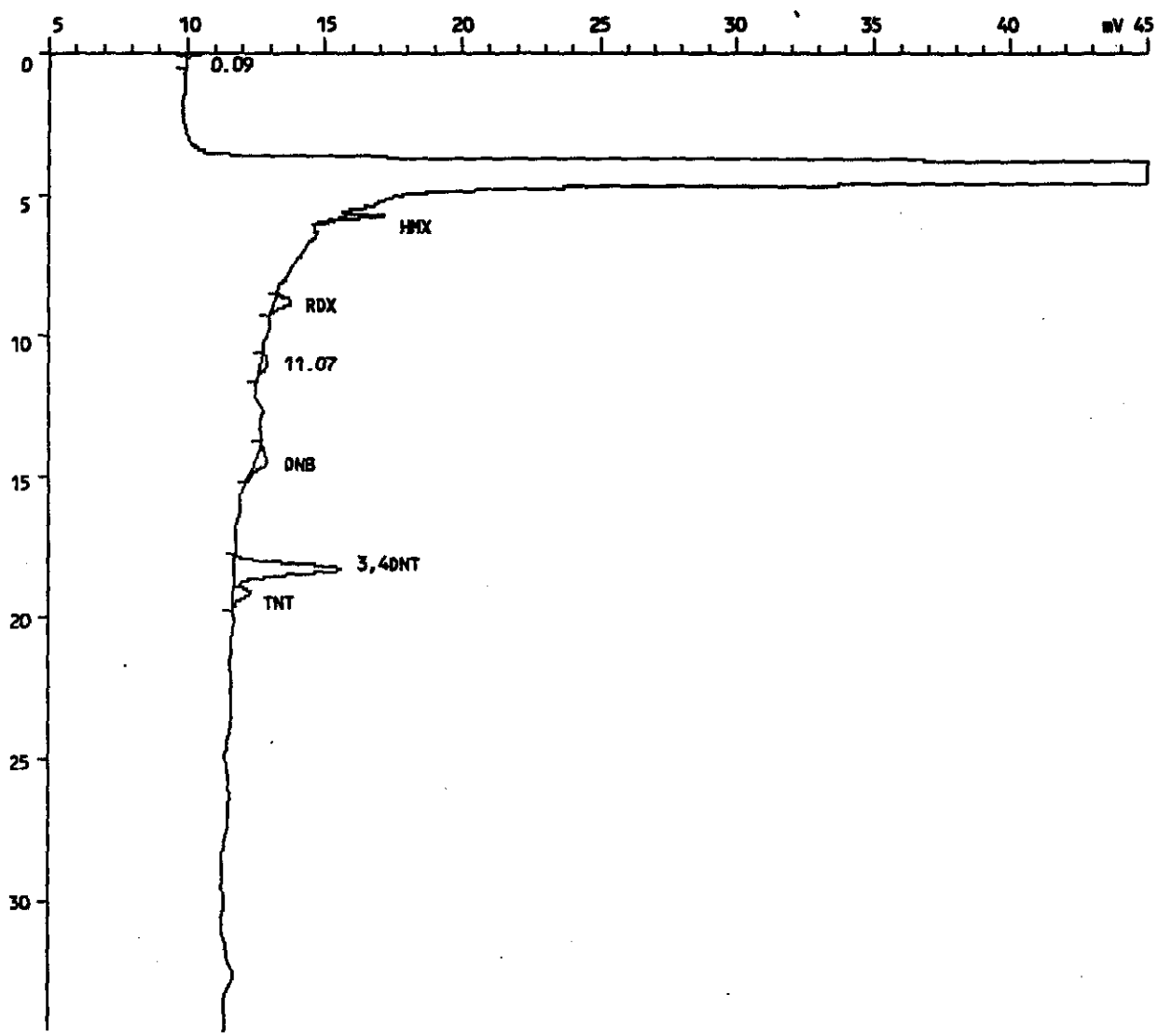
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,4,1

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 03:56:16
Reported on 05-Jun-98 at 13:11:09



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,4,1

Acquired on 20-May-98 at 03:56:16
Modified on 05-Jun-82 at 12:21:32
Reported on 05-Jun-98 at 12:21:31

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
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

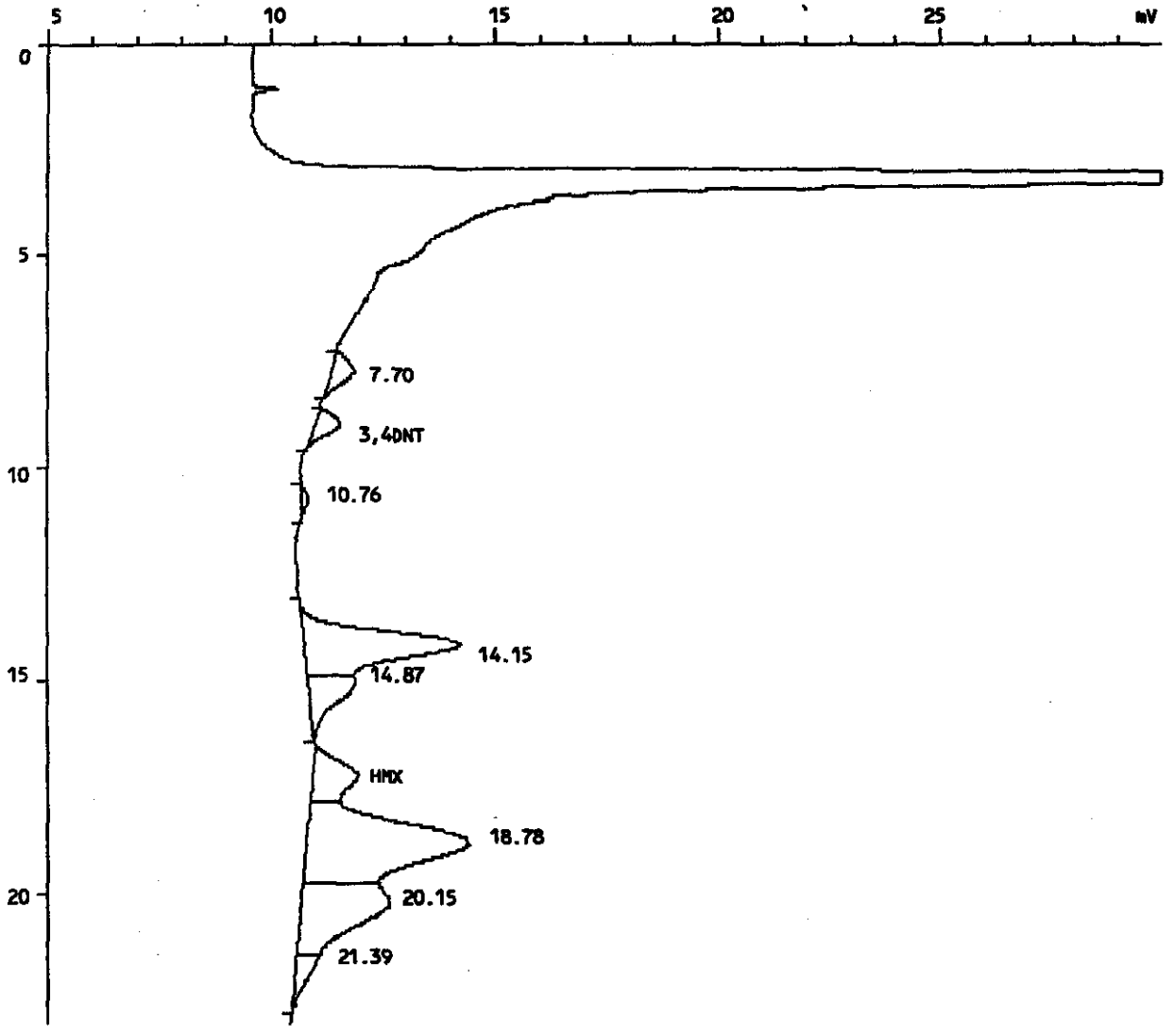
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.739	1753	16263	660.551	HMX
3	8.827	670	15207	355.470	RDX
5	14.565	487	19364	147.498	DNB
6	18.272	3841	104310	1722.997	3,4DNT
7	19.152	637	16864	159.757	TNT
Total		7388	172007	3046.272	
Residual		776	13282	310.480	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,2,1

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 00:10:47
Reported on 05-Jun-98 at 13:37:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,2,1

Acquired on 05-Jun-98 at 00:10:47
Modified on 05-Jun-82 at 13:33:12
Reported on 05-Jun-98 at 13:33:11

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
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

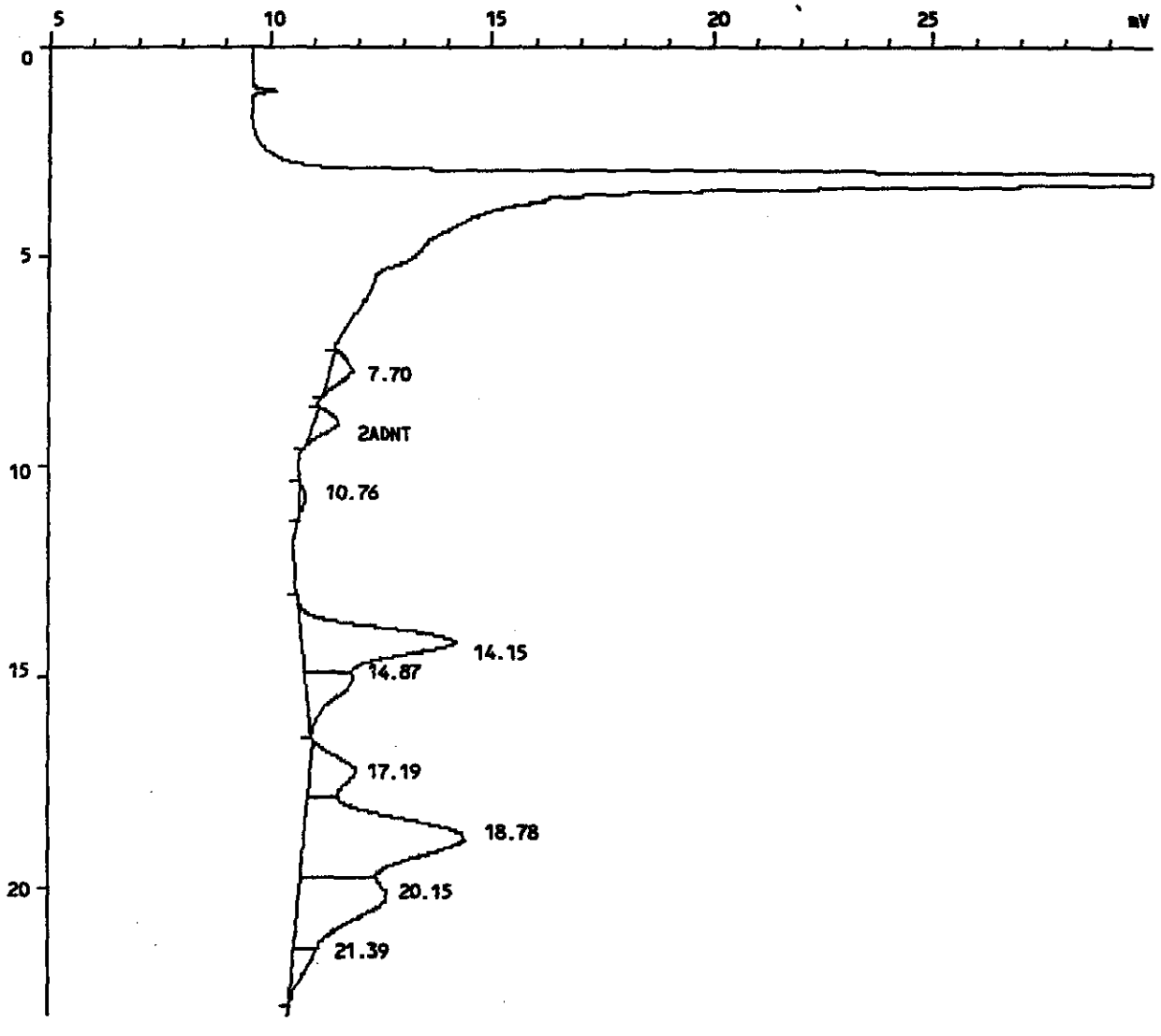
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.040	575	18208	1378.314	3,4DNT
6	17.195	1028	52781	5806.484	HMX
Total		1603	70988	7184.799	
Residual		11258	659640	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,2,1

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 00:10:47
Reported on 05-Jun-98 at 13:42:37



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,2,1

Acquired on 05-Jun-98 at 00:10:47
Modified on 05-Jun-82 at 13:38:30
Reported on 05-Jun-98 at 13:38:29

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 13:32:56
Method file.....: LCCN Last modified on 05-Jun-82 at 13:38:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C1
Sample ID.....: 33910.10
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	9.040	575	18208	743.165	2ADNT
Total		575	18208	743.165	
Residual		12286	712421	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-C1

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.10

Sample Amt: 2g % Moisture 27.73 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

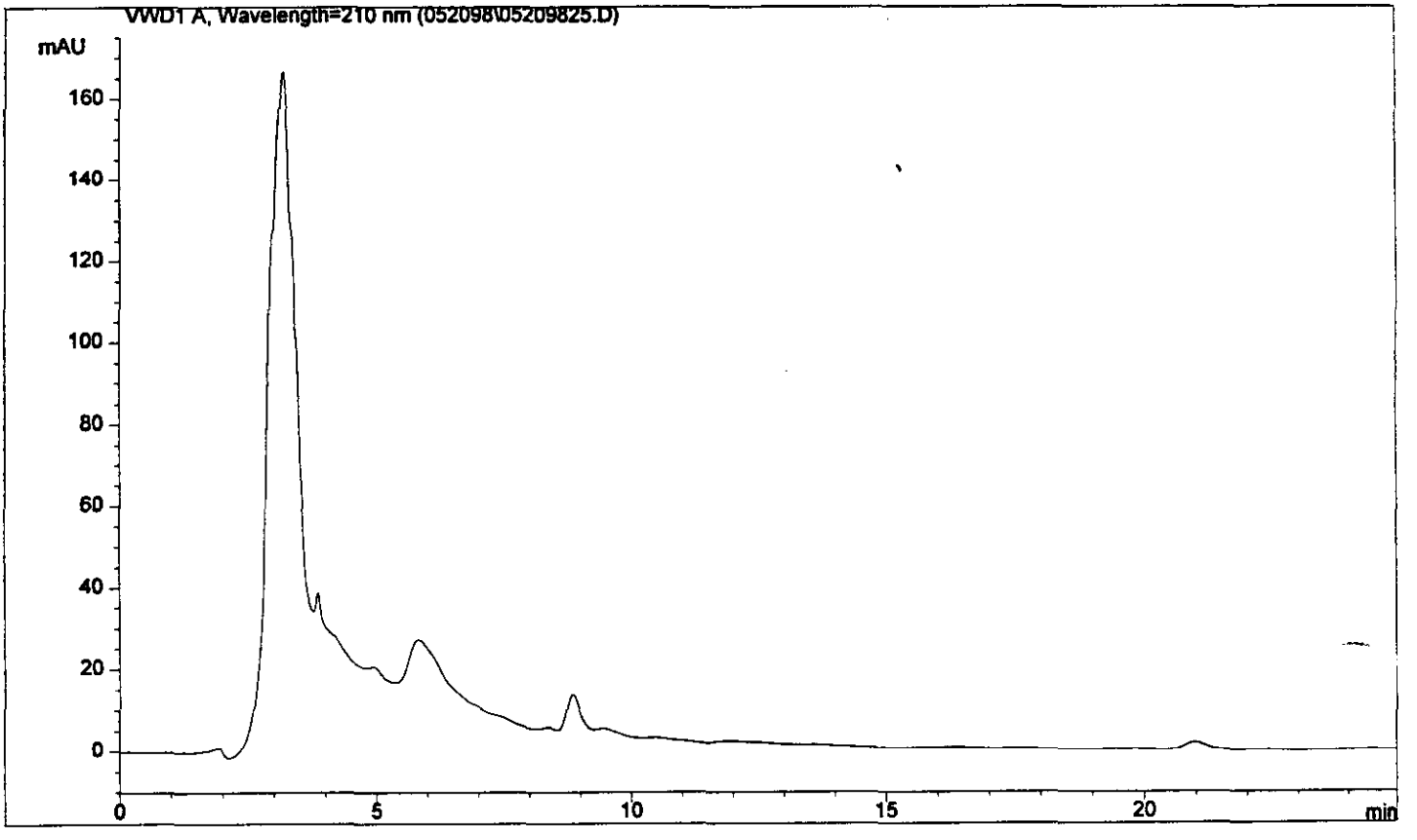
FORM I

Sample Name : 33910.10
Acq Operator : SS

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

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.11

Sample Amt: 2g % Moisture 21.11 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

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	2570	
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

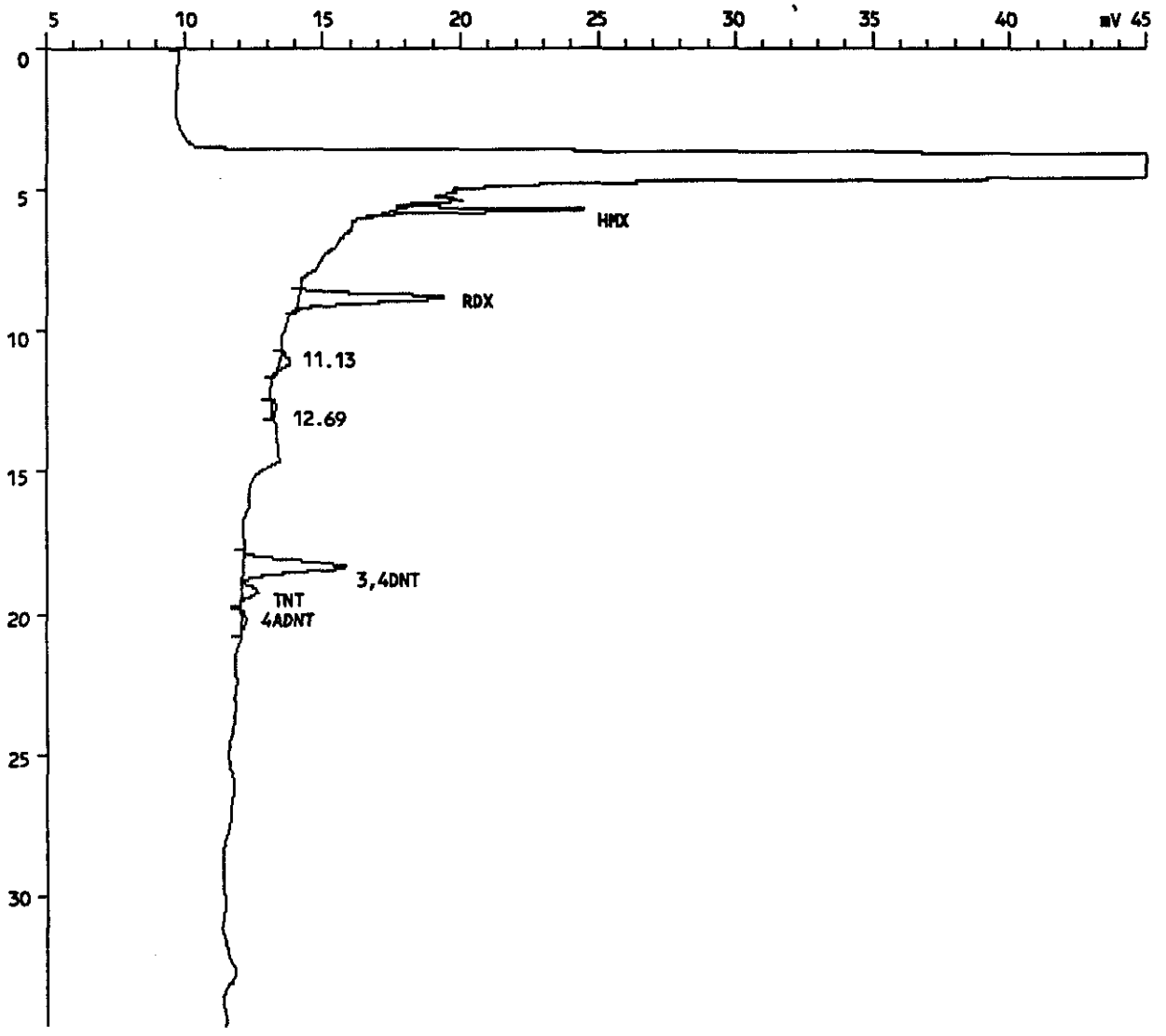
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,5,1

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 04:40:54
Reported on 05-Jun-98 at 13:11:34



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,5,1

Acquired on 20-May-98 at 04:40:54
Modified on 05-Jun-82 at 12:21:16
Reported on 05-Jun-98 at 12:21:16

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
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

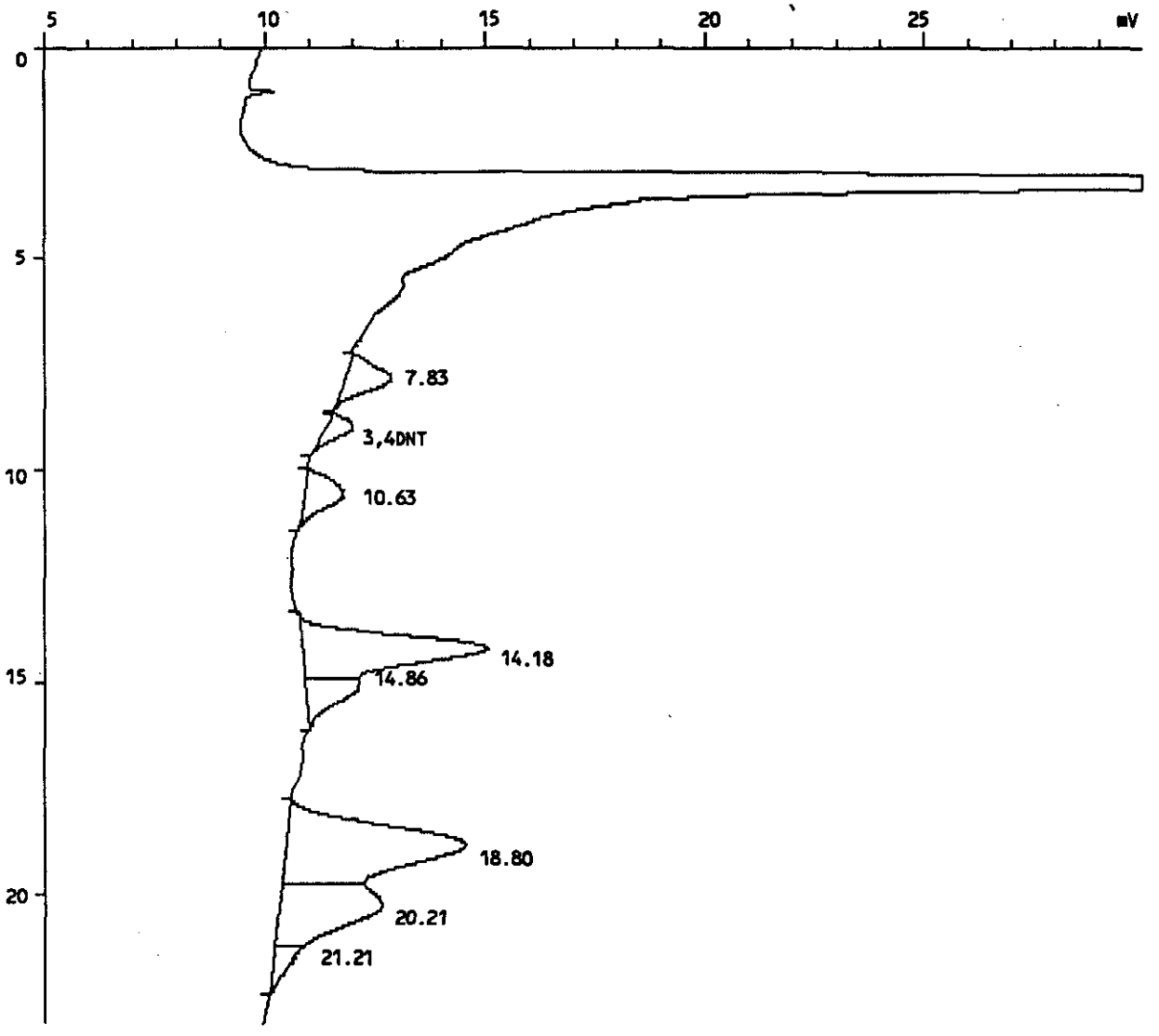
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.739	6997	67426	2738.662	HMX
2	8.821	5232	109988	2571.016	RDX*
5	18.331	3736	99952	1651.015	3,4DNT SJ
6	19.205	621	14994	142.044	TNT
7	20.139	221	7627	114.316	4ADNT
Total		16808	299988	7217.053	
Residual		576	15471	361.632	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,3,1

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 00:55:08
Reported on 05-Jun-98 at 13:37:19



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,3,1

Acquired on 05-Jun-98 at 00:55:08
Modified on 05-Jun-82 at 13:33:24
Reported on 05-Jun-98 at 13:33:23

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
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

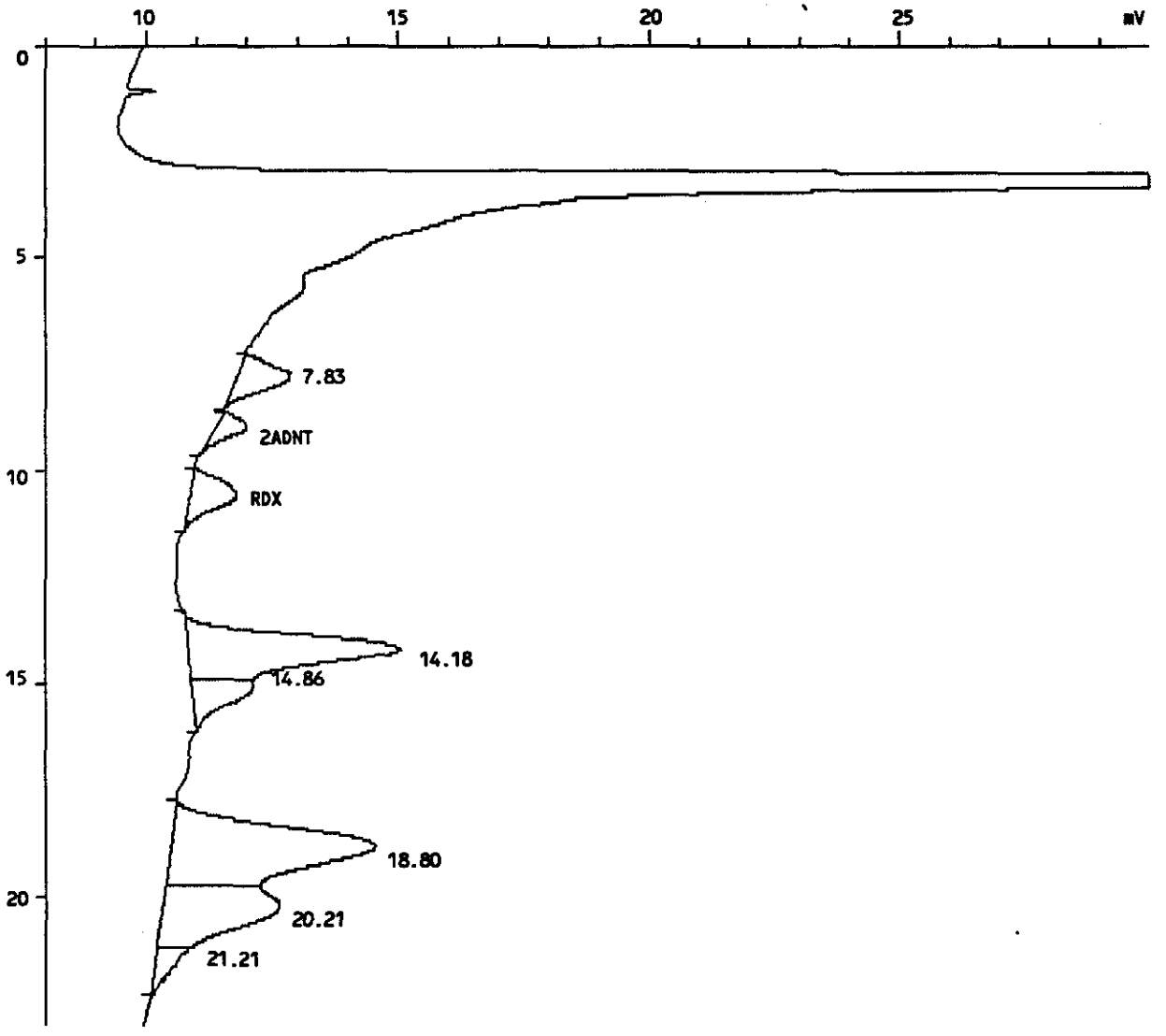
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.035	636	20092	1521.005	3,4DNT
Total		636	20092	1521.005	
Residual		14542	791037	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,3,1

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 00:55:08
Reported on 05-Jun-98 at 15:35:27



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,3,1

Acquired on 05-Jun-98 at 00:55:08
Modified on 05-Jun-82 at 15:18:06
Reported on 05-Jun-98 at 15:18:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 15:18:04
Method file.....: LCCN Last modified on 05-Jun-82 at 15:17:06
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C2
Sample ID.....: 33910.11
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	9.035	636	20092	820.101	2ADNT
3	10.629	902	40536	3344.580	RDX
Total		1539	60629	4164.681	
Residual		13640	750501	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-C2

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.11

Sample Amt: 2g % Moisture 21.11 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

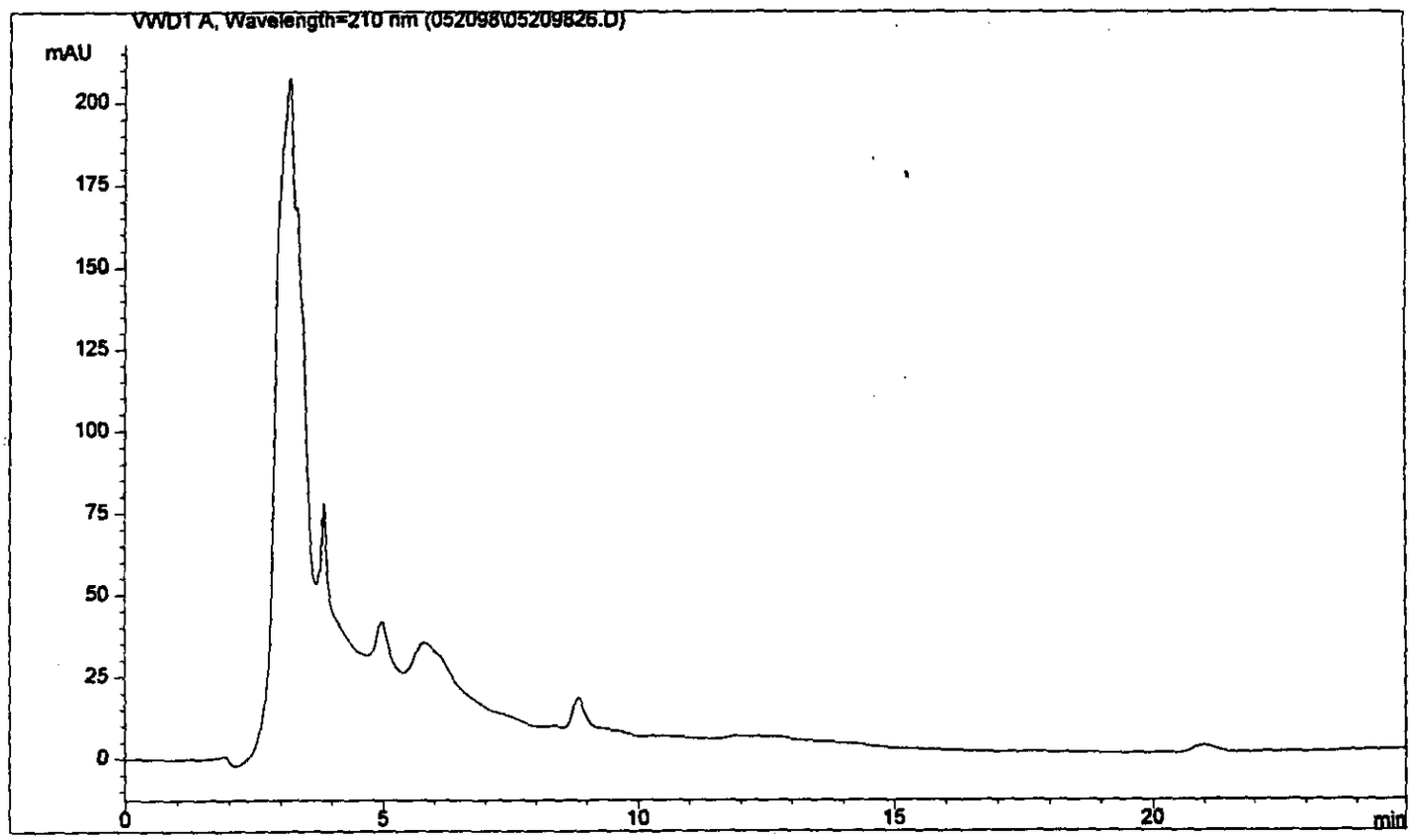
FORM I

Sample Name : 33910.11
Acq Operator : SS

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

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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

Totals: 0.00000

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-10-C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.12

Sample Amt: 2g % Moisture 21.67 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

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	2790	
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

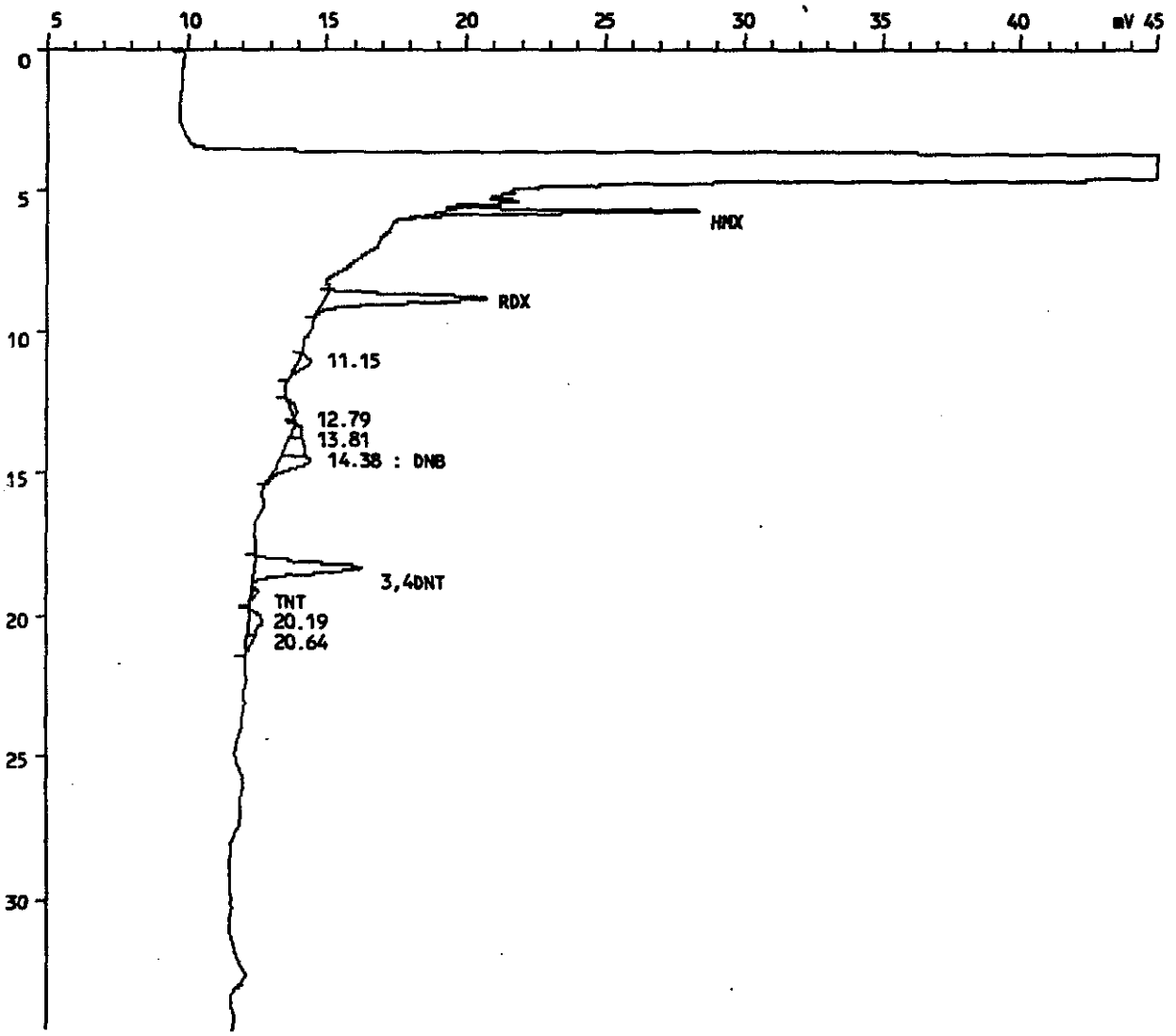
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,6,1

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 05:25:31
Reported on 05-Jun-98 at 13:10:44



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,6,1

Acquired on 20-May-98 at 05:25:31
Modified on 05-Jun-82 at 12:21:00
Reported on 05-Jun-98 at 12:21:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
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

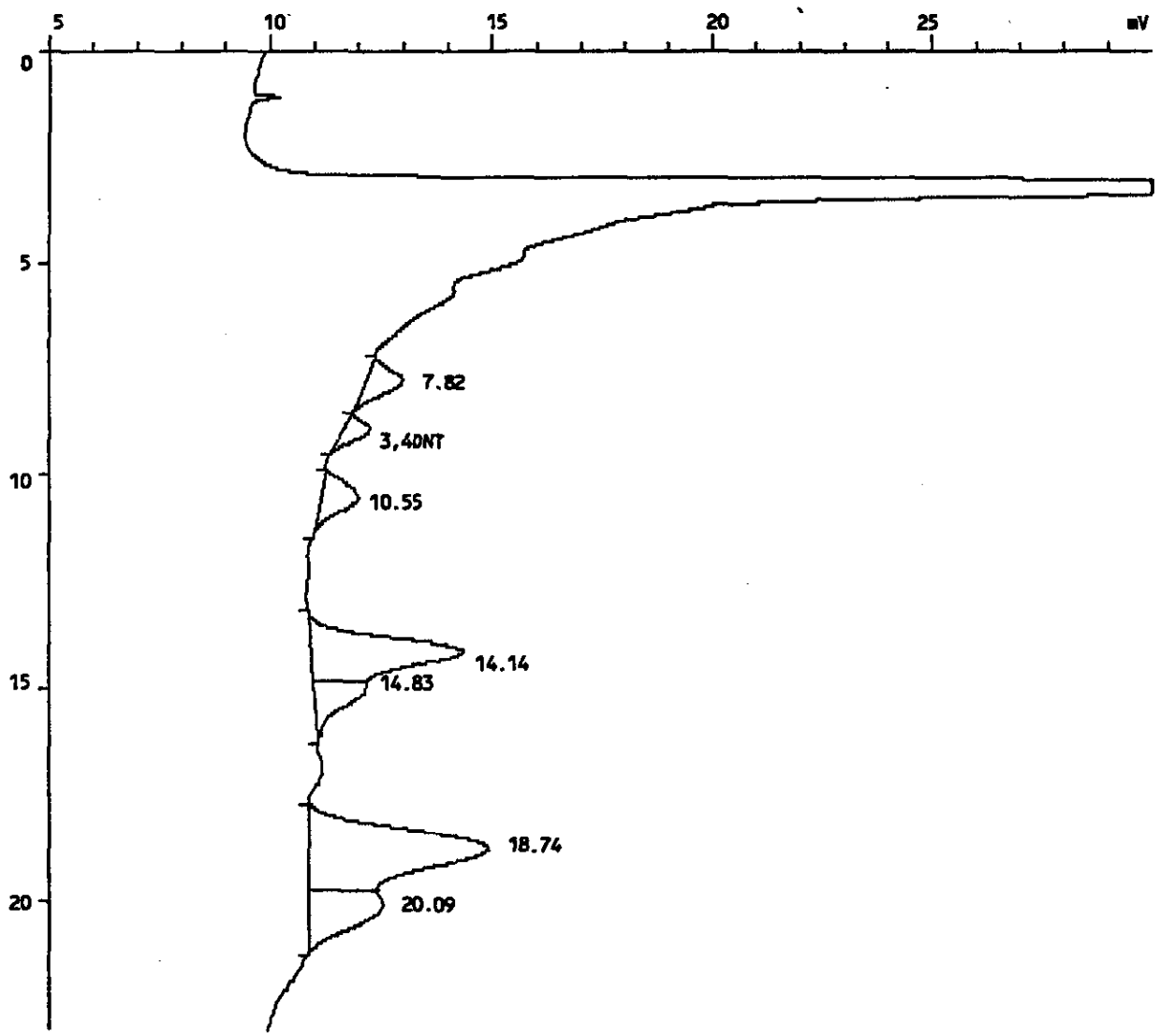
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.744	9433	90464	3674.417	HMX
2	8.832	5775	119545	2794.408	RDX *
7	14.651	1129	36570	278.566	DNB
8	18.352	3814	98693	1630.209	3,4DNT S2
9	19.227	232	5035	47.697	TNT
Total		20384	350307	8425.296	
Residual		2857	79522	1498.317	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,4,1

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 01:39:29
Reported on 05-Jun-98 at 13:36:38



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,4,1

Acquired on 05-Jun-98 at 01:39:29
Modified on 05-Jun-82 at 13:33:36
Reported on 05-Jun-98 at 13:33:35

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
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

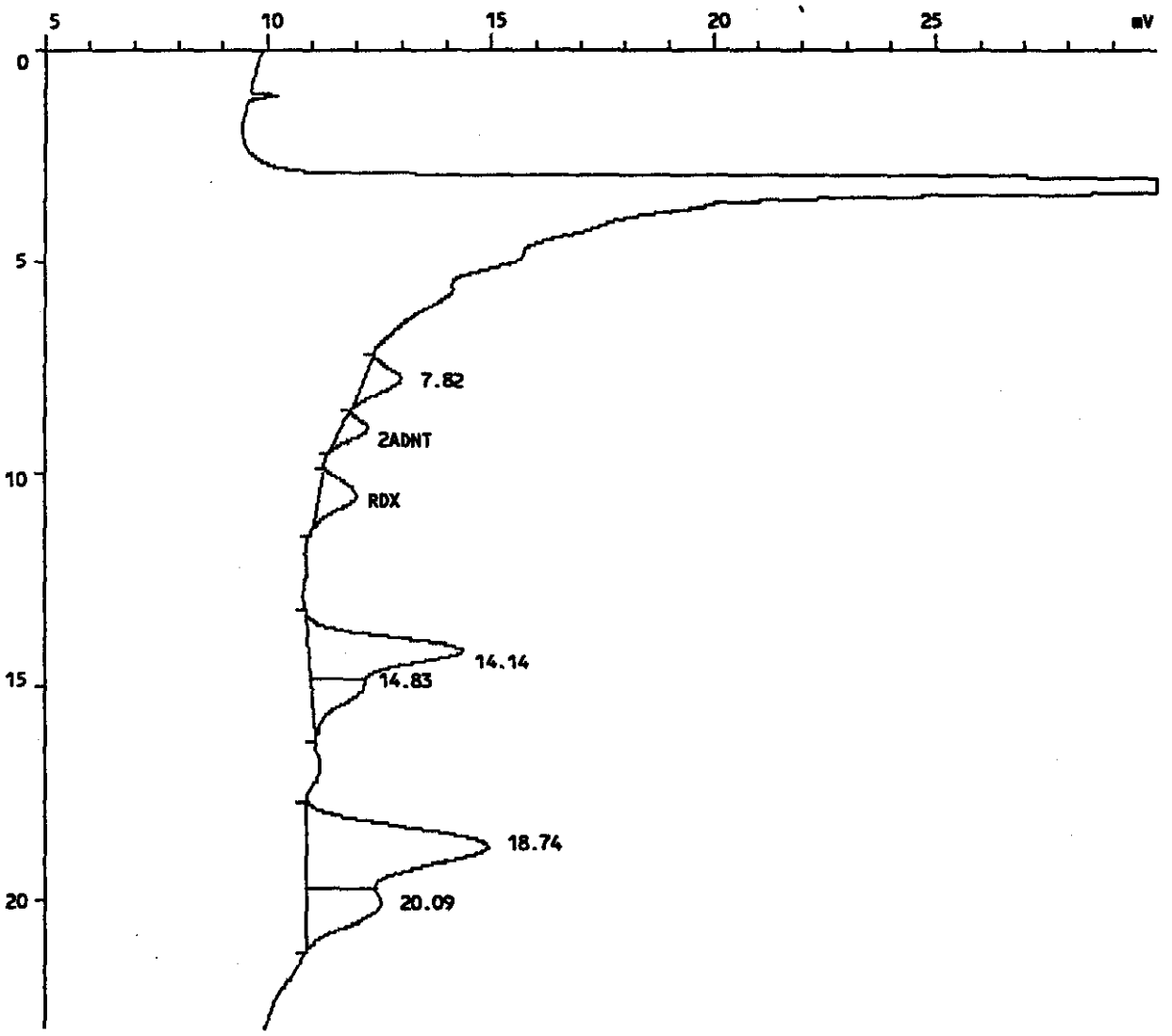
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.019	610	18819	1424.591	3,4DNT
Total		610	18819	1424.591	
Residual		12049	654562	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,4,1

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 01:39:29
Reported on 05-Jun-98 at 13:41:40



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,4,1

Acquired on 05-Jun-98 at 01:39:29
Modified on 05-Jun-82 at 13:38:54
Reported on 05-Jun-98 at 13:38:54

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 13:32:56
Method file.....: LCCN Last modified on 05-Jun-82 at 13:38:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-C3
Sample ID.....: 33910.12
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	9.019	610	18819	768.116	2ADNT
3	10.549	845	36833	3039.043	RDX
Total		1456	55652	3807.159	
Residual		11204	617729	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-C3

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.12

Sample Amt: 2g % Moisture 21.67 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN		625	U

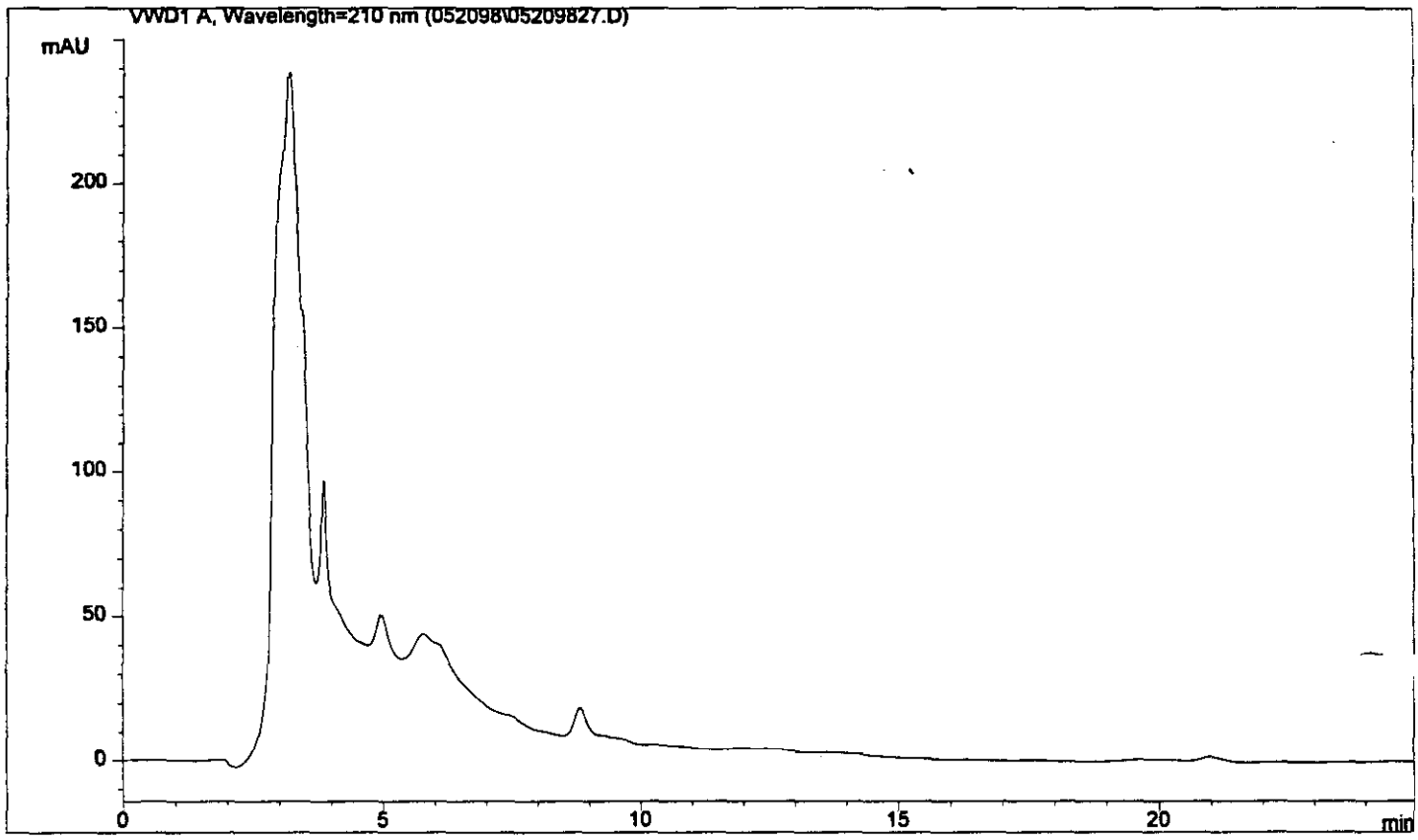
FORM I

Sample Name : 33910.12
Acq Operator : SS

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

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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

Totals: 0.00000

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D1
10X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:EARTH-VA SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.13

Sample Amt: 2g % Moisture 29.47 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	22000	U
121-82-4	RDX	112000	
99-35-4	TNB	2500	U
99-65-0	DNB	2500	U
479-45-8	TETRYL	6500	U
98-95-3	NB	2600	U
118-96-7	TNT	44500	P
1946-51-0	4ADNT	2500	U
35572-78-2	2ADNT	2500	U
606-20-2	26DNT	2600	U
121-14-2	24DNT	2500	U
88-72-2	2NT	2500	U
99-99-0	4NT	2500	U
99-08-1	3NT	2500	U

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

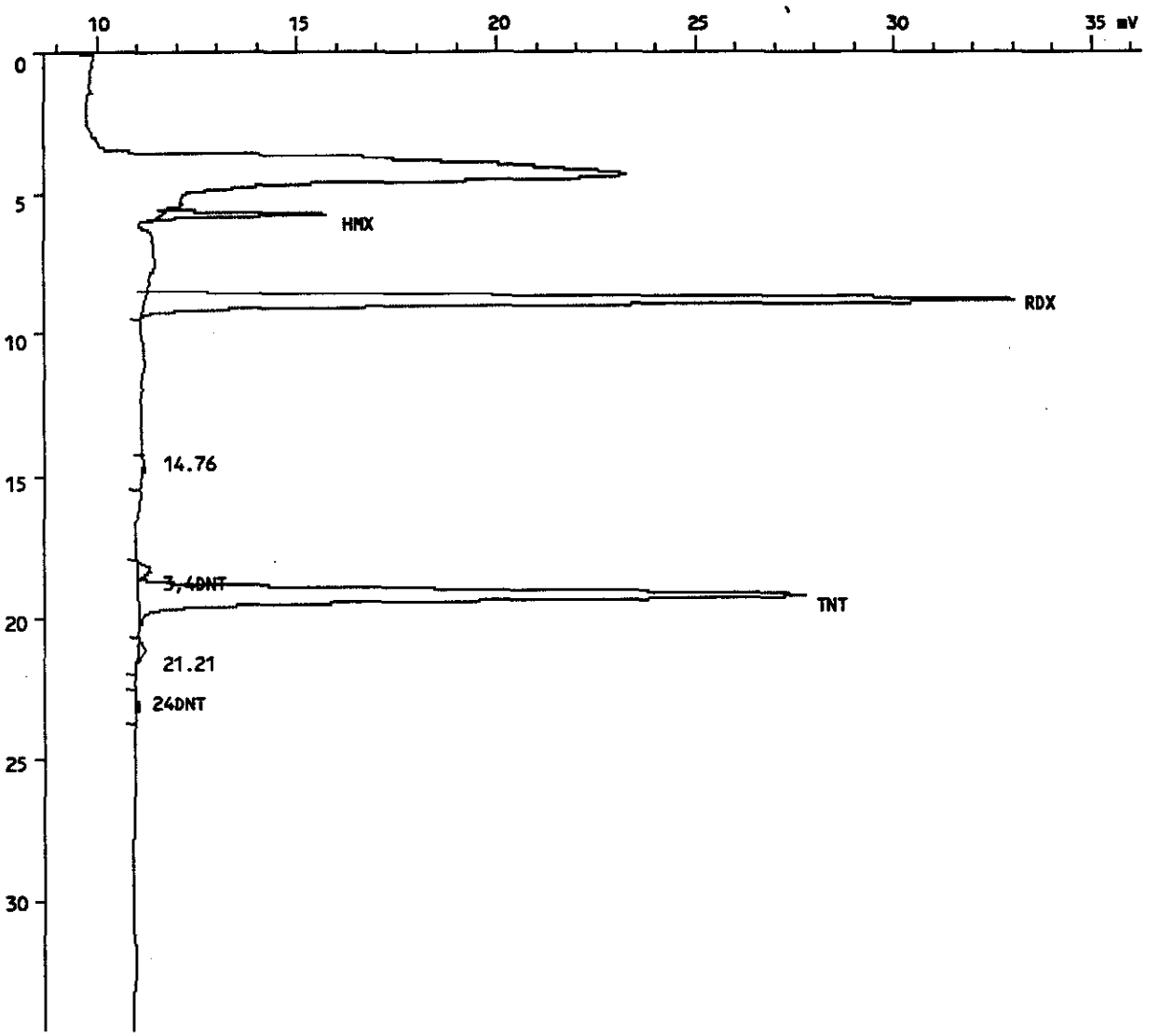
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,7,1

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 06:10:09
Reported on 05-Jun-98 at 13:12:11



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,7,1

Acquired on 20-May-98 at 06:10:09
Modified on 05-Jun-82 at 12:20:44
Reported on 05-Jun-98 at 12:20:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

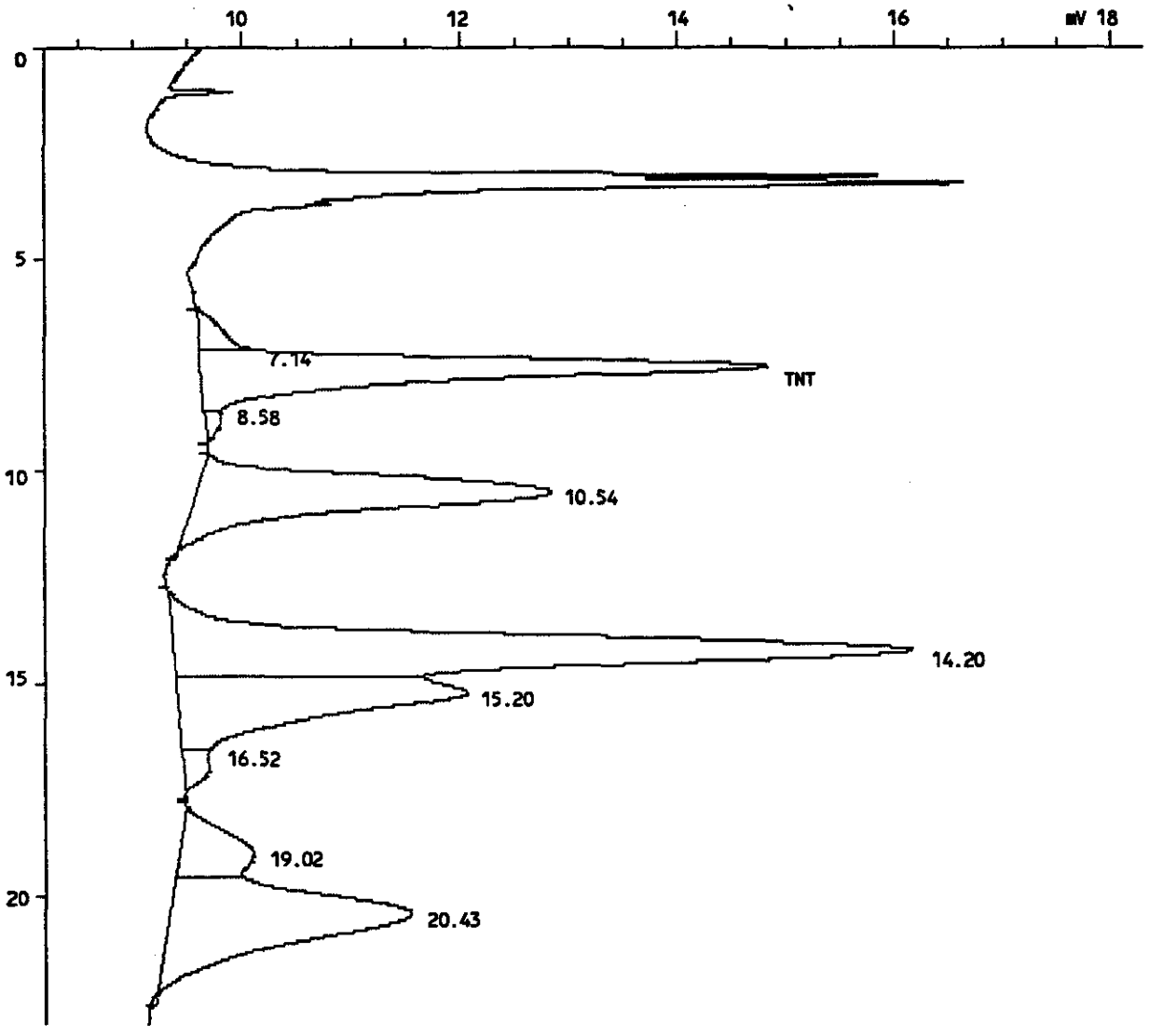
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.755	4210	42012	17064.020	HMX
2	8.837	21817	479905	112179.781	RDX *
4	18.325	353	8623	1424.422	3,4DNT
5	19.200	16734	469397	44467.301	TNT * P
7	23.200	87	3138	239.275	24DNT
Total		43202	1003075	175374.797	
Residual		269	8786	1198.895	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,5,1

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 02:23:51
Reported on 05-Jun-98 at 13:36:06



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,5,1

Acquired on 05-Jun-98 at 02:23:51
Modified on 05-Jun-82 at 13:33:48
Reported on 05-Jun-98 at 13:33:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

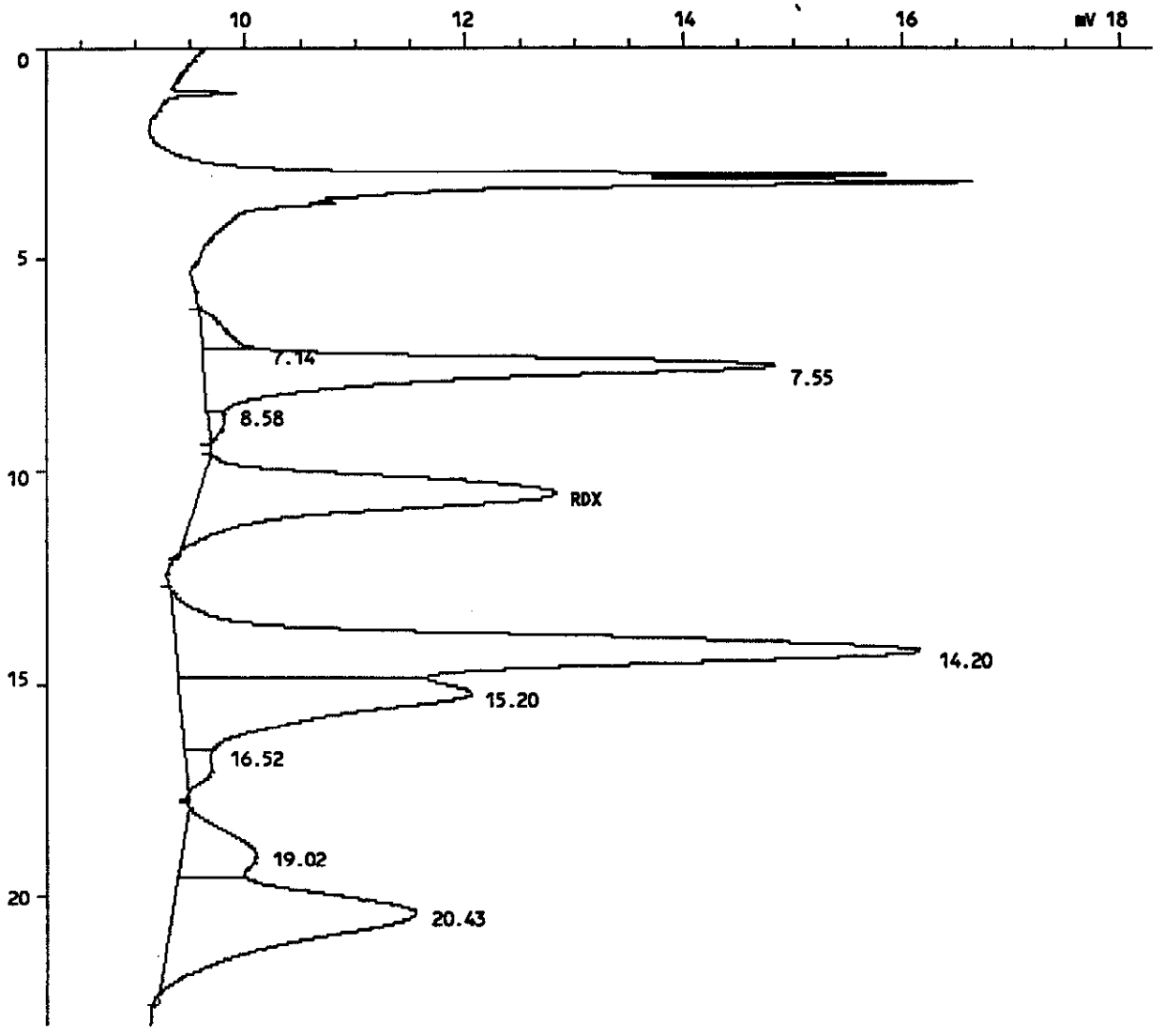
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.547	5214	183318	74671.102	TNT
Total		5214	183318	74671.102	
Residual		16594	906924	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,5,1

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 02:23:51
Reported on 05-Jun-98 at 13:40:57



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,5,1

Acquired on 05-Jun-98 at 02:23:51
Modified on 05-Jun-82 at 13:39:08
Reported on 05-Jun-98 at 13:39:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 13:32:56
Method file.....: LCCN Last modified on 05-Jun-82 at 13:38:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D1 10X
Sample ID.....: 33910.13
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	10.544	3271	172553	142370.141	RDX
Total		3271	172553	142370.141	
Residual		18537	917689	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.13

Sample Amt: 2g % Moisture 29.47 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

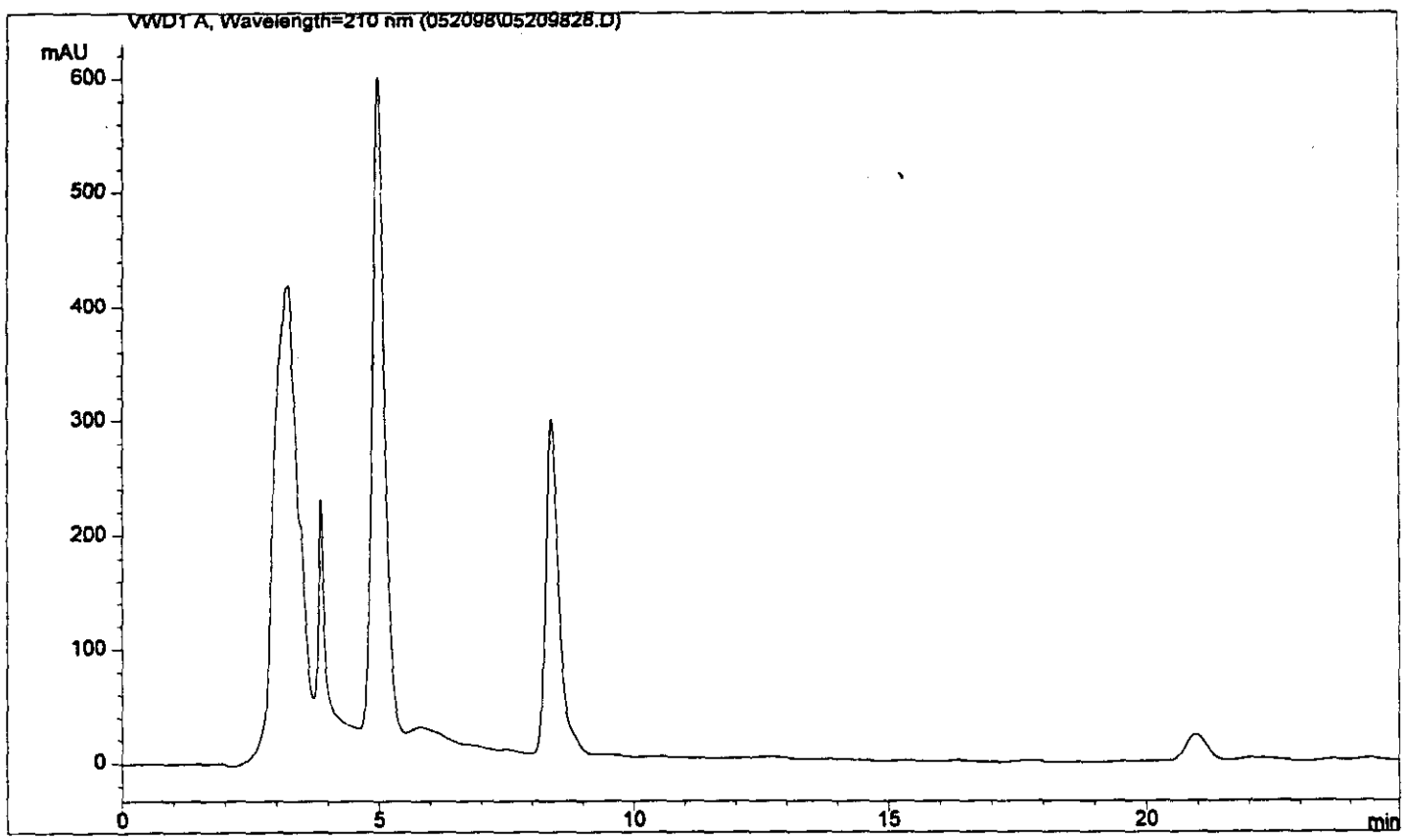
FORM I

Sample Name : 33910.13
Acq Operator : SS

Vial No. : 28
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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

Totals: 0.00000

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.14

Sample Amt: 2g % Moisture 22.73 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

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	2780	
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

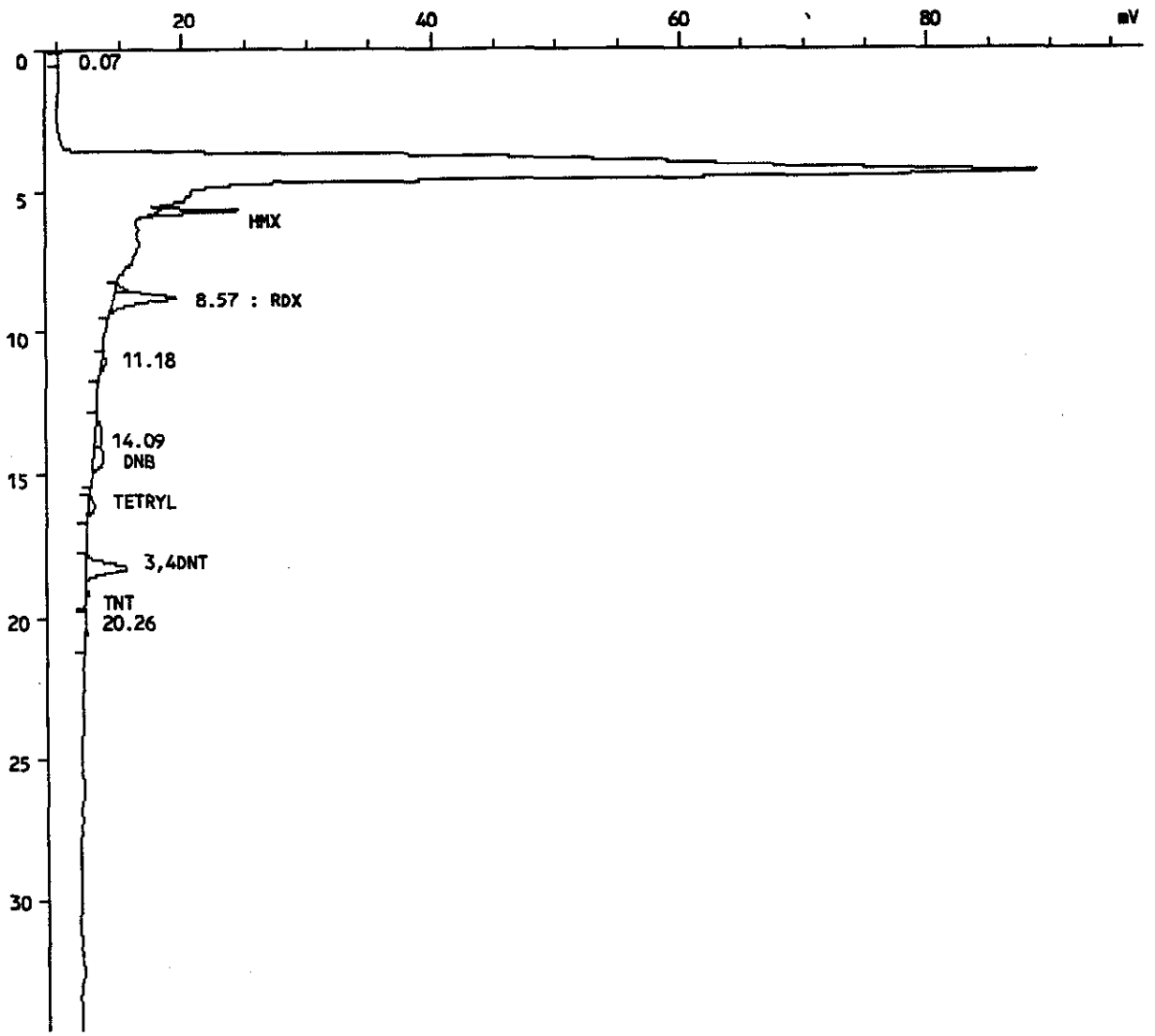
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,8,1

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 06:54:47
Reported on 08-Jun-98 at 09:54:06



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,8,1

Acquired on 20-May-98 at 06:54:47
Modified on 05-Jun-82 at 12:20:28
Reported on 05-Jun-98 at 12:20:28

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
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

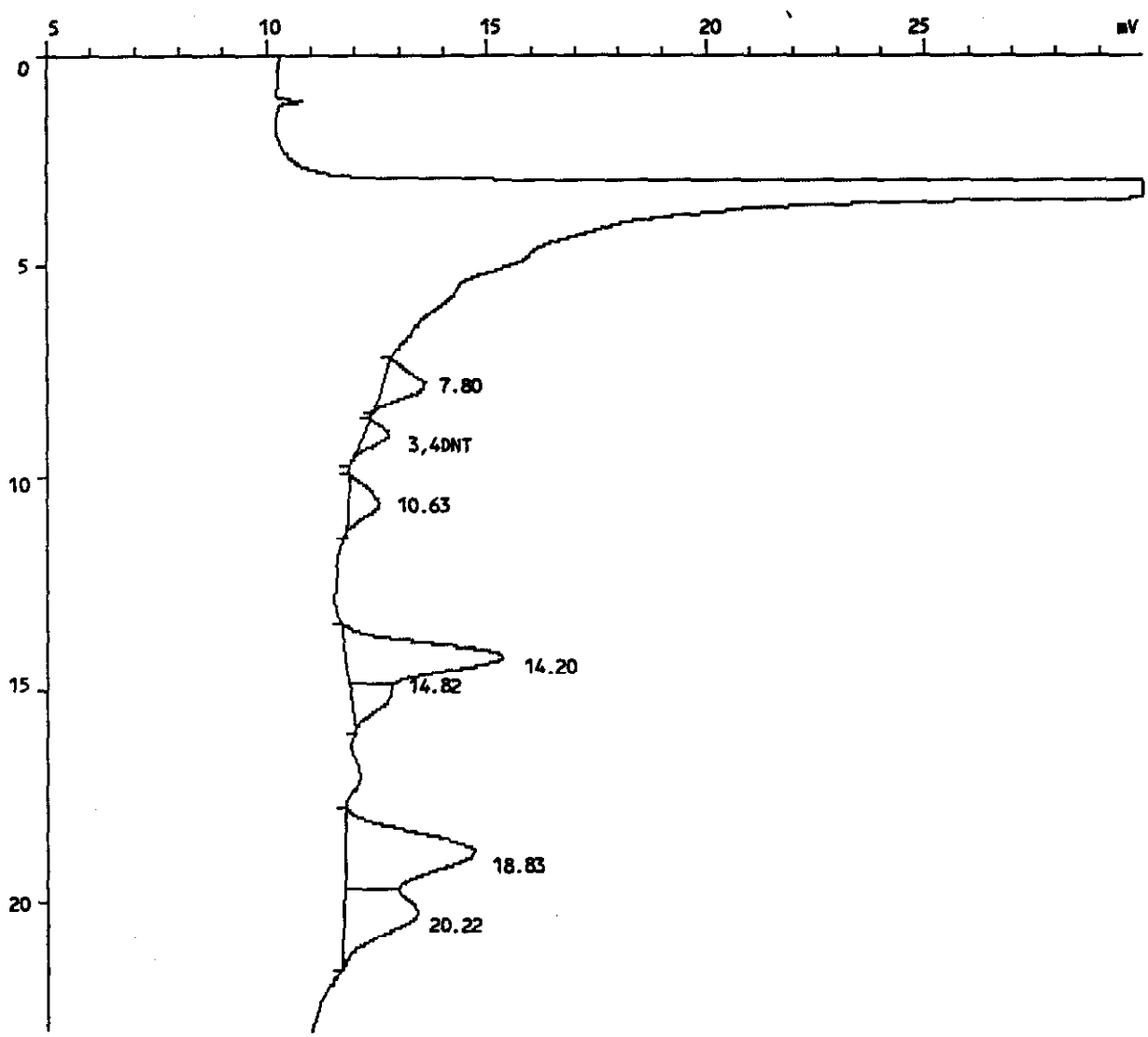
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	5.733	6576	57679	2342.764	HMX
4	8.832	4988	119063	2783.145	RDX*
7	14.608	895	40766	310.525	DNB
8	16.149	508	13679	235.351	TETRYL
9	18.320	3287	83848	1385.004	3,4DNT
10	19.211	216	4485	42.485	TNT
Total		16469	319519	7099.273	
Residual		2655	62463	1511.926	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,6,1

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 03:08:12
Reported on 05-Jun-98 at 13:35:35



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,6,1

Acquired on 05-Jun-98 at 03:08:12
Modified on 05-Jun-82 at 13:34:02
Reported on 05-Jun-98 at 13:34:01

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
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

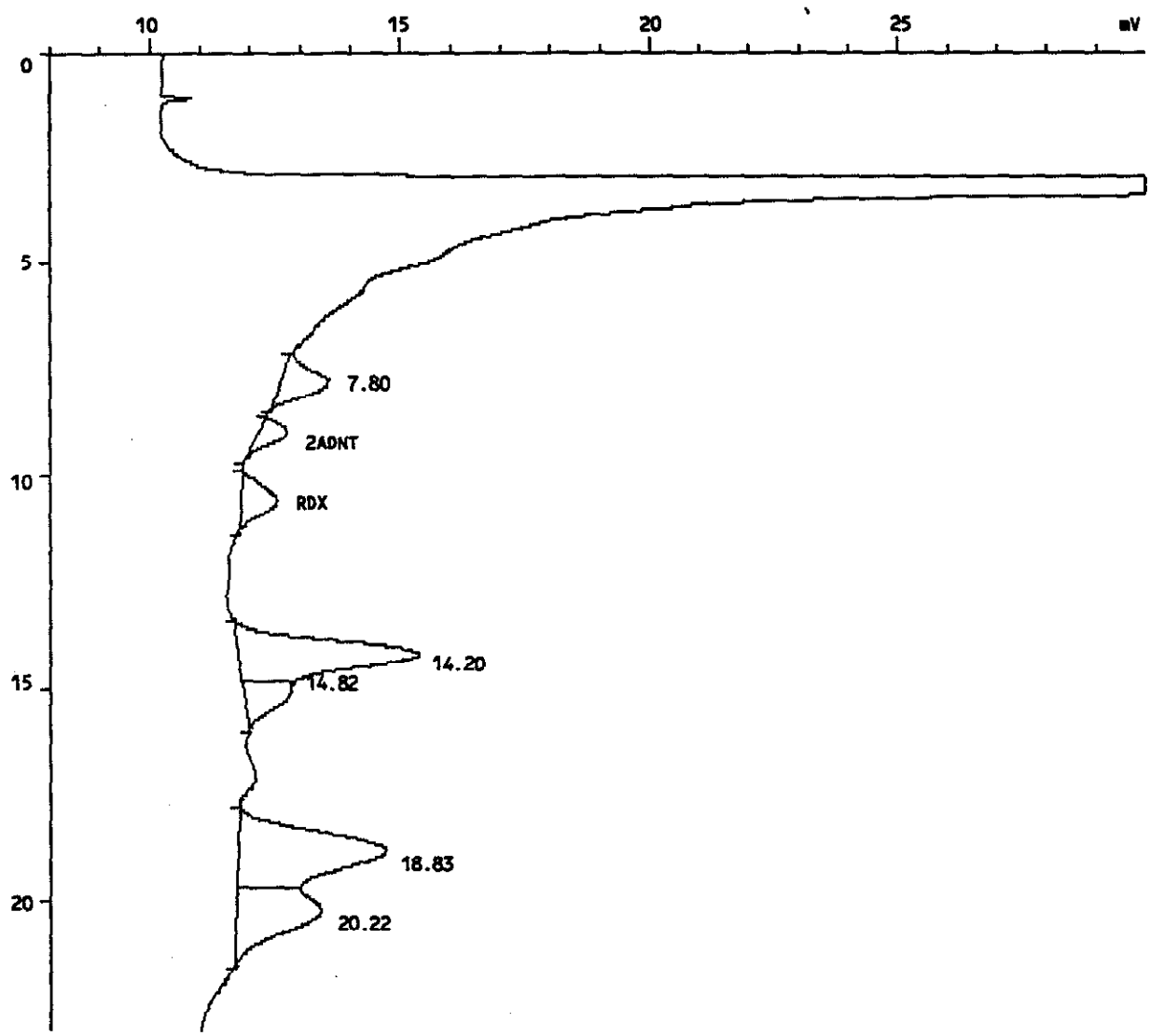
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.045	593	19278	1459.342	3,4DNT
Total		593	19278	1459.342	
Residual		10966	579418	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,6,1

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 03:08:12
Reported on 05-Jun-98 at 15:28:47



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,6,1

Acquired on 05-Jun-98 at 03:08:12
Modified on 05-Jun-82 at 15:27:04
Reported on 05-Jun-98 at 15:27:08

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 15:18:04
Method file.....: LCCN Last modified on 05-Jun-82 at 15:19:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D2
Sample ID.....: 33910.14
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	9.045	593	19278	786.853	2ADNT
3	10.629	727	31893	2631.430	RDX
Total		1319	51171	3418.284	
Residual		10239	547525	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.14

Sample Amt: 2g % Moisture 22.73 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

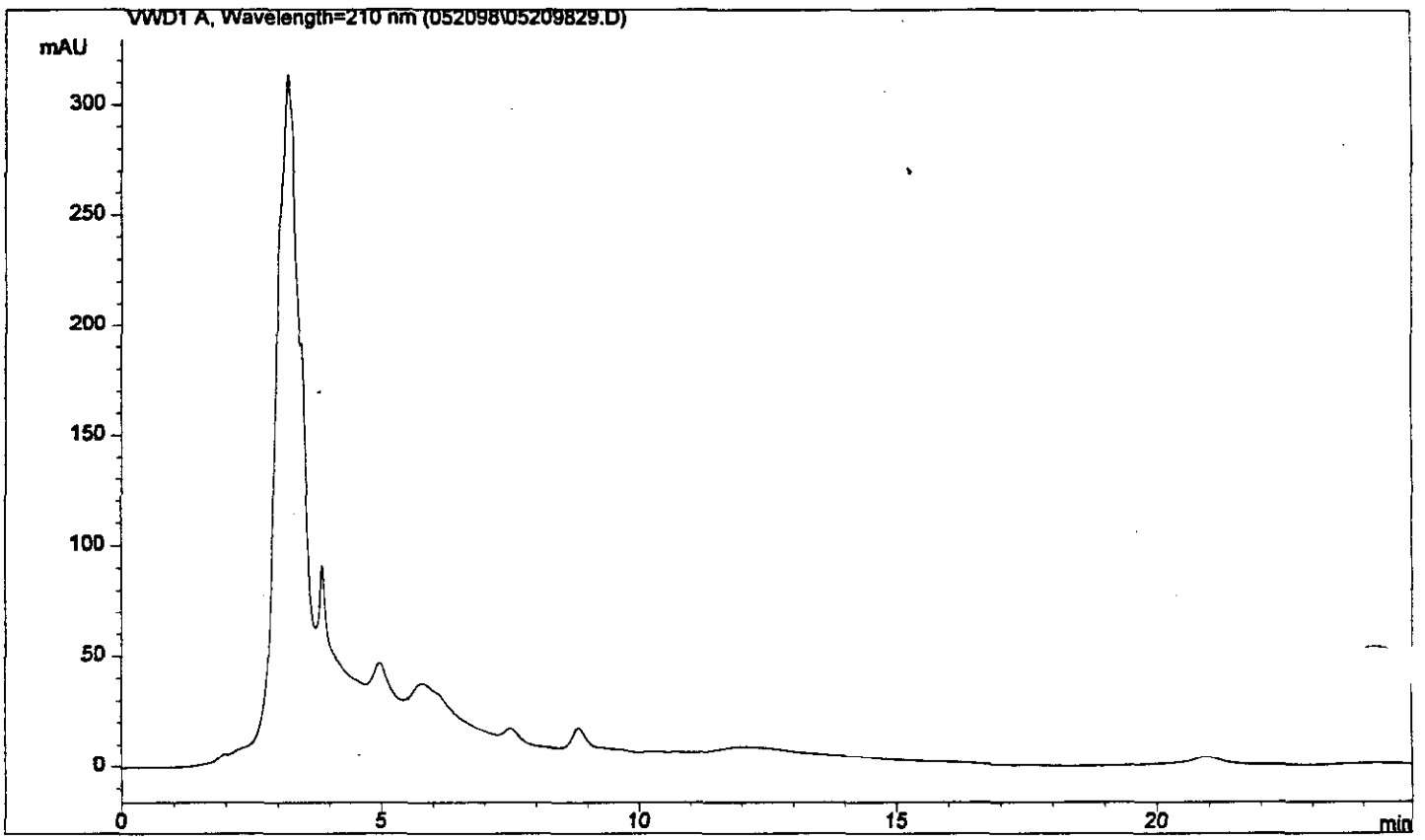
FORM I

Sample Name : 33910.14
Acq Operator : SS

Vial No. : 29
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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

Totals: 0.00000

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.15

Sample Amt: 2g % Moisture 24.86 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

Extraction Method: SONC Date Analyzed: 05/20/98

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	1090	
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

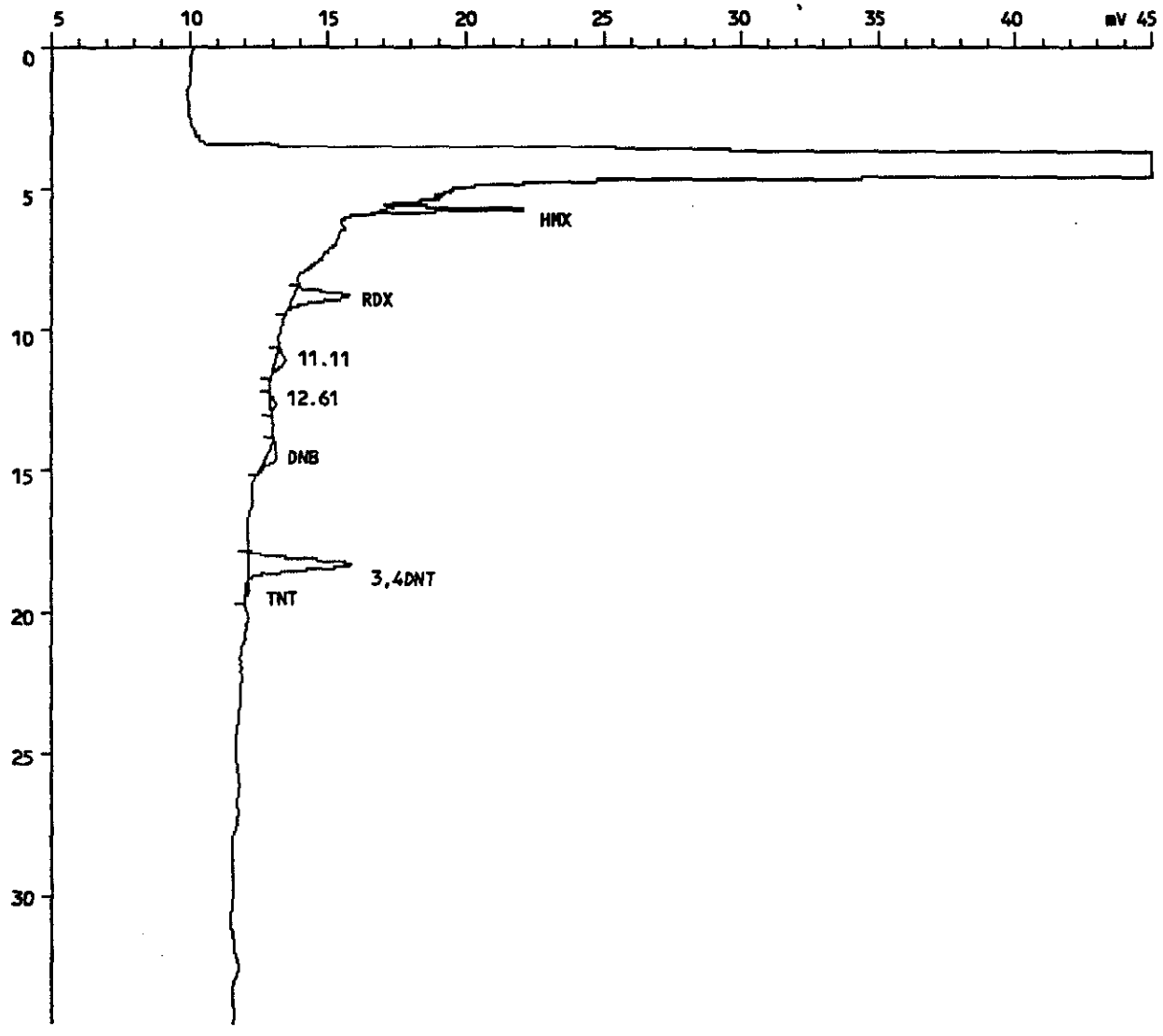
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519A,9,1

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 20-May-98 at 07:39:24
Reported on 05-Jun-98 at 13:12:52



INJECTION REPORT

Injection F: <MC3> 2 2EX0519A,9,1

Acquired on 20-May-98 at 07:39:24
Modified on 05-Jun-82 at 12:20:12
Reported on 05-Jun-98 at 12:20:12

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 40
Calibration file..: 2EX0519 Last modified on 01-Jun-82 at 19:04:18
Method file.....: EXPLOS Last modified on 05-Jun-82 at 12:19:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
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

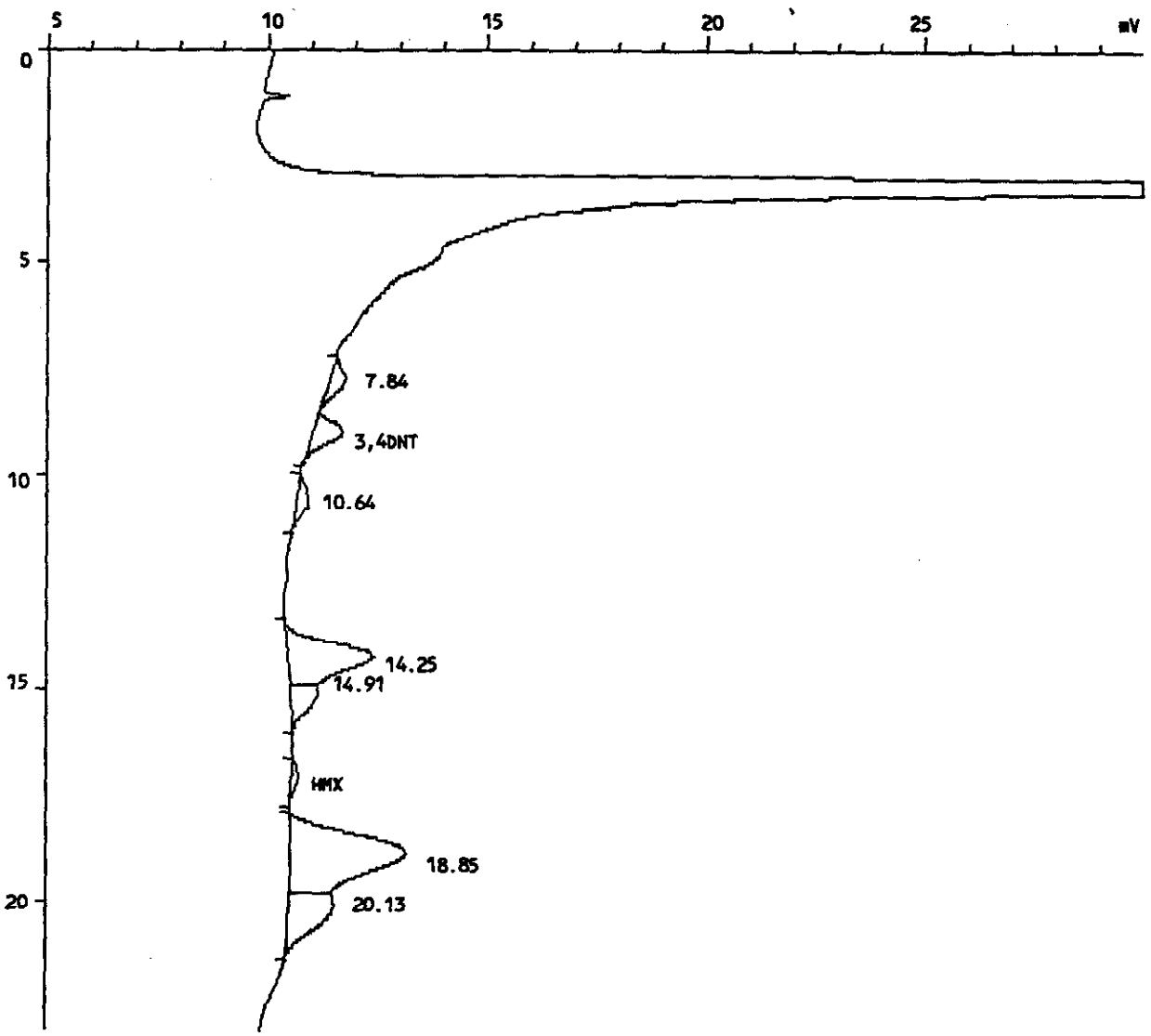
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.728	5190	47123	1914.015	HMX
2	8.811	2013	46728	1092.283	RDX *
5	14.613	421	16003	121.899	DNB
6	18.299	3764	101653	1679.103	3,4DNT
7	19.205	170	3832	36.304	TNT
Total		11559	215339	4843.604	
Residual		603	17495	408.959	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,7,1

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 03:52:33
Reported on 05-Jun-98 at 13:35:09



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,7,1

Acquired on 05-Jun-98 at 03:52:33
Modified on 05-Jun-82 at 13:34:14
Reported on 05-Jun-98 at 13:34:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604A Last modified on 05-Jun-82 at 13:31:06
Method file.....: LCCN Last modified on 05-Jun-82 at 13:28:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
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

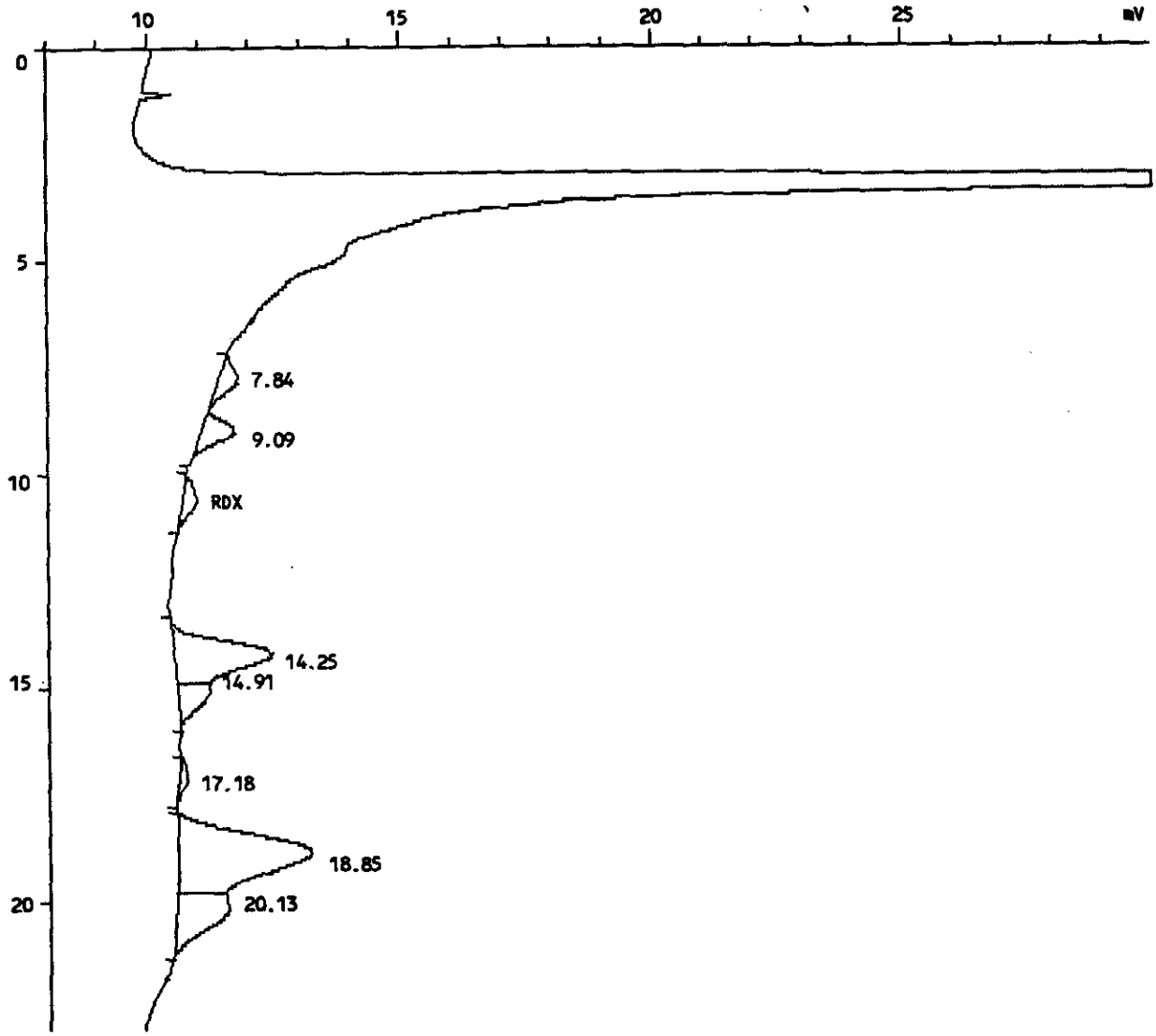
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.088	697	23921	1810.789	3,4DNT
6	17.179	167	6144	675.892	HMX
Total		864	30064	2486.681	
Residual		7041	382560	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0604A,7,1

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 05-Jun-98 at 03:52:33
Reported on 05-Jun-98 at 15:29:55



INJECTION REPORT

Injection F: <MC3> 3 3CN0604A,7,1

Acquired on 05-Jun-98 at 03:52:33
Modified on 05-Jun-82 at 15:29:46
Reported on 05-Jun-98 at 15:31:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 8
Calibration file..: 3CN0604B Last modified on 05-Jun-82 at 15:29:28
Method file.....: LCCN Last modified on 05-Jun-82 at 15:28:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-10-D3
Sample ID.....: 33910.15
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	10.640	292	12574	1037.494	RDX
Total		292	12574	1037.494	
Residual		7613	400050	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-10-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) SOIL Lab Sample ID: 33910.15

Sample Amt: 2g % Moisture 24.86 Date Received: 05/09/98

Extraction Volume: 10ml Date Extracted: 05/11/98

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	625	U

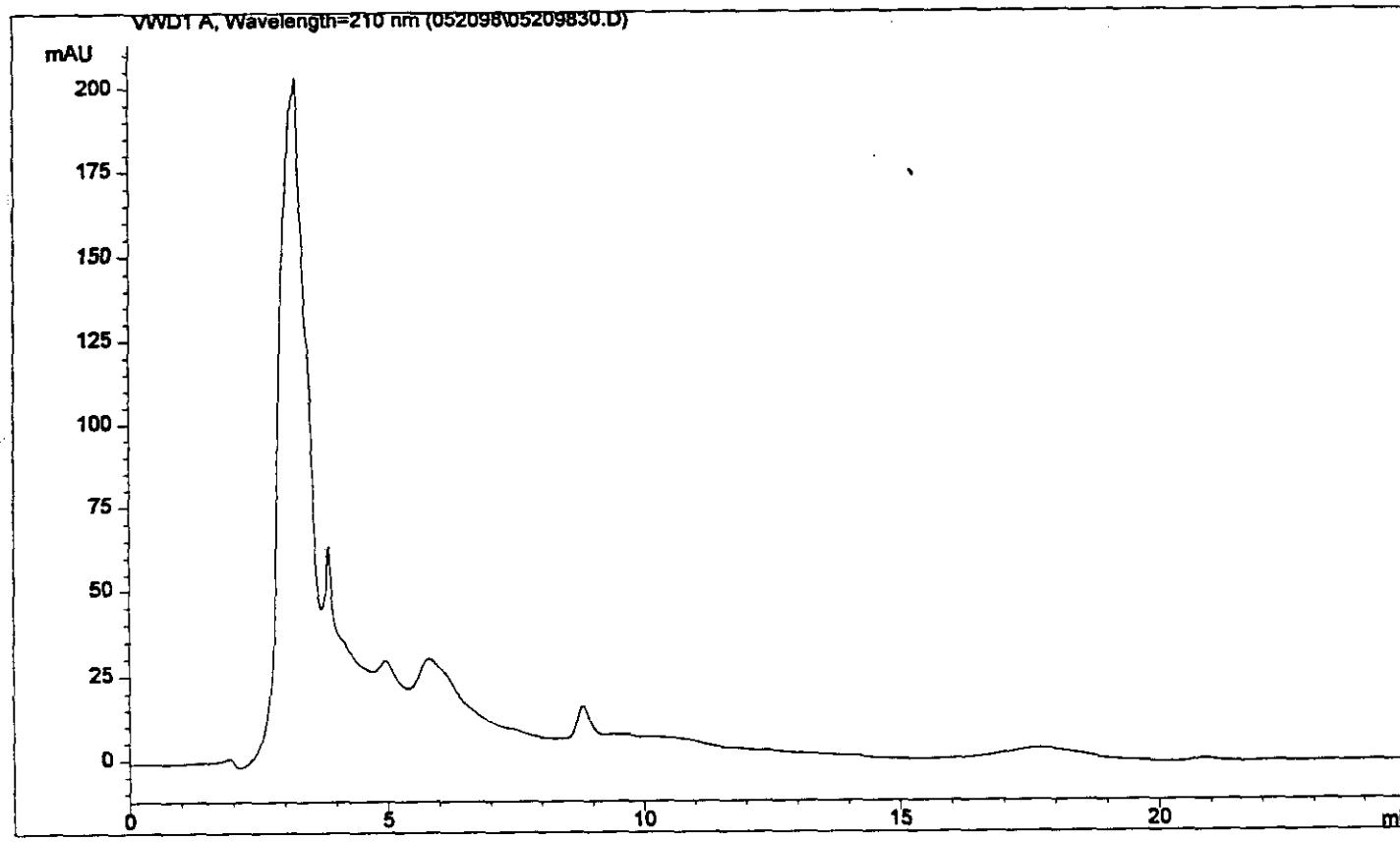
FORM I

Sample Name : 33910.15
Acq Operator : SS

Vial No. : 30
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052098.M
Analysis Method : C:\HPCHEM\1\METHODS\052098.M
Last Changed : Sun, 31. May. 1998, 05:29:49 pm

PETN SOIL RE-ANALYZED



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Sun, 31. May. 1998,05:28:26 pm
Multiplier : 2.000000
Dilution : 5.000000
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
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB050798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) WATER Lab Sample ID: 33910.16

Sample Amt: 1ml % Moisture Date Received: 05/09/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/13/98

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

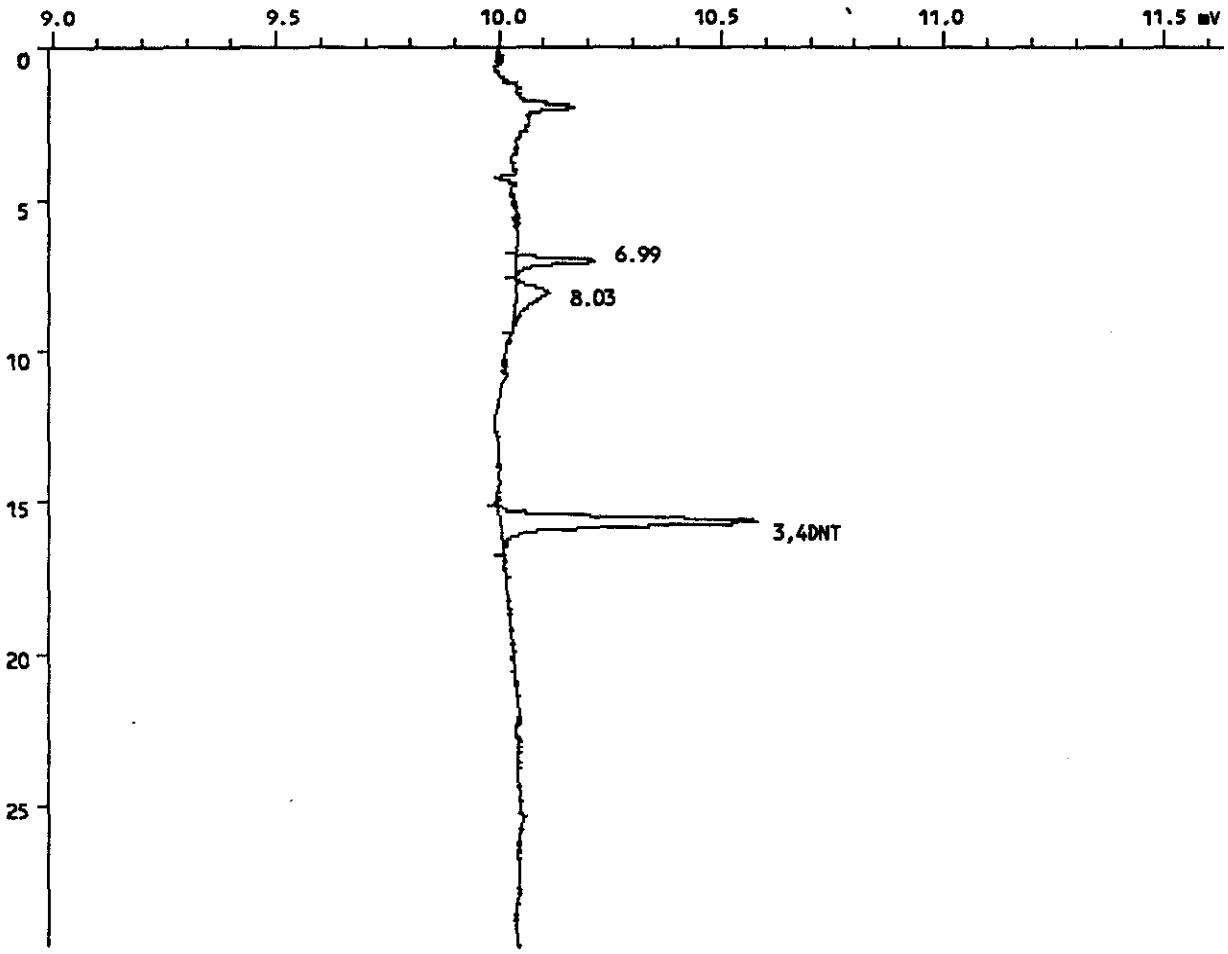
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0512W,13,1

Sample name.....: BIO-RB050798
Sample ID.....: 33910.16
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 13-May-98 at 05:07:56
Reported on 15-May-98 at 12:32:08



INJECTION REPORT

Injection F: <MC3> 5 5E0512W,13,1

Acquired on 13-May-98 at 05:07:56
Modified on 15-May-82 at 12:28:34
Reported on 15-May-98 at 12:28:36

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.: 27
Calibration file..: 5E0512W Last modified on 15-May-82 at 12:27:08
Method file.....: EXPLOS Last modified on 15-May-82 at 12:27:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-RB050798
Sample ID.....: 33910.16
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	15.621	576	12925	263.247	3,4DNT 131
Total		576	12925	263.247	
Residual		257	5800	118.117	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB050798

ab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 33910

Matrix: (soil/water) WATER Lab Sample ID: 33910.16

Sample Amt: 1ml % Moisture Date Received: 05/09/98

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
75-11-5	PETN----------	20.0	U

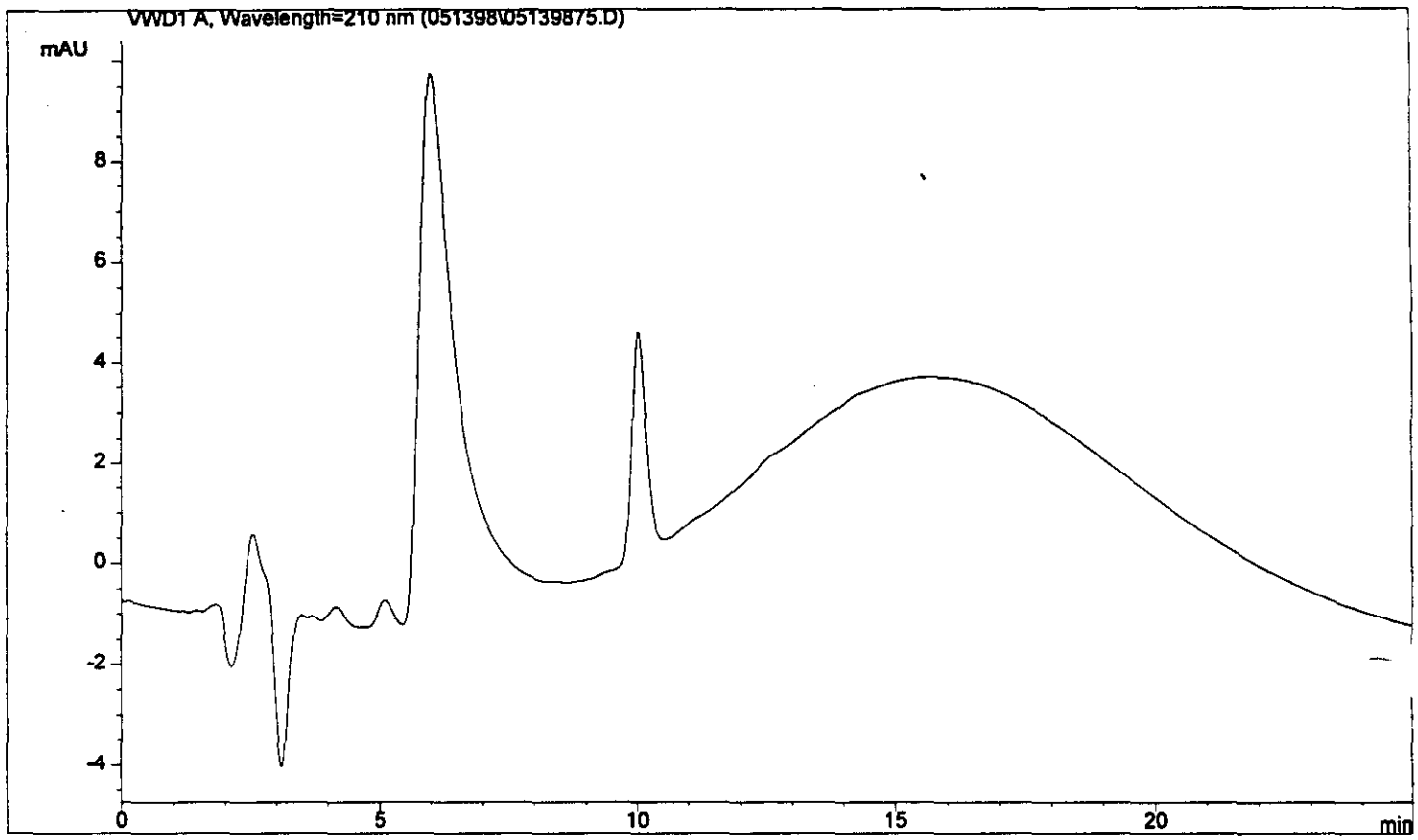
FORM I

Sample Name : 33910.16
Acq Operator : SS

Vial No. : 75
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 051398W.M
Analysis Method : C:\HPCHEM\1\METHODS\051398W.M
Last Changed : Sat, 16. May. 1998, 02:54:40 pm

PETN WATER



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Customized Report: extstd.frp

==========

Sorted By Signal
Calib. Data Modified : Sat, 16. May. 1998,02:54:36 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 ***

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ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33910
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 05/12/98 to 05/14/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	05/18/98	19:25
EXP L1 SOIL STD	2-260:IA1	05/18/98	21:39
EXP L2 SOIL STD	2-259:IA2	05/18/98	22:24
EXP L3 SOIL STD	2-258:IA3	05/18/98	23:09
EXP L4 SOIL STD	2-257:IA4	05/18/98	23:53
EXP L5 SOIL STD	2-256:IA5	05/19/98	00:38
BL0511SA	BL0511SA	05/19/98	01:22
LC0511SA	LC0511SA	05/19/98	02:52
LD0511SA	LD0511SA	05/19/98	03:36
BIO-N-30%-10-A1	33910.01	05/19/98	04:21
BIO-N-30%-10-1A MS	33910.02MS	05/19/98	05:06
BIO-N-30%-10-A1 MSD	33910.03MSD	05/19/98	05:50
BIO-N-30%-10-A2	33910.04	05/19/98	06:35
BIO-N-30%-10-A3	33910.05	05/19/98	07:19
BIO-N-30%-10-B1	33910.06	05/19/98	08:04
EXP L3 SOIL STD	2-258:CA1	05/19/98	08:49

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FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0518,4
Injection File Name Level 2 : 2EX0518,5
Injection File Name Level 3 : 2EX0518,6
Injection File Name Level 4 : 2EX0518,7
Injection File Name Level 5 : 2EX0518,8

Calibration Date : 05/18/1998
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	11246	1109	352388	1387	801205	1214	1185906	1198	1660663	1258
RDX	9141	2166	244304	2313	565085	2047	849304	2061	1181337	2148
TNB	12529	4149	354551	4690	817705	4151	1217371	4113	1694717	4301
DNB	11460	7074	299205	7370	672308	6367	1010260	6378	1413566	6668
TETRYL	10914	2934	305486	3285	691509	2857	1023288	2811	1406052	2905
NB	16868	5112	485520	5892	1106697	5171	1656761	5145	2322612	5401
3,4-DNT	15294	3011	427015	3368	974840	2954	1454554	2933	2029900	3076
TNT	13853	5131	395206	5846	905559	5145	1355911	5136	1896508	5388
4ADNT	7748	3283	217080	3667	495288	3216	738866	3185	1031022	3347
2ADNT	12390	5250	348599	5888	797606	5179	1192364	5140	1671675	5428
26DNT	10184	2625	276001	2840	629227	2477	937761	2468	1296556	2562
24DNT	15294	6481	427764	7226	989369	6424	1474953	6358	2075355	6738
NT	8917	2638	266640	3152	612321	2783	909636	2756	1265916	287[illegible]
T	8158	2414	254705	3011	582596	2648	863707	2617	1209166	2[illegible]
NT	11057	3434	340691	4237	780533	3717	1147914	3656	1615487	[illegible]

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1
Injection File Name Level 1 : 2EX0518,4
Injection File Name Level 2 : 2EX0518,5
Injection File Name Level 3 : 2EX0518,6
Injection File Name Level 4 : 2EX0518,7
Injection File Name Level 5 : 2EX0518,8

Calibration Date : 05/18/1998
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	1233	8.25	0.99892	1237	0.000
RDX	2147	4.96	0.99913	2113	0.000
TNB	4281	5.61	0.99910	4234	0.000
DNB	6771	6.52	0.99893	6559	0.000
TETRYL	2958	6.36	0.99925	2879	0.000
NB	5344	6.11	0.99894	5307	0.000
3,4-DNT	3068	5.75	0.99897	3024	0.000
NT	5329	5.79	0.99897	5292	0.000
ADNT	3340	5.79	0.99892	3289	0.000
2ADNT	5377	5.70	0.99879	5320	0.000
26DNT	2594	5.84	0.99917	2529	0.000
24DNT	6645	5.34	0.99875	6595	0.000
2NT	2841	6.80	0.99914	2835	0.000
4NT	2688	8.10	0.99896	2702	0.000
3NT	3782	7.89	0.99876	3792	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/18/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/19/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0518A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	772303	1170	1233	5.12	1237	5.43
RDX	547798	1985	2147	7.57	2113	6.05
TNB	786562	3993	4281	6.73	4234	5.70
DNB	661114	6261	6771	7.54	6559	4.55
TETRYL	661930	2735	2958	7.55	2879	5.00
NB	1065763	4980	5344	6.81	5307	6.15
3,4-DNT	945855	2866	3068	6.58	3024	5.21
TNT	877293	4985	5329	6.47	5292	5.80
4ADNT	484602	3147	3340	5.78	3289	4.32
2ADNT	768839	4992	5377	7.15	5320	6.15
26DNT	615096	2422	2594	6.66	2529	4.25
24DNT	946930	6149	6645	7.47	6595	6.77
2NT	584093	2655	2841	6.56	2835	6.35
4NT	554612	2521	2688	6.20	2702	6.70
NT	740434	3526	3782	6.77	3792	7.02

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	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

2EX051
page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN12
Column ID : CARB-07
Calibration Date : 05/18/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.78	5.76	5.77	5.77	5.77
RDX	8.89	8.85	8.88	8.86	8.87
TNB	12.09	12.05	12.09	12.05	12.07
DNB	14.78	14.74	14.78	14.75	14.76
TETRYL	16.19	16.17	16.22	16.18	16.20
NB	16.78	16.77	16.82	16.78	16.80
3,4-DNT	18.52	18.47	18.53	18.49	18.50
TNT	19.36	19.33	19.39	19.36	19.37
4ADNT	20.19	20.18	20.26	20.23	20.25
2ADNT	21.23	21.22	21.29	21.26	21.28
26DNT	22.65	22.59	22.66	22.63	22.64
24DNT	23.32	23.31	23.38	23.34	23.35
2NT	27.56	27.53	27.60	27.57	27.57
4NT	29.48	29.46	29.53	29.49	29.48
3NT	31.78	31.77	31.84	31.82	31.81

COMPONENT NAME	RT Cont CA1
HMX	5.78
RDX	8.89
TNB	12.09
DNB	14.79
TETRYL	16.24
NB	16.83
3,4-DNT	18.54
TNT	19.40
4ADNT	20.32
2ADNT	21.35
26DNT	22.68
24DNT	23.40
2NT	27.61
4NT	29.54
3NT	31.86

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.77	0.006	0.019	5.75 - 5.79
RDX	8.87	0.017	0.052	8.82 - 8.92
TNB	12.07	0.016	0.047	12.02 - 12.12
DNB	14.77	0.021	0.064	14.70 - 14.83
TETRYL	16.20	0.026	0.077	16.12 - 16.27
NB	16.80	0.023	0.068	16.73 - 16.86
3,4-DNT	18.51	0.027	0.080	18.43 - 18.59
TNT	19.37	0.024	0.072	19.30 - 19.44

2EX0518
page 2

4ADNT	20.24	0.053	0.158	20.08 - 20.39
2ADNT	21.27	0.048	0.145	21.13 - 21.42
26DNT	22.64	0.029	0.088	22.55 - 22.73
24DNT	23.35	0.035	0.105	23.25 - 23.46
2NT	27.57	0.030	0.090	27.48 - 27.66
4NT	29.50	0.030	0.089	29.41 - 29.58
3NT	31.81	0.035	0.106	31.70 - 31.92

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33910
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 05/12/98 to 05/14/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	05/19/98	19:45
EXP L1 SOIL STD	2-260:IA1	05/19/98	21:59
EXP L2 SOIL STD	2-259:IA2	05/19/98	22:43
EXP L3 SOIL STD	2-258:IA3	05/19/98	23:28
EXP L4 SOIL STD	2-257:IA4	05/20/98	00:13
EXP L5 SOIL STD	2-256:IA5	05/20/98	00:57
BIO-N-30%-10-B2	33910.07	05/20/98	01:42
BIO-N-30%-10-B3	33910.08	05/20/98	02:27
BIO-N-30%-10-B3FD	33910.09	05/20/98	03:11
BIO-N-30%-10-C1	33910.10	05/20/98	03:56
BIO-N-30%-10-C2	33910.11	05/20/98	04:40
BIO-N-30%-10-C3	33910.12	05/20/98	05:25
BIO-N-30%-10-D1 10X	33910.13	05/20/98	06:10
BIO-N-30%-10-D2	33910.14	05/20/98	06:54
BIO-N-30%-10-D3	33910.15	05/20/98	07:39
EXP L3 SOIL STD	2-258:CA1	05/20/98	08:24

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FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0519,4
Injection File Name Level 2 : 2EX0519,5
Injection File Name Level 3 : 2EX0519,6
Injection File Name Level 4 : 2EX0519,7
Injection File Name Level 5 : 2EX0519,8

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
HMX	12105	1194	347230	1367	808135	1224	1114131	1125	1642152	1244
RDX	9524	2257	245537	2325	562830	2039	800366	1943	1173121	2133
TNB	12593	4170	352151	4658	815464	4139	1137255	3842	1690090	4290
DNB	10460	6457	294399	7251	688197	6517	943789	5958	1407455	6639
TETRYL	10789	2900	297215	3196	696238	2877	967125	2657	1404578	2902
NB	17281	5237	474976	5764	1115294	5212	1539077	4780	2303360	5357
3,4-DNT	15186	2989	420106	3313	988290	2995	1369810	2762	2030712	3077
TNT	14352	5316	389159	5757	912535	5185	1262862	4784	1883603	5351
4ADNT	8150	3453	214126	3617	504132	3274	698066	3009	1025303	3329
2ADNT	12254	5192	342972	5793	804521	5224	1113542	4800	1658713	5385
26DNT	9557	2463	273580	2815	637860	2511	885721	2331	1298900	2567
24DNT	15556	6592	424201	7166	990717	6433	1374684	5925	2055048	6672
2NT	8894	2631	264018	3121	610972	2777	848914	2572	1256356	2855
[illegible]	8149	2411	254772	3011	587611	2671	817627	2478	1209605	274[illegible]
[illegible]	10950	3401	335840	4177	777481	3702	1080458	3441	1600631	38[illegible]

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0519,4
Injection File Name Level 2 : 2EX0519,5
Injection File Name Level 3 : 2EX0519,6
Injection File Name Level 4 : 2EX0519,7
Injection File Name Level 5 : 2EX0519,8

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
HMX	1231	7.18	0.99693	1211	0.000
RDX	2139	7.28	0.99731	2070	0.000
TNB	4220	7.00	0.99649	4151	0.000
DNB	6564	7.06	0.99655	6445	0.000
TETRYL	2906	6.59	0.99751	2835	0.000
NB	5270	6.69	0.99634	5184	0.000
3,4-DNT	3027	6.55	0.99666	2982	0.000
T	5278	6.62	0.99645	5178	0.000
4ADNT	3336	6.76	0.99696	3237	0.000
2ADNT	5279	6.80	0.99626	5207	0.000
26DNT	2537	7.01	0.99716	2498	0.000
24DNT	6558	6.82	0.99605	6440	0.000
2NT	2791	7.73	0.99677	2771	0.000
4NT	2664	8.94	0.99677	2668	0.000
3NT	3710	8.53	0.99664	3710	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/19/1998
ıtinuing Calibration #: 1
ɔntinuing Cal Date : 05/20/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0519A.10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	795131	1205	1231	2.13	1211	0.48
RDX	564683	2046	2139	4.37	2070	1.18
TNB	813988	4132	4220	2.08	4151	0.46
DNB	682881	6467	6564	1.49	6445	0.34
TETRYL	677305	2799	2906	3.70	2835	1.28
NB	1108068	5178	5270	1.74	5184	0.12
3,4-DNT	979861	2969	3027	1.91	2982	0.42
TNT	907664	5157	5278	2.30	5178	0.40
4ADNT	501652	3257	3336	2.36	3237	0.65
2ADNT	796606	5173	5279	2.01	5207	0.66
26DNT	637537	2510	2537	1.08	2498	0.49
24DNT	981973	6376	6558	2.76	6440	0.99
2NT	603600	2744	2791	1.71	2771	0.97
⁴NT	581335	2642	2664	0.81	2668	0.94
NT	770979	3671	3710	1.04	3710	1.04

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection 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 : IN12
Column ID : CARB-07
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
HMX	5.74	5.73	5.74	5.73	5.73
RDX	8.85	8.78	8.80	8.78	8.79
TNB	12.01	11.95	11.98	11.95	11.95
DNB	14.64	14.59	14.64	14.61	14.61
TETRYL	16.06	15.98	16.04	16.00	16.01
NB	16.69	16.60	16.65	16.61	16.60
3,4-DNT	18.36	18.24	18.30	18.25	18.25
TNT	19.25	19.13	19.18	19.14	19.14
4ADNT	20.07	19.93	20.01	19.98	19.98
2ADNT	21.09	20.97	21.04	21.01	21.01
26DNT	22.46	22.32	22.38	22.35	22.34
24DNT	23.16	23.03	23.10	23.06	23.06
2NT	27.35	27.16	27.24	27.20	27.20
4NT	29.23	29.05	29.13	29.08	29.08
3NT	31.57	31.34	31.42	31.38	31.38

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	5.72	5.73	5.73	5.74	5.76
RDX	8.78	8.78	8.78	8.80	8.76
TNB	11.94	11.95	11.95	11.97	11.94
DNB	14.59	14.59	14.59	14.62	14.57
TETRYL	15.99	15.97	15.97	16.01	15.96
NB	16.58	16.60	16.60	16.63	16.58
3,4-DNT	18.24	18.22	18.23	18.28	18.20
TNT	19.10	19.12	19.12	19.17	19.11
4ADNT	19.99	19.88	19.89	19.95	19.85
2ADNT	21.02	20.90	20.92	20.98	20.86
26DNT	22.32	22.29	22.30	22.37	22.27
24DNT	23.04	23.00	23.01	23.07	22.97
2NT	27.15	27.15	27.15	27.24	27.13
4NT	29.02	29.01	29.02	29.12	28.98
3NT	31.32	31.30	31.31	31.43	31.28

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.74	0.014	0.041	5.70 - 5.78
RDX	8.80	0.026	0.077	8.72 - 8.88
TNB	11.97	0.032	0.097	11.88 - 12.07
DNB	14.62	0.036	0.108	14.51 - 14.73
TETRYL	16.02	0.047	0.141	15.88 - 16.16
NB	16.63	0.046	0.137	16.50 - 16.77
3,4-DNT	18.28	0.056	0.167	18.11 - 18.45
TNT	19.17	0.056	0.168	19.00 - 19.34

4ADNT	19.97	0.068	0.203	19.77 - 20.18
2ADNT	21.00	0.070	0.210	20.79 - 21.21
26DNT	22.36	0.066	0.197	22.17 - 22.56
24DNT	23.07	0.066	0.197	22.88 - 23.27
2NT	27.23	0.079	0.238	26.99 - 27.46
T	29.10	0.086	0.259	28.84 - 29.36
T	31.41	0.096	0.288	31.12 - 31.69

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33910
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/15/98 to 05/15/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	05/20/98	19:49
L1 2-249:IA1	L1 2-249:IA1	05/20/98	21:13
L2 2-248:IA2	L2 2-248:IA2	05/20/98	21:41
L3 2-247:IA3	L3 2-247:IA3	05/20/98	22:09
L4 2-246:IA4	L4 2-246:IA4	05/20/98	22:38
L5 2-245:IA5	L5 2-245:IA5	05/20/98	23:06
ICV 2-223:CA1	ICV 2-223:CA1	05/20/98	23:34
BL0511SB	BL0511SB	05/21/98	00:02
LC0511SB	LC0511SB	05/21/98	00:58
LD0511SB	LD0511SB	05/21/98	01:26
BIO-N-30%-10-A1	33910.01	05/21/98	01:55
BIO-N-30%-10-A1	33910.02MS	05/21/98	02:23
BIO-N-30%-10-A1	33910.03MSD	05/21/98	02:51
BIO-N-30%-10-A2	33910.04	05/21/98	03:19
BIO-N-30%-10-A3	33910.05	05/21/98	03:47
L3 2-247:CA2	L3 2-247:CA2	05/21/98	04:15
BIO-N-30%-10-B1	33910.06	05/21/98	05:12
BIO-N-30%-10-B2	33910.07	05/21/98	05:40
BIO-N-30%-10-B3	33910.08	05/21/98	06:08

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FORM VIII

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33910
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/15/98 to 05/15/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-10-B3FD	33910.09	05/21/98	06:36
BIO-N-30%-10-C1	33910.10	05/21/98	07:04
BIO-N-30%-10-C2	33910.11	05/21/98	07:33
BIO-N-30%-10-C3	33910.12	05/21/98	08:01
BIO-N-30%-10-D1	33910.13	05/21/98	08:29
BIO-N-30%-10-D2	33910.14	05/21/98	08:57
BIO-N-30%-10-D3	33910.15	05/21/98	09:25
L3 2-247:CA3	L3 2-247:CA3	05/21/98	09:53

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FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

	Inj 1
Injection File Name Level 1 :	052098,4
Injection File Name Level 2 :	052098,5
Injection File Name Level 3 :	052098,6
Injection File Name Level 4 :	052098,7
Injection File Name Level 5 :	052098,8

Calibration Date : 05/20/98
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	6.461S	3.10E0	55.7692	2.87E0	112.632	2.84E0	443.835	2.88E0	876.241	2.92E0

CALIBRATION FACTOR DATA
FORM 9B

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

	Inj 1
Injection File Name Level 1 :	052098,4
Injection File Name Level 2 :	052098,5
Injection File Name Level 3 :	052098,6
Injection File Name Level 4 :	052098,7
Injection File Name Level 5 :	052098,8

Calibration Date : 05/20/98
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	2.92E0	3.46	0.99998	2.91E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/20/98
Continuing Calibration #: 1
tinuing Cal Date : 05/20/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052098,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	101.626	3.15E0	2.92E0	7.76	2.91E0	8.10

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/20/98
Continuing Calibration #: 2
Continuing Cal Date : 05/21/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052098,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	112.159	2.85E0	2.92E0	2.36	2.91E0	2.05

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/20/98
Continuing Calibration #: 3
Continuing Cal Date : 05/21/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052098,31
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	126.825	2.52E0	2.92E0	13.65	2.91E0	13.38

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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 :
Calibration Date : 05/20/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	11.16	11.15	11.18	11.16	11.17

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
PETN	11.21	11.29	11.31	11.31

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	11.21	0.067	0.202	11.01 - 11.42

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33910
Instrument ID: IN13 Column ID: CARB-08

Dates of Anlayses: 05/12/98 to 05/13/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLANK	INST.BLK.	05/12/98	20:11
EXP HIGH WATER L1 ST	2-199:IA1	05/12/98	22:25
EXP HIGH WATER L2 ST	2-198:IA2	05/12/98	23:10
EXP HIGH WATER L3 ST	2-197:IA3	05/12/98	23:55
EXP HIGH WATER L4 ST	2-196:IA4	05/13/98	00:39
EXP HIGH WATER L5 ST	2-195:IA5	05/13/98	01:24
BL0511WD	BL0511WD	05/13/98	02:09
LC0511WD	LC0511WD	05/13/98	03:38
LD0511WD	LD0511WD	05/13/98	04:23
BIO-RB050798	33910.16	05/13/98	05:07
BIO-RB050798 MS	33910.16MS	05/13/98	05:52
BIO-RB050798 MSD	33910.16MSD	05/13/98	06:37
EXP HIGH WATER L3 ST	2-197:CA1	05/13/98	08:06

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FORM VIII

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 : 5E0512W,4
Injection File Name Level 2 : 5E0512W,5
Injection File Name Level 3 : 5E0512W,6
Injection File Name Level 4 : 5E0512W,7
Injection File Name Level 5 : 5E0512W,8

Calibration Date : 05/12/1998
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	408	319	1149	361	55502	349	110662	348	229287	361
RDX	564	542	1620	623	56839	437	115086	443	233817	451
TNB	495	688	1477	821	84157	939	173569	970	353259	987
DNB	452	1189	1019	1061	62400	1311	126919	1336	259635	1367
TETRYL	524	582	1174	519	62073	549	128132	567	259661	577
NB	594	874	1212	713	77182	908	160635	945	332308	977
3,4-DNT	636	497	1279	397	82587	516	165832	518	338359	529
TNT	644	1006	1411	882	85730	1072	180052	1125	373615	1168
4ADNT	470	470	1357	538	75752	606	163077	652	338934	678
2ADNT	386	689	1141	815	58136	831	122928	878	251677	899
26DNT	436	454	1280	533	71827	625	149974	652	306446	666
24DNT	558	996	1307	934	82162	1174	171355	1224	344611	1231
2NT	647	578	1323	473	77724	536	158021	545	325546	561
T	385	481	723	362	43585	436	90665	453	187940	4
T	479	599	812	406	61741	650	120794	636	240634	6

CALIBRATION FACTOR DATA
FORM 9B

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

Inj 1

Injection File Name Level 1 : 5E0512W,4
Injection File Name Level 2 : 5E0512W,5
Injection File Name Level 3 : 5E0512W,6
Injection File Name Level 4 : 5E0512W,7
Injection File Name Level 5 : 5E0512W,8

Calibration Date : 05/12/1998
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	4.96	0.99984	358	0.000
RDX	499	16.31	0.99992	449	0.000
TNB	881	14.31	0.99991	981	0.000
DNB	1253	10.08	0.99991	1358	0.000
TETRYL	559	4.55	0.99991	574	0.000
NB	883	11.65	0.99976	968	0.000
3,4-DNT	491	10.97	0.99995	526	0.000
TNT	1051	10.66	0.99969	1155	0.000
2,6DNT	589	14.43	0.99956	670	0.000
2ADNT	822	9.95	0.99979	892	0.000
26DNT	586	15.37	0.99986	662	0.000
24DNT	1112	12.37	0.99994	1227	0.000
2NT	538	7.46	0.99986	557	0.000
4NT	440	10.74	0.99974	465	0.000
3NT	585	17.39	0.99997	635	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/12/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/13/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5E0512W.17
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	55917	352	348	1.19	358	1.67
RDX	57588	443	499	11.28	449	1.36
TNB	86528	966	881	9.65	981	1.59
DNB	62269	1308	1253	4.41	1358	3.68
TETRYL	59758	529	559	5.40	574	7.84
NB	79021	930	883	5.24	968	3.98
TNT	89161	1115	1051	6.09	1155	3.54
4ADNT	80250	642	589	9.01	670	4.18
2ADNT	60309	862	822	4.77	892	3.40
26DNT	73897	643	586	9.64	662	2.88
24DNT	84408	1206	1112	8.47	1227	1.71
2NT	77790	536	538	0.37	557	3.70
4NT	44306	443	440	0.61	465	4.77
3NT	58913	620	585	6.05	635	2.27

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 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : CARB-08
Calibration Date : 05/12/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.97	4.95	4.93	4.94	4.93
RDX	7.87	7.81	7.72	7.71	7.71
TNB	10.36	10.41	10.28	10.28	10.28
DNB	12.70	12.85	12.65	12.66	12.64
TETRYL	13.84	14.01	13.75	13.77	13.72
NB	14.32	14.47	14.29	14.30	14.26
3,4-DNT	15.79	16.08	15.81	15.81	15.71
TNT	16.24	16.43	16.20	16.21	16.11
4ADNT	17.34	17.56	17.33	17.35	17.21
2ADNT	18.32	18.60	18.40	18.41	18.24
26DNT	18.94	19.25	19.01	19.01	18.82
24DNT	19.74	19.98	19.78	19.79	19.57
2NT	22.72	23.08	22.95	22.97	22.63
4NT	24.34	24.74	24.57	24.60	24.21
3NT	26.33	26.59	26.46	26.51	26.08

COMPONENT NAME	RT Cont CA1	RT Cont CA2
HMX	4.91	4.92
RDX	7.67	7.67
TNB	10.22	10.24
DNB	12.58	12.57
TETRYL	13.62	13.56
NB	14.20	14.19
3,4-DNT	15.61	15.61
TNT	16.04	16.02
4ADNT	17.14	17.07
2ADNT	18.16	18.09
26DNT	18.77	18.77
24DNT	19.52	19.52
2NT	22.58	22.67
4NT	24.16	24.27
3NT	26.01	26.15

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.94	0.019	0.058	4.88 - 4.99
RDX	7.74	0.075	0.225	7.51 - 7.96
TNB	10.30	0.068	0.203	10.09 - 10.50
DNB	12.66	0.094	0.282	12.38 - 12.95
TETRYL	13.75	0.147	0.441	13.31 - 14.19
NB	14.29	0.093	0.280	14.01 - 14.57
3,4-DNT	15.80	0.157	0.470	15.33 - 16.27
TNT	16.18	0.138	0.414	15.76 - 16.59

4ADNT	17.28	0.163	0.489	16.79 - 17.77
2ADNT	18.31	0.174	0.521	17.79 - 18.83
26DNT	18.94	0.173	0.519	18.42 - 19.46
24DNT	19.70	0.173	0.520	19.18 - 20.22
2NT	22.80	0.196	0.589	22.21 - 23.39
4NT	24.41	0.222	0.665	23.75 - 25.08
NT	26.30	0.229	0.687	25.62 - 26.99

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33910
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/15/98 to 05/15/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
Instrument blank	Instrument bla	05/15/98	10:00
L1 2-210:IA1	L1 2-210:IA1	05/15/98	11:44
L2 2-209:IA2	L2 2-209:IA2	05/15/98	12:12
L3 2-208:IA3	L3 2-208:IA3	05/15/98	12:41
L4 2-207:IA4	L4 2-207:IA4	05/15/98	13:09
L5 2-180:IA5	L5 2-180:IA5	05/15/98	13:37
ICV 2-238:CA1	ICV 2-238:CA1	05/15/98	14:05
BL0511WE	BL0511WE	05/15/98	14:33
LC0511WE	LC0511WE	05/15/98	15:30
LD0511WE	LD0511WE	05/15/98	15:58
BIO-RB050798	33910.16	05/15/98	16:26
BIO-RB050798	33910.16MS	05/15/98	16:54
BIO-RB050798	33910.16MSD	05/15/98	17:22
L3 2-208:CA2	L3 2-208:CA2	05/15/98	18:19

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FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

Inj 1

Injection File Name Level 1 : 051398W,65
Injection File Name Level 2 : 051398W,66
Injection File Name Level 3 : 051398W,67
Injection File Name Level 4 : 051398W,68
Injection File Name Level 5 : 051398W,69

Calibration Date : 05/15/98
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	6.24562	3.20E0	49.1293	3.26E0	97.2485	3.29E0	404.725	3.16E0	824.092	3.11E0

CALIBRATION FACTOR DATA
FORM 9B

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

Inj 1
Injection File Name Level 1 : 051398W,65
Injection File Name Level 2 : 051398W,66
Injection File Name Level 3 : 051398W,67
Injection File Name Level 4 : 051398W,68
Injection File Name Level 5 : 051398W,69

Calibration Date : 05/15/98
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	3.20E0	2.29	0.99995	3.12E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/15/98
Continuing Calibration #: 1
Continuing Cal Date : 05/15/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051398W,70
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	114.511	2.79E0	3.20E0	12.77	3.12E0	10.43

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/15/98
Continuing Calibration #: 2
Continuing Cal Date : 05/15/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 051398W,79
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	106.199	3.01E0	3.20E0	5.95	3.12E0	3.42

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVES CALIBRATION - METHOD SW846-8330

ıjection 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

EXPLOSIVES CALIBRATION - METHOD SW846-8330

ıstrument ID : LC4
ɔolumn ID :
Calibration Date : 05/15/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	13.00	12.98	12.95	12.93	12.93

COMPONENT NAME	RT Cont CA1	RT Cont CA2
PETN	12.90	12.90

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	12.94	0.036	0.109	12.83 - 13.05

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33910
Instrument ID: IN10 Column ID: LC-CN-09

Dates of Anlayses: 05/29/98 to 05/30/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	05/29/98	20:20
EXP L1A STD	2-231:IA1	05/29/98	22:33
EXP L2A STD	2-230:IA2	05/29/98	23:17
EXP L3A STD	2-229:IA3	05/30/98	00:01
EXP L4A STD	2-228:IA4	05/30/98	00:46
EXP L5A STD	2-227:IA5	05/30/98	01:30
EXP L1B STD	1-236:IB1	05/30/98	02:15
EXP L2B STD	2-235:IB2	05/30/98	02:59
EXP L3B STD	2-234:IB3	05/30/98	03:43
EXP L4B STD	2-233:IB4	05/30/98	04:28
EXP L5B STD	2-232:IB5	05/30/98	05:12
BL0511SA	BL0511SA	05/30/98	05:56
BIO-N-30%-10-A1	33910.01	05/30/98	07:25
BIO-N-30%-10-A2	33910.04	05/30/98	08:09
BIO-N-30%-10-A3	33910.05	05/30/98	08:54
BIO-N-30%-10-B1	33910.06	05/30/98	09:38
BIO-N-30%-10-B2	33910.07	05/30/98	10:22
BIO-N-30%-10-B3	33910.08	05/30/98	11:07
BIO-N-30%-10-B3FD	33910.09	05/30/98	11:51

FORM VIII

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33910
Instrument ID: IN10 Column ID: LC-CN-09

Dates of Anlayses: 05/29/98 to 05/30/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
EXP L3A STD	2-229:CA1	05/30/98	12:35
EXP L3B STD	2-234:CB1	05/30/98	13:20

FORM VIII

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 : 3CN0530,4
Injection File Name Level 2 : 3CN0530,5
Injection File Name Level 3 : 3CN0530,6
Injection File Name Level 4 : 3CN0530,7
Injection File Name Level 5 : 3CN0530,8

Calibration Date : 05/29/1998
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	13064	2840	63715	2770	154093	2680	315083	2740	630615	2742
26DNT	9915	1983	50643	2026	126166	2019	253552	2028	507265	2029
TNT	12268	2667	64814	2818	164805	2866	334664	2910	672185	2923
3,4DNT	7644	1092	50314	1438	131310	1592	267771	1623	541200	1640
TETRYL	10476	1164	53705	1193	109485	973	230973	1027	484309	1076
HMX	7494	1071	41613	1189	105128	1201	215530	1232	438774	1254

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 : 3CN0530,9
Injection File Name Level 2 : 3CN0530,10
Injection File Name Level 3 : 3CN0530,11
Injection File Name Level 4 : 3CN0530,12
Injection File Name Level 5 : 3CN0530,13

Calibration Date : 05/29/1998
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	10781	2156	52282	2091	133965	2143	266222	2130	476603	1906
DNB	20503	5126	85806	4290	215360	4307	421304	4213	786512	3933
24DNT	21662	4332	96614	3865	239710	3835	465040	3720	852846	3411
4ADNT	18163	1974	92081	2002	229889	1999	450570	1959	829340	1803
2ADNT	28376	2838	149187	2984	372429	2979	737510	2950	1425624	2851
RDX	9641	1928	43674	1747	99321	1589	200976	1608	380516	1522

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 : 3CN0530,9
Injection File Name Level 2 : 3CN0530,10
Injection File Name Level 3 : 3CN0530,11
Injection File Name Level 4 : 3CN0530,12
Injection File Name Level 5 : 3CN0530,13

Calibration Date : 05/29/1998
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	2085	4.94	0.99809	1966	0.000
DNB	4374	10.21	0.99932	4011	0.000
24DNT	3833	8.66	0.99886	3500	0.000
4ADNT	1947	4.25	0.99892	1846	0.000
2ADNT	2920	2.42	0.99982	2878	0.000
RDX	1679	9.63	0.99964	1544	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 : 3CN0530,4
Injection File Name Level 2 : 3CN0530,5
Injection File Name Level 3 : 3CN0530,6
Injection File Name Level 4 : 3CN0530,7
Injection File Name Level 5 : 3CN0530,8

Calibration Date : 05/29/1998
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	2754	2.11	0.99998	2739	0.000
26DNT	2017	0.96	1.00000	2028	0.000
TNT	2837	3.65	0.99999	2917	0.000
3,4DNT	1477	15.54	0.99997	1633	0.000
TETRYL	1087	8.48	0.99924	1064	0.000
HMX	1189	5.97	0.99995	1247	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/29/1998
ntinuing Calibration #: 1
tinuing Cal Date : 05/30/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0530A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	143165	2490	2754	9.60	2739	9.09
26DNT	122105	1954	2017	3.14	2028	3.68
TNT	163872	2850	2837	0.46	2917	2.29
3,4DNT	137011	1661	1477	12.45	1633	1.70
TETRYL	90239	802	1087	26.19	1064	24.59
HMX	109720	1254	1189	5.44	1247	0.59

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/29/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/30/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0530A.11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	127964	2047	2085	1.82	1966	4.14
DNB	202994	4060	4374	7.18	4011	1.23
24DNT	223641	3578	3833	6.64	3500	2.25
4ADNT	215319	1872	1947	3.85	1846	1.43
2ADNT	361534	2892	2920	0.96	2878	0.51
RDX	94072	1505	1679	10.35	1544	2.53

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ıjection 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

ıjection 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

3CN053C
A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/29/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	6.05	6.04	6.05	6.05	6.04
26DNT	6.66	6.60	6.63	6.63	6.62
TNT	7.25	7.22	7.24	7.24	7.23
3,4DNT	8.30	8.24	8.28	8.29	8.28
TETRYL	11.52	11.46	11.50	11.52	11.49
HMX	13.70	13.66	13.72	13.76	13.72

COMPONENT NAME	RT Cont CA1
TNB	6.05
26DNT	6.64
TNT	7.24
3,4DNT	8.29
TETRYL	11.46
HMX	13.64

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.05	0.005	0.015	6.03 - 6.07
26DNT	6.63	0.018	0.053	6.58 - 6.68
TNT	7.23	0.011	0.033	7.20 - 7.27
3,4DNT	8.28	0.021	0.063	8.22 - 8.34
TETRYL	11.49	0.027	0.081	11.41 - 11.57
HMX	13.70	0.042	0.127	13.57 - 13.83

3CND550
B STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ıstrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/29/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.32	5.32	5.33	5.33	5.31
DNB	5.93	5.93	5.94	5.93	5.91
24DNT	6.93	6.95	6.95	6.94	6.92
4ADNT	7.65	7.69	7.71	7.70	7.66
2ADNT	8.25	8.27	8.28	8.27	8.23
RDX	9.19	9.18	9.19	9.19	9.16

COMPONENT NAME	RT Cont CA1
NB	5.31
DNB	5.90
24DNT	6.90
4ADNT	7.63
2ADNT	8.20
ɔX	9.08

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.32	0.010	0.030	5.29 - 5.35
DNB	5.92	0.013	0.039	5.88 - 5.96
24DNT	6.93	0.019	0.057	6.87 - 6.99
4ADNT	7.67	0.029	0.087	7.59 - 7.76
2ADNT	8.25	0.029	0.088	8.16 - 8.34
RDX	9.17	0.043	0.129	9.04 - 9.29

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 33910
Instrument ID: IN10 Column ID: LC-CN-11

Dates of Anlayses: 06/04/98 to 06/05/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	06/04/98	14:34
EXP L1A STD	2-231:IA1	06/04/98	16:47
EXP L2A STD	2-230:IA2	06/04/98	17:31
EXP L3A STD	2-229:IA3	06/04/98	18:15
EXP L4A STD	2-228:IA4	06/04/98	19:00
EXP L5A STD	2-227:IA5	06/04/98	19:44
EXP L1B STD	1-236:IB1	06/04/98	20:29
EXP L2B STD	2-235:IB2	06/04/98	21:13
EXP L3B STD	2-234:IB3	06/04/98	21:57
EXP L4B STD	2-233:IB4	06/04/98	22:42
EXP L5B STD	2-232:IB5	06/04/98	23:26
BIO-N-30%-10-C1	33910.10	06/05/98	00:10
BIO-N-30%-10-C2	33910.11	06/05/98	00:55
BIO-N-30%-10-C3	33910.12	06/05/98	01:39
BIO-N-30%-10-D1 10X	33910.13	06/05/98	02:23
BIO-N-30%-10-D2	33910.14	06/05/98	03:08
BIO-N-30%-10-D3	33910.15	06/05/98	03:52
EXP L3A STD	2-229:CA1	06/05/98	04:36
EXP L3B STD	2-234:CB1	06/05/98	05:21

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
:strument ID: IN10
lumn ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0604,4
Injection File Name Level 2 : 3CN0604,5
Injection File Name Level 3 : 3CN0604,6
Injection File Name Level 4 : 3CN0604,7
Injection File Name Level 5 : 3CN0604,8

Calibration Date : 06/04/1998
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	10055	2186	52031	2262	134917	2346	276826	2407	561816	2443
26DNT	7501	1500	39155	1566	109851	1758	220696	1766	445288	1781
TNT	9359	2035	51494	2239	151983	2643	306098	2662	620727	2699
3,4DNT	8141	1163	40925	1169	115535	1400	233161	1413	481787	1460
TETRYL	10436	1160	53999	1200	130712	1162	273130	1214	540817	1202
HMX	5957	851	29043	830	81081	927	167690	958	343125	980

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0604,9
Injection File Name Level 2 : 3CN0604,10
Injection File Name Level 3 : 3CN0604,11
Injection File Name Level 4 : 3CN0604,12
Injection File Name Level 5 : 3CN0604,13

Calibration Date : 06/04/1998
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	6470	1294	39646	1586	113929	1823	198552	1588	414673	1659
DNB	10784	2696	61041	3052	170871	3417	311000	3110	644154	3221
24DNT	13096	2619	70001	2800	185279	2964	344032	2752	705992	2824
4ADNT	13255	1441	70577	1534	180303	1568	344873	1499	705062	1533
2ADNT	25371	2537	128654	2573	301700	2414	588348	2353	1186752	2374
RDX	2774	555	31086	1243	81115	1298	153434	1227	300378	1202

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

Inj 1
Injection File Name Level 1 : 3CN0604,4
Injection File Name Level 2 : 3CN0604,5
Injection File Name Level 3 : 3CN0604,6
Injection File Name Level 4 : 3CN0604,7
Injection File Name Level 5 : 3CN0604,8

Calibration Date : 06/04/1998
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	2329	4.52	0.99995	2430	0.000
26DNT	1674	7.83	0.99996	1776	0.000
TNT	2455	12.24	0.99992	2686	0.000
3,4DNT	1321	10.84	0.99981	1447	0.000
TETRYL	1187	2.10	0.99993	1202	0.000
HMX	909	7.27	0.99988	973	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-11

Inj 1
Injection File Name Level 1 : 3CN0604,9
Injection File Name Level 2 : 3CN0604,10
Injection File Name Level 3 : 3CN0604,11
Injection File Name Level 4 : 3CN0604,12
Injection File Name Level 5 : 3CN0604,13

Calibration Date : 06/04/1998
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	1590	12.04	0.99915	1654	0.000
DNB	3099	8.55	0.99958	3209	0.000
24DNT	2792	4.47	0.99976	2817	0.000
4ADNT	1515	3.17	0.99989	1528	0.000
2ADNT	2450	4.04	0.99995	2373	0.000
RDX	1105	28.02	0.99959	1212	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/04/1998
'tinuing Calibration #: 1
.tinuing Cal Date : 06/05/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0604A,8
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	141126	2454	2329	5.39	2430	0.99
26DNT	115205	1843	1674	10.10	1776	3.81
TNT	160055	2784	2455	13.36	2686	3.62
3,4DNT	120503	1461	1321	10.56	1447	0.98
TETRYL	119380	1061	1187	10.63	1202	11.74
HMX	84040	960	909	5.64	973	1.27

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/04/1998
ntinuing Calibration #: 1
.tinuing Cal Date : 06/05/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0604B,1
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	112926	1807	1590	13.64	1654	9.25
DNB	170160	3403	3099	9.81	3209	6.05
24DNT	186033	2977	2792	6.61	2817	5.65
4ADNT	182361	1586	1515	4.67	1528	3.76
2ADNT	304100	2433	2450	0.71	2373	2.50
RDX	82414	1319	1105	19.33	1212	8.83

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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

.jection 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

3CN0604
A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.strument ID : IN10
Column ID : LC-CN-11
Calibration Date : 06/04/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	6.23	6.19	6.21	6.23	6.21
26DNT	6.88	6.82	6.85	6.89	6.86
TNT	7.56	7.51	7.51	7.54	7.51
3,4DNT	9.07	9.01	9.00	9.04	9.01
TETRYL	12.89	12.85	12.86	12.93	12.90
HMX	17.18	17.06	17.06	17.16	17.14

COMPONENT NAME	RT Cont CA1
TNB	6.21
26DNT	6.88
TNT	7.51
3,4DNT	9.00
TETRYL	12.86
HMX	16.97

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.21	0.016	0.047	6.17 - 6.26
26DNT	6.86	0.025	0.076	6.79 - 6.94
TNT	7.52	0.023	0.070	7.45 - 7.59
3,4DNT	9.02	0.030	0.089	8.93 - 9.11
TETRYL	12.88	0.031	0.092	12.79 - 12.98
HMX	17.10	0.080	0.239	16.86 - 17.33

3CN0604
BSTD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.strument ID : IN10
Column ID : LC-CN-11
Calibration Date : 06/04/1998
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	5.40	5.39	5.39	5.38
DNB	6.12	6.14	6.14	6.12	6.11
24DNT	7.28	7.29	7.28	7.26	7.25
4ADNT	8.21	8.21	8.24	8.21	8.20
2ADNT	8.98	9.03	9.02	8.99	8.99
RDX	10.49	10.54	10.53	10.50	10.50

COMPONENT NAME	RT Cont CA1
NB	5.39
DNB	6.14
24DNT	7.29
4ADNT	8.24
2ADNT	9.01
X	10.52

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.39	0.007	0.022	5.37 - 5.41
DNB	6.13	0.011	0.034	6.09 - 6.16
24DNT	7.27	0.015	0.045	7.23 - 7.32
4ADNT	8.22	0.018	0.054	8.16 - 8.27
2ADNT	9.00	0.020	0.060	8.94 - 9.06
RDX	10.51	0.020	0.059	10.46 - 10.57

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

BIO-013

Project No.: 4324-CC09-07-35
Project Name: NSWC Crane Bio-Facility
Samplers: (Signature)
Sampler: (Print) Ryan H. Erwin

Analysis Required: 6320 Explosive

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	Remarks
Compost	CS A SL 1	5/7/98	1050	BIO-N-30%-10-A1		✓	MS/MSD
	2		1038	BIO-N-30%-10-A2			
	3		1100	BIO-N-30%-10-A3			30%
	B 1		1125	BIO-N-30%-10-B1			Day 10
	2		1136	BIO-N-30%-10-B2			
	3		1110	BIO-N-30%-10-B3			CS=cross
	3		1110	BIO-N-30%-10-B3-FD			section
	C 1		1201	BIO-N-30%-10-C1			
	2		1148	BIO-N-30%-10-C2			SL=sample
	3		1204	BIO-N-30%-10-C3			location
	D 1		1222	BIO-N-30%-10-D1			
	2		1212	BIO-N-30%-10-D2			
	3		1230	BIO-N-30%-10-D3			
liquid	rinse blank		1242	BIO-RB050798			
							SouthWest Labs

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company: J. Hudson	Date/Time 5/9/98 10:00	Total No. Samples This Shipping Container: / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

Seal #s: 2307, 2308

5

APPENDIX N
RAW DATA FOR LABORATORY ANALYSIS DAY 20

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Analytical Run Logbook and Calibration for Instrument IN12 on 5/19/98 (soil analysis)	6 pages
Analytical Run Logbook and Calibration for Instrument IN12 on 6/08/98 (soil analysis)	5 pages
Analytical Run Logbook and Calibration for Instrument IN13 on 5/29/98 (soil analysis)	5 pages
Analytical Run Logbook and Calibration for Instrument IN13 on 6/02/98 (soil analysis)	4 pages
Analytical Run Logbook and Calibration for Instrument LC4 on 5/24/98 (water analysis)	5 pages
Analytical Run Logbook and Calibration for Instrument IN13 on 5/21/98 (soil analysis)	4 pages
Analytical Run Logbook and Calibration for Instrument IN10 on 6/04/98 (soil analysis)	6 pages
Analytical Run Logbook and Calibration for Instrument LC4 on 5/28/98 (water analysis)	5 pages
Analytical Run Logbook and Calibration for Instrument IN10 on 5/25/98 (soil analysis)	7 pages
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Chain of Custody Record	1 page

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34017

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-20-A1	81.5	0
2	BIO-N-30%-20-A1 RE	115	0
3	BIO-N-30%-20-A2	86.9	0
4	BIO-N-30%-20-A2 RE	119	0
5	BIO-N-30%-20-A3	65.1	0
6	BIO-N-30%-20-A3 RE	130	0
7	BIO-N-30%-20-B1	60.9	0
8	BIO-N-30%-20-B1 RE	109	0
9	BIO-N-30%-20-B2	85.1	0
10	BIO-N-30%-20-B2 RE	118	0
11	BIO-N-30%-20-B3	85.3	0
12	BIO-N-30%-20-B3 RE	109	0
13	BIO-N-30%-20-C1	83.4	0
14	BIO-N-30%-20-C1 RE	106	0
15	BIO-N-30%-20-C1 MS	104	0
16	BIO-N-30%-20-C1MS RE	82.5	0
17	BIO-N-30%-20-C1 MSD	72.8	0
18	BIO-N-30%-20-C1MSDRE	96.2	0
19	BIO-N-30%-20-C2	87.4	0
20	BIO-N-30%-20-C2 RE	126	0
21	BIO-N-30%-20-C3	87.4	0
22	BIO-N-30%-20-C3 RE	123	0
23	BIO-N-30%-20-D1	76.1	0
24	BIO-N-30%-20-D1 RE	104	0
25	BIO-N-30%-20-D2	82.2	0
26	BIO-N-30%-20-D2 RE	100	0
27	BIO-N-30%-20-D3	83.3	0
28	BIO-N-30%-20-D3 RE	116	0
29	BIO-N-30%-20-A1FD	73.8	0
30	BIO-N-30%-20-A1FD RE	117	0
31	BIO-N-30%-20-D2FD	81.5	0
32	BIO-N-30%-20-D2FD RE	112	0
33	BIO-RB051798	106	0
34	BIO-RB051798	131	0
35	BIO-RB051798	107	0
36	BL0519SD	81.6	0
37	BL0520WE	105	0
38	BL0526SA RE	123	0
39	LC0519SD	97.3	0
40	LC0520WE	97.2	0
41	LC0526SA RE	99.1	0
42	LD0519SD	97.4	0
43	LD0520WE	95.0	0
44	LD0526SA RE	91.9	0

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

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34017

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-20-B3 RERE	109	0
2	BIO-N-30%-20-C1 RE	105	0
3	BL0608SB RERE	120	0
4	LC0608SB RERE	118	0
5			
6			
7			
8			
9			
10			
11			
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20			
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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

page _ 1

FORM II

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

L_ Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: BIO-N-30%-20-C1 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500		9240	97	54-128
RDX	9500	38500	6700	335*	66-109
TNB	9500		7830	82	57-130
DNB	9500		7860	83	74-122
TETRYL	9500		2590	27*	32-119
NB	9500		7580	80	70-135
TNT	9500	11500	6630	51	44-124
4ADNT	9500		9330	98	60-140
2ADNT	9500		6990	74	60-140
26DNT	9500		8660	91	58-125
24DNT	9500		7610	80	59-120
2NT	9500		8510	90	79-124
4NT	9500		8400	88	74-128
3NT	9500		7430	78*	79-121

1 of Analyte recoveries out of QC Advisory Limits = 3

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	7790	82	17	30	54-128
RDX	9500	6130	341*	2	30	66-109
TNB	9500	6780	71	14	30	57-130
DNB	9500	6620	70*	17	45	74-122
TETRYL	9500	2190	23*	17	30	32-119
NB	9500	6340	67*	18	35	70-135
TNT	9500	5900	59	14	30	44-124
4ADNT	9500	7660	81	20	40	60-140
2ADNT	9500	5800	61	19	40	60-140
26DNT	9500	7270	77	18	35	58-125
24DNT	9500	6370	67	18	35	59-120
2NT	9500	7210	76*	17	35	79-124
4NT	9500	7090	75	17	35	74-128
3NT	9500	6280	66*	17	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 3
No of RPD's out of QC Limits 0

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: BIO-N-30%-20-C1 MSD RE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500		9210	97	54-128
RDX	9500		10700	113*	66-109
TNB	9500		9030	95	57-130
DNB	9500		9570	101	74-122
TETRYL	9500		5420	57	32-119
NB	9500		9440	99	70-135
TNT	9500		7080	75	44-124
4ADNT	9500		9990	105	60-140
2ADNT	9500		9370	99	60-140
26DNT	9500		9140	96	58-125
24DNT	9500		10300	108	59-120
2NT	9500		9370	99	79-124
4NT	9500		9200	97	74-128
3NT	9500		9040	95	79-121

f Analyte recoveries out of QC Advisory Limits = 1

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	9920	104	7	30	54-128
RDX	9500	14200	149*	27	30	66-109
TNB	9500	9340	98	3	30	57-130
DNB	9500	9760	103	2	45	74-122
TETRYL	9500	5610	59	3	30	32-119
NB	9500	9640	101	2	35	70-135
TNT	9500	8850	93	22	30	44-124
4ADNT	9500	10400	109	4	40	60-140
2ADNT	9500	9600	101	2	40	60-140
26DNT	9500	9360	99	2	35	58-125
24DNT	9500	10500	110	2	35	59-120
2NT	9500	9590	101	2	35	79-124
4NT	9500	9310	98	1	35	74-128
3NT	9500	9440	99	4	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 1
No of RPD's out of QC Limits 0

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

L. Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: BIO-N-30%-20-C1

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000		2680	89	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000	2530	84	6	30	70-130

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

3F

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: BIO-RB051798

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
HMX	400		378	95	44-154
RDX	150		157	105	66-139
TNB	225		216	96	56-129
DNB	125		131	105	76-122
TETRYL	413		352	85	76-120
NB	213		283	133*	82-111
TNT	188		307	163*	76-137
4ADNT	313		308	98	60-140
2ADNT	313		303	97	60-140
26DNT	288		274	95	80-118
24DNT	175		171	98	72-123
2NT	363		330	91	74-130
4NT	250		231	92	78-116
3NT	238		299	126	72-126

f Analyte recoveries out of QC Advisory Limits = 2

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	400	385	96	2	15	44-154
RDX	150	158	105	0	12	66-139
TNB	225	214	95	1	10	56-129
DNB	125	124	99	6	15	76-122
TETRYL	413	234	57*	40*	14	76-120
NB	213	246	115*	15*	13	82-111
TNT	188	282	150*	8	15	76-137
4ADNT	313	283	90	8	40	60-140
2ADNT	313	286	91	6	40	60-140
26DNT	288	270	94	1	13	80-118
24DNT	175	167	95	2	14	72-123
2NT	363	333	92	1	15	74-130
4NT	250	234	94	1	14	78-116
3NT	238	290	122	3	15	72-126

No of Analyte recoveries out of QC Advisory Limits = 2
No of RPD's out of QC Limits 2

3F

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: BIO-RB051798

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
PETN	1200		1320	110	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	REC.
PETN	1200	1310	109	1	30	70-130

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

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: LC0519SD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		9570	101	57-137
RDX	9500		6900	73*	77-113
TNB	9500		6920	73	64-125
DNB	9500		7840	83	82-118
TETRYL	9500		3110	33	23-124
NB	9500		8220	87	69-143
TNT	9500		6060	64*	75-118
4ADNT	9500		9110	96	60-140
2ADNT	9500		7080	75	60-140
26DNT	9500		8610	91	78-117
24DNT	9500		7750	82	74-126
2NT	9500		8750	92	78-123
4NT	9500		8770	92	79-125
3NT	9500		7430	78	78-121

# of Analyte recoveries out of QC Advisory Limits = 2

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

L... Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: LC0526SA RE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		9180	97	57-137
RDX	9500		9150	96	77-113
TNB	9500		9430	99	64-125
DNB	9500		9360	99	82-118
TETRYL	9500		7740	82	23-124
NB	9500		9620	101	69-143
TNT	9500		7360	78	75-118
4ADNT	9500		9820	103	60-140
2ADNT	9500		9730	102	60-140
26DNT	9500		9160	96	78-117
24DNT	9500		10400	109	74-126
2NT	9500		9660	102	78-123
4NT	9500		6980	74*	79-125
3NT	9500		8690	92	78-121

# of Analyte recoveries out of QC Advisory Limits = 1

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: LC0608SB RERE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		8980	95	57-137
RDX	9500		8960	94	77-113
TNB	9500		9170	97	64-125
DNB	9500		9010	95	82-118
TETRYL	9500		8470	89	23-124
NB	9500		9180	97	69-143
TNT	9500		7700	81	75-118
4ADNT	9500		8720	92	60-140
2ADNT	9500		8960	94	60-140
26DNT	9500		8690	92	78-117
24DNT	9500		9930	104	74-126
2NT	9500		9660	102	78-123
4NT	9500		9040	95	79-125
3NT	9500		8510	90	78-121

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:34017

Client Sample No: LC0519SE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		2880	96	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:34017

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

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34017

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

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: LD0519SD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		9570	101	57-137
RDX	9500		6820	72*	77-113
TNB	9500		7200	76	64-125
DNB	9500		7850	83	82-118
TETRYL	9500		3930	41	23-124
NB	9500		8250	87	69-143
TNT	9500		6160	65*	75-118
4ADNT	9500		8530	90	60-140
2ADNT	9500		7100	75	60-140
26DNT	9500		8640	91	78-117
24DNT	9500		7760	82	74-126
2NT	9500		8770	92	78-123
4NT	9500		8710	92	79-125
3NT	9500		7450	78	78-121

f Analyte recoveries out of QC Advisory Limits = 2

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: LD0526SA RE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		9240	97	57-137
RDX	9500		9170	97	77-113
TNB	9500		9320	98	64-125
DNB	9500		9420	99	82-118
TETRYL	9500		3160	33	23-124
NB	9500		9610	101	69-143
TNT	9500		7340	77	75-118
4ADNT	9500		12900	136	60-140
2ADNT	9500		9770	103	60-140
26DNT	9500		9280	98	78-117
24DNT	9500		10500	110	74-126
2NT	9500		9680	102	78-123
4NT	9500		7060	74*	79-125
3NT	9500		8690	92	78-121

# of Analyte recoveries out of QC Advisory Limits = 1

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Client Sample No: LD0519SE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		2820	94	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:34017

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

1 of Analyte recoveries out of QC Advisory Limits = 1

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Code: SWOK Case No: MKF-OH SDG No:34017

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

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0519SD

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Matrix: (soil/water) Soil

Date Extracted: 05/19/98 Extn. Method: SONC

Date Analyzed (1): 05/22/98 Date Analyzed(2): 05/26/98

Time Analyzed (1): 01:32:13 Time Analyzed(2): 05:02:20

Instrument ID (1): IN12 Instrument ID(2): IN10

LC Column ID (1): CARB-07 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	LC0519SD	LC0519SD	05/22/98	
2	LD0519SD	LD0519SD	05/22/98	
3	BIO-N-30%-20-A1	34017.01	05/22/98	05/26/98
4	BIO-N-30%-20-A2	34017.02	05/22/98	
5	BIO-N-30%-20-A3	34017.03	05/22/98	05/26/98
	BIO-N-30%-20-B1	34017.04	05/22/98	
7	BIO-N-30%-20-B2	34017.05	05/22/98	05/26/98
8	BIO-N-30%-20-B3	34017.06	05/22/98	05/26/98
9	BIO-N-30%-20-C1	34017.07	05/22/98	05/26/98
10	BIO-N-30%-20-C1 MS	34017.08MS	05/22/98	
11	BIO-N-30%-20-C1 MSD	34017.09MSD	05/22/98	
12	BIO-N-30%-20-C2	34017.10	05/22/98	
13	BIO-N-30%-20-C3	34017.11	05/22/98	05/26/98
14	BIO-N-30%-20-D1	34017.12	05/22/98	
15	BIO-N-30%-20-D2	34017.13	05/22/98	
16	BIO-N-30%-20-D3	34017.14	05/22/98	
17	BIO-N-30%-20-A1FD	34017.15	05/22/98	
18	BIO-N-30%-20-D2FD	34017.16	05/22/98	05/26/98
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FORM IV

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0526SA RE

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Matrix: (soil/water) Soil

Date Extracted: 05/26/98 Extn. Method: SONC

Date Analyzed (1): 05/29/98 Date Analyzed(2): 06/05/98

Time Analyzed (1): 11:03:26 Time Analyzed(2): 22:07:15

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

LC Column ID (1): CARB-08 LC Column ID (2): LC-CN-11

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

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0526SA RE	LC0526SA RE	05/29/98	
2	LD0526SA RE	LD0526SA RE	05/29/98	
3	BIO-N-30%-20-A1 RE	34017.01RE	05/29/98	06/05/98
4	BIO-N-30%-20-A2 RE	34017.02 RE	05/30/98	06/06/98
5	BIO-N-30%-20-A3 RE	34017.03 RE	05/30/98	06/06/98
	BIO-N-30%-20-B1 RE	34017.04 RE	05/30/98	06/06/98
7	BIO-N-30%-20-B2 RE	34017.05 RE	05/30/98	06/06/98
8	BIO-N-30%-20-B3 RE	34017.06 RE	05/30/98	06/06/98
9	BIO-N-30%-20-C1 RE	34017.07 RE	05/30/98	06/06/98
10	BIO-N-30%-20-C1MS RE	34017.08MS RE	05/30/98	
11	BIO-N-30%-20-C1MSDRE	34017.09MSD RE	05/30/98	
12	BIO-N-30%-20-C2 RE	34017.10 RE	05/30/98	06/06/98
13	BIO-N-30%-20-C3 RE	34017.11 RE	05/30/98	06/06/98
14	BIO-N-30%-20-D1 RE	34017.12 RE	06/03/98	06/06/98
15	BIO-N-30%-20-D2 RE	34017.13 RE	06/03/98	06/06/98
16	BIO-N-30%-20-D3 RE	34017.14 RE	06/03/98	06/06/98
17	BIO-N-30%-20-A1FD RE	34017.15 RE	06/03/98	06/06/98
18	BIO-N-30%-20-D2FD RE	34017.16 RE	06/03/98	06/06/98
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page 1

FORM IV

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0608SB RERE

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Matrix: (soil/water) Soil

Date Extracted: / / Extn. Method: SONC

Date Analyzed (1): 06/11/98 Date Analyzed(2): 06/11/98

Time Analyzed (1): 00:08:11 Time Analyzed(2): 06:56:50

Instrument ID (1): IN12 Instrument ID(2): IN13

LC Column ID (1): CARB-07 LC Column ID (2): LC-CN-12

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

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0608SB RERE	LC0608SBRERE	06/11/98	
2	BIO-N-30%-20-B3 RERE	34017.06RERE	06/11/98	06/11/98
3	BIO-N-30%-20-C1 RE	34017.07RERE	06/11/98	06/11/98
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page 1

FORM IV

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0519SE

Lab Code: SWOK Case No: MKF-OH SDG No:34017

Matrix: (soil/water) Soil

Date Extracted: 05/19/98 Extn. Method: SONC

Date Analyzed (1): 05/24/98 Date Analyzed(2):

Time Analyzed (1): 21:40:59 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	LC0519SE	LC0519SE	05/24/98	
2	LD0519SE	LD0519SE	05/24/98	
3	BIO-N-30%-20-A1	34017.01	05/24/98	
4	BIO-N-30%-20-A2	34017.02	05/25/98	
5	BIO-N-30%-20-A3	34017.03	05/25/98	
	BIO-N-30%-20-B1	34017.04	05/25/98	
7	BIO-N-30%-20-B2	34017.05	05/25/98	06/02/98
8	BIO-N-30%-20-B3	34017.06	05/25/98	
9	BIO-N-30%-20-C1	34017.07	05/25/98	
10	BIO-N-30%-20-C1	34017.08MS	05/25/98	
11	BIO-N-30%-20-C1	34017.09MSD	05/25/98	
12	BIO-N-30%-20-C2	34017.10	05/25/98	
13	BIO-N-30%-20-C3	34017.11	05/25/98	
14	BIO-N-30%-20-D1	34017.12	05/25/98	
15	BIO-N-30%-20-D2	34017.13	05/25/98	06/02/98
16	BIO-N-30%-20-D3	34017.14	05/25/98	
17	BIO-N-30%-20-A1FD	34017.15	05/25/98	
18	BIO-N-30%-20-D2FD	34017.16	05/25/98	
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FORM IV

WB 6/15/98 26A

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0520WE

Lab Code: SWOK Case No: MKF-OH SDG No:34017

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-RB051798	34017.17	05/21/98	
4	BIO-RB051798	34017.17MS	05/21/98	
5	BIO-RB051798	34017.17MSD	05/21/98	
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FORM IV

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0520WF

L. Code: SWOK Case No: MKF-OH SDG No:34017

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-RB051798	34017.17	05/27/98	
4	BIO-RB051798	34017.17MS	05/27/98	
5	BIO-RB051798	34017.17MSD	05/27/98	
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FORM IV

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.01

Sample Amt: 2g % Moisture 29.92 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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	448	JP
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

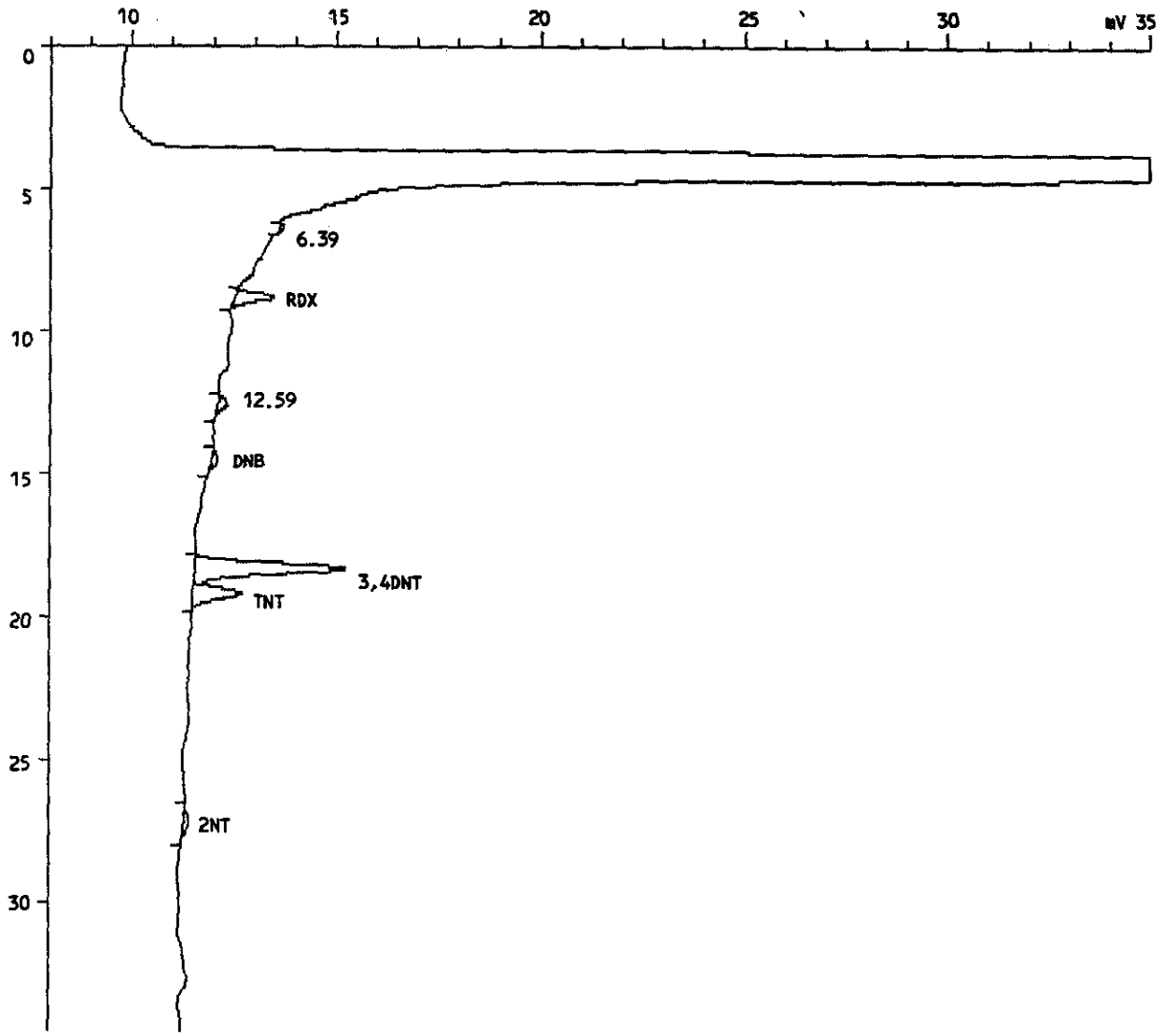
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,11,1

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 05:15:21
Reported on 26-May-98 at 17:36:31



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,11,1

Acquired on 22-May-98 at 05:15:21
Modified on 26-May-82 at 17:36:06
Reported on 26-May-98 at 17:36:10

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:34:44
Method file.....: EXPLOS Last modified on 26-May-82 at 17:33:02
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01
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

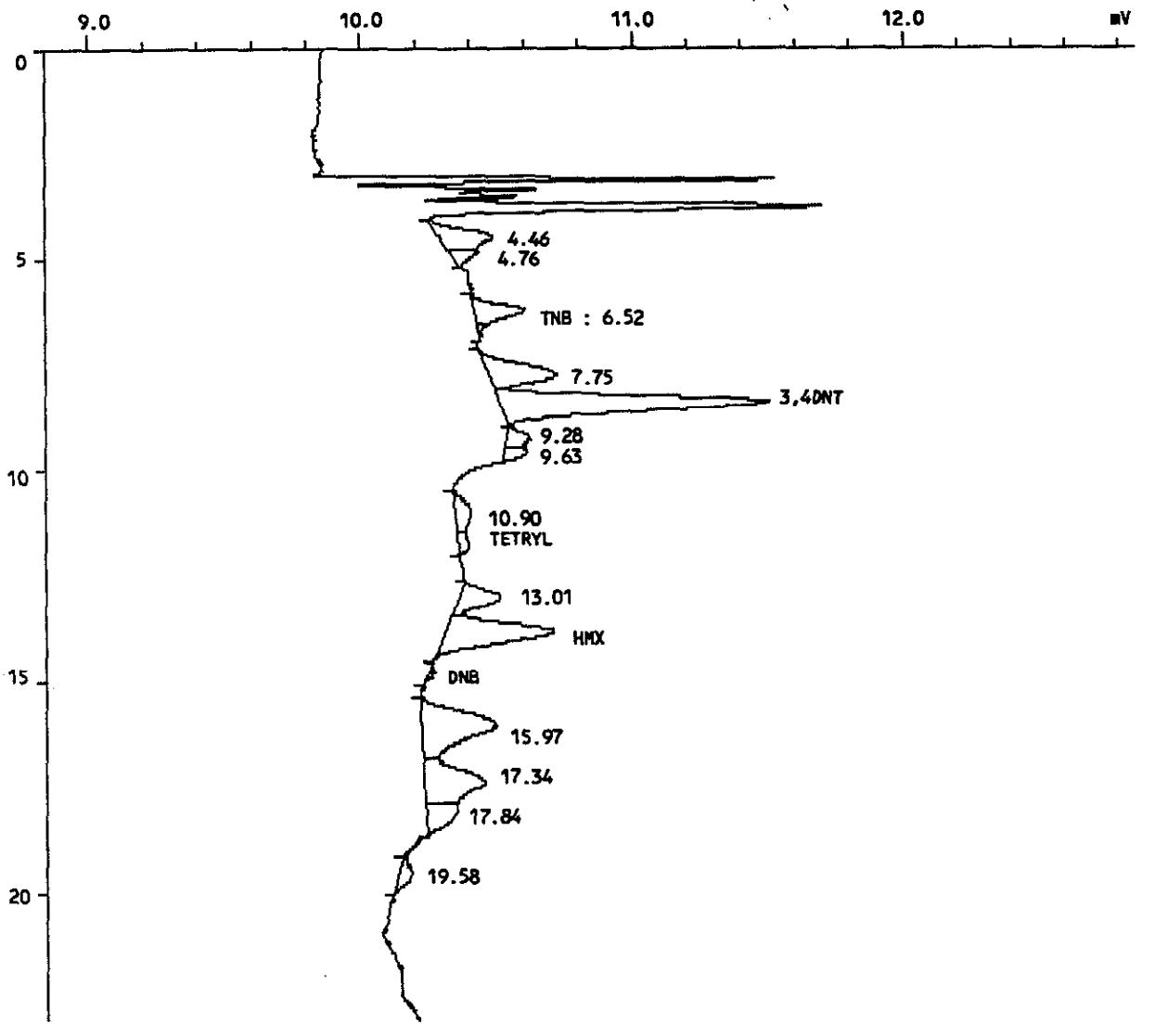
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.827	950	19184	448.435	RDX
4	14.549	151	4417	33.642	DNB
5	18.325	3720	98726	1630.749	3,4DNT
6	19.221	1187	32367	306.625	TNT
7	27.285	119	5411	96.943	2NT
Total		6127	160105	2516.394	
Residual		395	8462	197.802	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,3,1

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 06:31:02
Reported on 26-May-98 at 17:59:32



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,3,1

Acquired on 26-May-98 at 06:31:02
Modified on 26-May-82 at 17:53:40
Reported on 26-May-98 at 17:53:40

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..: 3CN0525A Last modified on 26-May-82 at 17:51:34
Method file.....: LCCN Last modified on 26-May-82 at 17:52:40
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01
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

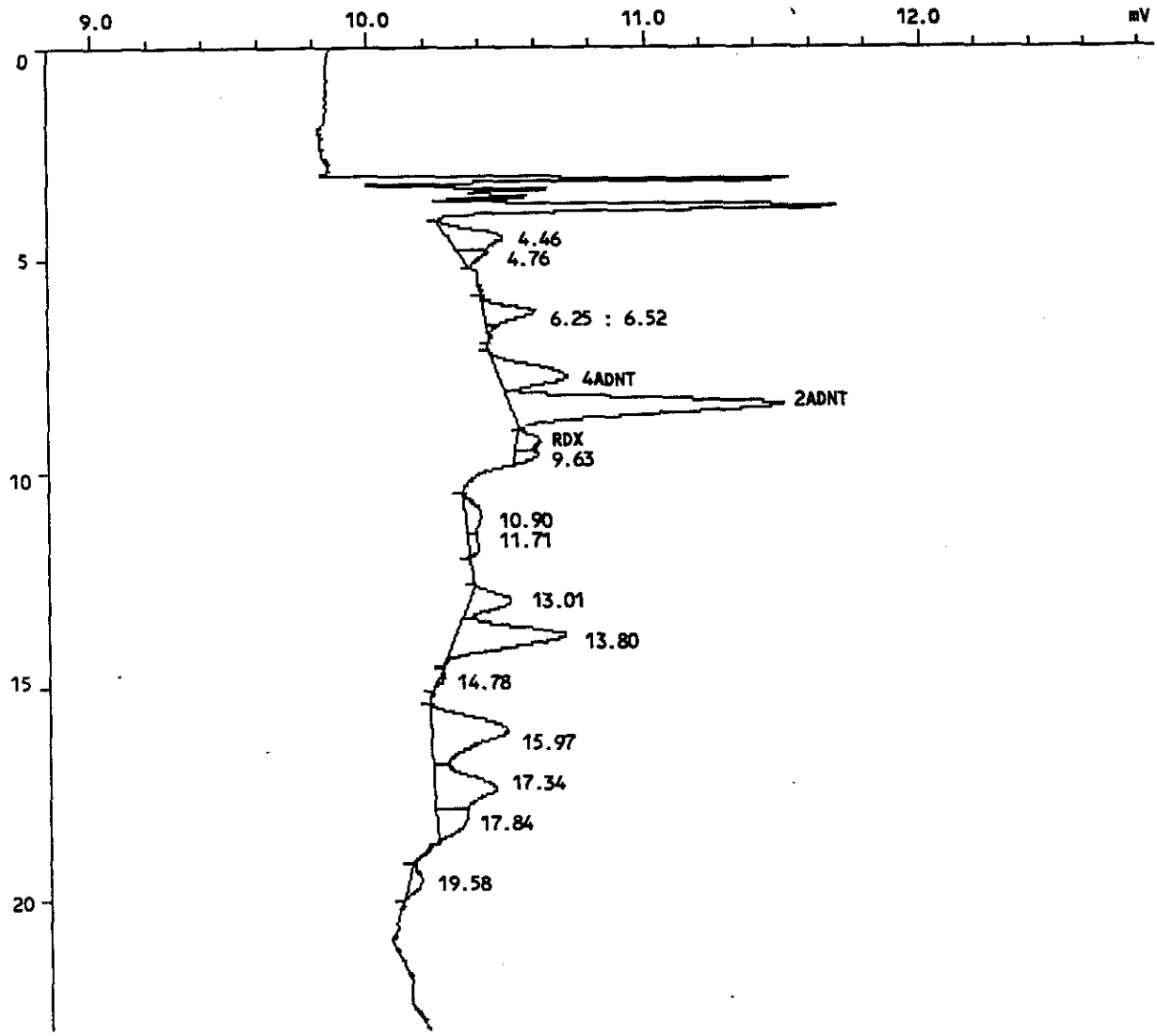
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	6.251	186	3969	155.540	TNB
6	8.405	992	24691	1708.724	3,4DNT
10	11.712	39	996	72.462	TETRYL
12	13.797	408	12611	1259.878	HMX
13	14.784	22	369	35.433	DNB
Total		1648	42637	3232.037	
Residual		1674	51216	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,3,1

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 06:31:02
Reported on 26-May-98 at 19:09:24



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,3,1

Acquired on 26-May-98 at 06:31:02
Modified on 26-May-82 at 19:06:32
Reported on 26-May-98 at 19:06:31

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..: 3CN0525B Last modified on 26-May-82 at 19:05:50
Method file.....: LCCN Last modified on 26-May-82 at 19:06:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01
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
5	7.749	247	7285	434.135	4ADNT
6	8.405	992	24691	896.553	2ADNT
7	9.280	89	1630	118.141	RDX
Total		1328	33606	1448.828	
Residual		1993	60246	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A1 RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.01RE

Sample Amt: 2g % Moisture 29.92 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/26/98

Extraction Method: SONC Date Analyzed: 05/29/98

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	1030	
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

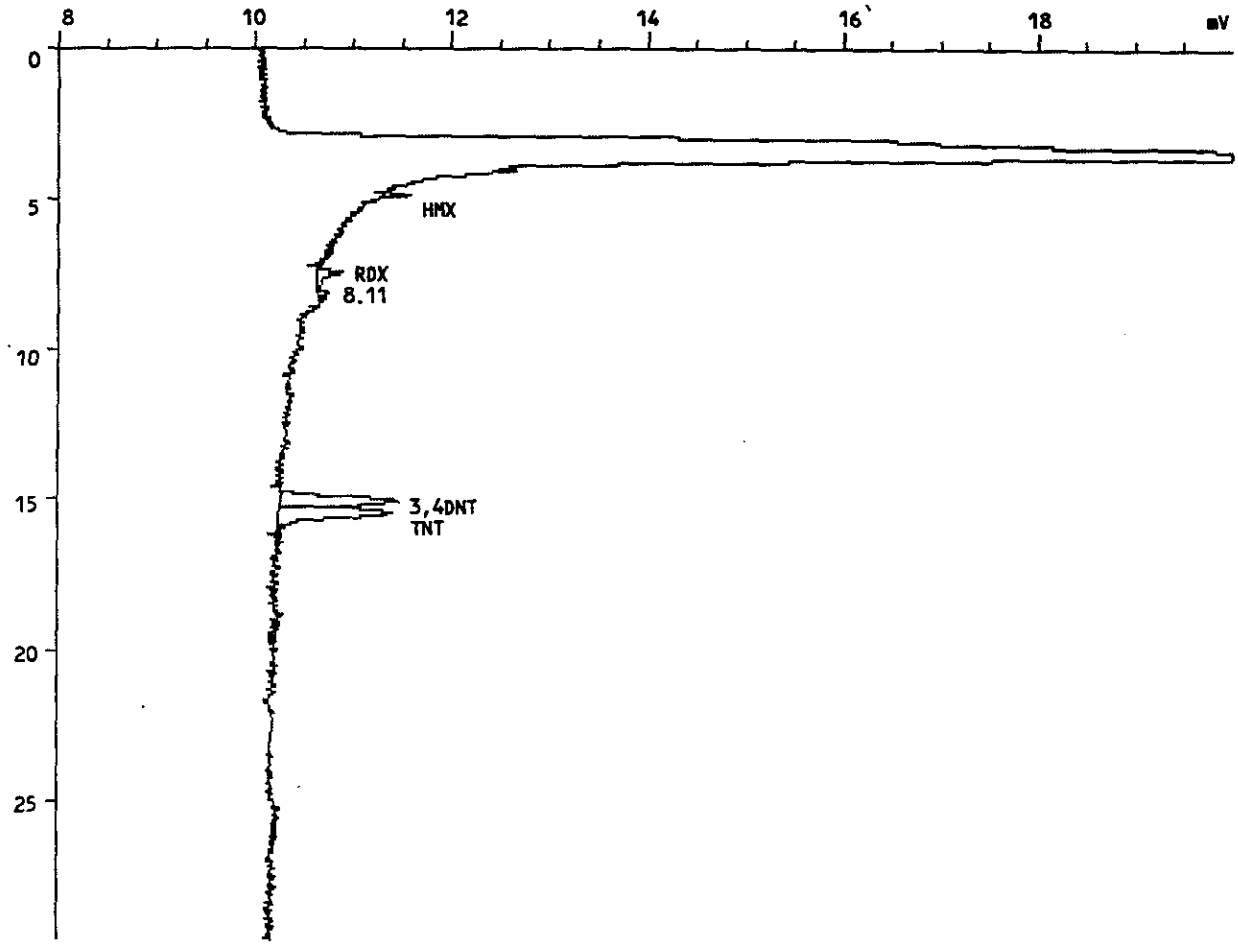
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0528B,7,1

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01 RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 29-May-98 at 23:28:43
Reported on 08-Jun-98 at 11:42:39



INJECTION REPORT

Injection F: <MC3> 5 5EX0528B,7,1

Acquired on 29-May-98 at 23:28:43
Modified on 04-Jun-82 at 10:55:22
Reported on 04-Jun-98 at 10:55:22

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.: 28
Calibration file..: 5EX0528 Last modified on 04-Jun-82 at 10:53:08
Method file.....: EXPLOS Last modified on 04-Jun-82 at 10:53:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01RE
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

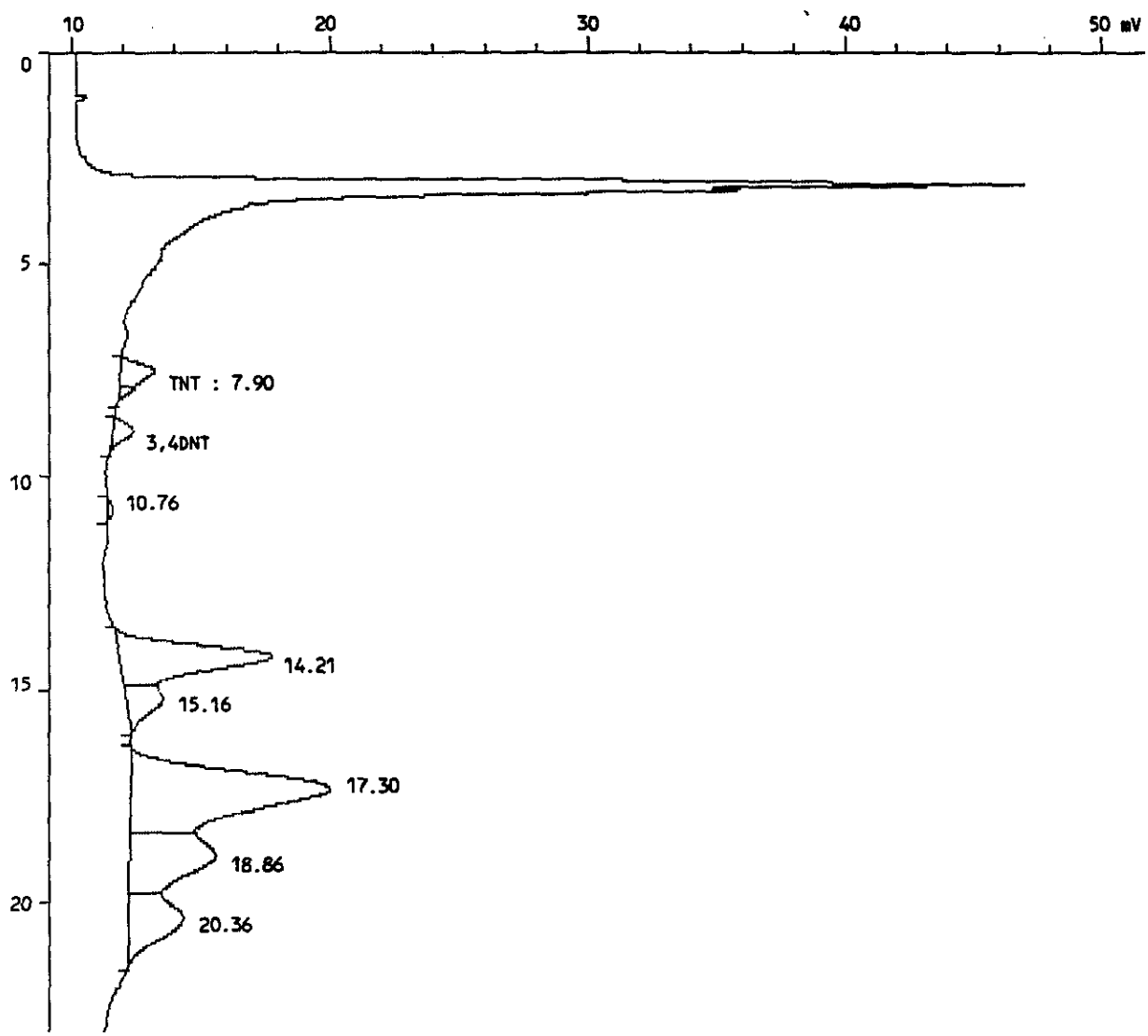
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.917	310	2201	293.526	HMX
2	7.483	253	3533	382.367	RDX
4	15.115	1209	24043	2302.974	3,4DNT 115.14%
5	15.488	1146	24652	1026.292	TNT *P
Total		2917	54429	4005.158	06/08/98
Residual		106	2158	233.542	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,3,1

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 05-Jun-98 at 23:35:58
Reported on 08-Jun-98 at 10:50:58



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,3,1

Acquired on 05-Jun-98 at 23:35:58
Modified on 08-Jun-82 at 10:46:54
Reported on 08-Jun-98 at 10:46:55

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01RE
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

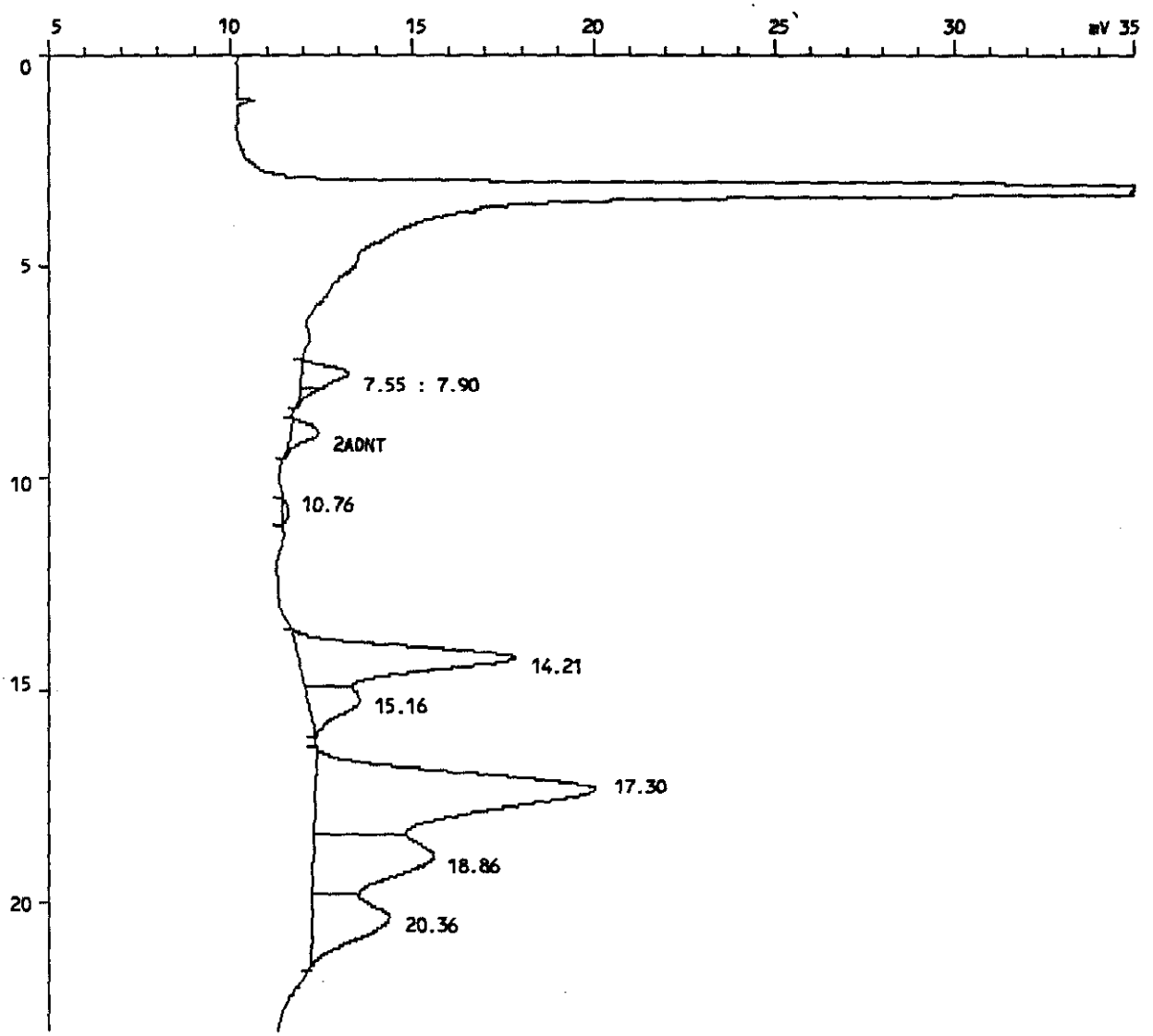
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.547	1299	35335	1404.977	TNT
3	8.955	800	21456	1554.778	3,4DNT
Total		2099	56791	2959.754	
Residual		21380	1168937	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,3,1

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 05-Jun-98 at 23:35:58
Reported on 08-Jun-98 at 11:22:42



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,3,1

Acquired on 05-Jun-98 at 23:35:58
Modified on 08-Jun-82 at 11:18:24
Reported on 08-Jun-98 at 11:18:24

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A1
Sample ID.....: 34017.01 RE
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	8.955	800	21456	864.113	2ADNT
Total		800	21456	864.113	
Residual		22679	1204272	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.01

Sample Amt: 2g % Moisture 29.92 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/24/98

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

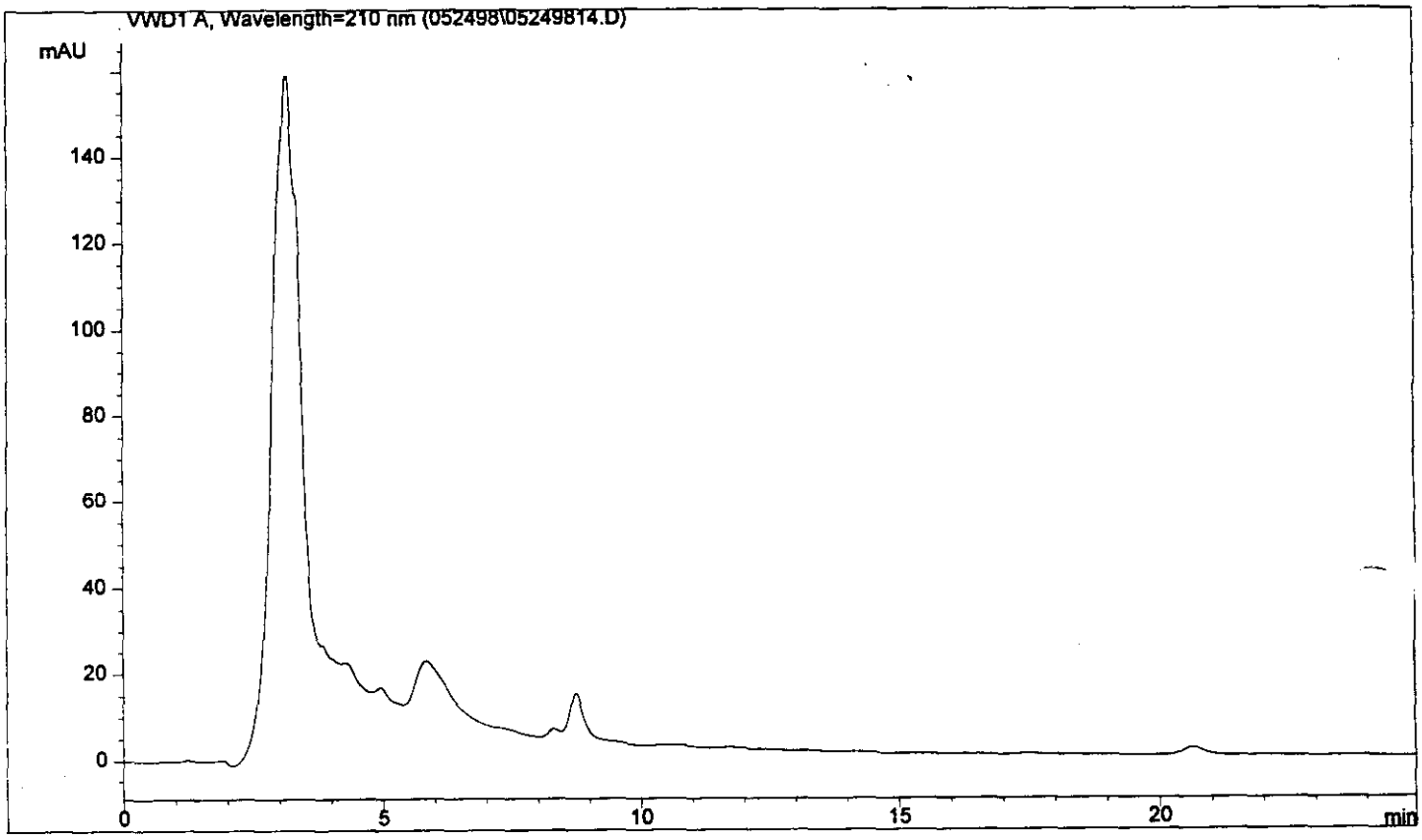
FORM I

Injection Date : Sun, 24. May. 1998
Sample Name : 34017.01
Acq Operator : SS

Seq Line : 14
Vial No. : 14
Inj. No. : 1
Inj. Vol. : 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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

Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
Totals:				0.00000	

11

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.02

Sample Amt: 2g % Moisture 19.14 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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

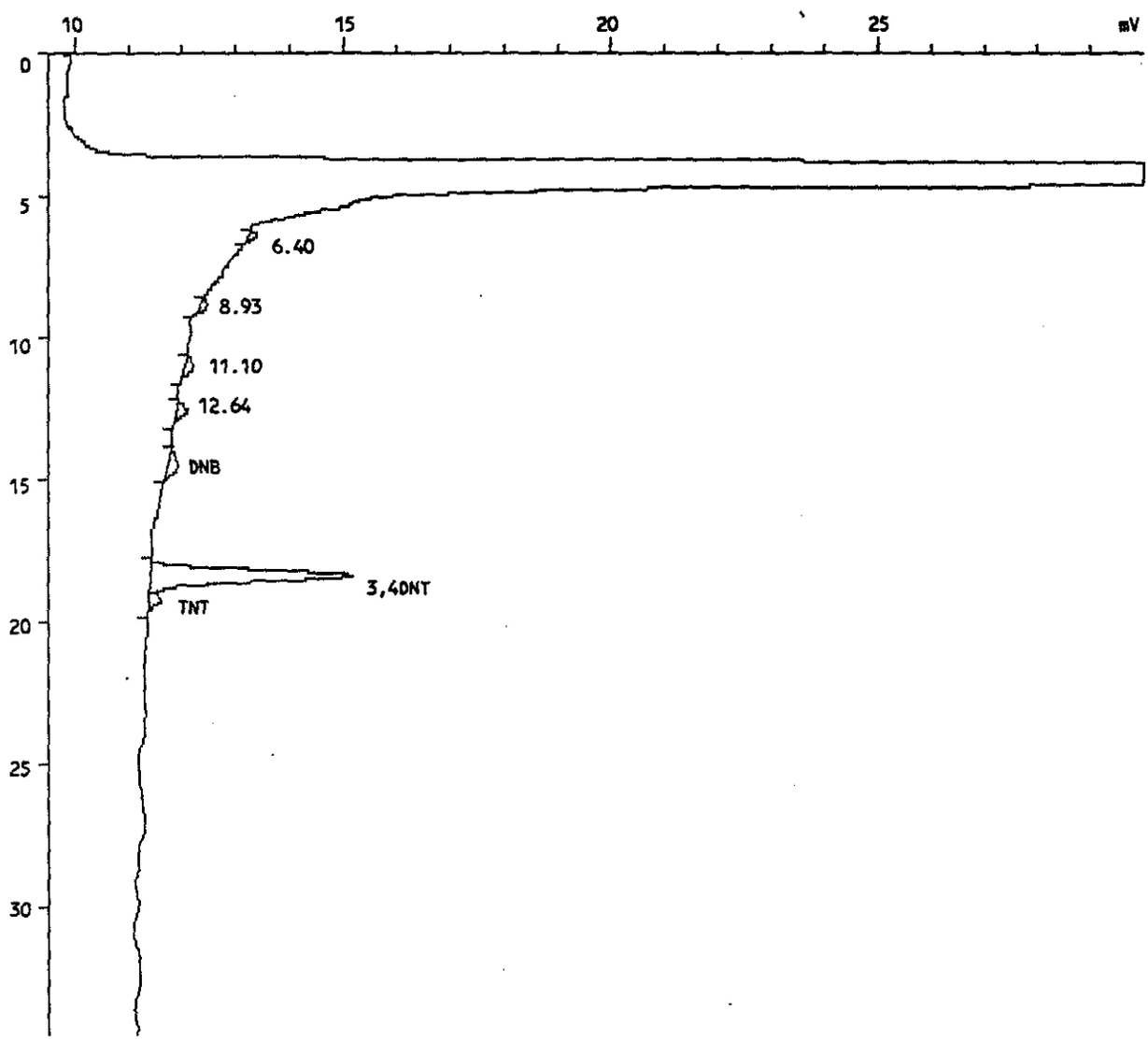
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,12,1

Sample name.....: BIO-N-30%-20-A2
Sample ID.....: 34017.02
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 05:59:59
Reported on 26-May-98 at 17:02:35



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,12,1

Acquired on 22-May-98 at 05:59:59
Modified on 26-May-82 at 17:01:24
Reported on 26-May-98 at 17:01:26

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:01:24
Method file.....: EXPLOS Last modified on 26-May-82 at 16:48:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A2
Sample ID.....: 34017.02
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
5	14.640	197	7871	59.956	DNB
6	18.368	3744	105174	1737.267	3,4DNT
7	19.275	226	6061	57.418	TNT
Total		4166	119106	1854.640	
Residual		705	17784	-138.936	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A2
RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.02 RE

Sample Amt: 2g % Moisture 19.14 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/26/98

Extraction Method: SONC Date Analyzed: 05/30/98

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

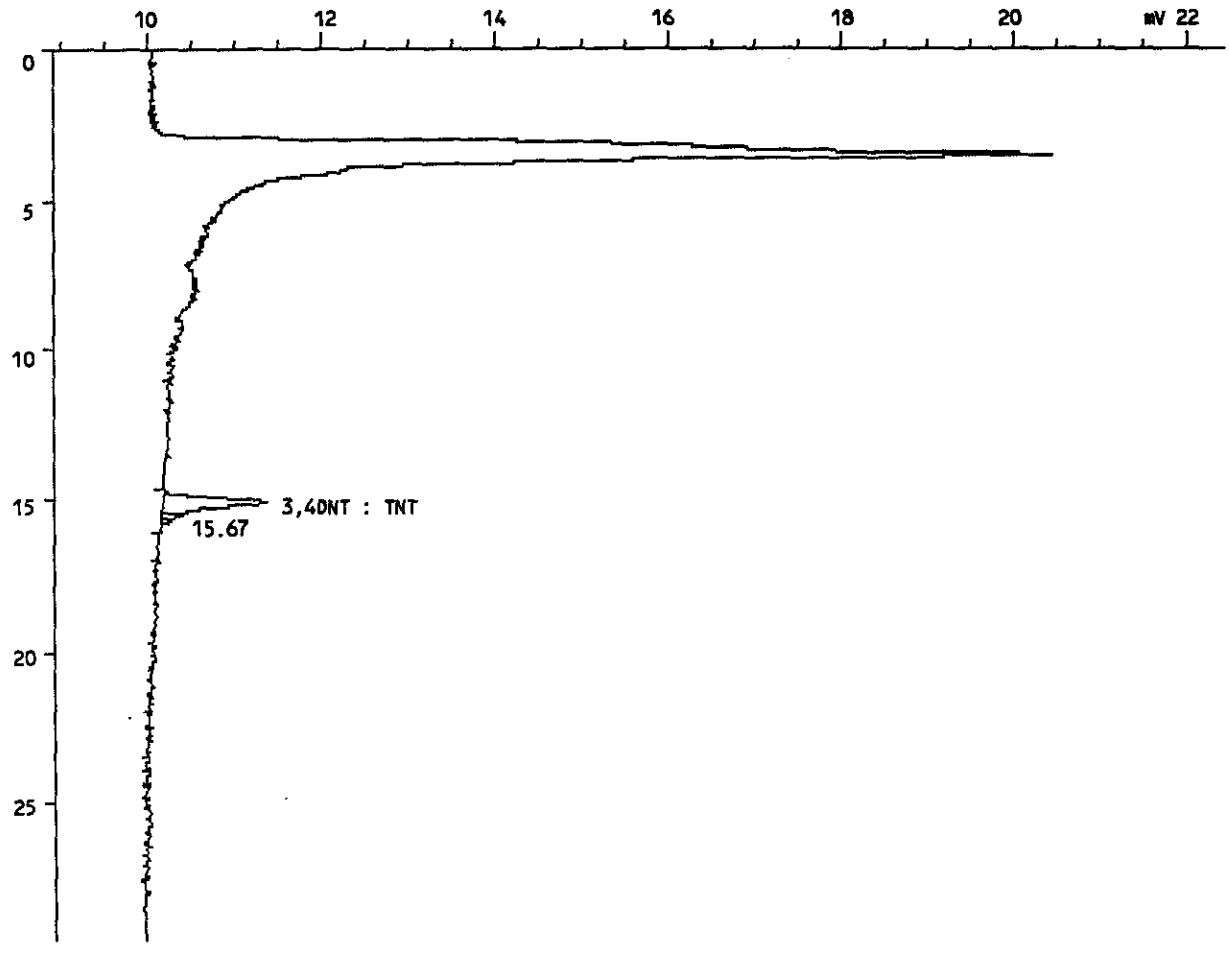
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0528B,8,1

Sample name.....: BIO-N-30%-20-A2
Sample ID.....: 34017.02 RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 30-May-98 at 00:13:24
Reported on 04-Jun-98 at 11:01:37



INJECTION REPORT

Injection F: <MC3> 5 5EX0528B,8,1

Acquired on 30-May-98 at 00:13:24
Modified on 04-Jun-82 at 10:55:40
Reported on 04-Jun-98 at 10:55:39

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.: 28
Calibration file..: 5EX0528 Last modified on 04-Jun-82 at 10:53:08
Method file.....: EXPLOS Last modified on 04-Jun-82 at 10:53:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A2
Sample ID.....: 34017.02 RE
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

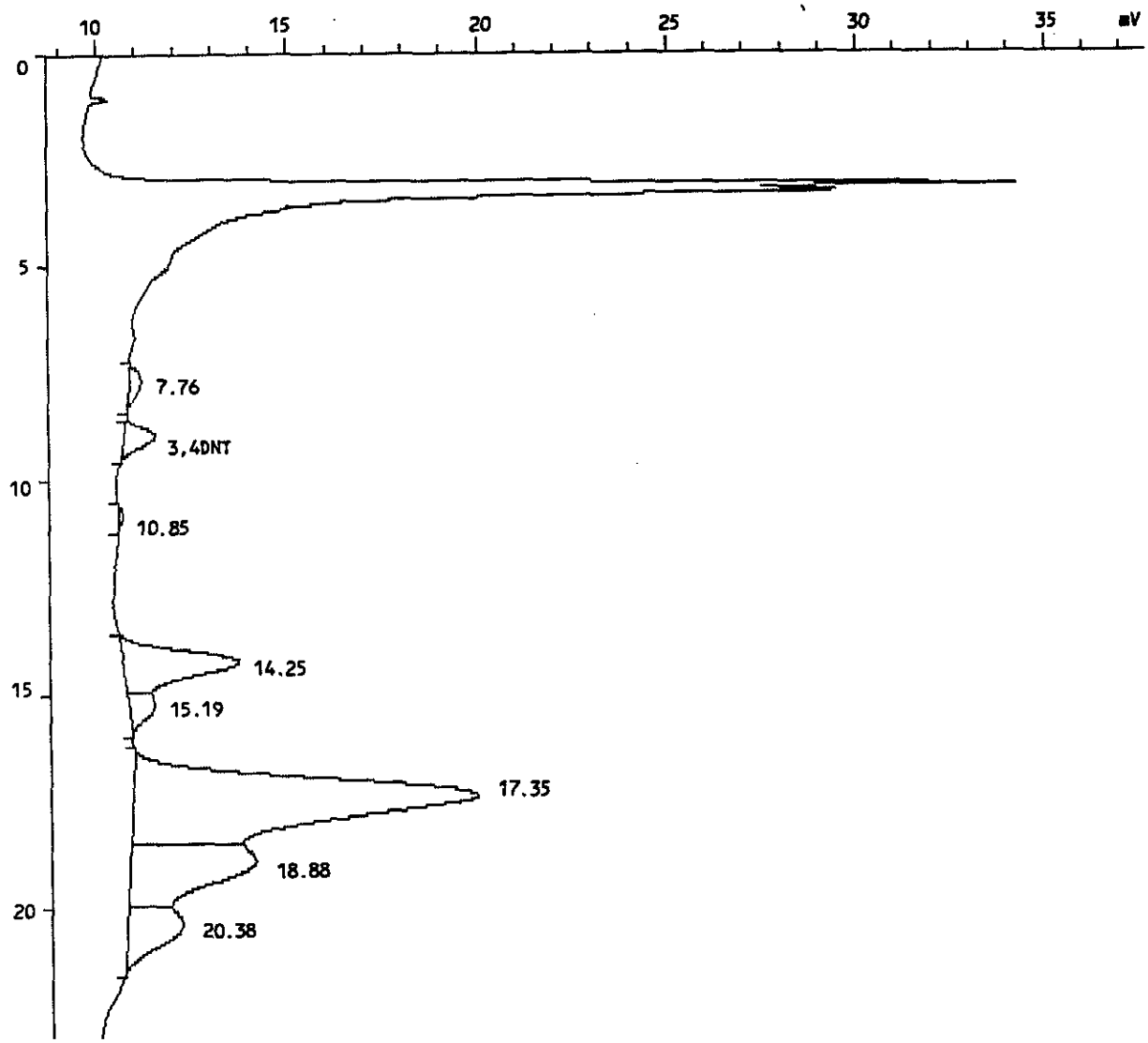
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	15.115	1190	24934	2388.308	3,4DNT 119.41%
2	15.445	277	2492	103.746	TNT
Total		1467	27426	2492.054	
Residual		140	1303	54.232	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,4,1

Sample name.....: BIO-N-30%-20-A2
Sample ID.....: 34017.02 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 00:20:20
Reported on 08-Jun-98 at 10:51:19



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,4,1

Acquired on 06-Jun-98 at 00:20:20
Modified on 08-Jun-82 at 10:47:08
Reported on 08-Jun-98 at 10:47:08

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A2
Sample ID.....: 34017.02RE
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

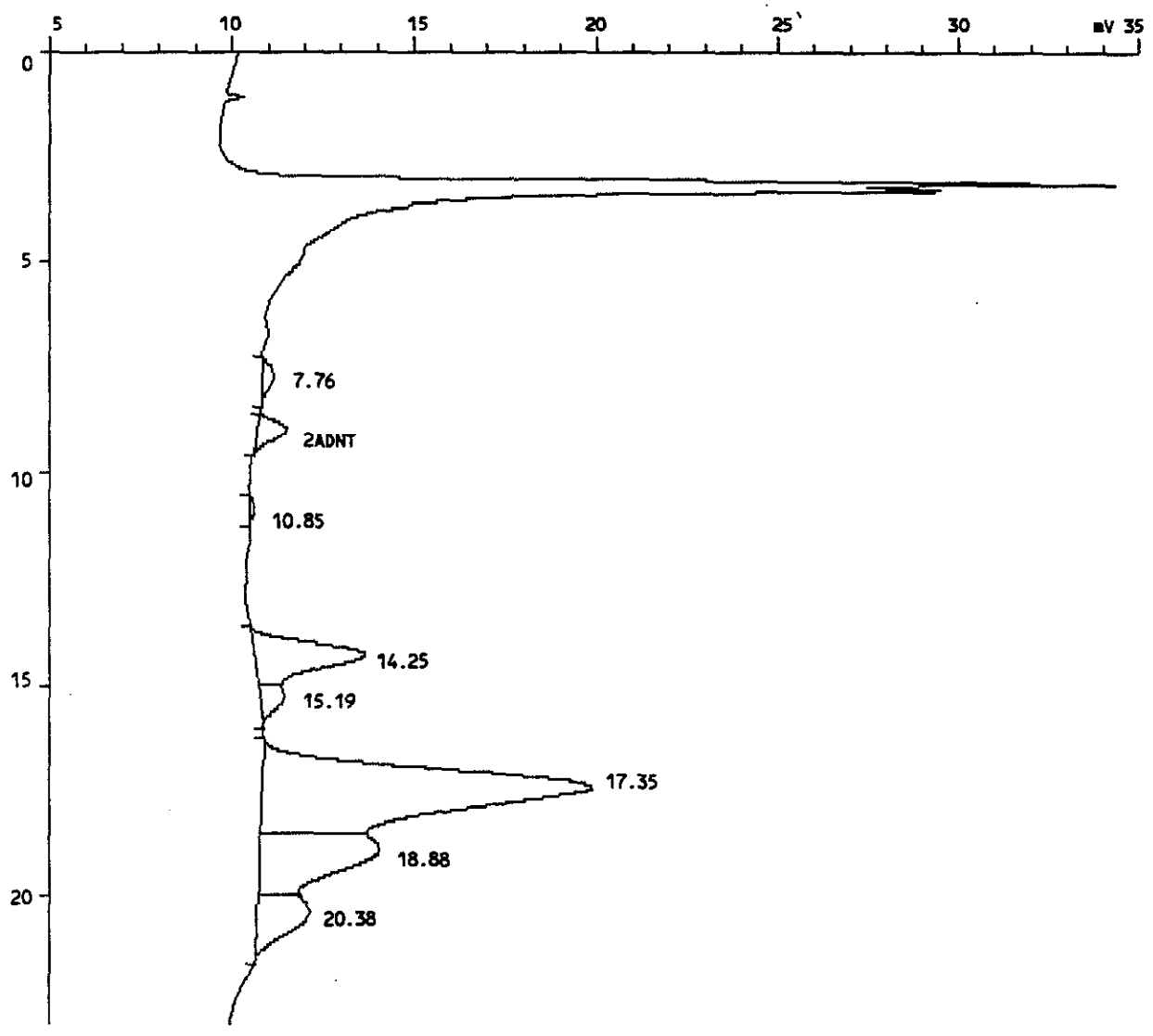
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.997	821	25268	1830.980	3,4DNT
Total		821	25268	1830.980	
Residual		18012	1083327	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,4,1

Sample name.....: BIO-N-30%-20-A2
Sample ID.....: 34017.02 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 00:20:20
Reported on 08-Jun-98 at 11:23:15



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,4,1

Acquired on 06-Jun-98 at 00:20:20
Modified on 08-Jun-82 at 11:18:12
Reported on 08-Jun-98 at 11:18:11

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A2
Sample ID.....: 34017.02RE
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	8.997	821	25268	1017.621	2ADNT
Total		821	25268	1017.621	
Residual		18012	1083327	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.02

Sample Amt: 2g % Moisture 19.14 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

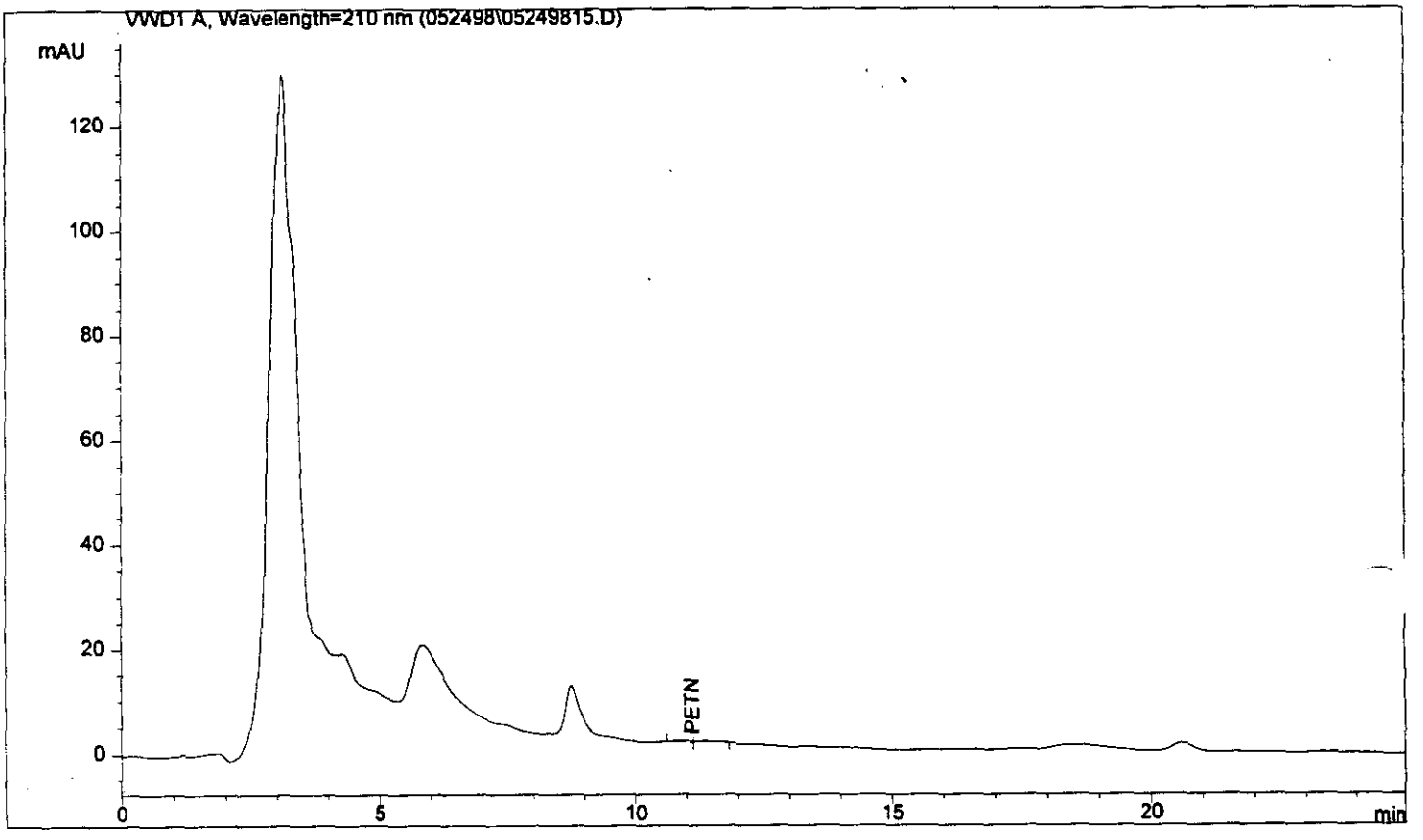
FORM I

Injection Date : Mon, 25. May. 1998
Sample Name : 34017.02
Acq Operator : SS

Seq Line : 15
Vial No. : 15
Inj. No. : 1
Inj. Vol. : 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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

Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
10.841	BB	2.27962	0.00000	0.00000	
11.349	BBA	5.50206	2.93257	161.35185	PETN
Totals:				161.35185	

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.03

Sample Amt: 2g % Moisture 20.38 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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

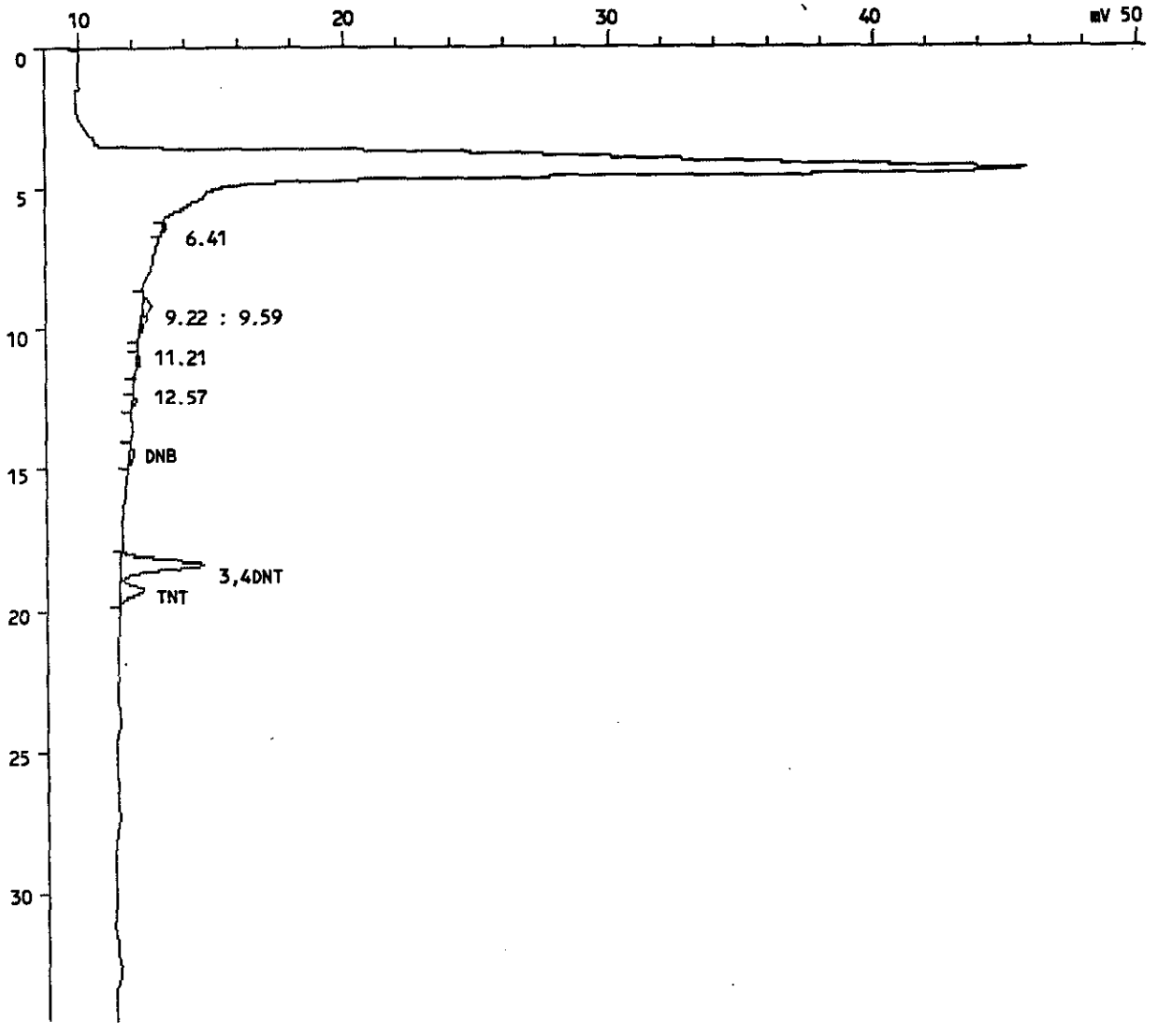
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,15,1

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 08:13:51
Reported on 26-May-98 at 16:52:27



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,15,1

Acquired on 22-May-98 at 08:13:51
Modified on 26-May-82 at 16:52:06
Reported on 26-May-98 at 16:52:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 16:52:06
Method file.....: EXPLOS Last modified on 26-May-82 at 16:48:12
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03
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

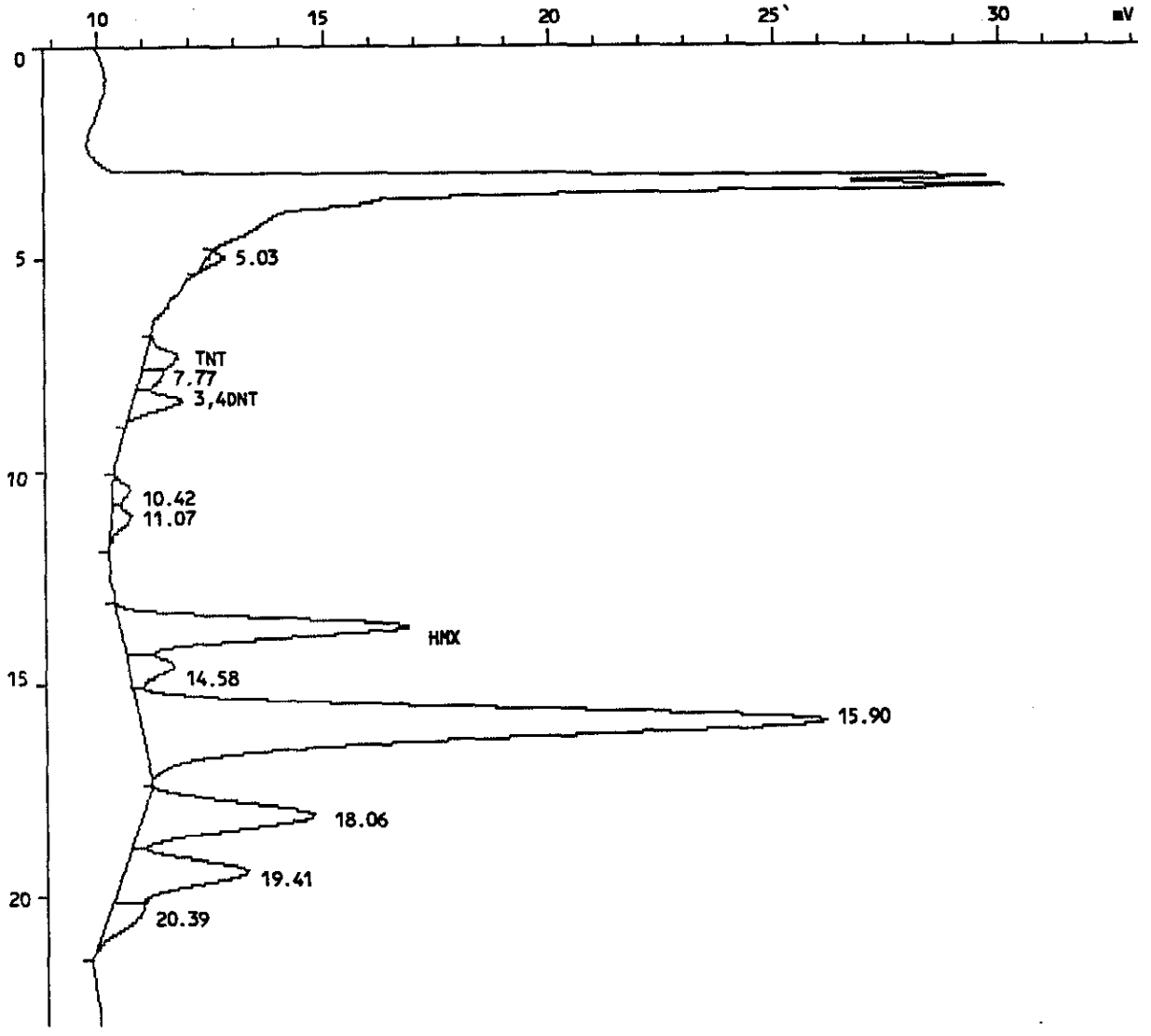
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
6	14.544	169	5207	39.666	DNB
7	18.368	3121	78786	1301.381	3,4DNT 5
8	19.269	893	23510	222.715	TNT
Total		4182	107503	1563.762	
Residual		1114	29933	-233.848	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,5,1

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 07:59:44
Reported on 26-May-98 at 18:00:03



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,5,1

Acquired on 26-May-98 at 07:59:44
Modified on 26-May-82 at 17:54:10
Reported on 26-May-98 at 17:54:10

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..: 3CN0525A Last modified on 26-May-82 at 17:51:34
Method file.....: LCCN Last modified on 26-May-82 at 17:52:40
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03
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

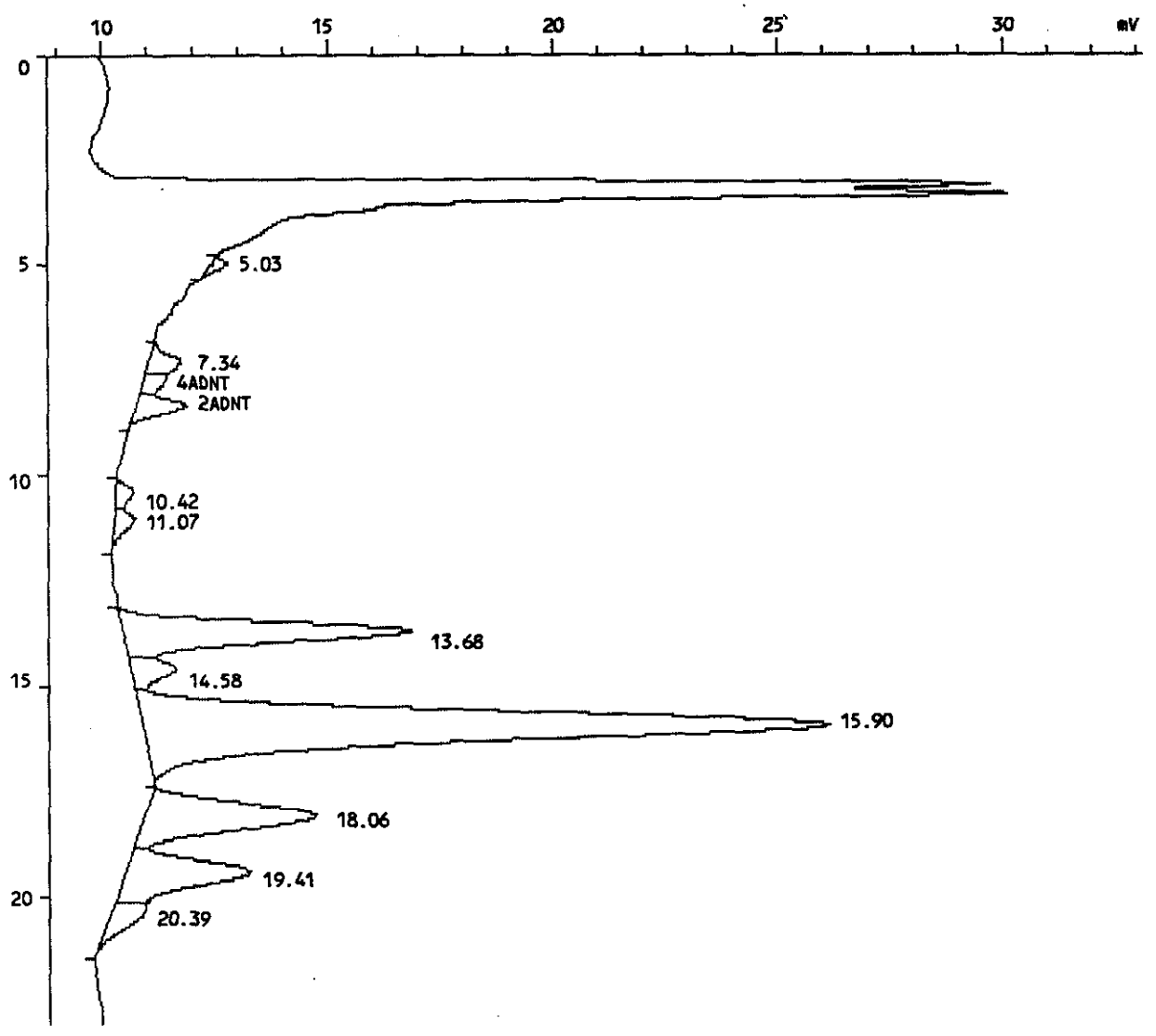
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.339	710	19355	750.501	TNT
4	8.357	1097	28410	1966.070	3,4DNT
7	13.680	6359	202587	20238.461	HMX
Total		8165	250352	22955.031	
Residual		25243	1120705	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,5,1

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 07:59:44
Reported on 26-May-98 at 19:09:54



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,5,1

Acquired on 26-May-98 at 07:59:44
Modified on 26-May-82 at 19:06:44
Reported on 26-May-98 at 19:06:44

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..: 3CN0525B Last modified on 26-May-82 at 19:05:50
Method file.....: LCCN Last modified on 26-May-82 at 19:06:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03
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	7.771	512	12648	753.744	4ADNT
4	8.357	1097	28410	1031.580	2ADNT
Total		1609	41058	1785.324	
Residual		31799	1330000	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A3
RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.03 RE

Sample Amt: 2g % Moisture 20.38 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/26/98

Extraction Method: SONC Date Analyzed: 05/30/98

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

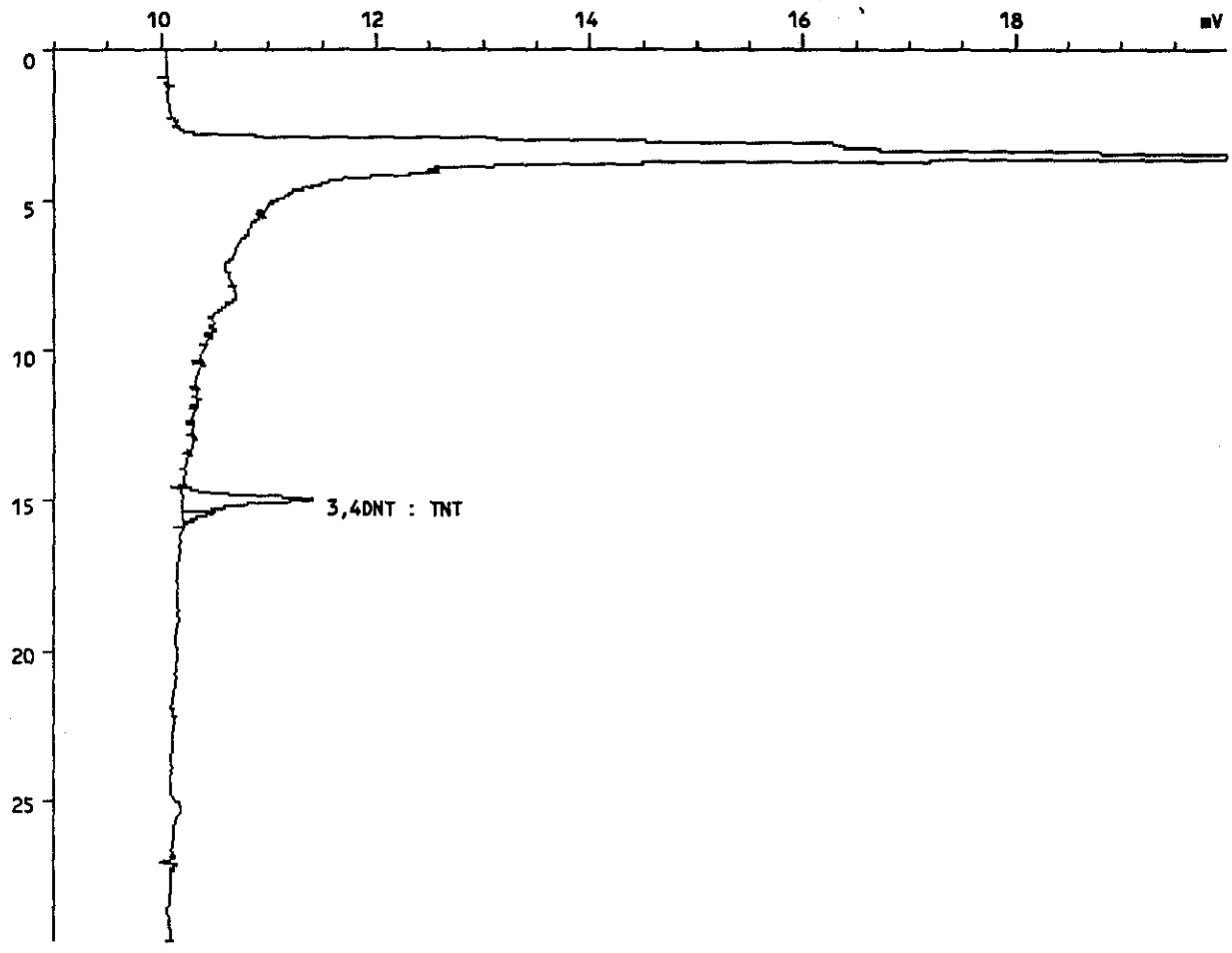
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0528B,11,1

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 30-May-98 at 02:27:30
Reported on 08-Jun-98 at 11:49:57



INJECTION REPORT

Injection F: <MC3> 5 5EX0528B,11,1

Acquired on 30-May-98 at 02:27:30
Modified on 08-Jun-82 at 11:49:00
Reported on 08-Jun-98 at 11:49:05

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.: 28
Calibration file..: 5EX0528 Last modified on 08-Jun-82 at 11:48:56
Method file.....: EXPLOS1 Last modified on 08-Jun-82 at 11:42:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03 RE
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

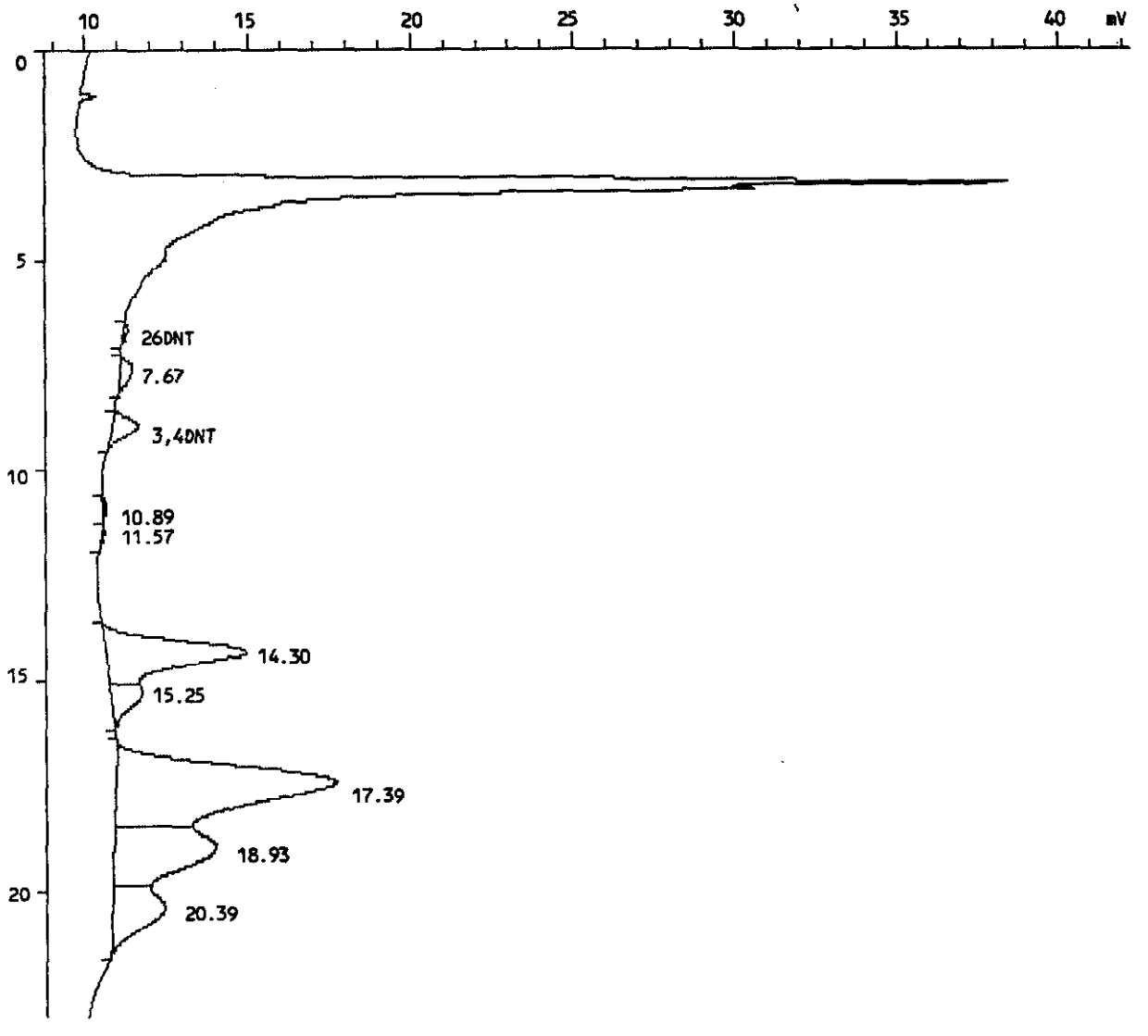
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	14.992	1220	27134	2599.051	3,4DNT 130
2	15.381	317	4603	191.625	TNT
Total		1537	31737	2790.676	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,5,1

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 01:04:42
Reported on 08-Jun-98 at 10:51:41



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,5,1

Acquired on 06-Jun-98 at 01:04:42
Modified on 08-Jun-82 at 10:47:20
Reported on 08-Jun-98 at 10:47:21

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03 RE
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

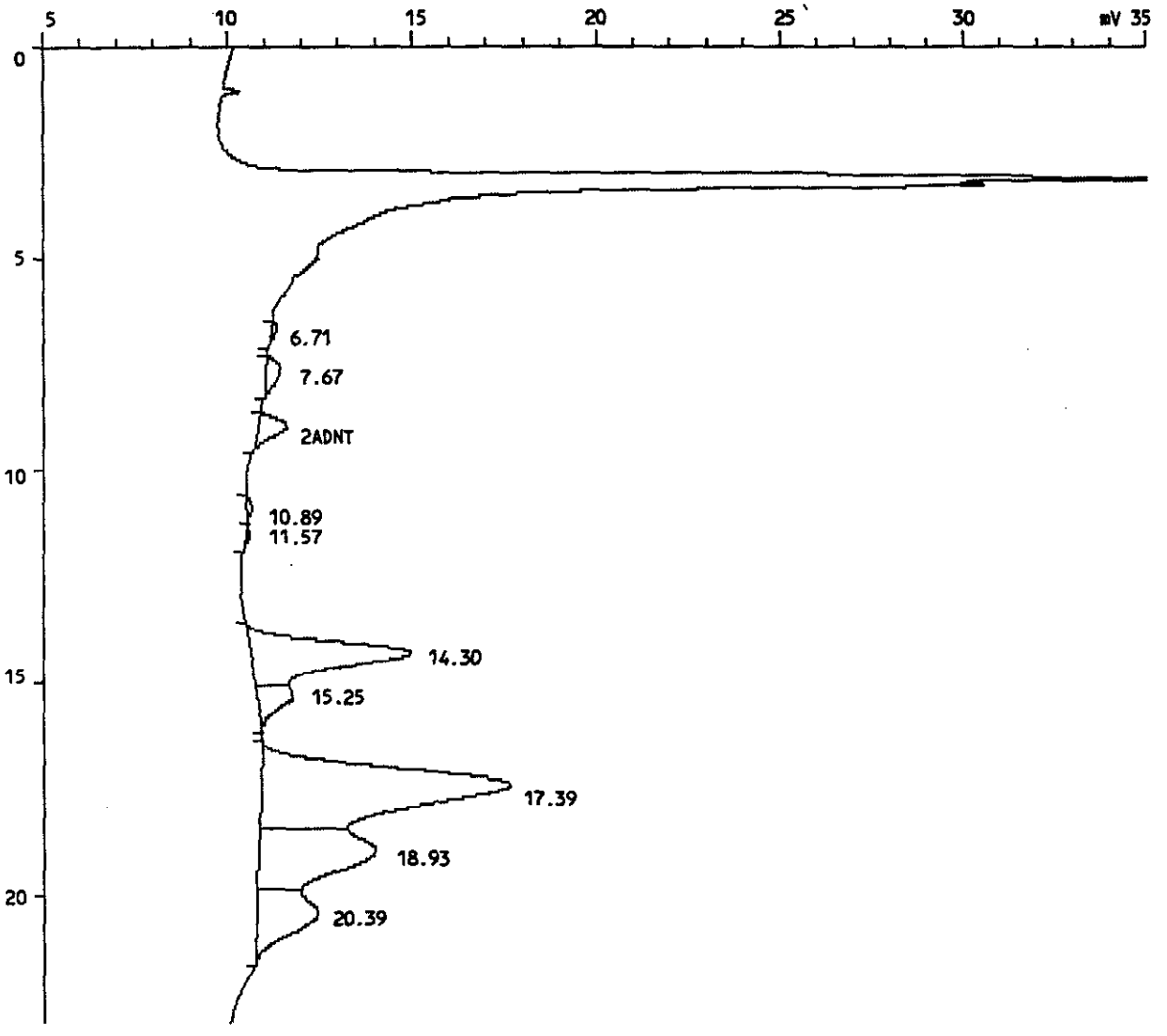
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	6.715	129	2744	158.971	26DNT
3	9.045	810	22967	1664.280	3,4DNT
Total		939	25711	1823.251	
Residual		17447	986284	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,5,1

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 01:04:42
Reported on 08-Jun-98 at 11:23:55



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,5,1

Acquired on 06-Jun-98 at 01:04:42
Modified on 08-Jun-82 at 11:17:58
Reported on 08-Jun-98 at 11:17:58

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A3
Sample ID.....: 34017.03RE
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	9.045	810	22967	924.972	2ADNT
Total		810	22967	924.972	
Residual		17576	989028	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.03

Sample Amt: 2g % Moisture 20.38 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

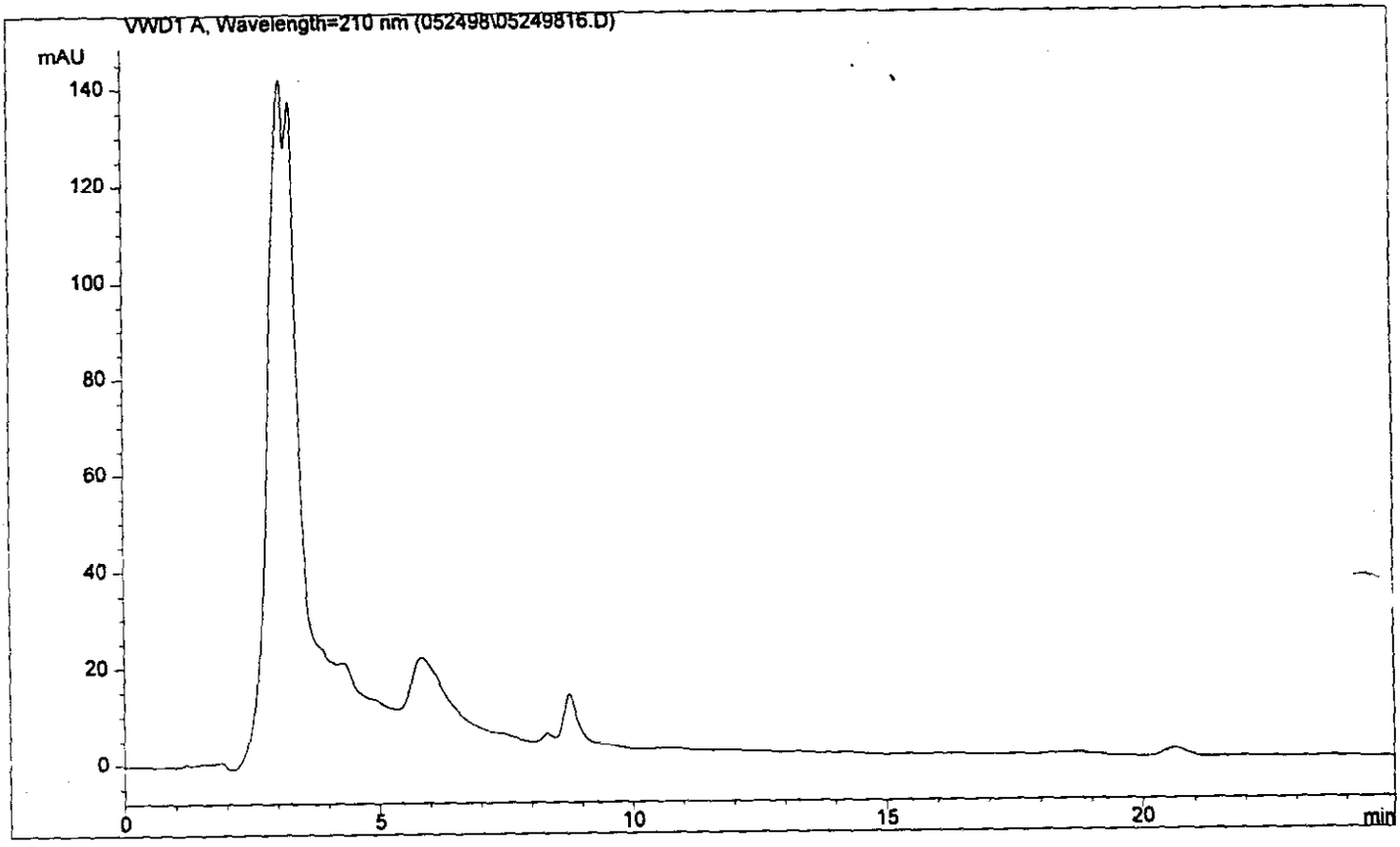
FORM I

Injection Date : Mon, 25. May. 1998
Sample Name : 34017.03
Acq Operator : SS

Seq Line : 16
Vial No. : 16
Inj. No. : 1
Inj. Vol. : 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.04

Sample Amt: 2g % Moisture 29.12 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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

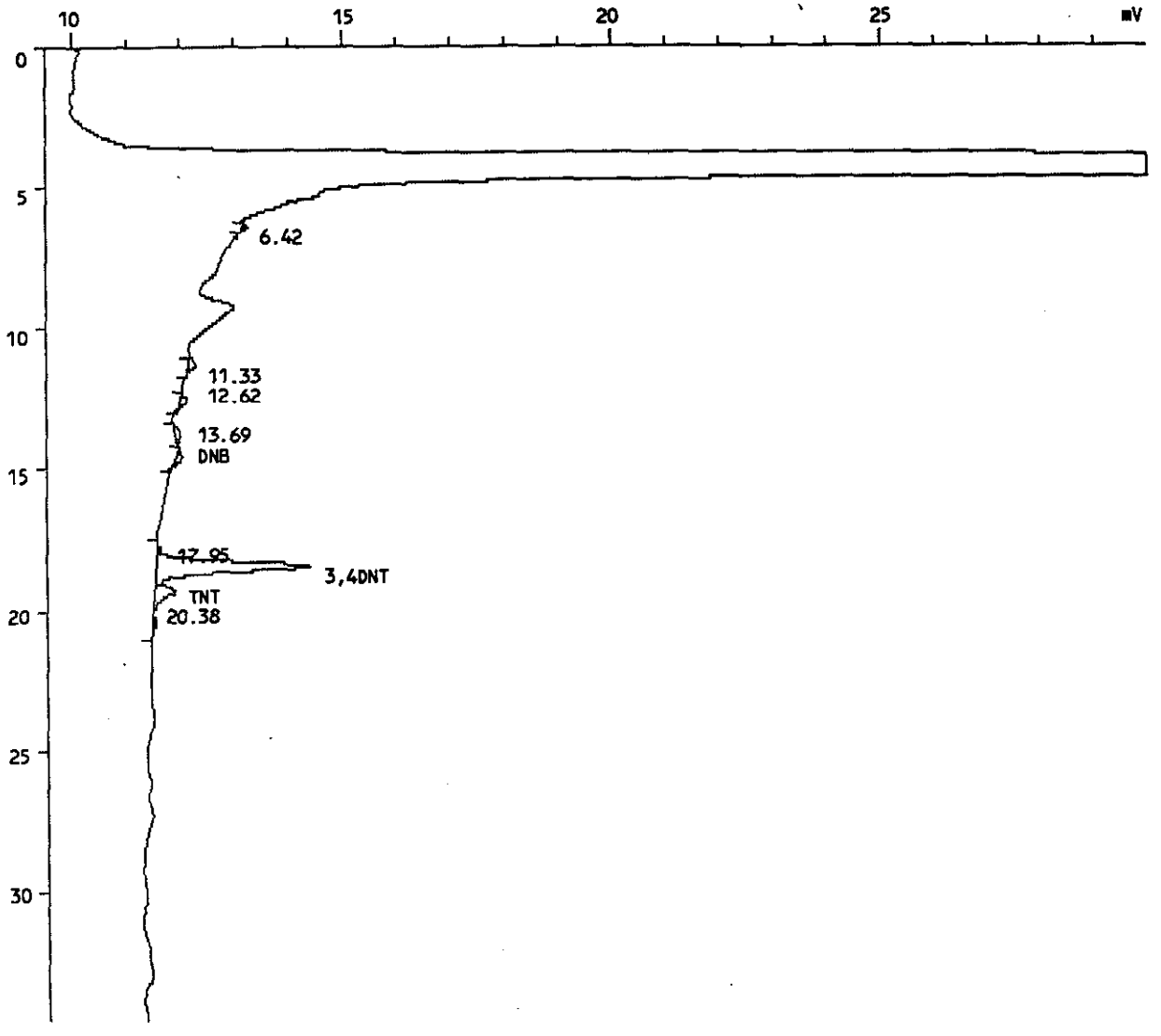
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,16,1

Sample name.....: BIO-N-30%-20-B1
Sample ID.....: 34017.04
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 08:58:29
Reported on 26-May-98 at 17:05:42



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,16,1

Acquired on 22-May-98 at 08:58:29
Modified on 26-May-82 at 17:05:18
Reported on 26-May-98 at 17:05:22

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:01:24
Method file.....: EXPLOS Last modified on 26-May-82 at 17:02:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B1
Sample ID.....: 34017.04
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
5	14.640	143	3992	30.408	DNB
7	18.432	2856	73700	1217.381	3,4DNT
8	19.328	376	10940	103.639	TNT
Total		3375	88632	1351.427	
Residual		595	12102	95.533	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-B1
RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.04 RE

Sample Amt: 2g % Moisture 29.12 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/26/98

Extraction Method: SONC Date Analyzed: 05/30/98

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

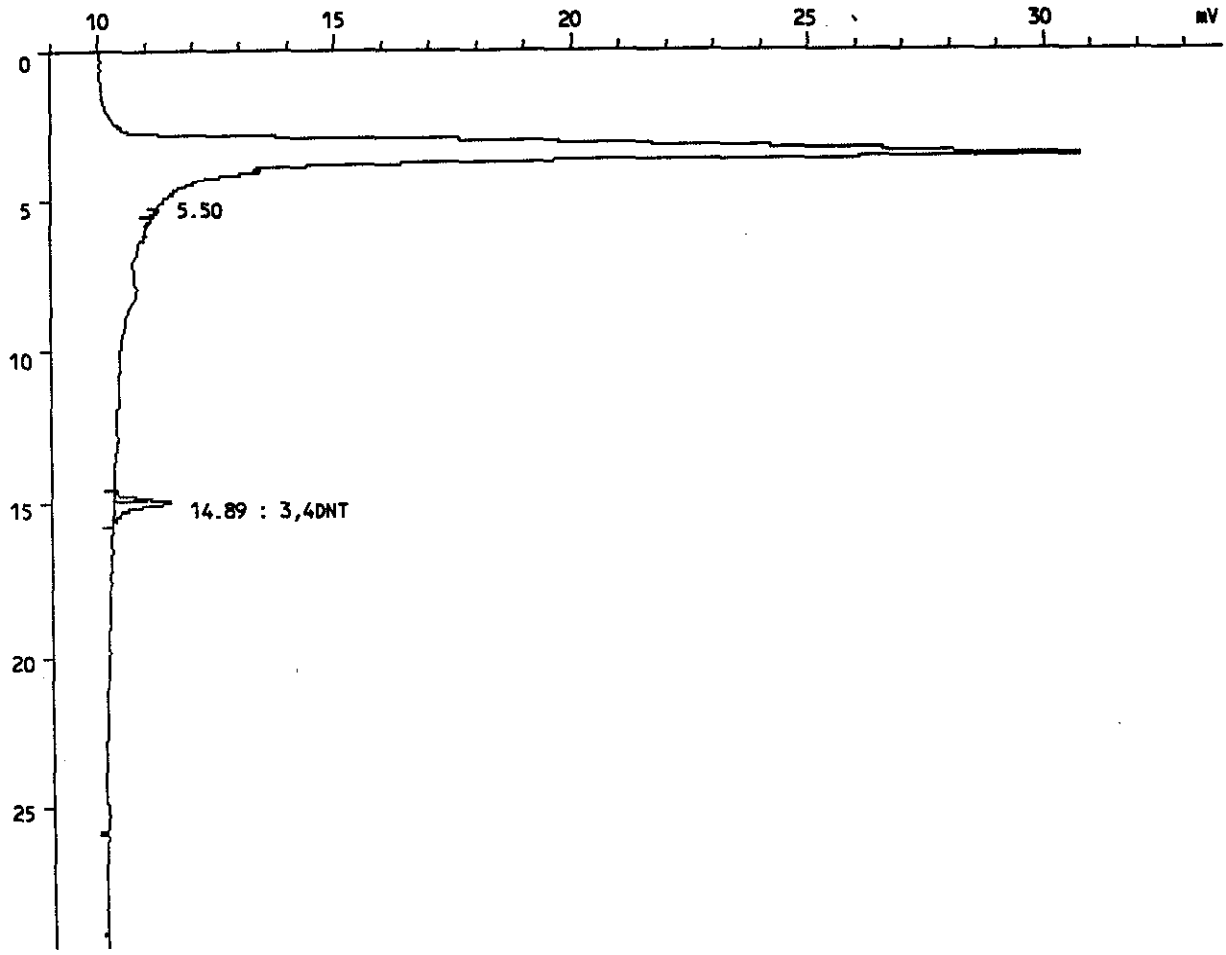
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0528B,12,1

Sample name.....: BIO-N-30%-20-B1
Sample ID.....: 34017.04 RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 30-May-98 at 03:12:12
Reported on 04-Jun-98 at 11:03:10



INJECTION REPORT

Injection F: <MC3> 5 5EX0528B,12,1

Acquired on 30-May-98 at 03:12:12
Modified on 04-Jun-82 at 10:57:00
Reported on 04-Jun-98 at 10:56:59

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.: 28
Calibration file..: 5EX0528 Last modified on 04-Jun-82 at 10:53:08
Method file.....: EXPLOS Last modified on 04-Jun-82 at 10:53:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B1
Sample ID.....: 34017.04RE
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

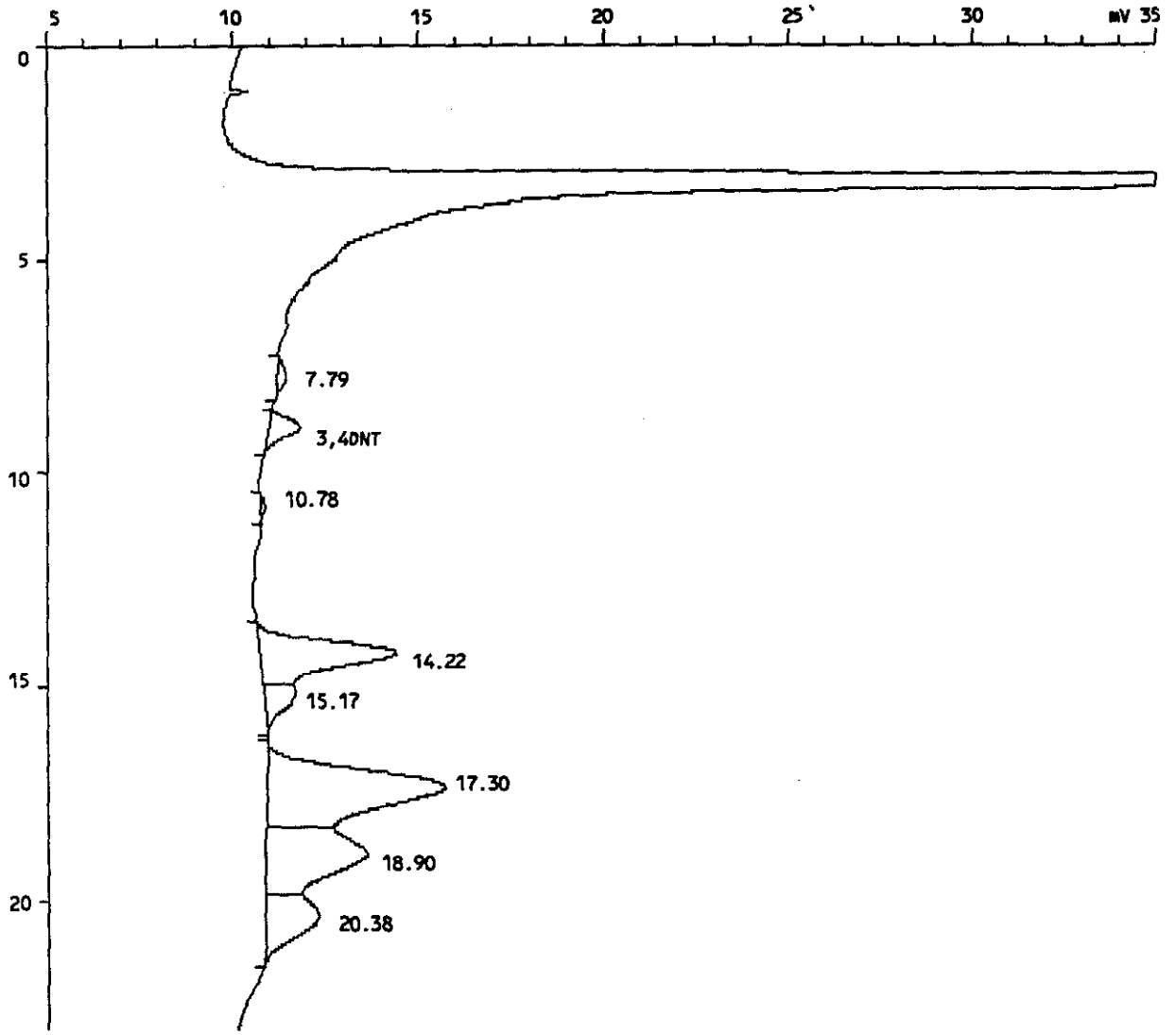
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	15.003	1238	22802	2184.077	3,4DNT 109.20%
Total		1238	22802	2184.077	
Residual		821	5640	540.210	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,6,1

Sample name.....: BIO-N-30%-20-B1
Sample ID.....: 34017.04RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 01:49:03
Reported on 08-Jun-98 at 10:54:17



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,6,1

Acquired on 06-Jun-98 at 01:49:03
Modified on 08-Jun-82 at 10:47:34
Reported on 08-Jun-98 at 10:47:34

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B1
Sample ID.....: 34017.04 RE
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

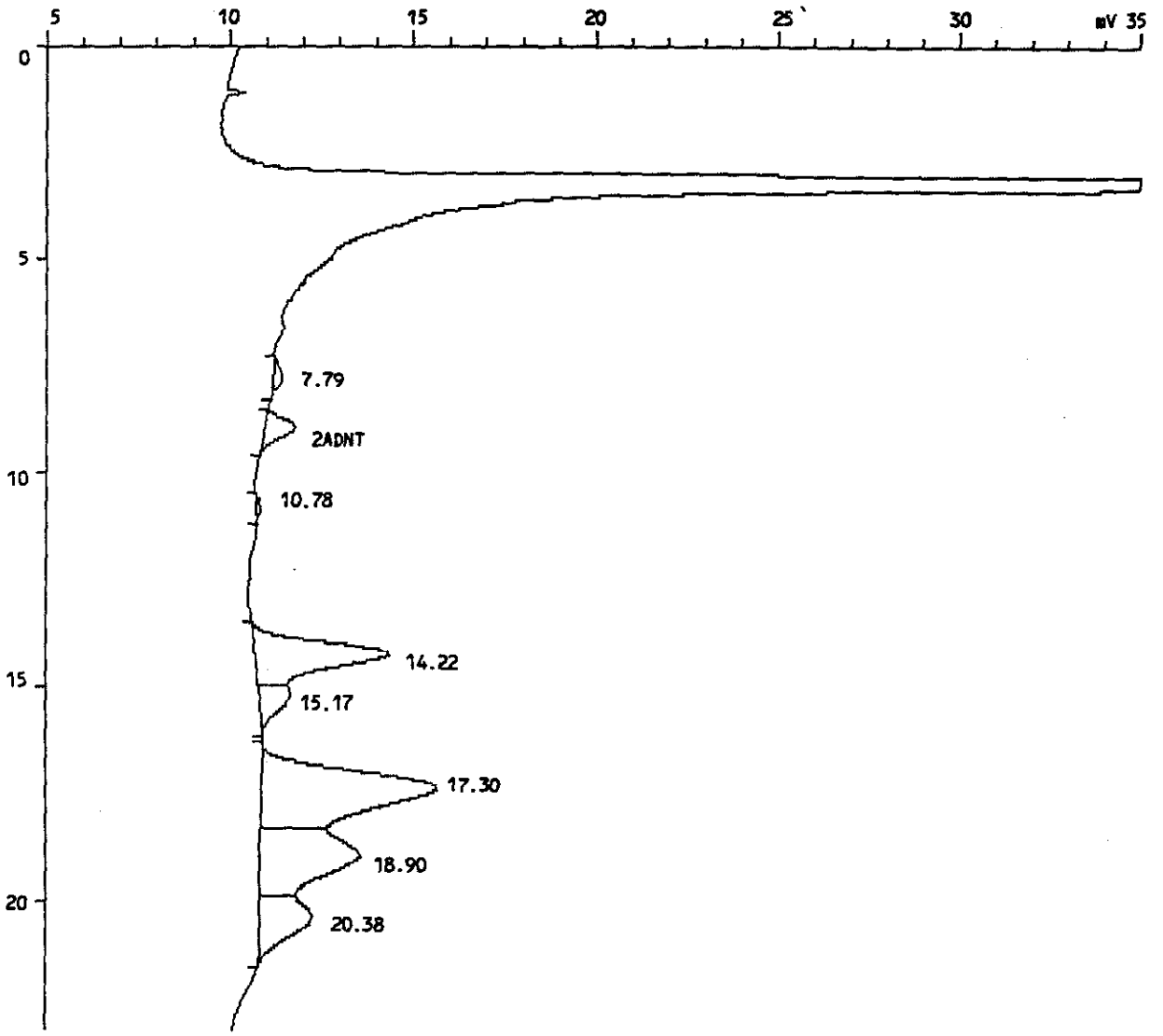
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.987	846	25311	1834.097	3,4DNT
Total		846	25311	1834.097	
Residual		13946	785336	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,6,1

Sample name.....: BIO-N-30%-20-B1
Sample ID.....: 34017.04RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 01:49:03
Reported on 08-Jun-98 at 11:24:45



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,6,1

Acquired on 06-Jun-98 at 01:49:03
Modified on 08-Jun-82 at 11:17:46
Reported on 08-Jun-98 at 11:17:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B1
Sample ID.....: 34017.04RE
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	8.987	846	25311	1019.353	2ADNT
Total		846	25311	1019.353	
Residual		13946	785336	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.04

Sample Amt: 2g % Moisture 29.12 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

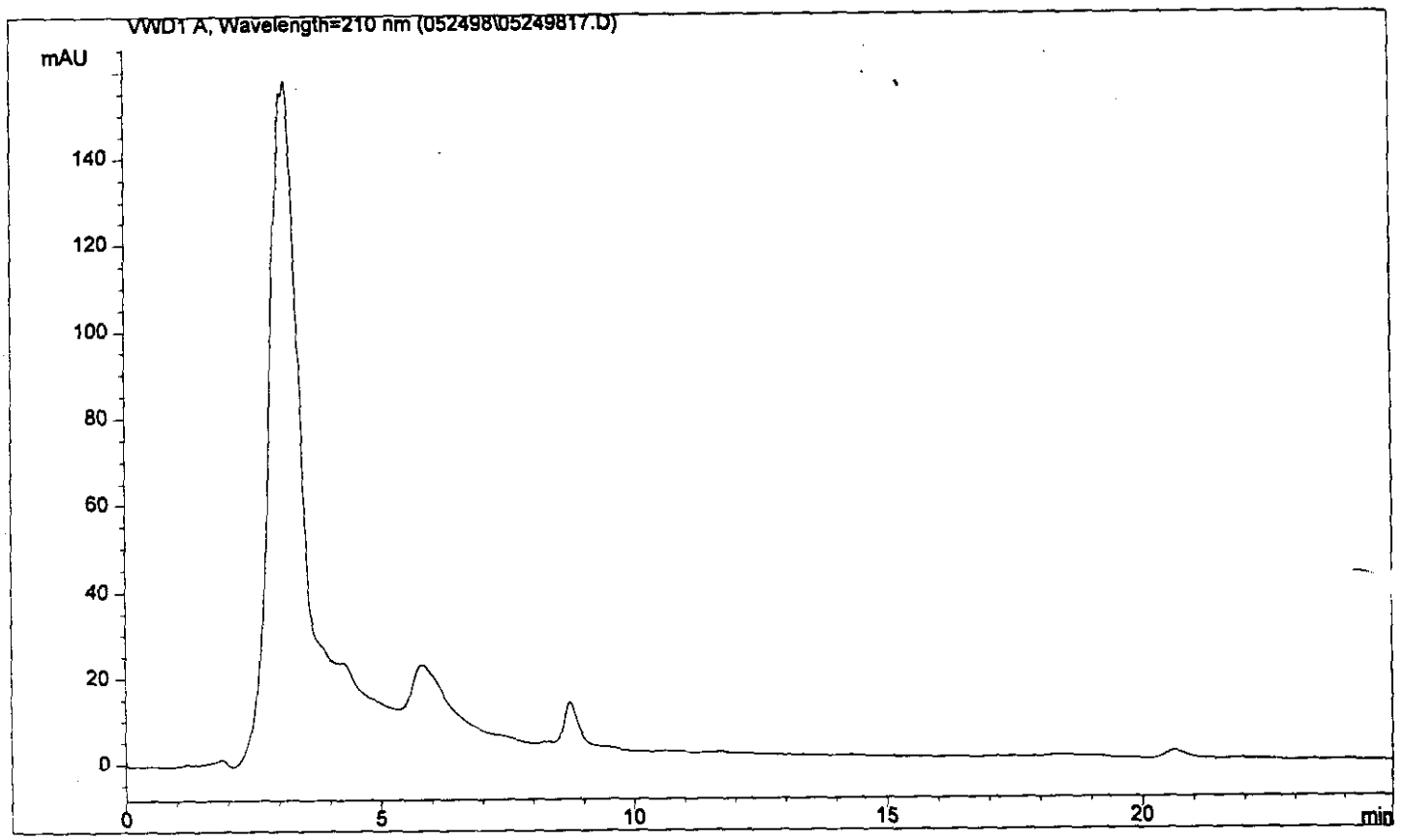
FORM I

Injection Date : Mon, 25. May. 1998
Sample Name : 34017.04
Acq Operator : SS

Seq Line : 17
Vial No. : 17
Inj. No. : 1
Inj. Vol. : 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
Totals:				0.00000	

81

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-20-B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.05

Sample Amt: 2g % Moisture 20.60 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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	1360	
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

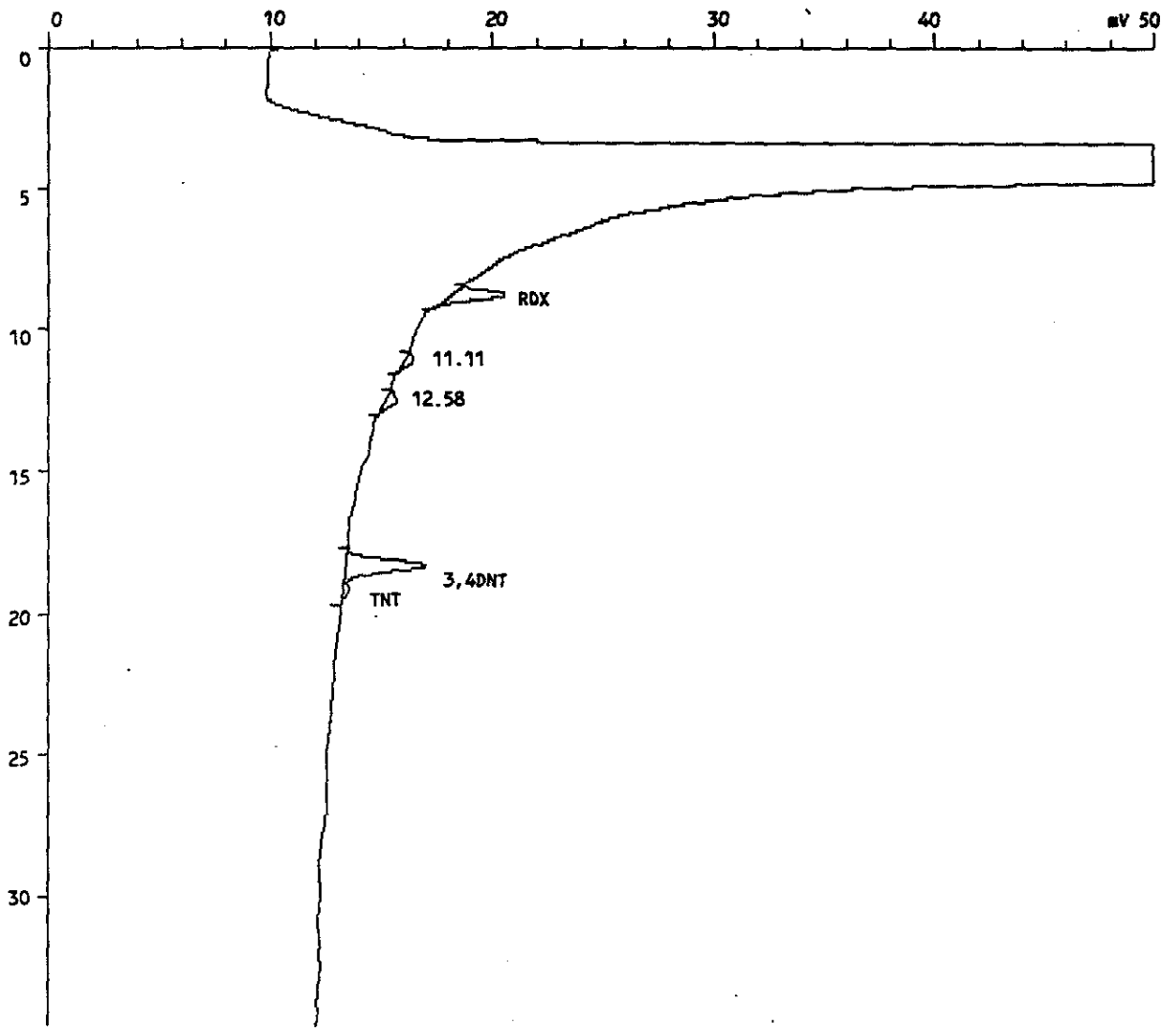
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,17,1

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 09:43:08
Reported on 26-May-98 at 17:15:23



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,17,1

Acquired on 22-May-98 at 09:43:08
Modified on 26-May-82 at 17:08:08
Reported on 26-May-98 at 17:08:08

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:01:24
Method file.....: EXPLOS Last modified on 26-May-82 at 17:02:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05
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

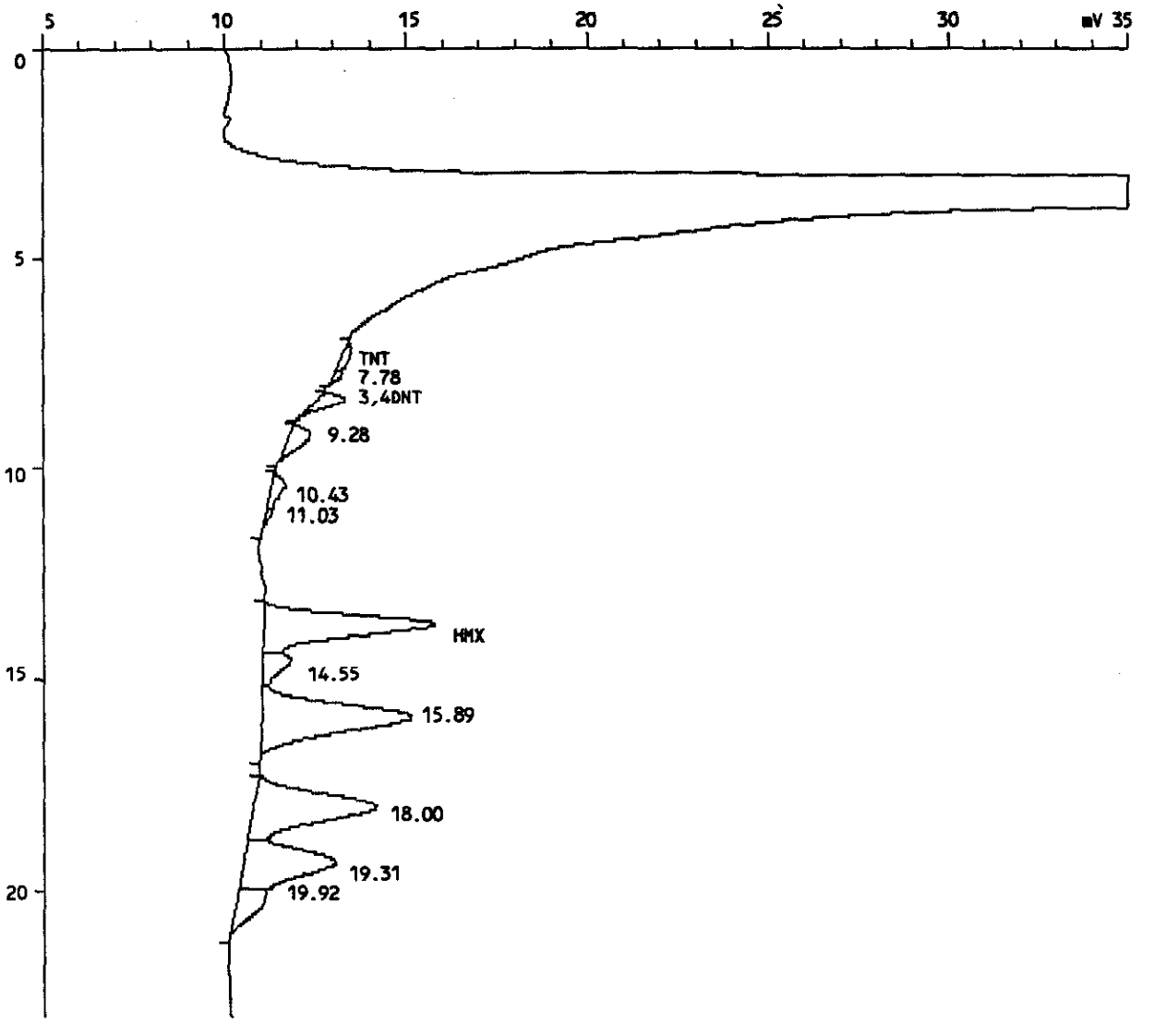
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.821	2493	58078	1357.608	RDX *
4	18.336	3577	103079	1702.654	3,4DNT <5
5	19.237	339	9081	86.031	TNT
Total		6409	170239	3146.293	
Residual		961	24457	571.695	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,7,1

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 09:28:26
Reported on 26-May-98 at 18:00:56



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,7,1

Acquired on 26-May-98 at 09:28:26
Modified on 26-May-82 at 17:54:38
Reported on 26-May-98 at 17:54:38

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..: 3CN0525A Last modified on 26-May-82 at 17:51:34
Method file.....: LCCN Last modified on 26-May-82 at 17:52:40
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05
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

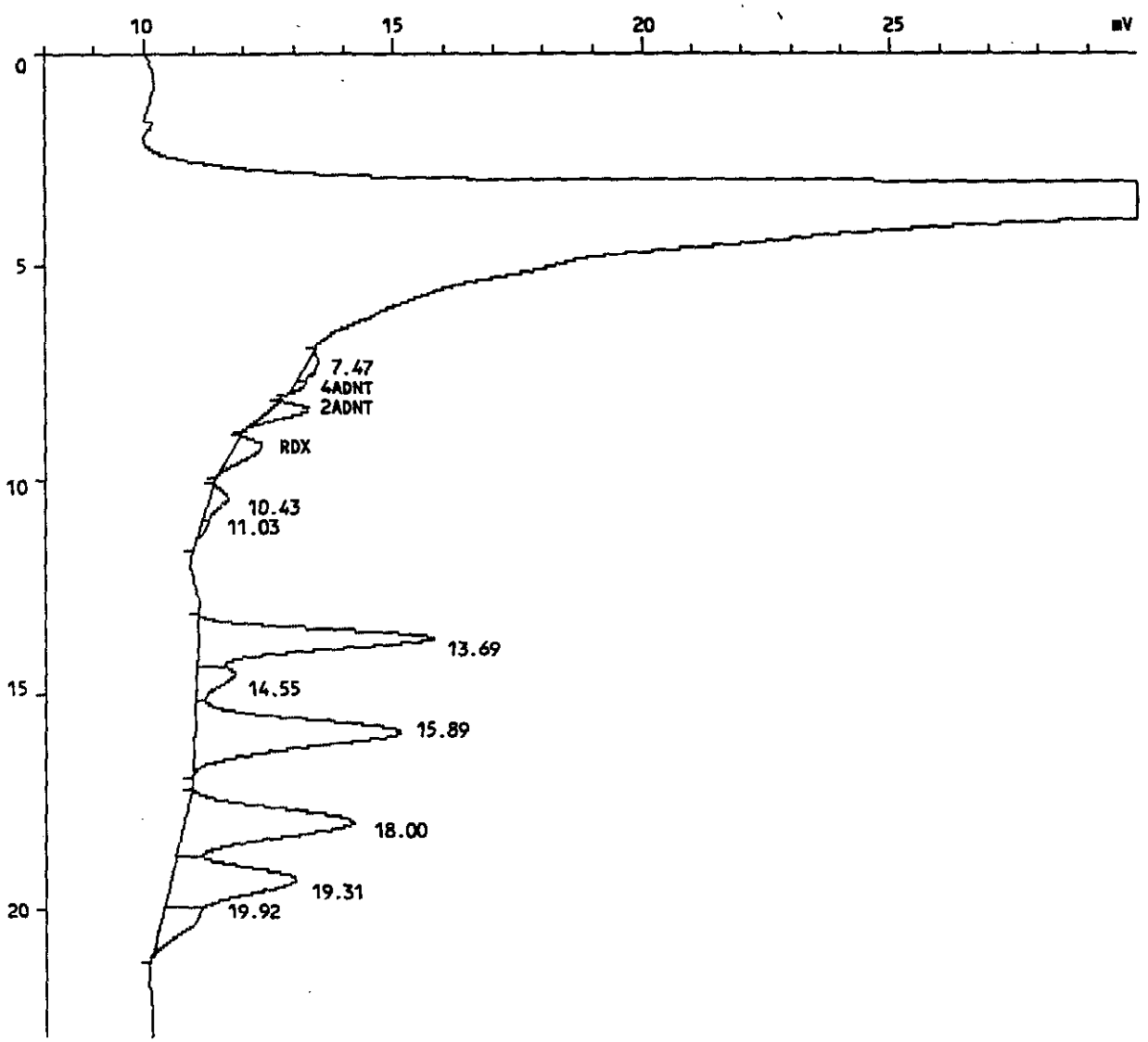
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.467	259	8223	318.831	TNT
3	8.384	826	18973	1313.012	3,4DNT
7	13.685	4712	155795	15563.979	HMX
Total		5798	182991	17195.822	
Residual		13057	553051	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,7,1

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 09:28:26
Reported on 26-May-98 at 19:10:33



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,7,1

Acquired on 26-May-98 at 09:28:26
Modified on 26-May-82 at 19:06:58
Reported on 26-May-98 at 19:06:57

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..: 3CN0525B Last modified on 26-May-82 at 19:05:50
Method file.....: LCCN Last modified on 26-May-82 at 19:06:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05
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
2	7.781	259	3675	219.021	4ADNT
3	8.384	826	18973	688.926	2ADNT
4	9.280	582	18352	1329.833	RDX
Total		1668	41000	2237.780	
Residual		17187	695043	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-B2
RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.05 RE

Sample Amt: 2g % Moisture 20.60 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/26/98

Extraction Method: SONC Date Analyzed: 05/30/98

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	12500	
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

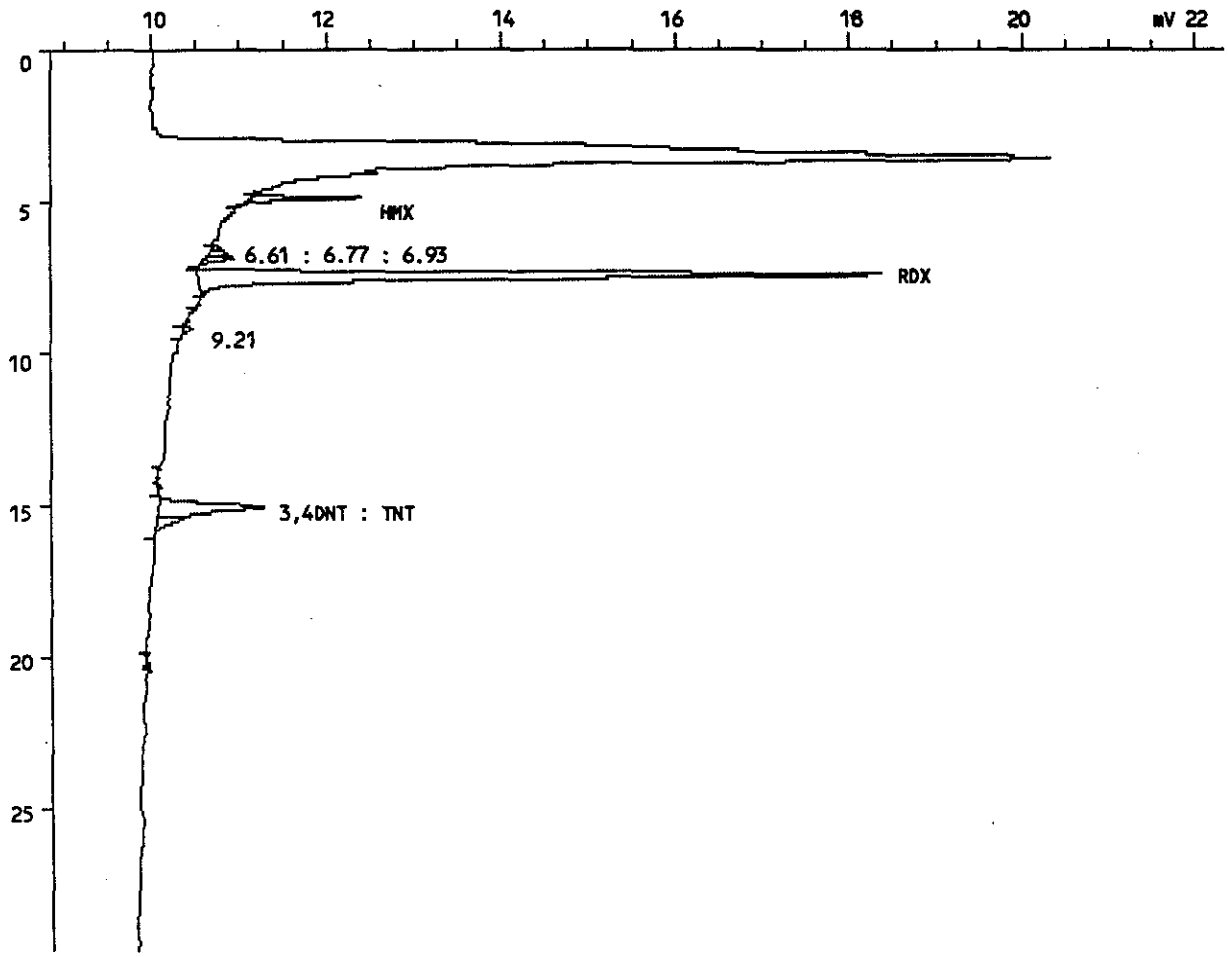
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0528B,13,1

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 30-May-98 at 03:56:55
Reported on 04-Jun-98 at 11:03:30



INJECTION REPORT

Injection F: <MC3> 5 5EX0528B,13,1

Acquired on 30-May-98 at 03:56:55
Modified on 04-Jun-82 at 10:57:14
Reported on 04-Jun-98 at 10:57:14

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.: 28
Calibration file..: 5EX0528 Last modified on 04-Jun-82 at 10:53:08
Method file.....: EXPLOS Last modified on 04-Jun-82 at 10:53:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05RE
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

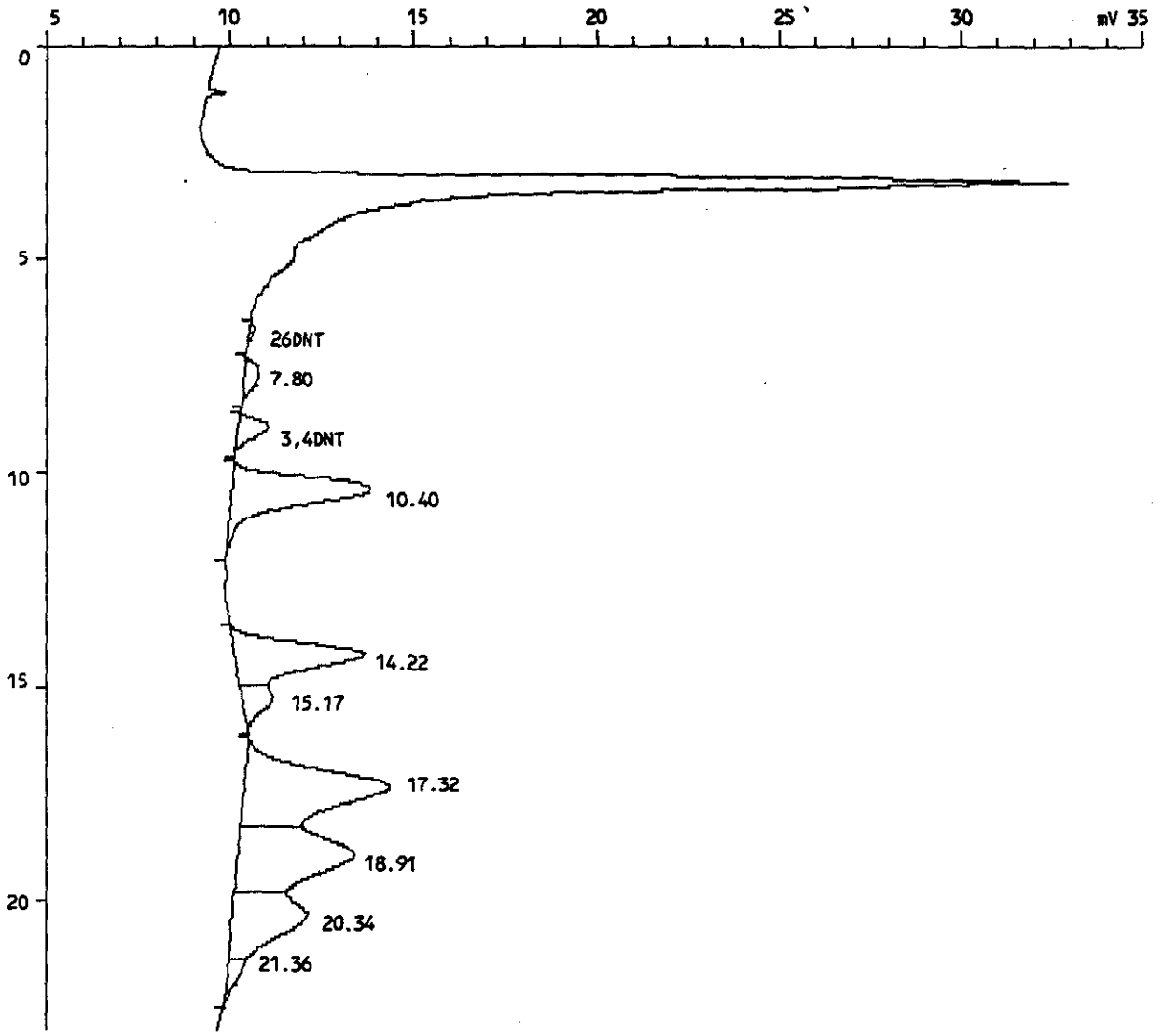
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.923	1303	10769	1435.855	HMX
5	7.477	7820	115633	12514.423	RDX *
7	15.088	1203	24597	2356.018	3,4DNT 117.80%
8	15.371	357	5559	231.425	TNT
Total		10683	156558	16537.721	
Residual		784	7151	923.067	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,7,1

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 02:33:25
Reported on 08-Jun-98 at 10:54:44



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,7,1

Acquired on 06-Jun-98 at 02:33:25
Modified on 08-Jun-82 at 10:47:46
Reported on 08-Jun-98 at 10:47:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05ℓ
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

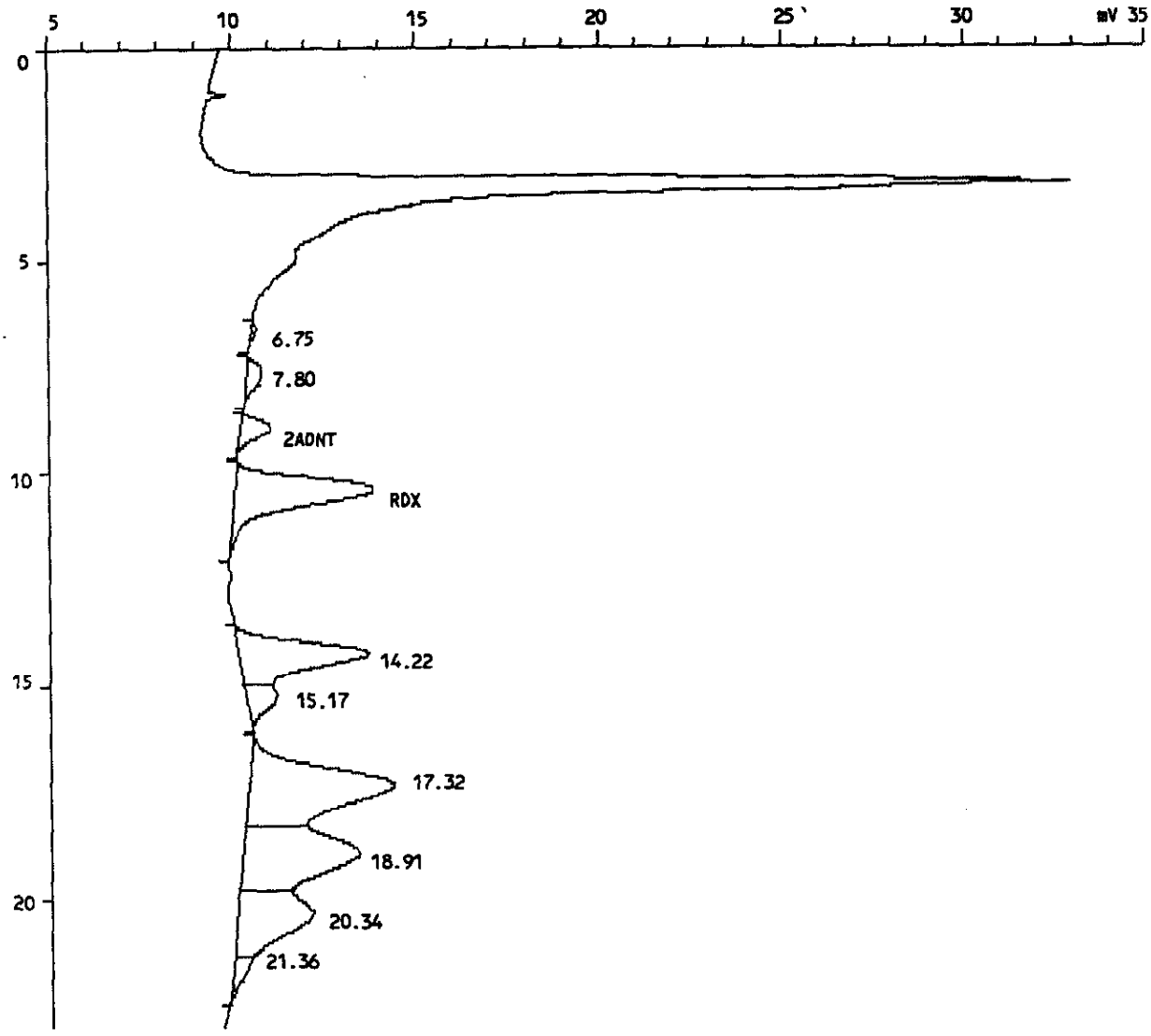
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	6.747	139	3475	201.312	26DNT
3	8.976	815	23530	1705.064	3,4DNT
Total		954	27005	1906.375	
Residual		18255	997629	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,7,1

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 02:33:25
Reported on 08-Jun-98 at 11:25:30



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,7,1

Acquired on 06-Jun-98 at 02:33:25
Modified on 08-Jun-82 at 11:17:32
Reported on 08-Jun-98 at 11:17:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05 RE
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	8.976	815	23530	947.639	2ADNT
4	10.400	3800	167658	13027.007	RDX
Total		4615	191187	13974.646	
Residual		14594	833446	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.05

Sample Amt: 2g % Moisture 20.60 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

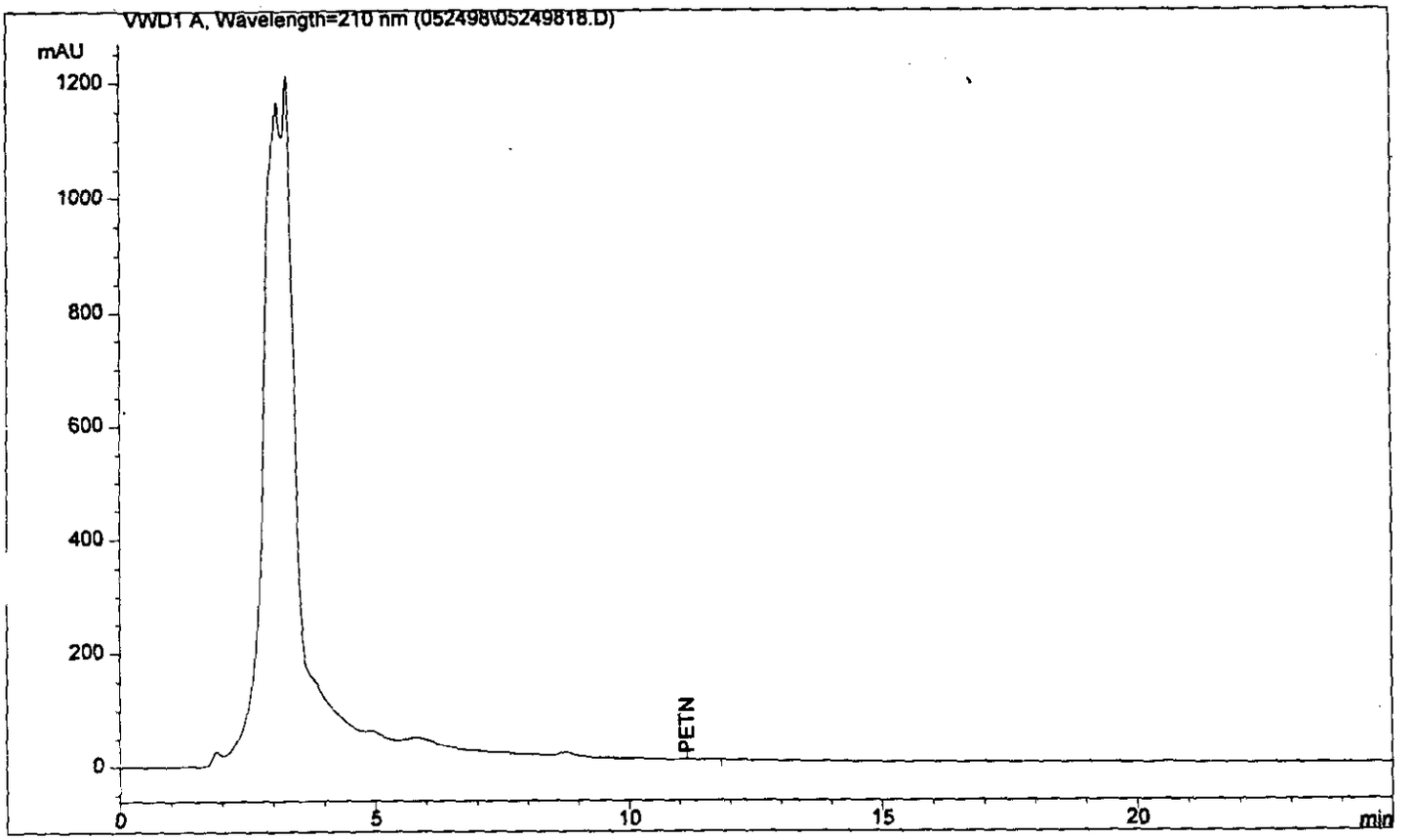
FORM I

Data file : C:\HPCHEM\1\DATA\052498\05249818.D
Sample Name: 34017.05 1

Injection Date	: Mon, 25. May. 1998	Seq Line	: 18
Sample Name	: 34017.05	Vial No.	: 18
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



Customized Report: extstd.frp

Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
11.391	BBA	8.81856	2.93257	258.61072	PETN
Totals:				258.61072	

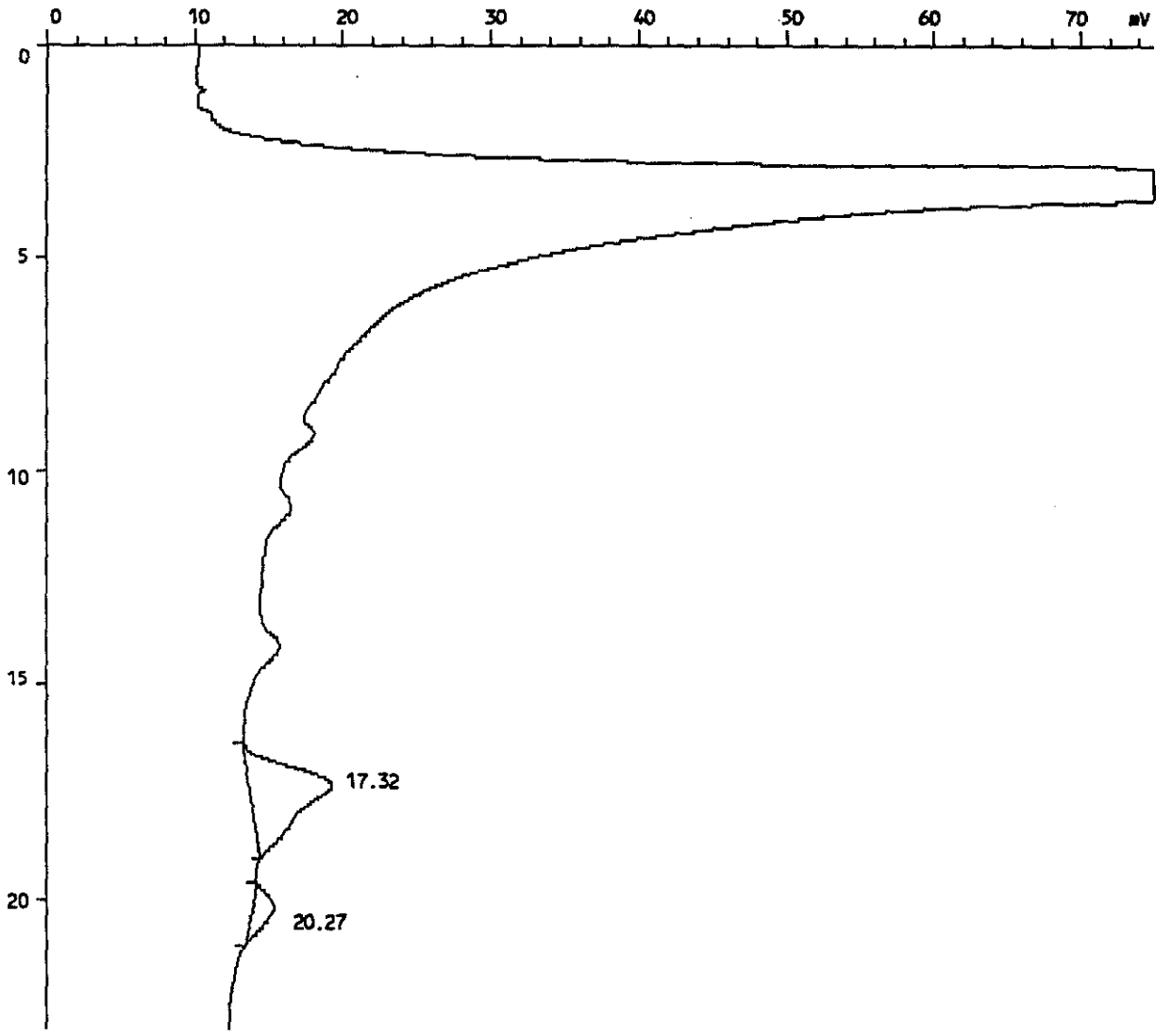
*** End of Report ***

LONG PLOT

Injection F: <MC3> 3 3PC0601,26,1

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 02-Jun-98 at 05:39:55
Reported on 02-Jun-98 at 16:03:51



INJECTION REPORT

Injection F: <MC3> 3 3PC0601,26,1

Acquired on 02-Jun-98 at 05:39:55
Modified on 02-Jun-82 at 16:03:58
Reported on 02-Jun-98 at 16:03:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: ODS-II, ID: LC-CN-11, INJ:100, UV
Number of samples.: 29
Calibration file..: 3PC0601 Last modified on 02-Jun-82 at 14:33:06
Method file.....: LCCN1 Last modified on 02-Jun-82 at 15:54:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B2
Sample ID.....: 34017.05
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
Total	0	0	0.000	
Residual	7006	494914	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.06

Sample Amt: 2g % Moisture 19.26 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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	297	J
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	453	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

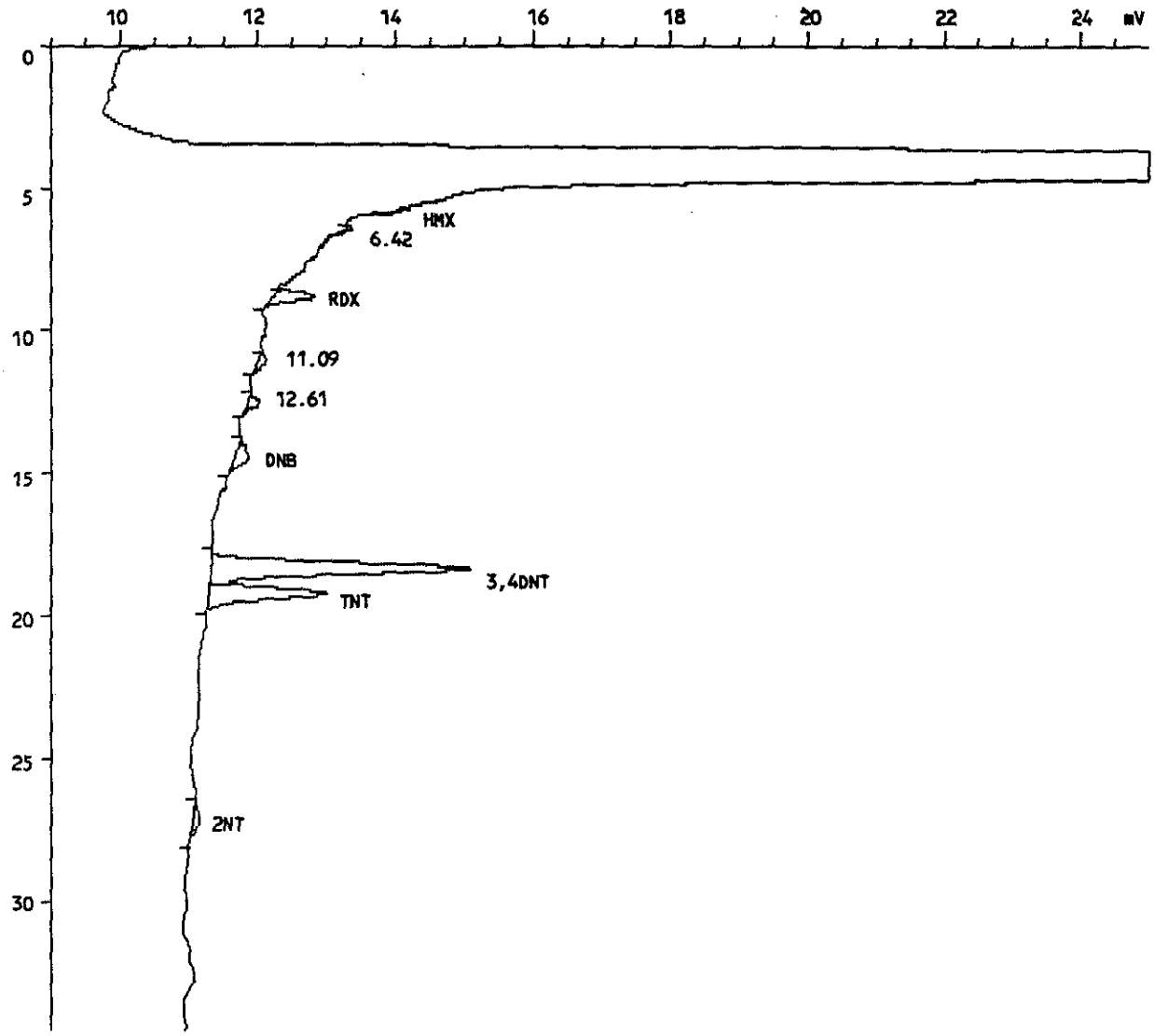
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,18,1

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 10:27:47
Reported on 26-May-98 at 17:16:43



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,18,1

Acquired on 22-May-98 at 10:27:47
Modified on 26-May-82 at 17:16:00
Reported on 26-May-98 at 17:16:02

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:01:24
Method file.....: EXPLOS Last modified on 26-May-82 at 17:15:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06
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

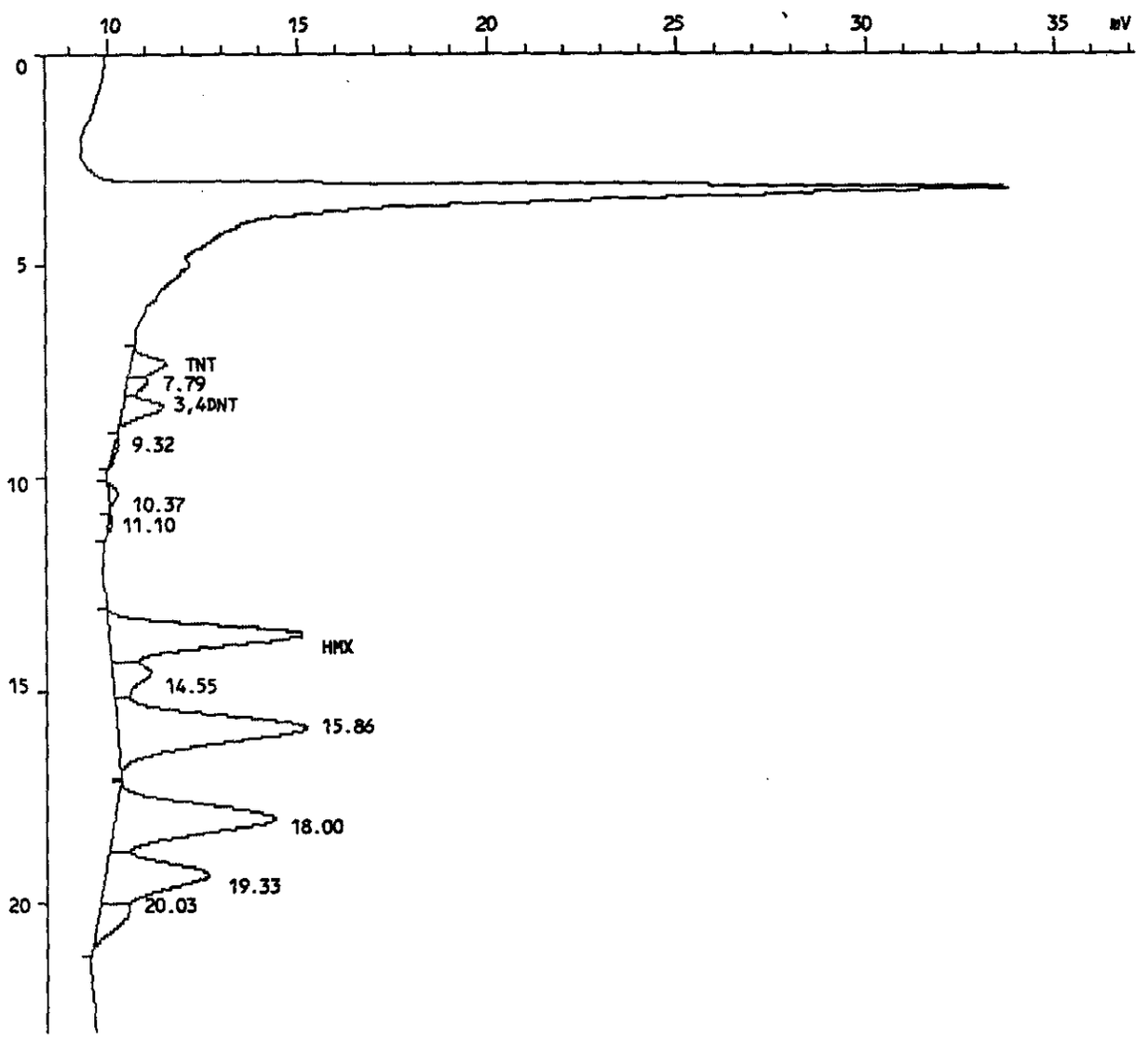
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.755	193	1445	58.692	HMX
3	8.837	601	12692	296.691	RDX *J
6	14.549	238	9221	70.242	DNB
7	18.331	3756	103317	1706.589	3,4DNT J
8	19.211	1724	47815	452.961	TNT *P
9	27.243	105	4803	86.043	2NT
Total		6617	179293	2671.218	
Residual		437	9597	253.903	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,8,1

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 10:12:48
Reported on 26-May-98 at 18:01:34



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,8,1

Acquired on 26-May-98 at 10:12:48
Modified on 26-May-82 at 17:54:52
Reported on 26-May-98 at 17:54:52

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..: 3CN0525A Last modified on 26-May-82 at 17:51:34
Method file.....: LCCN Last modified on 26-May-82 at 17:52:40
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06
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

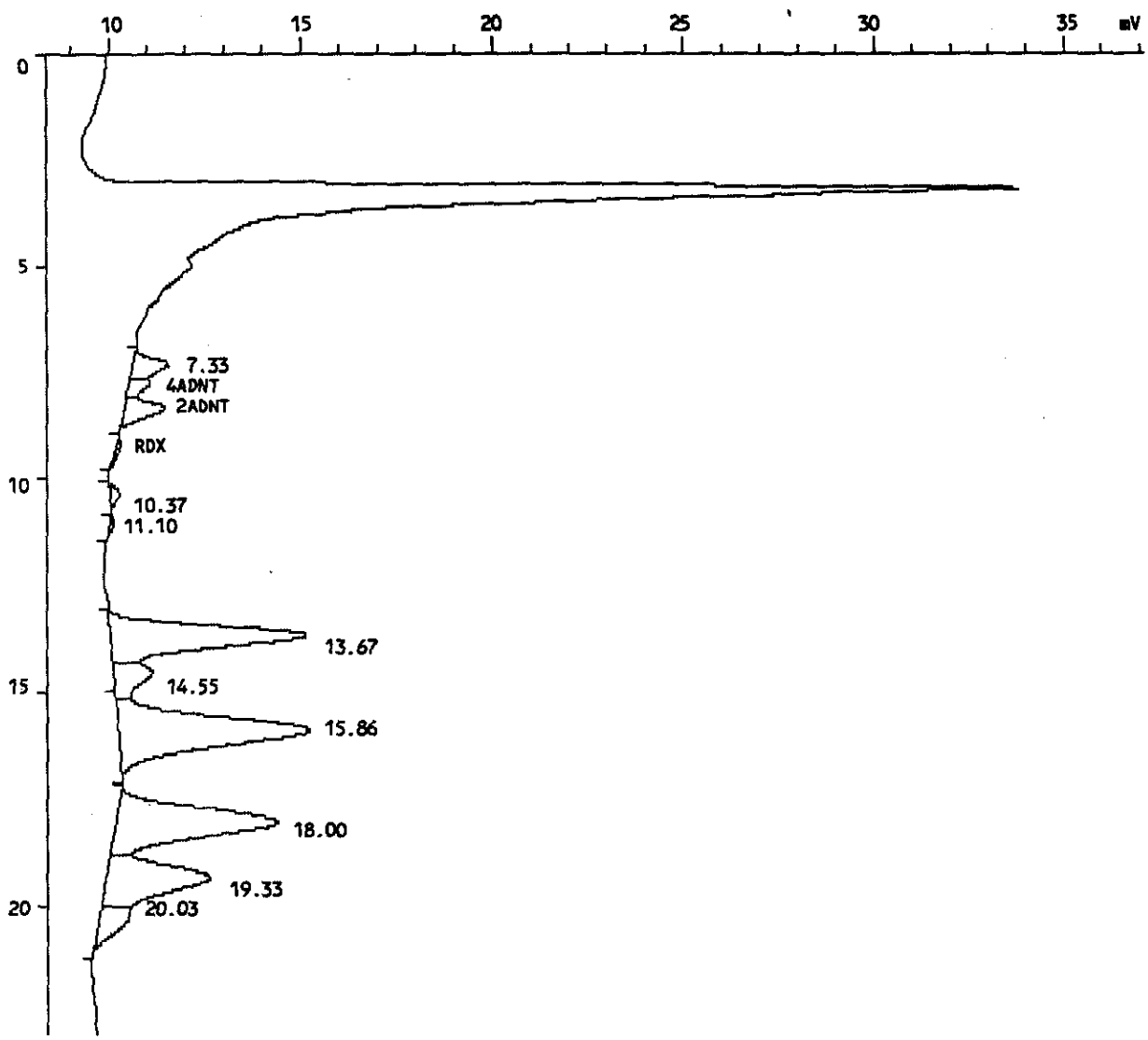
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.328	914	23541	912.779	TNT
3	8.373	1086	28172	1949.640	3,4DNT
7	13.669	5090	169484	16931.457	HMX
Total		7090	221197	19793.877	
Residual		14705	637838	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,8,1

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 10:12:48
Reported on 26-May-98 at 19:11:02



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,8,1

Acquired on 26-May-98 at 10:12:48
Modified on 26-May-82 at 19:07:12
Reported on 26-May-98 at 19:07:11

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..: 3CN0525B Last modified on 26-May-82 at 19:05:50
Method file.....: LCCN Last modified on 26-May-82 at 19:06:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06
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	7.787	547	10856	646.977	4ADNT
3	8.373	1086	28172	1022.959	2ADNT
4	9.323	102	2559	185.403	RDX
Total		1735	41587	1855.340	
Residual		20060	817448	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-B3 RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.06 RE

Sample Amt: 2g % Moisture 19.26 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/26/98

Extraction Method: SONC Date Analyzed: 05/30/98

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	19700	P
121-82-4	RDX	152000	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	34000	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

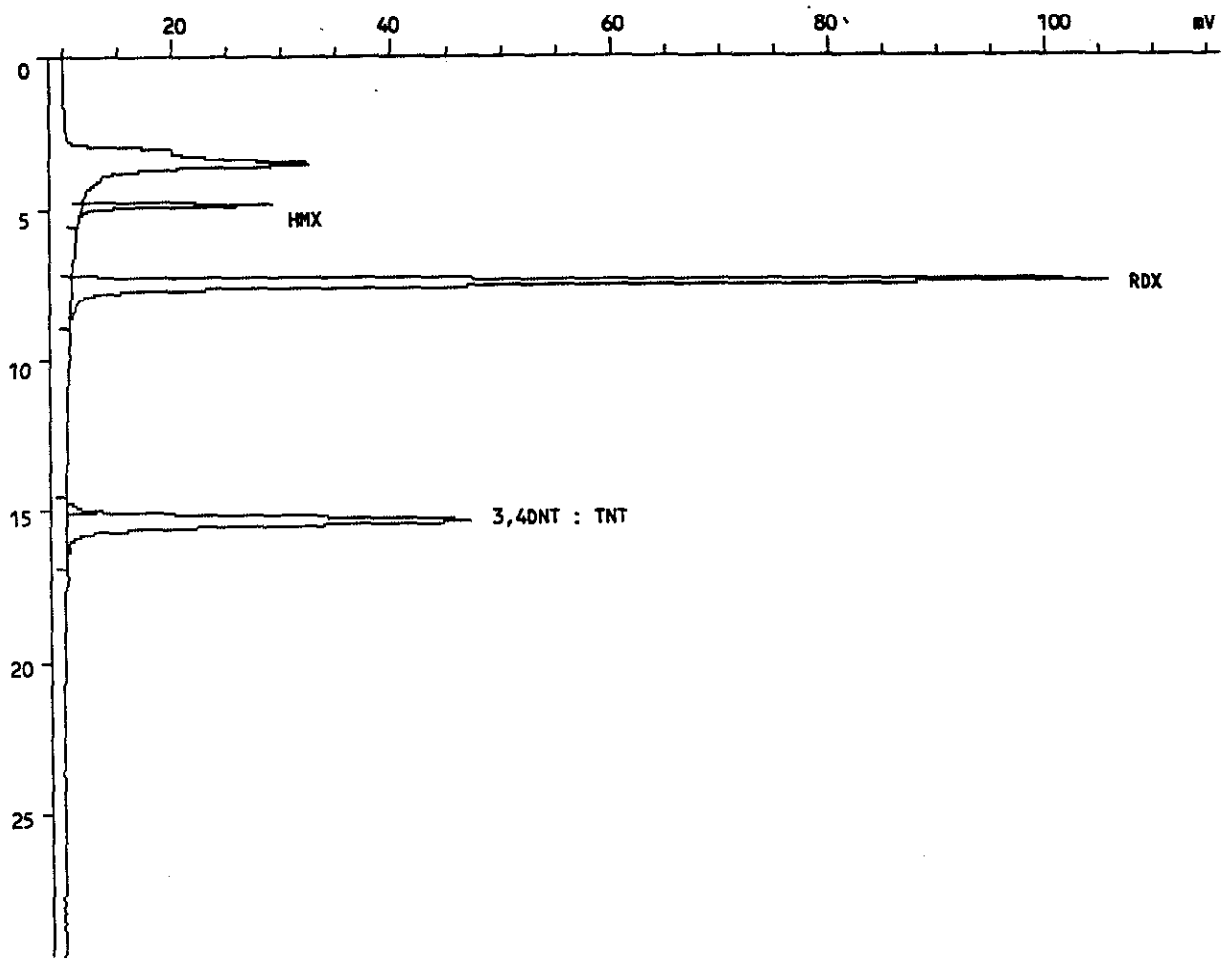
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0528B,14,1

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06 RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 30-May-98 at 04:41:38
Reported on 04-Jun-98 at 11:03:51



INJECTION REPORT

Injection F: <MC3> 5 5EX0528B,14,1

Acquired on 30-May-98 at 04:41:38
Modified on 04-Jun-82 at 10:57:30
Reported on 04-Jun-98 at 10:57:30

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.: 28
Calibration file..: 5EX0528 Last modified on 04-Jun-82 at 10:53:08
Method file.....: EXPLOS Last modified on 04-Jun-82 at 10:53:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06 RE
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

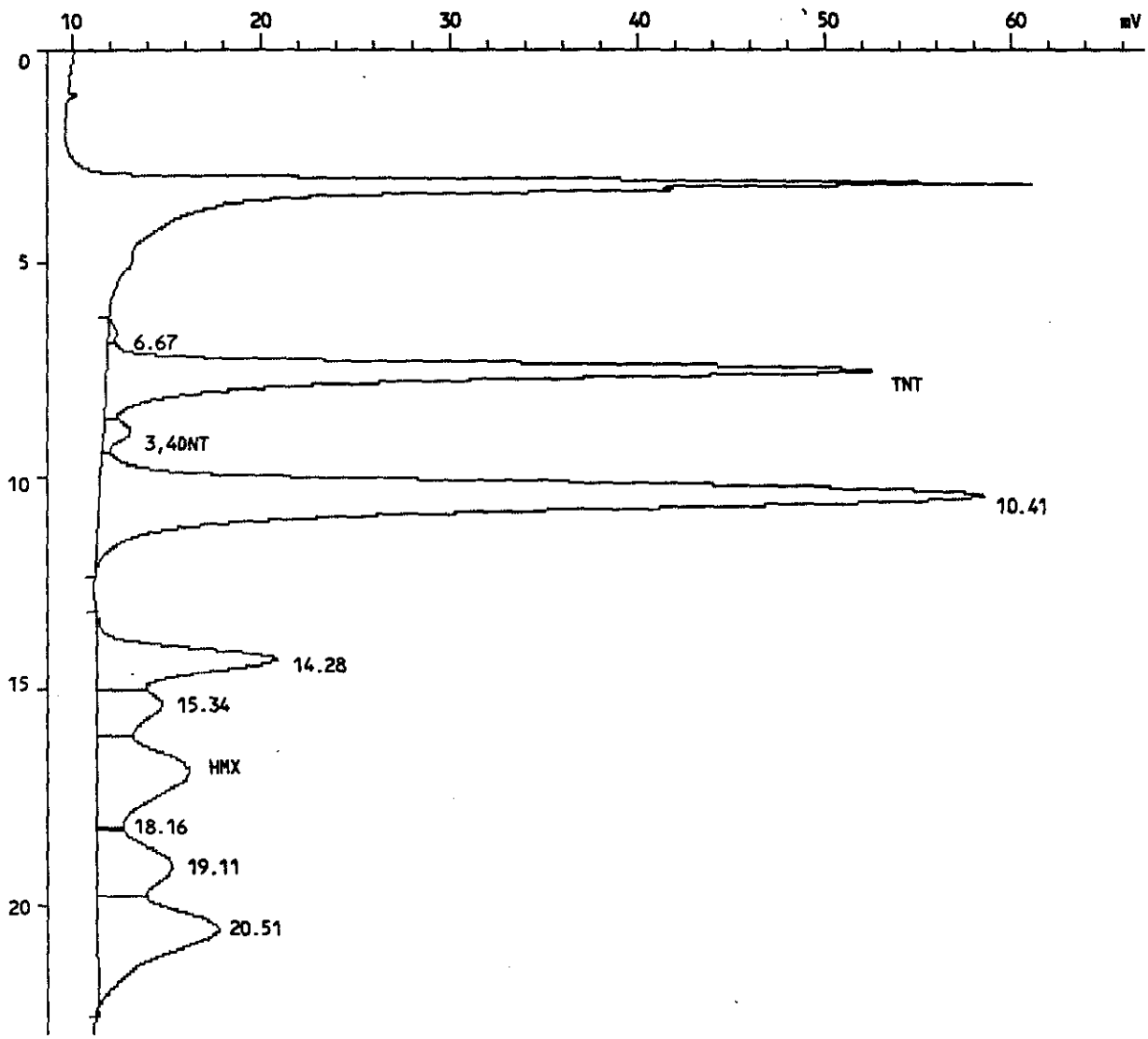
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.896	17385	147910	19721.297	HMX * P
2	7.429	94980	1408048	152386.172	RDX * E
3	15.056	2608	22839	2187.643	3,4DNT 109.38%
4	15.376	37000	816576	33995.668	TNT * E
Total		151973	2395373	208290.781	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,8,1

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06 RL
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 03:17:47
Reported on 08-Jun-98 at 10:55:22



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,8,1

Acquired on 06-Jun-98 at 03:17:47
Modified on 08-Jun-82 at 10:48:00
Reported on 08-Jun-98 at 10:48:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06RE
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

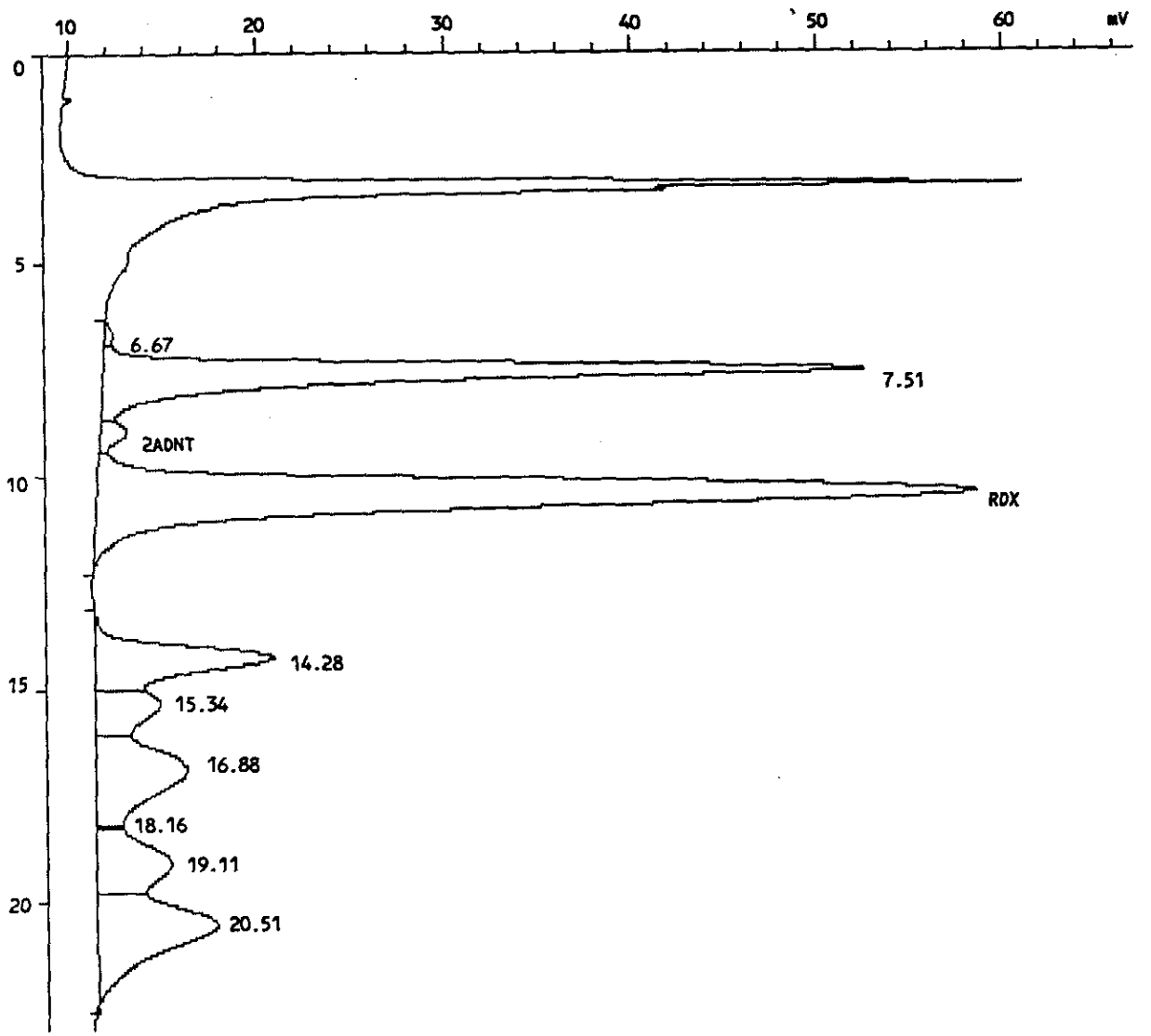
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.509	40757	1176769	46790.004	TNT
3	8.944	1462	49535	3589.504	3,4DNT
7	16.880	4872	402873	41405.281	HMX
Total		47091	1629177	91784.789	
Residual		72364	3469059	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,8,1

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 03:17:47
Reported on 08-Jun-98 at 11:26:04



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,8,1

Acquired on 06-Jun-98 at 03:17:47
Modified on 08-Jun-82 at 11:17:18
Reported on 08-Jun-98 at 11:17:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B3
Sample ID.....: 34017.06 RE
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	8.944	1462	49535	1994.972	2ADNT
4	10.405	47084	2073538	161114.094	RDX
Total		48546	2123074	163109.063	
Residual		70908	2975163	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-B3
RERE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.06RERE

Sample Amt: 2g % Moisture 19.26 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 06/11/98

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	1220	
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

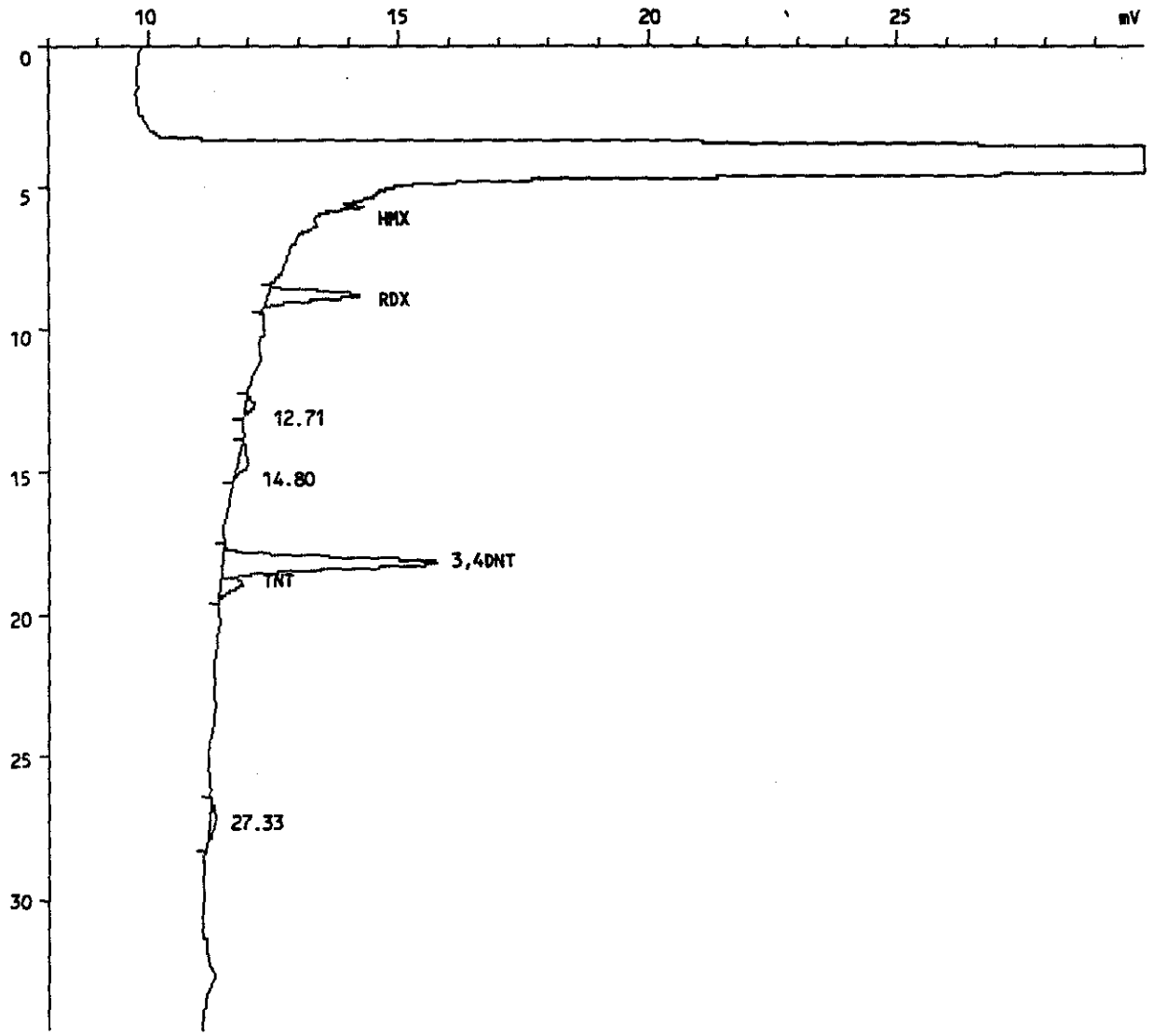
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0608C,9,1

Sample name.....: BIO-N-30%-20-B3 RERE
Sample ID.....: 34017.06RERE
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 11-Jun-98 at 03:06:44
Reported on 11-Jun-98 at 11:43:06



INJECTION REPORT

Injection F: <MC3> 2 2EX0608C,9,1

Acquired on 11-Jun-98 at 03:06:44
Modified on 11-Jun-82 at 11:42:46
Reported on 11-Jun-98 at 11:42:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0608 Last modified on 11-Jun-82 at 11:35:36
Method file.....: EXPLOS Last modified on 11-Jun-82 at 11:42:14
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B3 RE RE
Sample ID.....: 34017.06RE RE
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

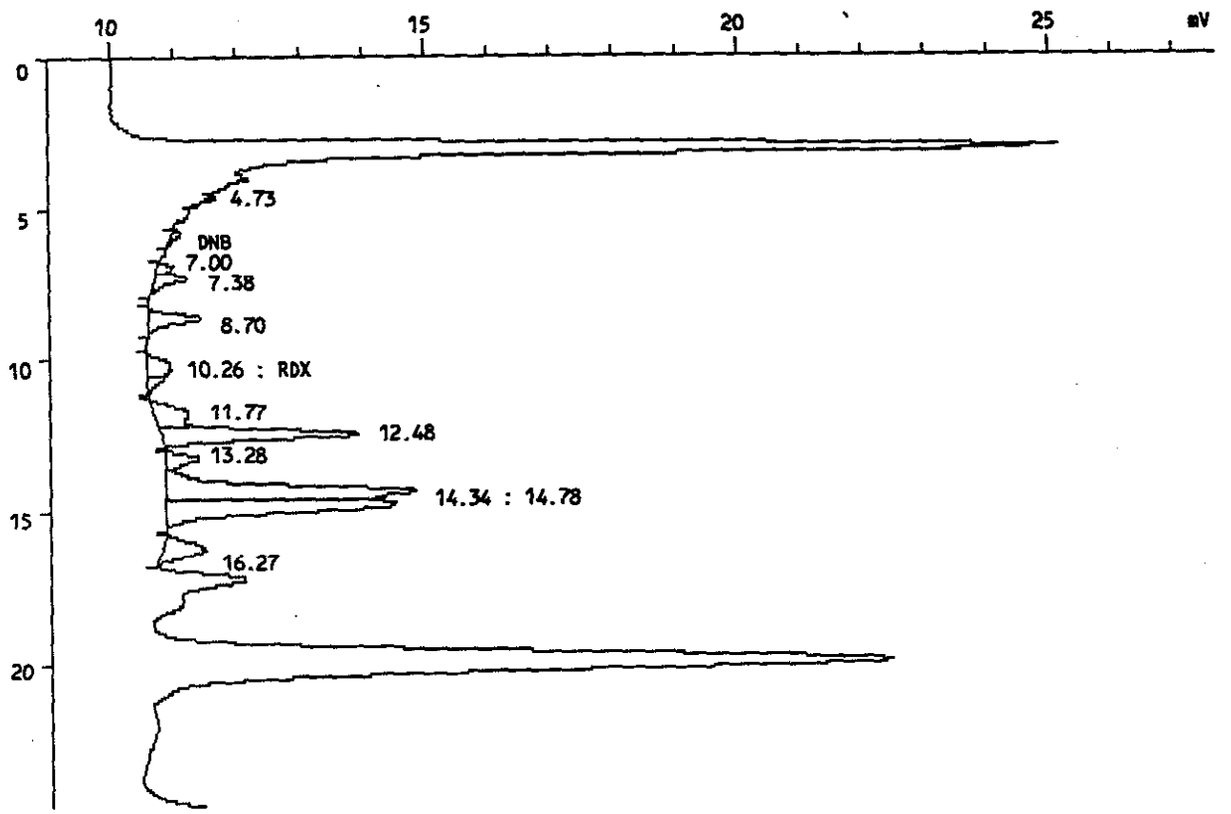
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.701	363	2996	123.283	HMX
2	8.805	1846	40454	1224.395	RDX *
5	18.171	4287	117907	2186.711	3,4DNT 109
6	18.939	456	12058	130.358	TNT
Total		6951	173415	3664.748	
Residual		541	23682	571.730	

LONG PLOT

Injection F: <MC3> 5 5CN0610B,3,1

Sample name.....: BIO-N-30%-20-B3 RE RE
Sample ID.....: 34017.06RE RE
INST ID: IN13, COL. TYPE: LC-CN, ID: LC-CN-12, INJ:100, UV

Acquired on 11-Jun-98 at 11:29:12
Reported on 12-Jun-98 at 12:32:13



INJECTION REPORT

Injection F: <MC3> 5 5CN0610B,3,1

Acquired on 11-Jun-98 at 11:29:12
Modified on 12-Jun-82 at 12:28:08
Reported on 12-Jun-98 at 12:31:29

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: LC-CN, ID: LC-CN-12,INJ:100, UV
Number of samples.: 10
Calibration file..: 5CN0610A Last modified on 12-Jun-82 at 11:14:34
Method file.....: LCCN Last modified on 12-Jun-82 at 12:31:02
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-B3 RE RV
Sample ID.....: 34017.06RE RV
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	5.888	150	2927	156.505	DNB
7	10.549	297	5755	903.512	RDX
Total		446	8682	1060.017	
Residual		14738	394610	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.06

Sample Amt: 2g % Moisture 19.26 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

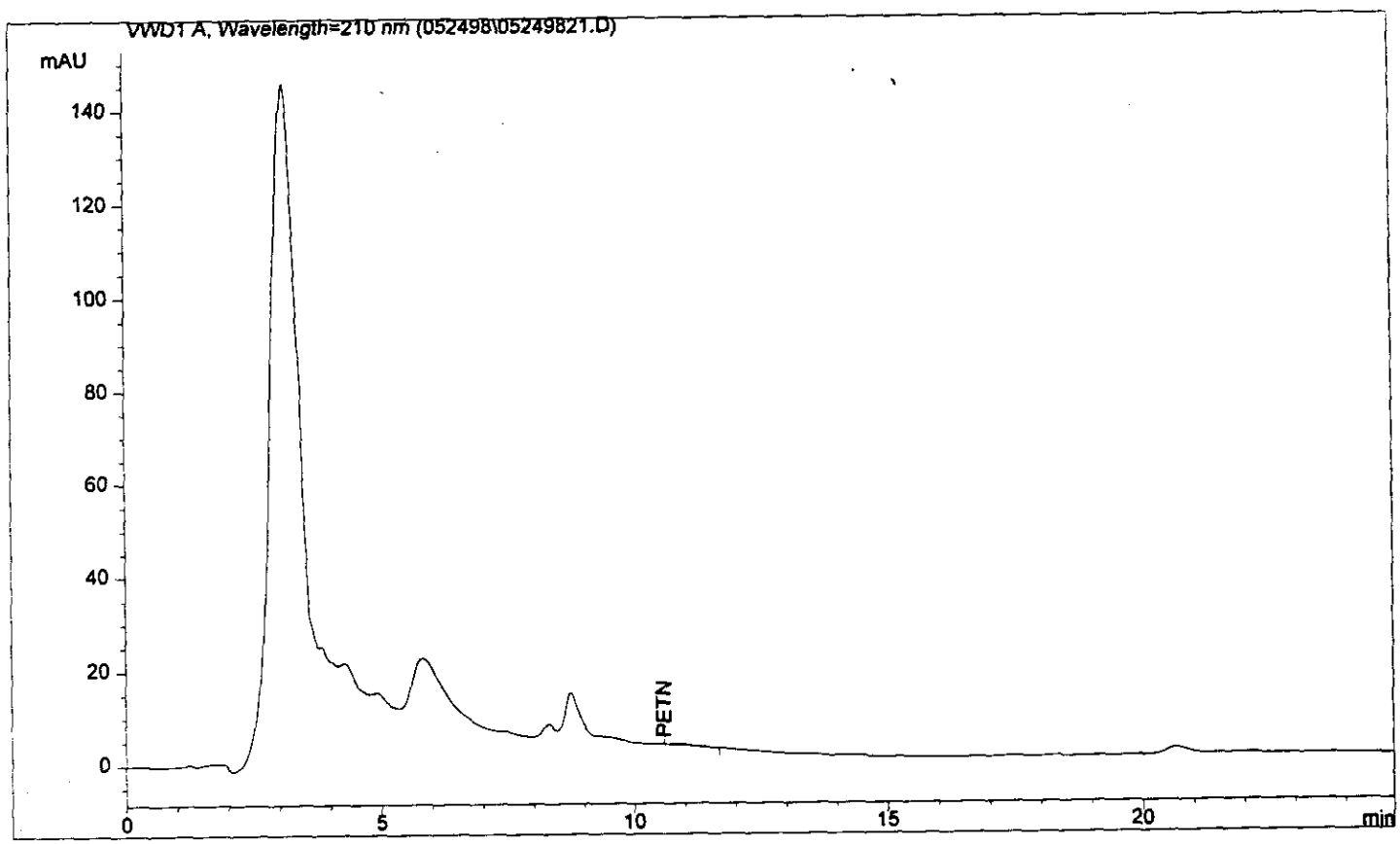
FORM I

Injection Date : Mon, 25. May. 1998
Sample Name : 34017.06
Acq Operator : SS

Seq Line : 21
Vial No. : 21
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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

Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
10.846	BBA	5.03621	2.93257	147.69060	PETN
Totals:				147.69060	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-Cl

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.07

Sample Amt: 2g % Moisture 26.89 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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	38500	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	11500	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

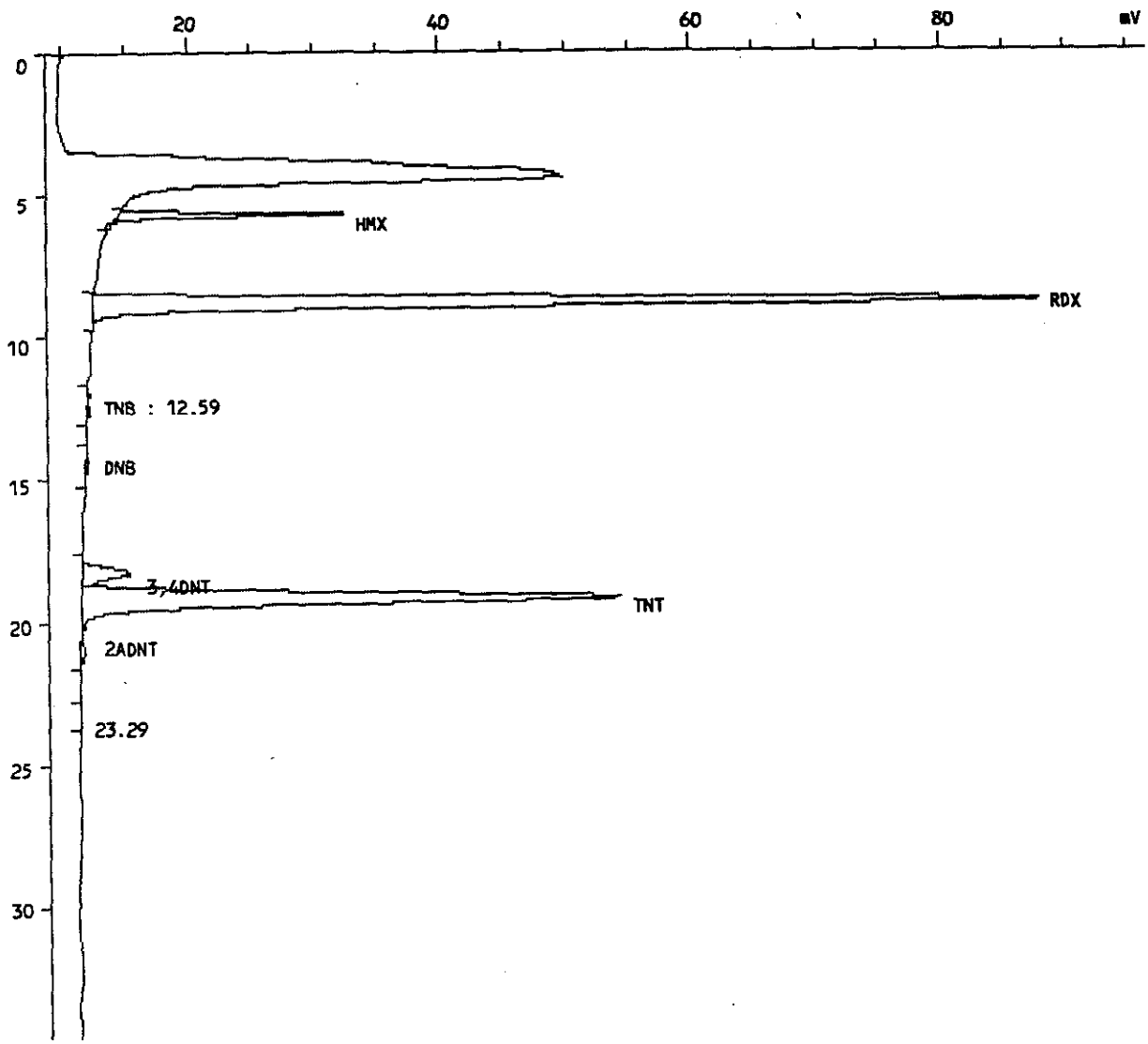
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,19,1

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 11:12:25
Reported on 26-May-98 at 17:19:23



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,19,1

Acquired on 22-May-98 at 11:12:25
Modified on 26-May-82 at 17:18:44
Reported on 26-May-98 at 17:18:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:01:24
Method file.....: EXPLOS Last modified on 26-May-82 at 17:16:40
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07
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

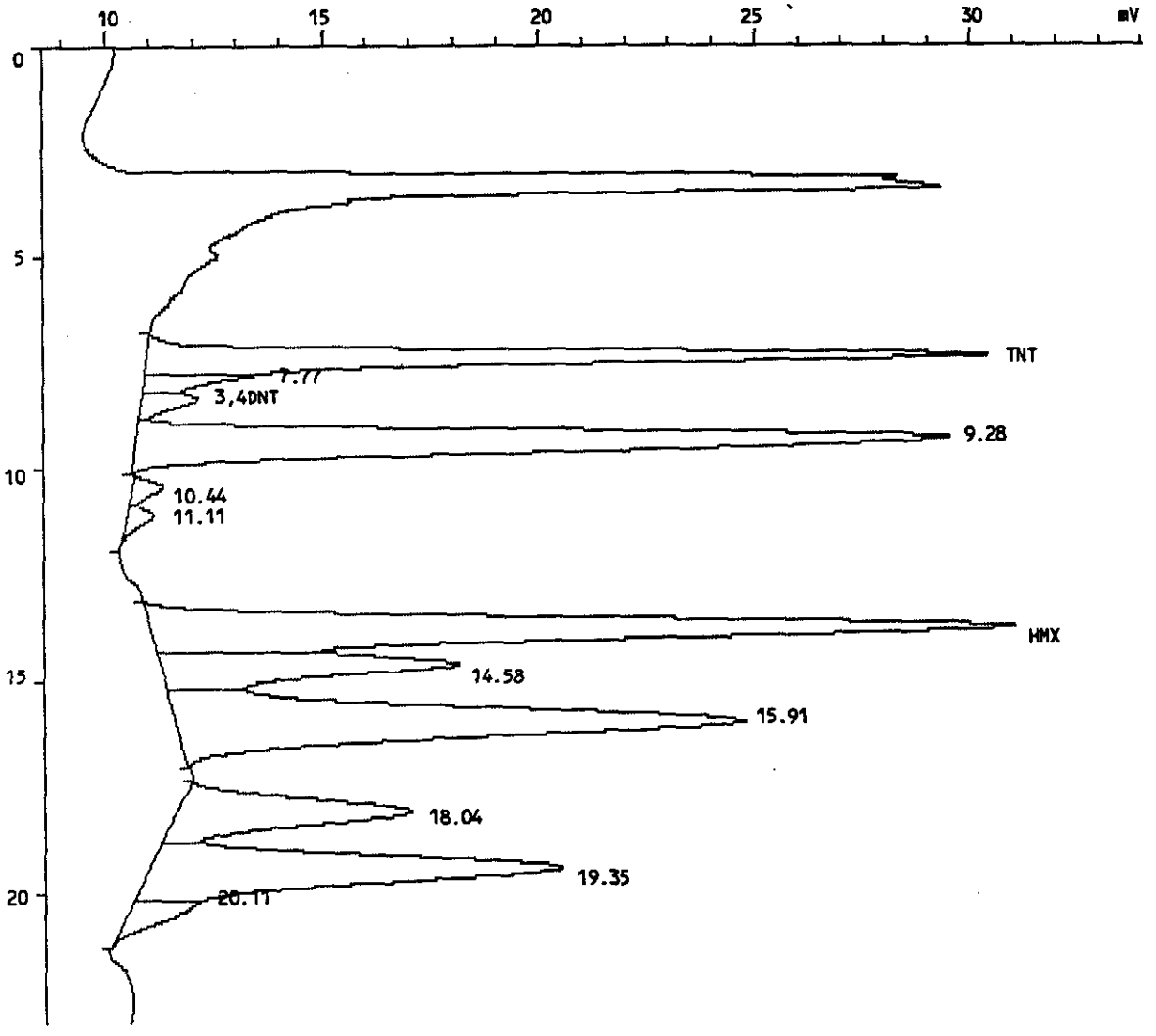
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.744	18076	186434	7572.478	HMX
2	8.816	75387	1645746	38469.988	RDX *E
3	12.043	195	4206	49.830	TNB
5	14.587	219	9583	72.993	DNB
6	18.336	3790	100999	1668.295	3,4DNT
7	19.221	42800	1215893	11518.502	TNT *E
8	21.072	331	12087	114.482	2ADNT
Total		140797	3174947	59466.566	
Residual		326	9544	106.234	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,9,1

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 10:57:09
Reported on 26-May-98 at 18:02:00



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,9,1

Acquired on 26-May-98 at 10:57:09
Modified on 26-May-82 at 17:55:06
Reported on 26-May-98 at 17:55:06

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..: 3CN0525A Last modified on 26-May-82 at 17:51:34
Method file.....: LCCN Last modified on 26-May-82 at 17:52:40
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07
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

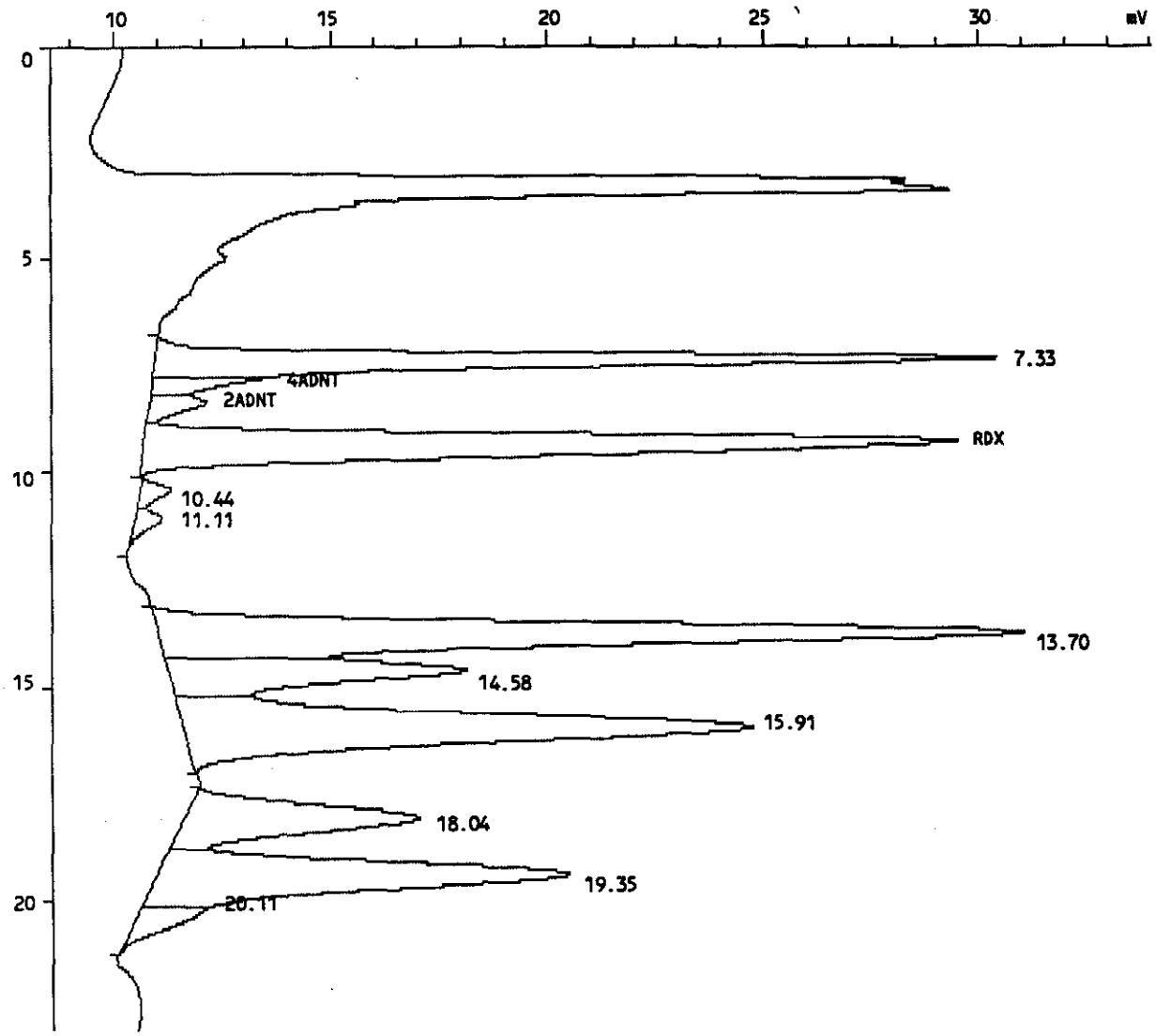
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.333	19475	417483	16187.795	TNT
3	8.363	1316	34205	2367.117	3,4DNT
7	13.696	19978	654996	65434.188	HMX
Total		40769	1106684	83989.102	
Residual		59528	2265575	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,9,1

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 10:57:09
Reported on 26-May-98 at 19:11:22



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,9,1

Acquired on 26-May-98 at 10:57:09
Modified on 26-May-82 at 19:07:40
Reported on 26-May-98 at 19:07:40

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..: 3CN0525B Last modified on 26-May-82 at 19:05:50
Method file.....: LCCN Last modified on 26-May-82 at 19:06:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07
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	7.771	2799	40854	2434.670	4ADNT
3	8.363	1316	34205	1242.006	2ADNT
4	9.280	18813	613238	44437.543	RDX
Total		22928	688297	48114.219	
Residual		77369	2683962	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-C1 RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.07 RE

Sample Amt: 2g % Moisture 26.89 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/26/98

Extraction Method: SONC Date Analyzed: 05/30/98

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

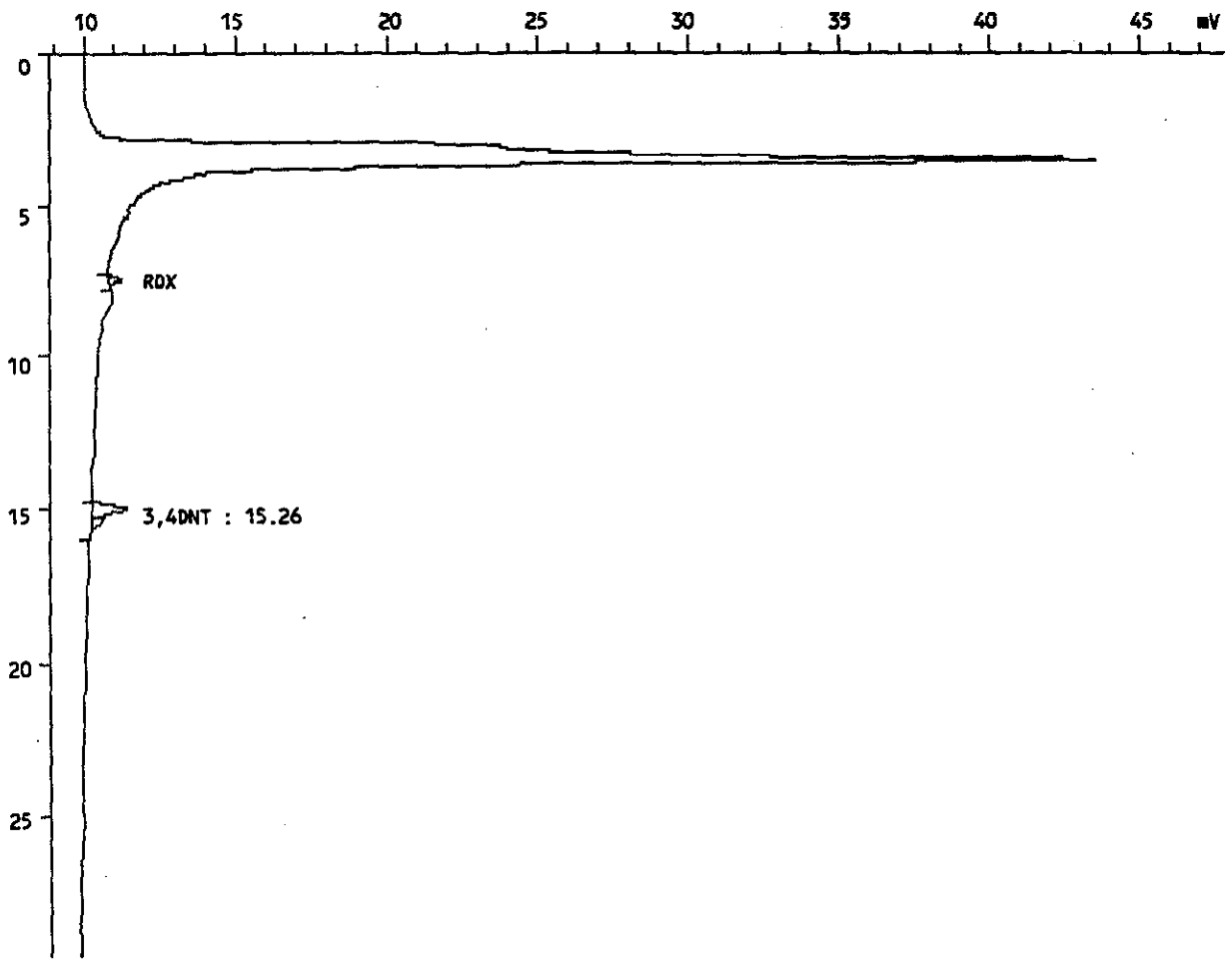
FORM I

LONG PLOT

Injection F: <MC3> 5 SEX0528B,15,1

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 30-May-98 at 05:26:21
Reported on 04-Jun-98 at 11:04:13



INJECTION REPORT

Injection F: <MC3> 5 5EX0528B,15,1

Acquired on 30-May-98 at 05:26:21
Modified on 04-Jun-82 at 10:57:46
Reported on 04-Jun-98 at 10:57:45

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.: 28
Calibration file..: 5EX0528 Last modified on 04-Jun-82 at 10:53:08
Method file.....: EXPLOS Last modified on 04-Jun-82 at 10:53:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07RE
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

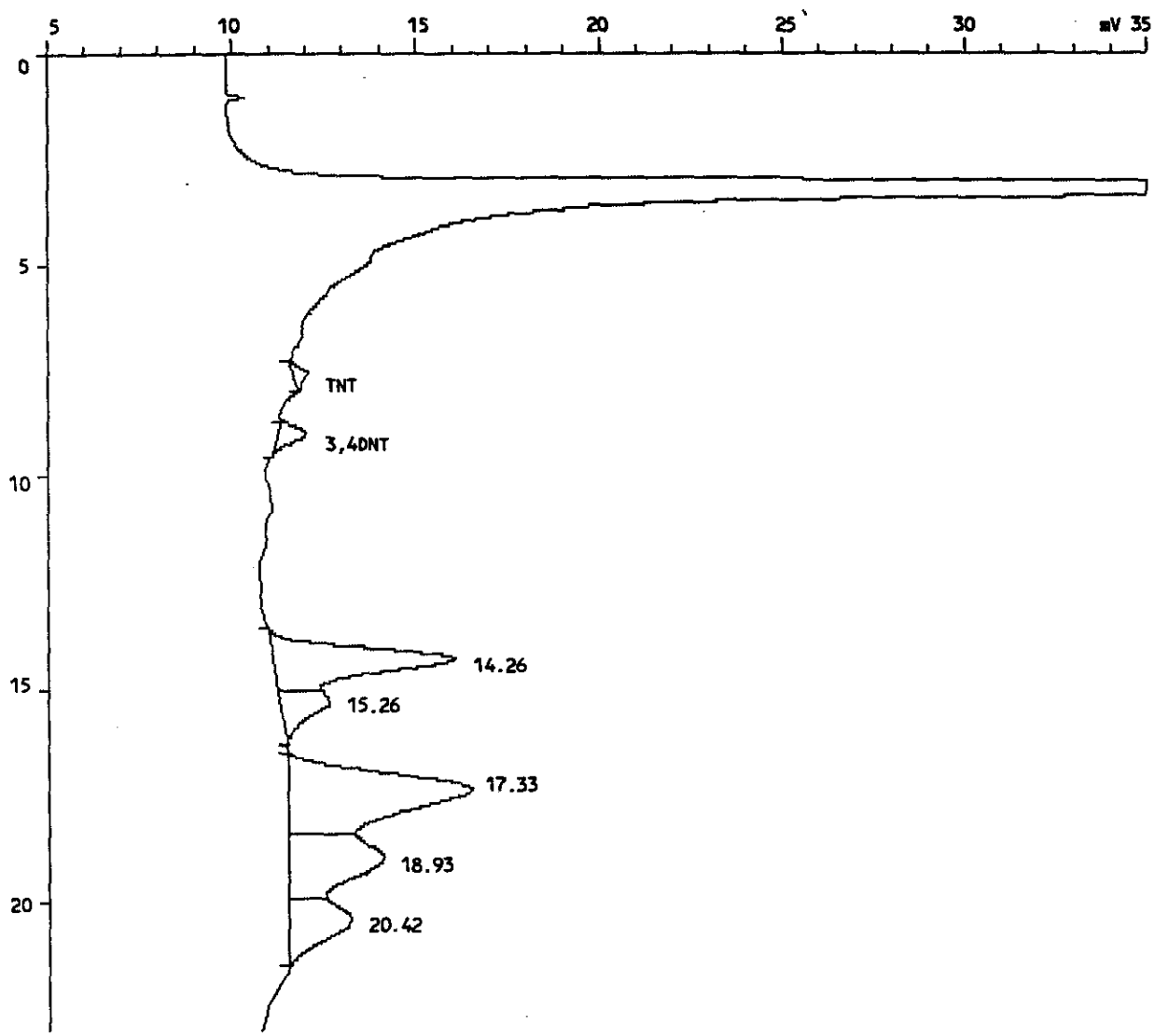
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.467	414	5149	557.288	RDX
2	15.029	1170	22233	2129.620	3,4DNT 106.48%
Total		1585	27383	2686.908	
Residual		444	9109	872.475	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,11,1

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 05:30:52
Reported on 08-Jun-98 at 10:56:24



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,11,1

Acquired on 06-Jun-98 at 05:30:52
Modified on 08-Jun-82 at 10:48:14
Reported on 08-Jun-98 at 10:48:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07RE
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

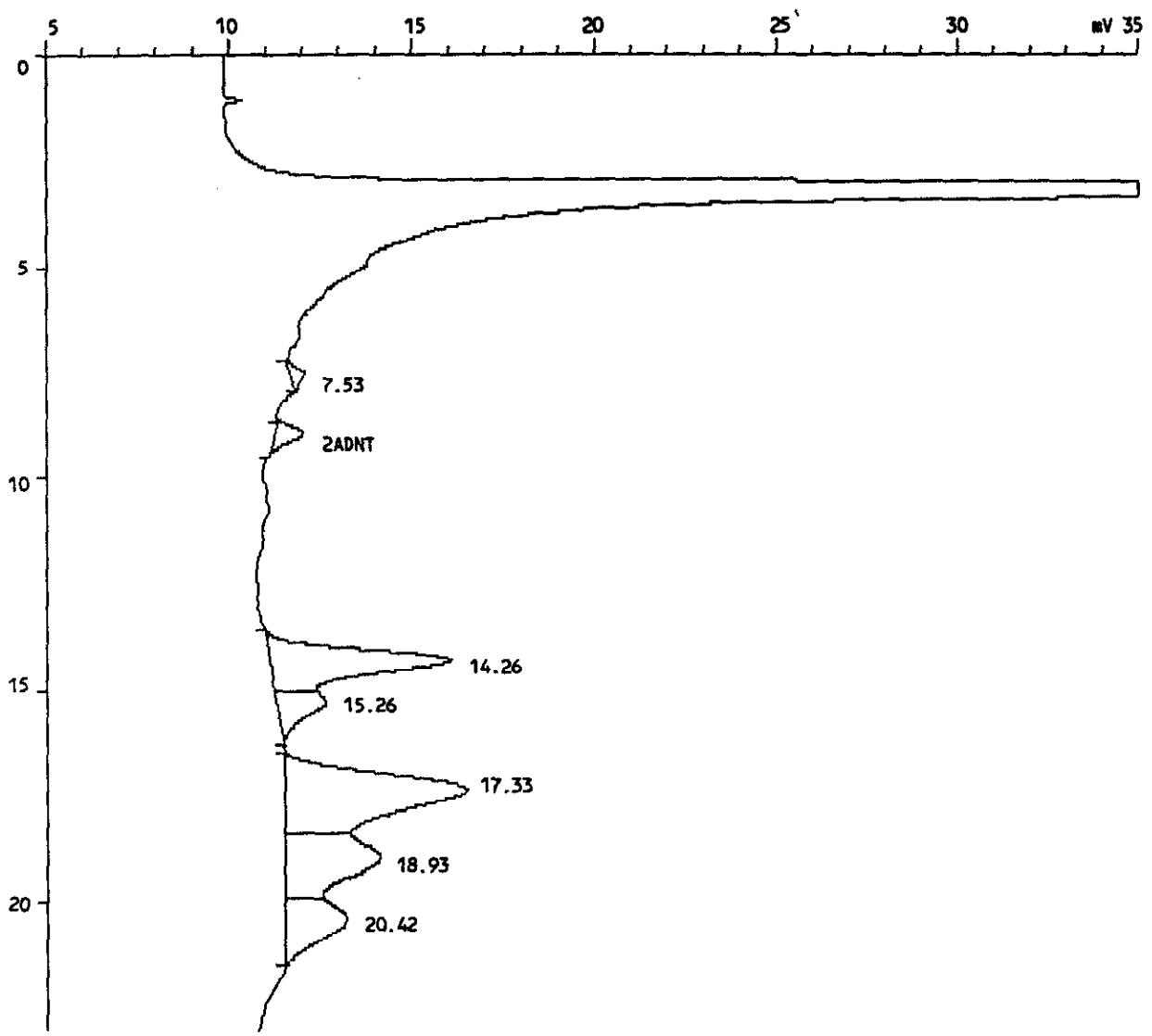
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.531	362	7768	308.856	TNT
2	9.019	774	20345	1474.261	3,4DNT
Total		1136	28113	1783.117	
Residual		15624	864038	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,11,1

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 05:30:52
Reported on 08-Jun-98 at 11:26:43



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,11,1

Acquired on 06-Jun-98 at 05:30:52
Modified on 08-Jun-82 at 11:17:06
Reported on 08-Jun-98 at 11:17:05

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C1
Sample ID.....: 34017.07RE
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	9.019	774	20345	819.364	2ADNT
Total		774	20345	819.364	
Residual		15986	871805	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-C1 RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.07RERE

Sample Amt: 2g % Moisture 26.89 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 06/11/98

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	246	JP
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

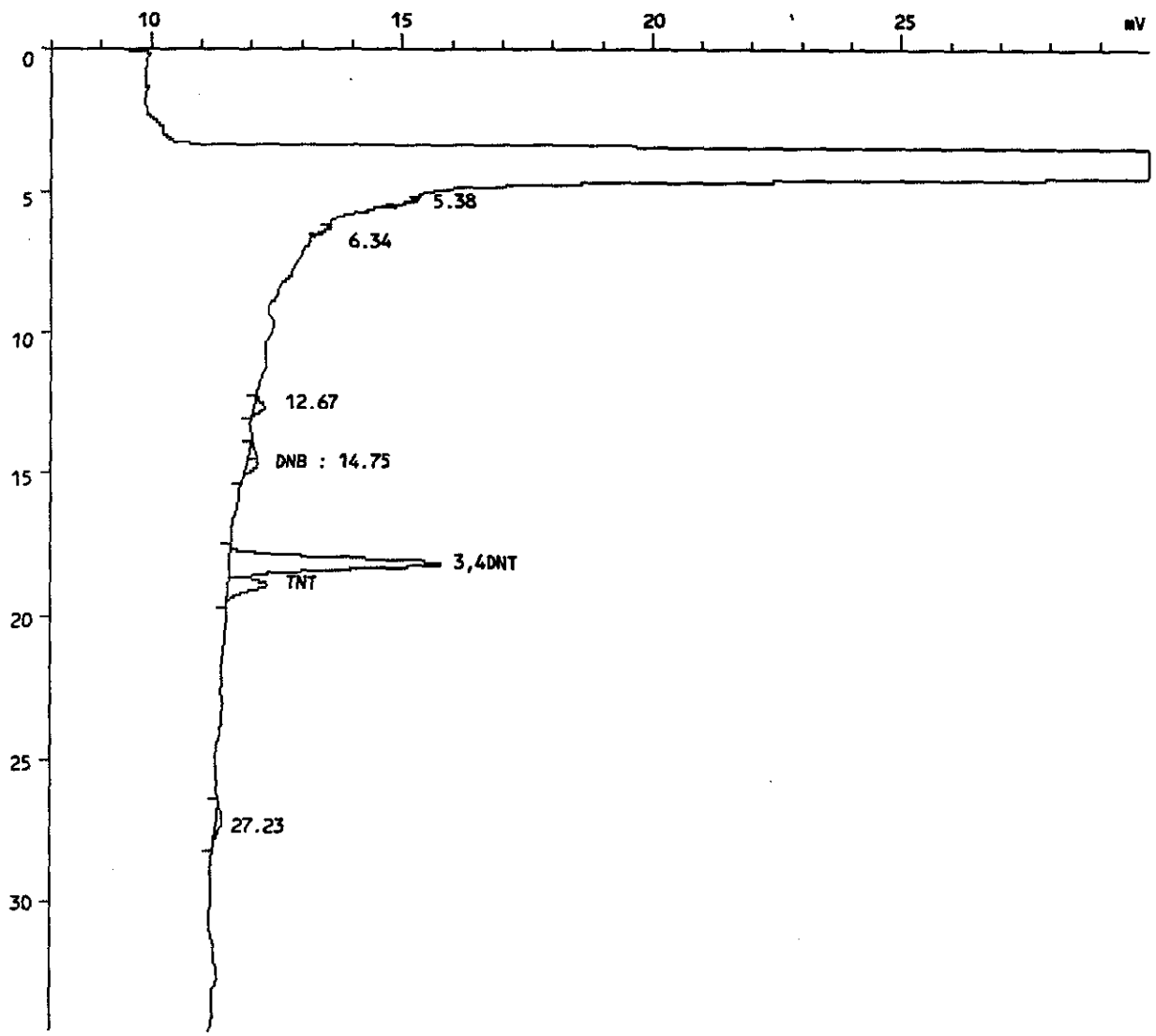
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0608C,14,1

Sample name.....: BIO-N-30%-20-C1 RE RE
Sample ID.....: 34017.07RE RE
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 11-Jun-98 at 06:49:54
Reported on 11-Jun-98 at 11:42:16



INJECTION REPORT

Injection F: <MC3> 2 2EX0608C,14,1

Acquired on 11-Jun-98 at 06:49:54
Modified on 11-Jun-82 at 11:41:12
Reported on 11-Jun-98 at 11:41:34

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0608 Last modified on 11-Jun-82 at 11:35:36
Method file.....: EXPLOS Last modified on 11-Jun-82 at 11:27:46
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C1 RE RE
Sample ID.....: 34017.07RE RE
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

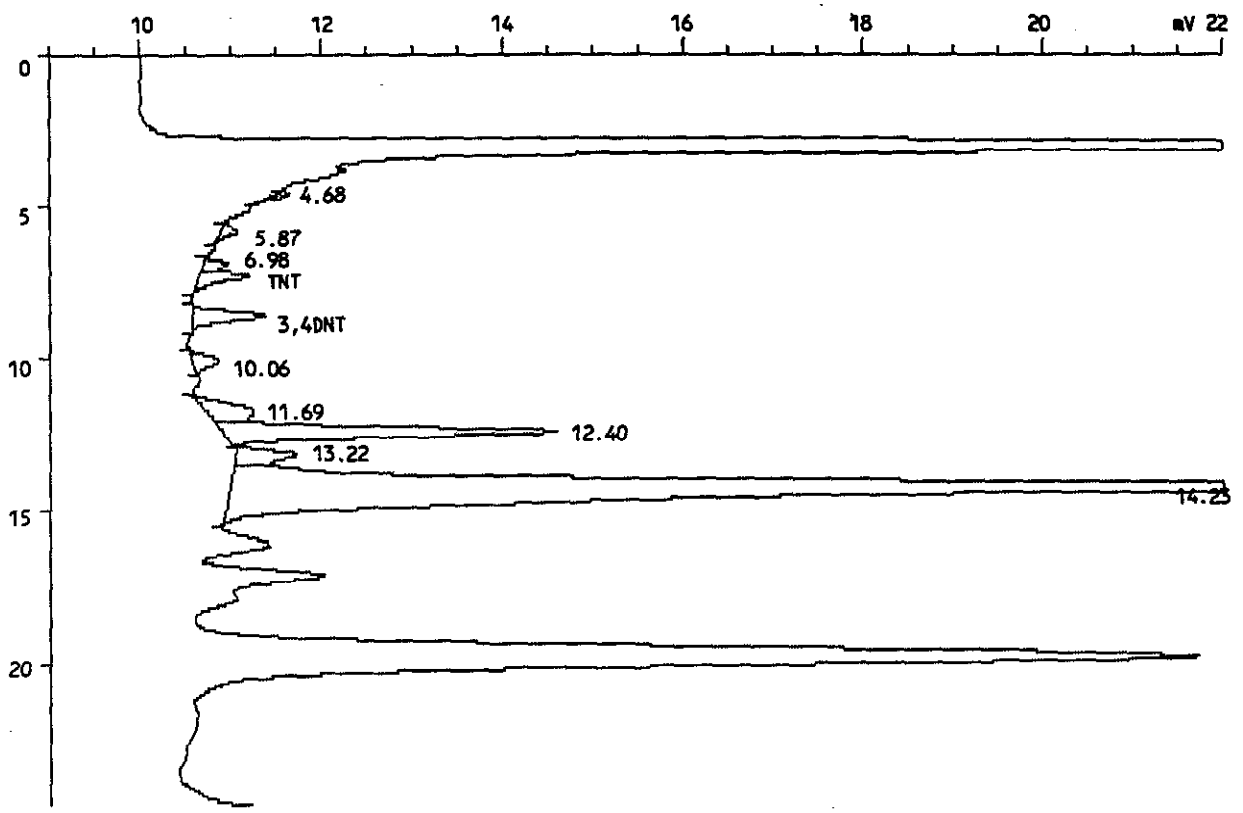
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
4	14.480	175	3469	30.006	DNB
6	18.171	4204	113702	2108.720	3,4DNT 105
7	18.944	807	22798	246.468	TNT * JP
Total		5186	139970	2385.194	
Residual		1012	25957	241.550	

LONG PLOT

Injection F: <MC3> 5 5CN0610B,6,1

Sample name.....: BIO-N-30%-20-C1 RE RE
Sample ID.....: 34017.07RE RE
INST ID: IN13, COL. TYPE: LC-CN, ID: LC-CN-12, INJ:100, UV

Acquired on 11-Jun-98 at 13:12:23
Reported on 12-Jun-98 at 12:30:37



INJECTION REPORT

Injection F: <MC3> 5 5CN0610B,6,1

Acquired on 11-Jun-98 at 13:12:23
Modified on 12-Jun-82 at 12:30:06
Reported on 12-Jun-98 at 12:30:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: LC-CN, ID: LC-CN-12,INJ:100, UV
Number of samples.: 10
Calibration file..: 5CN0610A Last modified on 12-Jun-82 at 11:14:34
Method file.....: LCCN Last modified on 12-Jun-82 at 10:45:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C1 RE RE
Sample ID.....: 34017.07RE RE
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	7.355	565	11788	970.169	TNT
5	8.651	797	16980	2276.144	3,4DNT
Total		1362	28768	3246.313	
Residual		20506	654124	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-C1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.07

Sample Amt: 2g % Moisture 26.89 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

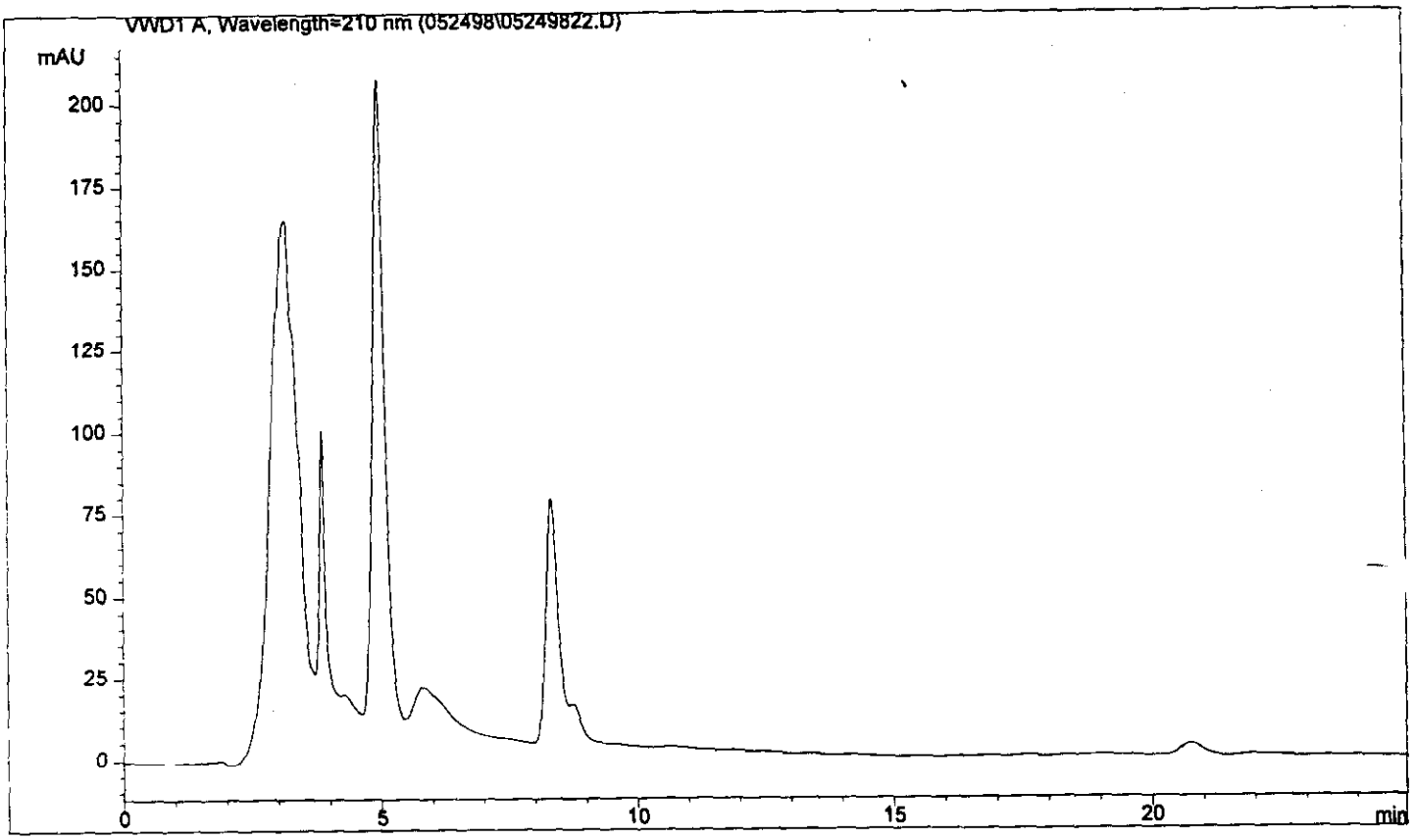
FORM I

Injection Date : Mon, 25. May. 1998
Sample Name : 34017.07
Acq Operator : SS

Seq Line : 22
Vial No. : 22
Inj. No. : 1
Inj. Vol. : 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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

Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.10

Sample Amt: 2g % Moisture 18.54 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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

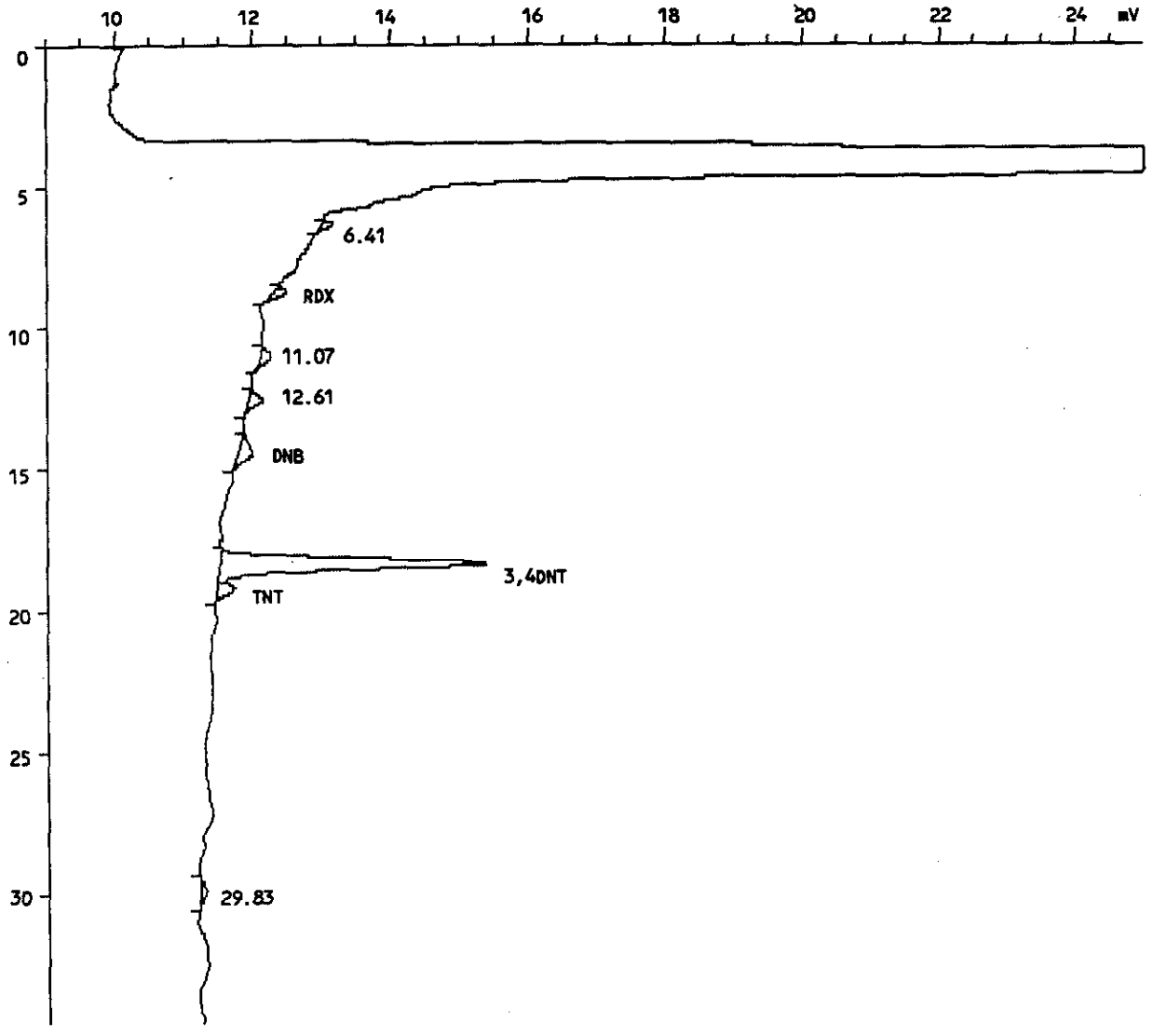
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,22,1

Sample name.....: BIO-N-30%-20-C2
Sample ID.....: 34017.10
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 13:26:17
Reported on 26-May-98 at 17:21:39



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,22,1

Acquired on 22-May-98 at 13:26:17
Modified on 26-May-82 at 17:21:06
Reported on 26-May-98 at 17:21:06

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:01:24
Method file.....: EXPLOS Last modified on 26-May-82 at 17:19:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C2
Sample ID.....: 34017.10
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	8.853	210	4320	100.990	RDX
5	14.581	207	8753	66.674	DNB
6	18.357	3863	105821	1747.945	3,4DNT ?
7	19.227	266	7089	67.159	TNT
Total		4546	125983	1982.768	
Residual		645	16895	350.876	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-C2 RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.10 RE

Sample Amt: 2g % Moisture 18.54 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/26/98

Extraction Method: SONC Date Analyzed: 05/30/98

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	292	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

INJECTION REPORT

Injection F: <MC3> 5 5EX0528B,18,1

Acquired on 30-May-98 at 07:40:33
Modified on 04-Jun-82 at 10:58:48
Reported on 04-Jun-98 at 10:58:47

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.: 28
Calibration file..: 5EX0528 Last modified on 04-Jun-82 at 10:53:08
Method file.....: EXPLOS Last modified on 04-Jun-82 at 10:53:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C2
Sample ID.....: 34017.10RE
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

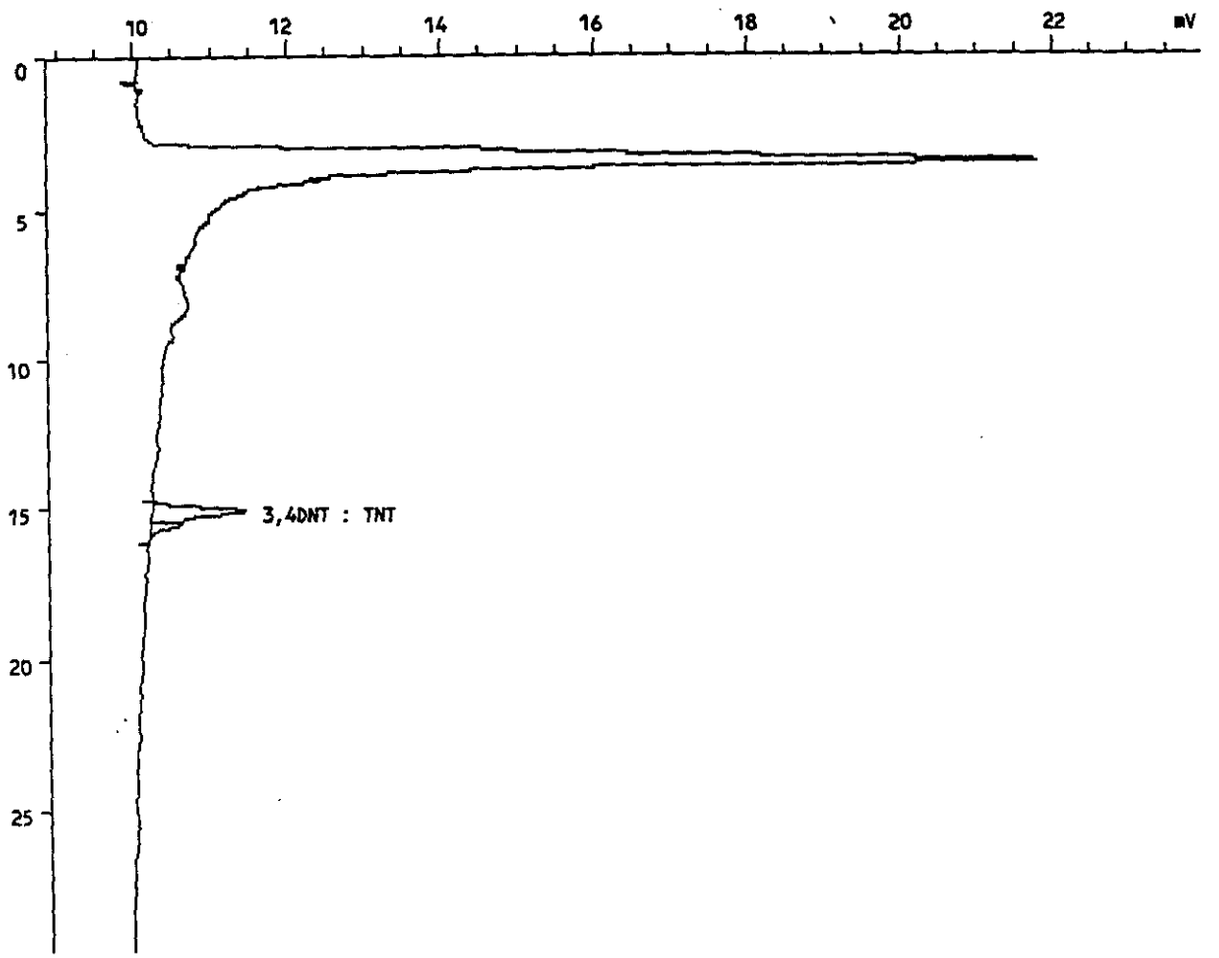
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	15.141	1212	26224	2511.835	3,4DNT 125.59%
2	15.461	430	7009	291.794	TNT *p
Total		1642	33232	2803.629	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 5 5EX0528B,18,1

Sample name.....: BIO-N-30%-20-C2
Sample ID.....: 34017.10RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 30-May-98 at 07:40:33
Reported on 04-Jun-98 at 11:05:18

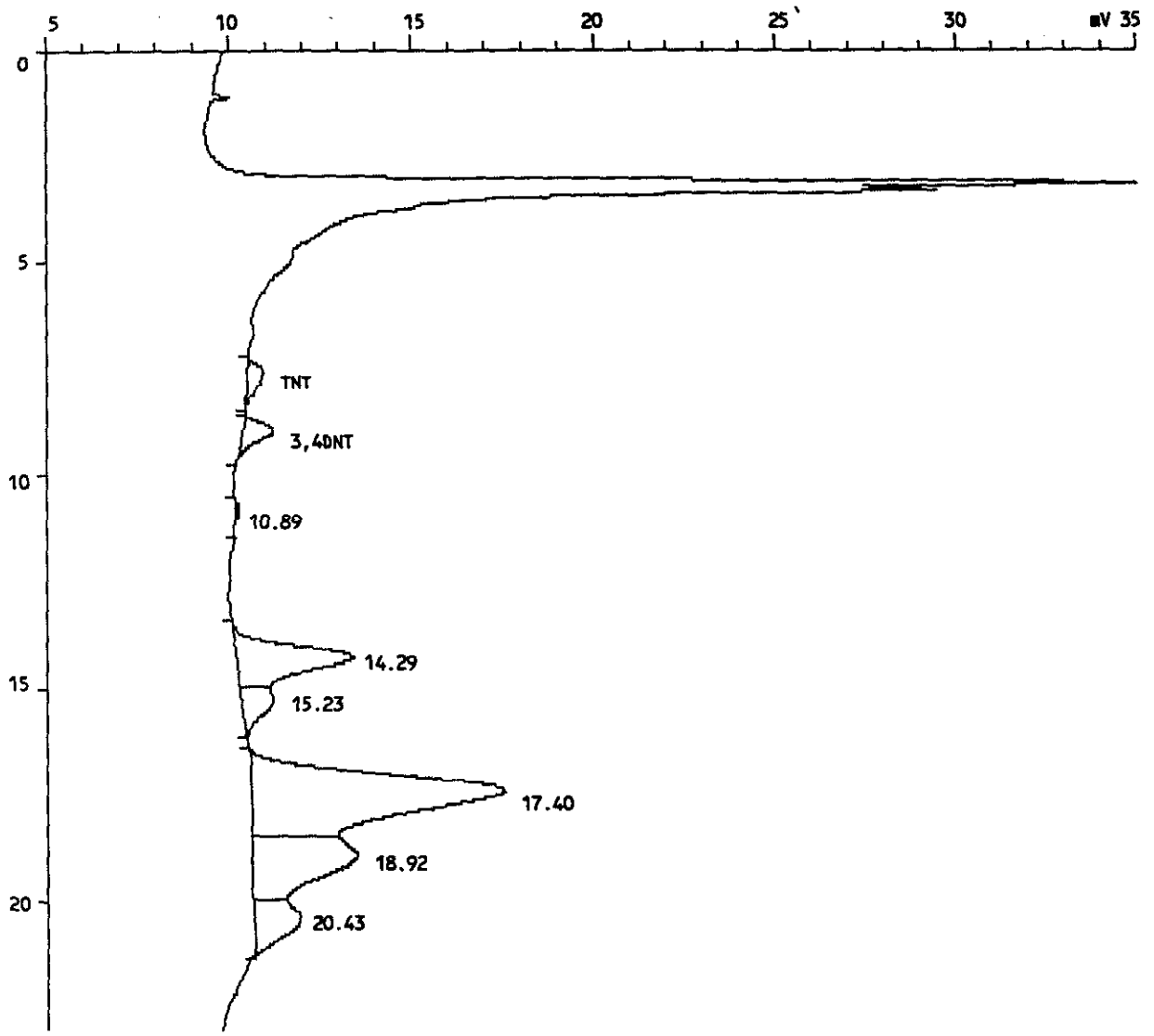


LONG PLOT

Injection F: <MC3> 3 3CN0605A,12,1

Sample name.....: BIO-N-30%-20-C2
Sample ID.....: 34017.10 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 06:15:13
Reported on 08-Jun-98 at 10:56:47



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,12,1

Acquired on 06-Jun-98 at 06:15:13
Modified on 08-Jun-82 at 10:48:26
Reported on 08-Jun-98 at 10:48:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C2
Sample ID.....: 34017.10 RE
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

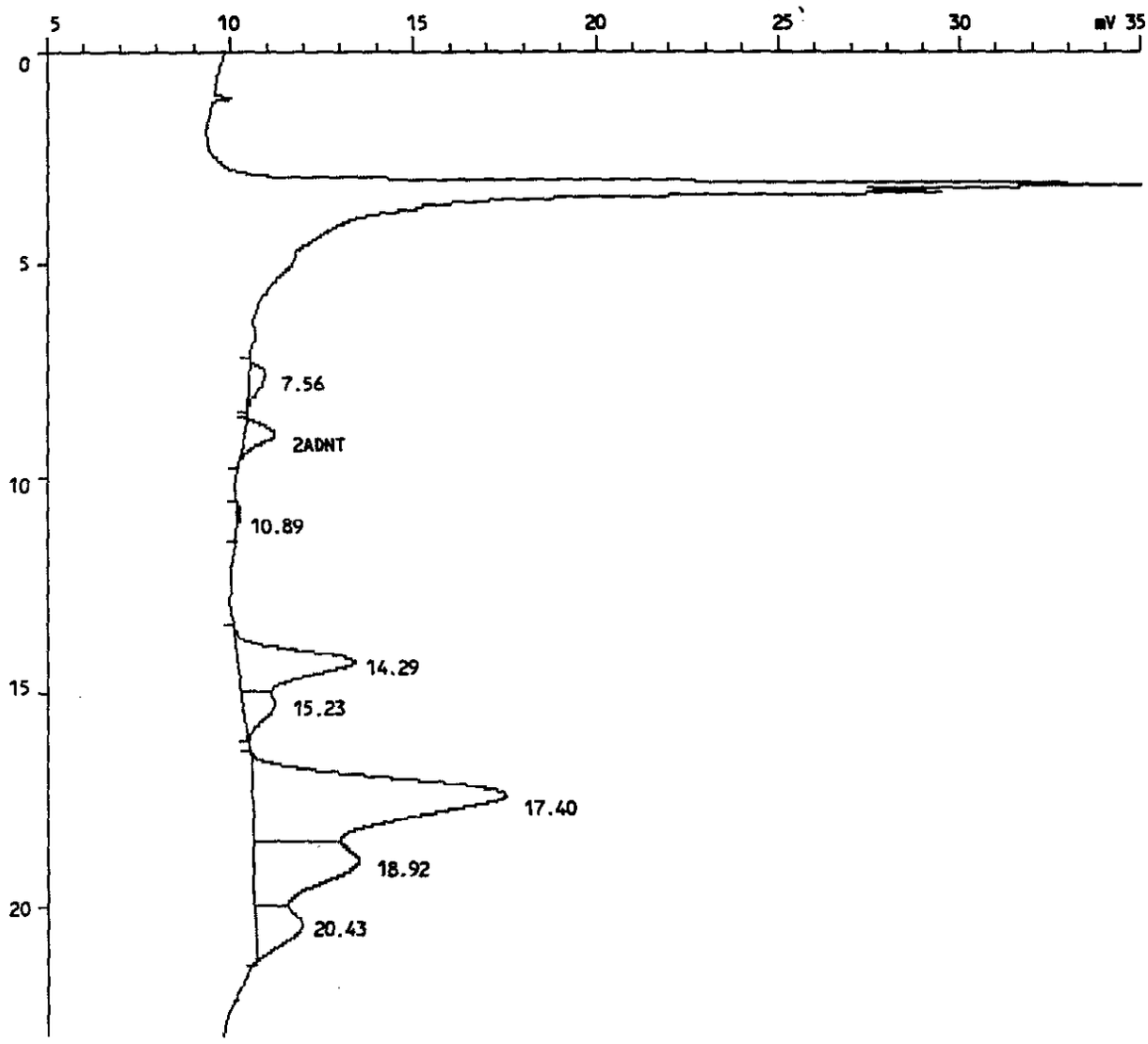
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.563	480	17783	707.062	TNT
2	8.976	875	26692	1934.203	3,4DNT
Total		1354	44475	2641.265	
Residual		15261	898933	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,12,1

Sample name.....: BIO-N-30%-20-C2
Sample ID.....: 34017.10 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 06:15:13
Reported on 08-Jun-98 at 11:27:15



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,12,1

Acquired on 06-Jun-98 at 06:15:13
Modified on 08-Jun-82 at 11:16:52
Reported on 08-Jun-98 at 11:16:52

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C2
Sample ID.....: 34017.10 RE
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	8.976	875	26692	1074.990	2ADNT
Total		875	26692	1074.990	
Residual		15741	916716	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.10

Sample Amt: 2g % Moisture 18.54 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

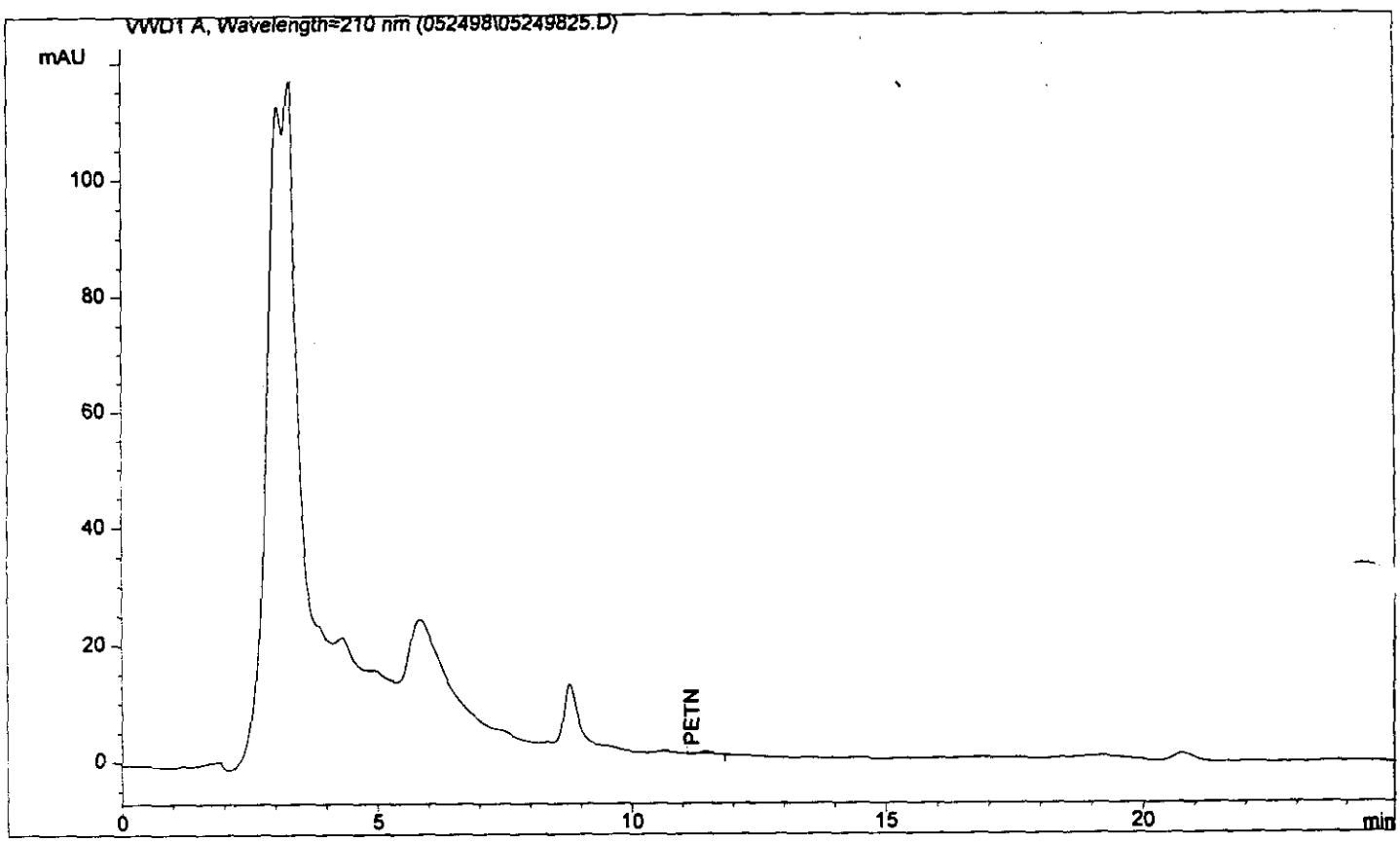
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 25. May. 1998	Seq Line	: 25
Sample Name	: 34017.10	Vial No.	: 25
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
11.428	PBA	6.01465	2.93257	176.38404	PETN
Totals:				176.38404	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.11

Sample Amt: 2g % Moisture 20.35 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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	3420	
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	591	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

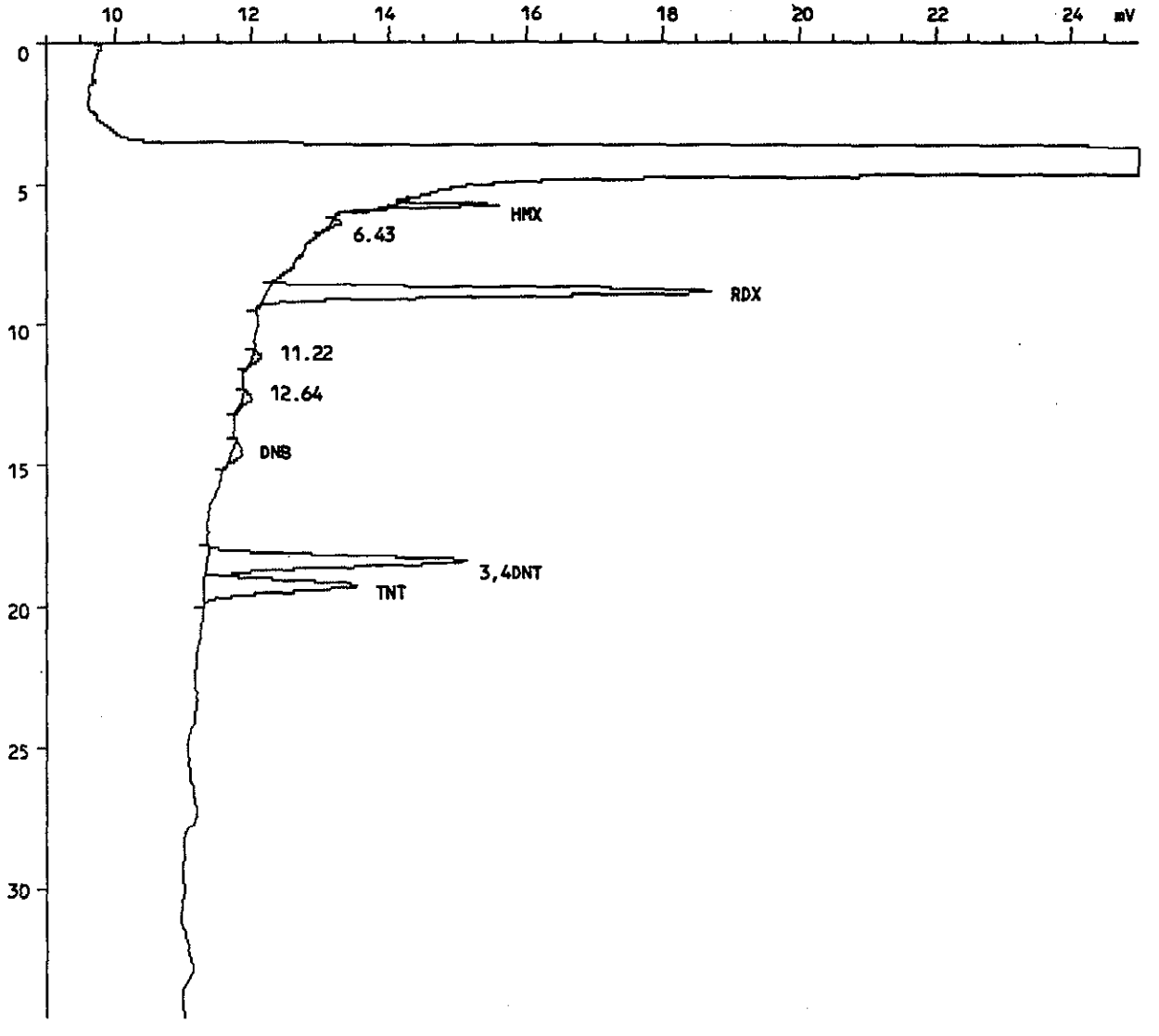
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,23,1

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 14:10:55
Reported on 26-May-98 at 17:23:39



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,23,1

Acquired on 22-May-98 at 14:10:55
Modified on 26-May-82 at 17:23:16
Reported on 26-May-98 at 17:23:21

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:01:24
Method file.....: EXPLOS Last modified on 26-May-82 at 17:21:36
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11
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

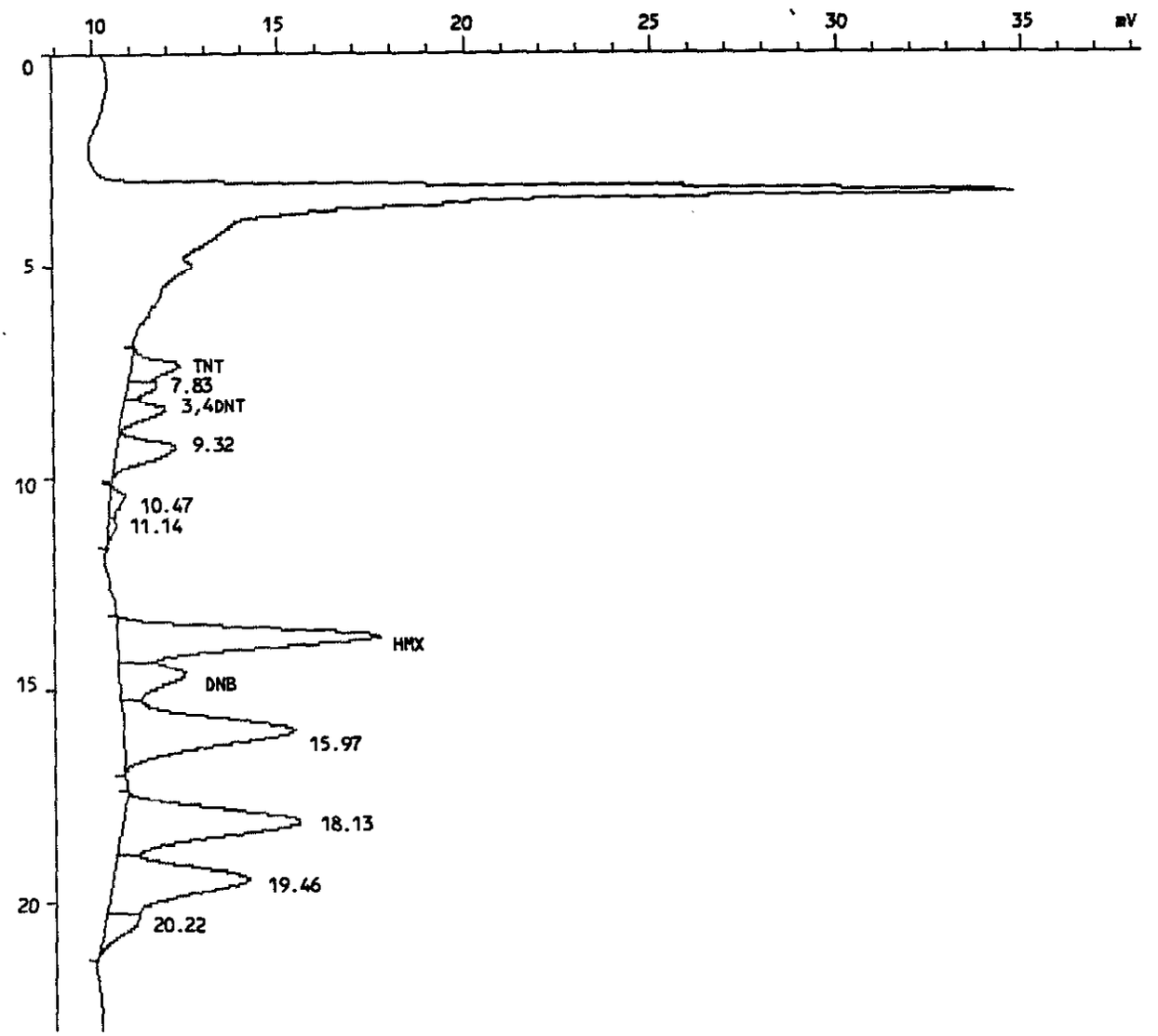
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.755	1683	16801	682.400	HMX
3	8.843	6506	146399	3422.138	RDX *
6	14.635	182	6307	48.043	DNB
7	18.384	3785	105867	1748.712	3,4DNT ST
8	19.264	2212	62400	591.129	TNT * P
Total		14367	337773	6492.422	
Residual		450	9392	256.751	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,13,1

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 13:54:34
Reported on 26-May-98 at 18:02:23



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,13,1

Acquired on 26-May-98 at 13:54:34
Modified on 26-May-82 at 17:55:34
Reported on 26-May-98 at 17:55:33

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..: 3CN0525A Last modified on 26-May-82 at 17:51:34
Method file.....: LCCN Last modified on 26-May-82 at 17:52:40
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11
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

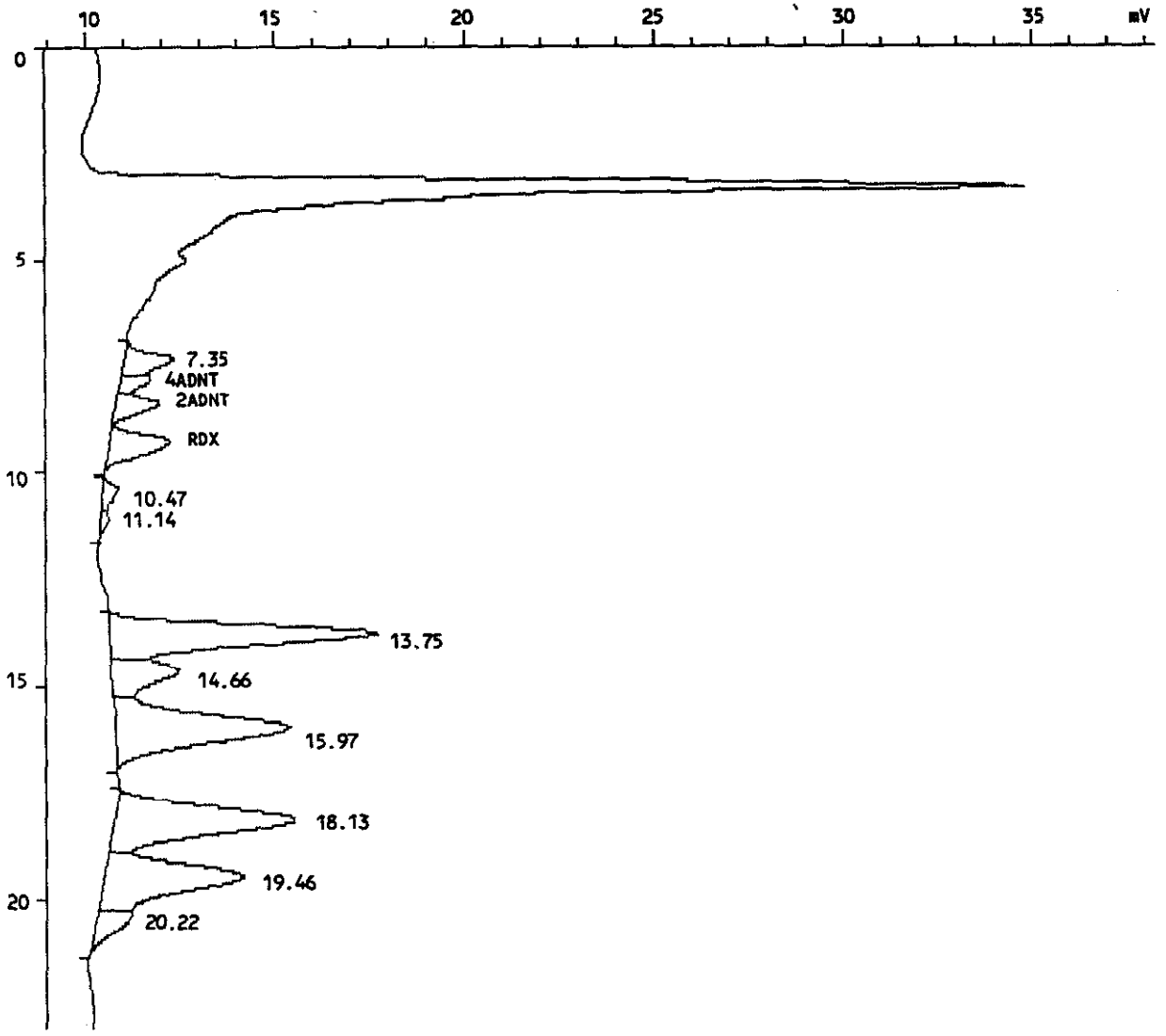
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.355	1299	33510	1299.346	TNT
3	8.411	1120	28377	1963.832	3,4DNT
7	13.755	7040	226224	22599.826	HMX
8	14.656	1775	63507	6106.418	DNB
Total		11233	351619	31969.422	
Residual		17033	718629	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,13,1

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 13:54:34
Reported on 26-May-98 at 19:08:44



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,13,1

Acquired on 26-May-98 at 13:54:34
Modified on 26-May-82 at 19:07:54
Reported on 26-May-98 at 19:07:54

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..: 3CN0525B Last modified on 26-May-82 at 19:05:50
Method file.....: LCCN Last modified on 26-May-82 at 19:06:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11
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	7.829	806	16602	989.386	4ADNT
3	8.411	1120	28377	1030.406	2ADNT
4	9.317	1601	51710	3747.072	RDX
Total		3526	96689	5766.864	
Residual		24740	973559	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-C3
RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.11 RE

Sample Amt: 2g % Moisture 20.35 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/26/98

Extraction Method: SONC Date Analyzed: 05/30/98

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	448	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

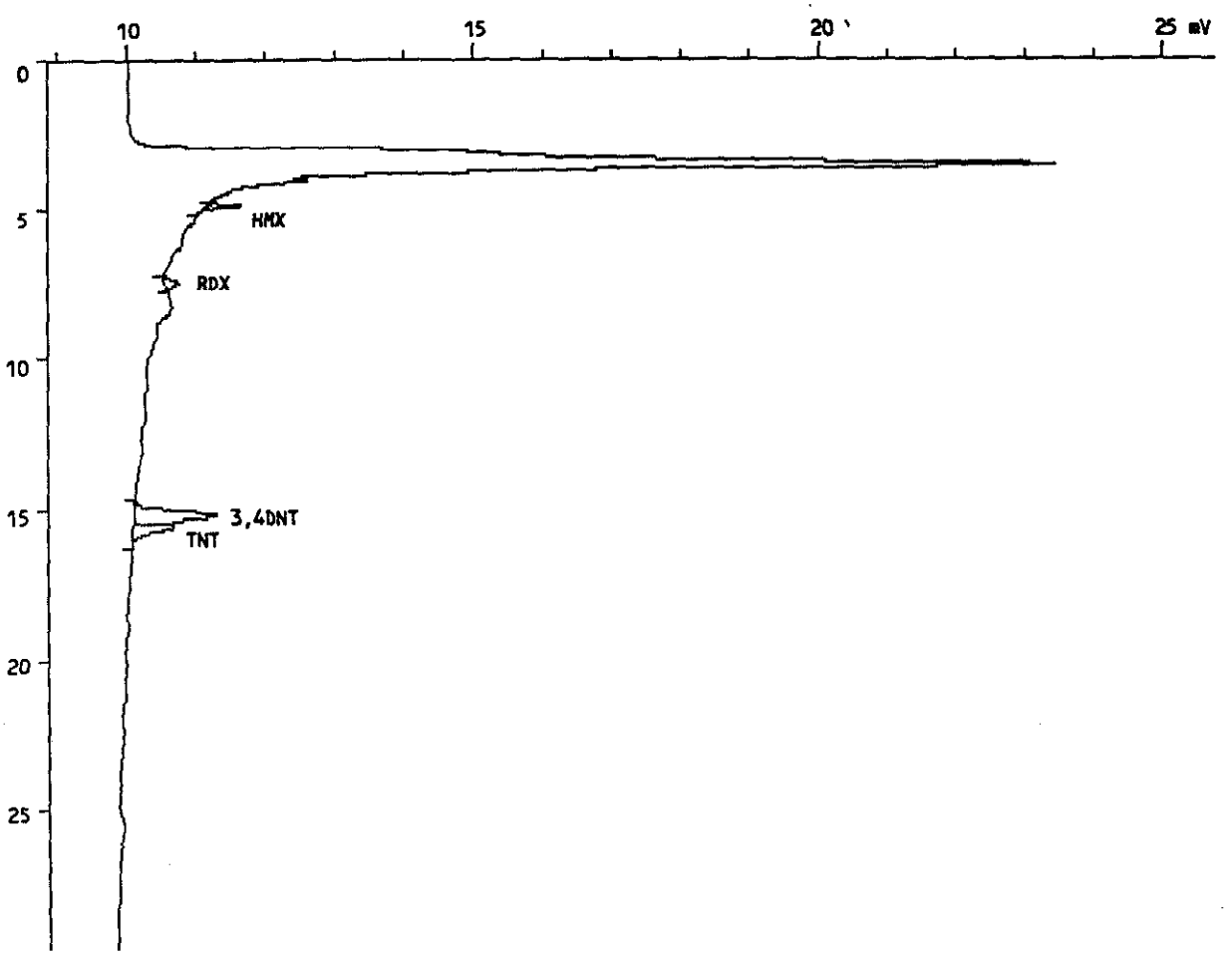
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0528B,19,1

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 30-May-98 at 08:25:17
Reported on 04-Jun-98 at 11:05:41



INJECTION REPORT

Injection F: <MC3> 5 5EX0528B,19,1

Acquired on 30-May-98 at 08:25:17
Modified on 04-Jun-82 at 10:59:02
Reported on 04-Jun-98 at 10:59:01

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.: 28
Calibration file..: 5EX0528 Last modified on 04-Jun-82 at 10:53:08
Method file.....: EXPLOS Last modified on 04-Jun-82 at 10:53:28
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11 RE
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

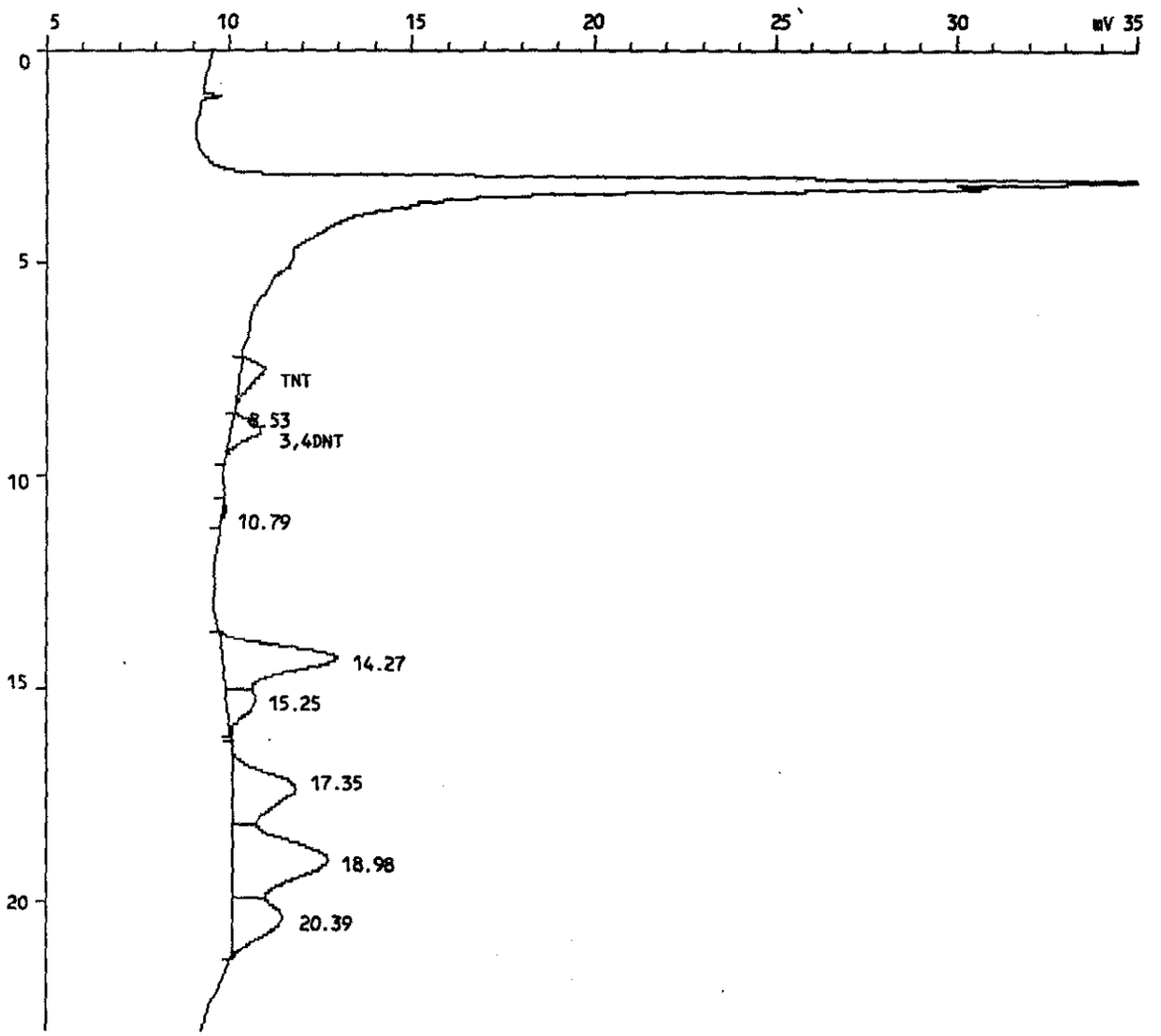
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.928	513	4266	568.781	HMX
2	7.504	168	2395	259.248	RDX
3	15.173	1184	25786	2469.880	3,4DNT 123.49%
4	15.563	590	10774	448.542	TNT *P
Total		2455	43221	3746.449	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,13,1

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 06:59:35
Reported on 08-Jun-98 at 10:57:08



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,13,1

Acquired on 06-Jun-98 at 06:59:35
Modified on 08-Jun-82 at 10:48:40
Reported on 08-Jun-98 at 10:48:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11 RE
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

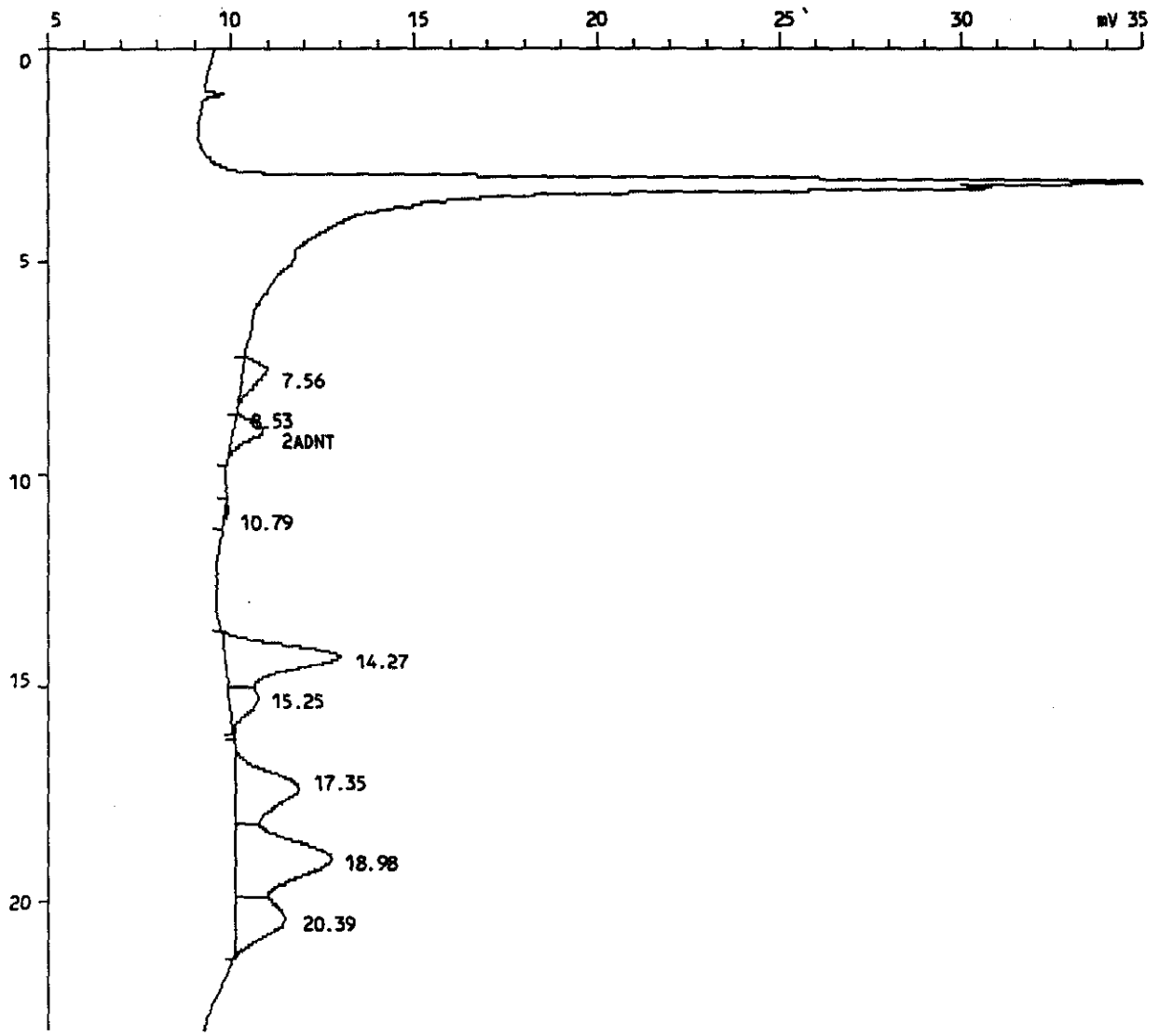
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.563	655	23611	938.826	TNT
3	8.997	836	26080	1889.824	3,4DNT
Total		1491	49691	2828.650	
Residual		9736	508792	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,13,1

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 06:59:35
Reported on 08-Jun-98 at 11:27:37



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,13,1

Acquired on 06-Jun-98 at 06:59:35
Modified on 08-Jun-82 at 11:16:40
Reported on 08-Jun-98 at 11:16:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-C3
Sample ID.....: 34017.11RE
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	8.997	836	26080	1050.325	2ADNT
Total		836	26080	1050.325	
Residual		10392	532404	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.11

Sample Amt: 2g % Moisture 20.35 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

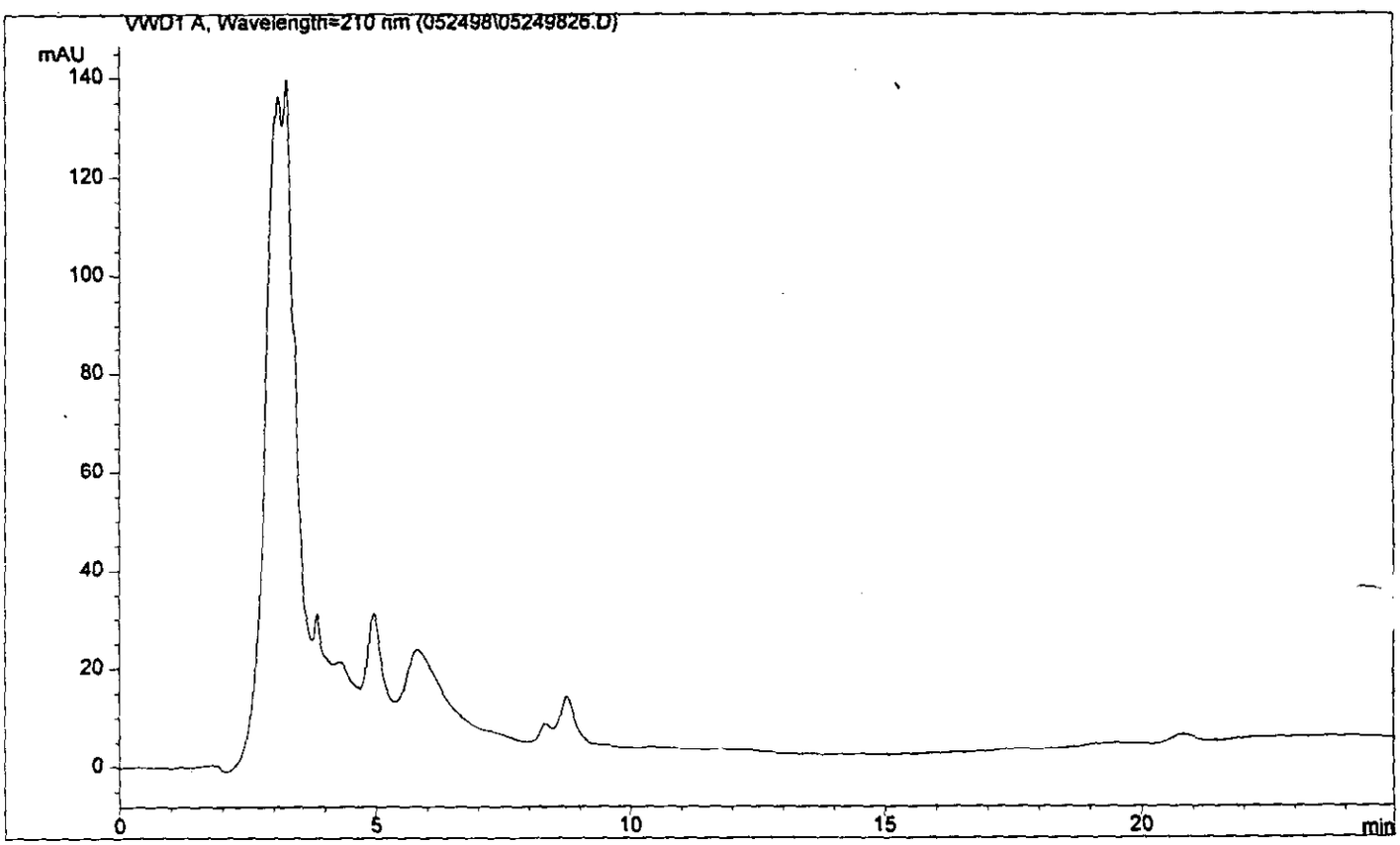
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN----------		250	U

FORM I

Injection Date	: Mon, 25. May. 1998	Seq Line	: 26
Sample Name	: 34017.11	Vial No.	: 26
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.12

Sample Amt: 2g % Moisture 23.43 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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

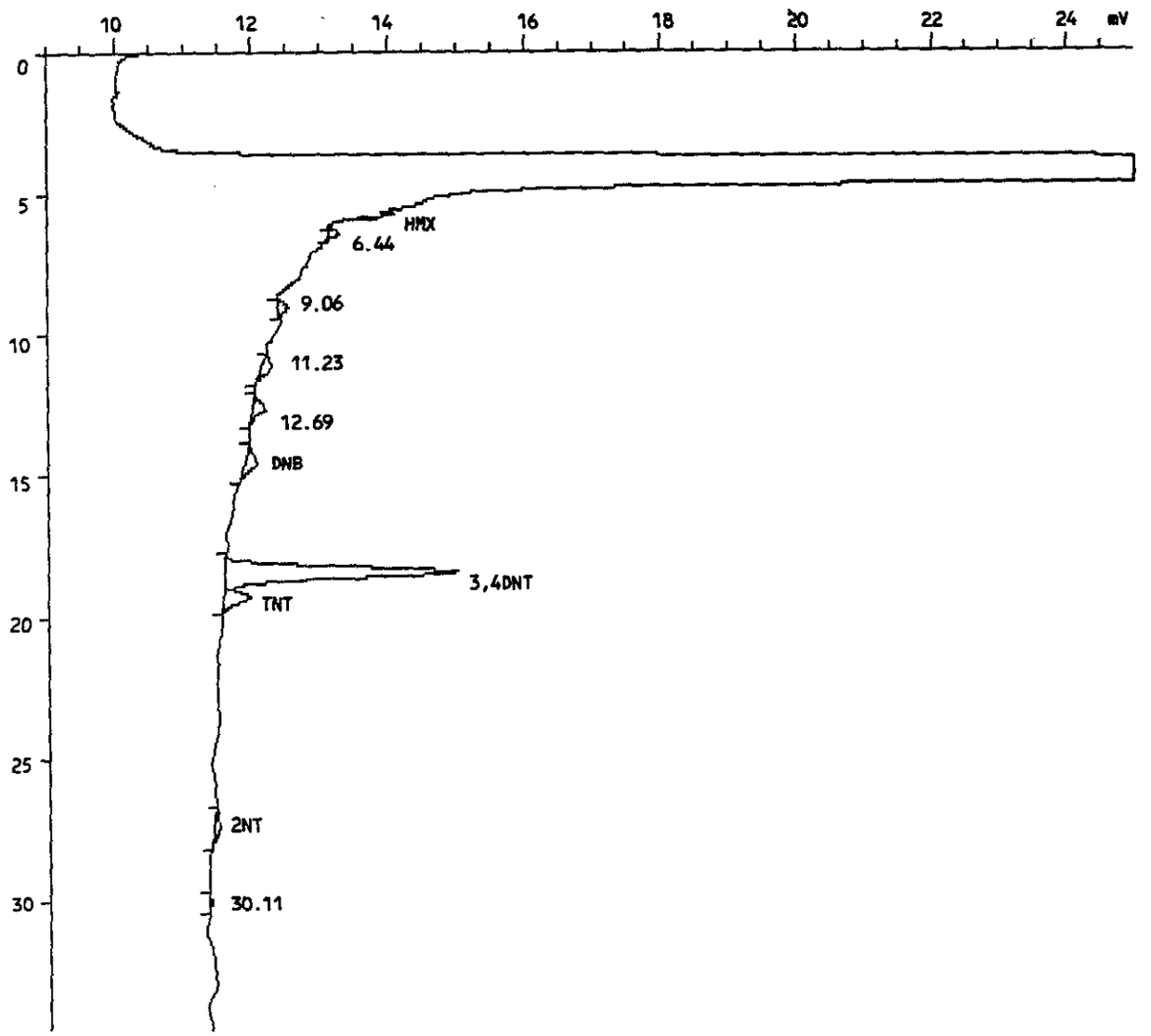
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,26,1

Sample name.....: BIO-N-30%-20-D1
Sample ID.....: 34017.12
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 16:24:47
Reported on 26-May-98 at 17:26:15



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,26,1

Acquired on 22-May-98 at 16:24:47
Modified on 26-May-82 at 17:25:58
Reported on 26-May-98 at 17:25:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:01:24
Method file.....: EXPLOS Last modified on 26-May-82 at 17:21:36
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D1
Sample ID.....: 34017.12
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	5.765	196	1205	48.955	HMX
6	14.635	186	7354	56.017	DNB
7	18.405	3389	92096	1521.234	3,4DNT 76
8	19.285	392	10487	99.350	TNT
9	27.397	79	3927	70.360	2NT
Total		4241	115070	1795.916	
Residual		677	16722	658.085	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D1
RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.12 RE

Sample Amt: 2g % Moisture 23.43 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 06/03/98

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

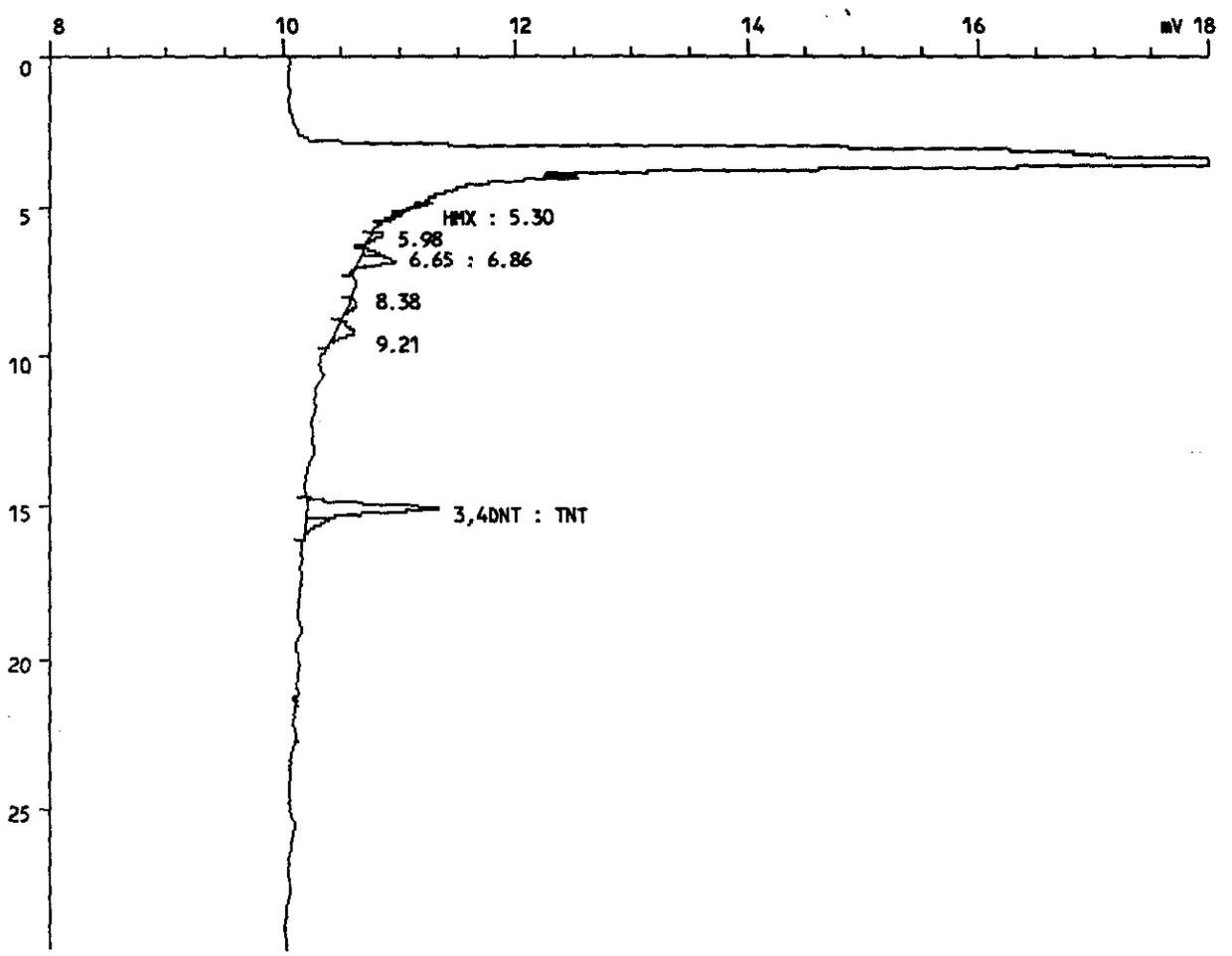
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0602A,1,1

Sample name.....: BIO-N-30%-20-D1
Sample ID.....: 34017.12 RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 03-Jun-98 at 00:49:47
Reported on 08-Jun-98 at 12:01:26



INJECTION REPORT

Injection F: <MC3> 5 5EX0602A,1,1

Acquired on 03-Jun-98 at 00:49:47
Modified on 08-Jun-82 at 12:00:26
Reported on 08-Jun-98 at 12:00:36

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.: 5
Calibration file..: 5EX0602 Last modified on 08-Jun-82 at 12:00:22
Method file.....: EXPLOS Last modified on 08-Jun-82 at 11:41:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D1
Sample ID.....: 34017.12 RE
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

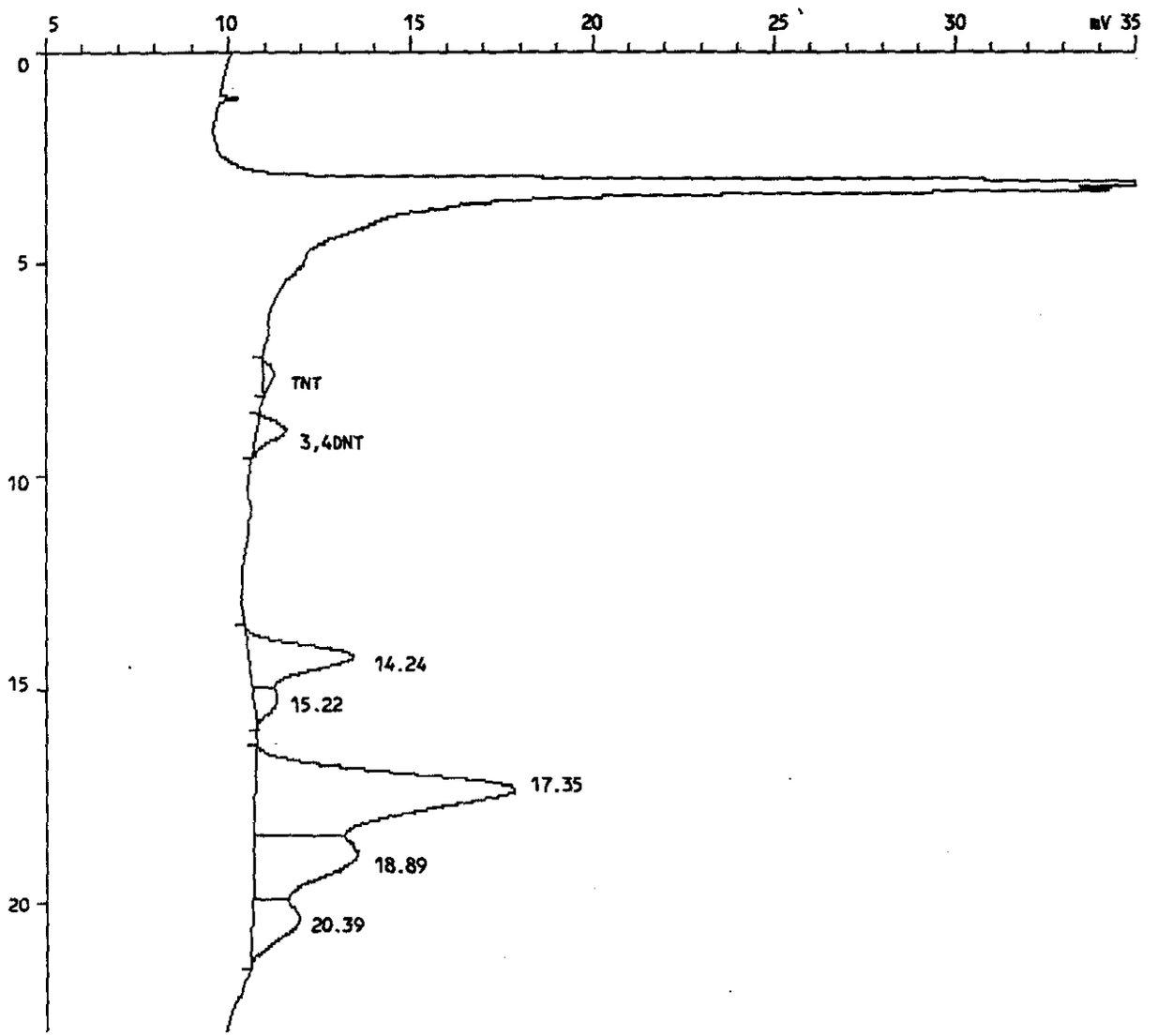
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.912	117	939	139.691	HMX
8	15.067	1147	22566	2085.628	3,4DNT 104
9	15.360	238	3983	185.781	TNT
Total		1502	27488	2411.099	
Residual		902	15309	2278.199	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,14,1

Sample name.....: BIO-N-30%-20-D1
Sample ID.....: 34017.12RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 07:43:57
Reported on 08-Jun-98 at 10:57:29



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,14,1

Acquired on 06-Jun-98 at 07:43:57
Modified on 08-Jun-82 at 10:48:54
Reported on 08-Jun-98 at 10:48:53

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D1
Sample ID.....: 34017.12 RE
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

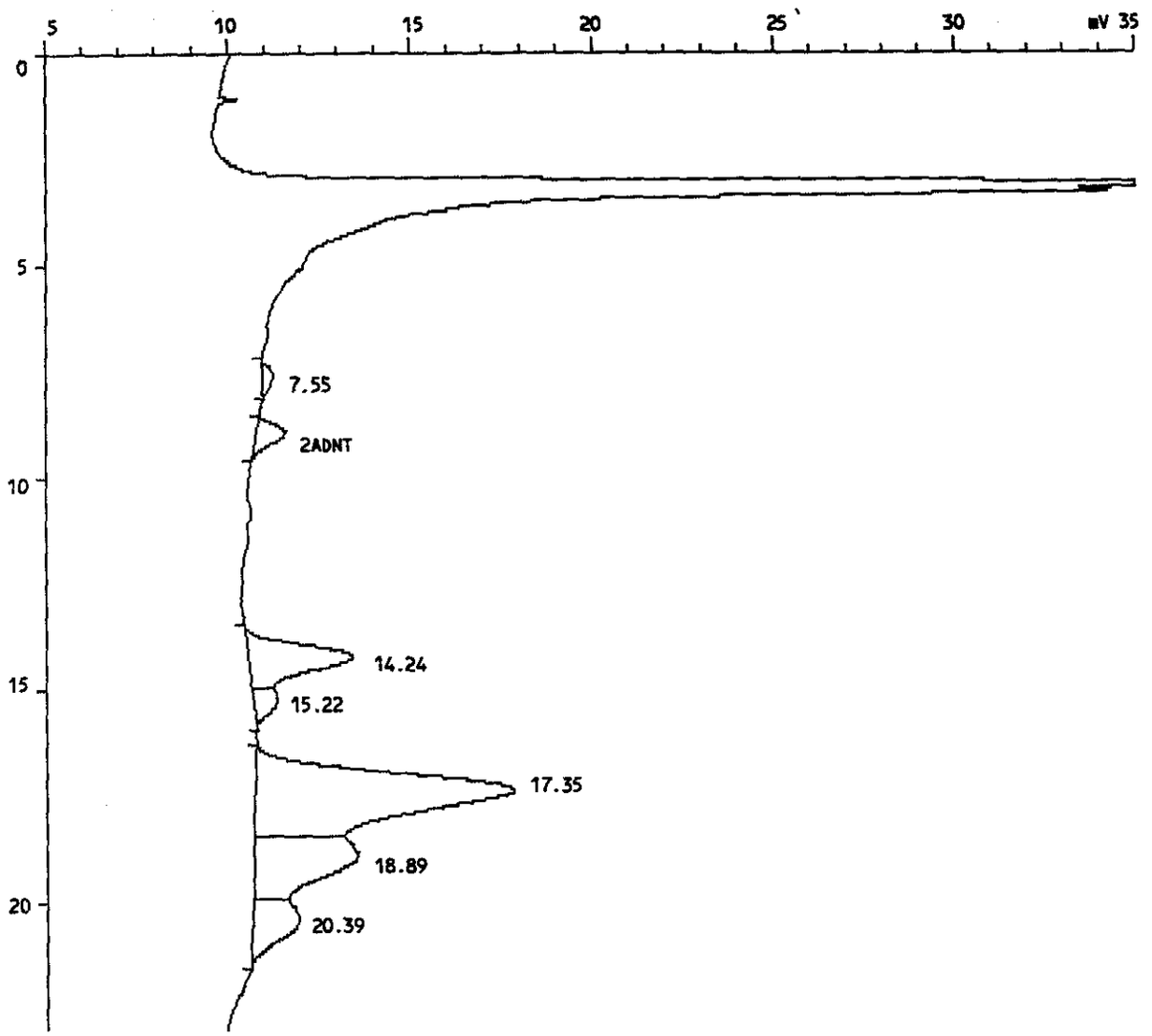
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.547	291	8816	350.518	TNT
2	8.955	799	24869	1802.128	3,4DNT
Total		1091	33685	2152.647	
Residual		14769	889763	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,14,1

Sample name.....: BIO-N-30%-20-D1
Sample ID.....: 34017.12RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 07:43:57
Reported on 08-Jun-98 at 11:28:06



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,14,1

Acquired on 06-Jun-98 at 07:43:57
Modified on 08-Jun-82 at 11:16:26
Reported on 08-Jun-98 at 11:16:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D1
Sample ID.....: 34017.12RE
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	8.955	799	24869	1001.586	2ADNT
Total		799	24869	1001.586	
Residual		15061	898579	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.12

Sample Amt: 2g % Moisture 23.43 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

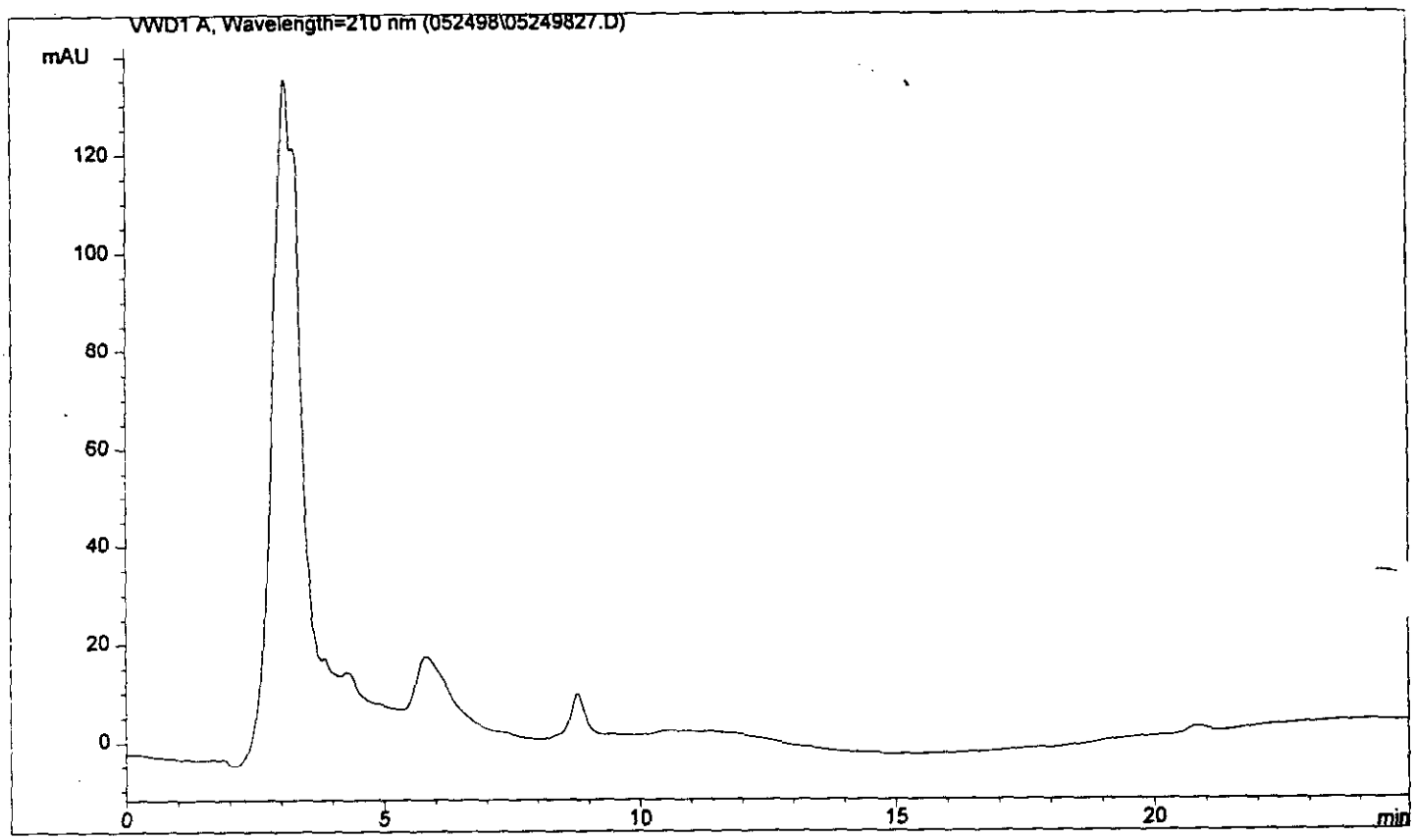
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN----------		250	U

FORM I

Injection Date	: Mon, 25. May. 1998	Seq Line	: 27
Sample Name	: 34017.12	Vial No.	: 27
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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

Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.13

Sample Amt: 2g % Moisture 21.59 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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

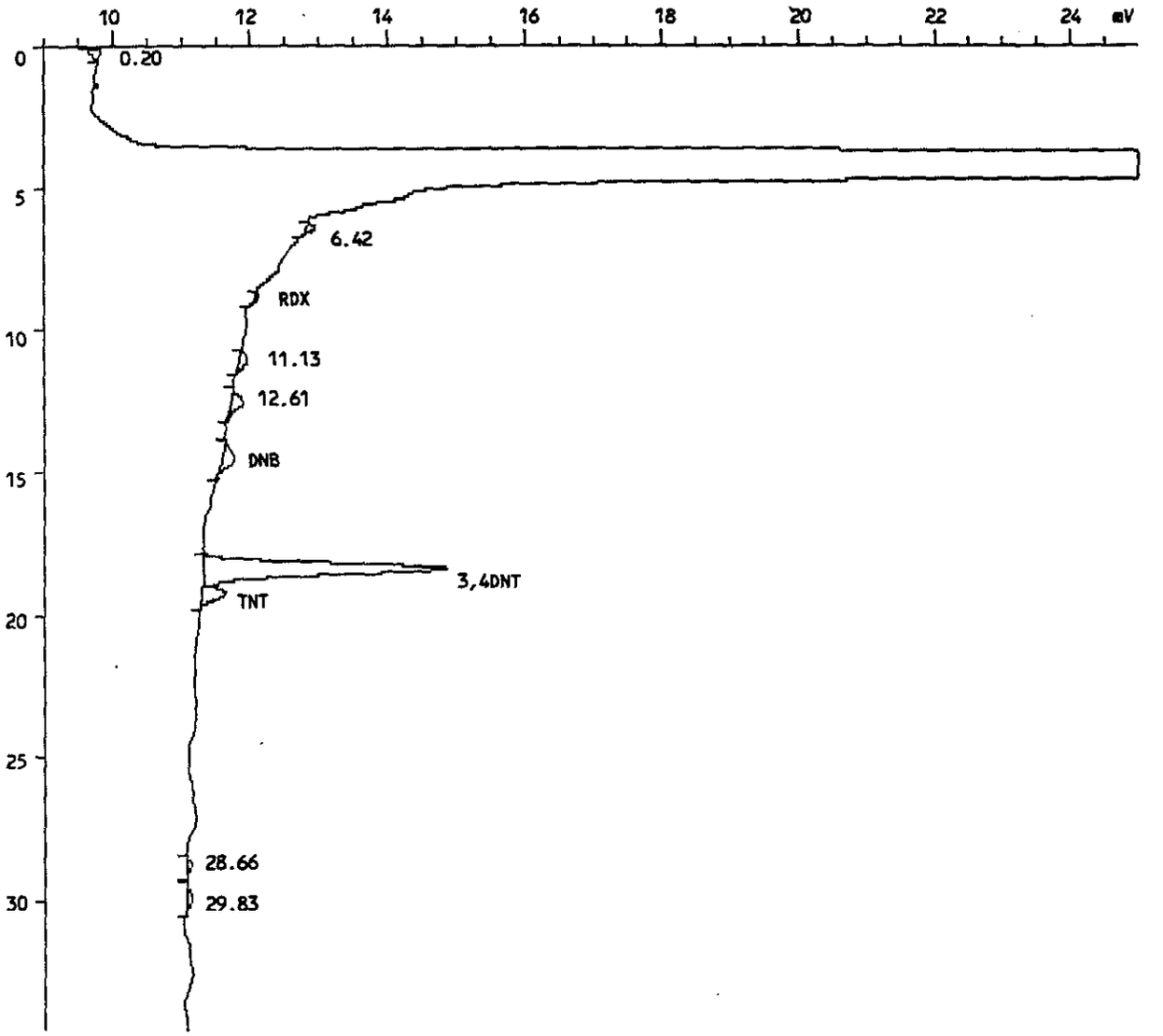
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,27,1

Sample name.....: BIO-N-30%-20-D2
Sample ID.....: 34017.13
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 17:09:28
Reported on 26-May-98 at 17:28:23



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,27,1

Acquired on 22-May-98 at 17:09:28
Modified on 26-May-82 at 17:28:04
Reported on 26-May-98 at 17:28:05

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:01:24
Method file.....: EXPLOS Last modified on 26-May-82 at 17:21:36
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2
Sample ID.....: 34017.13
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	8.896	89	1589	37.142	RDX
6	14.565	192	8279	63.060	DNB
7	18.352	3552	99553	1644.411	3,4DNT
8	19.232	368	10175	96.389	TNT
Total		4201	119595	1841.003	
Residual		802	19091	379.060	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D2 RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.13 RE

Sample Amt: 2g % Moisture 21.59 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 06/03/98

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

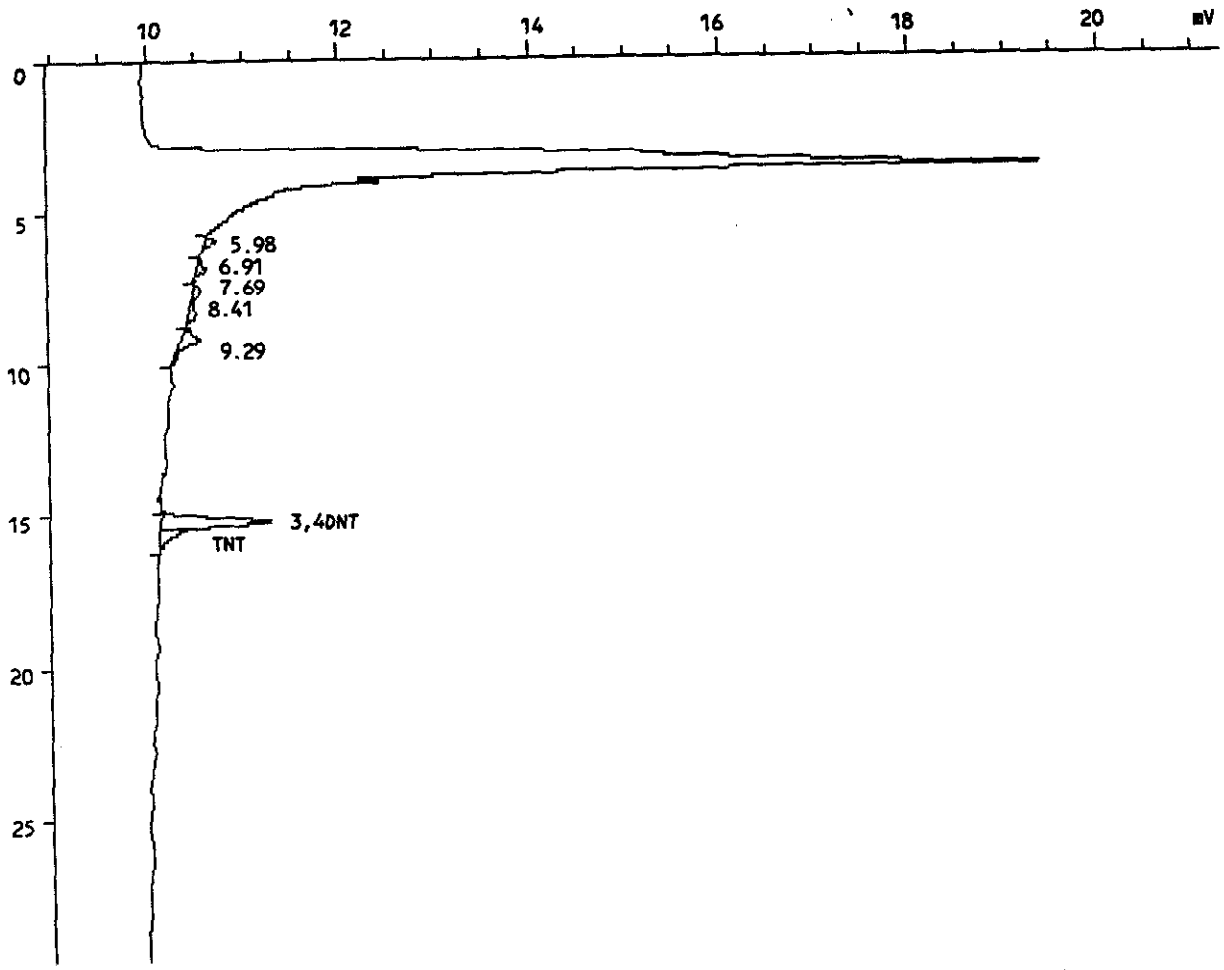
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0602A,2,1

Sample name.....: BIO-N-30%-20-D2
Sample ID.....: 34017.13 RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 03-Jun-98 at 01:34:29
Reported on 04-Jun-98 at 19:22:49



INJECTION REPORT

Injection F: <MC3> 5 5EX0602A,2,1

Acquired on 03-Jun-98 at 01:34:29
Modified on 04-Jun-82 at 19:20:26
Reported on 04-Jun-98 at 19:20:24

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.: 5
Calibration file..: 5EX0602 Last modified on 04-Jun-82 at 19:20:24
Method file.....: EXPLOS Last modified on 04-Jun-82 at 19:08:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2
Sample ID.....: 34017.13 RE
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

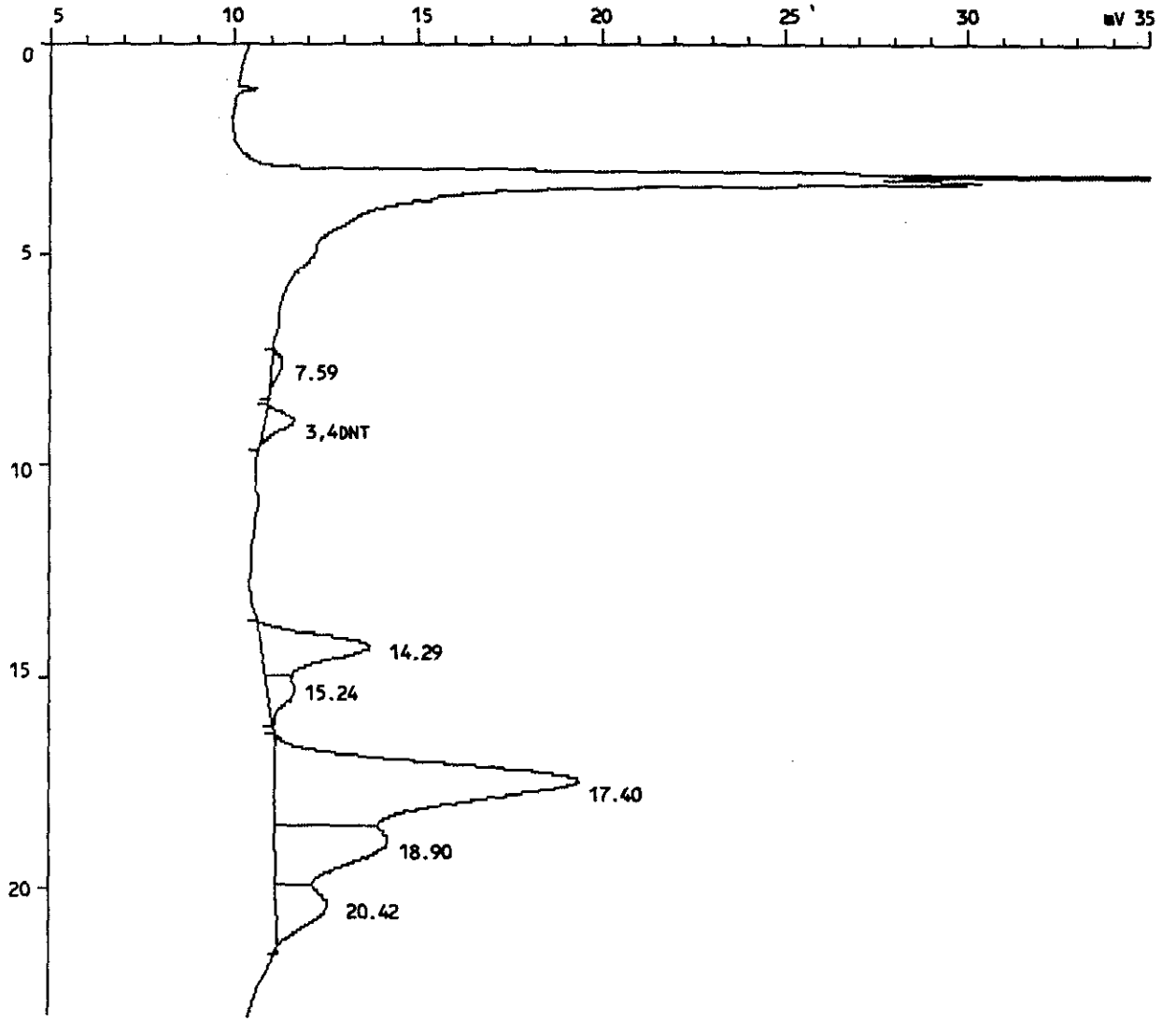
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
6	15.253	1143	21650	2000.904	3,4DNT 100.04%
7	15.477	361	5074	236.662	TNT
Total		1504	26724	2237.566	
Residual		582	14502	-113.298	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,15,1

Sample name.....: BIO-N-30%-20-D2
Sample ID.....: 34017.13RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 08:28:18
Reported on 08-Jun-98 at 10:57:50



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,15,1

Acquired on 06-Jun-98 at 08:28:18
Modified on 08-Jun-82 at 10:49:06
Reported on 08-Jun-98 at 10:49:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2
Sample ID.....: 34017.13 RE
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

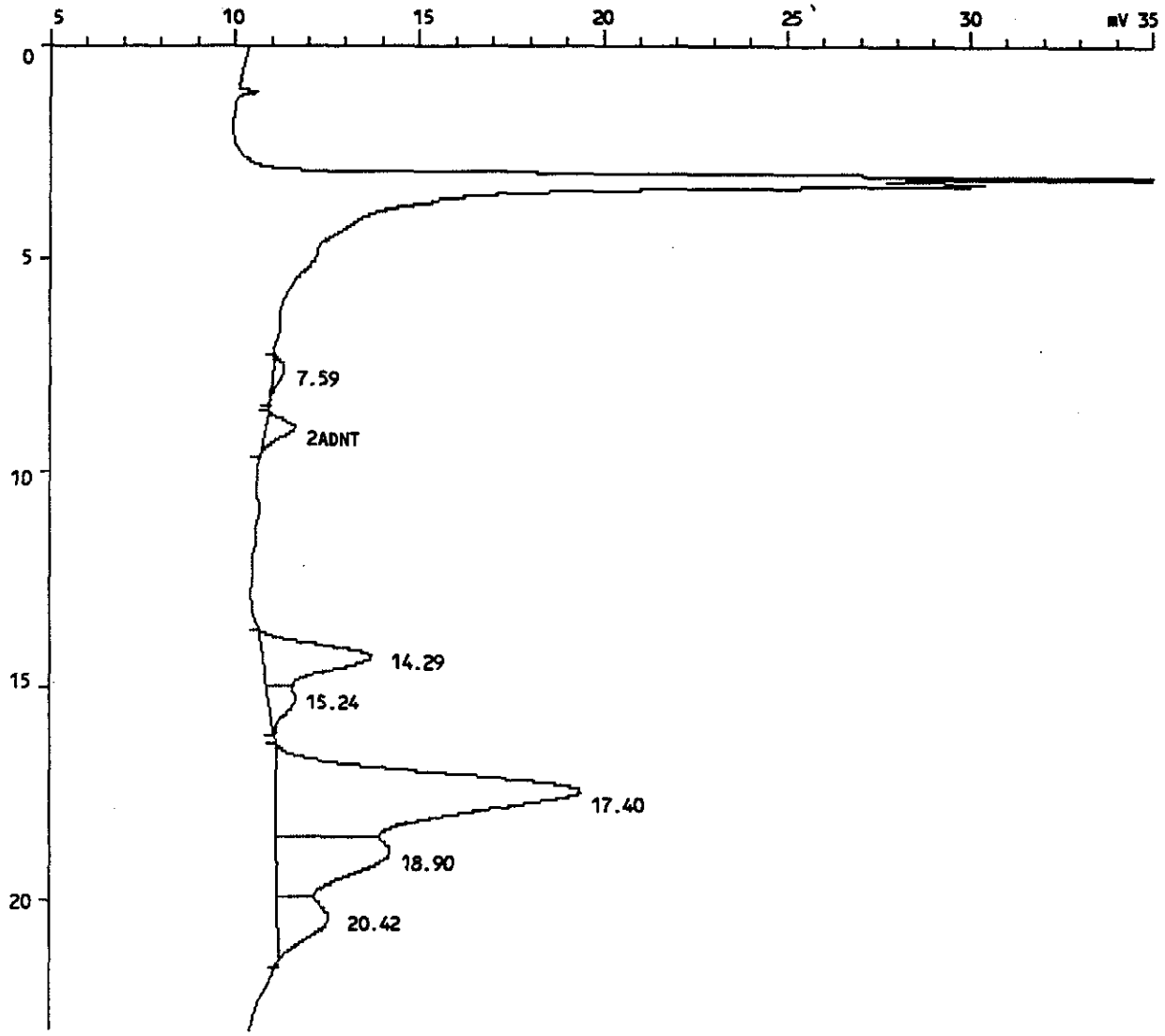
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	9.003	806	24691	1789.192	3,4DNT
Total		806	24691	1789.192	
Residual		16753	1003186	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,15,1

Sample name.....: BIO-N-30%-20-D2
Sample ID.....: 34017.13RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 08:28:18
Reported on 08-Jun-98 at 11:28:32



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,15,1

Acquired on 06-Jun-98 at 08:28:18
Modified on 08-Jun-82 at 11:16:14
Reported on 08-Jun-98 at 11:16:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2
Sample ID.....: 34017.13RE
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	9.003	806	24691	994.396	2ADNT
Total		806	24691	994.396	
Residual		16753	1003186	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.13

Sample Amt: 2g % Moisture 21.59 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

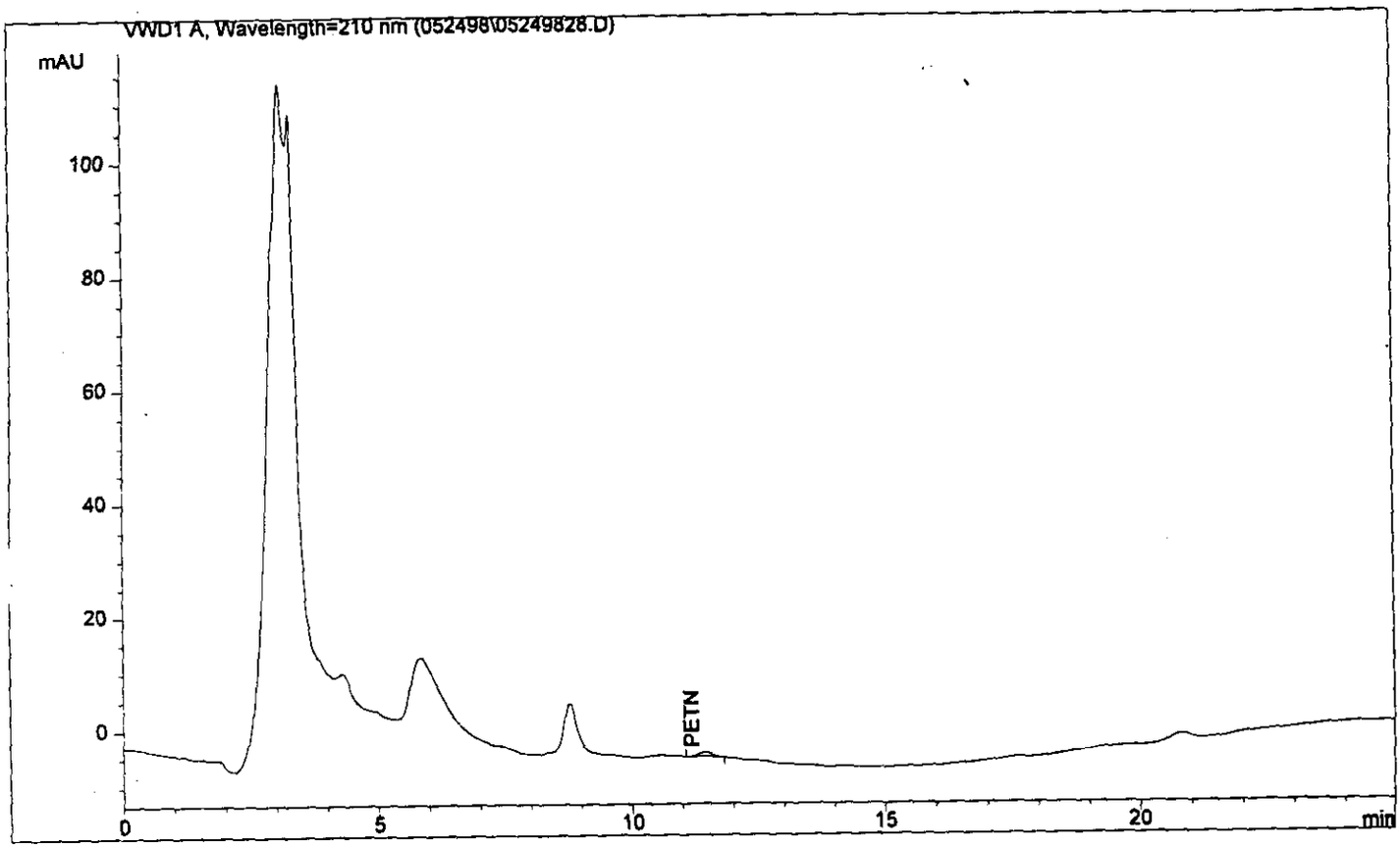
FORM I

Data file : C:\HPCHEM\1\DATA\052498\05249828.D
Sample Name: 34017.13 1

Injection Date	: Mon, 25. May. 1998	Seq Line	: 28
Sample Name	: 34017.13	Vial No.	: 28
\cq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



Customized Report: extstd.frp

Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
11.421	PBA	14.33285	2.93257	420.32135	PETN
Totals:				420.32135	

*** End of Report ***

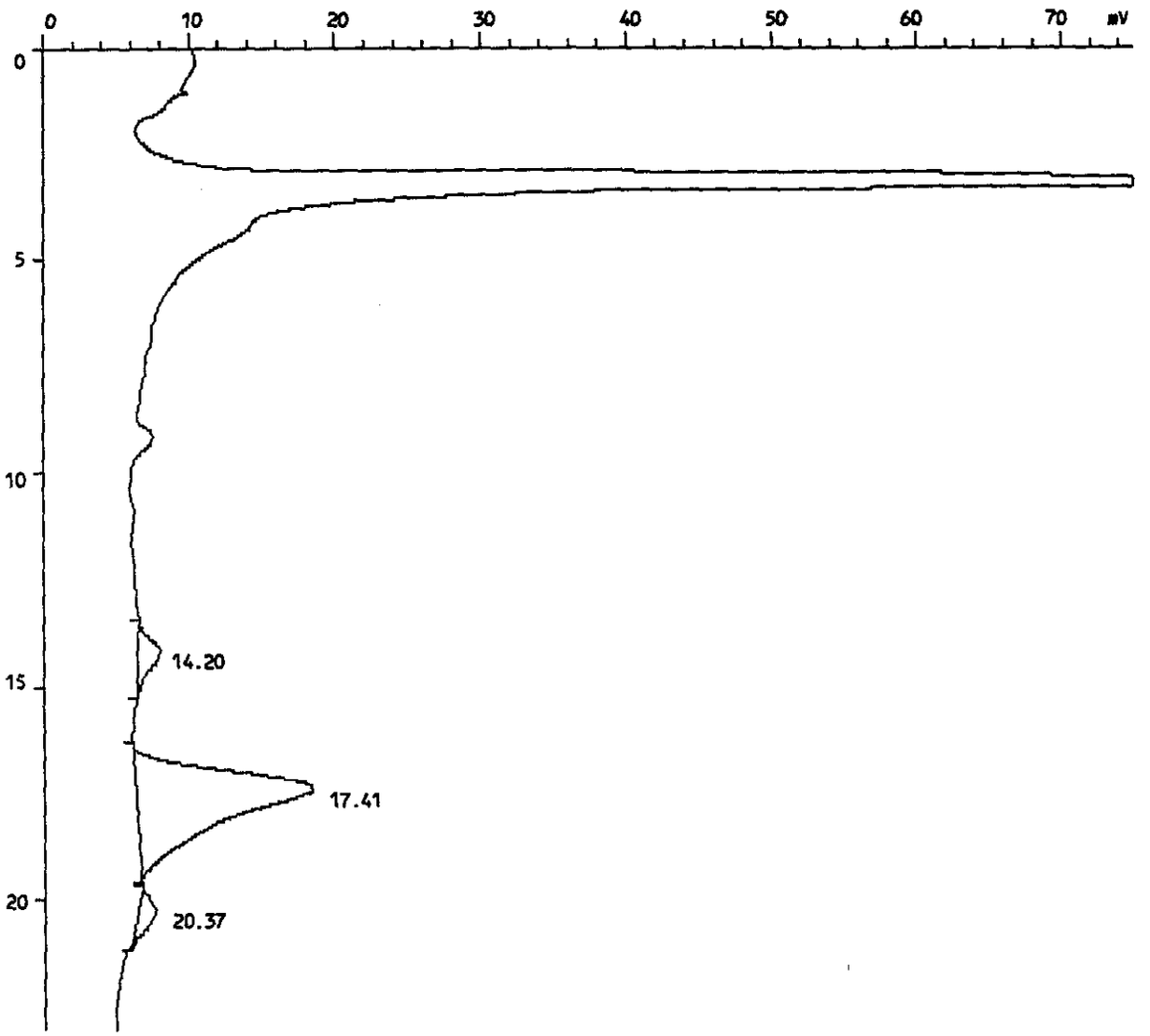
196

LONG PLOT

Injection F: <MC3> 3 3PC0601,27,1

Sample name.....: BIO-N-30%-20-D2
Sample ID.....: 34017.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 02-Jun-98 at 06:06:16
Reported on 02-Jun-98 at 16:05:10



INJECTION REPORT

Injection F: <MC3> 3 3PC0601,27,1

Acquired on 02-Jun-98 at 06:06:16
Modified on 02-Jun-82 at 16:04:58
Reported on 02-Jun-98 at 16:04:39

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: ODS-II, ID: LC-CN-11, INJ:100, UV
Number of samples.: 29
Calibration file..: 3PC0601 Last modified on 02-Jun-82 at 14:33:06
Method file.....: LCCN1 Last modified on 02-Jun-82 at 15:54:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2
Sample ID.....: 34017.13
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
Total	0	0	0.000	
Residual	14837	1082153	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.14

Sample Amt: 2g % Moisture 19.74 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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

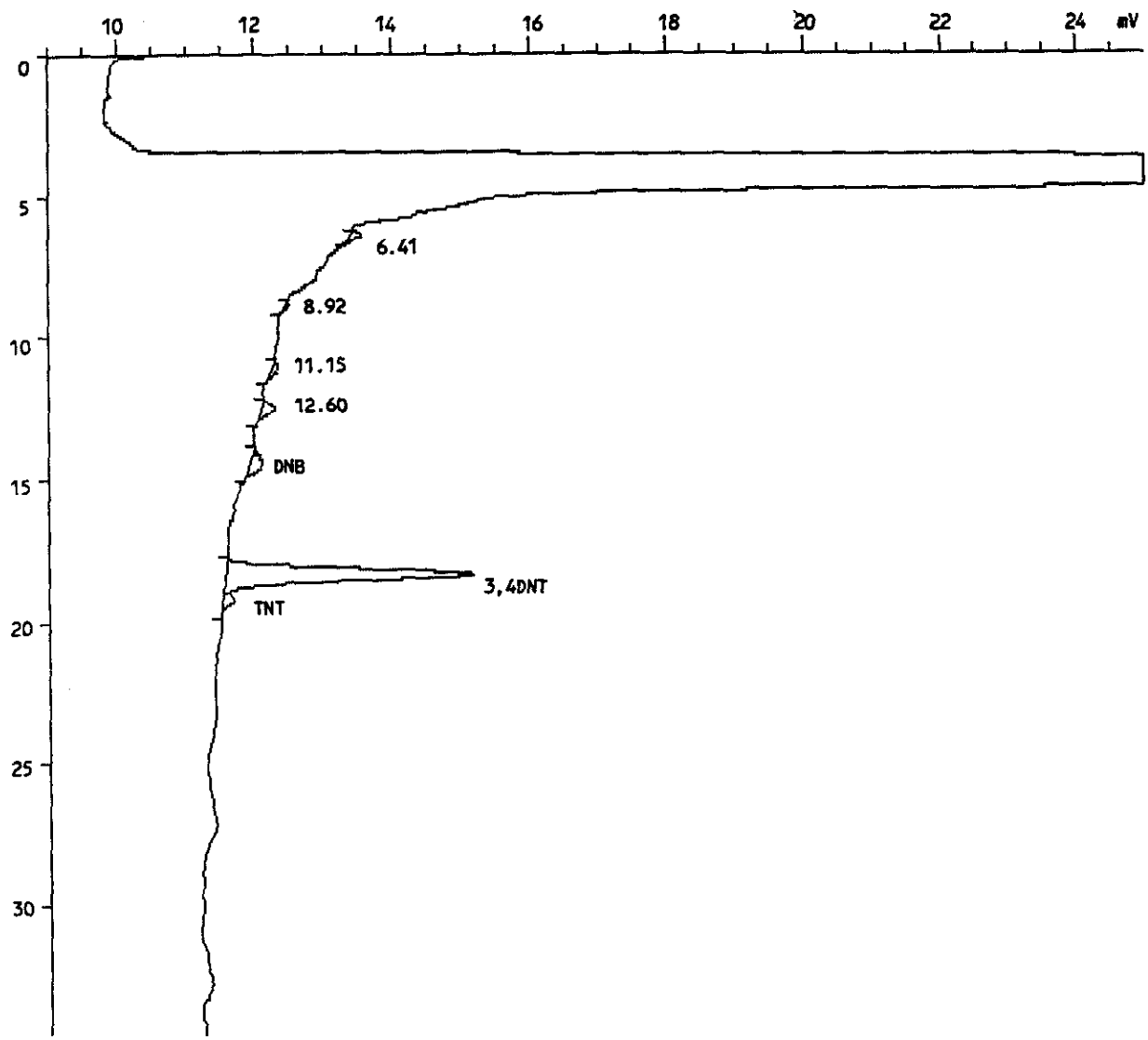
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,28,1

Sample name.....: BIO-N-30%-20-D3
Sample ID.....: 34017.14
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 17:54:05
Reported on 26-May-98 at 17:30:47



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,28,1

Acquired on 22-May-98 at 17:54:05
Modified on 26-May-82 at 17:30:28
Reported on 26-May-98 at 17:30:28

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:30:26
Method file.....: EXPLOS Last modified on 26-May-82 at 17:21:36
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D3
Sample ID.....: 34017.14
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
5	14.549	197	7461	56.829	DNB
6	18.352	3603	100867	1666.116	3,4DNT 83
7	19.205	177	4995	47.323	TNT
Total		3977	113323	1770.269	
Residual		562	12722	-99.391	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D3
RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.14 RE

Sample Amt: 2g % Moisture 19.74 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 06/03/98

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

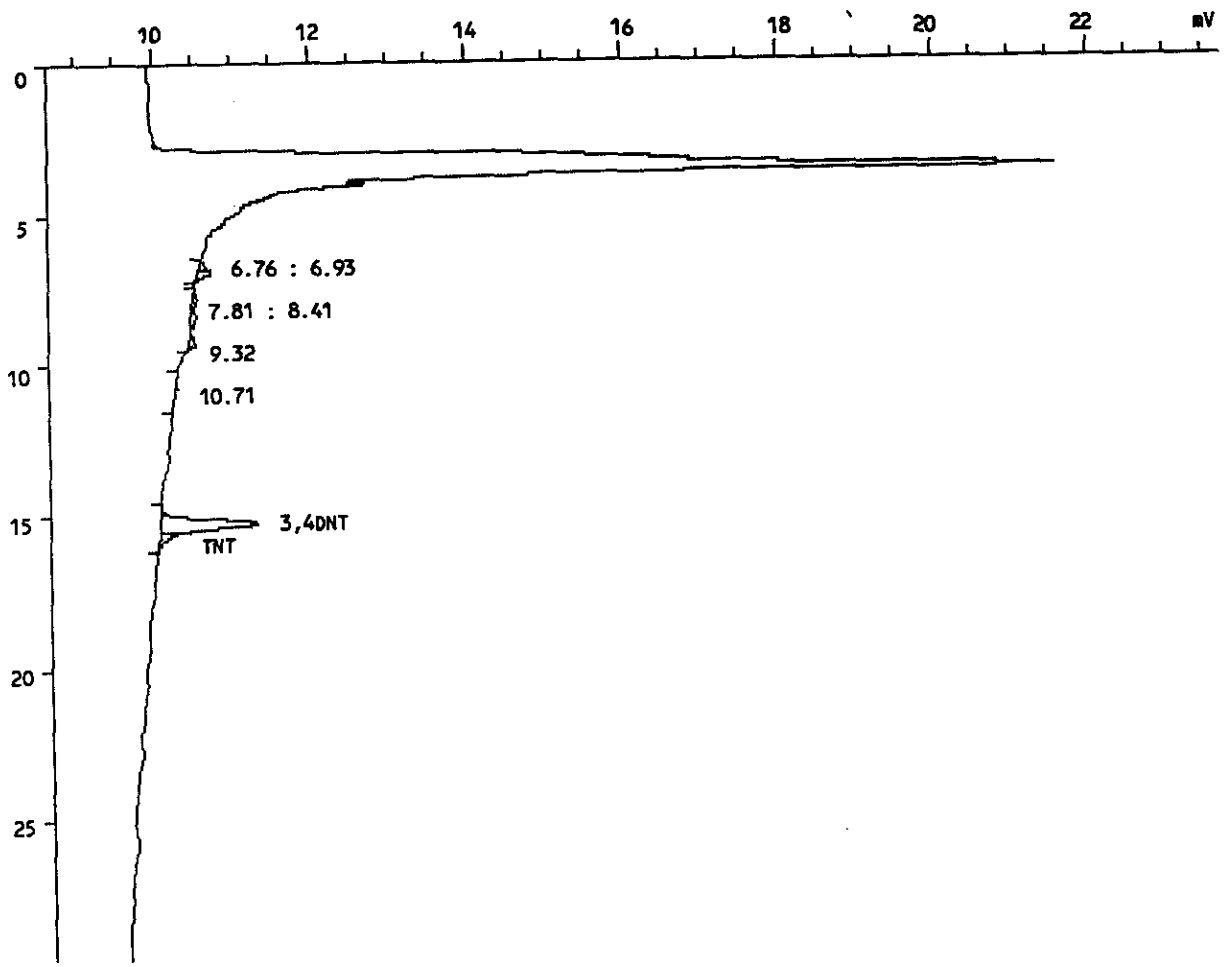
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0602A,3,1

Sample name.....: BIO-N-30%-20-D3
Sample ID.....: 34017.14ℓℓ
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 03-Jun-98 at 02:19:11
Reported on 04-Jun-98 at 19:23:21



INJECTION REPORT

Injection F: <MC3> 5 5EX0602A,3,1

Acquired on 03-Jun-98 at 02:19:11
Modified on 04-Jun-82 at 19:20:38
Reported on 04-Jun-98 at 19:20:37

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.: 5
Calibration file..: 5EX0602 Last modified on 04-Jun-82 at 19:20:38
Method file.....: EXPLOS Last modified on 04-Jun-82 at 19:08:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D3
Sample ID.....: 34017.1486
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

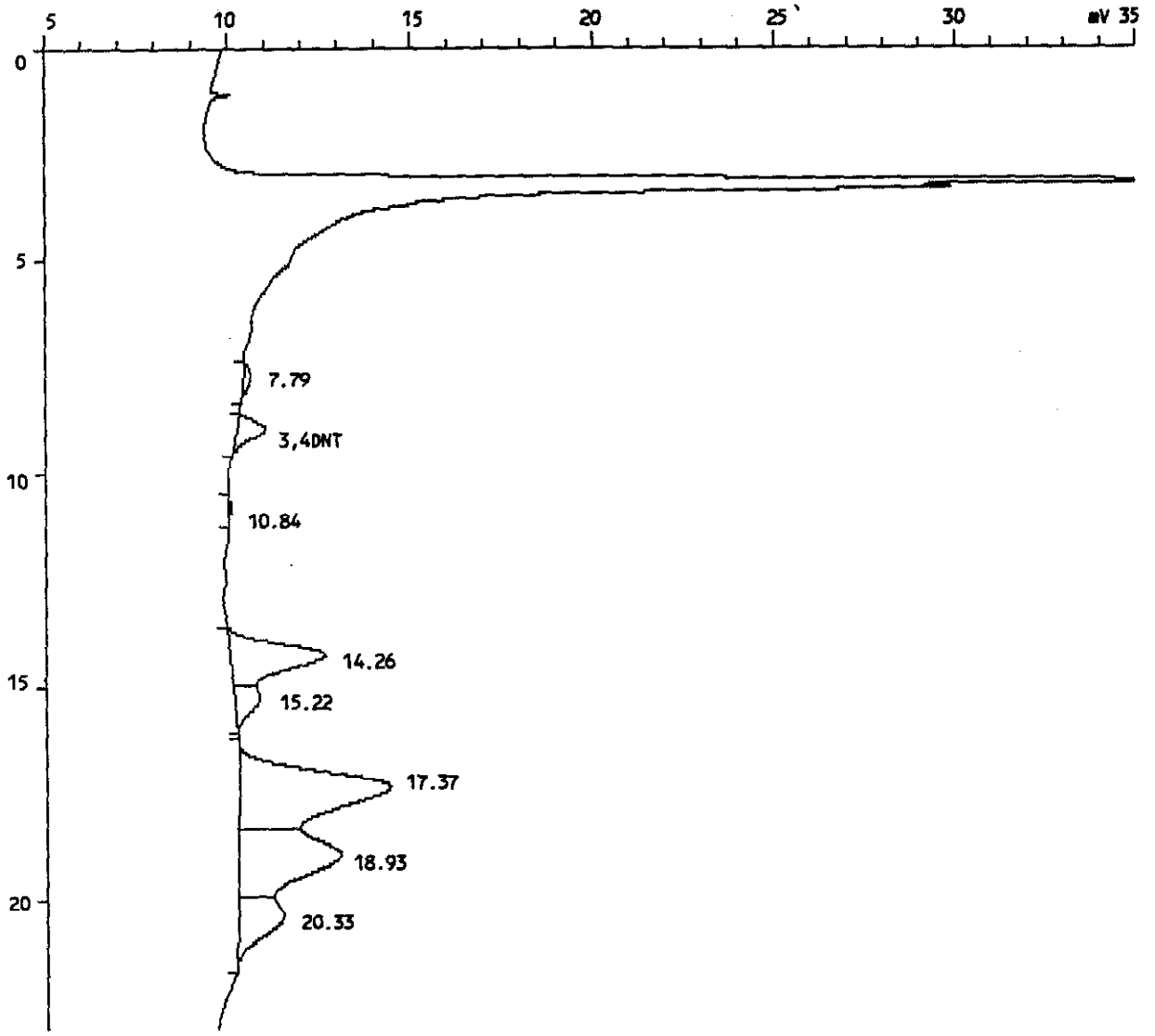
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
7	15.291	1255	25139	2323.409	3,4DNT 116.17%
8	15.547	323	3222	150.289	TNT
Total		1578	28361	2473.698	
Residual		567	12311	-96.177	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,16,1

Sample name.....: BIO-N-30%-20-D3
Sample ID.....: 34017.14 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 09:12:40
Reported on 08-Jun-98 at 10:58:12



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,16,1

Acquired on 06-Jun-98 at 09:12:40
Modified on 08-Jun-82 at 10:49:18
Reported on 08-Jun-98 at 10:49:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D3
Sample ID.....: 34017.14 RE
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

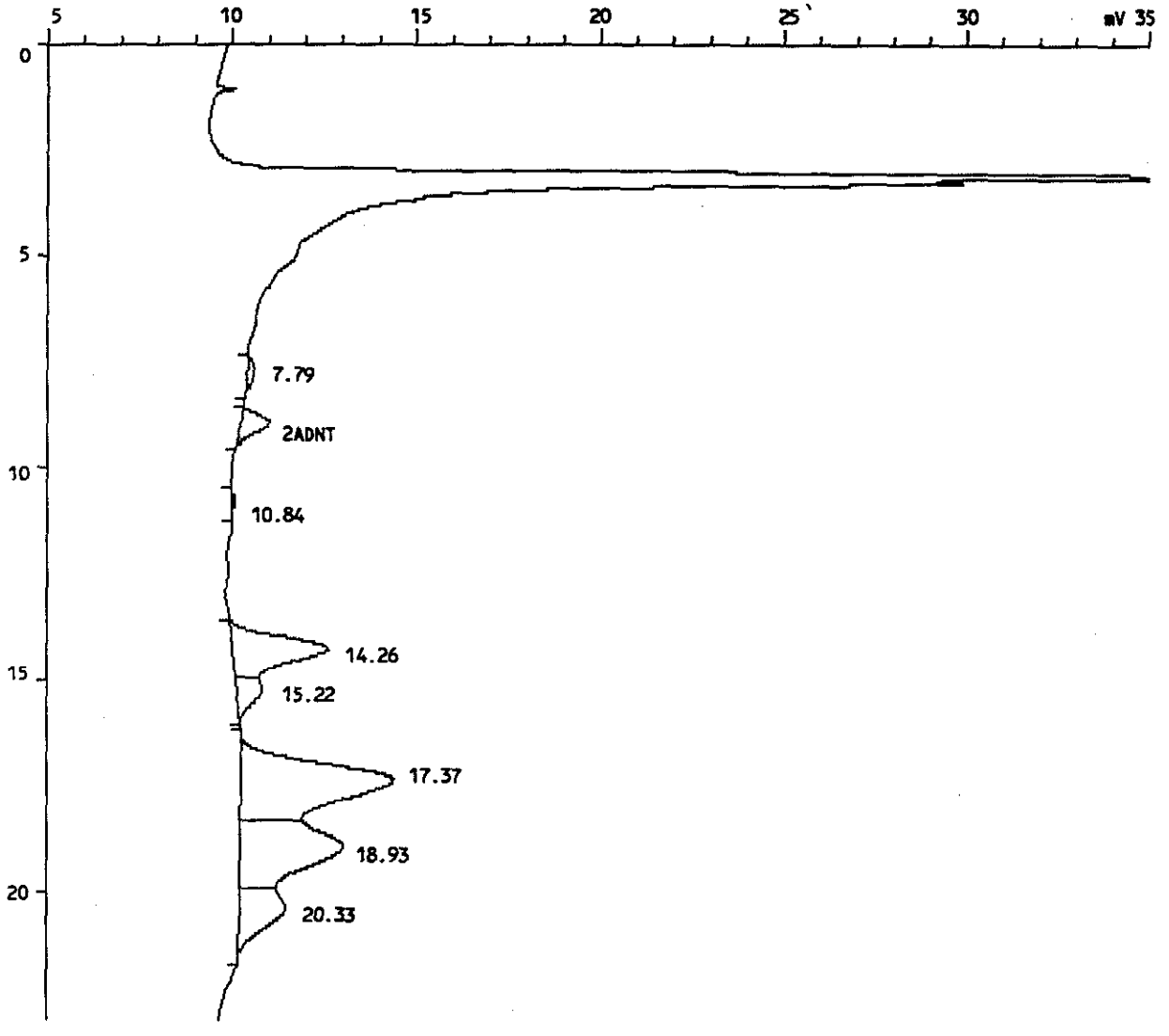
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.992	787	23168	1678.810	3,4DNT
Total		787	23168	1678.810	
Residual		11850	680700	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,16,1

Sample name.....: BIO-N-30%-20-D3
Sample ID.....: 34017.14RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 09:12:40
Reported on 08-Jun-98 at 11:29:01



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,16,1

Acquired on 06-Jun-98 at 09:12:40
Modified on 08-Jun-82 at 11:16:00
Reported on 08-Jun-98 at 11:16:01

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D3
Sample ID.....: 34017.14RE
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	8.992	787	23168	933.048	2ADNT
Total		787	23168	933.048	
Residual		11850	680700	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.14

Sample Amt: 2g % Moisture 19.74 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

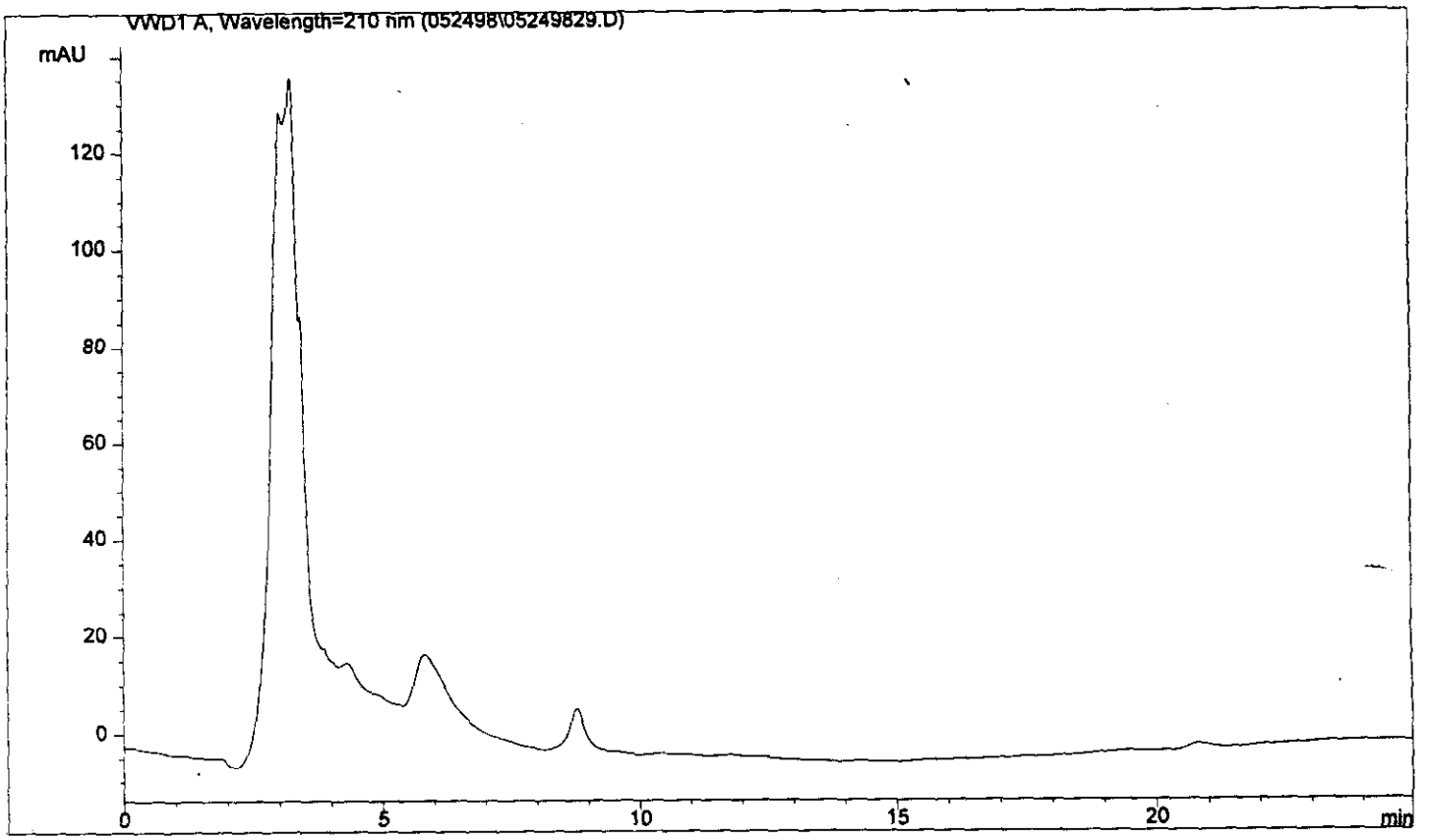
FORM I

Injection Date : Mon, 25. May. 1998
Sample Name : 34017.14
Acq Operator : SS

Seq Line : 29
Vial No. : 29
Inj. No. : 1
Inj. Vol. : 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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

Totals: 0.00000

210

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A1 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.15

Sample Amt: 2g % Moisture 31.47 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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

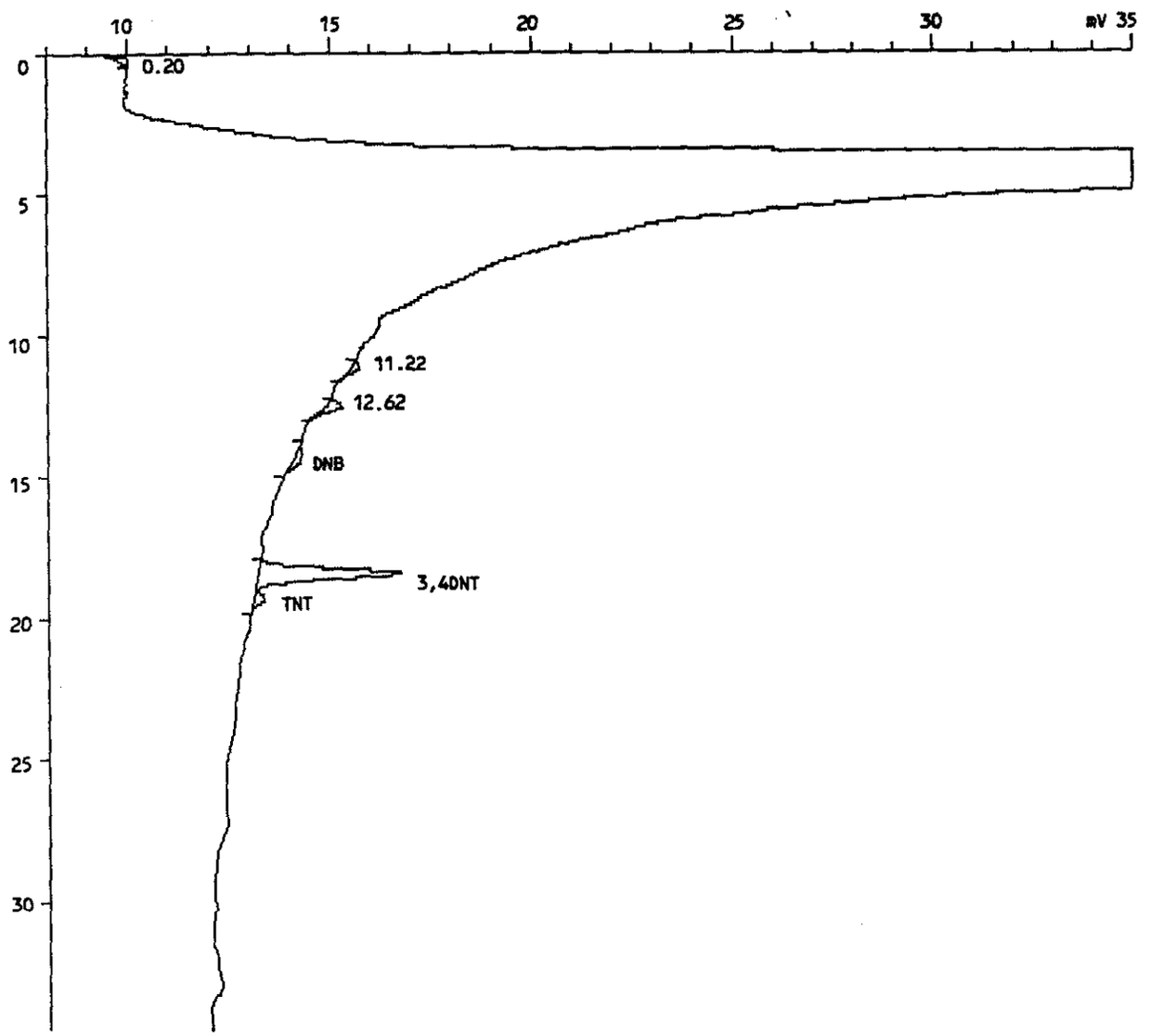
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,29,1

Sample name.....: BIO-N-30%-20-A1FD
Sample ID.....: 34017.15
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 18:38:43
Reported on 26-May-98 at 17:33:04



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,29,1

Acquired on 22-May-98 at 18:38:43
Modified on 26-May-82 at 17:32:10
Reported on 26-May-98 at 17:32:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:32:10
Method file.....: EXPLOS Last modified on 26-May-82 at 17:21:36
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A1FD
Sample ID.....: 34017.15
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	14.549	228	8079	61.541	DNB
5	18.437	3576	89396	1476.640	3,4DNT 74
6	19.333	296	7515	71.190	TNT
Total		4100	104990	1609.371	
Residual		1016	20321	-158.758	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A1
FD RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.15 RE

Sample Amt: 2g % Moisture 31.47 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 06/03/98

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

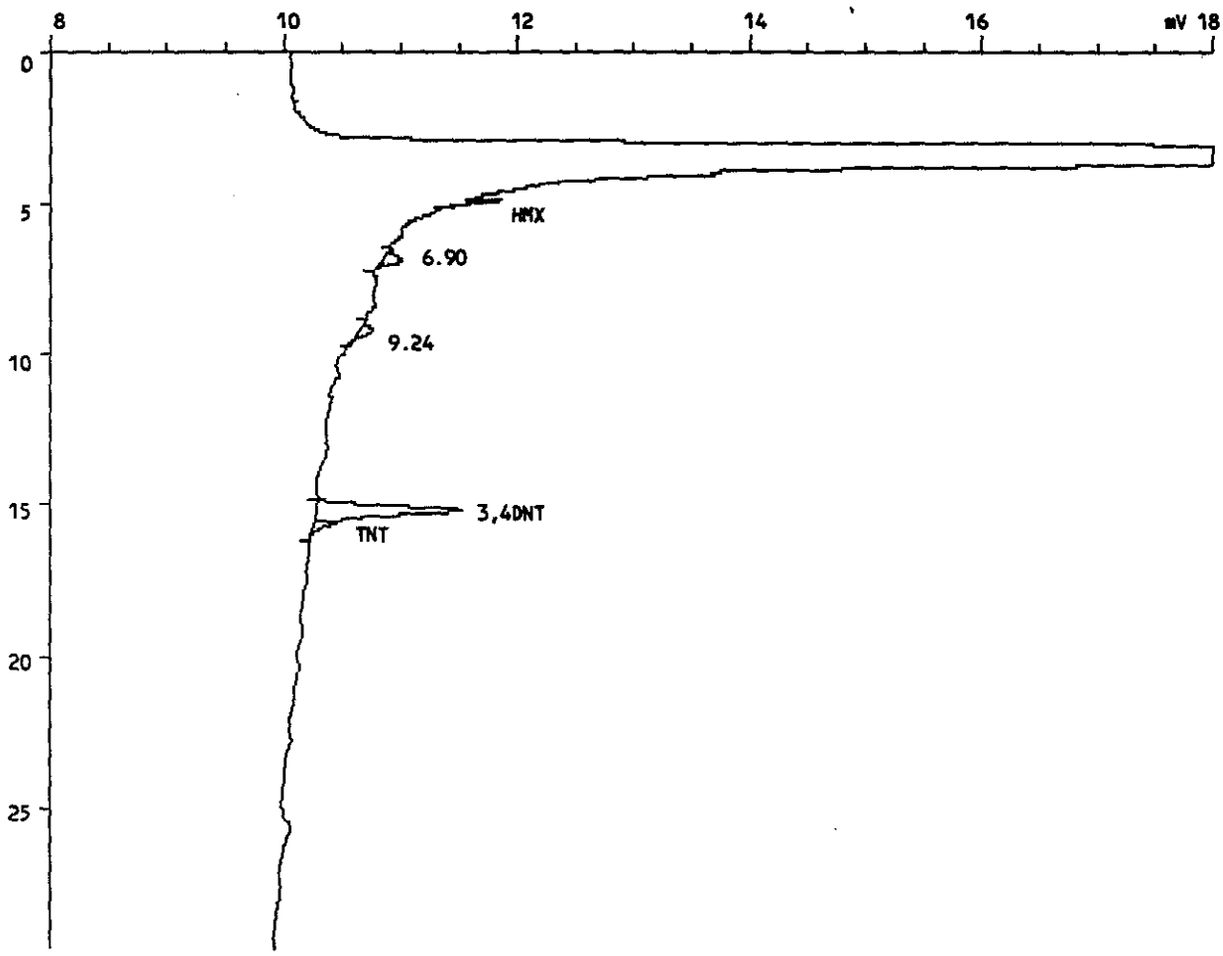
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0602A,4,1

Sample name.....: BIO-N-30%-20-A1FD
Sample ID.....: 34017.15 RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 03-Jun-98 at 03:03:54
Reported on 08-Jun-98 at 12:04:40



INJECTION REPORT

Injection F: <MC3> 5 5EX0602A,4,1

Acquired on 03-Jun-98 at 03:03:54
Modified on 08-Jun-82 at 12:03:58
Reported on 08-Jun-98 at 12:04:03

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.: 5
Calibration file..: 5EX0602 Last modified on 08-Jun-82 at 12:00:22
Method file.....: EXPLOS Last modified on 08-Jun-82 at 12:01:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A1FD
Sample ID.....: 34017.15 RE
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

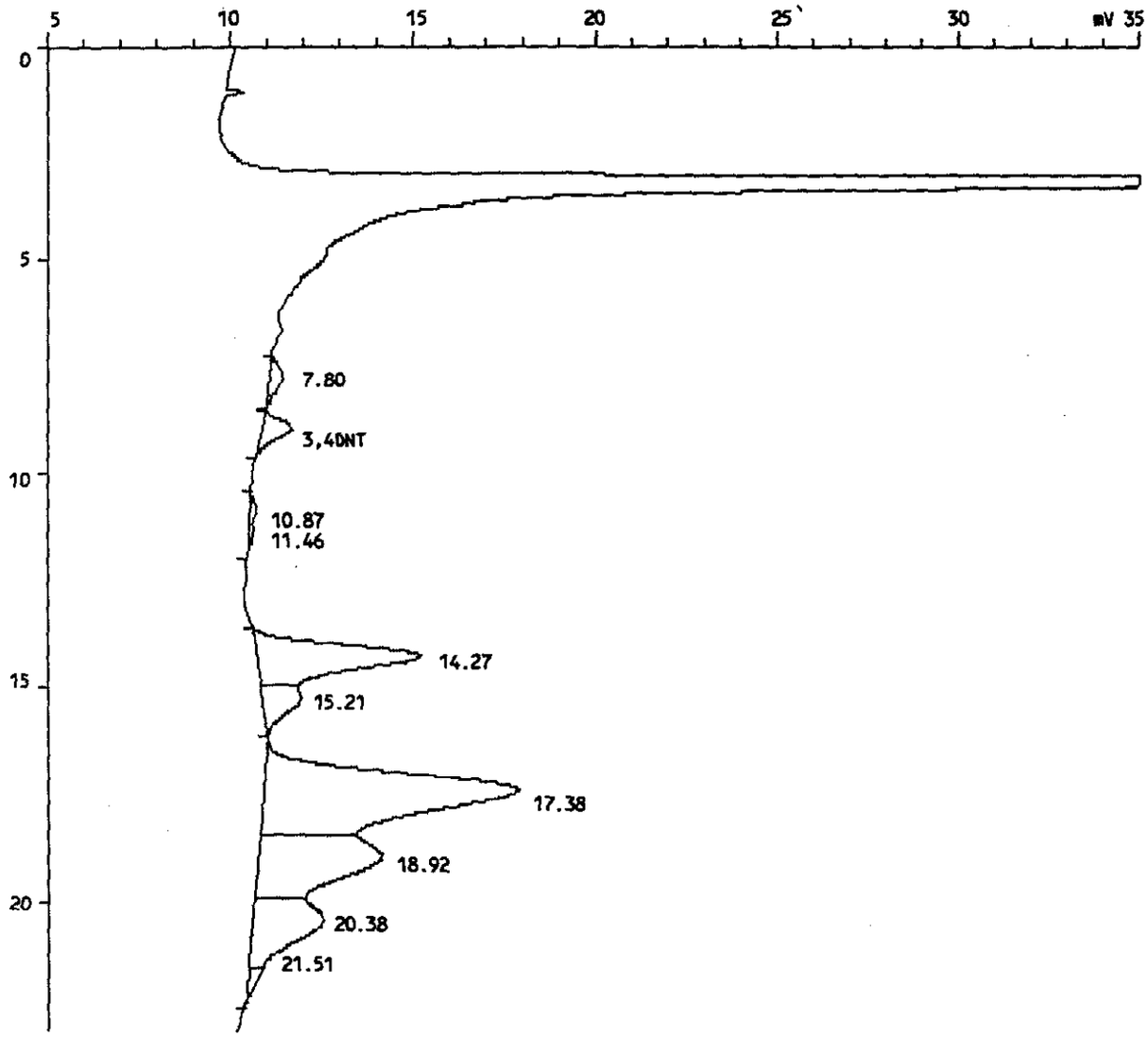
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.933	297	2404	357.800	HMX
4	15.200	1246	25273	2335.797	3,4DNT 117
5	15.520	240	3224	150.354	TNT
Total		1783	30901	2843.951	
Residual		292	6547	974.255	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,17,1

Sample name.....: BIO-N-30%-20-A1FD
Sample ID.....: 34017.15 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 09:57:02
Reported on 08-Jun-98 at 10:58:33



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,17,1

Acquired on 06-Jun-98 at 09:57:02
Modified on 08-Jun-82 at 10:49:32
Reported on 08-Jun-98 at 10:49:31

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 10:45:52
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:39:48
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A1FD
Sample ID.....: 34017.15RE
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

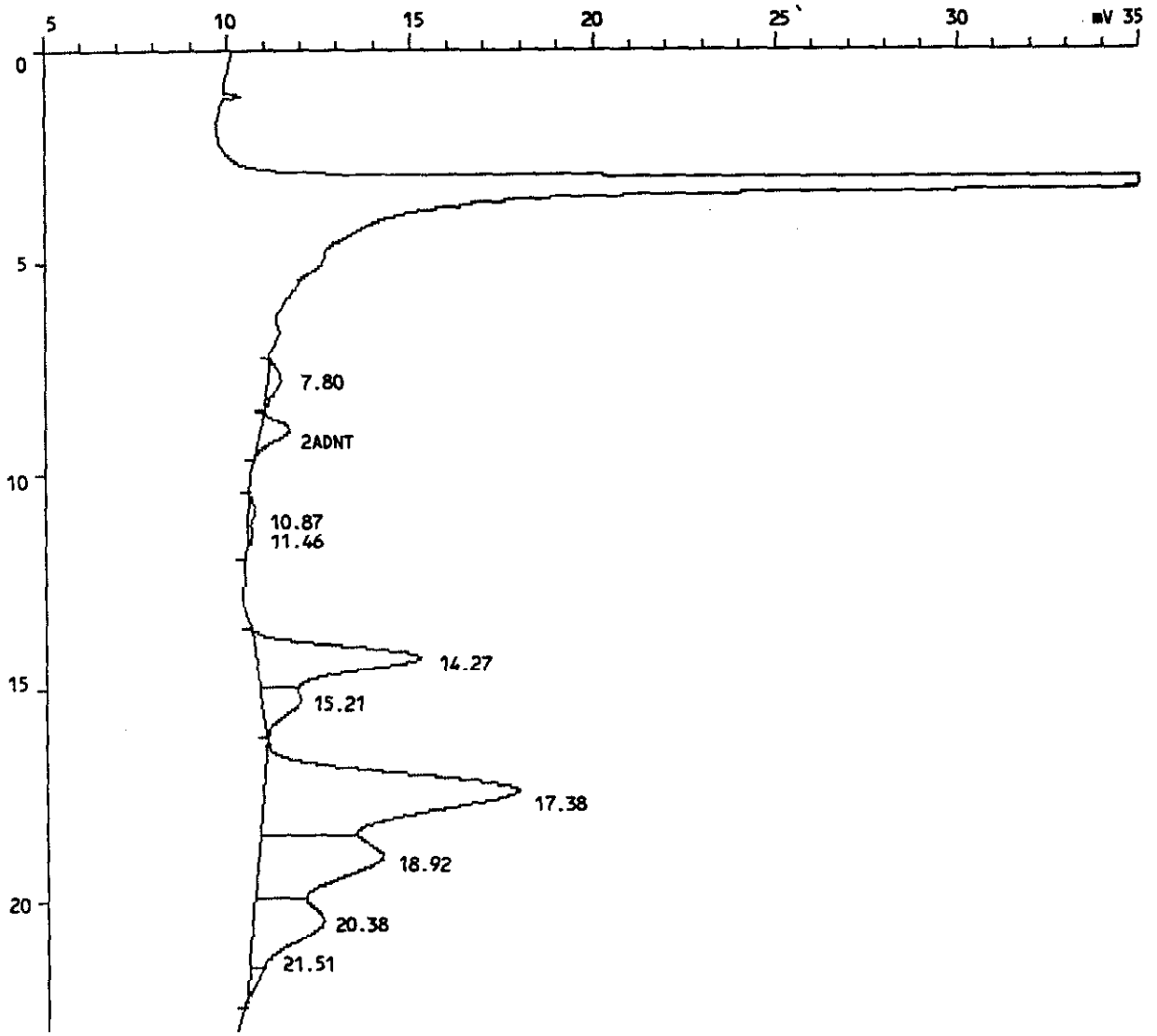
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.971	806	24280	1759.413	3,4DNT
Total		806	24280	1759.413	
Residual		18938	1096491	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,17,1

Sample name.....: BIO-N-30%-20-A1FD
Sample ID.....: 34017.15 RC
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 09:57:02
Reported on 08-Jun-98 at 11:29:22



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,17,1

Acquired on 06-Jun-98 at 09:57:02
Modified on 08-Jun-82 at 11:15:48
Reported on 08-Jun-98 at 11:15:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-A1FD
Sample ID.....: 34017.15 RE
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	8.971	806	24280	977.846	2ADNT
Total		806	24280	977.846	
Residual		18938	1096491	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-A1 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.15

Sample Amt: 2g % Moisture 31.47 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

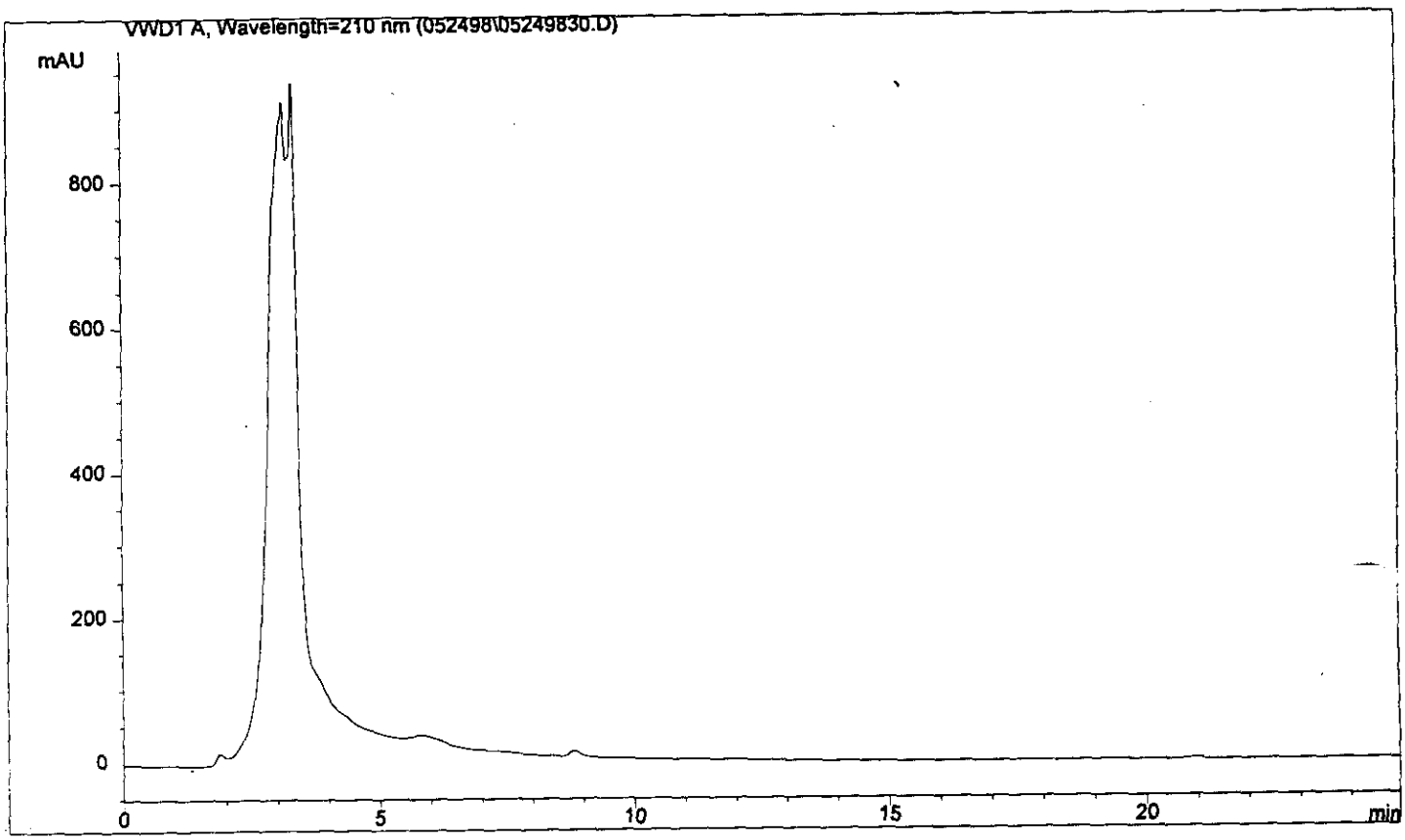
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 25. May. 1998	Seq Line	: 30
Sample Name	: 34017.15	Vial No.	: 30
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
Totals:				0.00000	

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D2 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.16

Sample Amt: 2g % Moisture 19.94 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/22/98

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	283	
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

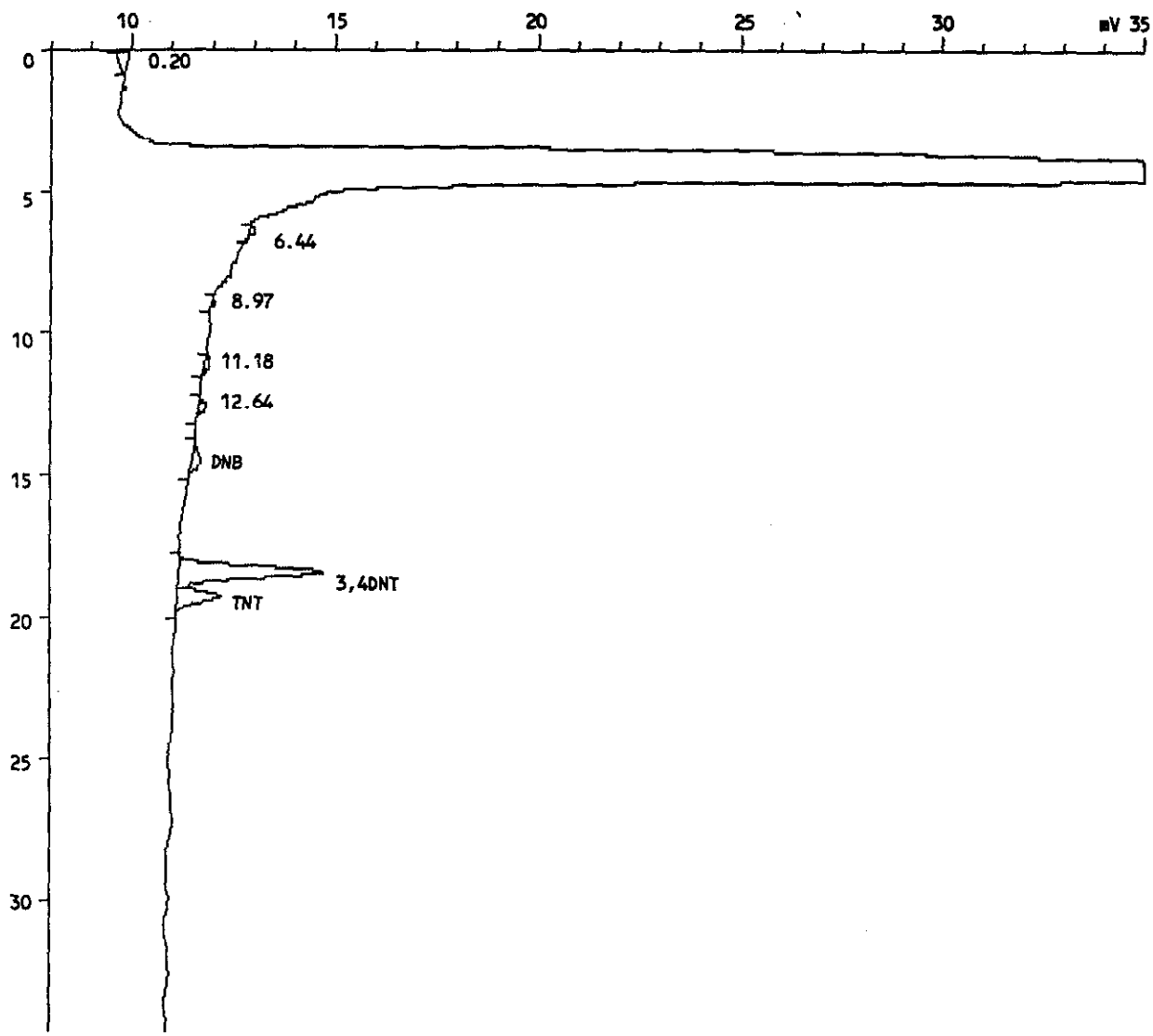
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0519D,30,1

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 22-May-98 at 19:23:20
Reported on 26-May-98 at 17:35:13



INJECTION REPORT

Injection F: <MC3> 2 2EX0519D,30,1

Acquired on 22-May-98 at 19:23:20
Modified on 26-May-82 at 17:34:44
Reported on 26-May-98 at 17:34:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 47
Calibration file..: 2EX0519 Last modified on 26-May-82 at 17:34:44
Method file.....: EXPLOS Last modified on 26-May-82 at 17:33:02
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16
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

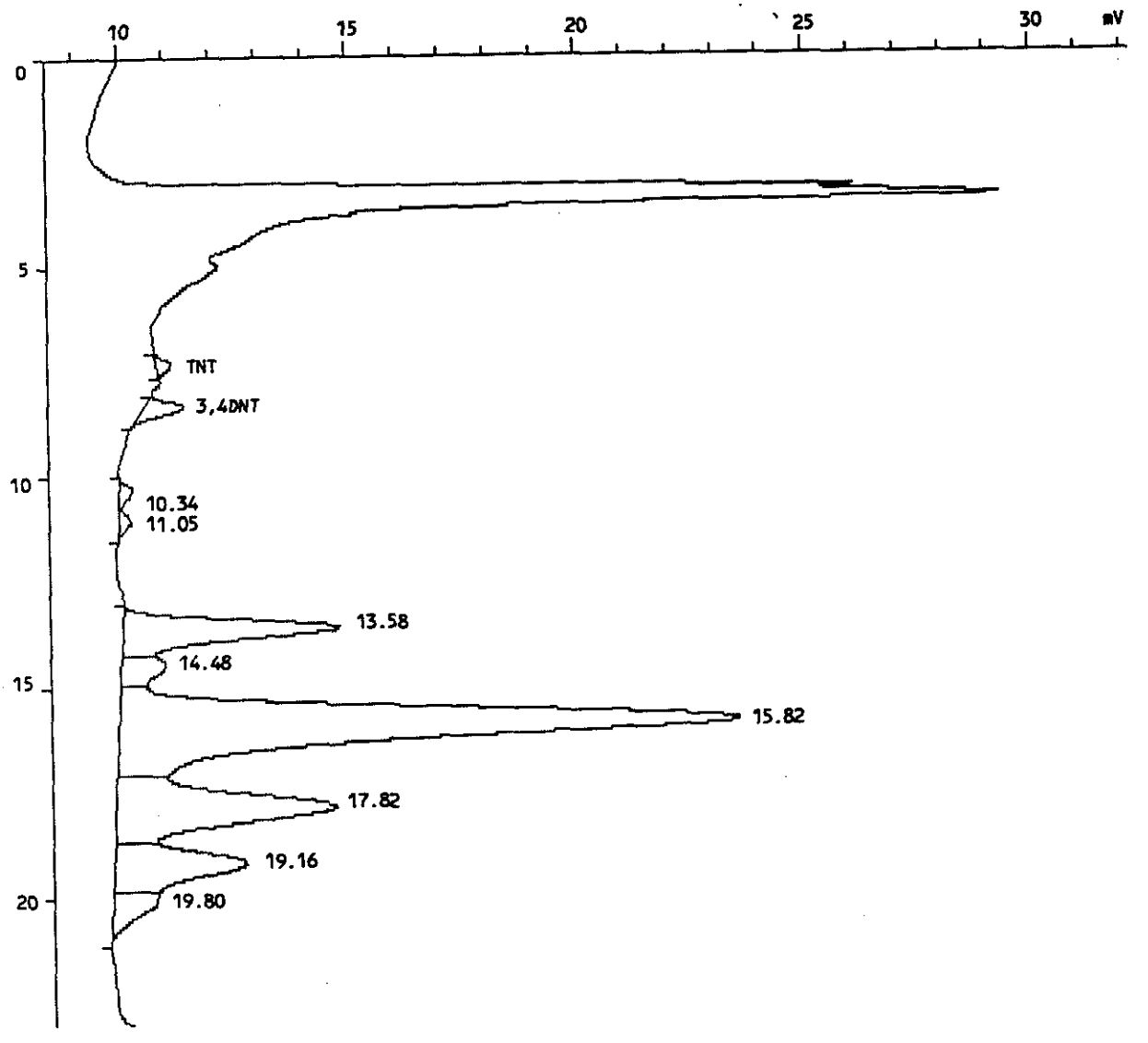
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
6	14.635	230	9411	71.683	DNB
7	18.389	3595	98665	1629.753	3,4DNT 82
8	19.285	1063	29906	283.305	TNT *
Total		4888	137982	1984.742	
Residual		876	20300	-158.590	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,18,1

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 17:36:20
Reported on 26-May-98 at 19:13:49



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,18,1

Acquired on 26-May-98 at 17:36:20
Modified on 26-May-82 at 19:13:26
Reported on 26-May-98 at 19:13:27

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..: 3CN0525A Last modified on 26-May-82 at 18:22:28
Method file.....: LCCN Last modified on 26-May-82 at 19:11:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16
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

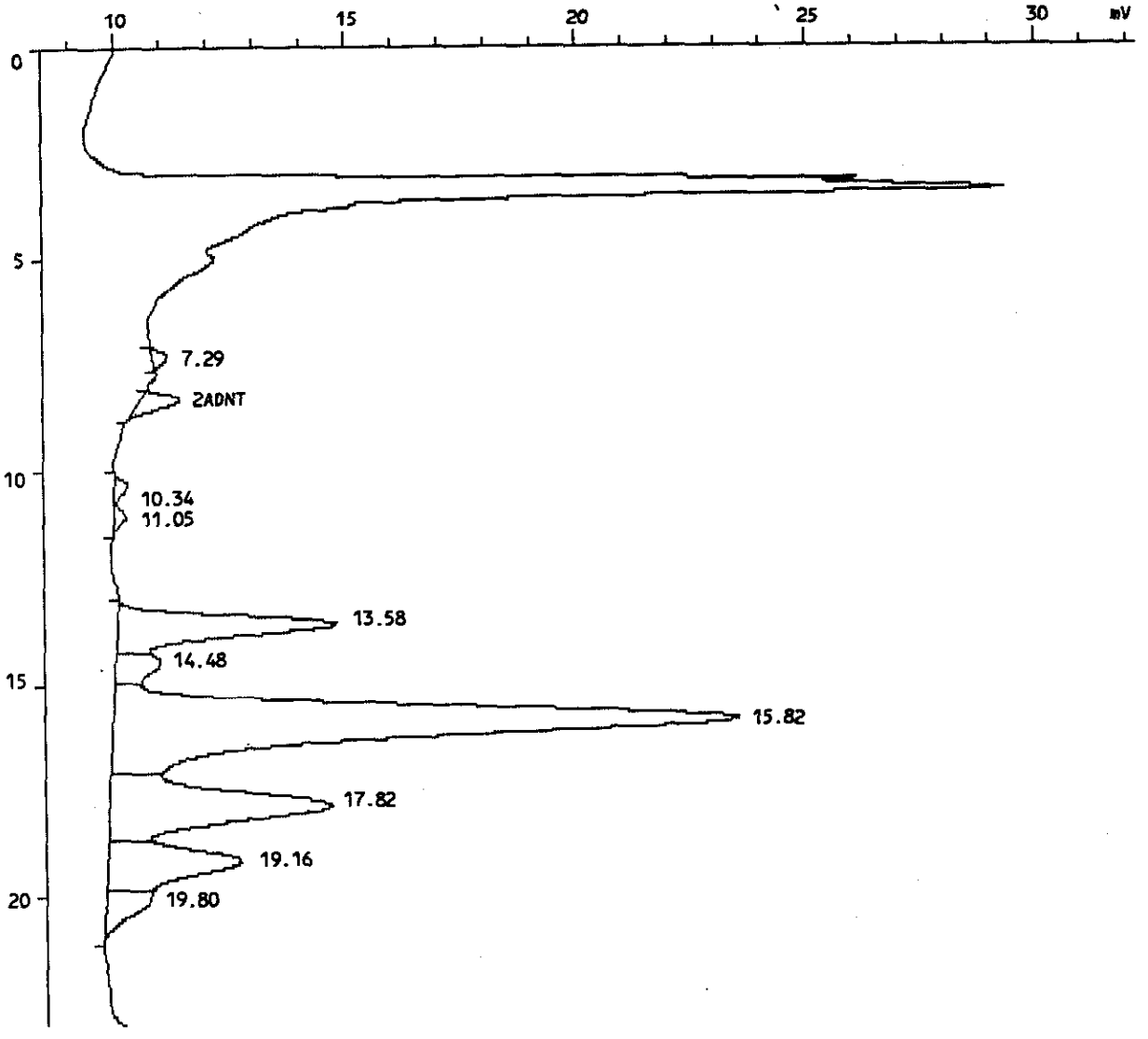
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.285	312	5721	221.833	TNT
2	8.331	904	20627	1427.458	3,4DNT
Total		1216	26348	1649.291	
Residual		28540	1323275	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0525A,18,1

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-09, INJ:100, UV

Acquired on 26-May-98 at 17:36:20
Reported on 26-May-98 at 19:12:49



INJECTION REPORT

Injection F: <MC3> 3 3CN0525A,18,1

Acquired on 26-May-98 at 17:36:20
Modified on 26-May-82 at 19:12:12
Reported on 26-May-98 at 19:12:34

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..: 3CN0525B Last modified on 26-May-82 at 19:05:50
Method file.....: LCCN Last modified on 26-May-82 at 19:11:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16
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	8.331	904	20627	748.975	2ADNT
Total		904	20627	748.975	
Residual		28852	1328996	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D2
FD RE

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.16 RE

Sample Amt: 2g % Moisture 19.94 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 06/03/98

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	333	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

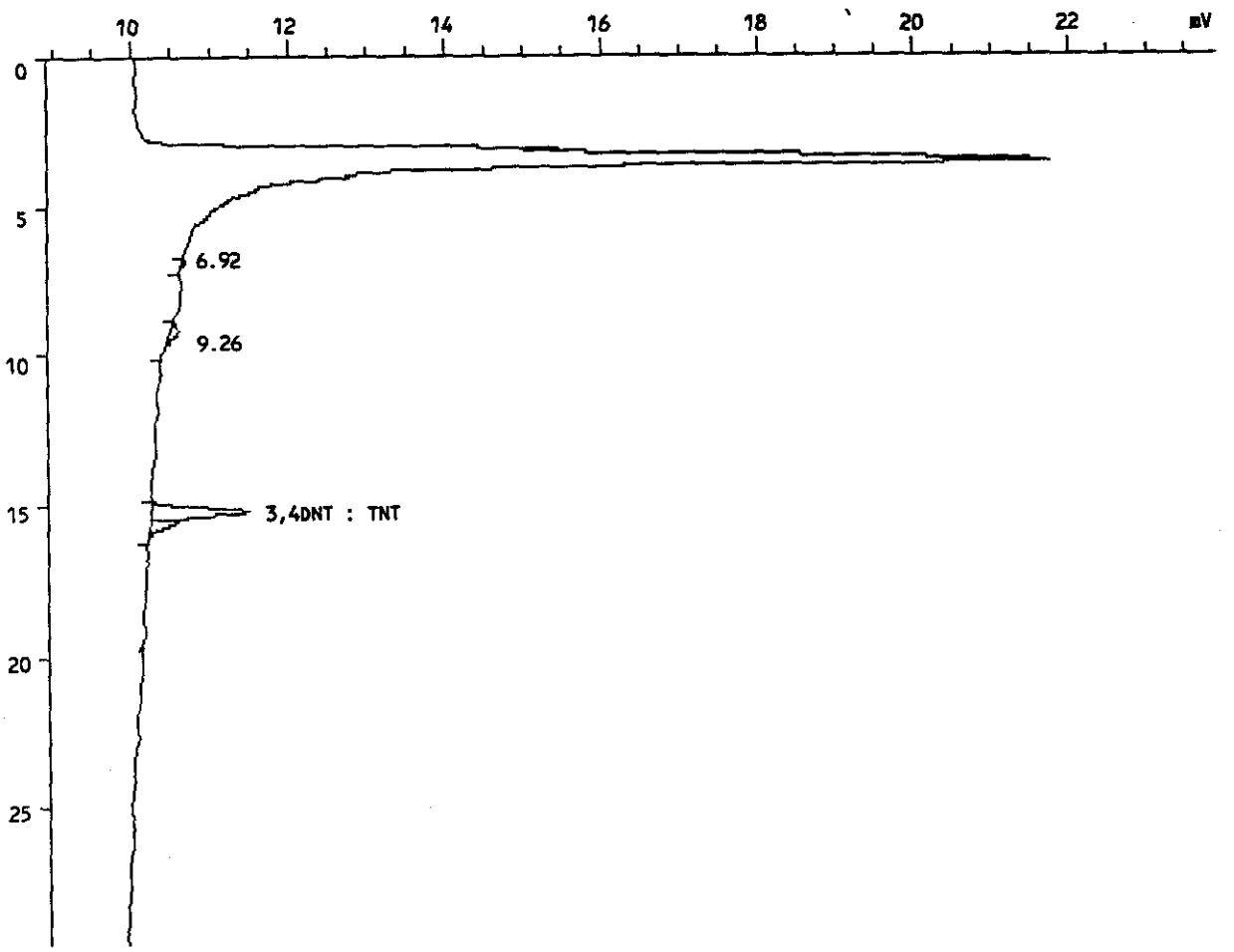
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0602A,5,1

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16RE
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 03-Jun-98 at 03:48:37
Reported on 04-Jun-98 at 19:28:16



INJECTION REPORT

Injection F: <MC3> 5 5EX0602A,5,1

Acquired on 03-Jun-98 at 03:48:37
Modified on 04-Jun-82 at 19:27:30
Reported on 04-Jun-98 at 19:27:37

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.: 5
Calibration file..: 5EX0602 Last modified on 04-Jun-82 at 19:27:30
Method file.....: EXPLOS Last modified on 04-Jun-82 at 19:08:58
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16RE
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

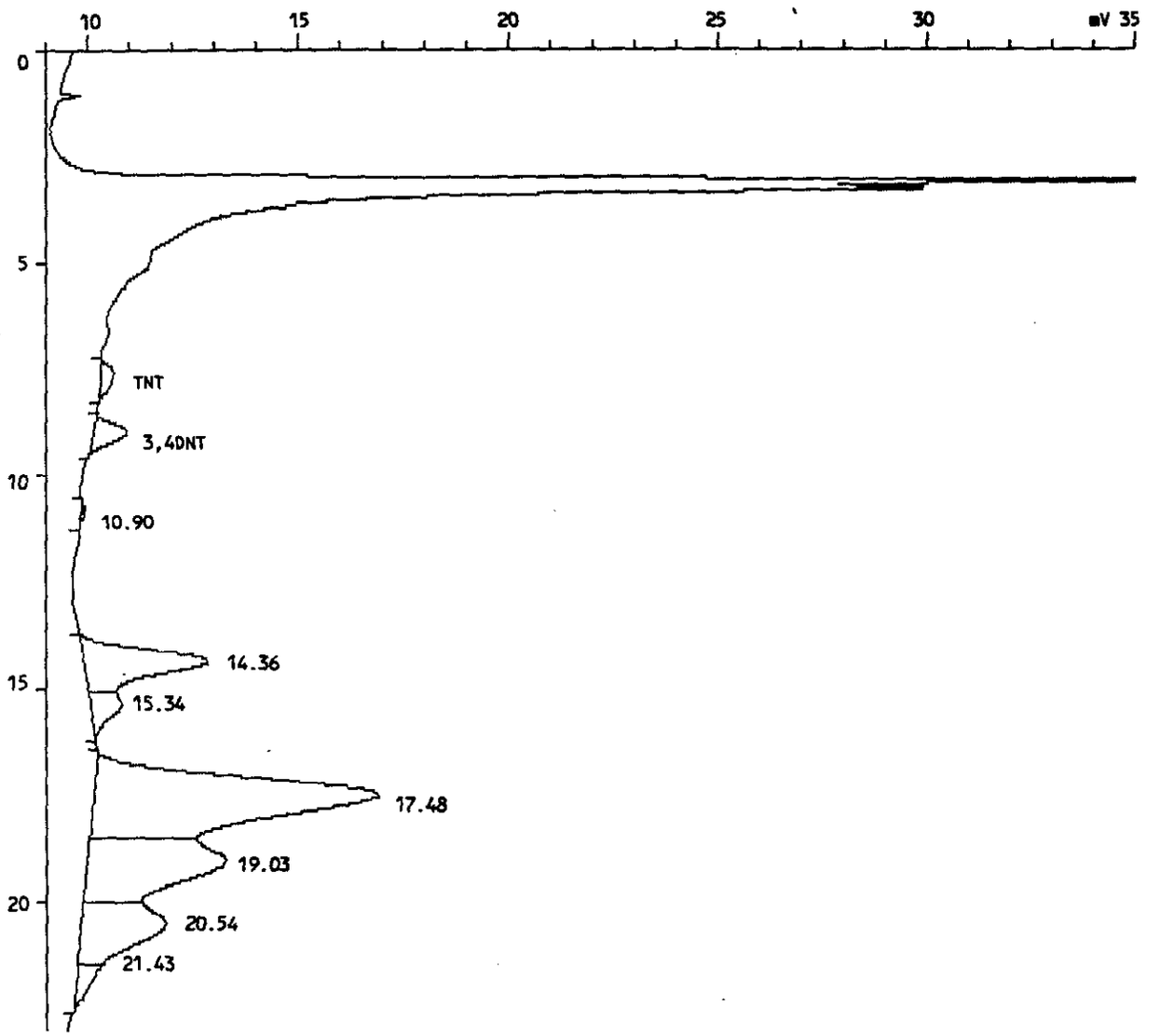
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	15.211	1244	24281	2244.058	3,4DNT 112.20%
4	15.456	419	7146	333.312	TNT *P
Total		1663	31427	2577.370	
Residual		154	4170	-32.575	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,18,1

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 06-Jun-98 at 10:41:23
Reported on 08-Jun-98 at 12:07:52



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,18,1

Acquired on 06-Jun-98 at 10:41:23
Modified on 08-Jun-82 at 12:07:02
Reported on 08-Jun-98 at 12:07:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605A Last modified on 08-Jun-82 at 12:07:00
Method file.....: LCCN Last modified on 08-Jun-82 at 11:16:54
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16 RE
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

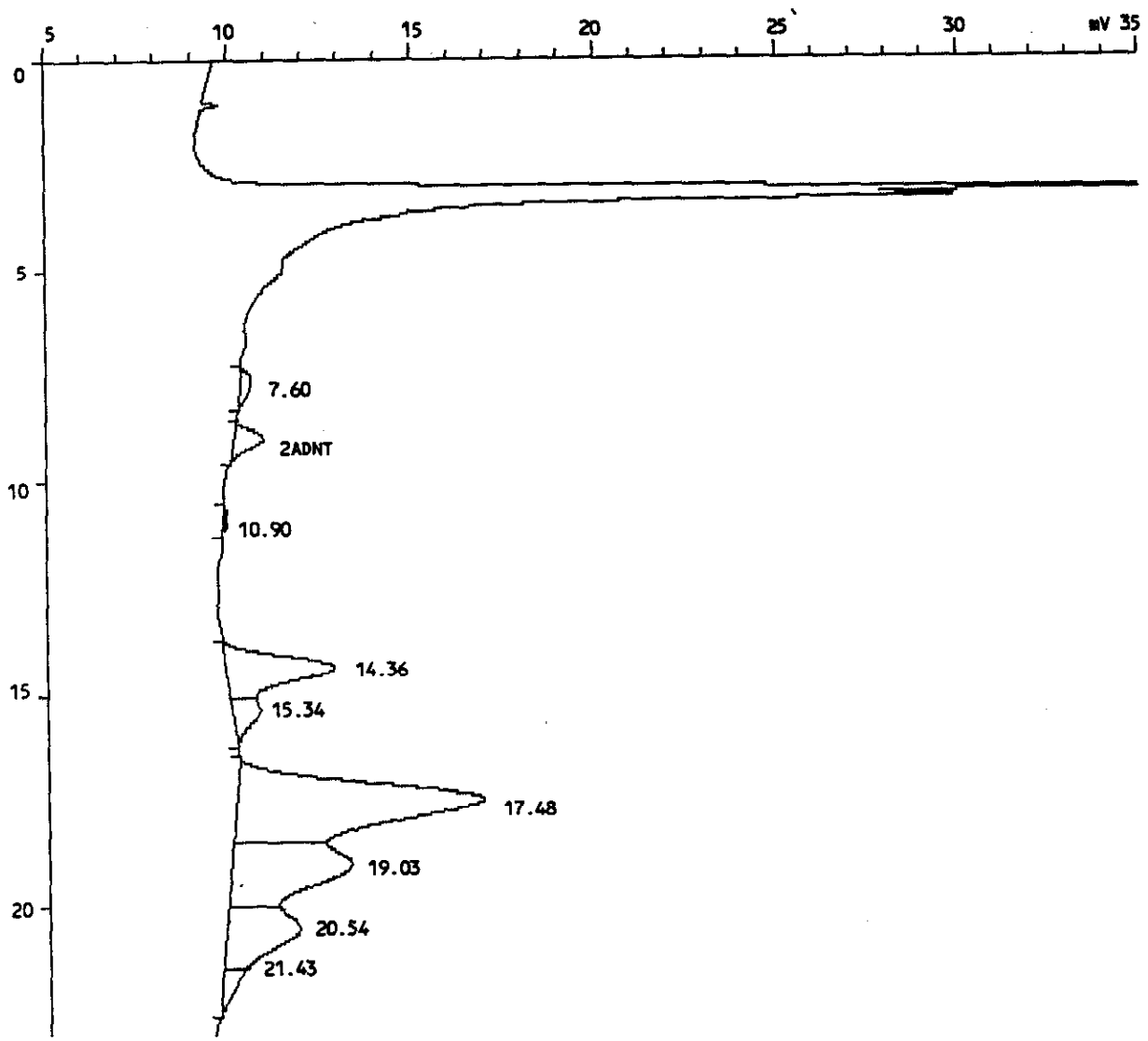
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.600	333	12443	494.760	TNT
2	9.035	804	23671	1715.298	3,4DNT
Total		1137	36114	2210.058	
Residual		16500	989949	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0605A,18,1

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16 RE
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV

Acquired on 06-Jun-98 at 10:41:23
Reported on 08-Jun-98 at 11:29:46



INJECTION REPORT

Injection F: <MC3> 3 3CN0605A,18,1

Acquired on 06-Jun-98 at 10:41:23
Modified on 08-Jun-82 at 11:15:36
Reported on 08-Jun-98 at 11:15:36

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 20
Calibration file..: 3CN0605B Last modified on 08-Jun-82 at 11:15:02
Method file.....: LCCN1 Last modified on 08-Jun-82 at 10:56:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-20-D2FD
Sample ID.....: 34017.16 RE
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	9.035	804	23671	953.327	2ADNT
Total		804	23671	953.327	
Residual		16833	1002392	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-20-D2 FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) SOIL Lab Sample ID: 34017.16

Sample Amt: 2g % Moisture 19.94 Date Received: 05/19/98

Extraction Volume: 10ml Date Extracted: 05/19/98

Extraction Method: SONC Date Analyzed: 05/25/98

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

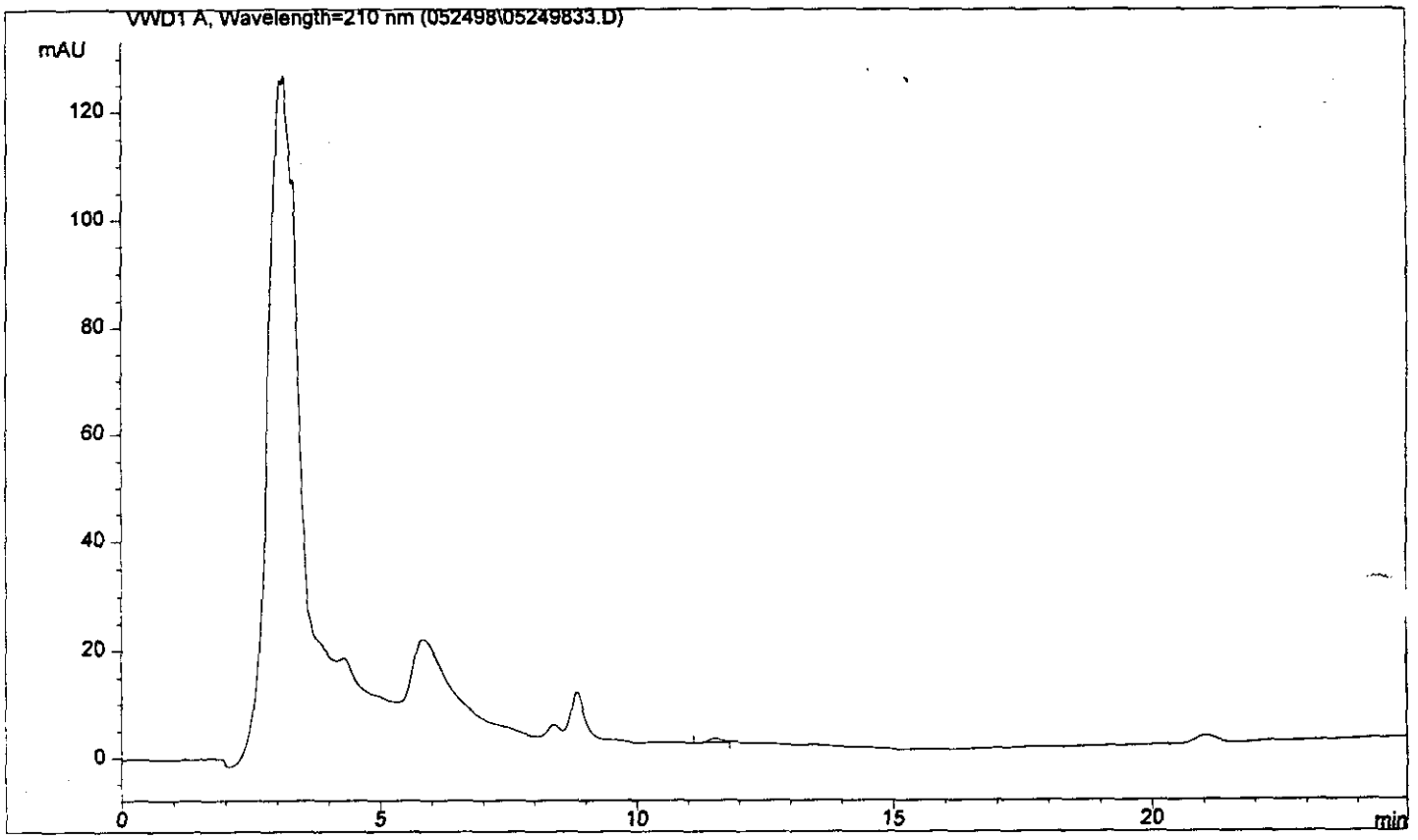
FORM I

Injection Date : Mon, 25. May. 1998
Sample Name : 34017.16
Acq Operator : SS

Seq Line : 33
Vial No. : 33
Inj. No. : 1
Inj. Vol. : 200 µ

Acq. Method : 052498.M
Analysis Method : C:\HPCHEM\1\METHODS\052498.M
Last Changed : Tue, 26. May. 1998, 03:10:43 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Tue, 26. May. 1998,00:52:15 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
11.520	PBA	15.71149	0.00000	0.00000	
Totals:				0.00000	

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB051798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) WATER Lab Sample ID: 34017.17

Sample Amt: 1ml % Moisture Date Received: 05/19/98

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) 200
3,4-DNT

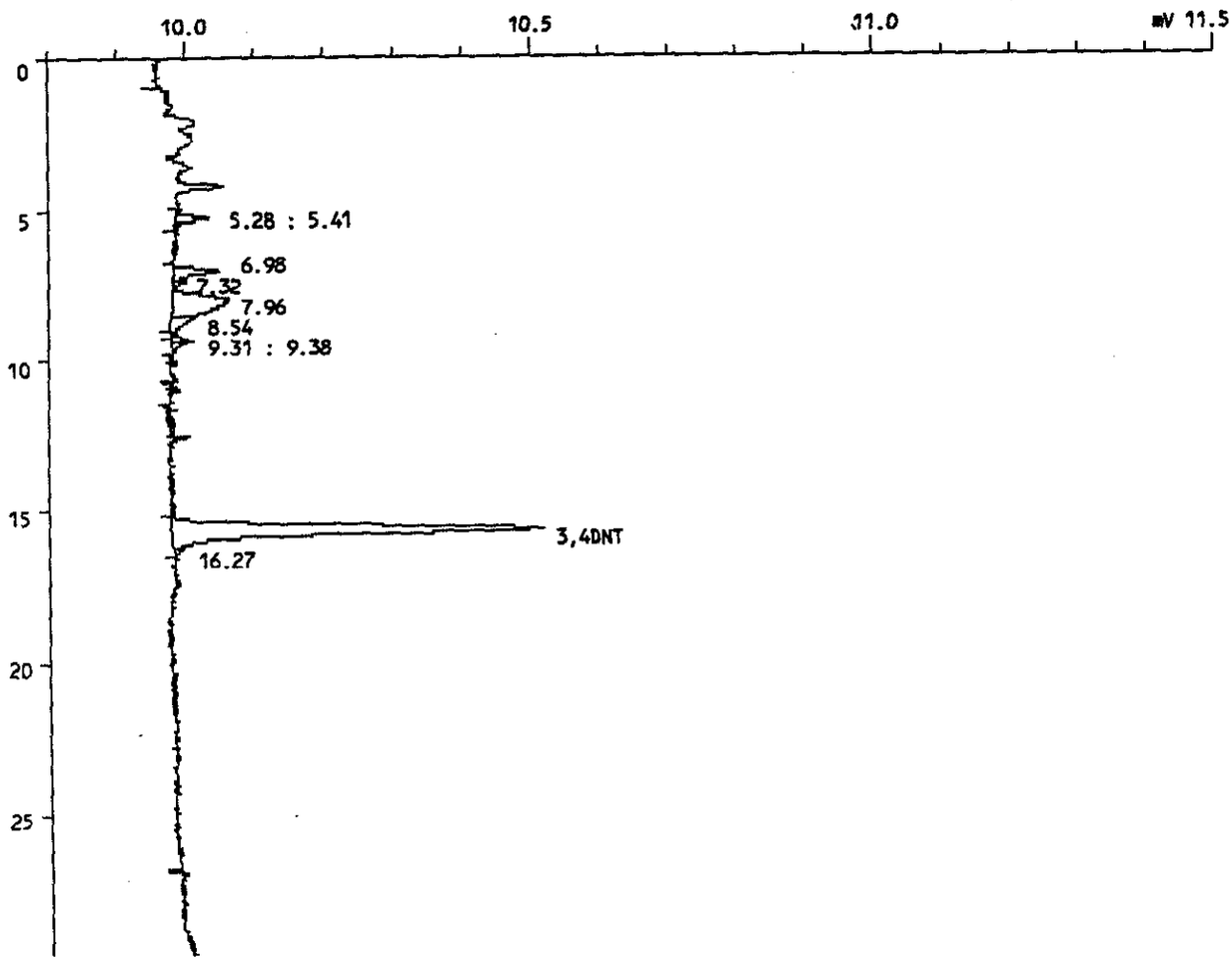
FORM I

LONG PLOT

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

Sample name.....: BIO-RB051798
Sample ID.....: 34017.17
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 21-May-98 at 15:38:41
Reported on 27-May-98 at 12:21:00



INJECTION REPORT

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

Acquired on 21-May-98 at 15:38:41
Modified on 27-May-82 at 12:08:14
Reported on 27-May-98 at 12:06:07

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 12:03:00
Method file.....: EXPLOS Last modified on 27-May-82 at 11:36:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-RB051798
Sample ID.....: 34017.17
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
9	15.653	540	11764	212.729	3,4DNT
Total		540	11764	212.729	
Residual		339	5944	107.485	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB051798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34017

Matrix: (soil/water) WATER Lab Sample ID: 34017.17

Sample Amt: 1ml % Moisture Date Received: 05/19/98

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

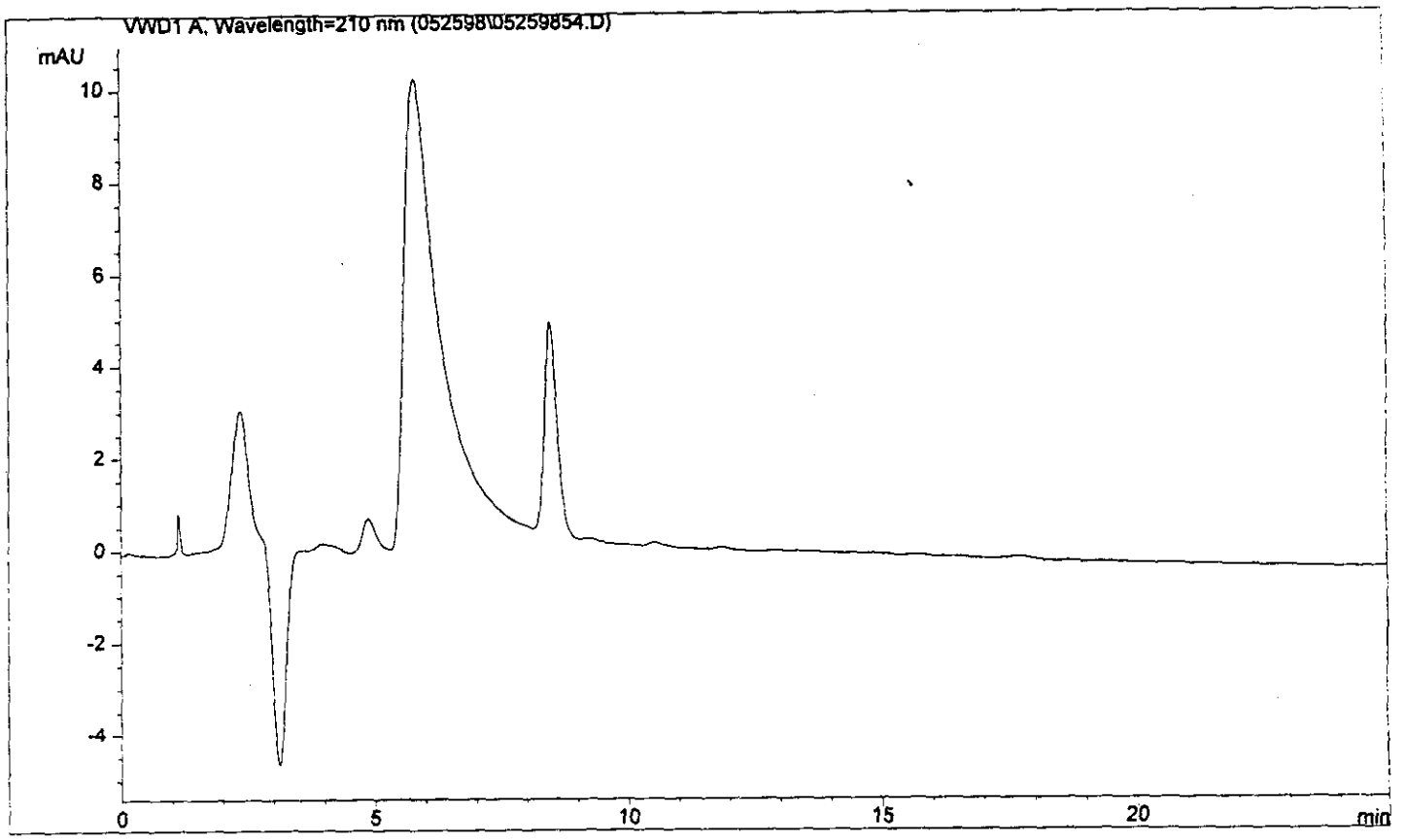
FORM I

Sample Name : 34017.17
Acq Operator : SS

Vial No. : 54
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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ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 05/19/98 to 05/23/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	05/19/98	19:45
EXP L1 SOIL STD	2-260:IA1	05/19/98	21:59
EXP L2 SOIL STD	2-259:IA2	05/19/98	22:43
EXP L3 SOIL STD	2-258:IA3	05/19/98	23:28
EXP L4 SOIL STD	2-257:IA4	05/20/98	00:13
EXP L5 SOIL STD	2-256:IA5	05/20/98	00:57
EXP L3 SOIL STD	2-258:CA6	05/22/98	00:02
BL0519SD	BL0519SD	05/22/98	01:32
LC0519SD	LC0519SD	05/22/98	03:01
LD0519SD	LD0519SD	05/22/98	03:46
BIO-N-30%-20-A1	34017.01	05/22/98	05:15
BIO-N-30%-20-A2	34017.02	05/22/98	05:59
EXP L3 SOIL STD	2-258:CA7	05/22/98	06:44
BIO-N-30%-20-A3	34017.03	05/22/98	08:13
BIO-N-30%-20-B1	34017.04	05/22/98	08:58
BIO-N-30%-20-B2	34017.05	05/22/98	09:43
BIO-N-30%-20-B3	34017.06	05/22/98	10:27
BIO-N-30%-20-C1	34017.07	05/22/98	11:12
BIO-N-30%-20-C1 MS	34017.08MS	05/22/98	11:57

FORM VIII

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 05/19/98 to 05/23/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-20-C1 MSD	34017.09MSD	05/22/98	12:41
BIO-N-30%-20-C2	34017.10	05/22/98	13:26
BIO-N-30%-20-C3	34017.11	05/22/98	14:10
EXP L3 SOIL STD	2-258:CA8	05/22/98	14:55
BIO-N-30%-20-D1	34017.12	05/22/98	16:24
BIO-N-30%-20-D2	34017.13	05/22/98	17:09
BIO-N-30%-20-D3	34017.14	05/22/98	17:54
BIO-N-30%-20-A1FD	34017.15	05/22/98	18:38
BIO-N-30%-20-D2FD	34017.16	05/22/98	19:23
EXP L3 SOIL STD	2-258:CA9	05/22/98	23:06

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN12
olumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0519,4
Injection File Name Level 2 : 2EX0519,5
Injection File Name Level 3 : 2EX0519,6
Injection File Name Level 4 : 2EX0519,7
Injection File Name Level 5 : 2EX0519,8

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
HMX	12105	1194	347230	1367	808135	1224	1114131	1125	1642152	1244
RDX	9524	2257	245537	2325	562830	2039	800366	1943	1173121	2133
TNB	12593	4170	352151	4658	815464	4139	1137255	3842	1690090	4290
DNB	10460	6457	294399	7251	688197	6517	943789	5958	1407455	6639
TETRYL	10789	2900	297215	3196	696238	2877	967125	2657	1404578	2902
NB	17281	5237	474976	5764	1115294	5212	1539077	4780	2303360	5357
3,4-DNT	15186	2989	420106	3313	988290	2995	1369810	2762	2030712	3077
TNT	14352	5316	389159	5757	912535	5185	1262862	4784	1883603	5351
4ADNT	8150	3453	214126	3617	504132	3274	698066	3009	1025303	3329
2ADNT	12254	5192	342972	5793	804521	5224	1113542	4800	1658713	5385
26DNT	9557	2463	273580	2815	637860	2511	885721	2331	1298900	2567
24DNT	15556	6592	424201	7166	990717	6433	1374684	5925	2055048	6672
T	8894	2631	264018	3121	610972	2777	848914	2572	1256356	2855
T	8149	2411	254772	3011	587611	2671	817627	2478	1209605	2749
NT	10950	3401	335840	4177	777481	3702	1080458	3441	1600631	3829

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN12
olumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0519,4
Injection File Name Level 2 : 2EX0519,5
Injection File Name Level 3 : 2EX0519,6
Injection File Name Level 4 : 2EX0519,7
Injection File Name Level 5 : 2EX0519,8

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
HMX	1231	7.18	0.99693	1211	0.000
RDX	2139	7.28	0.99731	2070	0.000
TNB	4220	7.00	0.99649	4151	0.000
DNB	6564	7.06	0.99655	6445	0.000
TETRYL	2906	6.59	0.99751	2835	0.000
NB	5270	6.69	0.99634	5184	0.000
³.4-DNT	3027	6.55	0.99666	2982	0.000
T	5278	6.62	0.99645	5178	0.000
4ADNT	3336	6.76	0.99696	3237	0.000
2ADNT	5279	6.80	0.99626	5207	0.000
26DNT	2537	7.01	0.99716	2498	0.000
24DNT	6558	6.82	0.99605	6440	0.000
2NT	2791	7.73	0.99677	2771	0.000
4NT	2664	8.94	0.99677	2668	0.000
3NT	3710	8.53	0.99664	3710	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/19/1998
ntinuing Calibration #: 6
ontinuing Cal Date : 05/22/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0519D,4
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	815840	1236	1231	0.42	1211	2.11
RDX	577835	2094	2139	2.14	2070	1.12
TNB	833913	4233	4220	0.31	4151	1.98
DNB	695367	6585	6564	0.31	6445	2.17
TETRYL	710356	2935	2906	1.00	2835	3.54
NB	1121453	5240	5270	0.56	5184	1.09
3,4-DNT	1001902	3036	3027	0.29	2982	1.82
TNT	923685	5248	5278	0.57	5178	1.36
4ADNT	511379	3321	3336	0.47	3237	2.60
2ADNT	816129	5300	5279	0.39	5207	1.78
26DNT	644703	2538	2537	0.03	2498	1.62
24DNT	1000311	6496	6558	0.95	6440	0.86
2NT	616001	2800	2791	0.31	2771	1.06
4NT	593441	2697	2664	1.25	2668	1.12
NT	786274	3744	3710	0.92	3710	0.92

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/19/1998
ntinuing Calibration #: 7
ontinuing Cal Date : 05/22/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0519D,13
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	816097	1237	1231	0.45	1211	2.15
RDX	572834	2075	2139	2.99	2070	0.25
TNB	827309	4200	4220	0.48	4151	1.17
DNB	686834	6504	6564	0.92	6445	0.92
TETRYL	688693	2846	2906	2.08	2835	0.38
NB	1106402	5170	5270	1.89	5184	0.27
3,4-DNT	994157	3013	3027	0.48	2982	1.04
TNT	917476	5213	5278	1.24	5178	0.68
4ADNT	504391	3275	3336	1.83	3237	1.20
2ADNT	808852	5252	5279	0.51	5207	0.87
26DNT	638502	2514	2537	0.93	2498	0.64
24DNT	993736	6453	6558	1.60	6440	0.20
2NT	606238	2756	2791	1.28	2771	0.54
4NT	584431	2657	2664	0.28	2668	0.41
NT	774572	3688	3710	0.58	3710	0.58

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/19/1998
ıtinuing Calibration #: 8
ıtinuing Cal Date : 05/22/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0519D,24
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	778853	1180	1231	4.13	1211	2.51
RDX	550265	1994	2139	6.81	2070	3.70
TNB	784711	3983	4220	5.60	4151	4.04
DNB	656450	6216	6564	5.30	6445	3.55
TETRYL	640004	2645	2906	9.01	2835	6.71
NB	1053551	4923	5270	6.58	5184	5.03
3,4-DNT	951176	2882	3027	4.78	2982	3.33
TNT	873566	4963	5278	5.97	5178	4.14
4ADNT	484581	3147	3336	5.69	3237	2.78
2ADNT	771739	5011	5279	5.07	5207	3.76
26DNT	615407	2423	2537	4.51	2498	3.00
24DNT	943242	6125	6558	6.60	6440	4.89
2NT	579265	2633	2791	5.67	2771	4.97
4NT	559373	2543	2664	4.56	2668	4.68
JT	739565	3522	3710	5.08	3710	5.07

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/19/1998
ıtinuing Calibration #: 9
Continuing Cal Date : 05/22/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0519D,35
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	821036	1244	1231	1.06	1211	2.76
RDX	578154	2095	2139	2.09	2070	1.18
TNB	823508	4180	4220	0.94	4151	0.71
DNB	696173	6593	6564	0.43	6445	2.29
TETRYL	652338	2696	2906	7.25	2835	4.91
NB	1107887	5177	5270	1.76	5184	0.13
3,4-DNT	1001106	3034	3027	0.21	2982	1.74
TNT	921425	5235	5278	0.81	5178	1.11
4ADNT	512068	3325	3336	0.34	3237	2.74
2ADNT	817492	5308	5279	0.56	5207	1.95
26DNT	645414	2541	2537	0.14	2498	1.73
24DNT	999561	6491	6558	1.02	6440	0.79
2NT	606024	2755	2791	1.32	2771	0.58
'NT	585075	2659	2664	0.17	2668	0.30
NT	774410	3688	3710	0.60	3710	0.60

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	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

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page 1
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CALIBRATION FACTOR DAT
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN12
olumn ID : CARB-07
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
HMX	5.74	5.73	5.74	5.73	5.73
RDX	8.85	8.78	8.80	8.78	8.79
TNB	12.01	11.95	11.98	11.95	11.95
DNB	14.64	14.59	14.64	14.61	14.61
TETRYL	16.06	15.98	16.04	16.00	16.01
NB	16.69	16.60	16.65	16.61	16.60
3,4-DNT	18.36	18.24	18.30	18.25	18.25
TNT	19.25	19.13	19.18	19.14	19.14
4ADNT	20.07	19.93	20.01	19.98	19.98
2ADNT	21.09	20.97	21.04	21.01	21.01
26DNT	22.46	22.32	22.38	22.35	22.34
24DNT	23.16	23.03	23.10	23.06	23.06
2NT	27.35	27.16	27.24	27.20	27.20
4NT	29.23	29.05	29.13	29.08	29.08
3NT	31.57	31.34	31.42	31.38	31.38

COMPONENT NAME	RT Cont CA6	RT Cont CA7	RT Cont CA8	RT Cont CA9
HMX	5.74	5.75	5.77	5.76
RDX	8.80	8.82	8.85	8.82
TNB	11.98	12.01	12.04	12.01
DNB	14.64	14.66	14.70	14.66
TETRYL	16.04	16.06	16.13	16.07
NB	16.65	16.67	16.73	16.68
3,4-DNT	18.29	18.32	18.40	18.33
TNT	19.18	19.21	19.28	19.22
4ADNT	19.98	20.01	20.09	20.01
2ADNT	21.00	21.03	21.12	21.03
26DNT	22.37	22.41	22.50	22.42
24DNT	23.08	23.12	23.21	23.13
2NT	27.24	27.28	27.38	27.30
4NT	29.12	29.16	29.27	29.19
3NT	31.42	31.47	31.58	31.49

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.74	0.014	0.041	5.70 - 5.78
RDX	8.80	0.026	0.077	8.72 - 8.88
TB	11.97	0.032	0.097	11.88 - 12.07
B	14.62	0.036	0.108	14.51 - 14.73
TETRYL	16.02	0.047	0.141	15.88 - 16.16
NB	16.63	0.046	0.137	16.50 - 16.77
3,4-DNT	18.28	0.056	0.167	18.11 - 18.45
TNT	19.17	0.056	0.168	19.00 - 19.34
4ADNT	19.97	0.068	0.203	19.77 - 20.18

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page 2
CA6→CA9

2ADNT	21.00	0.070	0.210	20.79 - 21.21
26DNT	22.36	0.066	0.197	22.17 - 22.56
24DNT	23.07	0.066	0.197	22.88 - 23.27
2NT	27.23	0.079	0.238	26.99 - 27.46
4NT	29.10	0.086	0.259	28.84 - 29.36
T	31.41	0.096	0.288	31.12 - 31.69

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 05/19/98 to 05/23/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	06/08/98	13:02
EXP L1 SOIL STD	2-281:IA1	06/08/98	15:16
EXP L2 SOIL STD	2-280:IA2	06/08/98	16:00
EXP L3 SOIL STD	2-279:IA3	06/08/98	16:45
EXP L4 SOIL STD	2-278:IA4	06/08/98	17:30
EXP L5 SOIL STD	2-277:IA5	06/08/98	18:14
EXP L3 SOIL STD	3-3:CA8	06/10/98	21:54
BL0608SB RERE	BL0608SBRERE	06/11/98	00:08
LC0608SB RERE	LC0608SBRERE	06/11/98	01:37
BIO-N-30%-20-B3 RERE	34017.06RERE	06/11/98	03:06
EXP L3 SOIL STD	3-3:CA9	06/11/98	04:36
BIO-N-30%-20-C1 RE	34017.07RERE	06/11/98	06:49
EXP L3 SOIL STD	3-3:CA10	06/11/98	09:03

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FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
lumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0608,4
Injection File Name Level 2 : 2EX0608,5
Injection File Name Level 3 : 2EX0608,6
Injection File Name Level 4 : 2EX0608,7
Injection File Name Level 5 : 2EX0608,8

Calibration Date : 06/08/1998
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	13247	1306	302740	1192	782618	1186	1174078	1186	1592483	1206
RDX	7033	1667	173303	1641	452227	1639	675665	1640	921551	1676
TNB	10734	3554	277638	3672	718362	3647	1077074	3639	1456704	3697
DNB	9450	5833	233700	5756	607190	5750	907432	5729	1237000	5835
TETRYL	8116	2182	210936	2268	542477	2242	804269	2210	1069237	2209
NB	14991	4543	394520	4788	1027052	4799	1537361	4774	2122541	4936
3,4-DNT	13861	2729	341981	2697	885259	2683	1319528	2660	1788431	2710
TNT	12234	4531	313672	4640	811655	4612	1216673	4609	1666117	4733
4ADNT	7641	3238	177406	2997	456707	2966	680419	2933	923849	3000
2ADNT	10481	4441	250149	4225	648424	4211	970428	4183	1325256	4303
26DNT	9725	2506	255368	2627	660039	2599	982024	2584	1317168	2603
24DNT	12230	5182	305805	5166	796008	5169	1196556	5158	1654612	5372
2NT	8444	2498	220970	2612	576525	2621	858407	2601	1170082	2659
	9421	2787	225612	2667	588611	2676	876064	2655	1197773	2722
	10364	3219	271679	3379	707430	3369	1053205	3354	1441973	

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0608,4
Injection File Name Level 2 : 2EX0608,5
Injection File Name Level 3 : 2EX0608,6
Injection File Name Level 4 : 2EX0608,7
Injection File Name Level 5 : 2EX0608,8

Calibration Date : 06/08/1998
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	1215	4.25	0.99991	1197	0.000
RDX	1652	1.05	0.99986	1659	0.000
TNB	3642	1.48	0.99993	3672	0.000
DNB	5781	0.86	0.99991	5790	0.000
TETRYL	2222	1.50	0.99996	2215	0.000
NB	4768	2.97	0.99970	4867	0.000
3,4-DNT	2696	0.96	0.99991	2691	0.000
TNT	4625	1.57	0.99979	4678	0.000
NT	3026	4.00	0.99986	2975	0.000
DNT	4273	2.44	0.99978	4253	0.000
26DNT	2584	1.78	0.99998	2597	0.000
24DNT	5209	1.76	0.99953	5277	0.000
2NT	2598	2.31	0.99988	2636	0.000
4NT	2701	2.02	0.99984	2695	0.000
3NT	3354	2.51	0.99979	3409	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/08/1998
Continuing Calibration #: 8
tinuing Cal Date : 06/10/1998
tinuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0608C,2
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	806445	1222	1215	0.54	1197	2.06
RDX	462863	1677	1652	1.49	1659	1.07
TNB	742240	3768	3642	3.46	3672	2.60
DNB	622754	5897	5781	2.02	5790	1.85
TETRYL	565552	2337	2222	5.17	2215	5.51
NB	1049728	4905	4768	2.88	4867	0.79
3,4-DNT	908153	2752	2696	2.09	2691	2.27
TNT	831472	4724	4625	2.15	4678	0.99
4ADNT	468666	3043	3026	0.56	2975	2.30
2ADNT	664786	4317	4273	1.04	4253	1.50
26DNT	671952	2645	2584	2.38	2597	1.86
24DNT	815497	5295	5209	1.65	5277	0.35
2NT	588559	2675	2598	2.96	2636	1.50
4NT	599500	2725	2701	0.88	2695	1.13
3NT	721230	3434	3354	2.40	3409	0.75

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/08/1998
Continuing Calibration #: 9
tinuing Cal Date : 06/11/1998
tinuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0608C,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	809639	1227	1215	0.94	1197	2.47
RDX	467550	1694	1652	2.52	1659	2.10
TNB	739212	3752	3642	3.03	3672	2.18
DNB	625095	5919	5781	2.40	5790	2.23
TETRYL	554439	2291	2222	3.11	2215	3.44
NB	1045998	4888	4768	2.51	4867	0.43
3,4-DNT	912642	2766	2696	2.59	2691	2.77
TNT	834564	4742	4625	2.53	4678	1.37
4ADNT	473406	3074	3026	1.57	2975	3.34
2ADNT	671672	4362	4273	2.08	4253	2.55
26DNT	672764	2649	2584	2.51	2597	1.98
24DNT	824858	5356	5209	2.82	5277	1.50
2NT	586032	2664	2598	2.52	2636	1.07
4NT	602069	2737	2701	1.31	2695	1.56
NT	720391	3430	3354	2.28	3409	0.64

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/08/1998
Continuing Calibration #: 10
Continuing Cal Date : 06/11/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0608C,17
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	789235	1196	1215	1.60	1197	0.12
RDX	461617	1673	1652	1.22	1659	0.80
TNB	732407	3718	3642	2.09	3672	1.24
DNB	618241	5855	5781	1.28	5790	1.11
TETRYL	526314	2175	2222	2.12	2215	1.81
NB	983744	4597	4768	3.59	4867	5.55
3,4-DNT	905988	2745	2696	1.85	2691	2.02
TNT	819229	4655	4625	0.64	4678	0.49
4ADNT	471583	3062	3026	1.18	2975	2.94
2ADNT	661542	4296	4273	0.54	4253	1.01
26DNT	678638	2672	2584	3.40	2597	2.87
24DNT	803154	5215	5209	0.12	5277	1.17
2NT	550200	2501	2598	3.75	2636	5.11
4NT	561702	2553	2701	5.48	2695	5.25
3NT	671288	3197	3354	4.69	3409	6.22

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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 DAT
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN12
Column ID : CARB-07
Calibration Date : 06/08/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.72	5.72	5.73	5.71	5.70
RDX	8.84	8.81	8.82	8.80	8.78
TNB	11.89	11.89	11.90	11.89	11.87
DNB	14.57	14.55	14.57	14.54	14.53
TETRYL	15.89	15.90	15.92	15.89	15.88
NB	16.54	16.52	16.53	16.51	16.49
3,4-DNT	18.25	18.21	18.22	18.20	18.19
TNT	18.97	18.97	18.98	18.95	18.93
4ADNT	20.00	19.96	19.97	19.95	19.94
2ADNT	21.04	21.02	21.04	21.00	20.99
26DNT	22.19	22.18	22.19	22.16	22.15
24DNT	22.92	22.90	22.92	22.89	22.87
2NT	26.92	26.93	26.97	26.94	26.92
4NT	28.84	28.81	28.84	28.80	28.80
3NT	31.05	31.07	31.08	31.05	31.04

COMPONENT NAME	RT Cont CA6	RT Cont CA7	RT Cont CA8	RT Cont CA9	RT Cont CA10
HMX	5.71	5.72	5.71	5.71	5.73
RDX	8.79	8.80	8.80	8.78	8.83
TNB	11.88	11.89	11.88	11.87	11.92
DNB	14.52	14.53	14.52	14.51	14.58
TETRYL	15.87	15.88	15.87	15.85	15.94
NB	16.50	16.51	16.49	16.48	16.56
3,4-DNT	18.17	18.18	18.16	18.14	18.24
TNT	18.93	18.94	18.92	18.91	19.00
4ADNT	19.90	19.89	19.89	19.87	20.00
2ADNT	20.96	20.94	20.94	20.91	21.06
26DNT	22.13	22.13	22.11	22.10	22.21
24DNT	22.85	22.85	22.83	22.82	22.94
2NT	26.89	26.91	26.86	26.86	26.98
4NT	28.76	28.77	28.73	28.72	28.85
3NT	31.00	31.01	30.96	30.95	31.10

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.71	0.011	0.032	5.68 - 5.74
RDX	8.80	0.019	0.057	8.74 - 8.86
TNB	11.88	0.016	0.049	11.83 - 11.93
DNB	14.53	0.024	0.073	14.46 - 14.61
TETRYL	15.88	0.027	0.080	15.80 - 15.96
NB	16.50	0.027	0.080	16.42 - 16.58
3,4-DNT	18.18	0.036	0.107	18.07 - 18.29
TNT	18.94	0.029	0.087	18.85 - 19.02
4ADNT	19.92	0.047	0.140	19.78 - 20.06

2ADNT	20.97	0.050	0.149	20.82 - 21.12
26DNT	22.14	0.038	0.114	22.02 - 22.25
24DNT	22.86	0.042	0.126	22.74 - 22.99
2NT	26.90	0.040	0.120	26.78 - 27.02
4NT	28.77	0.048	0.143	28.63 - 28.91
3NT	31.01	0.050	0.150	30.86 - 31.16

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN13 Column ID: CARB-08

Dates of Anlayses: 05/29/98 to 05/30/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	05/29/98	02:51
EXP L1 SOIL STD	2-281:IA1	05/29/98	05:05
EXP L2 SOIL STD	2-280:IA2	05/29/98	05:50
EXP L3 SOIL STD	2-279:IA3	05/29/98	06:34
EXP L4 SOIL STD	2-278:IA4	05/29/98	07:19
EXP L5 SOIL STD	2-277:IA5	05/29/98	08:04
BL0526SA	BL0526SA RE	05/29/98	11:03
EXP L3 SOIL STD	2-279:CA1	05/29/98	19:24
LC0526SA	LC0526SA RE	05/29/98	21:14
LD0526SA	LD0526SA RE	05/29/98	21:59
BIO-N-30%-20-A1	34017.01RE	05/29/98	23:28
BIO-N-30%-20-A2	34017.02 RE	05/30/98	00:13
EXP L3 SOIL STD	2-279:CA2	05/30/98	00:58
BIO-N-30%-20-A3	34017.03 RE	05/30/98	02:27
BIO-N-30%-20-B1	34017.04 RE	05/30/98	03:12
BIO-N-30%-20-B2	34017.05 RE	05/30/98	03:56
BIO-N-30%-20-B3	34017.06 RE	05/30/98	04:41
BIO-N-30%-20-C1	34017.07 RE	05/30/98	05:26
BIO-N-30%-20-C1 MS	34017.08MS RE	05/30/98	06:11

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN13 Column ID: CARB-08

Dates of Anlayses: 05/29/98 to 05/30/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-20-C1 MSD	34017.09MSD RE	05/30/98	06:55
BIO-N-30%-20-C2	34017.10 RE	05/30/98	07:40
BIO-N-30%-20-C3	34017.11 RE	05/30/98	08:25
EXP L3 SOIL STD	2-279:CA3	05/30/98	09:10

page 2

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
ıstrument ID: IN13
ɔlumn ID : CARB-08

Inj 1

Injection File Name Level 1 : 5EX0528,4
Injection File Name Level 2 : 5EX0528,5
Injection File Name Level 3 : 5EX0528,6
Injection File Name Level 4 : 5EX0528,7
Injection File Name Level 5 : 5EX0528,8

Calibration Date : 05/29/1998
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	4453	439	88540	349	238054	361	359084	363	479841	364
RDX	1823	432	50848	482	128777	467	193369	469	254541	463
TNB	2643	875	72737	962	194627	988	292614	989	388730	987
DNB	1849	1141	54781	1349	145146	1374	218806	1381	291968	1377
TETRYL	1997	537	63763	686	169101	699	254412	699	331839	686
NB	2689	815	72729	883	193597	905	288297	895	386322	898
3,4-DNT	2416	476	67299	531	178639	541	262497	529	350950	532
TNT	3015	1117	79930	1182	217794	1237	326620	1237	433975	1233
4ADNT	1306	553	39480	667	108297	703	159762	689	212325	689
2ADNT	1682	713	53632	906	145069	942	215739	930	288579	937
26DNT	2065	532	64605	665	173456	683	259703	683	345570	683
24DNT	2140	907	66935	1131	180357	1171	271013	1168	362616	1177
[illegible]	1739	514	44587	527	117607	535	181349	550	240738	547
	1442	427	39353	465	102619	466	162234	492	213693	486
	1791	556	48224	600	136127	648	208168	663	277580	664

CALIBRATION FACTOR DATA
FORM 9B

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

Inj 1

Injection File Name Level 1 : 5EX0528,4
Injection File Name Level 2 : 5EX0528,5
Injection File Name Level 3 : 5EX0528,6
Injection File Name Level 4 : 5EX0528,7
Injection File Name Level 5 : 5EX0528,8

Calibration Date : 05/29/1998
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	375	9.71	0.99996	363	0.000
RDX	462	3.98	0.99993	466	0.000
TNB	960	5.08	0.99999	987	0.000
DNB	1325	7.80	0.99999	1378	0.000
TETRYL	661	10.56	0.99988	692	0.000
NB	879	4.19	0.99998	898	0.000
3,4-DNT	522	5.03	0.99993	532	0.000
[illegible]	1201	4.39	0.99996	1234	0.000
[illegible]NT	660	9.26	0.99990	691	0.000
2ADNT	886	11.02	0.99996	935	0.000
26DNT	649	10.15	0.99999	683	0.000
24DNT	1111	10.40	0.99997	1173	0.000
2NT	535	2.71	0.99990	546	0.000
4NT	467	5.45	0.99969	485	0.000
3NT	626	7.52	0.99983	660	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/29/1998
.tinuing Calibration #: 1
.ıtinuing Cal Date : 05/29/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0528B,2
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	238753	362	375	3.52	363	0.24
RDX	128405	465	462	0.60	466	0.10
TNB	194863	989	960	3.03	987	0.23
DNB	146392	1386	1325	4.65	1378	0.63
TETRYL	170140	703	661	6.34	692	1.67
NB	193712	905	879	2.96	898	0.80
3,4-DNT	177951	539	522	3.36	532	1.31
TNT	213260	1212	1201	0.86	1234	1.79
4ADNT	107432	698	660	5.65	691	1.01
2ADNT	146417	951	886	7.37	935	1.70
26DNT	170369	671	649	3.31	683	1.76
24DNT	180079	1169	1111	5.27	1173	0.29
2NT	120220	546	535	2.23	546	0.12
4NT	106706	485	467	3.84	485	0.09
T	138345	659	626	5.20	660	0.25

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/29/1998
ıtinuing Calibration #: 2
ıtinuing Cal Date : 05/30/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0528B,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	244301	370	375	1.27	363	2.08
RDX	129690	470	462	1.61	466	0.90
TNB	197185	1001	960	4.26	987	1.42
DNB	149478	1416	1325	6.85	1378	2.76
TETRYL	172045	711	661	7.53	692	2.81
NB	195161	912	879	3.73	898	1.55
3,4-DNT	189067	573	522	9.81	532	7.64
TNT	215453	1224	1201	1.90	1234	0.79
4ADNT	110720	719	660	8.88	691	4.11
2ADNT	148954	967	886	9.23	935	3.46
26DNT	177388	698	649	7.57	683	2.29
24DNT	184918	1201	1111	8.10	1173	2.38
2NT	122052	555	535	3.78	546	1.64
4NT	108501	493	467	5.58	485	1.77
'T	139310	663	626	5.93	660	0.45

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/29/1998
ıtinuing Calibration #: 3
ıtinuing Cal Date : 05/30/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0528B,20
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	244774	371	375	1.08	363	2.28
RDX	132208	479	462	3.58	466	2.86
TNB	198713	1009	960	5.06	987	2.21
DNB	148846	1410	1325	6.40	1378	2.32
TETRYL	164902	681	661	3.06	692	1.46
NB	196478	918	879	4.43	898	2.24
3,4-DNT	187127	567	522	8.69	532	6.53
TNT	214336	1218	1201	1.37	1234	1.30
4ADNT	109840	713	660	8.02	691	3.28
2ADNT	147507	958	886	8.17	935	2.45
26DNT	176674	696	649	7.14	683	1.88
24DNT	184468	1198	1111	7.83	1173	2.14
2NT	121796	554	535	3.57	546	1.43
4NT	108310	492	467	5.40	485	1.59
T	140099	667	626	6.53	660	1.01

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

5EX0528
page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : CARB-08
Calibration Date : 05/29/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.92	4.91	4.91	4.94	4.92
RDX	7.46	7.47	7.48	7.52	7.49
TNB	9.92	9.95	9.96	10.01	9.98
DNB	12.21	12.23	12.25	12.30	12.27
TETRYL	12.97	13.01	13.04	13.11	13.07
NB	13.85	13.86	13.88	13.96	13.93
3,4-DNT	15.09	15.16	15.19	15.30	15.25
TNT	15.47	15.53	15.55	15.64	15.60
4ADNT	16.42	16.53	16.54	16.65	16.62
2ADNT	17.40	17.47	17.49	17.58	17.58
26DNT	18.11	18.20	18.22	18.33	18.33
24DNT	18.81	18.90	18.92	19.03	19.04
2NT	21.88	22.03	22.06	22.21	22.22
4NT	23.48	23.59	23.61	23.77	23.79
3NT	25.17	25.39	25.40	25.58	25.61

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
HMX	4.92	4.91	4.91
RDX	7.50	7.45	7.49
TNB	10.02	9.92	9.97
DNB	12.31	12.19	12.24
TETRYL	13.12	12.93	13.02
NB	13.98	13.80	13.85
3,4-DNT	15.32	15.04	15.14
TNT	15.68	15.45	15.54
4ADNT	16.62	16.37	16.50
2ADNT	17.55	17.30	17.46
26DNT	18.37	18.03	18.17
24DNT	19.05	18.73	18.87
2NT	22.26	21.82	21.96
4NT	23.81	23.33	23.48
3NT	25.63	25.09	25.26

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.92	0.009	0.028	4.89 - 4.95
RDX	7.48	0.022	0.066	7.42 - 7.55
TNB	9.97	0.035	0.104	9.86 - 10.07
DNB	12.25	0.043	0.130	12.12 - 12.38
TETRYL	13.03	0.065	0.196	12.84 - 13.23
NB	13.89	0.064	0.191	13.70 - 14.08
3,4-DNT	15.19	0.098	0.293	14.89 - 15.48
TNT	15.55	0.079	0.236	15.32 - 15.79

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Page 2

4ADNT	16.53	0.099	0.298	16.23 - 16.83
2ADNT	17.48	0.097	0.290	17.19 - 17.77
26DNT	18.22	0.116	0.349	17.87 - 18.57
24DNT	18.92	0.115	0.345	18.57 - 19.26
2NT	22.06	0.164	0.493	21.56 - 22.55
IT	23.61	0.171	0.514	23.09 - 24.12
NT	25.39	0.206	0.617	24.78 - 26.01

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN13 Column ID: CARB-08

Dates of Anlayses: 06/02/98 to 06/03/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	06/02/98	18:52
EXP L1 SOIL STD	2-296:IA1	06/02/98	21:06
EXP L2 SOIL STD	2-295:IA2	06/02/98	21:51
EXP L3 SOIL STD	2-294:IA3	06/02/98	22:35
EXP L4 SOIL STD	2-293:IA4	06/02/98	23:20
EXP L5 SOIL STD	2-292:IA5	06/03/98	00:05
BIO-N-30%-20-D1	34017.12 RE	06/03/98	00:49
BIO-N-30%-20-D2	34017.13 RE	06/03/98	01:34
BIO-N-30%-20-D3	34017.14 RE	06/03/98	02:19
BIO-N-30%-20-A1FD	34017.15 RE	06/03/98	03:03
BIO-N-30%-20-D2FD	34017.16 RE	06/03/98	03:48
EXP L3 SOIL STD	2-294:CA1	06/03/98	07:32

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
ıstrument ID: IN13
ɔolumn ID : CARB-08

Inj 1

Injection File Name Level 1 : 5EX0602,4
Injection File Name Level 2 : 5EX0602,5
Injection File Name Level 3 : 5EX0602,6
Injection File Name Level 4 : 5EX0602,7
Injection File Name Level 5 : 5EX0602,8

Calibration Date : 06/02/1998
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	3597	355	85405	336	230103	349	293221	296	457566	347
RDX	2108	500	44980	426	124268	450	163353	396	239677	436
TNB	2396	793	69611	921	188170	955	239091	808	372834	946
DNB	2007	1239	53677	1322	143137	1355	180568	1140	286313	1351
TETRYL	2158	580	55671	599	149234	617	190506	523	298266	616
NB	2809	851	75915	921	198765	929	250521	778	406171	945
3,4-DNT	2710	533	71099	561	186069	564	236334	476	377569	572
TNT	2601	963	75453	1116	201602	1145	256044	970	410167	1165
4ADNT	1192	505	41421	700	105749	687	133872	577	219000	711
2ADNT	1543	654	53440	.903	141578	919	180712	779	287765	934
26DNT	2175	561	62852	647	167118	658	213707	562	339263	670
24DNT	2447	1037	66161	1118	175529	1140	223516	963	355267	1153
T	1653	489	44660	528	120352	547	152838	463	241052	548
T	1413	418	39306	465	107320	488	137337	416	215024	4[illegible]
NT	1998	620	51622	642	139778	666	176615	562	279760	

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
'nstrument ID: IN13
olumn ID : CARB-08

Inj 1

Injection File Name Level 1 : 5EX0602,4
Injection File Name Level 2 : 5EX0602,5
Injection File Name Level 3 : 5EX0602,6
Injection File Name Level 4 : 5EX0602,7
Injection File Name Level 5 : 5EX0602,8

Calibration Date : 06/02/1998
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	336	6.98	0.99340	333	0.000
RDX	442	8.58	0.99704	427	0.000
TNB	885	8.81	0.99325	909	0.000
DNB	1281	7.17	0.99246	1294	0.000
TETRYL	587	6.58	0.99300	591	0.000
NB	885	7.87	0.99066	898	0.000
3,4-DNT	541	7.21	0.99157	545	0.000
'T	1072	9.13	0.99167	1109	0.000
.DNT	636	14.26	0.98942	672	0.000
2ADNT	838	14.31	0.99175	890	0.000
26DNT	620	8.67	0.99233	639	0.000
24DNT	1082	7.42	0.99181	1100	0.000
2NT	515	7.29	0.99271	524	0.000
4NT	455	7.91	0.99334	468	0.000
3NT	632	6.89	0.99228	639	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/02/1998
ntinuing Calibration #: 1
ontinuing Cal Date : 06/03/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0602B,5
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	231209	350	336	4.11	333	5.20
RDX	125992	456	442	3.37	427	7.02
TNB	189141	960	885	8.53	909	5.59
DNB	144647	1370	1281	6.90	1294	5.84
TETRYL	146026	603	587	2.80	591	2.15
NB	202116	944	885	6.75	898	5.21
3,4-DNT	182264	552	541	2.03	545	1.34
TNT	208827	1187	1072	10.68	1109	6.97
4ADNT	109132	709	636	11.44	672	5.47
2ADNT	141257	917	838	9.48	890	3.10
26DNT	173537	683	620	10.27	639	6.90
24DNT	179862	1168	1082	7.92	1100	6.22
2NT	121044	550	515	6.84	524	4.91
'4NT	107780	490	455	7.66	468	4.59
NT	140878	671	632	6.15	639	4.91

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

_njection 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

5EX0602
page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : CARB-08
Calibration Date : 06/02/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.94	4.94	4.91	4.89	4.89
RDX	7.52	7.52	7.44	7.42	7.42
TNB	10.04	10.03	9.90	9.89	9.88
DNB	12.29	12.32	12.12	12.12	12.11
TETRYL	13.11	13.18	12.91	12.90	12.90
NB	13.93	13.95	13.71	13.70	13.70
3,4-DNT	15.23	15.30	14.95	14.94	14.94
TNT	15.63	15.69	15.39	15.38	15.38
4ADNT	16.62	16.64	16.28	16.29	16.30
2ADNT	17.52	17.57	17.22	17.23	17.25
26DNT	18.29	18.33	17.95	17.96	17.97
24DNT	18.96	19.01	18.65	18.65	18.66
2NT	22.14	22.08	21.67	21.68	21.70
4NT	23.59	23.59	23.17	23.17	23.21
3NT	25.41	25.34	24.93	24.93	24.97

COMPONENT NAME	RT Cont CAl
HMX	4.91
RDX	7.50
TNB	9.97
DNB	12.26
TETRYL	13.12
NB	13.86
3,4-DNT	15.20
TNT	15.58
4ADNT	16.62
2ADNT	17.58
26DNT	18.25
24DNT	18.95
2NT	22.03
4NT	23.57
3NT	25.36

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.91	0.023	0.069	4.85 - 4.98
RDX	7.47	0.046	0.137	7.33 - 7.61
NB	9.95	0.072	0.215	9.74 - 10.17
DNB	12.20	0.096	0.288	11.92 - 12.49
TETRYL	13.02	0.131	0.393	12.62 - 13.41
NB	13.81	0.120	0.359	13.45 - 14.17
3,4-DNT	15.09	0.165	0.494	14.60 - 15.59
TNT	15.51	0.141	0.424	15.08 - 15.93

5EX0602
page 2

4ADNT	16.46	0.184	0.553	15.91 - 17.01
2ADNT	17.39	0.180	0.540	16.85 - 17.93
26DNT	18.12	0.182	0.546	17.58 - 18.67
24DNT	18.81	0.178	0.534	18.28 - 19.34
2NT	21.88	0.223	0.668	21.21 - 22.55
NT	23.38	0.218	0.653	22.73 - 24.04
NT	25.16	0.235	0.705	24.45 - 25.86

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/24/98 to 05/25/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	05/24/98	17:27
L1 2-249:IA1	L1 2-249:IA1	05/24/98	18:51
L2 2-248:IA2	L2 2-248:IA2	05/24/98	19:20
L3 2-247:IA3	L3 2-247:IA3	05/24/98	19:48
L4 2-246:IA4	L4 2-246:IA4	05/24/98	20:16
L5 2-245:IA5	L5 2-245:IA5	05/24/98	20:44
ICV 2-223:CA1	ICV 2-223:CA1	05/24/98	21:12
BL0519SE	BL0519SE	05/24/98	21:40
LC0519SE	LC0519SE	05/24/98	22:37
LD0519SE	LD0519SE	05/24/98	23:05
BIO-N-30%-20-A1	34017.01	05/24/98	23:33
BIO-N-30%-20-A2	34017.02	05/25/98	00:01
BIO-N-30%-20-A3	34017.03	05/25/98	00:29
BIO-N-30%-20-B1	34017.04	05/25/98	00:58
BIO-N-30%-20-B2	34017.05	05/25/98	01:26
L3 2-247:CA2	L3 2-247:CA2	05/25/98	01:54
BIO-N-30%-20-B3	34017.06	05/25/98	02:50
BIO-N-30%-20-C1	34017.07	05/25/98	03:19
BIO-N-30%-20-C1	34017.08MS	05/25/98	03:47

FORM VIII

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/24/98 to 05/25/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-20-C1	34017.09MSD	05/25/98	04:15
BIO-N-30%-20-C2	34017.10	05/25/98	04:43
BIO-N-30%-20-C3	34017.11	05/25/98	05:11
BIO-N-30%-20-D1	34017.12	05/25/98	05:39
BIO-N-30%-20-D2	34017.13	05/25/98	06:07
BIO-N-30%-20-D3	34017.14	05/25/98	06:36
BIO-N-30%-20-A1FD	34017.15	05/25/98	07:04
L3 2-247:CA3	L3 2-247:CA3	05/25/98	07:32
BIO-N-30%-20-D2FD	34017.16	05/25/98	08:28
L3 2-247:CA4	L3 2-247:CA4	05/25/98	13:10

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
`strument ID: LC4
,lumn ID :

Inj 1

Injection File Name Level 1 : 052498,4
Injection File Name Level 2 : 052498,5
Injection File Name Level 3 : 052498,6
Injection File Name Level 4 : 052498,7
Injection File Name Level 5 : 052498,8

Calibration Date : 05/24/98
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	6.56715	3.05E0	55.1483	2.90E0	110.789	2.89E0	446.215	2.87E0	864.644	2.96E0

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: LC4
lumn ID :

	Inj 1
Injection File Name Level 1 :	052498,4
Injection File Name Level 2 :	052498,5
Injection File Name Level 3 :	052498,6
Injection File Name Level 4 :	052498,7
Injection File Name Level 5 :	052498,8

Calibration Date : 05/24/98
Number of Calibration Levels: 5
Line forced thru zero : Yes
Calculation Method : Area

Component Name	Mean Resp Factor	% RSD	Corr. Coeff.	Slope area/amt
PETN	2.93E0	2.44	0.99987	2.94E0

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/24/98
ntinuing Calibration #: 1
ntinuing Cal Date : 05/24/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052498,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.752	3.11E0	2.93E0	6.19	2.94E0	5.89

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/24/98
tinuing Calibration #: 2
tinuing Cal Date : 05/25/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052498,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	110.398	2.90E0	2.93E0	1.17	2.94E0	1.44

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/24/98
Continuing Calibration #: 3
Continuing Cal Date : 05/25/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052498,31
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	121.892	2.63E0	2.93E0	10.49	2.94E0	10.74

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/24/98
Continuing Calibration #: 4
Continuing Cal Date : 05/25/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052498,43
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	107.926	2.96E0	2.93E0	1.09	2.94E0	0.81

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection 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

.nstrument ID : LC4
Column ID :
Calibration Date : 05/24/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	11.04	11.07	11.07	11.04	11.05

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	11.10	11.18	11.25	11.32	11.30

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	11.14	0.110	0.330	10.81 - 11.47

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN13 Column ID: CARB-08

Dates of Anlayses: 05/21/98 to 05/21/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLANK	INST.BLK.	05/21/98	02:27
EXP HIGH WATER L1 ST	2-199:IA1	05/21/98	04:41
EXP HIGH WATER L2 ST	2-198:IA2	05/21/98	05:26
EXP HIGH WATER L3 ST	2-197:IA3	05/21/98	06:10
EXP HIGH WATER L4 ST	2-196:IA4	05/21/98	06:55
EXP HIGH WATER L5 ST	2-195:IA5	05/21/98	07:40
BL0520WE	BL0520WE	05/21/98	12:40
LC0520WE	LC0520WE	05/21/98	14:09
LD0520WE	LD0520WE	05/21/98	14:54
BIO-RB051798	34017.17	05/21/98	15:38
BIO-RB051798	34017.17MS	05/21/98	16:23
BIO-RB051798	34017.17MSD	05/21/98	17:08
EXP HIGH WATER L3 ST	2-240:CA1	05/21/98	18:58

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FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
strument ID: IN13
olumn 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	428	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
	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	64

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
ıstrument ID: IN13
,lumn 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
`	1098	18.84	0.99930	1223	0.000
ɔNT	652	26.47	0.99984	676	0.000
2ADNT	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
tinuing Calibration #: 1
tinuing 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
T	57862	609	594	2.51	638	4.48

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

5E0520W
page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.strument 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
B	10.12	0.049	0.146	9.97 - 10.26
NB	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

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page 2

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
T	24.13	0.129	0.387	23.75 - 24.52
T	25.97	0.142	0.427	25.54 - 26.40

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: LC4 Column ID:

Dates of Anlayses: 05/25/98 to 05/27/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
Instrument blank	Instrument bla	05/25/98	19:33
L1 2-210:IA1	L1 2-210:IA1	05/25/98	20:57
L2 2-209:IA2	L2 2-209:IA2	05/25/98	21:25
L3 2-208:IA3	L3 2-208:IA3	05/25/98	21:53
L4 2-207:IA4	L4 2-207:IA4	05/25/98	22:21
L5 2-180:IA5	L5 2-180:IA5	05/25/98	22:49
ICV 2-238:CA1	ICV 2-238:CA1	05/25/98	23:18
L3 2-208:CA5	L3 2-208:CA5	05/26/98	22:11
BL0520WF	BL0520WF	05/26/98	22:39
LC0520WF	LC0520WF	05/26/98	23:35
LD0520WF	LD0520WF	05/27/98	00:03
BIO-RB051798	34017.17	05/27/98	00:31
BIO-RB051798	34017.17MS	05/27/98	00:59
BIO-RB051798	34017.17MSD	05/27/98	01:28
L3 2-208:CA6	L3 2-208:CA6	05/27/98	03:49

page 1

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
strument ID: LC4
lumn 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
lumn 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
tinuing 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 #: 5
Continuing Cal Date : 05/26/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052598W,49
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.784	3.11E0	3.14E0	0.79	3.07E0	1.40

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/98
tinuing Calibration #: 6
tinuing Cal Date : 05/27/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 052598W,61
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	103.427	3.09E0	3.14E0	1.41	3.07E0	0.77

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection 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 DAT
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : LC4
lumn 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 CA6	RT Cont CA7
PETN	10.81	10.82

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

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : LC4
olumn 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

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN10 Column ID: LC-CN-09

Dates of Anlayses: 05/25/98 to 05/27/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	05/25/98	19:25
EXP L1A STD	2-231:IA1	05/25/98	21:38
EXP L2A STD	2-230:IA2	05/25/98	22:23
EXP L3A STD	2-229:IA3	05/25/98	23:07
EXP L4A STD	2-228:IA4	05/25/98	23:51
EXP L5A STD	2-227:IA5	05/26/98	00:36
EXP L1B STD	2-236:IB1	05/26/98	01:20
EXP L2B STD	2-235:IB2	05/26/98	02:04
EXP L3B STD	2-234:IB3	05/26/98	02:49
EXP L4B STD	2-233:IB4	05/26/98	03:33
EXP L5B STD	2-232:IB5	05/26/98	04:17
BL0519SD	BL0519SD	05/26/98	05:02
BIO-N-30%-20-A1	34017.01	05/26/98	06:31
BIO-N-30%-20-A3	34017.03	05/26/98	07:59
BIO-N-30%-20-B2	34017.05	05/26/98	09:28
BIO-N-30%-20-B3	34017.06	05/26/98	10:12
BIO-N-30%-20-C1	34017.07	05/26/98	10:57
EXP L3A STD	2-229:CA1	05/26/98	11:41
EXP L3B STD	2-234:CB1	05/26/98	12:25

FORM VIII

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN10 Column ID: LC-CN-09

Dates of Anlayses: 05/25/98 to 05/27/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-20-C3	34017.11	05/26/98	13:54
BIO-N-30%-20-D2FD	34017.16	05/26/98	17:36
EXP L3A STD	2-229:CA2	05/26/98	19:49
EXP L3B STD	2-234:CB2	05/26/98	20:33

FORM VIII

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 : 3CN0525,4
Injection File Name Level 2 : 3CN0525,5
Injection File Name Level 3 : 3CN0525,6
Injection File Name Level 4 : 3CN0525,7
Injection File Name Level 5 : 3CN0525,8

Calibration Date : 05/25/1998
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	12095	2629	59507	2587	145388	2528	287218	2498	579371	2519
26DNT	8496	1699	45722	1829	112705	1803	225425	1803	454505	1818
TNT	10378	2256	62002	2696	151290	2631	300859	2616	619578	2694
3,4DNT	8447	1207	50914	1455	126580	1534	247223	1498	505630	1532
TETRYL	12284	1365	61297	1362	153409	1364	315105	1400	623807	1386
HMX	6549	936	34999	1000	89312	1021	178353	1019	359818	1028

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 : 3CN0525,9
Injection File Name Level 2 : 3CN0525,10
Injection File Name Level 3 : 3CN0525,11
Injection File Name Level 4 : 3CN0525,12
Injection File Name Level 5 : 3CN0525,13

Calibration Date : 05/25/1998
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	9451	1890	52197	2088	128331	2053	257214	2058	545699	2183
DNB	14635	3659	77833	3892	188045	3761	373787	3738	808207	4041
24DNT	17545	3509	85467	3419	206464	3303	410491	3284	883382	3534
4ADNT	16024	1742	77788	1691	186835	1625	369493	1606	795078	1728
2ADNT	27878	2788	136603	2732	335438	2684	669331	2677	1444395	2889
RDX	7304	1461	33998	1360	83050	1329	164944	1320	358074	1432

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 : 3CN0525,4
Injection File Name Level 2 : 3CN0525,5
Injection File Name Level 3 : 3CN0525,6
Injection File Name Level 4 : 3CN0525,7
Injection File Name Level 5 : 3CN0525,8

Calibration Date : 05/25/1998
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	2552	2.13	0.99998	2516	0.000
26DNT	1791	2.91	0.99999	1815	0.000
TNT	2579	7.13	0.99989	2676	0.000
3,4DNT	1445	9.49	0.99993	1525	0.000
TETRYL	1375	1.24	0.99997	1388	0.000
HMX	1001	3.78	0.99999	1026	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 : 3CN0525,9
Injection File Name Level 2 : 3CN0525,10
Injection File Name Level 3 : 3CN0525,11
Injection File Name Level 4 : 3CN0525,12
Injection File Name Level 5 : 3CN0525,13

Calibration Date : 05/25/1998
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	2054	5.14	0.99956	2154	0.000
DNB	3818	3.93	0.99921	3973	0.000
24DNT	3410	3.36	0.99927	3478	0.000
4ADNT	1678	3.62	0.99927	1702	0.000
2ADNT	2754	3.18	0.99924	2841	0.000
RDX	1380	4.57	0.99911	1407	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/1998
Continuing Calibration #: 1
Continuing Cal Date : 05/26/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0525A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	143413	2494	2552	2.28	2516	0.87
26DNT	104085	1665	1791	6.99	1815	8.23
TNT	134739	2343	2579	9.13	2676	12.45
3,4DNT	109734	1330	1445	7.97	1525	12.80
TETRYL	149454	1328	1375	3.42	1388	4.27
HMX	88209	1008	1001	0.74	1026	1.73

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/1998
'ontinuing Calibration #: 1
,ontinuing Cal Date : 05/26/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0525A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	116645	1866	2054	9.15	2154	13.34
DNB	179148	3583	3818	6.16	3973	9.82
24DNT	199998	3200	3410	6.15	3478	7.99
4ADNT	188600	1640	1678	2.29	1702	3.63
2ADNT	333485	2668	2754	3.12	2841	6.09
RDX	91503	1464	1380	6.07	1407	4.04

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/1998
ontinuing Calibration #: 2
ontinuing Cal Date : 05/26/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0525A,21
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	147970	2573	2552	0.83	2516	2.28
26DNT	117020	1872	1791	4.57	1815	3.18
TNT	157915	2746	2579	6.51	2676	2.61
3,4DNT	130298	1579	1445	9.28	1525	3.54
TETRYL	148951	1324	1375	3.74	1388	4.59
HMX	94245	1077	1001	7.63	1026	5.00

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/25/1998
ontinuing Calibration #: 2
ontinuing Cal Date : 05/26/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-09
Injection File Name : 3CN0525A,22
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	128572	2057	2054	0.14	2154	4.48
DNB	190847	3817	3818	0.03	3973	3.94
24DNT	210528	3368	3410	1.21	3478	3.14
4ADNT	193510	1683	1678	0.25	1702	1.12
2ADNT	341054	2728	2754	0.92	2841	3.95
RDX	83983	1344	1380	2.65	1407	4.51

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

3CN0525
ASTD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/25/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	6.12	6.15	6.12	6.12	6.11
26DNT	6.70	6.72	6.69	6.68	6.67
TNT	7.32	7.34	7.31	7.31	7.30
3,4DNT	8.36	8.39	8.37	8.36	8.33
TETRYL	11.65	11.68	11.65	11.62	11.59
HMX	13.94	13.98	13.94	13.91	13.86

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
TNB	6.13	6.11	6.12	6.16
26DNT	6.72	6.67	6.70	6.76
TNT	7.34	7.29	7.32	7.38
3,4DNT	8.42	8.34	8.39	8.48
TETRYL	11.75	11.58	11.65	11.80
HMX	14.12	13.85	13.92	14.14

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.13	0.018	0.054	6.07 - 6.18
26DNT	6.70	0.029	0.087	6.61 - 6.79
TNT	7.32	0.026	0.077	7.25 - 7.40
3,4DNT	8.38	0.046	0.138	8.24 - 8.52
TETRYL	11.66	0.071	0.214	11.45 - 11.88
HMX	13.96	0.105	0.315	13.65 - 14.28

2N0525
B STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-09
Calibration Date : 05/25/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.35	5.36	5.35	5.36	5.33
DNB	5.97	5.97	5.95	5.97	5.94
24DNT	6.97	6.99	6.98	6.98	6.94
4ADNT	7.72	7.74	7.70	7.72	7.69
2ADNT	8.28	8.31	8.27	8.29	8.26
RDX	9.18	9.24	9.19	9.22	9.19

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
NB	5.36	5.36	5.37	5.41
DNB	5.97	5.97	5.98	6.03
24DNT	6.99	6.97	6.99	7.06
4ADNT	7.74	7.71	7.74	7.82
2ADNT	8.33	8.29	8.33	8.41
RDX	9.29	9.22	9.26	9.36

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.36	0.022	0.066	5.29 - 5.43
DNB	5.97	0.025	0.075	5.90 - 6.05
24DNT	6.98	0.031	0.094	6.89 - 7.08
4ADNT	7.73	0.041	0.122	7.61 - 7.85
2ADNT	8.31	0.045	0.136	8.17 - 8.44
RDX	9.24	0.056	0.167	9.07 - 9.41

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN10 Column ID: LC-CN-11

Dates of Anlayses: 06/05/98 to 06/06/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	06/05/98	12:30
EXP L1A STD	2-231:IA1	06/05/98	14:43
EXP L2A STD	2-230:IA2	06/05/98	15:28
EXP L3A STD	2-229:IA3	06/05/98	16:12
EXP L4A STD	2-228:IA4	06/05/98	16:56
EXP L5A STD	2-227:IA5	06/05/98	17:41
EXP L1B STD	1-236:IB1	06/05/98	18:25
EXP L2B STD	2-235:IB2	06/05/98	19:09
EXP L3B STD	2-234:IB3	06/05/98	19:54
EXP L4B STD	2-233:IB4	06/05/98	20:38
EXP L5B STD	2-232:IB5	06/05/98	21:22
BL0526SA RE	BL0526SA RE	06/05/98	22:07
BIO-N-30%-20-A1 RE	34017.01 RE	06/05/98	23:35
BIO-N-30%-20-A2 RE	34017.02 RE	06/06/98	00:20
BIO-N-30%-20-A3 RE	34017.03 RE	06/06/98	01:04
BIO-N-30%-20-B1 RE	34017.04 RE	06/06/98	01:49
BIO-N-30%-20-B2 RE	34017.05 RE	06/06/98	02:33
BIO-N-30%-20-B3 RE	34017.06 RE	06/06/98	03:17
EXP L3A STD	2-229:CA1	06/06/98	04:02

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN10 Column ID: LC-CN-11

Dates of Anlayses: 06/05/98 to 06/06/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
EXP L3B STD	2-234:CB1	06/06/98	04:46
BIO-N-30%-20-C1 RE	34017.07 RE	06/06/98	05:30
BIO-N-30%-20-C2 RE	34017.10 RE	06/06/98	06:15
BIO-N-30%-20-C3 RE	34017.11 RE	06/06/98	06:59
BIO-N-30%-20-D1 RE	34017.12 RE	06/06/98	07:43
BIO-N-30%-20-D2 RE	34017.13 RE	06/06/98	08:28
BIO-N-30%-20-D3 RE	34017.14 RE	06/06/98	09:12
BIO-N-30%-20-A1FD RE	34017.15 RE	06/06/98	09:57
BIO-N-30%-20-D2FD RE	34017.16 RE	06/06/98	10:41
EXP L3A STD	2-229:CA2	06/06/98	18:49
EXP L3B STD	2-234:CB2	06/06/98	19:34

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
ıstrument ID: IN10
ɔlumn ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0605,4
Injection File Name Level 2 : 3CN0605,5
Injection File Name Level 3 : 3CN0605,6
Injection File Name Level 4 : 3CN0605,7
Injection File Name Level 5 : 3CN0605,8

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
TNB	10664	2318	51260	2229	134771	2344	280094	2436	555605	2416
26DNT	7921	1584	39765	1591	112012	1792	228198	1826	459639	1839
TNT	9967	2167	53101	2309	152541	2653	308819	2685	634840	2760
3,4DNT	8184	1169	43907	1254	121527	1473	245752	1489	500240	1516
TETRYL	10288	1143	48701	1082	103914	924	241746	1074	434986	967
HMX	6238	891	31131	889	87253	997	182894	1045	364571	1042

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0605,9
Injection File Name Level 2 : 3CN0605,10
Injection File Name Level 3 : 3CN0605,11
Injection File Name Level 4 : 3CN0605,12
Injection File Name Level 5 : 3CN0605,13

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
NB	7507	1501	40878	1635	106341	1701	204416	1635	426654	1707
DNB	12902	3226	63015	3151	173758	3475	324627	3246	674696	3373
24DNT	14770	2954	73188	2928	192274	3076	358109	2865	734409	2938
4ADNT	13483	1466	73860	1606	189707	1650	359851	1565	730600	1588
2ADNT	23502	2350	133683	2674	309260	2474	611428	2446	1236262	2473
RDX	3187	637	32835	1313	79280	1268	158487	1268	323086	1292

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

Inj 1
Injection File Name Level 1 : 3CN0605,4
Injection File Name Level 2 : 3CN0605,5
Injection File Name Level 3 : 3CN0605,6
Injection File Name Level 4 : 3CN0605,7
Injection File Name Level 5 : 3CN0605,8

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
TNB	2348	3.52	0.99994	2415	0.000
26DNT	1726	7.41	0.99994	1832	0.000
TNT	2515	10.37	0.99989	2738	0.000
3,4DNT	1380	11.41	0.99990	1507	0.000
TETRYL	1038	8.68	0.99797	988	0.000
HMX	973	7.99	0.99989	1039	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
ıstrument ID: IN10
ɔlumn ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0605,9
Injection File Name Level 2 : 3CN0605,10
Injection File Name Level 3 : 3CN0605,11
Injection File Name Level 4 : 3CN0605,12
Injection File Name Level 5 : 3CN0605,13

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
NB	1636	5.06	0.99976	1693	0.000
DNB	3294	3.92	0.99970	3354	0.000
24DNT	2952	2.62	0.99978	2931	0.000
4ADNT	1575	4.35	0.99989	1587	0.000
2ADNT	2483	4.75	0.99993	2469	0.000
RDX	1156	25.13	0.99992	1287	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/05/1998
tinuing Calibration #: 1
.ıtinuing Cal Date : 06/06/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0605A,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	135110	2350	2348	0.06	2415	2.70
26DNT	114884	1838	1726	6.48	1832	0.32
TNT	157695	2743	2515	9.06	2738	0.15
3,4DNT	128340	1556	1380	12.70	1507	3.23
TETRYL	93404	830	1038	20.02	988	15.96
HMX	83655	956	973	1.73	1039	8.01

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/05/1998
ntinuing Calibration #: 1
itinuing Cal Date : 06/06/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0605A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	97912	1567	1636	4.24	1693	7.45
DNB	160549	3211	3294	2.53	3354	4.25
24DNT	177604	2842	2952	3.74	2931	3.05
4ADNT	177876	1547	1575	1.78	1587	2.53
2ADNT	306525	2452	2483	1.25	2469	0.69
RDX	77875	1246	1156	7.79	1287	3.17

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/05/1998
Continuing Calibration #: 2
tinuing Cal Date : 06/06/1998
ntinuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0605B,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	113981	1824	1636	11.47	1693	7.73
DNB	174553	3491	3294	5.97	3354	4.10
24DNT	190440	3047	2952	3.22	2931	3.96
4ADNT	185041	1609	1575	2.18	1587	1.39
2ADNT	310881	2487	2483	0.15	2469	0.72
RDX	84507	1352	1156	16.97	1287	5.08

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/05/1998
Continuing Calibration #: 2
Continuing Cal Date : 06/06/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0605B,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	137491	2391	2348	1.82	2415	0.98
26DNT	111993	1792	1726	3.80	1832	2.20
TNT	154358	2684	2515	6.75	2738	1.97
3,4DNT	124145	1505	1380	9.01	1507	0.15
TETRYL	106599	948	1038	8.72	988	4.09
HMX	85052	972	973	0.09	1039	6.47

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection 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

ıjection 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

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN10
olumn ID : LC-CN-11
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
TNB	6.23	6.21	6.23	6.19	6.20
26DNT	6.87	6.85	6.89	6.85	6.87
TNT	7.52	7.50	7.53	7.49	7.50
3,4DNT	9.02	8.97	9.01	8.98	8.99
TETRYL	12.90	12.80	12.82	12.77	12.80
HMX	16.99	16.89	16.91	16.80	16.86

COMPONENT NAME	RT Cont CA1	RT Cont CA2
TNB	6.20	6.19
26DNT	6.87	6.88
TNT	7.50	7.50
3,4DNT	8.98	8.95
TETRYL	12.75	12.74
HMX	16.67	16.54

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.21	0.018	0.054	6.15 - 6.26
26DNT	6.87	0.014	0.043	6.83 - 6.91
TNT	7.51	0.014	0.042	7.47 - 7.55
3,4DNT	8.99	0.022	0.066	8.92 - 9.05
TETRYL	12.80	0.054	0.163	12.63 - 12.96
HMX	16.81	0.155	0.464	16.34 - 17.27

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-11
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
NB	5.38	5.40	5.40	5.37	5.38
DNB	6.12	6.15	6.14	6.09	6.12
24DNT	7.26	7.27	7.28	7.21	7.25
4ADNT	8.22	8.24	8.22	8.15	8.19
2ADNT	8.98	9.02	9.01	8.91	8.95
RDX	10.49	10.51	10.46	10.35	10.40

COMPONENT NAME	RT Cont CA1	RT Cont CA2
NB	5.37	5.42
DNB	6.10	6.14
24DNT	7.23	7.29
4ADNT	8.16	8.26
2ADNT	8.92	9.01
RDX	10.33	10.44

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.39	0.022	0.067	5.32 - 5.46
DNB	6.12	0.022	0.067	6.06 - 6.19
24DNT	7.26	0.029	0.088	7.17 - 7.34
4ADNT	8.20	0.042	0.126	8.08 - 8.33
2ADNT	8.97	0.045	0.135	8.84 - 9.11
RDX	10.42	0.068	0.204	10.22 - 10.63

492 WB 6/15/98

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN13 Column ID: LC-CN-12

Dates of Anlayses: 06/10/98 to 06/11/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
EXP L5A STD	3-13	06/10/98	19:28
EXP L1A STD	3-17:IA1	06/10/98	21:46
EXP L2A STD	3-16:IA2	06/10/98	22:20
EXP L3A STD	3-15:IA3	06/10/98	22:54
EXP L4A STD	3-14:IA4	06/10/98	23:29
EXP L5A STD	3-13:IA5	06/11/98	00:03
EXP L1B STD	1-236:IB1	06/11/98	00:38
EXP L2B STD	2-235:IB2	06/11/98	01:12
EXP L3B STD	2-234:IB3	06/11/98	01:46
EXP L4B STD	2-233:IB4	06/11/98	02:21
EXP L5B STD	2-232:IB5	06/11/98	02:55
EXP L3A STD	3-3:CA1	06/11/98	05:47
EXP L3B STD	3-20:CB1	06/11/98	06:22
BL0608SB RE	BL0608SBRERE	06/11/98	06:56
BIO-N-30%-20-B3 RE	34017.06RERE	06/11/98	11:29
BIO-N-30%-20-C1 RE	34017.07RERE	06/11/98	13:12
EXP L3A STD	3-3:CA2	06/11/98	18:05
EXP L3B STD	3-20:CB2	06/11/98	18:40

page 2

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
lumn ID : LC-CN-12

Inj 1

Injection File Name Level 1 : 5CN0610,5
Injection File Name Level 2 : 5CN0610,6
Injection File Name Level 3 : 5CN0610,7
Injection File Name Level 4 : 5CN0610,8
Injection File Name Level 5 : 5CN0610,9

Calibration Date : 06/10/1998
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	5956	1295	30903	1344	76687	1334	160066	1392	320793	1395
26DNT	4353	871	22562	902	56658	907	119129	953	238927	956
TNT	5368	1167	27553	1198	68734	1195	144384	1256	290158	1262
3,4DNT	863	654	4974	754	12470	756	26219	795	50812	770
TETRYL	8121	902	41893	931	106494	947	218688	972	446039	991
HMX	2700	386	15901	454	40163	459	82390	471	168284	481

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
lumn ID : LC-CN-12

Inj 1

Injection File Name Level 1 : 5CN0610,10
Injection File Name Level 2 : 5CN0610,11
Injection File Name Level 3 : 5CN0610,12
Injection File Name Level 4 : 5CN0610,13
Injection File Name Level 5 : 5CN0610,14

Calibration Date : 06/10/1998
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	6021	1204	31712	1268	70053	1121	140473	1124	281965	1128
DNB	7637	1909	39229	1961	90334	1807	183311	1833	367502	1838
24DNT	8766	1753	44809	1792	103371	1654	207501	1660	416267	1665
4ADNT	8099	880	41719	907	97153	845	195485	850	392889	854
2ADNT	13361	1336	68050	1361	158968	1272	321322	1285	644311	1289
RDX	3383	677	16185	647	38365	614	77961	624	156343	625

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
lumn ID : LC-CN-12

Inj 1

Injection File Name Level 1 : 5CN0610,5
Injection File Name Level 2 : 5CN0610,6
Injection File Name Level 3 : 5CN0610,7
Injection File Name Level 4 : 5CN0610,8
Injection File Name Level 5 : 5CN0610,9

Calibration Date : 06/10/1998
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	1352	3.12	0.99995	1391	0.000
26DNT	918	3.95	0.99993	953	0.000
TNT	1215	3.39	0.99993	1257	0.000
3,4DNT	746	7.22	0.99980	774	0.000
TETRYL	949	3.66	0.99993	985	0.000
HMX	450	8.32	0.99994	478	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : LC-CN-12

Inj 1

Injection File Name Level 1 : 5CN0610,10
Injection File Name Level 2 : 5CN0610,11
Injection File Name Level 3 : 5CN0610,12
Injection File Name Level 4 : 5CN0610,13
Injection File Name Level 5 : 5CN0610,14

Calibration Date : 06/10/1998
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	1169	5.61	0.99991	1128	0.000
DNB	1870	3.42	0.99995	1836	0.000
24DNT	1705	3.73	0.99996	1665	0.000
4ADNT	867	3.01	0.99996	853	0.000
2ADNT	1309	2.91	0.99997	1288	0.000
RDX	637	3.94	0.99997	625	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/10/1998
Continuing Calibration #: 1
Continuing Cal Date : 06/11/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : LC-CN-12
Injection File Name : 5CN0610A,5
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	80684	1403	1352	3.81	1391	0.87
26DNT	59544	953	918	3.82	953	0.01
TNT	71730	1247	1215	2.63	1257	0.75
3,4DNT	13066	792	746	6.22	774	2.33
TETRYL	111977	995	949	4.93	985	1.04
HMX	41975	480	450	6.57	478	0.41

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/10/1998
Continuing Calibration #: 1
tinuing Cal Date : 06/11/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : LC-CN-12
Injection File Name : 5CN0610A,6
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	67979	1088	1169	6.96	1128	3.57
DNB	90691	1814	1870	2.98	1836	1.22
24DNT	102975	1648	1705	3.36	1665	1.02
4ADNT	98028	852	867	1.71	853	0.11
2ADNT	160577	1285	1309	1.83	1288	0.25
RDX	39216	627	637	1.56	625	0.44

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/10/1998
Continuing Calibration #: 2
tinuing Cal Date : 06/11/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : LC-CN-12
Injection File Name : 5CN0610C,1
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	80588	1402	1352	3.68	1391	0.75
26DNT	57608	922	918	0.44	953	3.24
TNT	71306	1240	1215	2.03	1257	1.34
3,4DNT	13816	837	746	12.32	774	8.20
TETRYL	111469	991	949	4.45	985	0.58
HMX	46837	535	450	18.92	478	12.04

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/10/1998
Continuing Calibration #: 2
tinuing Cal Date : 06/11/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : LC-CN-12
Injection File Name : 5CN0610C,2
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	70180	1123	1169	3.95	1128	0.45
DNB	91161	1823	1870	2.48	1836	0.71
24DNT	103339	1653	1705	3.02	1665	0.67
4ADNT	97770	850	867	1.97	853	0.37
2ADNT	159619	1277	1309	2.41	1288	0.84
RDX	38230	612	637	4.03	625	2.09

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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	1.320	6.600	16.500	33.000	66.000
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

jection 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

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN13
olumn ID : LC-CN-12
Calibration Date : 06/10/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	6.17	6.16	6.15	6.14	6.12
26DNT	6.70	6.70	6.69	6.67	6.64
TNT	7.46	7.46	7.44	7.42	7.39
3,4DNT	8.83	8.85	8.80	8.77	8.75
TETRYL	12.83	12.91	12.82	12.77	12.72
HMX	17.92	18.01	17.94	17.86	17.74

COMPONENT NAME	RT Cont CA1	RT Cont CA2
TNB	6.14	6.13
26DNT	6.68	6.67
TNT	7.42	7.41
3,4DNT	8.76	8.74
TETRYL	12.73	12.68
HMX	17.74	17.48

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.15	0.019	0.056	6.09 - 6.20
26DNT	6.68	0.022	0.065	6.61 - 6.74
TNT	7.43	0.025	0.076	7.35 - 7.50
3,4DNT	8.78	0.043	0.129	8.66 - 8.91
TETRYL	12.78	0.080	0.239	12.54 - 13.02
HMX	17.81	0.175	0.526	17.29 - 18.34

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN13
Column ID : LC-CN-12
Calibration Date : 06/10/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.24	5.23	5.20	5.20	5.22
DNB	6.03	6.03	6.01	6.01	6.02
24DNT	7.13	7.12	7.09	7.09	7.10
4ADNT	8.04	8.04	8.00	8.01	8.02
2ADNT	8.89	8.88	8.85	8.85	8.86
RDX	10.65	10.61	10.58	10.59	10.61

COMPONENT NAME	RT Cont CA1	RT Cont CA2
NB	5.23	5.21
DNB	6.03	5.99
24DNT	7.12	7.05
4ADNT	8.04	7.94
2ADNT	8.88	8.75
RDX	10.60	10.40

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.22	0.012	0.037	5.18 - 5.26
DNB	6.02	0.016	0.048	5.97 - 6.06
24DNT	7.10	0.025	0.075	7.02 - 7.17
4ADNT	8.01	0.035	0.105	7.91 - 8.12
2ADNT	8.85	0.046	0.137	8.71 - 8.99
RDX	10.58	0.081	0.243	10.33 - 10.82

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34017
Instrument ID: IN10 Column ID: LC-CN-11

Dates of Anlayses: 06/01/98 to 06/02/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	06/01/98	18:40
PETN L1 SOIL STD	2-249:IA1	06/01/98	20:00
PETN L2 SOIL STD	2-248:IA2	06/01/98	20:26
PETN L3 SOIL STD	2-288:IA3	06/01/98	20:52
PETN L4 SOIL STD	2-246:IA4	06/01/98	21:19
PETN L5 SOIL STD	2-245:IA5	06/01/98	21:45
PETN L3 SOIL STD	2-288:CA1	06/02/98	03:01
BL0519SE	BL0519SE	06/02/98	04:47
BIO-N-30%-20-B2	34017.05	06/02/98	05:39
BIO-N-30%-20-D2	34017.13	06/02/98	06:06
PETN L3 SOIL STD	2-288:CA2	06/02/98	06:58

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
strument ID: IN10
olumn ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3PC0601,4
Injection File Name Level 2 : 3PC0601,5
Injection File Name Level 3 : 3PC0601,6
Injection File Name Level 4 : 3PC0601,7
Injection File Name Level 5 : 3PC0601,8

Calibration Date : 06/01/1998
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
PETN	1826	913	18196	1137	32352	1011	150688	1177	321611	1256

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
strument ID: IN10
olumn ID : LC-CN-11

Inj 1
Injection File Name Level 1 : 3PC0601,4
Injection File Name Level 2 : 3PC0601,5
Injection File Name Level 3 : 3PC0601,6
Injection File Name Level 4 : 3PC0601,7
Injection File Name Level 5 : 3PC0601,8

Calibration Date : 06/01/1998
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
PETN	1099	12.43	0.99942	1239	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/01/1998
tinuing Calibration #: 1
.tinuing Cal Date : 06/02/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3PC0601,20
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
PETN	38691	1209	1099	10.02	1239	2.39

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/01/1998
tinuing Calibration #: 2
tinuing Cal Date : 06/02/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3PC0601,29
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
PETN	38271	1196	1099	8.83	1239	3.45

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection 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
PETN	2.000	16.000	32.000	128.000	256.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-11
Calibration Date : 06/01/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	18.18	17.90	17.97	17.95	17.95

COMPONENT NAME	RT Cont CA1	RT Cont CA2
PETN	18.34	18.37

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	18.09	0.199	0.598	17.49 - 18.69

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

B10-21

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

Project No.: 4324-00009-07-35

Project Name: NSWC Crane Biofacility

Samplers: (Signature)

Sampler: (Print) Mike Maddox

Split Samples: Yes / No

Analysis Required: 8330 Explosives

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Yes	No	8330 Explosives	Remarks
Compost	CS A SL 1	5/12/98	0920	B10-N-30%-20-A1		✓	✓	30%
	2		0850	B10-N-30%-20-A2				Day 20
	3		0905	B10-N-30%-20-A3				
	B 1		0924	B10-N-30%-20-B1				
	2		0853	B10-N-30%-20-B2				
	3		0908	B10-N-30%-20-B3				
	C 1		0927	B10-N-30%-20-C1				MS/MSD
	2		0856	B10-N-30%-20-C2				
	3		0911	B10-N-30%-20-C3				
	D 1		0935	B10-N-30%-20-D1				CS=cross
	2		0859	B10-N-30%-20-D2				Section
	3		0914	B10-N-30%-20-D3				
	A 1		0921	B10-N-30%-20-A1-FD				SL=Sample
	D 2		0900	B10-N-30%-20-D2-FD				location
liquid	rinse blank		0940	B10-RB 051798				
								Southwest
								Labs

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
[signature]	5/18/98 1530				
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company: S. Hodson	Date/Time 5/19/98 10:00	Total No. Samples This Shipping Container / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

Coil #s 2320, 2321

6c

APPENDIX O
RAW DATA FOR LABORATORY ANALYSIS DAY 30

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Laboratory Quality Control Data Summary	8 pages
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Analytical Run Logbook and Calibration for Instrument IN12 on 6/02/98 (soil analysis)	4 pages
Analytical Run Logbook and Calibration for Instrument IN12 on 6/02/98 (soil analysis)	5 pages
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Analytical Run Logbook and Calibration for Instrument IN10 on 6/10/98 (soil analysis)	7 pages
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2E

EXPLOSIVE SURROGATE RECOVERY FORM

ab Name: SWL-TULSA Contract:

de: SWOK Case No: MKF-OH SDG No:34140

	SAMPLE NUMBER	S1 #	OTHER
1	BION30%30A1	99.1	0
2	BION30%30A1 MS	104	0
3	BION30%30A1 MSD	107	0
4	BION30%30A2	104	0
5	BION30%30A3	108	0
6	BION30%30B1	103	0
7	BION30%30B2	98.9	0
8	BION30%30B3	93.8	0
9	BION30%30C1	112	0
10	BION30%30C2	105	0
11	BION30%C2FD	99.6	0
12	BION30%C3	98.2	0
13	BION30%30D1	100	0
14	BION30%30D2	94.5	0
15	BION30%30D3	97.0	0
16	BIO-FB-052798	119	0
17	BL0528SD	99.0	0
18	BL0528WH	118	0
19	LC0528SD	116	0
20	LC0528WH	74.5	0
21	LD0528SD	116	0
22	LD0528WH	89.4	0
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

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34140

Client Sample No: BION30%30A1 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500		9380	99	54-128
RDX	9500		9120	96	66-109
TNB	9500		9530	100	57-130
DNB	9500		9630	101	74-122
TETRYL	9500		3510	37	32-119
NB	9500		8930	94	70-135
TNT	9500	268	7990	81	44-124
4ADNT	9500		9310	98	60-140
2ADNT	9500		9430	99	60-140
26DNT	9500		9110	96	58-125
24DNT	9500		10200	107	59-120
2NT	9500		9780	103	79-124
4NT	9500		9180	97	74-128
3NT	9500		8460	89	79-121

N f Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	9790	103	4	30	54-128
RDX	9500	9310	98	2	30	66-109
TNB	9500	9690	102	2	30	57-130
DNB	9500	9770	103	2	45	74-122
TETRYL	9500	3200	34	9	30	32-119
NB	9500	9050	95	1	35	70-135
TNT	9500	8060	82	1	30	44-124
4ADNT	9500	9600	101	3	40	60-140
2ADNT	9500	9550	100	1	40	60-140
26DNT	9500	9290	98	2	35	58-125
24DNT	9500	10400	109	2	35	59-120
2NT	9500	9920	104	1	35	79-124
4NT	9500	9290	98	1	35	74-128
3NT	9500	8550	90	1	35	79-121

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

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34140

Client Sample No: BION30%30A1

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000		2860	95	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000	2820	94	1	30	70-130

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

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34140

Client Sample No: LC0528SD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		9500	100	57-137
RDX	9500		8680	91	77-113
TNB	9500		9110	96	64-125
DNB	9500		8850	93	82-118
TETRYL	9500		6910	73	23-124
NB	9500		9570	101	69-143
TNT	9500		7610	80	75-118
4ADNT	9500		9630	101	60-140
2ADNT	9500		8820	93	60-140
26DNT	9500		8500	90	78-117
24DNT	9500		9980	105	74-126
2NT	9500		9840	104	78-123
4NT	9500		9370	99	79-125
3NT	9500		8770	92	78-121

N f 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:34140

Client Sample No: LC0528SD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		3040	101	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

JB 08
6-25-98

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34140

Client Sample No: LD0528SD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		9740	102	57-137
RDX	9500		8880	94	77-113
TNB	9500		9270	98	64-125
DNB	9500		9020	95	82-118
TETRYL	9500		4370	46	23-124
NB	9500		9700	102	69-143
TNT	9500		7700	81	75-118
4ADNT	9500		11600	122	60-140
2ADNT	9500		8980	95	60-140
26DNT	9500		8620	91	78-117
24DNT	9500		10200	107	74-126
2NT	9500		10000	105	78-123
4NT	9500		9540	100	79-125
3NT	9500		8880	94	78-121

N f 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:34140

Client Sample No: LD0528SD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		2880	96	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:34140

Client Sample No: LC0528WH

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
HMX	400		378	95	46-151
RDX	150		133	89	72-129
TNB	225		202	90	74-118
DNB	125		120	96	76-132
TETRYL	413		518	125*	58-120
NB	213		212	100	68-135
TNT	188		203	108	61-145
4ADNT	313		312	100	60-140
2ADNT	313		333	106	60-140
26DNT	288		308	107	77-125
24DNT	175		166	95	70-134
2NT	363		323	89	73-131
4NT	250		250	100	73-116
3NT	238		312	131*	71-127

N .f Analyte recoveries out of QC Advisory Limits = 2

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34140

Client Sample No: LC0528WI

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
PETN	1200		1280	107	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:34140

Client Sample No: LD0528WH

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
HMX	400		355	89	46-151
RDX	150		127	85	72-129
TNB	225		190	84	74-118
DNB	125		116	93	76-132
TETRYL	413		500	121*	58-120
NB	213		202	95	68-135
TNT	188		178	95	61-145
4ADNT	313		315	101	60-140
2ADNT	313		326	104	60-140
26DNT	288		292	101	77-125
24DNT	175		156	89	70-134
2NT	363		311	86	73-131
4NT	250		248	99	73-116
3NT	238		310	130*	71-127

N f Analyte recoveries out of QC Advisory Limits = 2

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34140

Client Sample No: LD0528WI

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
PETN	1200		1280	107	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0528SD

Lab Code: SWOK Case No: MKF-OH SDG No:34140

Matrix: (soil/water) Soil

Date Extracted: 05/28/98 Extn. Method: SONC

Date Analyzed (1): 06/03/98 Date Analyzed(2): 06/11/98

Time Analyzed (1): 01:25:38 Time Analyzed(2): 05:55:10

Instrument ID (1): IN12 Instrument ID(2): IN10

LC Column ID (1): CARB-07 LC Column ID (2): LC-CN-11

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

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0528SD	LC0528SD	06/03/98	
2	LD0528SD	LD0528SD	06/03/98	
3	BION30%30A1	34140.01	06/03/98	06/11/98
4	BION30%30A1 MS	34140.02MS	06/06/98	
5	BION30%30A1 MSD	34140.03MSD	06/06/98	
	BION30%30A2	34140.04	06/06/98	
7	BION30%30A3	34140.05	06/06/98	
8	BION30%30B1	34140.06	06/06/98	
9	BION30%30B2	34140.07	06/06/98	06/11/98
10	BION30%30B3	34140.08	06/06/98	06/11/98
11	BION30%30C1	34140.09	06/06/98	06/11/98
12	BION30%30C2	34140.10	06/06/98	
13	BION30%C2FD	34140.11	06/06/98	
14	BION30%C3	34140.12	06/06/98	06/11/98
15	BION30%30D1	34140.13	06/06/98	06/11/98
16	BION30%30D2	34140.14	06/06/98	06/11/98
17	BION30%30D3	34140.15	06/06/98	06/11/98
18				
19				
20				
21				
22				
23				
24				
25				

FORM IV

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0528SD

Lab Code: SWOK Case No: MKF-OH SDG No:34140

Matrix: (soil/water) Soil

Date Extracted: 05/28/98 Extn. Method: SONC

Date Analyzed (1): 06/01/98 Date Analyzed(2):

Time Analyzed (1): 23:14:18 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	LC0528SD	LC0528SD	06/02/98	
2	LD0528SD	LD0528SD	06/02/98	
3	BION30%30A1	34140.01	06/02/98	
4	BION30%30A1 MS	34140.02MS	06/02/98	
5	BION30%30A1 MSD	34140.03MSD	06/02/98	
	BION30%30A2	34140.04	06/02/98	
7	BION30%30A3	34140.05	06/02/98	
8	BION30%30B1	34140.06	06/02/98	
9	BION30%30B2	34140.07	06/02/98	
10	BION30%30B3	34140.08	06/02/98	
11	BION30%30C1	34140.09	06/02/98	
12	BION30%30C2	34140.10	06/02/98	
13	BION30%30C2FD	34140.11	06/02/98	
14	BION30%30C3	34140.12	06/02/98	
15	BION30%30D1	34140.13	06/02/98	
16	BION30%30D2	34140.14	06/02/98	
17	BION30%30D3	34140.15	06/02/98	
18				
19				
20				
21				
22				
23				
24				
25				

FORM IV

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0528WH

Lab Code: SWOK Case No: MKF-OH SDG No:34140

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 05/28/98 Date Analyzed(2):

Time Analyzed (1): 21:38:40 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	LC0528WH	LC0528WH	05/28/98	
2	LD0528WH	LD0528WH	05/28/98	
3	BIO-FB-052798	34140.16	05/29/98	
4				
5				
7				
8				
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:

Lab Sample ID: BL0528WI

Lab Code: SWOK Case No: MKF-OH SDG No:34140

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 05/31/98 Date Analyzed(2):

Time Analyzed (1): 17:53:18 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	LC0528WI	LC0528WI	05/31/98	
2	LD0528WI	LD0528WI	05/31/98	
3	BIO-FB-052798	34140.16	05/31/98	
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

FORM IV

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.01

Sample Amt: 2g % Moisture 20.64 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/03/98

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	268	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

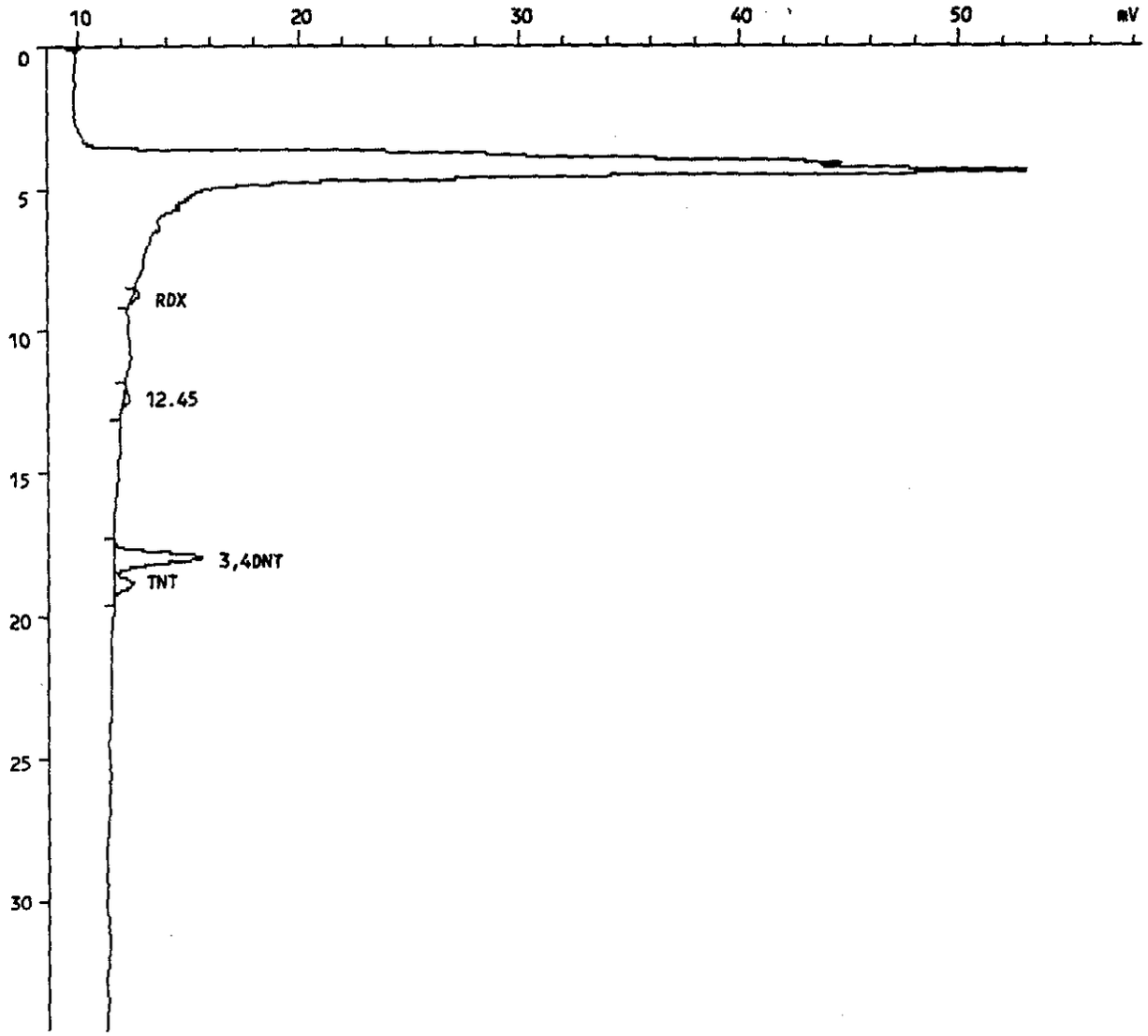
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0601B,9,1

Sample name.....: BION30%30A1
Sample ID.....: 34140.01
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 03-Jun-98 at 07:22:40
Reported on 10-Jun-98 at 17:12:47



INJECTION REPORT

Injection F: <MC3> 2 2EX0601B,9,1

Acquired on 03-Jun-98 at 07:22:40
Modified on 10-Jun-82 at 17:11:04
Reported on 10-Jun-98 at 17:11:08

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 29
Calibration file..: 2EX0601 Last modified on 10-Jun-82 at 17:00:28
Method file.....: EXPLOS Last modified on 10-Jun-82 at 17:04:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30A1
Sample ID.....: 34140.01
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

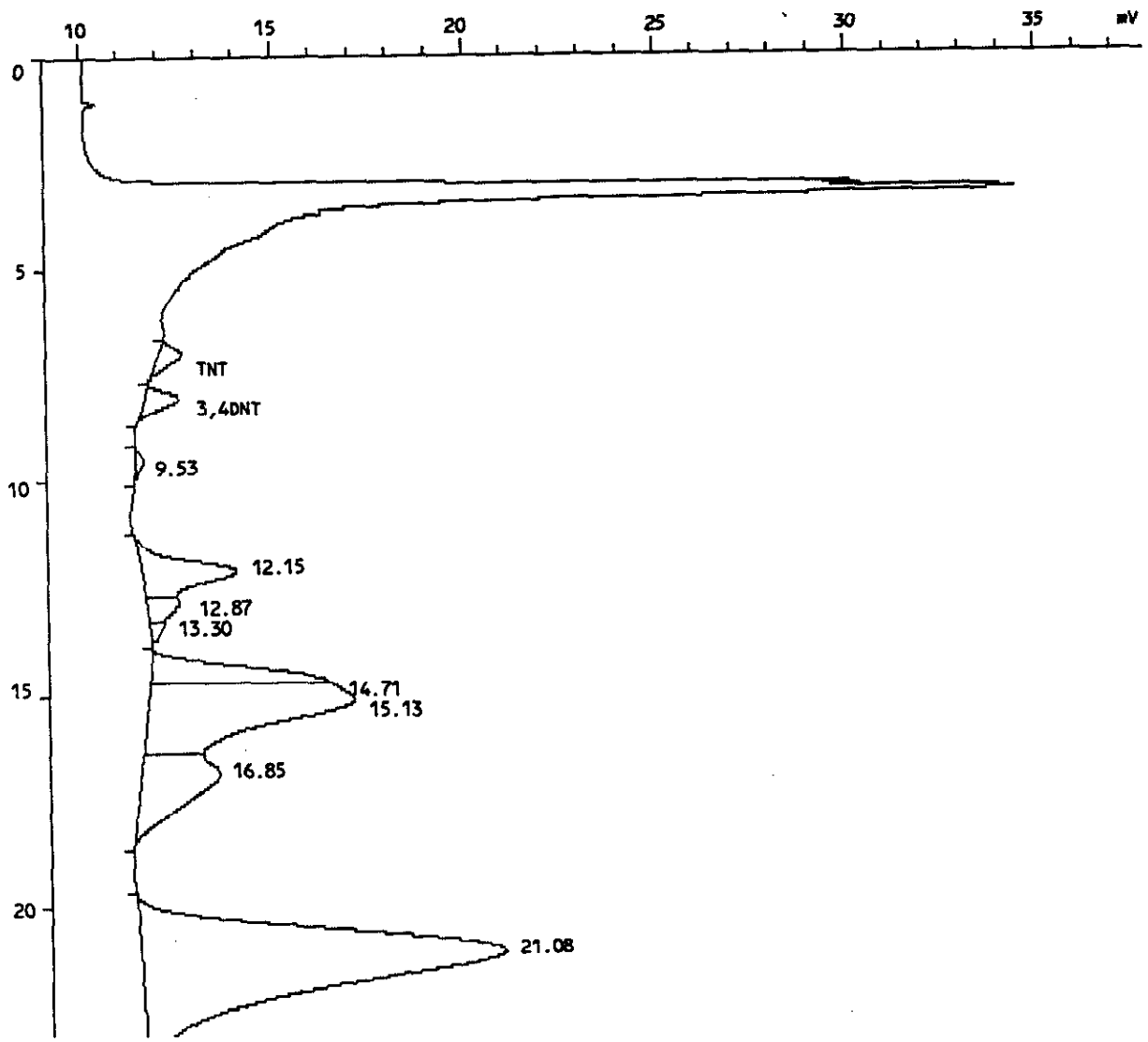
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.784	328	6782	195.777	RDX
3	17.968	4037	109203	1982.616	3,4DNT 99%
4	18.864	922	25221	268.420	TNT *P
Total		5287	141205	2446.814	
Residual		284	9114	263.107	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,3,1

Sample name.....: BION30%30A1
Sample ID.....: 34140.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 07:23:54
Reported on 13-Jun-98 at 19:04:37



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,3,1

Acquired on 11-Jun-98 at 07:23:54
Modified on 13-Jun-82 at 18:50:18
Reported on 13-Jun-98 at 18:50:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610A Last modified on 13-Jun-82 at 18:48:48
Method file.....: LCCN Last modified on 13-Jun-82 at 18:49:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30A1
Sample ID.....: 34140.01
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

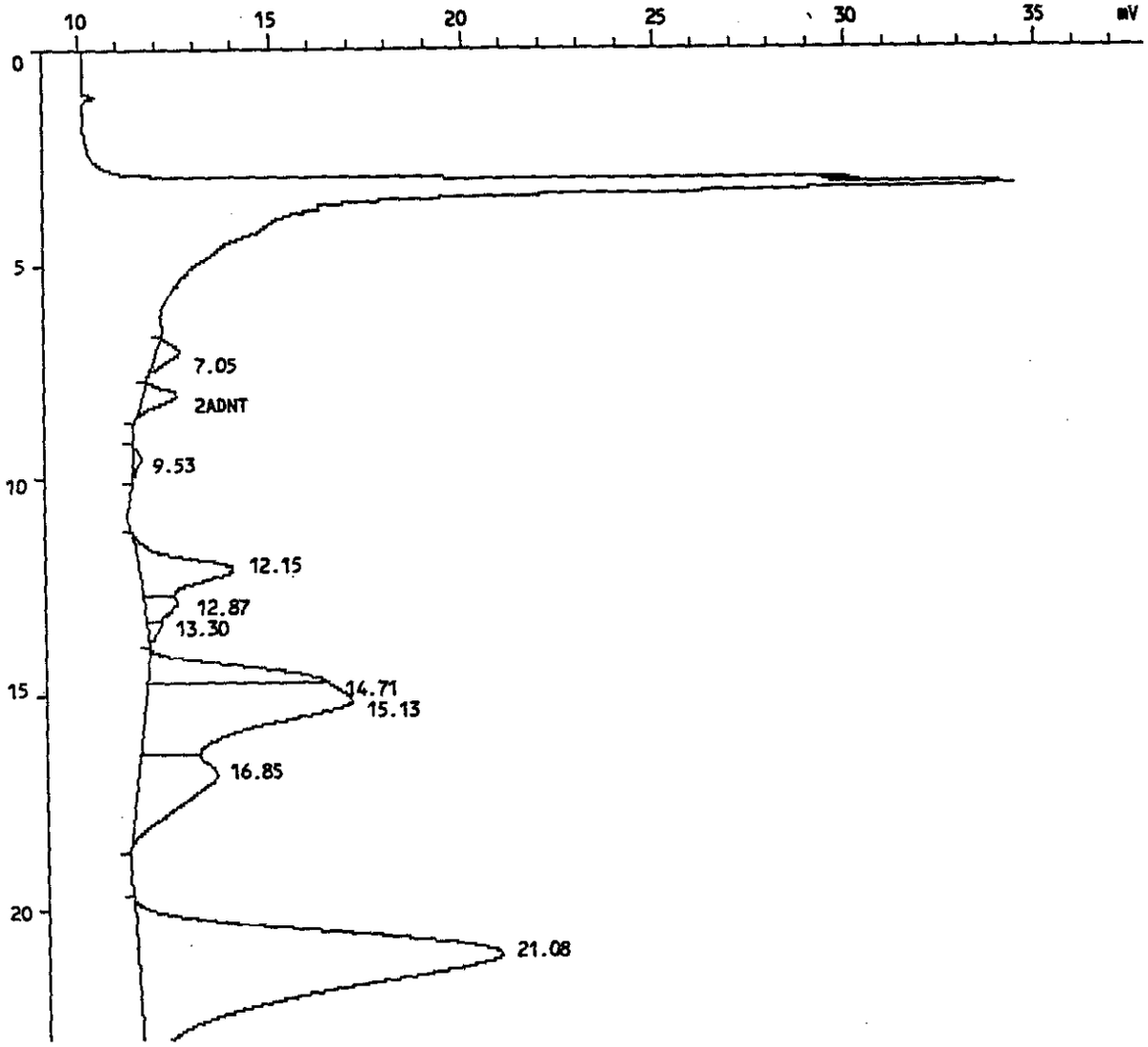
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.045	627	18341	765.807	TNT
2	8.075	913	24734	1508.163	3,4DNT
Total		1541	43075	2273.970	
Residual		25591	1640496	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,3,1

Sample name.....: BION30%30A1
Sample ID.....: 34140.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 07:23:54
Reported on 14-Jun-98 at 18:17:13



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,3,1

Acquired on 11-Jun-98 at 07:23:54
Modified on 14-Jun-82 at 18:12:58
Reported on 14-Jun-98 at 18:12:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610B Last modified on 13-Jun-82 at 18:49:10
Method file.....: LCCN Last modified on 14-Jun-82 at 18:05:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30A1
Sample ID.....: 34140.01
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
2	8.075	913	24734	924.977	2ADNT
Total		913	24734	924.977	
Residual		26218	1658837	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.01

Sample Amt: 2g % Moisture 20.64 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

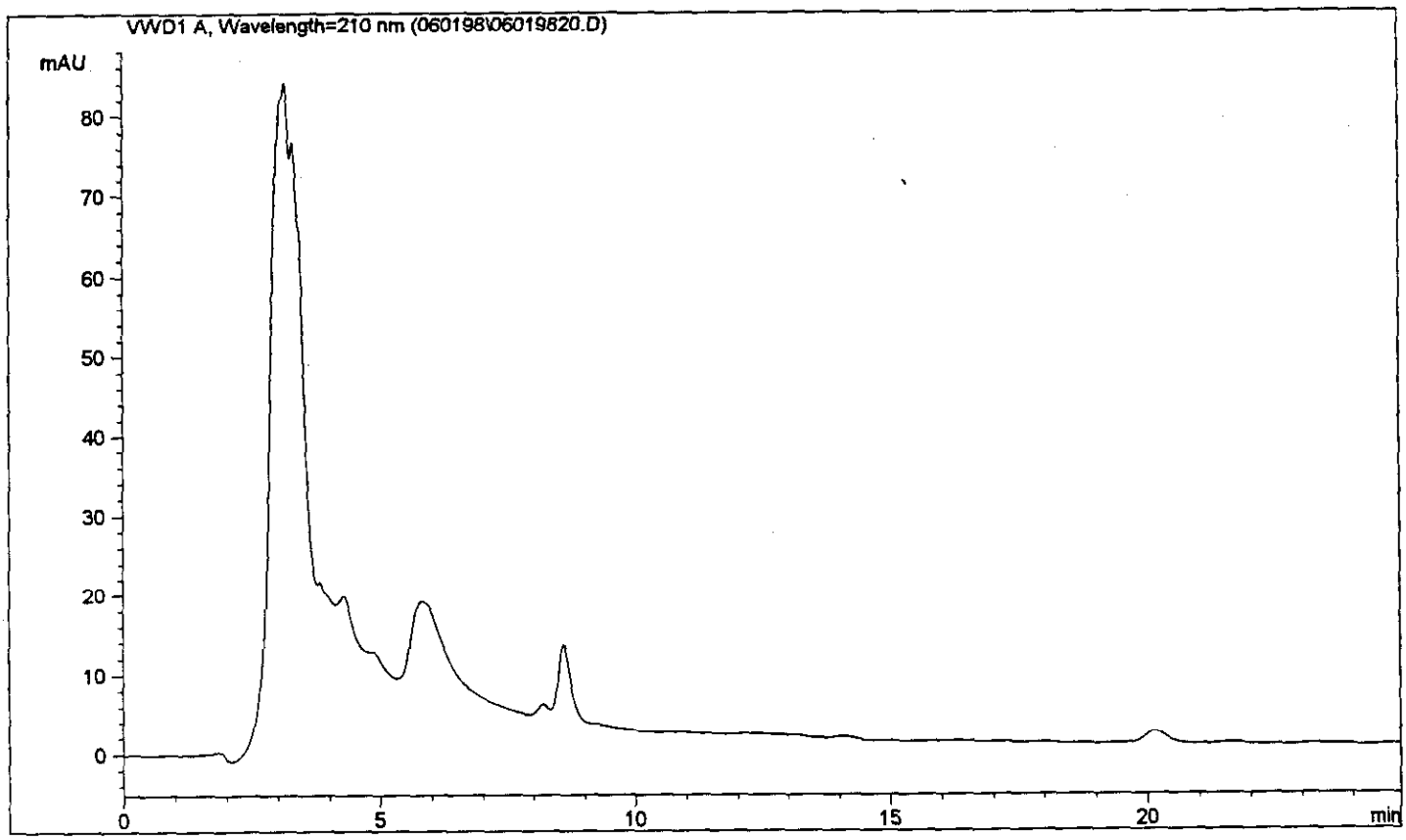
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 20
Sample Name	: 34140.01	Vial No.	: 20
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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

Totals: 0.00000

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*** End of Report ***

27

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.04

Sample Amt: 2g % Moisture 20.00 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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

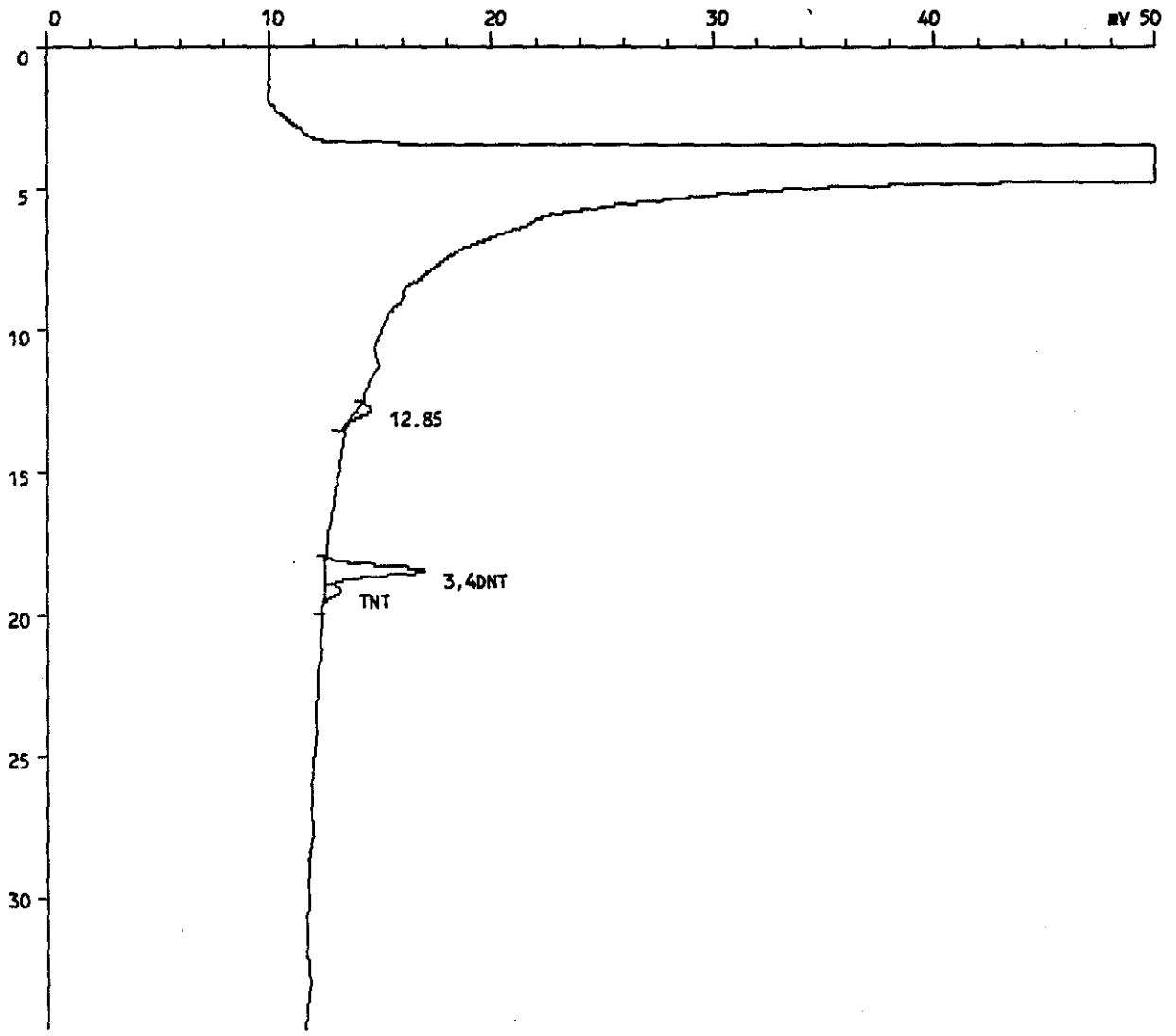
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,2,1

Sample name.....: BION30%30A2
Sample ID.....: 34140.04
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 03:22:37
Reported on 18-Jun-98 at 16:49:02



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,2,1

Acquired on 06-Jun-98 at 03:22:37
Modified on 11-Jun-82 at 10:03:38
Reported on 18-Jun-98 at 16:48:25

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:05:50
Method file.....: EXPLOS Last modified on 18-Jun-82 at 16:23:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30A2
Sample ID.....: 34140.04
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
2	18.427	4505	114544	2072.078	3,4DNT 104
3	19.125	784	17864	189.839	TNT
Total		5289	132408	2261.917	
Residual		694	19765	-154.413	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.04

Sample Amt: 2g % Moisture 20.00 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

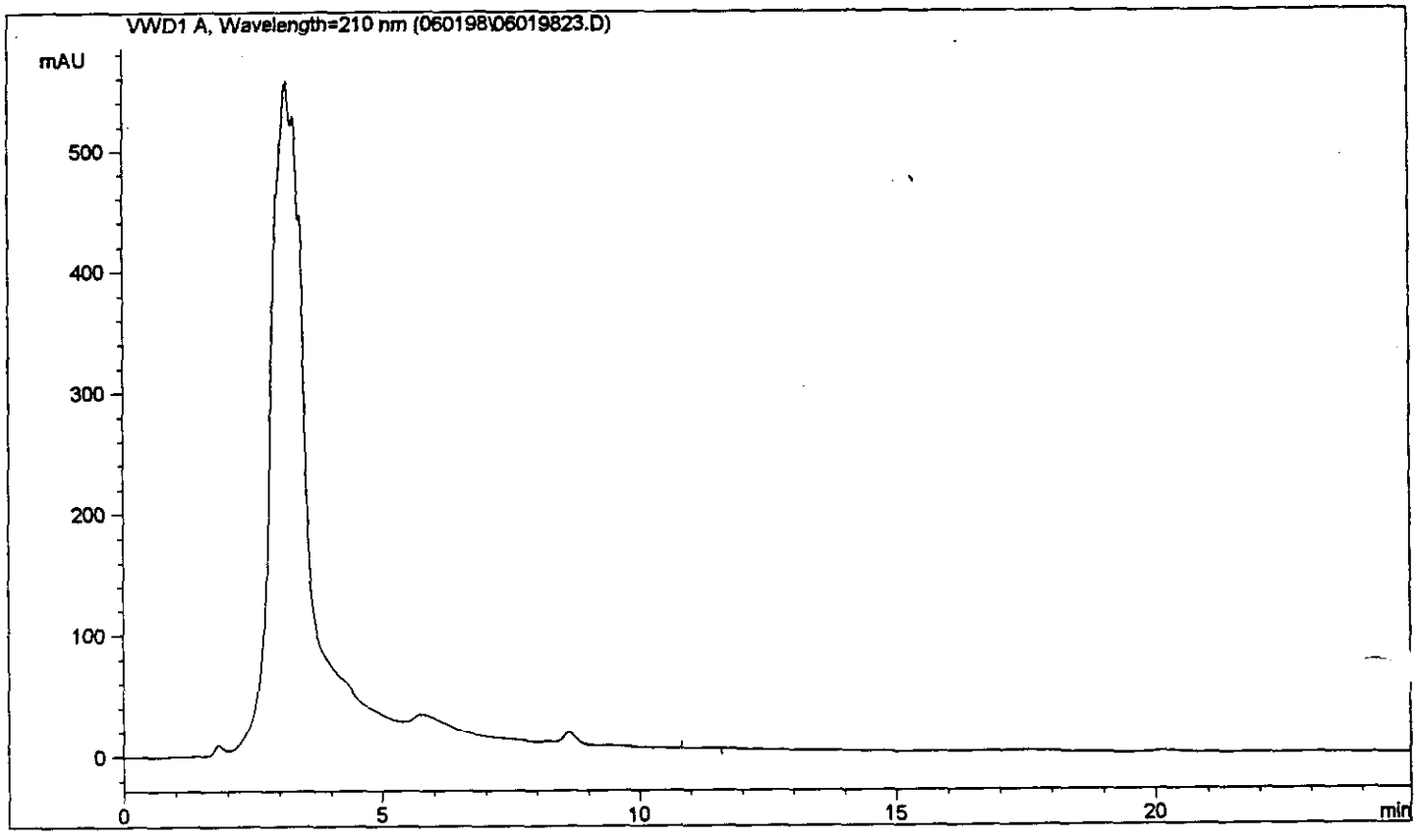
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 23
Sample Name	: 34140.04	Vial No.	: 23
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
11.266	PBA	2.06634	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:

BION30%30A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.05

Sample Amt: 2g % Moisture 31.11 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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

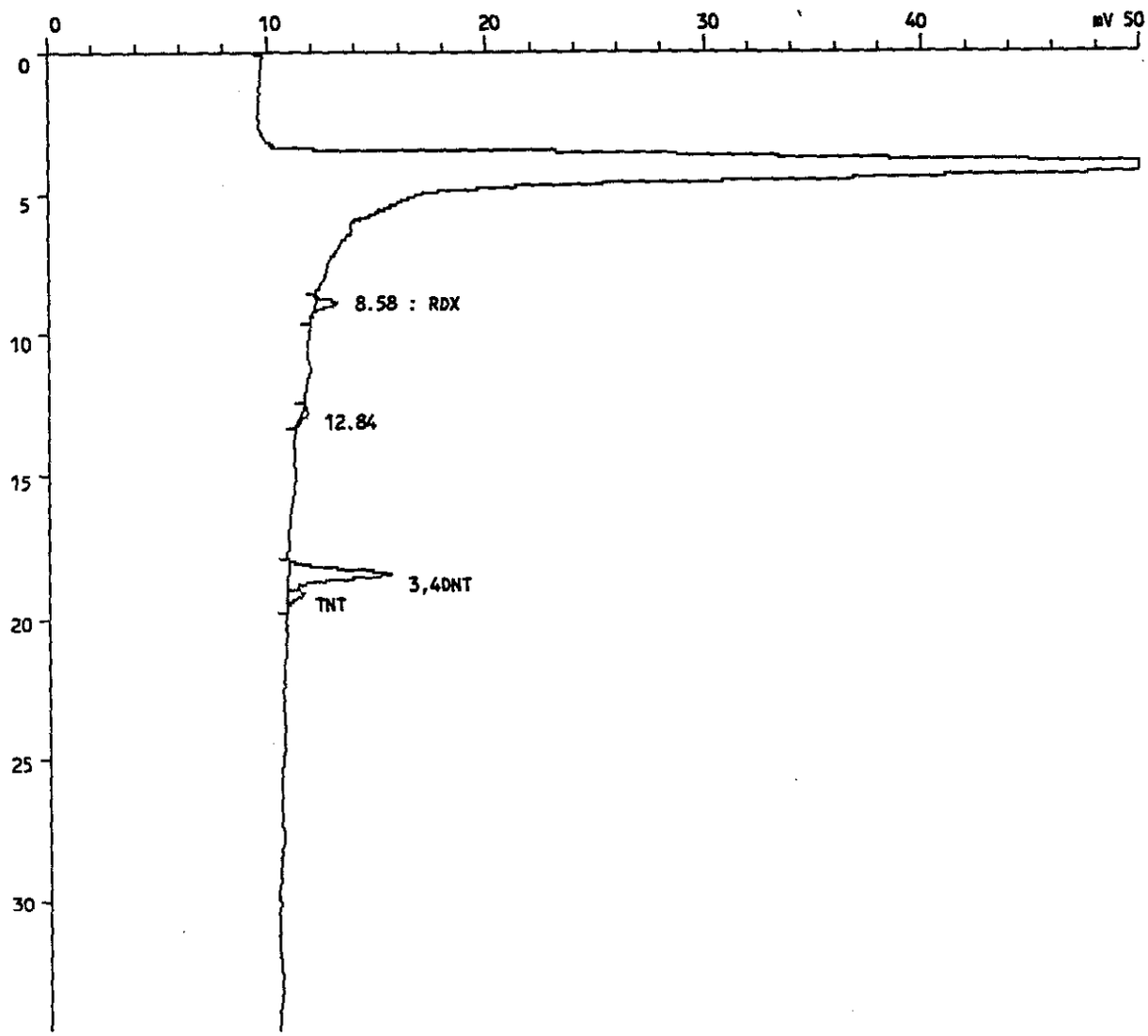
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,3,1

Sample name.....: BION30%30A3
Sample ID.....: 34140.05
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 04:07:15
Reported on 18-Jun-98 at 17:08:05



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,3,1

Acquired on 06-Jun-98 at 04:07:15
Modified on 11-Jun-82 at 10:03:54
Reported on 18-Jun-98 at 16:53:05

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:05:50
Method file.....: EXPLOS Last modified on 18-Jun-82 at 16:49:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30A3
Sample ID.....: 34140.05
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
2	8.907	1058	19410	570.537	RDX
4	18.427	4741	119966	2170.154	3,4DNT 108
5	19.147	760	19313	205.239	TNT
Total		6559	158689	2945.930	
Residual		347	8596	252.681	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.05

Sample Amt: 2g % Moisture 31.11 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

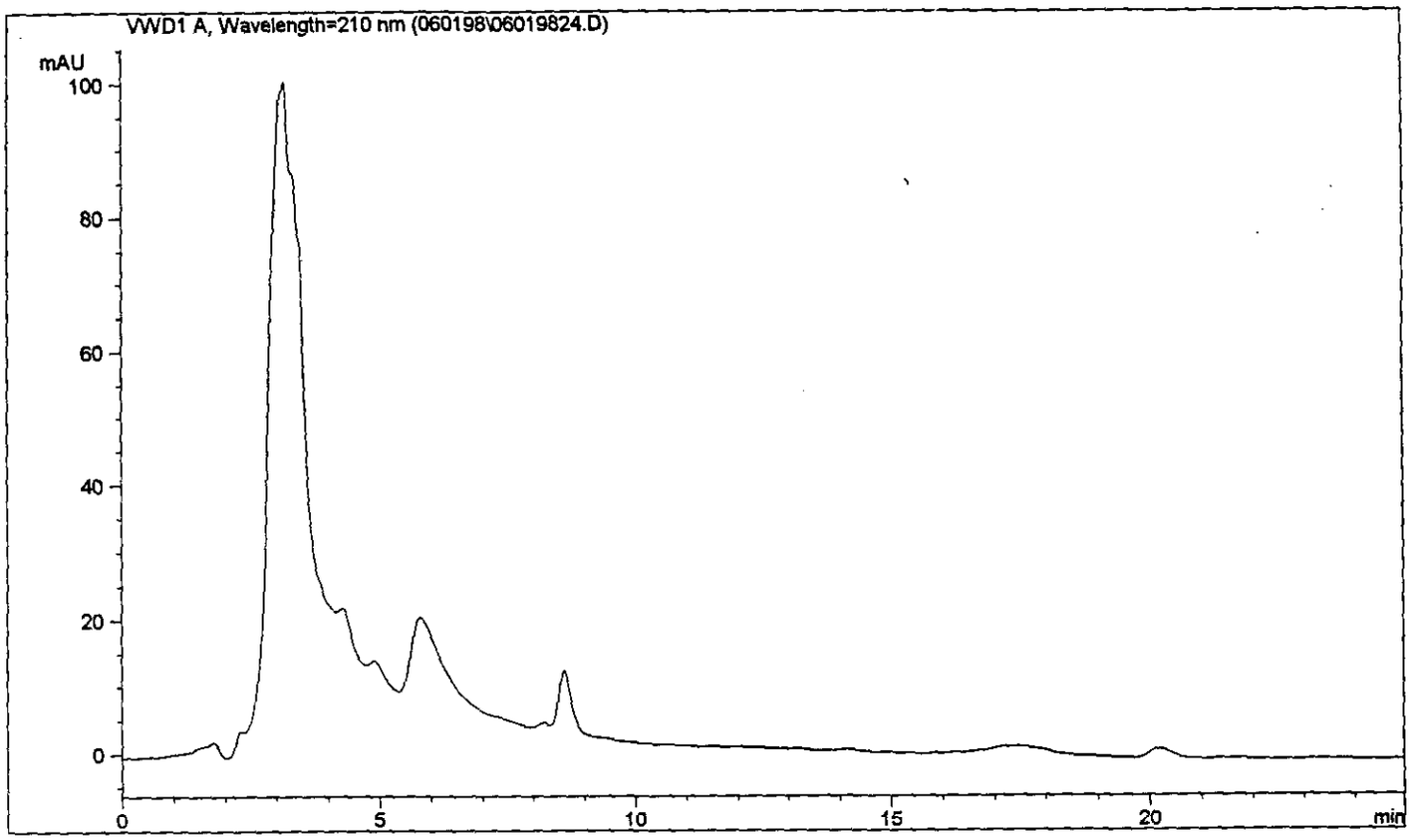
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 24
Sample Name	: 34140.05	Vial No.	: 24
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.06

Sample Amt: 2g % Moisture 23.84 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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

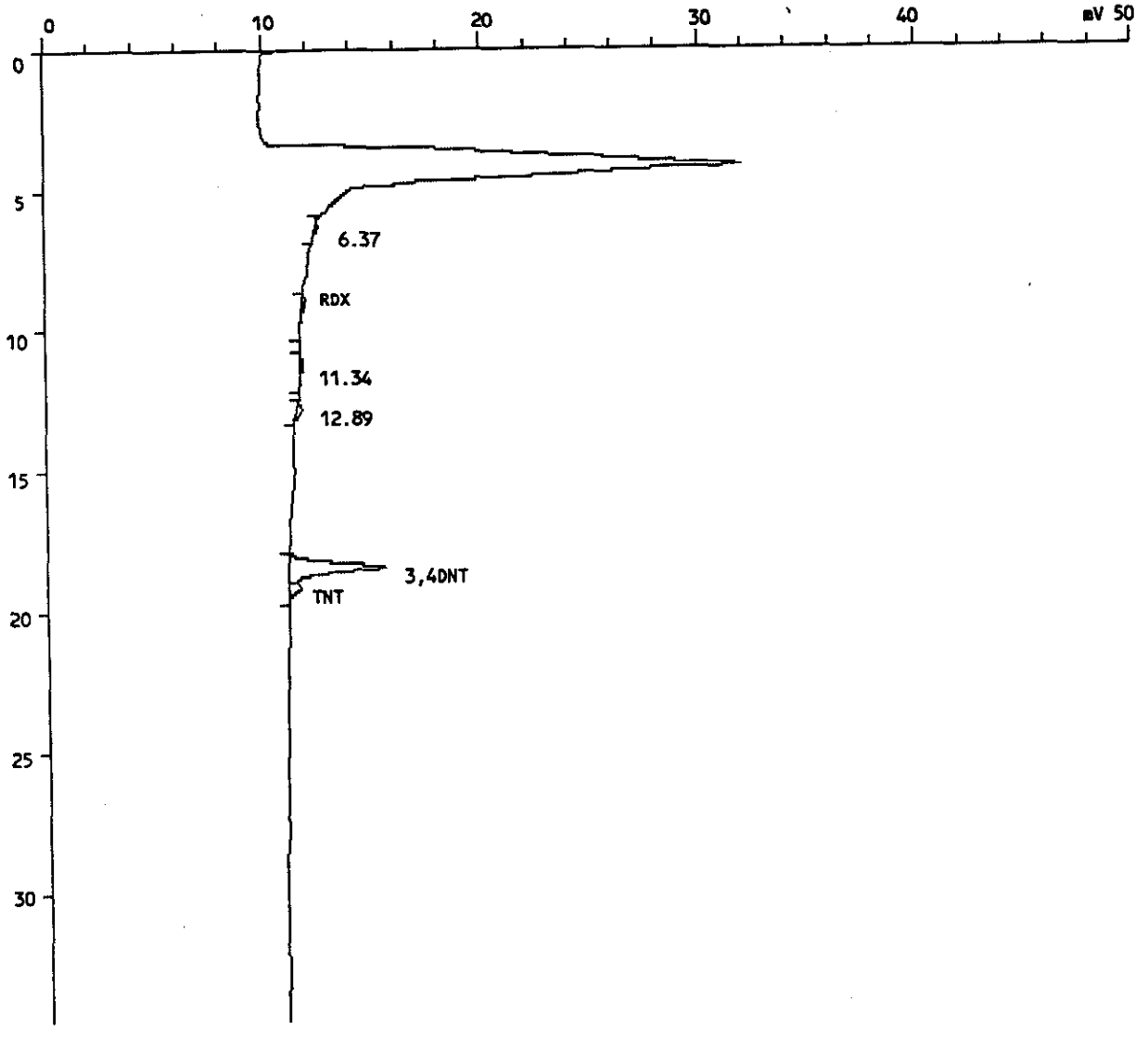
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,4,1

Sample name.....: BION30%30B1
Sample ID.....: 34140.06
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 04:51:53
Reported on 18-Jun-98 at 17:10:57



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,4,1

Acquired on 06-Jun-98 at 04:51:53
Modified on 11-Jun-82 at 10:04:10
Reported on 18-Jun-98 at 17:09:26

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:05:50
Method file.....: EXPLOS Last modified on 18-Jun-82 at 16:49:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30B1
Sample ID.....: 34140.06
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	9.013	157	7296	214.473	RDX
5	18.437	4436	113901	2060.441	3,4DNT 103
6	19.152	545	13735	145.960	TNT
Total		5138	134932	2420.874	
Residual		644	18966	557.494	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.06

Sample Amt: 2g % Moisture 23.84 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

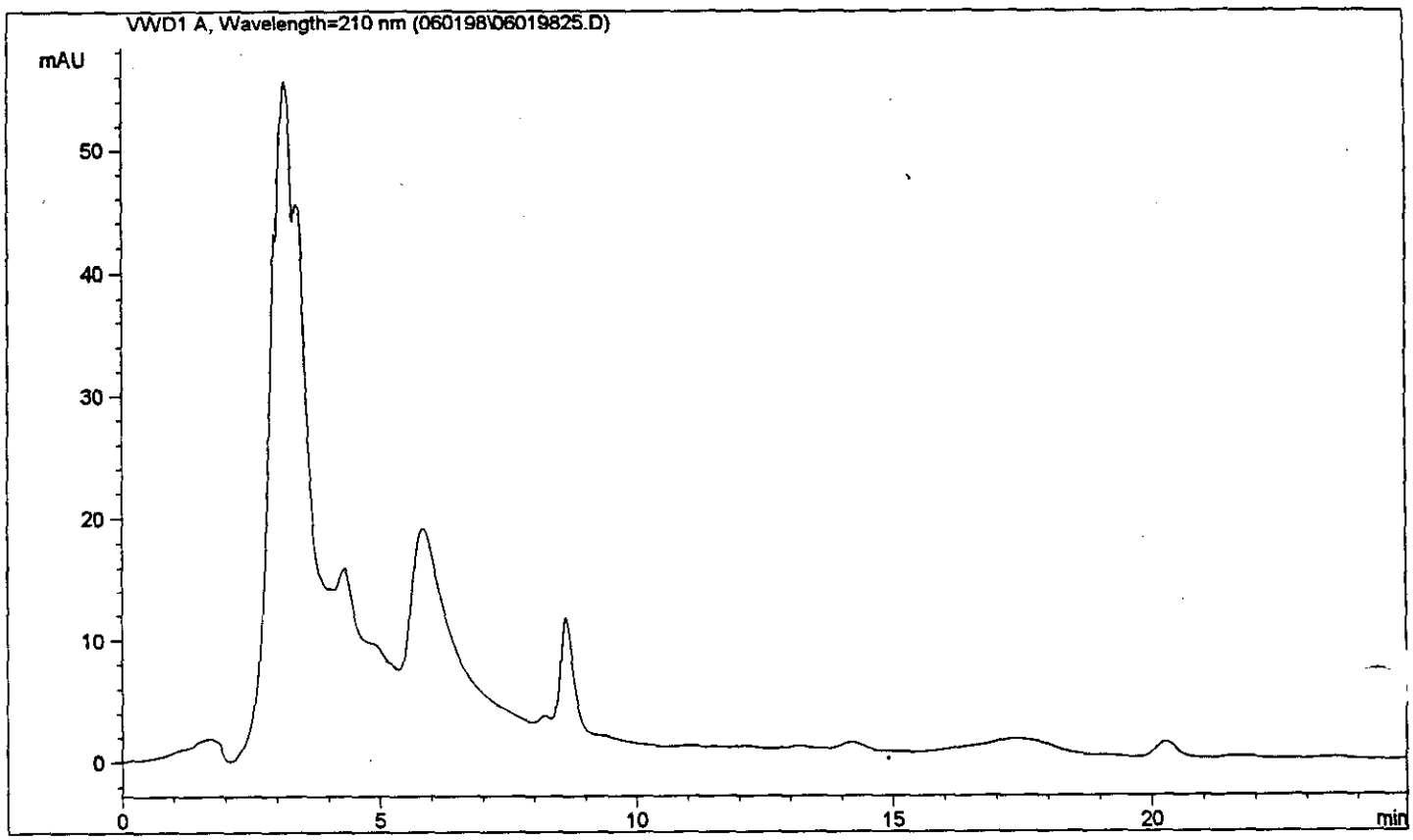
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 25
Sample Name	: 34140.06	Vial No.	: 25
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.07

Sample Amt: 2g % Moisture 22.58 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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	287	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

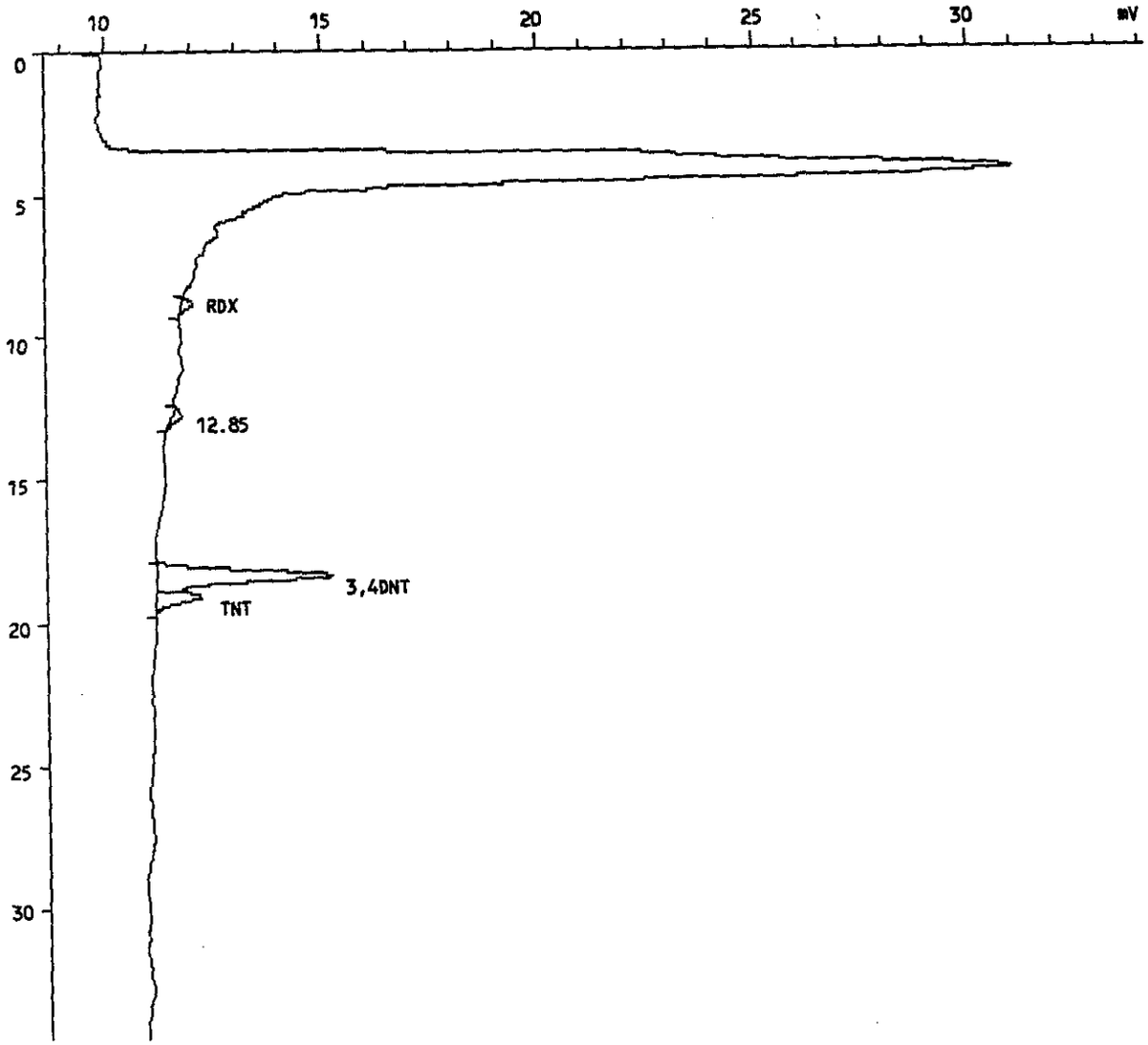
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,5,1

Sample name.....: BION30%30B2
Sample ID.....: 34140.07
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 05:36:31
Reported on 11-Jun-98 at 10:12:57



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,5,1

Acquired on 06-Jun-98 at 05:36:31
Modified on 11-Jun-82 at 10:04:26
Reported on 11-Jun-98 at 10:04:24

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:03:38
Method file.....: EXPLOS Last modified on 11-Jun-82 at 10:00:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30B2
Sample ID.....: 34140.07
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

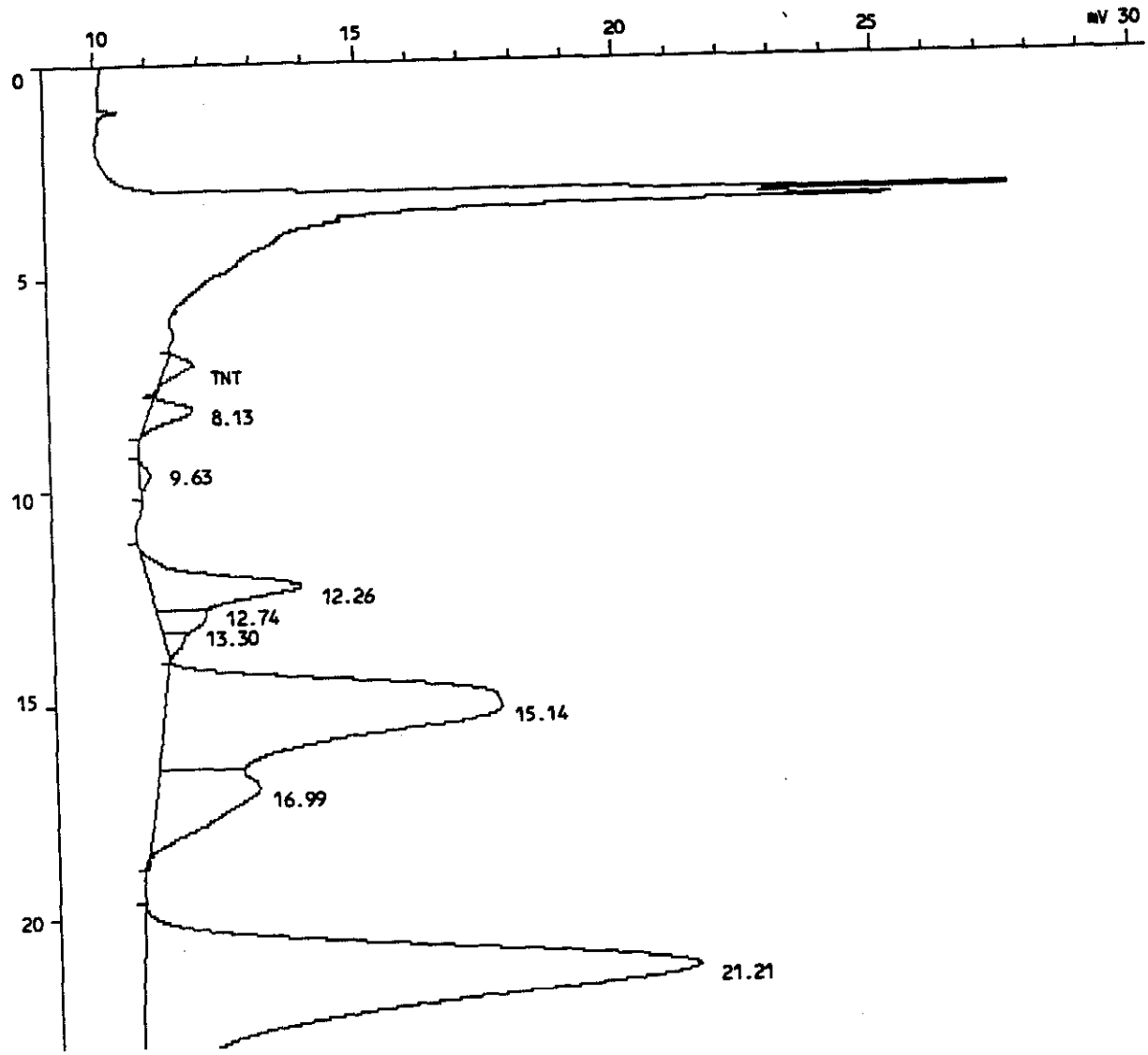
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.864	264	5492	161.420	RDX
3	18.368	4064	109391	1978.855	3,4DNT 99%
4	19.077	1015	27044	287.396	TNT *P
Total		5342	141927	2427.671	
Residual		235	6374	187.352	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,7,1

Sample name.....: BION30%30B2
Sample ID.....: 34140.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 10:21:21
Reported on 13-Jun-98 at 19:02:02



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,7,1

Acquired on 11-Jun-98 at 10:21:21
Modified on 13-Jun-82 at 18:51:10
Reported on 13-Jun-98 at 18:51:11

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610A Last modified on 13-Jun-82 at 18:48:48
Method file.....: LCCN Last modified on 13-Jun-82 at 18:49:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30B2
Sample ID.....: 34140.07
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

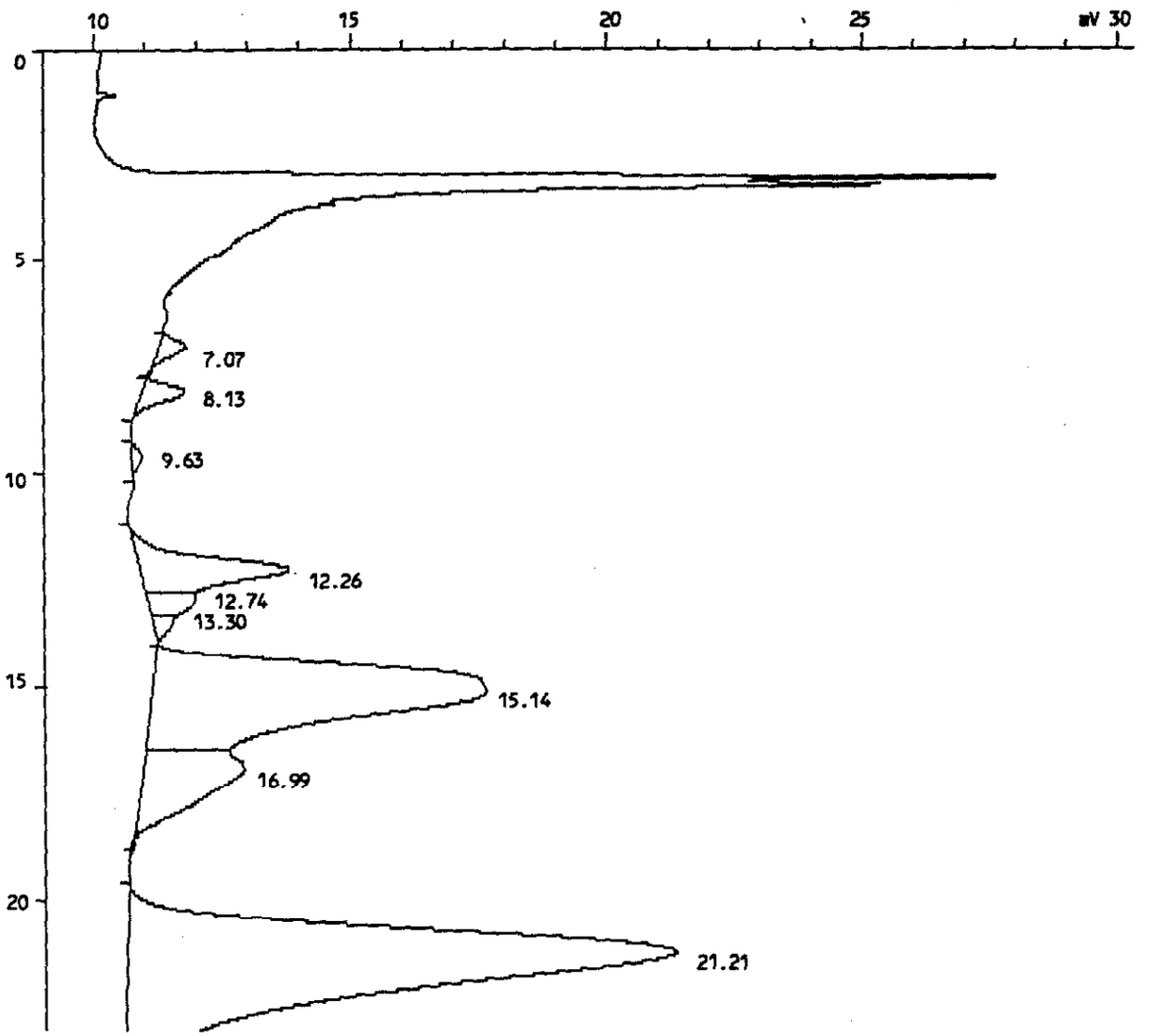
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.072	550	14491	605.070	TNT
Total		550	14491	605.070	
Residual		24784	1967329	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,7,1

Sample name.....: BION30%30B2
Sample ID.....: 34140.07
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 10:21:21
Reported on 14-Jun-98 at 18:19:10



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,7,1

Acquired on 11-Jun-98 at 10:21:21
Modified on 14-Jun-82 at 18:13:58
Reported on 14-Jun-98 at 18:13:49

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610B Last modified on 13-Jun-82 at 18:49:10
Method file.....: LCCN Last modified on 14-Jun-82 at 18:05:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30B2
Sample ID.....: 34140.07
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
Total	0	0	0.000	
Residual	25334	1981821	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.07

Sample Amt: 2g % Moisture 22.58 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

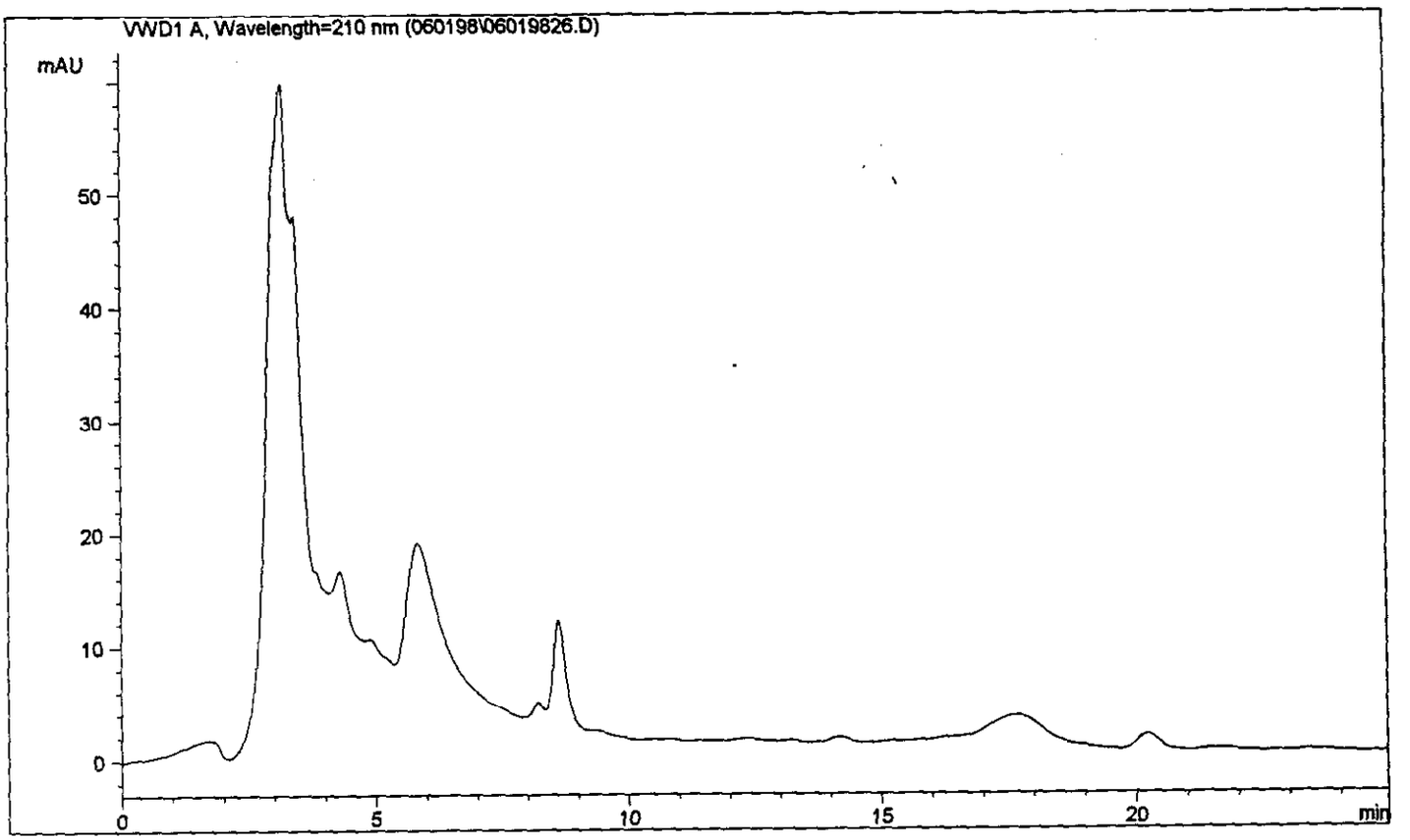
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 26
Sample Name	: 34140.07	Vial No.	: 26
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.08

Sample Amt: 2g % Moisture 20.73 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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	1430	
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	948	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

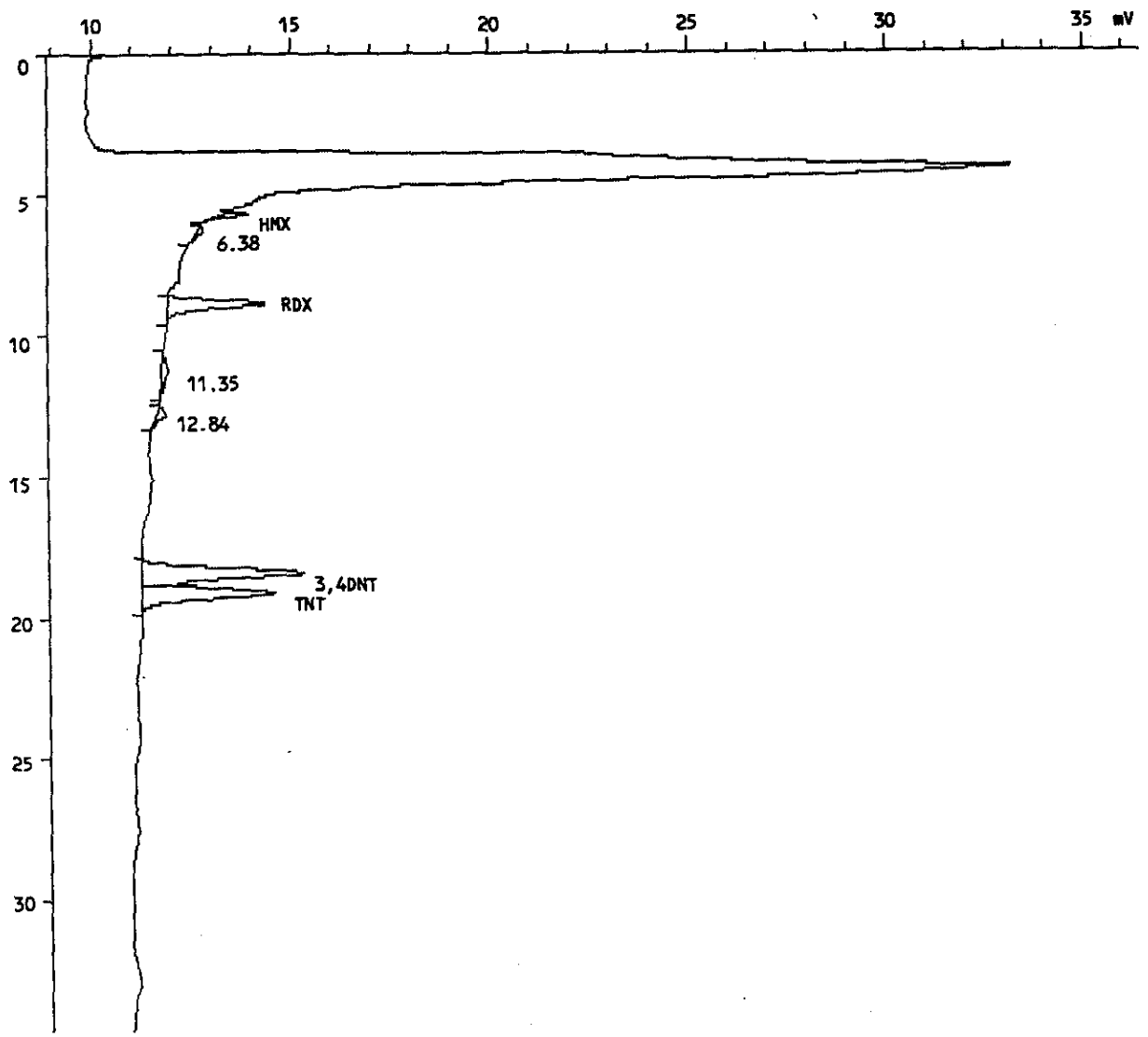
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,6,1

Sample name.....: BION30%30B3
Sample ID.....: 34140.08
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 06:21:09
Reported on 11-Jun-98 at 10:13:39



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,6,1

Acquired on 06-Jun-98 at 06:21:09
Modified on 11-Jun-82 at 10:04:44
Reported on 11-Jun-98 at 10:04:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:03:38
Method file.....: EXPLOS Last modified on 11-Jun-82 at 10:00:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30B3
Sample ID.....: 34140.08
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

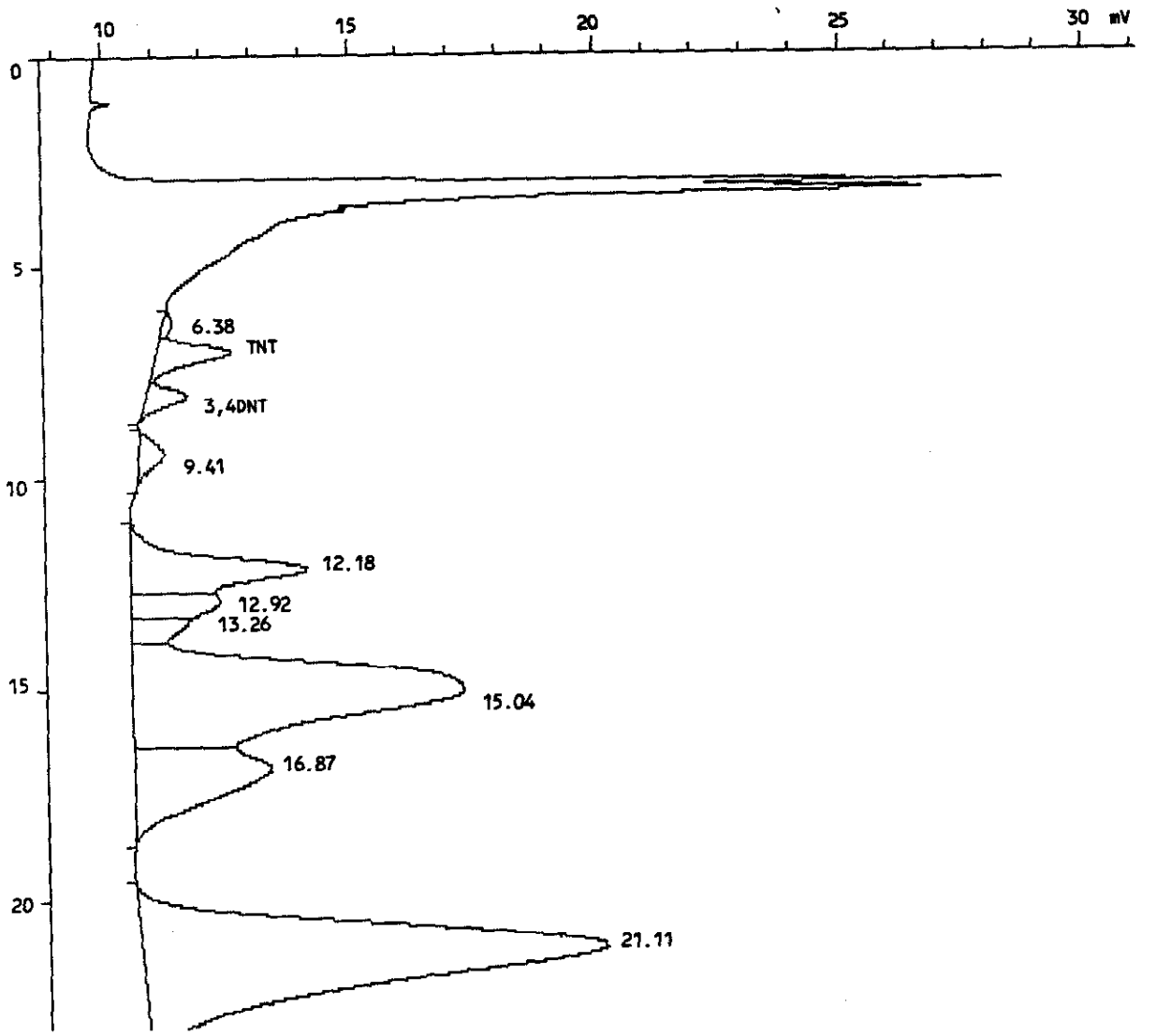
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name	
1	5.755	764	8469	343.690	HMX	
3	8.885	2430	48734	1432.521	RDX	*
6	18.373	4065	103684	1875.613	3,4DNT	93%
7	19.093	3362	89234	948.290	TNT	* P
Total		10621	250121	4600.113		
Residual		648	20335	647.592		

LONG PLOT

Injection F: <MC3> 3 3CN0610A,8,1

Sample name.....: BION30%30B3
Sample ID.....: 34140.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 11:05:42
Reported on 13-Jun-98 at 19:01:38



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,8,1

Acquired on 11-Jun-98 at 11:05:42
Modified on 13-Jun-82 at 18:51:24
Reported on 13-Jun-98 at 18:51:24

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610A Last modified on 13-Jun-82 at 18:48:48
Method file.....: LCCN Last modified on 13-Jun-82 at 18:49:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30B3
Sample ID.....: 34140.08
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

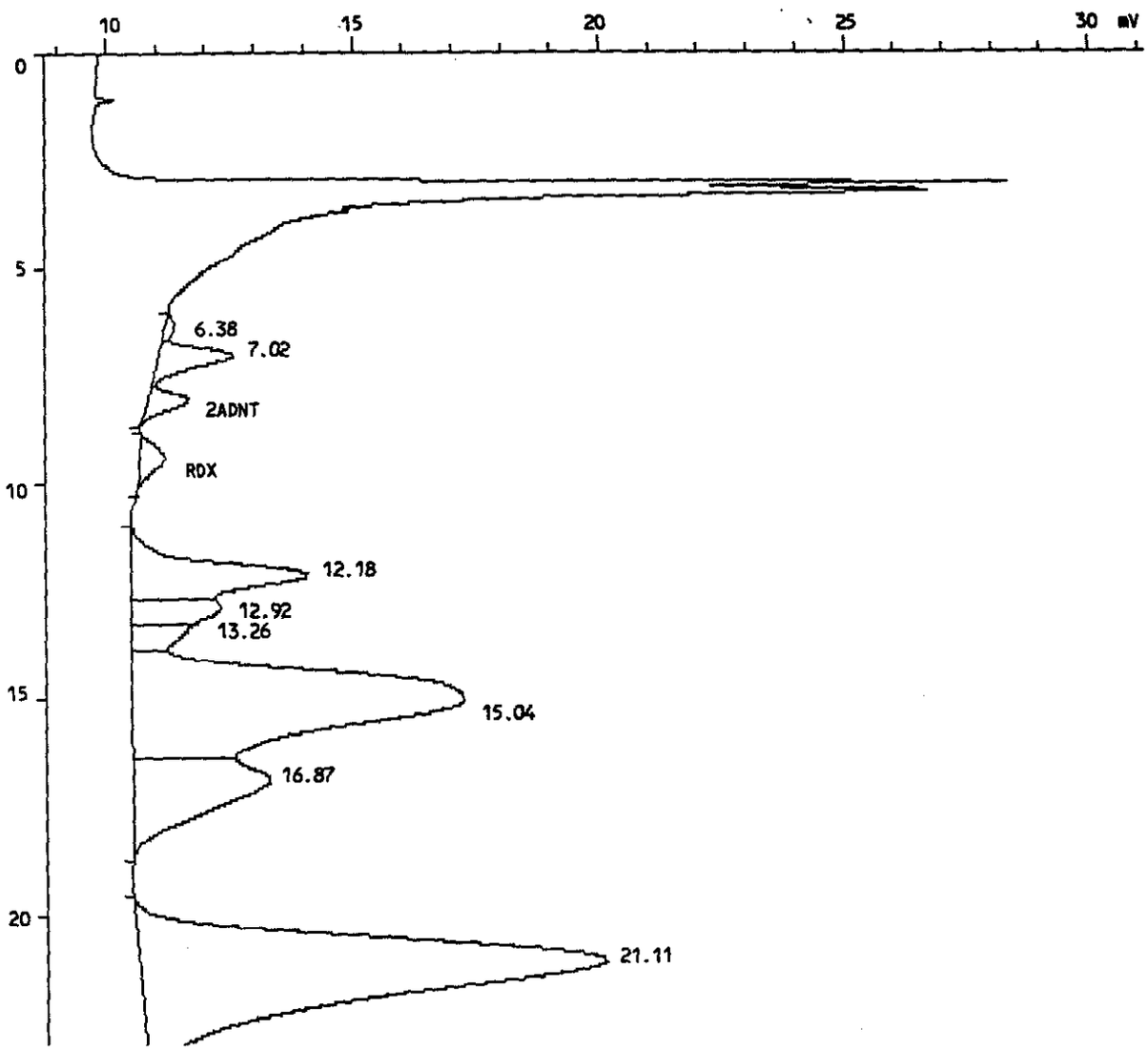
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.024	1554	46694	1949.630	TNT
3	8.075	862	24704	1506.366	3,4DNT
Total		2416	71398	3455.996	
Residual		26409	1995606	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,8,1

Sample name.....: BION30%30B3
Sample ID.....: 34140.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 11:05:42
Reported on 14-Jun-98 at 18:19:34



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,8,1

Acquired on 11-Jun-98 at 11:05:42
Modified on 14-Jun-82 at 18:14:12
Reported on 14-Jun-98 at 18:14:03

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610B Last modified on 13-Jun-82 at 18:49:10
Method file.....: LCCN Last modified on 14-Jun-82 at 18:05:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30B3
Sample ID.....: 34140.08
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	8.075	862	24704	923.874	2ADNT
4	9.413	515	20074	1327.629	RDX
Total		1377	44778	2251.503	
Residual		27448	2022226	0.000	

6-24-98 58

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.08

Sample Amt: 2g % Moisture 20.73 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

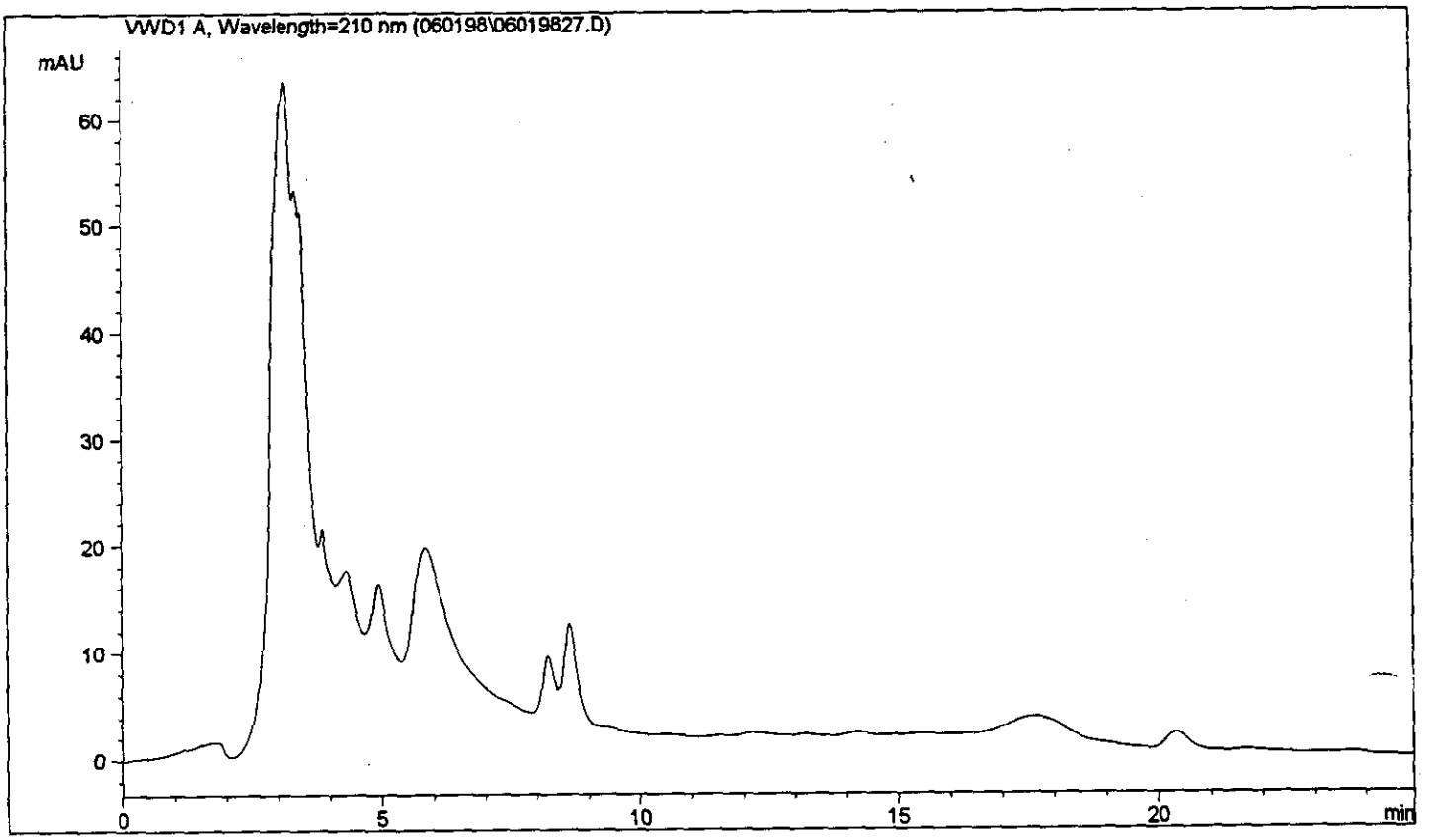
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 27
Sample Name	: 34140.08	Vial No.	: 27
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
Totals:				0.00000	

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30C1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.09

Sample Amt: 2g % Moisture 25.94 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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	344	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

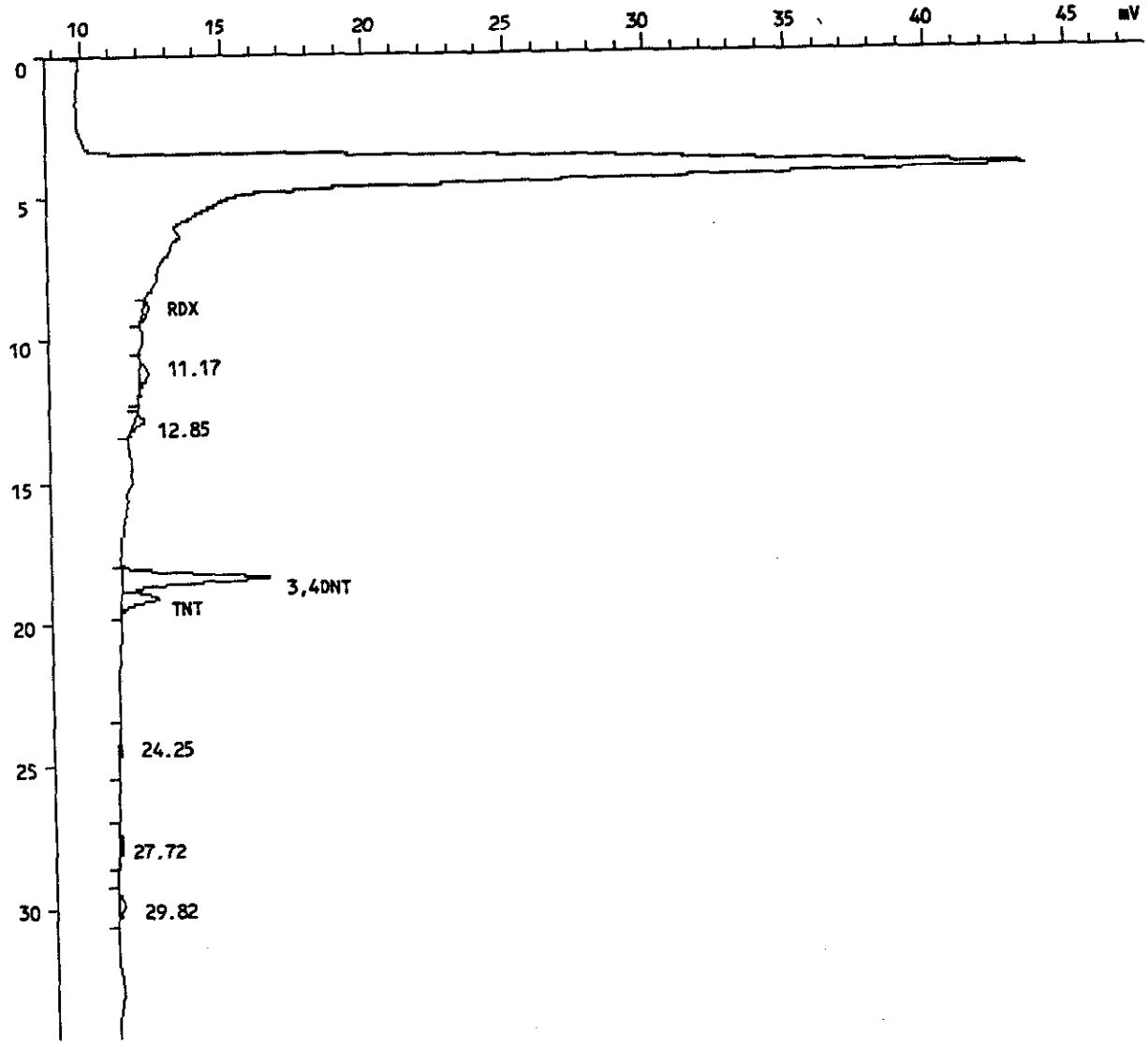
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,7,1

Sample name.....: BION30%30C1
Sample ID.....: 34140.09
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 07:05:47
Reported on 11-Jun-98 at 10:30:02



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,7,1

Acquired on 06-Jun-98 at 07:05:47
Modified on 11-Jun-82 at 10:05:02
Reported on 11-Jun-98 at 10:04:58

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:03:38
Method file.....: EXPLOS Last modified on 11-Jun-82 at 10:00:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30C1
Sample ID.....: 34140.09
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

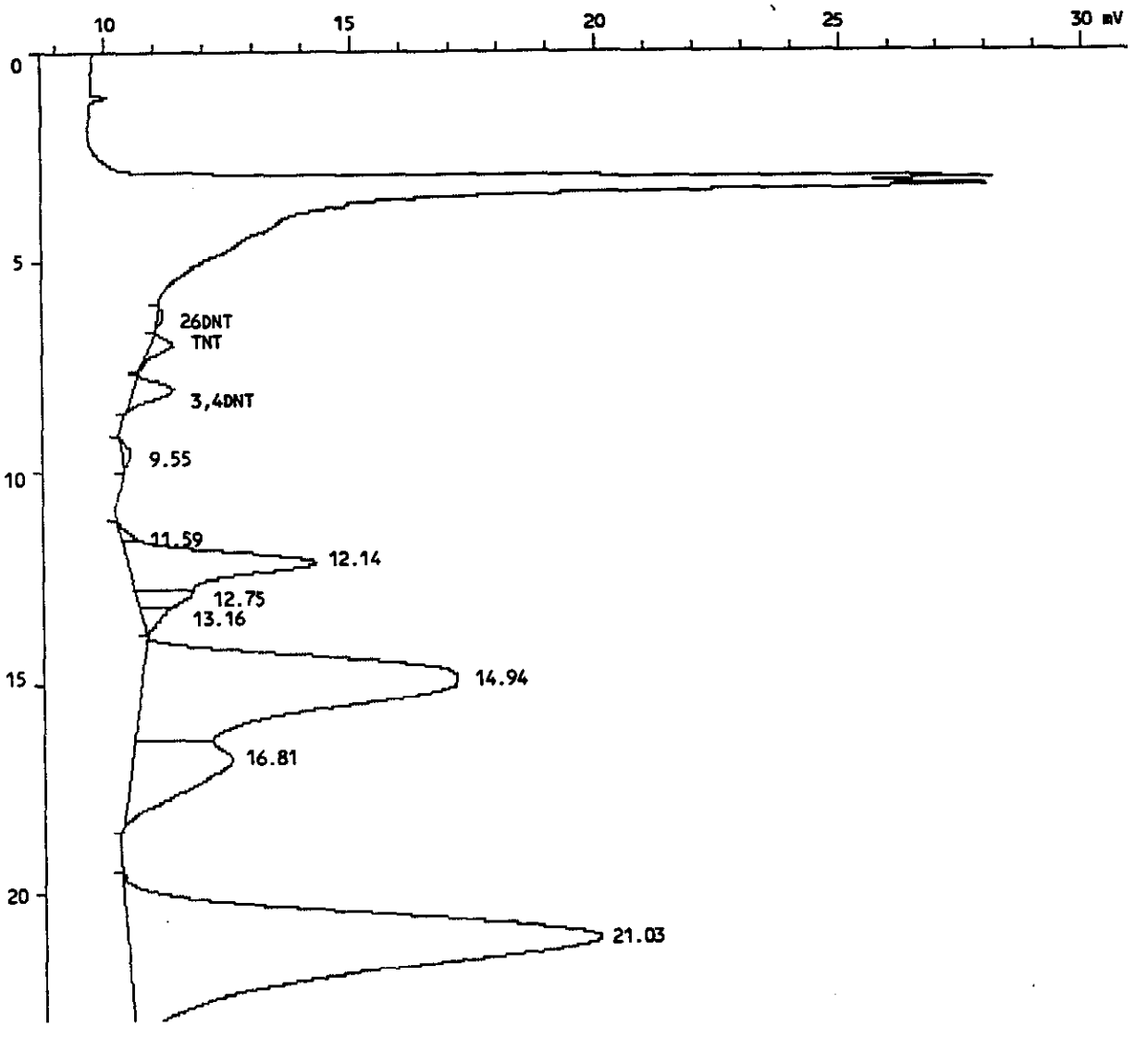
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.965	195	6143	180.584	RDX
4	18.416	5202	124396	2250.291	3,4DNT 112%
5	19.125	1291	32359	343.878	TNT * P
Total		6687	162898	2774.753	
Residual		1141	42678	870.217	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,9,1

Sample name.....: BION30%30C1
Sample ID.....: 34140.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 11:50:04
Reported on 13-Jun-98 at 19:01:16



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,9,1

Acquired on 11-Jun-98 at 11:50:04
Modified on 13-Jun-82 at 18:51:36
Reported on 13-Jun-98 at 18:51:37

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610A Last modified on 13-Jun-82 at 18:48:48
Method file.....: LCCN Last modified on 13-Jun-82 at 18:49:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30C1
Sample ID.....: 34140.09
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

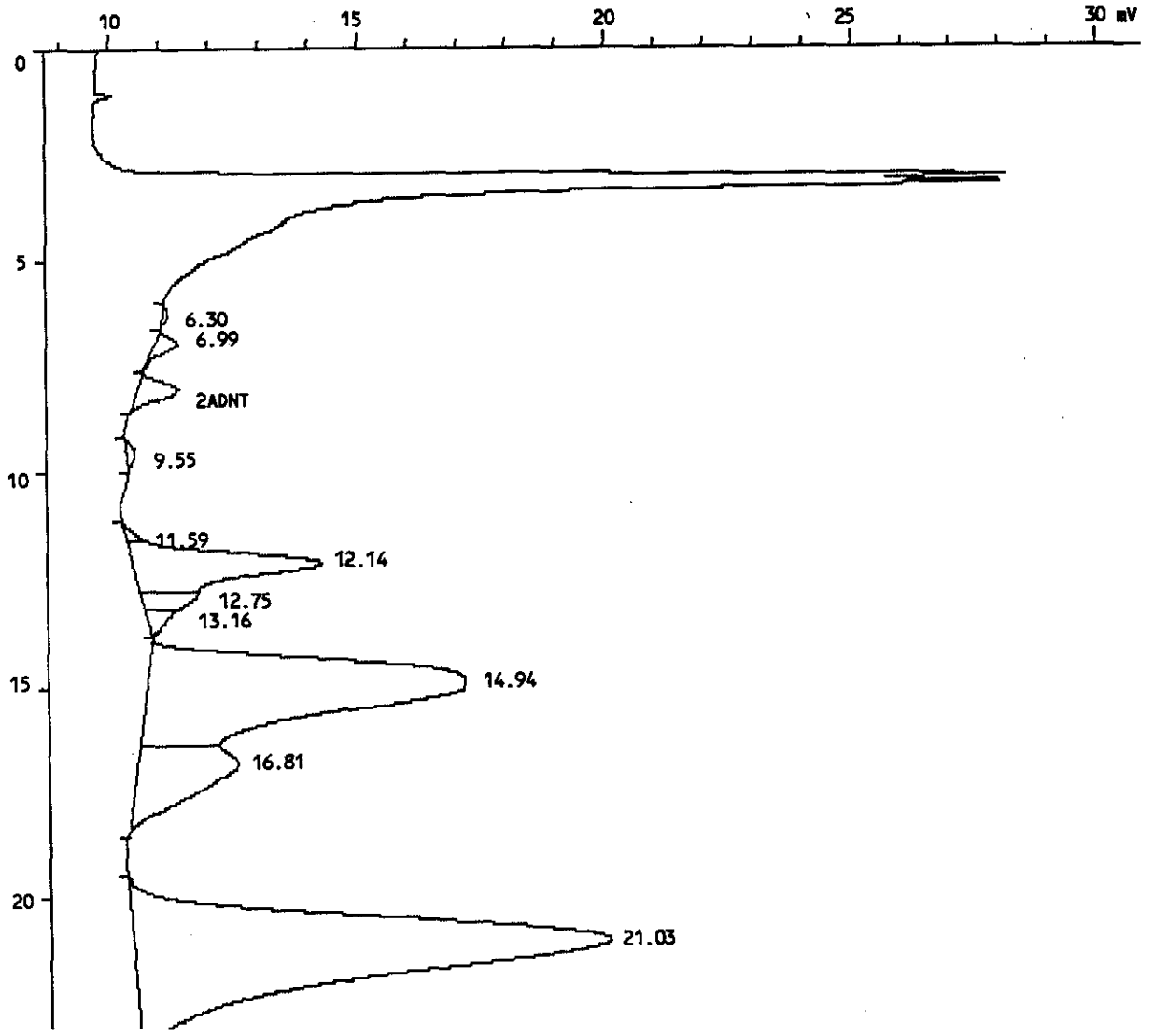
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	6.304	142	3048	187.110	26DNT
2	6.987	486	12167	508.002	TNT
3	8.053	837	23139	1410.929	3,4DNT
Total		1465	38354	2106.042	
Residual		24446	1795348	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,9,1

Sample name.....: BION30%30C1
Sample ID.....: 34140.09
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 11:50:04
Reported on 14-Jun-98 at 18:19:58



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,9,1

Acquired on 11-Jun-98 at 11:50:04
Modified on 14-Jun-82 at 18:14:28
Reported on 14-Jun-98 at 18:14:19

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610B Last modified on 13-Jun-82 at 18:49:10
Method file.....: LCCN Last modified on 14-Jun-82 at 18:05:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30C1
Sample ID.....: 34140.09
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	8.053	837	23139	865.342	2ADNT
Total		837	23139	865.342	
Residual		25074	1810563	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30C1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.09

Sample Amt: 2g % Moisture 25.94 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

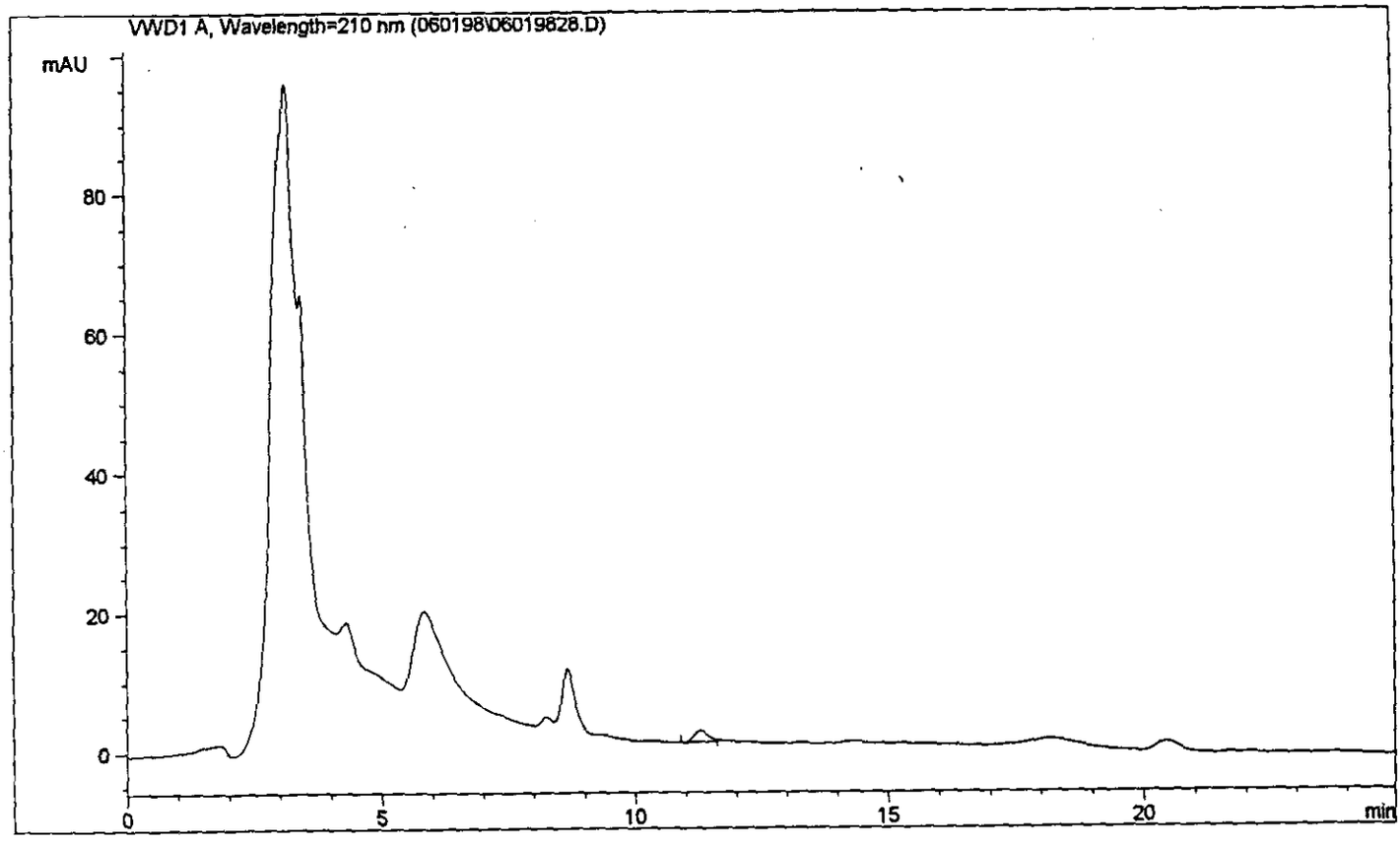
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN		250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 28
Sample Name	: 34140.09	Vial No.	: 28
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
11.291	PBA	32.41269	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:

BION30%30C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.10

Sample Amt: 2g % Moisture 24.59 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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

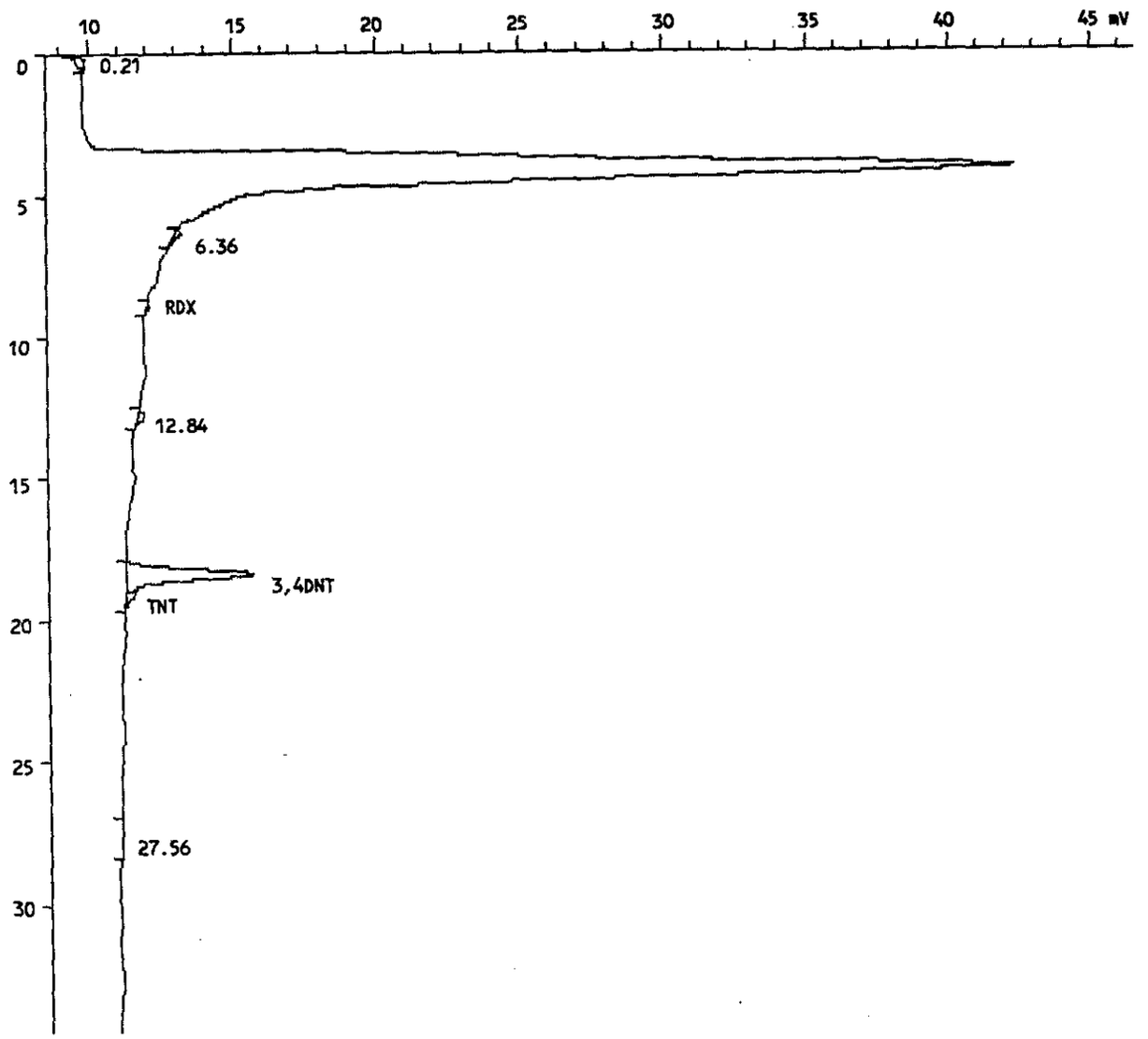
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,8,1

Sample name.....: BION30%30C2
Sample ID.....: 34140.10
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 07:50:25
Reported on 11-Jun-98 at 10:14:19



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,8,1

Acquired on 06-Jun-98 at 07:50:25
Modified on 11-Jun-82 at 10:05:18
Reported on 11-Jun-98 at 10:05:15

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:03:38
Method file.....: EXPLOS Last modified on 11-Jun-82 at 10:00:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30C2
Sample ID.....: 34140.10
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	8.864	100	1540	45.277	RDX
5	18.389	4490	116571	2108.739	3,4DNT 105%
6	19.093	340	7826	83.164	TNT
Total		4930	125937	2237.180	
Residual		947	20600	526.226	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.10

Sample Amt: 2g % Moisture 24.59 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

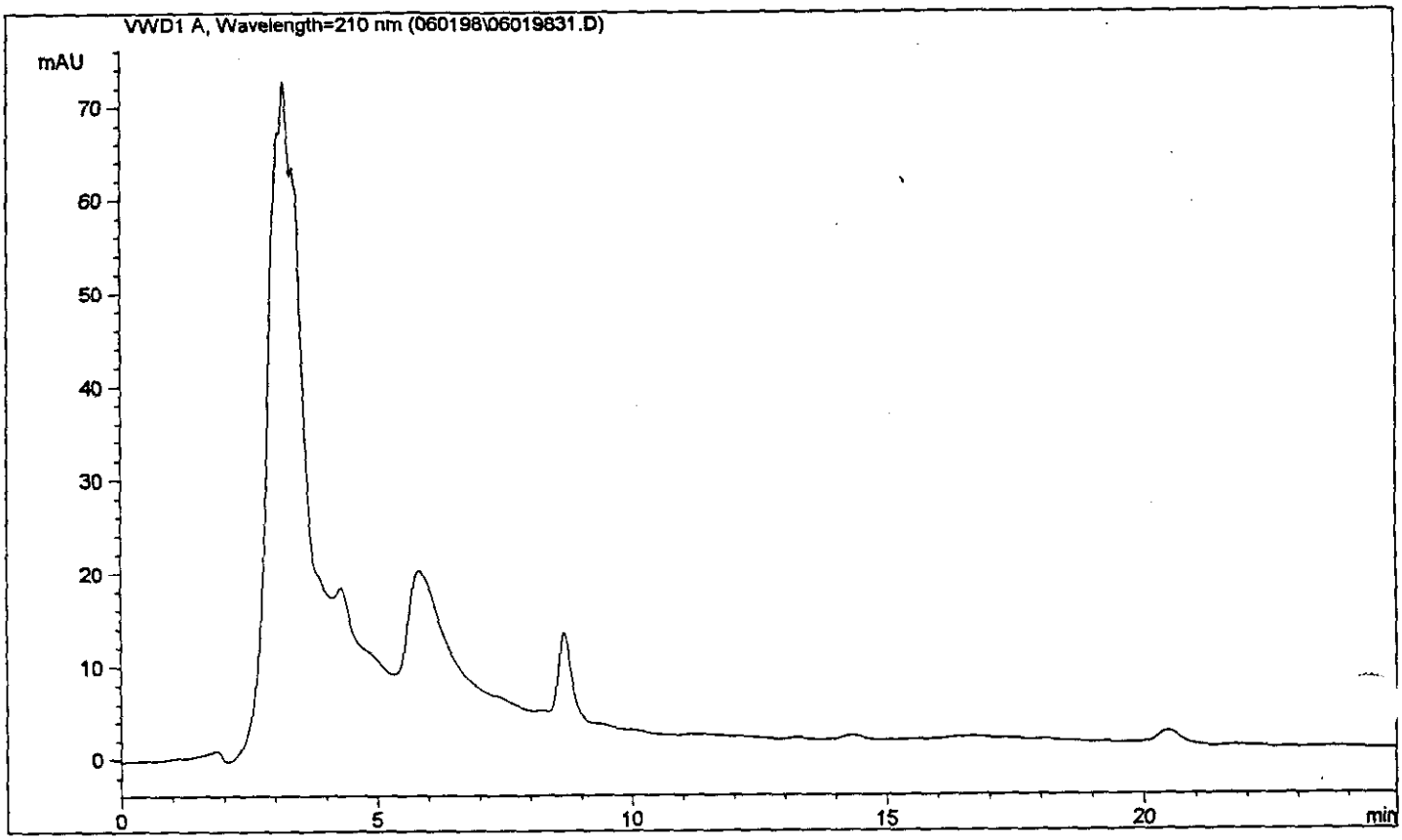
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 31
Sample Name	: 34140.10	Vial No.	: 31
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%C2FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.11

Sample Amt: 2g % Moisture 31.69 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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

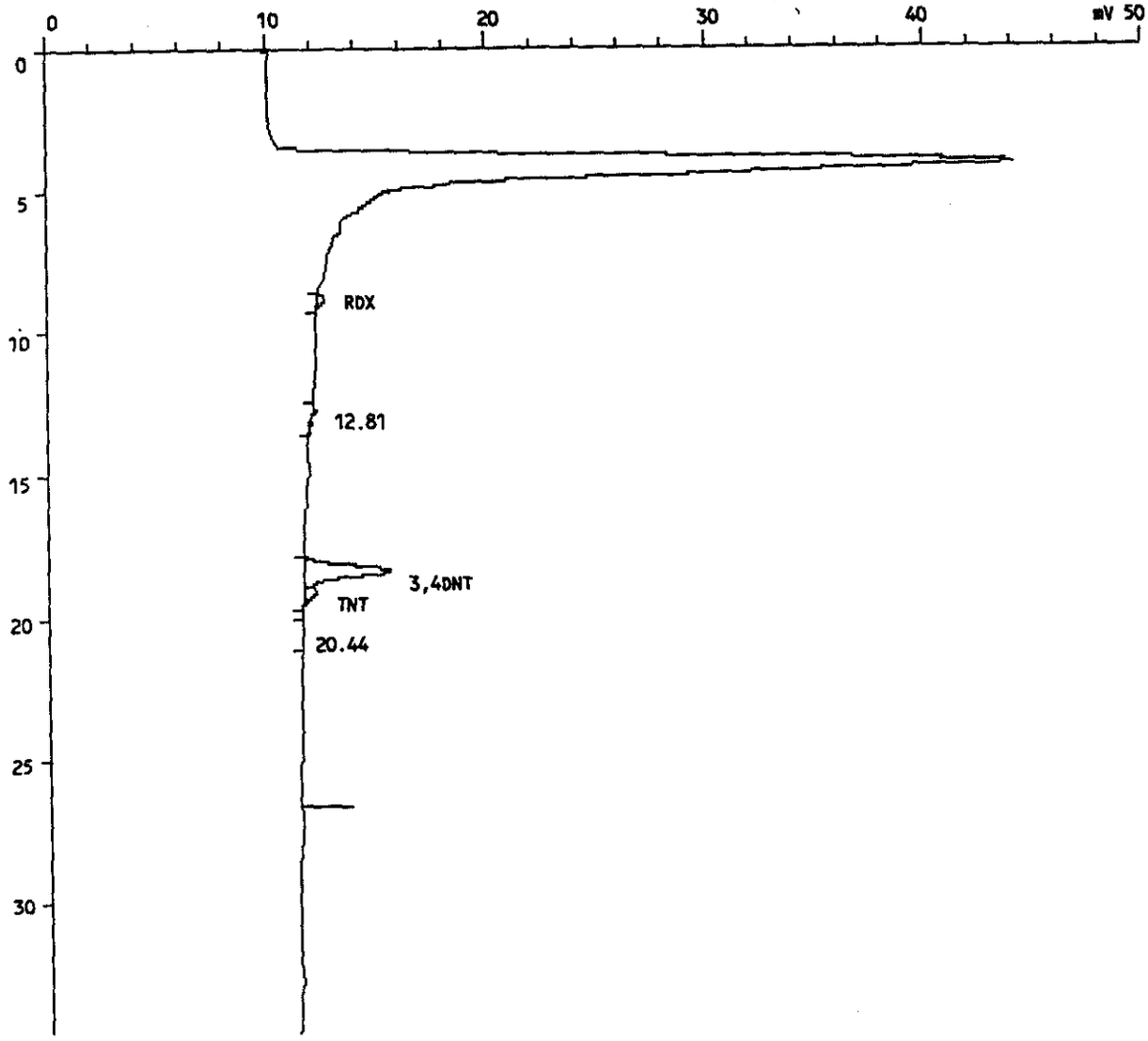
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,11,1

Sample name.....: BION30%C2FD
Sample ID.....: 34140.11
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 10:04:19
Reported on 18-Jun-98 at 17:18:18



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,11,1

Acquired on 06-Jun-98 at 10:04:19
Modified on 11-Jun-82 at 10:05:34
Reported on 18-Jun-98 at 17:17:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:05:50
Method file.....: EXPLOS Last modified on 18-Jun-82 at 16:49:00
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%C2FD
Sample ID.....: 34140.11
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	8.837	311	6513	191.451	RDX
3	18.336	3976	110184	1993.197	3,4DNT 100
4	19.061	588	15034	159.761	TNT
Total		4876	131731	2344.409	
Residual		271	6740	154.516	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30C2FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.11

Sample Amt: 2g % Moisture 31.69 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

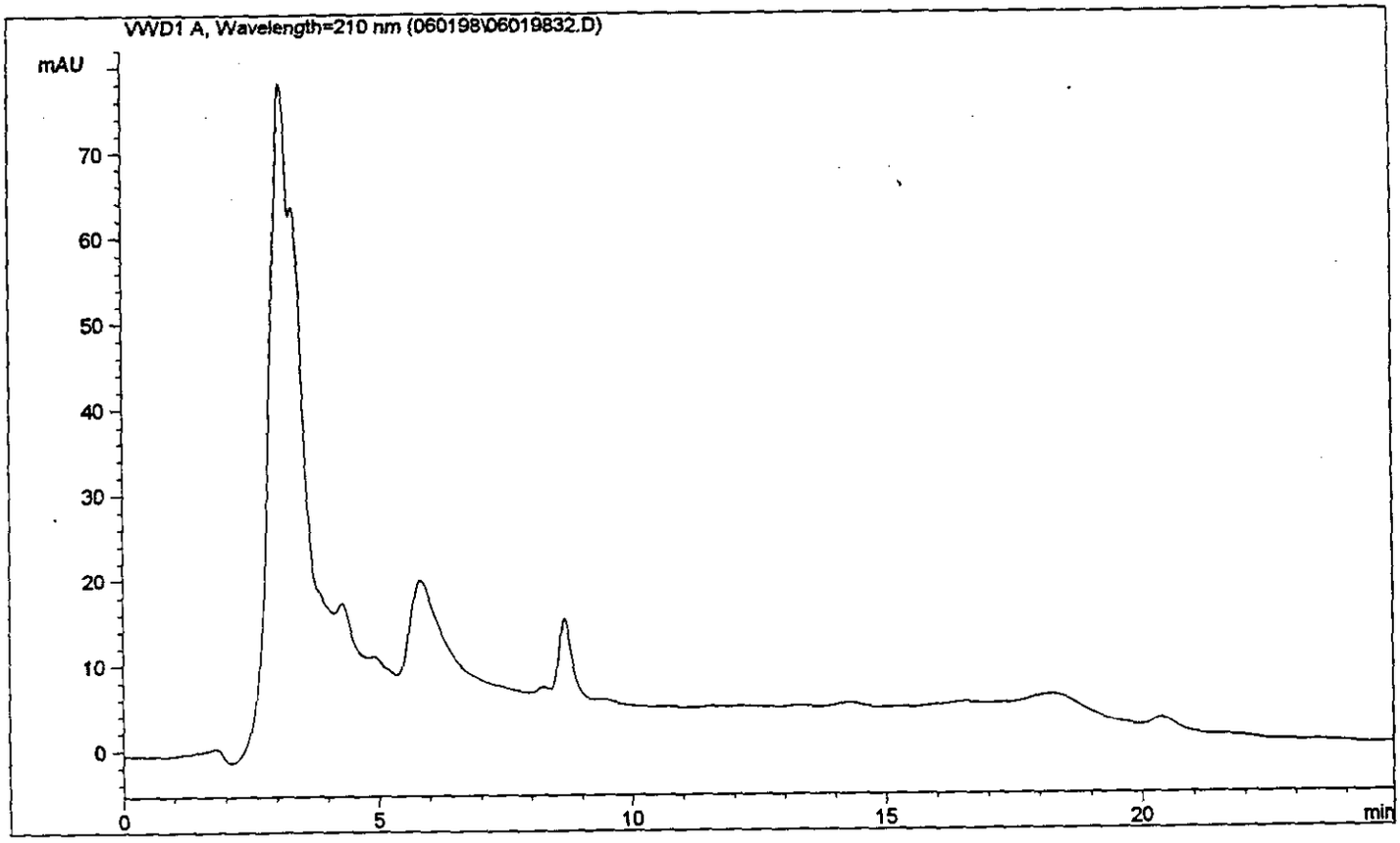
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 32
Sample Name	: 34140.11	Vial No.	: 32
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
Totals:				0.00000	

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BION30%C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.12

Sample Amt: 2g % Moisture 23.43 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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	274	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

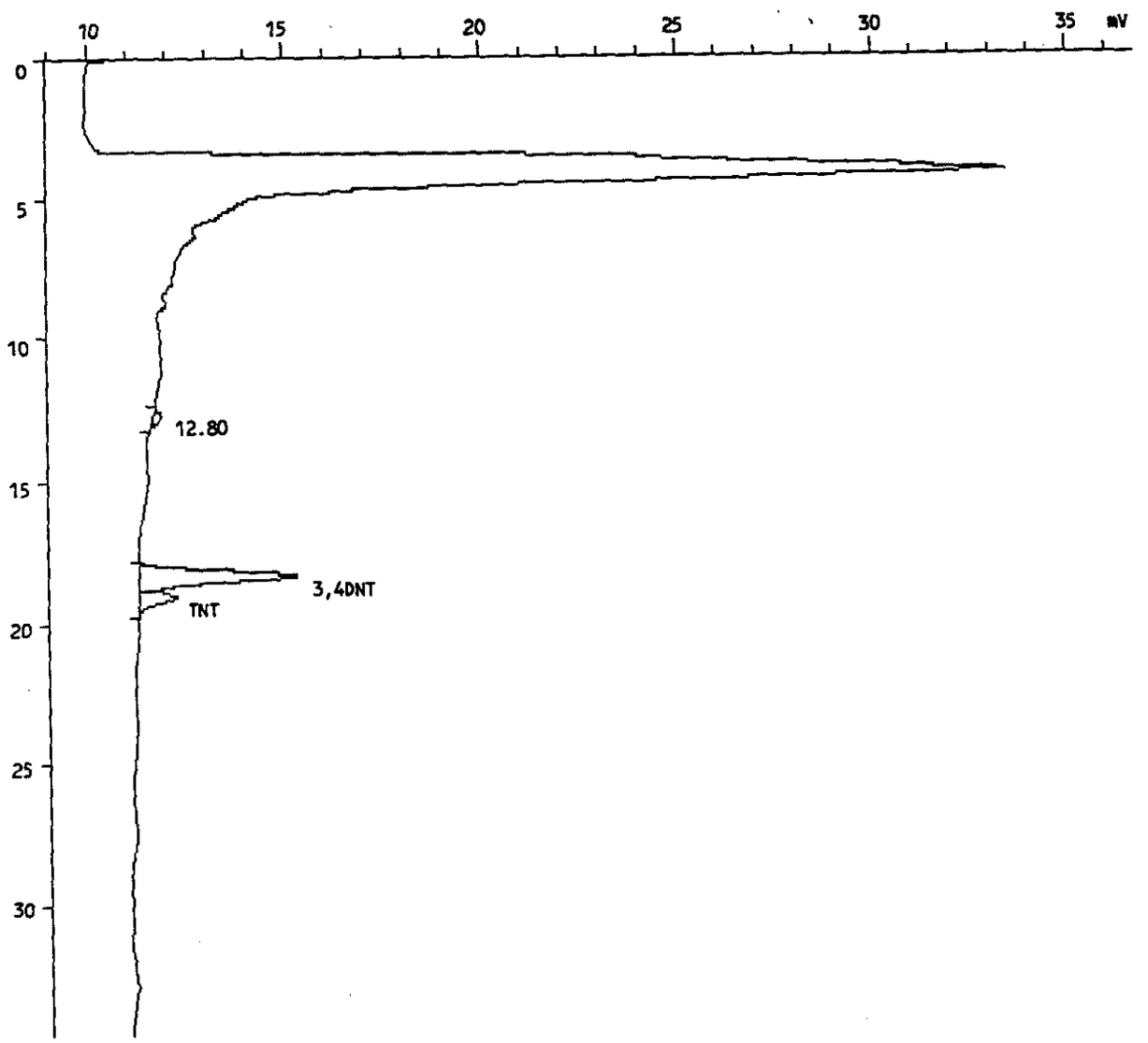
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,12,1

Sample name.....: BION30%C3
Sample ID.....: 34140.12
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 10:48:57
Reported on 11-Jun-98 at 10:15:32



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,12,1

Acquired on 06-Jun-98 at 10:48:57
Modified on 11-Jun-82 at 10:05:50
Reported on 11-Jun-98 at 10:05:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:05:50
Method file.....: EXPLOS Last modified on 11-Jun-82 at 10:00:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%C3
Sample ID.....: 34140.12
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

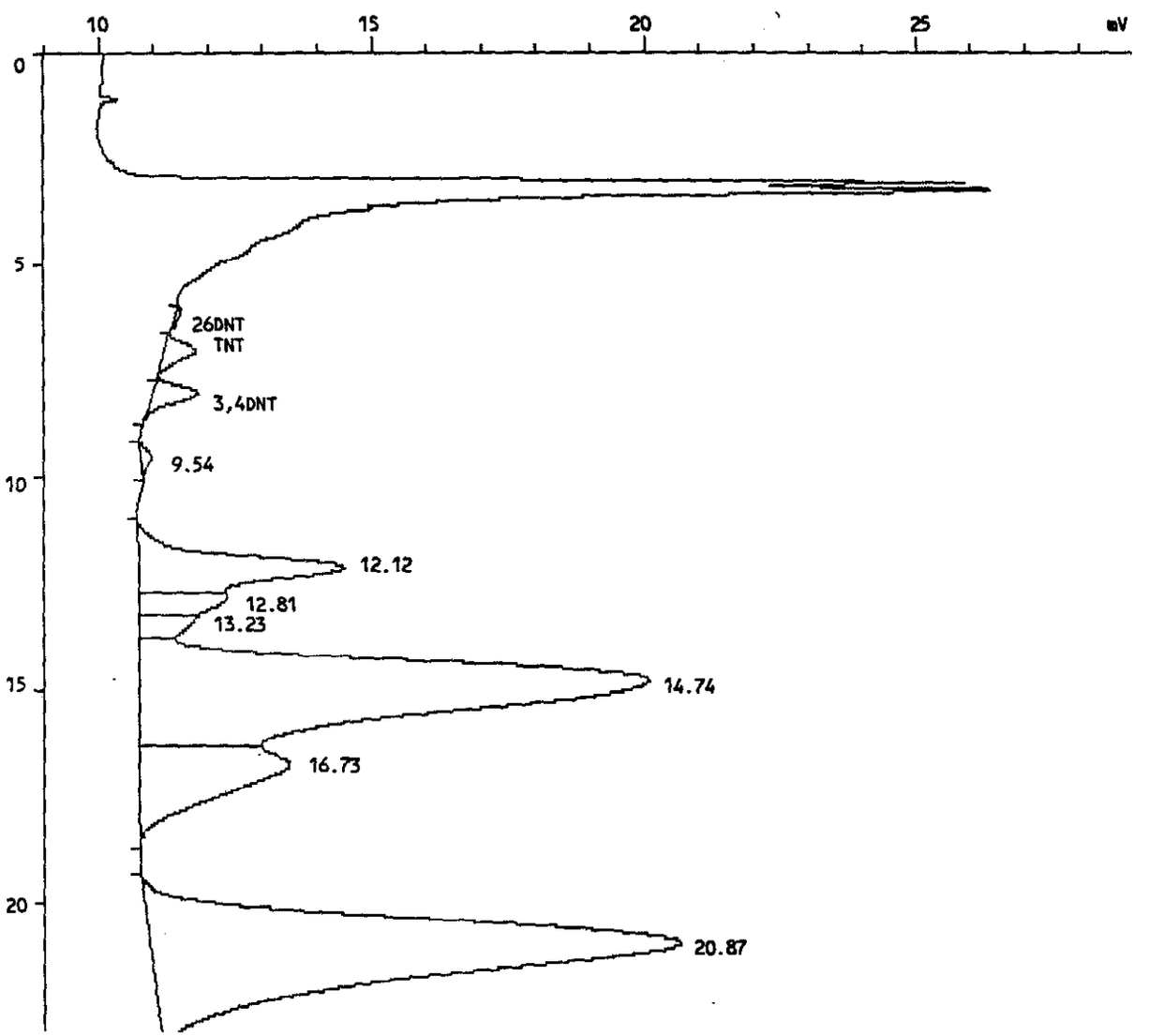
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	18.325	3986	108614	1964.796	3,4DNT 98%
3	19.051	939	25764	273.794	TNT *p
Total		4924	134378	2238.589	
Residual		233	5970	-46.644	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,13,1

Sample name.....: BION30%30C3
Sample ID.....: 34140.12
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 14:47:31
Reported on 13-Jun-98 at 19:00:24



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,13,1

Acquired on 11-Jun-98 at 14:47:31
Modified on 13-Jun-82 at 18:52:04
Reported on 13-Jun-98 at 18:52:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610A Last modified on 13-Jun-82 at 18:48:48
Method file.....: LCCN Last modified on 13-Jun-82 at 18:49:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30C3
Sample ID.....: 34140.12
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

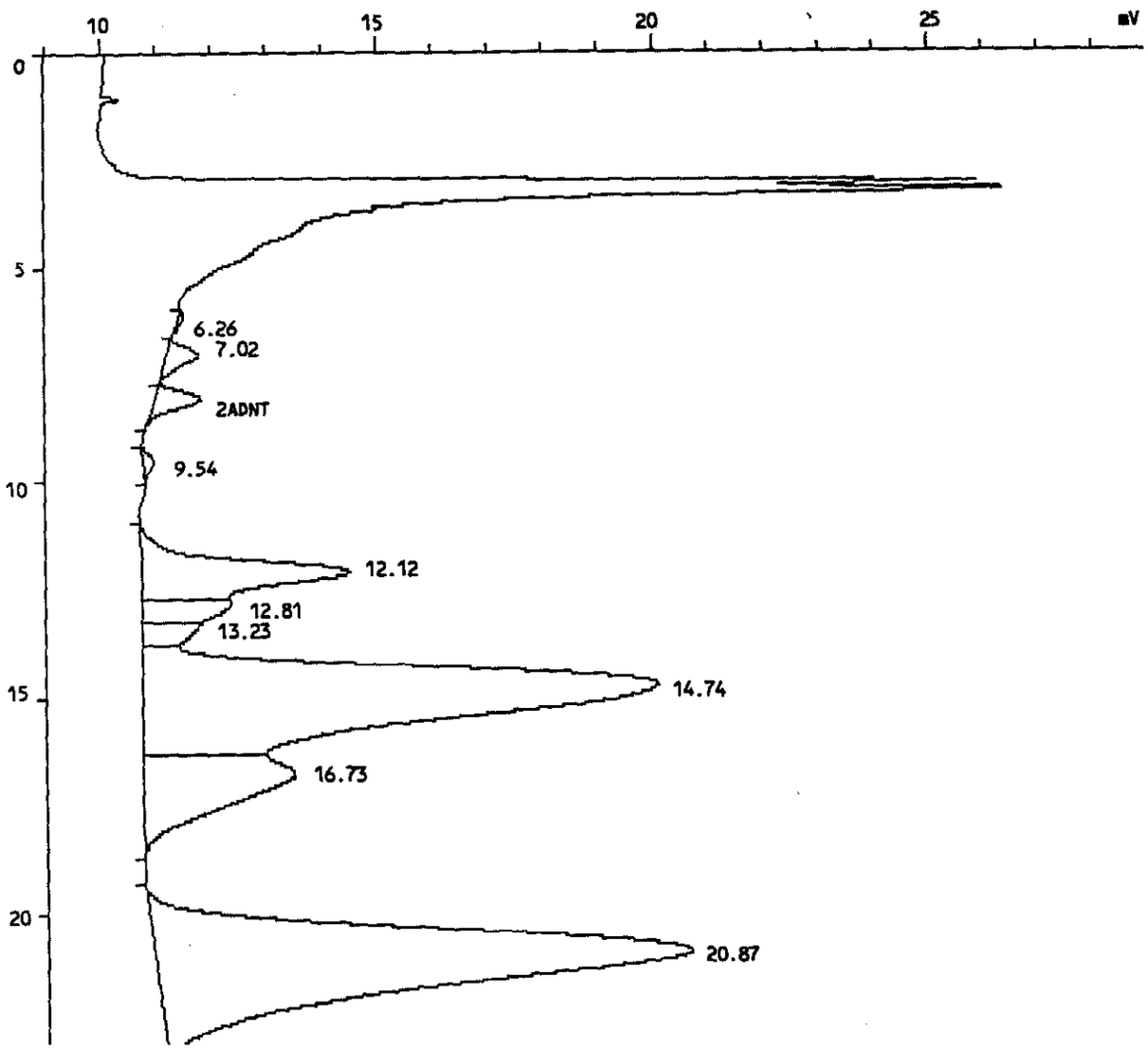
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	6.256	100	2139	131.314	26DNT
2	7.024	588	17979	750.699	TNT
3	8.069	849	23934	1459.398	3,4DNT
Total		1537	44052	2341.411	
Residual		28538	2124298	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,13,1

Sample name.....: BION30%30C3
Sample ID.....: 34140.12
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 14:47:31
Reported on 14-Jun-98 at 18:29:57



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,13,1

Acquired on 11-Jun-98 at 14:47:31
Modified on 14-Jun-82 at 18:15:00
Reported on 14-Jun-98 at 18:14:49

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610B Last modified on 13-Jun-82 at 18:49:10
Method file.....: LCCN Last modified on 14-Jun-82 at 18:05:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30C3
Sample ID.....: 34140.12
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	8.069	849	23934	895.068	2ADNT
Total		849	23934	895.068	
Residual		29226	2144416	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.12

Sample Amt: 2g % Moisture 23.43 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

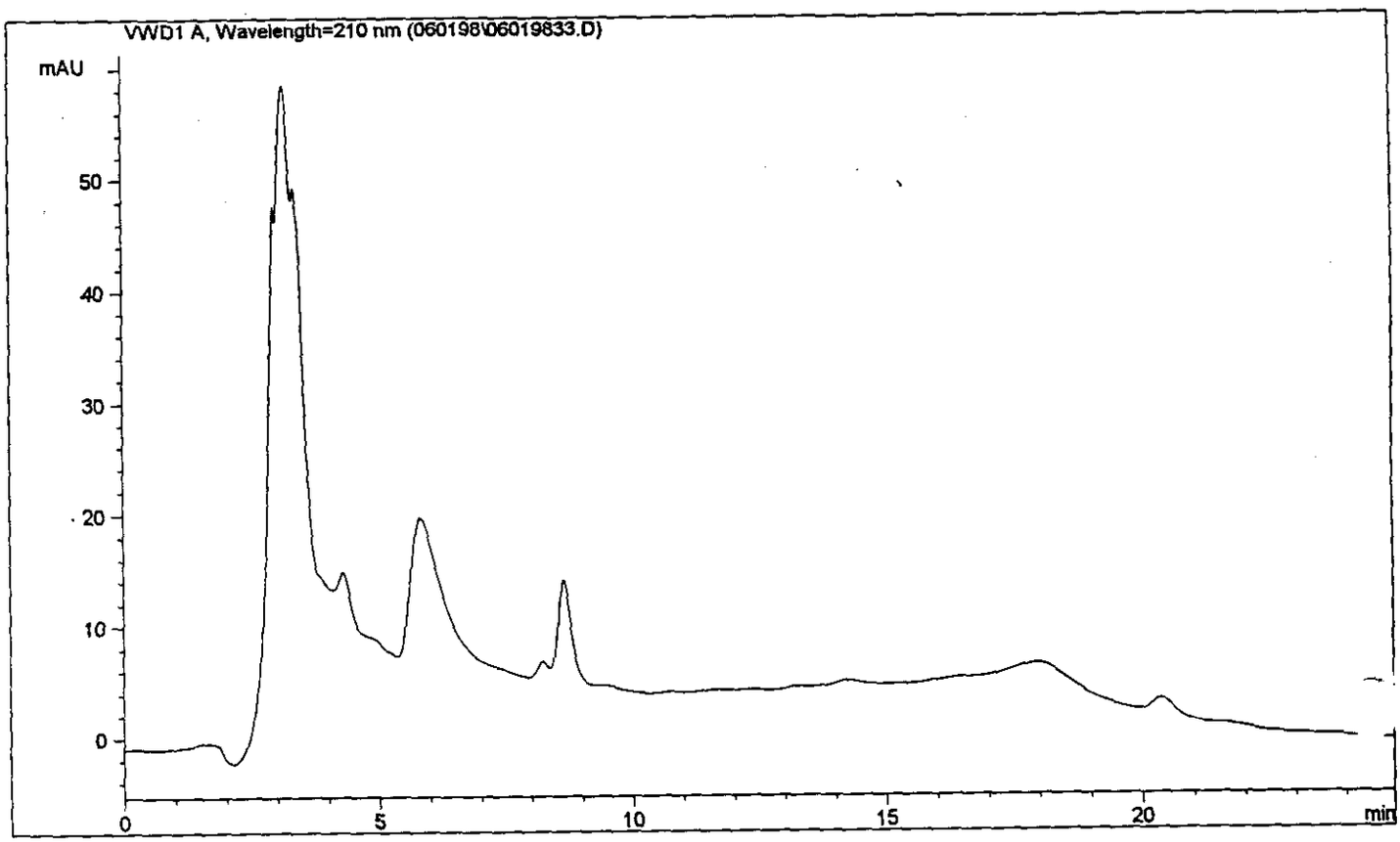
FORM I

6-26-98 87 JB

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 33
Sample Name	: 34140.12	Vial No.	: 33
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
Totals:				0.00000	

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*** End of Report ***

80

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.13

Sample Amt: 2g % Moisture 21.10 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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	273	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

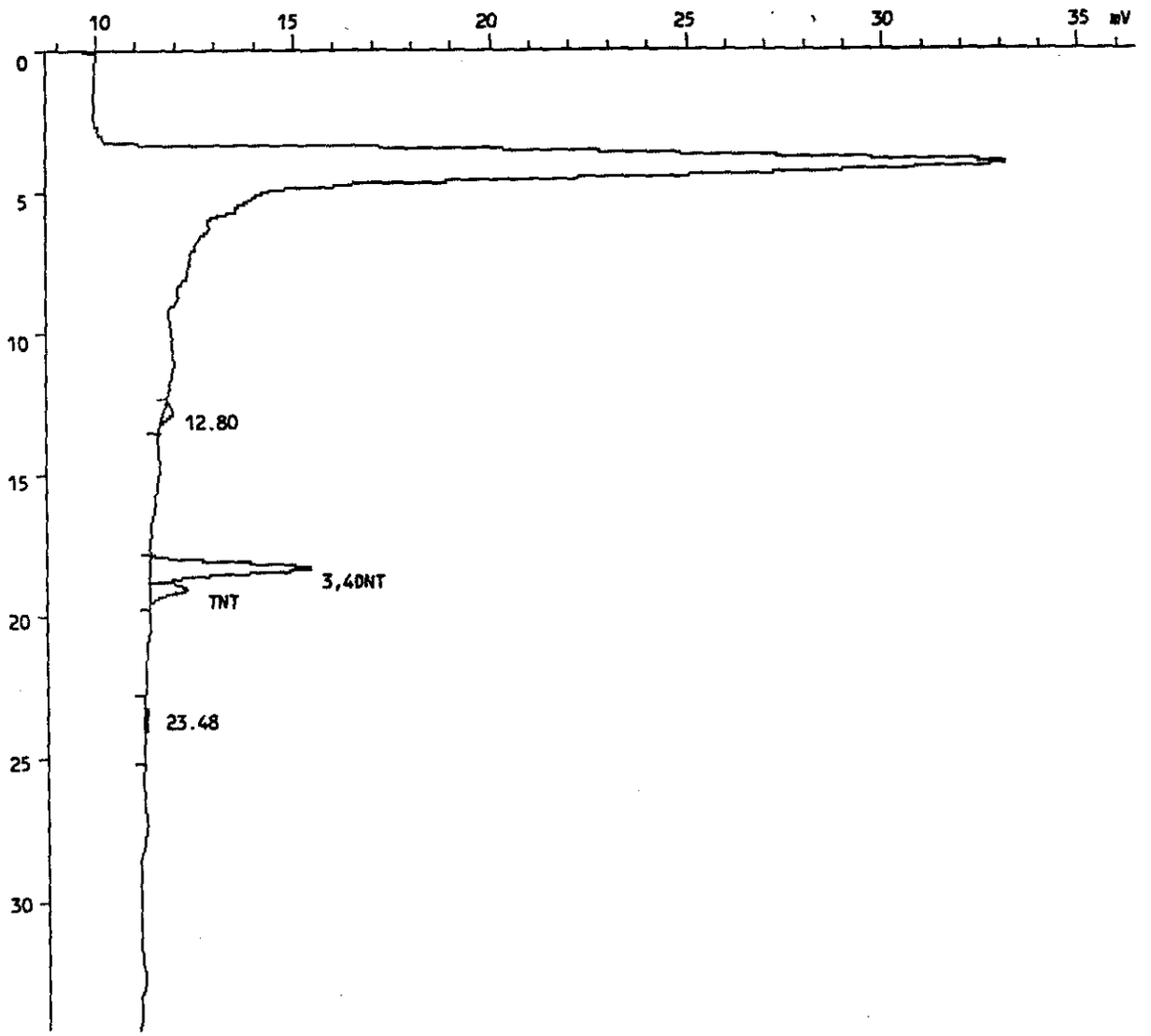
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,13,1

Sample name.....: BION30%30D1
Sample ID.....: 34140.13
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 11:33:35
Reported on 11-Jun-98 at 10:16:11



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,13,1

Acquired on 06-Jun-98 at 11:33:35
Modified on 11-Jun-82 at 10:06:08
Reported on 11-Jun-98 at 10:06:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:05:50
Method file.....: EXPLOS Last modified on 11-Jun-82 at 10:00:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30D1
Sample ID.....: 34140.13
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

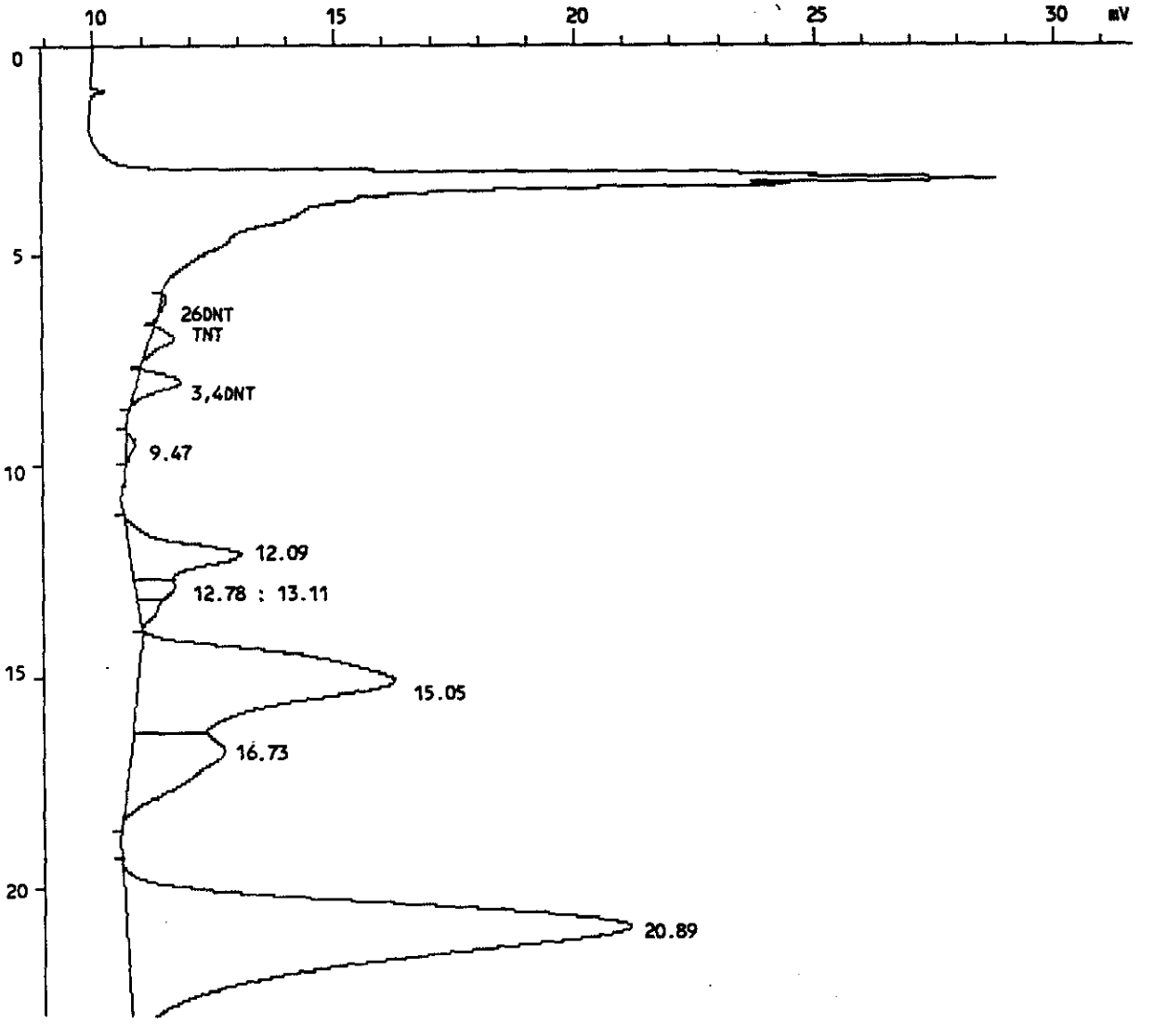
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	18.309	4022	110743	2003.318	3,4DNT 100%
3	19.040	949	25715	273.271	TNT *P
Total		4971	136458	2276.590	
Residual		351	15927	169.253	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,14,1

Sample name.....: BION30%30D1
Sample ID.....: 34140.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 15:31:53
Reported on 13-Jun-98 at 18:59:58



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,14,1

Acquired on 11-Jun-98 at 15:31:53
Modified on 13-Jun-82 at 18:52:18
Reported on 13-Jun-98 at 18:52:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610A Last modified on 13-Jun-82 at 18:48:48
Method file.....: LCCN Last modified on 13-Jun-82 at 18:49:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30D1
Sample ID.....: 34140.13
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

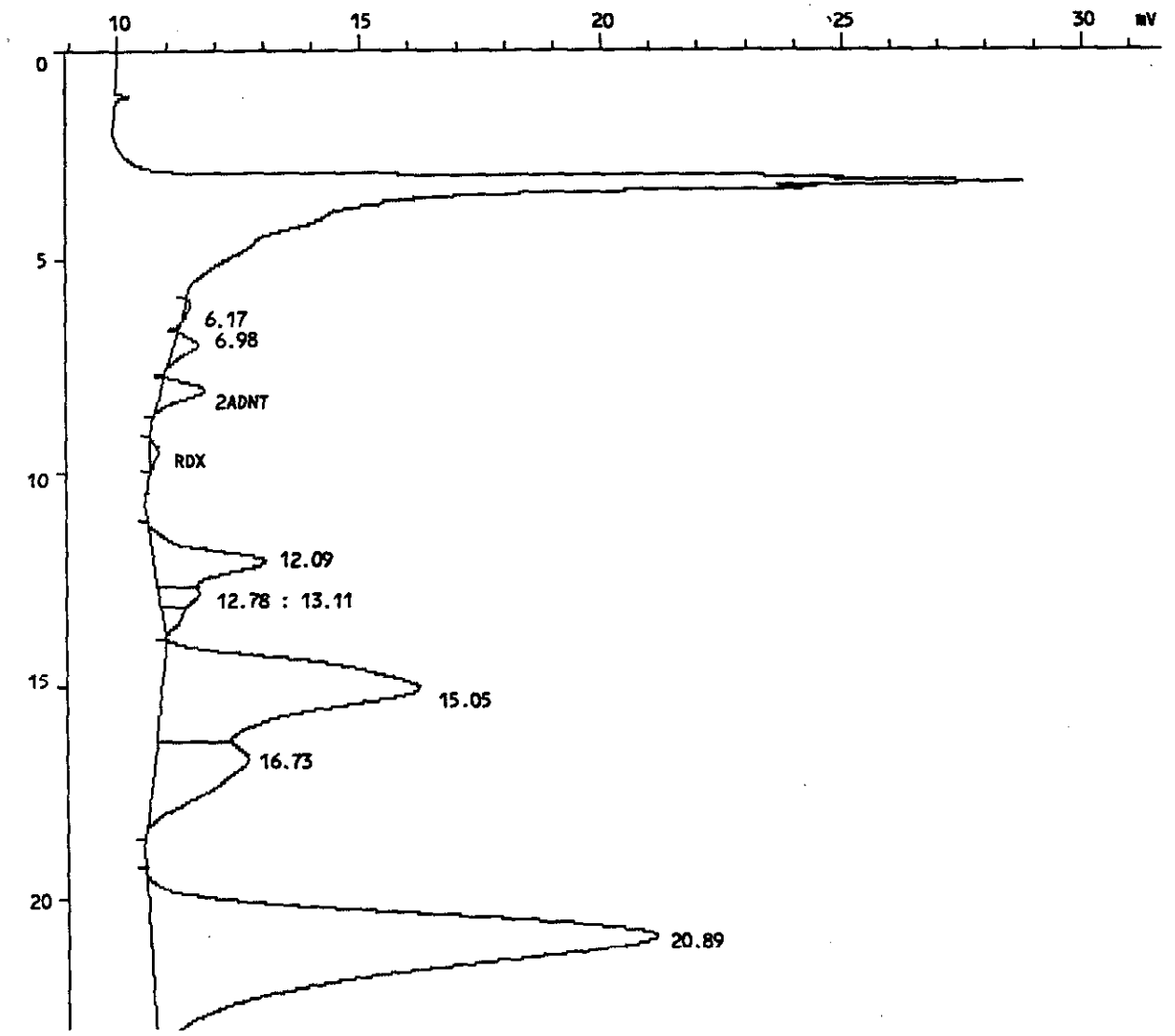
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	6.165	156	3649	223.997	26DNT
2	6.981	528	14507	605.712	TNT
3	8.043	892	23868	1455.386	3,4DNT
Total		1576	42024	2285.095	
Residual		21651	1674511	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,14,1

Sample name.....: BION30%30D1
Sample ID.....: 34140.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 15:31:53
Reported on 14-Jun-98 at 18:31:04



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,14,1

Acquired on 11-Jun-98 at 15:31:53
Modified on 14-Jun-82 at 18:15:14
Reported on 14-Jun-98 at 18:15:05

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610B Last modified on 13-Jun-82 at 18:49:10
Method file.....: LCCN Last modified on 14-Jun-82 at 18:05:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30D1
Sample ID.....: 34140.13
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	8.043	892	23868	892.608	2ADNT
4	9.472	187	4792	316.958	RDX
Total		1079	28661	1209.566	
Residual		22148	1687874	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.13

Sample Amt: 2g % Moisture 21.10 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

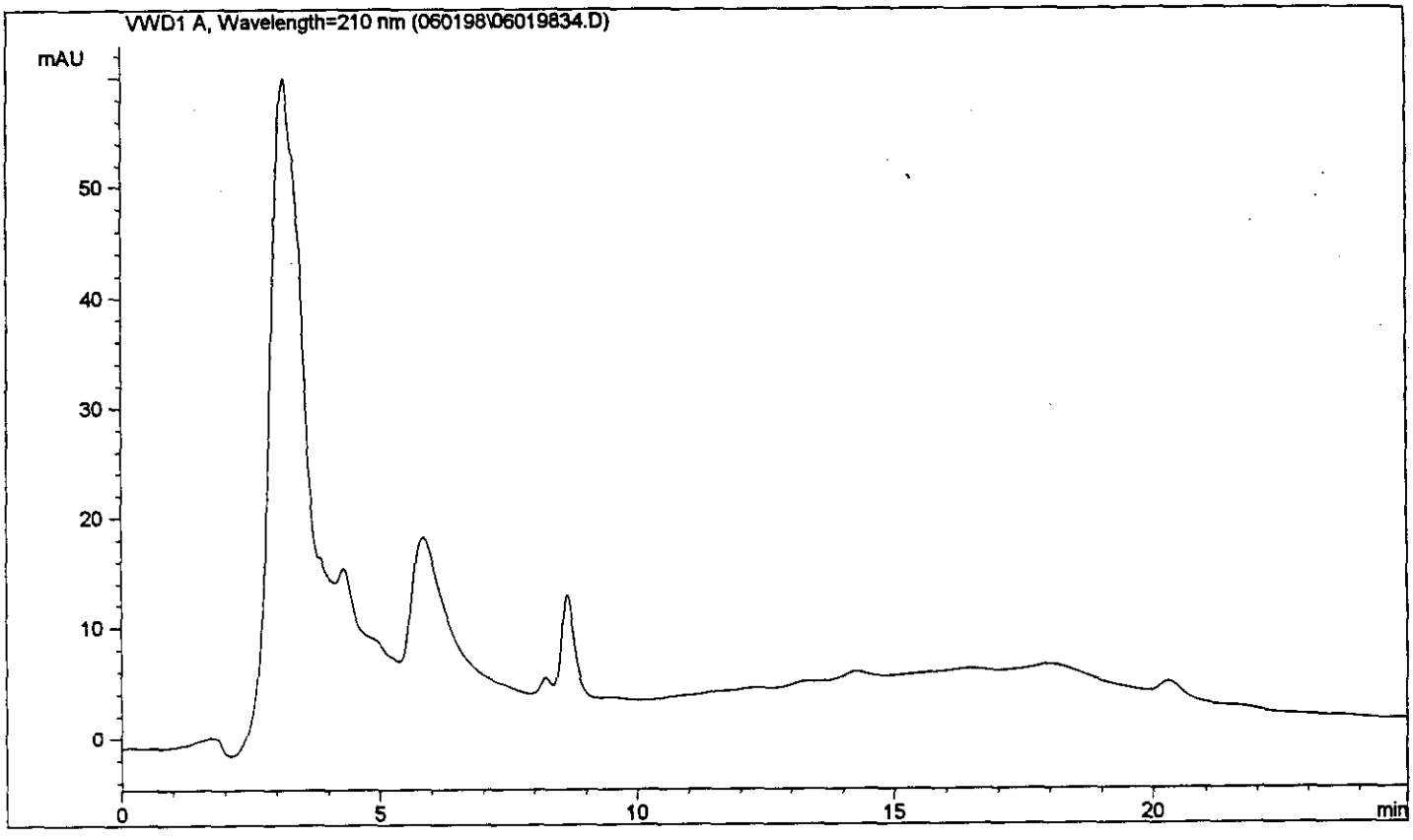
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 34
Sample Name	: 34140.13	Vial No.	: 34
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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

Totals: 0.00000

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*** End of Report ***

6-25-98 97 JB

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.14

Sample Amt: 2g % Moisture 21.92 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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	414	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

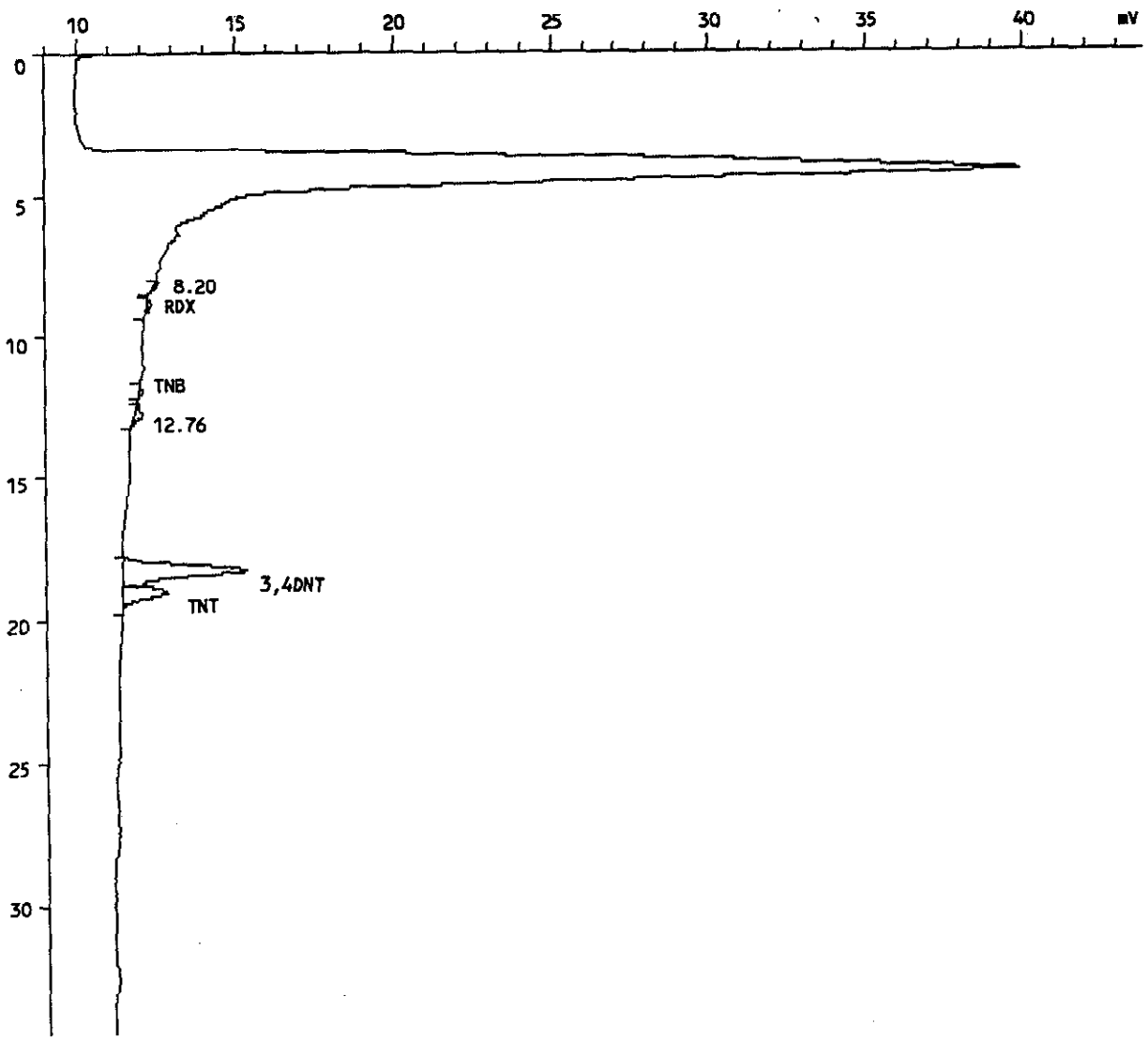
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,14,1

Sample name.....: BION30%30D2
Sample ID.....: 34140.14
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 12:18:13
Reported on 11-Jun-98 at 10:16:33



6-25-98 99

INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,14,1

Acquired on 06-Jun-98 at 12:18:13
Modified on 11-Jun-82 at 10:06:24
Reported on 11-Jun-98 at 10:06:21

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:05:50
Method file.....: EXPLOS Last modified on 11-Jun-82 at 10:00:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30D2
Sample ID.....: 34140.14
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

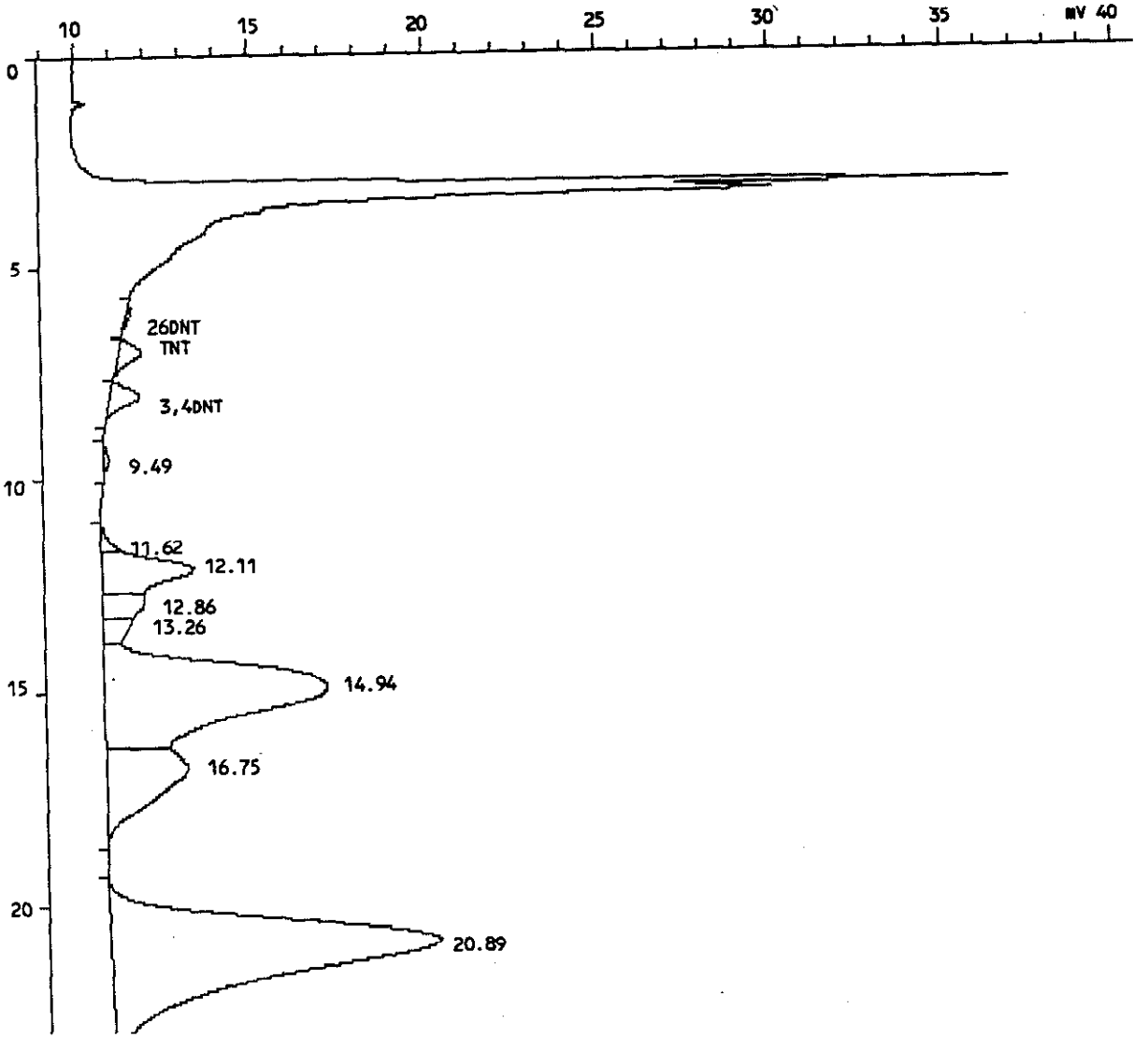
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.875	176	3849	113.152	RDX
3	11.909	112	1747	23.303	TNB
5	18.293	3890	104474	1889.913	3,4DNT 94%
6	19.029	1415	38923	413.638	TNT * p
Total		5593	148994	2440.006	
Residual		361	8904	118.754	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,15,1

Sample name.....: BION30%30D2
Sample ID.....: 34140.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 16:16:14
Reported on 13-Jun-98 at 18:59:27



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,15,1

Acquired on 11-Jun-98 at 16:16:14
Modified on 13-Jun-82 at 18:52:32
Reported on 13-Jun-98 at 18:52:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610A Last modified on 13-Jun-82 at 18:48:48
Method file.....: LCCN Last modified on 13-Jun-82 at 18:49:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30D2
Sample ID.....: 34140.14
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

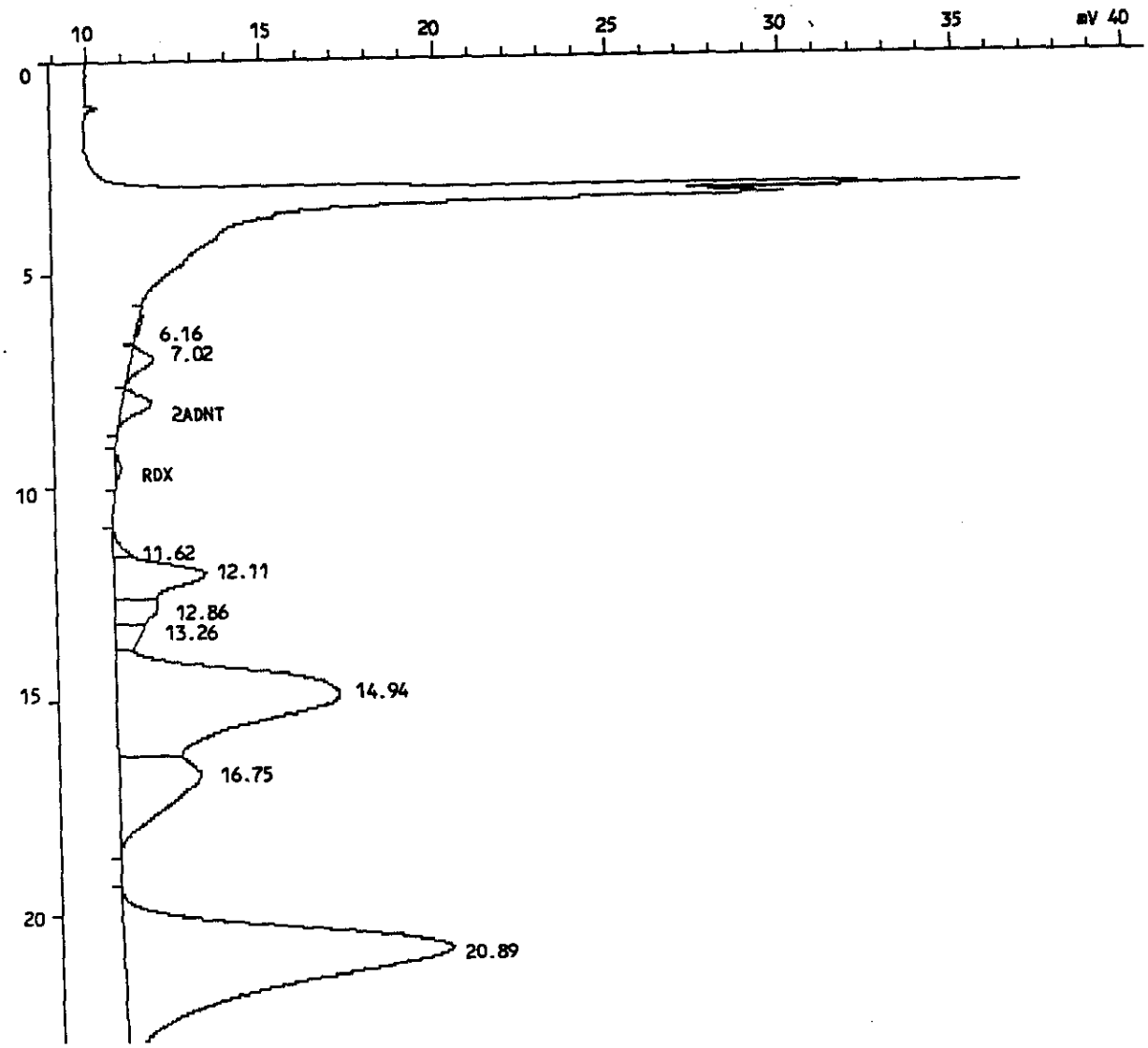
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	6.160	128	3769	231.356	26DNT
2	7.019	682	18471	771.228	TNT
3	8.027	849	24388	1487.047	3,4DNT
Total		1659	46627	2489.631	
Residual		23784	1815862	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,15,1

Sample name.....: BION30%30D2
Sample ID.....: 34140.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 16:16:14
Reported on 14-Jun-98 at 18:31:27



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,15,1

Acquired on 11-Jun-98 at 16:16:14
Modified on 14-Jun-82 at 18:15:30
Reported on 14-Jun-98 at 18:15:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610B Last modified on 13-Jun-82 at 18:49:10
Method file.....: LCCN Last modified on 14-Jun-82 at 18:05:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30D2
Sample ID.....: 34140.14
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	8.027	849	24388	912.026	2ADNT
4	9.488	178	5164	341.560	RDX
Total		1026	29552	1253.585	
Residual		24417	1832937	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.14

Sample Amt: 2g % Moisture 21.92 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

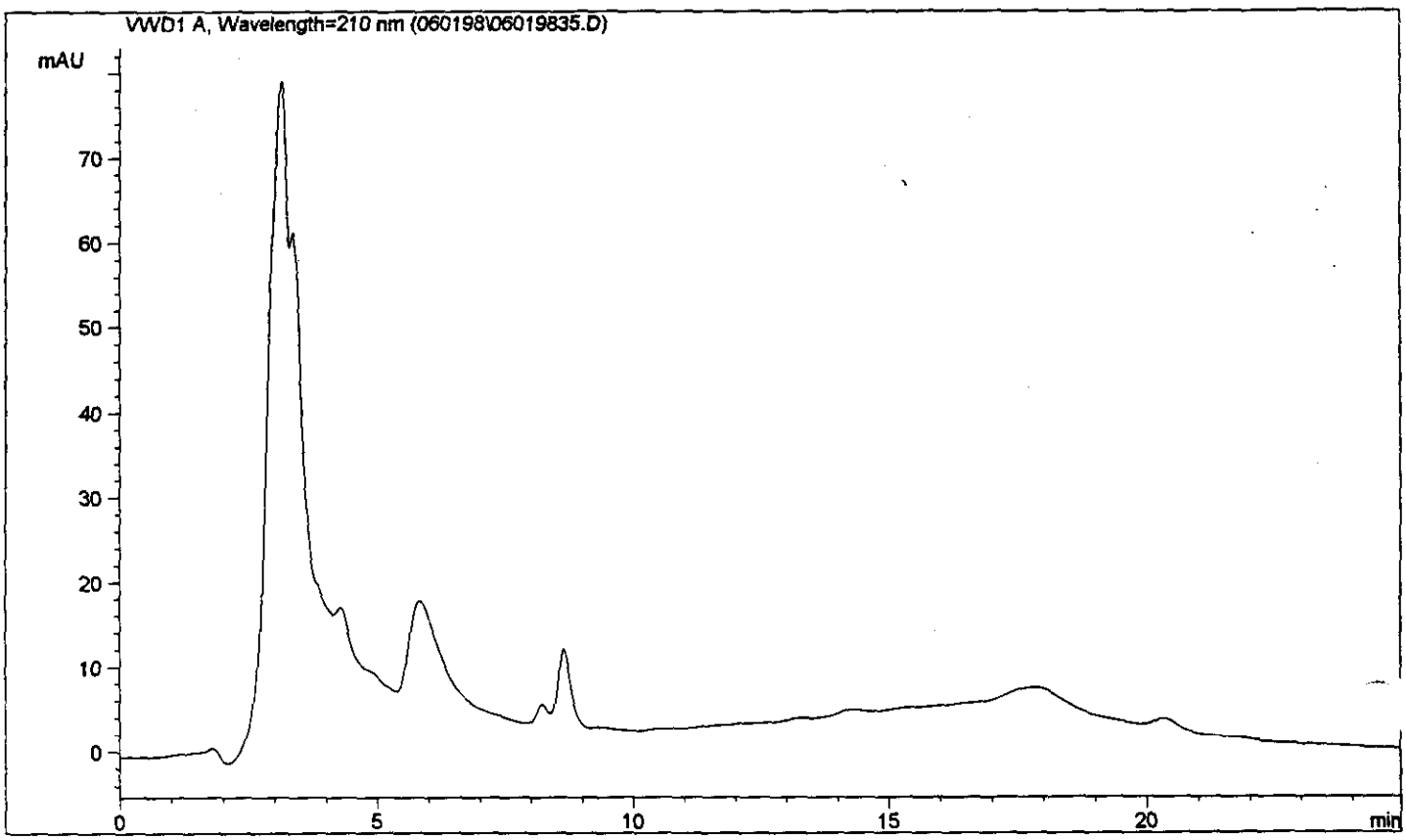
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN	250		U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 35
Sample Name	: 34140.14	Vial No.	: 35
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
Totals:				0.00000	

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*** End of Report ***

6-25-98 ~~105~~ 106 JB

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.15

Sample Amt: 2g % Moisture 25.26 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

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	259	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

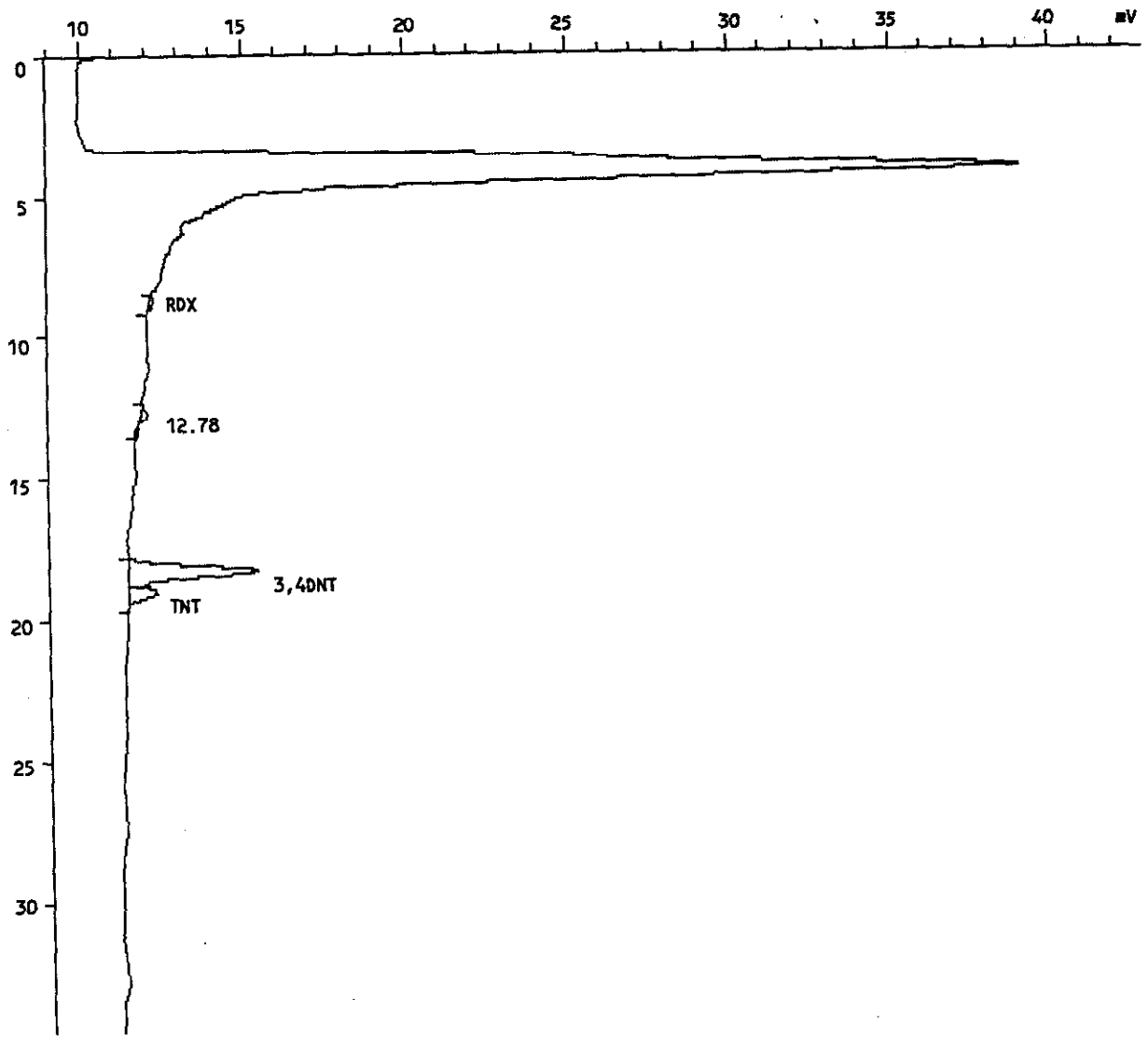
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0606A,15,1

Sample name.....: BION30%30D3
Sample ID.....: 34140.15
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 06-Jun-98 at 13:02:51
Reported on 11-Jun-98 at 10:17:31



INJECTION REPORT

Injection F: <MC3> 2 2EX0606A,15,1

Acquired on 06-Jun-98 at 13:02:51
Modified on 11-Jun-82 at 10:06:40
Reported on 11-Jun-98 at 10:06:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 18
Calibration file..: 2EX0606 Last modified on 11-Jun-82 at 10:05:50
Method file.....: EXPLOS Last modified on 11-Jun-82 at 10:00:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30D3
Sample ID.....: 34140.15
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

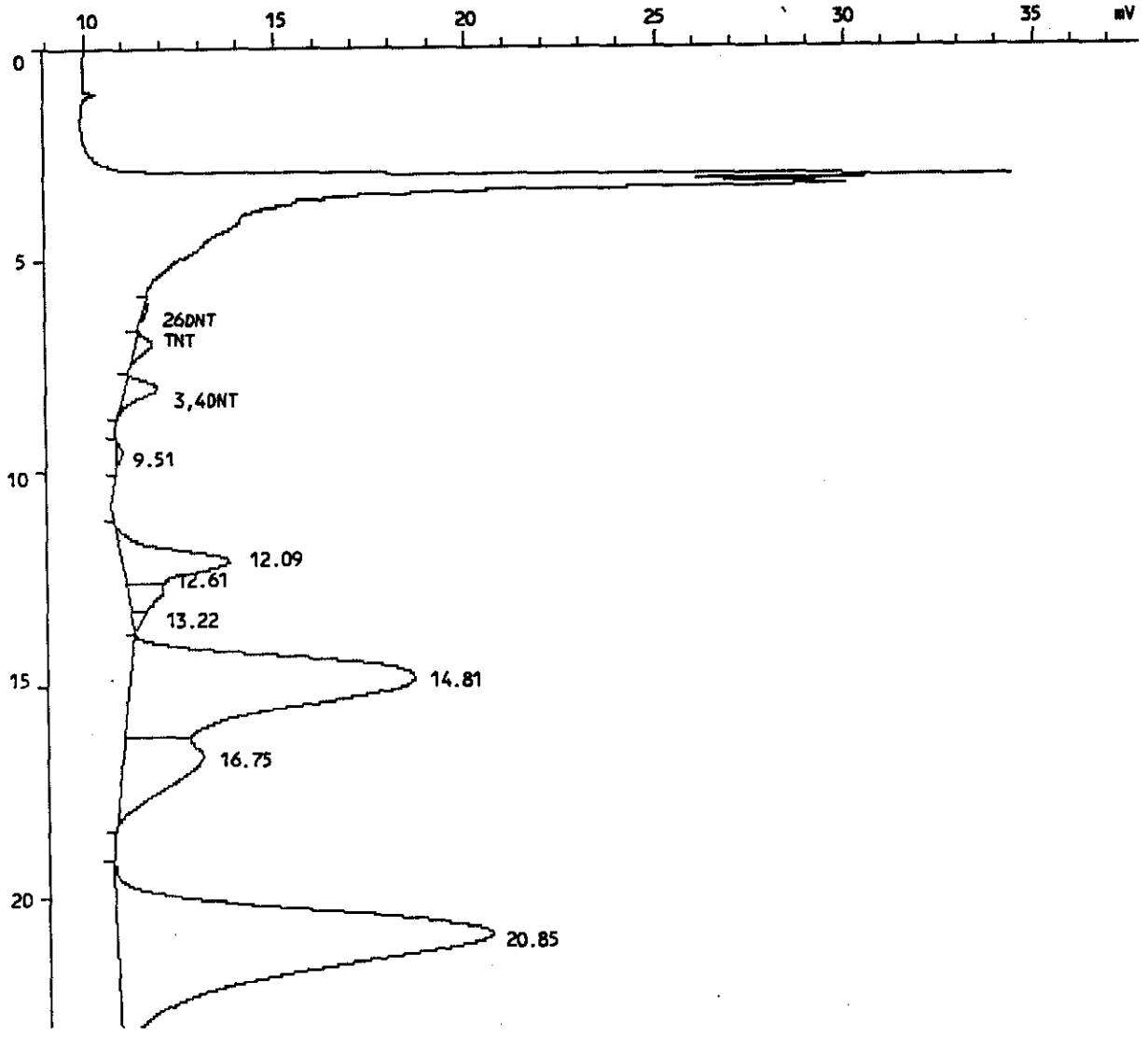
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.832	124	2331	68.512	RDX
3	18.293	3963	107275	1940.576	3,4DNT 97%
4	19.024	907	24372	258.997	TNT *p
Total		4994	133977	2268.085	
Residual		230	4960	145.786	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,16,1

Sample name.....: BION30%30D3
Sample ID.....: 34140.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 17:00:36
Reported on 13-Jun-98 at 18:59:03



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,16,1

Acquired on 11-Jun-98 at 17:00:36
Modified on 13-Jun-82 at 18:52:46
Reported on 13-Jun-98 at 18:52:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610A Last modified on 13-Jun-82 at 18:48:48
Method file.....: LCCN Last modified on 13-Jun-82 at 18:49:16
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30D3
Sample ID.....: 34140.15
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

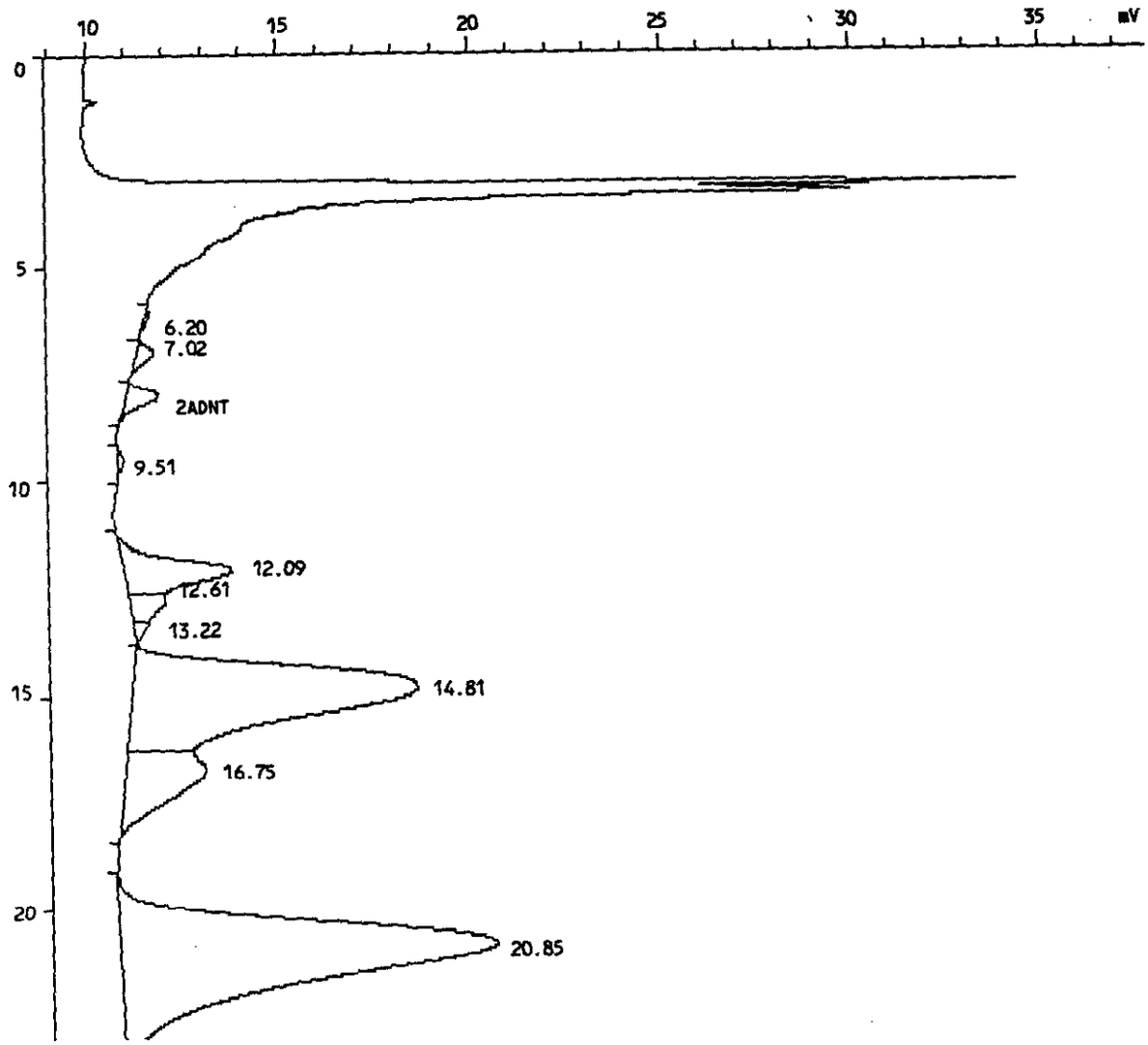
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	6.203	164	4200	257.850	26DNT
2	7.019	492	13688	571.530	TNT
3	8.032	866	24312	1482.452	3,4DNT
Total		1521	42201	2311.833	
Residual		23904	1852887	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0610A,16,1

Sample name.....: BION30%30D3
Sample ID.....: 34140.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 11-Jun-98 at 17:00:36
Reported on 14-Jun-98 at 18:31:52



INJECTION REPORT

Injection F: <MC3> 3 3CN0610A,16,1

Acquired on 11-Jun-98 at 17:00:36
Modified on 14-Jun-82 at 18:15:46
Reported on 14-Jun-98 at 18:15:37

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100, UV
Number of samples.: 18
Calibration file..: 3CN0610B Last modified on 13-Jun-82 at 18:49:10
Method file.....: LCCN Last modified on 14-Jun-82 at 18:05:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BION30%30D3
Sample ID.....: 34140.15
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	8.032	866	24312	909.208	2ADNT
Total		866	24312	909.208	
Residual		24559	1870775	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BION30%30D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) SOIL Lab Sample ID: 34140.15

Sample Amt: 2g % Moisture 25.26 Date Received: 05/28/98

Extraction Volume: 10ml Date Extracted: 05/28/98

Extraction Method: SONC Date Analyzed: 06/02/98

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

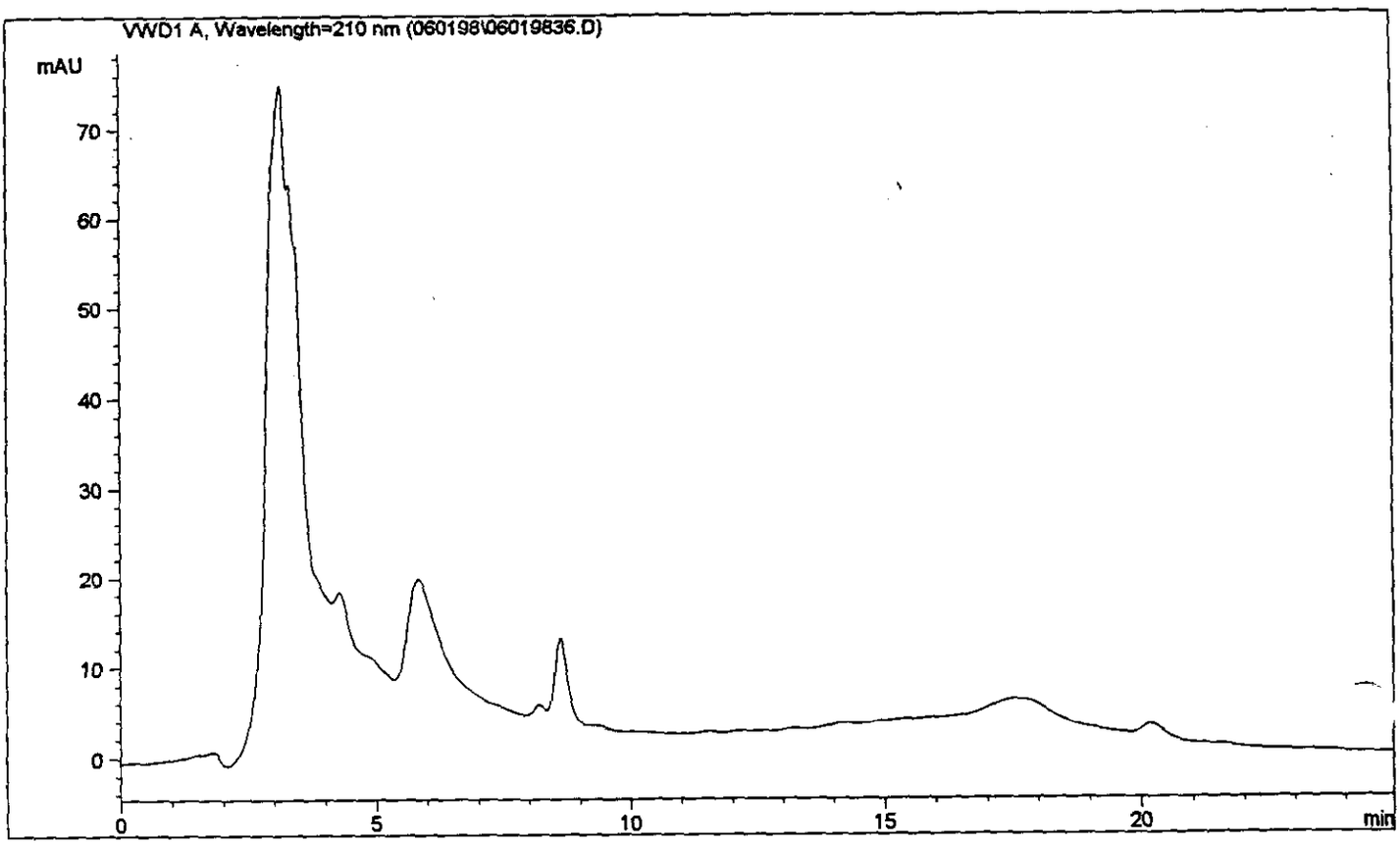
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Tue, 2. Jun. 1998	Seq Line	: 36
Sample Name	: 34140.15	Vial No.	: 36
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 060198.M
Analysis Method : F:\HPCHEM\LC4\METHODS\060198.M
Last Changed : Wed, 10. Jun. 1998, 02:39:15 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 10. Jun. 1998,02:35:36 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
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-FB-052798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) WATER Lab Sample ID: 34140.16

Sample Amt: 1ml % Moisture Date Received: 05/28/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/29/98

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

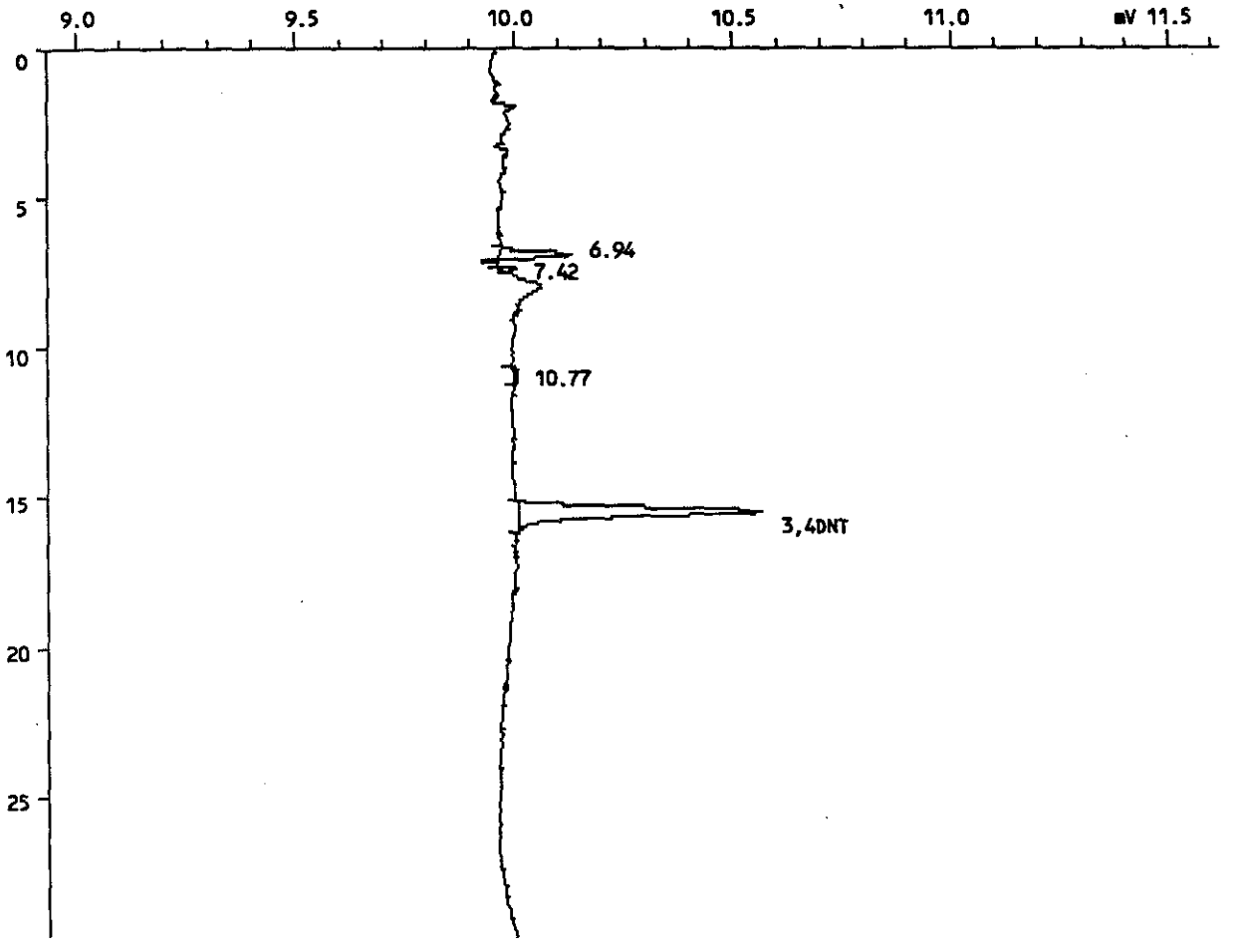
FORM I

LONG PLOT

Injection F: <MC3> 5 5E0527WB,7,1

Sample name.....: BIO-FB-052798
Sample ID.....: 34140.16
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 29-May-98 at 00:37:21
Reported on 10-Jun-98 at 15:54:33



INJECTION REPORT

Injection F: <MC3> 5 5E0527WB,7,1

Acquired on 29-May-98 at 00:37:21
Modified on 10-Jun-82 at 15:50:10
Reported on 10-Jun-98 at 15:50:08

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.: 9
Calibration file..: 5E0527W Last modified on 10-Jun-82 at 15:50:08
Method file.....: EXPLOS Last modified on 10-Jun-82 at 13:47:06
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-FB-052798
Sample ID.....: 34140.16
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	15.488	557	11812	237.675	3,4DNT 118 %
Total		557	11812	237.675	
Residual		217	2503	-3.911	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-FB-052798

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34140

Matrix: (soil/water) WATER Lab Sample ID: 34140.16

Sample Amt: 1ml % Moisture Date Received: 05/28/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 05/31/98

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

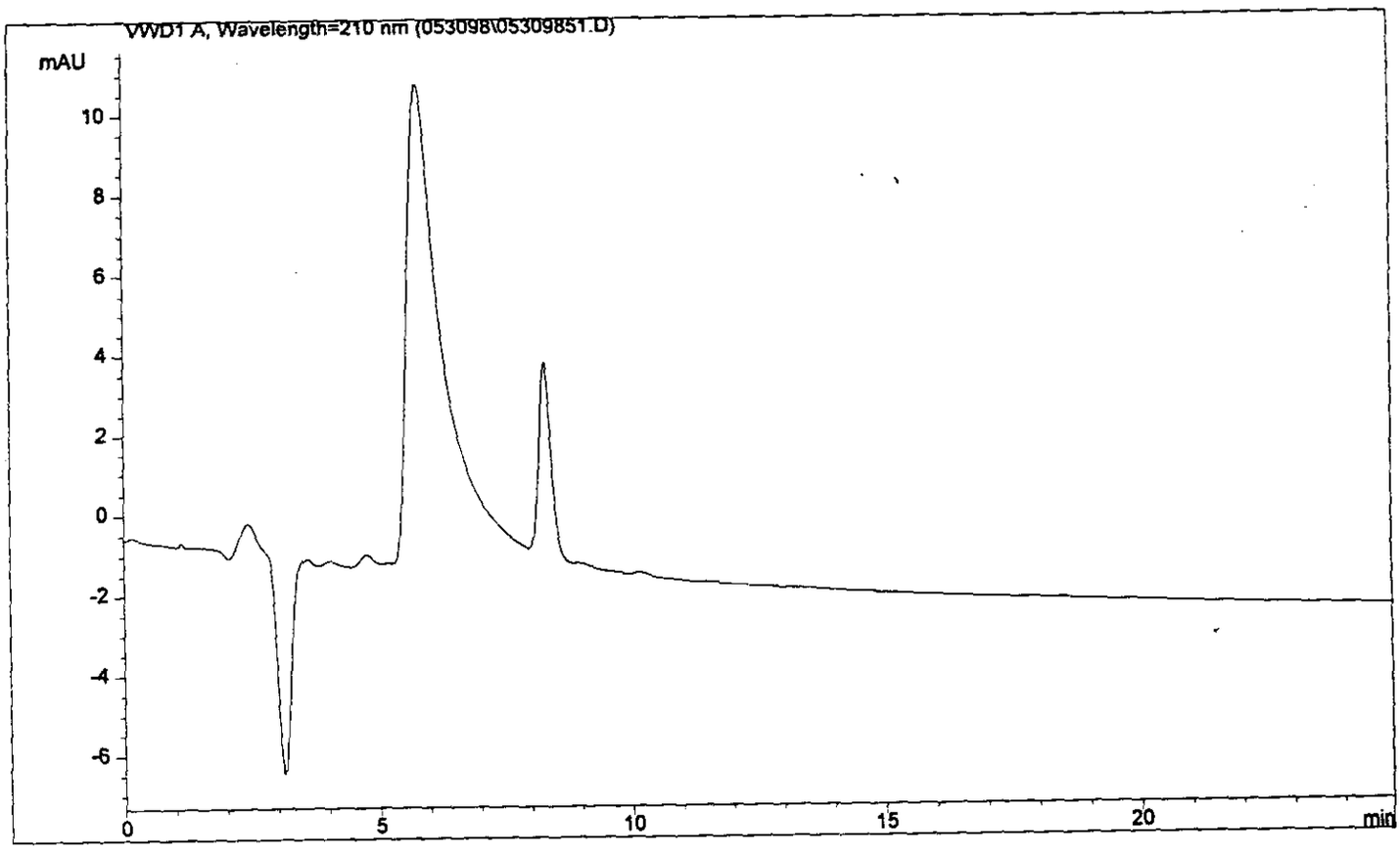
FORM I

Sample Name : 34140.16
Acq Operator : SS

Vial No. : 51
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 053098W.M
Analysis Method : C:\HPCHEM\1\METHODS\053098W.M
Last Changed : Tue, 9. Jun. 1998, 07:20:34 pm

PETN WATER



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Tue, 9. Jun. 1998, 06:10:49 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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ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34140
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 06/02/98 to 06/03/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	06/02/98	04:40
EXP L1 SOIL STD	2-281:IA1	06/02/98	06:54
EXP L2 SOIL STD	2-280:IA2	06/02/98	07:39
EXP L3 SOIL STD	2-279:IA3	06/02/98	08:23
EXP L4 SOIL STD	2-278:IA4	06/02/98	09:08
EXP L5 SOIL STD	2-277:IA5	06/02/98	09:53
EXP L3 SOIL STD	2-279:CA1	06/02/98	23:56
BL0528SD	BL0528SD	06/03/98	01:25
LC0528SD	LC0528SD	06/03/98	02:54
LD0528SD	LD0528SD	06/03/98	03:39
BION30%30A1	34140.01	06/03/98	07:22
EXP L3 SOIL STD	2-294:CA2	06/03/98	08:07

page 4

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
lumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0601,4
Injection File Name Level 2 : 2EX0601,5
Injection File Name Level 3 : 2EX0601,6
Injection File Name Level 4 : 2EX0601,7
Injection File Name Level 5 : 2EX0601,8

Calibration Date : 06/01/1998
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	11756	1159	308043	1213	851528	1290	1212485	1225	1658331	1256
RDX	7191	1704	177094	1677	494697	1792	708818	1720	970640	1765
TNB	10472	3468	279458	3697	764634	3881	1117018	3774	1496614	3799
DNB	8988	5548	238376	5871	662837	6277	950597	6001	1304233	6152
TETRYL	8683	2334	228374	2456	590734	2441	922560	2535	1144237	2364
NB	13519	4097	377473	4581	989390	4623	1497550	4651	2058571	4787
3,4-DNT	12592	2479	345406	2724	962991	2918	1377303	2777	1897281	2875
TNT	11807	4373	312771	4627	863761	4908	1250542	4737	1706176	4847
4ADNT	6035	2557	172691	2917	489484	3178	683747	2947	953993	3097
2ADNT	9547	4045	255814	4321	715047	4643	1024280	4415	1408931	4574
26DNT	9189	2368	259088	2666	720242	2836	1025110	2698	1399612	2766
24DNT	10969	4648	307327	5191	862467	5600	1242555	5356	1710844	5555
2NT	8072	2388	220696	2609	574048	2609	871892	2642	1178245	2678
	7728	2286	225187	2662	593854	2699	890968	2700	1211370	[illegible]
	9471	2941	270354	3363	709913	3381	1071820	3413	1461049	

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
umn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0601,4
Injection File Name Level 2 : 2EX0601,5
Injection File Name Level 3 : 2EX0601,6
Injection File Name Level 4 : 2EX0601,7
Injection File Name Level 5 : 2EX0601,8

Calibration Date : 06/01/1998
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	1229	3.99	0.99960	1251	0.000
RDX	1732	2.69	0.99969	1754	0.000
TNB	3724	4.23	0.99988	3800	0.000
DNB	5970	4.71	0.99967	6119	0.000
TETRYL	2426	3.27	0.99872	2431	0.000
NB	4548	5.80	0.99974	4721	0.000
3,4-DNT	2754	6.25	0.99953	2849	0.000
TNT	4698	4.50	0.99976	4818	0.000
NT	2939	8.14	0.99901	3061	0.000
DNT	4400	5.35	0.99951	4532	0.000
26DNT	2667	6.72	0.99963	2753	0.000
24DNT	5270	7.29	0.99954	5495	0.000
2NT	2585	4.40	0.99991	2657	0.000
4NT	2620	7.23	0.99989	2728	0.000
3NT	3319	6.54	0.99980	3453	0.000

CALIBRATION FACTOR DATA
FORM 9C

:nitial Calibration Date: 06/01/1998
›tinuing Calibration #: 1
.tinuing Cal Date : 06/02/1998
:ontinuing Cal Level : 3
Instrument ID : IN12
:olumn ID : CARB-07
Injection File Name : 2EX0601A,10
:alculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	822556	1246	1229	1.43	1251	0.36
RDX	481744	1745	1732	0.79	1754	0.47
TNB	729717	3704	3724	0.52	3800	2.53
DNB	637582	6038	5970	1.14	6119	1.33
TETRYL	528218	2183	2426	10.02	2431	10.20
NB	992156	4636	4548	1.94	4721	1.79
3,4-DNT	930209	2819	2754	2.34	2849	1.05
TNT	839767	4771	4698	1.56	4818	0.97
4ADNT	454392	2951	2939	0.38	3061	3.61
2ADNT	690663	4485	4400	1.93	4532	1.03
26DNT	688643	2711	2667	1.67	2753	1.53
24DNT	828784	5382	5270	2.12	5495	2.06
2NT	579614	2635	2585	1.91	2657	0.83
4NT	595079	2705	2620	3.24	2728	0.85
T	712944	3395	3319	2.30	3453	1.67

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/01/1998
Continuing Calibration #: 2
Continuing Cal Date : 06/03/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0601B,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	792893	1201	1229	2.22	1251	3.95
RDX	461182	1671	1732	3.51	1754	4.72
TNB	733046	3721	3724	0.07	3800	2.09
DNB	618629	5858	5970	1.87	6119	4.26
TETRYL	577811	2388	2426	1.58	2431	1.77
NB	1022469	4778	4548	5.06	4721	1.21
3,4-DNT	908604	2753	2754	0.04	2849	3.35
TNT	826771	4698	4698	0.02	4818	2.50
4ADNT	442646	2874	2939	2.22	3061	6.10
2ADNT	665905	4324	4400	1.72	4532	4.58
26DNT	658382	2592	2667	2.80	2753	5.86
24DNT	813965	5285	5270	0.29	5495	3.81
2NT	587665	2671	2585	3.33	2657	0.55
4NT	596340	2711	2620	3.46	2728	0.64
[illegible]T	721970	3438	3319	3.60	3453	0.43

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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

page 1

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN12
Column ID : CARB-07
Calibration Date : 06/01/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.72	5.72	5.72	5.70	5.70
RDX	8.76	8.72	8.72	8.70	8.69
TNB	11.83	11.85	11.85	11.82	11.81
DNB	14.41	14.45	14.44	14.42	14.41
TETRYL	15.71	15.77	15.76	15.73	15.71
NB	16.38	16.42	16.41	16.38	16.37
3,4-DNT	17.95	17.98	17.96	17.93	17.91
TNT	18.85	18.88	18.87	18.85	18.83
4ADNT	19.53	19.64	19.63	19.60	19.57
2ADNT	20.59	20.65	20.65	20.61	20.58
26DNT	21.96	22.00	21.98	21.96	21.93
24DNT	22.68	22.70	22.69	22.66	22.64
2NT	26.69	26.75	26.74	26.71	26.68
4NT	28.52	28.59	28.58	28.54	28.51
3NT	30.83	30.85	30.83	30.80	30.76

COMPONENT NAME	RT Cont CA1	RT Cont CA2
HMX	5.72	5.72
RDX	8.69	8.70
TNB	11.81	11.82
DNB	14.37	14.40
TETRYL	15.65	15.70
NB	16.35	16.36
3,4-DNT	17.86	17.90
TNT	18.78	18.81
4ADNT	19.44	19.54
2ADNT	20.45	20.57
26DNT	21.85	21.90
24DNT	22.54	22.61
2NT	26.59	26.64
4NT	28.41	28.47
3NT	30.66	30.73

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.71	0.009	0.026	5.69 - 5.74
RDX	8.71	0.023	0.068	8.64 - 8.78
B	11.83	0.015	0.045	11.78 - 11.87
.B	14.41	0.026	0.077	14.34 - 14.49
TETRYL	15.72	0.038	0.113	15.60 - 15.83
NB	16.38	0.025	0.075	16.31 - 16.46
3,4-DNT	17.93	0.042	0.125	17.80 - 18.05
TNT	18.84	0.035	0.104	18.73 - 18.94

page 2

4ADNT	19.56	0.069	0.207	19.35 - 19.77
2ADNT	20.58	0.067	0.202	20.38 - 20.79
26DNT	21.94	0.053	0.158	21.78 - 22.10
24DNT	22.65	0.056	0.168	22.48 - 22.81
2NT	26.69	0.058	0.173	26.51 - 26.86
4NT	28.52	0.064	0.193	28.32 - 28.71
T	30.78	0.069	0.207	30.57 - 30.99

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ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34140
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 06/02/98 to 06/03/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	06/05/98	20:40
EXP L1 SOIL STD	2-281:IA1	06/05/98	22:10
EXP L2 SOIL STD	2-280:IA2	06/05/98	22:54
EXP L3 SOIL STD	2-279:IA3	06/05/98	23:39
EXP L4 SOIL STD	2-278:IA4	06/06/98	00:24
EXP ~~L4~~ L5 SOIL STD SEG 06/23/98	2-277:IA5	06/06/98	01:08
BION30%30A1 MS	34140.02MS	06/06/98	01:53
BION30%30A1 MSD	34140.03MSD	06/06/98	02:37
BION30%30A2	34140.04	06/06/98	03:22
BION30%30A3	34140.05	06/06/98	04:07
BION30%30B1	34140.06	06/06/98	04:51
BION30%30B2	34140.07	06/06/98	05:36
BION30%30B3	34140.08	06/06/98	06:21
BION30%30C1	34140.09	06/06/98	07:05
BION30%30C2	34140.10	06/06/98	07:50
EXP L3 SOIL STD	2-294:CA1	06/06/98	08:35
BION30%C2FD	34140.11	06/06/98	10:04
BION30%C3	34140.12	06/06/98	10:48
BION30%30D1	34140.13	06/06/98	11:33

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34140
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 06/02/98 to 06/03/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BION30%30D2	34140.14	06/06/98	12:18
BION30%30D3	34140.15	06/06/98	13:02
EXP L3 SOIL STD	2-294:CA2	06/06/98	13:47

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0606,4
Injection File Name Level 2 : 2EX0606,5
Injection File Name Level 3 : 2EX0606,6
Injection File Name Level 4 : 2EX0606,7
Injection File Name Level 5 : 2EX0606,8

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	13636	1345	297763	1172	821032	1244	1173198	1185	1603576	1215
RDX	7261	1721	174801	1655	478041	1732	691140	1678	945016	1718
TNB	11528	3817	275812	3648	761041	3863	1077121	3639	1488853	3779
DNB	9558	5900	231949	5713	646640	6123	924570	5837	1280045	6038
TETRYL	8721	2344	210043	2259	602698	2490	816652	2244	1109342	2292
NB	15780	4782	390208	4736	1046485	4890	1567631	4868	2138105	4972
3,4-DNT	13901	2736	341040	2690	947834	2872	1348830	2719	1849815	2803
TNT	12215	4524	309883	4584	860214	4888	1234612	4677	1707407	4851
4ADNT	6003	2544	174302	2944	486466	3159	690756	2977	952572	3093
2ADNT	9115	3862	249188	4209	690839	4486	990464	4269	1365569	4434
26DNT	9997	2577	257288	2647	713152	2808	1005390	2646	1378863	2725
24DNT	12645	5358	301778	5098	839018	5448	1212086	5225	1671746	5428
2NT	8702	2575	221452	2618	590881	2686	879983	2667	1194486	2715
[illegible]	8856	2620	226478	2677	606092	2755	902070	2734	1221075	2775
	10616	3297	274139	3410	722022	3438	1084899	3455	1456776	3485

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1
Injection File Name Level 1 : 2EX0606,4
Injection File Name Level 2 : 2EX0606,5
Injection File Name Level 3 : 2EX0606,6
Injection File Name Level 4 : 2EX0606,7
Injection File Name Level 5 : 2EX0606,8

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	1232	5.58	0.99964	1209	0.000
RDX	1701	1.92	0.99979	1707	0.000
TNB	3749	2.69	0.99941	3747	0.000
DNB	5922	2.74	0.99956	5984	0.000
TETRYL	2326	4.29	0.99852	2306	0.000
NB	4850	1.92	0.99987	4926	0.000
3,4-DNT	2764	2.65	0.99953	2785	0.000
TNT	4705	3.41	0.99956	4799	0.000
NT	2943	8.14	0.99940	3065	0.000
NT	4252	5.78	0.99950	4388	0.000
26DNT	2680	3.30	0.99949	2712	0.000
24DNT	5311	2.79	0.99954	5364	0.000
2NT	2652	2.11	0.99991	2694	0.000
4NT	2712	2.33	0.99993	2758	0.000
3NT	3417	2.12	0.99997	3468	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 : IN12
Column ID : CARB-07
Injection File Name : 2EX0606A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	769062	1165	1232	5.43	1209	3.63
RDX	447362	1621	1701	4.70	1707	5.03
TNB	707953	3594	3749	4.15	3747	4.08
DNB	602513	5706	5922	3.66	5984	4.65
TETRYL	546519	2258	2326	2.90	2306	2.06
NB	1013553	4736	4850	2.34	4926	3.85
3,4-DNT	879858	2666	2764	3.54	2785	4.28
TNT	802934	4562	4705	3.03	4799	4.94
4ADNT	449171	2917	2943	0.91	3065	4.83
2ADNT	643967	4182	4252	1.66	4388	4.69
26DNT	651415	2565	2680	4.32	2712	5.42
24DNT	788137	5118	5311	3.64	5364	4.58
2NT	576633	2621	2652	1.16	2694	2.72
4NT	594870	2704	2712	0.30	2758	1.96
[illegible]T	711217	3387	3417	0.89	3468	2.35

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/05/1998
Continuing Calibration #: 2
tinuing Cal Date : 06/06/1998
ontinuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0606A,17
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	745107	1129	1232	8.38	1209	6.64
RDX	429946	1558	1701	8.41	1707	8.73
TNB	684944	3477	3749	7.27	3747	7.20
DNB	585790	5547	5922	6.33	5984	7.30
TETRYL	517586	2139	2326	8.04	2306	7.25
NB	967689	4522	4850	6.76	4926	8.20
3,4-DNT	858623	2602	2764	5.87	2785	6.59
TNT	774668	4402	4705	6.44	4799	8.28
4ADNT	440662	2861	2943	2.78	3065	6.63
2ADNT	626697	4069	4252	4.29	4388	7.25
26DNT	643647	2534	2680	5.46	2712	6.55
24DNT	758189	4923	5311	7.30	5364	8.21
2NT	551081	2505	2652	5.54	2694	7.03
4NT	567068	2578	2712	4.96	2758	6.54
3NT	678486	3231	3417	5.45	3468	6.84

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ɔction 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

strument ID : IN12
olumn ID : CARB-07
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	5.78	5.77	5.76	5.74	5.72
RDX	8.92	8.90	8.89	8.85	8.84
TNB	12.05	12.00	12.00	11.96	11.94
DNB	14.74	14.68	14.68	14.65	14.62
TETRYL	16.11	16.08	16.06	16.03	16.01
NB	16.71	16.68	16.68	16.64	16.62
3,4-DNT	18.47	18.43	18.42	18.38	18.35
TNT	19.19	19.14	19.13	19.09	19.07
4ADNT	20.22	20.18	20.19	20.14	20.11
2ADNT	21.30	21.24	21.25	21.20	21.17
26DNT	22.46	22.40	22.40	22.34	22.33
24DNT	23.20	23.14	23.13	23.07	23.05
2NT	27.30	27.22	27.22	27.16	27.14
4NT	29.15	29.13	29.11	29.05	29.03
3NT	31.47	31.37	31.37	31.31	31.28

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	5.73	5.72	5.72	5.73	5.72
RDX	8.83	8.80	8.80	8.80	8.80
TNB	11.93	11.90	11.88	11.89	11.89
DNB	14.59	14.54	14.53	14.55	14.54
TETRYL	15.95	15.89	15.88	15.90	15.90
NB	16.57	16.52	16.50	16.52	16.52
3,4-DNT	18.28	18.20	18.19	18.22	18.21
TNT	19.02	18.94	18.93	18.96	18.96
4ADNT	20.02	19.93	19.92	19.97	19.95
2ADNT	21.07	20.97	20.97	21.03	21.00
26DNT	22.25	22.15	22.13	22.18	22.17
24DNT	22.97	22.88	22.85	22.91	22.90
2NT	27.05	26.92	26.89	26.94	26.94
4NT	28.93	28.78	28.75	28.83	28.82
3NT	31.18	31.02	30.99	31.06	31.05

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.74	0.022	0.066	5.67 - 5.81
RDX	8.83	0.045	0.135	8.70 - 8.97
NB	11.94	0.057	0.172	11.76 - 12.11
B	14.60	0.071	0.212	14.39 - 14.81
TETRYL	15.97	0.083	0.250	15.72 - 16.22
NB	16.59	0.077	0.230	16.36 - 16.82
3,4-DNT	18.30	0.103	0.310	17.99 - 18.61
TNT	19.03	0.088	0.265	18.77 - 19.30

4ADNT	20.05	0.114	0.341	19.71 - 20.39
2ADNT	21.11	0.118	0.354	20.75 - 21.46
26DNT	22.27	0.115	0.344	21.92 - 22.61
24DNT	23.00	0.117	0.352	22.64 - 23.35
2NT	27.06	0.139	0.418	26.64 - 27.48
4NT	28.94	0.144	0.432	28.51 - 29.37
	31.19	0.159	0.478	30.71 - 31.67

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34140
Instrument ID: LC4 Column ID:

Dates of Anlayses: 06/01/98 to 06/02/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	06/01/98	19:00
L1 2-249:IA1	L1 2-249:IA1	06/01/98	20:25
L2 2-248:IA2	L2 2-248:IA2	06/01/98	20:53
L3 2-247:IA3	L3 2-247:IA3	06/01/98	21:21
L4 2-246:IA4	L4 2-246:IA4	06/01/98	21:49
L5 2-245:IA5	L5 2-245:IA5	06/01/98	22:17
ICV 2-223:CA1	ICV 2-223:CA1	06/01/98	22:46
BL0528SD	BL0528SD	06/01/98	23:14
LC0528SD	LC0528SD	06/02/98	00:10
LD0528SD	LD0528SD	06/02/98	00:38
L3 2-247:CA2	L3 2-247:CA2	06/02/98	02:59
BION30%30A1	34140.01	06/02/98	03:56
BION30%30A1	34140.02MS	06/02/98	04:24
BION30%30A1	34140.03MSD	06/02/98	04:52
BION30%30A2	34140.04	06/02/98	05:20
BION30%30A3	34140.05	06/02/98	05:48
BION30%30B1	34140.06	06/02/98	06:16
BION30%30B2	34140.07	06/02/98	06:45
BION30%30B3	34140.08	06/02/98	07:13

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

	Inj 1
Injection File Name Level 1 :	060198,4
Injection File Name Level 2 :	060198,5
Injection File Name Level 3 :	060198,6
Injection File Name Level 4 :	060198,7
Injection File Name Level 5 :	060198,8

Calibration Date : 06/01/98
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	6.12006	3.27E0	54.3801	2.94E0	109.761	2.92E0	450.758	2.84E0	879.49	2.91E0

CALIBRATION FACTOR DATA
FORM 9B

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

	Inj 1
Injection File Name Level 1 :	060198,4
Injection File Name Level 2 :	060198,5
Injection File Name Level 3 :	060198,6
Injection File Name Level 4 :	060198,7
Injection File Name Level 5 :	060198,8

Calibration Date : 06/01/98
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	2.98E0	5.65	0.99991	2.90E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/01/98
Continuing Calibration #: 1
tinuing Cal Date : 06/01/98
.tinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 060198,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	101.746	3.15E0	2.98E0	5.71	2.90E0	8.58

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/01/98
Continuing Calibration #: 2
Continuing Cal Date : 06/02/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 060198,18
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	109.897	2.91E0	2.98E0	2.13	2.90E0	0.52

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/01/98
Continuing Calibration #: 3
tinuing Cal Date : 06/02/98
.tinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 060198,29
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	109.824	2.91E0	2.98E0	2.07	2.90E0	0.59

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/01/98
Continuing Calibration #: 4
nuing Cal Date : 06/02/98
.tinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 060198,37
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	109.359	2.93E0	2.98E0	1.65	2.90E0	1.02

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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

rument ID : LC4
olumn ID :
Calibration Date : 06/01/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	10.73	10.74	10.78	10.82	10.80

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
PETN	10.87	10.92	11.05	10.98

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	10.85	0.111	0.333	10.52 - 11.19

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34140
Instrument ID: IN13 Column ID: CARB-08

Dates of Anlayses: 05/27/98 to 05/29/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLANK	INST.BLK.	05/27/98	19:00
EXP HIGH WATER L1 ST	2-199:IA1	05/27/98	21:14
EXP HIGH WATER L2 ST	2-198:IA2	05/27/98	21:59
EXP HIGH WATER L3 ST	2-240:IA3	05/27/98	22:44
EXP HIGH WATER L4 ST	2-196:IA4	05/27/98	23:28
EXP HIGH WATER L5 ST	2-195:IA5	05/28/98	00:13
EXP HIGH WATER L3 ST	2-240:CA3	05/28/98	20:09
BL0528WH	BL0528WH	05/28/98	21:38
LC0528WH	LC0528WH	05/28/98	23:08
LD0528WH	LD0528WH	05/28/98	23:52
BIO-FB-052798	34140.16	05/29/98	00:37
EXP HIGH WATER L3 ST	2-240:CA4	05/29/98	01:22

page 1

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

Inj 1

Injection File Name Level 1 : 5E0527W,4
Injection File Name Level 2 : 5E0527W,5
Injection File Name Level 3 : 5E0527W,6
Injection File Name Level 4 : 5E0527W,7
Injection File Name Level 5 : 5E0527W,8

Calibration Date : 05/27/1998
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	380	297	1256	395	54927	345	110190	347	224432	353
RDX	413	397	1041	400	57717	444	116694	449	234773	453
TNB	684	950	1501	834	86151	962	173941	972	354226	989
DNB	430	1132	1197	1247	61497	1292	124790	1314	252960	1331
TETRYL	317	352	1272	563	58897	521	106184	470	235728	524
NB	435	640	1679	988	77304	909	155189	913	312605	919
3,4-DNT	572	447	1593	495	82251	514	166848	521	324857	508
TNT	750	1172	1518	949	91962	1150	181150	1132	381110	1191
4ADNT	585	585	1248	495	81315	651	158447	634	326240	652
2ADNT	365	652	1009	721	62105	887	122384	874	251024	897
26DNT	414	431	1371	571	71341	620	142817	621	291494	634
24DNT	628	1121	1583	1131	85451	1221	170809	1220	349046	1247
2NT	602	538	1344	480	77387	534	158485	547	321928	555
	140	175	736	368	43982	440	91591	458	185877	465
	183	229	1112	556	58812	619	119125	627	243567	

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6-25-98

CALIBRATION FACTOR DATA
FORM 9B

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

Inj 1

Injection File Name Level 1 : 5E0527W,4
Injection File Name Level 2 : 5E0527W,5
Injection File Name Level 3 : 5E0527W,6
Injection File Name Level 4 : 5E0527W,7
Injection File Name Level 5 : 5E0527W,8

Calibration Date : 05/27/1998
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	347	10.03	0.99995	351	0.000
RDX	429	6.43	0.99998	452	0.000
TNB	941	6.56	0.99995	985	0.000
DNB	1263	6.33	0.99996	1326	0.000
TETRYL	486	16.82	0.99854	514	0.000
NB	874	15.42	0.99999	918	0.000
3,4-DNT	497	5.97	0.99990	511	0.000
TNT	1119	8.72	0.99969	1178	0.000
NT	603	10.99	0.99989	649	0.000
DNT	806	13.94	0.99992	892	0.000
26DNT	575	14.61	0.99995	631	0.000
24DNT	1188	4.84	0.99994	1240	0.000
2NT	531	5.55	0.99994	552	0.000
4NT	381	31.87	0.99991	462	0.000
3NT	534	32.55	0.99993	637	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/27/1998
Continuing Calibration #: 3
Continuing Cal Date : 05/28/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5E0527WB,1
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	54478	343	347	1.36	351	2.48
RDX	56881	438	429	2.06	452	3.19
TNB	84901	948	941	0.66	985	3.78
DNB	61275	1287	1263	1.92	1326	2.93
TETRYL	59337	525	486	8.05	514	2.11
NB	73749	868	874	0.71	918	5.46
3,4-DNT	79810	499	497	0.38	511	2.31
TNT	90720	1134	1119	1.37	1178	3.76
4ADNT	80431	643	603	6.64	649	0.84
2ADNT	61720	882	806	9.38	892	1.14
26DNT	70610	614	575	6.69	631	2.64
24DNT	84388	1206	1188	1.48	1240	2.81
2NT	76645	529	531	0.37	552	4.32
4NT	43543	435	381	14.26	462	5.81
[illegible]T	57758	608	534	13.78	637	4.61

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/27/1998
Continuing Calibration #: 4
Continuing Cal Date : 05/29/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5E0527WB,8
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	54663	344	347	1.02	351	2.15
RDX	57777	444	429	3.67	452	1.66
TNB	85791	957	941	1.72	985	2.78
DNB	61513	1292	1263	2.31	1326	2.56
TETRYL	57522	509	486	4.74	514	1.01
NB	75041	883	874	1.03	918	3.80
3,4-DNT	80911	506	497	1.76	511	0.96
TNT	91141	1139	1119	1.84	1178	3.31
4ADNT	79434	635	603	5.31	649	2.07
2ADNT	60019	857	806	6.37	892	3.87
26DNT	70429	612	575	6.42	631	2.89
24DNT	81730	1168	1188	1.71	1240	5.87
2NT	78160	539	531	1.60	552	2.43
4NT	43756	438	381	14.82	462	5.35
[illegible]T	58180	612	534	14.61	637	3.91

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

· jection 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

rument ID : IN13
umn ID : CARB-08
Calibration Date : 05/27/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.84	4.86	4.88	4.86	4.85
RDX	7.51	7.55	7.59	7.56	7.55
TNB	10.01	10.07	10.12	10.08	10.06
DNB	12.32	12.41	12.47	12.44	12.41
TETRYL	13.13	13.19	13.29	13.24	13.20
NB	14.06	14.10	14.17	14.13	14.09
3,4-DNT	15.32	15.44	15.53	15.47	15.41
TNT	15.64	15.74	15.84	15.80	15.74
4ADNT	16.72	16.84	16.92	16.86	16.81
2ADNT	17.61	17.79	17.88	17.82	17.76
26DNT	18.34	18.55	18.63	18.56	18.49
24DNT	19.08	19.22	19.32	19.26	19.20
2NT	22.24	22.47	22.56	22.48	22.40
4NT	24.12	24.00	24.13	24.04	23.96
3NT	25.69	25.93	25.95	25.87	25.79

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4
HMX	4.86	4.88	4.89	4.88
RDX	7.56	7.60	7.60	7.58
TNB	10.08	10.13	10.13	10.09
DNB	12.43	12.51	12.50	12.45
TETRYL	13.24	13.37	13.33	13.26
NB	14.12	14.22	14.21	14.13
3,4-DNT	15.47	15.64	15.58	15.49
TNT	15.79	15.93	15.89	15.81
4ADNT	16.87	17.03	16.95	16.91
2ADNT	17.82	17.99	17.90	17.88
26DNT	18.55	18.74	18.68	18.59
24DNT	19.25	19.44	19.38	19.29
2NT	22.46	22.73	22.65	22.51
4NT	24.02	24.32	24.22	24.08
3NT	25.83	26.17	26.06	25.92

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.87	0.015	0.046	4.82 - 4.91
RDX	7.57	0.029	0.088	7.48 - 7.66
TNB	10.09	0.039	0.116	9.97 - 10.20
DNB	12.44	0.056	0.169	12.27 - 12.61
TETRYL	13.25	0.074	0.223	13.02 - 13.47
NB	14.14	0.054	0.163	13.97 - 14.30
3,4-DNT	15.48	0.093	0.280	15.20 - 15.76
TNT	15.80	0.086	0.258	15.54 - 16.06

4ADNT	16.88	0.089	0.267	16.61 - [illegible]
2ADNT	17.83	0.106	0.317	17.51 - 18.15
26DNT	18.57	0.115	0.344	18.23 - 18.91
24DNT	19.27	0.104	0.313	18.96 - 19.58
2NT	22.50	0.141	0.423	22.07 - 22.92
4NT	24.10	0.114	0.342	23.76 - 24.44
T	25.91	0.145	0.435	25.48 - 26.35

AB
6-25-98

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34140
Instrument ID: LC4 Column ID:

Dates of Anlayses: 06/01/98 to 06/02/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BION30%30C1	34140.09	06/02/98	07:41
L3 2-247:CA3	L3 2-247:CA3	06/02/98	08:09
BION30%30C2	34140.10	06/02/98	09:05
BION30%30C2FD	34140.11	06/02/98	09:34
BION30%30C3	34140.12	06/02/98	10:02
BION30%30D1	34140.13	06/02/98	10:30
BION30%30D2	34140.14	06/02/98	10:58
BION30%30D3	34140.15	06/02/98	11:26
L3 2-247:CA4	L3 2-247:CA4	06/02/98	11:54

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FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: LC4
· lumn ID :

Inj 1

Injection File Name Level 1 : 053098W,31
Injection File Name Level 2 : 053098W,32
Injection File Name Level 3 : 053098W,33
Injection File Name Level 4 : 053098W,34
Injection File Name Level 5 : 053098W,35

Calibration Date : 05/31/98
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	5.97084	3.35E0	49.8549	3.21E0	103.014	3.11E0	410.989	3.11E0	831.524	3.08E0

CALIBRATION FACTOR DATA
FORM 9B

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

Inj 1
Injection File Name Level 1 : 053098W,31
Injection File Name Level 2 : 053098W,32
Injection File Name Level 3 : 053098W,33
Injection File Name Level 4 : 053098W,34
Injection File Name Level 5 : 053098W,35

Calibration Date : 05/31/98
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	3.17E0	3.50	0.99998	3.09E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/31/98
Continuing Calibration #: 1
tinuing Cal Date : 05/31/98
.tinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 053098W,36
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	113.947	2.81E0	3.17E0	11.46	3.09E0	9.01

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/31/98
Continuing Calibration #: 2
inuing Cal Date : 05/31/98
.tinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 053098W,45
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	101.948	3.14E0	3.17E0	1.04	3.09E0	1.70

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 05/31/98
Continuing Calibration #: 3
tinuing Cal Date : 05/31/98
ntinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 053098W,57
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	101.476	3.15E0	3.17E0	0.57	3.09E0	2.17

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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

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AB

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : LC4
olumn ID :
Calibration Date : 05/31/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	10.48	10.48	10.47	10.47	10.46

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
PETN	10.47	10.42	10.60

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	10.48	0.053	0.160	10.32 - 10.64

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34140
Instrument ID: IN10 Column ID: LC-CN-11

Dates of Anlayses: 06/10/98 to 06/11/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
EXP L1A STD	3-17:IA1	06/10/98	22:31
EXP L2A STD	3-16:IA2	06/10/98	23:15
EXP L3A STD	3-15:IA3	06/11/98	00:00
EXP L4A STD	3-14:IA4	06/11/98	00:44
EXP L5A STD	3-13:IA5	06/11/98	01:29
EXP L1B STD	~~1-236~~ 2-237:IB1 SMG 06/23/98	06/11/98	02:13
EXP L2B STD	2-235:IB2	06/11/98	02:57
EXP L3B STD	3-20:IB3	06/11/98	03:42
EXP L4B STD	2-233:IB4	06/11/98	04:26
EXP L5B STD	2-232:IB5	06/11/98	05:10
BL0528SD	BL0528SD	06/11/98	05:55
BION30%30A1	34140.01	06/11/98	07:23
BION30%30B2	34140.07	06/11/98	10:21
BION30%30B3	34140.08	06/11/98	11:05
BION30%30C1	34140.09	06/11/98	11:50
EXP L3A STD	3-15:CA1	06/11/98	12:34
EXP L3B STD	3-20:CB1	06/11/98	13:18
BION30%30C3	34140.12	06/11/98	14:47
BION30%30D1	34140.13	06/11/98	15:31

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34140
Instrument ID: IN10 Column ID: LC-CN-11

Dates of Anlayses: 06/10/98 to 06/11/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BION30%30D2	34140.14	06/11/98	16:16
BION30%30D3	34140.15	06/11/98	17:00
EXP L3A STD	3-15:CA2	06/11/98	17:44
EXP L3B STD	3-20:CB2	06/11/98	18:29

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0610,4
Injection File Name Level 2 : 3CN0610,5
Injection File Name Level 3 : 3CN0610,6
Injection File Name Level 4 : 3CN0610,7
Injection File Name Level 5 : 3CN0610,8

Calibration Date : 06/10/1998
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	10802	2348	60809	2644	155369	2702	303408	2638	603059	2622
26DNT	6757	1351	40217	1609	105753	1692	213090	1705	447022	1788
TNT	8307	1806	56148	2441	146525	2548	296823	2581	597721	2599
3,4DNT	1660	1258	10380	1573	30250	1833	60162	1823	113239	1716
TETRYL	15095	1677	78842	1752	204550	1818	406906	1808	832303	1850
HMX	3987	570	33337	952	84194	962	166543	952	335226	958

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0610,9
Injection File Name Level 2 : 3CN0610,10
Injection File Name Level 3 : 3CN0610,11
Injection File Name Level 4 : 3CN0610,12
Injection File Name Level 5 : 3CN0610,13

Calibration Date : 06/10/1998
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	7826	1565	44934	1797	109597	1754	217637	1741	437382	1750
DNB	12821	3205	73011	3651	172905	3458	348430	3484	701837	3509
24DNT	14546	2909	76735	3069	180126	2882	359409	2875	730969	2924
4ADNT	15926	1731	77758	1690	181007	1574	365555	1589	706501	1536
2ADNT	28055	2806	137115	2742	320072	2561	648522	2594	1333784	2668
RDX	9290	1858	38249	1530	86395	1382	175226	1402	346449	1386

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-11

Inj 1
Injection File Name Level 1 : 3CN0610,4
Injection File Name Level 2 : 3CN0610,5
Injection File Name Level 3 : 3CN0610,6
Injection File Name Level 4 : 3CN0610,7
Injection File Name Level 5 : 3CN0610,8

Calibration Date : 06/10/1998
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	2591	5.36	0.99996	2629	0.000
26DNT	1629	10.29	0.99975	1767	0.000
TNT	2395	13.99	1.00000	2592	0.000
3,4DNT	1640	14.53	0.99918	1742	0.000
TETRYL	1781	3.81	0.99994	1840	0.000
HMX	879	19.67	0.99996	957	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-11

Inj 1
Injection File Name Level 1 : 3CN0610,9
Injection File Name Level 2 : 3CN0610,10
Injection File Name Level 3 : 3CN0610,11
Injection File Name Level 4 : 3CN0610,12
Injection File Name Level 5 : 3CN0610,13

Calibration Date : 06/10/1998
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	1721	5.23	0.99999	1748	0.000
DNB	3461	4.66	0.99997	3503	0.000
24DNT	2932	2.71	0.99993	2914	0.000
4ADNT	1624	5.09	0.99985	1549	0.000
2ADNT	2674	3.80	0.99983	2650	0.000
RDX	1512	13.43	0.99995	1390	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/10/1998
Continuing Calibration #: 1
tinuing Cal Date : 06/11/1998
ontinuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0610A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	152026	2644	2591	2.05	2629	0.57
26DNT	115872	1854	1629	13.81	1767	4.91
TNT	151299	2631	2395	9.86	2592	1.52
3,4DNT	29832	1808	1640	10.21	1742	3.80
TETRYL	199535	1774	1781	0.42	1840	3.59
HMX	84804	969	879	10.29	957	1.30

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/10/1998
Continuing Calibration #: 1
ontinuing Cal Date : 06/11/1998
ontinuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0610A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	100196	1603	1721	6.87	1748	8.31
DNB	167618	3352	3461	3.15	3503	4.30
24DNT	174911	2799	2932	4.55	2914	3.96
4ADNT	180027	1565	1624	3.61	1549	1.04
2ADNT	325868	2607	2674	2.51	2650	1.61
RDX	85374	1366	1512	9.63	1390	1.73

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/10/1998
Continuing Calibration #: 2
tinuing Cal Date : 06/11/1998
ontinuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0610A,17
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	153693	2673	2591	3.17	2629	1.67
26DNT	122767	1964	1629	20.58	1767	11.15
TNT	156398	2720	2395	13.57	2592	4.94
3,4DNT	31118	1886	1640	14.96	1742	8.28
TETRYL	197920	1759	1781	1.22	1840	4.37
HMX	88263	1009	879	14.79	957	5.43

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/10/1998
Continuing Calibration #: 2
Continuing Cal Date : 06/11/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0610A,18
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	107107	1714	1721	0.44	1748	1.99
DNB	183995	3680	3461	6.31	3503	5.05
24DNT	190076	3041	2932	3.73	2914	4.37
4ADNT	196188	1706	1624	5.04	1549	10.10
2ADNT	342942	2744	2674	2.60	2650	3.54
RDX	93924	1503	1512	0.58	1390	8.11

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	1.320	6.600	16.500	33.000	66.000
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

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-11
Calibration Date : 06/10/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	5.89	5.90	5.89	5.90	5.88
26DNT	6.29	6.35	6.30	6.29	6.13
TNT	6.97	6.99	6.98	6.97	6.95
3,4DNT	8.04	8.04	8.05	8.03	8.00
TETRYL	11.16	11.21	11.21	11.16	11.19
HMX	14.25	14.33	14.29	14.22	14.29

COMPONENT NAME	RT Cont CA1	RT Cont CA2
TNB	5.88	5.88
26DNT	6.32	6.33
TNT	6.96	6.96
3,4DNT	8.00	8.00
TETRYL	11.14	11.13
HMX	14.15	14.07

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	5.89	0.008	0.025	5.86 - 5.91
26DNT	6.29	0.073	0.220	6.07 - 6.51
TNT	6.97	0.014	0.041	6.93 - 7.01
3,4DNT	8.02	0.020	0.061	7.96 - 8.08
TETRYL	11.17	0.034	0.101	11.07 - 11.27
HMX	14.23	0.091	0.274	13.95 - 14.50

~~256~~
256
JB
10-25-9

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-11
Calibration Date : 06/10/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.11	5.15	5.13	5.14	5.13
DNB	5.77	5.78	5.77	5.78	5.77
24DNT	6.70	6.73	6.69	6.73	6.70
4ADNT	7.44	7.42	7.40	7.45	7.42
2ADNT	8.03	8.07	8.04	8.08	8.04
RDX	9.36	9.27	9.25	9.28	9.25

COMPONENT NAME	RT Cont CA1	RT Cont CA2
NB	5.13	5.12
DNB	5.76	5.75
24DNT	6.70	6.68
4ADNT	7.41	7.37
2ADNT	8.02	7.99
RDX	9.21	9.17

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.13	0.013	0.040	5.09 - 5.17
DNB	5.77	0.011	0.034	5.73 - 5.80
24DNT	6.71	0.020	0.059	6.65 - 6.76
4ADNT	7.41	0.027	0.080	7.33 - 7.49
2ADNT	8.04	0.031	0.094	7.94 - 8.13
RDX	9.26	0.060	0.181	9.08 - 9.44

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

B10-28

Project No.: 4324-0009-007-35

Project Name: NSWC Crane Bio Facility

Samplers: (Signature)

Sampler: (Print) Mike Maddox

Analysis Required: 8330 EXPL

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	8330 EXPL	Remarks
compost	A1	5/27/98	0802	B10N30%30A1		X	X	30%
	A2		0808	B10N30%30A2				Day 30
	A3		0812	B10N30%30A3				
	B1		0818	B10N30%30B1				
	B2		0822	B10N30%30B2				
	B3		0828	B10N30%30B3				
	C1		0834	B10N30%30C1				
	C2		0841	B10N30%30C2				
	C2		0841	B10N30%30C2FD				
	C3		0825	B10N30%30C3				
	D1		0828	B10N30%30D1				
	D2		0831	B10N30%30D2				
	D3		0835	B10N30%30D3				
liquid	Field blank		0900	BO-FB-052798				

South West Labs

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
[signature]	5/27/98 1500				
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company: S. Hedden	Date/Time 5/28/98 9:50	Total No. Samples This Shipping Container / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

Seal # (2341, 2342)

5.4.

APPENDIX P
RAW DATA FOR LABORATORY ANALYSIS DAY 40

TABLE OF CONTENTS

DESCRIPTION	PAGE
Laboratory Quality Control Data Summary	8 pages
Analytical Raw Data and Chromatograms	60 pages
Analytical Run Logbook and Calibration for Instrument IN12 on 6/14/98 (soil analysis)	7 pages
Analytical Run Logbook and Calibration for Instrument IN13 on 6/19/98 (soil analysis)	4 pages
Analytical Run Logbook and Calibration for Instrument LC4 on 6/15/98 (soil analysis)	6 pages
Analytical Run Logbook and Calibration for Instrument IN12 on 6/12/98 (water analysis)	4 pages
Analytical Run Logbook and Calibration for Instrument LC4 on 6/12/98 (water analysis)	4 pages
Analytical Run Logbook and Calibration for Instrument IN10 on 6/20/98 (soil analysis)	6 pages
Analytical Run Logbook and Calibration for Instrument IN10 on 6/21/98 (soil analysis)	6 pages
Analytical Run Logbook and Calibration for Instrument IN10 on 6/29/98 (soil analysis)	3 pages
Chain of Custody Record	1 page

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Code: SWOK Case No: MKF-OH SDG No:34301

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-40-A1	104	0
2	BIO-N-30%-40-A1FD	103	0
3	BIO-N-3%-40-A2	101	0
4	BIO-N-30%-40-A3	103	0
5	BIO-N-30%-40-B1	98.0	0
6	BIO-N-30%-40-B2	99.8	0
7	BIO-N-30%-40-B3	105	0
8	BIO-N-30%-40-C1	105	0
9	BIO-N-30%-40-C1	95.8	0
10	BIO-N-30%-40-C1	90.0	0
11	BIO-N-30%-40-C2	89.9	0
12	BIO-N-30%-40-C2 5X	71.2D	0
13	BIO-N-30%-40-C3	92.5	0
14	BIO-N-30%-40-D1	92.9	0
15	BIO-N-30%-40-D2	92.0	0
16	BIO-N-30%-40-D2FD	89.9	0
17	BIO-N-30%-40-D3	88.8	0
18	BIO-RB-060698	108	0
19	BL0609SE	101	0
20	BL0612WF	108	0
21	LC0609SE	114	0
22	LC0612WF	112	0
23	LD0609SE	116	0
24	LD0612WF	104	0
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

page _ 1

FORM II

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

L Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Client Sample No: BIO-N-30%-40-C1

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500		8040	85	54-128
RDX	9500	1480	8840	78	66-109
TNB	9500		8050	85	57-130
DNB	9500		8760	92	74-122
TETRYL	9500		171	2*	32-119
NB	9500		8080	85	70-135
TNT	9500	219	7100	72	44-124
4ADNT	9500		8380	88	60-140
2ADNT	9500		8500	90	60-140
26DNT	9500		8280	87	58-125
24DNT	9500		9340	98	59-120
2NT	9500		9280	98	79-124
4NT	9500		8590	90	74-128
3NT	9500		7930	84	79-121

No of Analyte recoveries out of QC Advisory Limits = 1

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	9080	96	12	30	54-128
RDX	9500	18800	182*	81*	30	66-109
TNB	9500	7950	84	1	30	57-130
DNB	9500	8400	88	4	45	74-122
TETRYL	9500	1270	13*	153*	30	32-119
NB	9500	7840	83	3	35	70-135
TNT	9500	13700	142*	65*	30	44-124
4ADNT	9500	7920	83	6	40	60-140
2ADNT	9500	8290	87	2	40	60-140
26DNT	9500	7920	83	4	35	58-125
24DNT	9500	8910	94	5	35	59-120
2NT	9500	8960	94	4	35	79-124
4NT	9500	8290	87	3	35	74-128
3NT	9500	7560	80	5	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 1
No of RPD's out of QC Limits 3

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Client Sample No: BIO-N-30%-40-C1

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000		2840	95	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	REC.
PETN	3000	2890	96	2	30	70-130

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

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

L Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Client Sample No: LC0609SE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		9020	95	57-137
RDX	9500		8920	94	77-113
TNB	9500		9250	97	64-125
DNB	9500		8970	94	82-118
TETRYL	9500		8510	90	23-124
NB	9500		9150	96	69-143
TNT	9500		7710	81	75-118
4ADNT	9500		8920	94	60-140
2ADNT	9500		9040	95	60-140
26DNT	9500		8560	90	78-117
24DNT	9500		9860	104	74-126
2NT	9500		9510	100	78-123
4NT	9500		9000	95	79-125
3NT	9500		8240	87	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:34301

Client Sample No: LC0609SF

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		3040	101	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

I . Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Client Sample No: LC0612WF

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
HMX	400		366	92	46-151
RDX	150		128	85	72-129
TNB	225		207	92	74-118
DNB	125		128	102	79-132
TETRYL	413		512	124*	58-120
NB	213		223	105	68-135
TNT	188		193	103	61-145
4ADNT	313		325	104	60-140
2ADNT	313		315	101	60-140
26DNT	288		284	99	77-125
24DNT	175		164	94	70-134
2NT	363		339	93	73-131
4NT	250		283	113	73-116
3NT	238		266	112	71- 127

No of Analyte recoveries out of QC Advisory Limits = 1

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Client Sample No: LC0612WG

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
PETN	1200		1210	101	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

L Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Client Sample No: LD0609SE

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		8740	92	57-137
RDX	9500		8740	92	77-113
TNB	9500		8960	94	64-125
DNB	9500		8750	92	82-118
TETRYL	9500		6770	71	23-124
NB	9500		9050	95	69-143
TNT	9500		7400	78	75-118
4ADNT	9500		9030	95	60-140
2ADNT	9500		8830	93	60-140
26DNT	9500		8440	89	78-117
24DNT	9500		9620	101	74-126
2NT	9500		9270	98	78-123
4NT	9500		8790	93	79-125
3NT	9500		8090	85	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:34301

Client Sample No: LD0609SF

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		2990	100	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

L Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Client Sample No: LD0612WF

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
HMX	400		320	80	46-151
RDX	150		118	79	72-129
TNB	225		187	83	74-118
DNB	125		117	94	79-132
TETRYL	413		452	109	58-120
NB	213		197	93	68-135
TNT	188		172	92	61-145
4ADNT	313		290	93	60-140
2ADNT	313		284	91	60-140
26DNT	288		260	90	77-125
24DNT	175		149	85	70-134
2NT	363		305	84	73-131
4NT	250		253	101	73-116
3NT	238		246	103	71- 127

No of Analyte recoveries out of QC Advisory Limits = 0

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Client Sample No: LD0612WG

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
PETN	1200		1270	106	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

Lab Name: SWL-TULSA Contract:

I . Sample ID: BL0609SE

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Matrix: (soil/water) Soil

Date Extracted: 06/09/98 Extn. Method: SONC

Date Analyzed (1): 06/15/98 Date Analyzed(2): 06/21/98

Time Analyzed (1): 02:36:10 Time Analyzed(2): 05:27:44

Instrument ID (1): IN12 Instrument ID(2): IN10

LC Column ID (1): CARB-07 LC Column ID (2): LC-CN-11

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

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0609SE	LC0609SE	06/15/98	
2	LD0609SE	LD0609SE	06/15/98	
3	BIO-N-30%-40-A1	34301.01	06/15/98	06/22/98
4	BIO-N-30%-40-A1FD	34301.02	06/15/98	
	BIO-N-3%-40-A2	34301.03	06/15/98	06/22/98
6	BIO-N-30%-40-A3	34301.04	06/16/98	06/22/98
7	BIO-N-30%-40-B1	34301.05	06/16/98	
8	BIO-N-30%-40-B2	34301.06	06/16/98	06/22/98
9	BIO-N-30%-40-B3	34301.07	06/16/98	
10	BIO-N-30%-40-C1	34301.08	06/16/98	06/22/98
11	BIO-N-30%-40-C1	34301.09MS	06/16/98	
12	BIO-N-30%-40-C1	34301.10MSD	06/16/98	
13	BIO-N-30%-40-C2	34301.11	06/16/98	06/22/98
14	BIO-N-30%-40-C3	34301.12	06/16/98	
15	BIO-N-30%-40-D1	34301.13	06/16/98	06/22/98
16	BIO-N-30%-40-D2	34301.14	06/16/98	06/22/98
17	BIO-N-30%-40-D2FD	34301.15	06/16/98	06/22/98
18	BIO-N-30%-40-D3	34301.16	06/16/98	06/30/98
19	BIO-N-30%-40-C2 5X	34301.11DL	06/20/98	06/22/98
20				
21				
22				
23				
24				
25				

FORM IV

4C

Lab Name: SWL-TULSA Contract:

Sample ID: BL0609SF

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Matrix: (soil/water) Soil

Date Extracted: 06/09/98 Extn. Method: SONC

Date Analyzed (1): 06/15/98 Date Analyzed(2):

Time Analyzed (1): 23:10:31 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	LC0609SF	LC0609SF	06/16/98	
2	LD0609SF	LD0609SF	06/16/98	
3	BIO-N-30%-40-A1	34301.01	06/16/98	
4	BIO-N-30%-40-A1FD	34301.02	06/16/98	
	BIO-N-30%-40-A2	34301.03	06/16/98	
	BIO-N-30%-40-A3	34301.04	06/16/98	
7	BIO-N-30%-40-B1	34301.05	06/16/98	
8	BIO-N-30%-40-B2	34301.06	06/16/98	
9	BIO-N-30%-40-B3	34301.07	06/16/98	
10	BIO-N-30%-40-C1	34301.08	06/16/98	
11	BIO-N-30%-40-C1	34301.09MS	06/16/98	
12	BIO-N-30%-40-C1	34301.10MSD	06/16/98	
13	BIO-N-30%-40-C2	34301.11	06/16/98	
14	BIO-N-30%-40-C3	34301.12	06/16/98	
15	BIO-N-30%-40-D1	34301.13	06/16/98	
16	BIO-N-30%-40-D2	34301.14	06/16/98	
17	BIO-N-30%-40-D2FD	34301.15	06/16/98	
18	BIO-N-30%-40-D3	34301.16	06/16/98	
19				
20				
21				
22				
23				
24				
25				

FORM IV

Lab Name: SWL-TULSA Contract:

L· Sample ID: BL0612WF

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 06/13/98 Date Analyzed(2):

Time Analyzed (1): 01:37:26 Time Analyzed(2):

Instrument ID (1): IN12 Instrument ID(2):

LC Column ID (1): CARB-07 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	BIO-RB-060698	34301.17	06/12/98	
2	LC0612WF	LC0612WF	06/13/98	
3	LD0612WF	LD0612WF	06/13/98	
4				
7				
8				
9				
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page 1

FORM IV

4C

Lab Name: SWL-TULSA Contract:

I Sample ID: BL0612WG

Lab Code: SWOK Case No: MKF-OH SDG No:34301

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 06/12/98 Date Analyzed(2):

Time Analyzed (1): 22:03:50 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	LC0612WG	LC0612WG	06/12/98	
2	LD0612WG	LD0612WG	06/12/98	
3	BIO-RB-060698	34301.17	06/12/98	
4				
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FORM IV

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.01

Sample Amt: 2g % Moisture 19.08 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/15/98

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	1420	
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	164	JP
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

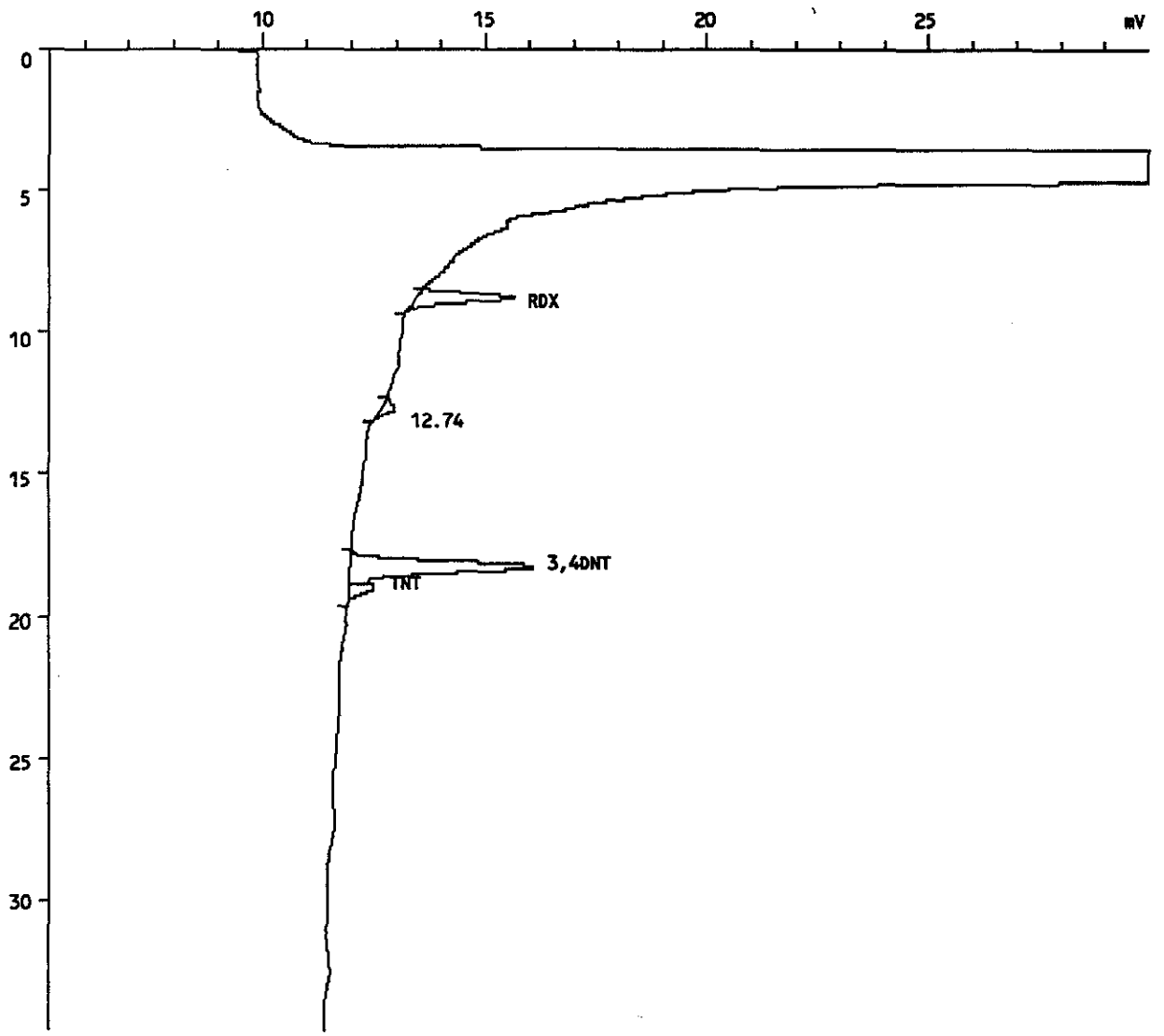
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613A,22,1

Sample name.....: BIO-N-30%-40-A1
Sample ID.....: 34301.01
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 15-Jun-98 at 05:34:42
Reported on 26-Jun-98 at 21:20:25



INJECTION REPORT

Injection F: <MC3> 2 2EX0613A,22,1

Acquired on 15-Jun-98 at 05:34:42
Modified on 26-Jun-82 at 20:55:18
Reported on 26-Jun-98 at 20:55:18

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 43
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 20:45:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-A1
Sample ID.....: 34301.01
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

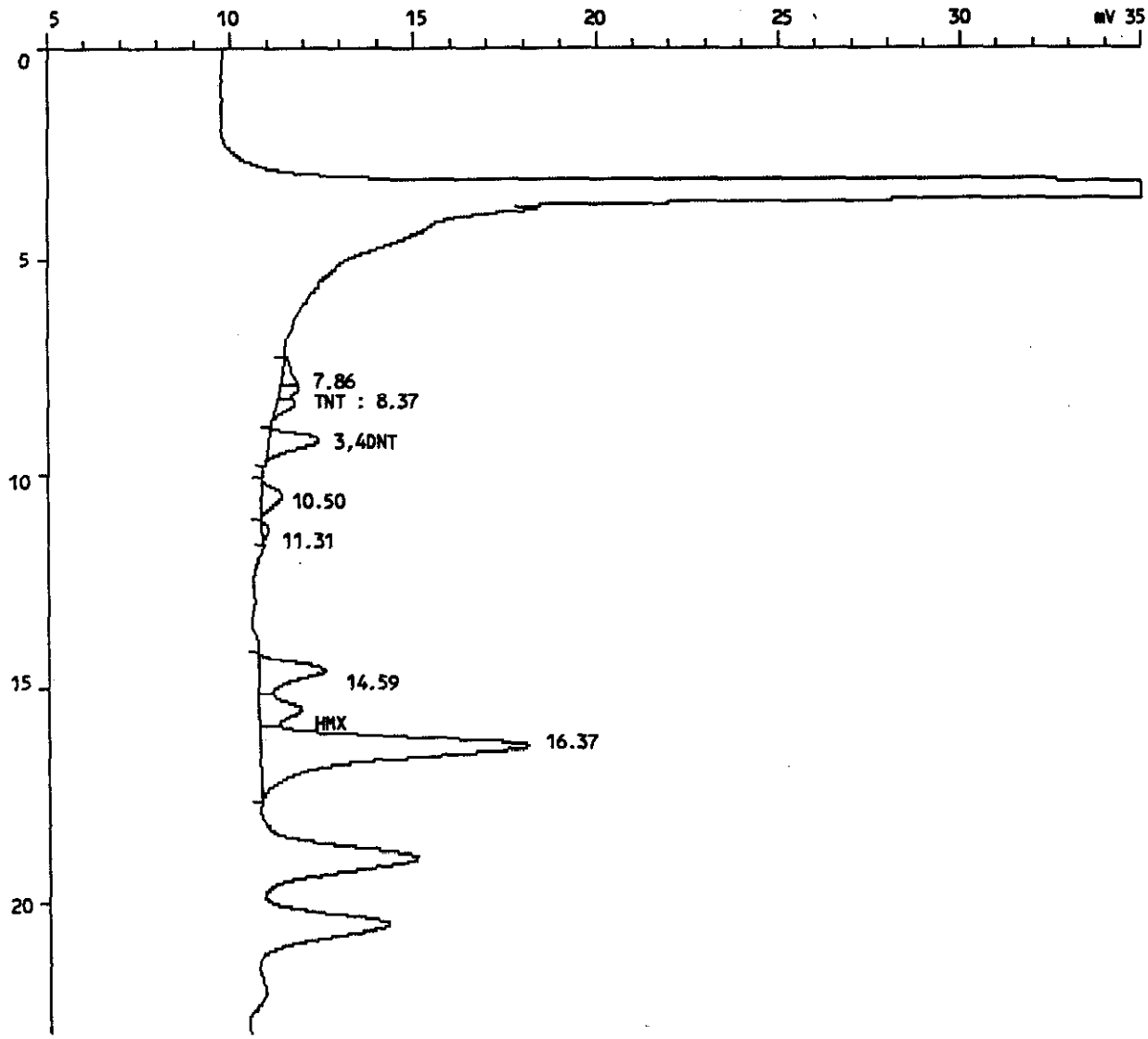
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.816	2218	48390	1420.736	RDX *
3	18.213	4136	115389	2091.141	3,4DNT 104%
4	18.965	587	15530	163.921	TNT *JP
Total		6941	179309	3675.798	
Residual		322	8541	250.760	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,1,1

Sample name.....: BIO-N-30%-40-A1
Sample ID.....: 34301.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 00:00:46
Reported on 26-Jun-98 at 15:14:15



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,1,1

Acquired on 22-Jun-98 at 00:00:46
Modified on 26-Jun-82 at 15:13:32
Reported on 26-Jun-98 at 15:13:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621A Last modified on 23-Jun-82 at 18:19:40
Method file.....: LCCN Last modified on 26-Jun-82 at 09:20:14
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-A1
Sample ID.....: 34301.01
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

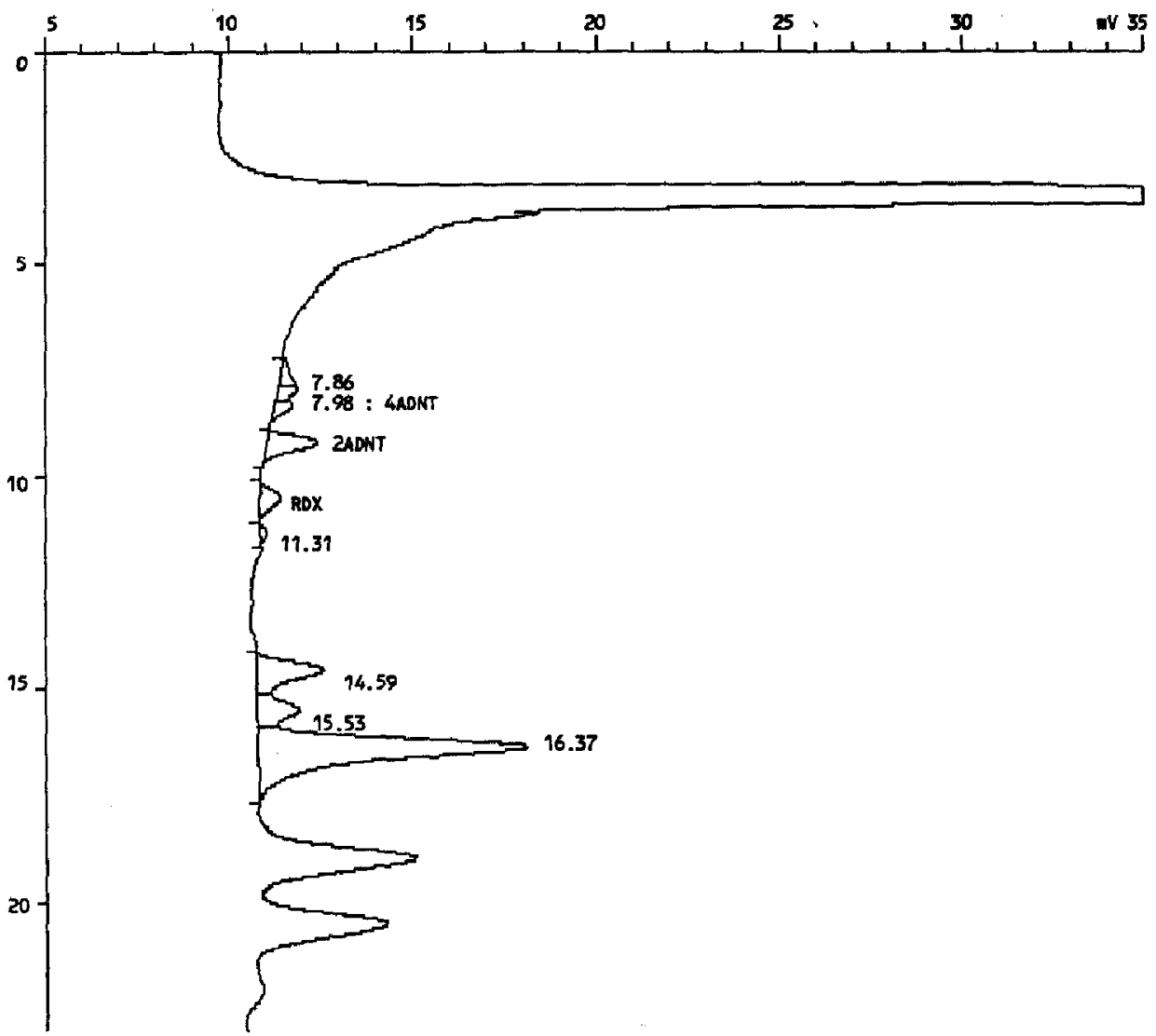
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.979	566	9927	386.560	TNT
4	9.200	1382	31525	1955.625	3,4DNT
8	15.531	1156	35329	3093.596	HMX
Total		3104	76780	5435.781	
Residual		10911	354079	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,1,1

Sample name.....: BIO-N-30%-40-A1
Sample ID.....: 34301.01
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 00:00:46
Reported on 26-Jun-98 at 15:22:05



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,1,1

Acquired on 22-Jun-98 at 00:00:46
Modified on 26-Jun-82 at 15:21:34
Reported on 26-Jun-98 at 15:21:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621B Last modified on 23-Jun-82 at 19:08:00
Method file.....: LCCN Last modified on 26-Jun-82 at 15:14:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-A1
Sample ID.....: 34301.01
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	8.368	543	11393	658.960	4ADNT
4	9.200	1382	31525	1238.204	2ADNT
5	10.501	574	16900	1168.772	RDX
Total		2499	59819	3065.936	
Residual		11516	371041	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-A1

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.01

Sample Amt: 2g % Moisture 19.08 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

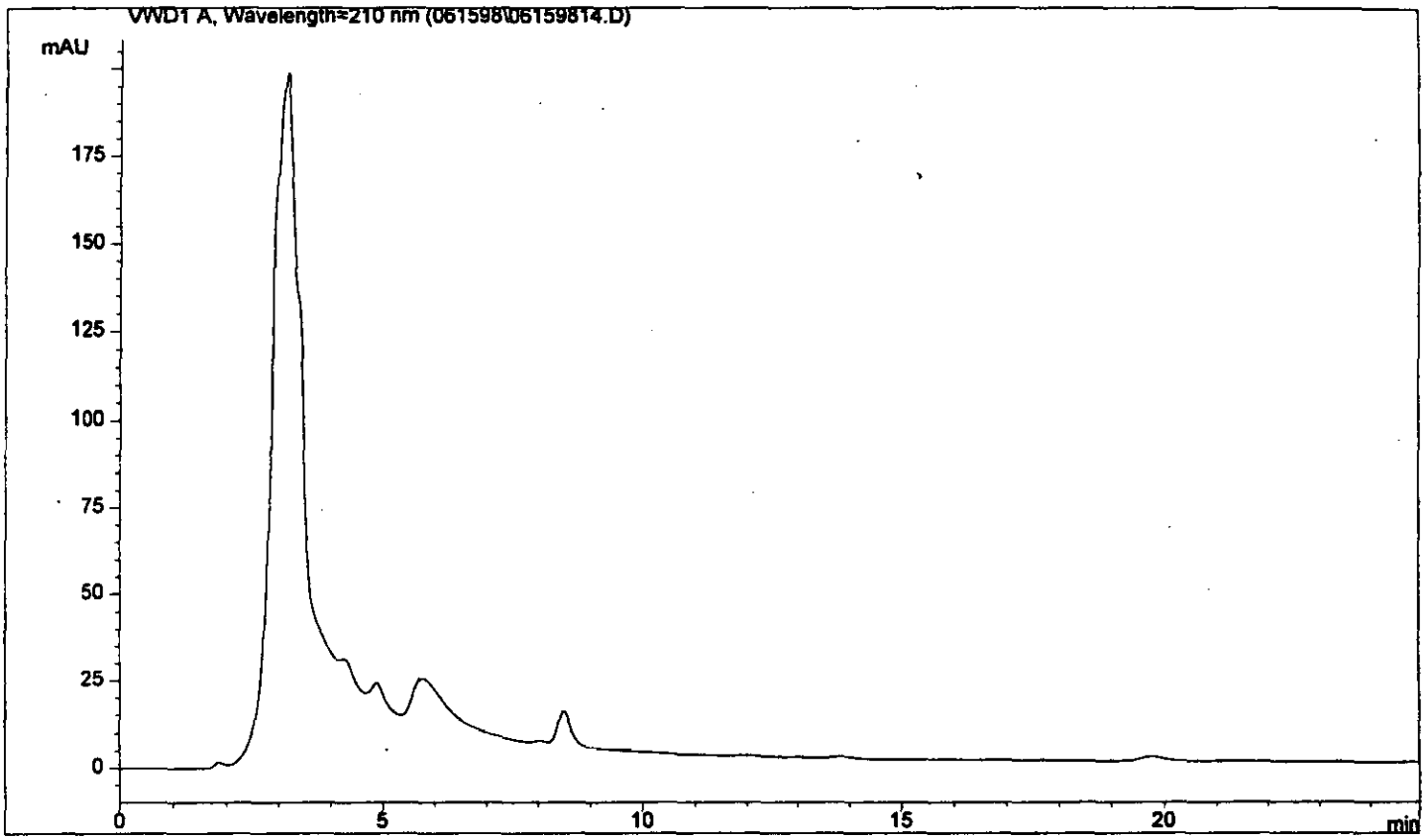
FORM I

Sample Name : 34301.01
Acq Operator : SS

Vial No. : 14
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-A1
FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.02

Sample Amt: 2g % Moisture 19.33 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/15/98

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

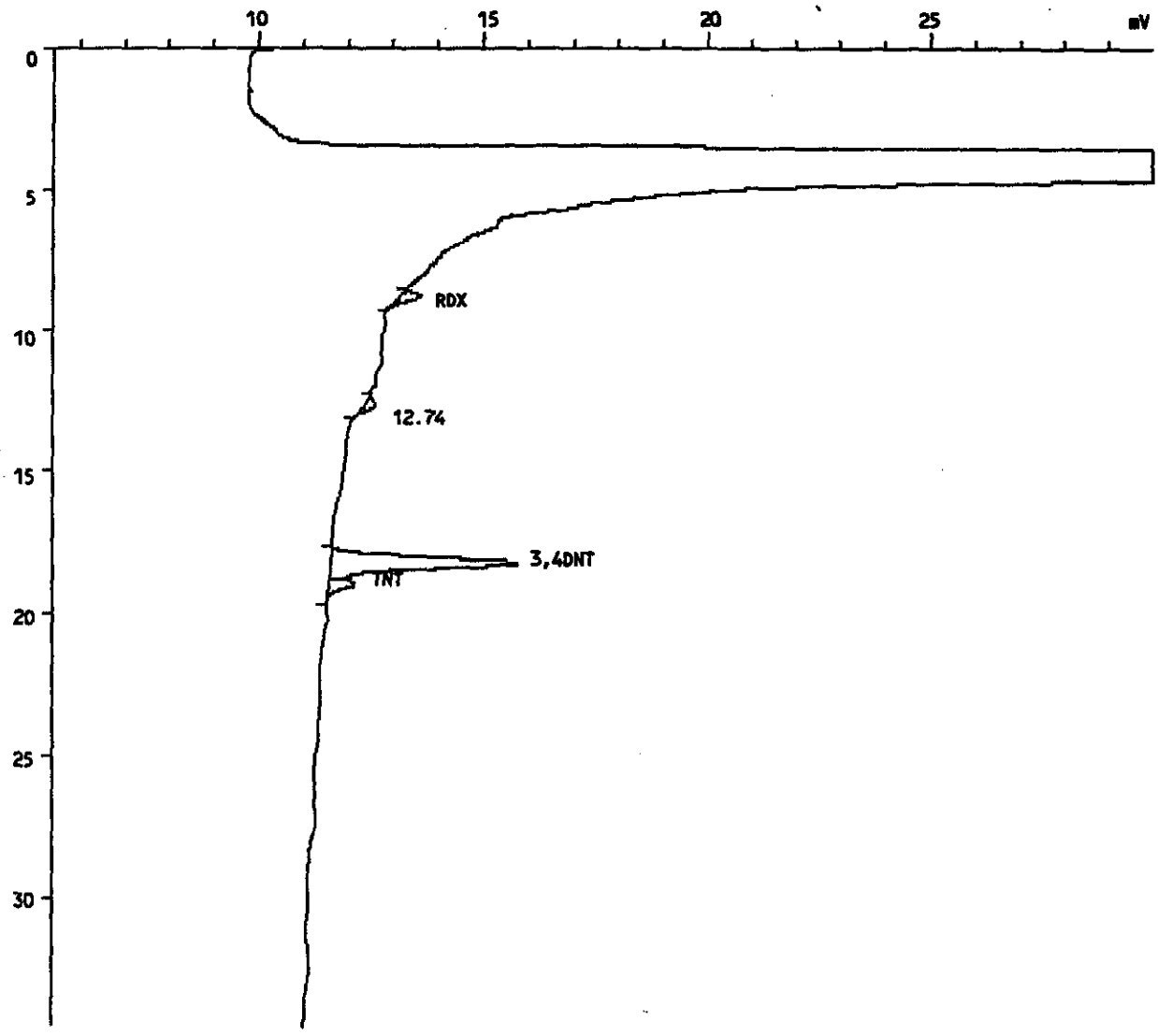
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613A,23,1

Sample name.....: BIO-N-30%-40-A1FD
Sample ID.....: 34301.02
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 15-Jun-98 at 06:19:20
Reported on 26-Jun-98 at 21:15:58



INJECTION REPORT

Injection F: <MC3> 2 2EX0613A,23,1

Acquired on 15-Jun-98 at 06:19:20
Modified on 26-Jun-82 at 20:55:32
Reported on 26-Jun-98 at 20:55:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 43
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 20:45:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-A1FD
Sample ID.....: 34301.02
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	8.816	529	10560	310.042	RDX
3	18.208	4166	114058	2067.021	3,4DNT 103%
4	18.955	583	15488	163.483	TNT
Total		5278	140107	2540.547	
Residual		313	8186	240.339	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

b Name: SWL-TULSA Contract:

BIO-N-30%-40-A1
FD

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.02

Sample Amt: 2g % Moisture 19.33 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

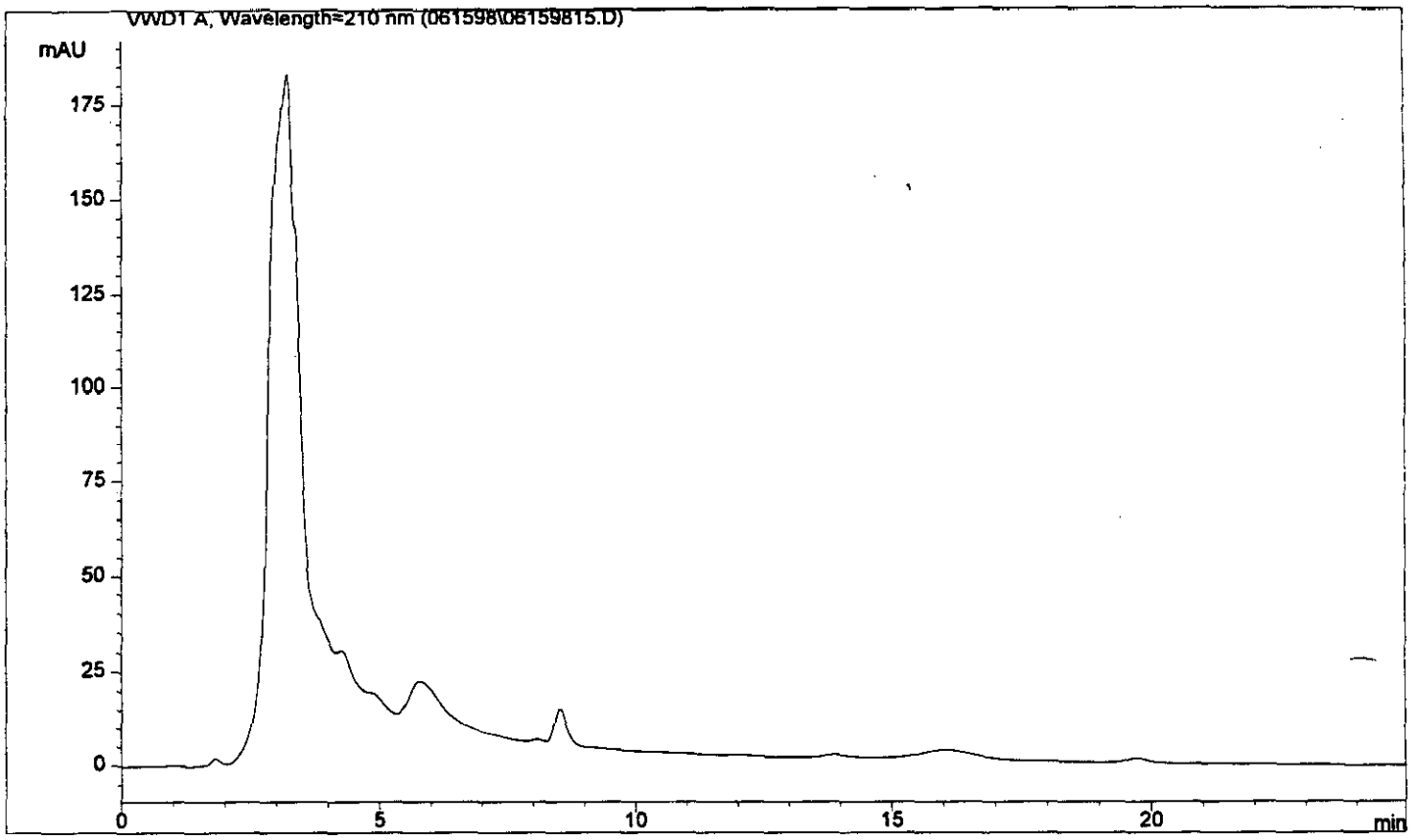
FORM I

Sample Name : 34301.02
Acq Operator : SS

Vial No. : 15
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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

Totals: 0.00000

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-3%-40-A2

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.03

Sample Amt: 2g % Moisture 17.38 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/15/98

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	392	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

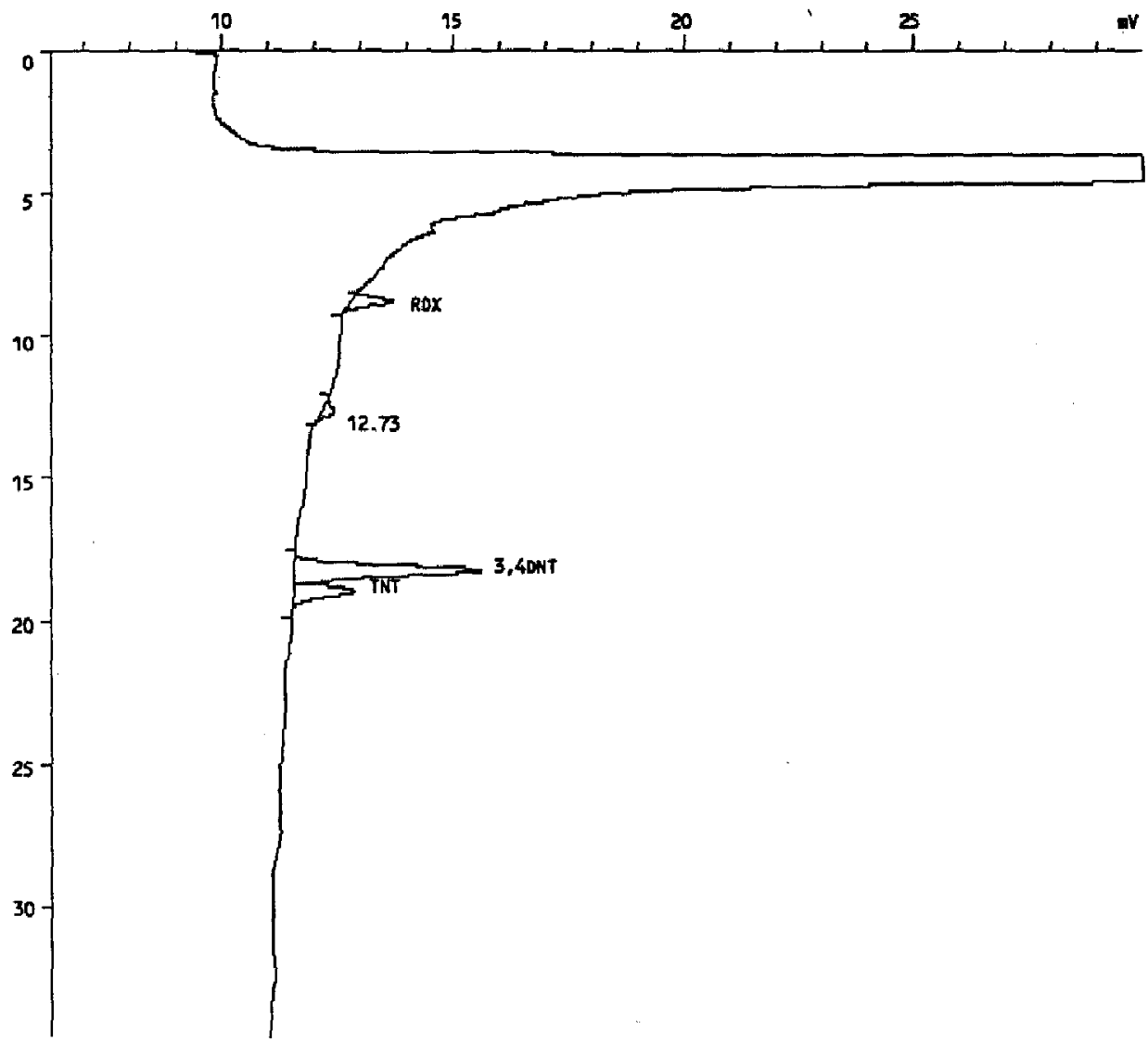
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613A,24,1

Sample name.....: BIO-N-3%-40-A2
Sample ID.....: 34301.03
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 15-Jun-98 at 07:03:58
Reported on 26-Jun-98 at 21:19:34



INJECTION REPORT

Injection F: <MC3> 2 2EX0613A,24,1

Acquired on 15-Jun-98 at 07:03:58
Modified on 26-Jun-82 at 20:55:48
Reported on 26-Jun-98 at 20:55:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 43
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 20:45:22
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-3%-40-A2
Sample ID.....: 34301.03
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

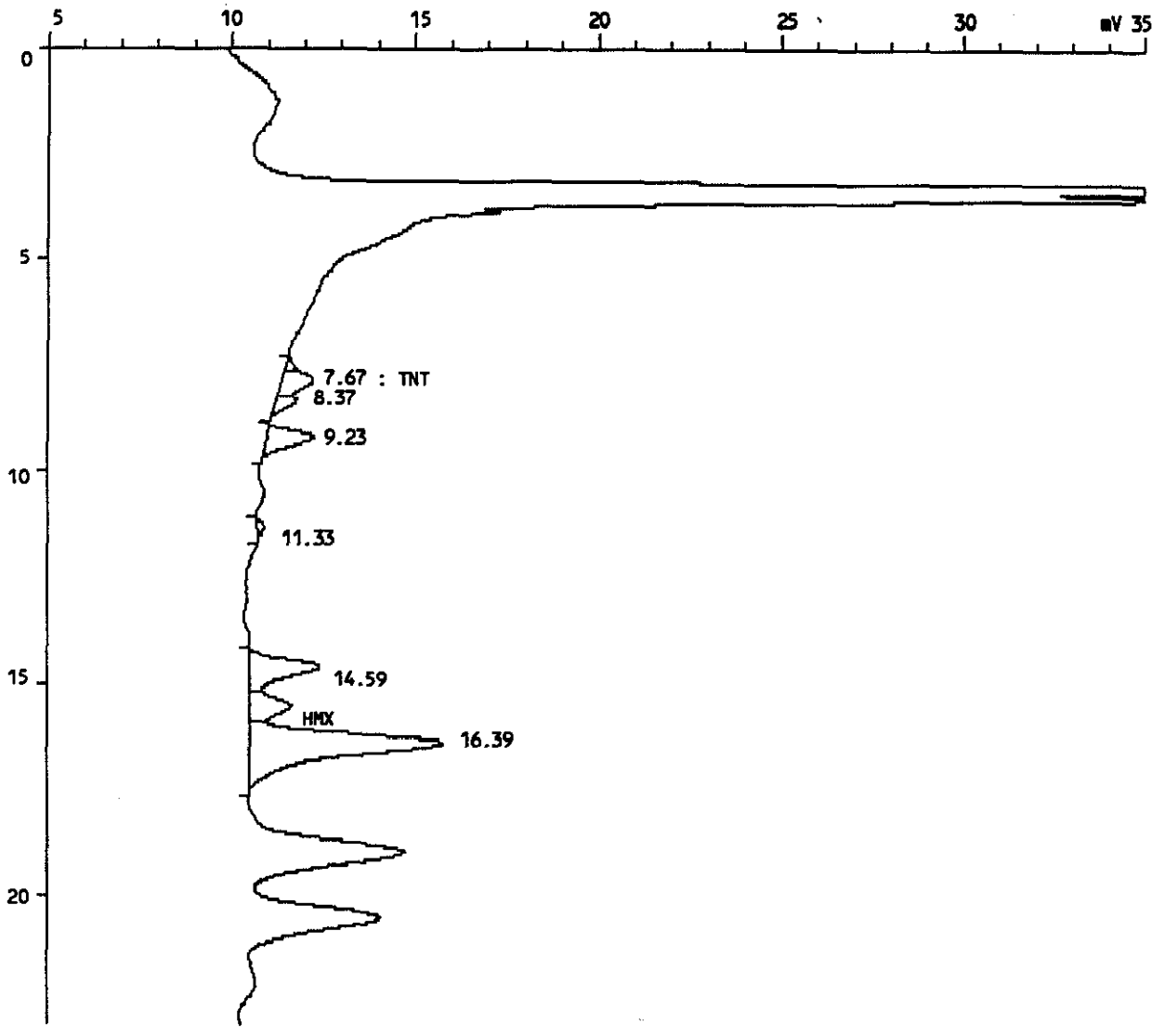
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.827	892	18493	542.966	RDX
3	18.229	4071	111894	2027.798	3,4DNT 101%
4	18.981	1334	37104	391.635	TNT * ρ
Total		6297	167491	2962.399	
Residual		291	8047	236.274	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,2,1

Sample name.....: BIO-N-3%-40-A2
Sample ID.....: 34301.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 00:45:08
Reported on 26-Jun-98 at 15:15:56



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,2,1

Acquired on 22-Jun-98 at 00:45:08
Modified on 26-Jun-82 at 15:15:16
Reported on 26-Jun-98 at 15:15:16

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621A Last modified on 23-Jun-82 at 18:19:40
Method file.....: LCCN Last modified on 26-Jun-82 at 15:14:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-3%-40-A2
Sample ID.....: 34301.03
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

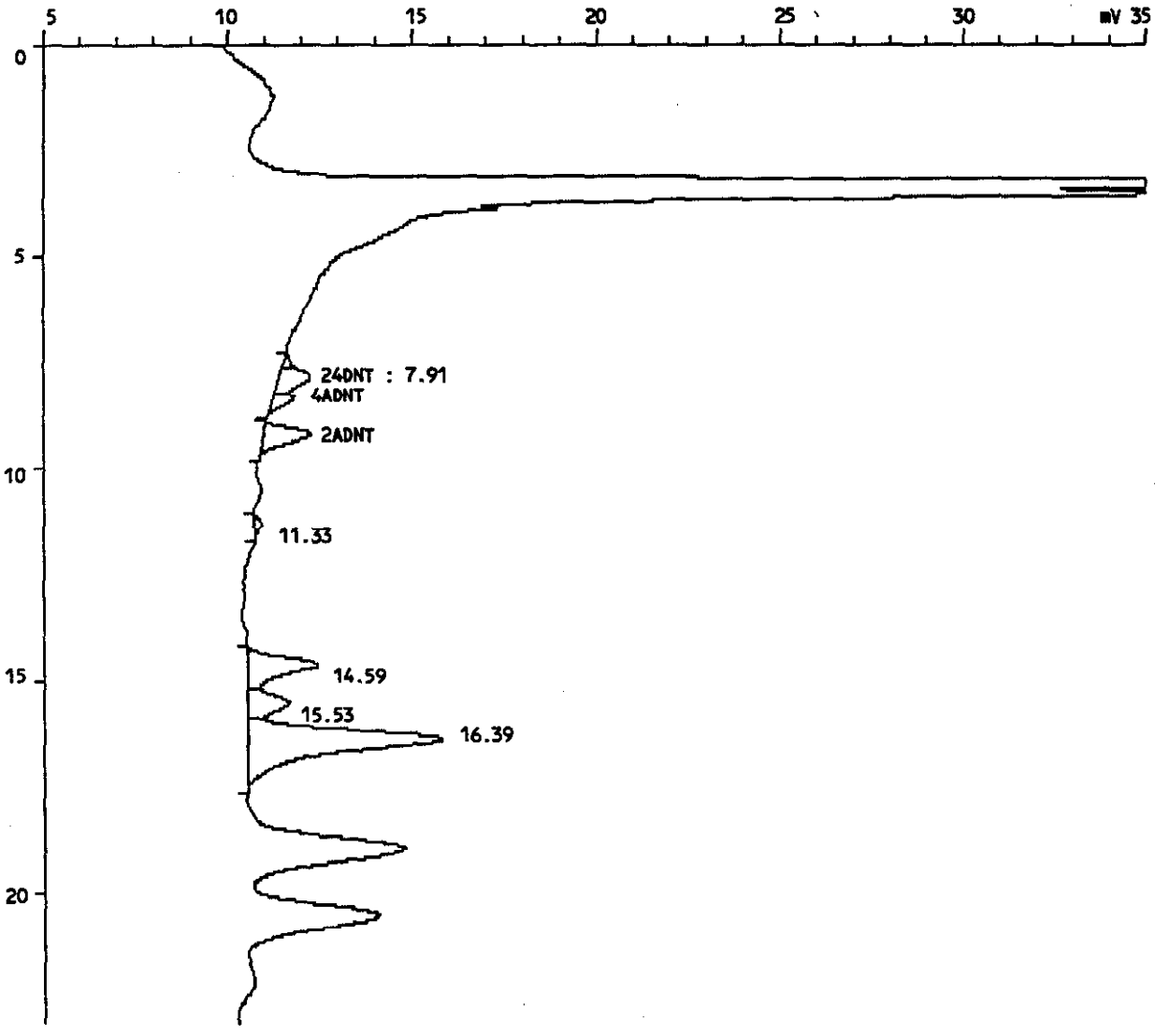
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.909	862	22351	870.380	TNT
7	15.525	1148	34888	3054.976	HMX
Total		2010	57239	3925.355	
Residual		9694	299596	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,2,1

Sample name.....: BIO-N-3%-40-A2
Sample ID.....: 34301.03
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 00:45:08
Reported on 26-Jun-98 at 15:23:13



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,2,1

Acquired on 22-Jun-98 at 00:45:08
Modified on 26-Jun-82 at 15:22:46
Reported on 26-Jun-98 at 15:22:45

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621B Last modified on 23-Jun-82 at 19:08:00
Method file.....: LCCN Last modified on 26-Jun-82 at 15:14:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-3%-40-A2
Sample ID.....: 34301.03
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
1	7.669	368	3812	121.509	24DNT
3	8.373	568	12115	700.717	4ADNT
4	9.232	1295	30365	1192.652	2ADNT
Total		2232	46292	2014.878	
Residual		9473	310543	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

b Name: SWL-TULSA Contract:

BIO-N-30%-40-A2

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.03

Sample Amt: 2g % Moisture 17.38 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

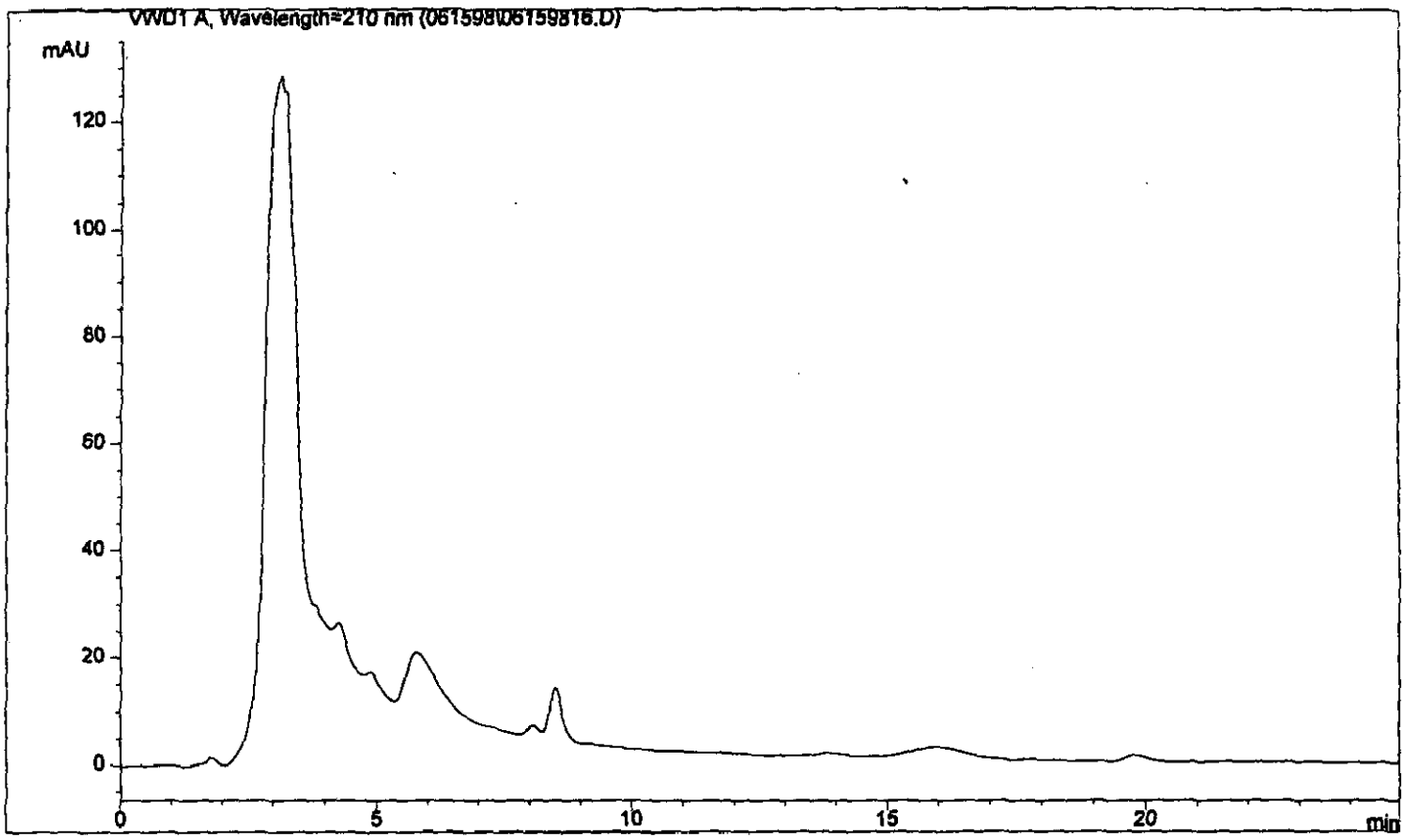
FORM I

Sample Name : 34301.03
Acq Operator : SS

Vial No. : 16
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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

Totals: 0.00000

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

b Name: SWL-TULSA Contract:

BIO-N-30%-40-A3

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.04

Sample Amt: 2g % Moisture 18.23 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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	836	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

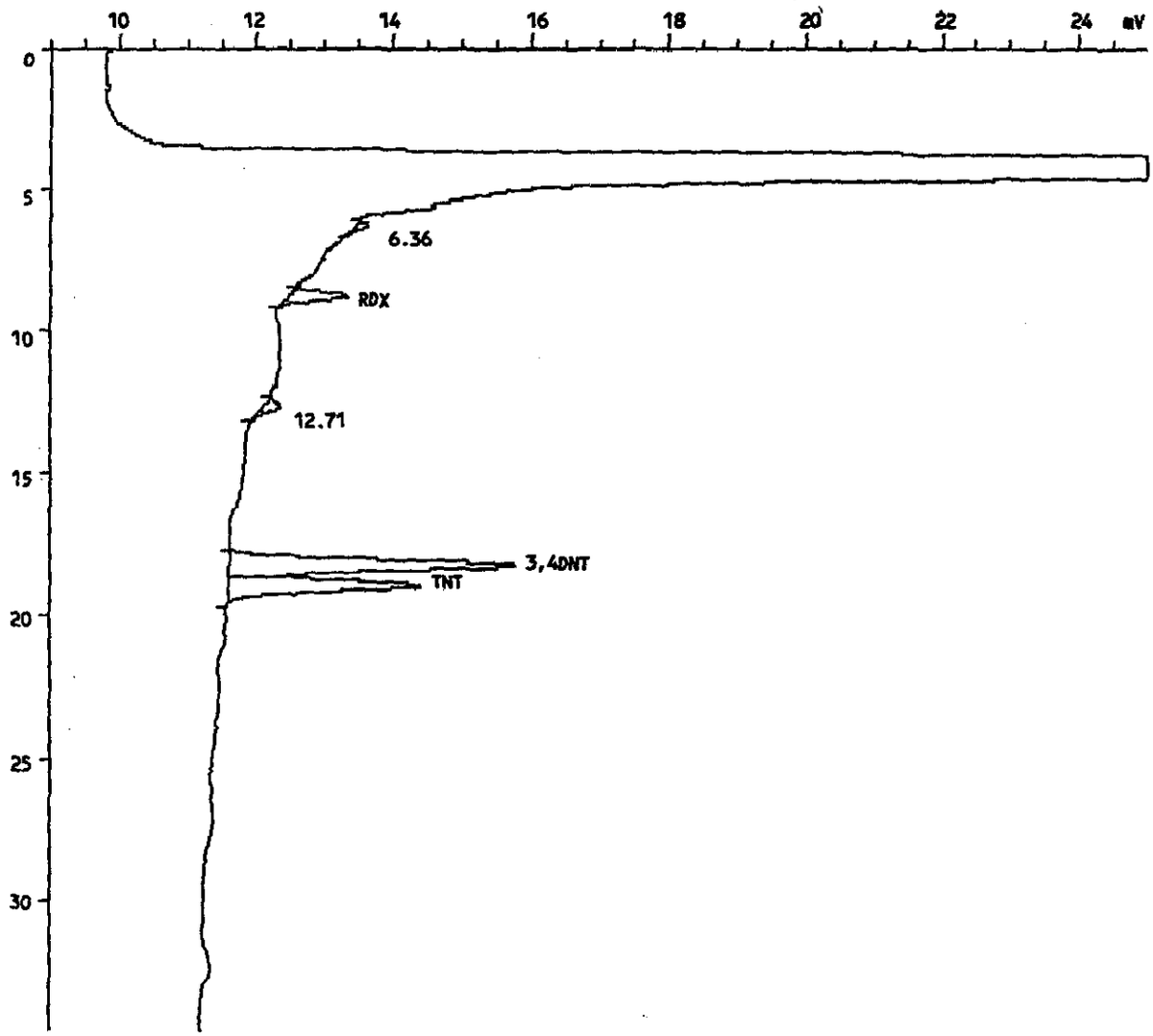
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,1,1

Sample name.....: BIO-N-30%-40-A3
Sample ID.....: 34301.04
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 03:16:48
Reported on 26-Jun-98 at 21:37:48



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,1,1

Acquired on 16-Jun-98 at 03:16:48
Modified on 26-Jun-82 at 21:29:12
Reported on 26-Jun-98 at 21:29:12

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 21:25:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-A3
Sample ID.....: 34301.04
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

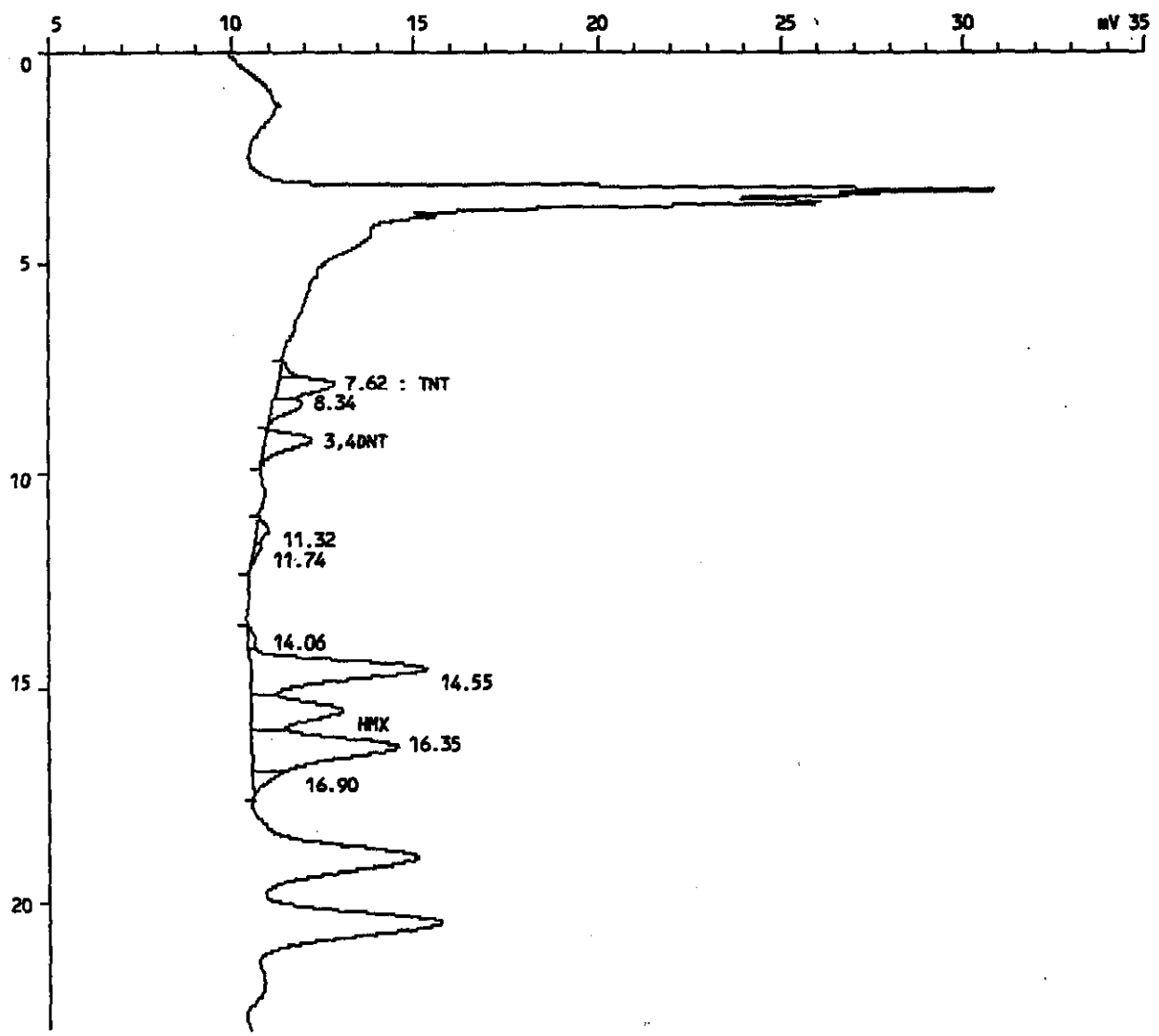
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.821	870	18178	533.708	RDX
4	18.208	4155	113292	2053.140	3,4DNT 102%
5	18.965	2805	79255	836.548	TNT * P
Total		7830	210725	3423.396	
Residual		471	10557	309.942	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,3,1

Sample name.....: BIO-N-30%-40-A3
Sample ID.....: 34301.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 01:29:30
Reported on 26-Jun-98 at 15:18:29



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,3,1

Acquired on 22-Jun-98 at 01:29:30
Modified on 26-Jun-82 at 15:16:46
Reported on 26-Jun-98 at 15:18:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621A Last modified on 23-Jun-82 at 18:19:40
Method file.....: LCCN Last modified on 26-Jun-82 at 15:14:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-A3
Sample ID.....: 34301.04
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

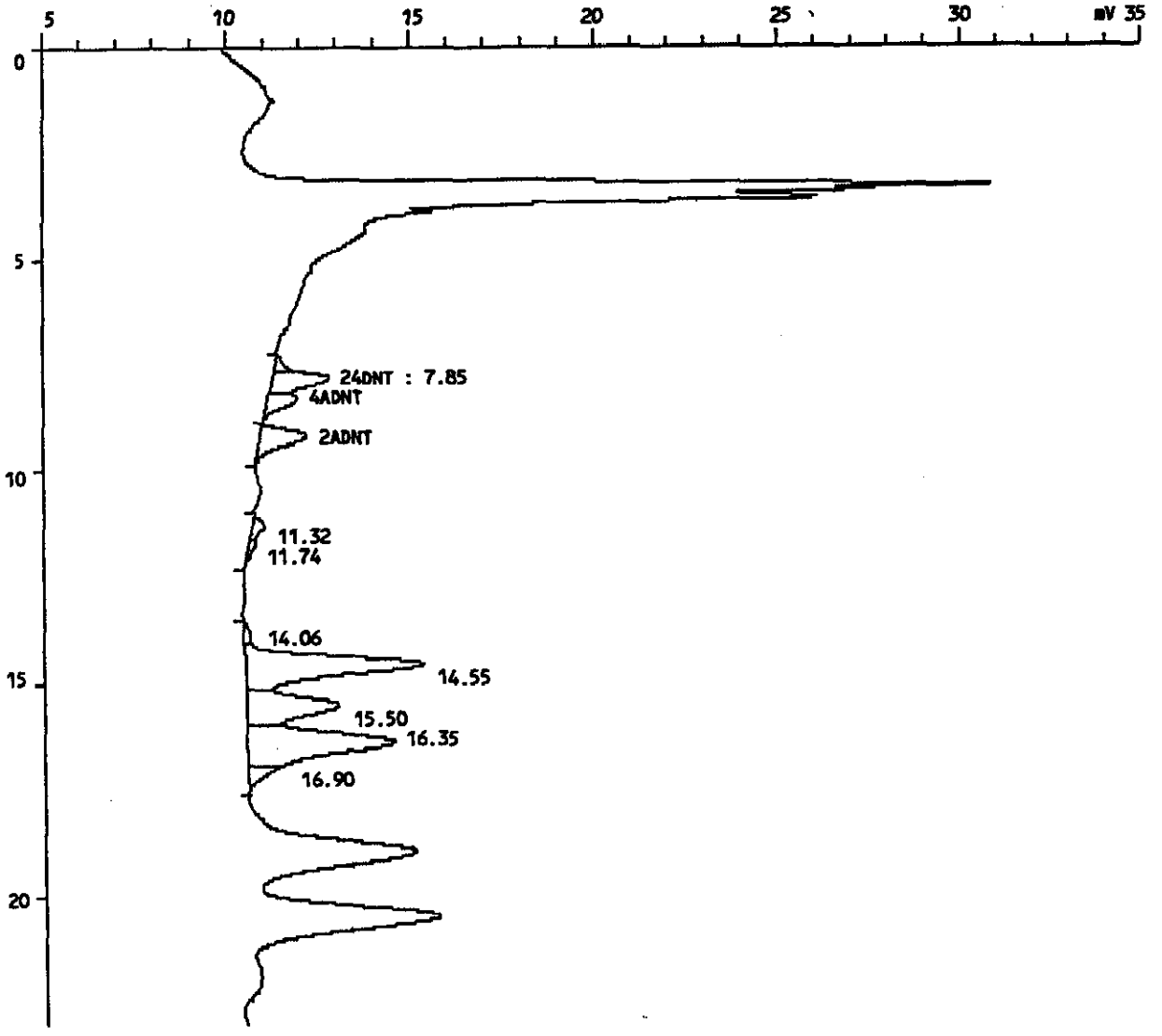
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.851	1561	37462	1458.790	TNT
4	9.205	1272	31921	1980.186	3,4DNT
9	15.504	2555	80785	7074.014	HMX
Total		5388	150168	10512.990	
Residual		11895	345543	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,3,1

Sample name.....: BIO-N-30%-40-A3
Sample ID.....: 34301.04
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 01:29:30
Reported on 26-Jun-98 at 15:24:23



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,3,1

Acquired on 22-Jun-98 at 01:29:30
Modified on 26-Jun-82 at 15:23:52
Reported on 26-Jun-98 at 15:23:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621B Last modified on 23-Jun-82 at 19:08:00
Method file.....: LCCN Last modified on 26-Jun-82 at 15:14:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-A3
Sample ID.....: 34301.04
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	7.616	432	4411	140.616	24DNT
3	8.336	838	18800	1087.318	4ADNT
4	9.205	1272	31921	1253.755	2ADNT
Total		2542	55131	2481.689	
Residual		14741	440579	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-A3

ɔ Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.04

Sample Amt: 2g % Moisture 18.23 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

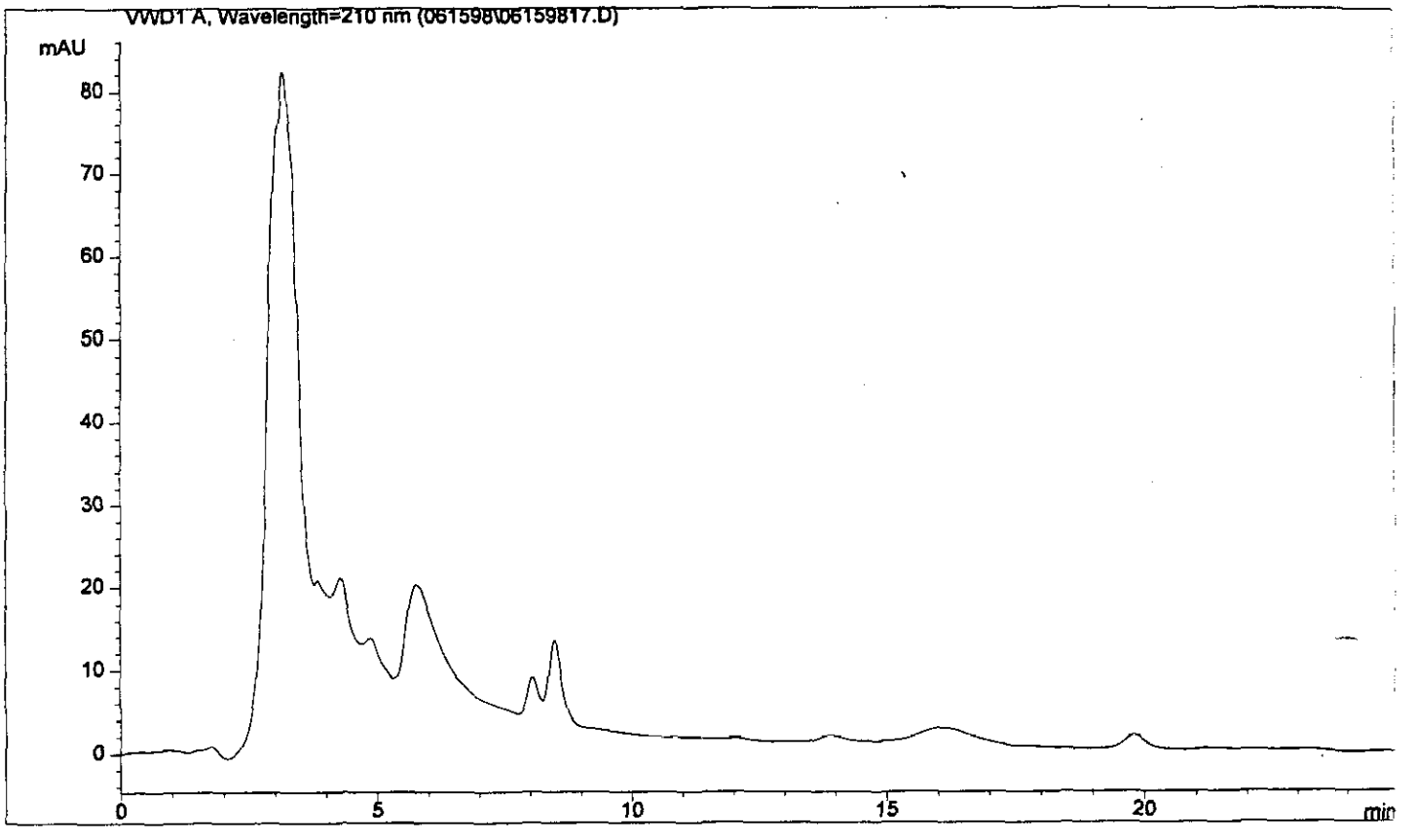
FORM I

Sample Name : 34301.04
Acq Operator : SS

Vial No. : 17
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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
Totals:				0.00000	

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-B1

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.05

Sample Amt: 2g % Moisture 18.75 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

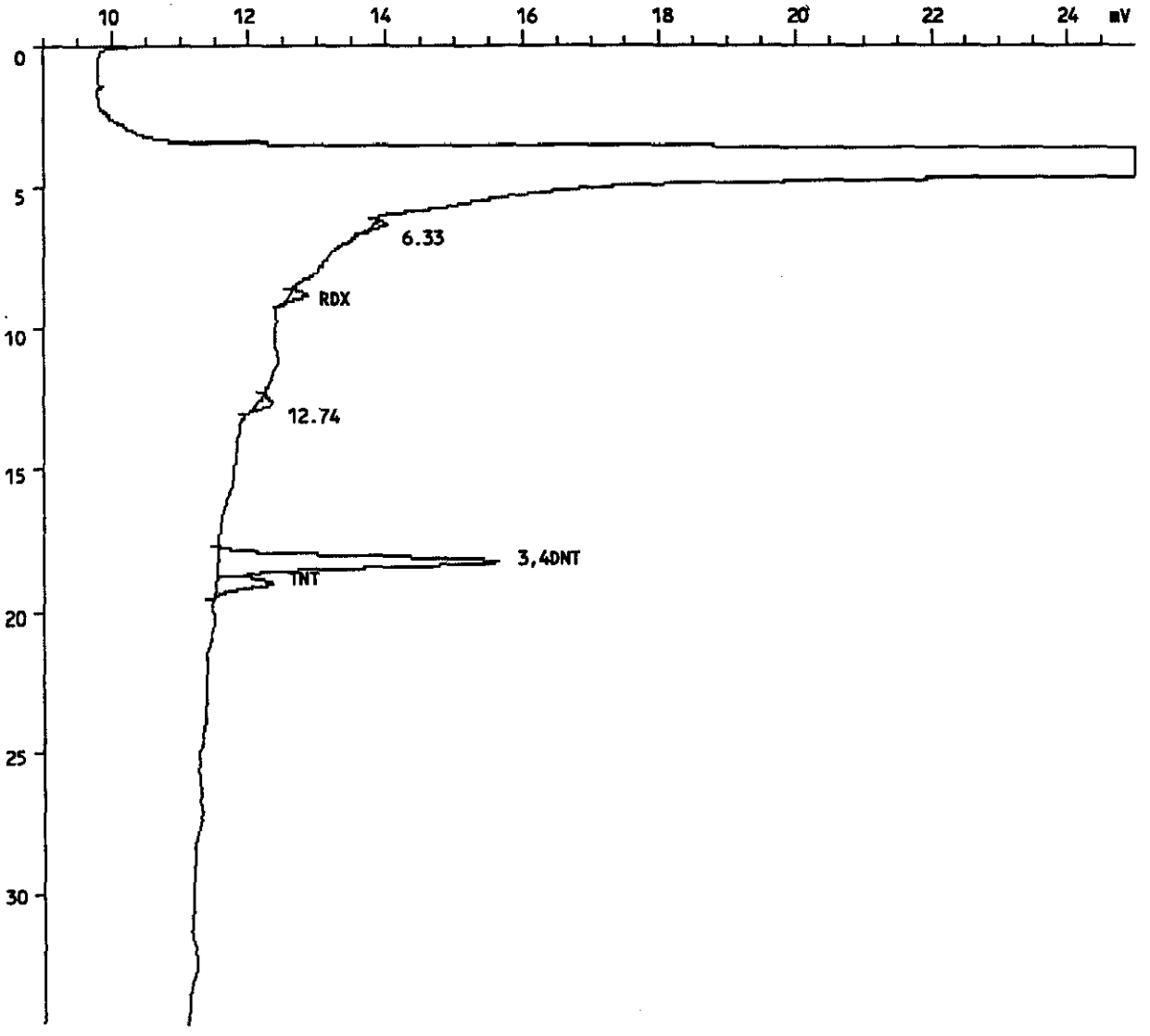
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,2,1

Sample name.....: BIO-N-30%-40-B1
Sample ID.....: 34301.05
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 04:01:26
Reported on 26-Jun-98 at 21:37:10



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,2,1

Acquired on 16-Jun-98 at 04:01:26
Modified on 26-Jun-82 at 21:29:26
Reported on 26-Jun-98 at 21:29:25

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 21:25:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-B1
Sample ID.....: 34301.05
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
2	8.848	295	4954	145.440	RDX
4	18.251	4092	108205	1960.940	3,4DNT 98%
5	18.987	814	21000	221.655	TNT
Total		5200	134158	2328.036	
Residual		455	9308	273.278	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-B1

ɔ Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.05

Sample Amt: 2g % Moisture 18.75 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

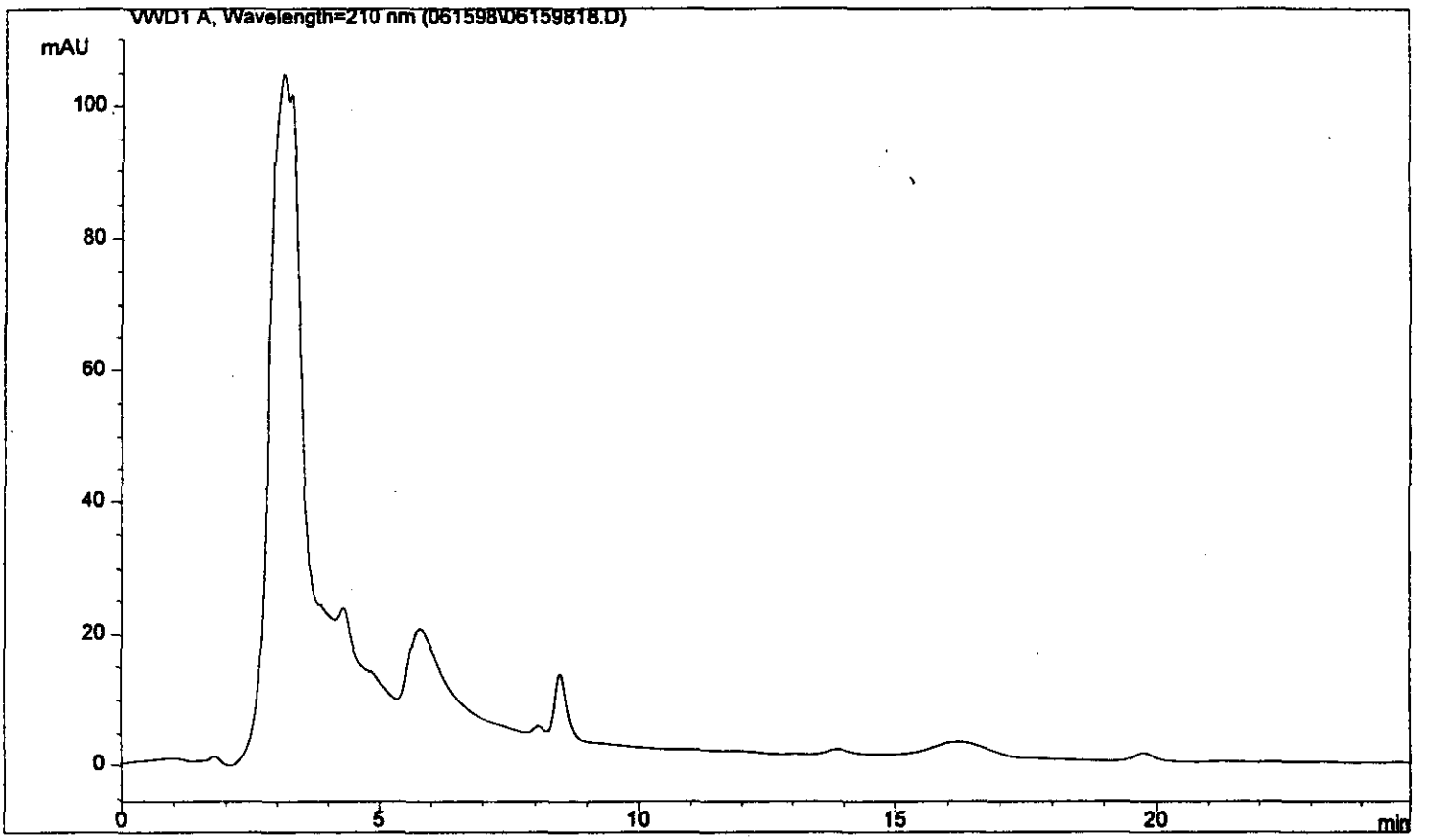
FORM I

Sample Name : 34301.05
Acq Operator : SS

Vial No. : 18
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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

Totals: 0.00000

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-B2

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.06

Sample Amt: 2g % Moisture 21.19 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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	772	J
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	271	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

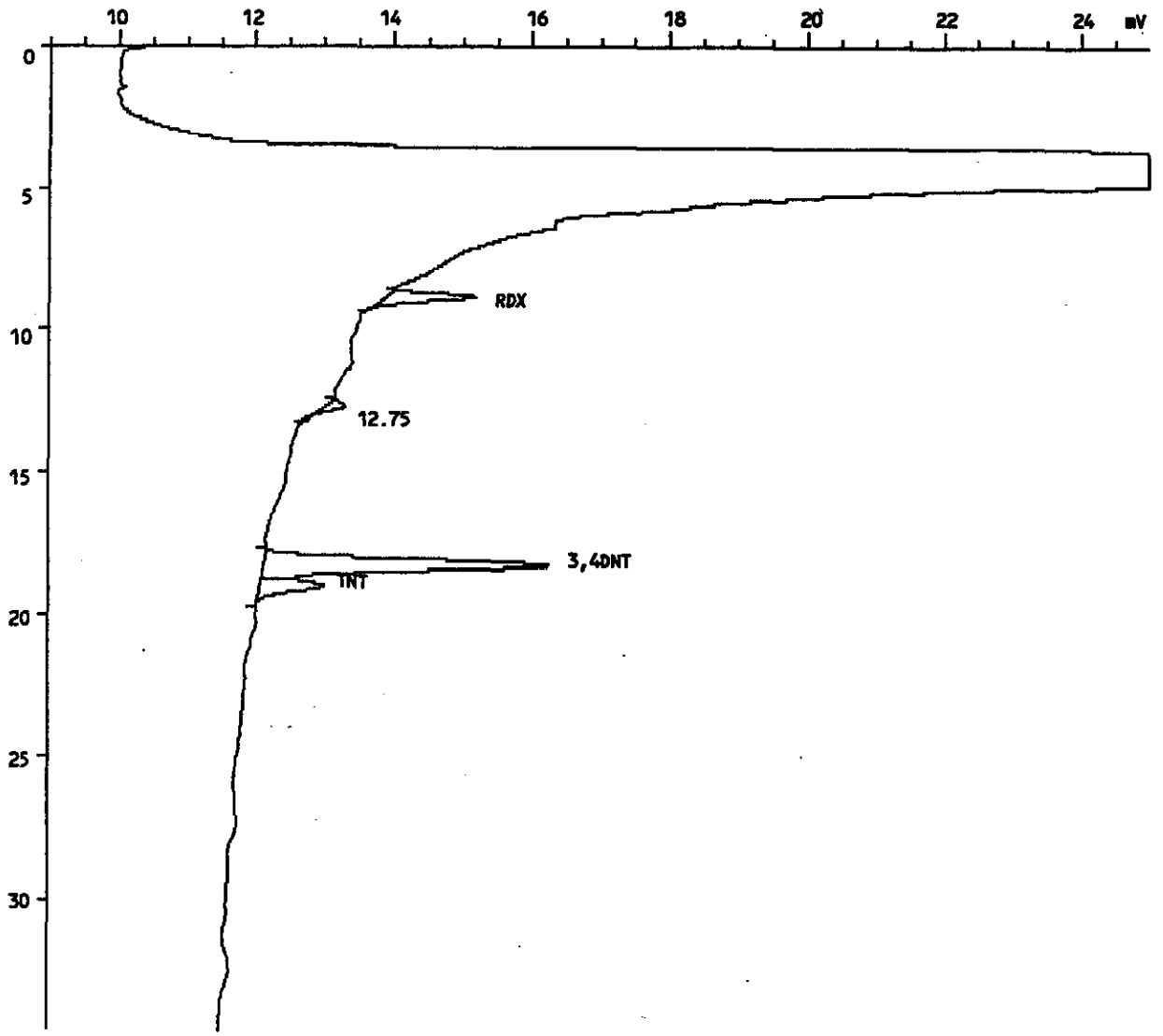
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,3,1

Sample name.....: BIO-N-30%-40-B2
Sample ID.....: 34301.06
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 04:46:05
Reported on 26-Jun-98 at 21:36:26



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,3,1

Acquired on 16-Jun-98 at 04:46:05
Modified on 26-Jun-82 at 21:29:40
Reported on 26-Jun-98 at 21:29:39

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 21:25:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-B2
Sample ID.....: 34301.06
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

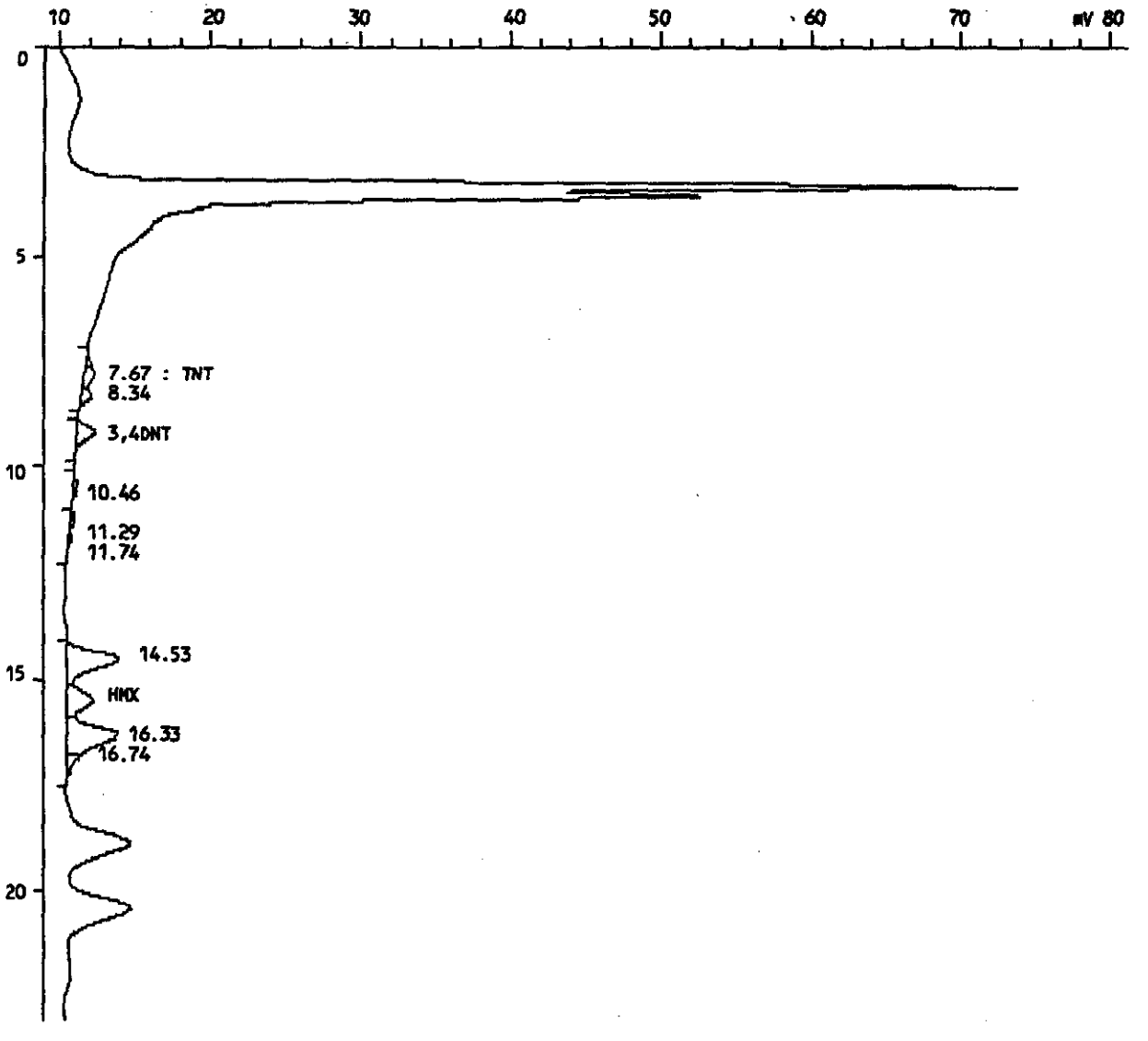
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.832	1345	26300	772.153	RDX *σ
3	18.224	4146	110184	1996.819	3,4DNT 100%
4	18.976	959	25701	271.280	TNT *P
Total		6449	162185	3040.252	
Residual		356	9173	269.308	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,4,1

Sample name.....: BIO-N-30%-40-B2
Sample ID.....: 34301.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 02:13:51
Reported on 23-Jun-98 at 19:02:15



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,4,1

Acquired on 22-Jun-98 at 02:13:51
Modified on 23-Jun-82 at 18:56:08
Reported on 23-Jun-98 at 18:56:06

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621A Last modified on 23-Jun-82 at 18:19:40
Method file.....: LCCN Last modified on 23-Jun-82 at 18:24:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-B2
Sample ID.....: 34301.06
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

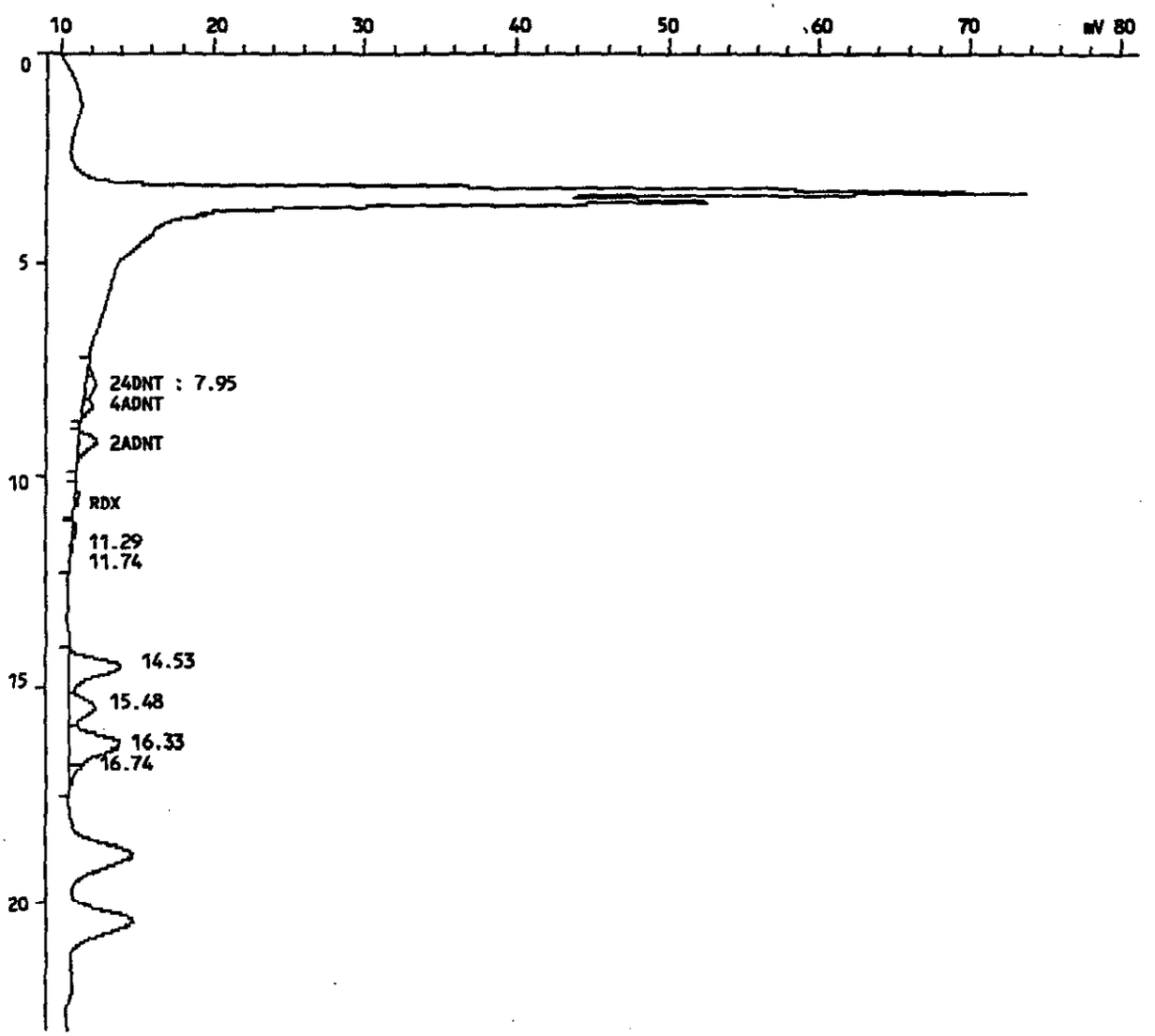
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.947	658	16544	644.226	TNT
4	9.200	1261	29990	1860.437	3,4DNT
9	15.477	1826	55761	4882.720	HMX
Total		3744	102295	7387.383	
Residual		9984	266289	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,4,1

Sample name.....: BIO-N-30%-40-B2
Sample ID.....: 34301.06
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 02:13:51
Reported on 23-Jun-98 at 19:15:25



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,4,1

Acquired on 22-Jun-98 at 02:13:51
Modified on 23-Jun-82 at 19:10:36
Reported on 23-Jun-98 at 19:10:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621B Last modified on 23-Jun-82 at 19:08:00
Method file.....: LCCN Last modified on 23-Jun-82 at 19:00:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-B2
Sample ID.....: 34301.06
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	7.669	412	5472	174.449	24DNT
3	8.336	692	13933	805.867	4ADNT
4	9.200	1261	29990	1177.936	2ADNT
5	10.464	270	8052	556.880	RDX
Total		2634	57449	2715.132	
Residual		11093	311135	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-B2

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.06

Sample Amt: 2g % Moisture 21.19 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

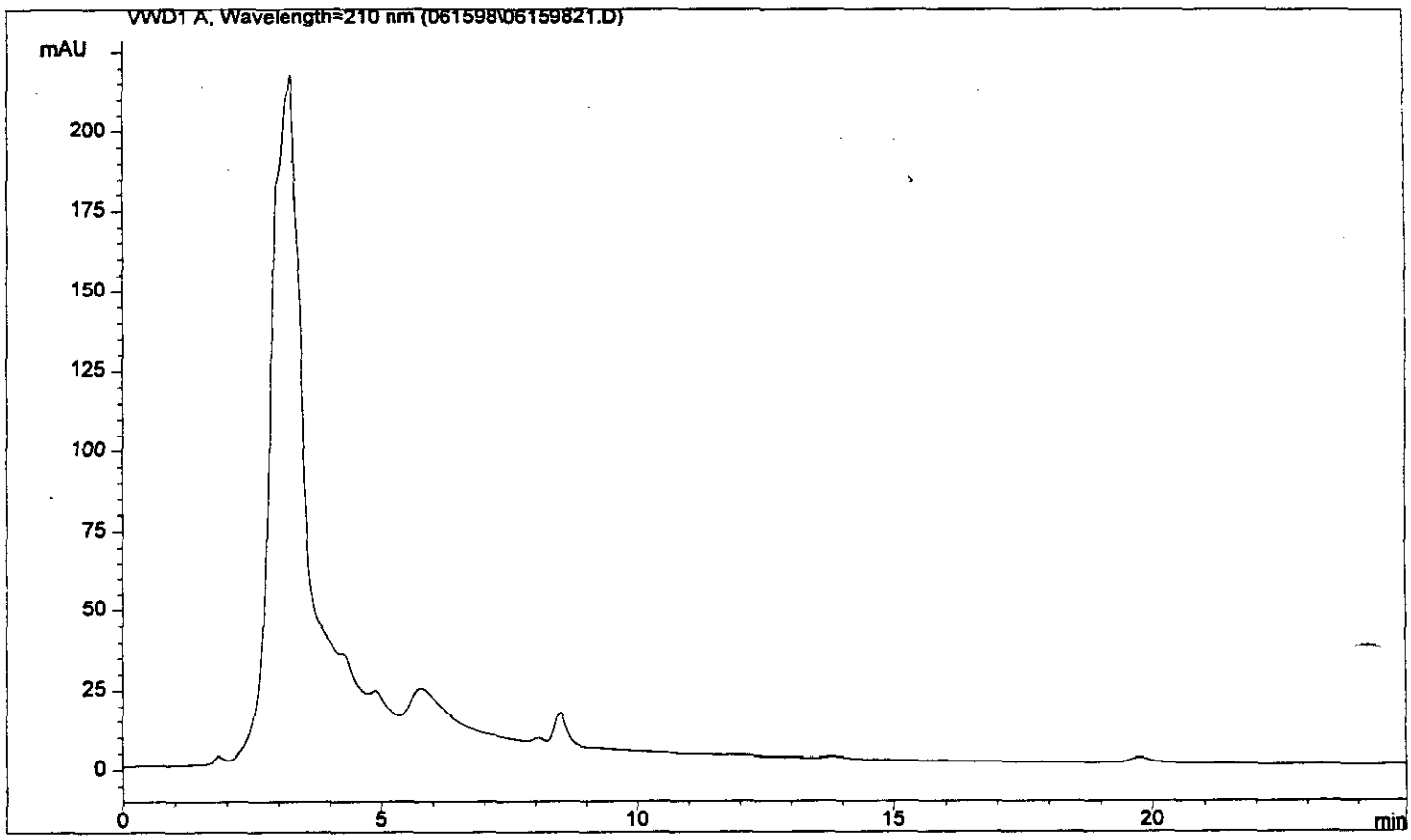
FORM I

Sample Name : 34301.06
Acq Operator : SS

Vial No. : 21
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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
Totals:				0.00000	

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*** End of Report ***

65

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.07

Sample Amt: 2g % Moisture 18.70 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

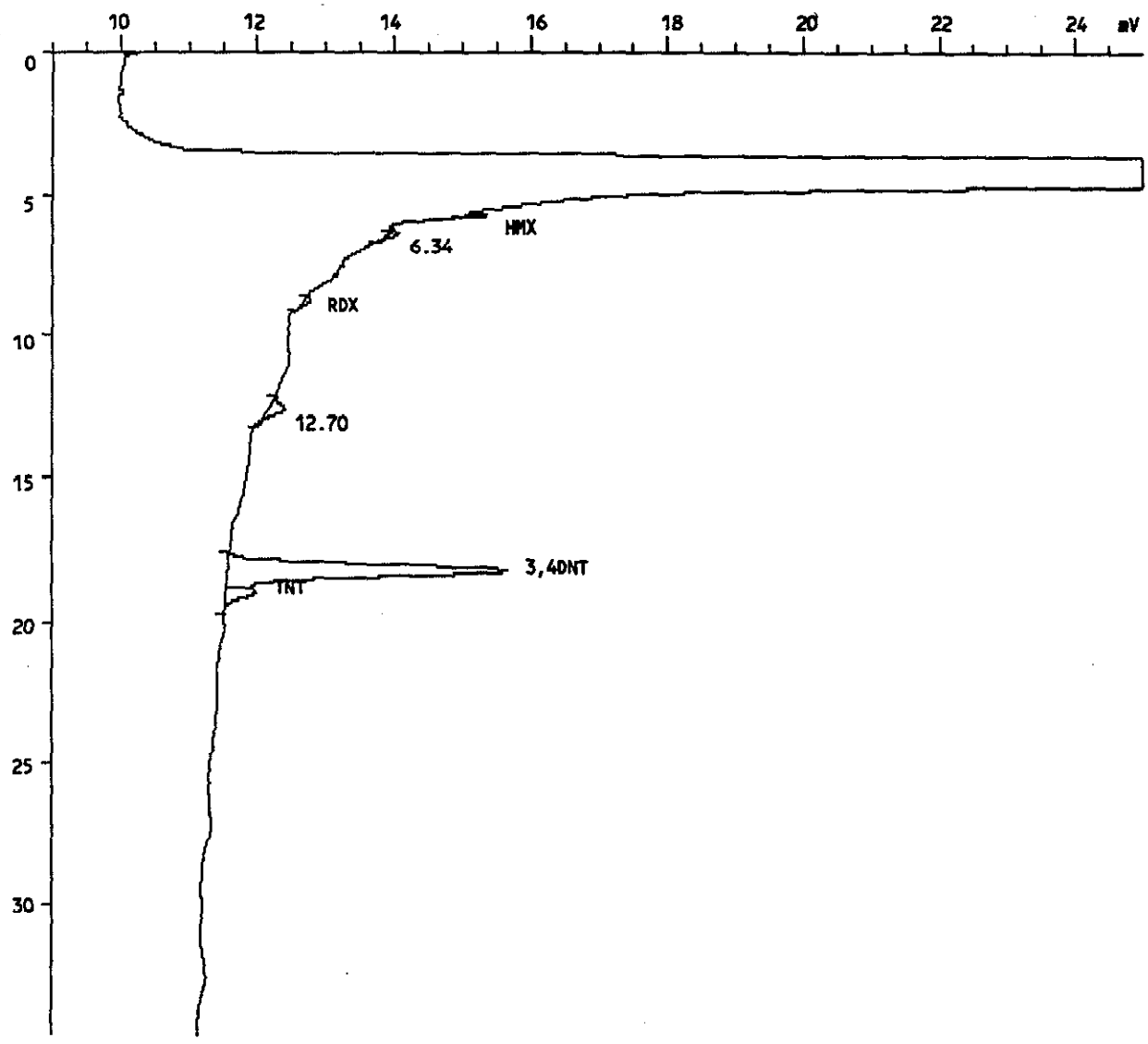
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,4,1

Sample name.....: BIO-N-30%-40-B3
Sample ID.....: 34301.07
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 05:30:43
Reported on 26-Jun-98 at 21:38:23



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,4,1

Acquired on 16-Jun-98 at 05:30:43
Modified on 26-Jun-82 at 21:29:54
Reported on 26-Jun-98 at 21:29:53

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 21:29:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-B3
Sample ID.....: 34301.07
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	5.728	390	3331	136.865	HMX
3	8.843	104	1971	57.881	RDX
5	18.192	4093	116144	2104.815	3,4DNT 105%
6	18.955	454	10583	111.704	TNT
Total		5041	132029	2411.266	
Residual		458	10406	339.800	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-B3

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.07

Sample Amt: 2g % Moisture 18.70 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

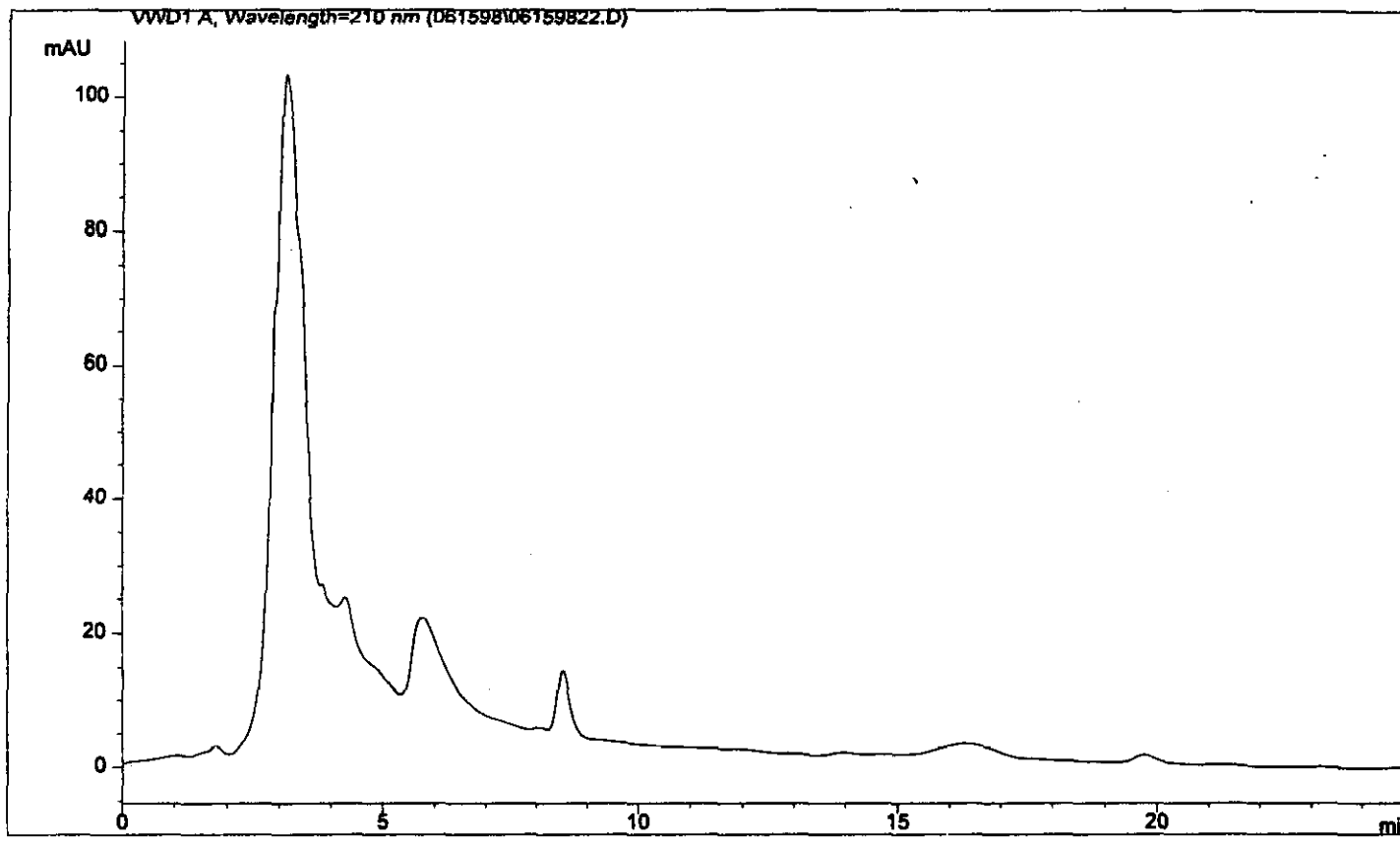
FORM I

Sample Name : 34301.07
Acq Operator : SS

Vial No. : 22
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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

Totals: 0.00000

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*** End of Report ***

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-C1

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.08

Sample Amt: 2g % Moisture 18.95 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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	1480	
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	219	JP
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

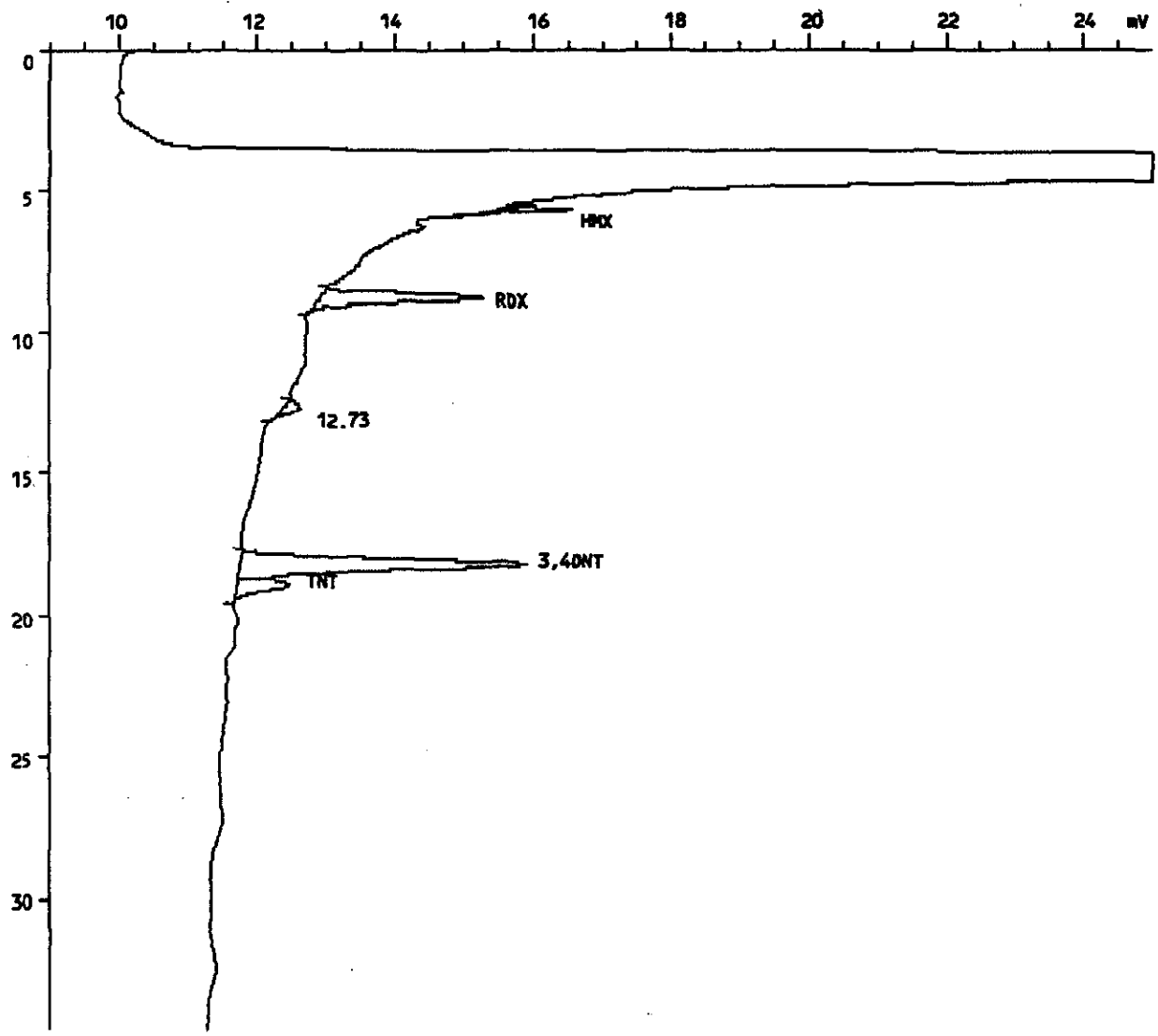
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,5,1

Sample name.....: BIO-N-30%-40-C1
Sample ID.....: 34301.08
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 06:15:21
Reported on 26-Jun-98 at 21:39:05



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,5,1

Acquired on 16-Jun-98 at 06:15:21
Modified on 26-Jun-82 at 21:30:10
Reported on 26-Jun-98 at 21:30:08

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 21:29:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-C1
Sample ID.....: 34301.08
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

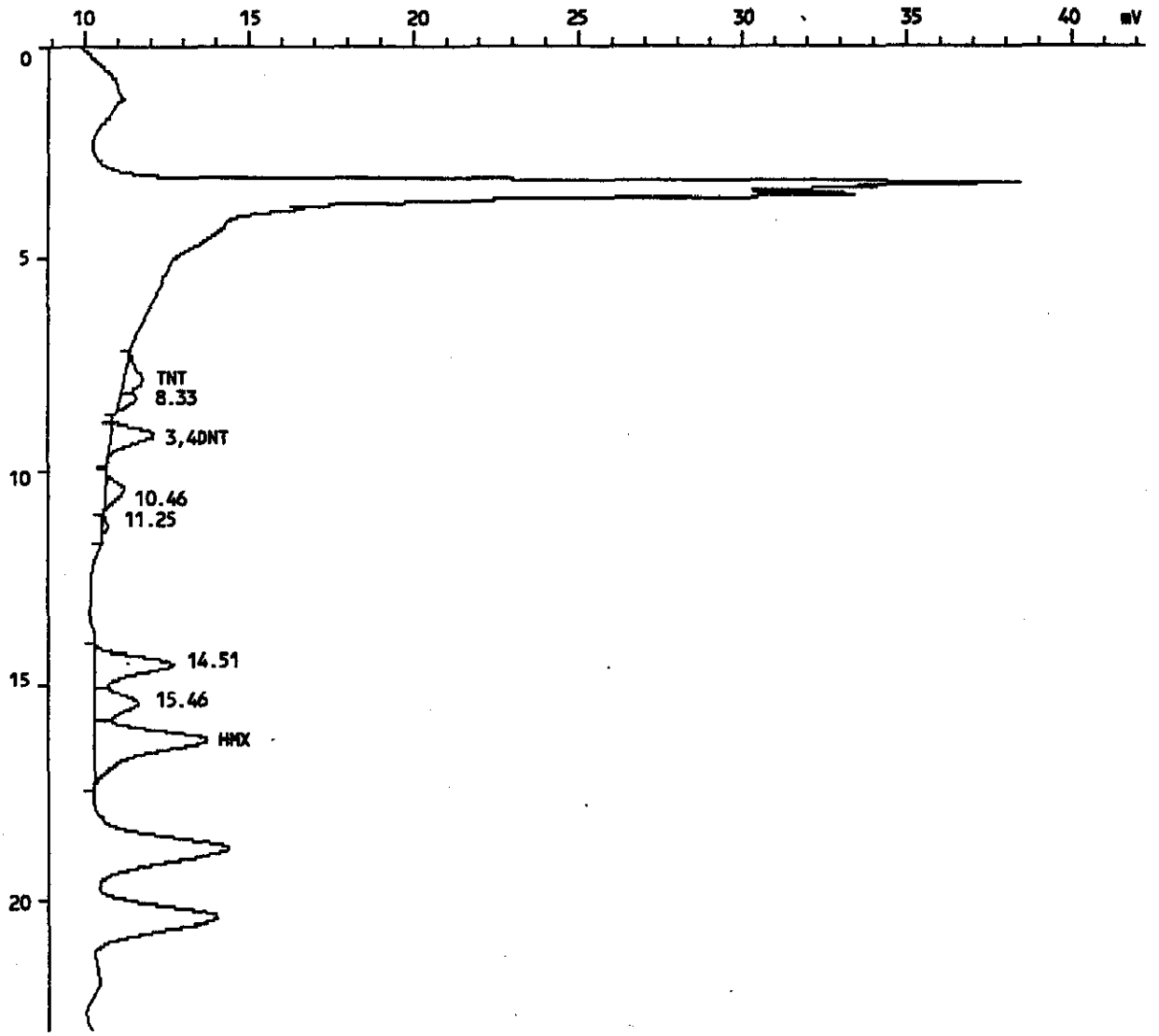
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.717	1217	11762	483.242	HMX
2	8.811	2382	50467	1481.705	RDX *
4	18.203	4144	115460	2092.433	3,4DNT 104%
5	18.960	763	20736	218.872	TNT *OT
Total		8506	198425	4276.252	
Residual		261	6238	183.162	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,5,1

Sample name.....: BIO-N-30%-40-C1
Sample ID.....: 34301.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 02:58:13
Reported on 23-Jun-98 at 19:02:38



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,5,1

Acquired on 22-Jun-98 at 02:58:13
Modified on 23-Jun-82 at 18:56:24
Reported on 23-Jun-98 at 18:56:21

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621A Last modified on 23-Jun-82 at 18:19:40
Method file.....: LCCN Last modified on 23-Jun-82 at 18:24:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-C1
Sample ID.....: 34301.08
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

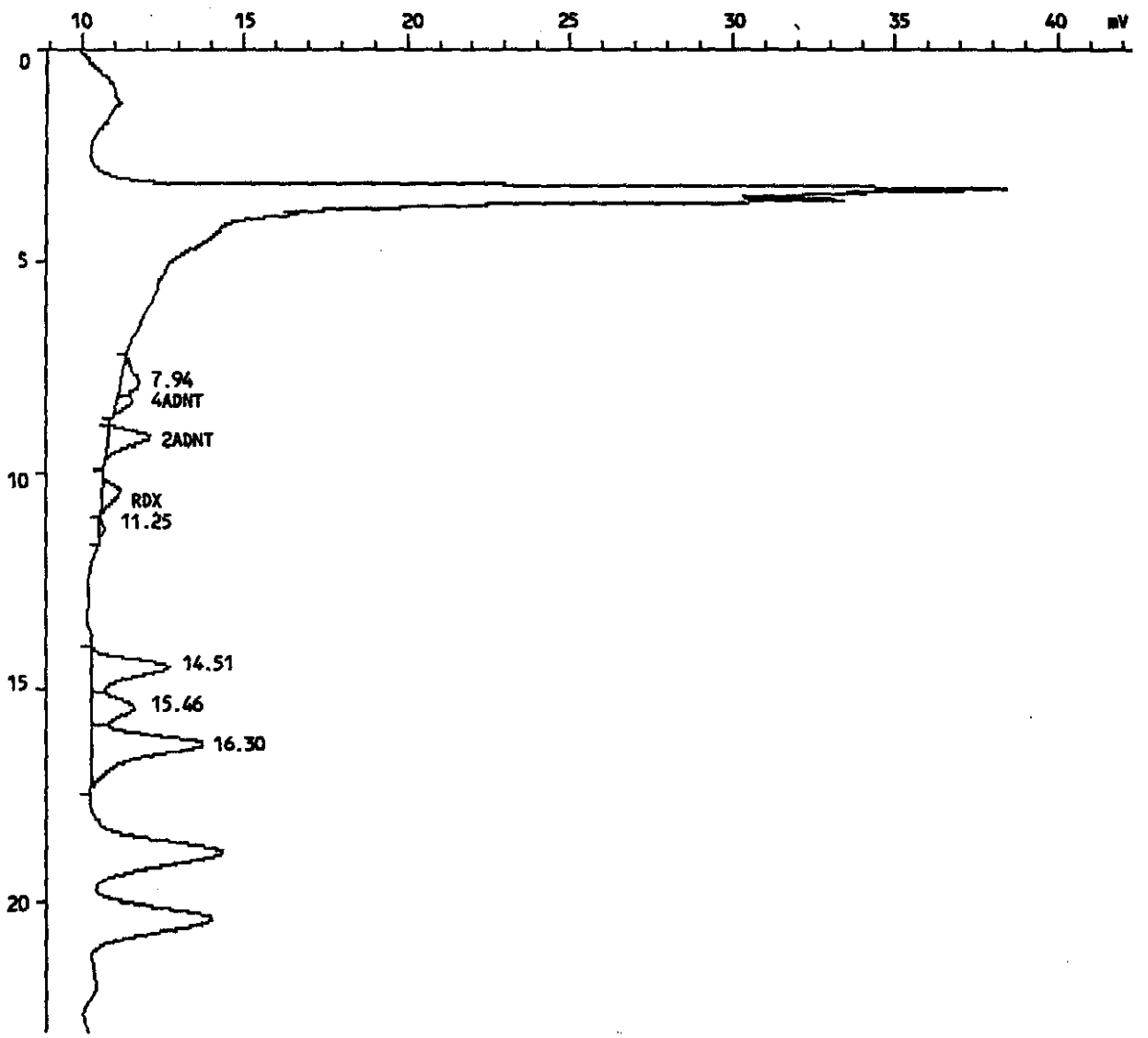
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.936	587	18387	716.019	TNT
3	9.179	1331	32060	1988.809	3,4DNT
8	16.304	3498	131177	11486.633	HMX
Total		5416	181624	14191.461	
Residual		5073	146463	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,5,1

Sample name.....: BIO-N-30%-40-C1
Sample ID.....: 34301.08
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 02:58:13
Reported on 23-Jun-98 at 19:16:31



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,5,1

Acquired on 22-Jun-98 at 02:58:13
Modified on 23-Jun-82 at 19:10:52
Reported on 23-Jun-98 at 19:10:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621B Last modified on 23-Jun-82 at 19:08:00
Method file.....: LCCN Last modified on 23-Jun-82 at 19:00:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-C1
Sample ID.....: 34301.08
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	8.331	546	11480	663.966	4ADNT
3	9.179	1331	32060	1259.214	2ADNT
4	10.459	598	18123	1253.344	RDX
Total		2476	61663	3176.524	
Residual		8013	266425	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-C1

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.08

Sample Amt: 2g % Moisture 18.95 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

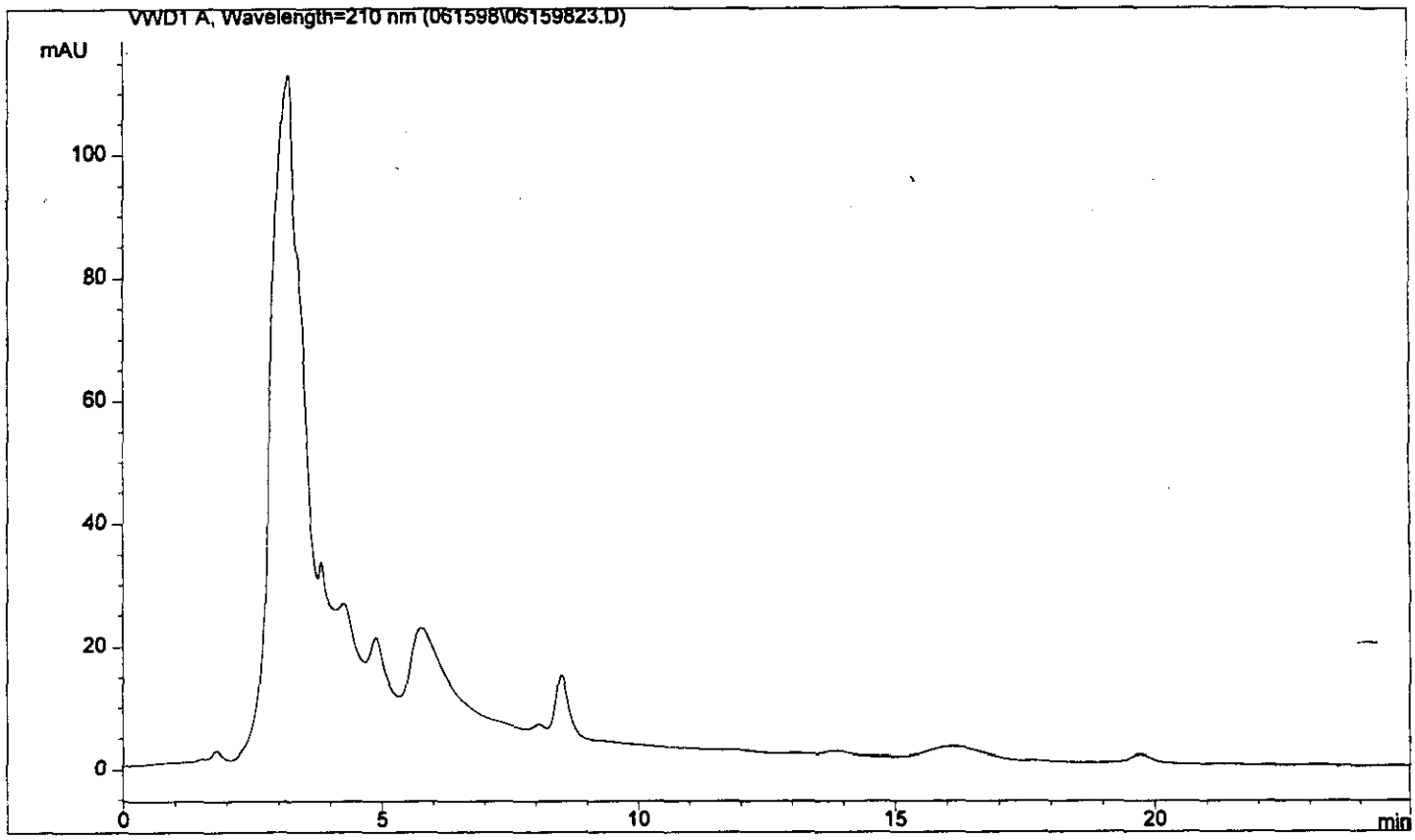
FORM I

Sample Name : 34301.08
Acq Operator : SS

Vial No. : 23
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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
Totals:				0.00000	

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-C2

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.11

Sample Amt: 2g % Moisture 19.22 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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	5240	P
121-82-4	RDX	34500	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	14800	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

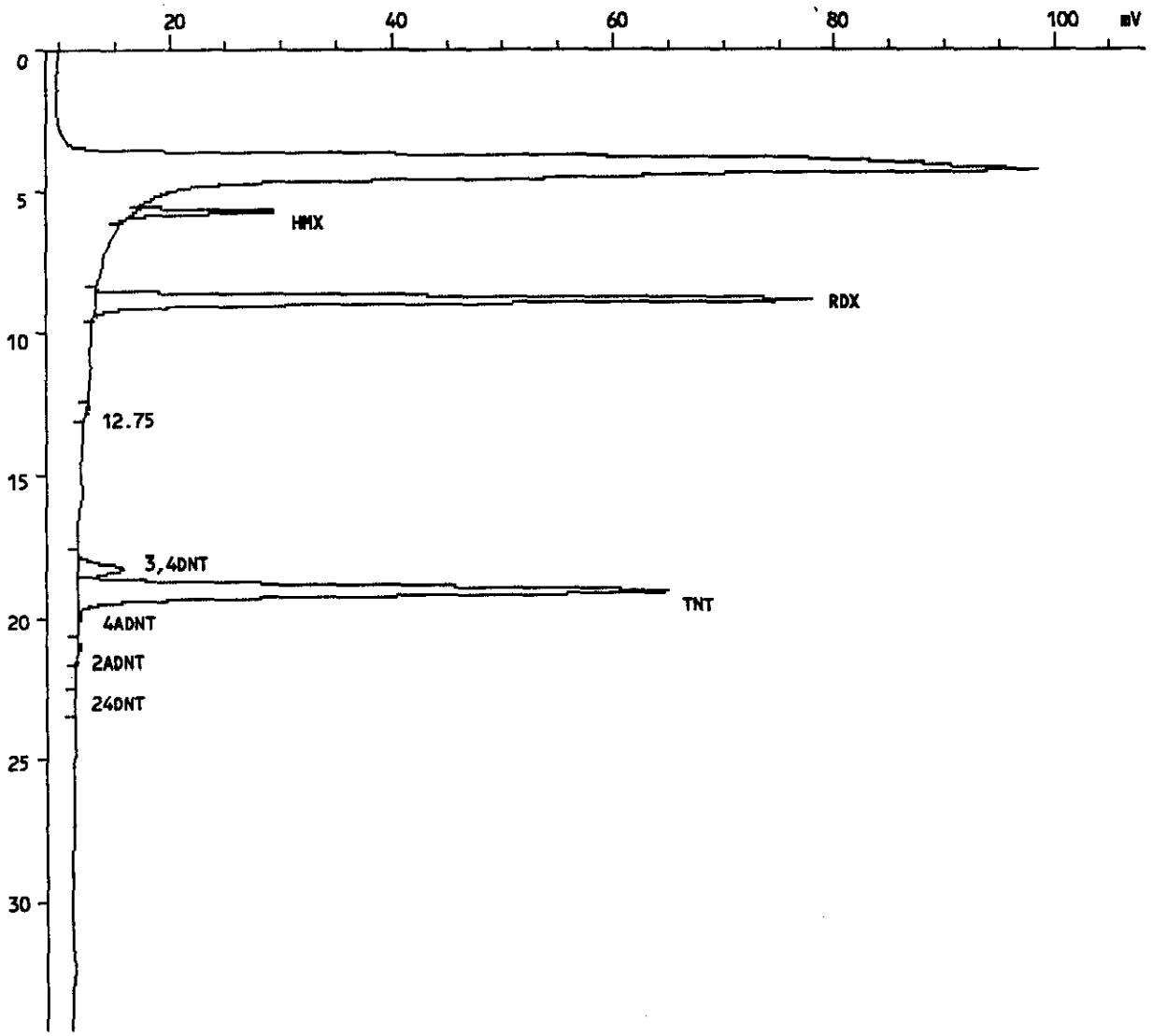
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,8,1

Sample name.....: BIO-N-30%-40-C2
Sample ID.....: 34301.11
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 08:29:16
Reported on 26-Jun-98 at 21:41:11



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,8,1

Acquired on 16-Jun-98 at 08:29:16
Modified on 27-Jun-82 at 11:39:52
Reported on 27-Jun-98 at 11:39:56

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 27-Jun-82 at 11:39:36
Method file.....: EXPLOS Last modified on 27-Jun-82 at 11:22:34
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-C2
Sample ID.....: 34301.11
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

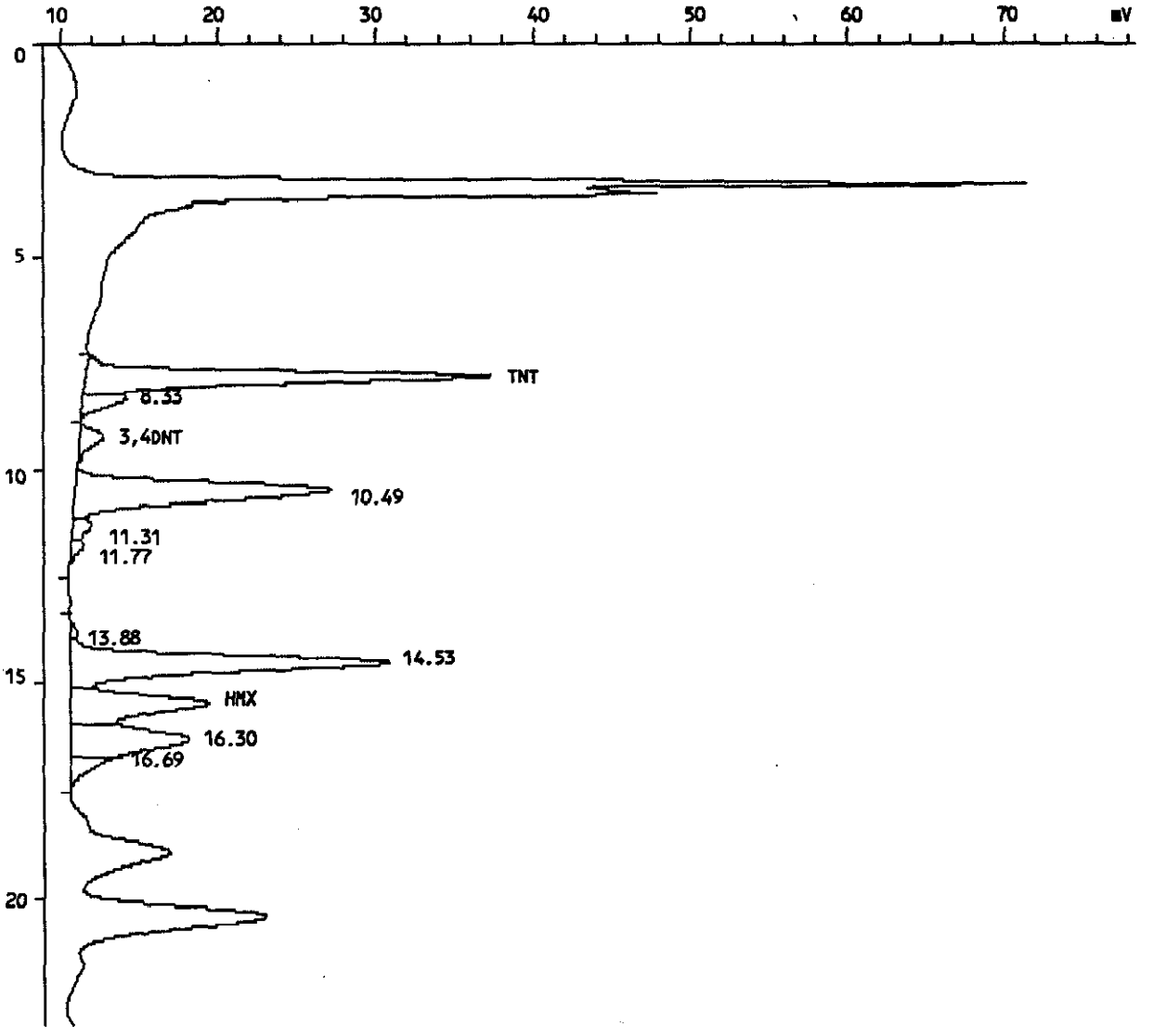
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.739	12851	127510	5238.708	HMX * P
2	8.853	64684	1174463	34482.184	RDX * E
4	18.256	4183	99246	1798.594	3,4DNT 90%
5	19.013	53469	1403280	14811.910	TNT * E
6	19.808	390	8544	141.036	4ADNT
7	21.120	388	10726	124.172	2ADNT
8	22.971	161	4578	42.769	24DNT
Total		136125	2828348	56639.371	
Residual		317	7169	210.489	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,6,1

Sample name.....: BIO-N-30%-40-C2
Sample ID.....: 34301.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 03:42:35
Reported on 23-Jun-98 at 19:03:06



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,6,1

Acquired on 22-Jun-98 at 03:42:35
Modified on 23-Jun-82 at 18:56:38
Reported on 23-Jun-98 at 18:56:37

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621A Last modified on 23-Jun-82 at 18:19:40
Method file.....: LCCN Last modified on 23-Jun-82 at 18:24:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-C2
Sample ID.....: 34301.11
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

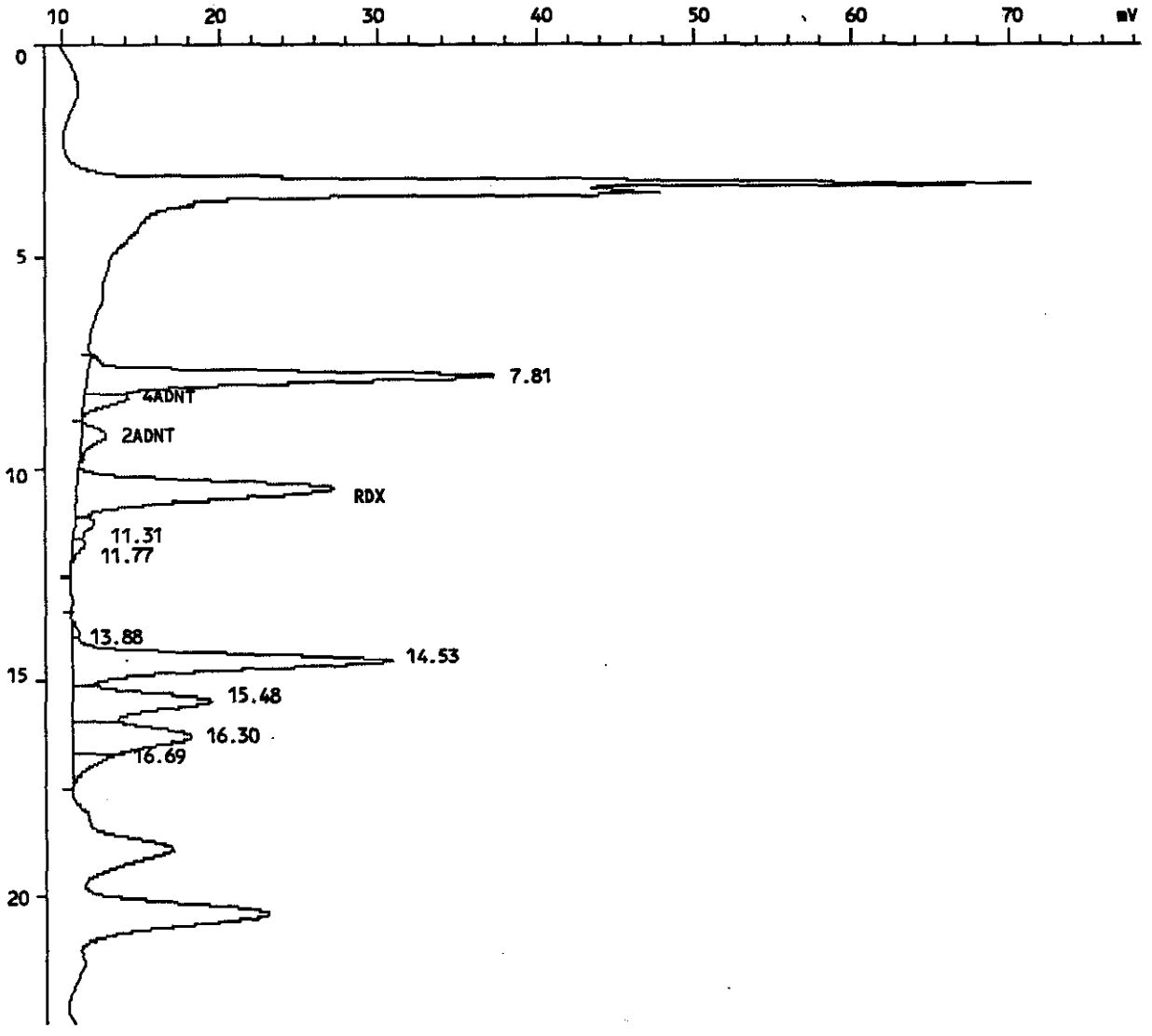
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.813	25675	505428	19681.771	TNT
3	9.221	1608	44229	2743.723	3,4DNT
10	15.483	8789	256962	22501.074	HMX
Total		36072	806619	44926.570	
Residual		52361	1451356	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,6,1

Sample name.....: BIO-N-30%-40-C2
Sample ID.....: 34301.11
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 03:42:35
Reported on 23-Jun-98 at 19:16:52



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,6,1

Acquired on 22-Jun-98 at 03:42:35
Modified on 23-Jun-82 at 19:11:08
Reported on 23-Jun-98 at 19:11:07

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621B Last modified on 23-Jun-82 at 19:08:00
Method file.....: LCCN Last modified on 23-Jun-82 at 19:00:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-C2
Sample ID.....: 34301.11
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	8.325	2739	51437	2974.943	4ADNT
3	9.221	1608	44229	1737.188	2ADNT
4	10.485	16153	491002	33955.906	RDX
Total		20501	586668	38668.039	
Residual		67933	1671306	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-C2
5X

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.11DL

Sample Amt: 2g % Moisture 19.22 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/20/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	5370	DJP
121-82-4	RDX	36800	D
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	16200	D
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

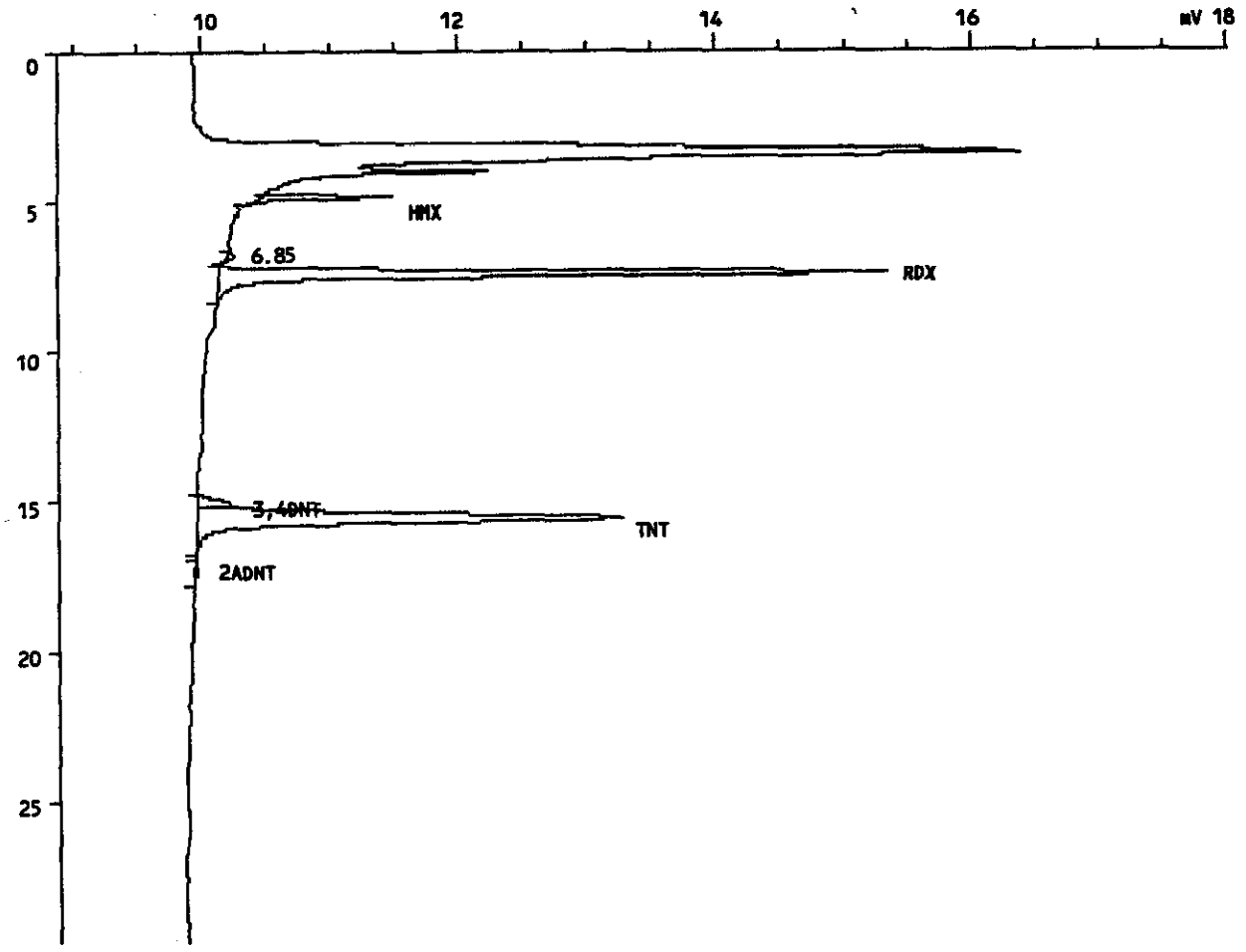
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0619A,5,1

Sample name.....: BIO-N-30%-40-C2 5X
Sample ID.....: 34301.11DL
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-08, INJ:200,COL#1

Acquired on 20-Jun-98 at 03:19:58
Reported on 22-Jun-98 at 10:23:52



INJECTION REPORT

Injection F: <MC3> 5 5EX0619A,5,1

Acquired on 20-Jun-98 at 03:19:58
Modified on 27-Jun-82 at 14:05:40
Reported on 27-Jun-98 at 14:05:43

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.: 25
Calibration file..: 5EX0619 Last modified on 25-Jun-82 at 16:14:04
Method file.....: EXPLOS Last modified on 27-Jun-82 at 13:43:10
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-C2 5X
Sample ID.....: 34301.11DL
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

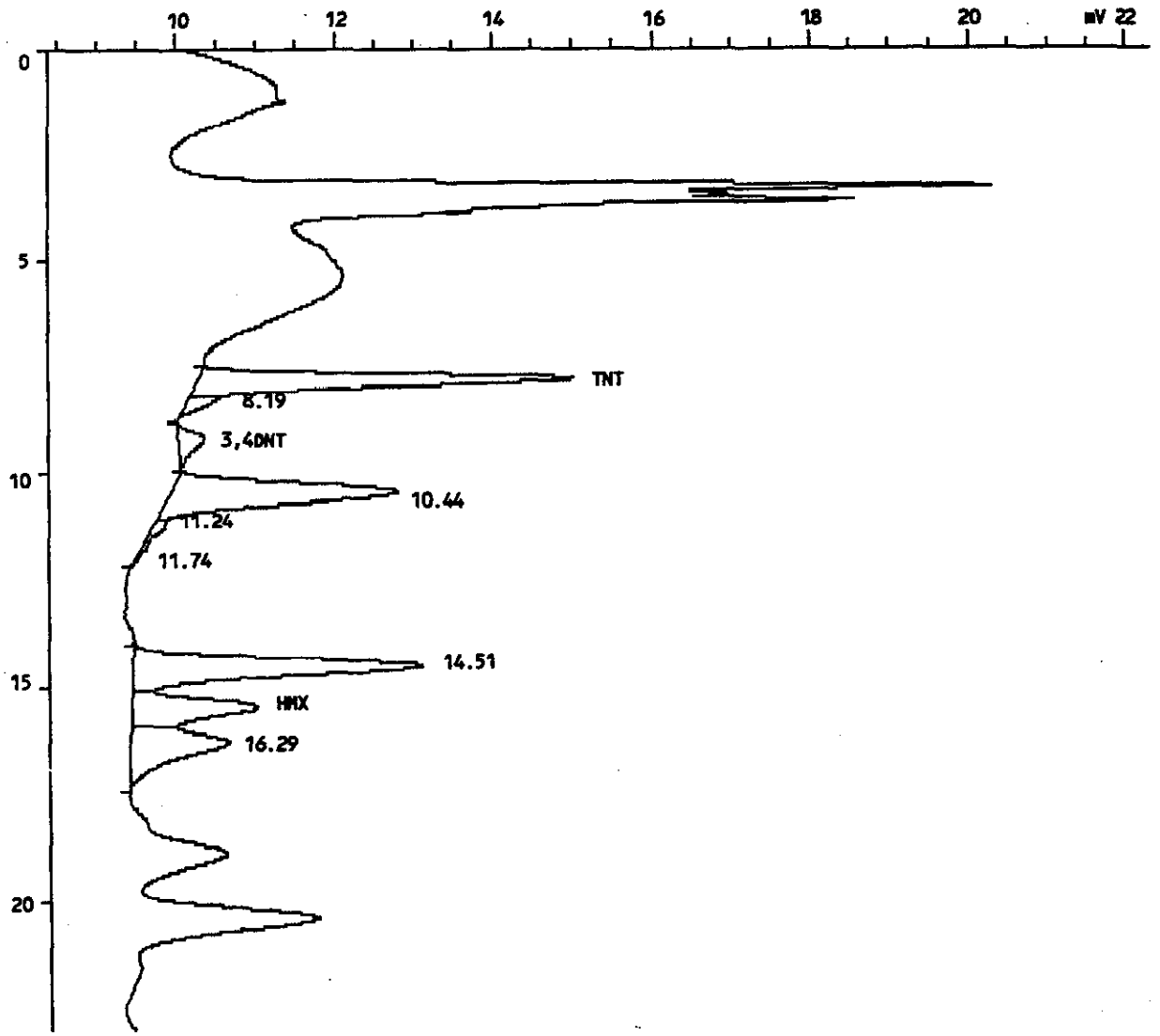
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.896	1047	8286	5366.792	HMX DP
3	7.451	5200	72595	36812.898	RDX D
4	15.157	260	3466	1424.973	3,4DNT D
5	15.563	3296	75125	16246.763	TNT D
6	17.323	26	590	149.943	2ADNT
Total		9829	160062	60001.367	
Residual		61	816	528.599	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,7,1

Sample name.....: BIO-N-30%-40-C2 5X
Sample ID.....: 34301.11DL
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 04:26:57
Reported on 23-Jun-98 at 19:03:47



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,7,1

Acquired on 22-Jun-98 at 04:26:57
Modified on 23-Jun-82 at 18:56:54
Reported on 23-Jun-98 at 18:56:52

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621A Last modified on 23-Jun-82 at 18:19:40
Method file.....: LCCN Last modified on 23-Jun-82 at 18:24:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-C2 5X
Sample ID.....: 34301.11DL
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

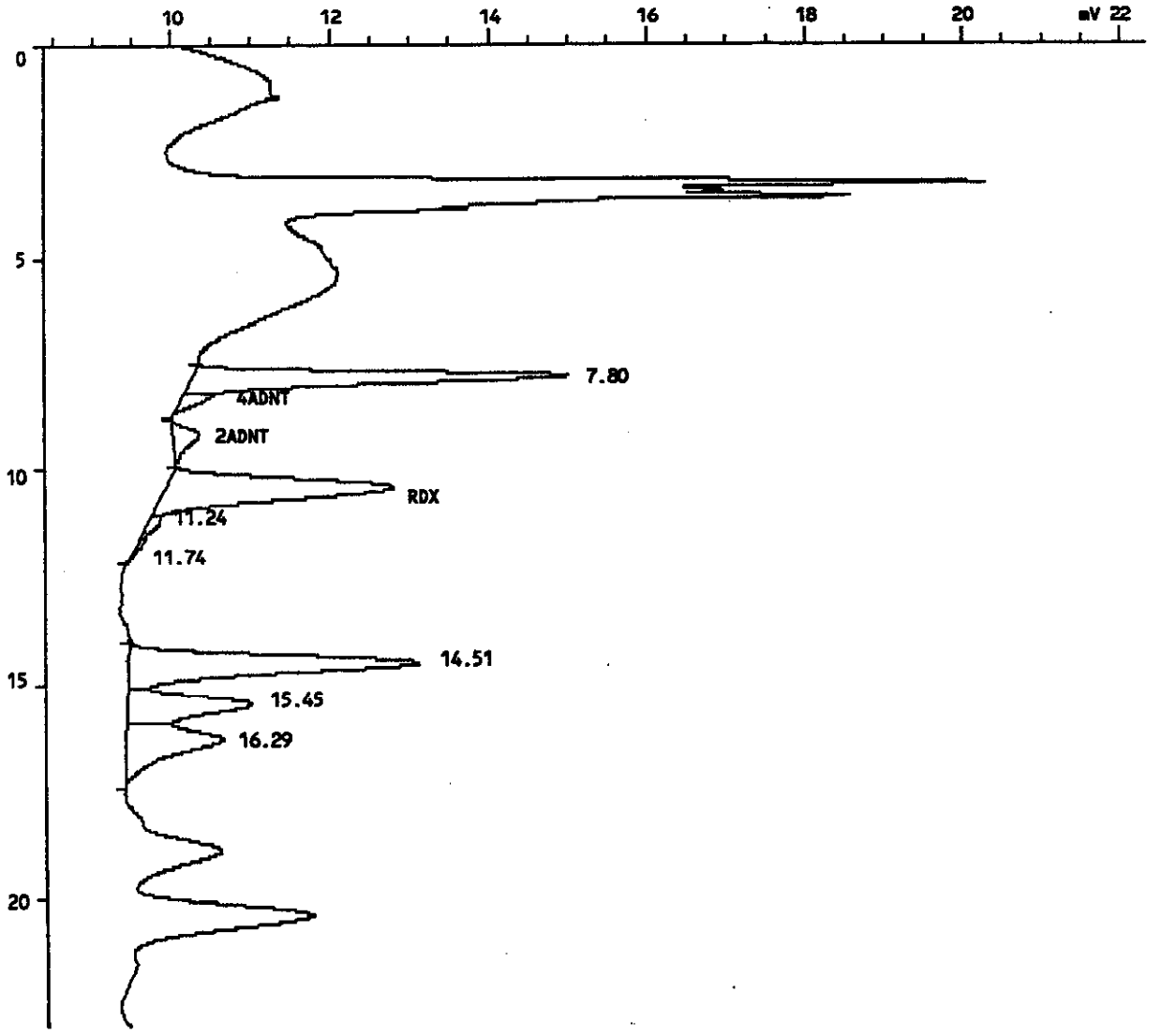
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.797	4763	92585	18026.598	TNT
3	9.200	318	9013	2795.724	3,4DNT
8	15.451	1575	48833	21380.654	HMX
Total		6656	150431	42202.977	
Residual		8466	261944	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,7,1

Sample name.....: BIO-N-30%-40-C2 5X
Sample ID.....: 34301.11DL
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 04:26:57
Reported on 23-Jun-98 at 19:17:33



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,7,1

Acquired on 22-Jun-98 at 04:26:57
Modified on 23-Jun-82 at 19:11:26
Reported on 23-Jun-98 at 19:11:23

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621B Last modified on 23-Jun-82 at 19:08:00
Method file.....: LCCN Last modified on 23-Jun-82 at 19:00:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-C2 5X
Sample ID.....: 34301.11DL
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	8.192	456	7392	2137.510	4ADNT
3	9.200	318	9013	1770.113	2ADNT
4	10.443	2878	95481	33015.637	RDX
Total		3652	111886	36923.258	
Residual		11471	300489	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-C2

Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.11

Sample Amt: 2g % Moisture 19.22 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

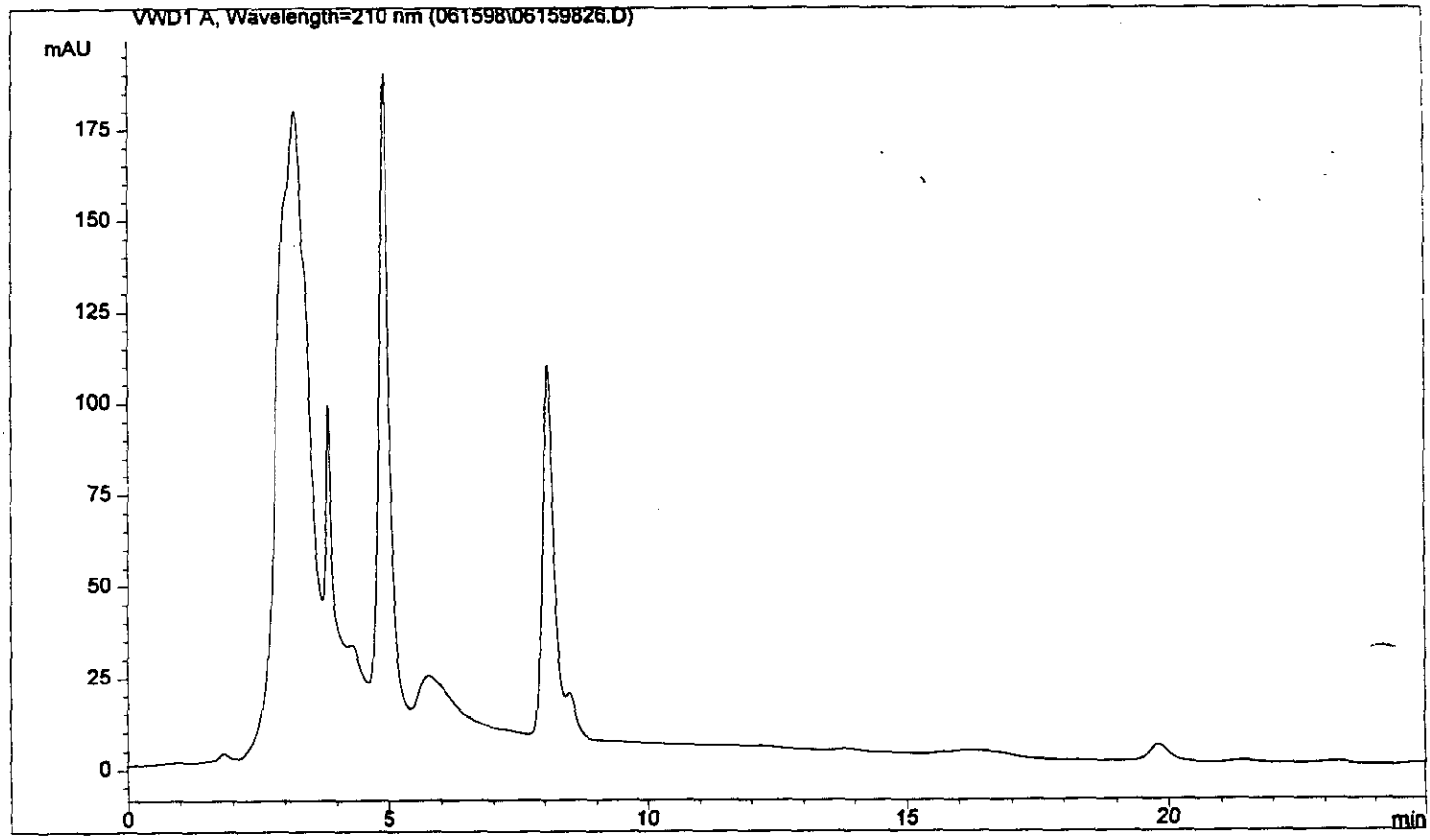
FORM I

Sample Name : 34301.11
Acq Operator : SS

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

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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

Totals: 0.00000

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

b Name: SWL-TULSA Contract:

BIO-N-30%-40-C3

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.12

Sample Amt: 2g % Moisture 18.75 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

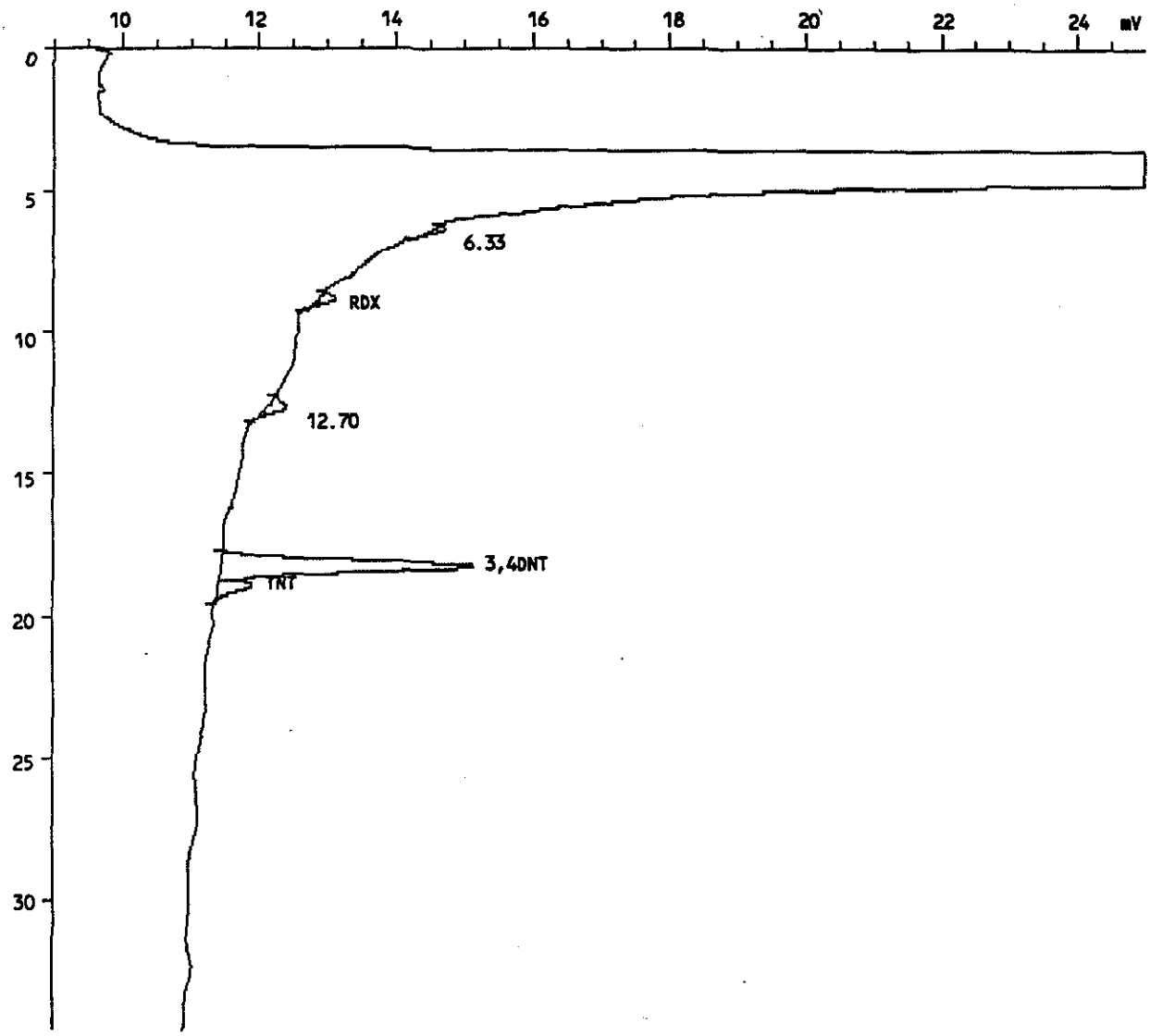
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,9,1

Sample name.....: BIO-N-30%-40-C3
Sample ID.....: 34301.12
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 09:13:54
Reported on 26-Jun-98 at 21:41:50



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,9,1

Acquired on 16-Jun-98 at 09:13:54
Modified on 26-Jun-82 at 21:31:28
Reported on 26-Jun-98 at 21:31:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 21:29:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-C3
Sample ID.....: 34301.12
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	8.800	286	5336	156.658	RDX
4	18.165	3688	102111	1850.503	3,4DNT 92%
5	18.939	504	13342	140.826	TNT
Total		4478	120788	2147.988	
Residual		539	12411	364.379	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-C3

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.12

Sample Amt: 2g % Moisture 18.75 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

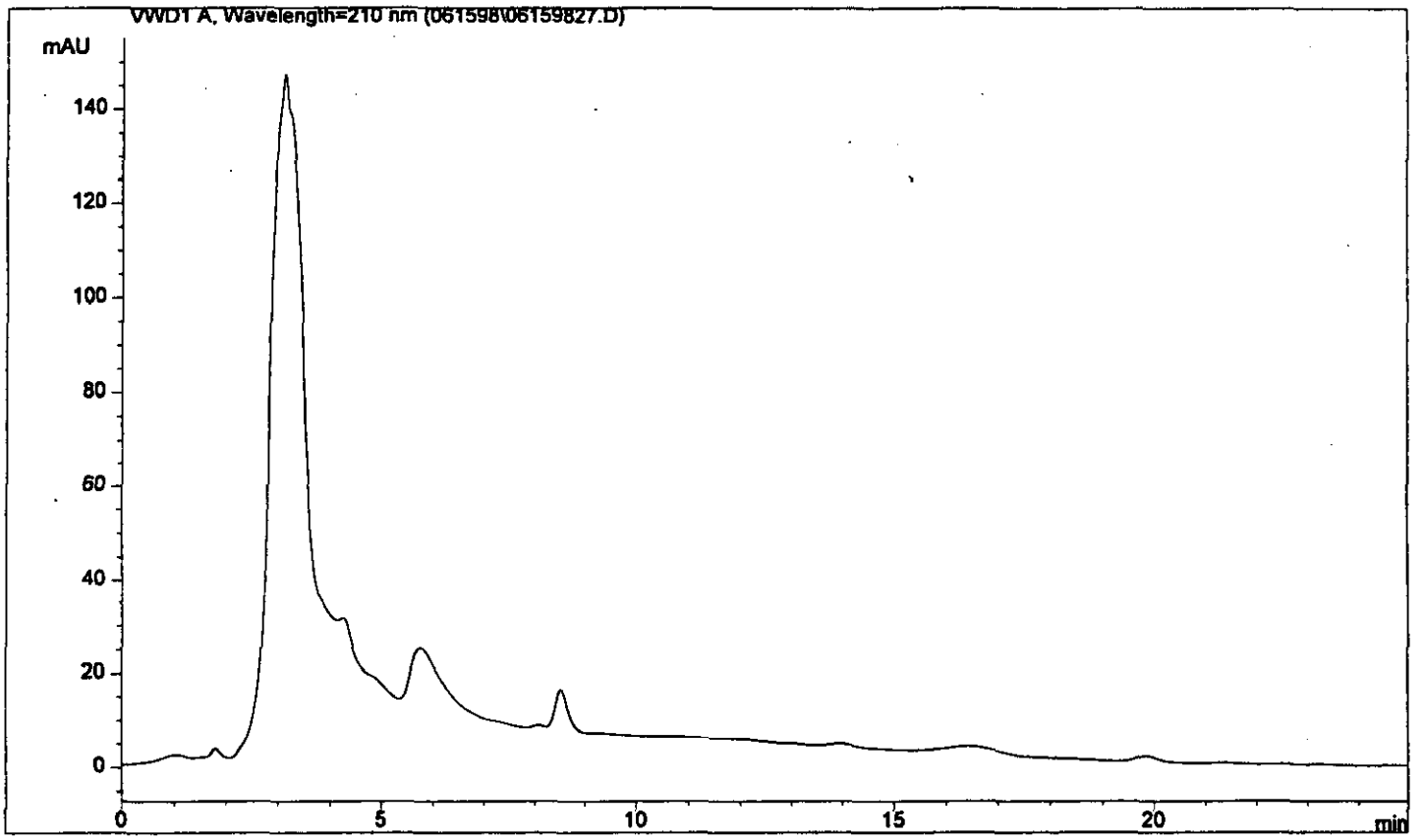
FORM I

Sample Name : 34301.12
Acq Operator : SS

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

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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

Totals: 0.00000

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*** End of Report ***

" 100

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

b Name: SWL-TULSA Contract:

BIO-N-30%-40-D1

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.13

Sample Amt: 2g % Moisture 17.09 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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	1680	
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	156	JP
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

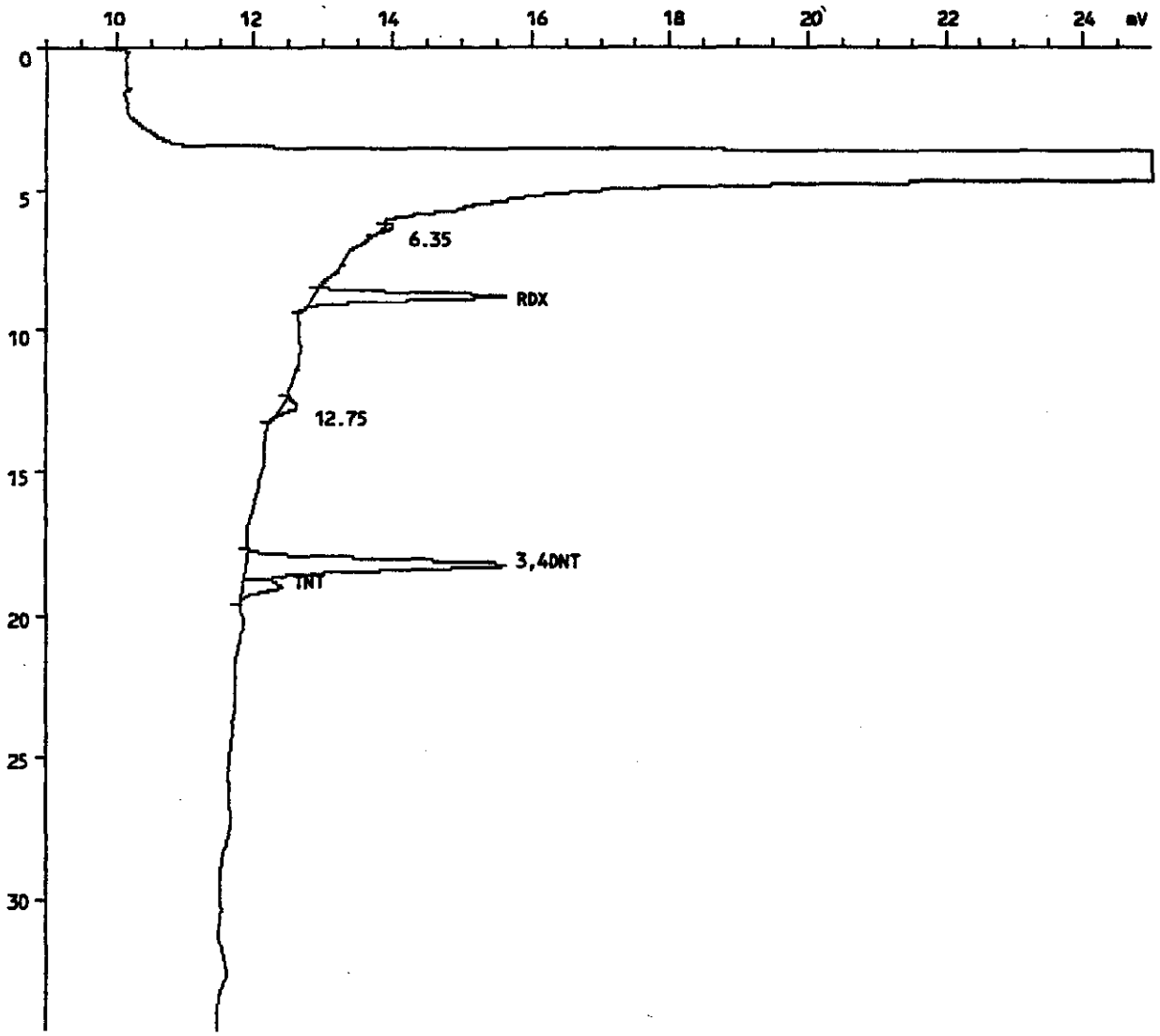
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,12,1

Sample name.....: BIO-N-30%-40-D1
Sample ID.....: 34301.13
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 11:27:51
Reported on 26-Jun-98 at 21:42:40



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,12,1

Acquired on 16-Jun-98 at 11:27:51
Modified on 26-Jun-82 at 21:31:42
Reported on 26-Jun-98 at 21:31:41

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 21:29:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D1
Sample ID.....: 34301.13
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

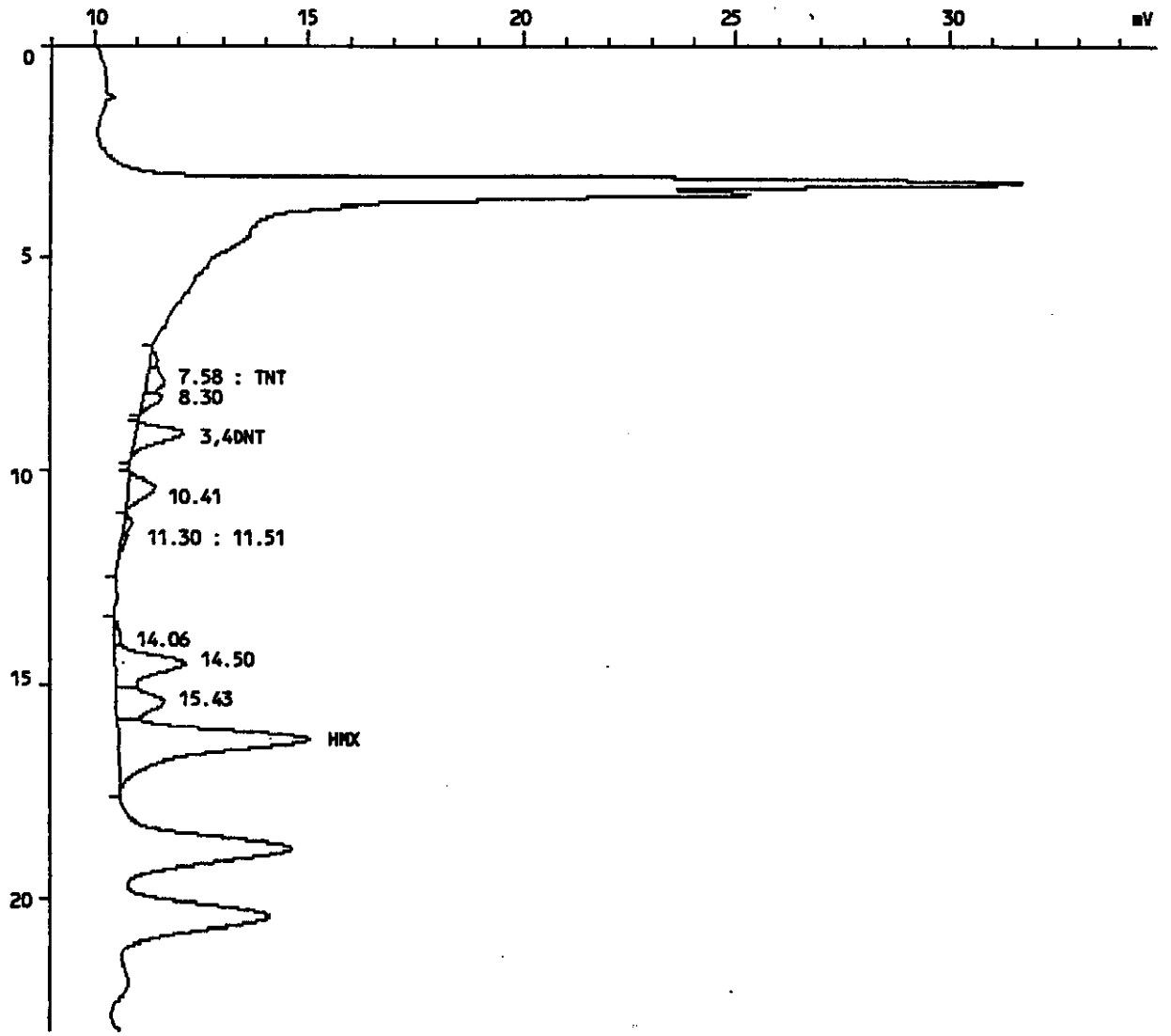
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.816	2788	57082	1675.937	RDX *
4	18.203	3733	102540	1858.286	3,4DNT 93%
5	18.965	563	14767	155.870	TNT *JP
Total		7084	174390	3690.094	
Residual		417	9038	265.349	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,8,1

Sample name.....: BIO-N-30%-40-D1
Sample ID.....: 34301.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 05:11:18
Reported on 23-Jun-98 at 19:04:11



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,8,1

Acquired on 22-Jun-98 at 05:11:18
Modified on 23-Jun-82 at 18:57:10
Reported on 23-Jun-98 at 18:57:08

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621A Last modified on 23-Jun-82 at 18:19:40
Method file.....: LCCN Last modified on 23-Jun-82 at 18:24:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D1
Sample ID.....: 34301.13
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

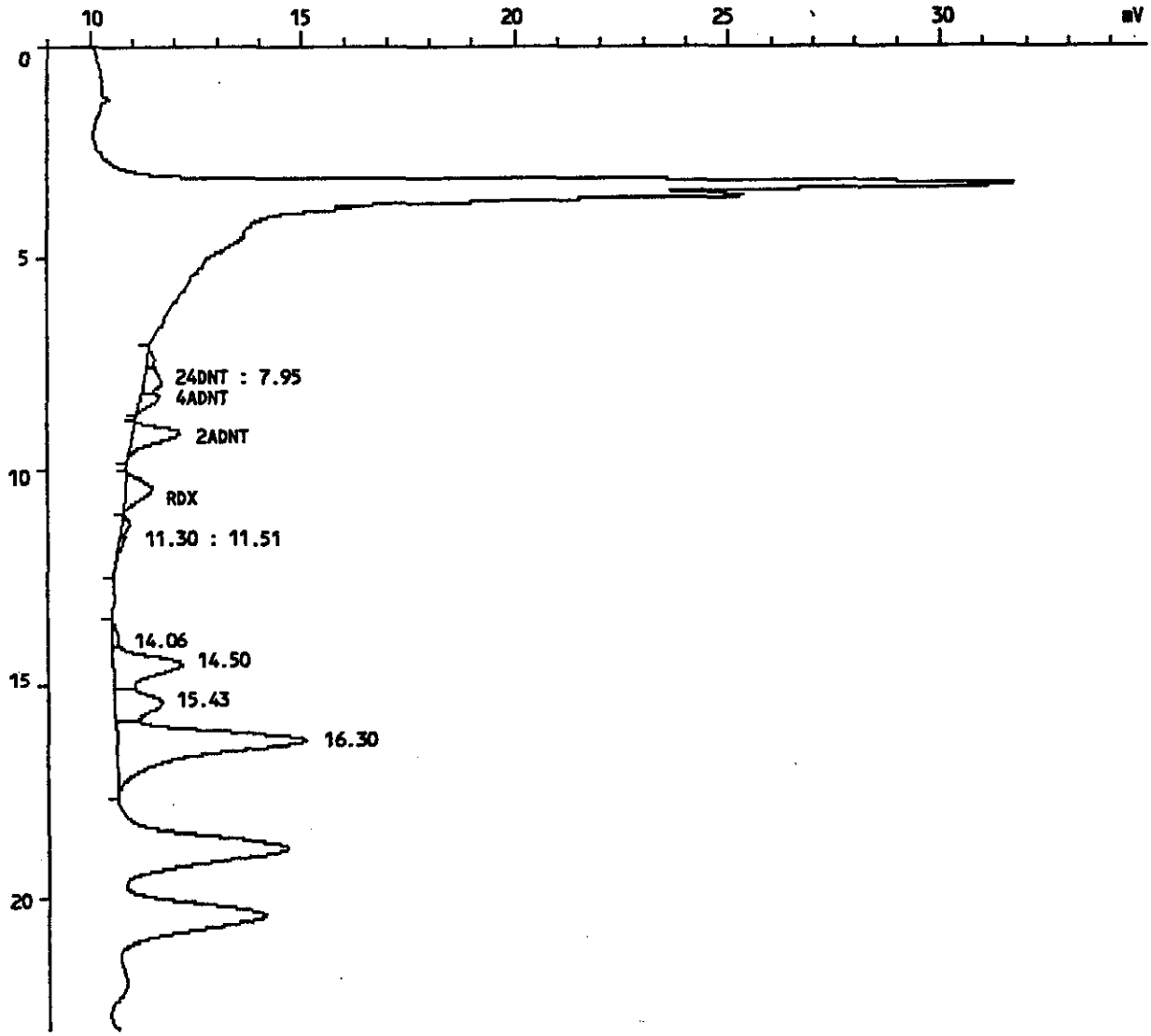
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.947	457	11786	458.951	TNT
4	9.157	1133	27446	1702.613	3,4DNT
11	16.299	4451	166182	14551.832	HMX
Total		6041	205414	16713.396	
Residual		4604	136656	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,8,1

Sample name.....: BIO-N-30%-40-D1
Sample ID.....: 34301.13
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 05:11:18
Reported on 23-Jun-98 at 19:17:54



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,8,1

Acquired on 22-Jun-98 at 05:11:18
Modified on 23-Jun-82 at 19:11:42
Reported on 23-Jun-98 at 19:11:39

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621B Last modified on 23-Jun-82 at 19:08:00
Method file.....: LCCN Last modified on 23-Jun-82 at 19:00:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D1
Sample ID.....: 34301.13
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	7.584	214	3725	118.754	24DNT
3	8.299	464	9789	566.160	4ADNT
4	9.157	1133	27446	1078.010	2ADNT
5	10.405	654	19828	1371.243	RDX
Total		2465	60789	3134.167	
Residual		8180	281282	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-D1

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.13

Sample Amt: 2g % Moisture 17.09 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

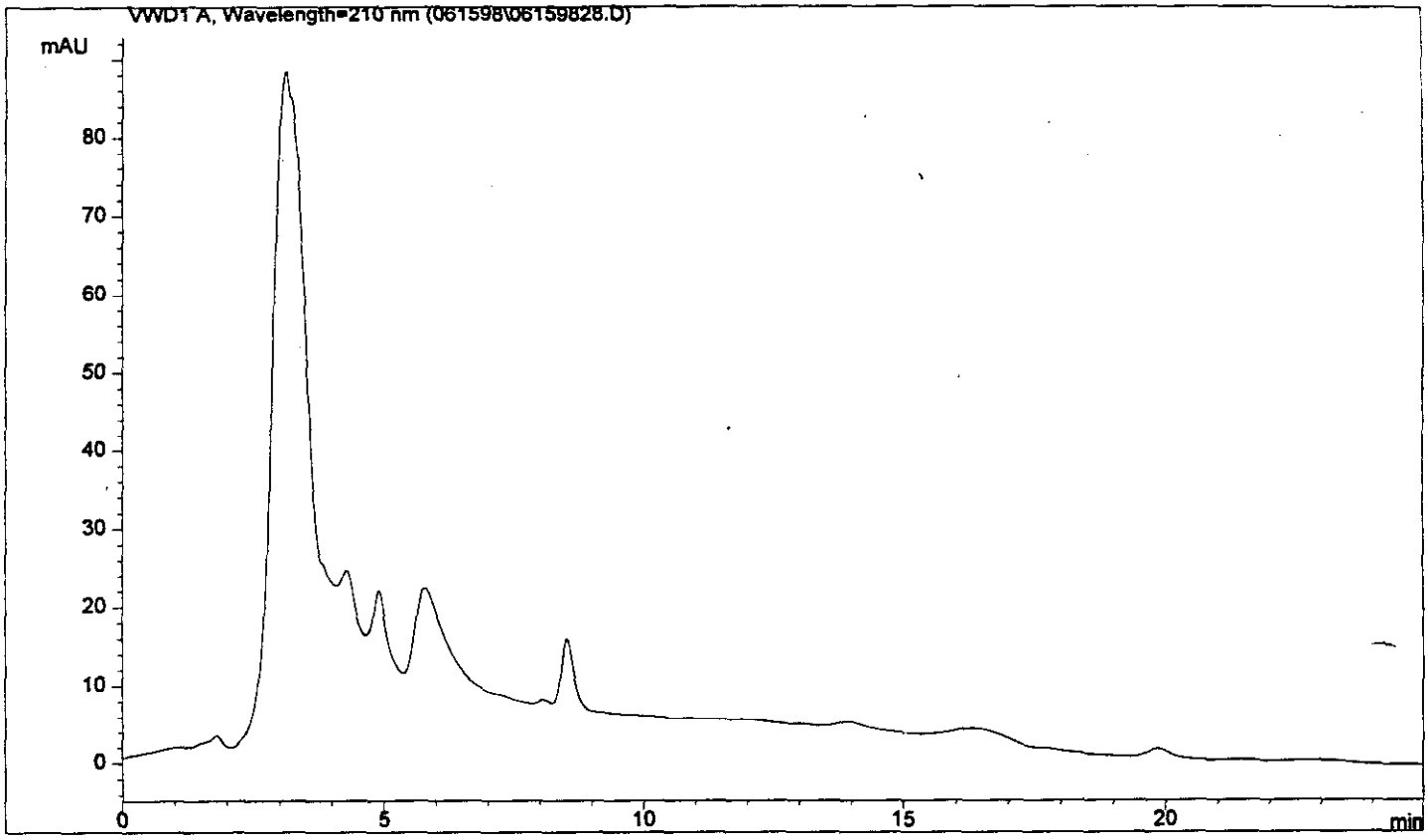
FORM I

Sample Name : 34301.13
Acq Operator : SS

Vial No. : 28
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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

Totals: 0.00000

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*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-D2

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.14

Sample Amt: 2g % Moisture 19.20 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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	636	J
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	397	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

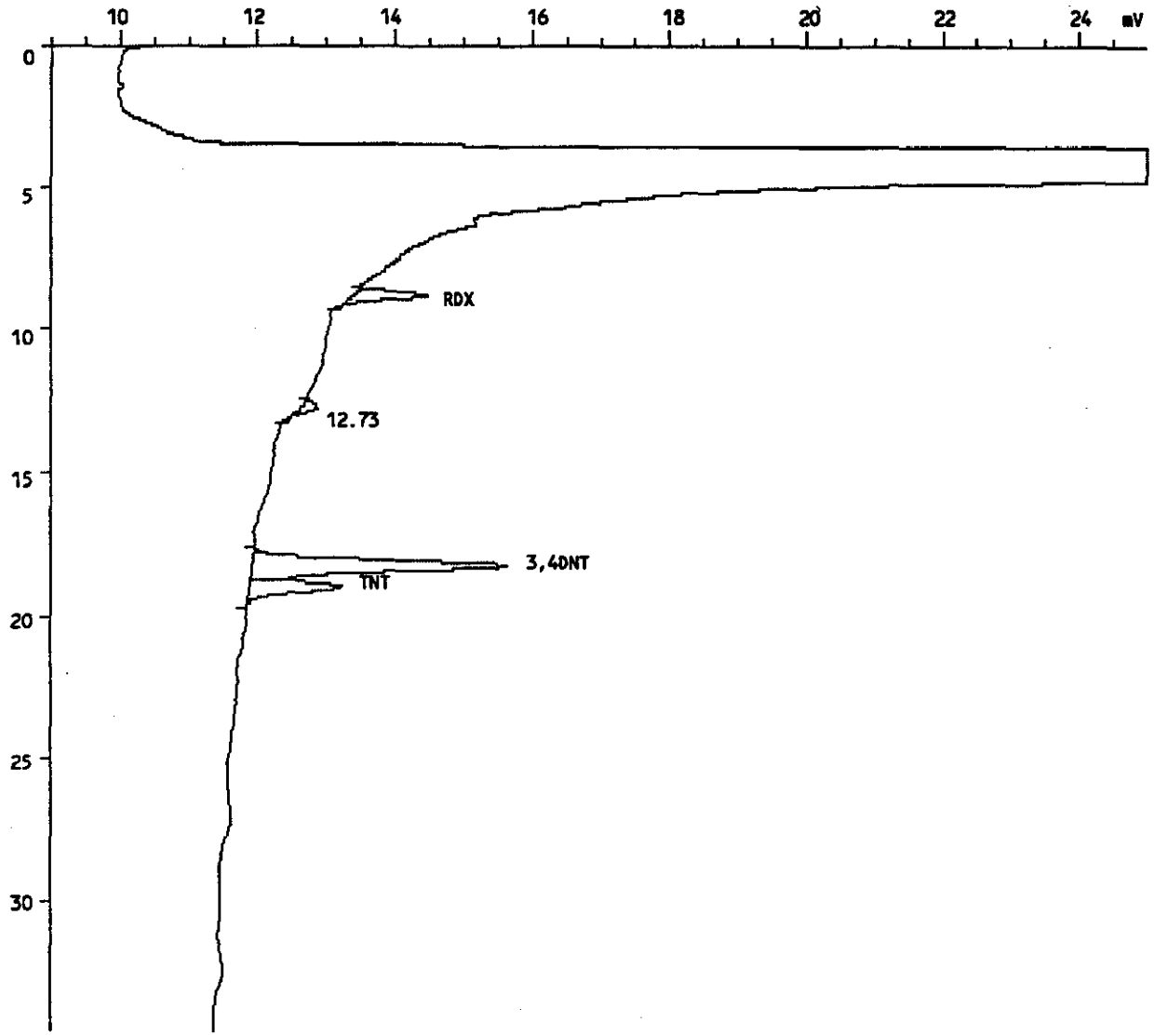
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,13,1

Sample name.....: BIO-N-30%-40-D2
Sample ID.....: 34301.14
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 12:12:43
Reported on 26-Jun-98 at 21:43:19



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,13,1

Acquired on 16-Jun-98 at 12:12:43
Modified on 26-Jun-82 at 21:31:58
Reported on 26-Jun-98 at 21:31:56

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 21:29:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D2
Sample ID.....: 34301.14
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

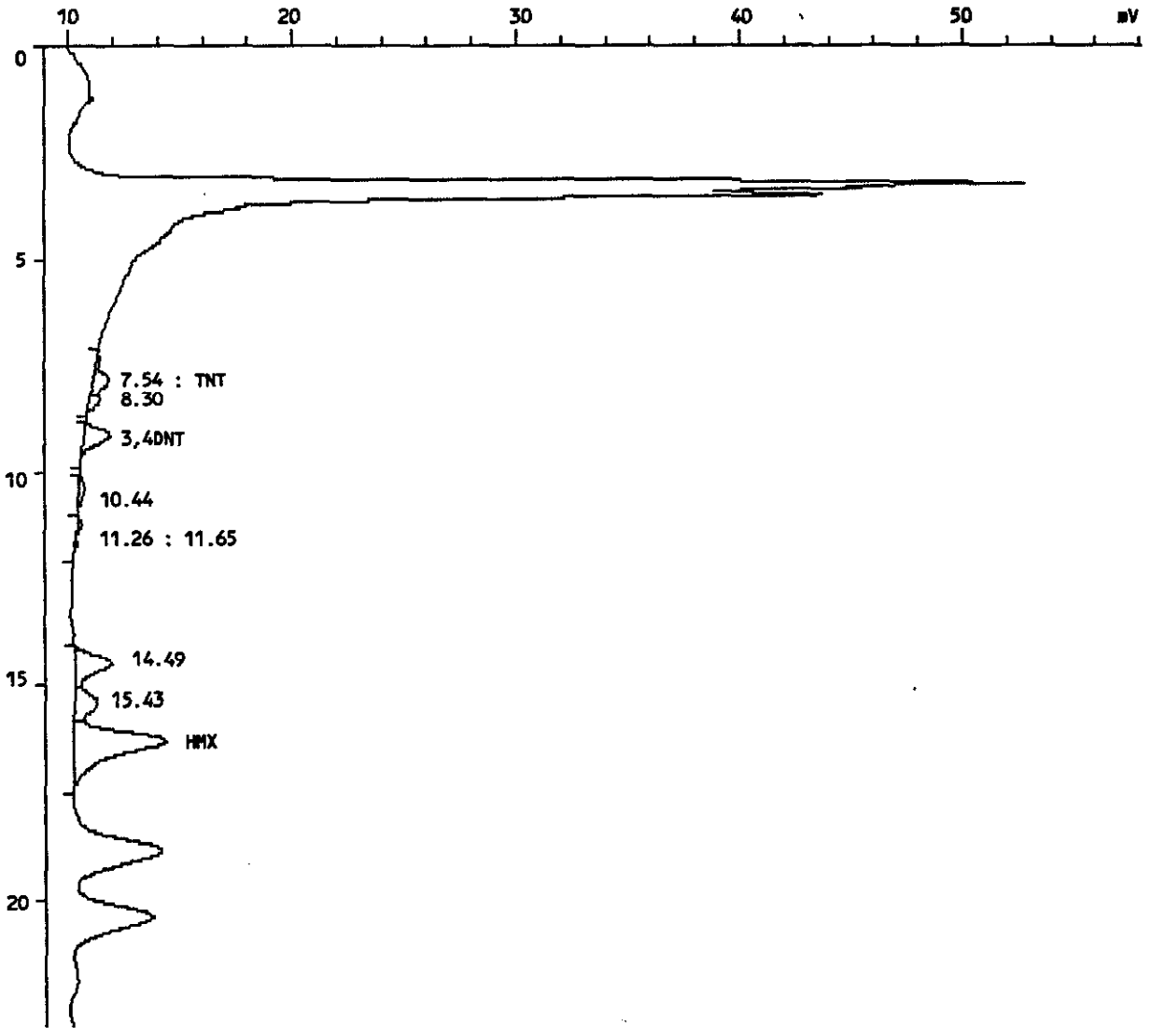
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	8.816	1098	21660	635.940	RDX *J
3	18.197	3713	101586	1840.992	3,4DNT 92%
4	18.971	1349	37614	397.026	TNT *P
Total		6160	160860	2873.958	
Residual		280	6895	202.444	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,9,1

Sample name.....: BIO-N-30%-40-D2
Sample ID.....: 34301.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 05:55:40
Reported on 23-Jun-98 at 19:04:38



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,9,1

Acquired on 22-Jun-98 at 05:55:40
Modified on 23-Jun-82 at 18:57:24
Reported on 23-Jun-98 at 18:57:23

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621A Last modified on 23-Jun-82 at 18:19:40
Method file.....: LCCN Last modified on 23-Jun-82 at 18:24:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D2
Sample ID.....: 34301.14
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

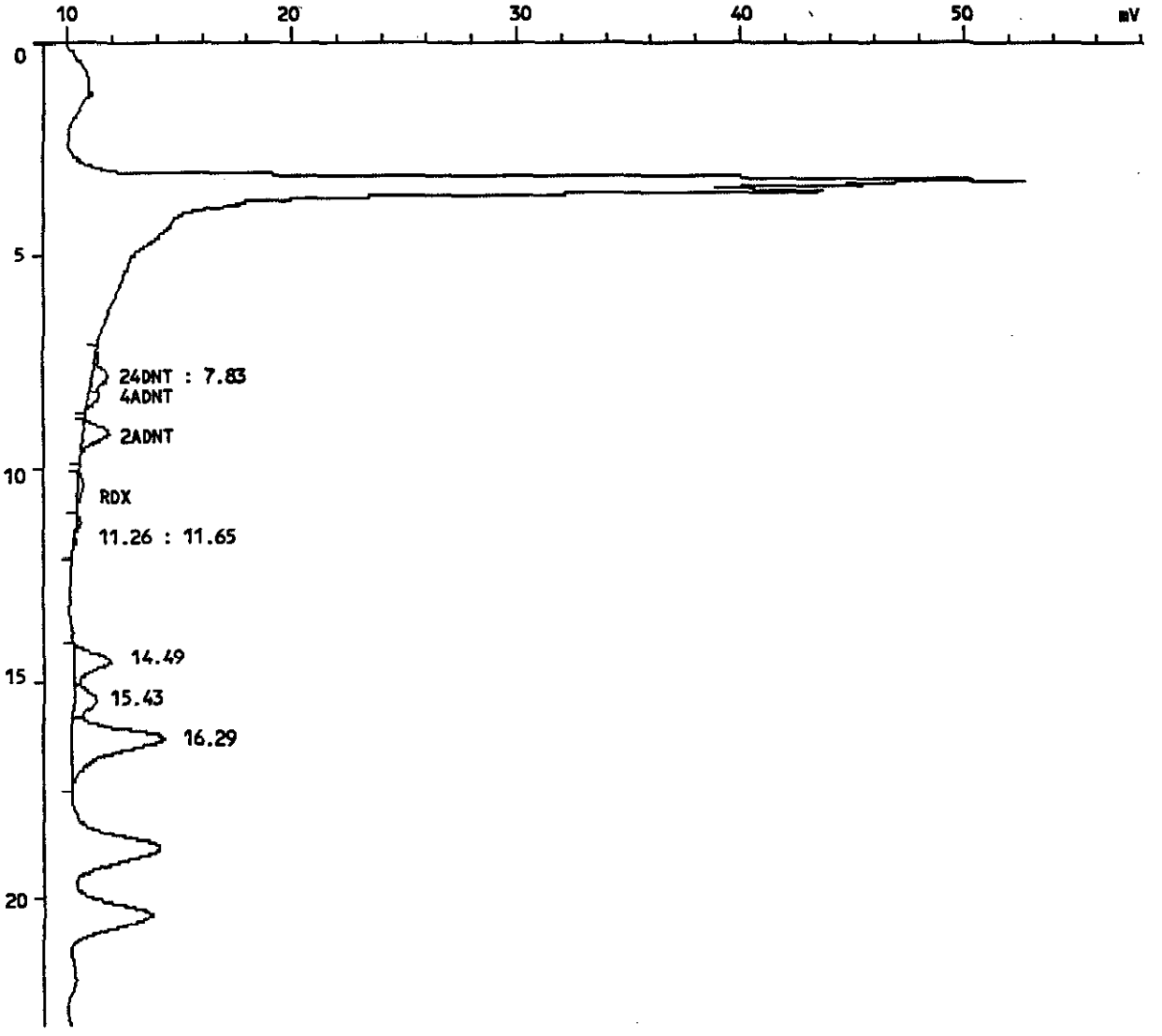
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.829	760	20037	780.270	TNT
4	9.157	1164	28695	1780.105	3,4DNT
10	16.293	4110	151083	13229.678	HMX
Total		6034	199816	15790.053	
Residual		4066	111678	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,9,1

Sample name.....: BIO-N-30%-40-D2
Sample ID.....: 34301.14
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 05:55:40
Reported on 23-Jun-98 at 19:18:24



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,9,1

Acquired on 22-Jun-98 at 05:55:40
Modified on 23-Jun-82 at 19:11:58
Reported on 23-Jun-98 at 19:11:56

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621B Last modified on 23-Jun-82 at 19:08:00
Method file.....: LCCN Last modified on 23-Jun-82 at 19:00:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D2
Sample ID.....: 34301.14
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	7.536	220	3324	105.952	24DNT
3	8.299	519	10437	603.667	4ADNT
4	9.157	1164	28695	1127.073	2ADNT
5	10.437	229	6699	463.309	RDX
Total		2133	49156	2300.001	
Residual		7967	262338	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-D2

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.14

Sample Amt: 2g % Moisture 19.20 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

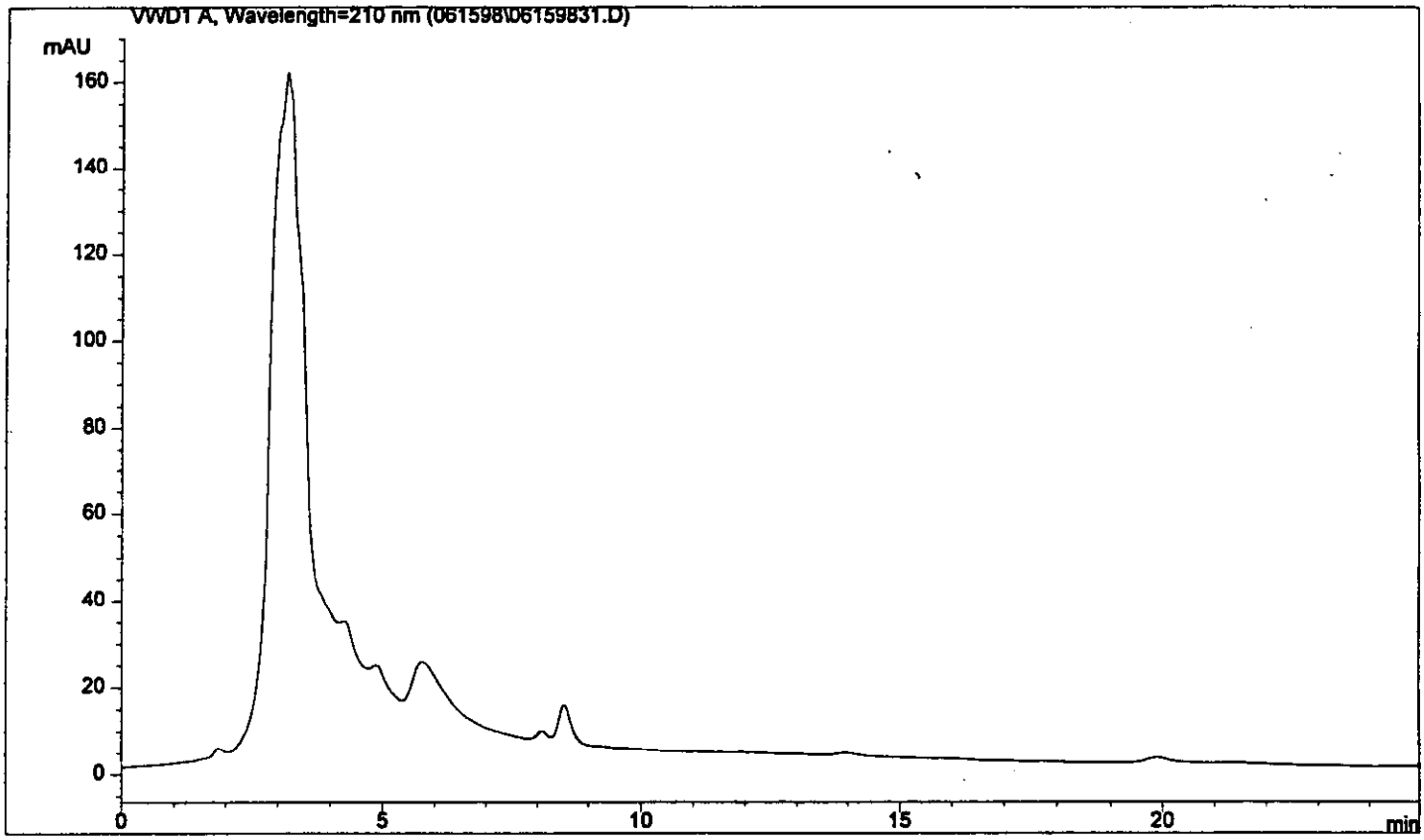
FORM I

Sample Name : 34301.14
Acq Operator : SS

Vial No. : 31
Inj. No. : 1
Inj. Vol. : 200 µl

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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

Totals: 0.00000

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*** End of Report ***

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-D2
FD

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.15

Sample Amt: 2g % Moisture 18.17 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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	343	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

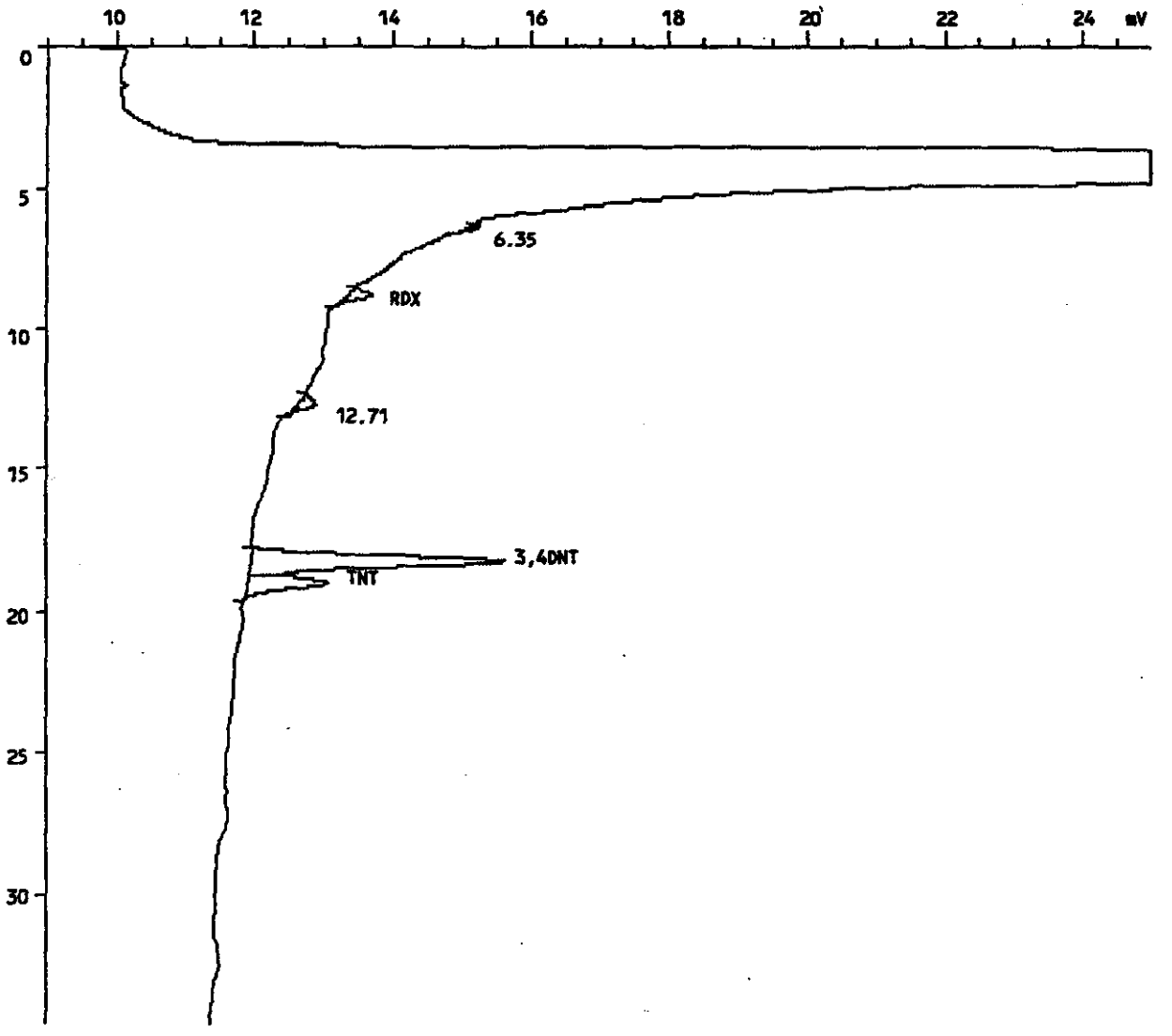
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,14,1

Sample name.....: BIO-N-30%-40-D2FD
Sample ID.....: 34301.15
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 12:57:21
Reported on 26-Jun-98 at 21:43:56



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,14,1

Acquired on 16-Jun-98 at 12:57:21
Modified on 26-Jun-82 at 21:32:12
Reported on 26-Jun-98 at 21:32:10

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 21:29:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D2FD
Sample ID.....: 34301.15
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

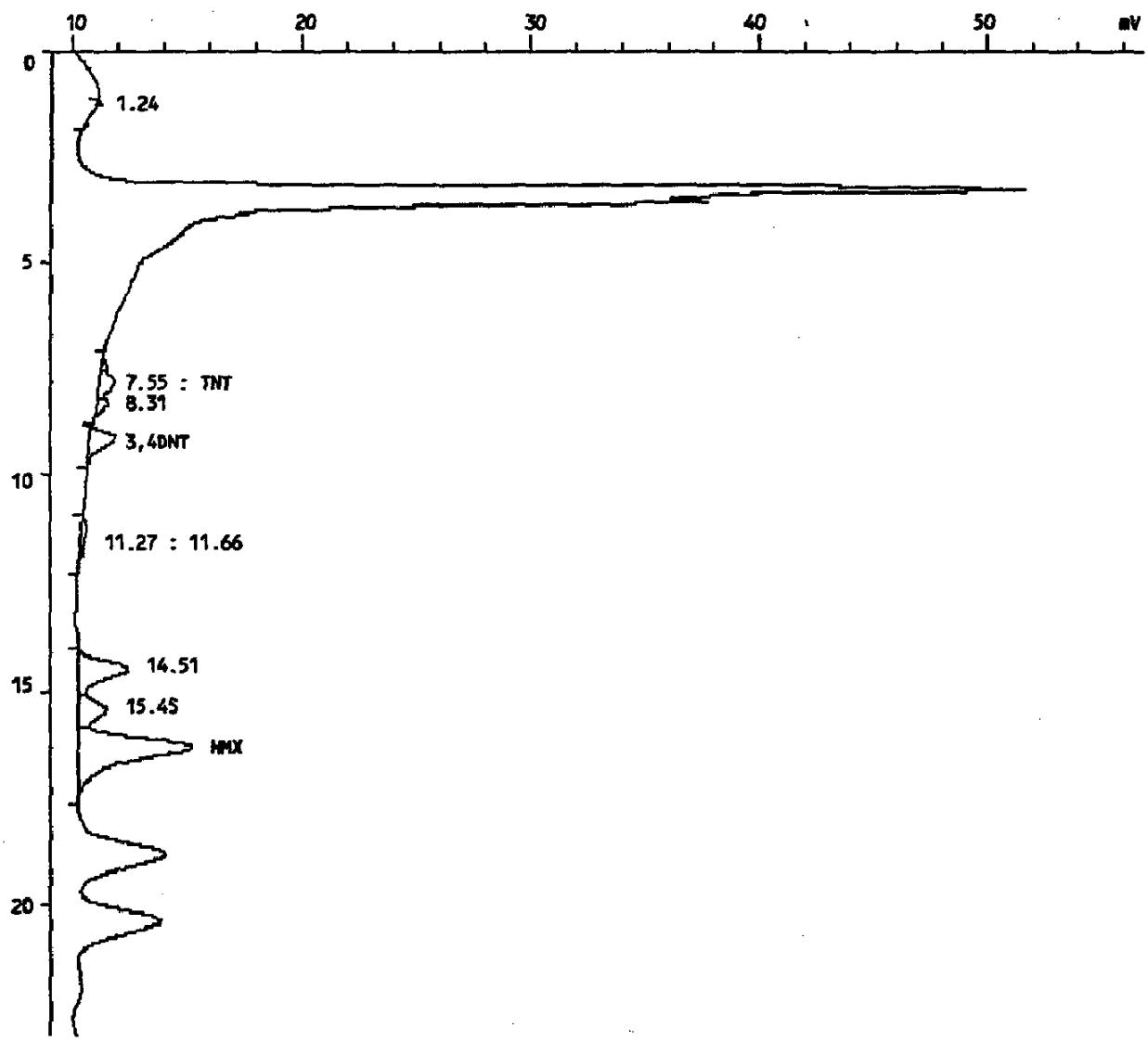
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.827	358	6981	204.971	RDX
4	18.219	3675	99180	1797.388	3,4DNT 90%
5	18.987	1180	32492	342.965	TNT *P
Total		5213	138654	2345.323	
Residual		466	9604	281.984	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,10,1

Sample name.....: BIO-N-30%-40-D2FD
Sample ID.....: 34301.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 06:40:02
Reported on 23-Jun-98 at 19:05:57



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,10,1

Acquired on 22-Jun-98 at 06:40:02
Modified on 23-Jun-82 at 18:57:40
Reported on 23-Jun-98 at 18:57:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621A Last modified on 23-Jun-82 at 18:19:40
Method file.....: LCCN Last modified on 23-Jun-82 at 18:24:20
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D2FD
Sample ID.....: 34301.15
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

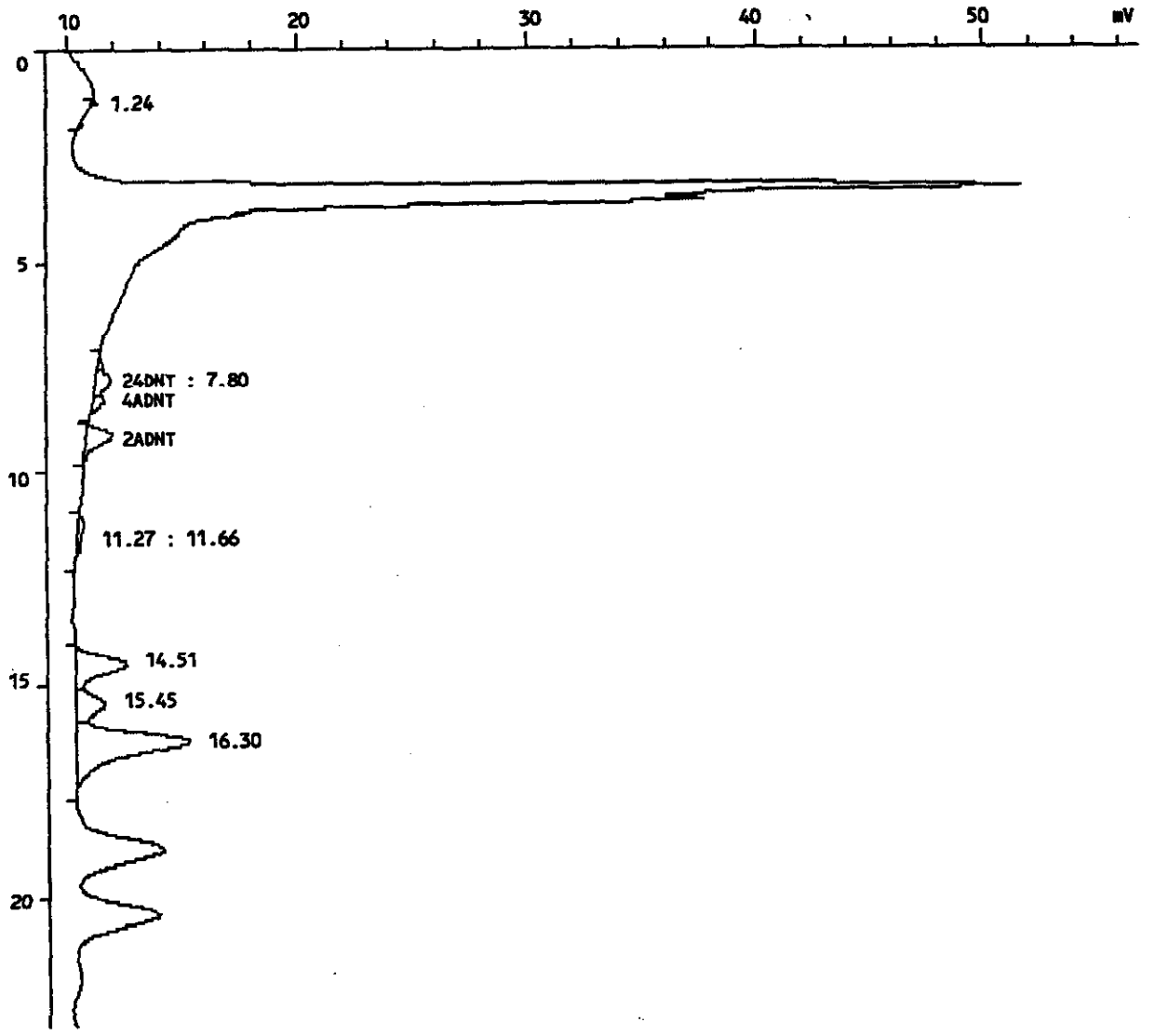
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.803	696	18526	721.420	TNT
5	9.168	1128	27939	1733.178	3,4DNT
10	16.299	4998	182581	15987.814	HMX
Total		6823	229046	18442.412	
Residual		4877	130284	0.000	

LONG PLOT

Injection F: <MC3> 3 3CN0621A,10,1

Sample name.....: BIO-N-30%-40-D2FD
Sample ID.....: 34301.15
INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11, INJ:100,UV

Acquired on 22-Jun-98 at 06:40:02
Reported on 23-Jun-98 at 19:18:46



INJECTION REPORT

Injection F: <MC3> 3 3CN0621A,10,1

Acquired on 22-Jun-98 at 06:40:02
Modified on 23-Jun-82 at 19:12:16
Reported on 23-Jun-98 at 19:12:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: LC-CN, ID: LC-CN-11,INJ:100, UV
Number of samples.: 12
Calibration file..: 3CN0621B Last modified on 23-Jun-82 at 19:08:00
Method file.....: LCCN Last modified on 23-Jun-82 at 19:00:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D2FD
Sample ID.....: 34301.15
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	7.547	227	2979	94.965	24DNT
4	8.315	530	11503	665.278	4ADNT
5	9.168	1128	27939	1097.362	2ADNT
Total		1885	42421	1857.605	
Residual		9816	316909	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-D2
FD

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.15

Sample Amt: 2g % Moisture 18.17 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

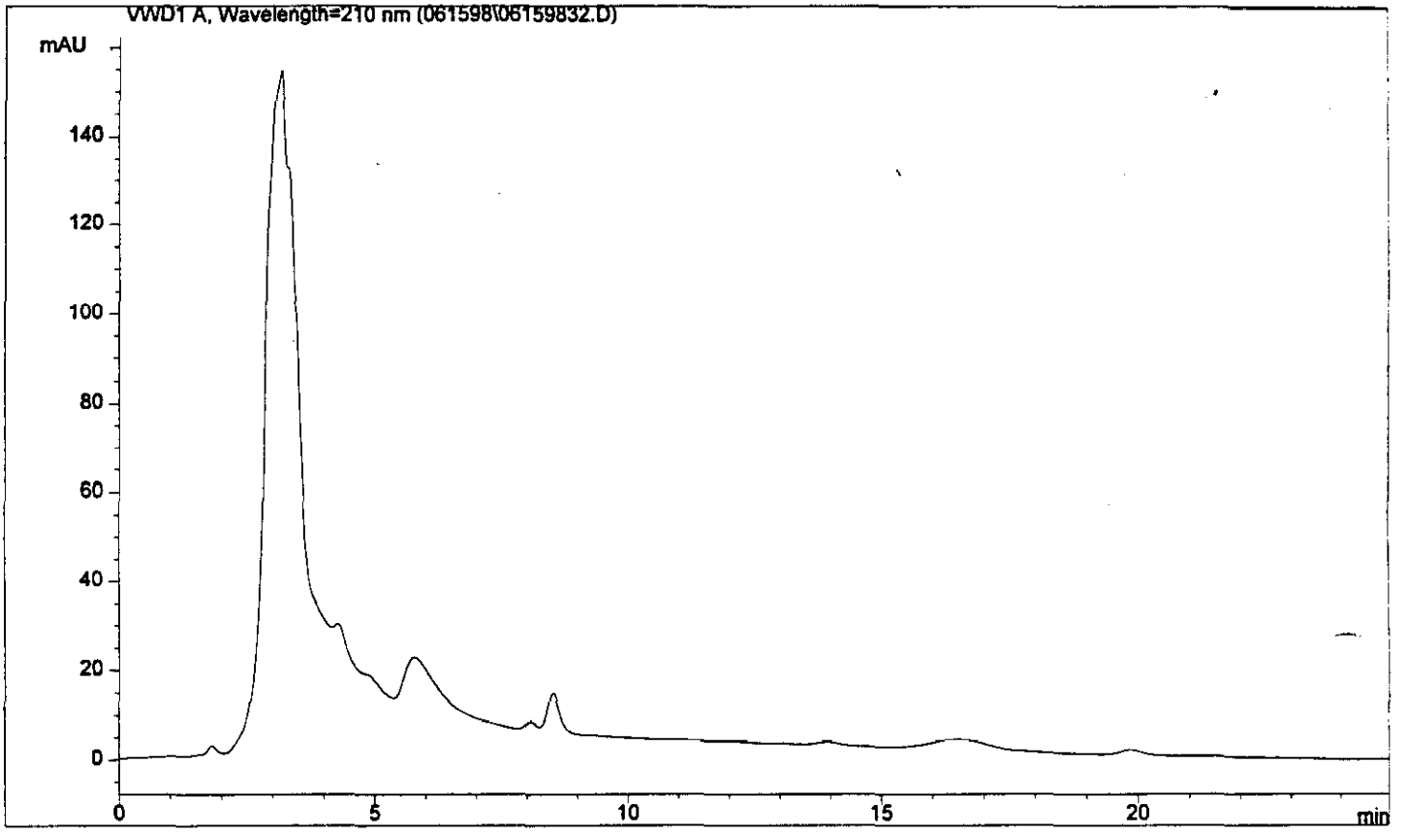
FORM I

Sample Name : 34301.15
Acq Operator : SS

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

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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
Totals:				0.00000	

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*** End of Report ***

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-D3

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.16

Sample Amt: 2g % Moisture 18.13 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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	302	
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

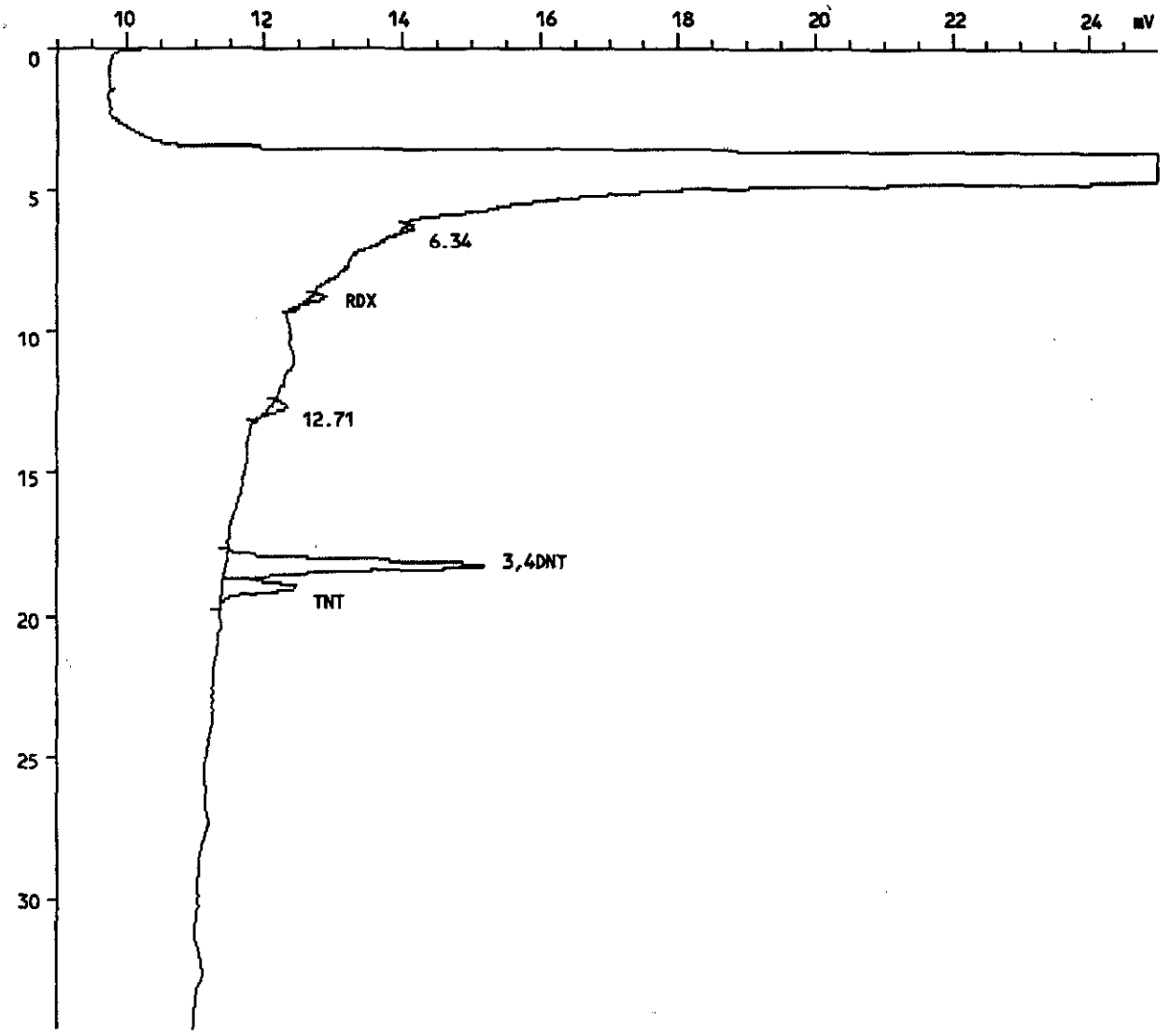
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0613C,15,1

Sample name.....: BIO-N-30%-40-D3
Sample ID.....: 34301.16
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 16-Jun-98 at 13:41:59
Reported on 26-Jun-98 at 21:44:32



INJECTION REPORT

Injection F: <MC3> 2 2EX0613C,15,1

Acquired on 16-Jun-98 at 13:41:59
Modified on 26-Jun-82 at 21:32:26
Reported on 26-Jun-98 at 21:32:25

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 17
Calibration file..: 2EX0613 Last modified on 26-Jun-82 at 20:18:12
Method file.....: EXPLOS Last modified on 26-Jun-82 at 21:29:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D3
Sample ID.....: 34301.16
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

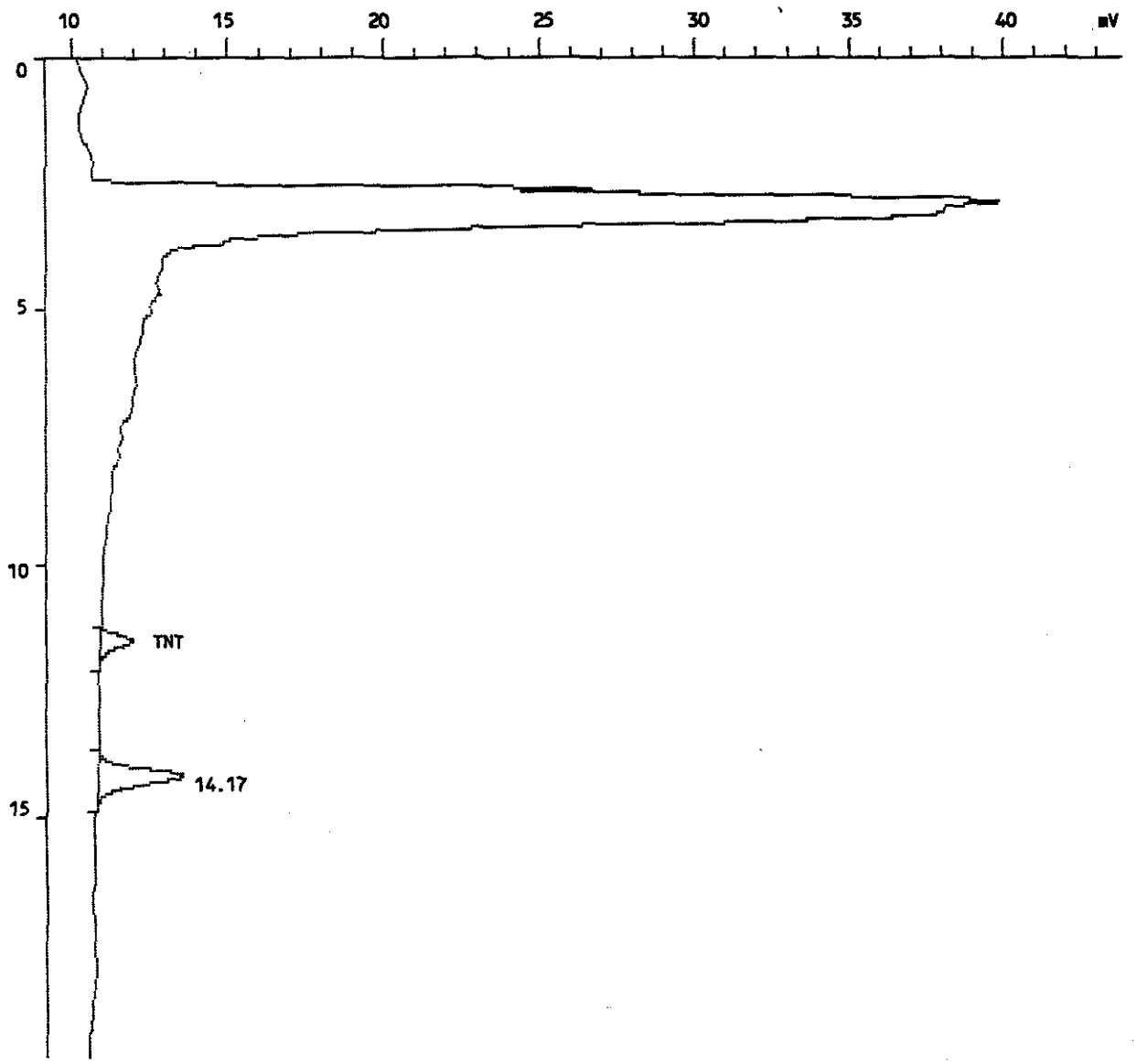
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	8.827	286	5082	149.215	RDX
4	18.219	3727	97971	1775.480	3,4DNT 89%
5	18.997	1061	28632	302.218	TNT *
Total		5074	131685	2226.913	
Residual		466	9404	276.115	

LONG PLOT

Injection F: <MC3> 3 3CN0630A,2,1

Sample name.....: BIO-N-30%-40-D3
Sample ID.....: 34301.16
INST ID: IN10, COL. TYPE: METASIL, ID: MET-01, INJ:200, UV

Acquired on 30-Jun-98 at 03:37:02
Reported on 01-Jul-98 at 10:44:18



INJECTION REPORT

Injection F: <MC3> 3 3CN0630A,2,1

Acquired on 30-Jun-98 at 03:37:02
Modified on 01-Jul-82 at 10:43:44
Reported on 01-Jul-98 at 10:43:48

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN10, COL. TYPE: METASIL, ID: MET-01,INJ:200, UV
Number of samples.: 23
Calibration file..: 3CN0630A Last modified on 01-Jul-82 at 10:19:56
Method file.....: LCCN1 Last modified on 01-Jul-82 at 10:37:18
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-40-D3
Sample ID.....: 34301.16
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	11.515	1055	19300	378.129	TNT
Total		1055	19300	378.129	
Residual		2696	61977	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-40-D3

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) SOIL Lab Sample ID: 34301.16

Sample Amt: 2g % Moisture 18.13 Date Received: 06/09/98

Extraction Volume: 10ml Date Extracted: 06/09/98

Extraction Method: SONC Date Analyzed: 06/16/98

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

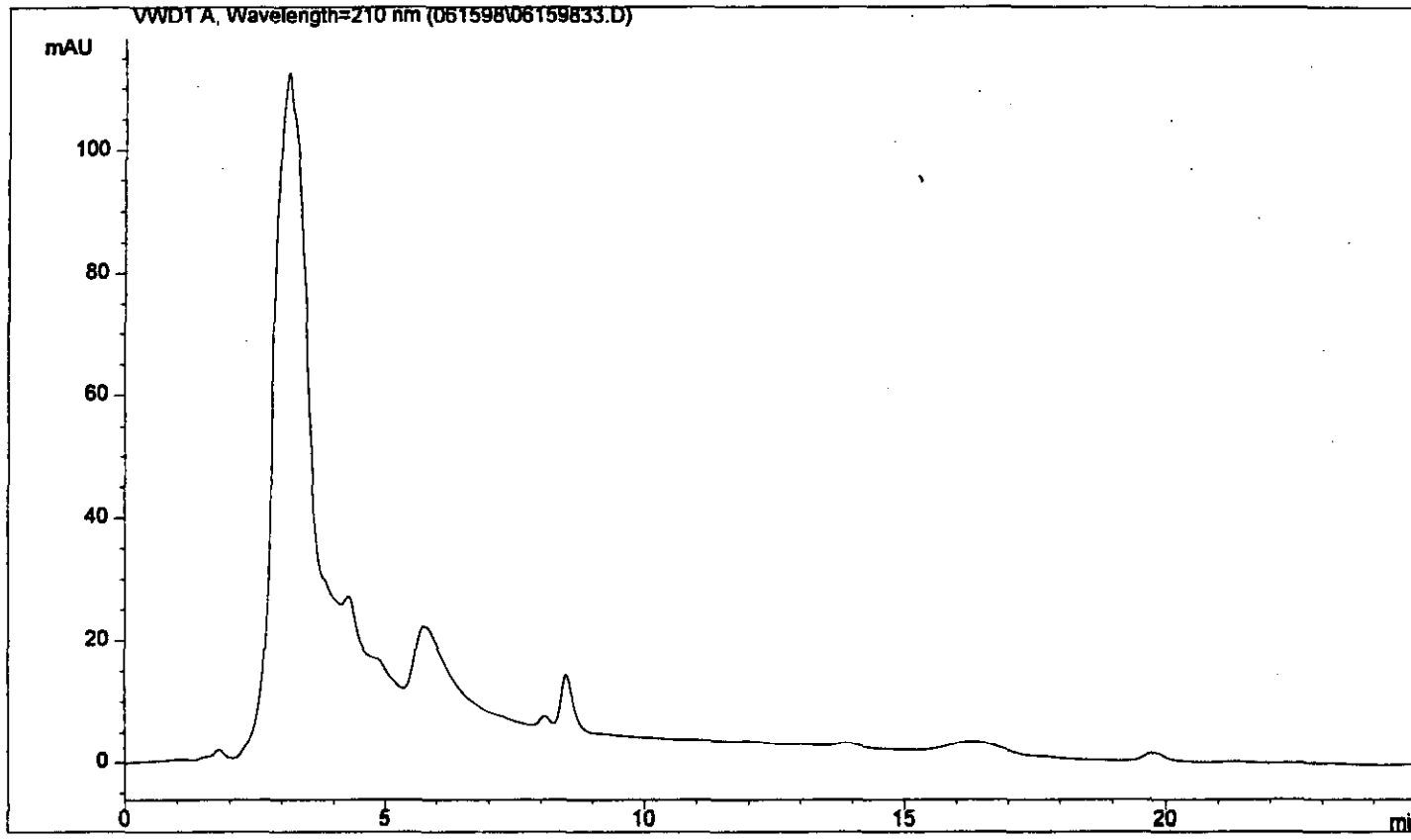
FORM I

Sample Name : 34301.16
Acq Operator : SS

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

Acq. Method : 061598.M
Analysis Method : C:\HPCHEM\1\METHODS\061598.M
Last Changed : Wed, 17. Jun. 1998, 00:32:56 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Wed, 17. Jun. 1998,00:05:19 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

Totals: 0.00000

==========

*** End of Report ***

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB-060698

b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) WATER Lab Sample ID: 34301.17

Sample Amt: 1ml % Moisture Date Received: 06/09/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 06/12/98

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

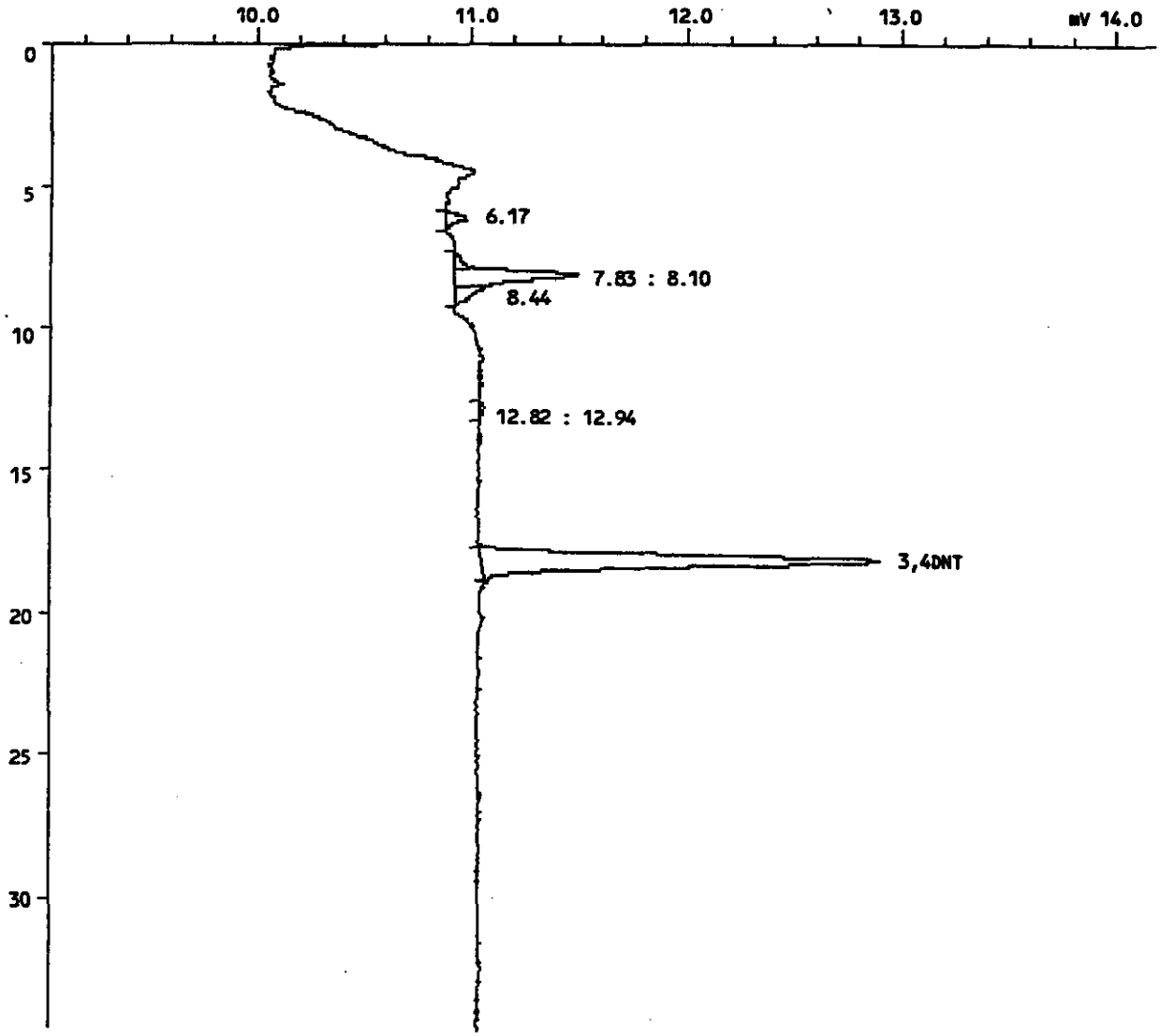
FORM I

LONG PLOT

Injection F: <MC3> 2 2E0612W,8,1

Sample name.....: BIO-RB-060698
Sample ID.....: 34301.17
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jun-98 at 23:23:32
Reported on 13-Jun-98 at 15:05:23



INJECTION REPORT

Injection F: <MC3> 2 2E0612W,8,1

Acquired on 12-Jun-98 at 23:23:32
Modified on 13-Jun-82 at 14:52:08
Reported on 13-Jun-98 at 14:52:09

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 22
Calibration file..: 2E0612W Last modified on 13-Jun-82 at 14:52:08
Method file.....: EXPLOS Last modified on 13-Jun-82 at 14:50:42
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-RB-060698
Sample ID.....: 34301.17
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
7	18.101	1838	50069	215.536	3,4DNT 107%
Total		1838	50069	215.536	
Residual		950	20109	-31.420	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB-060698

-b Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34301

Matrix: (soil/water) WATER Lab Sample ID: 34301.17

Sample Amt: 1ml % Moisture Date Received: 06/09/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 06/12/98

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

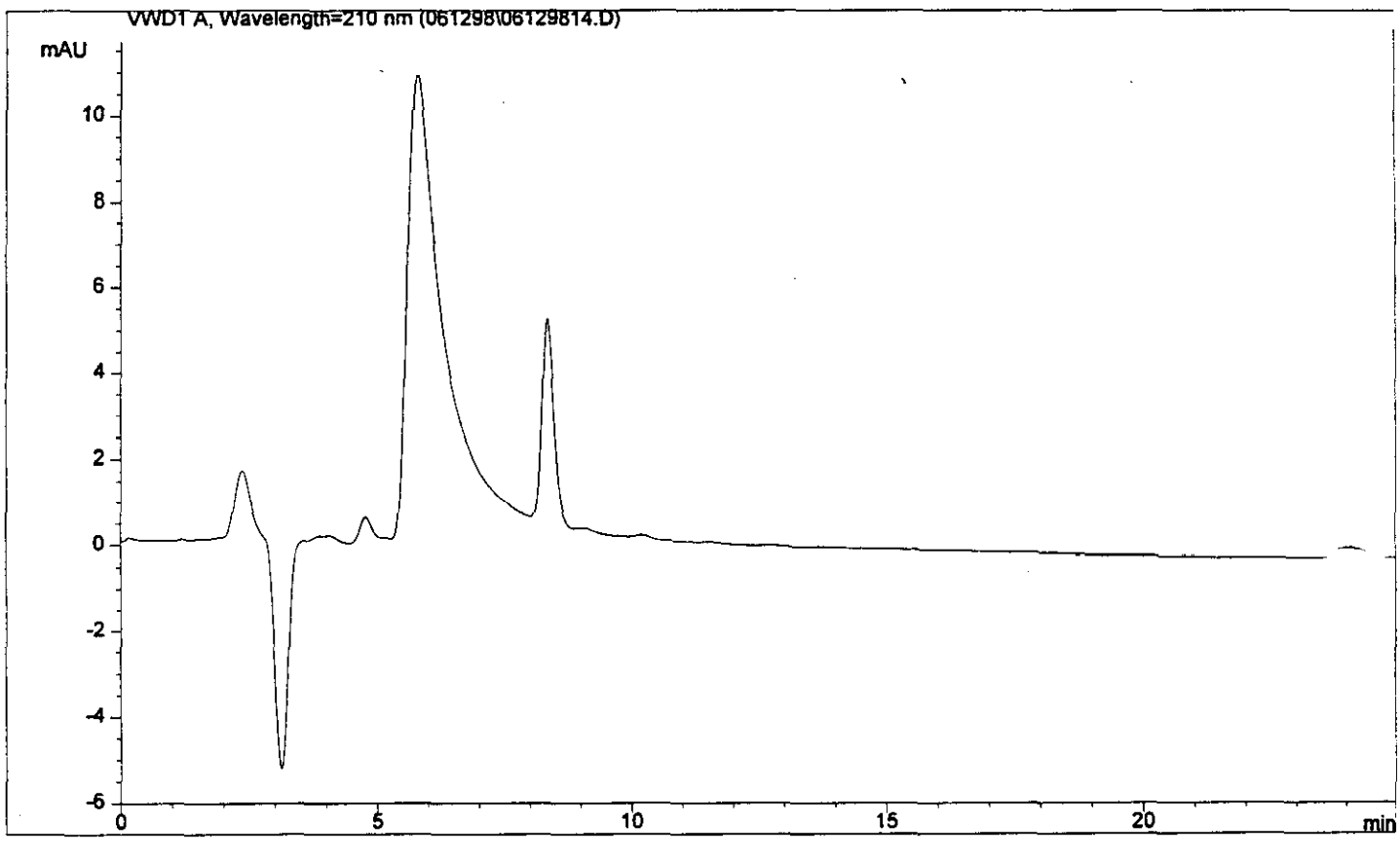
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

Injection Date	: Fri, 12. Jun. 1998	Seq Line	: 14
Sample Name	: 34301.17	Vial No.	: 14
Acq Operator	: SS	Inj. No.	:
		Inj. Vol.	: 200 µ

Acq. Method : 061298W.M
Analysis Method : C:\HPCHEM\1\METHODS\061298W.M
Last Changed : Tue, 16. Jun. 1998, 03:14:42 pm

PETN SOIL



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Customized Report: extstd.frp

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Sorted By Signal
Calib. Data Modified : Tue, 16. Jun. 1998,03:13:18 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

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 06/14/98 to 06/18/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	06/14/98	08:43
EXP L1 SOIL STD	3-26:IA1	06/14/98	10:12
EXP L2 SOIL STD	3-25:IA2	06/14/98	10:57
EXP L3 SOIL STD	3-24:IA3	06/14/98	11:41
EXP L4 SOIL STD	3-23:IA4	06/14/98	12:26
EXP L5 SOIL STD	3-22:IA5	06/14/98	13:11
EXP L3 SOIL STD	3-24:CA2	06/15/98	01:06
BL0609SE	BL0609SE	06/15/98	02:36
LC0609SE	LC0609SE	06/15/98	04:05
LD0609SE	LD0609SE	06/15/98	04:50
BIO-N-30%-40-A1	34301.01	06/15/98	05:34
BIO-N-30%-40-A1FD	34301.02	06/15/98	06:19
BIO-N-3%-40-A2	34301.03	06/15/98	07:03
EXP L3 SOIL STD	3-24:CA3	06/15/98	10:46
EXP L3 SOIL STD	3-24:CA5	06/16/98	01:47
BIO-N-30%-40-A3	34301.04	06/16/98	03:16
BIO-N-30%-40-B1	34301.05	06/16/98	04:01
BIO-N-30%-40-B2	34301.06	06/16/98	04:46
BIO-N-30%-40-B3	34301.07	06/16/98	05:30

page 1

FORM VIII

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 06/14/98 to 06/18/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-40-C1	34301.08	06/16/98	06:15
BIO-N-30%-40-C1	34301.09MS	06/16/98	06:59
BIO-N-30%-40-C1	34301.10MSD	06/16/98	07:44
BIO-N-30%-40-C2	34301.11	06/16/98	08:29
BIO-N-30%-40-C3	34301.12	06/16/98	09:13
EXP L3 SOIL STD	3-24:CA6	06/16/98	09:58
BIO-N-30%-40-D1	34301.13	06/16/98	11:27
BIO-N-30%-40-D2	34301.14	06/16/98	12:12
BIO-N-30%-40-D2FD	34301.15	06/16/98	12:57
BIO-N-30%-40-D3	34301.16	06/16/98	13:41
EXP L3 SOIL STD	3-24:CA7	06/16/98	14:26

page 2

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
strument ID: IN12
·lumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0613,3
Injection File Name Level 2 : 2EX0613,4
Injection File Name Level 3 : 2EX0613,5
Injection File Name Level 4 : 2EX0613,6
Injection File Name Level 5 : 2EX0613,7

Calibration Date : 06/14/1998
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	11856	1169	312928	1232	822282	1246	1189587	1202	1631679	1236
RDX	7022	1664	179997	1705	478527	1734	692658	1681	952284	1731
TNB	11274	3733	287383	3801	753439	3825	1090139	3683	1514795	3845
DNB	9254	5712	240613	5926	642444	6084	917762	5794	1275144	6015
TETRYL	8122	2183	203777	2191	557724	2305	747272	2053	1010514	2088
NB	15747	4772	394551	4788	1070549	5003	1522526	4728	2147359	4994
3,4-DNT	14026	2761	346591	2733	934598	2832	1316233	2654	1857821	2815
TNT	12402	4593	319815	4731	861254	4893	1219783	4620	1706546	4848
4ADNT	6912	2929	179237	3028	481953	3130	678254	2924	966370	3138
2ADNT	9888	4190	255160	4310	687118	4462	973178	4195	1367657	4440
26DNT	10179	2623	259540	2670	690722	2719	987589	2599	1355171	2678
24DNT	11897	5041	318358	5378	850130	5520	1219090	5255	1715037	5568
	8177	2419	230857	2729	611816	2781	884429	2680	1221475	2776
	8668	2564	234677	2774	622490	2830	904726	2742	1248929	2838
	10821	3361	282027	3508	750690	3575	1091474	3476	1504754	3600

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
·strument ID: IN12
lumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0613,3
Injection File Name Level 2 : 2EX0613,4
Injection File Name Level 3 : 2EX0613,5
Injection File Name Level 4 : 2EX0613,6
Injection File Name Level 5 : 2EX0613,7

Calibration Date : 06/14/1998
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	1217	2.58	0.99974	1227	0.000
RDX	1703	1.80	0.99975	1716	0.000
TNB	3777	1.79	0.99951	3793	0.000
DNB	5906	2.59	0.99954	5957	0.000
TETRYL	2164	4.56	0.99820	2112	0.000
NB	4857	2.69	0.99917	4913	0.000
3,4-DNT	2759	2.58	0.99899	2768	0.000
'	4737	2.81	0.99929	4785	0.000
,NT	3029	3.43	0.99866	3072	0.000
2ADNT	4319	3.00	0.99907	4369	0.000
26DNT	2658	1.79	0.99966	2660	0.000
24DNT	5352	3.98	0.99913	5466	0.000
2NT	2677	5.60	0.99965	2747	0.000
4NT	2750	4.03	0.99968	2807	0.000
3NT	3504	2.69	0.99968	3558	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/14/1998
tinuing Calibration #: 2
.tinuing Cal Date : 06/15/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0613A,16
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	814913	1235	1217	1.46	1227	0.62
RDX	475828	1724	1703	1.23	1716	0.45
TNB	761789	3867	3777	2.37	3793	1.95
DNB	634267	6006	5906	1.69	5957	0.82
TETRYL	512254	2117	2164	2.18	2112	0.24
NB	1032204	4823	4857	0.69	4913	1.83
3,4-DNT	907727	2751	2759	0.30	2768	0.64
TNT	836021	4750	4737	0.27	4785	0.73
4ADNT	466602	3030	3029	0.02	3072	1.37
2ADNT	671029	4357	4319	0.88	4369	0.26
26DNT	679028	2673	2658	0.58	2660	0.49
24DNT	843548	5478	5352	2.34	5466	0.22
2NT	606104	2755	2677	2.91	2747	0.28
4NT	619330	2815	2750	2.38	2807	0.28
T	744916	3547	3504	1.24	3558	0.30

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/14/1998
Continuing Calibration #: 3
Continuing Cal Date : 06/15/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0613B,2
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	821319	1244	1217	2.26	1227	1.41
RDX	479837	1739	1703	2.09	1716	1.30
TNB	766751	3892	3777	3.04	3793	2.61
DNB	628309	5950	5906	0.74	5957	0.13
TETRYL	539347	2229	2164	2.99	2112	5.55
NB	1037708	4849	4857	0.16	4913	1.31
3,4-DNT	914417	2771	2759	0.43	2768	0.09
TNT	849809	4828	4737	1.92	4785	0.90
4ADNT	468834	3044	3029	0.49	3072	0.90
2ADNT	675264	4385	4319	1.52	4369	0.37
26DNT	689444	2714	2658	2.12	2660	2.04
24DNT	848135	5507	5352	2.89	5466	0.76
2NT	601382	2734	2677	2.11	2747	0.50
4NT	610103	2773	2750	0.86	2807	1.21
[illegible]	756282	3601	3504	2.78	3558	1.22

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/14/1998
tinuing Calibration #: 5
.tinuing Cal Date : 06/16/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0613B,22
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	823152	1247	1217	2.48	1227	1.64
RDX	479328	1737	1703	1.98	1716	1.19
TNB	756458	3840	3777	1.66	3793	1.23
DNB	645209	6110	5906	3.45	5957	2.56
TETRYL	550230	2274	2164	5.07	2112	7.68
NB	1041591	4867	4857	0.21	4913	0.94
3,4-DNT	941726	2854	2759	3.43	2768	3.08
TNT	862200	4899	4737	3.41	4785	2.38
4ADNT	486003	3156	3029	4.17	3072	2.73
2ADNT	691719	4492	4319	3.99	4369	2.82
26DNT	695807	2739	2658	3.06	2660	2.98
24DNT	853468	5542	5352	3.54	5466	1.40
2NT	603763	2744	2677	2.52	2747	0.11
4NT	615710	2799	2750	1.78	2807	0.30
T	740515	3526	3504	0.64	3558	0.89

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/14/1998
Continuing Calibration #: 6
Continuing Cal Date : 06/16/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0613C,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	815542	1236	1217	1.54	1227	0.70
RDX	473748	1716	1703	0.79	1716	0.01
TNB	754499	3830	3777	1.39	3793	0.97
DNB	641795	6078	5906	2.90	5957	2.02
TETRYL	533621	2205	2164	1.90	2112	4.43
NB	1093133	5108	4857	5.17	4913	3.96
3,4-DNT	932577	2826	2759	2.43	2768	2.08
TNT	857701	4873	4737	2.87	4785	1.84
4ADNT	481860	3129	3029	3.29	3072	1.86
2ADNT	685605	4452	4319	3.07	4369	1.91
26DNT	691037	2721	2658	2.35	2660	2.27
24DNT	851007	5526	5352	3.24	5466	1.10
2NT	602867	2740	2677	2.36	2747	0.26
4NT	615783	2799	2750	1.80	2807	0.29
[illegible]	741611	3531	3504	0.79	3558	0.74

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/14/1998
Continuing Calibration #: 7
Continuing Cal Date : 06/16/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0613C,16
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	816074	1236	1217	1.60	1227	0.76
RDX	477120	1729	1703	1.51	1716	0.72
TNB	758025	3848	3777	1.87	3793	1.44
DNB	638406	6046	5906	2.36	5957	1.48
TETRYL	539857	2231	2164	3.09	2112	5.65
NB	1086993	5079	4857	4.58	4913	3.38
3,4-DNT	931903	2824	2759	2.35	2768	2.00
TNT	852719	4845	4737	2.27	4785	1.25
4ADNT	481624	3127	3029	3.24	3072	1.81
2ADNT	685172	4449	4319	3.00	4369	1.84
26DNT	685790	2700	2658	1.58	2660	1.50
24DNT	848717	5511	5352	2.97	5466	0.83
2NT	601490	2734	2677	2.13	2747	0.48
4NT	614674	2794	2750	1.61	2807	0.47
[illegible]	737221	3511	3504	0.19	3558	1.33

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection 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 : IN12
Column ID : CARB-07
Calibration Date : 06/14/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.72	5.72	5.71	5.70	5.69
RDX	8.82	8.80	8.79	8.78	8.76
TNB	11.90	11.89	11.87	11.87	11.85
DNB	14.52	14.54	14.51	14.52	14.49
TETRYL	15.89	15.89	15.86	15.87	15.84
NB	16.51	16.50	16.48	16.49	16.46
3,4-DNT	18.22	18.19	18.16	18.17	18.14
TNT	18.96	18.94	18.91	18.92	18.90
4ADNT	20.00	19.93	19.89	19.92	19.88
2ADNT	20.97	20.98	20.93	20.97	20.93
26DNT	22.17	22.14	22.10	22.12	22.10
24DNT	22.83	22.86	22.82	22.84	22.81
2NT	26.90	26.90	26.86	26.88	26.86
4NT	28.69	28.76	28.73	28.75	28.73
3NT	31.03	31.00	30.97	30.99	30.97

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	5.70	5.71	5.72	5.74	5.71
RDX	8.78	8.79	8.81	8.72	8.79
TNB	11.88	11.88	11.90	11.80	11.88
DNB	14.52	14.53	14.54	14.45	14.51
TETRYL	15.88	15.88	15.91	15.78	15.87
NB	16.49	16.50	16.51	16.42	16.49
3,4-DNT	18.18	18.18	18.20	18.08	18.17
TNT	18.94	18.93	18.96	18.86	18.93
4ADNT	19.92	19.91	19.96	19.84	19.92
2ADNT	20.97	20.96	21.01	20.89	20.96
26DNT	22.14	22.12	22.16	22.05	22.12
24DNT	22.86	22.84	22.88	22.78	22.85
2NT	26.91	26.89	26.91	26.82	26.89
4NT	28.78	28.76	28.78	28.69	28.76
3NT	31.01	31.00	31.02	30.94	31.00

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.72	0.016	0.048	5.67 - 5.76
RDX	8.79	0.029	0.087	8.70 - 8.87
TNB	11.88	0.031	0.093	11.79 - 11.97
DNB	14.52	0.033	0.099	14.42 - 14.62
TETRYL	15.87	0.040	0.120	15.75 - 15.99
NB	16.49	0.035	0.106	16.38 - 16.60
3,4-DNT	18.17	0.043	0.129	18.04 - 18.30
TNT	18.93	0.037	0.112	18.82 - 19.04

4ADNT	19.91	0.050	0.149	19.76 - 20.06
2ADNT	20.96	0.047	0.142	20.82 - 21.10
26DNT	22.13	0.044	0.131	22.00 - 22.26
24DNT	22.85	0.044	0.131	22.72 - 22.98
2NT	26.89	0.047	0.141	26.75 - 27.03
T	28.75	0.052	0.155	28.60 - 28.91
T	31.00	0.051	0.153	30.85 - 31.15

CALIBRATION FACTOR DAT
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN12
lumn ID : CARB-07
alibration Date : 06/14/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.72	5.72	5.71	5.70	5.69
RDX	8.82	8.80	8.79	8.78	8.76
TNB	11.90	11.89	11.87	11.87	11.85
DNB	14.52	14.54	14.51	14.52	14.49
TETRYL	15.89	15.89	15.86	15.87	15.84
NB	16.51	16.50	16.48	16.49	16.46
3,4-DNT	18.22	18.19	18.16	18.17	18.14
TNT	18.96	18.94	18.91	18.92	18.90
4ADNT	20.00	19.93	19.89	19.92	19.88
2ADNT	20.97	20.98	20.93	20.97	20.93
26DNT	22.17	22.14	22.10	22.12	22.10
24DNT	22.83	22.86	22.82	22.84	22.81
2NT	26.90	26.90	26.86	26.88	26.86
4NT	28.69	28.76	28.73	28.75	28.73
3NT	31.03	31.00	30.97	30.99	30.97

COMPONENT NAME	RT Cont CA6	RT Cont CA7	RT Cont CA8	RT Cont CA9	RT Cont CA10
HMX	5.70	5.71	5.73	5.72	5.72
RDX	8.77	8.79	8.83	8.81	8.80
TNB	11.86	11.88	11.93	11.92	11.90
DNB	14.50	14.52	14.58	14.56	14.54
TETRYL	15.85	15.87	15.95	15.92	15.90
NB	16.46	16.49	16.56	16.54	16.52
3,4-DNT	18.14	18.16	18.25	18.22	18.20
TNT	18.90	18.93	19.01	18.99	18.96
4ADNT	19.89	19.90	19.99	19.97	19.94
2ADNT	20.94	20.94	21.04	21.02	20.98
26DNT	22.09	22.12	22.22	22.19	22.16
24DNT	22.82	22.84	22.94	22.91	22.88
2NT	26.85	26.88	27.01	26.97	26.92
4NT	28.72	28.74	28.88	28.84	28.78
3NT	30.96	30.99	31.12	31.08	31.04

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.72	0.016	0.048	5.67 - 5.76
RDX	8.79	0.029	0.087	8.70 - 8.87
TNB	11.88	0.031	0.093	11.79 - 11.97
3	14.52	0.033	0.099	14.42 - 14.62
TRYL	15.87	0.040	0.120	15.75 - 15.99
NB	16.49	0.035	0.106	16.38 - 16.60
3,4-DNT	18.17	0.043	0.129	18.04 - 18.30
TNT	18.93	0.037	0.112	18.82 - 19.04
4ADNT	19.91	0.050	0.149	19.76 - 20.06

2ADNT	20.96	0.047	0.142	20.82 - 21.10
26DNT	22.13	0.044	0.131	22.00 - 22.26
24DNT	22.85	0.044	0.131	22.72 - 22.98
2NT	26.89	0.047	0.141	26.75 - 27.03
4NT	28.75	0.052	0.155	28.60 - 28.91
[illegible]	31.00	0.051	0.153	30.85 - 31.15

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: IN13 Column ID: CARB-08

Dates of Anlayses: 06/19/98 to 06/20/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	06/19/98	18:23
EXP L1 SOIL STD	3-26:IA1	06/19/98	20:37
EXP L2 SOIL STD	3-25:IA2	06/19/98	21:22
EXP L3 SOIL STD	3-24:IA3	06/19/98	22:07
EXP L4 SOIL STD	3-23:IA4	06/19/98	22:51
EXP L5 SOIL STD	3-22:IA5	06/19/98	23:36
BIO-N-30%-40-C2 5X	34301.11DL	06/20/98	03:19
EXP L3 SOIL STD	3-24:CA1	06/20/98	14:23

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

Inj 1

Injection File Name Level 1 : 5EX0619,4
Injection File Name Level 2 : 5EX0619,5
Injection File Name Level 3 : 5EX0619,6
Injection File Name Level 4 : 5EX0619,7
Injection File Name Level 5 : 5EX0619,8

Calibration Date : 06/19/1998
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
HMX	4168	411	94214	371	250853	380	378160	382	506979	384
RDX	2116	501	51891	491	135192	490	202428	491	269767	490
TNB	2813	931	75591	1000	198039	1005	299112	1011	397829	1010
DNB	2186	1349	57286	1411	152221	1441	229096	1446	308155	1454
TETRYL	2172	584	54937	591	140993	583	212668	584	286804	593
NB	2881	873	77483	940	206092	963	309004	960	425941	991
3,4-DNT	2984	587	76326	602	200725	608	305123	615	415598	630
TNT	2912	1079	77516	1147	206012	1171	311038	1178	423681	1204
4ADNT	1646	697	43594	736	116934	759	177926	767	246719	801
2ADNT	2168	919	57418	970	153032	994	233130	1005	318226	1033
26DNT	2501	645	66955	689	177772	700	268806	707	362922	717
24DNT	2606	1104	69322	1171	185845	1207	284299	1225	384848	1250
2NT	1767	523	46517	550	124070	564	186000	564	248790	565
[illegible]	1648	488	40886	483	109588	498	164280	498	221831	506
	2067	642	53857	670	142482	678	214130	682	288443	

CALIBRATION FACTOR DATA
FORM 9B

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

Inj 1
Injection File Name Level 1 : 5EX0619,4
Injection File Name Level 2 : 5EX0619,5
Injection File Name Level 3 : 5EX0619,6
Injection File Name Level 4 : 5EX0619,7
Injection File Name Level 5 : 5EX0619,8

Calibration Date : 06/19/1998
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
HMX	386	3.91	0.99997	383	0.000
RDX	493	0.98	1.00000	491	0.000
TNB	991	3.41	1.00000	1009	0.000
DNB	1420	3.02	0.99998	1449	0.000
TETRYL	587	0.77	0.99993	589	0.000
NB	945	4.68	0.99973	977	0.000
3,4-DNT	608	2.57	0.99979	622	0.000
TNT	1156	4.12	0.99984	1190	0.000
NT	752	5.11	0.99938	784	0.000
NT	984	4.38	0.99971	1018	0.000
26DNT	692	4.09	0.99991	711	0.000
24DNT	1191	4.75	0.99981	1235	0.000
2NT	553	3.27	0.99999	564	0.000
4NT	494	1.73	0.99994	501	0.000
3NT	672	2.76	0.99995	686	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/19/1998
Continuing Calibration #: 1
tinuing Cal Date : 06/20/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-08
Injection File Name : 5EX0619A,14
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	250997	380	386	1.38	383	0.61
RDX	134904	489	493	0.83	491	0.38
TNB	198930	1010	991	1.86	1009	0.06
DNB	151835	1438	1420	1.23	1449	0.77
TETRYL	142437	589	587	0.30	589	0.02
NB	205695	961	945	1.68	977	1.59
3,4-DNT	200784	608	608	0.01	622	2.17
TNT	207230	1177	1156	1.90	1190	1.09
4ADNT	116411	756	752	0.49	784	3.60
2ADNT	153983	1000	984	1.61	1018	1.80
26DNT	177559	699	692	1.08	711	1.73
24DNT	186204	1209	1191	1.49	1235	2.10
2NT	121743	553	553	0.04	564	1.95
4NT	107659	489	494	0.98	501	2.33
3NT	143089	681	672	1.33	686	0.62

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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

strument ID : IN13
olumn ID : CARB-08
Calibration Date : 06/19/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.91	4.90	4.90	4.90	4.90
RDX	7.46	7.44	7.45	7.46	7.46
TNB	9.98	9.97	9.97	9.99	9.98
DNB	12.21	12.20	12.20	12.24	12.24
TETRYL	13.04	13.03	13.04	13.10	13.09
NB	13.85	13.82	13.82	13.87	13.87
3,4-DNT	15.13	15.09	15.09	15.17	15.17
TNT	15.59	15.59	15.58	15.65	15.64
4ADNT	16.42	16.37	16.38	16.46	16.46
2ADNT	17.25	17.28	17.30	17.39	17.38
26DNT	18.19	18.17	18.18	18.27	18.26
24DNT	18.84	18.83	18.84	18.94	18.92
2NT	21.96	21.97	21.99	22.12	22.09
4NT	23.49	23.48	23.50	23.64	23.61
3NT	25.35	25.27	25.31	25.46	25.44

COMPONENT NAME	RT Cont CA1	RT Cont CA2
HMX	4.91	4.86
RDX	7.45	7.36
TNB	9.97	9.83
DNB	12.20	12.04
TETRYL	13.01	12.78
NB	13.84	13.64
3,4-DNT	15.10	14.84
TNT	15.57	15.33
4ADNT	16.36	16.10
2ADNT	17.26	17.00
26DNT	18.17	17.87
24DNT	18.82	18.53
2NT	21.98	21.62
4NT	23.49	23.10
3NT	25.29	24.86

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.90	0.016	0.048	4.85 - 4.95
RDX	7.44	0.035	0.104	7.33 - 7.54
TNB	9.96	0.054	0.163	9.79 - 10.12
B	12.19	0.069	0.206	11.98 - 12.39
TETRYL	13.01	0.108	0.324	12.69 - 13.33
NB	13.82	0.079	0.238	13.58 - 14.05
3,4-DNT	15.08	0.114	0.341	14.74 - 15.42
TNT	15.57	0.107	0.320	15.25 - 15.89

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: LC4 Column ID:

Dates of Anlayses: 06/15/98 to 06/17/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	06/15/98	18:57
L1 2-249:IA1	L1 2-249:IA1	06/15/98	20:21
L2 2-248:IA2	L2 2-248:IA2	06/15/98	20:49
L3 2-288:IA3	L3 2-288:IA3	06/15/98	21:17
L4 2-246:IA4	L4 2-246:IA4	06/15/98	21:46
L5 2-245:IA5	L5 2-245:IA5	06/15/98	22:14
ICV 2-223:CA1	ICV 2-223:CA1	06/15/98	22:42
BL0609SF	BL0609SF	06/15/98	23:10
LC0609SF	LC0609SF	06/16/98	00:06
LD0609SF	LD0609SF	06/16/98	00:35
BIO-N-30%-40-A1	34301.01	06/16/98	01:03
BIO-N-30%-40-A1FD	34301.02	06/16/98	01:31
BIO-N-30%-40-A2	34301.03	06/16/98	01:59
BIO-N-30%-40-A3	34301.04	06/16/98	02:27
BIO-N-30%-40-B1	34301.05	06/16/98	02:55
L3 2-288:CA2	L3 2-288:CA2	06/16/98	03:23
BIO-N-30%-40-B2	34301.06	06/16/98	04:20
BIO-N-30%-40-B3	34301.07	06/16/98	04:48
BIO-N-30%-40-C1	34301.08	06/16/98	05:16

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: LC4 Column ID:

Dates of Anlayses: 06/15/98 to 06/17/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-40-C1	34301.09MS	06/16/98	05:44
BIO-N-30%-40-C1	34301.10MSD	06/16/98	06:12
BIO-N-30%-40-C2	34301.11	06/16/98	06:40
BIO-N-30%-40-C3	34301.12	06/16/98	07:09
BIO-N-30%-40-D1	34301.13	06/16/98	07:37
L3 2-288:CA3	L3 2-288:CA3	06/16/98	08:05
BIO-N-30%-40-D2	34301.14	06/16/98	09:01
BIO-N-30%-40-D2FD	34301.15	06/16/98	09:29
BIO-N-30%-40-D3	34301.16	06/16/98	09:57
L3 2-288:CA4	L3 2-288:CA4	06/16/98	10:26

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

Inj 1

Injection File Name Level 1 : 061598,4
Injection File Name Level 2 : 061598,5
Injection File Name Level 3 : 061598,6
Injection File Name Level 4 : 061598,7
Injection File Name Level 5 : 061598,8

Calibration Date : 06/15/98
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	6.47171	3.09E0	54.8152	2.92E0	107.432	2.98E0	442.186	2.89E0	890.541	2.87E0

CALIBRATION FACTOR DATA
FORM 9B

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

	Inj 1
Injection File Name Level 1 :	061598,4
Injection File Name Level 2 :	061598,5
Injection File Name Level 3 :	061598,6
Injection File Name Level 4 :	061598,7
Injection File Name Level 5 :	061598,8

Calibration Date : 06/15/98
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	2.95E0	2.94	0.99999	2.88E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/15/98
Continuing Calibration #: 1
tinuing Cal Date : 06/15/98
tinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 061598,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	103.268	3.10E0	2.95E0	4.99	2.88E0	7.60

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/15/98
Continuing Calibration #: 2
tinuing Cal Date : 06/16/98
.tinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 061598,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	110.959	2.88E0	2.95E0	2.29	2.88E0	0.14

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/15/98
Continuing Calibration #: 3
tinuing Cal Date : 06/16/98
tinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 061598,29
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	114.147	2.80E0	2.95E0	5.02	2.88E0	2.66

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/15/98
Continuing Calibration #: 4
tinuing Cal Date : 06/16/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 061598,34
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	111.688	2.87E0	2.95E0	2.92	2.88E0	0.52

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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 :
Calibration Date : 06/15/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	10.60	10.59	10.63	10.63	10.63

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	10.68	10.70	10.75	10.75	10.72

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	10.67	0.062	0.187	10.49 - 10.86

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 06/12/98 to 06/14/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLANK	INST.BLK.	06/12/98	18:11
EXP HIGH WATER L1 ST	2-199:IA1	06/12/98	19:40
EXP HIGH WATER L2 ST	2-198:IA2	06/12/98	20:25
EXP HIGH WATER L3 ST	2-197:IA3	06/12/98	21:09
EXP HIGH WATER L4 ST	2-196:IA4	06/12/98	21:54
EXP HIGH WATER L5 ST	2-195:IA5	06/12/98	22:38
BIO-RB-060698	34301.17	06/12/98	23:23
EXP HIGH WATER L3 ST	2-197:CA1	06/13/98	00:08
BL0612WF	BL0612WF	06/13/98	01:37
LC0612WF	LC0612WF	06/13/98	03:06
LD0612WF	LD0612WF	06/13/98	03:51
EXP HIGH WATER L3 ST	2-197:CA2	06/13/98	09:03

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2E0612W,3
Injection File Name Level 2 : 2E0612W,4
Injection File Name Level 3 : 2E0612W,5
Injection File Name Level 4 : 2E0612W,6
Injection File Name Level 5 : 2E0612W,7

Calibration Date : 06/12/1998
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	1552	1213	3513	1105	179752	1131	364479	1146	747182	1175
RDX	1346	1294	5476	2106	206347	1587	409045	1573	831318	1605
TNB	1901	2640	6344	3524	317828	3547	642683	3590	1336490	3733
DNB	1429	3761	4465	4651	257674	5413	517434	5447	1058211	5570
TETRYL	1484	1649	4411	1952	193504	1712	387556	1715	831766	1848
NB	2770	4074	7413	4361	370404	4358	773046	4547	1598464	4701
3,4-DNT	2480	1938	7262	2255	388344	2427	797250	2491	1601187	2502
TNT	2115	3305	6401	4001	339119	4239	694463	4340	1429188	4466
4ADNT	1913	1913	5830	2313	314190	2514	644047	2576	1334046	2668
2ADNT	1894	3382	5234	3739	265281	3790	544685	3891	1119636	3999
26DNT	2228	2321	5119	2133	271584	2362	551175	2396	1127298	2451
24DNT	2648	4729	6729	4806	366102	5230	747724	5341	1553156	5547
2NT	2483	2217	6980	2493	355001	2448	725882	2503	1514091	2611
	1526	1908	4884	2442	235112	2351	486266	2431	1018618	2547
	1780	2225	5690	2845	284138	2991	585648	3082	1225258	32

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
Column ID : CARB-07

Inj 1

Injection File Name Level 1 : 2E0612W,3
Injection File Name Level 2 : 2E0612W,4
Injection File Name Level 3 : 2E0612W,5
Injection File Name Level 4 : 2E0612W,6
Injection File Name Level 5 : 2E0612W,7

Calibration Date : 06/12/1998
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	1154	3.60	0.99990	1167	0.000
RDX	1633	17.98	0.99994	1598	0.000
TNB	3407	12.81	0.99978	3698	0.000
DNB	4968	15.42	0.99993	5539	0.000
TETRYL	1775	6.90	0.99925	1818	0.000
NB	4408	5.35	0.99975	4657	0.000
3,4-DNT	2323	10.20	0.99997	2496	0.000
[illegible]T	4070	11.32	0.99985	4432	0.000
[illegible]DNT	2397	12.52	0.99979	2644	0.000
2ADNT	3760	6.21	0.99985	3969	0.000
26DNT	2332	5.20	0.99992	2436	0.000
24DNT	5131	6.85	0.99977	5494	0.000
2NT	2454	5.93	0.99972	2583	0.000
4NT	2336	10.67	0.99963	2517	0.000
3NT	2874	13.50	0.99966	3188	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/12/1998
ntinuing Calibration #: 1
ntinuing Cal Date : 06/13/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2E0612W,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	186272	1172	1154	1.54	1167	0.35
RDX	209325	1610	1633	1.41	1598	0.76
TNB	324133	3618	3407	6.18	3698	2.18
DNB	256557	5390	4968	8.49	5539	2.70
TETRYL	189982	1681	1775	5.30	1818	7.52
NB	373255	4391	4408	0.38	4657	5.71
3,4-DNT	399500	2497	2323	7.50	2496	0.02
TNT	348633	4358	4070	7.07	4432	1.68
4ADNT	322263	2578	2397	7.56	2644	2.49
2ADNT	272399	3891	3760	3.50	3969	1.95
26DNT	278387	2421	2332	3.78	2436	0.64
24DNT	376391	5377	5131	4.80	5494	2.14
2NT	352655	2432	2454	0.91	2583	5.85
4NT	236111	2361	2336	1.09	2517	6.18
VT	280082	2948	2874	2.60	3188	7.51

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/12/1998
Continuing Calibration #: 2
Continuing Cal Date : 06/13/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2E0612W,21
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	183038	1151	1154	0.22	1167	1.39
RDX	209932	1615	1633	1.12	1598	1.05
TNB	324628	3623	3407	6.34	3698	2.03
DNB	258934	5440	4968	9.49	5539	1.79
TETRYL	178012	1575	1775	11.26	1818	13.35
NB	352369	4146	4408	5.96	4657	10.99
3,4-DNT	404754	2530	2323	8.92	2496	1.33
TNT	350539	4382	4070	7.65	4432	1.14
4ADNT	322890	2583	2397	7.77	2644	2.30
2ADNT	274331	3919	3760	4.23	3969	1.26
26DNT	278270	2420	2332	3.74	2436	0.68
24DNT	376856	5384	5131	4.93	5494	2.02
2NT	339302	2340	2454	4.66	2583	9.42
4NT	225609	2256	2336	3.41	2517	10.35
NT	267418	2815	2874	2.04	3188	11.70

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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 : IN12
Column ID : CARB-07
Calibration Date : 06/12/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.56	5.56	5.56	5.55	5.52
RDX	8.88	8.80	8.80	8.78	8.75
TNB	11.86	11.88	11.88	11.86	11.83
DNB	14.54	14.56	14.57	14.54	14.51
TETRYL	15.79	15.85	15.86	15.84	15.79
NB	16.52	16.56	16.55	16.53	16.49
3,4-DNT	18.12	18.16	18.17	18.14	18.09
TNT	18.92	18.94	18.92	18.90	18.86
4ADNT	19.88	20.00	19.98	19.96	19.92
2ADNT	20.99	21.00	21.05	21.02	20.98
26DNT	22.12	22.16	22.16	22.13	22.09
24DNT	22.85	22.86	22.90	22.87	22.83
2NT	26.84	26.95	26.92	26.90	26.85
4NT	28.66	28.76	28.78	28.75	28.70
3NT	30.91	31.05	31.02	30.99	30.94

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
HMX	5.56	5.56	5.60
RDX	8.79	8.80	8.86
TNB	11.87	11.89	11.96
DNB	14.55	14.58	14.66
TETRYL	15.84	15.88	15.98
NB	16.53	16.57	16.65
3,4-DNT	18.14	18.19	18.31
TNT	18.90	18.94	19.04
4ADNT	19.96	20.02	20.15
2ADNT	21.02	21.09	21.22
26DNT	22.12	22.18	22.30
24DNT	22.86	22.93	23.05
2NT	26.88	26.96	27.09
4NT	28.74	28.82	28.96
3NT	30.97	31.06	31.21

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.56	0.022	0.066	5.49 - 5.62
RDX	8.81	0.044	0.132	8.67 - 8.94
NB	11.88	0.037	0.111	11.77 - 11.99
DNB	14.56	0.043	0.129	14.43 - 14.69
TETRYL	15.85	0.059	0.178	15.68 - 16.03
NB	16.55	0.048	0.145	16.40 - 16.69
3,4-DNT	18.16	0.067	0.200	17.96 - 18.36
TNT	18.93	0.053	0.159	18.77 - 19.09

4ADNT	19.98	0.081	0.244	19.74 - 20.23
2ADNT	21.05	0.079	0.236	20.81 - 21.28
26DNT	22.16	0.065	0.194	21.96 - 22.35
24DNT	22.89	0.069	0.206	22.69 - 23.10
2NT	26.92	0.079	0.237	26.69 - 27.16
4NT	28.77	0.090	0.270	28.50 - 29.04
NT	31.02	0.092	0.276	30.74 - 31.29

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: LC4 Column ID:

Dates of Anlayses: 06/12/98 to 06/13/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	06/12/98	17:50
L1 2-210:IA1	L1 2-210:IA1	06/12/98	19:14
L2 2-209:IA2	L2 2-209:IA2	06/12/98	19:43
L3 2-289:IA3	L3 2-289:IA3	06/12/98	20:11
L4 2-207:IA4	L4 2-207:IA4	06/12/98	20:39
L5 2-180:IA5	L5 2-180:IA5	06/12/98	21:07
ICV 2-238:CA1	ICV 2-238:CA1	06/12/98	21:35
BL0612WG	BL0612WG	06/12/98	22:03
LC0612WG	LC0612WG	06/12/98	23:00
LD0612WG	LD0612WG	06/12/98	23:28
BIO-RB-060698	34301.17	06/12/98	23:56
L3 2-289:CA2	L3 2-289:CA2	06/13/98	00:24

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

	Inj 1
Injection File Name Level 1 :	061298W,4
Injection File Name Level 2 :	061298W,5
Injection File Name Level 3 :	061298W,6
Injection File Name Level 4 :	061298W,7
Injection File Name Level 5 :	061298W,8

Calibration Date : 06/12/98
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	5.72056	3.50E0	50.4875	3.17E0	101.042	3.17E0	419.841	3.05E0	829.676	3.09E0

CALIBRATION FACTOR DATA
FORM 9B

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

	Inj 1
Injection File Name Level 1 :	061298W,4
Injection File Name Level 2 :	061298W,5
Injection File Name Level 3 :	061298W,6
Injection File Name Level 4 :	061298W,7
Injection File Name Level 5 :	061298W,8

Calibration Date : 06/12/98
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	3.19E0	5.55	0.99997	3.08E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/12/98
Continuing Calibration #: 1
tinuing Cal Date : 06/12/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 061298W,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	118.435	2.70E0	3.19E0	15.39	3.08E0	12.26

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/12/98
Continuing Calibration #: 2
tinuing Cal Date : 06/13/98
ıtinuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 061298W,15
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	100.229	3.19E0	3.19E0	0.02	3.08E0	3.68

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: IN10 Column ID: LC-CN-11

Dates of Anlayses: 06/20/98 to 06/21/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	06/20/98	14:22
EXP L1A STD	3-17:IA1	06/20/98	16:35
EXP L2A STD	3-16:IA2	06/20/98	17:19
EXP L3A STD	3-15:IA3	06/20/98	18:04
EXP L4A STD	3-14:IA4	06/20/98	18:48
EXP L5A STD	3-13:IA5	06/20/98	19:51
EXP L1B STD	2-237:IB1	06/20/98	20:35
EXP L2B STD	2-235:IB2	06/20/98	21:19
EXP L3B STD	3-20:IB3	06/20/98	22:04
EXP L4B STD	2-233:IB4	06/20/98	22:48
EXP L5B STD	2-232:IB5	06/20/98	23:32
BL0609SE	BL0609SE	06/21/98	05:27
EXP L3A STD	3-15:CA1	06/21/98	07:40
EXP L3B STD	3-20:CB1	06/21/98	08:25

page 6

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0620,4
Injection File Name Level 2 : 3CN0620,5
Injection File Name Level 3 : 3CN0620,6
Injection File Name Level 4 : 3CN0620,7
Injection File Name Level 5 : 3CN0620,1 M.M. 06/28/98

Calibration Date : 06/20/1998
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	11122	2418	59115	2570	158704	2760	324358	2821	657163	2857
26DNT	8110	1622	39774	1591	113771	1820	213656	1709	429590	1718
TNT	10012	2177	51231	2227	151863	2641	298395	2595	617030	2683
13,4DNT	2322	1759	8755	1327	28492	1727	60094	1821	112923	1711
TETRYL	15180	1687	78913	1754	211760	1882	416302	1850	832818	1851
HMX	6234	891	34470	985	91272	1043	180391	1031	366558	1047

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0620A2
Injection File Name Level 2 : 3CN0620A3
Injection File Name Level 3 : 3CN0620A4
Injection File Name Level 4 : 3CN0620A5
Injection File Name Level 5 : 3CN0620A6

M.M. 06/28/98

Calibration Date : 06/20/1998
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	4071	814	40535	1621	93655	1498	225345	1803	426998	1708
DNB	8397	2099	62872	3144	154945	3099	349843	3498	722465	3612
24DNT	10667	2133	67802	2712	168311	2693	368515	2948	726672	2907
4ADNT	11061	1202	64845	1410	164853	1434	333451	1450	663298	1442
2ADNT	27156	2716	124380	2488	342178	2737	683265	2733	1372678	2745
RDX	3317	663	30586	1223	81870	1310	159185	1273	316329	1265

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

Inj 1
Injection File Name Level 1 : 3CN0620,4
Injection File Name Level 2 : 3CN0620,5
Injection File Name Level 3 : 3CN0620,6
Injection File Name Level 4 : 3CN0620,7
Injection File Name Level 5 : 3CN0620A 1 MN 06/28/98

Calibration Date : 06/20/1998
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	2685	6.92	0.99996	2844	0.000
26DNT	1692	5.33	0.99978	1721	0.000
TNT	2465	9.83	0.99982	2662	0.000
3,4DNT	1669	11.74	0.99897	1731	0.000
TETRYL	1805	4.53	0.99997	1851	0.000
HMX	999	6.57	0.99997	1044	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0620A2
Injection File Name Level 2 : 3CN0620A3
Injection File Name Level 3 : 3CN0620A4
Injection File Name Level 4 : 3CN0620A5
Injection File Name Level 5 : 3CN0620A6

M.M. 06/28/98

Calibration Date : 06/20/1998
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	1489	26.43	0.99884	1717	0.000
DNB	3091	19.31	0.99953	3567	0.000
24DNT	2679	12.14	0.99978	2904	0.000
4ADNT	1387	7.54	0.99999	1443	0.000
2ADNT	2684	4.11	0.99996	2741	0.000
RDX	1147	23.72	0.99987	1269	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/20/1998
Continuing Calibration #: 1
Continuing Cal Date : 06/21/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0620B,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	156374	2720	2685	1.28	2844	4.37
26DNT	116600	1866	1692	10.25	1721	8.41
TNT	155222	2700	2465	9.54	2662	1.43
3,4DNT	27782	1684	1669	0.89	1731	2.75
TETRYL	175122	1557	1805	13.75	1851	15.92
HMX	92044	1052	999	5.26	1044	0.80

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/20/1998
Continuing Calibration #: 1
Continuing Cal Date : 06/21/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0620B,12
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	102295	1637	1489	9.92	1717	4.70
DNB	177094	3542	3091	14.61	3567	0.70
24DNT	187888	3006	2679	12.23	2904	3.53
4ADNT	187113	1627	1387	17.27	1443	12.78
2ADNT	341667	2733	2684	1.85	2741	0.28
RDX	88611	1418	1147	23.60	1269	11.76

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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	1.320	6.600	16.500	33.000	66.000
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

jection 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

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A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN10
olumn ID : LC-CN-11
Calibration Date : 06/20/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	5.92	5.89	5.91	5.91	5.91
26DNT	6.37	6.35	6.35	6.35	6.35
TNT	6.99	6.96	6.96	6.97	6.96
3,4DNT	7.93	7.96	7.96	7.90	7.94
TETRYL	10.94	10.91	10.93	10.93	10.94
HMX	13.56	13.42	13.40	13.42	13.44

COMPONENT NAME	RT Cont CAl
TNB	5.94
26DNT	6.45
TNT	7.04
3,4DNT	8.06
TETRYL	11.14
HMX	13.78

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	5.92	0.016	0.047	5.87 - 5.96
26DNT	6.37	0.042	0.127	6.24 - 6.50
TNT	6.98	0.031	0.092	6.89 - 7.07
3,4DNT	7.96	0.055	0.165	7.79 - 8.12
TETRYL	10.97	0.086	0.259	10.71 - 11.23
HMX	13.50	0.145	0.435	13.07 - 13.94

B STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN10
olumn ID : LC-CN-11
Calibration Date : 06/20/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.17	5.20	5.20	5.19	5.20
DNB	5.78	5.80	5.81	5.80	5.81
24DNT	6.70	6.73	6.74	6.73	6.75
4ADNT	7.41	7.42	7.46	7.45	7.46
2ADNT	7.97	7.97	8.03	8.00	8.02
RDX	9.08	8.98	9.01	9.04	9.08

COMPONENT NAME	RT Cont CAl
NB	5.23
DNB	5.84
24DNT	6.79
4ADNT	7.52
2ADNT	8.12
RDX	9.17

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.20	0.019	0.058	5.14 - 5.26
DNB	5.80	0.021	0.063	5.74 - 5.87
24DNT	6.74	0.028	0.085	6.65 - 6.82
4ADNT	7.45	0.039	0.118	7.34 - 7.57
2ADNT	8.02	0.055	0.165	7.85 - 8.18
RDX	9.06	0.067	0.200	8.86 - 9.26

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: IN10 Column ID: LC-CN-11

Dates of Anlayses: 06/21/98 to 06/23/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	06/21/98	14:24
EXP L1A STD	3-17:IA1	06/21/98	16:37
EXP L2A STD	3-16:IA2	06/21/98	17:21
EXP L3A STD	3-15:IA3	06/21/98	18:05
EXP L4A STD	3-14:IA4	06/21/98	18:50
EXP L5A STD	3-13:IA5	06/21/98	19:34
EXP L1B STD	2-237:IB1	06/21/98	20:18
EXP L2B STD	2-235:IB2	06/21/98	21:03
EXP L3B STD	3-20:IB3	06/21/98	21:47
EXP L4B STD	2-233:IB4	06/21/98	22:32
EXP L5B STD	2-232:IB5	06/21/98	23:16
BIO-N-30%-40-A1	34301.01	06/22/98	00:00
BIO-N-3%-40-A2	34301.03	06/22/98	00:45
BIO-N-30%-40-A3	34301.04	06/22/98	01:29
BIO-N-30%-40-B2	34301.06	06/22/98	02:13
BIO-N-30%-40-C1	34301.08	06/22/98	02:58
BIO-N-30%-40-C2	34301.11	06/22/98	03:42
BIO-N-30%-40-C2 5X	34301.11DL	06/22/98	04:26
BIO-N-30%-40-D1	34301.13	06/22/98	05:11

FORM VIII

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: IN10 Column ID: LC-CN-11

Dates of Anlayses: 06/21/98 to 06/23/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-40-D2	34301.14	06/22/98	05:55
BIO-N-30%-40-D2FD	34301.15	06/22/98	06:40
EXP L3A STD	3-15:CA1	06/22/98	07:24
EXP L3B STD	3-30:CB1	06/22/98	08:08

page 2

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0621,4
Injection File Name Level 2 : 3CN0621,5
Injection File Name Level 3 : 3CN0621,6
Injection File Name Level 4 : 3CN0621,7
Injection File Name Level 5 : 3CN0621,8

Calibration Date : 06/21/1998
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
TNB	12859	2795	64499	2804	170589	2967	348331	3029	681388	2963
26DNT	9523	1905	46099	1844	119833	1917	243994	1952	487197	1949
TNT	11492	2498	56654	2463	147783	2570	303648	2640	614062	2670
13,4DNT	2166	1641	10216	1548	25156	1525	52044	1577	116831	1770
TETRYL	18150	2017	69292	1540	207861	1848	421234	1872	784443	1743
HMX	12180	1740	35857	1024	99842	1141	204214	1167	397930	1137

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0621,9
Injection File Name Level 2 : 3CN0621,10
Injection File Name Level 3 : 3CN0621,11
Injection File Name Level 4 : 3CN0621,12
Injection File Name Level 5 : 3CN0621,13

Calibration Date : 06/21/1998
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
NB	9063	1813	46974	1879	116873	1870	240434	1923	489627	1959
DNB	14055	3514	70041	3502	181964	3639	367496	3675	746347	3723
24DNT	14351	2870	76926	3077	202548	3241	402805	3222	818300	3273
4ADNT	14765	1605	78007	1696	205062	1783	409170	1779	820437	1784
2ADNT	24275	2428	123708	2474	329385	2635	647160	2589	1303430	2607
RDX	12901	2580	33094	1324	111450	1783	178319	1427	356080	1424

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

Inj 1
Injection File Name Level 1 : 3CN0621,4
Injection File Name Level 2 : 3CN0621,5
Injection File Name Level 3 : 3CN0621,6
Injection File Name Level 4 : 3CN0621,7
Injection File Name Level 5 : 3CN0621,8

Calibration Date : 06/21/1998
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
TNB	2912	3.62	0.99990	2974	0.000
26DNT	1913	2.29	0.99998	1947	0.000
TNT	2568	3.45	0.99996	2658	0.000
3,4DNT	1612	6.11	0.99825	1725	0.000
TETRYL	1804	9.81	0.99899	1773	0.000
HMX	1242	22.85	0.99973	1142	0.000

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : LC-CN-11

Inj 1

Injection File Name Level 1 : 3CN0621,9
Injection File Name Level 2 : 3CN0621,10
Injection File Name Level 3 : 3CN0621,11
Injection File Name Level 4 : 3CN0621,12
Injection File Name Level 5 : 3CN0621,13

Calibration Date : 06/21/1998
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
NB	1889	2.94	0.99993	1947	0.000
DNB	3612	2.80	0.99997	3715	0.000
24DNT	3137	5.32	0.99997	3261	0.000
4ADNT	1729	4.56	0.99999	1782	0.000
2ADNT	2546	3.55	0.99997	2604	0.000
RDX	1708	30.34	0.99754	1446	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/21/1998
Continuing Calibration #: 1
Continuing Cal Date : 06/22/1998
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0621A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
TNB	174910	3042	2912	4.48	2974	2.27
26DNT	122353	1958	1913	2.32	1947	0.54
TNT	150641	2620	2568	2.00	2658	1.45
3,4DNT	28912	1752	1612	8.69	1725	1.59
TETRYL	183225	1629	1804	9.71	1773	8.13
HMX	105771	1209	1242	2.66	1142	5.81

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/21/1998
Continuing Calibration #: 1
tinuing Cal Date : 06/22/1998
tinuing Cal Level : 3
Instrument ID : IN10
Column ID : LC-CN-11
Injection File Name : 3CN0621A,12
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
NB	121210	1939	1889	2.68	1947	0.41
DNB	195623	3912	3612	8.31	3715	5.31
24DNT	216979	3472	3137	10.68	3261	6.47
4ADNT	219770	1911	1729	10.51	1782	7.24
2ADNT	340071	2721	2546	6.84	2604	4.49
RDX	91189	1459	1708	14.56	1446	0.93

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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	1.320	6.600	16.500	33.000	66.000
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

jection 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

SCN0621
B STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN10
olumn ID : LC-CN-11
Calibration Date : 06/21/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
NB	5.63	5.66	5.67	5.67	5.66
DNB	6.33	6.37	6.38	6.38	6.38
24DNT	7.48	7.52	7.52	7.52	7.52
4ADNT	8.43	8.46	8.48	8.48	8.48
2ADNT	9.11	9.17	9.20	9.20	9.20
RDX	10.21	10.41	10.40	10.44	10.46

COMPONENT NAME	RT Cont CA1
NB	5.66
DNB	6.38
24DNT	7.52
4ADNT	8.50
2ADNT	9.22
RDX	10.47

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
NB	5.66	0.014	0.042	5.62 - 5.70
DNB	6.37	0.022	0.065	6.30 - 6.43
24DNT	7.52	0.019	0.058	7.46 - 7.57
4ADNT	8.47	0.024	0.072	8.40 - 8.54
2ADNT	9.18	0.037	0.111	9.07 - 9.29
RDX	10.40	0.097	0.291	10.11 - 10.69

A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

Instrument ID : IN10
Column ID : LC-CN-11
Calibration Date : 06/21/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
TNB	6.42	6.40	6.40	6.41	6.40
26DNT	7.10	7.10	7.10	7.11	7.10
TNT	7.73	7.73	7.73	7.74	7.72
3,4DNT	9.05	9.00	9.02	9.05	9.03
TETRYL	12.74	12.72	12.71	12.73	12.70
HMX	15.80	15.87	15.87	15.90	15.89

COMPONENT NAME	RT Cont CAl
TNB	6.46
26DNT	7.20
TNT	7.81
3,4DNT	9.18
TETRYL	12.93
HMX	16.32

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
TNB	6.41	0.026	0.077	6.34 - 6.49
26DNT	7.12	0.038	0.113	7.01 - 7.23
TNT	7.74	0.035	0.106	7.64 - 7.85
3,4DNT	9.05	0.065	0.194	8.86 - 9.25
TETRYL	12.75	0.089	0.266	12.49 - 13.02
HMX	15.94	0.186	0.559	15.38 - 16.50

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34301
Instrument ID: IN10 Column ID: MET-01

Dates of Anlayses: 06/29/98 to 06/30/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	06/29/98	22:03
EXP L1A STD	3-17:IA1	06/29/98	23:54
EXP L2A STD	3-16:IA2	06/30/98	00:32
EXP L3A STD	3-57:IA3	06/30/98	01:09
EXP L4A STD	3-14:IA4	06/30/98	01:46
EXP L5A STD	3-13:IA5	06/30/98	02:23
BIO-N-30%-40-D3	34301.16	06/30/98	03:37
EXP L3A STD	3-57:CA1	06/30/98	05:28

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
lumn ID : MET-01

Inj 1

Injection File Name Level 1 : 3CN0630,4
Injection File Name Level 2 : 3CN0630,5
Injection File Name Level 3 : 3CN0630,6
Injection File Name Level 4 : 3CN0630,7
Injection File Name Level 5 : 3CN0630,8

Calibration Date : 06/29/98
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	14755	1054	75310	1076	201714	1153	383122	1095	781758	1117
TNB	25993	2825	130721	2842	348748	3033	682312	2967	1388158	3018
TNT	22448	2440	108039	2349	327526	2848	577562	2511	1201144	2611
TETRYL	32093	1783	162447	1805	358466	1593	806671	1793	1629059	1810
3,4DNT	3323	1259	14753	1118	29186	884	66178	1003	120814	915
26DNT	20185	2019	95929	1919	280719	2246	510298	2041	1076248	2152

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN10
Column ID : MET-01

Inj 1
Injection File Name Level 1 : 3CN0630,4
Injection File Name Level 2 : 3CN0630,5
Injection File Name Level 3 : 3CN0630,6
Injection File Name Level 4 : 3CN0630,7
Injection File Name Level 5 : 3CN0630,8

Calibration Date : 06/29/98
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	1099	3.46	0.99987	1114	0.000
TNB	2937	3.32	0.99995	3008	0.000
TNT	2552	7.50	0.99925	2603	0.000
TETRYL	1757	5.24	0.99949	1798	0.000
3,4DNT	1036	14.87	0.99847	934	0.000
26DNT	2075	6.09	0.99941	2135	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/29/98
Continuing Calibration #: 1
Continuing Cal Date : 06/30/98
Continuing Cal Level : 3
Instrument ID : IN10
Column ID : MET-01
Injection File Name : 3CN0630A,5
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	199061	1137	1099	3.52	1114	2.10
TNB	344743	2998	2937	2.08	3008	0.33
TNT	305703	2658	2552	4.17	2603	2.11
TETRYL	366477	1629	1757	7.28	1798	9.39
3,4DNT	31316	949	1036	8.38	934	1.64
26DNT	265547	2124	2075	2.36	2135	0.52

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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	14.000	70.000	175.000	350.000	700.000
TNB	9.200	46.000	115.000	230.000	460.000
TNT	9.200	46.000	115.000	230.000	460.000
TETRYL	18.000	90.000	225.000	450.000	900.000
3,4DNT	2.640	13.200	33.000	66.000	132.000
26DNT	10.000	50.000	125.000	250.000	500.000

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN10
olumn ID : MET-01
Calibration Date : 06/29/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.01	5.02	5.00	5.03	5.05
TNB	7.45	7.47	7.43	7.48	7.50
TNT	11.31	11.36	11.30	11.40	11.44
TETRYL	12.43	12.49	12.43	12.56	12.60
3,4DNT	13.94	14.01	13.77	14.06	14.05
26DNT	14.28	14.36	14.22	14.44	14.49

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
HMX	5.08	5.09	5.13
TNB	7.55	7.55	7.62
TNT	11.53	11.54	11.68
TETRYL	12.74	12.76	12.96
3,4DNT	14.24	14.29	14.54
26DNT	14.64	14.66	14.90

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.05	0.045	0.136	4.91 - 5.19
TNB	7.51	0.062	0.187	7.32 - 7.69
TNT	11.44	0.131	0.392	11.05 - 11.84
TETRYL	12.62	0.184	0.553	12.07 - 13.17
3,4DNT	14.11	0.238	0.713	13.40 - 14.83
26DNT	14.50	0.223	0.670	13.83 - 15.17

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

B10-030

Project No.: 4324-0009-07-35
Project Name: NSWC Crane Bioremediation
Samplers: (Signature)
Sampler: (Print) Peter J Chevalier

Split Samples

Analysis Required: 8330 only

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	Remarks
compost	CS BA SL 1	6/6/98	0916	~~B10-S-030-01~~ B10-N-30%-40-A1		✓	
	2		0916	B10-N-30%-40-A1-FD			
	2		0918	B10-N-30%-40-A2			
	3		0919	B10-N-30%-40-A3			
	B 1		0920	B10-N-30%-40-B1			
	2		0921	B10-N-30%-40-B2			
	3		0922	B10-N-30%-40-B3			
	C 1		0923	B10-N-30%-40-C1			MS/MSD
	2		0925	B10-N-30%-40-C2			
	3		0926	B10-N-30%-40-C3			
	D 1		0927	B10-N-30%-40-D1			
	2		0929	B10-N-30%-40-D2			
	2		0929	B10-N-30%-40-D2-FD			
	3		0930	B10-N-30%-40-D3			
liquid	rinse blank	—	0941	B10-RB-060696		✓	SwMwest Labs

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
[signature]	6/7/98 1530				
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company: S. Hodson	Date/Time 6/9/98 9:30	Total No. Samples This Shipping Container / Company: ~~S. Hodson~~ 5 6/9/98
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

Seal #s: 3501, 3502

S.O.C.

APPENDIX Q
RAW DATA FOR LABORATORY ANALYSIS DAY 60

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Analytical Run Logbook and Calibration for Instrument LC4 on 7/04/98 (water analysis)	4 pages
Chain of Custody Record	1 page

2E

EXPLOSIVE SURROGATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

J ⌒ Code: SWOK Case No: MKF-OH SDG No:34581

	SAMPLE NUMBER	S1 #	OTHER
1	BIO-N-30%-60-A1	85.1	0
2	BIO-N-30%-60-A2	85.2	0
3	BIO-N-30%-60-A3	87.2	0
4	BIO-N-30%-60-B1	86.3	0
5	BIO-N-30%-60-B2	87.3	0
6	BIO-N-30%-60-B3	84.3	0
7	BIO-N-30%-60-B3FD	87.2	0
8	BIO-N-30%-60-C1	85.9	0
9	BIO-N-30%-60-C2	87.4	0
10	BIO-N-30%-60-C3	85.0	0
11	BIO-N-30%-60-C3 MS	79.3	0
12	BIO-N-30%-60-C3 MSD	79.2	0
13	BIO-N-30%-60-D1	85.4	0
14	BIO-N-30%-60-D2	85.5	0
15	BIO-N-30%-60-D3	81.1	0
16	BIO-N-30%-60-D3 5X	81.0D	0
17	BIO-RB062698	102	0
18	BIO-RB062698 MS	111	0
19	BIO-RB062698 MSD	112	0
20	BL0628SA	90.2	0
21	BL0702WB	94.1	0
22	LC0628SA	102	0
23	LC0702WB	122	0
24	LD0628SA	99.2	0
25	LD0702WB	124	0
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

page _ 1

FORM II

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

I Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: BIO-N-30%-60-C3 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
HMX	9500		8850	93	54-128
RDX	9500	5530	13800	87	66-109
TNB	9500		9100	96	57-130
DNB	9500		8680	91	74-122
TETRYL	9500		2420	26*	32-119
NB	9500		8470	89	70-135
TNT	9500	479	7320	72	44-124
4ADNT	9500		7710	81	60-140
2ADNT	9500		8530	90	60-140
26DNT	9500		8350	88	58-125
24DNT	9500		9580	101	59-120
2NT	9500		9410	99	79-124
4NT	9500		8550	90	74-128
3NT	9500		8320	88	79-121

N of Analyte recoveries out of QC Advisory Limits = 1

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
HMX	9500	8900	94	1	30	54-128
RDX	9500	12800	77	13	30	66-109
TNB	9500	9010	95	1	30	57-130
DNB	9500	8640	91	1	45	74-122
TETRYL	9500	2170	23*	11	30	32-119
NB	9500	8430	89	1	35	70-135
TNT	9500	7450	73	2	30	44-124
4ADNT	9500	7690	81	0	40	60-140
2ADNT	9500	8480	89	1	40	60-140
26DNT	9500	8340	88	0	35	58-125
24DNT	9500	9530	100	1	35	59-120
2NT	9500	9370	99	0	35	79-124
4NT	9500	8410	89	2	35	74-128
3NT	9500	8150	86	2	35	79-121

No of Analyte recoveries out of QC Advisory Limits = 1
No of RPD's out of QC Limits 0

3F

SOIL EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: BIO-N-30%-60-C3

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
PETN	3000		2930	98	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD#	QC LIMITS RPD	QC LIMITS REC.
PETN	3000	2930	98	0	30	70-130

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

3F

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

I ' Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: BIO-RB062698 MSD

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
HMX	400		417	104	44-154
RDX	150		124	83	66-139
TNB	225		211	94	56-129
DNB	125		120	96	76-122
TETRYL	413		435	105	76-120
NB	213		235	110	82-111
TNT	188		174	93	76-137
4ADNT	313		295	94	60-140
2ADNT	313		288	92	60-140
26DNT	288		267	93	80-118
24DNT	175		168	96	72-123
2NT	363		332	92	74-130
4NT	250		272	109	78-116
3NT	238		259	109	72-126

A 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	392	98	6	15	44-154
RDX	150	105	70	17*	12	66-139
TNB	225	203	90	4	10	56-129
DNB	125	118	94	2	15	76-122
TETRYL	413	425	103	2	14	76-120
NB	213	233	109	1	13	82-111
TNT	188	170	90	2	15	76-137
4ADNT	313	288	92	2	40	60-140
2ADNT	313	280	89	3	40	60-140
26DNT	288	256	89	4	13	80-118
24DNT	175	171	98	2	14	72-123
2NT	363	331	91	0	15	74-130
4NT	250	268	107	2	14	78-116
3NT	238	249	105	4	15	72-126

No of Analyte recoveries out of QC Advisory Limits = 0
No of RPD's out of QC Limits 1

3F

WATER EXPLOSIVE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: BIO-RB062698

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
PETN	1200		1440	120	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	REC.
PETN	1200	1420	118	2	30	70-130

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

3G

SOIL EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: LC0628SA

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
HMX	9500		9210	97	57-137
RDX	9500		9010	95	77-113
TNB	9500		9210	97	64-125
DNB	9500		8520	90	82-118
TETRYL	9500		8610	91	23-124
NB	9500		9250	97	69-143
TNT	9500		7280	77	75-118
4ADNT	9500		8390	88	60-140
2ADNT	9500		8610	91	60-140
26DNT	9500		8330	88	78-117
24DNT	9500		9510	100	74-126
2NT	9500		9320	98	78-123
4NT	9500		8540	90	79-125
3NT	9500		8180	86	78-121

1 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:34581

Client Sample No: LC0628SB

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC LIMITS REC.
PETN	3000		2930	98	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:34581

Client Sample No: LD0628SA

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
HMX	9500		9370	99	57-137
RDX	9500		9160	96	77-113
TNB	9500		9370	99	64-125
DNB	9500		8700	92	82-118
TETRYL	9500		7930	84	23-124
NB	9500		9310	98	69-143
TNT	9500		7410	78	75-118
4ADNT	9500		9020	95	60-140
2ADNT	9500		8760	92	60-140
26DNT	9500		8500	90	78-117
24DNT	9500		9710	102	74-126
2NT	9500		9540	100	78-123
4NT	9500		8750	92	79-125
3NT	9500		8340	88	78-121

# 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:34581

Client Sample No: LD0628SB

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	QC LIMITS REC.
PETN	3000		3040	101	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

3G

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

L-' Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: LC0702WB

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
HMX	400		356	89	46-151
RDX	150		127	85	72-129
TNB	225		206	92	74-118
DNB	125		107	86	79-132
TETRYL	413		344	83	58-120
NB	213		250	117	68-135
TNT	188		183	97	61-145
4ADNT	313		303	97	60-140
2ADNT	313		312	100	60-140
26DNT	288		272	94	77-125
24DNT	175		161	92	70-134
2NT	363		350	96	73-131
4NT	250		305	122*	73-116
3NT	238		266	112	71- 127

N ,f Analyte recoveries out of QC Advisory Limits = 1

WATER EXPLOSIVE CONTROL SPIKE RECOVERY FORM

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Client Sample No: LC0702WC

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC LIMITS REC.
PETN	1200		1400	117	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:34581

Client Sample No: LD0702WB

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
HMX	400		368	92	46-151
RDX	150		123	82	72-129
TNB	225		203	90	74-118
DNB	125		110	88	79-132
TETRYL	413		354	86	58-120
NB	213		253	119	68-135
TNT	188		191	102	61-145
4ADNT	313		310	99	60-140
2ADNT	313		323	103	60-140
26DNT	288		282	98	77-125
24DNT	175		163	93	70-134
2NT	363		340	94	73-131
4NT	250		283	113	73-116
3NT	238		263	110	71- 127

# 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:34581

Client Sample No: LD0702WC

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	QC LIMITS REC.
PETN	1200		1400	117	70-130

No of Analyte recoveries out of QC Advisory Limits = 0

4C

Lab Name: SWL-TULSA Contract:

J ⌐ Sample ID: BL0628SA

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Matrix: (soil/water) Soil

Date Extracted: 06/28/98 Extn. Method: SONC

Date Analyzed (1): 07/01/98 Date Analyzed(2): 07/17/98

Time Analyzed (1): 01:10:45 Time Analyzed(2): 01:15:03

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

LC Column ID (1): CARB-10 LC Column ID (2): MET-02

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

	CUSTOMER SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
1	LC0628SA	LC0628SA	07/01/98	
2	LD0628SA	LD0628SA	07/01/98	
3	BIO-N-30%-60-A1	34581.01	07/01/98	07/17/98
4	BIO-N-30%-60-A2	34581.02	07/01/98	07/17/98
	BIO-N-30%-60-A3	34581.03	07/01/98	07/17/98
	BIO-N-30%-60-B1	34581.04	07/01/98	07/17/98
7	BIO-N-30%-60-B2	34581.05	07/01/98	07/17/98
8	BIO-N-30%-60-B3	34581.06	07/01/98	07/17/98
9	BIO-N-30%-60-B3FD	34581.07	07/01/98	07/17/98
10	BIO-N-30%-60-C1	34581.08	07/01/98	07/17/98
11	BIO-N-30%-60-C2	34581.09	07/01/98	07/17/98
12	BIO-N-30%-60-C3	34581.10	07/01/98	07/17/98
13	BIO-N-30%-60-C3 MS	34581.11MS	07/01/98	
14	BIO-N-30%-60-C3 MSD	34581.12MSD	07/01/98	
15	BIO-N-30%-60-D1	34581.13	07/01/98	07/17/98
16	BIO-N-30%-60-D2	34581.14	07/01/98	07/17/98
17	BIO-N-30%-60-D3	34581.15	07/01/98	07/17/98
18	BIO-N-30%-60-D3 5X	34581.15DL	07/12/98	07/17/98
19				
20				
21				
22				
23				
24				
25				

FORM IV

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0628SB

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Matrix: (soil/water) Soil

Date Extracted: 06/28/98 Extn. Method: SONC

Date Analyzed (1): 07/05/98 Date Analyzed(2):

Time Analyzed (1): 19:35:40 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	LC0628SB	LC0628SB	07/05/98	
2	LD0628SB	LD0628SB	07/05/98	
3	BIO-N-30%-60-A1	34581.01	07/05/98	
4	BIO-N-30%-60-A2	34581.02	07/05/98	
5	BIO-N-30%-60-A3	34581.03	07/05/98	
	BIO-N-30%-60-B1	34581.04	07/05/98	
7	BIO-N-30%-60-B2	34581.05	07/05/98	
8	BIO-N-30%-60-B3	34581.06	07/06/98	
9	BIO-N-30%-60-B3FD	34581.07	07/06/98	
10	BIO-N-30%-60-C1	34581.08	07/06/98	
11	BIO-N-30%-60-C2	34581.09	07/06/98	
12	BIO-N-30%-60-C3	34581.10	07/06/98	
13	BIO-N-30%-60-C3	34581.11MS	07/06/98	
14	BIO-N-30%-60-C3	34581.12MSD	07/06/98	
15	BIO-N-30%-60-D1	34581.13	07/06/98	
16	BIO-N-30%-60-D2	34581.14	07/06/98	
17	BIO-N-30%-60-D3	34581.15	07/06/98	
18				
19				
20				
21				
22				
23				
24				
25				

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FORM IV

4C

Lab Name: SWL-TULSA Contract:

Lab Sample ID: BL0702WC

Lab Code: SWOK Case No: MKF-OH SDG No:34581

Matrix: (soil/water) Water

Date Extracted: Extn. Method: DIRECT

Date Analyzed (1): 07/04/98 Date Analyzed(2):

Time Analyzed (1): 20:31:33 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	LC0702WC	LC0702WC	07/04/98	
2	LD0702WC	LD0702WC	07/04/98	
3	BIO-RB062698	34581.16	07/04/98	
4	BIO-RB062698	34581.16MS	07/04/98	
5	BIO-RB062698	34581.16MSD	07/04/98	
6				
7				
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page 1

FORM IV

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.01

Sample Amt: 2g % Moisture 11.94 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	2290	P
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	695	
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

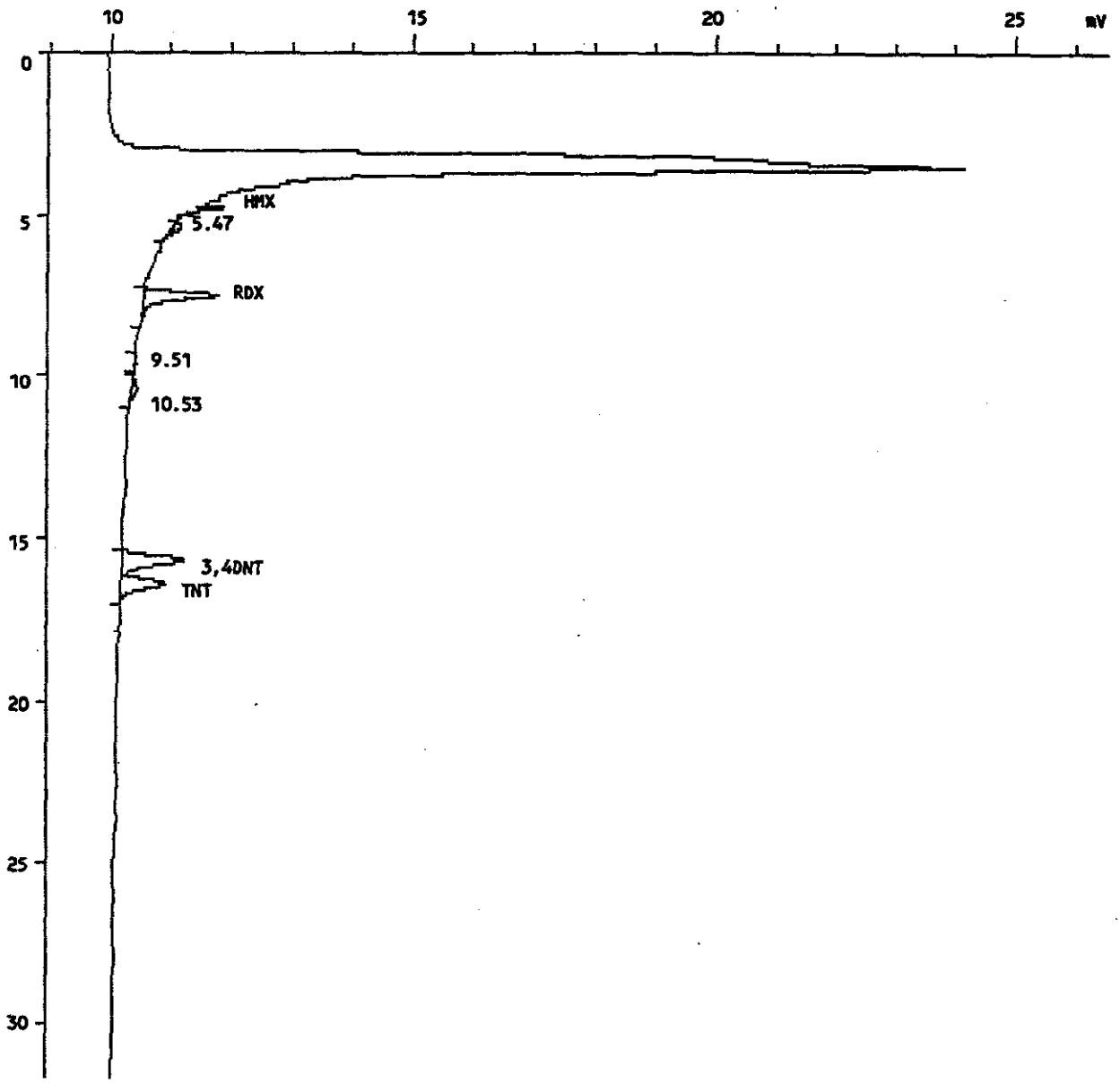
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,5,1

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 04:09:35
Reported on 01-Jul-98 at 15:25:48



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,5,1

Acquired on 01-Jul-98 at 04:09:35
Modified on 01-Jul-82 at 15:14:44
Reported on 01-Jul-98 at 15:14:43

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
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

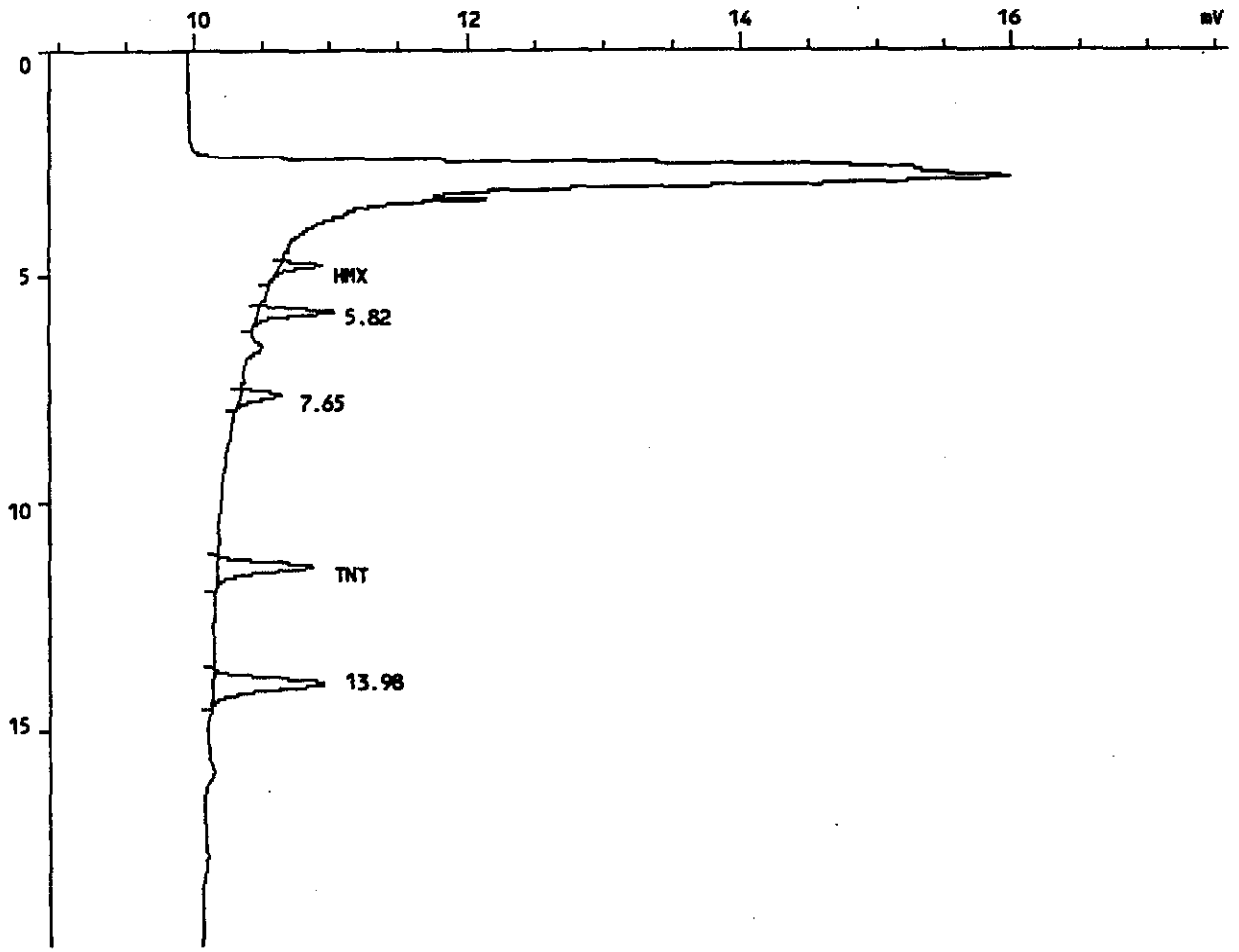
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.837	412	2860	372.361	HMX
3	7.536	1230	21673	2286.223	RDX * P
6	15.680	1027	21746	1701.584	3,4DNT 85
7	16.395	734	16198	695.211	TNT *
Total		3403	62478	5055.379	
Residual		293	6020	706.813	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,3,1

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 02:23:54
Reported on 20-Jul-98 at 10:35:26



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,3,1

Acquired on 17-Jul-98 at 02:23:54
Modified on 20-Jul-82 at 10:27:34
Reported on 20-Jul-98 at 10:27:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:24:30
Method file.....: LCCN Last modified on 20-Jul-82 at 10:07:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
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

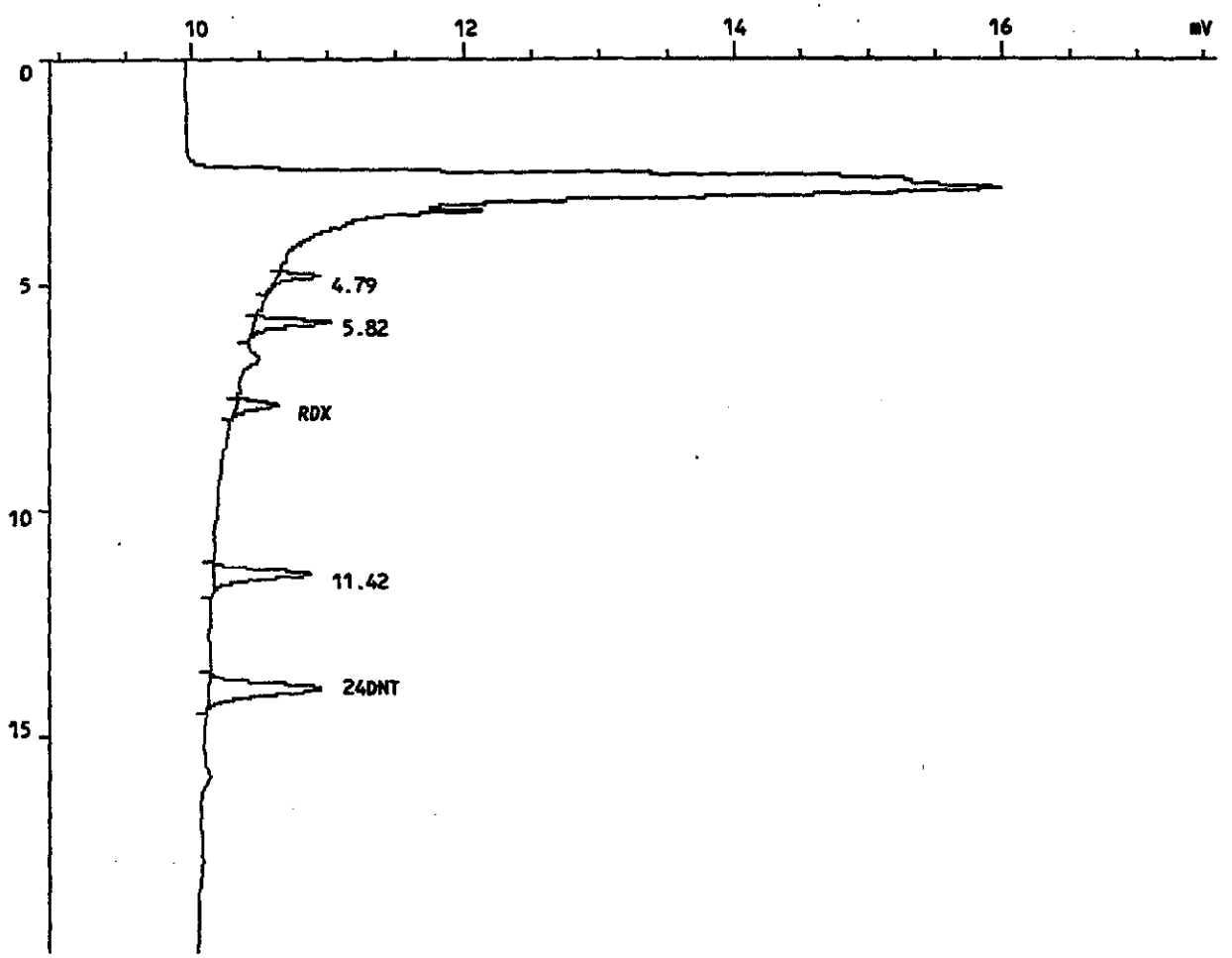
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.789	318	3084	639.864	HMX
4	11.424	724	11282	882.795	TNT
Total		1042	14366	1522.659	
Residual		1684	26164	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,3,1

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 02:23:54
Reported on 20-Jul-98 at 10:58:09



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,3,1

Acquired on 17-Jul-98 at 02:23:54
Modified on 20-Jul-82 at 10:53:14
Reported on 20-Jul-98 at 10:53:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A1
Sample ID.....: 34581.01
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	311	4105	671.878	RDX
5	13.984	817	15661	945.122	24DNT
Total		1128	19766	1617.000	
Residual		1598	20764	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-A1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.01

Sample Amt: 2g % Moisture 11.94 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/05/98

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

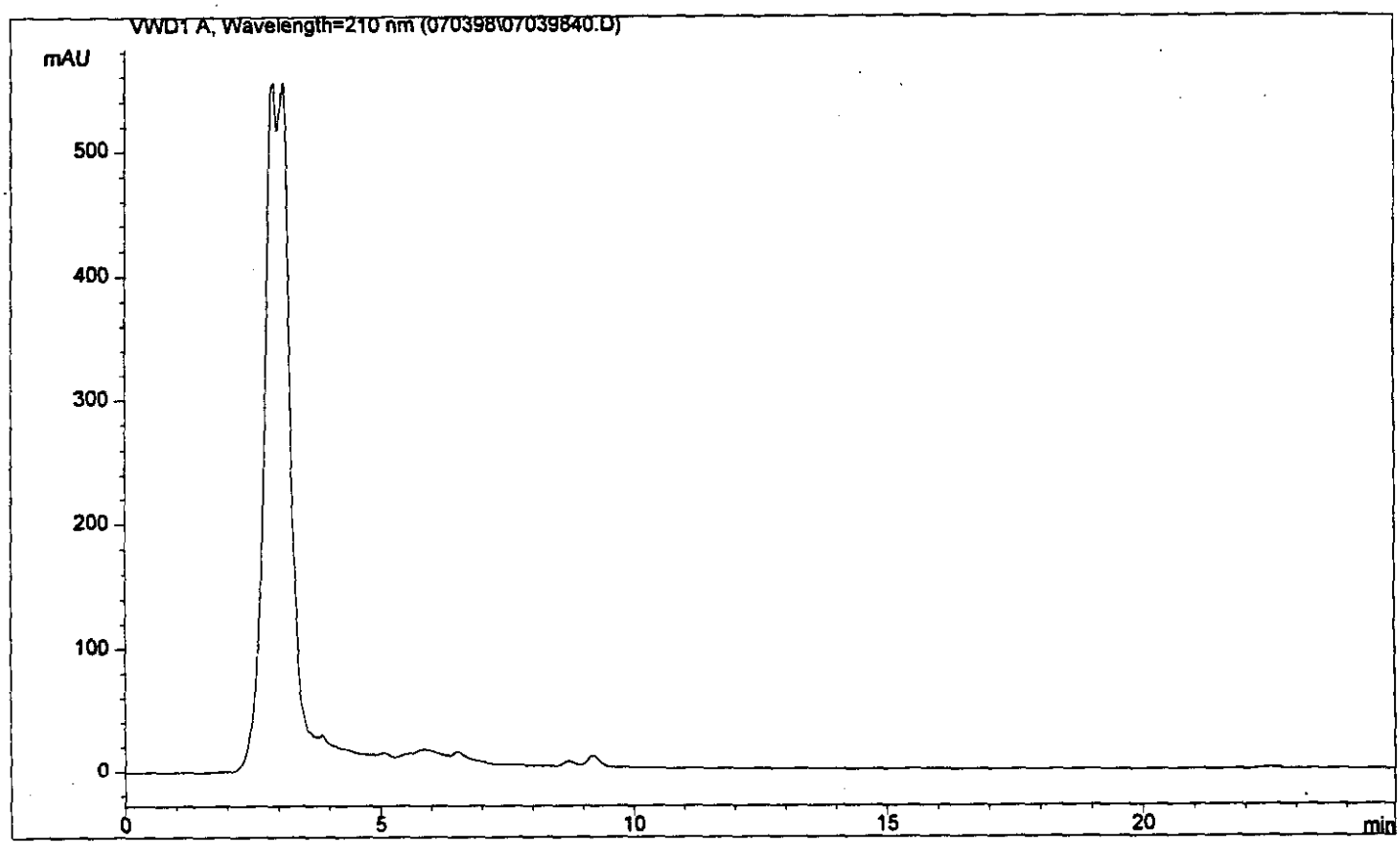
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Sun, 5. Jul. 1998	Seq Line	: 40
Sample Name	: 34581.01	Vial No.	: 40
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



==========
Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

29

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-60-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.02

Sample Amt: 2g % Moisture 14.19 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	7170	P
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	384	
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

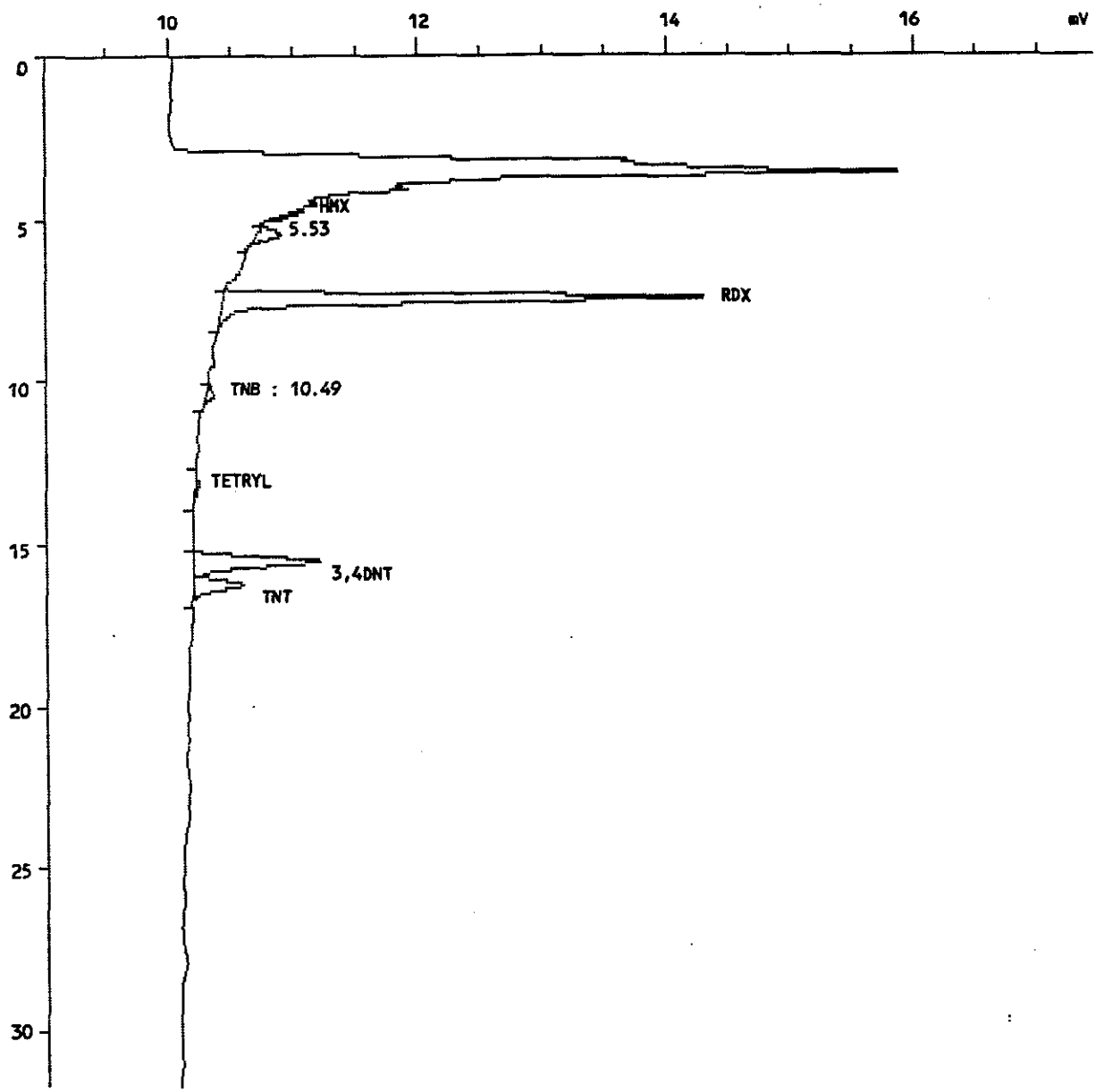
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,6,1

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 04:54:18
Reported on 01-Jul-98 at 15:26:10



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,6,1

Acquired on 01-Jul-98 at 04:54:18
Modified on 01-Jul-82 at 15:14:58
Reported on 01-Jul-98 at 15:14:57

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
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

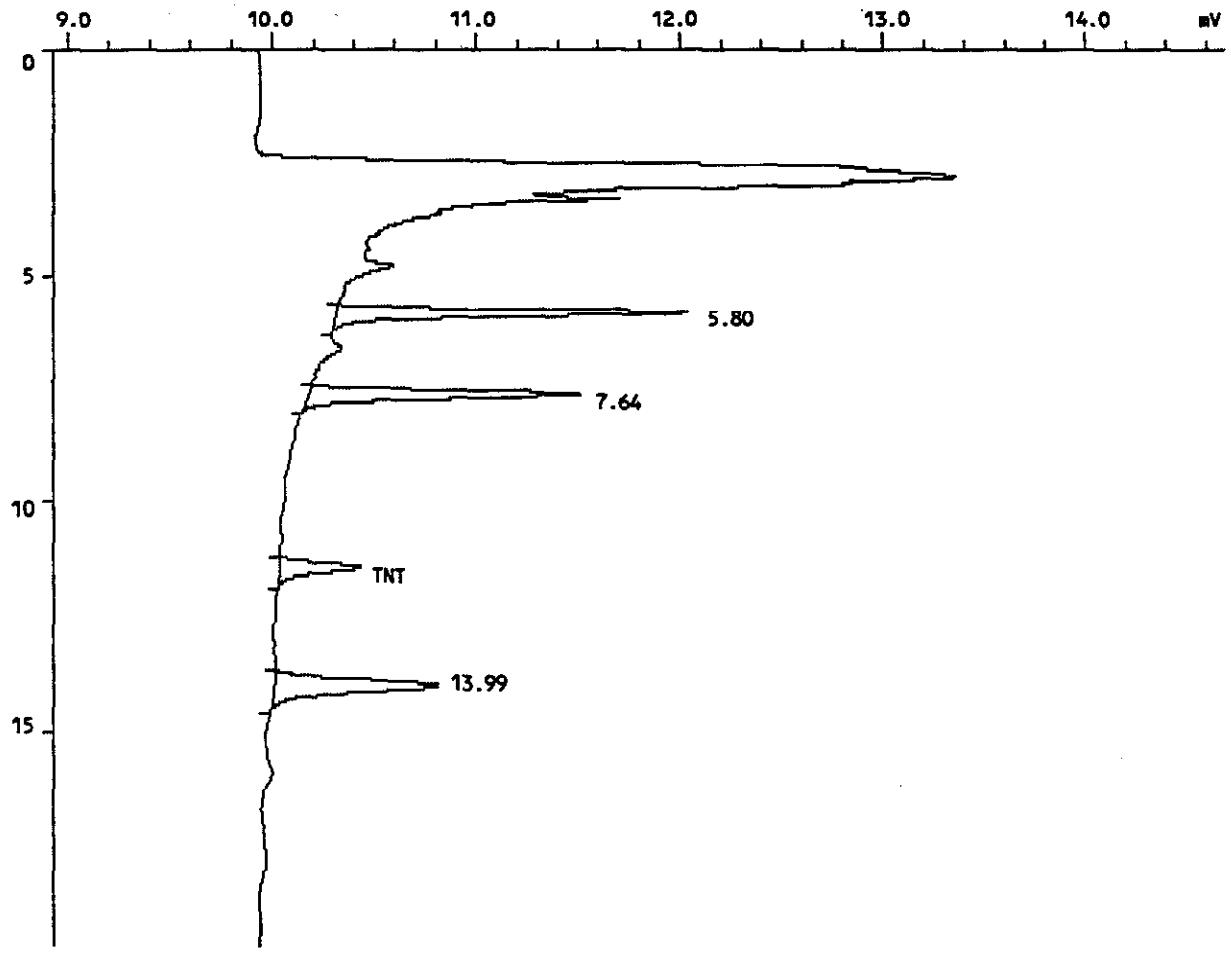
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.832	116	766	99.784	HMX
3	7.504	3863	67982	7171.133	RDX *P
4	10.251	25	158	7.823	TNB
6	13.307	33	1068	91.764	TETRYL
7	15.563	1028	21774	1703.758	3,4DNT 85
8	16.283	407	8942	383.793	TNT *
Total		5472	100691	9458.055	
Residual		269	5673	619.538	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,4,1

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 02:58:20
Reported on 20-Jul-98 at 10:35:53



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,4,1

Acquired on 17-Jul-98 at 02:58:20
Modified on 20-Jul-82 at 10:27:46
Reported on 20-Jul-98 at 10:27:47

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:24:30
Method file.....: LCCN Last modified on 20-Jul-82 at 10:07:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
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

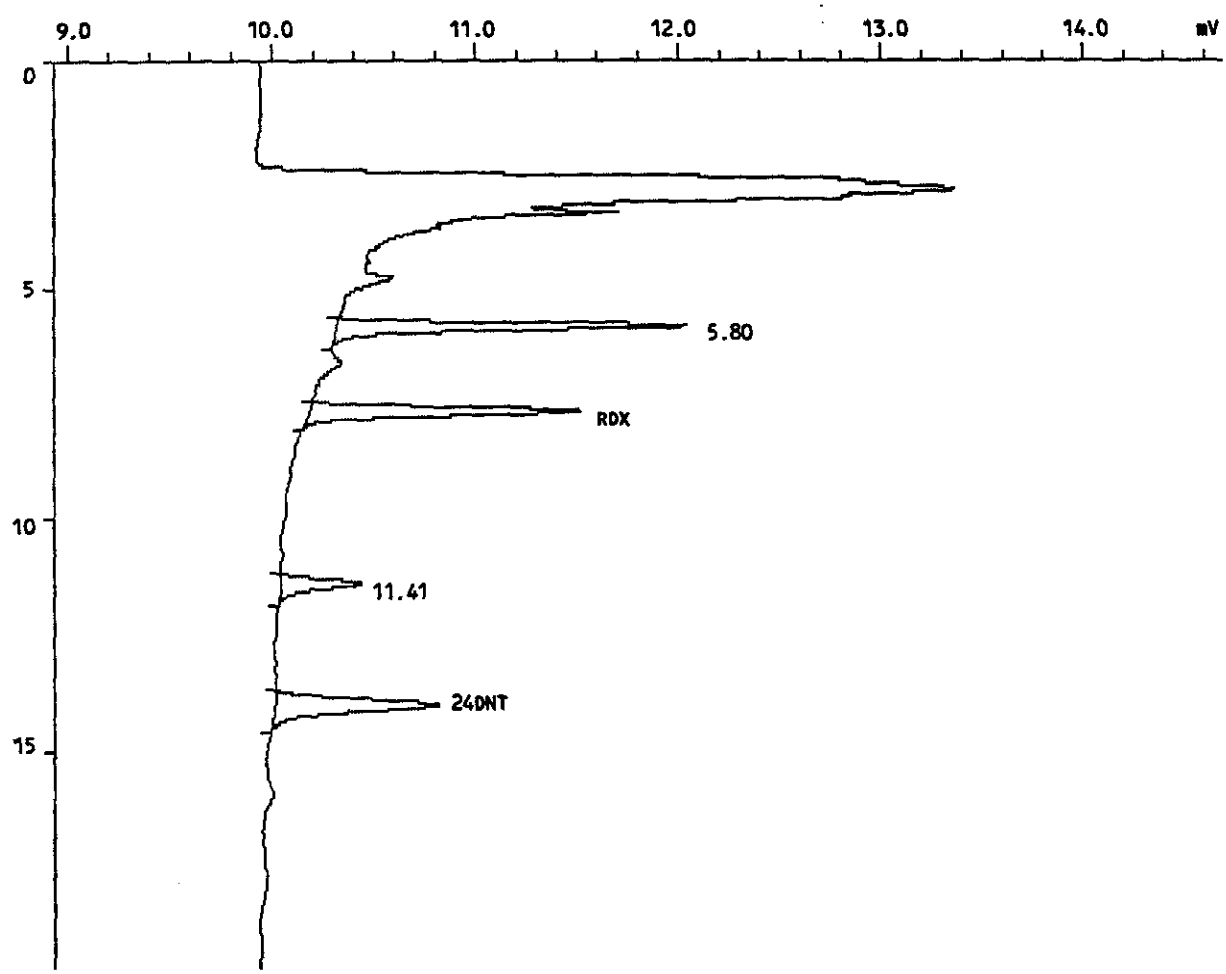
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	11.413	398	6223	486.950	TNT
Total		398	6223	486.950	
Residual		3876	54451	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,4,1

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 02:58:20
Reported on 20-Jul-98 at 10:58:29



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,4,1

Acquired on 17-Jul-98 at 02:58:20
Modified on 20-Jul-82 at 10:53:26
Reported on 20-Jul-98 at 10:53:26

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A2
Sample ID.....: 34581.02
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	7.637	1331	18812	3078.868	RDX
4	13.989	813	15700	947.475	24DNT
Total		2145	34512	4026.343	
Residual		2130	26163	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-A2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.02

Sample Amt: 2g % Moisture 14.19 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/05/98

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

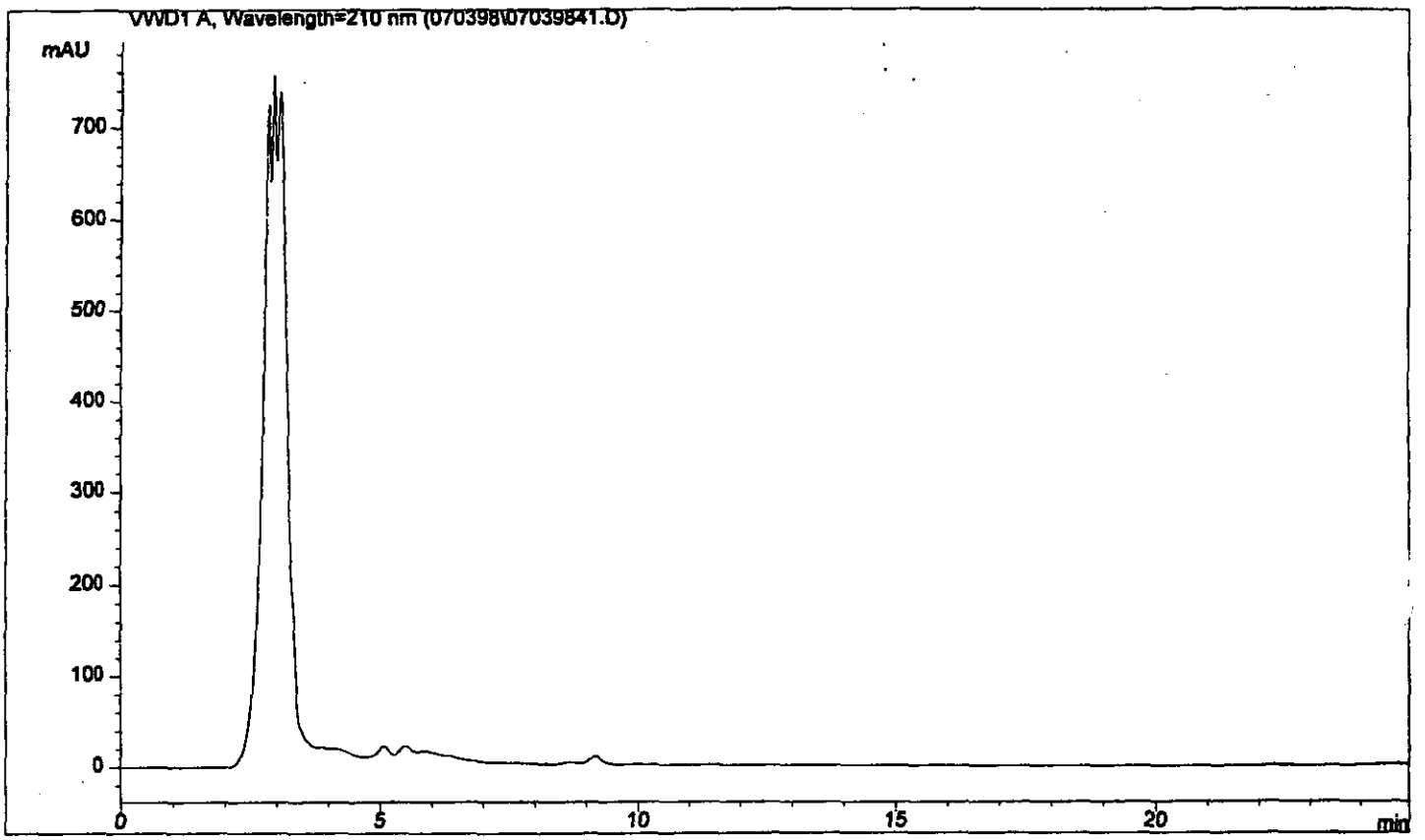
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Sun, 5. Jul. 1998	Seq Line	: 41
Sample Name	: 34581.02	Vial No.	: 41
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.03

Sample Amt: 2g % Moisture 13.41 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	2230	P
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	148	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

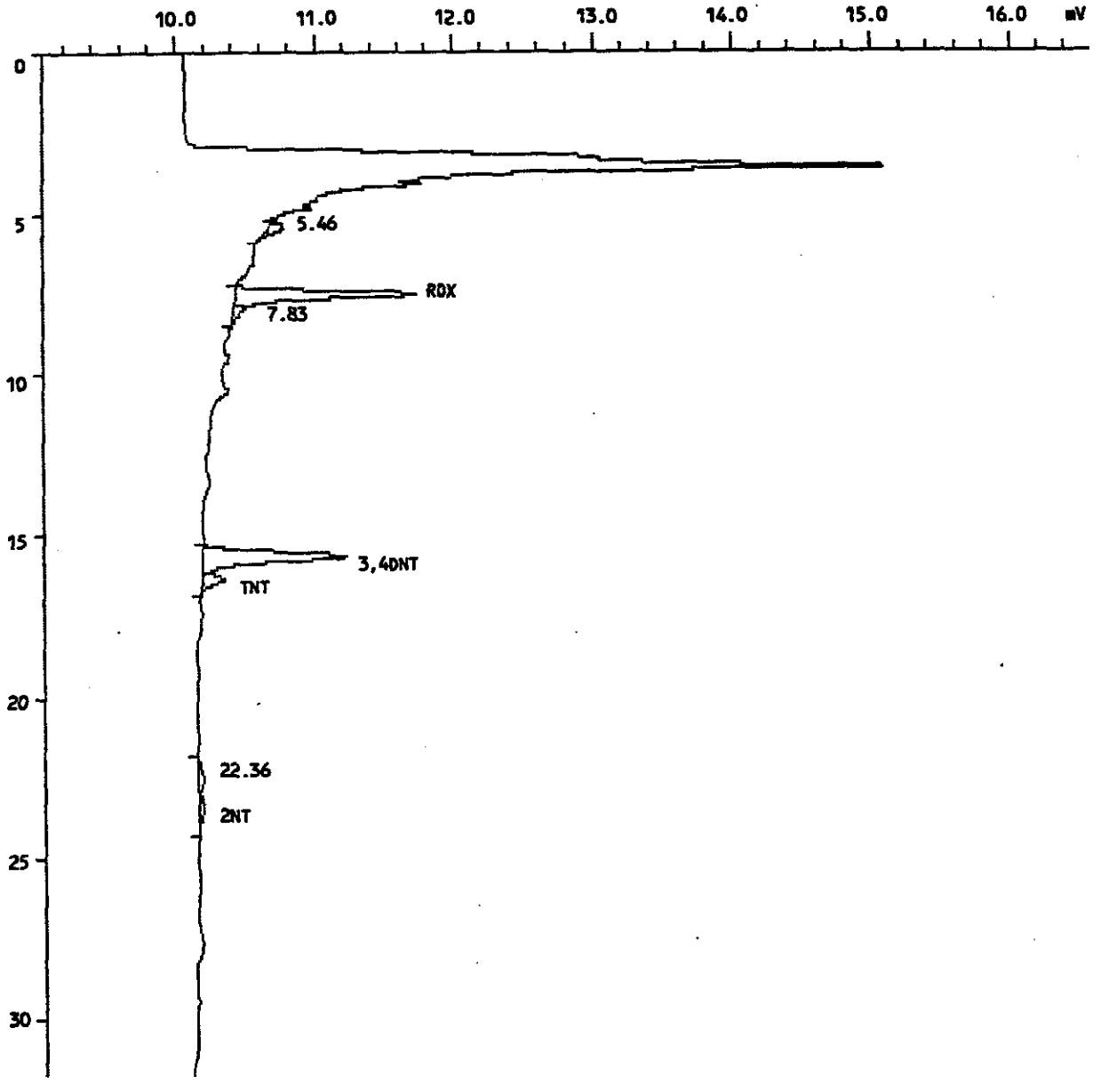
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,7,1

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 05:39:02
Reported on 01-Jul-98 at 15:26:48



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,7,1

Acquired on 01-Jul-98 at 05:39:02
Modified on 01-Jul-82 at 15:15:12
Reported on 01-Jul-98 at 15:15:12

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
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

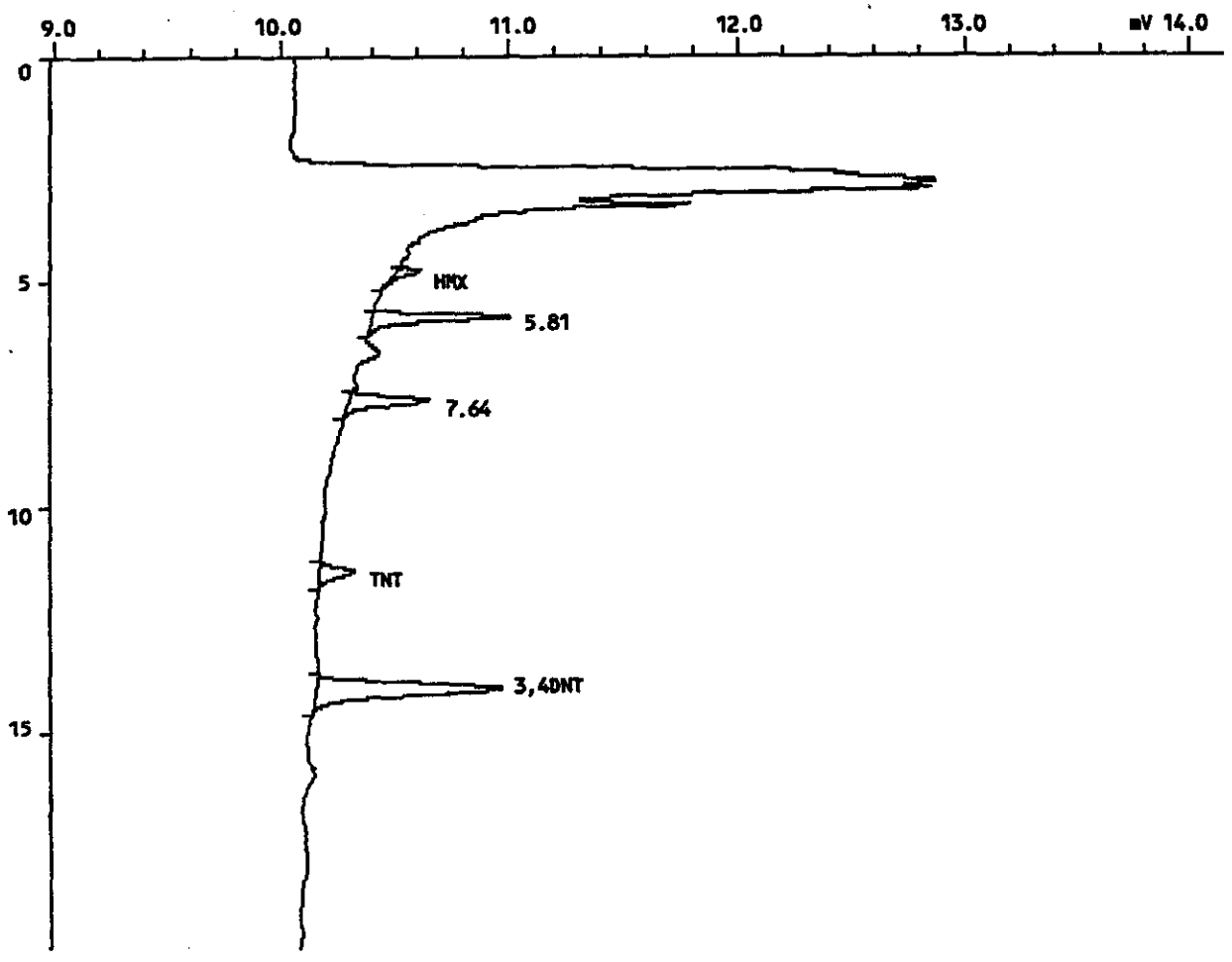
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	7.531	1314	21126	2228.496	RDX *P
4	15.659	1041	22295	1744.495	3,4DNT 87
5	16.384	160	3449	148.029	TNT *J
7	23.365	40	1595	141.657	2NT
Total		2554	48465	4262.677	
Residual		301	6175	543.497	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,5,1

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 03:32:46
Reported on 21-Jul-98 at 11:09:48



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,5,1

Acquired on 17-Jul-98 at 03:32:46
Modified on 21-Jul-82 at 11:09:08
Reported on 21-Jul-98 at 11:09:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
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

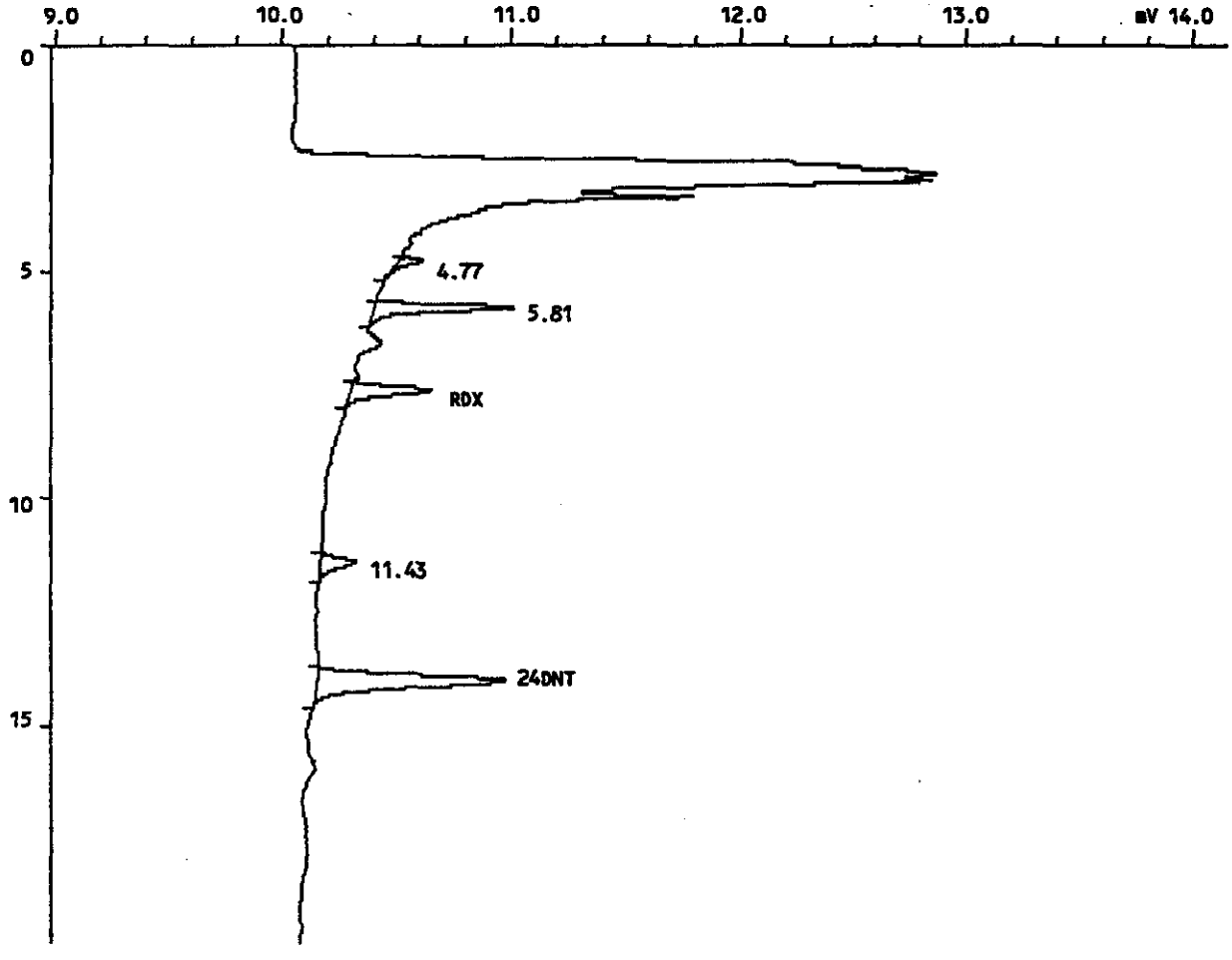
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.773	110	1260	261.378	HMX
4	11.429	152	2395	187.391	TNT
5	14.000	818	15740	1977.398	3,4DNT
Total		1081	19395	2426.167	
Residual		966	12063	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,5,1

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 03:32:46
Reported on 20-Jul-98 at 10:59:09



WA 7-23-98

43A

INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,5,1

Acquired on 17-Jul-98 at 03:32:46
Modified on 20-Jul-82 at 10:53:40
Reported on 20-Jul-98 at 10:53:40

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-A3
Sample ID.....: 34581.03
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	7.643	354	4920	805.219	RDX
5	14.000	818	15740	949.915	24DNT
Total		1173	20660	1755.133	
Residual		874	10797	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-A3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.03

Sample Amt: 2g % Moisture 13.41 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/05/98

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

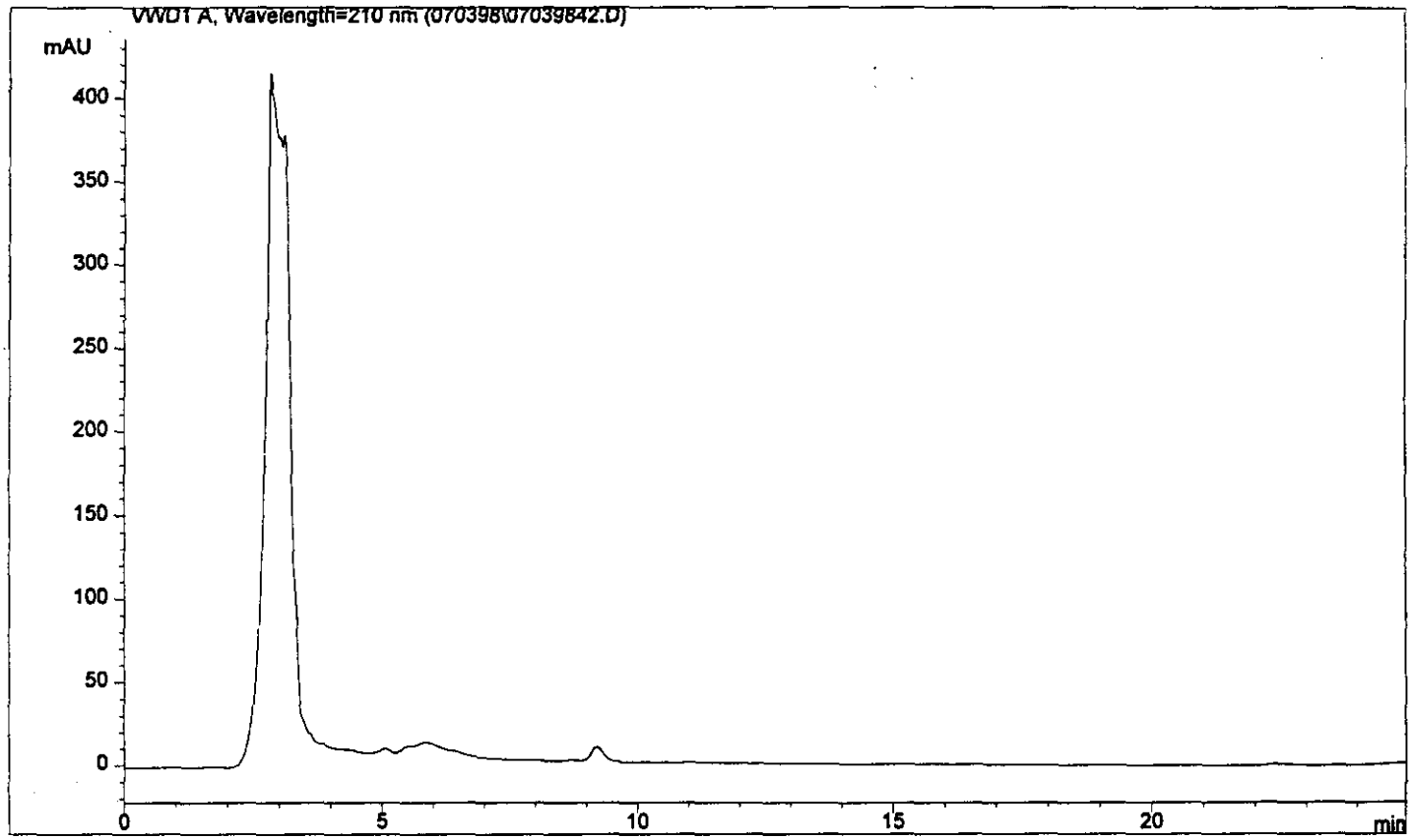
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Sun, 5. Jul. 1998	Seq Line	: 42
Sample Name	: 34581.03	Vial No.	: 42
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

46

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.04

Sample Amt: 2g % Moisture 15.83 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	5570	P
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	213	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

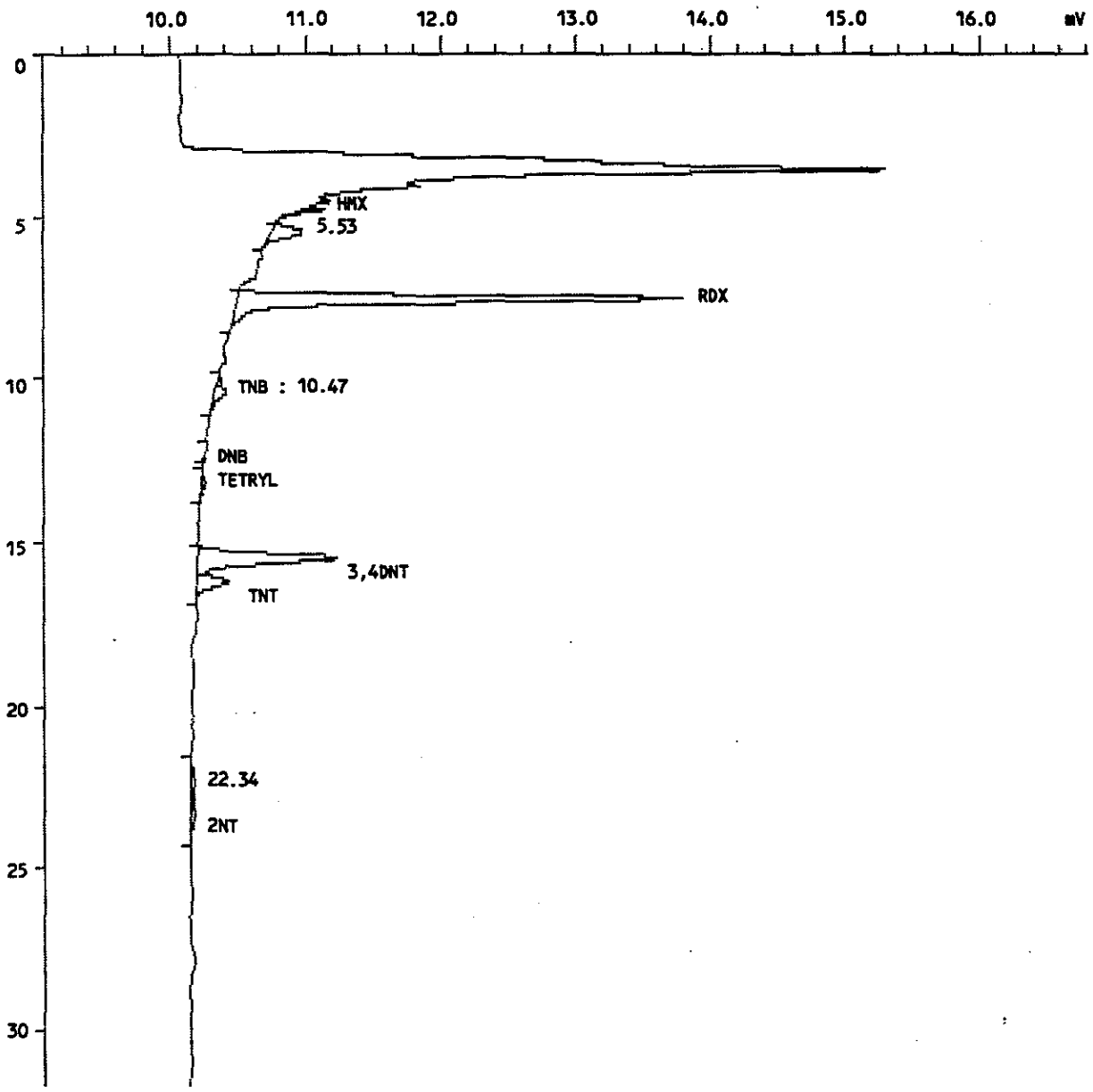
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,8,1

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 06:23:46
Reported on 01-Jul-98 at 15:27:21



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,8,1

Acquired on 01-Jul-98 at 06:23:46
Modified on 01-Jul-82 at 15:15:28
Reported on 01-Jul-98 at 15:15:27

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
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

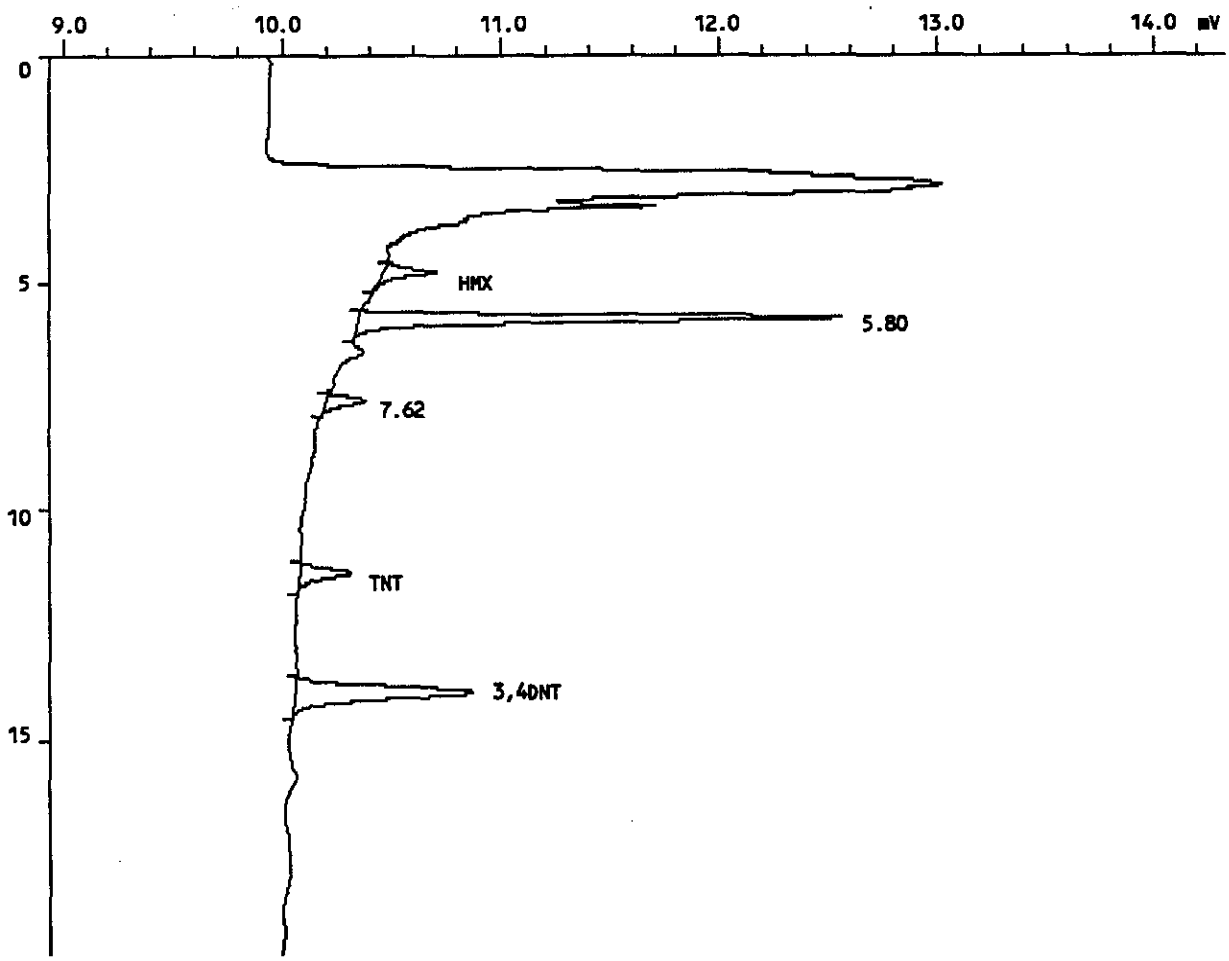
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.827	155	986	128.335	HMX
3	7.531	3290	52842	5574.015	RDX *P
4	10.261	50	613	30.356	TNB
6	12.181	15	266	8.886	DNB
7	13.184	29	863	74.183	TETRYL
8	15.483	1036	22068	1726.762	3,4DNT 86
9	16.213	232	4961	212.916	TNT *J
11	23.451	32	1421	126.202	2NT
Total		4840	84019	7881.655	
Residual		351	8114	799.433	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,6,1

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 04:07:12
Reported on 21-Jul-98 at 11:10:35



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,6,1

Acquired on 17-Jul-98 at 04:07:12
Modified on 21-Jul-82 at 11:10:14
Reported on 21-Jul-98 at 11:10:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
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

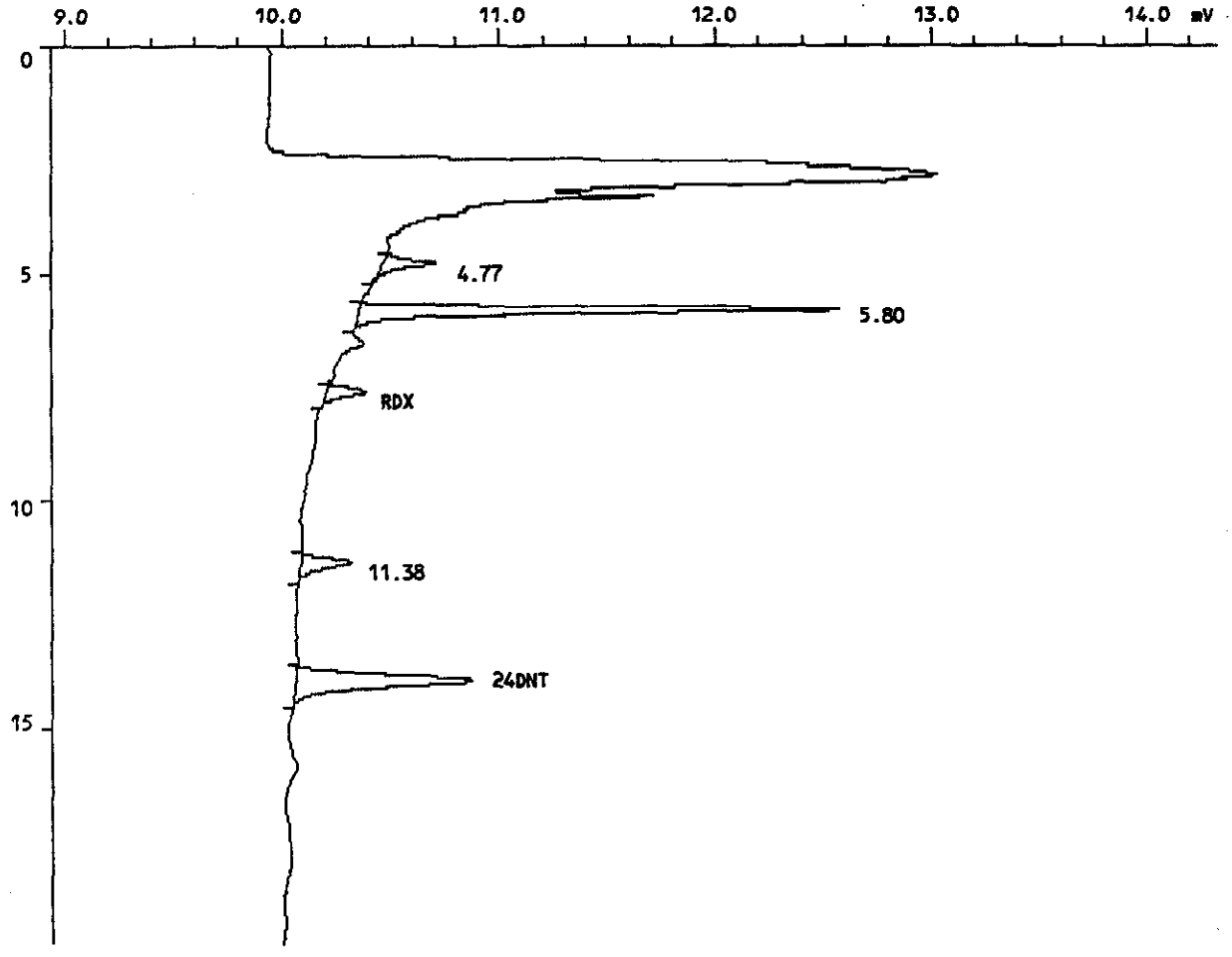
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.773	250	3181	660.031	HMX
4	11.376	234	3621	283.344	TNT
5	13.947	808	15608	1960.835	3,4DNT
Total		1293	22411	2904.210	
Residual		2394	27626	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,6,1

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 04:07:12
Reported on 20-Jul-98 at 10:59:25



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,6,1

Acquired on 17-Jul-98 at 04:07:12
Modified on 20-Jul-82 at 10:53:54
Reported on 20-Jul-98 at 10:53:53

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B1
Sample ID.....: 34581.04
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	7.621	181	2416	395.354	RDX
5	13.947	808	15608	941.958	24DNT
Total		989	18024	1337.313	
Residual		2698	32013	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.04

Sample Amt: 2g % Moisture 15.83 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/05/98

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

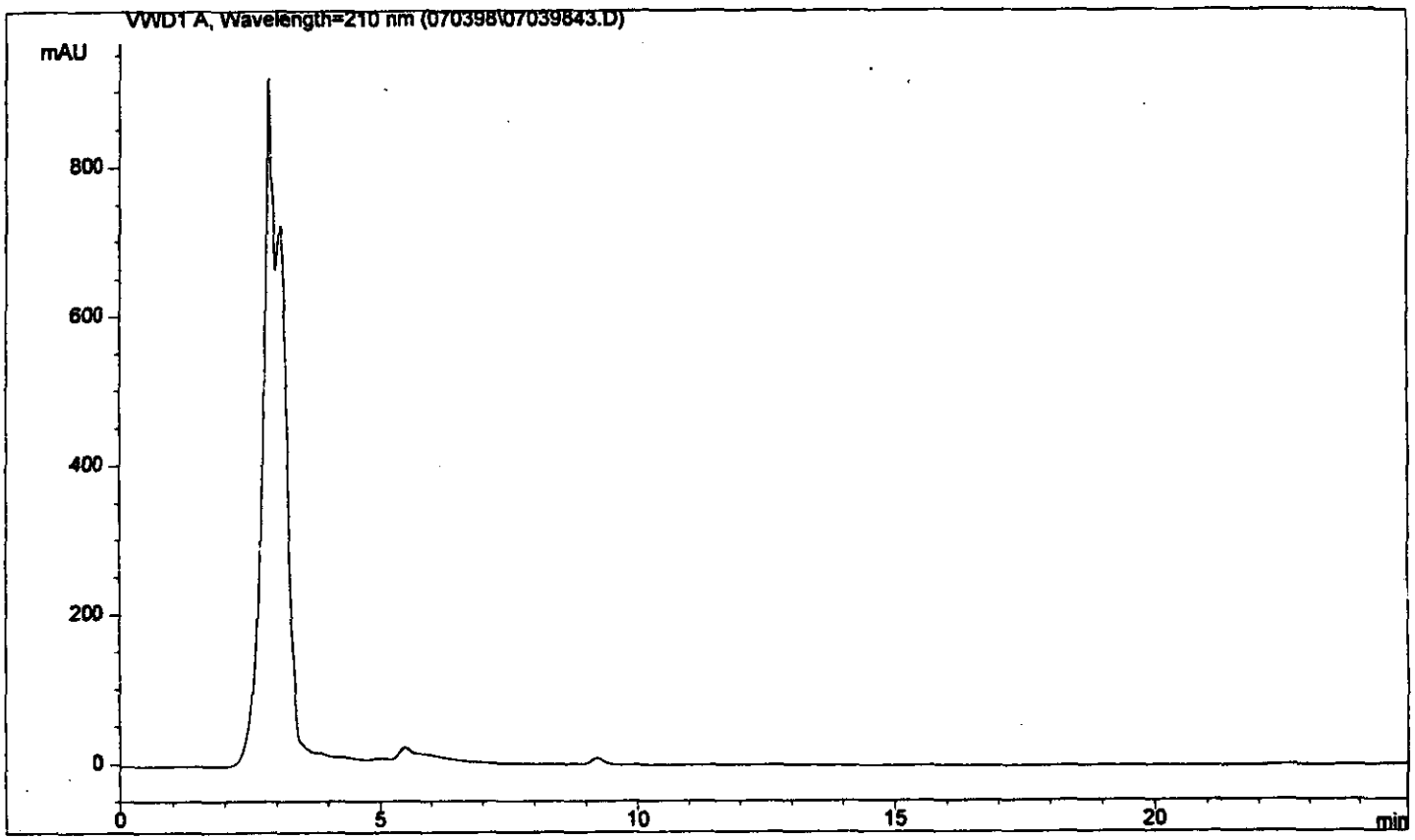
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Sun, 5. Jul. 1998	Seq Line	: 43
Sample Name	: 34581.04	Vial No.	: 43
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



==========
Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.05

Sample Amt: 2g % Moisture 26.90 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	1660	P
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	144	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

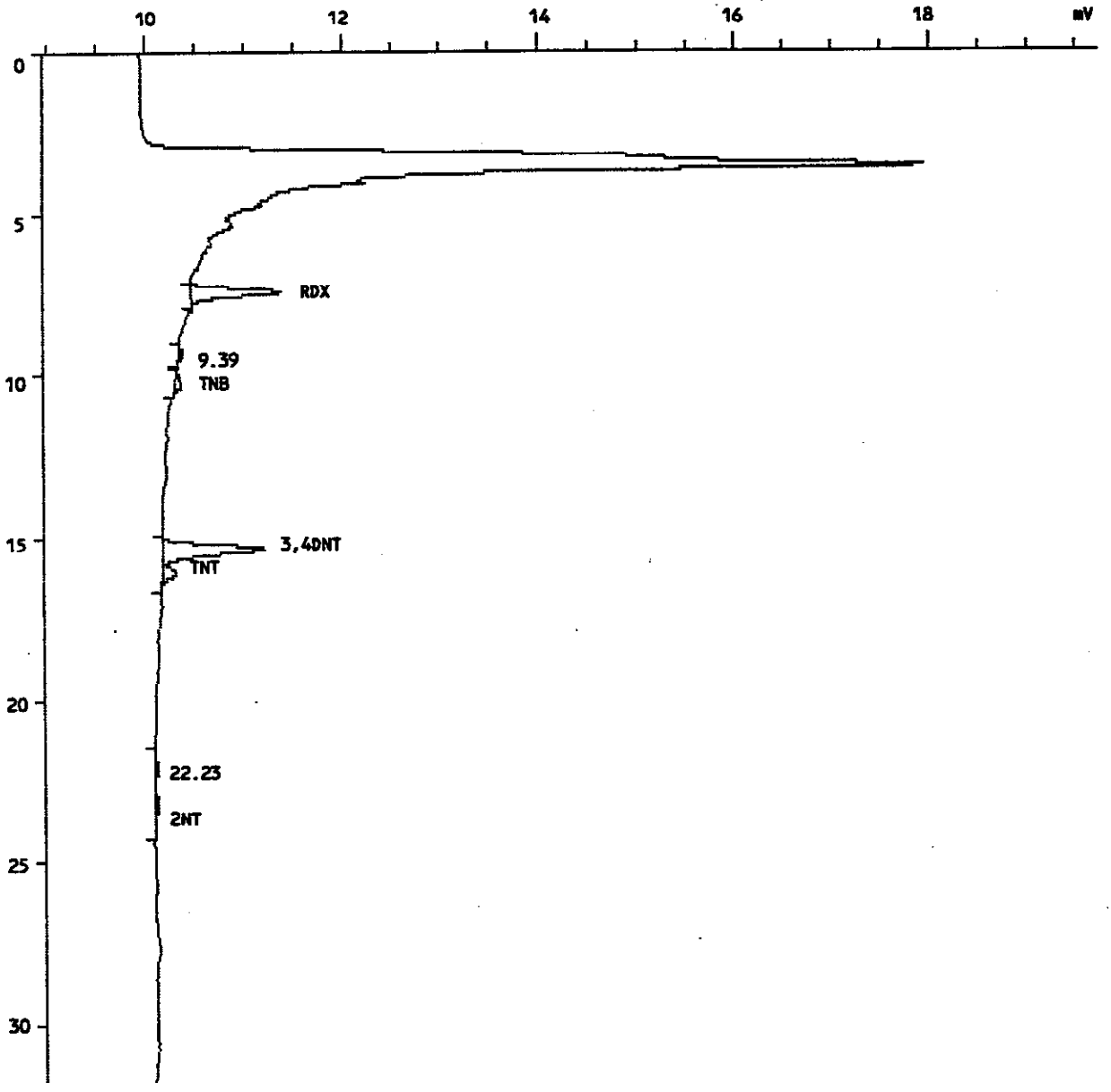
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,9,1

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 07:08:30
Reported on 01-Jul-98 at 15:27:42



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,9,1

Acquired on 01-Jul-98 at 07:08:30
Modified on 01-Jul-82 at 15:15:44
Reported on 01-Jul-98 at 15:15:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
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

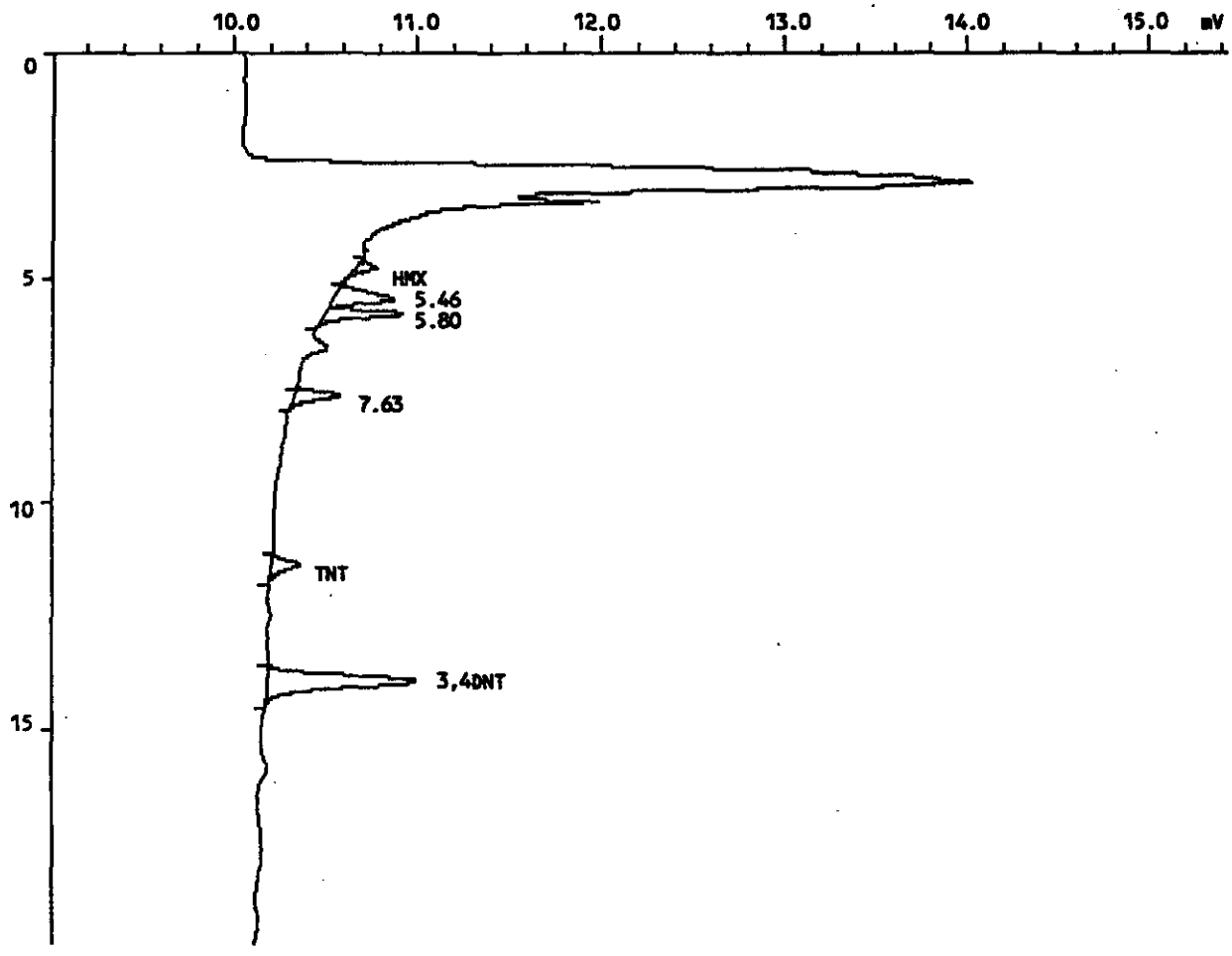
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	7.472	921	15788	1665.418	RDX *P
3	10.320	71	1691	83.807	TNB
4	15.387	1042	22323	1746.727	3,4DNT 87
5	16.128	154	3351	143.803	TNT *J
7	23.333	34	1403	124.603	2NT
Total		2222	44556	3764.358	
Residual		73	1932	134.316	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,7,1

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 04:41:38
Reported on 21-Jul-98 at 11:11:15



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,7,1

Acquired on 17-Jul-98 at 04:41:38
Modified on 21-Jul-82 at 11:10:58
Reported on 21-Jul-98 at 11:11:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
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

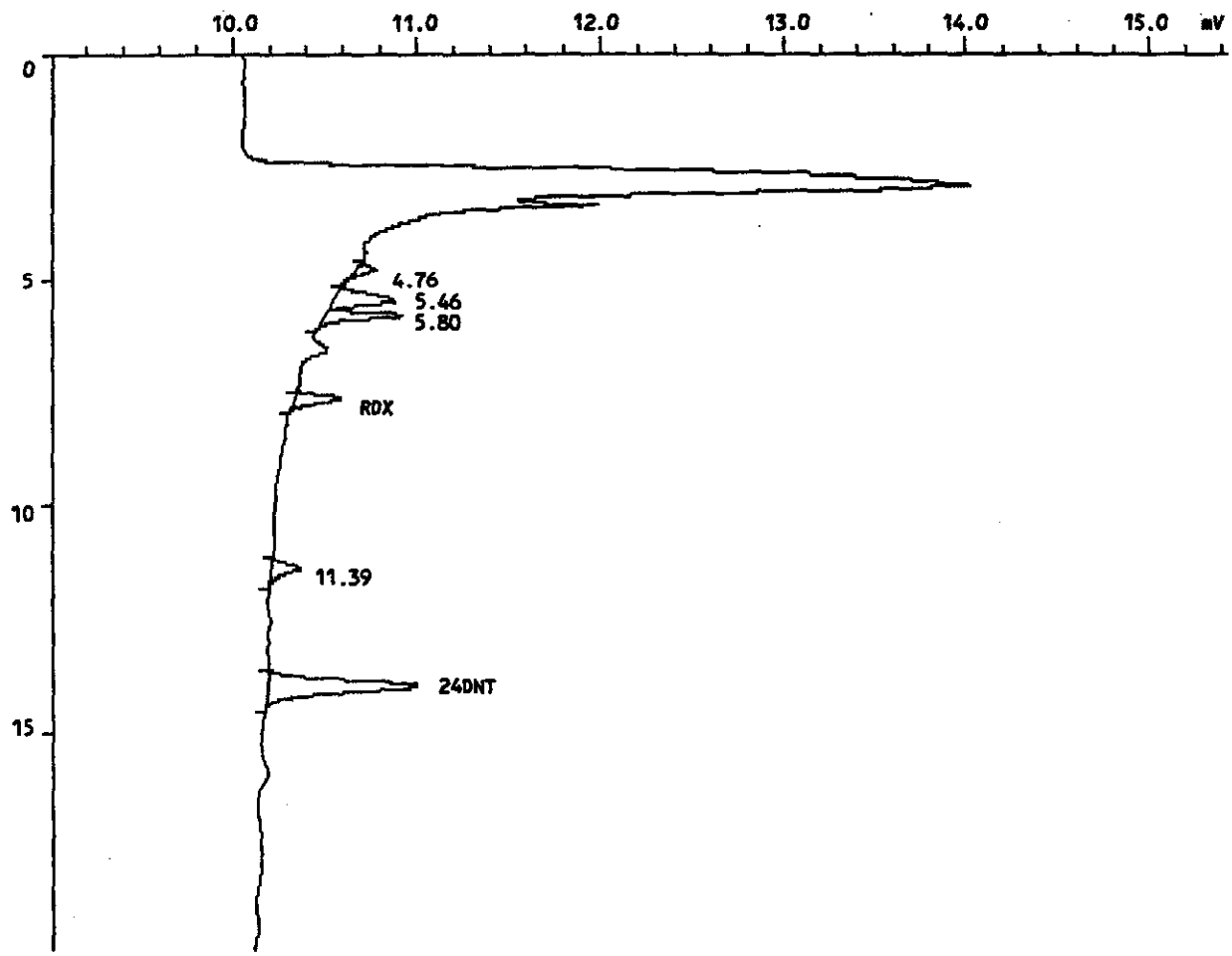
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.763	127	1874	388.777	HMX
5	11.387	153	2475	193.696	TNT
6	13.947	809	15679	1969.731	3,4DNT
Total		1089	20028	2552.204	
Residual		1023	13712	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,7,1

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 04:41:38
Reported on 20-Jul-98 at 10:59:48



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,7,1

Acquired on 17-Jul-98 at 04:41:38
Modified on 20-Jul-82 at 10:54:06
Reported on 20-Jul-98 at 10:54:06

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B2
Sample ID.....: 34581.05
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	7.627	247	3333	545.554	RDX
6	13.947	809	15679	946.232	24DNT
Total		1056	19012	1491.785	
Residual		1057	14728	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.05

Sample Amt: 2g % Moisture 26.90 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/05/98

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

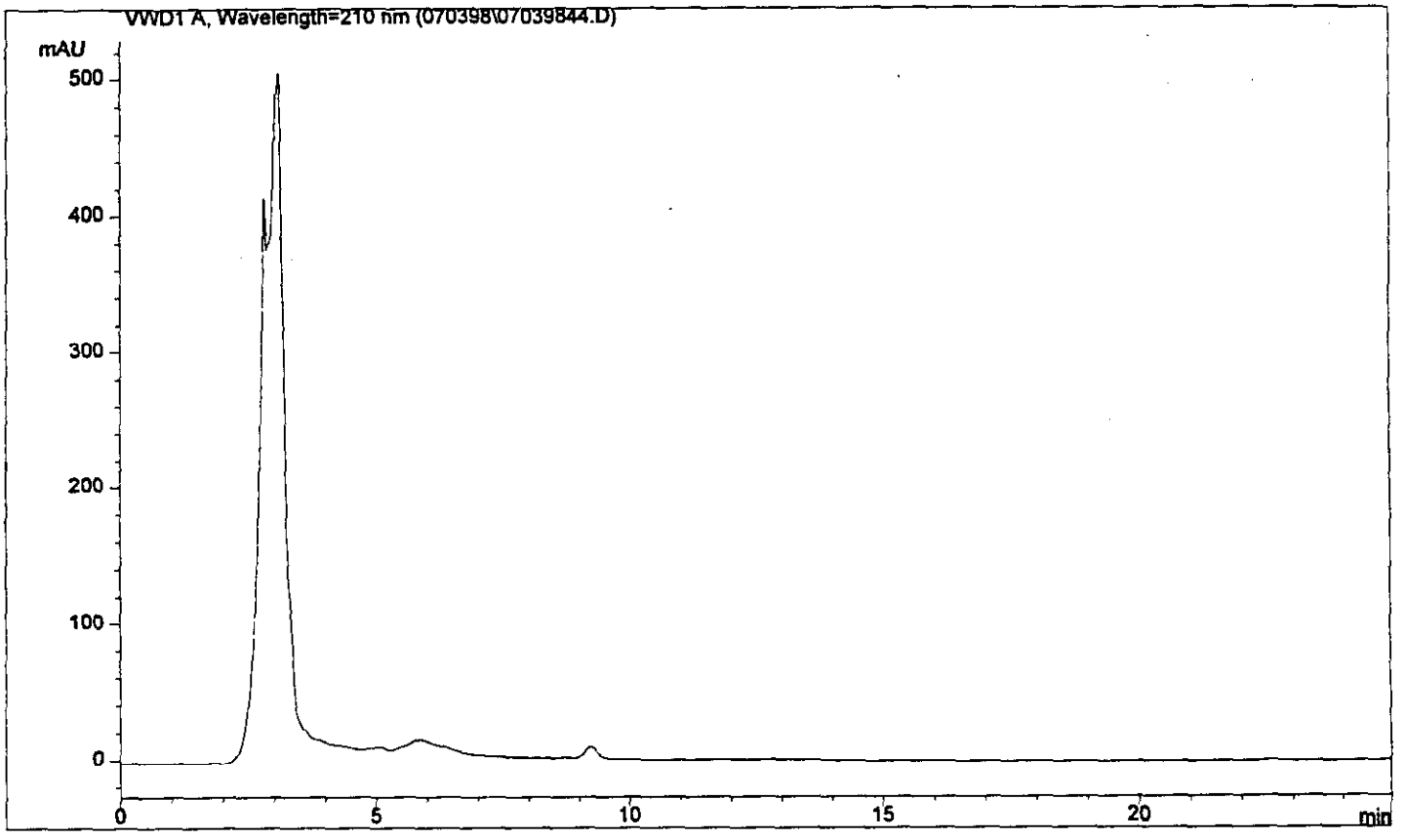
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN	250		U

FORM I

Injection Date	: Sun, 5. Jul. 1998	Seq Line	: 44
Sample Name	: 34581.05	Vial No.	: 44
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.06

Sample Amt: 2g % Moisture 14.76 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	4160	P
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	359	
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

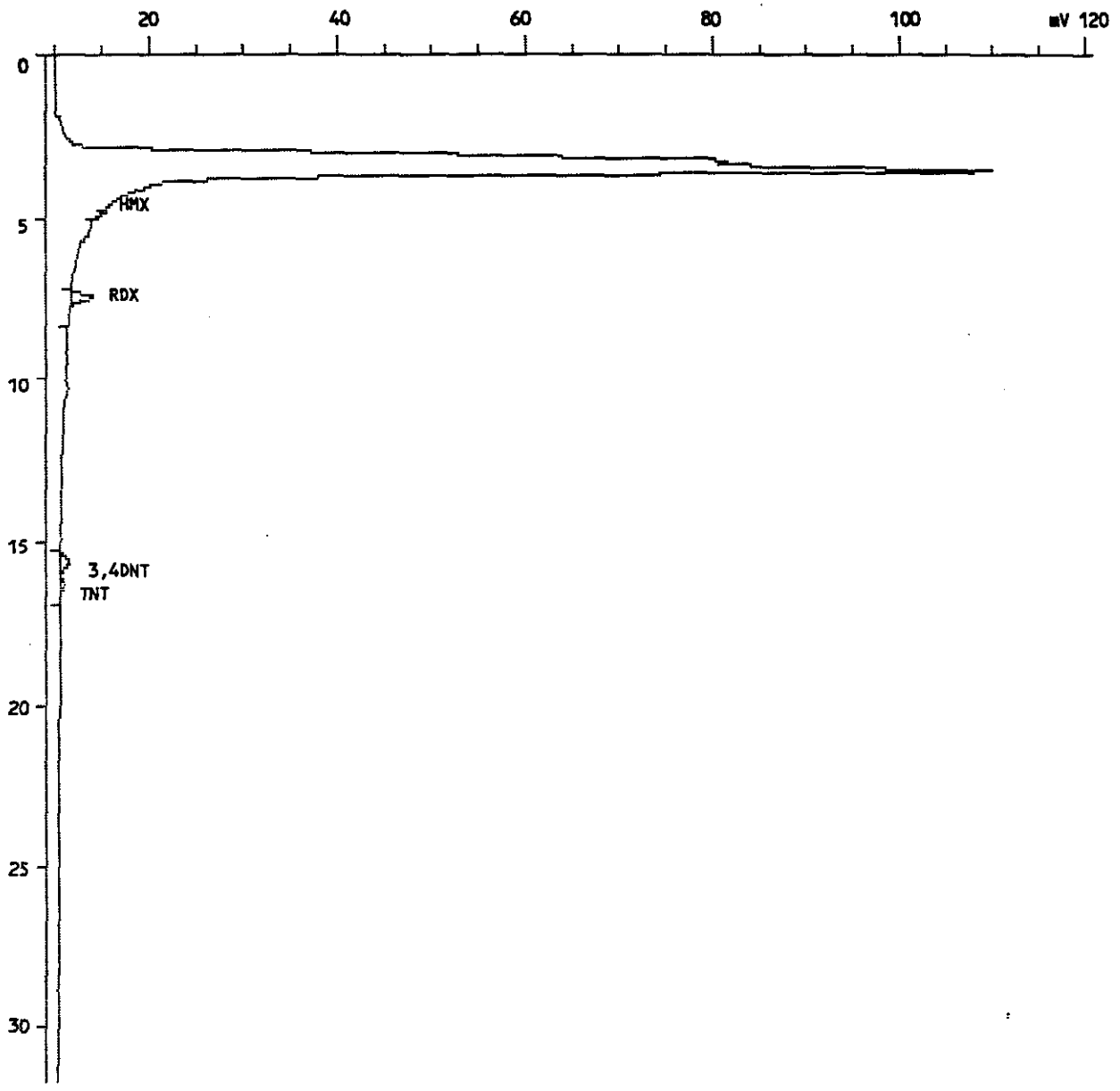
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,10,1

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 07:53:15
Reported on 01-Jul-98 at 15:28:11



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,10,1

Acquired on 01-Jul-98 at 07:53:15
Modified on 01-Jul-82 at 15:16:00
Reported on 01-Jul-98 at 15:15:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
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

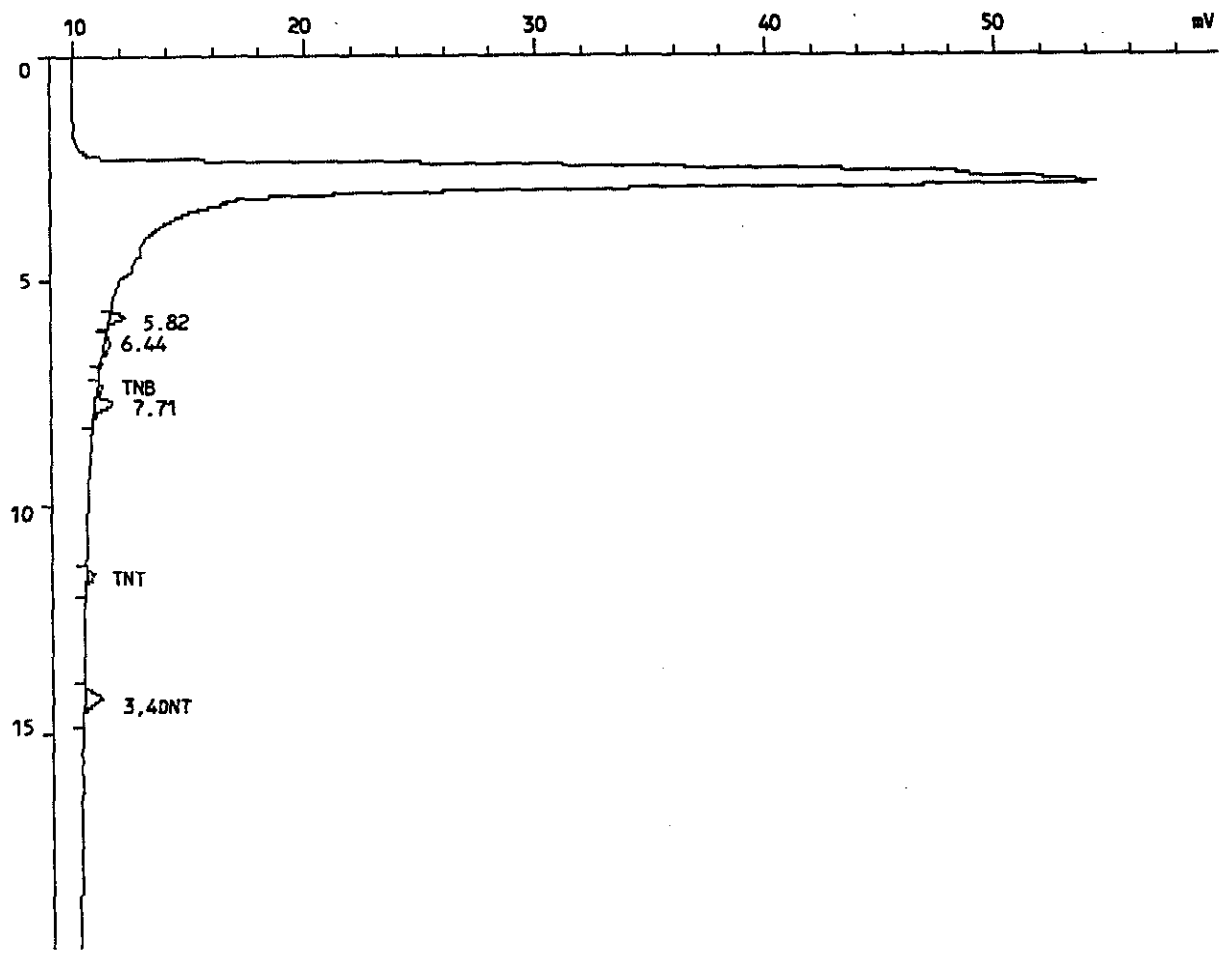
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.832	334	2046	266.349	HMX
2	7.509	2367	39412	4157.374	RDX * P
3	15.648	1021	21547	1686.024	3,4DNT 84
4	16.363	392	8359	358.775	TNT *
Total		4113	71364	6468.523	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,8,1

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 05:16:05
Reported on 20-Jul-98 at 10:37:17



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,8,1

Acquired on 17-Jul-98 at 05:16:05
Modified on 20-Jul-82 at 10:28:38
Reported on 20-Jul-98 at 10:28:38

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:24:30
Method file.....: LCCN Last modified on 20-Jul-82 at 10:07:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
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

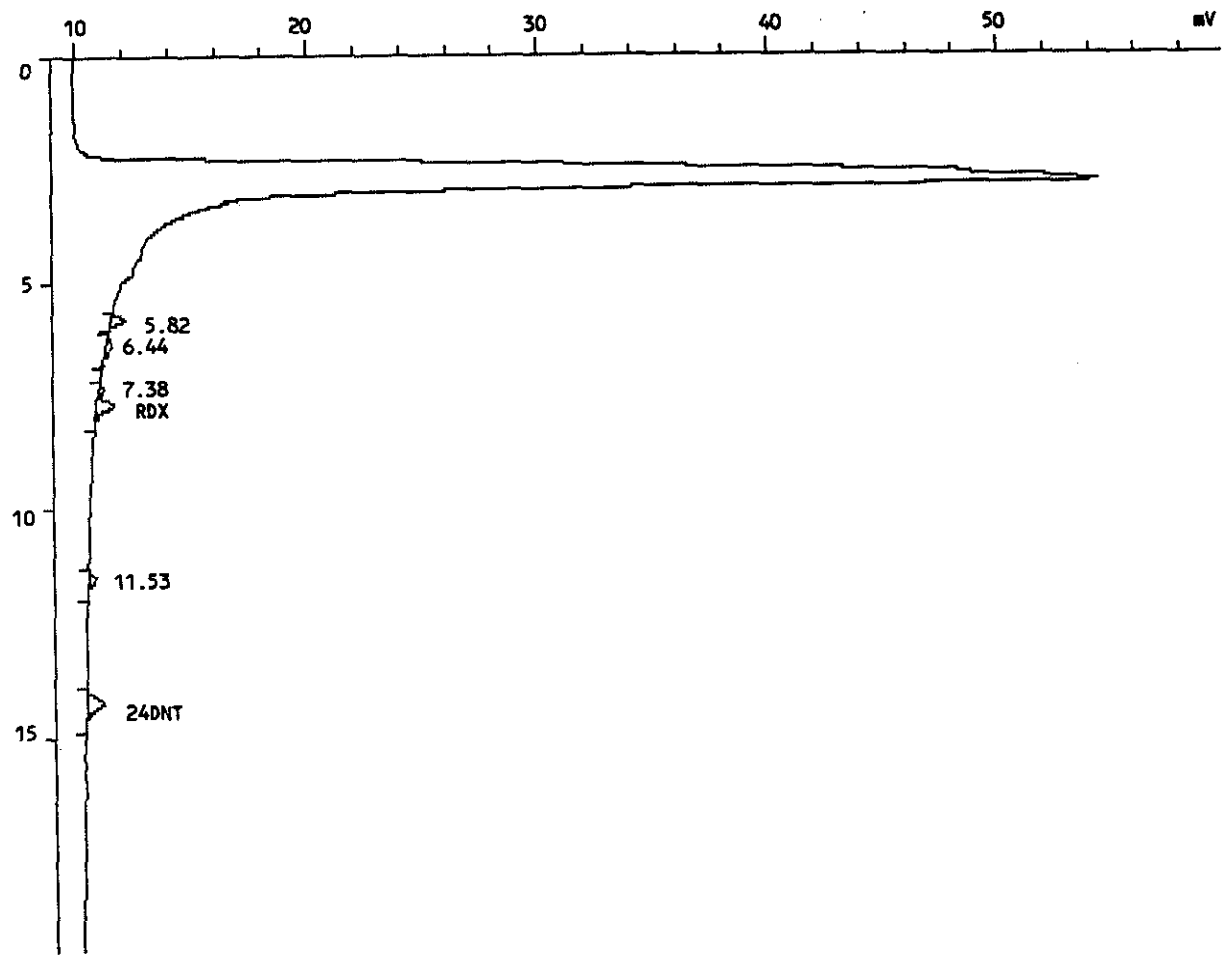
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.381	209	2425	172.331	TNB
5	11.531	388	6044	472.932	TNT
6	14.203	797	15551	1953.627	3,4DNT
Total		1394	24020	2598.890	
Residual		1709	23787	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,8,1

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 05:16:05
Reported on 20-Jul-98 at 11:00:06



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,8,1

Acquired on 17-Jul-98 at 05:16:05
Modified on 20-Jul-82 at 10:54:20
Reported on 20-Jul-98 at 10:54:20

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3
Sample ID.....: 34581.06
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	7.712	790	11510	1883.878	RDX
6	14.203	797	15551	938.496	24DNT
Total		1587	27061	2822.374	
Residual		1516	20746	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.06

Sample Amt: 2g % Moisture 14.76 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

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

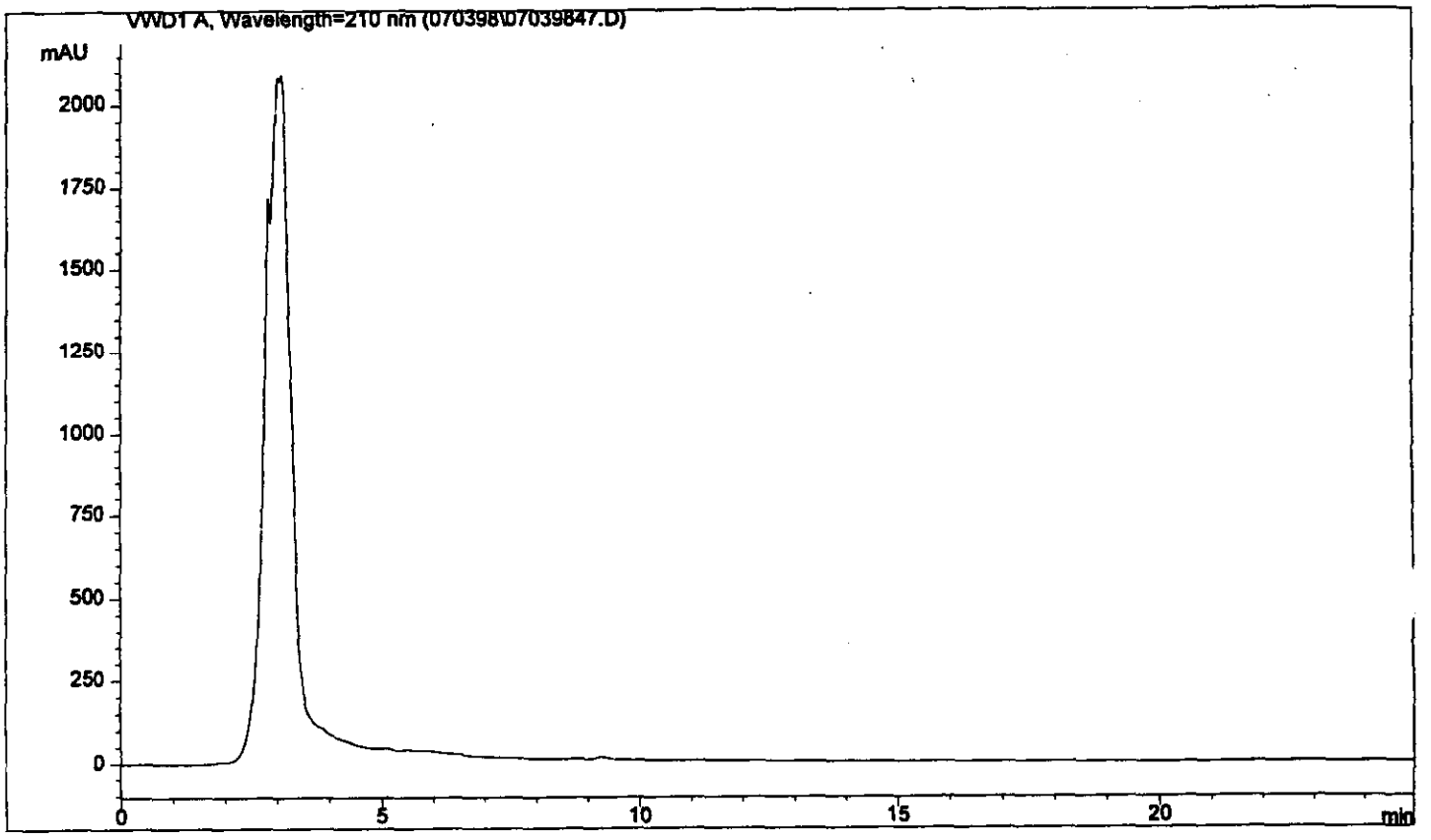
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 47
Sample Name	: 34581.06	Vial No.	: 47
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



==========
Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3
FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.07

Sample Amt: 2g % Moisture 14.39 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	3520	P
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	138	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

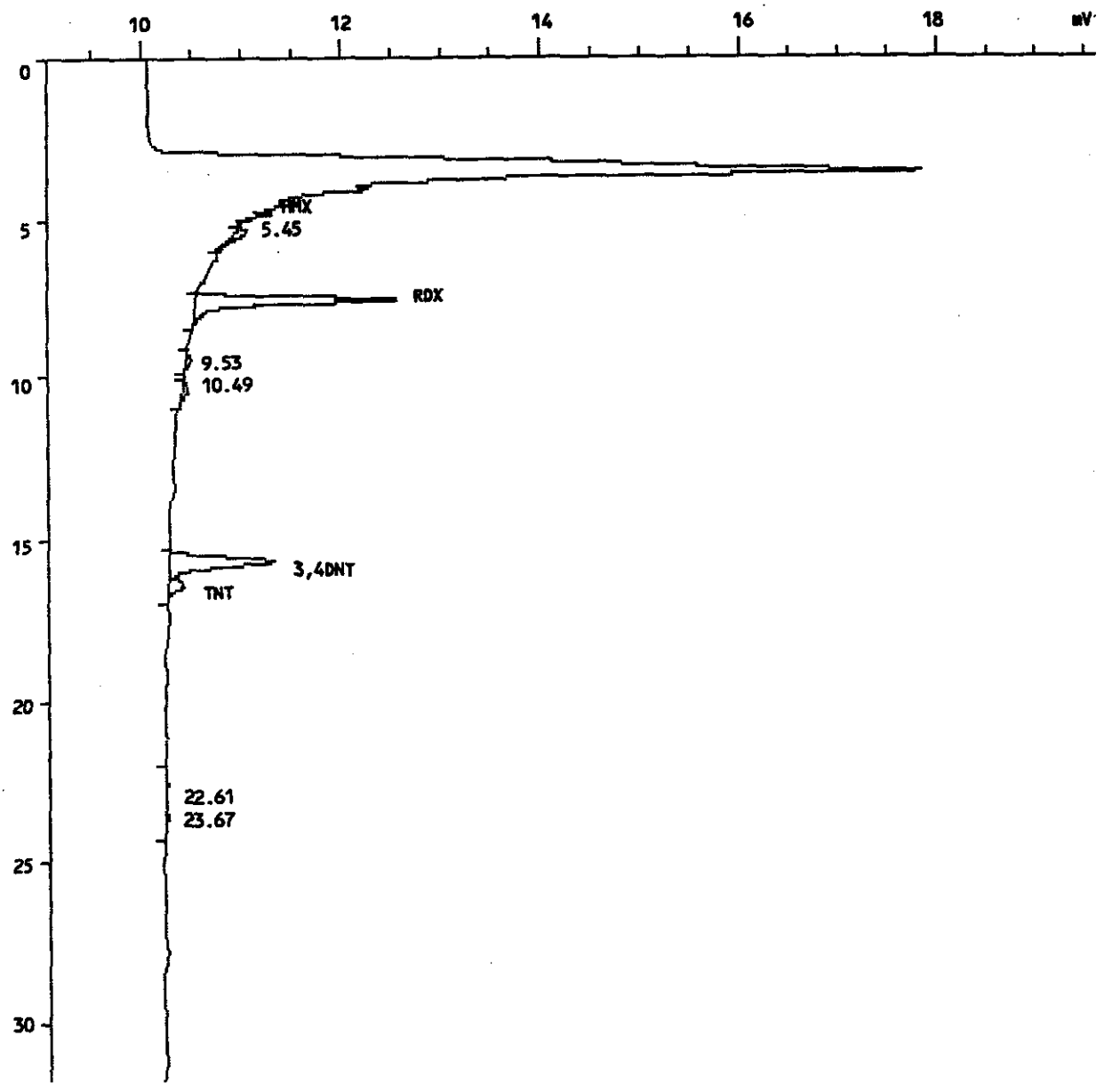
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,13,1

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 10:07:31
Reported on 01-Jul-98 at 15:28:36



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,13,1

Acquired on 01-Jul-98 at 10:07:31
Modified on 01-Jul-82 at 15:16:14
Reported on 01-Jul-98 at 15:16:14

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
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

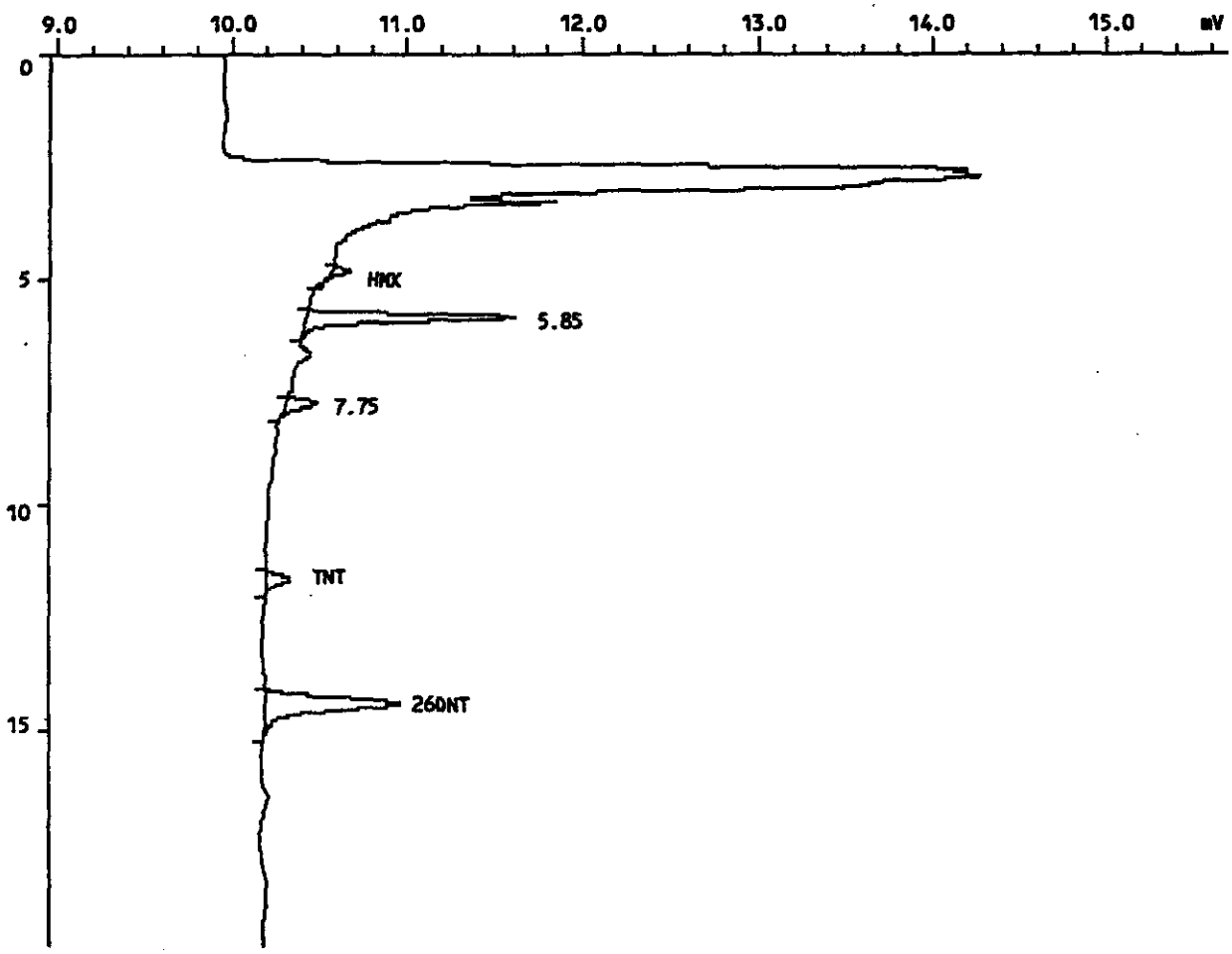
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.853	131	919	119.641	HMX
3	7.568	2019	33332	3516.079	RDX * P
6	15.653	1050	22299	1744.828	3,4DNT 87
7	16.357	153	3208	137.676	TNT *J
Total		3354	59758	5518.224	
Residual		318	7878	760.890	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,11,1

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 10:13:04
Reported on 21-Jul-98 at 11:11:53



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,11,1

Acquired on 17-Jul-98 at 10:13:04
Modified on 21-Jul-82 at 11:11:38
Reported on 21-Jul-98 at 11:11:39

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
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

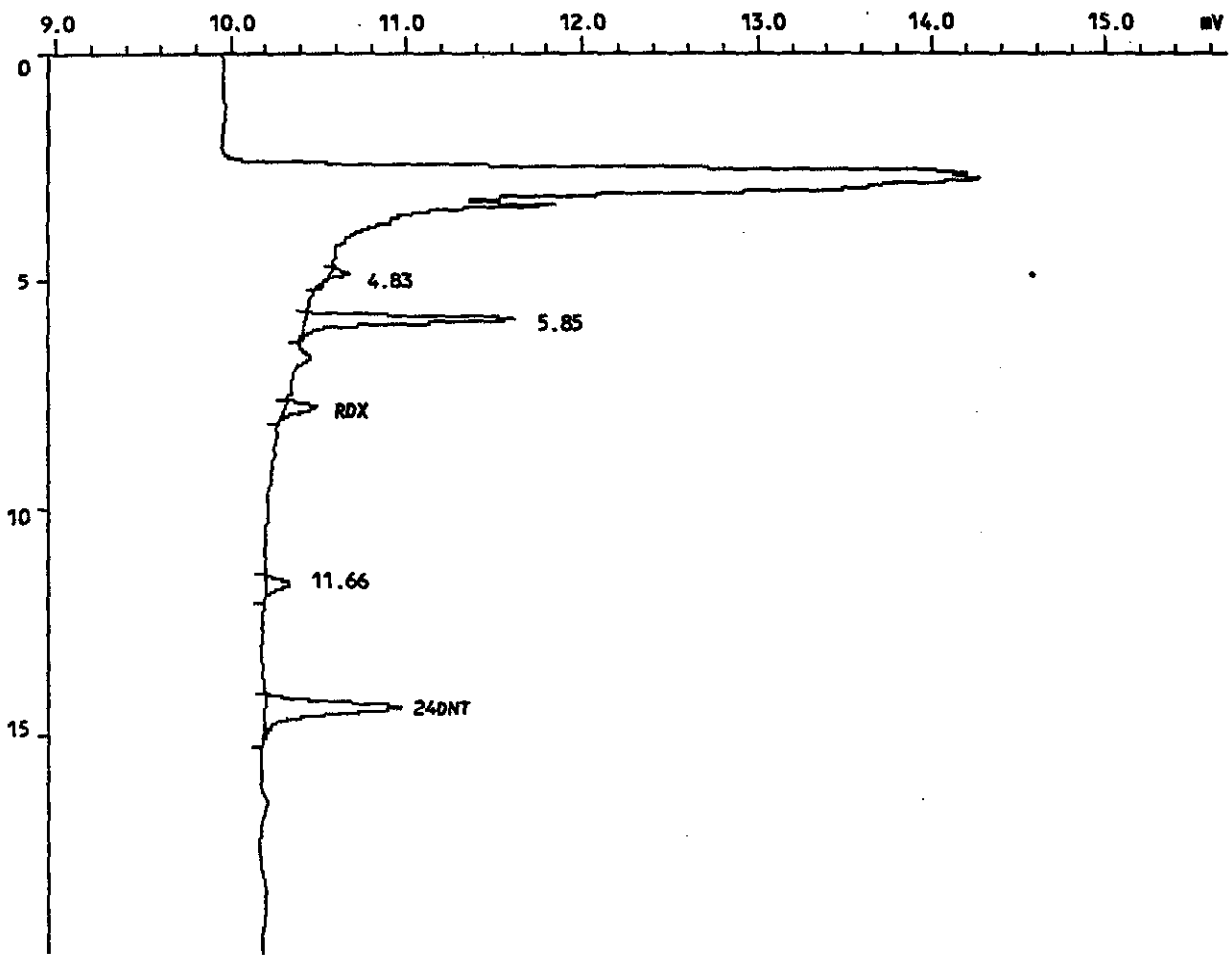
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.832	116	1293	268.266	HMX
4	11.664	135	2090	163.499	TNT
5	14.400	777	16045	1678.308	26DNT
Total		1028	19427	2110.073	
Residual		1382	16557	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,11,1

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 10:13:04
Reported on 20-Jul-98 at 11:00:26



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,11,1

Acquired on 17-Jul-98 at 10:13:04
Modified on 20-Jul-82 at 10:54:34
Reported on 20-Jul-98 at 10:54:33

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-B3FD
Sample ID.....: 34581.07
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	7.755	182	2525	413.336	RDX
5	14.400	777	16045	968.294	24DNT
Total		959	18570	1381.630	
Residual		1452	17414	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-B3
FD

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.07

Sample Amt: 2g % Moisture 14.39 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

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

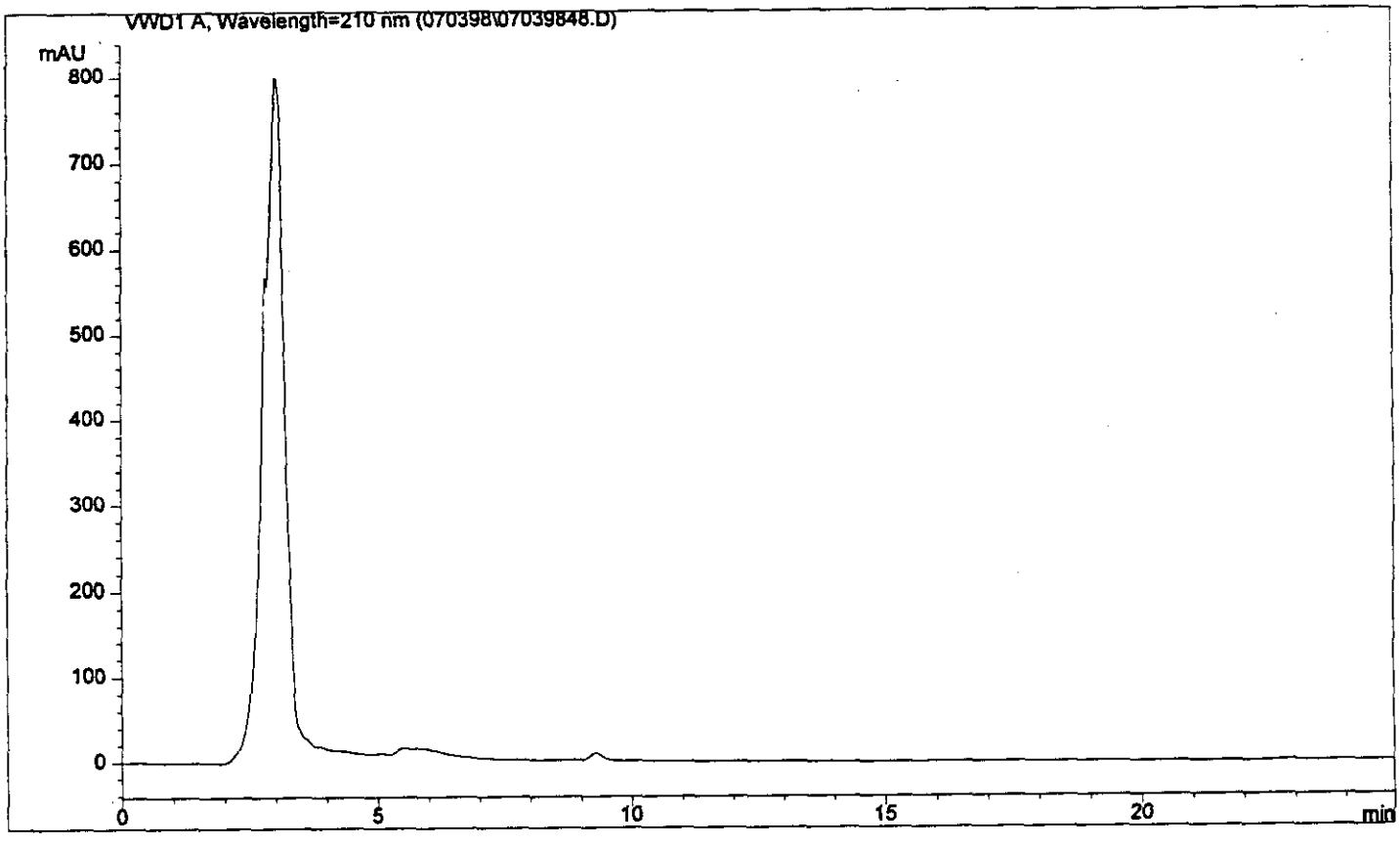
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 48
Sample Name	: 34581.07	Vial No.	: 48
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

82

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-C1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.08

Sample Amt: 2g % Moisture 15.23 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	5650	P
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	380	
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

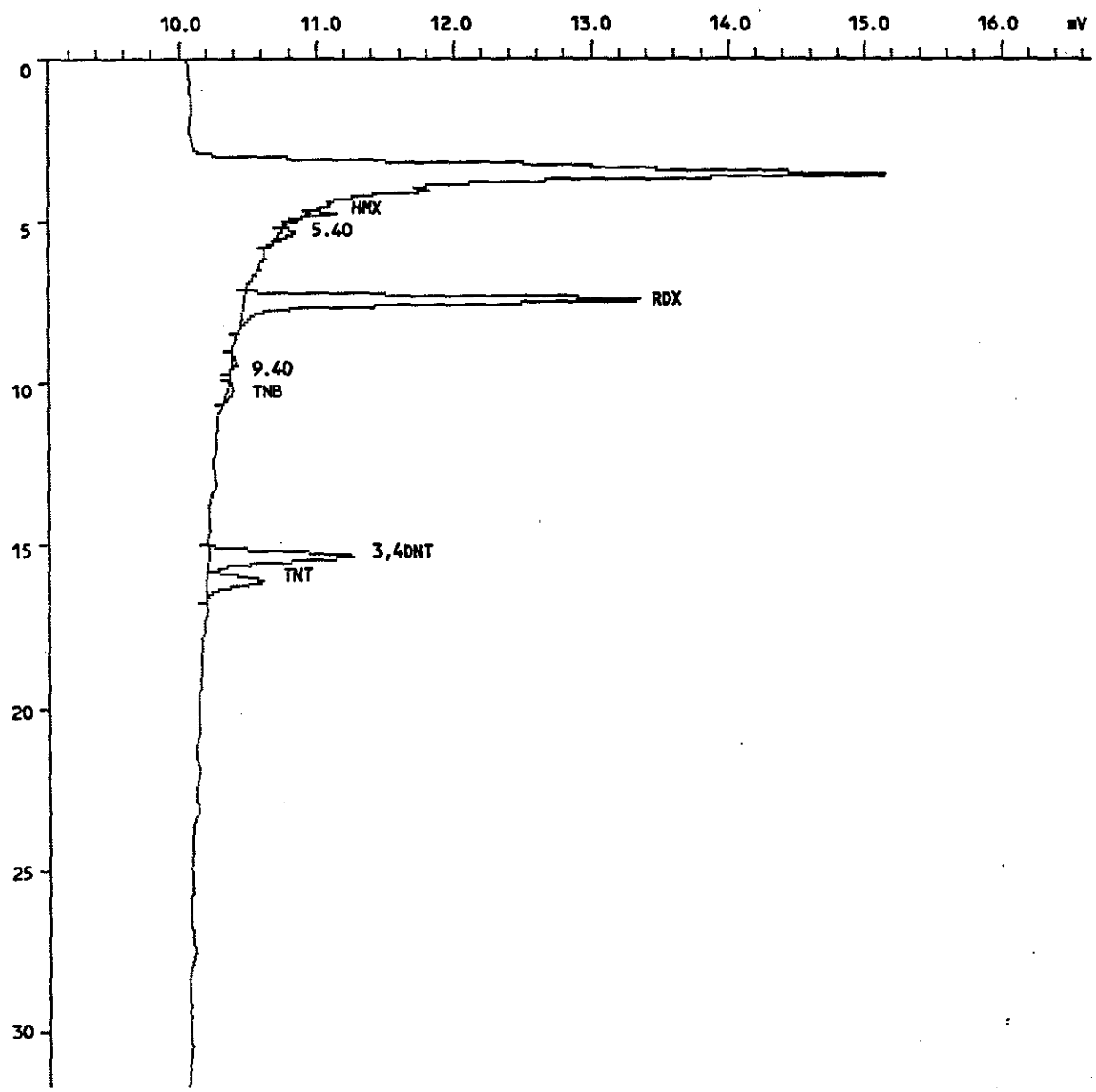
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,14,1

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 10:52:17
Reported on 01-Jul-98 at 15:29:13



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,14,1

Acquired on 01-Jul-98 at 10:52:17
Modified on 01-Jul-82 at 15:16:28
Reported on 01-Jul-98 at 15:16:28

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
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

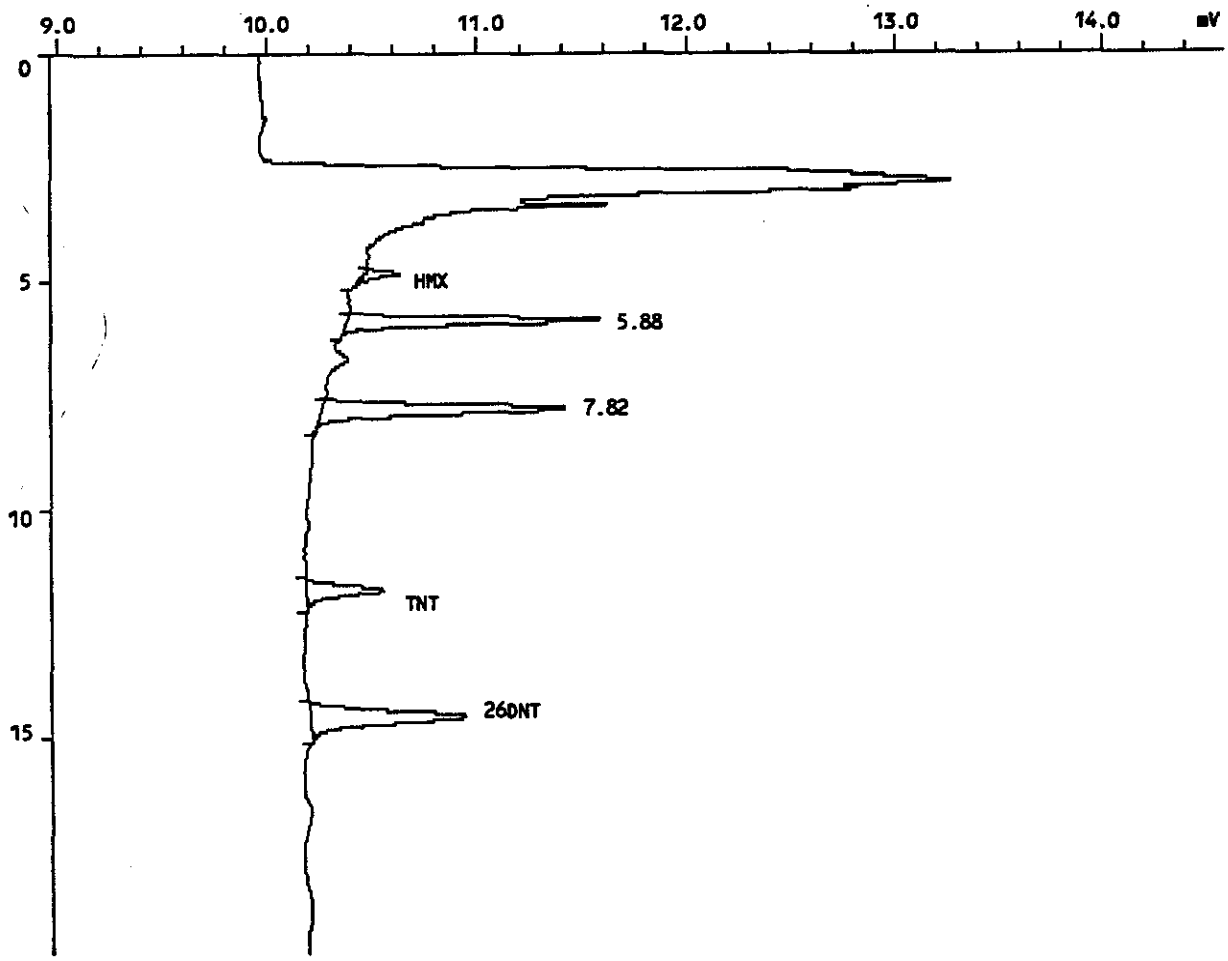
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.821	231	1680	218.815	HMX
3	7.472	2889	53606	5654.628	RDX *P
5	10.267	50	1228	60.876	TNB
6	15.355	1054	21957	1718.069	3,4DNT 86
7	16.112	401	8843	379.527	TNT *
Total		4625	87315	8031.916	
Residual		162	3261	402.516	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,12,1

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 10:47:28
Reported on 21-Jul-98 at 10:07:35



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,12,1

Acquired on 17-Jul-98 at 10:47:28
Modified on 21-Jul-82 at 10:05:26
Reported on 21-Jul-98 at 10:06:00

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
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

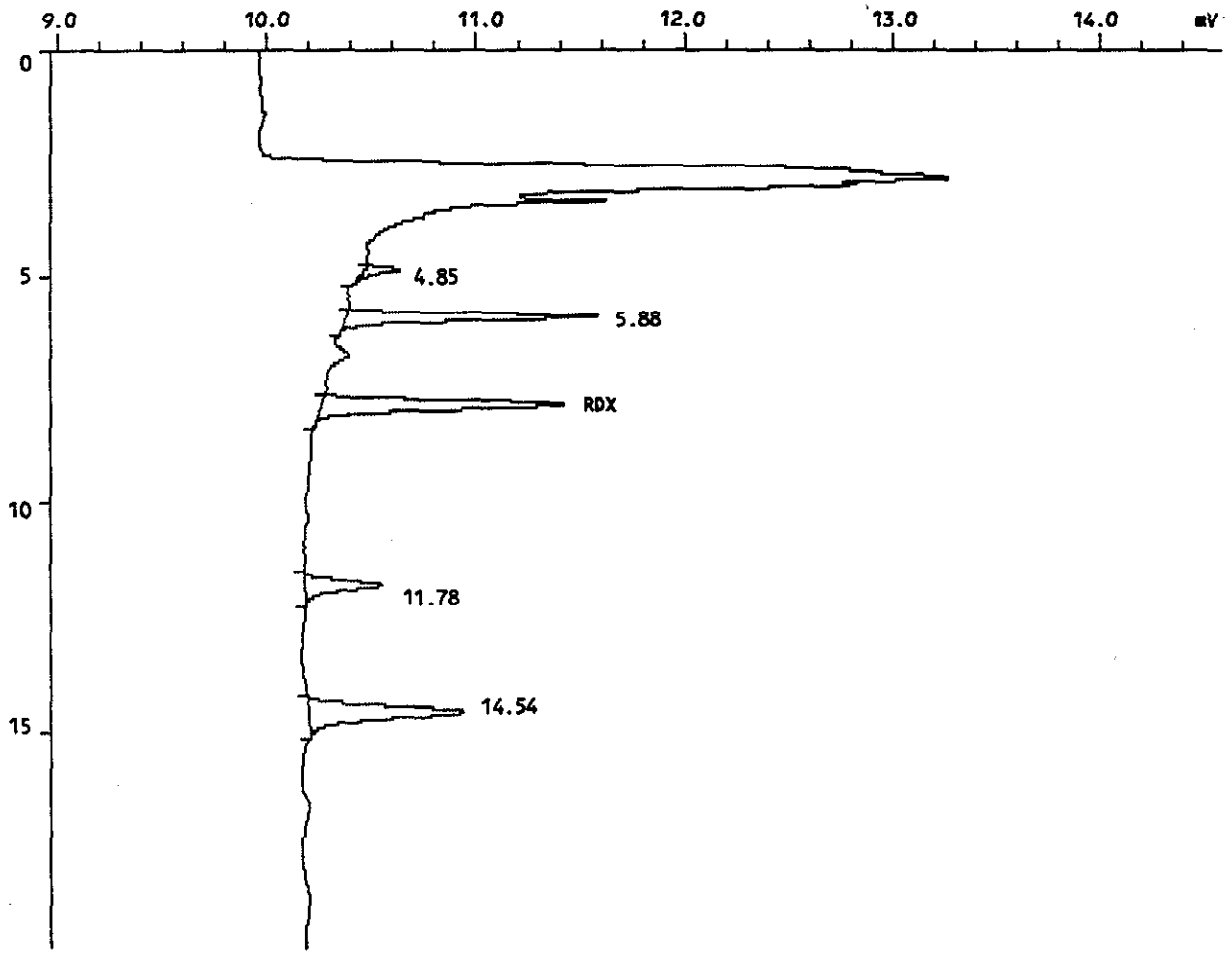
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.853	182	1916	397.513	HMX
4	11.776	372	5930	464.024	TNT
5	14.539	748	14619	1529.212	26DNT
Total		1302	22466	2390.749	
Residual		2375	30680	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,12,1

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 10:47:28
Reported on 20-Jul-98 at 11:00:43



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,12,1

Acquired on 17-Jul-98 at 10:47:28
Modified on 20-Jul-82 at 10:54:46
Reported on 20-Jul-98 at 10:54:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C1
Sample ID.....: 34581.08
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	7.824	1166	16903	2766.454	RDX
Total		1166	16903	2766.454	
Residual		2512	36242	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-Cl

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.08

Sample Amt: 2g % Moisture 15.23 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

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

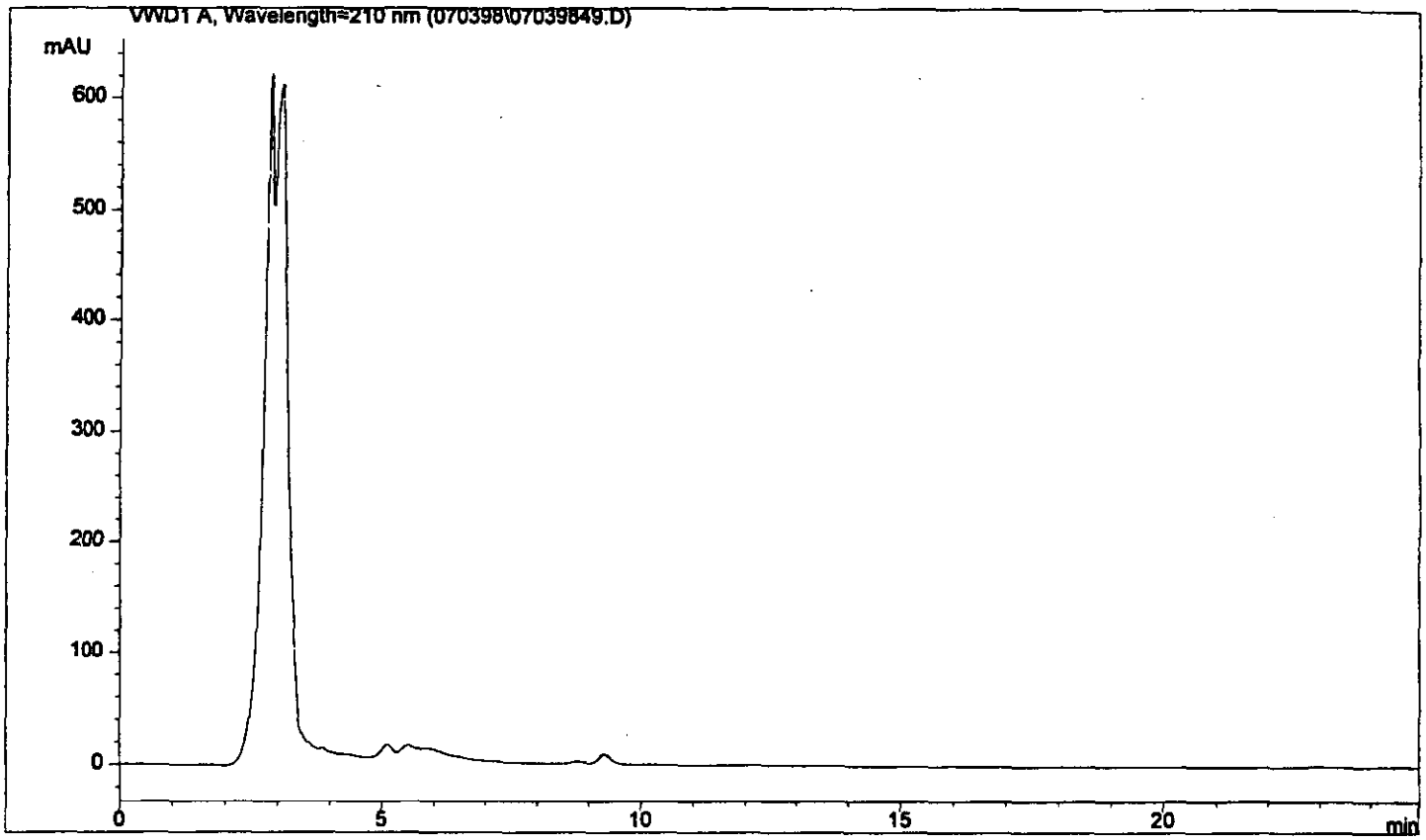
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg)	ug/kg	Q
75-11-5	PETN	250		U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 49
Sample Name	: 34581.08	Vial No.	: 49
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-60-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.09

Sample Amt: 2g % Moisture 16.93 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	5490	P
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	102	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

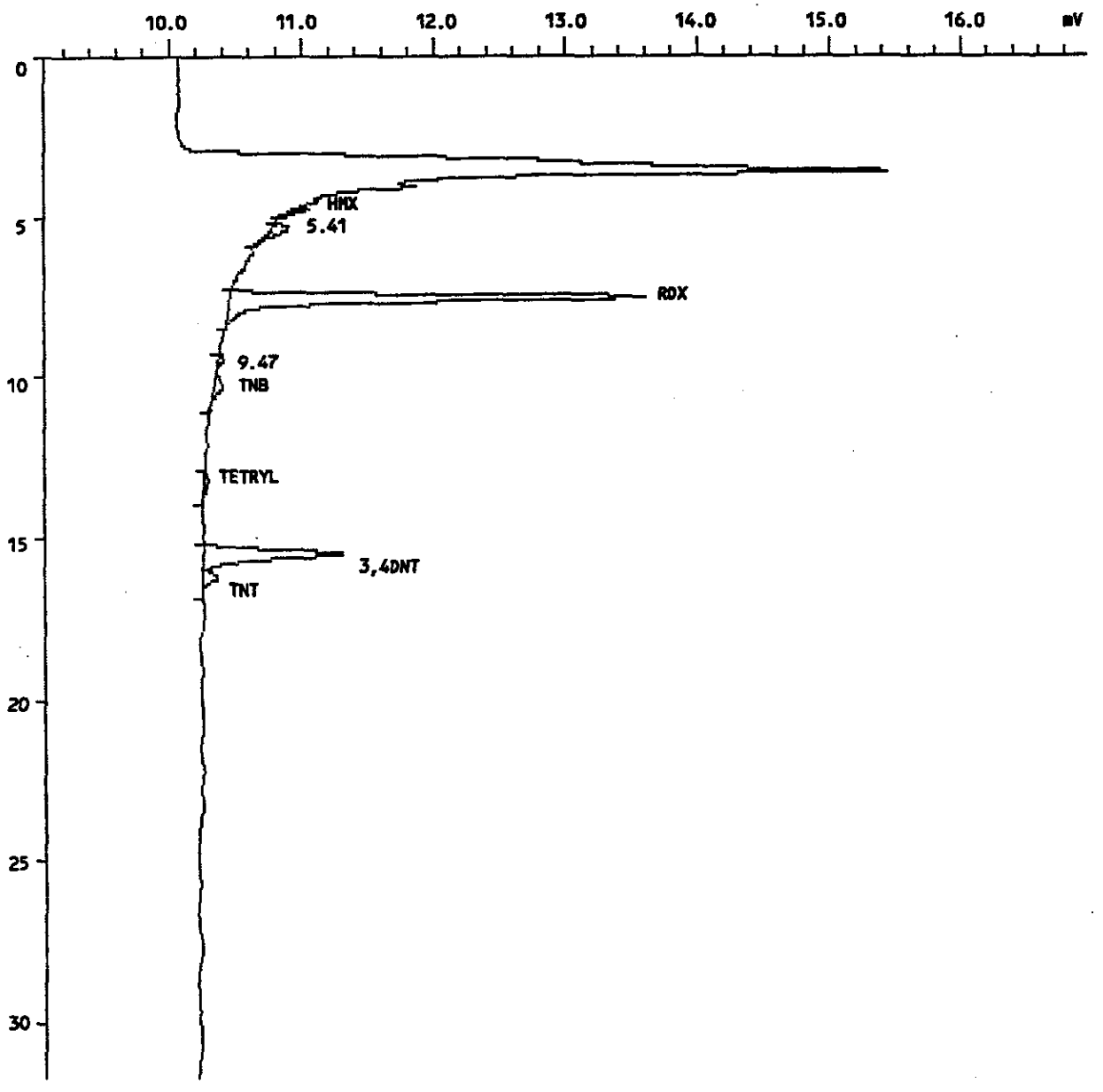
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,15,1

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 11:37:10
Reported on 01-Jul-98 at 15:29:37



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,15,1

Acquired on 01-Jul-98 at 11:37:10
Modified on 01-Jul-82 at 15:16:44
Reported on 01-Jul-98 at 15:16:43

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
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

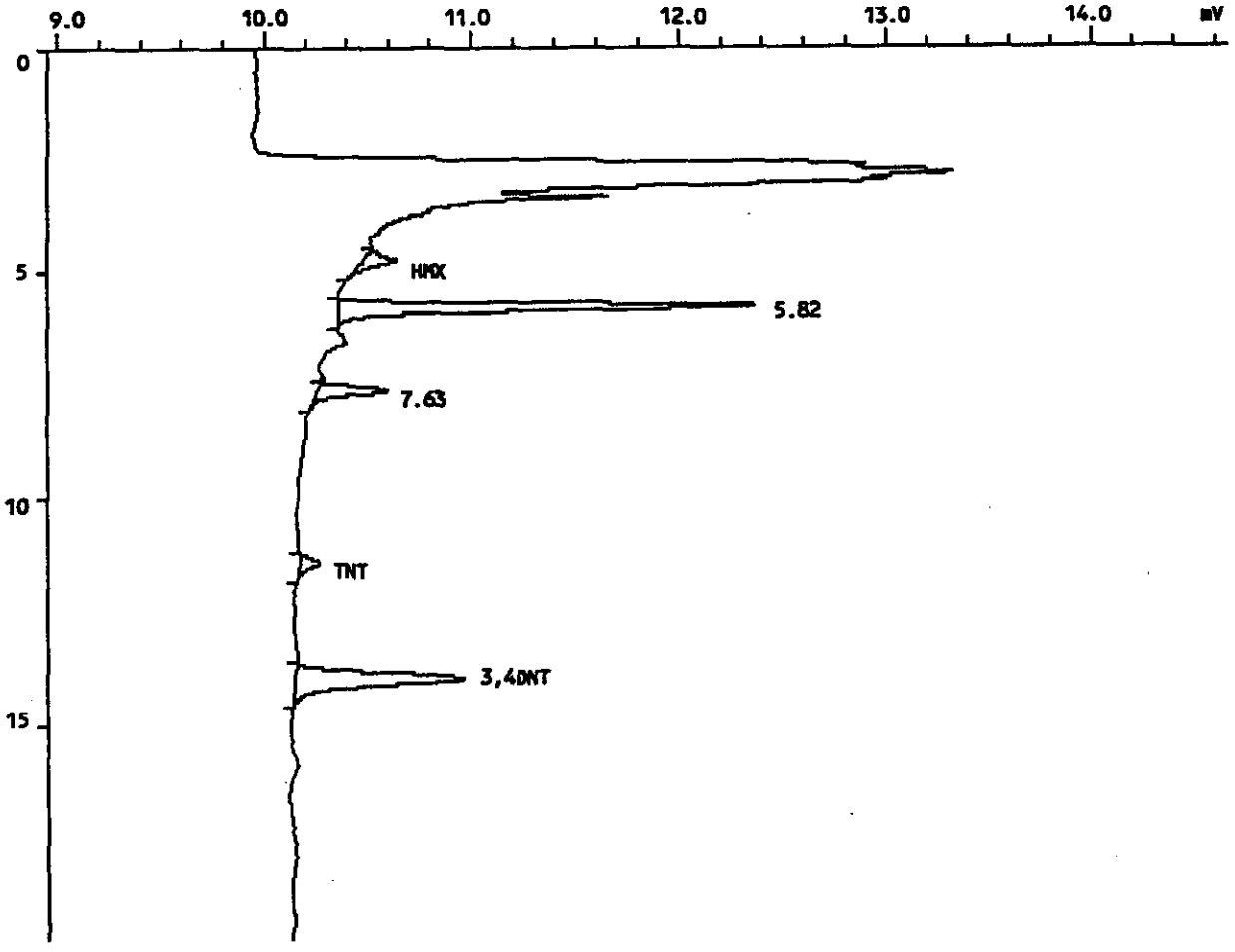
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.821	108	712	92.703	HMX
3	7.531	3147	52044	5489.862	RDX *P
5	10.293	73	2517	124.716	TNB
6	13.205	27	787	67.601	TETRYL
7	15.499	1049	22334	1747.541	3,4DNT 87
8	16.245	111	2381	102.184	TNT *J
Total		4515	80774	7624.608	
Residual		194	4158	519.765	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,13,1

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 11:21:52
Reported on 21-Jul-98 at 11:12:40



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,13,1

Acquired on 17-Jul-98 at 11:21:52
Modified on 21-Jul-82 at 11:12:22
Reported on 21-Jul-98 at 11:12:23

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
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

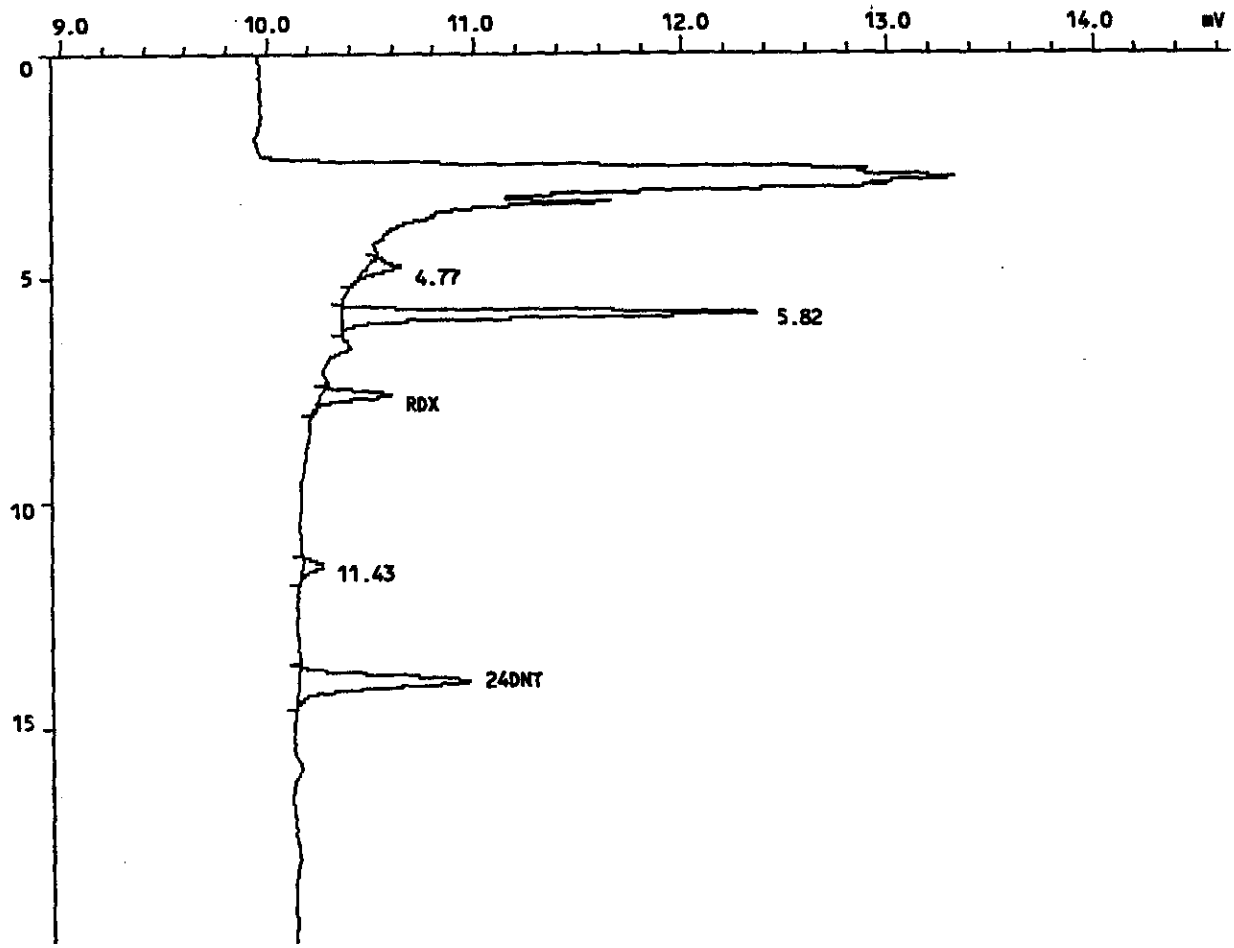
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.773	165	2579	535.140	HMX
4	11.429	104	1618	126.615	TNT
5	13.968	814	15721	1974.984	3,4DNT
Total		1083	19918	2636.739	
Residual		2346	27660	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,13,1

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 11:21:52
Reported on 20-Jul-98 at 11:01:02



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,13,1

Acquired on 17-Jul-98 at 11:21:52
Modified on 20-Jul-82 at 10:55:00
Reported on 20-Jul-98 at 10:54:59

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C2
Sample ID.....: 34581.09
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	7.632	344	4740	775.734	RDX
5	13.968	814	15721	948.755	24DNT
Total		1157	20461	1724.489	
Residual		2272	27118	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-C2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.09

Sample Amt: 2g % Moisture 16.93 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

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

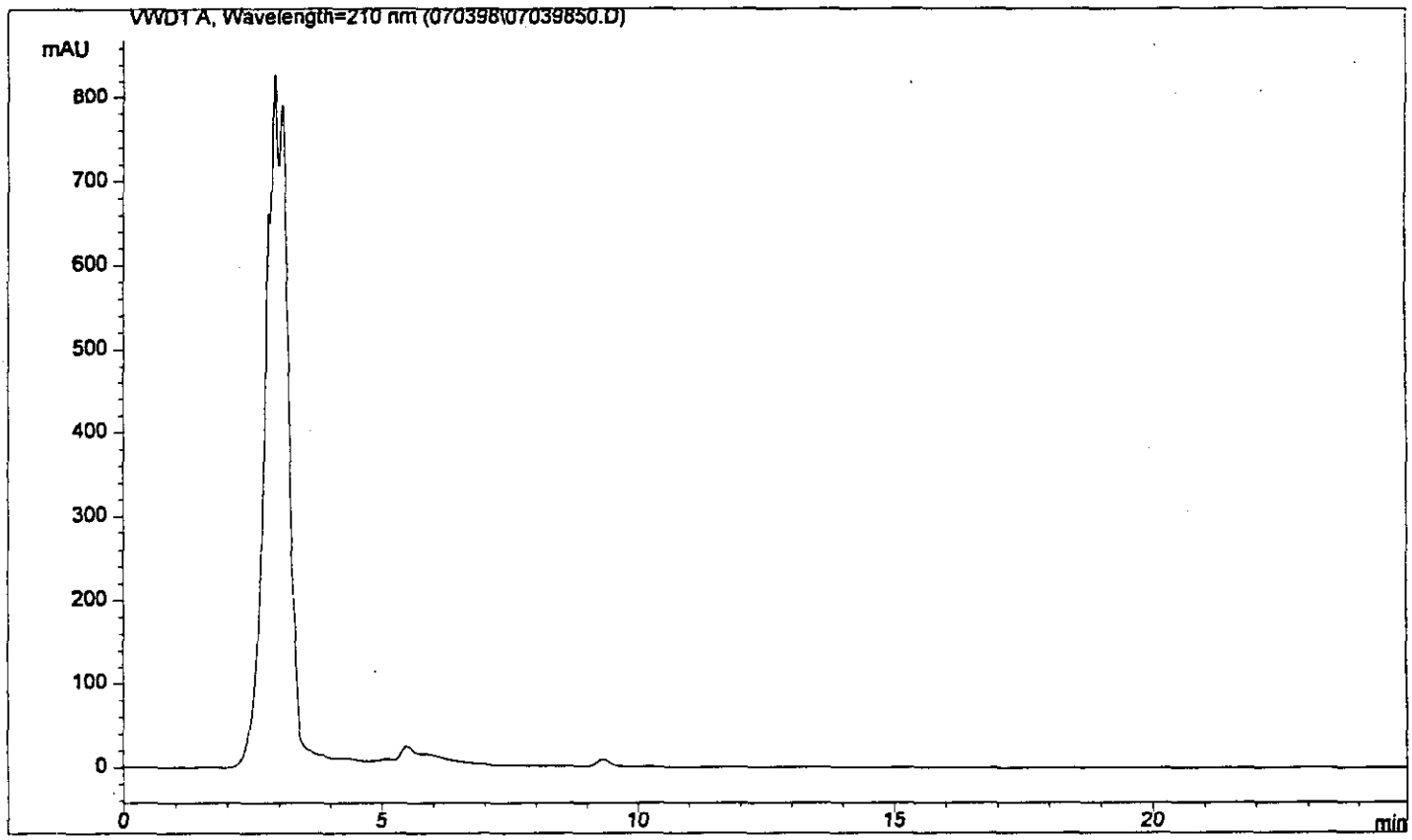
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 50
Sample Name	: 34581.09	Vial No.	: 50
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.10

Sample Amt: 2g % Moisture 16.08 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	5530	P
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	479	
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

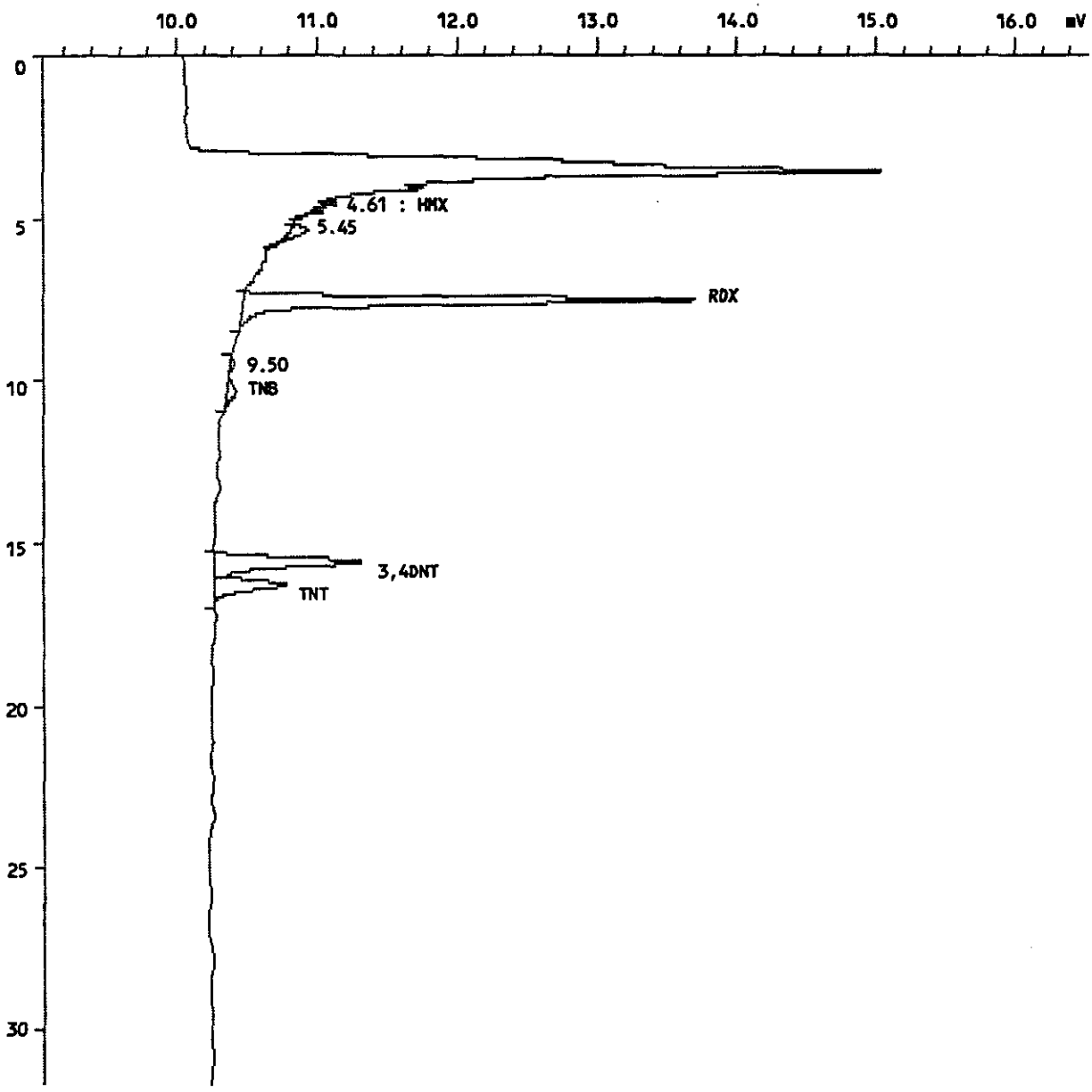
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,16,1

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 12:21:52
Reported on 01-Jul-98 at 15:30:15



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,16,1

Acquired on 01-Jul-98 at 12:21:52
Modified on 01-Jul-82 at 15:16:58
Reported on 01-Jul-98 at 15:16:58

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:08:08
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
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

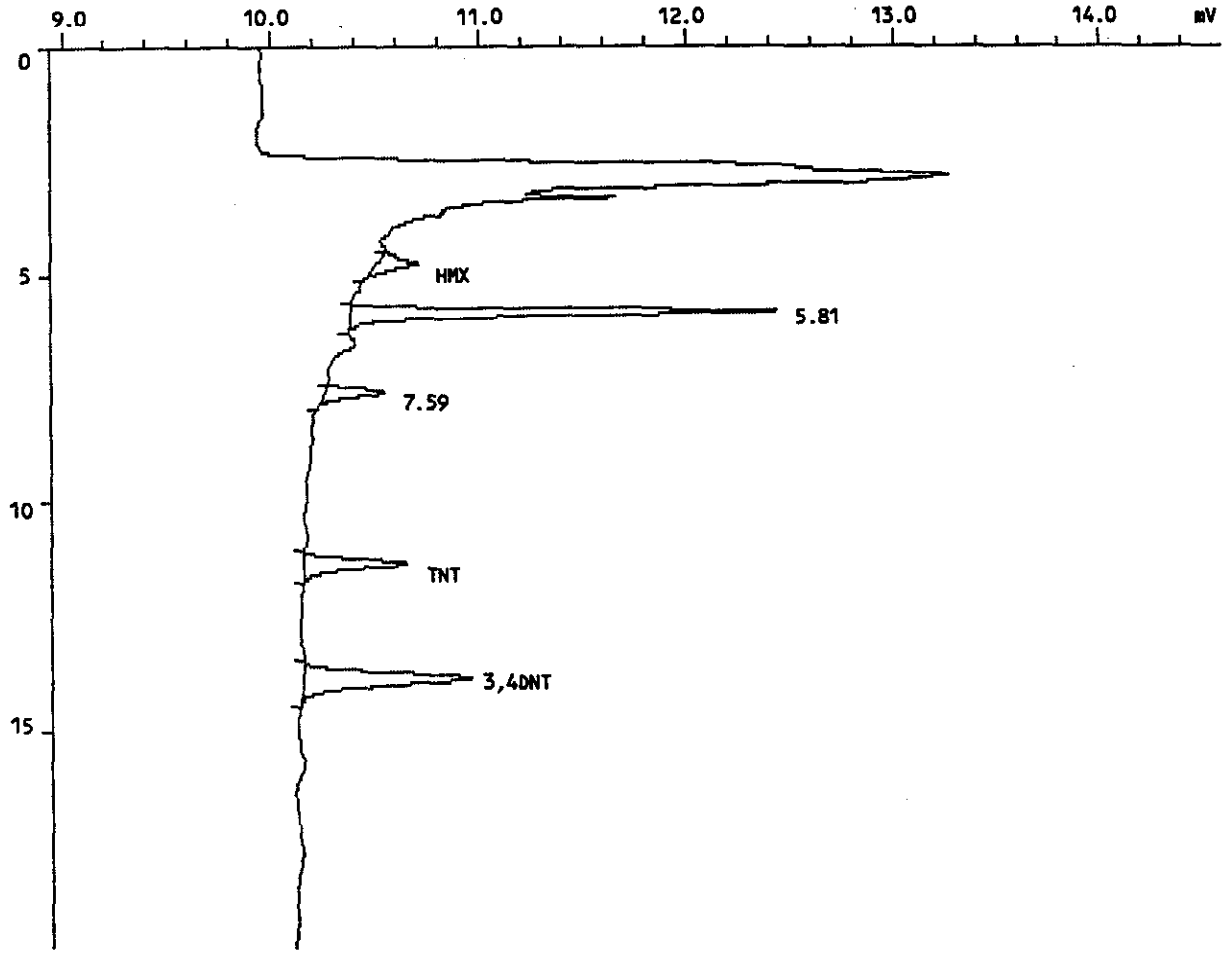
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	4.848	127	854	111.251	HMX
4	7.568	3223	52389	5526.304	RDX *P
6	10.363	65	2004	99.295	TNB
7	15.595	1041	21726	1699.968	3,4DNT 85
8	16.320	511	11152	478.622	TNT *
Total		4968	88125	7915.440	
Residual		293	5096	647.547	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,14,1

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 11:56:16
Reported on 20-Jul-98 at 10:43:23



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,14,1

Acquired on 17-Jul-98 at 11:56:16
Modified on 20-Jul-82 at 10:39:52
Reported on 20-Jul-98 at 10:39:51

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:38:22
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
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

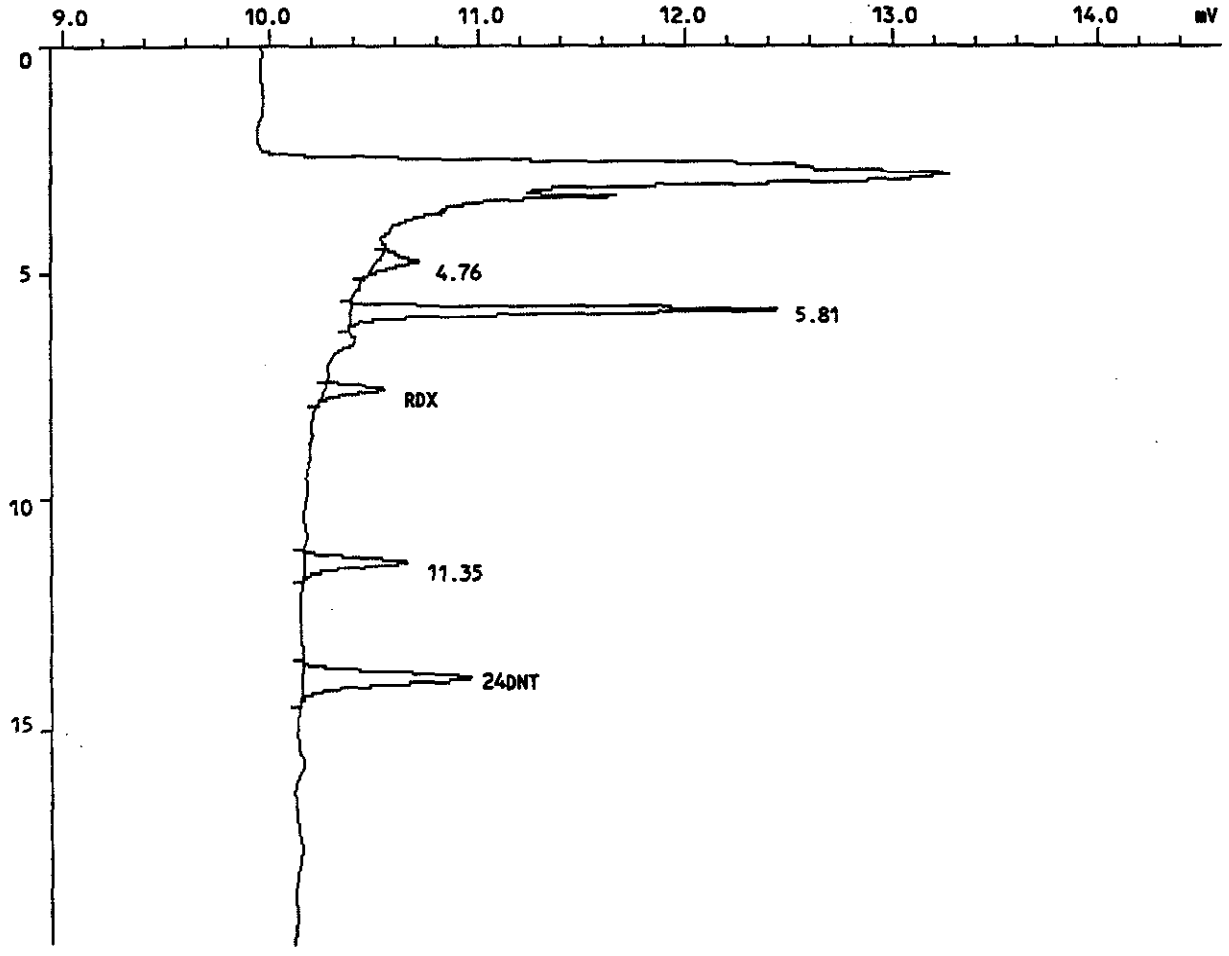
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.763	204	3314	687.606	HMX
4	11.349	500	7658	599.231	TNT
5	13.856	813	15642	1965.111	3,4DNT
Total		1517	26615	3251.948	
Residual		2335	27189	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,14,1

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 11:56:16
Reported on 20-Jul-98 at 11:01:24



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,14,1

Acquired on 17-Jul-98 at 11:56:16
Modified on 20-Jul-82 at 10:55:12
Reported on 20-Jul-98 at 10:55:13

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-C3
Sample ID.....: 34581.10
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	7.595	287	3880	635.064	RDX
5	13.856	813	15642	944.012	24DNT
Total		1100	19523	1579.076	
Residual		2752	34281	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-C3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.10

Sample Amt: 2g % Moisture 16.08 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

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

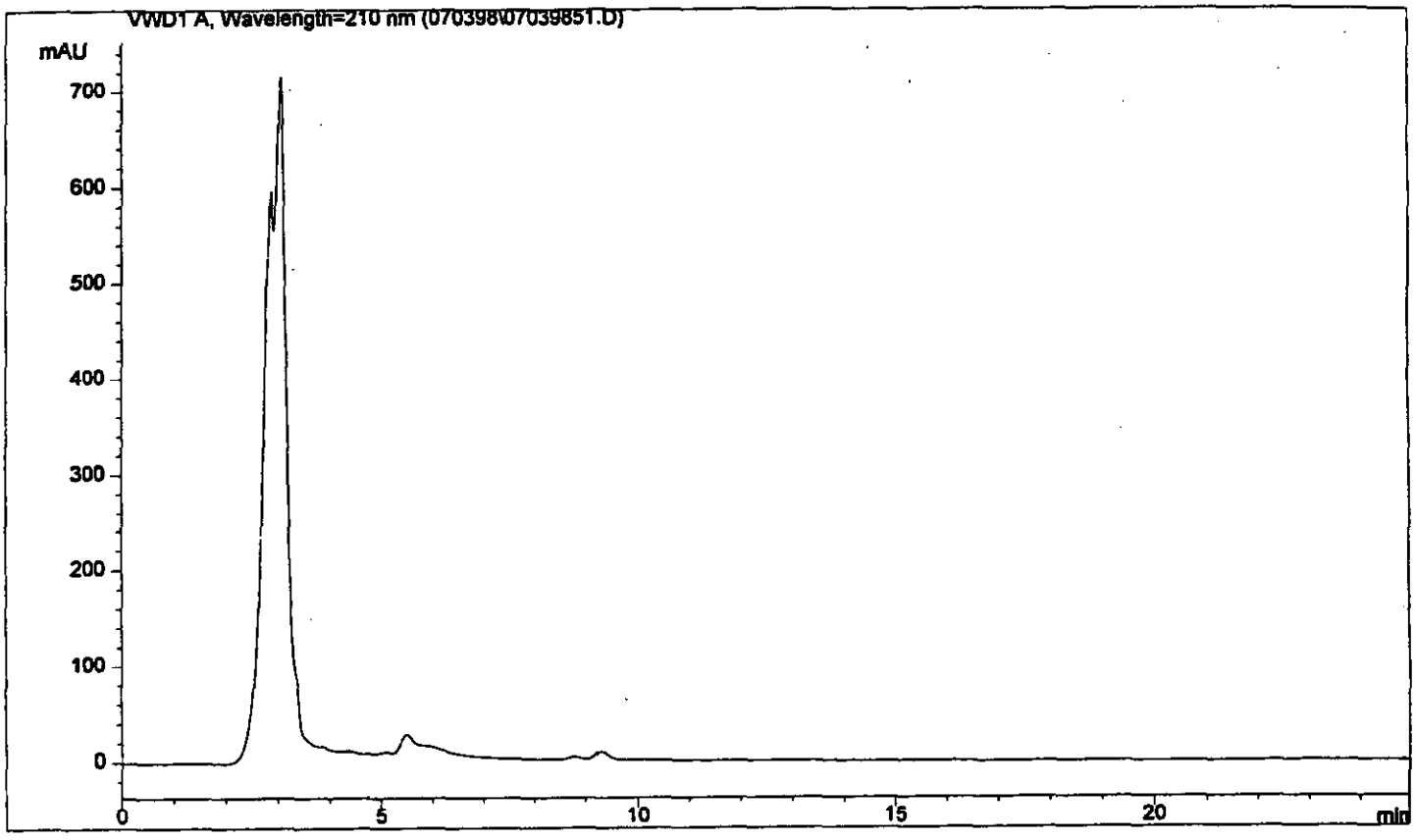
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 51
Sample Name	: 34581.10	Vial No.	: 51
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO: BIO-N-30%-60-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.13

Sample Amt: 2g % Moisture 12.99 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	2400	P
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	191	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

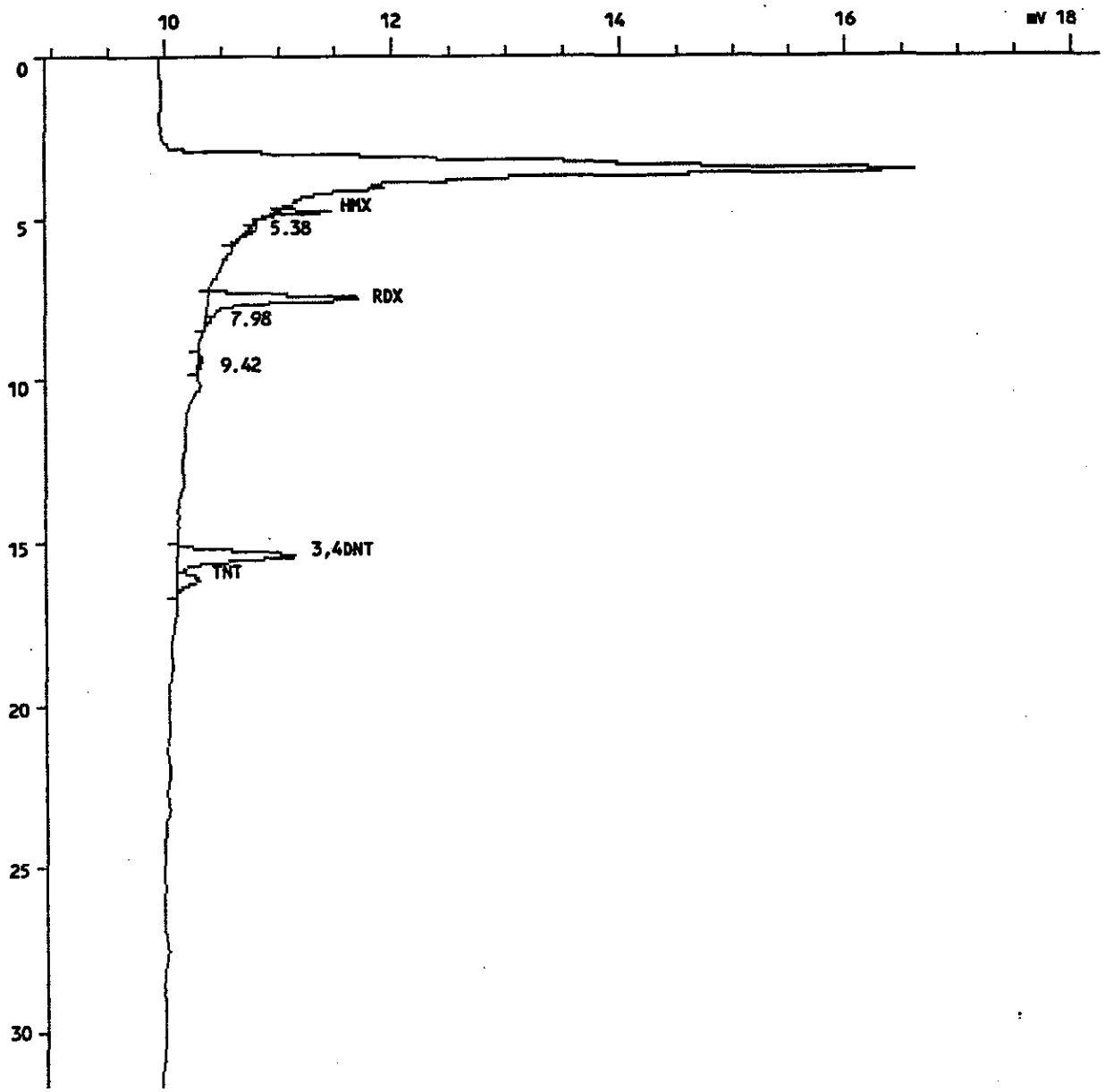
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,19,1

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 14:35:53
Reported on 01-Jul-98 at 16:54:11



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,19,1

Acquired on 01-Jul-98 at 14:35:53
Modified on 01-Jul-82 at 16:51:46
Reported on 01-Jul-98 at 16:53:30

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 01-Jul-82 at 15:11:36
Method file.....: EXPLOS Last modified on 01-Jul-82 at 15:27:40
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
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

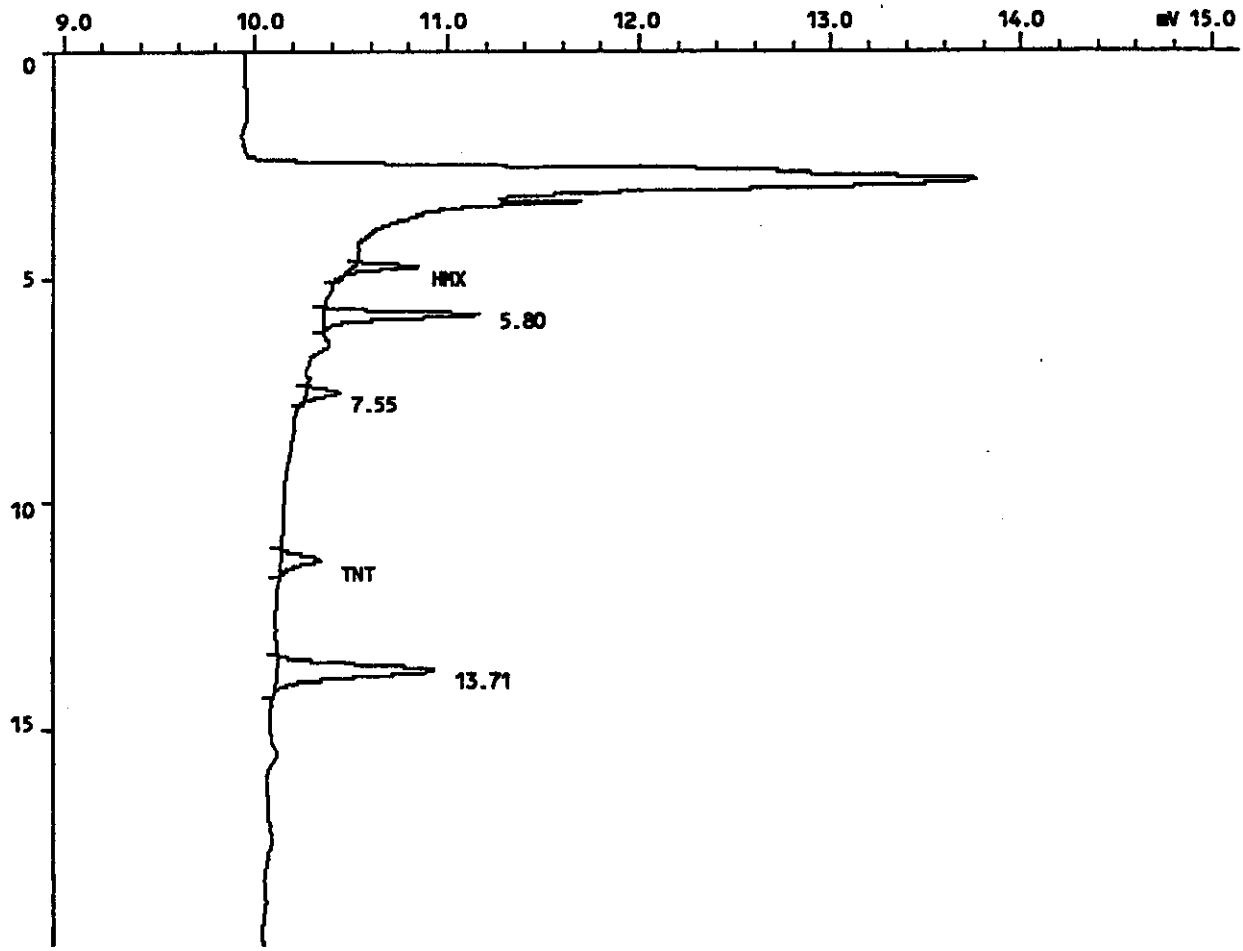
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.816	503	3625	472.058	HMX
3	7.509	1337	22760	2400.859	RDX * P
6	15.392	1035	21816	1707.075	3,4DNT 85
7	16.149	203	4447	190.859	TNT
Total		3078	52649	4770.851	
Residual		208	3617	418.839	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,15,1

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 12:30:40
Reported on 21-Jul-98 at 11:13:21



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,15,1

Acquired on 17-Jul-98 at 12:30:40
Modified on 21-Jul-82 at 11:13:06
Reported on 21-Jul-98 at 11:13:08

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
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

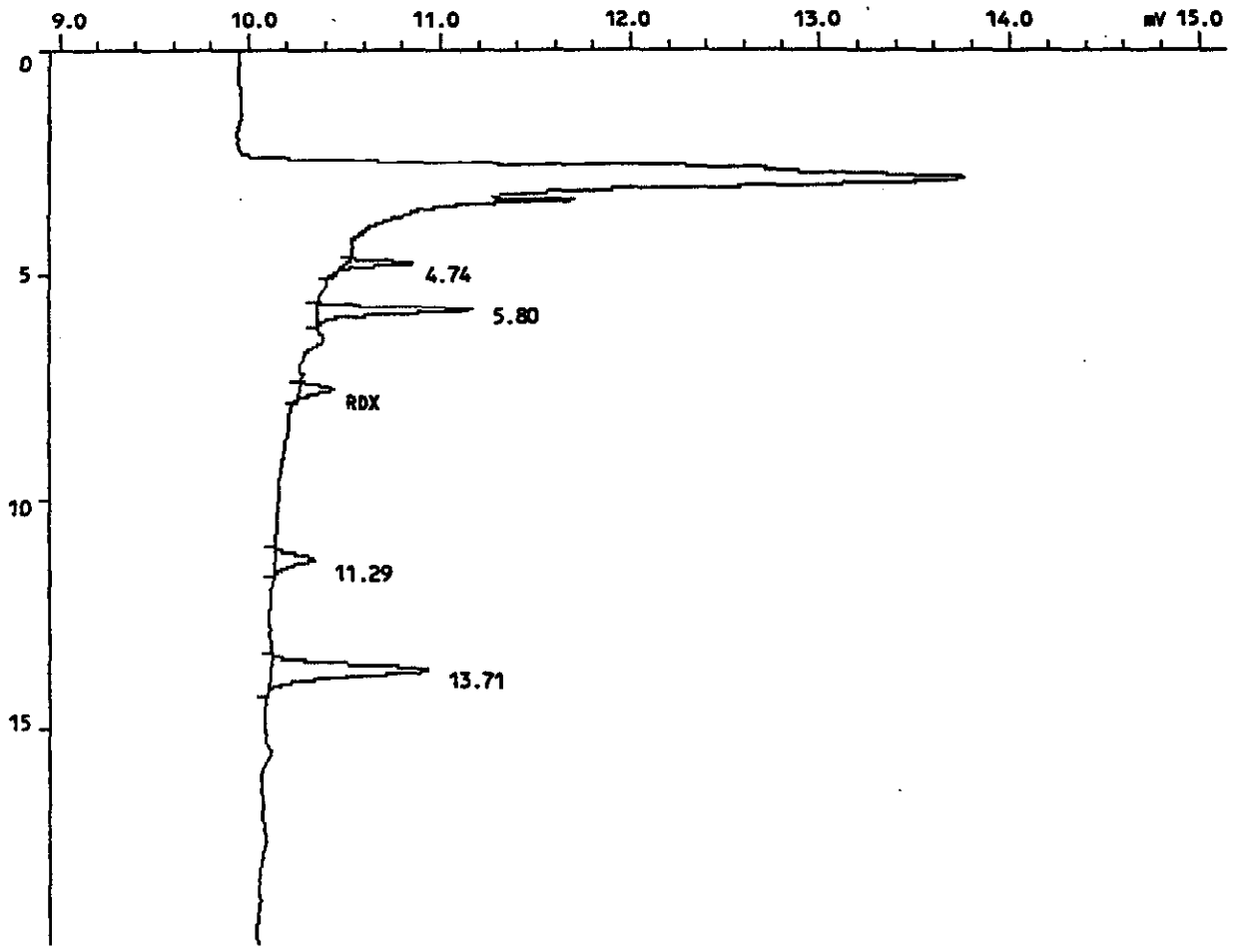
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.741	366	3230	670.035	HMX
4	11.285	207	3173	248.275	TNT
Total		572	6403	918.310	
Residual		1796	26737	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,15,1

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 12:30:40
Reported on 20-Jul-98 at 11:02:12



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,15,1

Acquired on 17-Jul-98 at 12:30:40
Modified on 20-Jul-82 at 10:55:26
Reported on 20-Jul-98 at 10:55:26

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D1
Sample ID.....: 34581.13
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	7.552	179	2298	376.123	RDX
Total		179	2298	376.123	
Residual		2189	30842	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D1

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.13

Sample Amt: 2g % Moisture 12.99 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

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

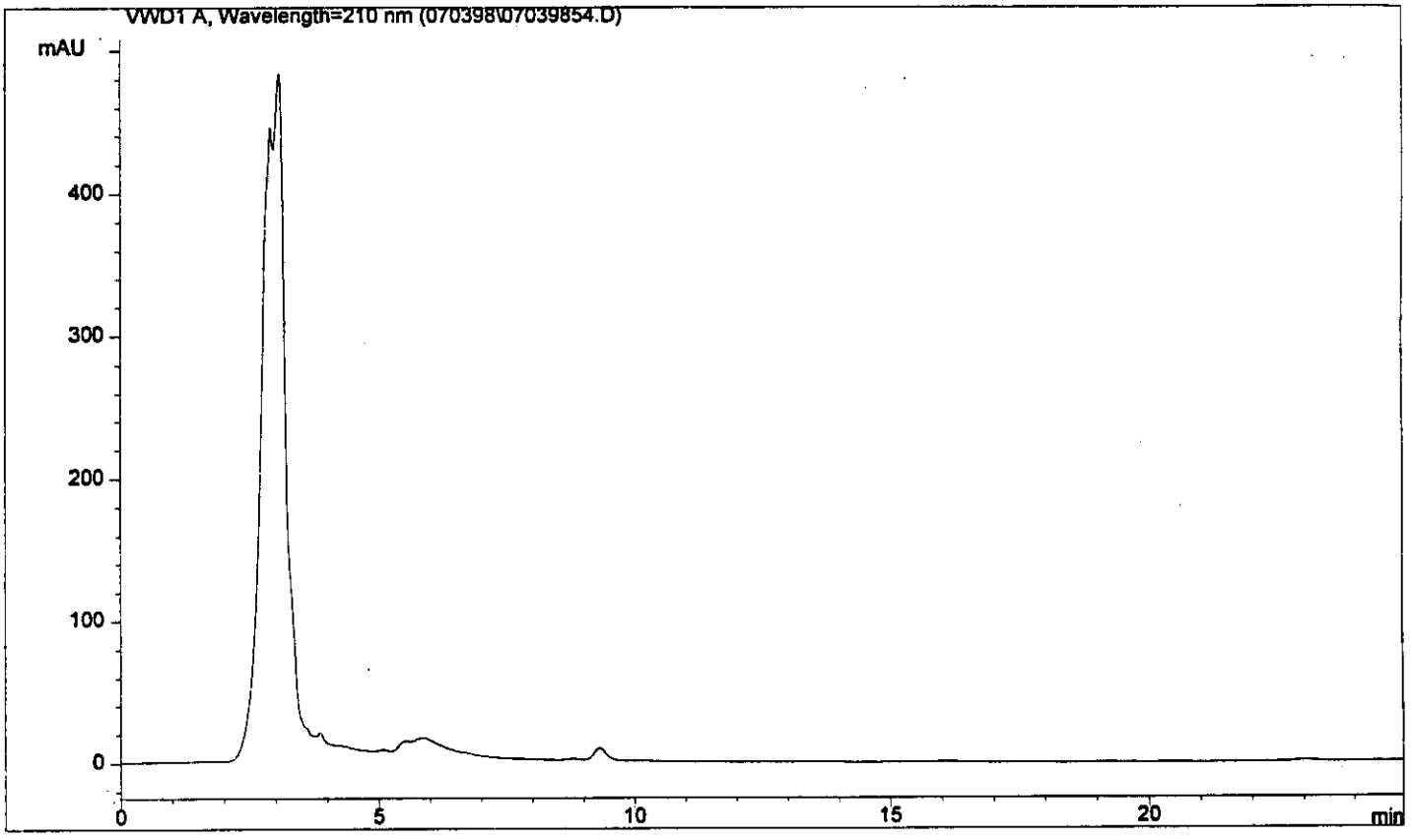
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 54
Sample Name	: 34581.13	Vial No.	: 54
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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

Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

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1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.14

Sample Amt: 2g % Moisture 15.03 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	3320	P
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	223	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

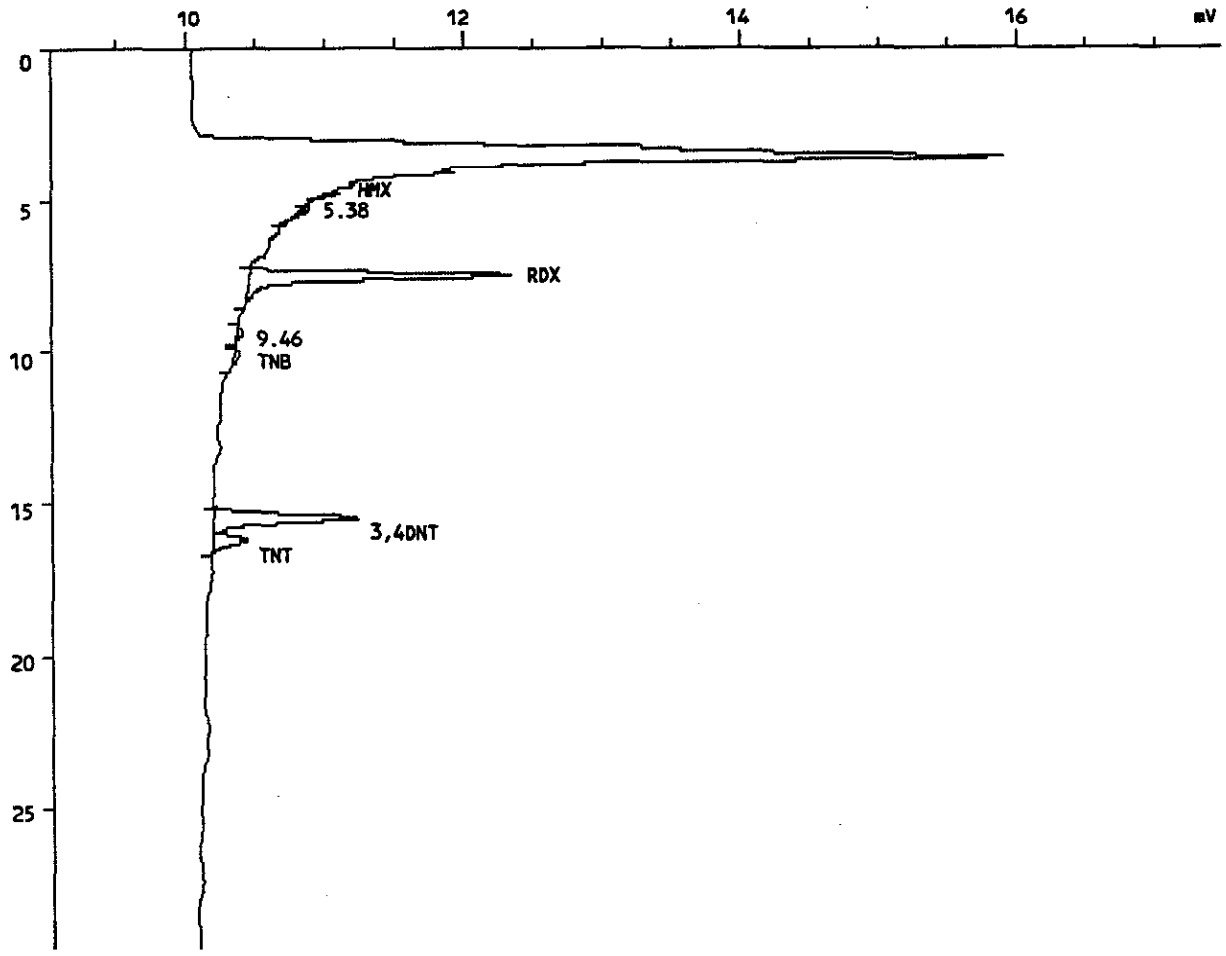
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,20,1

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 15:20:34
Reported on 20-Jul-98 at 11:33:19



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,20,1

Acquired on 01-Jul-98 at 15:20:34
Modified on 20-Jul-82 at 11:32:32
Reported on 20-Jul-98 at 11:32:35

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10,INJ:200,COL#1
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 14-Jul-82 at 15:09:38
Method file.....: EXPLOS Last modified on 19-Jul-82 at 17:04:38
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
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

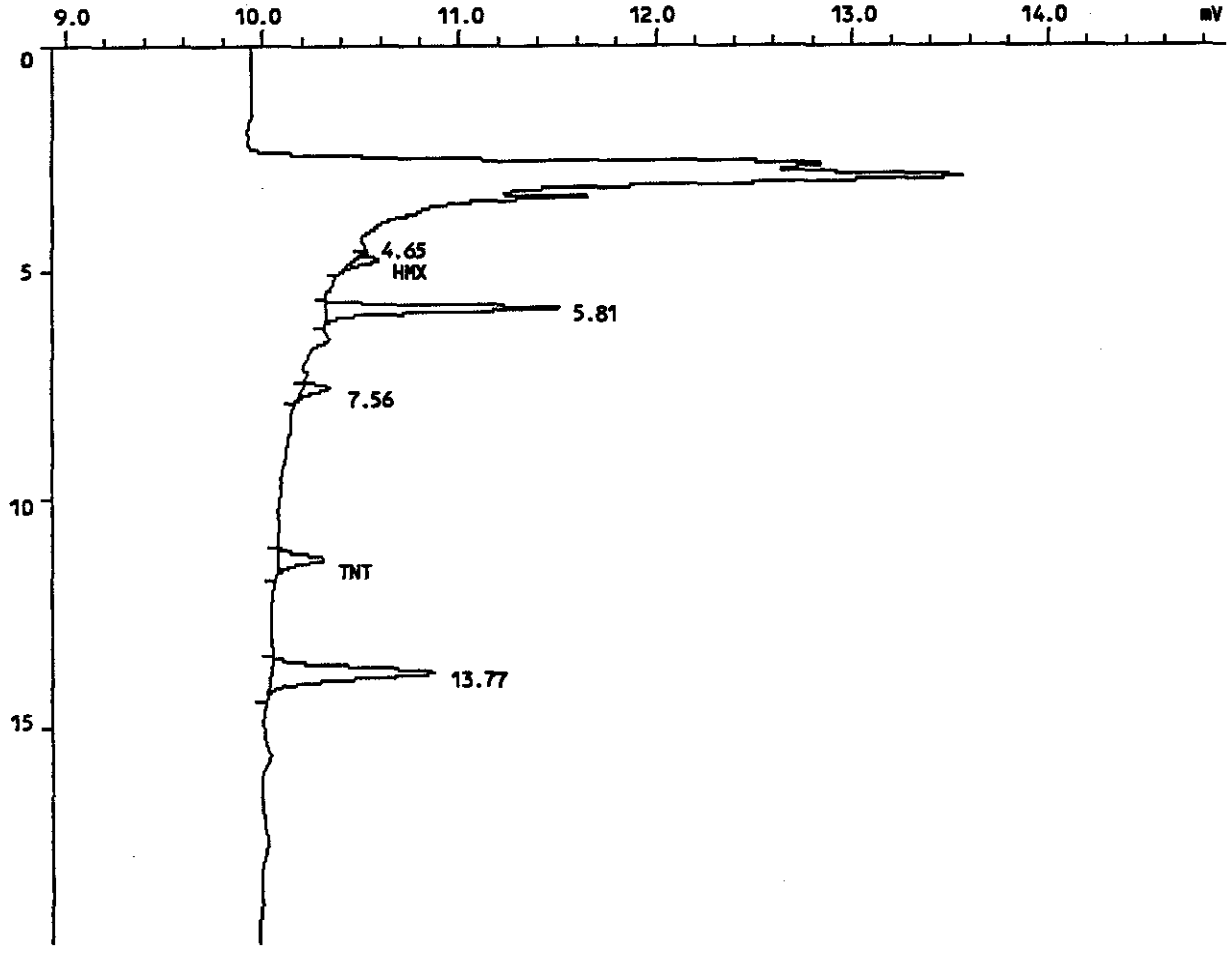
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.827	94	602	78.368	HMX
3	7.536	1879	31434	3315.770	RDX *P
5	10.197	54	1195	59.205	TNB
6	15.525	1038	21850	1709.713	3,4DNT 85
7	16.256	242	5191	222.793	TNT
Total		3306	60271	5385.849	
Residual		125	2353	285.260	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,16,1

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 13:05:04
Reported on 21-Jul-98 at 11:13:59



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,16,1

Acquired on 17-Jul-98 at 13:05:04
Modified on 21-Jul-82 at 11:13:44
Reported on 21-Jul-98 at 11:13:44

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 21-Jul-82 at 10:05:16
Method file.....: LCCN Last modified on 21-Jul-82 at 11:09:30
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
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

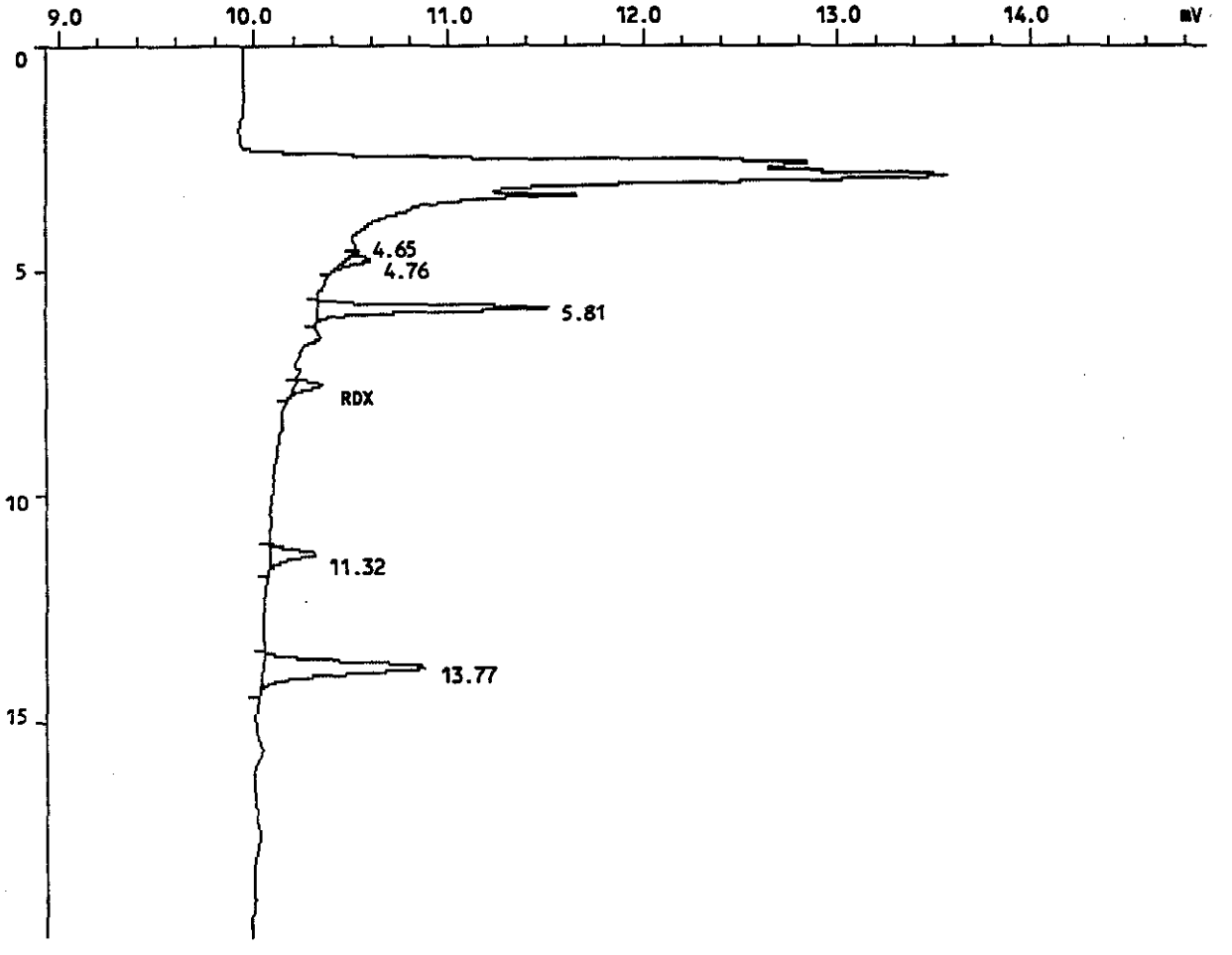
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
2	4.763	145	1741	361.184	HMX
5	11.317	242	3792	296.722	TNT
Total		387	5533	657.906	
Residual		2229	31316	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,16,1

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 13:05:04
Reported on 20-Jul-98 at 11:02:47



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,16,1

Acquired on 17-Jul-98 at 13:05:04
Modified on 20-Jul-82 at 10:55:38
Reported on 20-Jul-98 at 10:55:39

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D2
Sample ID.....: 34581.14
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	7.563	143	1865	305.244	RDX
Total		143	1865	305.244	
Residual		2474	34984	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D2

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.14

Sample Amt: 2g % Moisture 15.03 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

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

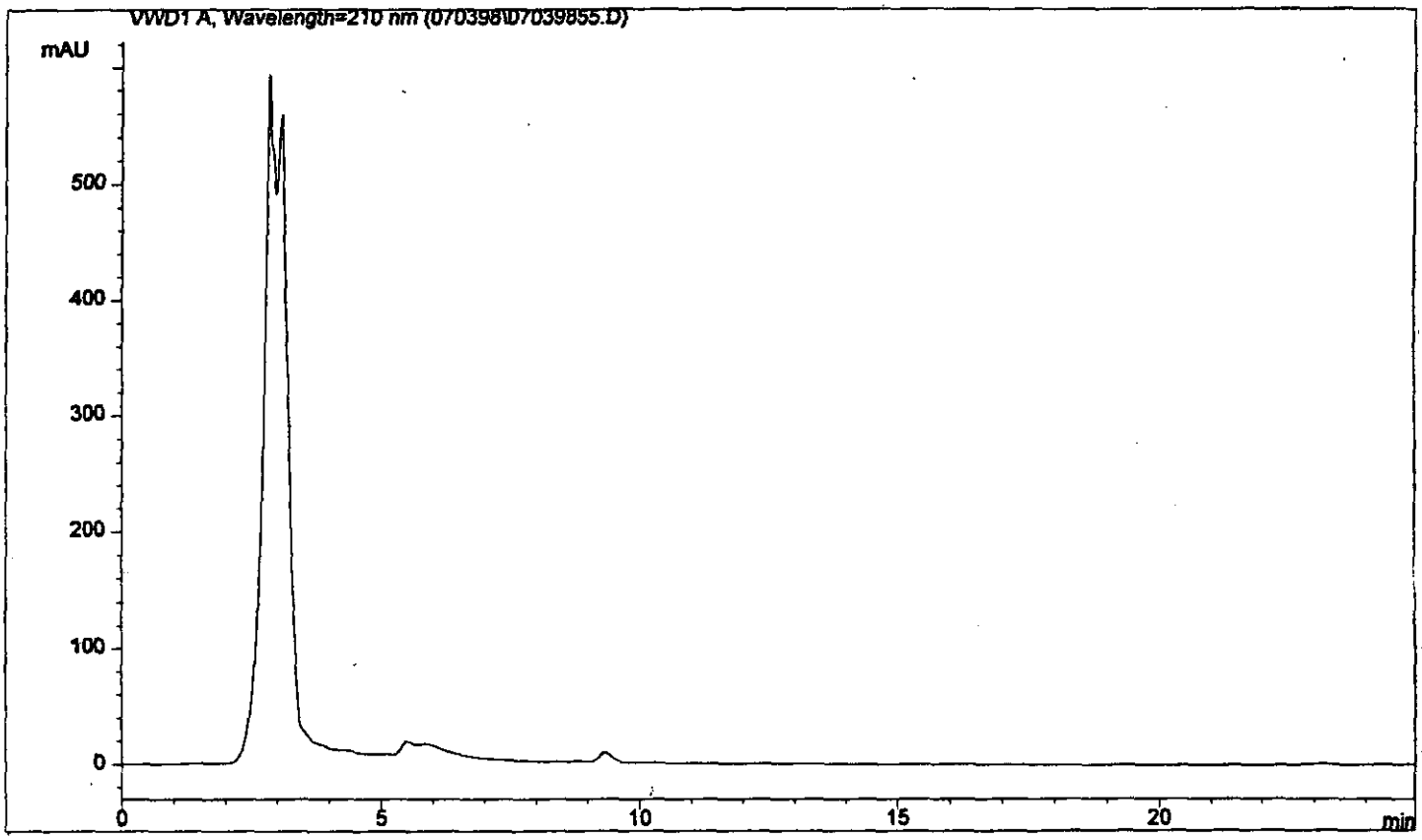
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 55
Sample Name	: 34581.14	Vial No.	: 55
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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Customized Report: extstd.frp
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Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.15

Sample Amt: 2g % Moisture 15.81 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/01/98

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	6880	
121-82-4	RDX	67200	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	18000	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

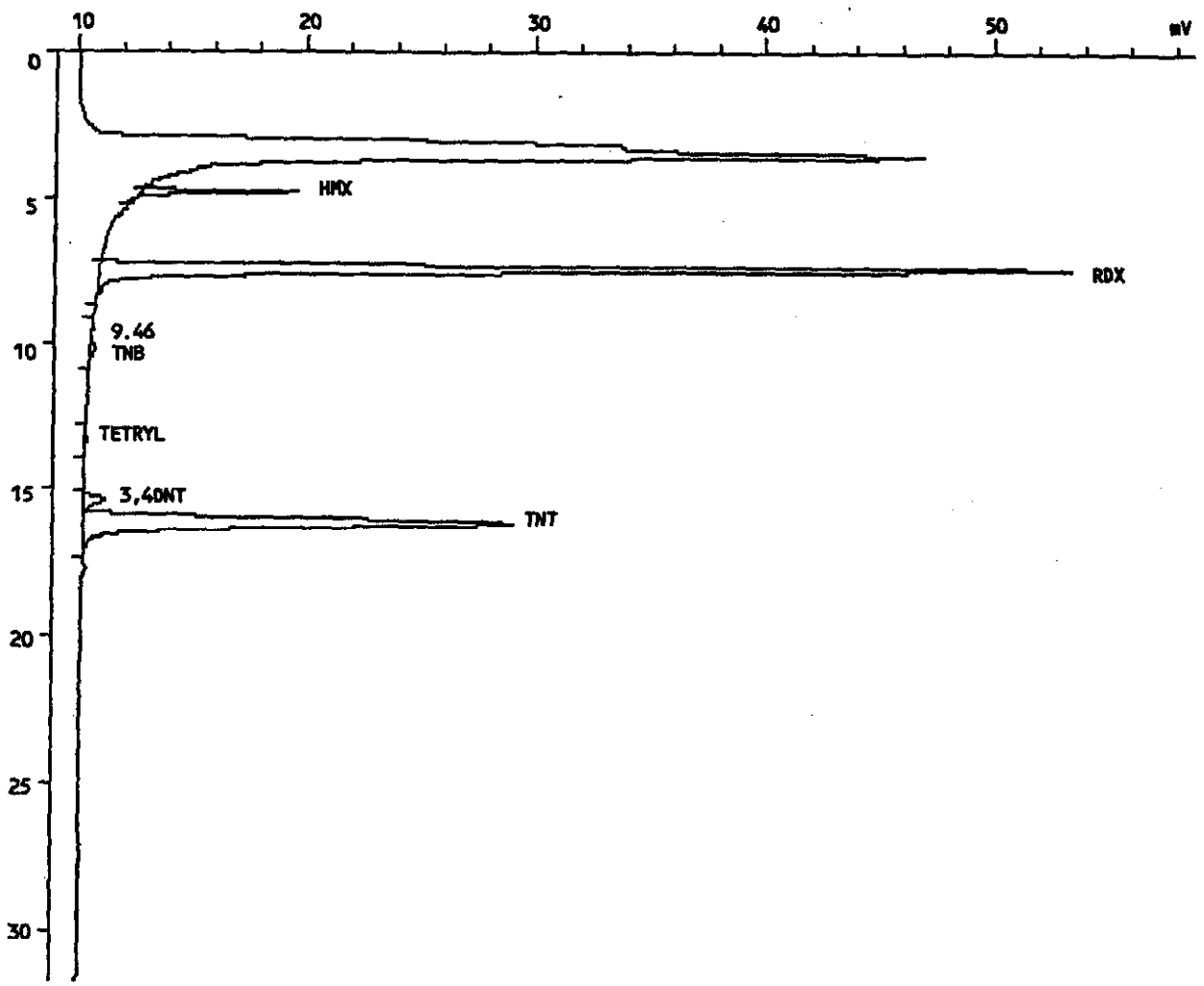
FORM I

LONG PLOT

Injection F: <MC3> 5 5EX0701A,21,1

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 01-Jul-98 at 16:05:16
Reported on 21-Jul-98 at 10:36:41



INJECTION REPORT

Injection F: <MC3> 5 5EX0701A,21,1

Acquired on 01-Jul-98 at 16:05:16
Modified on 01-Jul-82 at 16:51:52
Reported on 21-Jul-98 at 10:38:41

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, I
Number of samples.: 23
Calibration file..: 5EX0701 Last modified on 1
Method file.....: EXPLOS Last modified on 21-
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
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

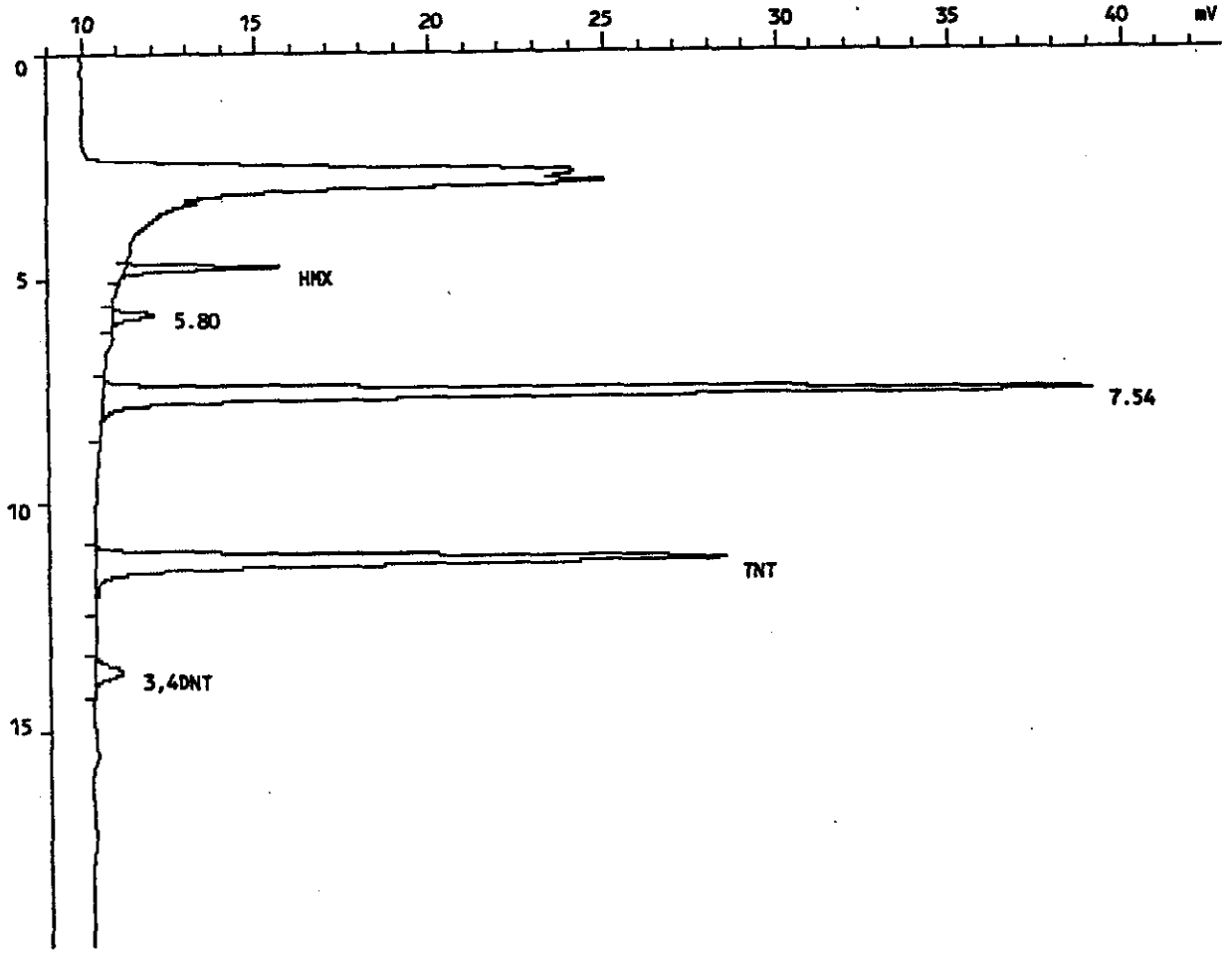
Peak	RT mins	Hght uV	Area uVs	ug/
1	4.821	6909	52801	6875.17
2	7.424	42416	637526	67249.
4	10.149	203	5658	280.35
5	13.211	100	3380	290.4
6	15.413	1036	20726	1621.776
7	16.149	18722	420786	18059.49
Total		69386	1140878	94376.80
Residual		76	1643	173.3

LONG PLOT

Injection F: <MC3> 5 5CN0716A,17,1

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 13:39:29
Reported on 20-Jul-98 at 10:44:28



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,17,1

Acquired on 17-Jul-98 at 13:39:29
Modified on 20-Jul-82 at 10:40:32
Reported on 20-Jul-98 at 10:40:32

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:38:22
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
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

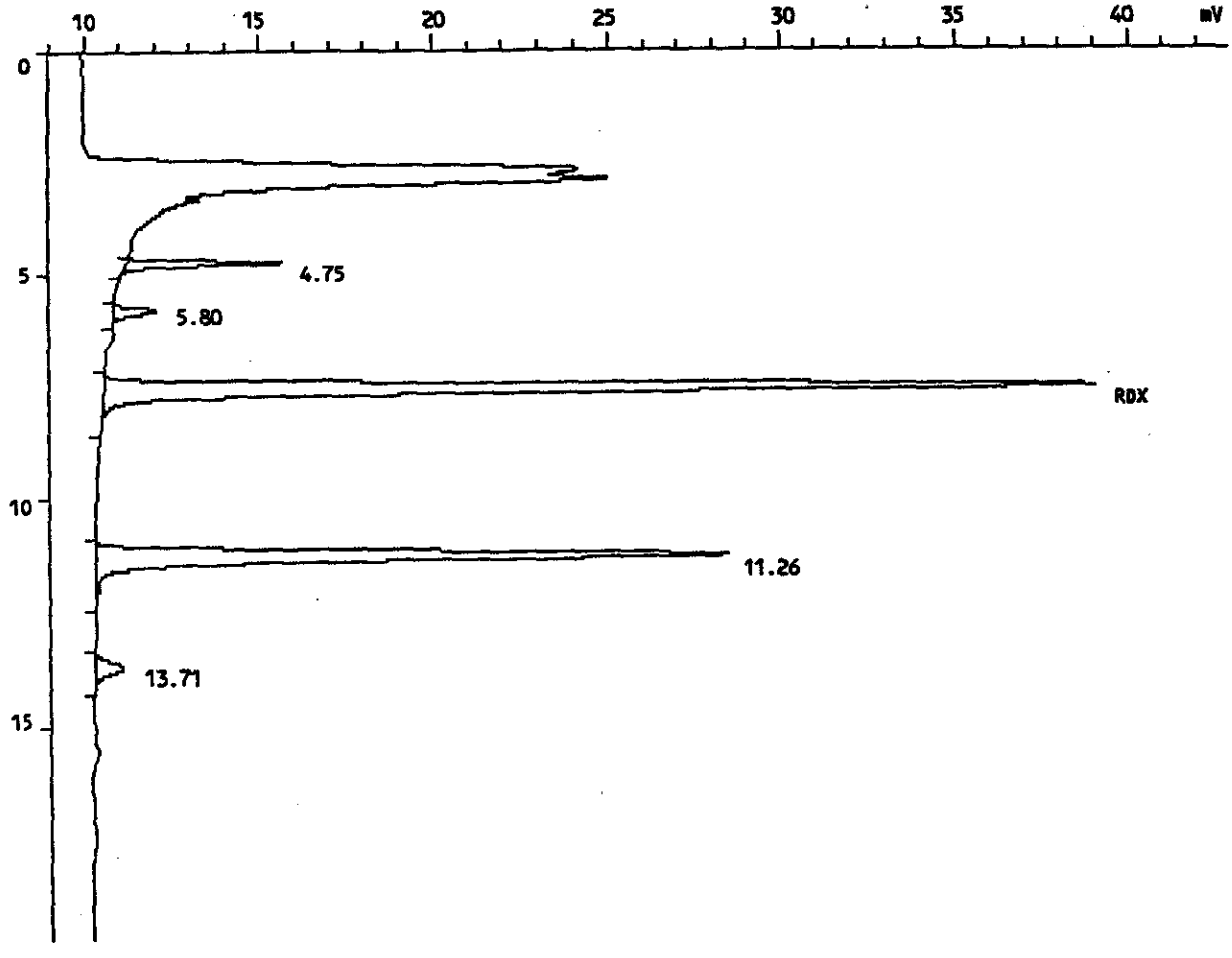
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.747	4474	35319	7327.579	HMX
4	11.264	18145	280081	21915.545	TNT
5	13.707	844	15798	1984.703	3,4DNT
Total		23463	331198	31227.826	
Residual		29745	418145	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,17,1

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 13:39:29
Reported on 20-Jul-98 at 11:03:09



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,17,1

Acquired on 17-Jul-98 at 13:39:29
Modified on 20-Jul-82 at 10:55:52
Reported on 20-Jul-98 at 10:55:52

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3
Sample ID.....: 34581.15
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	7.536	28505	404673	66231.305	RDX
Total		28505	404673	66231.305	
Residual		24703	344669	0.000	

1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D3
5X

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.15DL

Sample Amt: 2g % Moisture 15.81 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/12/98

GPC Cleanup: (Y/N) N Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
2691-41-0	HMX	5420	DJ
121-82-4	RDX	47800	D
99-35-4	TNB	1250	U
99-65-0	DNB	1250	U
479-45-8	TETRYL	3250	U
98-95-3	NB	1300	U
118-96-7	TNT	14100	DP
1946-51-0	4ADNT	1250	U
35572-78-2	2ADNT	1250	U
606-20-2	26DNT	1300	U
121-14-2	24DNT	1250	U
88-72-2	2NT	1250	U
99-99-0	4NT	1250	U
99-08-1	3NT	1250	U

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

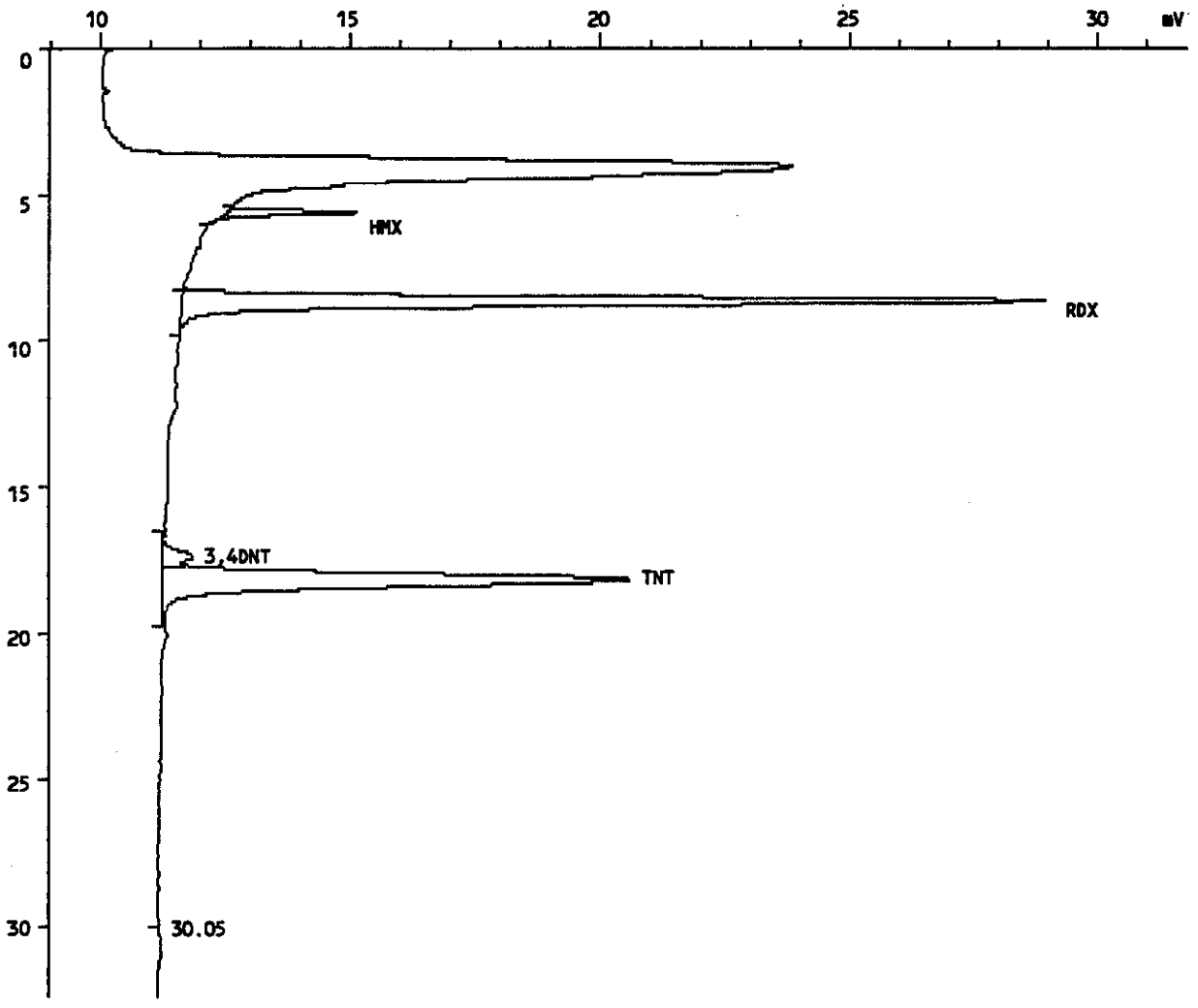
FORM I

LONG PLOT

Injection F: <MC3> 2 2EX0711B,4,1

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15DL
INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07, INJ:200,COL#1

Acquired on 12-Jul-98 at 19:11:19
Reported on 21-Jul-98 at 10:48:35



INJECTION REPORT

Injection F: <MC3> 2 2EX0711B,4,1

Acquired on 12-Jul-98 at 19:11:19
Modified on 21-Jul-82 at 10:47:54
Reported on 21-Jul-98 at 10:47:57

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN12, COL. TYPE: ODS-II, ID: CARB-07,INJ:200,COL#1
Number of samples.: 33
Calibration file..: 2EX0711 Last modified on 13-Jul-82 at 16:43:14
Method file.....: EXPLOS Last modified on 21-Jul-82 at 09:29:56
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15DL
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

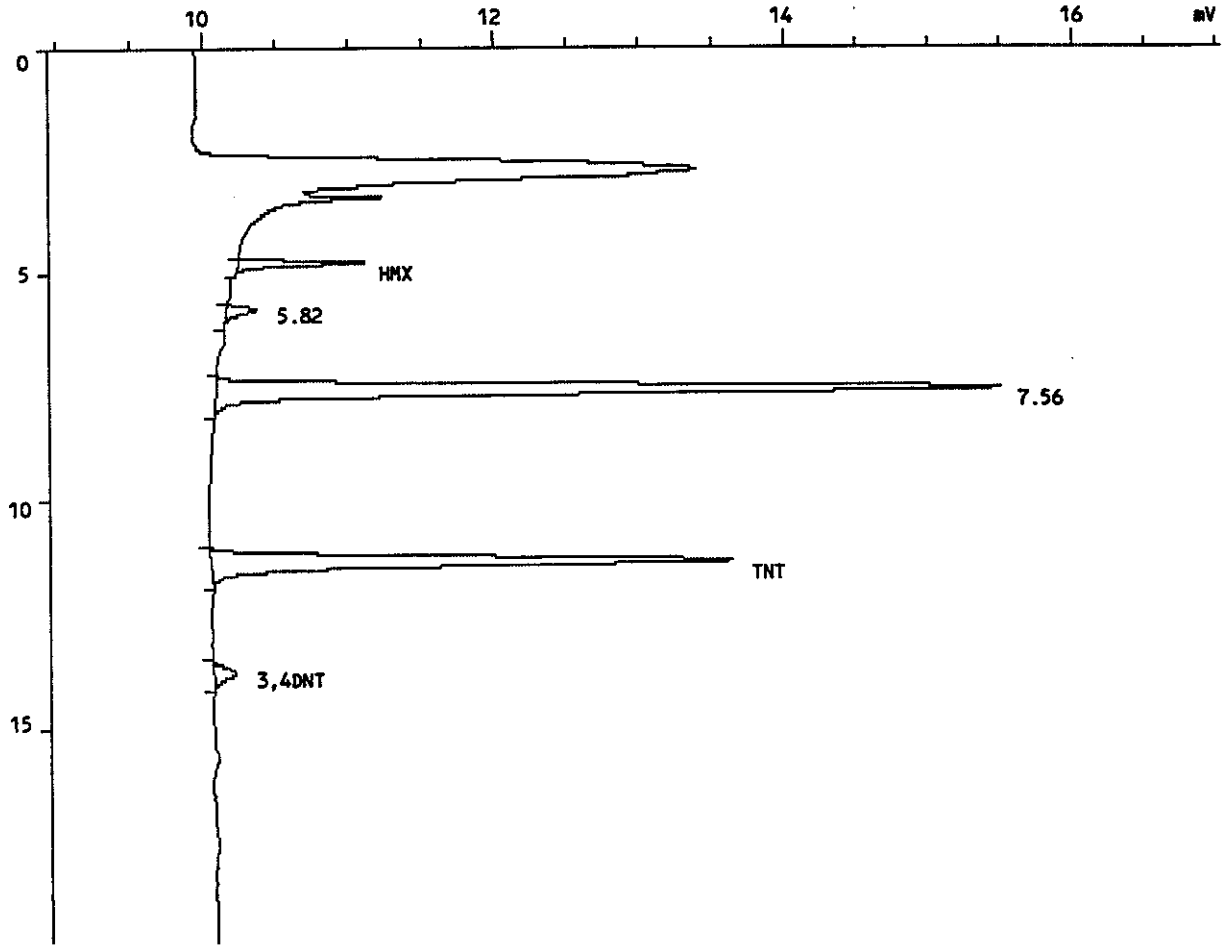
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	5.632	2681	29228	5420.630	HMX *D
2	8.613	17281	371879	47750.305	RDX *D
3	17.403	595	17624	1619.224	3,4DNT 104%
4	18.197	9310	285705	14104.712	TNT *D DP 07/23/98
Total		29867	704436	68894.867	
Residual		0	0	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,18,1

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 14:13:53
Reported on 20-Jul-98 at 10:44:45



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,18,1

Acquired on 17-Jul-98 at 14:13:53
Modified on 20-Jul-82 at 10:40:46
Reported on 20-Jul-98 at 10:40:46

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716A Last modified on 20-Jul-82 at 10:38:22
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

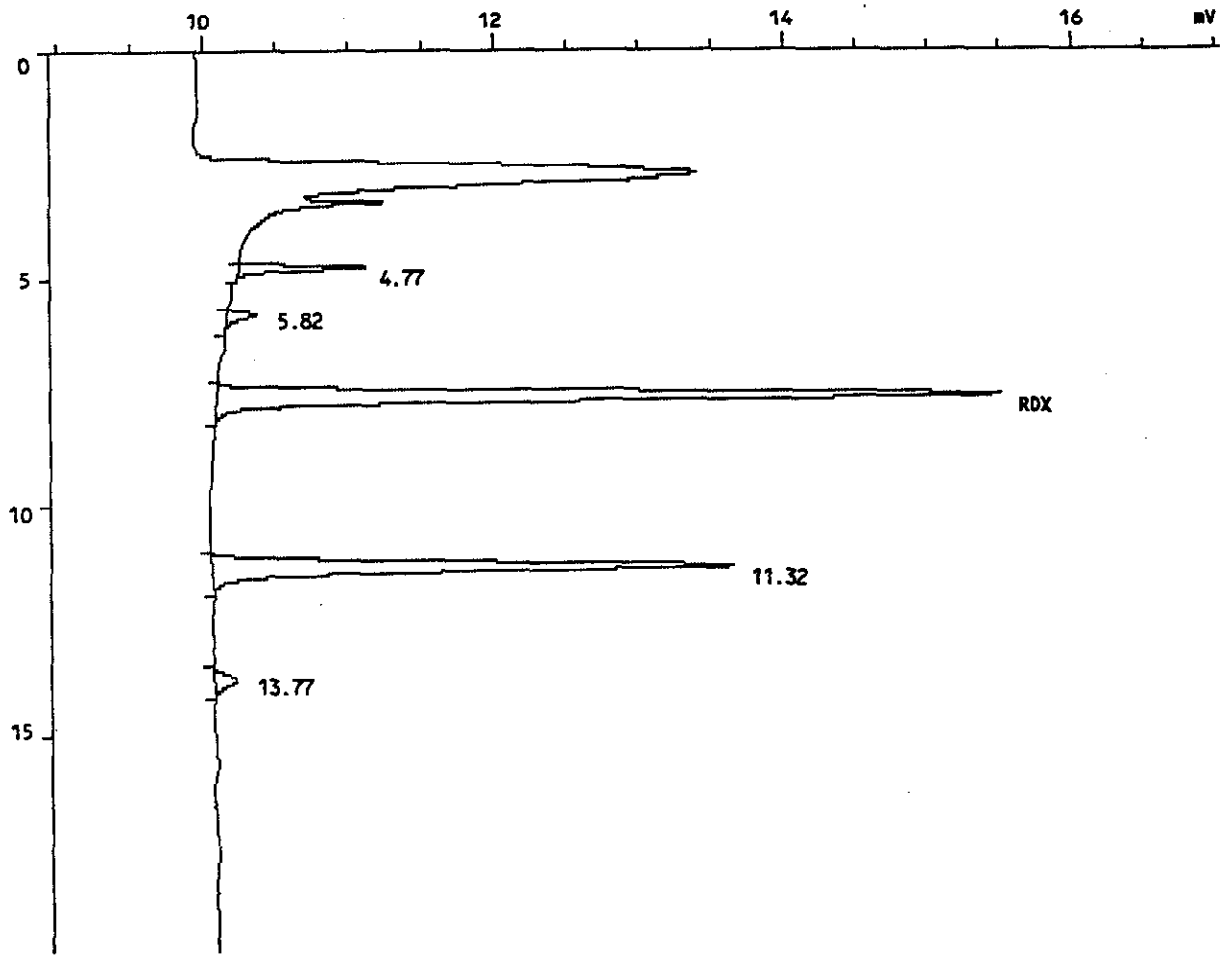
Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
1	4.768	876	7149	7416.002	HMX
4	11.323	3589	55144	21574.453	TNT
5	13.771	159	2880	1809.121	3,4DNT
Total		4624	65173	30799.576	
Residual		5606	82429	0.000	

LONG PLOT

Injection F: <MC3> 5 5CN0716A,18,1

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15
INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV

Acquired on 17-Jul-98 at 14:13:53
Reported on 20-Jul-98 at 11:03:25



INJECTION REPORT

Injection F: <MC3> 5 5CN0716A,18,1

Acquired on 17-Jul-98 at 14:13:53
Modified on 20-Jul-82 at 10:56:04
Reported on 20-Jul-98 at 10:56:04

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: METASIL, ID: MET-02, INJ:100, UV
Number of samples.: 20
Calibration file..: 5CN0716B Last modified on 20-Jul-82 at 10:51:08
Method file.....: LCCN Last modified on 20-Jul-82 at 10:34:32
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-N-30%-60-D3 5X
Sample ID.....: 34581.15
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.....: 10.000
Amount (g or mL).....: 2.000

PEAK INFORMATION

Peak	RT mins	Hght uV	Area uVs	ug/Kg	Peak name
3	7.563	5403	79962	65435.500	RDX
Total		5403	79962	65435.500	
Residual		4826	67640	0.000	

1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-N-30%-60-D3

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) SOIL Lab Sample ID: 34581.15

Sample Amt: 2g % Moisture 15.81 Date Received: 06/27/98

Extraction Volume: 10ml Date Extracted: 06/28/98

Extraction Method: SONC Date Analyzed: 07/06/98

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

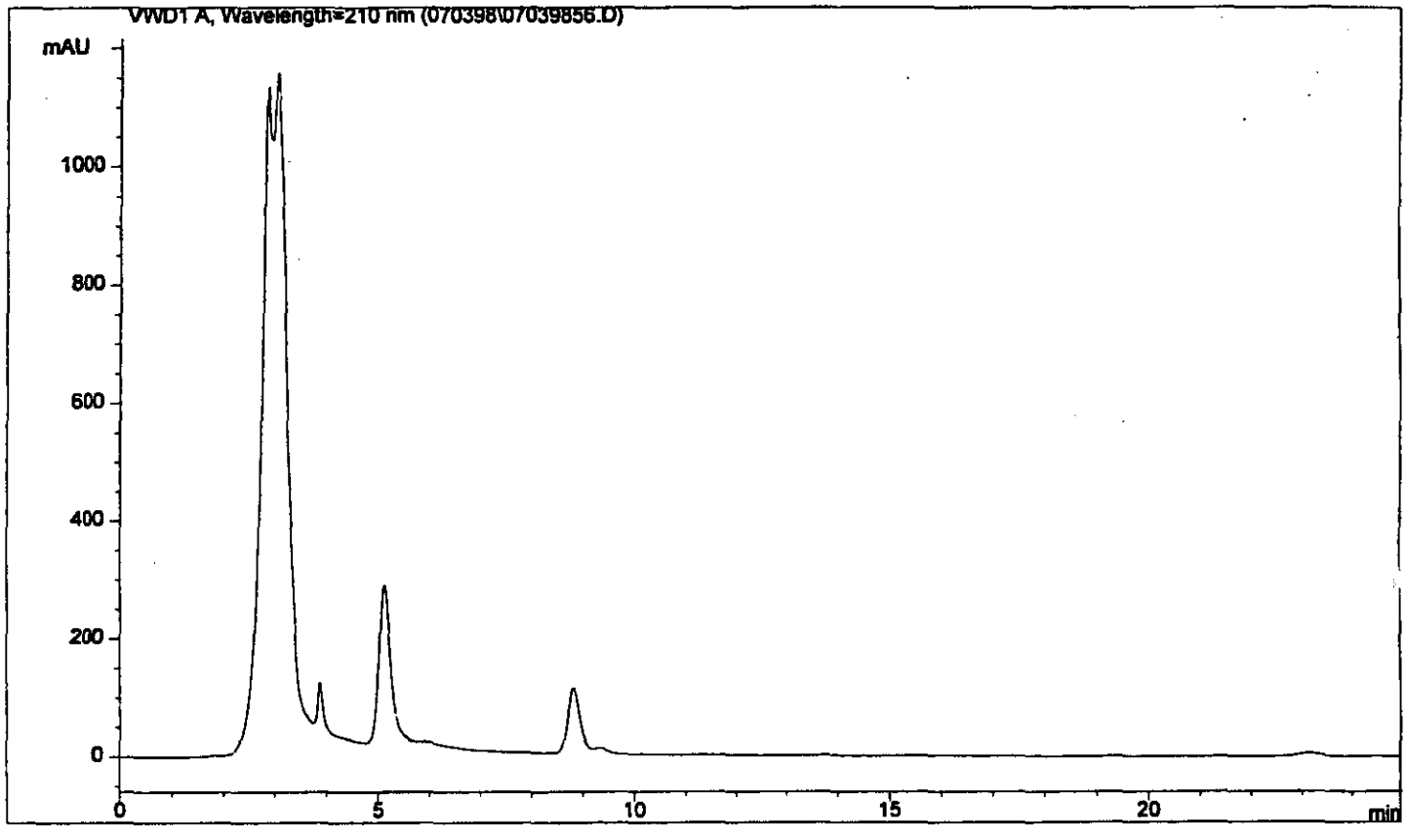
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/kg	Q
75-11-5	PETN----------	250	U

FORM I

Injection Date	: Mon, 6. Jul. 1998	Seq Line	: 56
Sample Name	: 34581.15	Vial No.	: 56
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µ

Acq. Method : 070398.M
Analysis Method : F:\HPCHEM\LC4\METHODS\070398.M
Last Changed : Thu, 9. Jul. 1998, 03:29:44 pm

PETN SOIL



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

Sorted By Signal
Calib. Data Modified : Thu, 9. Jul. 1998, 03:27:17 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
Totals:				0.00000	

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1D

EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB062698

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) WATER Lab Sample ID: 34581.16

Sample Amt: 1ml % Moisture Date Received: 06/27/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 07/05/98

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

INJECTION REPORT

Injection F: <MC3> 5 5E0704W,11,1

Acquired on 05-Jul-98 at 03:43:03
Modified on 06-Jul-82 at 11:35:32
Reported on 06-Jul-98 at 11:35:31

ANALYSIS INFORMATION

Analysis ID.....: EXP, GC 200
Analyst name.....: SS
Comment.....: INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1
Number of samples.: 20
Calibration file..: 5E0704W Last modified on 06-Jul-82 at 11:35:30
Method file.....: EXPLOS Last modified on 06-Jul-82 at 10:52:24
Method title.....: SW846-8330

SAMPLE INFORMATION

Sample name.....: BIO-RB062698
Sample ID.....: 34581.16
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

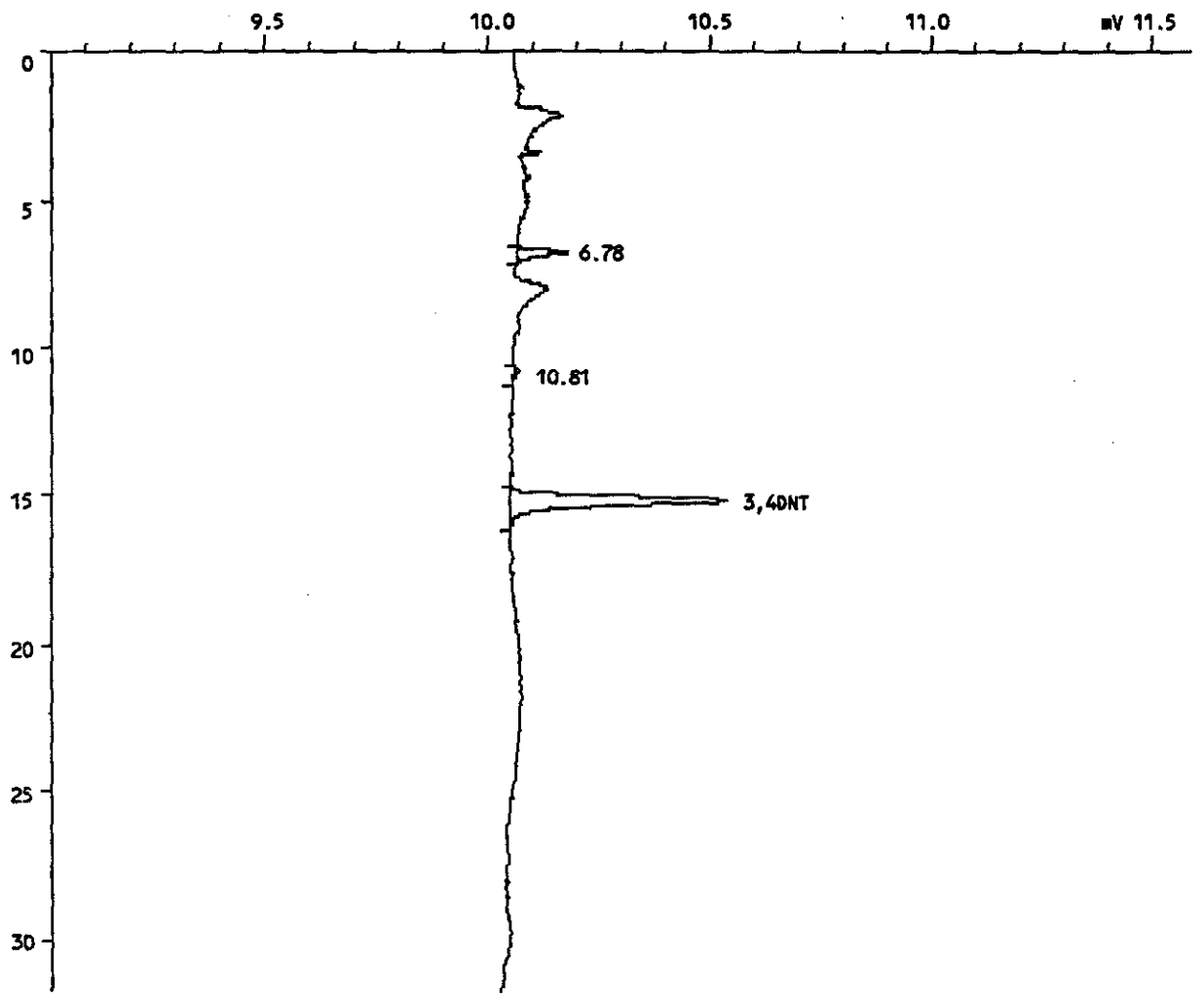
Peak	RT mins	Hght uV	Area uVs	ug/L	Peak name
3	15.189	485	10588	204.011	3,4DNT 102
Total		485	10588	204.011	
Residual		127	1780	-2.781	

LONG PLOT

Injection F: <MC3> 5 5E0704W,11,1

Sample name.....: BIO-RB062698
Sample ID.....: 34581.16
INST ID: IN13, COL. TYPE: ODS-II, ID: CARB-10, INJ:200,COL#1

Acquired on 05-Jul-98 at 03:43:03
Reported on 06-Jul-98 at 11:40:02



1D
EXPLOSIVE ANALYSIS DATA SHEET

EPA SAMPLE NO:

BIO-RB062698

Lab Name: SWL-TULSA Contract:

Lab Code: SWOK Case No:MKF-OH SDG No: 34581

Matrix: (soil/water) WATER Lab Sample ID: 34581.16

Sample Amt: 1ml % Moisture Date Received: 06/27/98

Extraction Volume: 1ml Date Extracted: DIRECT INJ

Extraction Method: DIRECT Date Analyzed: 07/04/98

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

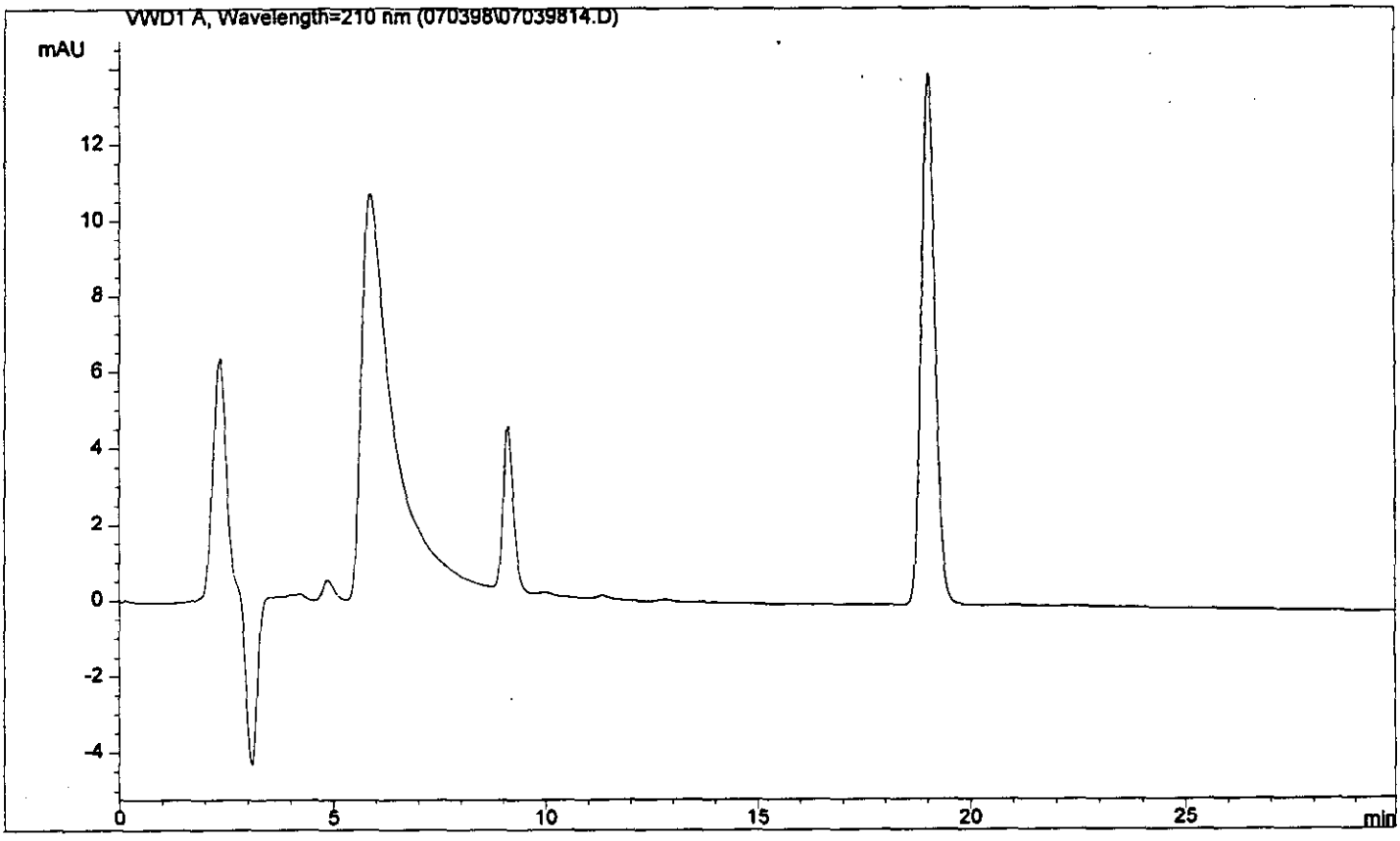
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) ug/L	Q
75-11-5	PETN----------	20.0	U

FORM I

Injection Date	: Sat, 4. Jul. 1998	Seq Line	: 14
Sample Name	: 34581.16	Vial No.	: 14
Acq Operator	: SS	Inj. No.	: 1
		Inj. Vol.	: 200 µl

Acq. Method : 070398W.M
Analysis Method : C:\HPCHEM\1\METHODS\070398W.M
Last Changed : Tue, 7. Jul. 1998, 04:21:35 pm

PETN SOIL



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

Sorted By Signal
Calib. Data Modified : Tue, 7. Jul. 1998, 04:15:14 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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ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34581
Instrument ID: IN13 Column ID: CARB-10

Dates of Anlayses: 07/03/98 to 07/04/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	06/30/98	19:57
EXP L1 SOIL STD	3-71:IA1	06/30/98	21:27
EXP L2 SOIL STD	3-70:IA2	06/30/98	22:11
EXP L3 SOIL STD	3-69:IA3	06/30/98	22:56
EXP L4 SOIL STD	3-68:IA4	06/30/98	23:41
EXP L5 SOIL STD	3-67:IA5	07/01/98	00:26
BL0628SA	BL0628SA	07/01/98	01:10
LC0628SA	LC0628SA	07/01/98	02:40
LD0628SA	LD0628SA	07/01/98	03:24
BIO-N-30%-60-A1	34581.01	07/01/98	04:09
BIO-N-30%-60-A2	34581.02	07/01/98	04:54
BIO-N-30%-60-A3	34581.03	07/01/98	05:39
BIO-N-30%-60-B1	34581.04	07/01/98	06:23
BIO-N-30%-60-B2	34581.05	07/01/98	07:08
BIO-N-30%-60-B3	34581.06	07/01/98	07:53
EXP L3 SOIL STD	3-69:CA1	07/01/98	08:38
BIO-N-30%-60-B3FD	34581.07	07/01/98	10:07
BIO-N-30%-60-C1	34581.08	07/01/98	10:52
BIO-N-30%-60-C2	34581.09	07/01/98	11:37

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34581
Instrument ID: IN13 Column ID: CARB-10

Dates of Anlayses: 07/03/98 to 07/04/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-60-C3	34581.10	07/01/98	12:21
BIO-N-30%-60-C3 MS	34581.11MS	07/01/98	13:06
BIO-N-30%-60-C3 MSD	34581.12MSD	07/01/98	13:51
BIO-N-30%-60-D1	34581.13	07/01/98	14:35
BIO-N-30%-60-D2	34581.14	07/01/98	15:20
BIO-N-30%-60-D3	34581.15	07/01/98	16:05
EXP L3 SOIL STD	3-69:CA2	07/01/98	17:34

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
umn ID : CARB-10

Inj 1

Injection File Name Level 1 : 5EX0701,3
Injection File Name Level 2 : 5EX0701,4
Injection File Name Level 3 : 5EX0701,5
Injection File Name Level 4 : 5EX0701,6
Injection File Name Level 5 : 5EX0701,7

Calibration Date : 06/30/1998
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	3574	352	98024	386	259344	393	390845	395	519342	393
RDX	1620	384	49914	473	138474	502	208209	505	277643	505
TNB	2772	918	76705	1015	207219	1052	307112	1038	403124	1023
DNB	2390	1475	60244	1484	158709	1503	239425	1512	319931	1509
TETRYL	2164	582	53694	577	150800	623	207537	570	269152	556
NB	3082	934	79271	962	205655	961	313258	973	431557	1004
3,4-DNT	3108	612	81232	641	212097	643	319130	643	431861	654
TNT	3007	1114	78483	1161	207589	1179	311227	1179	419597	1192
4ADNT	1809	767	48072	812	124942	811	190877	823	259346	842
2ADNT	2329	987	61025	1031	161592	1049	243467	1049	329229	1069
26DNT	2552	658	67177	691	178318	702	267959	705	357283	706
24DNT	2712	1149	74294	1255	197784	1284	297360	1282	399853	1298
2NT	1763	522	47229	558	126188	574	192101	582	255844	581
	1785	528	41534	491	112762	513	171716	520	227374	517
	2135	663	54428	677	145381	692	221034	704	294439	704

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
lumn ID : CARB-10

Inj 1
Injection File Name Level 1 : 5EX0701,3
Injection File Name Level 2 : 5EX0701,4
Injection File Name Level 3 : 5EX0701,5
Injection File Name Level 4 : 5EX0701,6
Injection File Name Level 5 : 5EX0701,7

Calibration Date : 06/30/1998
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	384	4.67	0.99999	394	0.000
RDX	474	10.98	0.99994	504	0.000
TNB	1009	5.24	0.99986	1031	0.000
DNB	1497	1.07	0.99999	1509	0.000
TETRYL	582	4.32	0.99816	571	0.000
NB	967	2.60	0.99965	988	0.000
3,4-DNT	639	2.49	0.99992	649	0.000
TNT	1165	2.64	0.99996	1186	0.000
NT	811	3.42	0.99978	832	0.000
NT	1037	3.00	0.99990	1060	0.000
26DNT	692	2.93	0.99999	705	0.000
24DNT	1254	4.83	0.99995	1291	0.000
2NT	563	4.49	0.99996	580	0.000
4NT	514	2.72	0.99993	517	0.000
3NT	688	2.61	0.99995	702	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/30/1998
Continuing Calibration #: 1
inuing Cal Date : 07/01/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-10
Injection File Name : 5EX0701A,11
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	258885	392	384	2.17	394	0.35
RDX	137858	499	474	5.45	504	0.89
TNB	207612	1054	1009	4.45	1031	2.18
DNB	159761	1513	1497	1.09	1509	0.29
TETRYL	150457	622	582	6.88	571	8.94
NB	217106	1015	967	4.95	988	2.68
3,4-DNT	215212	652	639	2.13	649	0.45
TNT	210714	1197	1165	2.77	1186	0.97
4ADNT	127218	826	811	1.87	832	0.66
2ADNT	162798	1057	1037	1.93	1060	0.24
26DNT	179049	705	692	1.80	705	0.01
24DNT	197971	1286	1254	2.54	1291	0.39
2NT	127615	580	563	2.96	580	0.02
4NT	113201	515	514	0.16	517	0.44
[illegible]T	146617	698	688	1.46	702	0.56

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 06/30/1998
Continuing Calibration #: 2
Continuing Cal Date : 07/01/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-10
Injection File Name : 5EX0701A,23
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	248869	377	384	1.78	394	4.21
RDX	138426	502	474	5.88	504	0.48
TNB	193628	983	1009	2.59	1031	4.70
DNB	171564	1625	1497	8.56	1509	7.70
TETRYL	175156	724	582	24.43	571	26.82
NB	281718	1316	967	36.18	988	33.24
3,4-DNT	187599	568	639	10.98	649	12.43
TNT	185241	1053	1165	9.66	1186	11.24
4ADNT	134439	873	811	7.65	832	4.98
2ADNT	152265	989	1037	4.66	1060	6.69
26DNT	162628	640	692	7.53	705	9.18
24DNT	197434	1282	1254	2.26	1291	0.66
2NT	127605	580	563	2.95	580	0.02
4NT	103135	469	514	8.75	517	9.29
[illegible]T	130723	622	688	9.54	702	11.34

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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

strument ID : IN13
olumn ID : CARB-10
Calibration Date : 06/30/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.83	4.82	4.82	4.82	4.82
RDX	7.44	7.40	7.42	7.42	7.44
TNB	10.18	10.13	10.15	10.17	10.20
DNB	12.48	12.41	12.41	12.47	12.50
TETRYL	13.45	13.35	13.37	13.46	13.50
NB	14.23	14.14	14.15	14.23	14.26
3,4-DNT	15.52	15.42	15.43	15.55	15.58
TNT	16.23	16.15	16.17	16.27	16.30
4ADNT	16.95	16.83	16.87	17.00	17.04
2ADNT	17.81	17.72	17.76	17.90	17.94
26DNT	18.98	18.89	18.92	19.05	19.08
24DNT	19.65	19.54	19.57	19.70	19.73
2NT	23.18	23.09	23.13	23.30	23.32
4NT	24.86	24.73	24.76	24.93	24.96
3NT	26.84	26.68	26.73	26.90	26.91

COMPONENT NAME	RT Cont CA1	RT Cont CA2
HMX	4.83	4.82
RDX	7.46	7.41
TNB	10.20	10.15
DNB	12.51	12.43
TETRYL	13.54	13.41
NB	14.23	14.17
3,4-DNT	15.53	15.46
TNT	16.25	16.20
4ADNT	16.99	16.90
2ADNT	17.89	17.78
26DNT	18.97	18.93
24DNT	19.61	19.58
2NT	23.12	23.15
4NT	24.74	24.78
3NT	26.69	26.75

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.82	0.006	0.017	4.80 - 4.84
RDX	7.42	0.020	0.060	7.36 - 7.49
'B	10.17	0.026	0.079	10.09 - 10.25
3	12.46	0.043	0.129	12.33 - 12.59
TETRYL	13.44	0.069	0.207	13.23 - 13.64
NB	14.20	0.046	0.139	14.06 - 14.34
3,4-DNT	15.50	0.063	0.188	15.31 - 15.69
TNT	16.22	0.056	0.169	16.05 - 16.39

4ADNT	16.94	0.076	0.229	16.71 - 17.17
2ADNT	17.83	0.081	0.244	17.58 - 18.07
26DNT	18.97	0.072	0.215	18.76 - 19.19
24DNT	19.63	0.071	0.212	19.41 - 19.84
2NT	23.18	0.090	0.270	22.91 - 23.45
4NT	24.82	0.095	0.285	24.54 - 25.11
	26.79	0.097	0.291	26.49 - 27.08

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34581
Instrument ID: IN12 Column ID: CARB-07

Dates of Anlayses: 07/11/98 to 07/13/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST.BLK.	07/11/98	18:21
EXP L1 SOIL STD	3-71:IA1	07/11/98	20:35
EXP L2 SOIL STD	3-70:IA2	07/11/98	21:20
EXP L3 SOIL STD	3-89:IA3	07/11/98	22:04
EXP L4 SOIL STD	3-68:IA4	07/11/98	22:49
EXP L5 SOIL STD	3-67:IA5	07/11/98	23:34
EXP L3 SOIL STD	3-89:CA3	07/12/98	16:57
BIO-N-30%-60-D3 5X	34581.15DL	07/12/98	19:11
EXP L3 SOIL STD	3-89:CA4	07/13/98	01:08

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
nstrument ID: IN12
lumn ID : CARB-07

Inj 1

Injection File Name Level 1 : 2EX0711,4
Injection File Name Level 2 : 2EX0711,5
Injection File Name Level 3 : 2EX0711,6
Injection File Name Level 4 : 2EX0711,7
Injection File Name Level 5 : 2EX0711,8

Calibration Date : 07/11/1998
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	12938	1276	336021	1323	944421	1431	1243733	1256	1918922	1454
RDX	7482	1773	200355	1897	571436	2070	763747	1854	1176159	2138
TNB	11289	3738	300908	3980	828066	4203	1105116	3734	1721555	4369
DNB	11471	7081	291880	7189	824364	7806	1085120	6851	1696763	8004
TETRYL	10846	2916	253224	2723	646413	2671	825112	2267	1322733	2733
NB	22850	6924	590648	7168	1572054	7346	2255663	7005	3220308	7489
3,4-DNT	13424	2643	334919	2641	946234	2867	1243174	2506	1946595	2949
TNT	12963	4801	335091	4957	936678	5322	1249405	4733	1937698	5505
4ADNT	8480	3593	213616	3608	610432	3964	801371	3454	1253935	4071
2ADNT	10517	4456	258332	4364	727654	4725	954300	4113	1482934	4815
26DNT	10030	2585	269535	2773	751599	2959	1001778	2636	1552509	3068
24DNT	14766	6257	374235	6322	1049451	6815	1406605	6063	2172110	7052
2NT	8983	2658	243591	2879	652229	2965	936181	2837	1332843	3029
	8233	2436	222191	2626	616536	2802	881688	2672	1259274	[illegible]
	9344	2902	263158	3273	722207	3439	1045202	3329	1478164	[illegible]

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN12
mn ID : CARB-07

Inj 1
Injection File Name Level 1 : 2EX0711,4
Injection File Name Level 2 : 2EX0711,5
Injection File Name Level 3 : 2EX0711,6
Injection File Name Level 4 : 2EX0711,7
Injection File Name Level 5 : 2EX0711,8

Calibration Date : 07/11/1998
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	1348	6.67	0.99471	1394	0.000
RDX	1947	7.85	0.99512	2046	0.000
TNB	4005	7.04	0.99413	4165	0.000
DNB	7386	6.69	0.99416	7647	0.000
TETRYL	2662	8.99	0.99122	2599	0.000
NB	7187	3.26	0.99889	7323	0.000
3,4-DNT	2721	6.68	0.99362	2811	0.000
T[illegible]	5064	6.63	0.99455	5257	0.000
T	3738	7.08	0.99347	3879	0.000
2ADNT	4495	6.29	0.99388	4601	0.000
26DNT	2804	7.37	0.99452	2929	0.000
24DNT	6502	6.37	0.99452	6732	0.000
2NT	2874	4.94	0.99894	2961	0.000
4NT	2680	6.21	0.99882	2794	0.000
3NT	3296	7.36	0.99910	3457	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/11/1998
Continuing Calibration #: 3
Continuing Cal Date : 07/12/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0711B,1
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	855156	1296	1348	3.88	1394	7.03
RDX	514718	1865	1947	4.20	2046	8.85
TNB	746493	3789	4005	5.38	4165	9.01
DNB	742413	7030	7386	4.82	7647	8.06
TETRYL	579511	2395	2662	10.04	2599	7.87
NB	1437893	6719	7187	6.50	7323	8.24
3,4-DNT	869312	2634	2721	3.20	2811	6.29
TNT	820247	4660	5064	7.96	5257	11.35
4ADNT	554331	3600	3738	3.71	3879	7.20
2ADNT	670527	4354	4495	3.13	4601	5.36
26DNT	667219	2627	2804	6.33	2929	10.31
24DNT	925226	6008	6502	7.59	6732	10.76
2NT	619804	2817	2874	1.96	2961	4.87
4NT	586640	2667	2680	0.49	2794	4.56
[illegible]NT	688865	3280	3296	0.47	3457	5.12

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/11/1998
Continuing Calibration #: 4
inuing Cal Date : 07/13/1998
Continuing Cal Level : 3
Instrument ID : IN12
Column ID : CARB-07
Injection File Name : 2EX0711B,12
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	869065	1317	1348	2.31	1394	5.52
RDX	526047	1906	1947	2.09	2046	6.85
TNB	767437	3896	4005	2.73	4165	6.46
DNB	758541	7183	7386	2.75	7647	6.06
TETRYL	577415	2386	2662	10.36	2599	8.20
NB	1489964	6962	7187	3.12	7323	4.92
3,4-DNT	881249	2670	2721	1.87	2811	5.01
TNT	848743	4822	5064	4.76	5257	8.27
4ADNT	567078	3682	3738	1.49	3879	5.06
2ADNT	685932	4454	4495	0.90	4601	3.19
26DNT	687766	2708	2804	3.44	2929	7.54
24DNT	958435	6224	6502	4.28	6732	7.55
2NT	623525	2834	2874	1.37	2961	4.30
4NT	592535	2693	2680	0.51	2794	3.61
3NT	697472	3321	3296	0.77	3457	3.93

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection 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

:rument ID : IN12
olumn ID : CARB-07
Calibration Date : 07/11/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	5.68	5.66	5.66	5.66	5.66
RDX	8.70	8.68	8.69	8.68	8.68
TNB	11.66	11.63	11.63	11.62	11.62
DNB	14.22	14.20	14.20	14.19	14.19
TETRYL	15.41	15.39	15.40	15.39	15.38
NB	16.06	16.04	16.05	16.03	16.03
3,4-DNT	17.63	17.58	17.57	17.56	17.55
TNT	18.36	18.31	18.31	18.29	18.29
4ADNT	19.50	19.41	19.43	19.41	19.42
2ADNT	20.54	20.49	20.51	20.49	20.50
26DNT	21.47	21.38	21.39	21.37	21.38
24DNT	22.22	22.12	22.13	22.11	22.12
2NT	25.91	25.88	25.89	25.87	25.87
4NT	27.68	27.69	27.69	27.67	27.66
3NT	29.85	29.81	29.82	29.80	29.80

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
HMX	5.67	5.66	5.68	5.66	5.66
RDX	8.72	8.66	8.54	8.66	8.66
TNB	11.67	11.61	11.49	11.63	11.62
DNB	14.25	14.15	14.03	14.18	14.18
TETRYL	15.47	15.34	15.20	15.39	15.39
NB	16.10	16.00	15.88	16.04	16.03
3,4-DNT	17.65	17.51	17.36	17.56	17.56
TNT	18.39	18.26	18.14	18.32	18.30
4ADNT	19.53	19.30	19.14	19.36	19.37
2ADNT	20.61	20.35	20.19	20.42	20.44
26DNT	21.49	21.30	21.17	21.38	21.38
24DNT	22.24	22.03	21.89	22.10	22.10
2NT	26.01	25.78	25.66	25.87	25.88
4NT	27.82	27.56	27.44	27.66	27.68
3NT	29.97	29.69	29.56	29.80	29.82

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	5.66	0.008	0.024	5.64 - 5.69
RDX	8.66	0.050	0.149	8.51 - 8.81
9	11.61	0.048	0.144	11.47 - 11.76
.B	14.17	0.066	0.197	13.97 - 14.36
TETRYL	15.36	0.080	0.241	15.12 - 15.60
NB	16.02	0.063	0.190	15.83 - 16.21
3,4-DNT	17.54	0.090	0.270	17.27 - 17.81
TNT	18.29	0.074	0.221	18.06 - 18.51

4ADNT	19.36	0.147	0.442	18.91 - 19.80
2ADNT	20.42	0.164	0.491	19.93 - 20.91
26DNT	21.35	0.108	0.323	21.03 - 21.67
24DNT	22.08	0.122	0.365	21.72 - 22.45
2NT	25.84	0.115	0.345	25.49 - 26.18
4NT	27.63	0.132	0.396	27.23 - 28.02
T	29.76	0.141	0.424	29.34 - 30.19

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34581
Instrument ID: LC4 Column ID:

Dates of Anlayses: 07/05/98 to 07/07/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	07/05/98	15:21
L1 3-83:IA1	L1 3-83:IA1	07/05/98	16:46
L2 3-82:IA2	L2 3-82:IA2	07/05/98	17:14
L3 3-81:IA3	L3 3-81:IA3	07/05/98	17:42
L4 3-80:IA4	L4 3-80:IA4	07/05/98	18:11
L5 3-79:IA5	L5 3-79:IA5	07/05/98	18:39
ICV 2-223:CA1	ICV 2-223:CA1	07/05/98	19:07
BL0628SB	BL0628SB	07/05/98	19:35
LC0628SB	LC0628SB	07/05/98	20:31
LD0628SB	LD0628SB	07/05/98	21:00
BIO-N-30%-60-A1	34581.01	07/05/98	21:28
BIO-N-30%-60-A2	34581.02	07/05/98	21:56
BIO-N-30%-60-A3	34581.03	07/05/98	22:24
BIO-N-30%-60-B1	34581.04	07/05/98	22:52
BIO-N-30%-60-B2	34581.05	07/05/98	23:20
L3 3-81:CA2	L3 3-81:CA2	07/05/98	23:49
BIO-N-30%-60-B3	34581.06	07/06/98	00:45
BIO-N-30%-60-B3FD	34581.07	07/06/98	01:13
BIO-N-30%-60-C1	34581.08	07/06/98	01:41

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34581
Instrument ID: LC4 Column ID:

Dates of Anlayses: 07/05/98 to 07/07/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
BIO-N-30%-60-C2	34581.09	07/06/98	02:10
BIO-N-30%-60-C3	34581.10	07/06/98	02:38
BIO-N-30%-60-C3	34581.11MS	07/06/98	03:06
BIO-N-30%-60-C3	34581.12MSD	07/06/98	03:34
BIO-N-30%-60-D1	34581.13	07/06/98	04:02
BIO-N-30%-60-D2	34581.14	07/06/98	04:31
BIO-N-30%-60-D3	34581.15	07/06/98	04:59
L3 3-81:CA3	L3 3-81:CA3	07/06/98	05:27

page 2

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

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

Inj 1

Injection File Name Level 1 : 070398,30
Injection File Name Level 2 : 070398,31
Injection File Name Level 3 : 070398,32
Injection File Name Level 4 : 070398,33
Injection File Name Level 5 : 070398,34

Calibration Date : 07/05/98
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	4.87002	4.11E0	58.5125	2.73E0	109.144	2.93E0	430.513	2.97E0	860.493	2.98E0

CALIBRATION FACTOR DATA
FORM 9B

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

	Inj 1
Injection File Name Level 1 :	070398,30
Injection File Name Level 2 :	070398,31
Injection File Name Level 3 :	070398,32
Injection File Name Level 4 :	070398,33
Injection File Name Level 5 :	070398,34

Calibration Date : 07/05/98
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	17.40	0.99998	2.97E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/05/98
inuing Calibration #: 1
inuing Cal Date : 07/05/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 070398,35
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	102.127	3.13E0	3.14E0	0.35	2.97E0	5.38

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/05/98
Continuing Calibration #: 2
Continuing Cal Date : 07/05/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 070398,45
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	115.956	2.76E0	3.14E0	12.23	2.97E0	7.19

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/05/98
Continuing Calibration #: 3
Continuing Cal Date : 07/06/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 070398,57
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	96.4308	3.32E0	3.14E0	5.54	2.97E0	11.61

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.jection 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 : 07/05/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	11.76	11.73	11.73	11.72	11.72

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3	RT Cont CA4	RT Cont CA5
PETN	11.77	11.91	12.05	11.94	11.64

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	11.79	0.123	0.369	11.42 - 12.16

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34581
Instrument ID: IN13 Column ID: MET-02

Dates of Anlayses: 07/16/98 to 07/17/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLK.	INST. BLK.	07/16/98	17:47
EXP L1A STD	3-78:IA1	07/16/98	19:30
EXP L2A STD	3-77:IA2	07/16/98	20:05
EXP L3A STD	3-76:IA3	07/16/98	20:39
EXP L4A STD	3-75:IA4	07/16/98	21:14
EXP L5A STD	3-74:IA5	07/16/98	21:48
EXP L1B STD	3-32:IB1	07/16/98	22:22
EXP L2B STD	3-31:IB2	07/16/98	22:57
EXP L3B STD	3-87:IB3	07/16/98	23:31
EXP L4B STD	3-29:IB4	07/17/98	00:06
EXP L5B STD	3-28:IB5	07/17/98	00:40
BL0628SA	BL0628SA	07/17/98	01:15
BIO-N-30%-60-A1	34581.01	07/17/98	02:23
BIO-N-30%-60-A2	34581.02	07/17/98	02:58
BIO-N-30%-60-A3	34581.03	07/17/98	03:32
BIO-N-30%-60-B1	34581.04	07/17/98	04:07
BIO-N-30%-60-B2	34581.05	07/17/98	04:41
BIO-N-30%-60-B3	34581.06	07/17/98	05:16
EXP L3A STD	3-76:CA1	07/17/98	09:04

FORM VIII

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34581
Instrument ID: IN13 Column ID: MET-02

Dates of Anlayses: 07/16/98 to 07/17/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
EXP L3B STD	3-87:CB1	07/17/98	09:38
BIO-N-30%-60-B3FD	34581.07	07/17/98	10:13
BIO-N-30%-60-C1	34581.08	07/17/98	10:47
BIO-N-30%-60-C2	34581.09	07/17/98	11:21
BIO-N-30%-60-C3	34581.10	07/17/98	11:56
BIO-N-30%-60-D1	34581.13	07/17/98	12:30
BIO-N-30%-60-D2	34581.14	07/17/98	13:05
BIO-N-30%-60-D3	34581.15	07/17/98	13:39
BIO-N-30%-60-D3 5X	34581.15DL	07/17/98	14:13
EXP L3A STD	3-76:CA2	07/17/98	14:48
EXP L3B STD	3-87:CB2	07/17/98	15:22

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : MET-02

Inj 1

Injection File Name Level 1 : 5CN0716,4
Injection File Name Level 2 : 5CN0716,5
Injection File Name Level 3 : 5CN0716,6
Injection File Name Level 4 : 5CN0716,7
Injection File Name Level 5 : 5CN0716,8

Calibration Date : 07/16/1998
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	3401	486	16563	473	42826	489	84211	481	168555	482
TNB	6071	1320	31898	1387	83391	1450	165684	1441	331119	1440
TNT	5561	1209	28511	1240	75433	1312	149806	1303	304678	1325
TETRYL	6452	717	34598	769	90577	805	182559	811	370013	822
3,4DNT	870	659	5035	763	13474	817	27026	819	60962	924
26DNT	4483	897	23364	935	61336	981	121570	973	249016	996

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : MET-02

Inj 1
Injection File Name Level 1 : 5CN0716,9
Injection File Name Level 2 : 5CN0716,10
Injection File Name Level 3 : 5CN0716,11
Injection File Name Level 4 : 5CN0716,12
Injection File Name Level 5 : 5CN0716,13

Calibration Date : 07/16/1998
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
RDX	2948	590	15093	604	39340	629	76843	615	154863	619
DNB	7139	1785	35429	1771	92894	1858	181599	1816	365859	1829
NB	5700	1140	27887	1115	73868	1182	145402	1163	290998	1164
24DNT	8191	1638	40314	1613	106078	1697	207931	1663	417771	1671
4ADNT	6992	760	34323	746	91253	794	177005	770	347615	756
2ADNT	12565	1257	62341	1247	165552	1324	322305	1289	650744	1301

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : MET-02

Inj 1

Injection File Name Level 1 : 5CN0716,4
Injection File Name Level 2 : 5CN0716,5
Injection File Name Level 3 : 5CN0716,6
Injection File Name Level 4 : 5CN0716,7
Injection File Name Level 5 : 5CN0716,8

Calibration Date : 07/16/1998
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	482	1.26	0.99999	482	0.000
TNB	1407	3.91	0.99999	1440	0.000
TNT	1278	3.95	0.99996	1319	0.000
TETRYL	785	5.48	0.99998	819	0.000
3,4DNT	796	12.09	0.99840	900	0.000
26DNT	956	4.22	0.99993	991	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/16/1998
Continuing Calibration #: 1
Continuing Cal Date : 07/17/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : MET-02
Injection File Name : 5CN0716A,10
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
RDX	38515	616	611	0.79	619	0.43
DNB	90448	1809	1812	0.16	1828	1.03
NB	72221	1156	1153	0.23	1164	0.76
24DNT	102786	1645	1657	0.72	1670	1.55
4ADNT	87224	758	765	0.85	760	0.22
2ADNT	161956	1296	1284	0.93	1300	0.33

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/16/1998
Continuing Calibration #: 2
Continuing Cal Date : 07/17/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : MET-02
Injection File Name : 5CN0716A,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	42946	491	482	1.77	482	1.86
TNB	82284	1431	1407	1.67	1440	0.62
TNT	73897	1285	1278	0.60	1319	2.59
TETRYL	90360	803	785	2.33	819	1.93
3,4DNT	13554	821	796	3.17	900	8.72
26DNT	59586	953	956	0.30	991	3.75

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/16/1998
ntinuing Calibration #: 2
tinuing Cal Date : 07/17/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : MET-02
Injection File Name : 5CN0716A,20
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
RDX	43225	692	611	13.12	619	11.74
DNB	103858	2077	1812	14.64	1828	13.65
NB	76137	1218	1153	5.66	1164	4.62
24DNT	119593	1913	1657	15.51	1670	14.55
4ADNT	103930	904	765	18.14	760	18.89
2ADNT	183945	1472	1284	14.64	1300	13.21

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ection 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
HMX	7.000	35.000	87.500	175.000	350.000
TNB	4.600	23.000	57.500	115.000	230.000
TNT	4.600	23.000	57.500	115.000	230.000
TETRYL	9.000	45.000	112.500	225.000	450.000
3,4DNT	1.320	6.600	16.500	33.000	66.000
26DNT	5.000	25.000	62.500	125.000	250.000

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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
RDX	5.000	25.000	62.500	125.000	250.000
DNB	4.000	20.000	50.000	100.000	200.000
NB	5.000	25.000	62.500	125.000	250.000
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

A STD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

strument ID : IN13
Column ID : MET-02
Calibration Date : 07/16/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.80	4.79	4.81	4.78	4.78
TNB	7.39	7.38	7.39	7.36	7.36
TNT	11.50	11.47	11.49	11.46	11.46
TETRYL	12.67	12.65	12.67	12.62	12.63
3,4DNT	14.04	14.04	14.06	14.02	14.02
26DNT	14.57	14.54	14.57	14.53	14.53

COMPONENT NAME	RT Cont CA1	RT Cont CA2
HMX	4.84	4.74
TNB	7.44	7.29
TNT	11.65	11.25
TETRYL	12.90	12.33
3,4DNT	14.37	13.68
DNT	14.87	14.21

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.79	0.031	0.094	4.70 - 4.89
TNB	7.37	0.046	0.139	7.23 - 7.51
TNT	11.47	0.116	0.347	11.12 - 11.81
TETRYL	12.64	0.168	0.504	12.13 - 13.14
3,4DNT	14.03	0.201	0.602	13.43 - 14.64
26DNT	14.55	0.192	0.575	13.97 - 15.12

BSTD

CALIBRATION FACTOR DATA
FORM 9E

EXPLOSIVE CALIBRATION - METHOD SW846-8330

.strument ID : IN13
Column ID : MET-02
Calibration Date : 07/16/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
RDX	7.70	7.68	7.69	7.64	7.68
DNB	9.53	9.49	9.49	9.43	9.48
NB	10.73	10.67	10.68	10.60	10.66
24DNT	14.24	14.15	14.19	14.06	14.14
4ADNT	15.58	15.47	15.53	15.39	15.49
2ADNT	16.12	16.01	16.06	15.93	16.02

COMPONENT NAME	RT Cont CA1	RT Cont CA2
RDX	7.79	7.55
DNB	9.64	9.32
NB	10.88	10.46
24DNT	14.49	13.80
4ADNT	15.92	15.01
\DNT	16.45	15.53

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
RDX	7.68	0.073	0.219	7.46 - 7.89
DNB	9.48	0.097	0.291	9.19 - 9.77
NB	10.67	0.124	0.372	10.30 - 11.04
24DNT	14.15	0.206	0.617	13.53 - 14.77
4ADNT	15.48	0.269	0.806	14.68 - 16.29
2ADNT	16.02	0.273	0.819	15.20 - 16.84

8D

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34581
Instrument ID: IN13 Column ID: CARB-10

Dates of Anlayses: 07/03/98 to 07/04/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLANK	INST.BLK.	07/03/98	18:29
EXP HIGH WATER L1 ST	3-43:IA1	07/03/98	20:43
EXP HIGH WATER L2 ST	3-42:IA2	07/03/98	21:28
EXP HIGH WATER L3 ST	3-41:IA3	07/03/98	22:12
EXP HIGH WATER L4 ST	3-40:IA4	07/03/98	22:57
EXP HIGH WATER L5 ST	3-39:IA5	07/03/98	23:42
BL0702WB	BL0702WB	07/04/98	00:27
LC0702WB	LC0702WB	07/04/98	01:56
LD0702WB	LD0702WB	07/04/98	02:41
EXP HIGH WATER L3 ST	3-41:CA1	07/04/98	07:09

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
Column ID : CARB-10

Inj 1

Injection File Name Level 1 : 5E0703W,4
Injection File Name Level 2 : 5E0703W,5
Injection File Name Level 3 : 5E0703W,6
Injection File Name Level 4 : 5E0703W,7
Injection File Name Level 5 : 5E0703W,8

Calibration Date : 07/03/1998
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	455	355	1084	341	55813	351	114625	360	232174	365
RDX	536	515	1217	468	58275	448	116740	449	237269	458
TNB	550	764	1597	887	87007	971	176570	986	356991	997
DNB	452	1189	1783	1857	63376	1331	128973	1358	259145	1364
TETRYL	343	381	937	415	57981	513	112885	499	220830	491
NB	397	584	1224	720	72653	855	143341	843	297575	875
3,4-DNT	509	398	1696	527	88342	552	180061	563	364421	569
TNT	539	842	1648	1030	83862	1048	169992	1062	344409	1076
4ADNT	506	506	1612	640	83243	666	168366	673	341433	683
2ADNT	381	680	1228	877	63632	909	129294	924	262995	939
26DNT	586	610	1308	545	70749	615	140695	612	285198	620
24DNT	572	1021	1738	1241	86565	1237	177381	1267	361816	1292
2NT	480	429	1286	459	75793	523	148763	513	304759	525
	238	298	784	392	43915	439	87656	438	178032	[illegible]
	334	418	917	459	57002	600	116199	612	234141	

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
umn ID : CARB-10

Inj 1

Injection File Name Level 1 : 5E0703W,4
Injection File Name Level 2 : 5E0703W,5
Injection File Name Level 3 : 5E0703W,6
Injection File Name Level 4 : 5E0703W,7
Injection File Name Level 5 : 5E0703W,8

Calibration Date : 07/03/1998
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	355	2.62	0.99994	364	0.000
RDX	468	5.95	0.99994	456	0.000
TNB	921	10.64	0.99997	994	0.000
DNB	1420	17.93	0.99998	1361	0.000
TETRYL	460	12.69	0.99990	494	0.000
NB	775	15.88	0.99983	868	0.000
3,4-DNT	522	13.65	0.99996	567	0.000
TNT	1012	9.52	0.99997	1072	0.000
NT	634	11.54	0.99997	680	0.000
NT	866	12.27	0.99995	935	0.000
26DNT	600	5.20	0.99998	618	0.000
24DNT	1212	8.97	0.99991	1285	0.000
2NT	490	8.88	0.99993	523	0.000
4NT	402	15.51	0.99997	444	0.000
3NT	541	17.59	0.99998	615	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/03/1998
C tinuing Calibration #: 1
cinuing Cal Date : 07/04/1998
.tinuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-10
Injection File Name : 5E0703W,18
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	57441	361	355	1.89	364	0.63
RDX	59027	454	468	2.93	456	0.40
TNB	88584	989	921	7.33	994	0.53
DNB	64102	1347	1420	5.16	1361	1.07
TETRYL	54533	483	460	4.96	494	2.22
NB	67600	795	775	2.57	868	8.41
3,4-DNT	91598	572	522	9.73	567	0.91
TNT	86118	1076	1012	6.39	1072	0.38
4ADNT	84288	674	634	6.43	680	0.88
2ADNT	65001	929	866	7.24	935	0.68
26DNT	70426	612	600	1.99	618	0.94
24DNT	89373	1277	1212	5.37	1285	0.64
2NT	69826	482	490	1.68	523	7.92
4NT	40650	407	402	1.02	444	8.35
T	53020	558	541	3.21	615	9.18

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ɔction 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

strument ID : IN13
olumn ID : CARB-10
Calibration Date : 07/03/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.77	4.78	4.77	4.76	4.75
RDX	7.45	7.49	7.49	7.48	7.48
TNB	10.20	10.27	10.25	10.22	10.23
DNB	12.52	12.61	12.58	12.57	12.58
TETRYL	13.52	13.65	13.60	13.60	13.62
NB	14.29	14.36	14.35	14.34	14.35
3,4-DNT	15.59	15.71	15.66	15.66	15.68
TNT	16.32	16.42	16.39	16.39	16.41
4ADNT	17.03	17.19	17.19	17.21	17.22
2ADNT	17.97	18.11	18.10	18.12	18.13
26DNT	19.06	19.20	19.18	19.21	19.22
24DNT	19.72	19.87	19.85	19.87	19.87
2NT	23.29	23.46	23.41	23.46	23.44
4NT	24.88	25.09	25.05	25.09	25.06
3NT	26.75	27.02	27.04	27.08	27.04

COMPONENT NAME	RT Cont CAl
HMX	4.75
RDX	7.47
TNB	10.22
DNB	12.56
TETRYL	13.56
NB	14.32
3,4-DNT	15.63
TNT	16.34
4ADNT	17.16
2ADNT	18.06
26DNT	19.14
24DNT	19.79
2NT	23.33
4NT	24.96
3NT	26.92

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.76	0.011	0.033	4.73 - 4.80
RDX	7.48	0.015	0.045	7.43 - 7.52
B	10.23	0.024	0.072	10.16 - 10.30
B	12.57	0.029	0.086	12.48 - 12.66
TETRYL	13.59	0.046	0.139	13.45 - 13.73
NB	14.33	0.028	0.083	14.25 - 14.42
3,4-DNT	15.65	0.041	0.122	15.53 - 15.77
TNT	16.38	0.039	0.118	16.26 - 16.49

page 2

4ADNT	17.17	0.070	0.210	16.96 - 17.37
2ADNT	18.08	0.059	0.177	17.91 - 18.26
26DNT	19.17	0.060	0.180	18.99 - 19.35
24DNT	19.83	0.061	0.182	19.65 - 20.01
2NT	23.40	0.071	0.213	23.18 - 23.61
4NT	25.02	0.085	0.256	24.77 - 25.28
	26.97	0.123	0.369	26.61 - 27.34

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34581
Instrument ID: IN13 Column ID: CARB-10

Dates of Anlayses: 07/03/98 to 07/04/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
INST. BLANK	INST.BLK.	07/04/98	20:16
EXP HIGH WATER L1 ST	3-43:IA1	07/04/98	22:30
EXP HIGH WATER L2 ST	3-42:IA2	07/04/98	23:14
EXP HIGH WATER L3 ST	3-41:IA3	07/04/98	23:59
EXP HIGH WATER L4 ST	3-40:IA4	07/05/98	00:44
EXP HIGH WATER L5 ST	3-39:IA5	07/05/98	01:28
BIO-RB062698	34581.16	07/05/98	03:43
BIO-RB062698 MS	34581.16MS	07/05/98	04:27
BIO-RB062698 MSD	34581.16MSD	07/05/98	05:12
EXP HIGH WATER L3 ST	3-41:CA1	07/05/98	09:40

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

EXPLOSIVE CALIBRATION - METHOD SW846-8330

ıstrument ID: IN13
lumn ID : CARB-10

Inj 1

Injection File Name Level 1 : 5E0704W,4
Injection File Name Level 2 : 5E0704W,5
Injection File Name Level 3 : 5E0704W,6
Injection File Name Level 4 : 5E0704W,7
Injection File Name Level 5 : 5E0704W,8

Calibration Date : 07/04/1998
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	339	265	958	301	56125	353	112336	353	225474	355
RDX	570	548	1095	421	57293	441	116387	448	237106	458
TNB	538	747	1560	867	86410	964	176202	984	355708	994
DNB	460	1211	1273	1326	63386	1332	127120	1338	257405	1355
TETRYL	331	368	1257	556	59779	529	118955	526	233246	518
NB	435	640	1340	788	73590	866	147910	870	304803	896
3,4-DNT	509	398	1727	536	88282	552	177025	553	356784	557
TNT	806	1259	1604	1003	83898	1049	168310	1052	340003	1063
4ADNT	755	755	1601	635	83132	665	166622	666	338556	677
2ADNT	725	1295	1220	871	63114	902	127582	911	259674	927
26DNT	778	810	1299	541	69213	602	139898	608	282015	613
24DNT	562	1004	1657	1184	87008	1243	176852	1263	359954	1286
2NT	583	521	1468	524	78327	540	157056	542	322215	556
	359	449	923	462	44961	450	90687	453	187246	[illegible]
	404	505	1157	579	59110	622	119674	630	243380	

CALIBRATION FACTOR DATA
FORM 9B

EXPLOSIVE CALIBRATION - METHOD SW846-8330
Instrument ID: IN13
mn ID : CARB-10

Inj 1

Injection File Name Level 1 : 5E0704W,4
Injection File Name Level 2 : 5E0704W,5
Injection File Name Level 3 : 5E0704W,6
Injection File Name Level 4 : 5E0704W,7
Injection File Name Level 5 : 5E0704W,8

Calibration Date : 07/04/1998
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	325	12.52	1.00000	354	0.000
RDX	463	10.66	0.99991	455	0.000
TNB	911	11.49	0.99997	990	0.000
DNB	1312	4.41	0.99998	1351	0.000
TETRYL	500	15.02	0.99996	520	0.000
NB	812	12.86	0.99988	890	0.000
3,4-DNT	519	13.18	0.99999	556	0.000
TNT	1085	9.23	0.99998	1060	0.000
T	680	6.59	0.99996	675	0.000
NT	981	17.97	0.99994	923	0.000
26DNT	635	16.11	0.99998	612	0.000
24DNT	1196	9.53	0.99994	1279	0.000
2NT	536	2.65	0.99991	552	0.000
4NT	456	1.82	0.99985	465	0.000
3NT	595	9.35	0.99995	638	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/04/1998
Continuing Calibration #: 1
Continuing Cal Date : 07/05/1998
Continuing Cal Level : 3
Instrument ID : IN13
Column ID : CARB-10
Injection File Name : 5E0704W,19
Calculation Mode : Area

Component Name	Response Cont Std	Cont CF	Init CF Mean	%D	Init CF Slope	%D
HMX	56270	354	325	8.77	354	0.09
RDX	57268	441	463	4.87	455	3.19
TNB	86804	969	911	6.31	990	2.19
DNB	63484	1334	1312	1.64	1351	1.25
TETRYL	55551	492	500	1.59	520	5.53
NB	73444	864	812	6.40	890	2.93
3,4-DNT	90175	564	519	8.53	556	1.29
TNT	83602	1045	1085	3.69	1060	1.40
4ADNT	83225	666	680	2.06	675	1.30
2ADNT	63860	912	981	7.03	923	1.18
26DNT	69601	605	635	4.68	612	1.05
24DNT	87592	1251	1196	4.64	1279	2.19
2NT	77911	537	536	0.17	552	2.70
4NT	44555	446	456	2.35	465	4.09
[illegible]T	58608	617	595	3.65	638	3.25

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

strument ID : IN13
olumn ID : CARB-10
Calibration Date : 07/04/1998
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
HMX	4.73	4.72	4.71	4.72	4.73
RDX	7.31	7.29	7.32	7.35	7.41
TNB	9.96	9.96	9.98	10.01	10.12
DNB	12.18	12.17	12.23	12.25	12.42
TETRYL	12.98	13.02	13.10	13.13	13.38
NB	13.84	13.81	13.90	13.92	14.15
3,4-DNT	14.97	14.93	15.05	15.06	15.40
TNT	15.73	15.72	15.84	15.85	16.15
4ADNT	16.38	16.37	16.53	16.57	16.92
2ADNT	17.31	17.28	17.44	17.48	17.82
26DNT	18.36	18.32	18.49	18.56	18.88
24DNT	19.04	18.94	19.14	19.23	19.53
2NT	22.50	22.29	22.52	22.70	22.98
4NT	23.98	23.82	24.06	24.29	24.57
3NT	25.91	25.67	25.92	26.19	26.49

COMPONENT NAME	RT Cont CA1
HMX	4.72
RDX	7.30
TNB	9.96
DNB	12.19
TETRYL	13.04
NB	13.87
3,4-DNT	14.99
TNT	15.78
4ADNT	16.47
2ADNT	17.37
26DNT	18.46
24DNT	19.13
2NT	22.62
4NT	24.23
3NT	26.18

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
HMX	4.72	0.008	0.024	4.70 - 4.74
RDX	7.33	0.045	0.134	7.19 - 7.46
B	10.00	0.061	0.183	9.82 - 10.18
B	12.24	0.092	0.276	11.96 - 12.51
TETRYL	13.11	0.145	0.436	12.67 - 13.54
NB	13.92	0.122	0.365	13.55 - 14.28
3,4-DNT	15.07	0.169	0.506	14.56 - 15.57
TNT	15.84	0.158	0.474	15.37 - 16.32

4ADNT	16.54	0.201	0.603	15.94 - 17.14
2ADNT	17.45	0.197	0.592	16.86 - 18.04
26DNT	18.51	0.201	0.603	17.91 - 19.11
24DNT	19.17	0.200	0.601	18.57 - 19.77
2NT	22.60	0.233	0.699	21.90 - 23.30
4NT	24.16	0.263	0.788	23.37 - 24.95
	26.06	0.286	0.858	25.20 - 26.92

ANALYTICAL SEQUENCE SUMMARY

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA

Lab Code: SWOK Case No: MKF-OH SDG No: 34581
Instrument ID: LC4 Column ID:

Dates of Anlayses: 07/04/98 to 07/05/98

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED
instrument blank	instrument bla	07/04/98	15:32
L1 3-65:IA1	L1 3-65:IA1	07/04/98	17:12
L2 3-64:IA2	L2 3-64:IA2	07/04/98	17:45
L3 3-63:IA3	L3 3-63:IA3	07/04/98	18:18
L4 3-62:IA4	L4 3-62:IA4	07/04/98	18:51
L5 3-61:IA5	L5 3-61:IA5	07/04/98	19:25
ICV 2-228:CA1	ICV 2-228:CA1	07/04/98	19:58
BL0702WC	BL0702WC	07/04/98	20:31
LC0702WC	LC0702WC	07/04/98	21:37
LD0702WC	LD0702WC	07/04/98	22:11
BIO-RB062698	34581.16	07/04/98	22:44
BIO-RB062698	34581.16MS	07/04/98	23:17
BIO-RB062698	34581.16MSD	07/04/98	23:50
L3 3-63:CA2	L3 3-63:CA2	07/05/98	00:57

FORM VIII

CALIBRATION FACTOR DATA
FORM 9A-1

CALIBRATION - METHOD SW846-8330

EXPLOSIVE
Instrument ID: LC4
lumn ID :

Inj 1

Injection File Name Level 1 : 070398W,4
Injection File Name Level 2 : 070398W,5
Injection File Name Level 3 : 070398W,6
Injection File Name Level 4 : 070398W,7
Injection File Name Level 5 : 070398W,8

Calibration Date : 07/04/98
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	5.53255	3.61E0	45.0061	3.56E0	92.52	3.46E0	368.591	3.47E0	737.765	3.47E0

CALIBRATION FACTOR DATA
FORM 9B

CALIBRATION - METHOD SW846-8330

EXPLOSIVE
Instrument ID: LC4
Column ID :

	Inj 1
Injection File Name Level 1 :	070398W,4
Injection File Name Level 2 :	070398W,5
Injection File Name Level 3 :	070398W,6
Injection File Name Level 4 :	070398W,7
Injection File Name Level 5 :	070398W,8

Calibration Date : 07/04/98
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	3.51E0	1.94	1.00000	3.47E0	0.000

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/04/98
Continuing Calibration #: 1
Continuing Cal Date : 07/05/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 070398W,9
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	114.652	2.79E0	3.51E0	20.58	3.47E0	19.58

CALIBRATION FACTOR DATA
FORM 9C

Initial Calibration Date: 07/04/98
Continuing Calibration #: 2
Continuing Cal Date : 07/05/98
Continuing Cal Level : 3
Instrument ID : LC4
Column ID :
Injection File Name : 070398W,18
Calculation Mode : Area

Component Name	Response Cont Std	Cont RF	Init RF Mean	%D	Init RF Slope	%D
PETN	89.8397	3.56E0	3.51E0	1.36	3.47E0	2.63

CALIBRATION FACTOR DATA
FORM 9D

EXPLOSIVE CALIBRATION - METHOD SW846-8330

jection 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

.trument ID : LC4
.olumn ID :
Calibration Date : 07/04/98
Number of Calibration Levels: 5

COMPONENT NAME	RT Level 1	RT Level 2	RT Level 3	RT Level 4	RT Level 5
PETN	11.63	11.60	11.59	11.57	11.57

COMPONENT NAME	RT Cont CA1	RT Cont CA2	RT Cont CA3
PETN	11.58	11.85	11.94

COMPONENT NAME	AVE RT	STD_DEV	3X SD	AVE+-3X SD
PETN	11.67	0.145	0.436	11.23 - 12.10

MORRISON KNUDSEN CORPORATION

CHAIN OF CUSTODY RECORD

720 Park Blvd., P.O. Box 73
Boise, Idaho 83729
(208) 386-5000

BIO-038

Project No.: 4324-[illegible]-C7-35

Project Name: NSWC Crane Biofacility

Samplers: (Signature)

Sampler: (Print) Ryan Erwin

Analysis Required: 7330 Explosives

Sample Type	Sampling Point Description	Sample Date	Time	Sample I.D. Number	Split Samples Yes	Split Samples No	7330 Explosives	Remarks
Composite	CS A SL 1	6/26/98	931	BIO-N-30% 60-A1		✓	✓	DAY C-7 SL 1
	A 2		935	BIO-N-30% 60-A2		✓	✓	
	A 3		941	BIO-N-30% 60-A3		✓	✓	
	CS B SL 1		952	BIO-N-30% 60-B1		✓	✓	
	B SL 2		956	BIO-N-30% 60-B2		✓	✓	
	B SL 3		1001	BIO-N-30% 60-B3		✓	✓	
	B 3		1001	BIO-N-30% 60-B3D		✓	✓	
	CS C SL 1		1007	BIO-N-30% 60-C1		✓	✓	
	C 2		1012	BIO-N-30% 60-C2		✓	✓	MS/MSD
	C 3		1017	BIO-N-30% 60-C3		✓	✓	
	CS D SL 1		1022	BIO-N-30% 60-D1		✓	✓	
	D 2		1025	BIO-N-30% 60-D2		✓	✓	
	D 3		1029	BIO-N-30% 60-D3		✓	✓	
Liquid	Rinse Blank		1038	BIO-RB 062698		✓	✓	
								South West Lake

Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
[signature]	6/26/98 1530				
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Received for Laboratory By: (Signature) / Company: [signature]	Date/Time 6/26/98 1910	Total No. Samples This Shipping Container: / Company:
Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:	Relinquished By: (Signature) / Company:	Date/Time	Received By: (Signature) / Company:

5.1c

T.D #'s 5155, 5156