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NWS EARLE
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SITE INVESTIGATION REPORT FOR UNDERGROUND STORAGE TANK GB-1/2 SUMMARY FINDINGS NWS EARLE NJ
4/10/1995
ENVIRO-TECH, INC.

Item # (12)
Box 1

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2 COPIES TO J. DANIELS
9 JUN 95

Closure Report for:
UST GB-1/2

000000361

SITE INVESTIGATION REPORT FOR UST GB-1/2
SUMMARY OF FINDINGS
for
UNITED STATES NAVAL WEAPONS STATION - EARLE
Colts Neck, Monmouth County, New Jersey

April 10, 1995

Prepared for:

Tom Dunn
ROICC
NWS Earle
Colts Neck, New Jersey

Prepared by:

Enviro-Tech, Inc.
364 Broad Street
Keyport, New Jersey

UST-014
2/91.

FOR STATE USE ONLY

UST # _____
Date Rec'd _____
TMS # _____
Staff _____

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028
Tel. # 609-984-3156
Fax. # 609-292-5604

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

UNDERGROUND STORAGE TANK SITE ASSESSMENT SUMMARY

Under the provisions of the Underground Storage of Hazardous Substances Act in accordance with N.J.A.C. 7:14B

This Summary form shall be used by all owners and operators of Underground Storage Tank Systems (USTS) who have either reported a release and are subject to the site assessment requirements of N.J.A.C. 7:14B-8.2 or who have closed USTS pursuant to N.J.A.C. 7:14B-9.1 et seq. and are subject to the site assessment requirements of N.J.A.C. 7:14B-9.2 and 9.3.

INSTRUCTIONS:

- *Please print legibly or type.*
- *Fill in all applicable blanks. This form will require various attachments in order to complete the Summary. The technical guidance document, Interim Closure Requirements for UST's, explains the regulatory (and technical) requirements for closure and the Scope of Work, Investigation and Corrective Action Requirements for Discharges from Underground Storage Tanks and Piping Systems explains the regulatory (and technical) requirements for corrective action.*
- *Return one original of the form and all required attachments to the above address.*
- *Attach a scaled site diagram of the subject facility which shows the information specified in Item IV B of this form.*
- *Explain any "No" or "N/A" response on a separate sheet.*

Date of Submission _____

0151003
FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

UNITED STATES NAVAL WEAPONS STATION - EARLE
COLTS NECK
County MONMOUTH
Telephone No. 908-866-2048

OWNER'S NAME AND ADDRESS, if different from above

- SAME AS ABOVE -

Telephone No. _____

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found? ___ Yes X No If Yes, Case No._____
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was(were) NOT APPLICABLE

C. Have any vapor hazards been mitigated? ___ Yes ___ No X N/A

III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. C95-0262

The site assessment requirements associated with tank decommissioning are explained in the Technical Guidance Document, **Interim Closure Requirements for UST's**, Section V. A-D. Attach complete documentation of the methods used and the results obtained for each of the steps of tank decommissioning used. Please include a site map which shows the locations of all samples and borings, the location of all tanks and piping runs at the facility at the beginning of the tank closure operation and annotated to differentiate the status of all tanks and piping (e.g., removed, abandoned, temporarily closed, etc.). The same site map can be used to document other parts of the site assessment requirements, if it is properly and legibly annotated.

IV. SITE ASSESSMENT REQUIREMENTS

A. Excavated Soil

Any evidence of contamination in excavated soil will require that the soil be classified as either Hazardous Waste or Non-Hazardous Waste. Please include all required **documentation** of compliance with the requirements for handling contaminated **excavated** soil (if any was present) as explained in the technical guidance documents for closure and corrective action. Describe amount of soil removed, its classification, and disposal location.

B. Scaled Site Diagrams

1. Scaled site diagrams must be attached which include the following information:

   a. North arrow and scale
   b. The locations of the ground water monitoring wells
   c. Location and depth of each soil sample and boring
   d. All major surface and sub-surface structures and utilities
   e. Approximate property boundaries
   f. All existing or closed underground storage tank systems, including appurtenant piping
   g. A cross-sectional view indicating depth of tank, stratigraphy and location of water table
   h. Locations of surface water bodies

C. Soil samples and borings (check appropriate answer)

1. Were soil samples taken from the excavation as prescribed? X Yes ___ No ___ N/A

2. Were soil borings taken at the tank system closure site as prescribed? ___ Yes ___ No X N/A

3. Attach the analytical results in tabular form and include the following information about each sample:
   a. Customer sample number (keyed to the site map)
   b. The depth of the soil sample
   c. Soil boring logs
   d. Method detection limit of the method used
   e. QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed NONE

2. Attach the analytical results of the ground water samples in tabular form. Include the following information for each sample from each well:

   a. Site diagram number for each well installed
   b. Depth of ground water surface
   c. Depth of screened interval
   d. Method detection limit of the method used
   e. Well logs
   f. Well permit numbers
   g. QA/QC Information as required

V. SOIL CONTAMINATION

A. Was soil contamination found? ___ Yes X No
If "Yes", please answer Question B-E
If "No", please answer Question B

B. The highest soil contamination still remaining in the ground has been determined to be:
1. 1,640 ppb total BTEX, 135,993 ppb total non-targeted VOC
2. N/A ppb total B/N, N/A ppb total non-targeted B/N
3. 3,600 ppm TPHC
4. 230 ppb METHYLENE CHLORIDE (for non-petroleum substance)

C. Remediation of free product contaminated soils

1. All free product contaminated soil on the property boundaries and above the water table are believed to have been removed from the subsurface ___ Yes ___ No
2. Free product contaminated soils are suspected to exist below the water table ___ Yes ___ No
3. Free product contaminated soils are suspected to exist off the property boundaries. ___ Yes ___ No

D. Was the vertical and horizontal extent of contamination determined? ___ Yes ___ No ___N/A

E. Does soil contamination intersect ground water? ___ Yes ___ No ___N/A

VI. GROUND WATER CONTAMINATION N/A

A. Was ground water contamination found? ___ Yes ___ No
If "Yes", please answer Questions B-G.
If "No", please answer only Question B.

B. The highest ground water contamination at any 1 sampling location and at any 1 sampling event to date has been determined to be:

1. _____ ppb total BTEX, _____ ppb total non-targeted VOC
2. _____ ppb total B/N, _____ ppb total non-targeted B/N
3. _____ ppb total MTBE, _____ ppb total TBA
4. _____ ppb _____ (for non-petroleum substance)
5. greatest thickness of separate phase product found _____
6. separate phase product has been delineated ___ Yes ___ No ___N/A

C. Result(s) of well search

1. A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. ___ Yes ___ No ___N/A

2. The number of these wells identified is _____ .

D. Proximity of wells and contaminant plume

1. The shallowest depth of any well noted in the well search which may be in the horizontal or vertical potential path(s) of the contaminant plume(s) is _____ feet below grade (consideration has been given for the effects of pumping, subsurface structures, etc. on the direction(s) of contaminant migration). This well is _____ feet from the source and its screening begins at a depth of _____ feet.

2. The shallowest depth to the top of the well screen for any well in the potential path of the plume(s) (as described in D1 above) is _____ feet below grade. This well is located _____ feet from the source.

3. The closest horizontal distance of a private, commercial or municipal well in the potential path of the plume (as determined in D1) is _____ feet from the source. This well is _____ feet deep and screening begins at a depth of _____ feet.

E. A plan for separate phase product recovery has been included. ___ Yes ___ No ___ N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well. ___ Yes ___ No ___ N/A

G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. ___ Yes ___ No

2. The plume is suspected to continue off the property at concentrations greater than MCLs. ___ Yes ___ No

3. Off property access (circle one): is being sought has been approved has been denied

VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:14B-8.3(b) &9.5(a)3]

The person signing this certification as the "Qualified Ground Water Consultant" (as defined in N.J.A.C.7:14B-1.6) responsible for the design and implementation of the site assessment plan as specified in N.J.A.C. 7:14B-8.3(a) & 9.2(b)2, must supply the name of the certifying organization and certification number.

"I certify under penalty of law that the information provided in this document is true, accurate, and complete and was obtained by procedures in compliance with N.J.A.C. 7:14B-8 and 9. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) A. LEE FANKHAUSER SIGNATURE A. Lee Fankhauser

COMPANY NAME ENVIRO-TECH, INC. DATE MARCH 22, 1995
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION STATE OF NEW JERSEY CERTIFICATION NUMBER 0002625

VIII. TANK DECOMMISSIONING CERTIFICATION [person performing tank decommissioning portion of closure plan - N.J.A.C. 7:14B-9.5(a)4]

"I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) STEVEN PIRIGYI SIGNATURE Steven Perigyi

COMPANY NAME CENTRAL PUMP & TANK DATE 6/8/95
(Performer of Tank Decommissioning)

IX. CERTIFICATIONS BY THE RESPONSIBLE PARTY(IES) OF THE FACILITY

A. The following certification shall be signed by the highest ranking individual with overall responsibility for that facility [N.J.A.C. 7:14B-2.3(c)1i].

"I certify under penalty of law that the information provided in this document is true, accurate, and complete . I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) _____ SIGNATURE _____

COMPANY NAME _____ DATE _____

B. The following certification shall be signed as follows [according to the requirements of N.J.A.C. 7:14B-2.3(C)2i]:

1. For a corporation, by a principal executive officer of at least the level of vice president.
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, Federal or other public agency by either the principal executive officer or ranking elected official.
4. In cases where the highest ranking corporate partnership, governmental officer or official at the facility as required in A above is the same person as the official required to certify in B, only the certification in A need to be made. In all other cases, the certifications of A and B shall be made.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) _____ SIGNATURE _____

COMPANY NAME _____ DATE _____

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ATTACHMENT:

UNDERGROUND STORAGE TANK SITE ASSESSMENT SUMMARY

1.0 INTRODUCTION

United States Naval Weapons Station Earle (Earle) is a United States Navy ammunition depot located in Monmouth County, New Jersey. Figure 1 is an annotated United States Geological Survey 7.5 minute series (Marlboro and Long Branch Quadrangles) map showing site location, local topography, drainage, and other features. Figure 2 is a site plan showing site layout, building location, underground storage tank (UST) location, UST designation and other site features.

During the closure of a single 5,000 gallon #2 heating oil UST (designated GB-1) at the Earle facility (TMS C93-5997), a single 1,500 gallon #2 heating oil UST was uncovered who's existance was unaccounted for by Earle personnel. This 1,500 gallon #2 heating oil UST was designated GB-1/2 by Earle as it was the second UST located at building GB-1.

In light of the New Jersey Department of Environmental Protection's (NJDEP's) deadlines regarding UST upgrades, Earle decided to close a single 1,500 gallon #2 heating oil UST (designated GB-1/2) at their facility (UST Registration #0151003).

In February, 1995, Earle submitted an UST Closure Approval Application to the NJDEP for review and on March 15, 1995, Earle was issued TMS # C95-0262 for the closure of UST GB-1/2. A copy of the UST Closure Approval is included in Appendix I.

In November, 1994, Enviro-Tech, Inc. (ETI) of Keyport, New Jersey (NJDEP Closure/Subsurface Evaluation Certification #1300239) was retained by Central Pump & Tank (CP&T) of Freehold, New Jersey (a subcontractor of Tri-State Construction, Inc. [Tri-State] of Fort Washington, Pennsylvania]), the UST removal contractors retained by Earle, to complete the NJDEP's site investigation requirements for the closure of UST GB-1/2. ETI's activities at Earle included the preparation and submission of the UST Closure Plan Approval Application to the NJDEP, the completion of a Site Investigation in accordance with N.J.A.C. 7:26E-3.0, and the preparation and submittion of a Site Investigation Report (SIR) to the NJDEP which would satisfy the requirements of the NJDEP's *Technical Requirements for Site Remediation*.

2.0. SITE INVESTIGATIONS

2.1 UST Decommissioning Activities

UST decommissioning and removal activities were conducted on November 14, 1994 by CP&T. UST decommissioning activities included pumping the UST free of residual product, excavating overlying soils to expose the top of the UST, cutting off the top of the UST to allow access to the tank's interior, and cleaning the interior of the UST with a biodegradable degreaser. A total of approximately 1,500 gallons of residual product and bottom sludge was removed from the

single 1,500 gallon UST present at the facility by Lorco Petroleum of Old Bridge, New Jersey as New Jersey hazardous waste X722 "Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks". The manifest for the residual product and bottom sludge disposal is included in Appendix II.

Following cleaning, the UST was inspected by ETI and CP&T personnel and was determined to be close enough to the footing of building GB-1 at Earle that removal of the tank might cause structural damage to the building. A New Jersey Certified Professional Engineer (NJCPE) reviewed the position of the UST with respect to building GB-1's footing and determined that the UST should be abandoned in-place. The letter certifying the abandonment of UST GB-1/2 is included in Appendix III.

During inspection of the UST, no corrosion holes or pitting was observed within the UST by ETI personnel. Photographs of the UST's location adjacent to building GB-1 at the Earle facility and the excavation created for the UST's abandonment are included in Appendix IV.

2.2 Soil Investigation

On November 14, 1994, ETI personnel (Kenneth W. Braitling-NJDEP UST Certification No.G0001345) was on-site to locate and collect post-excavation soil samples from below the UST in accordance with current NJDEP requirements.

During the abandonment of the UST at the Earle facility, soils removed from above the UST were scanned for "free product contamination" in the field using a Heath Consultants, Inc. *Detecto-Pack III* flame ionization detector (FID) and/or one or more of the following methods:

<u>Method 1 - Soil/Water Agitation</u>

A clear jar was partially filled with the soil/fill sample. Sufficient water was added to saturate the soil and bring the water level to about 1 cm above the soil surface. The jar was sealed, and the sample was agitated by shaking. The jar was then opened to check for the presence of a sheen on the water surface. If a sheen was present, the soils were contaminated by free product. If no sheen was present, the soils were either contaminated with dissolved product or were free of contamination. The presence of a sheen was checked under various lighting conditions and backgrounds since these factors affect the visibility of the sheen.

Method 2 - Field Sorption Method

This method was used to sorb free product from contaminated soils. A sample of the soil/fill was pressed against a brown paper bag for about 10 seconds. Soils contaminated by free product resulted in a "greasy" staining of the bag. The stain is more pronounced with fuel oils than for gasoline.

The FID was calibrated prior to use with 100 parts per million (ppm) methane gas.

During the removal of soil from over the top of UST GB-1/2, no potentially contaminated soil was identified by ETI personnel. Soil removed from over the UST was used as backfill following the the completion of site investigation activities.

Soils underlying the surface in the vicinity of UST GB-1/2 consisted of the following:

0" - 6" Brown medium to fine loamy sand;
6" - 4' White-tan medium to fine sand;

Following the cleaning of the UST, a total of four (4) holes were cut through the base of the UST for the collection of representative soil samples. The soil immediately underlying the UST was noted to consist of white medium to fine sand. No ground water was noted to exist in the soils immediately below the UST.

A total of four (4) representative soil samples (designated GB1-1 through GB1-4) were collected from below the base of the UST from a depth of approximately six (6) feet below grade. Post-excavation soil samples collected from below UST GB-1/2 were submitted to Veritech Environmental and Analytical Services (Veritech), NJDEP Certification #14622, for analysis of total petroleum hydrocarbons (TPH), volatile organic compounds plus ten (10) unknown peaks (VO+10), and total xylene. The TPH analyses were to be completed by the laboratory first. If the TPH results indicated a TPH concentration greater than 1,000 ppm in any of the post-excavation soil samples collected from a single UST excavation, 25% of those samples would be analyzed for VO+10 and total xylene. If the results showed no TPH concentration greater than 1,000 ppm, no additional analyses were to be required.

A chain of custody accompanied post-excavation soil samples from the time of collection to the time they were received by the appointed lab for analyses.

The locations and designations of post-excavation soil samples collected for UST GB-1/2 are included in Figure 3.

Following the collection of representative soil samples from below UST GB-1/2, the UST was filled with the clean excavated soil removed

from over the top of the UST and additional clean fill. Manifests for the clean fill material brought onto the Earle facility to be used as backfill within the UST excavations are included in Appendix V.

3.0 RESULTS

3.1 Chemical Analysis of Soil

A total of four (4) post-excavation soil samples were collected from below the base of UST GB-1/2 from a depth of approximately six (6) feet below grade. Post-excavation soil samples collected from below UST GB-1/2 were designated GB1-1 through GB1-4. Locations and designations of representative soil samples collected below UST GB-1/2 are shown in Figure 3.

The analytical results of the post-excavation soil samples collected from these sample locations indicated that post-excavation soil sample GB1-1 contained a TPH concentration of 3,600 ppm, post-excavation soil sample GB1-2 resulted in a TPH concentration of 58 ppm, post-excavation soil sample GB1-3 resulted in a TPH concentration of 67 ppm, and post-excavation soil sample GB1-4 resulted in a TPH concentration of 67 ppm. The results of the TPH analyses on the soil samples are included in Table 1.

As post-excavation soil sample GB1-1 resulted in a TPH concentration greater than 1,000 ppm, this sample was run for the additional parameters VO+10 and total xylene.

The results of the additional analyses completed on sample GB1-1 indicated detectable concentrations of methylene chloride (230 parts per billion [ppb]), ethylbenzene (340 ppb), and total xylene (1,300 ppb). No additional target VO compounds were reported for this sample. VO tentatively identified compounds (TICs) were reported at a total concentration of 135,993 ppb.

The field blank sample that accompanied the soil samples to the laboratory resulted in a non-detectable concentration of TPH and a detectable concentration of the target VO compound methylene chloride. No other target VO compounds were reported for this sample and VO TICs were reported as non-detectable.

Results of the VO analysis on soil sample GB1-1 are included in Table 2. The laboratory package for the Site Investigation is included in Appendix VI.

4.0 CONCLUSIONS

After reviewing the data collected during Earle's Site Investigation, the following conclusions may be made:

- A single formerly existing heating oil UST at the Earle facility designated as UST GB-1/2 was abandoned in-place;
- No indications of a discharge were observed in the soils overlying the UST;
- As the soil removed from the excavation showed no indication of contamination, the excavated soil was used as backfill within the UST:
- No ground water was observed within the soils underlying the UST;
- None of the four (4) post-excavation soil samples collected from below the base of the UST resulted in a concentration of TPH or VO compounds that exceeded the limits set for impact to ground water within the NJDEP's February 3, 1994 *Soil Cleanup Criteria*;

The Underground Storage Tank Site Assessment Summary is attached with this report.

FIGURES

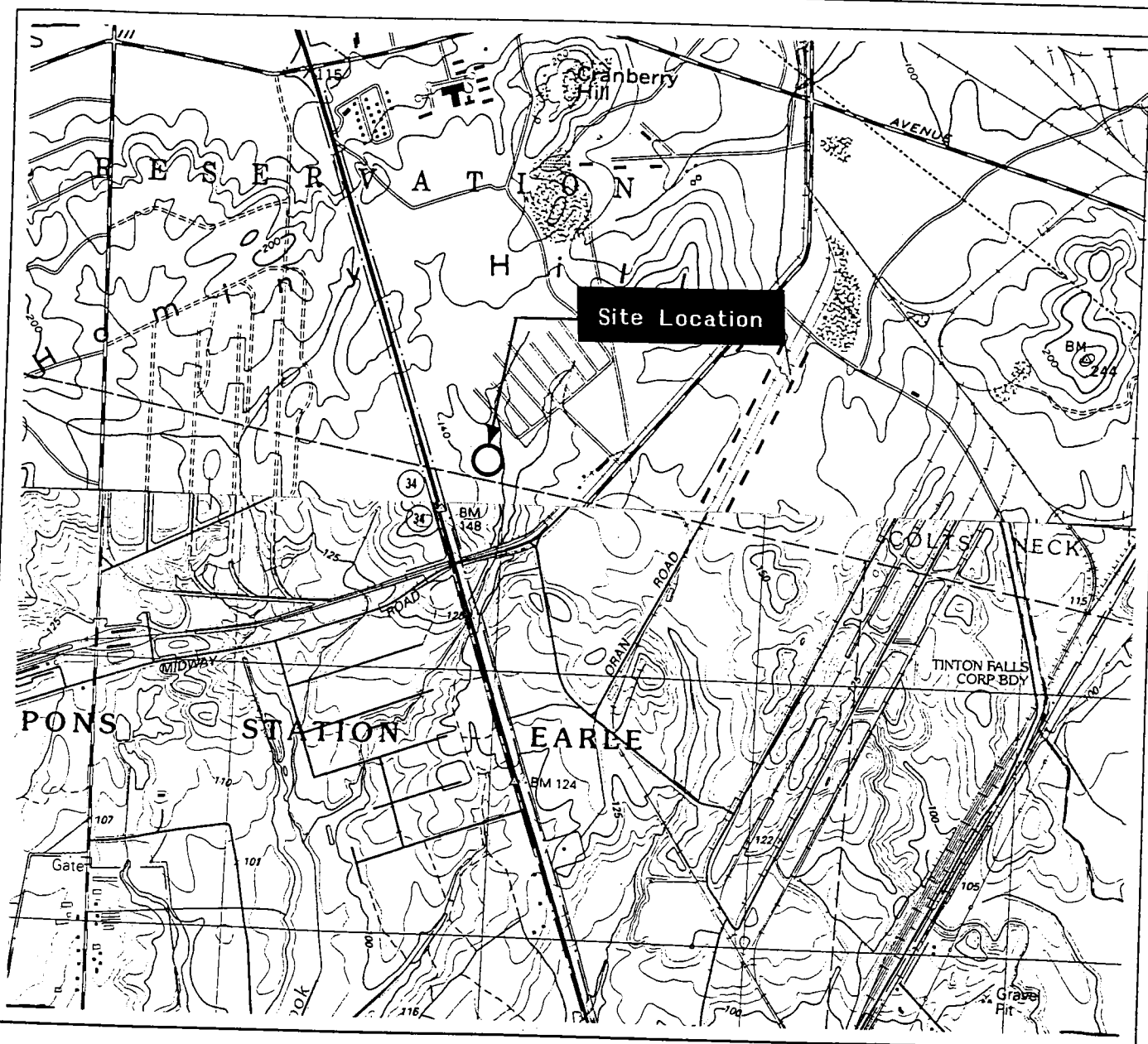


Figure 1

SITE LOCATION PLOT

United States Naval Weapons Station Earle

Colts Neck, Monmouth County, New Jersey

SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

MN GN

12° 213 MILS

0°27' 8 MILS

Enviro-Tech Inc.

364 Broad Street
Keyport, NJ 07735-1619

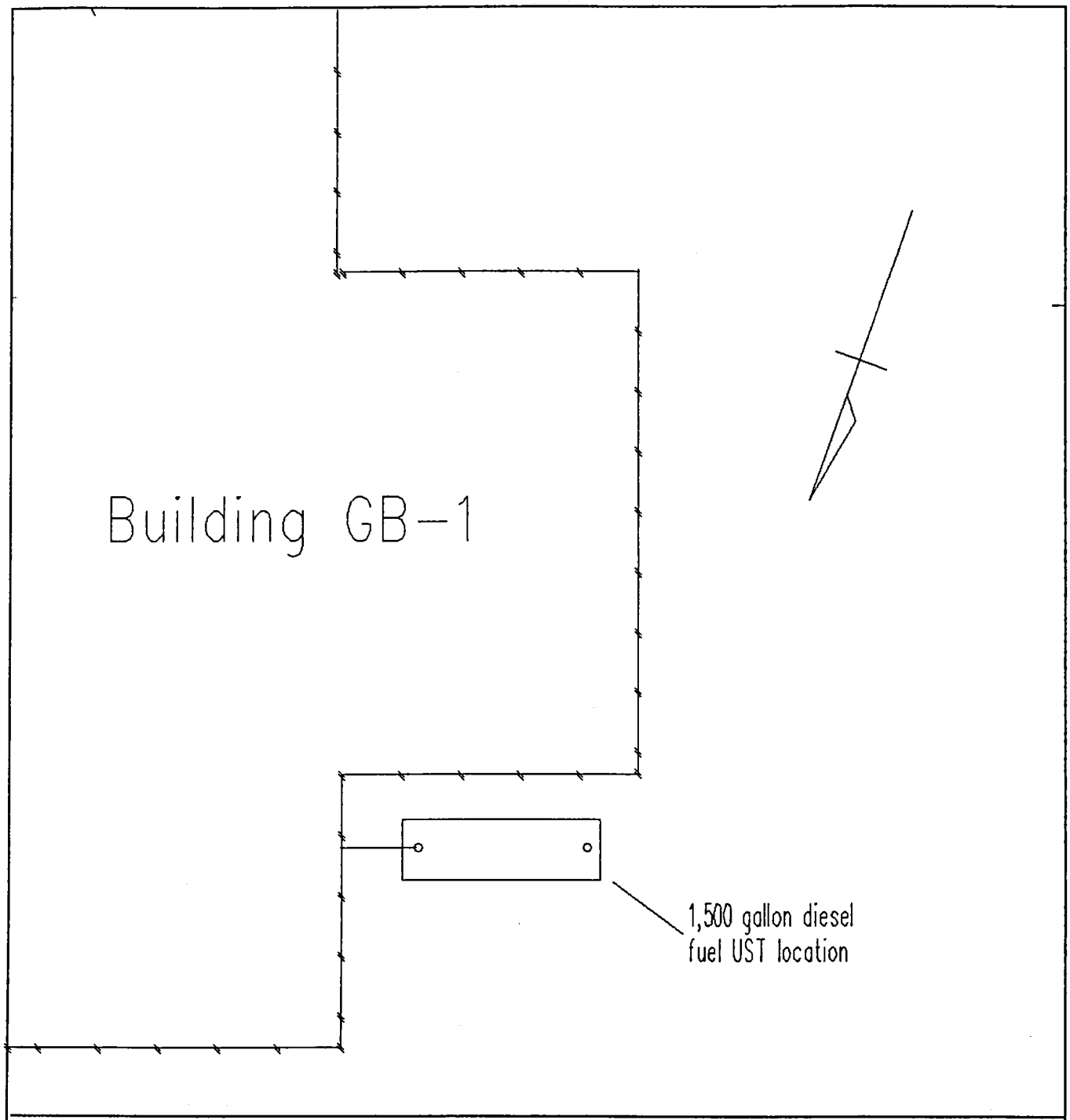


Figure 2

Site Plan

United States Naval Weapons Station Earle

Colts Neck, Monmouth County, New Jersey

Scale: 1" = 10'

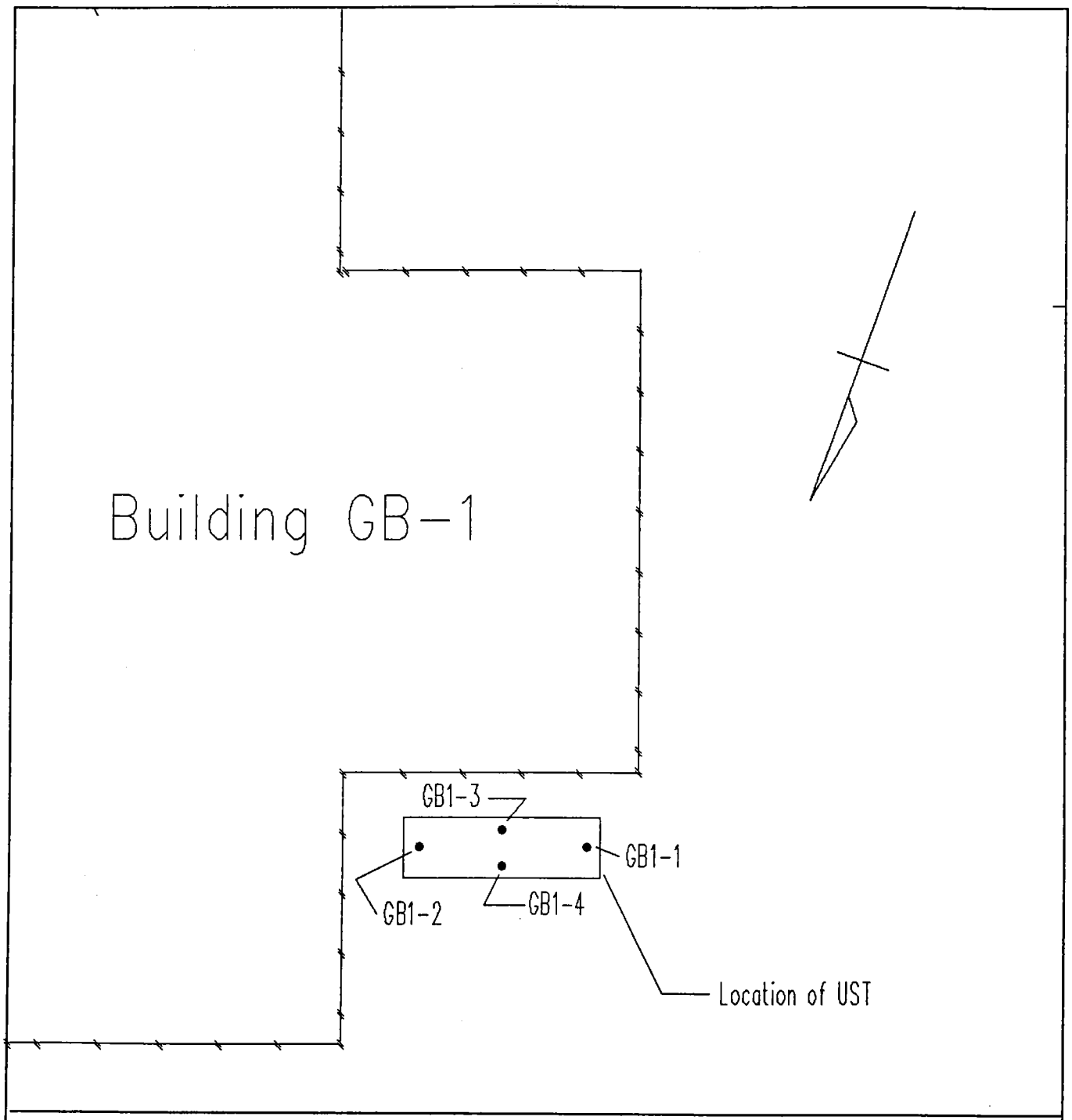


Figure 3

UST Abandonment Soil Sample Locations for UST GB-1/2

United States Naval Weapons Station Earle

Colts Neck, Monmouth County, New Jersey

Scale: 1" = 10'

TABLES

Table 1

SUMMARY OF TPH ANALYTICAL RESULTS FOR UST ABANDONMENT SOIL SAMPLES
United States Naval Weapons Station Earle
Monmouth County, New Jersey

Underground Storage Tank GB-1/2

(November 14, 1994)

SAMPLE #	TPH RESULT (ppm)
GB1-1	3,600
GB1-2	58
GB1-3	67
GB1-4	67

Table 2

SUMMARY OF VO ANALYTICAL RESULTS FOR UST ABANDONMENT SOIL SAMPLES
United States Naval Weapons Station Earle
Monmouth County, New Jersey

Underground Storage Tank GB-1/2

(November 14, 1994)

Soil Sample #'s		GB1-1	FB
VO Compounds (ug/kg)			
Chloromethane	-	ND	ND
Bromomethane	-	ND	ND
Vinyl Chloride	-	ND	ND
Chloroethane	-	ND	ND
Methylene Chloride	-	230J	5
Acetone	-	ND	ND
Trichlorofluoromethane	-	ND	ND
1,1-Dichloroethene	-	ND	ND
1,1-Dichloroethane	-	ND	ND
trans-1,2-Dichloroethane	-	ND	ND
Chloroform	-	ND	ND
1,2-Dichloroethane	-	ND	ND
1,1,1-Trichloroethane	-	ND	ND
Carbon Tetrachloride	-	ND	ND
Bromodichloromethane	-	ND	ND
1,2-Dichloropropane	-	ND	ND
Trichloroethene	-	ND	ND
Dibromochloromethane	-	ND	ND
1,1,2-Trichloroethane	-	ND	ND
Benzene	-	ND	ND
trans-1,3-Dichloropropene	-	ND	ND
2-Chloroethylvinyl ether	-	ND	ND
Bromoform	-	ND	ND
Tetrachloroethene	-	ND	ND
1,1,2,2-Tetrachloroethane	-	ND	ND
Toluene	-	ND	ND
Chlorobenzene	-	ND	ND
Ethylbenzene	-	340J	ND
o-Xylene	-	ND	ND
m/p-Xylenes	-	1,300	ND
1,3-Dichlorobenzene	-	ND	ND
1,2-Dichlorobenzene	-	ND	ND
1,4-Dichlorobenzene	-	ND	ND
Total VO Compounds *	-	1,870	5
Total VO TICs *	-	135,993	ND
Methyl-tert-butyl ether	-	ND	ND
Tert-butyl alcohol	-	ND	ND

Notes: ND = Compound was not detected.
* = "Totals" should be considered estimated values.
J = Compound was detected below the laboratory's PQL.

APPENDIX I

UST CLOSURE APPROVAL FOR GB-1/2

3B-1/2

UNDERGROUND STORAGE TANK SYSTEM CLOSURE APPROVAL

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF FIELD OPERATIONS
CN-028, TRENTON, NJ 08625-0028

TMS # C95-0262 **UST #** 0151003

United States Naval Weapons Station - Earle
Colts Neck, NJ
(Monmouth)

THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14b-1 et. seq:

REMOVAL OF: one 1,500 gallon diesel fuel\oil UST(s); and appurtenant piping.

SITE ASSESSMENT: Conduct a site investigation for the UST(s) and appurtenant piping specified in this approval in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E.

NOTE: The UNDERGROUND STORAGE TANK SERVICES CERTIFICATION ACT, N.J.S.A. 58:10A-24, requires that any service performed on an UST for the purpose of complying with P.L.1986, c.102 be performed by, or under the immediate on-site supervision of, a person certified by the Department for that service. The certified person providing that service must be employed by a business that is also certified by the Department for that service.

ON-SITE MANAGER: A. Lee Fankhauser **TELEPHONE:** 908-566-2277

EFFECTIVE DATE: 03/15/95

THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTIONS AT ALL TIMES.

H. R. Patel (for)
MIKE TOMPKINS, CHIEF
BUREAU OF FIELD OPERATIONS

APPENDIX II

RESIDUAL PRODUCT AND BOTTOM SLUDGE DISPOSAL MANIFEST

LORCO PETROLEUM SERVICES

RD1 Box 5A
Old Bridge, N.J. 08857
(908) 721-0900
Fax (908) 721-0231

STANDARD COLLECTION ORDER FORM

89449

OFFICE USE ONLY

GENERATOR/LOCATION

NAME: Earle
INFORMATION/ATTENTION LINE: RT. 34
ACCOUNT APPROVAL CODE:
DELIVERY ADDRESS: Colts Neck NJ
CITY:
STATE:
ZIP:
PHONE NUMBER:
PURCHASE ORDER NUMBER:
USA EPA ID NO. (IF APPLICABLE):
STATE ID NO.:

BILL TO (IF DIFFERENT FROM LOCATION)

NAME: Central Pump + Tank
INFORMATION/ATTENTION LINE:
ACCOUNT APPROVAL CODE:
DELIVERY ADDRESS:
CITY:
STATE:
ZIP:
PHONE NUMBER:
PURCHASE ORDER NUMBER:
MANIFEST NUMBER: NJH 201232

SHIPPING INFORMATION

This is to certify that the below named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

NO.	TYPE	QTY.	UNIT	US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	SALES REPRESENTATIVE

SERVICE SECTION

SALES CODE	DESCRIPTION	WASTE CODE	QUANTITY	UNIT OF MEASURE	PRICE	TAX	LINE TOTAL
40500	USED OIL REMOVAL						
40501	OIL WATER DISPOSAL	X722	1500	GALLONS			
40502	SLUDGE DISPOSAL						
41000	NON HAZARDOUS DISPOSAL						
41001	RCRA WASTE DISPOSAL						
41500	VAC TRUCK & OPERATOR	9:30 AM	-1:30 P.M				
41501	DRUM DISPOSAL						
41502	SEPARATOR CLEANING						
41503	QAQC ANALYTICAL TESTING						
41504	TANK CLEANING						
41505	CONFINED SPACE ENTRY						
42000	MANIFEST PROCESSING FEE						
42001	DEXSIL TEST KIT						

Pumped out Tank

TOTAL

CHARGE MY ACCOUNT FOR THIS TRANSACTION UNLESS OTHERWISE INDICATED IN THE PAYMENT SECTION. $

INVOICES REFLECTING CHARGES TO CUSTOMER ARE SUBJECT TO AN INTEREST RATE OF THE LESSER OF 1½% PER MONTH (18% PER ANNUM) OR THE MAXIMUM RATE ALLOWED BY LAW ON ANY INVOICES THAT ARE NOT PAID WITHIN 30 DAYS. IN THE EVENT OF DEFAULT, LORCO SHALL BE ENTITLED TO RECOVER COSTS OF COLLECTION, INCLUDING REASONABLE ATTORNEY'S FEES.

GENERATOR WARRANTS AND REPRESENTS THAT THE MATERIALS PROVIDED LORCO HEREUNDER HAVE NOT BEEN MIXED, COMBINED, OR OTHERWISE BLENDED IN ANY QUANTITY WITH MATERIALS CONTAINING POLYCHLORINATED BIPHENYLS (PCB) OR ANY OTHER MATERIAL DEFINED AS HAZARDOUS WASTE UNDER APPLICABLE LAWS, INCLUDING BUT NOT LIMITED TO 40 CFR PART 261. GENERATOR AGREES TO INDEMNIFY AND HOLD LORCO HARMLESS FOR ANY DAMAGES, COSTS, ATTORNEY'S FEES, ETC. ARISING OUT OF OR IN ANY WAY RELATED TO A BREACH OF THE ABOVE WARRANTY BY THE GENERATOR.

Generator certifies that the waste is X722
In accordance the N.J.A.C. 7:26-12.1 et seq, LORCO has the required permits to accept the above described waste.

PETER CLARK
Print Name

11/14/91
Signature — Date

GENERATOR/CUSTOMER

SMALL QUANTITY GENERATOR CERTIFICATION

I certify that my hazardous waste streams total less than 220 pounds (100 kg) for this calendar month and that I am not required to use an EPA identification number.

GENERATOR'S SIGNATURE

LARGE QUANTITY GENERATOR CERTIFICATION

DEXSIL CDT TEST RESULTS

_____ PPM

PAYMENT RECEIVED SECTION

CASH ☐	TOTAL RECEIVED
CHECK NUMBER	

PAYMENT MADE SECTION

PAYMENT METHOD	PAYMENT AMOUNT
CASH ☐ CHECK ☐	

RECEIVED BY

CUSTOMER'S SIGNATURE

In accordance with 40 CFR 266 § 43(5) LORCO has notified the US EPA of its location and used oil management activities.

Chuck Clayton
Print Name

11/14/91
Signature — Date

LORCO REPRESENTATIVE

APPENDIX III

UST ABANDONMENT CERTIFICATION

ENERGISTICS, INC.

1050 HWY. 35, SUITE 107 SHREWSBURY, N.J. 07702
TEL 908 775 4024 FAX 908 775 4011
ENERGY EFFICIENCY SERVICES

February 7, 1995

Mr. Ken Braitling
Enviro-Tech, Inc.
364 Broad Street
Keyport, New Jersey 07735-1619

Re: United States Naval Weapons Station - Earle
Colts Neck, Monmouth County, New Jersey
UST GB-1/2 Closure/Abandonment

Dear Mr. Braitling,

I have reviewed the job site information concerning the above referenced job sites. A single 1,500 gallon single walled steel underground storage tank (UST), used for the storage of #2 heating oil, was exposed in a single excavation. The depth to the top of the UST was approximately two (2) feet below the surface and the UST measured four (4) feet in diameter. Following removal of soil overlying the UST, it was noted the UST was close enough to building GB-1 that removal of the UST would potentially threaten the footing of the building.

Therefore, I am certifying that within the New Jersey Administrative Code, Title 7, Environmental Protection, Chapter 4B, Underground Storage Tank Systems and Closure of Underground Storage Tank Systems, Section 7:14B-9.1(D)2, that the UST designated GB-1/2 may be abandoned in-place. The UST is precariously close to the footing of building GB-1 and removal of the UST could cause damage to the building.

Please feel free to contact me with any questions.

Sincerely,

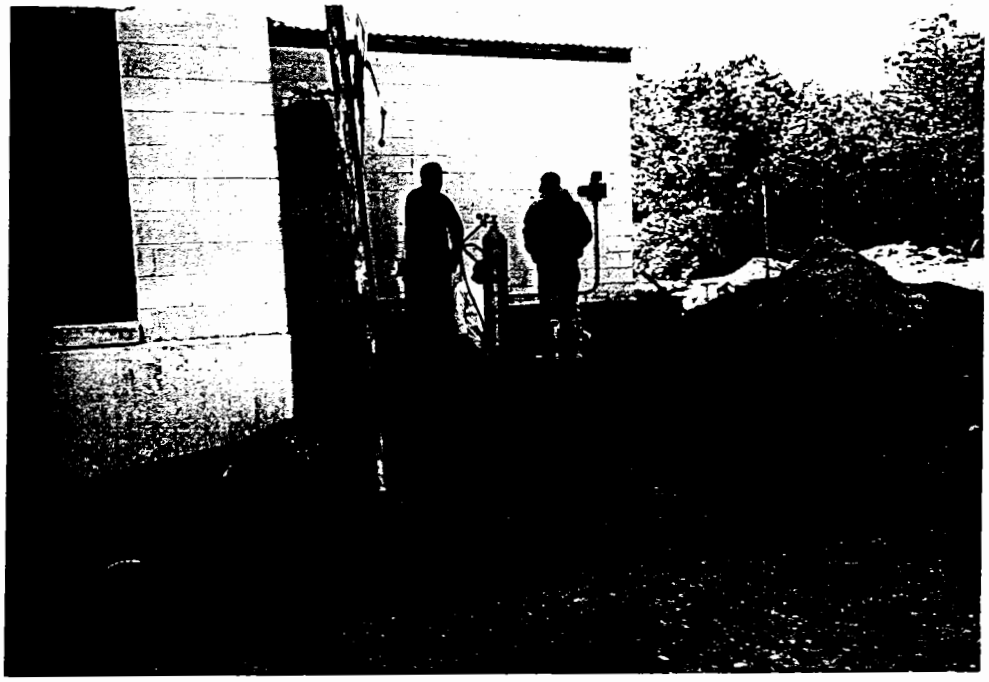
John F. Hyfantis

John F. Hyfantis, P.E.

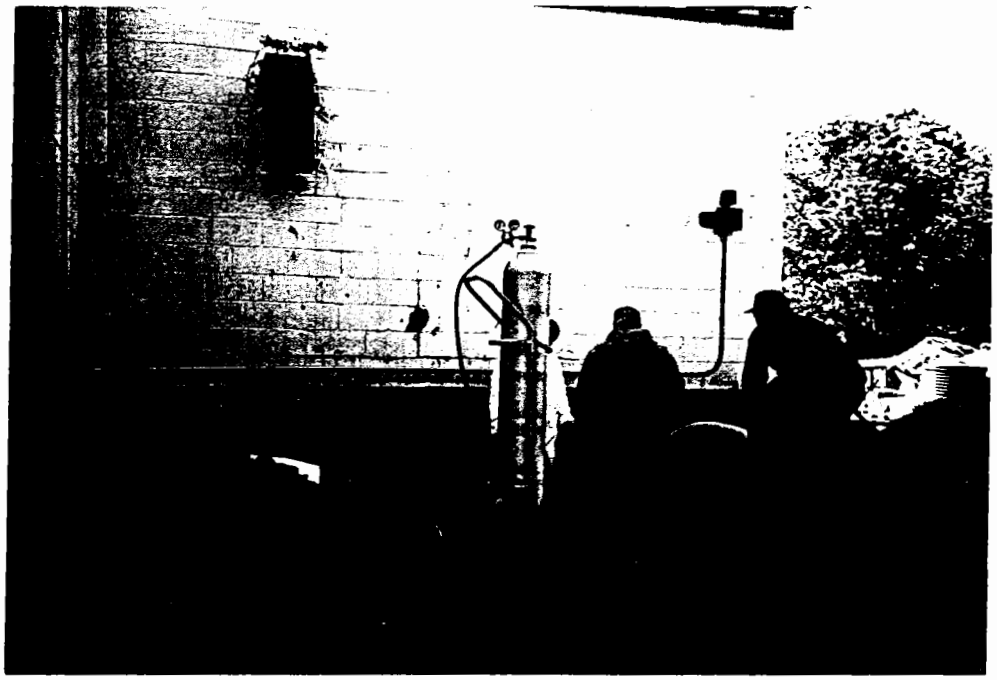
APPENDIX IV

SITE PHOTOGRAPHS

SITE PHOTOGRAPHS
United States Naval Weapons Station Earle
Colts Neck, Monmouth County, New Jersey



View of UST GB-1/2 showing proximity of UST to building GB-1.



View of UST during cleaning and prior to sample collection.

APPENDIX V

CLEAN FILL MANIFESTS

CENTRAL PUMP & TANK
SERVICE CORP.

April 5, 1995

Clean Fill Certification
For: Naval Weapons Station Earle

To Whom it May Concern,

In regards to the fill material that was used at location GB 1-2 (abandonment in place 1,500 gal. tank) the fill was purchased from Millington Quarry and to the best of our knowledge is clean material.

Sincerely,

Tom Bullaney
for Central Pump & Tank

Central Pump & Tank

360 Fairfield Road • Freehold, New Jersey 07728 • (908) 780-5113 • FAX: (908) 780-5277

APPENDIX VI

LABORATORY ANALYTICAL DATA

GB-1

veritech

Division of Hampton-Clarke, Inc.

environmental and analytical services

ENVIRO-TECH, INC.

NJDEPE REDUCED PKG

PROJECT: EARL NAVAL BASE

LAB # AA27343-AA27347

NJDEPE Cert. #14622, CT Cert. #PH0671
PADER Cert. #68-463, MA Cert. #NJ386
NYDOH Cert. #11408, NC Cert. #455

47 Carey Avenue • Butler, NJ 07405
Phone: (201) 492-8744 Fax: (201) 492-1815

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SAMPLE KEY

ENVIRO-TECH NO.	VERITECH NO.
GB1-1	AA27343
GB1-2	AA27344
GB1-3	AA27345
CB1-4	AA27346
FIELD BLANK	AA27347

Enviro-Tech Inc.

CHAIN-OF-CUSTODY RECORD

SAMPLER: (Signature) Kenneth W Braitling
Phone (908) 566-2277
Date Shipped
Airbill No.
Carrier
Cooler No.

SHIP TO:
VERITECH

ATTENTION:

SEND RESULTS TO:
Client Name Kenneth Braitling
Company Enviro Tech
Address 247 Main St
Matawan NJ
Phone (908) 566-2277

PROJECT NAME Earle Naval Base **PROJECT NO.** GB1 1500 gal **P.O. NO.**

Relinquished by: (Signature)	Received by: (Signature)	Date	Military Time
Kenneth W Braitling	[illegible]	11/15/94	0900
Relinquished by: (Signature)	Received by: (Signature)	Date	Military Time
[illegible]	A. Shami	11/15/94	1020
Relinquished by: (Signature)	Received at lab by: (Signature)	Date	Military Time
Relinquished from lab by: (Signature)	Received by: (Signature)	Date	Military Time

ANALYSIS REQUEST

	Sample ID Number	Sample Description	Date/Time Sampled	Analysis Requested		Sample Condition Upon Receipt
2	GB1-1	Soil	11/14/94 12:00	* TPHC	AA27343	Cool
2	GB1-2	Soil	12:15		27344	
	GB1-3	Soil	12:30		27345	
2	CB1-4	Soil	1245		27346	
2	Field Blank	Aquaeous.	—	*	27347	Perc.
2						

Special Instructions/Comments: If over 1,000 PPM of TPHC. Call for additional parameters & approval.

NOTE: UNUSED PORTIONS OF NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Expected Analytical T.A.T.'s: ____ Immediate Attention (200% surcharge) ____ RUSH (50-100% surcharge) ____ Standard

Sample Custodians Chain of Custody

HAMPTON-CLARKE, INC.
VERITECH LABORATORY
47 CAREY AVE., BUTLER, NJ 07405

CONDITION UPON RECEIPT

Date RECEIVED NOV 15 1994 Filed by A. S

Proj. Name ENVIRO Lab Sample No(s) AA27343 – 47

CONDITION (Check Applicable Items)

____(1) Not enough sample sent for analysis

____(2) Sample(s) received broken or leaking

____(3) Illegible sample number(s) ,or label(s) missing from bottles(s)

____(4) Numbers on sample(s) do not correspond to information on chain-of-custody

____(5) No chain-of-custody record submitted

____(6) Custody seals missing or broken

____(7) Holding time(s) exceeded upon receipt
(List parameters_____)

____(8) Samples received without proper refrigeration when deemed necessary

____(9) Samples received with proper preservation

✓(10) Other(Specify) Temp 1C°

_____

veritech

Division of Hampton-Clarke, Inc.

environmental and analytical services

INTERNAL CHAIN OF CUSTODY RECORD

REMOVED FROM

PARAMETER	SAMPLE NO.	COLDBOX NO.	DATE	TIME	SIGNATURE
TPH	27236, 237	Metals	11/14	11:30	MGWA
Pesticides	27187 EFI	Back Room	11/14	11:35	Tracy Crane
TCLP	27208 27209	3	11-14	1:29	G. Scott
↓	27210 27177	↓	↓	↓	↓
↓	27197 27191	↓	↓	↓	↓
Soil	27238 27239 27240	3	11-14	1:45	A. Olechowski
TCLP	EFI, 27197	Back Room	11-15	9:00	A. Olechowski
Density	27116	3	11/14	2:00	Martin V. Cirelli
ICP-WI	27208, 27209 EFI	Back Room	11-16	8:15	G. Scott
↓	27210, 27202	↓	↓	↓	↓
↓	27187 27191	↓	↓	↓	↓
TPH, % solid	27343-46	3	8:30	11/16	Dan Batelle
% solid	27331-27339	3	8:30	↓	"
TOX, % solid, Tg pH, Reactivity	27340	3	8:30	↓	"
Pot-pH	27330 40	Wet lab	9:00	11/16	Tracy Crane
TH-WI-WI	26414 27247-27202	3	[illegible]	[illegible]	[illegible]
↓	27197-27209	↓	↓	↓	↓
TPH Pesticides	27342	Sample Prep	11:00	11/16	Tracy Crane
TCLP	27340	Wet-lab	11-16	5:20	[illegible]
PCBs	27343, 27340	3	"	5:27	[illegible]
% solid, TPH	27348-53, 62-63, 80-84, 87-90	3	11/17	8:00	Dan Batelle
TPH	27331-38	3	11/17	8:15	A. Olechowski

RETURNED TO

PARAMETER	SAMPLE NO.	COLDBOX NO.	DATE	TIME	SIGNATURE
TPH	27236-237	3 / done	11/14	11:55	MGWA
Pesticides / TPH	27187	/ ~~[illegible]~~	~~11/14~~	~~12:00~~	~~Tracy Crane~~
Pest	27187 EFI	Done	11/14	12:00	Tracy Crane
Soil	27238, 27239 27240				
TCPL	27208, 27209	3	11-14	1:47	D Scott
	27210 27177	↓	↓	↓	↓
	27202 27191	↓	↓	↓	↓
TCLP	EFI, 27197	Back Room	11-15	9:15	A. Olechowski
Density	27116	3	11/14	2:30	Martin V. Cirelli
TCLP-EXT	27208, 27209	Back Rm	11-15	5:30	G. Scott
	27210 27177	↓	↓	↓	↓
	27202 27191	↓	↓	↓	↓
	EFI 27187	↓	↓	↓	↓
PCB	27340	3	11-16	9:15	A. Olechowski
TPH	27342	3	11-16	11:20	A. Olechowski
PCB/TPH	27340	3	11/16	1:45	Tracy Crane
TCLP	27340	3	11-16	4:15	A. Olechowski
TH-WI-WG	26414, 27247-27202	3	11/16	4:20	A. Olechowski
TPH, % solid	27343-46	3	11/16	4:45	Dan Batelle
% solid	27331-27335	3	11/16	4:45	Dan Batelle
TOX, % solid, Ig, pH	27340	3	11/16	4:45	Martin V. Cirelli
TPH	27331-38	5	11/17	9:15	A. Olechowski

47 Carey Avenue • Butler, NJ 07405

Phone: (201) 492-8744 Fax: (201) 492-1815

VERITECH INTERNAL CHAIN OF CUSTODY RECORD
REFRIGERATOR NO 2

PARAMETER & FROM/TO REFRIG	SAMPLE NUMBER	DATE OUT	TIME OUT	DATE IN *	TIME IN *	SIGNATURE
GC/MS	17379, 17381, 17187 TCLP ext.	11/15/94	5:33	11/15/94	5:49	
	17311 ~ 17314, 17193, 17194	"	6:19			
	17197, 17198					
"	17311 ~ 17314	11/16/94	10:23			
"	17187 TCLP ext.	"	4:27			
"	17358, 17304 ~ 17306, 17307,	"	6:11	11/16/94	6:29	
"	17343, 17358	"	8:04	"	7:09	
"	17341, 17365	11/17/94	4:41	11/17/94	5:01	
"	17331 ~ 17335	"	5:10	"	5:22	
"	17326 ~ 17340, 17341, 17379	"	6:11	"	6:46	
"	17331, 17333, 17340	11/18/94	3:01	11/18/94	3:20	
"	17406, 17191 ~ 17196	"	3:52			
"	17347, 17361	"	5:10			X
"	17343, 17354 ~ 17360, 17339	"	5:49	11/18/94	6:22	
	17340					
"	17389 ~ 17396	"	6:49			
"	17343, 17356 ~ 17360	11/20/94	3:09	11/20/94	3:28	X
"	17378, 17379	"	3:19			
"	17391 ~ 17399	"	4:01	11/21/94	4:28	
"	17389, 17391 ~ 17394	11/22/94	4:33			
"	17368 ~ 17377	"	4:50			
"	17394, 17368, 17371, 17373, 17377	11/21/94	10:45			
"	17378	"	3:22	11/21/94	3:19	
"	17400	"	6:30			
"	17339, 17342, 17383, 17394, 17397, 17398	"	6:19	11/21/94	6:44	
"	17435 ~ 17443	"	6:50	"	7:19	
"	17397 ~ 17403	11/22/94	2:03			
"	17339, 17340, 17342, 17393, 17397	"	5:14	11/22/94	5:52	
"	17447 ~ 17456	"	6:19	"	6:40	
"	17403	"	7:07			
"	17340, 17341, 17455 ~ 17457	11/23/94	3:19	11/23/94	3:26	
"	17386, 17403 ~ 17405	"	3:33			
"	17401 ~ 17412, 17460	"	5:19			
"	17448, 17449, 17457, 17456	"	6:01	11/23/94	6:22	
	17435, 17436, 17439					
"	17458, 17459, 17394	"	6:15	"	6:39	
"	17549 ~ 17553	"	6:28			
"	17610, 17458, 17444 ~ 17446	11/28/94	3:19	11/28/94	3:33	
"	17408 ~ 17410, 17412, 17550	"	3:22			
"	17443, 17451, 17453, 17454, 17459	"	6:08	11/28/94	6:10	

COMMENTS: * Aqueous samples are not logged back into the refrigerator

SAMPLE PROGRESS REPORT

Veritech (Hampton Clarke)
Date: 11-30-1994 Time: 18:24:30

Sample I.D. AA27343
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARL
CONTAIN: 2

Date collected: 11/14/94
Date submitted: 11/15/94
Due date: 11/28/94
Specification checking: off
Descript: GB1-1 SOIL

COL.DATE: 11/14/94

Analysis	Result	Unit	Finished	Anl
%SOLIDS	83	PERCENT	11/16/94	MC
TPH-SOIL	3600	mg/kg dry wt	11/16/94	MC
TPH EXTRACTION	Completed		11/16/94	MC
VOLATILES + 10	Completed	ATTACHED	11/20/94	YS

End of progress report on sample: AA27343

SAMPLE PROGRESS REPORT

Veritech (Hampton Clarke)
Date: 11-30-1994 Time: 18:24:31

Sample I.D. AA27344
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARL
CONTAIN: 2

Date collected: 11/14/94
Date submitted: 11/15/94
Due date: 11/28/94
Specification checking: off
Descript: GB1-2 SOIL

COL.DATE: 11/14/94

Analysis	Result	Unit	Finished	Anl
%SOLIDS	89	PERCENT	11/16/94	MC
TPH-SOIL	58	mg/kg dry wt	11/16/94	MC
TPH EXTRACTION	Completed		11/16/94	MC

End of progress report on sample: AA27344

SAMPLE PROGRESS REPORT

Veritech (Hampton Clarke)
Date: 11-30-1994 Time: 18:24:31

Sample I.D. AA27345
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARL
CONTAIN: 2

Date collected: 11/14/94
Date submitted: 11/15/94
Due date: 11/28/94
Specification checking: off
Descript: GB1-3 SOIL

COL.DATE: 11/14/94

Analysis	Result	Unit	Finished	Anl
%SOLIDS	80	PERCENT	11/16/94	MC
TPH-SOIL	67	mg/kg dry wt	11/16/94	MC
TPH EXTRACTION	Completed		11/16/94	MC

End of progress report on sample: AA27345

SAMPLE PROGRESS REPORT

Veritech (Hampton Clarke)
Date: 11-30-1994 Time: 18:24:32

Sample I.D. AA27346
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARL
CONTAIN: 2

Date collected: 11/14/94
Date submitted: 11/15/94
Due date: 11/28/94
Specification checking: off
Descript: GB1-4 SOIL

COL.DATE: 11/14/94

Analysis	Result	Unit	Finished	Anl
%SOLIDS	85	PERCENT	11/16/94	MC
TPH-SOIL	67	mg/kg dry wt	11/16/94	MC
TPH EXTRACTION	Completed		11/16/94	MC

End of progress report on sample: AA27346

SAMPLE PROGRESS REPORT

Veritech (Hampton Clarke)
Date: 11-30-1994 Time: 18:24:33

Sample I.D. AA27347
Status: Complete and inactive
Priority: 24 HR TA
Deliverables: REDUCED
Client ID: ENVIRO
Project Account Code: EARL
CONTAIN: 3

Date collected: 11/14/94
Date submitted: 11/15/94
Due date: 11/28/94
Specification checking: off
Descript: FIELD BLANK

COL.DATE: 11/14/94

Analysis	Result	Unit	Finished	Anl
pH (VOA VIALS)	<2	UNITS	11/15/94	AS
VOLATILES + 10	Completed	ATTACHED	11/18/94	FB

End of progress report on sample: AA27347

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

CLIENT: ENVIRO PROJECT: EARL
ANALYSIS: VOLATILE

	NO	YES
1. GC/MS Tune Specifications		
a. BFB passed	___	_X_
b. DFTPP passed	___	___
2. GC/MS Tuning Frequency - performed every 12 hours	___	_X_
3. GC/MS Calibration - Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 12 hours before sample analysis.	___	_X_
4. GC/MS Calibration Requirements		
a. Calibration Check Compounds	___	_X_
b. System Performance Check Compounds	___	_X_
5. Blank Contamination - List compounds for each fraction		
a. VOA Fraction ___		
b. B/N Fraction ___		
c. Acid Fraction ___		
6. Surrogate Recoveries Meet Criteria (If not met; list those compounds and their recoveries which fall outside the acceptable range)	___	_X_
a. VOA Fraction ___		
b. B/N Fraction ___		
c. Acid Fraction ___		
7. Extraction Holding Time Met	___	___

Comments: ___

8. Analysis Holding Time Met ___ _X_

Comments: ___

Additional Comments: ___

Organics Director ___ Date: 11/30/94

WET CHEMISTRY ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		No	Yes
1.	Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank:	_X_	___
2.	Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)	___	_X_
3.	IR Spectra submitted for all standards, blanks, & samples	___	_X_
4.	Chromatograms submitted for all standards, blanks, & samples if GC fingerprinting was conducted	___	___
5.	Extraction Holding Time Met	___	_X_
	If not met, list number of days exceeded for each sample:		
6.	Analysis Holding Time Met	___	_X_
	If not met, list number of days exceeded for each sample:		

Additional Comments: _____

QA/QC Director: Deborah A. Kellen Date: 11/17/94

METHOD REFERENCES

Volatile Organics (Soils) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Method 8240.

Volatile Organics (Waters) - Federal Register, 40 CFR Part 136, October 26, 1984, Method 624.

TCLP Volatile Organics - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Methods 1311 and 8240.

Volatile Organics (Drinking Waters) - Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, Revision 3, 1989, Method 524.2.

Semivolatile Organics (Soils) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Methods 3550 and 8270.

Semivolatile Organics (Waters) - Federal Register, 40 CFR Part 136, October 26, 1984, Method 625.

TCLP Semivolatile Organics - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Methods 1311, 3510 and 8270.

Pesticides (Soils) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Methods 3550 and 8080.

Pesticides (Waters) - Federal Register, 40 CFR Part 136, October 26, 1984, Method 608.

TCLP Pesticides - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Methods 1311, 3510 and 8080.

TCLP Herbicides (Waters) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Methods 1311 and 8150.

PCB's (Soils) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Methods 3550 and 8080.

PCB's (Waters) - Federal Register, 40 CFR, Part 136, October 26, 1984, Method 608.

PCB's (Oils) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Methods 3580 and 8080.

Total Metals (Soils) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition. Methods 3020 or 3050 are used for digestion. All ICP metals are analyzed using Method 6010. Antimony, arsenic, cadmium, molybdenum, selenium and thallium are analyzed by Methods 7041, 7060, 7131, 7481, 7740 and 7841 respectively. Mercury is analyzed using the Inorganic Statement of Work, Contract Laboratory Program, Revision 2.1.

TCLP Metals - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Method 1311 followed by Method 3020 for digestion and the individual parameter methods listed above in the Total Metals (Soils) section.

ICP Metals (Waters) - Methods for the Determination of Metals in Environmental Samples, EPA/600/4-91/010, June 1991, Revision 3.3, Method 200.7.

GFAA Metals & Mercury (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983. Antimony, arsenic, cadmium, lead, molybdenum, selenium, thallium and tin are analyzed using Methods 204.2, 206.2, 213.2, 239.2, 246.2, 270.2, 279.2 and 282.2 respectively. Mercury is analyzed using Method 245.1.

Cyanide (Soils) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Method 9010.

Cyanide (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 335.2.

Phenols (Soils) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Method 9065.

Phenols (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 420.1.

TPH (Soils & Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 418.1 for waters and modified 418.1 for soils using a soxhlet extraction with freon prior to analysis.

Hexavalent Chromium (Soils & Waters) - Test Methods for Evaluating Solid Waste, SW-846, Second and Third Editions, Methods 3060 and 7196A.

pH (Soils) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Method 9040.

pH (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 150.1.

Reactive Cyanide - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Chapter Seven, Section 7.3, Reactivity.

Reactive Sulfide - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Chapter Seven, Section 7.3, Reactivity.

Ignitability - Test Methods for Evaluating Solid Waste, SW-848, Third Edition, Chapter Seven, Section 7.1, Ignitability.

Flashpoint - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Method 1010.

Conductance (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 120.1.

Residue, Filterable (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 160.1.

Residue, Non-Filterable (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 160.2.

Residue, Total (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 160.3.

Chloride (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 325.3.

Chloride (Soils) - Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Method 9252.

Sulfide (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 376.1.

Chemical Oxygen Demand (Waters) - Hach Chemical Company, Method 8000.

Oil & Grease (Waters) - Methods for the Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, Method 413.1.

TOX (Waters & Soils) - American Society for Testing & Materials (ASTM), D2361-91, June 1991.

2,3,7,8 - TCDD/TCDF - Modified Contract Laboratory Program Statement of Work, November 1992.

VERITECH

47 CAREY AVE., BUTLER, NJ 07405

CT. NO: PH-0671
MADEP NO: NJ386
PADER NO: 68-463
NJDEPE NO: 14622
NYDOH NO: 11408

REPORT OF ANALYSIS

TO: ENVIRO-TECH, INC.
247 MAIN ST.
MATAWAN, NJ 07747-3222
(908) 566-2277

Date Collected: 11/14/94
Date Submitted: 11/15/94
Date Reported: 11/30/94
Project: EARL

Sample I.D.		AA27343		AA27344	
Sample Description		GB1-1 SOIL		GB1-2 SOIL	
Analyte	**Units**	**MDL**	**Result**	**MDL**	**Result**
%SOLIDS	PERCENT	1.0	83	1.0	89
TPH-SOIL	mg/kg dry wt	240	3600	22	58
VOLATILES + 10	ATTACHED		Completed		

Sample I.D.		AA27345		AA27346	
Sample Description		GB1-3 SOIL		GB1-4 SOIL	
Analyte	**Units**	**MDL**	**Result**	**MDL**	**Result**
%SOLIDS	PERCENT	1.0	80	1.0	85
TPH-SOIL	mg/kg dry wt	25	67	24	67
VOLATILES + 10					

Sample I.D.		AA27347	
Sample Description		FIELD BLANK	
Analyte	**Units**	**MDL**	**Result**
%SOLIDS			
TPH-SOIL			
VOLATILES + 10	ATTACHED		Completed

This report is a true report of results obtained from our tests of this material. In lieu of a formal contract document, the total aggregate liability of Veritech to all parties shall not exceed Veritech's total fee for analytical services rendered.

Stanley Gilewicz

Stanley Gilewicz / Laboratory Director

HAMPTON-CLARKE/VERITECH
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID :
Date Rcvd/Extd:
Sample Matrix : Water
Percent Solid : 0
Column : J&W DB-624 75M .53mm ID column

Lab Sample No. : DAILY BL
Lab File ID : >53736
Date Analyzed : 11/18/94
Dilution Factor: 1
Sample Wt/Vol : 5.0ml

CONCENTRATION UNITS: UG/L (PPB)

CAS No.	COMPOUND	PQL	CONC
74873	Chloromethane	10	U
74839	Bromomethane	10	U
75014	Vinyl Chloride	5	U
75003	Chloroethane	10	U
75092	Methylene Chloride	2	U
67641	Acetone	20	U
75150	Carbon Disulfide	5	U
75694	Trichlorofluoromethane	5	U
75354	1,1-Dichloroethene	2	U
75343	1,1-Dichloroethane	5	U
156605	Trans-1,2-Dichloroethene	5	U
67663	Chloroform	5	U
107062	1,2-Dichloroethane	2	U
78933	2-Butanone	25	U
71556	1,1,1-Trichloroethane	5	U
56235	Carbon Tetrachloride	2	U
108054	Vinyl Acetate	10	U
75274	Bromodichloromethane	1	U
78875	1,2-Dichloropropane	1	U
10061015	cis-1,3-Dichloropropene	5	U
79016	Trichloroethene	1	U

CAS NO.	COMPOUND	PQL	CONC
124481	Dibromochloromethane	5	U
79005	1,1,2-Trichloroethane	7	U
71432	Benzene	1	U
10061026	Trans-1,3-Dichloropropene	5	U
110758	2-Chloroethylvinylether	10	U
75252	Bromoform	4	U
108101	4-Methyl-2-Pentanone	25	U
591786	2-Hexanone	20	U
127184	Tetrachloroethene	1	U
79345	1,1,2,2-Tetrachloroethane	2	U
108883	Toluene	5	U
108907	Chlorobenzene	4	U
100414	Ethylbenzene	5	U
100425	Styrene	5	U
108383	m&p-Xylenes	5	U
95476	o-Xylene	5	U
541731	1,3-Dichlorobenzene	5	U
95501	1,2-Dichlorobenzene	5	U
106467	1,4-Dichlorobenzene	5	U
1634044	Methyl-t-butyl ether	5	U
108203	Di-isopropyl-ether	5	U
75650	t-Butyl Alcohol	100	U

TARGET COMPOUND SUMMARY: 0

DATA REPORTING QUALIFIERS

U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value used when a compound is detected at less than the specified detection limit.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the GC/MS instrument for that specific analyte.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.
DAILY BLK/A

Lab Name: VERITECH, NJDEPE CERT.# 14622 Contract:-------

Lab Code: GC/MS Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: WATER Client ID:

Sample wt/vol: 5.0 (g/ml) ml Lab File ID: >E2796

Level: (low/med) LOW Date Recvd/Ext:

% Solid: 0 Date Analyzed: 11/18/94

Column: CAP Dilution Factor: 1

Number of TICs found: 0 CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Tentative Compound Summary: 0

DATA REPORTING QUALIFIERS
A - Indicates an aldol condensate
J - Indicates an estimated value
B - Indicates compound was found in the blank as well as in the sample

QUANT REPORT

Operator ID: FRANK
Output File: ^E2796::D2
Data File: >E2796::D1
Name: DAILY BLK(A)
Misc: A,FOR WATER

Quant Rev: 7
Quant Time: 941118 19:22
Injected at: 941118 18:58
Dilution Factor: 1.00000
Instrument ID: MSD_1

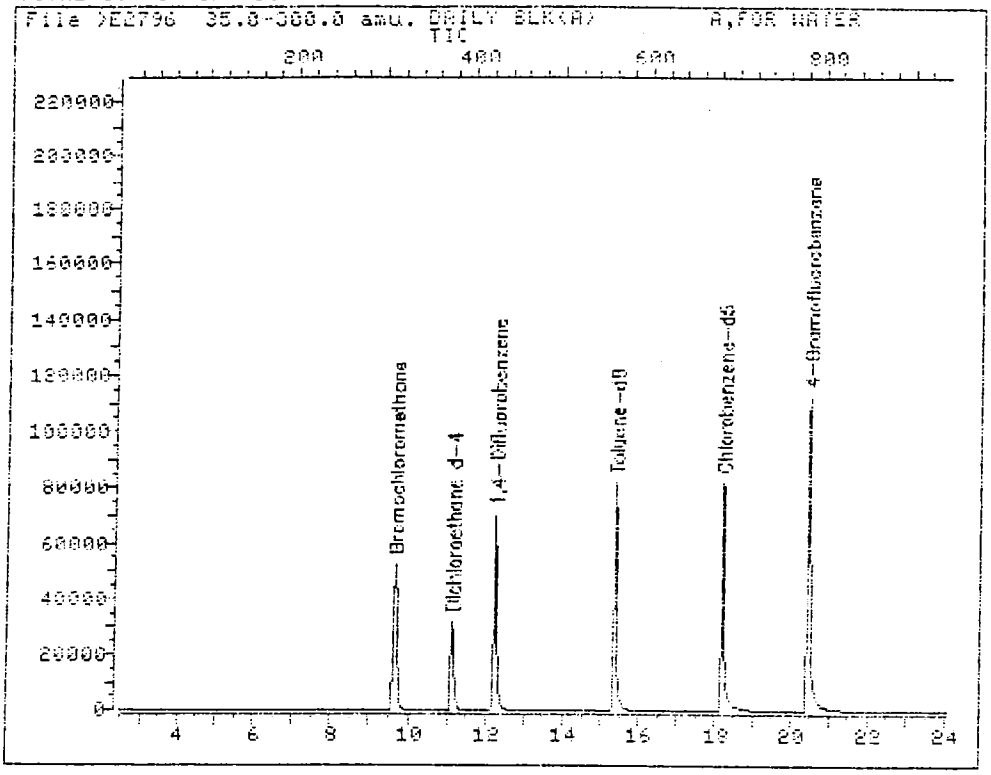
ID File: IDWV01::D2
Title: J&W DB-624 75M .53mm ID column
Last Calibration: 941103 19:19
Last Qual Time: 941118 13:30

	Compound	R.T.	Scan#	Area	Conc	Units	Q
1)	*Bromochloromethane	9.65	313	47771	50.00	ug/L	93
19)	1,2-Dichloroethane-d4	11.14	378	14008	49.11	ug/L	94
28)	*1,4-Difluorobenzene	12.24	426	170401	50.00	ug/L	96
39)	*Chlorobenzene-d5	18.19	685	156336	50.00	ug/L	95
46)	Toluene d-8	15.37	562	155705	49.84	ug/L	98
53)	Bromofluorobenzene	20.47	784	137365	53.95	ug/L	96

* Compound is ISTD

4/30/94

TOTAL ION CHROMATOGRAM



Data File: >E2796::D1
Name: DAILY BLK(A)
Misc: A,FOR WATER

Quant Output File: ^E2796::D2
Instrument ID: MSD_1

Id File: IDWVD1::D2
Title: J&W DB-624 75M .53mm ID column
Last Calibration: 941103 19:19

Last Qual Time: 941118 13:30

Operator ID: FRANK
Quant Time : 941118 19:22
Injected at: 941118 18:58

HAMPTON-CLARKE/VERITECH
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID :
Date Rcvd/Extd:
Sample Matrix : Soil
Percent Solid : 100
Column : J&W DB-624 75M .53mm ID column

Lab Sample No. : DAILY BL
Lab File ID : >E2915
Date Analyzed : 11/20/94
Dilution Factor: 125
Sample Wt/Vol : 5.0ml

CONCENTRATION UNITS: UG/KG(PPB)

CAS No.	COMPOUND	PQL	CONC
74873	Chloromethane	1300	U
74839	Bromomethane	1300	U
75014	Vinyl Chloride	630	U
75003	Chloroethane	1300	U
75092	Methylene Chloride	250	U
67641	Acetone	2500	U
75150	Carbon Disulfide	630	U
75694	Trichlorofluoromethane	630	U
75354	1,1-Dichloroethene	250	U
75343	1,1-Dichloroethane	630	U
156605	Trans-1,2-Dichloroethene	630	U
67663	Chloroform	630	U
107062	1,2-Dichloroethane	250	U
78933	2-Butanone	3100	U
71556	1,1,1-Trichloroethane	630	U
56235	Carbon Tetrachloride	250	U
108054	Vinyl Acetate	1300	U
75274	Bromodichloromethane	130	U
78875	1,2-Dichloropropane	130	U
10061015	cis-1,3-Dichloropropene	630	U
79016	Trichloroethene	130	U

CAS NO.	COMPOUND	PQL	CONC
124481	Dibromochloromethane	630	U
79005	1,1,2-Trichloroethane	730	U
71432	Benzene	130	U
10061026	Trans-1,3-Dichloropropene	630	U
110758	2-Chloroethylvinylether	1300	U
75252	Bromoform	500	U
108101	4-Methyl-2-Pentanone	3130	U
591786	2-Hexanone	2500	U
127184	Tetrachloroethene	130	U
79345	1,1,2,2-Tetrachloroethane	250	U
108883	Toluene	630	U
108907	Chlorobenzene	500	U
100414	Ethylbenzene	630	U
100425	Styrene	630	U
108383	m&p-Xylenes	630	U
95476	o-Xylene	630	U
541731	1,3-Dichlorobenzene	630	U
95501	1,2-Dichlorobenzene	630	U
106467	1,4-Dichlorobenzene	630	U
1634044	Methyl-t-butyl ether	630	U
108203	Di-isopropyl-ether	630	U
75650	t-Butyl Alcohol	13000	U

TARGET COMPOUND SUMMARY: 0

DATA REPORTING QUALIFIERS

U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value used when a compound is detected at less than the specified detection limit.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the GC/MS instrument for that specific analyte.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

DAILY BLK/M

Lab Name: VERITECH, NJDEPE CERT.# 14622 Contract:-------

Lab Code: GC/MS Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: SOIL Client ID:

Sample wt/vol: 5.0 (g/ml) ml Lab File ID: >E2813

Level: (low/med) MED Date Recvd/Ext:

% Solid: 100 Date Analyzed: 11/20/94

Column: CAP Dilution Factor: 125

Number of TICs found: 0 CONCENTRATION UNITS: ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Tentative Compound Summary: 0

DATA REPORTING QUALIFIERS

A - Indicates an aldol condensate
J - Indicates an estimated value
B - Indicates compound was found in the blank as well as in the sample

QUANT REPORT

Operator ID: LIN
Output File: ^E2813::D2
Data File: >E2813::D1
Name: DAILY BLK(MEOH)
Misc: M,FOR MEOH EXT

Quant Rev: 7
Quant Time: 941120 16:12
Injected at: 941120 15:46
Dilution Factor: 1.00000
Instrument ID: MSD_1

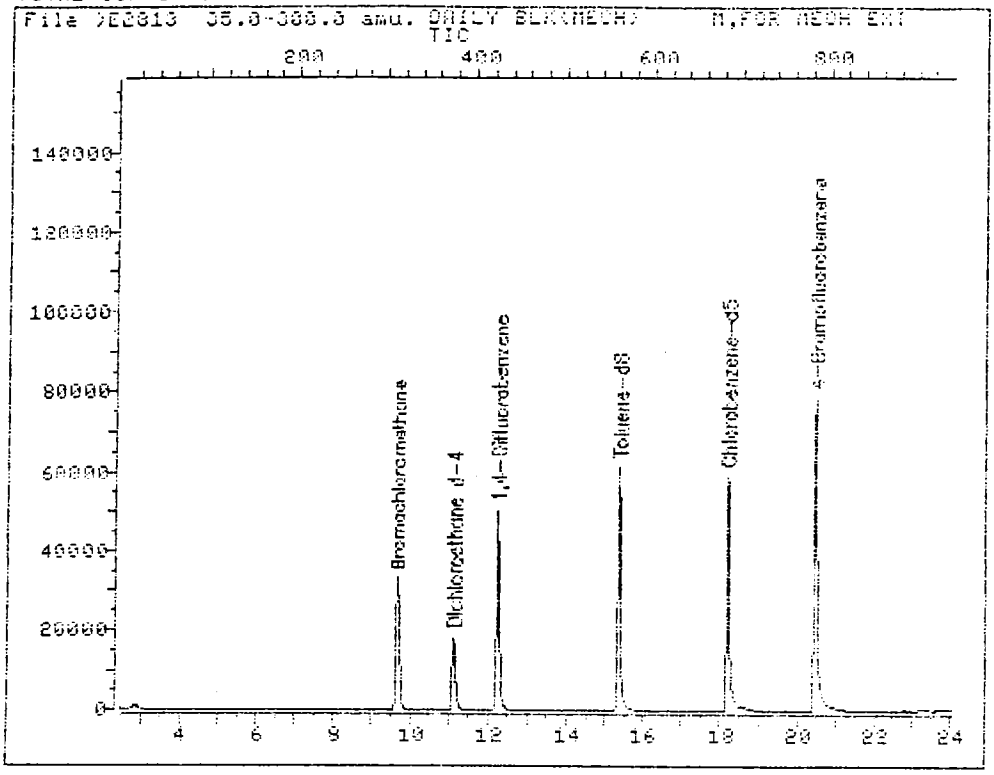
ID File: IDWVC1::D2
Title: J&W DB-624 75M .53mm ID column
Last Calibration: 941103 19:19
Last Qcal Time: 941120 15:18

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	9.65	313	30882	50.00	ug/L	9
19)	1,2-Dichloroethane-d4	11.14	378	7834	42.64	ug/L	9
28)	*1,4-Difluorobenzene	12.24	426	123550	50.00	ug/L	9
39)	*Chlorobenzene-d5	18.19	635	112814	50.00	ug/L	9
46)	Toluene d-8	15.37	562	115465	49.32	ug/L	9
53)	Bromofluorobenzene	20.47	784	96996	50.44	ug/L	9

* Compound is ISTD

11/30/94

TOTAL ION CHROMATOGRAM



Data File: >E2813::D1
Name: DAILY BLK(MEOH)
Misc: M,FOR MEOH EXT

Quant Output File: ^E2813::D2
Instrument ID: MSD_1

Id File: IDWUC1::D2
Title: J&W DB-624 75M .53mm ID column
Last Calibration: 941103 19:19
Last Qual Time: 941120 15:18

Operator ID: LIN
Quant Time : 941120 16:12
Injected at: 941120 15:46

HAMPTON-CLARKE/VERITECH
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID : SB1-1
Date Rcvd/Extd: 11/16/94-NA
Sample Matrix : Soil
Percent Solid : 83
Column : J&W DB-624 75M .53mm ID column

Lab Sample No. : AA27343
Lab File ID : >E2815
Date Analyzed : 11/20/94
Dilution Factor: 125
Sample Wt/Vol : 5.0ml

CONCENTRATION UNITS: UG/KG(PPB)

CAS No.	COMPOUND	PQL	CONC
74873	Chloromethane	1500	U
74839	Bromomethane	1500	U
75014	Vinyl Chloride	750	U
75003	Chloroethane	1500	U
75092	Methylene Chloride	300	2300
67641	Acetone	3000	U
75150	Carbon Disulfide	750	U
75694	Trichlorofluoromethane	750	U
75354	1,1-Dichloroethene	300	U
75343	1,1-Dichloroethane	750	U
156605	Trans-1,2-Dichloroethene	750	U
67663	Chloroform	750	U
107062	1,2-Dichloroethane	300	U
78933	2-Butanone	3800	U
71556	1,1,1-Trichloroethane	750	U
56235	Carbon Tetrachloride	300	U
108054	Vinyl Acetate	1500	U
75274	Bromodichloromethane	150	U
78875	1,2-Dichloropropane	150	U
10061015	cis-1,3-Dichloropropene	750	U
79016	Trichloroethene	150	U
124481	Dibromochloromethane	750	U
79005	1,1,2-Trichloroethane	450	U
71432	Benzene	150	U
10061026	Trans-1,3-Dichloropropene	750	U
110758	2-Chloroethylvinylether	1500	U
75252	Bromoform	600	U
108101	4-Methyl-2-Pentanone	3800	U
591786	2-Hexanone	3000	U
127184	Tetrachloroethene	150	U
79345	1,1,2,2-Tetrachloroethane	300	U
108883	Toluene	750	U
108907	Chlorobenzene	600	U
100414	Ethylbenzene	750	3400
100425	Styrene	750	U
108383	m&p-Xylenes	750	1300
95476	o-Xylene	750	U
541731	1,3-Dichlorobenzene	750	U
95501	1,2-Dichlorobenzene	750	U
106467	1,4-Dichlorobenzene	750	U
1634044	Methyl-t-butyl ether	750	U
108203	Di-isopropyl-ether	750	U
75650	t-Butyl Alcohol	15000	U

TARGET COMPOUND SUMMARY: 1300

DATA REPORTING QUALIFIERS

U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value used when a compound is detected at less than the specified detection limit.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the GC/MS instrument for that specific analyte.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.
AA07347

Lab Name: VERITECH, NJDEPE CERT.# 14622 Contract:-------

Lab Code: GC/MS Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: SOIL Client ID: #GB1-1

Sample wt/vol: 5.0 (g/ml) ml Lab File ID: >E2815

Level: (low/med) MED Date Recvd/Ext: 11/16/94-NA

% Solid: 83 Date Analyzed: 11/20/94

Column: CAP Dilution Factor: 125

Number of TICs found: 10 CONCENTRATION UNITS: ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1		Unknown	2.38	17878	J
2	622968	Benzene, 1-ethyl-4-methyl-	21.14	5734	J
3		Unknown substituted benzene	21.28	10934	J
4		Unknown substituted benzene	21.99	21034	J
5		Unknown substituted benzene	22.32	4287	J
6	611143	Benzene, 1-ethyl-2-methyl-	22.76	7992	J
7	1074437	Benzene, 1-methyl-3-propyl-	23.19	16546	J
8		Unknown substituted benzene	23.31	27602	J
9		Unknown substituted benzene	23.45	7079	J
10		Unknown substituted benzene	23.80	13579	J

Tentative Compound Summary: 135994

DATA REPORTING QUALIFIERS
A - Indicates an aldol condensate
J - Indicates an estimated value
B - Indicates compound was found in the blank as well as in the sample

QUANT REPORT

Operator ID: LIN
Output File: ^E2815::D2
Data File: >E2815::D1
Name: AA27343
Misc: M,100ul OF 4g/10ml

Quant Rev: 7
Quant Time: 941120 17:24
Injected at: 941120 16:55
Dilution Factor: 1.00000
Instrument ID: MSD_1

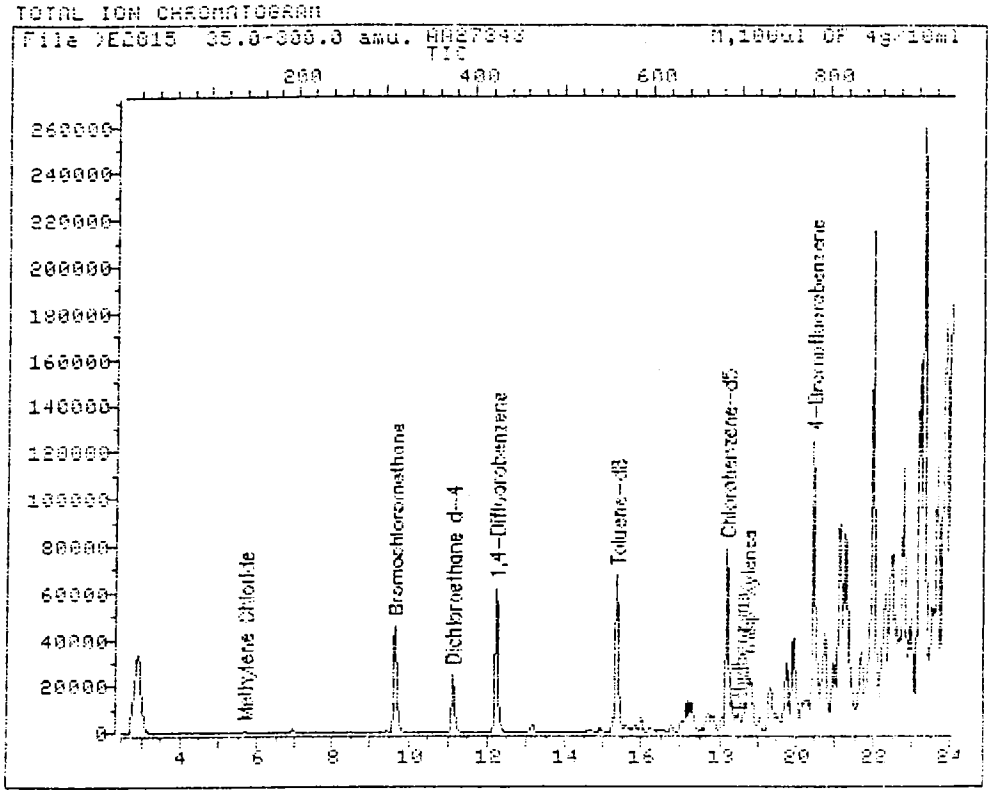
ID File: IDWU01::D2
Title: J&W DB-624 75M .53mm ID column
Last Calibration: 941103 19:19
Last Qual Time: 941120 15:18

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	9.65	313	40542	50.00	ug/L	9
9)	Methylene Chloride	5.70	141	1217	1.54	ug/L	9
19)	1,2-Dichloroethane-d4	11.12	377	11203	46.45	ug/L	9
28)	*1,4-Difluorobenzene	12.22	405	146430	50.00	ug/L	9
39)	*Chlorobenzene-d5	18.20	685	138186	50.00	ug/L	9
46)	Toluene d-8	15.37	562	127438	44.44	ug/L	9
48)	Ethylbenzene	18.52	699	8919	2.27	ug/L	9
50)	m&p-Xylenes	18.72	708	12806	8.66	ug/L	8
53)	Bromofluorobenzene	20.45	783	120313	53.10	ug/L	8

* Compound is ISTD

11/30/94

TOTAL ION CHROMATOGRAM



Data File: >E2815::D1
Name: AA27343
Misc: M,100ul OF 4g/10ml

Quant Output File: ^E2815::D2
Instrument ID: MSD_1

Id File: IDWU01::D2
Title: J&W DB-624 75M .53mm ID column
Last Calibration: 941103 19:19
Last Qcal Time: 941120 15:18

Operator ID: LIN
Quant Time : 941120 17:24
Injected at: 941120 16:55

HAMPTON-CLARKE/VERITECH
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID : #FB
Date Rcvd/Extd: 11/16/94-NA
Sample Matrix : Water
Percent Solid : 0
Column : J&W DB-624 75M .53mm ID column

Lab Sample No. : A027347
Lab File ID : >E2737
Date Analyzed : 11/18/94
Dilution Factor: 1
Sample Wt/Vol : 5.0ml

CONCENTRATION UNITS: UG/L (PPB)

CAS No.	COMPOUND	PQL	CONC
74873	Chloromethane	10	U
74839	Bromomethane	10	U
75014	Vinyl Chloride	5	U
75003	Chloroethane	10	U
75092	Methylene Chloride	2	5
67641	Acetone	20	U
75150	Carbon Disulfide	5	U
75694	Trichlorofluoromethane	5	U
75354	1,1-Dichloroethene	2	U
75343	1,1-Dichloroethane	5	U
156605	Trans-1,2-Dichloroethene	5	U
67663	Chloroform	5	U
107062	1,2-Dichloroethane	2	U
78933	2-Butanone	25	U
71556	1,1,1-Trichloroethane	5	U
56235	Carbon Tetrachloride	2	U
108054	Vinyl Acetate	10	U
75274	Bromodichloromethane	1	U
78875	1,2-Dichloropropane	1	U
10061015	cis-1,3-Dichloropropene	5	U
79016	Trichloroethene	1	U

CAS NO.	COMPOUND	PQL	CONC
124481	Dibromochloromethane	5	U
79005	1,1,2-Trichloroethane	3	U
71432	Benzene	1	U
10061026	Trans-1,3-Dichloropropene	5	U
110758	2-Chloroethylvinylether	10	U
75252	Bromoform	4	U
108101	4-Methyl-2-Pentanone	25	U
591786	2-Hexanone	20	U
127184	Tetrachloroethene	1	U
79345	1,1,2,2-Tetrachloroethane	3	U
108883	Toluene	5	U
108907	Chlorobenzene	4	U
100414	Ethylbenzene	5	U
100425	Styrene	5	U
108383	m&p-Xylenes	5	U
95476	o-Xylene	5	U
541731	1,3-Dichlorobenzene	5	U
95501	1,2-Dichlorobenzene	5	U
106467	1,4-Dichlorobenzene	5	U
1634044	Methyl-t-butyl ether	5	U
108203	Di-isopropyl-ether	5	U
75650	t-Butyl Alcohol	100	U

TARGET COMPOUND SUMMARY: 5

DATA REPORTING QUALIFIERS

U - Indicates the compound was analyzed for but not detected.
J - Indicates an estimated value used when a compound is detected at less than the specified detection limit.
B - Indicates the analyte was found in the blank as well as in the sample.
E - Indicates the analyte concentration exceeds the calibration range of the GC/MS instrument for that specific analyte.

15

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.
AA27347

Lab Name: VERITECH, NJDEPE CERT.# 14622 Contract:-------

Lab Code: GC/MS Case No.: ----- SAS No.: ----- SDG No.: -----

Matrix: WATER Client ID: #FB

Sample wt/vol: 5.0 (g/ml) ml Lab File ID: >E2797

Level: (low/med) LOW Date Recvd/Ext: 11/16/94-NA

% Solid: 0 Date Analyzed: 11/18/94

Column: CAP Dilution Factor: 1

Number of TICs found: 0 CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Tentative Compound Summary: 0

DATA REPORTING QUALIFIERS
A - Indicates an aldol condensate
J - Indicates an estimated value
B - Indicates compound was found in the blank as well as in the sample

QUANT REPORT

Operator ID: FRANK
Output File: ^E2797::D2
Data File: >E2797::D1
Name: AA27347
Misc: A,5ml,FB

Quant Rev: 7
Quant Time: 941118 19:50
Injected at: 941118 19:25
Dilution Factor: 1.00000
Instrument ID: MSD_1

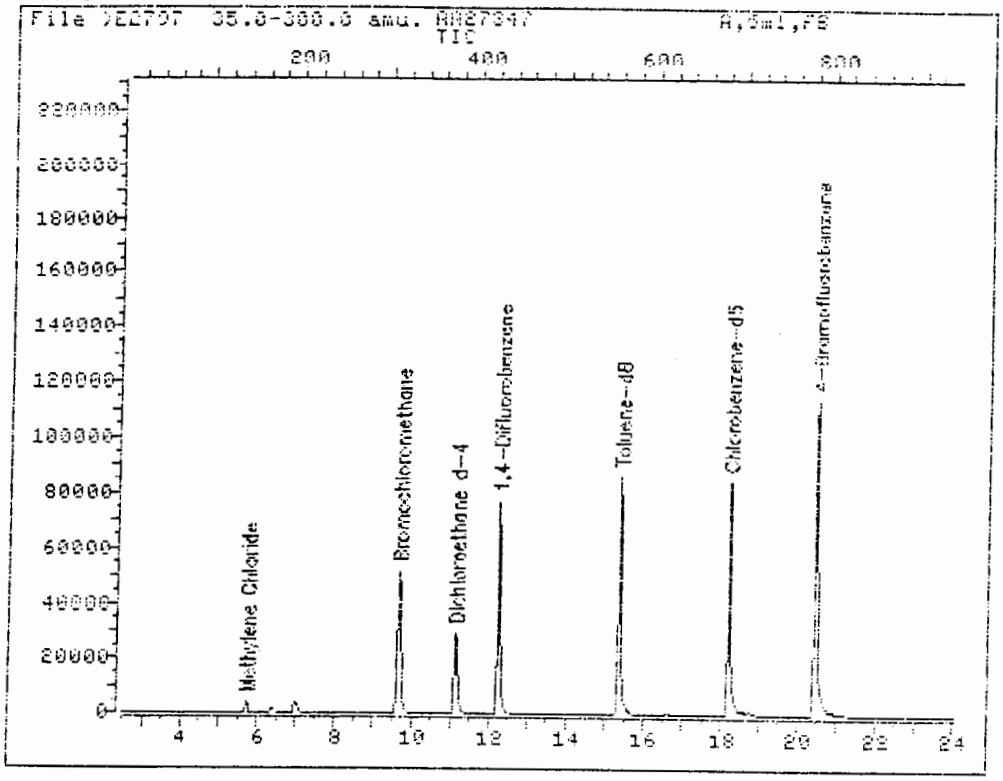
ID File: IDWU01::D2
Title: J&W DB-624 75M .53mm ID column
Last Calibration: 941103 19:19
Last Qcal Time: 941113 13:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	9.67	314	44558	50.00	ug/L	97
9)	Methylene Chloride	5.74	143	3811	4.77	ug/L	97
19)	1,2-Dichloroethane-d4	11.14	378	12704	47.75	ug/L	97
28)	*1,4-Difluorobenzene	12.24	426	175569	50.00	ug/L	96
39)	*Chlorobenzene-d5	18.19	685	159257	50.00	ug/L	97
46)	Toluene d-8	15.37	562	163454	51.34	ug/L	9[illegible]
53)	Bromofluorobenzene	20.47	784	135573	52.27	ug/L	97

* Compound is ISTD

Gill 30/94

TOTAL ION CHROMATOGRAM



Data File: >E2797::D1
Name: AA27347
Misc: A,5ml,FB

Quant Output File: ^E2797::D2
Instrument ID: MSD_1

Id File: IDWV01::D2
Title: J&W DB-624 75M .53mm ID column
Last Calibration: 941103 19:19

Last Qual Time: 941118 13:30

Operator ID: FRANK
Quant Time : 941118 19:50
Injected at: 941118 19:25

INORGANIC ANALYTICAL RESULTS SUMMARY

Lab ID No.: AA27343
Sample Matrix: Soil
% Solids: 83

Date Received: 11/15/94
Date Extracted: 11/16/94

PARAMETER	FIELD SAMPLE NO.	SAMPLE CONCEN. (mg/kg)	DILUTION FACTOR	MDL (mg/kg)	DATE ANALYZED
TPH	GB-1	3600	10	240	11/16/94

INORGANIC ANALYTICAL RESULTS SUMMARY

Lab ID No.: AA27344
Sample Matrix: Soil
% Solids: 89

Date Received: 11/15/94
Date Extracted: 11/16/94

PARAMETER	FIELD SAMPLE NO.	SAMPLE CONCEN. (mg/kg)	DILUTION FACTOR	MDL (mg/kg)	DATE ANALYZED
TPH	GB-2	58	1	22	11/16/94

INORGANIC ANALYTICAL RESULTS SUMMARY

Lab ID No.: AA27345
Sample Matrix: Soil
% Solids: 80

Date Received: 11/15/94
Date Extracted: 11/16/94

PARAMETER	FIELD SAMPLE NO.	SAMPLE CONCEN. (mg/kg)	DILUTION FACTOR	MDL (mg/kg)	DATE ANALYZED
TPH	GB-3	67	1	25	11/16/94

INORGANIC ANALYTICAL RESULTS SUMMARY

Lab ID No.: AA27346
Sample Matrix: Soil
% Solids: 85

Date Received: 11/15/94
Date Extracted: 11/16/94

PARAMETER	FIELD SAMPLE NO.	SAMPLE CONCEN. (mg/kg)	DILUTION FACTOR	MDL (mg/kg)	DATE ANALYZED
TPH	GB-4	67	1	24	11/16/94

2A
VOLATILE SURROGATE RECOVERIES

Lab Name: Varitech NJDEPE CERT.# 14602

Lab Code: 020406 Case No.:---- SAS No.:---- SDG No.:----

Dates Analyzed: 11/17/94 thru 11/18/94

LAB SAMP NO.	($)	S1 (DCE)#	S2 (TOL)#	S3 (BFB)#	FILE	TOT OUT
DAILY BLK(	W	88	102	102	^E2765	0
DAILY BLK(	W	97	99	109	^E2766	0
AA27342	W	92	97	105	^E2767	0
AA27305	W	91	97	104	^E2768	0
DAILY BLK(	S	84	89	107	^E2769	0
AA27331	S	94	103	99	^E2770	0
DAILY BLK(	S	92	94	105	^E2771	0
AA27332	S	99	103	95	^E2772	0
AA27333	S	101	108	94	^E2773	0
AA27334	S	95	117	87	^E2774	0
AA27336	S	97	110	99	^E2775	0
AA27337	S	101	115	92	^E2776	0
AA27338	S	100	117	87	^E2777	0
AA27335	W	95	93	104	^E2778	0
AA27339	W	94	96	107	^E2779	0
AA27340	W	95	96	101	^E2780	0
AA27342	W	94	95	106	^E2781	0
AA27279MS	W	95	103	107	^E2782	0
AA27279MSD	W	97	99	102	^E2783	0
WMB-SPK	W	96	99	98	^E2784	0

QC Limits For:	Soil	Water	Sur Conc(ug/L) Water	Soil
S1 (DCE) = 1,2-Dichloroethane-d4	70-121	76-114	50	50
S2 (TOL) = Toluene d-8	81-117	88-110	50	50
S3 (BFB) = Bromofluorobenzene	74-121	86-115	50	50

$ Column indicating Soil or Water matrix
# Column to be used to flag recovery values
* Values outside of method/lab limits

2A
VOLATILE SURROGATE RECOVERIES

Lab Name: Veritech NJDEPE CERT.# 14822

Lab Code: 020406 Case No.:---- SAS No.:---- SDG No.:----

Dates Analyzed: 11/18/94 thru 11/19/94

LAB SAMP NO.	($)	S1 (DCE)#	S2 (TOL)#	S3 (BFB)#	FILE	TOT OUT
DAILY BLK(	W	84	105	104	^E2789	0
DAILY BLK(	S	102	97	104	^E2790	0
AA27333	S	93	103	91	^E2791	0
AA27331	S	95	103	95	^E2792	0
AA27340	S	95	113	78	^E2793	0
DAILY BLK(	W	85	102	106	^E2794	0
DAILY BLK(	W	90	100	106	^E2795	0
DAILY BLK(	W	99	100	108	^E2796	0
AA27347	W	96	103	105	^E2797	0
AA27361	W	92	101	108	^E2798	0
AA27343	W	94	100	106	^E2799	0
AA27354	W	92	103	107	^E2800	0
AA27355	W	97	103	109	^E2801	0
AA27356	W	99	105	106	^E2802	0
AA27357	W	96	102	108	^E2803	0
AA27358	W	97	105	104	^E2804	0
AA27359	W	95	98	106	^E2805	0
AA27360	W	96	99	108	^E2806	0
AA27339	W	98	100	109	^E2807	0

QC Limits For:	Soil	Water	Sur Conc(ug/L) Water	Sur Conc(ug/L) Soil
S1 (DCE) = 1,2-Dichloroethane-d4	70-121	76-114	50	50
S2 (TOL) = Toluene d-8	81-117	88-110	50	50
S3 (BFB) = Bromofluorobenzene	74-121	86-115	50	50

$ Column indicating Soil or Water matrix
# Column to be used to flag recovery values
* Values outside of method/lab limits

2A
VOLATILE SURROGATE RECOVERIES

Lab Name: Veritech NJDEPE CERT.# 14422

Lab Code: 020406 Case No.:---- SAS No.:---- SDG No.:----

Dates Analyzed: 11/20/94 thru 11/21/94

LAB SAMP NO.	($)	S1 (DCE)#	S2 (TOL)#	S3 (BFB)#	FILE	TOT OUT
DAILY BLK(	W	95	99	115	E2813	0
DAILY BLK(	S	97	92	109	E2814	0
AA27343	W	93	99	106	E2815	0
AA27356	W	97	97	111	E2816	0
AA27358	W	98	98	109	E2817	0
AA27359	S	95	99	105	E2818	0
AA27360	S	94	98	109	E2819	0
AA27391	S	96	94	106	E2820	0
AA27392	S	98	95	109	E2821	0
AA27393	S	102	106	105	E2822	0
AA27394	S	99	99	107	E2823	0
AA27395	S	103	94	105	E2824	0
AA27396	S	101	95	107	E2825	0
AA27397	S	99	106	107	E2826	0
AA27398	S	97	94	111	E2827	0
AA27399	S	97	91	99	E2828	0
SMB-SPK	S	105	100	97	E2829	0

QC Limits For:	Soil	Water	Run Conc(ug/L) Water	Soil
S1 (DCE) = 1,2-Dichloroethane-d4	70-121	76-114	50	50
S2 (TOL) = Toluene d-8	81-117	88-110	50	50
S3 (BFB) = Bromofluorobenzene	74-121	86-115	50	50

$ Column indicating Soil or Water matrix
# Column to be used to flag recovery values
* Values outside of method/lab limits

FORM 3

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: VERITECH, NJDEPE CERT.# 14622

Matrix Spike - Lab sample No.: AA27079

Non spiked file: ^E2739 Spiked file: ^E2782 Spike dup file: ^E2783

Compound	Spike Added (ug/L)	Sample Conc (ug/L)	MS Conc (ug/L)	MSD Conc (ug/L)	MS % Rec#	MSD % Rec#	% Rpd#	QC Limits Rpd	QC Limits Rec
1,1-Dichloroethene	50	0	43	38	86	76	12	14	61-145
Trichloroethene	50	0	52	51	104	102	2	14	71-120
Benzene	50	0	53	52	106	104	2	11	76-127
Toluene	50	1	53	51	104	100	4	13	76-125
Chlorobenzene	50	0	50	49	100	99	2	13	75-130

Column to be used to flag recovery and RPD values with an asterisk.
* Values outside of QC limits.

RPD: 0 out of 5 outside limits
Spike Recovery: 0 of 10 outside of limits

Comments:

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: VERITECH, NJDEPE CERT.# 14622,

Lab file ID: >E2766 Lab Sample ID: DAILY BLK(M

Date Analyzed: 11/17/94 Time Analyzed: 16:39

Matrix: Water

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

LAB FILE NO.	LAB SAMPLE ID	DATE ANALYZED
>E2768	AA27305	17:42
>E2778	AA27335	23:11
>E2780	AA27340	00:20
>E2782	AA27279MS	01:28
>E2783	AA27279MSD	02:03
>E2784	WMS-BPK	02:37

Comments:

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: VERITECH, NJDEPE CERT.# 14602,

Lab file ID: >E2796 Lab Sample ID: DAILY BLK(4

Date Analyzed: 11/18/94 Time Analyzed: 18:58

Matrix: Water

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

LAB FILE NO.	LAB SAMPLE ID	DATE ANALYZED
>E2797	AA27347	19:05
>E2798	AA27361	19:53
>E2807	AA27339	00:56

Comments:

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: VERITECH, NJDEPE CERT.# 14622.

Lab file ID: >E2813 Lab Sample ID: DAILY BLK(M

Date Analyzed: 11/20/94 Time Analyzed: 15:46

Matrix: Water

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

LAB FILE NO.	LAB SAMPLE ID	DATE ANALYZED
>E2815	AA27343	16:55
>E2816	AA27356	17:29
>E2817	AA27368	18:04

Comments:

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: VERITECH Contract: -----

Lab File ID: >E2580 BFB Injection date: 11/03/94

Instrument ID: MSD_1 BFB Injection time: 15:44

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15-40% of mass 95	22.7
75	30-60% of mass 95	47.9
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	70.1
175	5.0 - 9.0% of mass 174	5.0(7.1)1
176	Greater than 95.0%, but less than 101.0% of mass 174	67.3(96.1)1
177	5.0 - 9.0% of mass 176	4.8(7.1)2

1 - Value is % mass 174 2 - Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	----------	10PPB STD	>E2581	11/03/94	14:13
2	----------	20PPB STD	>E2582	11/03/94	16:43
3	----------	50PPB STD	>E2583	11/03/94	17:13
4	----------	100PPB STD	>E2584	11/03/94	17:43
5	----------	10PPB GAS	>E2585	11/03/94	18:14
6	----------	200PPB STD	>E2586	11/03/94	18:45
7	----------	BLANK	>E2587	11/03/94	19:14
8	----------	10PPB STD	>E2588	11/03/94	19:43
9	----------	20PPB STD	>E2589	11/03/94	20:12
10	----------	50PPB STD	>E2590	11/03/94	20:41
11	----------	100PPB STD	>E2591	11/03/94	21:10
12	----------	200PPB STD	>E2592	11/03/94	21:39
13	----------	BLANK	>E2593	11/03/94	22:07
14	----------	DAILY BLK(A)	>E2594	11/03/94	22:36
15	----------	DAILY BLK(S)	>E2595	11/03/94	23:05
16	----------	AA26997	>E2596	11/03/94	23:35
17	----------	AA27060	>E2597	11/04/94	0:09
18	----------	AA26992	>E2598	11/04/94	0:44
19					
20					
21					
22					

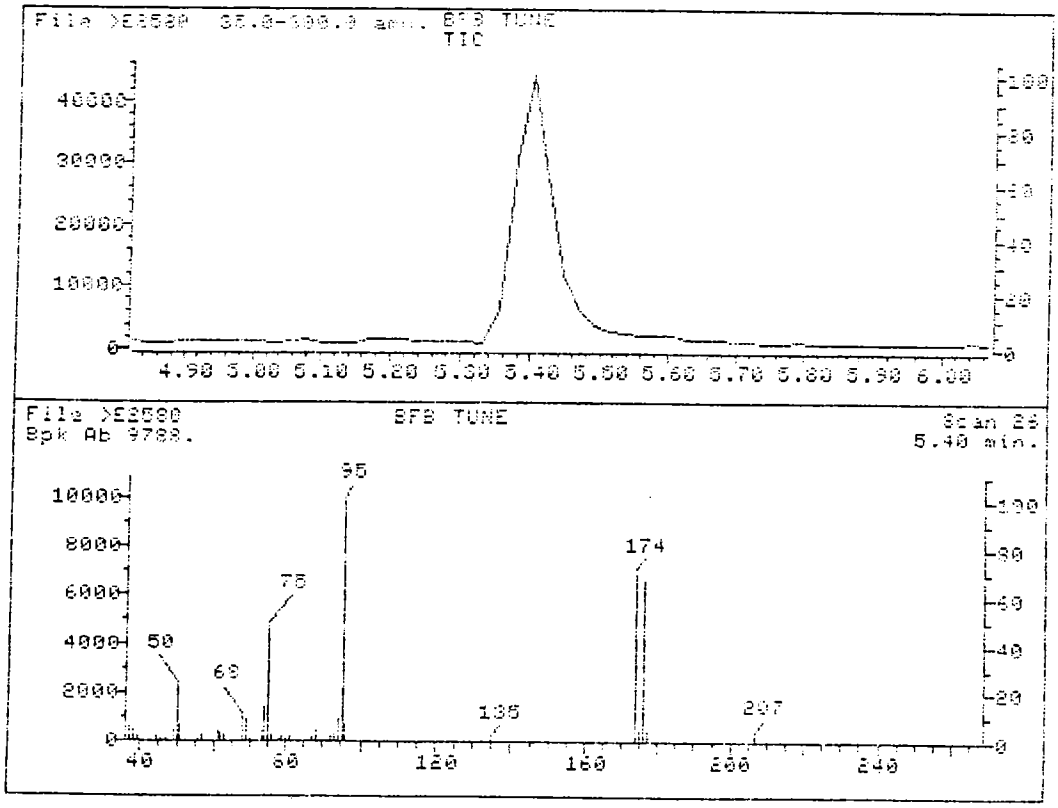
FORM V VOA

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	22.73	22.73	Ok
75	30-60% of mass 95	47.85	47.85	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.99	6.99	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	70.11	70.11	Ok
175	5-9% of mass 174	4.98	7.10	Ok
176	95-101% of mass 174	67.34	96.05	Ok
177	5-9% of mass 176	4.76	7.10	Ok

Injection Date: 11/03/94
Injection Time: 15:44
Data File: >E2590
Scan: 26



11/15/94

0045

>E2580 EFB TUNE
26

File: >E2580 Scan #: 26 Retn. time: 5.40

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.10	124.00	51.05	647.00	71.95	58.00	80.95	212.00	134.90	63.00
37.05	589.00	55.95	143.00	73.05	507.00	86.95	384.00	174.00	6862.00
38.05	494.00	57.05	282.00	74.05	1452.00	87.95	392.00	175.00	487.00
39.05	223.00	61.05	438.00	75.05	4684.00	91.95	207.00	176.00	6591.00
43.95	173.00	62.05	378.00	76.05	371.00	93.05	320.00	176.90	468.00
45.05	143.00	63.05	277.00	78.05	108.00	94.05	909.00	206.95	240.00
46.95	126.00	68.05	968.00	78.95	207.00	95.05	9788.00	208.95	62.00
49.05	453.00	68.95	902.00	79.95	96.00	96.05	604.00	269.00	199.00
50.05	2225.00	70.05	91.00						

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: VERITECH Contract: -----

Lab File ID: >E2762 BFB Injection date: 11/17/94

Instrument ID: MSD_1 BFB Injection time: 14:45

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15-40% of mass 95	20.9
75	30-60% of mass 95	45.4
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	89.9
175	5.0 - 9.0% of mass 174	6.6(7.4)1
176	Greater than 95.0%, but less than 101.0% of mass 174	88.9(98.9)1
177	5.0 - 9.0% of mass 176	6.3(7.0)2

1 - Value is % mass 174 2 - Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

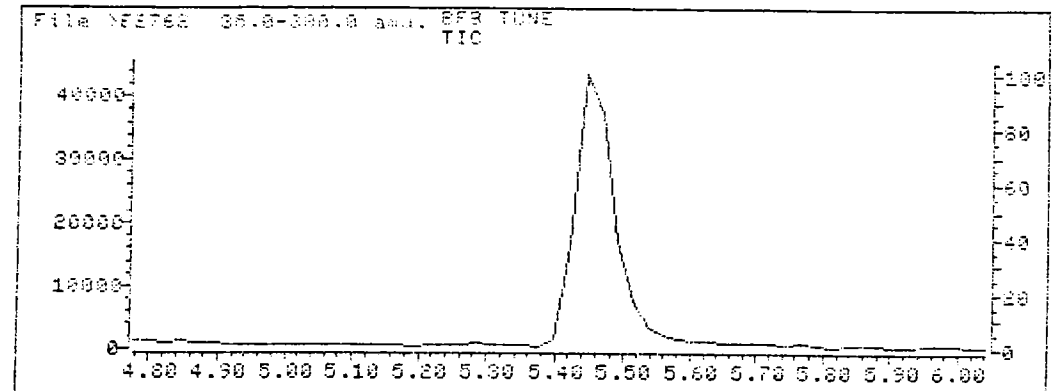
	EPA SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	----------	DAILY CAL(A)	>E2763	11/17/94	15:14
2	----------	DAILY CAL(S)	>E2764	11/17/94	15:43
3	----------	DAILY BLK(A)	>E2765	11/17/94	16:11
4	----------	DAILY BLK(ME	>E2766	11/17/94	16:39
5	----------	AA27342	>E2767	11/17/94	17:09
6	----------	AA27305	>E2768	11/17/94	17:42
7	----------	DAILY BLK(S)	>E2769	11/17/94	18:16
8	----------	AA27331	>E2770	11/17/94	18:44
9	----------	DAILY BLK(S)	>E2771	11/17/94	19:17
10	----------	AA27332	>E2772	11/17/94	19:45
11	----------	AA27333	>E2773	11/17/94	20:19
12	----------	AA27334	>E2774	11/17/94	20:54
13	----------	AA27336	>E2775	11/17/94	21:28
14	----------	AA27337	>E2776	11/17/94	22:03
15	----------	AA27338	>E2777	11/17/94	22:37
16	----------	AA27335	>E2778	11/17/94	23:11
17	----------	AA27339	>E2779	11/17/94	23:46
18	----------	AA27340	>E2780	11/18/94	0:20
19	----------	AA27342	>E2781	11/18/94	0:54
20	----------	AA27279MS	>E2782	11/18/94	1:28
21	----------	AA27279MSD	>E2783	11/18/94	2:03
22	----------	WMB-SPK	>E2784	11/18/94	2:37

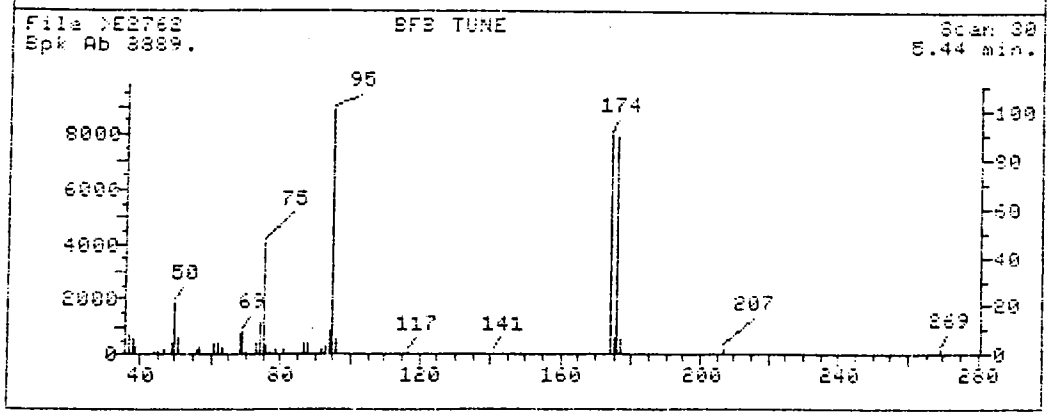
GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	20.95	20.95	Ok
75	30-60% of mass 95	45.38	45.38	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.47	6.47	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	89.33	89.38	Ok
175	5-9% of mass 174	6.63	7.37	Ok
176	95-101% of mass 174	98.90	98.91	Ok
177	5-9% of mass 176	6.25	7.04	Ok

Injection Date: 11/17/94
Injection Time: 14:45
Data File: >E2762
Scan: 30





G 11/30/94

>E2762 BFB TUNE
30

File: >E2762 Scan #: 30 Retn. time: 5.44

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.10	142.00	51.05	602.00	69.95	66.00	86.95	411.00	140.90	50.00
37.00	665.00	56.05	141.00	73.05	400.00	87.95	393.00	174.00	7999.00
38.05	517.00	56.95	238.00	74.05	1207.00	92.05	194.00	175.00	589.00
39.05	230.00	61.05	375.00	75.05	4034.00	93.05	304.00	176.00	7902.00
43.95	124.00	62.05	400.00	76.05	325.00	94.05	937.00	177.00	556.00
44.95	112.00	63.05	276.00	77.05	95.00	95.05	8989.00	207.05	190.00
47.05	137.00	68.05	790.00	78.95	183.00	96.05	575.00	269.00	141.00
49.05	412.00	69.05	832.00	80.95	189.00	116.90	57.00	281.00	56.00
50.05	1862.00								

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name:VERITECH Contract: -----

Lab File ID: >E2786 BFB Injection date: 11/18/94

Instrument ID: MSD_1 BFB Injection time: 13:03

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15-40% of mass 95	23.6
75	30-60% of mass 95	47.6
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	70.6
175	5.0 - 9.0% of mass 174	5.0(7.2)1
176	Greater than 95.0%, but less than 101.0% of mass 174	69.8(98.9)1
177	5.0 - 9.0% of mass 176	4.9(7.0)2

1 - Value is % mass 174 2 - Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

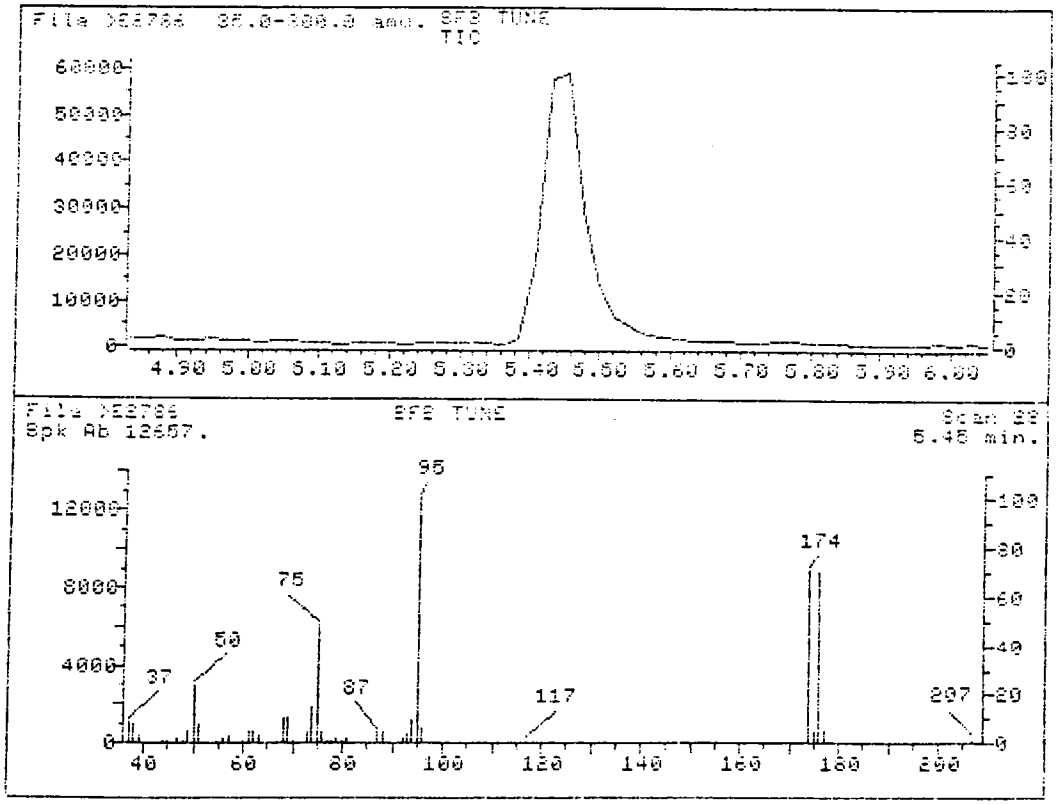
	EPA SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	----------	DAILY CAL(A)	>E2787	11/18/94	13:30
2	----------	DAILY CAL(S)	>E2788	11/18/94	13:58
3	----------	DAILY BLK(A)	>E2789	11/18/94	14:27
4	----------	DAILY BLK(S)	>E2790	11/18/94	15:07
5	----------	AA27333	>E2791	11/18/94	15:44
6	----------	AA27331	>E2792	11/18/94	16:42
7	----------	AA27340	>E2793	11/18/94	17:15
8	----------	DAILY BLK(A)	>E2794	11/18/94	18:03
9	----------	DAILY BLK(ME	>E2795	11/18/94	18:30
10	----------	DAILY BLK(A)	>E2796	11/18/94	18:58
11	----------	AA27347	>E2797	11/18/94	19:25
12	----------	AA27361	>E2798	11/18/94	19:53
13	----------	AA27343	>E2799	11/18/94	20:22
14	----------	AA27354	>E2800	11/18/94	20:56
15	----------	AA27355	>E2801	11/18/94	21:30
16	----------	AA27356	>E2802	11/18/94	22:05
17	----------	AA27357	>E2803	11/18/94	22:39
18	----------	AA27358	>E2804	11/18/94	23:13
19	----------	AA27359	>E2805	11/18/94	23:48
20	----------	AA27360	>E2806	11/19/94	0:22
21	----------	AA27339	>E2807	11/19/94	0:56

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	23.58	23.58	Ok
75	30-60% of mass 95	47.64	47.64	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.47	6.47	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	70.59	70.59	Ok
175	5-9% of mass 174	5.05	7.15	Ok
176	95-101% of mass 174	69.79	98.87	Ok
177	5-9% of mass 176	4.87	6.99	Ok

Injection Date: 11/18/94
Injection Time: 17:03
Data File: >52786
Scan: 29



11/30/94

>E2786 BFB TUNE
28

File: >E2786 Scan #: 28 Retn. time: 5.45

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.00	248.0	50.05	2984.0	69.05	1313.0	79.95	92.0	96.05	819.0
37.05	1086.0	51.05	1025.0	70.05	96.0	80.85	260.0	116.90	74.0
38.05	934.0	54.85	83.0	72.05	64.0	81.85	67.0	118.90	50.0
39.05	362.0	56.05	226.0	73.05	531.0	86.95	552.0	174.00	8934.0
39.85	54.0	57.05	387.0	74.05	1883.0	88.05	538.0	175.00	639.0
43.95	167.0	59.95	106.0	75.05	6030.0	92.05	262.0	176.00	8833.0
45.05	179.0	61.05	316.0	76.05	513.0	93.05	445.0	177.00	617.0
46.95	221.0	62.05	561.0	77.05	138.0	94.05	1180.0	207.05	178.0
47.95	106.0	63.05	377.0	77.95	88.0	95.05	12657.0	209.05	72.0
48.95	617.0	68.05	1276.0	78.95	278.0				

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: VERITECH Contract: -----

Lab File ID: >E2809 BFB Injection date: 11/20/94

Instrument ID: MSD_1 BFB Injection time: 13:55

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15-40% of mass 95	24.8
75	30-60% of mass 95	48.4
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	71.7
175	5.0 - 9.0% of mass 174	5.8(8.1)1
176	Greater than 95.0%, but less than 101.0% of mass 174	72.4(100.9)1
177	5.0 - 9.0% of mass 176	4.7(6.5)2

1 - Value is % mass 174 2 - Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

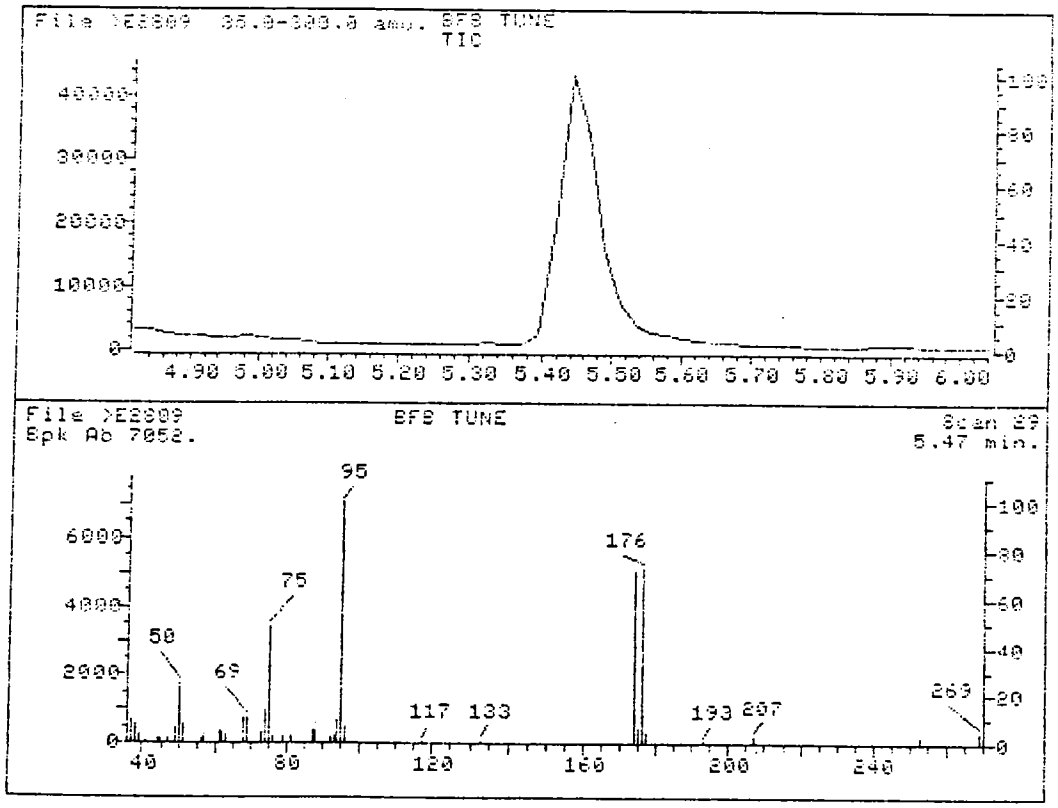
	EPA SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	----------	DAILY CAL(A)	>E2810	11/20/94	14:21
2	----------	DAILY CAL(S)	>E2811	11/20/94	14:50
3	----------	DAILY CAL(A)	>E2812	11/20/94	15:18
4	----------	DAILY BLK(ME	>E2813	11/20/94	15:46
5	----------	DAILY BLK(S)	>E2814	11/20/94	16:14
6	----------	AA27343	>E2815	11/20/94	16:55
7	----------	AA27356	>E2816	11/20/94	17:29
8	----------	AA27358	>E2817	11/20/94	18:04
9	----------	AA27359	>E2818	11/20/94	18:38
10	----------	AA27360	>E2819	11/20/94	19:13
11	----------	AA27391	>E2820	11/20/94	19:47
12	----------	AA27392	>E2821	11/20/94	20:21
13	----------	AA27393	>E2822	11/20/94	20:56
14	----------	AA27394	>E2823	11/20/94	21:30
15	----------	AA27395	>E2824	11/20/94	22:04
16	----------	AA27396	>E2825	11/20/94	22:39
17	----------	AA27397	>E2826	11/20/94	23:13
18	----------	AA27398	>E2827	11/20/94	23:47
19	----------	AA27399	>E2828	11/21/94	0:21
20	----------	SMB-SPK	>E2829	11/21/94	0:56

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	24.84	24.84	Ok
75	30-60% of mass 95	48.37	48.37	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.83	6.83	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	71.74	71.74	Ok
175	5-9% of mass 174	5.84	8.14	Ok
176	95-101% of mass 174	72.42	100.95	Ok
177	5-9% of mass 176	4.72	6.52	Ok

Injection Date: 11/20/94
Injection Time: 13:55
Data File: >E2909
Scan: 29



11/30/94

0054

>E2809 BFB TUNE
29

File: >E2809 Scan #: 29 Retn. time: 5.47

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.00	194.00	50.05	1752.00	73.05	335.00	92.05	168.00	175.00	412.00
37.05	660.00	51.05	568.00	74.05	988.00	93.05	275.00	176.00	5107.00
37.95	576.00	56.05	117.00	75.05	3411.00	94.05	668.00	177.00	333.00
38.95	250.00	57.05	235.00	76.05	276.00	95.05	7052.00	192.95	73.00
40.95	75.00	61.05	351.00	78.95	169.00	96.05	482.00	207.05	201.00
43.95	127.00	62.05	314.00	80.95	167.00	116.90	52.00	253.05	168.00
44.95	107.00	63.05	253.00	87.05	350.00	133.00	79.00	269.00	317.00
46.95	129.00	68.05	717.00	87.95	358.00	174.00	5059.00	270.10	81.00
49.05	442.00	69.05	736.00						

Initial Calibration Data

Lab: Veritech
Cal Type: CAL FOR WATER

Instrument ID: MSD_1
Calibration Date: 11/03/94

Minimum Avg RF for SPCC is: .300

Maximum %RSD for CCC is: 30

Compound	>E2581 RF 10.0	>E2582 RF 20.0	>E2583 RF 50.0	>E2584 RF 100.0	>E2586 RF 200.0	$RT	$RF	$RSD	*/**	Optional Cal Curve
Chloromethane	.5576	.9442	.8543	.6203	.4926	2.888	.6939	28.19	**	
Bromomethane	.7856	.5179	.5359	.5512	.4217	3.439	.5624	23.92		
Vinyl Chloride	.7806	1.093	1.032	.7925	.6694	3.017	.8774	20.64	*	
Chloroethane	.4060	.3165	.3577	.3255	.2778	3.623	.3759	14.68		
Trichlorofluoromethane	1.779	1.432	1.587	1.364	1.252	3.881	1.483	13.85		
t-Butyl Alcohol	.0236	.0255	.0279	.0259	.0345	6.100	.0275	15.26		(50.0,100.,250.,500.,1000)
Methyl-t-butyl ether	.9941	.9868	1.111	.9678	1.041	6.331	1.020	5.620		
Methylene Chloride	1.145	.8984	.8855	.8025	.7407	5.659	.8944	17.32		
Acrolein	--	--	--	.0307	.0347	3.142	.0327	8.704		
Acrylonitrile	.0369	.0737	.1072	.0991	.0971	6.225	.0829	34.43		
Acetone	.1542	.0963	.1046	.1073	.0915	4.887	.1109	20.65		
Carbon Disulfide	2.659	2.145	2.420	2.247	2.132	5.112	2.321	9.542		
1,1-Dichloroethene	.7929	.6569	.7485	.6829	.6497	4.726	.7062	8.807	*	
Di-isopropyl-ether	4.304	4.017	3.859	4.019	3.891	7.576	4.018	4.366		
1,1-Dichloroethane	2.393	2.248	2.288	2.313	2.228	7.268	2.294	2.818	**	
Trans-1,2-Dichloroethene	.9364	.9242	.9722	.8485	.8017	6.274	.8546	6.046		
Chloroform	2.600	2.653	2.581	2.734	2.645	9.832	2.643	2.249	*	
1,2-Dichloroethane-d4	.2895	.2937	.2419	.2893	.2893	11.05	.2807	7.766		(50.0,50.0,50.0,50.0,50.0)
1,2-Dichloroethane	1.311	1.395	1.295	1.487	1.506	11.24	1.397	7.157		
2-Butanone	.1941	.1987	.2007	.2507	.2979	9.101	.2264	17.28		
1,1,1-Trichloroethane	2.267	2.216	2.272	2.342	2.250	10.24	2.269	2.051		
Carbon Tetrachloride	2.300	2.271	2.402	2.472	2.363	10.65	2.361	3.356		
Vinyl Acetate	2.694	2.581	2.364	2.589	2.554	7.567	2.556	4.697		
Bromodichloromethane	2.417	2.646	2.309	2.834	2.880	13.82	2.617	9.601		
1,2-Dichloropropane	.3516	.3659	.3895	.3807	.3740	13.19	.3723	3.891	*	
Trans-1,3-Dichloropropene	.2903	.3492	.3821	.4089	.4183	15.95	.3698	14.03		
Trichloroethene	.5015	.4749	.5157	.4898	.4635	12.70	.4891	4.236		
Dibromochloromethane	.4315	.4468	.5345	.4987	.4994	17.03	.4820	8.754		
1,1,2-Trichloroethane	.2247	.2410	.2697	.2793	.2796	14.29	.2587	9.494		
Benzene	.8683	.8250	.9413	.8618	.8256	11.16	.8644	5.487		
cis-1,3-Dichloropropene	.5187	.5392	.5845	.5979	.5953	14.79	.5671	6.337		
2-Chloroethylvinylether	.0639	.1013	.1147	.1273	.1391	14.56	.1093	26.55		
Bromoform	.4903	.5219	.6707	.5775	.5778	19.77	.5676	12.11	**	
2-Hexanone	.0680	.0251	.0797	.1326	.1470	16.63	.0995	54.99		
4-Methyl-2-Pentanone	.1520	.1781	.2222	.1964	.2223	15.17	.1942	15.49		
Tetrachloroethene	.5909	.5536	.5392	.5673	.5366	16.51	.5575	4.095		
1,1,2,2-Tetrachloroethane	.4986	.5092	.6106	.5564	.5627	20.70	.5475	8.245	**	
Toluene	.6410	.6012	.5925	.6455	.6371	15.43	.6235	3.960	*	
Toluene d-8	1.078	1.049	1.005	1.062	1.094	15.30	1.057	3.213		(50.0,50.0,50.0,50.0,50.0)
Chlorobenzene	.9857	.9274	.9561	.9531	.9524	18.19	.9550	2.166	**	

* - Indicates CCC Compound ** - Indicates SPCC Compound Units in ug/L
$RT - Avg Retention Times $RF - Avg Response Factor $RSD- Relative Standard Deviation

Initial Calibration Data

Lab: Veritech
Cal Type: CAL FOR WATER

Instrument ID: MSD_1
Calibration Date: 11/03/94

Minimum Avg RF for SPCC is: .300

Maximum %RSD for CCC is: 30

Laboratory ID:	>E2581	>E2582	>E2583	>E2584	>E2586					
Compound	RF 10.0	RF 20.0	RF 50.0	RF 100.0	RF 200.0	$RT	$RF	$RSD	*/**	Optional Cal Curve
Ethylbenzene	1.317	1.273	1.345	1.398	1.430	18.43	1.353	4.621	*	
Styrene	.8194	.8092	.9010	.8786	.8358	19.45	.8488	4.645		
m&p-Xylenes	.5446	.5021	.5158	.4881	.4554	18.65	.5012	6.593		(20.0,40.0,100.,200.,400.)
o-Xylene	1.233	1.145	1.282	1.153	1.097	19.41	1.182	6.297		
Bromofluorobenzene	.9044	.8358	.8803	.8727	.9079	20.40	.8802	3.304		(50.0,50.0,50.0,50.0,50.0)
1,3-Dichlorobenzene	.9875	.9731	1.124	1.026	.9984	22.44	1.020	4.016		
1,4-Dichlorobenzene	1.442	1.185	1.292	1.136	1.081	22.61	1.227	11.66		
1,2-Dichlorobenzene	1.112	1.028	1.132	.9765	.9400	23.30	1.038	8.003		

* - Indicates CCC Compound ** - Indicates SPCC Compound Units in ug/L
$RT - Avg Retention Times $RF - Avg Response Factor $RSD- Relative Standard Deviation

FORM6 (Page 2 of 2)

Continuing Calibration Data

Lab : Veritech
Cal Type : CAL FOR WATER
File name: ^E2763

Instrument ID : MSD_1
Calibration Date: 11/17/94
Injection Time : 1514

Minimum RF for SPCC is: .300 Maximum % Diff for CCC is: 25

Compound	$RF	RF	RT	$DIF	*/**	
Chloromethane	.6938	.9913	2.930	42.89	**	
Bromomethane	.5624	.3815	3.436	32.18		
Vinyl Chloride	.8734	.9326	3.045	6.78	*	
Chloroethane	.3359	.2230	3.643	33.61		
Trichlorofluoromethane	1.483	.9403	3.913	36.58		
t-Butyl Alcohol	.0275	.0244	6.170	11.34		(Conc=250)
Methyl-t-butyl ether	1.020	1.230	6.400	20.62		
Methylene Chloride	.8944	.9006	5.734	.69		
Acrolein	--	--	--	--		
Acrylonitrile	.0828	.0936	6.308	13.05		
Acetone	.1108	.0914	4.952	17.52		
Carbon Disulfide	2.321	2.245	5.182	3.26		
1,1-Dichloroethene	.7062	.7302	4.792	3.40	*	
Di-isopropyl-ether	4.018	3.620	7.664	9.89		
1,1-Dichloroethane	2.294	2.152	7.342	6.21	**	
Trans-1,2-Dichloroethene	.8566	1.029	6.308	20.17		
Chloroform	2.643	2.691	9.916	1.83	*	
1,2-Dichloroethane-d4	.2807	.3027	11.13	7.83		
1,2-Dichloroethane	1.397	1.521	11.32	8.87		
2-Butanone	.2264	.2408	9.180	6.34		
1,1,1-Trichloroethane	2.269	2.399	10.31	5.73		
Carbon Tetrachloride	2.361	2.565	10.72	8.60		
Vinyl Acetate	2.556	2.239	7.664	12.40		
Bromodichloromethane	2.617	2.870	13.89	9.65		
1,2-Dichloropropane	.3723	.3457	13.25	7.15	*	
Trans-1,3-Dichloropropene	.3698	.3957	15.98	7.02		
Trichloroethene	.4891	.4992	12.77	2.06		
Dibromochloromethane	.4822	.5087	17.09	5.51		
1,1,2-Trichloroethane	.2587	.2719	16.33	5.10		
Benzene	.8644	.7809	11.23	9.66		
cis-1,3-Dichloropropene	.5671	.5642	14.83	.51		
2-Chloroethylvinylether	.1093	.1031	14.60	5.62		
Bromoform	.5676	.6077	19.82	7.06	**	
2-Hexanone	.0905	.0849	16.95	6.23		
4-Methyl-2-Pentanone	.1942	.1542	15.22	20.57		
Tetrachloroethene	.5575	.5968	16.56	7.05		
1,1,2,2-Tetrachloroethane	.5475	.4856	20.74	11.30	**	
Toluene	.6235	.6026	15.48	3.35	*	
Toluene d-8	1.057	1.013	15.36	4.16		
Chlorobenzene	.9550	.9422	18.24	1.33	**	

* - Indicates CCC compound ** - Indicates SPCC compound
RT - Cont Cal Retention Times RF - Response Factor from daily cal @ 50.00 ug/L
$DIFF- %Difference from average RF $RF - Avg Response Factor from initial cal
@ - Indicates compound failed specified criteria

FORM7 (Page 1 of 2)

Continuing Calibration Data

Lab : Veritech
Cal Type : CAL FOR WATER
File name: ^E2763

Instrument ID : MSD_1
Calibration Date: 11/17/94
Injection Time : 1514

Minimum RF for SPCC is: .300 Maximum % Diff for CCC is: 25

Compound	$RF	RF	RT	$DIF	*/**	
Ethylbenzene	1.353	1.337	18.47	1.14	*	
Styrene	.8488	.8658	19.48	2.00		
m&p-Xylenes	.5012	.4915	19.79	1.94		(Conc=100)
o-Xylene	1.182	1.129	19.46	4.51		
Bromofluorobenzene	.8802	.8104	20.44	7.93		
1,3-Dichlorobenzene	1.020	1.041	22.49	2.02		
1,4-Dichlorobenzene	1.227	1.199	22.65	2.30		
1,2-Dichlorobenzene	1.038	.9666	23.34	6.85		

* - Indicates CCC compound
** - Indicates SPCC compound
RT - Cont Cal Retention Times
RF - Response Factor from daily cal @ 50.00 ug/L
$DIFF- %Difference from average RF
$RF - Avg Response Factor from initial cal
@ - Indicates compound failed specified criteria

FORM7 (Page 2 of 2)

Continuing Calibration Data

Lab : Veritech
Cal Type : CAL FOR WATER
File name: ^E2787

Instrument ID : MSD_1
Calibration Date: 11/18/94
Injection Time : 1330

Minimum RF for SPCC is: .300 Maximum % Diff for CCC is: 25

Compound	$RF	RF	RT	$DIF	*/**	
Chloromethane	.6938	1.062	2.928	53.13	**	
Bromomethane	.5624	.4057	3.456	27.87		
Vinyl Chloride	.8734	.9895	3.043	13.30	*	
Chloroethane	.3359	.2289	3.663	31.86		
Trichlorofluoromethane	1.483	.9324	3.939	37.12		
t-Butyl Alcohol	.0275	.0312	6.191	13.64		(Conc=250)
Methyl-t-butyl ether	1.020	1.302	6.398	27.68		
Methylene Chloride	.8944	.8973	5.731	.33		
Acrolein	--	--	--	--		
Acrylonitrile	.0828	.1057	6.306	27.66		
Acetone	.1108	.0883	4.950	20.34		
Carbon Disulfide	2.321	2.138	5.180	7.86		
1,1-Dichloroethene	.7062	.6792	4.789	3.82	*	
Di-isopropyl-ether	4.018	3.631	7.685	9.63		
1,1-Dichloroethane	2.294	2.090	7.363	8.91	**	
Trans-1,2-Dichloroethene	.9566	1.061	6.306	23.87		
Chloroform	2.643	2.588	9.914	2.08	*	
1,2-Dichloroethane-d4	.2807	.2985	11.13	6.33		
1,2-Dichloroethane	1.397	1.461	11.32	4.61		
2-Butanone	.2264	.2134	9.201	5.73		
1,1,1-Trichloroethane	2.269	2.293	10.33	1.06		
Carbon Tetrachloride	2.361	2.425	10.74	2.68		
Vinyl Acetate	2.556	2.404	7.662	5.96		
Bromodichloromethane	2.617	2.766	13.89	5.70		
1,2-Dichloropropane	.3723	.3359	13.27	9.77	*	
Trans-1,3-Dichloropropene	.3698	.3884	16.01	5.05		
Trichloroethene	.4891	.5000	12.76	2.23		
Dibromochloromethane	.4822	.5208	17.09	8.01		
1,1,2-Trichloroethane	.2587	.2768	16.33	7.00		
Benzene	.8644	.7848	11.25	9.21		
cis-1,3-Dichloropropene	.5671	.5635	14.83	.65		
2-Chloroethylvinylether	.1093	.1060	14.60	2.97		
Bromoform	.5676	.6324	19.82	11.41	**	
2-Hexanone	.0905	.0672	16.95	25.71		
4-Methyl-2-Pentanone	.1942	.2145	15.22	10.45		
Tetrachloroethene	.5575	.5755	16.58	3.21		
1,1,2,2-Tetrachloroethane	.5475	.5194	20.74	5.13	**	
Toluene	.6235	.6010	15.50	3.61	*	
Toluene d-8	1.057	.9991	15.36	5.51		
Chlorobenzene	.9550	.9452	18.26	1.02	**	

* - Indicates CCC compound
** - Indicates SPCC compound
RT - Cont Cal Retention Times
RF - Response Factor from daily cal @ 50.00 ug/L
$DIFF- %Difference from average RF
$RF - Avg Response Factor from initial cal
@ - Indicates compound failed specified criteria

FORM7 (Page 1 of 2)

Continuing Calibration Data

Lab : Veritech
Cal Type : CAL FOR WATER
File name: ^E2787

Instrument ID : MSD_1
Calibration Date: 11/18/94
Injection Time : 1330

Minimum RF for SPCC is: .300 Maximum % Diff for CCC is: 25

Compound	$RF	RF	RT	$DIF	*/**	
Ethylbenzene	1.353	1.297	18.49	4.14	*	
Styrene	.8488	.8532	19.50	.51		
m&p-Xylenes	.5012	.4812	19.72	3.99		(Conc=100)
o-Xylene	1.182	1.111	19.45	6.06		
Bromofluorobenzene	.8802	.8142	20.47	7.50		
1,3-Dichlorobenzene	1.020	1.013	22.49	.75		
1,4-Dichlorobenzene	1.227	1.127	22.67	8.19		
1,2-Dichlorobenzene	1.038	.9475	23.34	8.69		

* - Indicates CCC compound
** - Indicates SPCC compound
RT - Cont Cal Retention Times
RF - Response Factor from daily cal @ 50.00 ug/L
$DIFF- %Difference from average RF
$RF - Avg Response Factor from initial cal
@ - Indicates compound failed specified criteria

FORM7 (Page 2 of 2)

Continuing Calibration Data

Lab : Veritech
Cal Type : CAL FOR WATER
File name: ^E2912

Instrument ID : MSD_1
Calibration Date: 11/20/94
Injection Time : 1519

Minimum RF for SPCC is: .300 Maximum % Diff for CCC is: 25

Compound	$RF	RF	RT	$DIF	*/**	
Chloromethane	.6938	.8157	2.898	17.57	**	
Bromomethane	.5624	.4014	3.495	28.64		
Vinyl Chloride	.8734	.7854	3.036	10.07	*	
Chloroethane	.3359	.2199	3.656	34.53		
Trichlorofluoromethane	1.483	1.024	3.932	30.95		
t-Butyl Alcohol	.0275	.0288	6.194	4.64		(Conc=250)
Methyl-t-butyl ether	1.020	1.372	6.414	34.49		
Methylene Chloride	.8944	.9775	5.724	9.29		
Acrolein	--	--	--	--		
Acrylonitrile	.0828	.1179	6.322	42.42		
Acetone	.1109	.1205	4.943	8.76		
Carbon Disulfide	2.321	2.441	5.173	5.16		
1,1-Dichloroethene	.7062	.7520	4.782	6.49	*	
Di-isopropyl-ether	4.018	4.283	7.677	6.60		
1,1-Dichloroethane	2.294	2.495	7.356	8.77	**	
Trans-1,2-Dichloroethene	.8566	1.200	6.322	40.12		
Chloroform	2.643	2.975	9.929	12.58	*	
1,2-Dichloroethane-d4	.2807	.2975	11.15	5.96		
1,2-Dichloroethane	1.397	1.645	11.33	17.80		
2-Butanone	.2264	.3363	9.216	48.53		
1,1,1-Trichloroethane	2.269	2.629	10.34	15.84		
Carbon Tetrachloride	2.361	2.881	10.73	18.63		
Vinyl Acetate	2.556	2.924	7.654	14.39		
Bromodichloromethane	2.617	3.142	13.88	20.05		
1,2-Dichloropropane	.3723	.3791	13.26	1.82	*	
Trans-1,3-Dichloropropene	.3698	.4172	16.00	12.82		
Trichloroethene	.4891	.5180	12.78	5.90		
Dibromochloromethane	.4822	.5316	17.08	10.24		
1,1,2-Trichloroethane	.2587	.2814	16.34	8.79		
Benzene	.8644	.8534	11.24	1.28		
cis-1,3-Dichloropropene	.5671	.6056	14.85	6.78		
2-Chloroethylvinylether	.1093	.1089	14.62	.32		
Bromoform	.5676	.6111	19.84	7.65	**	
2-Hexanone	.0905	.0816	16.96	9.93		
4-Methyl-2-Pentanone	.1942	.2052	15.21	5.64		
Tetrachloroethene	.5575	.6212	16.57	11.42		
1,1,2,2-Tetrachloroethane	.5475	.4986	20.76	8.93	**	
Toluene	.6235	.6469	15.49	3.74	*	
Toluene d-8	1.057	1.038	15.38	1.88		
Chlorobenzene	.9550	1.003	18.25	5.08	**	

* - Indicates CCC compound
** - Indicates SPCC compound
RT - Cont Cal Retention Times
RF - Response Factor from daily cal @ 50.00 ug/L
$DIFF- %Difference from average RF
$RF - Avg Response Factor from initial cal
@ - Indicates compound failed specified criteria

FORM7 (Page 1 of 2)

Continuing Calibration Data

Lab : Veritech
Cal Type : CAL FOR WATER
File name: ^E2812

Instrument ID : MSD_1
Calibration Date: 11/20/94
Injection Time : 1518

Minimum RF for SPCC is: .300 Maximum % Diff for CCC is: 25

Compound	$RF	RF	RT	$DIF	*/**	
Ethylbenzene	1.353	1.419	18.48	4.92	*	
Styrene	.8488	.9150	19.49	7.80		
m&p-Xylenes	.5012	.5350	18.71	6.74		(Conc=100)
o-Xylene	1.182	1.203	19.47	1.79		
Bromofluorobenzene	.8802	.8198	20.46	6.87		
1,3-Dichlorobenzene	1.020	1.079	22.50	5.78		
1,4-Dichlorobenzene	1.227	1.224	22.66	.28		
1,2-Dichlorobenzene	1.038	.9902	23.35	4.57		

* - Indicates CCC compound
** - Indicates SPCC compound
RT - Cont Cal Retention Times
RF - Response Factor from daily cal @ 50.00 ug/L
$DIFF- %Difference from average RF
$RF - Avg Response Factor from initial cal
@ - Indicates compound failed specified criteria

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8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: VERITECH, NJDEPE CERT.# 14622

Lab file ID: >E2583 Lab Sample ID: 50PPB STD

Date Analyzed: 11/03/94 Time Analyzed: 17:13

	IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
12 HOUR STD	29171	9.57	88535	12.16	87264	18.14
UPPER LIMIT	58342		177070		174528	
LOWER LIMIT	14586		44268		43632	
LAB SAMPLE #						
10PPB STD	37090	9.56	140250	12.16	120060	18.13
20PPB STD	37687	9.57	148018	12.14	132146	18.14
100PPB STD	41444	9.57	160928	12.14	142727	18.14
10PPB GAS	42747	9.56	174097	12.16	153782	18.13
200PPB STD	47640	9.56	186990	12.16	161167	18.14
DAILY BLK(	53912	9.56	198934	12.16	175585	18.15
AA26997	56060	9.56	217597	12.15	187138	18.13

IS1 (BCM) = Bromochlormethane @ 50ppb
IS2 (DFB) = 1,4-Difluorobenzene @ 50ppb
IS3 (CBZ) = Chlorobenzene-d5 @ 50ppb

UPPER LIMIT = + 100% of internal standard area of daily cal from previous daily cal.
LOWER LIMIT = -50% of internal standard area of daily cal from previous daily cal.

Column used to flag internal standard are values with an asterisk

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: VERITECH, NJDEPE CERT.# 14622

Lab file ID: >E2745 Lab Sample ID: DAILY CAL(A

Date Analyzed: ~~11/16/94~~ 11/17/94 Time Analyzed: 15:50

SA 11/30/94

	IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
12 HOUR STD	36270	9.65	152502	12.23	137151	18.18
UPPER LIMIT	72540		305004		274302	
LOWER LIMIT	18135		76251		68575	
LAB SAMPLE #						
DAILY CAL(	48307	9.64	195544	12.21	177636	18.19
DAILY BLK(	46648	9.67	191069	12.24	166483	18.19
DAILY BLK(	59843	9.65	207013	12.22	198459	18.20
AA27342	49854	9.65	191321	12.22	174824	18.20
AA27305	52395	9.66	193056	12.23	176963	18.21
AA27335	49098	9.65	189966	12.22	168155	18.20
AA27339	47231	9.67	176481	12.22	166392	18.20
AA27340	49732	9.65	186441	12.22	169731	18.20
AA27342	51171	9.65	194784	12.22	177396	18.20
AA27279MS	52152	9.65	203607	12.23	180529	18.20
AA27279MSD	49272	9.65	184056	12.23	167571	18.20
WMB-SPK	47186	9.67	176329	12.23	159471	18.20

IS1 (BCM) = Bromochlormethane @ 50ppb
IS2 (DFB) = 1,4-Difluorobenzene @ 50ppb
IS3 (CBZ) = Chlorobenzene-d5 @ 50ppb

UPPER LIMIT = + 100% of internal standard area of daily cal from previous daily cal.
LOWER LIMIT = -50% of internal standard area of daily cal from previous daily cal.

Column used to flag internal standard are values with an asterisk

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: VERITECH, NJDEPE CERT.# 14622

Lab file ID: >E2763 Lab Sample ID: DAILY CAL(A

Date Analyzed: 11~~/17/94~~ 11/18/94 Time Analyzed: 15:14

SA 11/30/94

	IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
12 HOUR STD	48307	9.64	195544	12.21	177636	18.19
UPPER LIMIT	96614		391088		355272	
LOWER LIMIT	24154		97772		88818	
LAB SAMPLE #						
DAILY CAL(	49019	9.66	190722	12.24	172516	18.19
DAILY BLK(	41969	9.67	153045	12.23	140635	18.20
DAILY BLK(	28779	9.67	98845	12.24	87933*	18.19
DAILY BLK(	38487	9.65	147468	12.22	138037	18.19
DAILY BLK(	47771	9.65	170401	12.24	156336	18.19
AA27347	44558	9.67	175569	12.24	159257	18.19
AA27361	47107	9.67	178634	12.25	160550	18.20
AA27343	48934	9.67	184826	12.24	167402	18.19
AA27354	40725	9.68	152769	12.23	137311	18.21
AA27355	42290	9.67	165588	12.23	150942	18.20
AA27356	41753	9.68	162329	12.25	144610	18.21
AA27357	39895	9.67	159003	12.25	145435	18.21
AA27358	41993	9.68	165814	12.25	151277	18.22
AA27359	39591	9.67	151094	12.24	140036	18.20
AA27360	39756	9.65	143633	12.24	135376	18.20
AA27339	40463	9.67	149616	12.25	133691	18.20

IS1 (BCM) = Bromochloromethane @ 50ppb
IS2 (DFB) = 1,4-Difluorobenzene @ 50ppb
IS3 (CBZ) = Chlorobenzene-d5 @ 50ppb

UPPER LIMIT = + 100% of internal standard area of daily cal from previous daily cal.
LOWER LIMIT = -50% of internal standard area of daily cal from previous daily cal.

Column used to flag internal standard area values with an asterisk

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: VERITECH, NJDEPE CERT.# 14622

Lab file ID: >E2787 Lab Sample ID: DAILY CAL(A

Date Analyzed: ~~11/19/94~~ 11/20/94 Time Analyzed: 13:30

SA 11/30/94

	IS1(BCM) AREA	#	RT	IS2(DFB) AREA	#	RT	IS3(CBZ) AREA	#	RT
12 HOUR STD	49019		9.66	190722		12.24	172516		18.19
UPPER LIMIT	98038			381444			345032		
LOWER LIMIT	24509			95361			86258		
LAB SAMPLE #									
DAILY CAL(	30360		9.67	123140		12.22	111511		18.20
DAILY CAL(	35579		9.65	148111		12.23	175052		18.20
DAILY BLK(	30882		9.65	123550		12.24	110916		18.19
AA27343	40542		9.65	146470		12.22	138186		18.20
AA27356	40703		9.67	157443		12.25	144387		18.20
AA27358	38067		9.67	146305		12.23	133934		18.20

IS1 (BCM) = Bromochlormethane @ 50ppb
IS2 (DFB) = 1,4-Difluorobenzene @ 50ppb
IS3 (CBZ) = Chlorobenzene-d5 @ 50ppb

UPPER LIMIT = + 100% of internal standard area of daily cal from previous daily cal.
LOWER LIMIT = -50% of internal standard area of daily cal from previous daily cal.

Column used to flag internal standard are values with an asterisk

1/3/94

METHOD DETECTION LIMTS FOR MSD#1

All the followin analytes were injected at 10 ppb with the exceeption of TBA and M&P-Xylene which were injected at 20 and 50 ppb respectively.

FILE ==========>	^C9008	^C9009	^C9010	^C9011	^C9012	^C9013	^C9014	AVG	STDDEV	MDL
Chloromethane	7.47	8.22	7.27	6.88	6.16	6.27	5.74	6.86	.86	2.71
Bromomethane	7.50	7.93	7.04	7.27	7.33	7.75	7.71	7.51	.31	.98
Vinyl Chloride	8.60	8.82	7.99	7.86	7.21	7.01	6.76	7.75	.79	2.49
Chloroethane	4.93	4.81	3.97	4.61	4.75	4.06	5.95	4.73	.66	2.06
Trichlorofluorometh	9.98	10.36	9.88	9.63	8.89	10.33	10.81	9.99	.62	1.94
t-Butyl Alcohol	73.64	63.64	75.78	62.38	67.24	70.21	74.03	69.56	5.29	16.62
Methyl-t-butyl ethe	11.32	10.70	10.88	11.27	11.20	11.31	11.38	11.15	.26	.81
Methylene Chloride	11.30	11.76	11.94	12.58	11.31	11.60	11.42	11.70	.46	1.43
Acetone	10.25	13.83	14.34	16.42	10.25	14.85	14.83	13.54	2.38	7.48
Carbon Disulfide	9.68	9.50	9.80	9.75	9.42	9.35	9.31	9.54	.20	.63
Di-isopropyl-ether	9.47	8.78	9.06	9.09	8.70	8.58	8.46	8.88	.35	1.10
1,1-Dichloroethene	10.18	10.06	9.95	10.77	10.38	10.72	10.41	10.35	.32	1.00
1,1-Dichloroethane	10.24	9.84	9.97	10.40	10.01	10.05	10.03	10.08	.19	.58
Trans-1,2-Dichloroe	10.03	9.65	9.70	9.76	9.31	9.53	9.54	9.65	.22	.70
Chloroform	10.45	10.25	10.86	11.02	10.90	10.98	10.99	10.78	.30	.96
1,2-Dichloroethane	11.06	10.75	11.86	12.26	12.14	12.55	12.54	11.88	.71	2.24
2-Butanone	11.17	11.03	12.21	12.28	11.74	10.39	12.41	11.60	.76	2.40
1,1,1-Trichloroetha	10.68	10.48	11.09	11.44	11.19	11.37	11.48	11.10	.39	1.22
Carbon Tetrachlorid	10.39	10.26	10.67	11.08	10.84	11.03	11.04	10.76	.33	1.04
Vinyl Acetate	8.72	7.83	7.29	6.88	6.09	6.40	5.14	6.91	1.18	3.70
Bromodichloromethan	9.54	9.48	9.91	9.91	10.21	9.82	10.15	9.86	.28	.87
1,2-Dichloropropane	9.22	8.91	9.54	9.40	8.93	9.26	9.30	9.22	.23	.73
cis-1,3-Dichloropro	9.09	8.62	9.20	9.11	9.14	9.08	8.88	9.02	.20	.64
Trichloroethene	9.74	9.28	9.71	9.97	9.79	9.64	9.70	9.69	.21	.66
Dibromochloromethan	9.11	8.68	9.53	9.57	9.55	9.38	9.38	9.31	.32	1.00
1,1,2-Trichloroetha	9.01	9.54	9.49	9.75	9.73	9.61	9.46	9.51	.25	.78
Benzene	9.99	9.69	9.83	10.08	9.66	9.81	9.67	9.82	.16	.51
Trans-1,3-Dichlorop	8.60	7.83	8.56	8.60	8.97	8.50	8.56	8.52	.34	1.06
2-Chloroethylvinyle	5.63	6.05	6.71	7.08	6.48	6.62	6.39	6.42	.47	1.48
Bromoform	8.83	8.30	9.25	9.24	9.42	9.05	8.76	8.98	.38	1.19
2-Hexanone	6.24	4.40	7.81	5.13	7.54	7.24	5.38	6.25	1.32	4.16
4-Methyl-2-Pentanon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tetrachloroethene	9.81	9.68	9.55	9.87	10.00	9.68	10.04	9.81	.18	.56
1,1,2,2-Tetrachloro	9.86	9.65	9.81	9.77	10.54	10.26	9.30	9.89	.40	1.27
Toluene	10.16	9.49	9.37	9.12	9.75	9.56	9.76	9.60	.33	1.05
Chlorobenzene	9.94	9.33	9.56	9.84	9.97	9.61	9.77	9.72	.23	.73
Ethylbenzene	9.64	9.24	9.53	9.58	9.65	9.68	9.74	9.58	.16	.51
Styrene	8.83	8.70	8.93	8.79	8.71	8.78	8.66	8.77	.09	.29
m&p-Xylenes	19.66	19.40	19.28	19.28	19.74	19.36	19.75	19.50	.21	.67
o-Xylene	10.53	10.06	10.29	10.57	10.77	10.76	10.83	10.54	.28	.89
1,3-Dichlorobenzene	9.73	8.84	9.39	9.13	9.57	9.61	9.56	9.41	.32	.99
1,4-Dichlorobenzene	10.52	10.07	10.27	10.28	10.67	10.10	10.50	10.34	.23	.71
1,2-Dichlorobenzene	10.30	9.71	10.17	10.18	10.49	10.31	10.14	10.19	.24	.76

The following analyte was injected at 50 ppb.

FILE ==========>	^c9018	^c9019	^c9020	^c9021	^c9022	^c9023	^c9024	AVG	STDDEV	MDL
4-Methyl-2-Pentanon	61.85	64.11	61.15	59.98	60.27	61.37	65.21	61.99	1.96	6.15

"c" unit converted to "E" unit after data file > C9999

INORGANIC METHOD BLANK SUMMARY

Lab Name: Veritech **Blank Matrix:** Soil

Lab Code: 14622 **Units:** mg/kg

Analyte	Practical Quant Limit	Batch Number	Method Blank Result
TPH	20	316s	ND

INORGANIC SPIKE SAMPLE RECOVERY

SAMPLE NO.

AA27344 MS

Lab Name: Veritech **Sample Matrix:** Soil

Lab Code: 14622

% Solids for Sample: 89

Concentration Units (mg/L or mg/kg dry weight): mg/kg

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
TPHC	75-125	790		58.4		749	98		C
Total CN	75-125								
Phenols	75-125								
Reac CN	75-125								
Reac HS	75-125								
Hex Cr	75-125								

Comments:

FORM V (PART 1) - IN ILM02.0

INORGANIC SPIKE SAMPLE RECOVERY

SAMPLE NO.

AA27344 MSD

Lab Name: Veritech **Sample Matrix:** Soil

Lab Code: 14622

% Solids for Sample: 89

Concentration Units (mg/L or mg/kg dry weight): mg/kg

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Added (SA)	%R	Q	M
TPHC	75-125	707		58.4		749	87		C
Total CN	75-125								
Phenols	75-125								
Reac CN	75-125								
Reac HS	75-125								
Hex Cr	75-125								

Comments:

FORM V (PART 1) - IN ILM02.0

INORGANIC DUPLICATE SUMMARY

SAMPLE NO.

AA27344 DUP

Lab Name: Veritech **Sample Matrix:** Soil

Lab Code: 14622

% Solids for Sample: 89

Concentration Units (mg/L or mg/kg dry weight): mg/kg

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
TPH	+/-20%	58.4		53.6		8.47		C
Total CN	+/-20%							
Phenols	+/-20%							
Reac CN	+/-20%							
Reac HS	+/-20%							
Hex Cr	+/-20%							

FORM VI - IN ILM02.0

TPH LINEAR REGRESSION DATE 10-NOV-94
TPH_1S ANALYST MARTY

STDS (MG)	ABS.
0	0.0000
2.5	0.1017
5	0.2072
10	0.4064
15	0.6095
20	0.8273

Regression Output:

Constant	-0.00124
Std Err of Y Est	0.004913
R Squared	0.999807
No. of Observations	6
Degrees of Freedom	4
X Coefficient(s)	0.041134
Std Err of Coef.	0.000285

Lot # W-94-TPH-1292

****

STDS (MG)	ABS.	PPM	DIFF
0	0.0000	0.0303	-0.0303
2.5	0.1017	2.5026	-0.0026
5	0.2072	5.0674	-0.0674
10	0.4064	9.9100	0.0900
15	0.6095	14.8474	0.1526
20	0.8273	20.1422	-0.1422

****

BATCH 316

SAMPLE	ABS.	MG
10mg11-16	0.4237	10.3306
mbs	0.3902	9.5162
dup 27344	0.0282	0.7158
ms1 27344	0.4328	10.5518
ms2 27344	0.3872	9.4433
mb11-16	0.0095	0.2612
27343	0.1827	4.4718
27344	0.0308	0.7790
27345	0.0318	0.8034
27346	0.0337	0.8495

DB 11/16

✓ Data Input 11/16/94 mc

analysis TPH SOILS

BATCH 316

DATE: 16-Nov-94

ANALYST: MC

Q.C. DATA

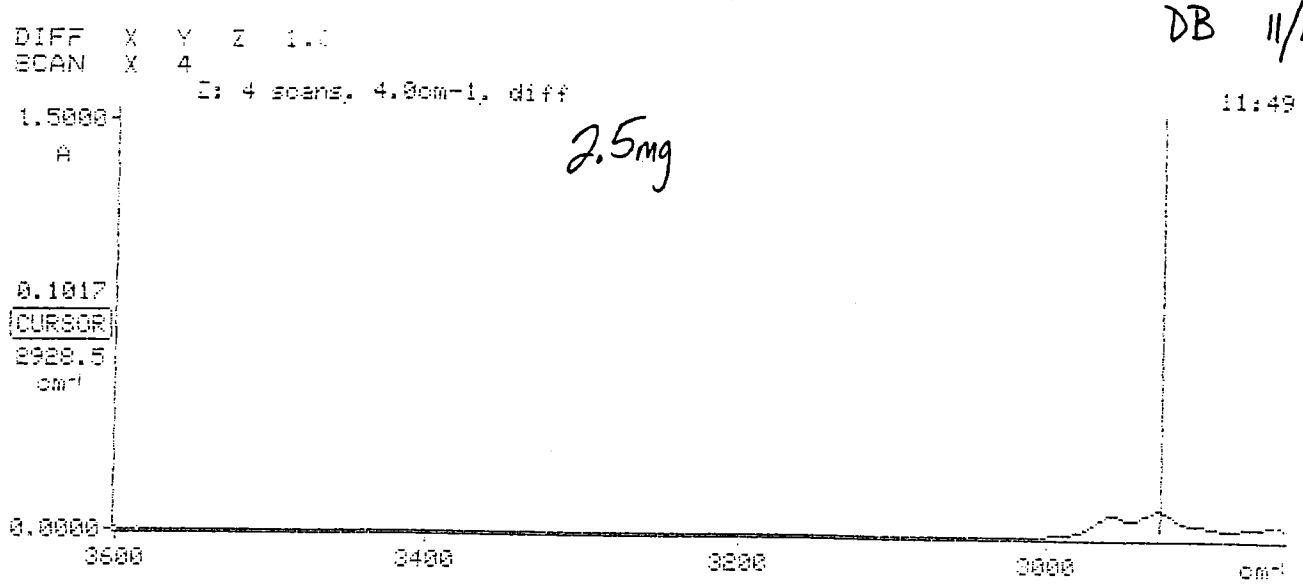
	THEORETICAL VALUE PPM	RESULT PPM	% REC.
CK STD	10	10.33	103%
MBS	666.7	634.41	95%
MS #1	749.06	790.4	98%
MS #2	749.06	707.36	87%
SAMPLE		58.36	RPD
SAMPLE DUP		53.62	8.47%

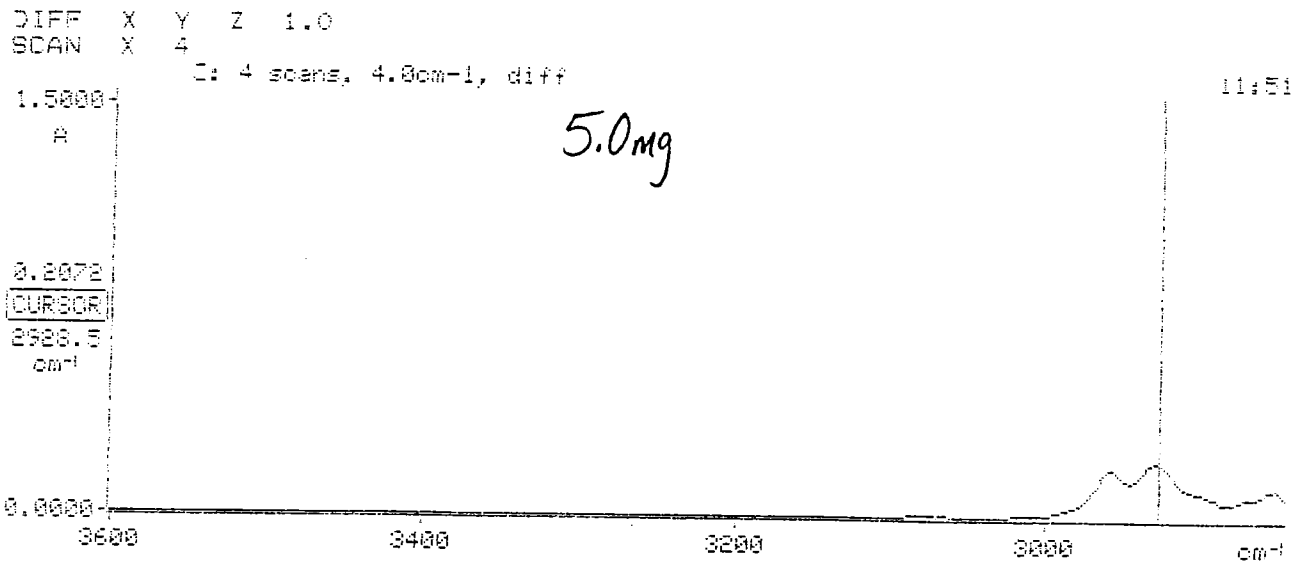
SAMPLE #	SOLIDS FACTOR	SAMPLE WEIGHT	MG CALC. FROM CURVE	DILUT. FACTOR	TPH (PPM)	MDL DRY WT.
10mg11-16	1.00	1000	10.3306	1.0	10.33	
mbs	1.00	15.0	9.5162	1.0	634.41	20.00
dup 27344	0.89	15.0	0.7158	1.0	53.62	22.47
ms1 27344	0.89	15.0	10.5518	1.0	790.40	22.47
ms2 27344	0.89	15.0	9.4433	1.0	707.36	22.47
mb11-16	1.00	15.0	0.2612	1.0	17.42	20.00
27343	0.83	15.0	4.4716	10.0	3591.79	240.96
27344	0.89	15.0	0.7790	1.0	58.36	22.47
27345	0.80	15.0	0.8034	1.0	66.95	25.00
27346	0.85	15.0	0.8495	1.0	66.63	23.53

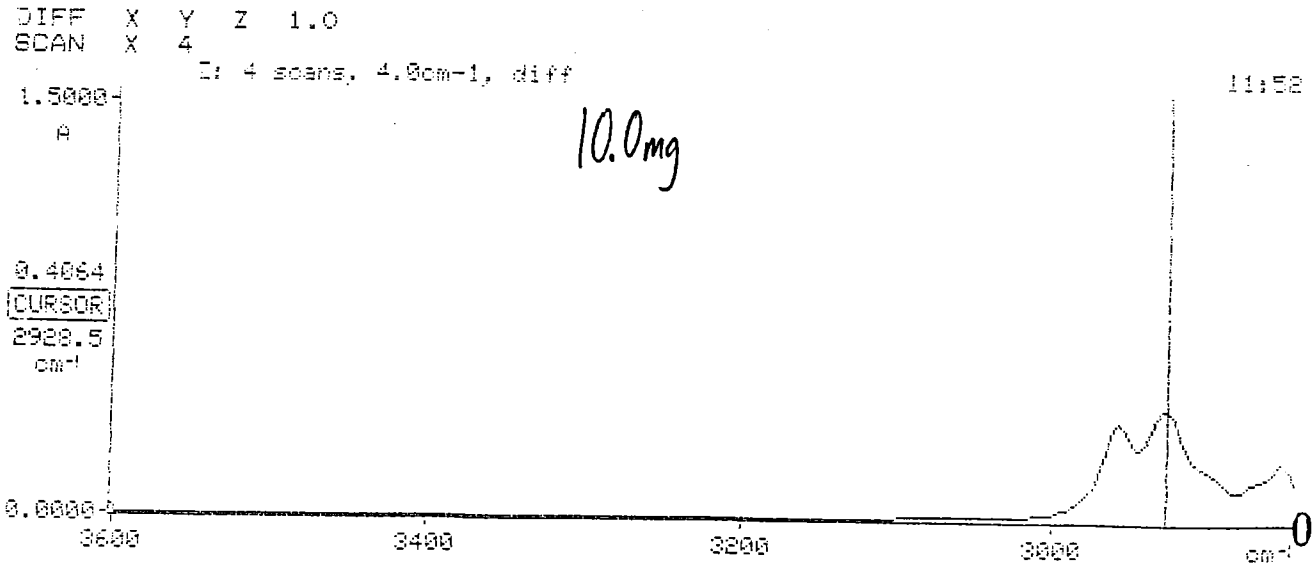
DB 11/16

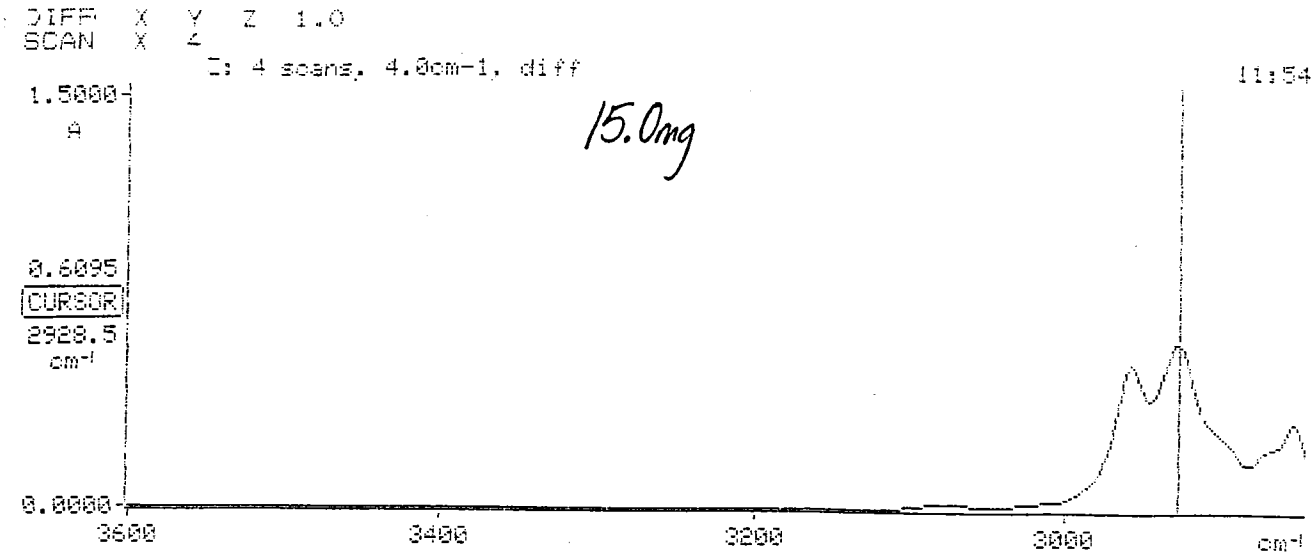
✓ Data Input
MC 11/16/94

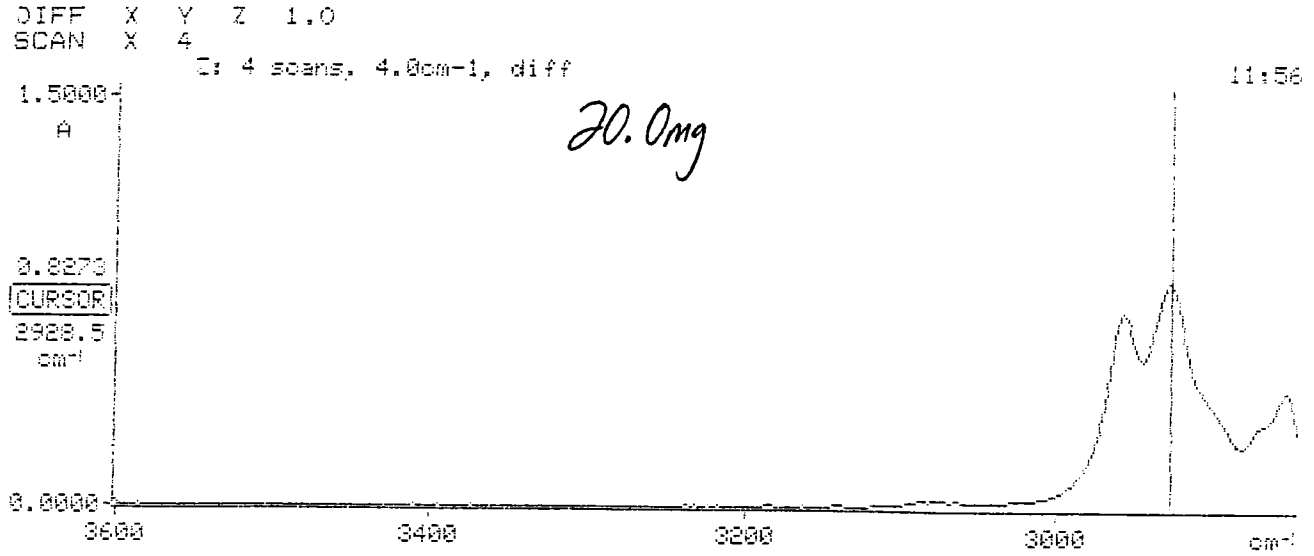
TPH curve
DB 11/10/94

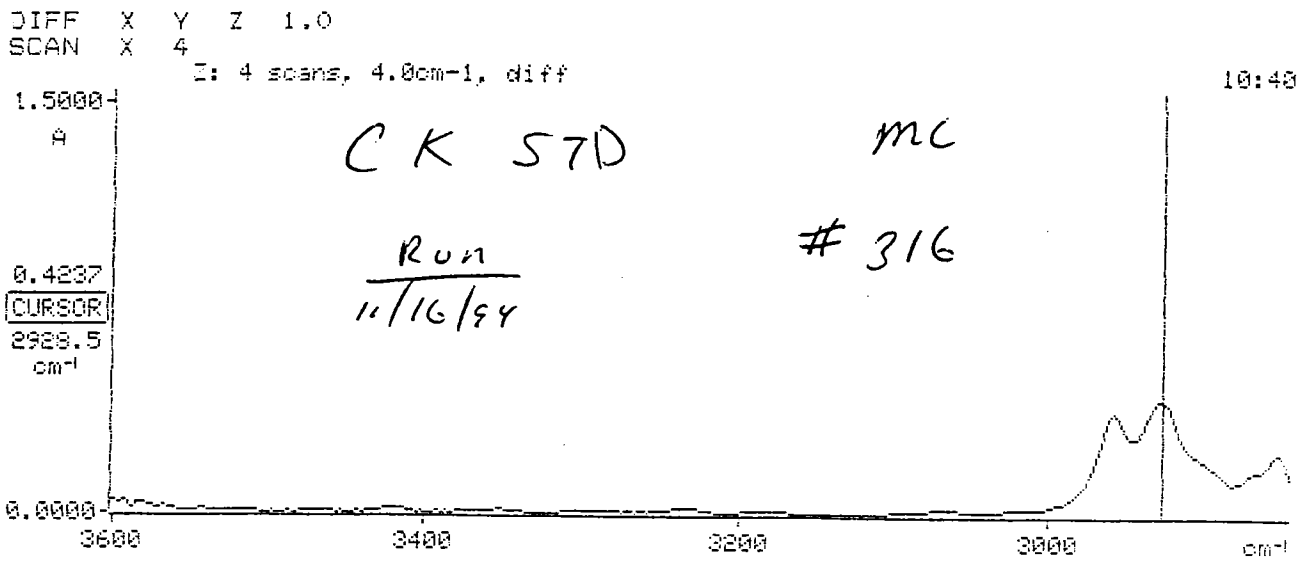


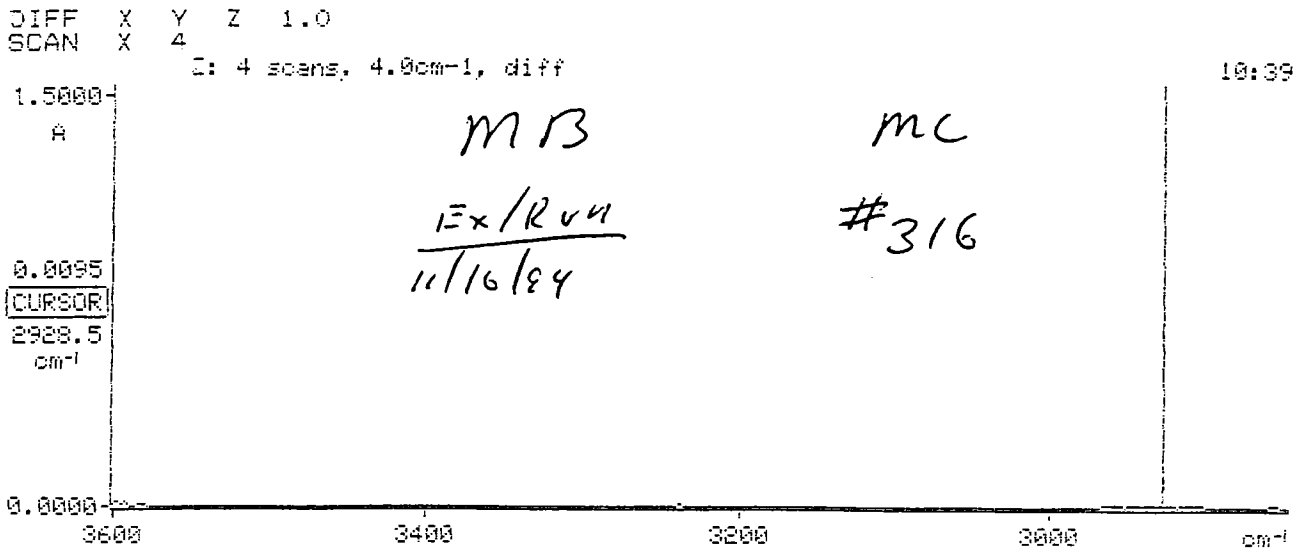


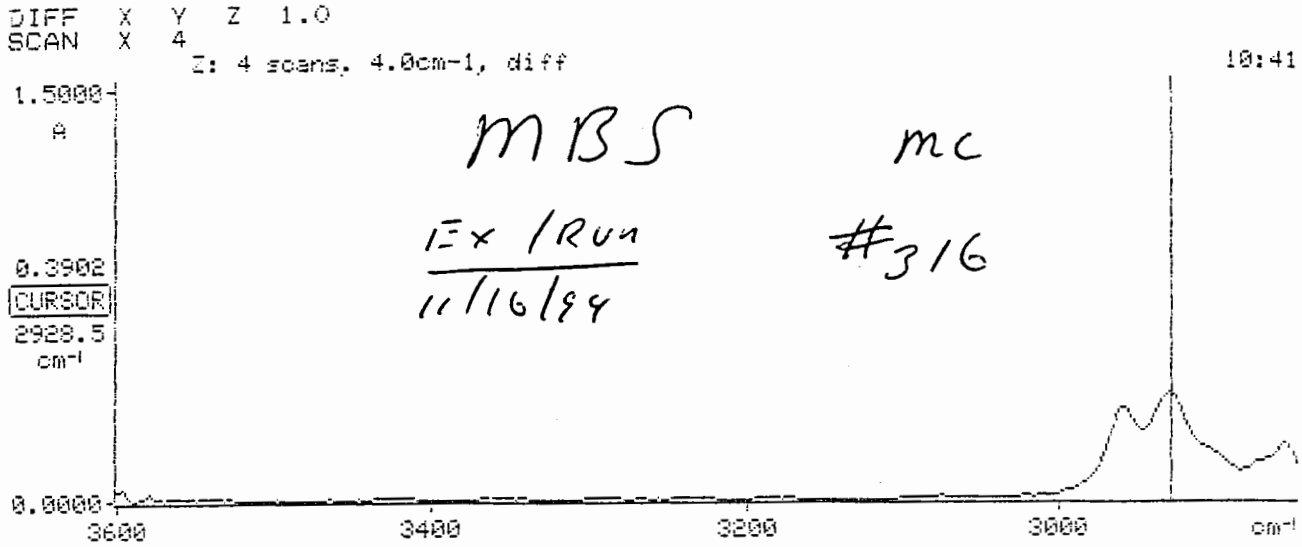


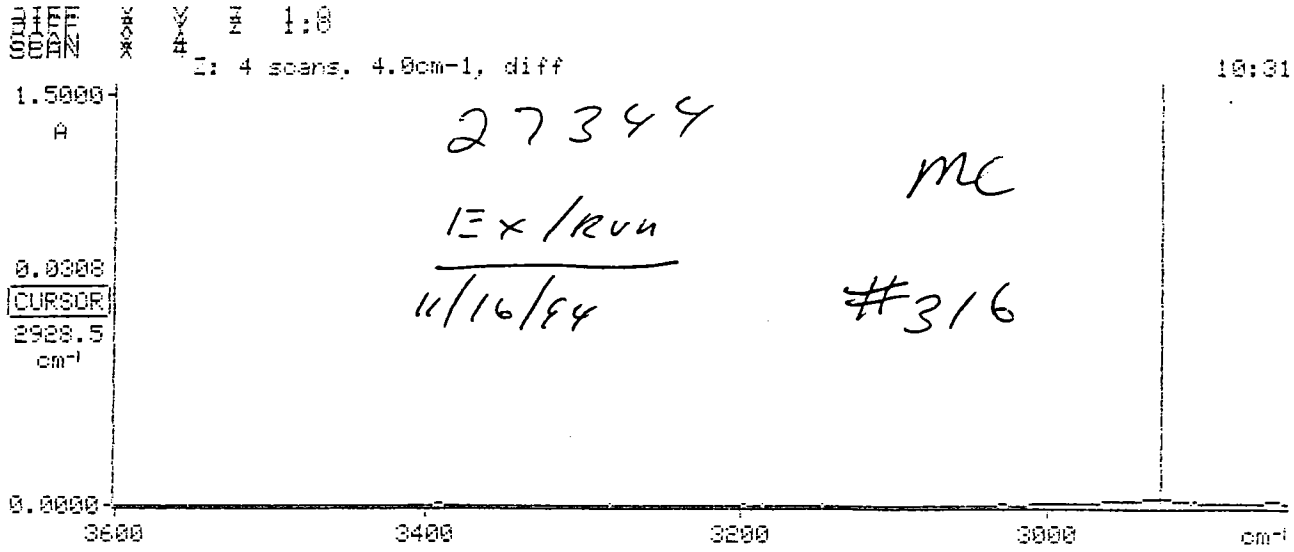

DIFF X Y Z 1.0
SCAN X 4
I: 4 scans, 4.0cm-1, diff
11:54
1.5000
A
15.0mg
0.6095
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1

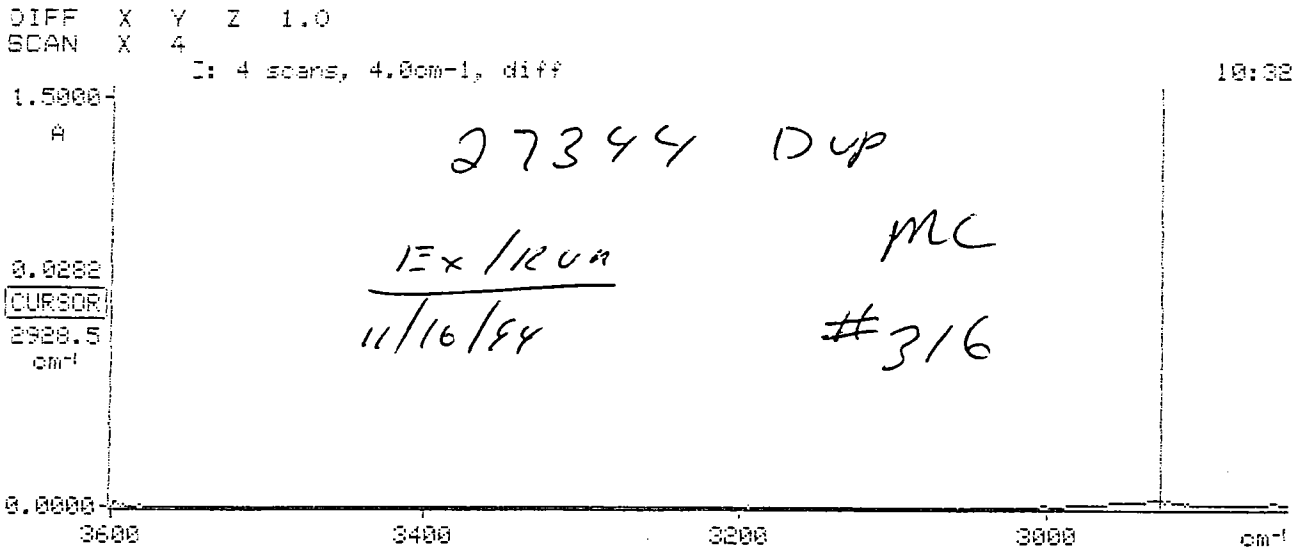

DIFF X Y Z 1.0
SCAN X 4
I: 4 scans, 4.0cm-1, diff
11:56
1.5000
A
20.0mg
0.8270
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1

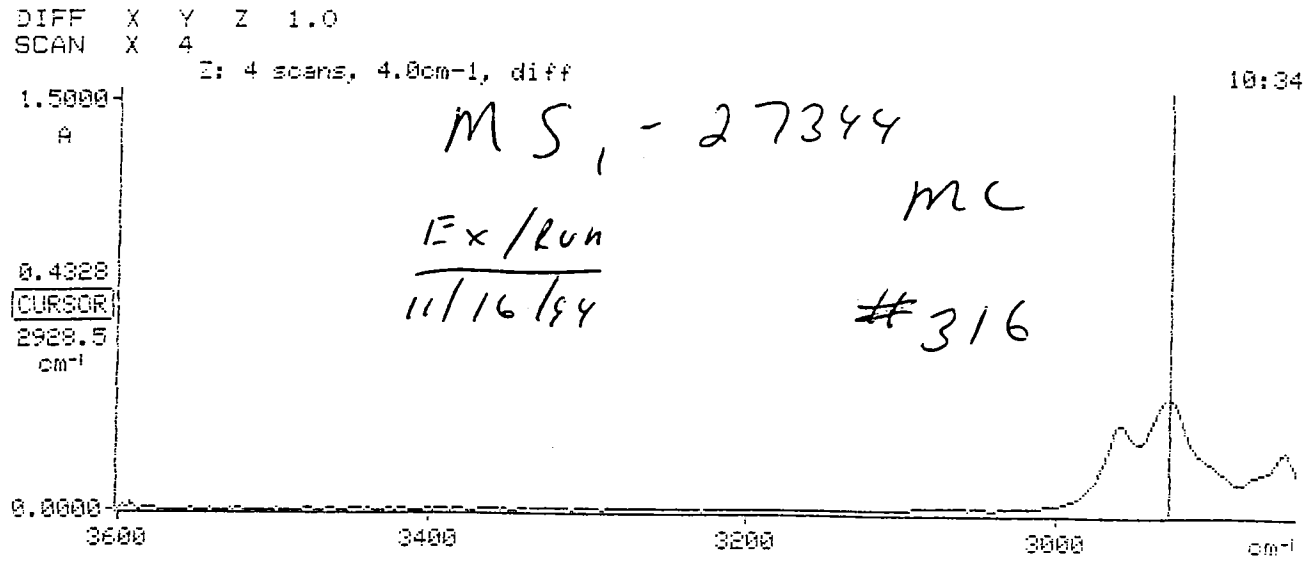

DIFF X Y Z 1.0
SCAN X 4
I: 4 scans, 4.0cm-1, diff
10:40
1.5000
A
CK STD
mc
Run
11/16/94
316
0.4237
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1

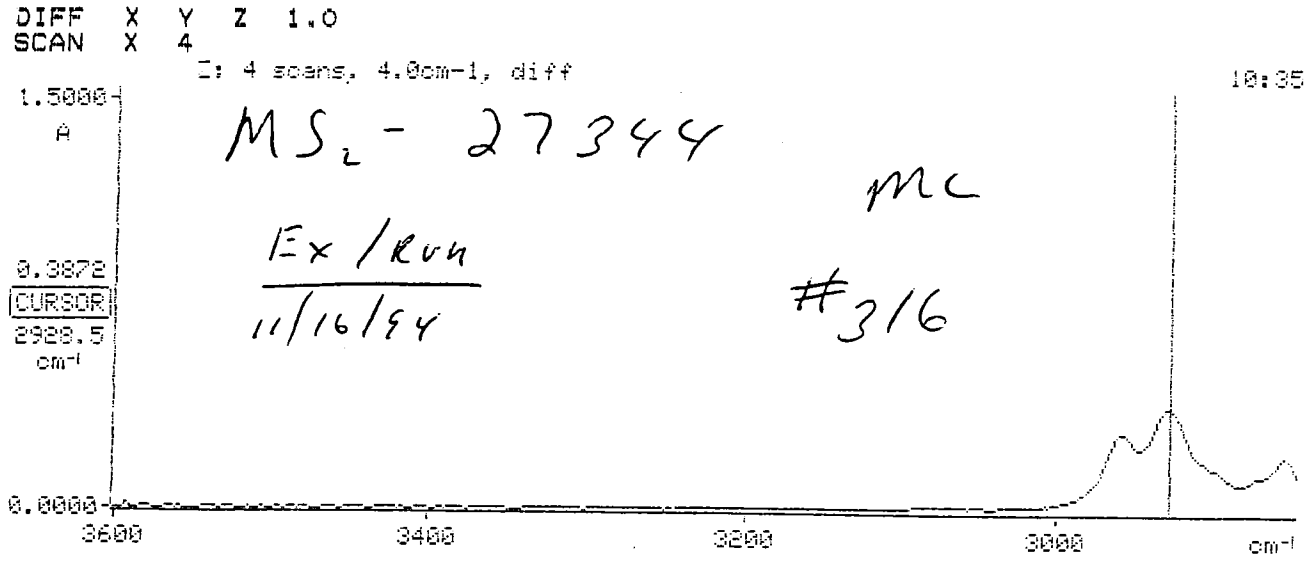

DIFF X Y Z 1.0
SCAN X 4
I: 4 scans, 4.0cm-1, diff
10:39
1.5000
A
MB
Ex/Run
11/16/84
MC
#316
0.0095
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1

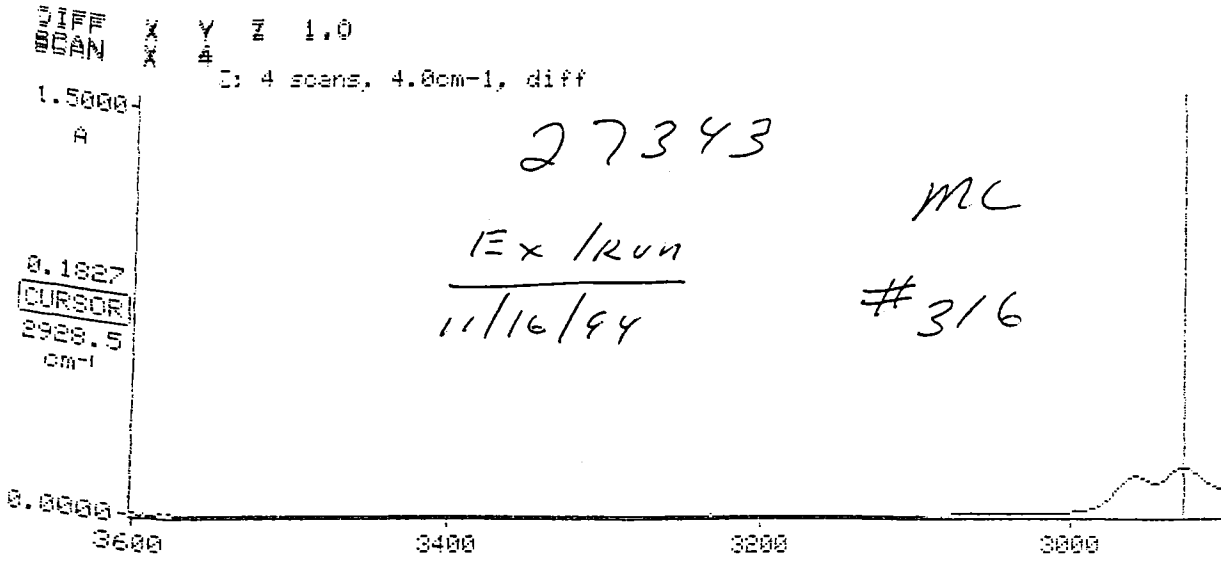

DIFF X Y Z 1.0
SCAN X 4
Z: 4 scans, 4.0cm-1, diff
10:41
1.5000
A
0.3902
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1
MBS
mc
Ex /Run
11/16/84
#316

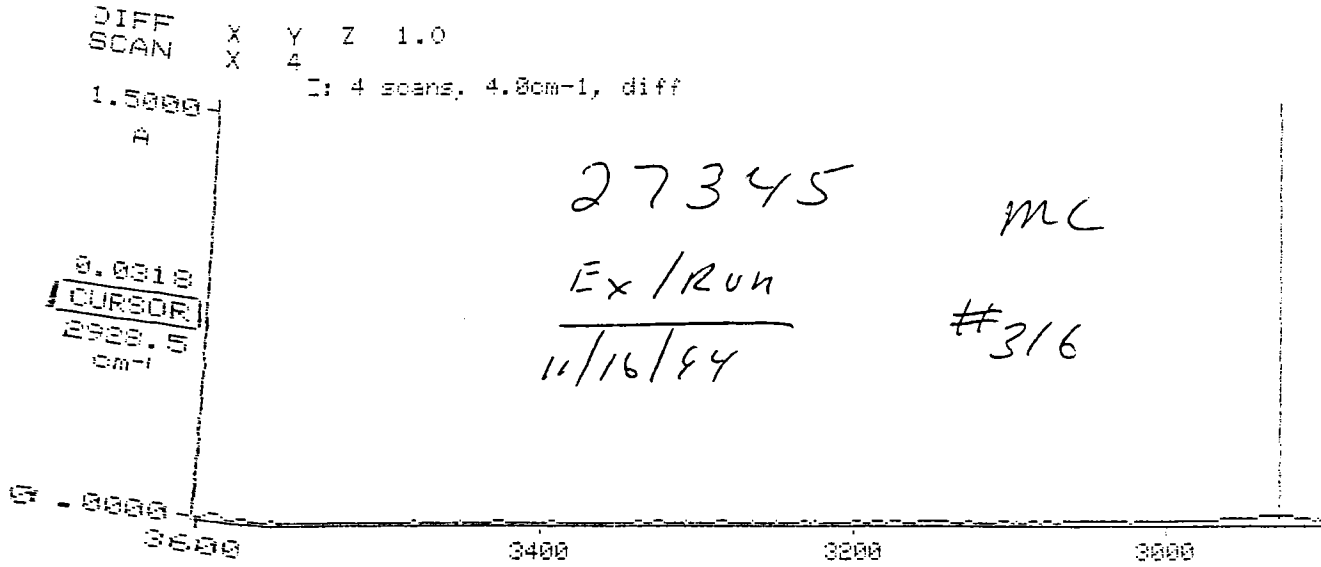

DIFF X Y Z 1.0
SCAN X 4
I: 4 scans, 4.0cm-1, diff
10:31
1.5000
A
27344
Ex/Run
11/16/84
MC
#316
0.0308
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1

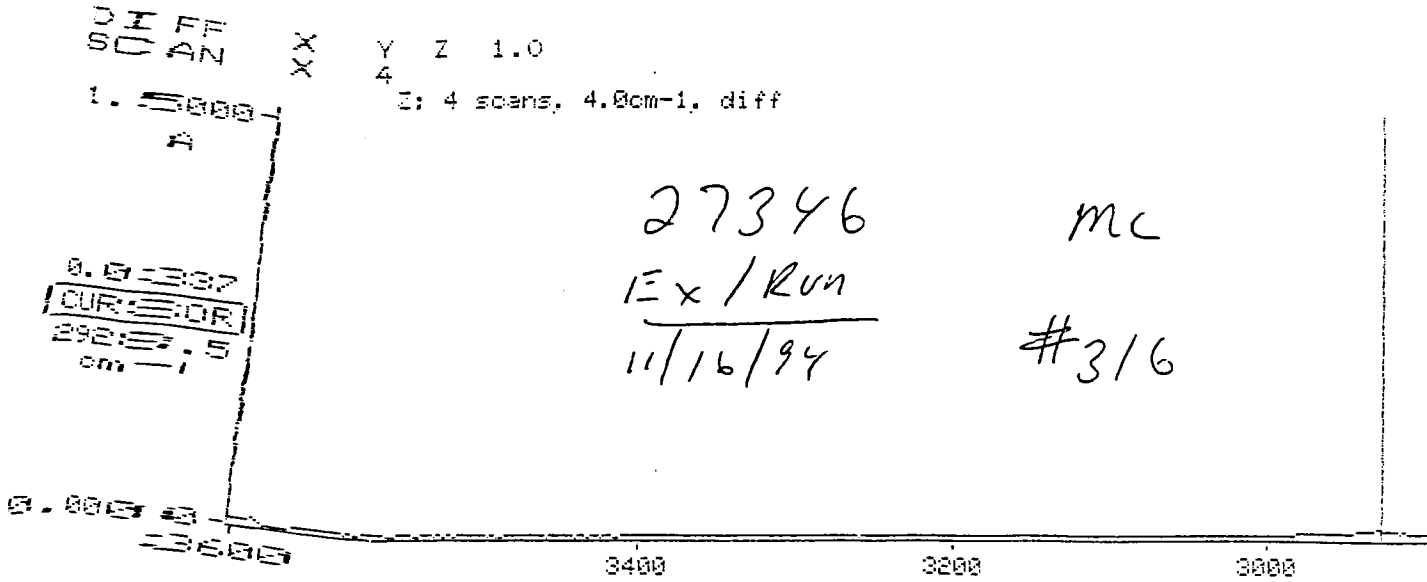

DIFF X Y Z 1.0
SCAN X 4
I: 4 scans, 4.0cm-1, diff
10:32
1.5000
A
27344 Dup
Ex/Run
11/16/84
MC
#316
0.0282
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1


DIFF X Y Z 1.0
SCAN X 4
I: 4 scans, 4.0cm-1, diff
10:34
1.5000
A
0.4328
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1
MS1 - 27344
Ex/Run
11/16/94
MC
#316


DIFF X Y Z 1.0
SCAN X 4
I: 4 scans, 4.0cm-1, diff
10:35
1.5000
A
0.3872
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
cm-1
MS2 - 27344
Ex/Run
11/16/94
MC
#316


DIFF SCAN
X Y Z 1.0
X 4
I: 4 scans, 4.0cm-1, diff
1.5000
A
0.1827
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
27343
Ex/Run
11/16/94
mc
#316


DIFF SCAN
X Y Z 1.0
X 4
I: 4 scans, 4.0cm-1, diff
1.5000
A
0.0318
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
27345
Ex/Run
11/16/94
mc
#316


DIFF SCAN
X Y Z 1.0
X 4
I: 4 scans, 4.0cm-1, diff
1.5000
A
0.0387
CURSOR
2928.5
cm-1
0.0000
3600
3400
3200
3000
27346
Ex/Run
11/16/94
mc
#316