UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 1076 NJDEPE UST FACILITY NO. 0081533 UST NOS. 160 AND 161 TMS NO. C-91-2845 SPILL CASE NO. 90-02-09-1524

31 May 1994

W.O. No.: 03886-088-001

Prepared For:

UNITED STATES ARMY
DIRECTORATE OF PUBLIC WORKS
BUILDING 167
FORT MONMOUTH, NEW JERSEY 07703

Prepared by:

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EXECUTIVE SUMMARY

On 2 February 1990, the New Jersey Department of Environmental Protection and Energy (NJDEPE) was notified by the Directorate of Public Works (DPW) of a discharge of hazardous substances. The discharge occurred during tightness testing of Underground Storage Tank (UST) No. 160. Spill Case No. 90-02-09-1524 was assigned by the NJDEPE.

On 14 March 1990, the NJDEPE responded to the spill report recognizing the spill and providing guidance to Fort Monmouth with respect to corrective actions and investigation of the spill event.

On 12 July 1991, an UST Decommissioning/Closure Plan was submitted to NJDEPE. The State responded on 22 October 1991 with the UST Closure Approval (C-91-2845).

Prior to receiving the Closure Approval, three monitoring wells were installed within the area of UST Nos. 160 and 161 to determine the possible impact, if any, to the environment. Wells were installed on 9 October 1991.

On 10 December 1991 groundwater samples collected from each monitoring well were analyzed by Environmental Profile Laboratories for volatile organic compounds plus 15 tentatively identified compounds (VO+15) and base neutral compounds plus 15 tentatively identified compounds (BN+15). The results indicated that methylene chloride, a common laboratory chemical, was detected in all samples in concentrations which exceed NJDEPE Class II-A Groundwater Quality Criteria. Quality Control Surrogates were outside of the acceptable range on VO+15 and BN+15 analyses and the results were disregarded.

On 26 October 1992 a second round of groundwater samples were collected from each monitoring well and analyzed for VO+15, BN+15, and lead. The results indicated that concentrations of lead (24 ug/L) in sample 9173.14 (collected from MW-3), benzene (39 ug/L) in sample No. 9173.12 (collected from MW-1), and methylene chloride in all samples were detected at levels which exceed NJDEPE Class II-A Ground Water Quality Criteria. In addition, each methylene chloride result was marked with a "B" data qualifier to show that methylene chloride was detected in the laboratory's quality control method blank which indicates the presence of methylene chloride is attributable to laboratory induced contamination. Lead concentrations are not typically associated with fuel oil spills, therefore, lead is not thought to be representative of potential contamination associated with UST Nos. 160 and 161.

On 8 December 1992, a one-year extension was requested by the Fort Monmouth Directorate of Engineering and Housing. of Closure Permit

On 18 May 1993, two underground storage tanks were closed at U.S. Army Fort Monmouth, in Fort Monmouth, New Jersey. The tanks, UST Nos. 160 and 161, were located adjacent to Building 1076 in the Main Post area of Fort Monmouth. UST Nos. 160 and 161 were single wall steel, 15,000-gallon capacity, No. 2 fuel oil USTs. The USTs were located immediately adjacent to each other and were closed simultaneously. All Service Environmental, Inc. (ASE) performed the tank closures.

Soils surrounding the tanks were screened visually and with air monitoring instruments for evidence of contamination. The tanks were inspected following removal for cracks, corrosion and puncture holes as an indication of historical leakage from the tank. No holes were noted in UST No. 161 and no potentially contaminated soils were identified surrounding this UST.

Upon removal and inspection of UST No. 160, several corrosion holes of approximately 1/16-inch in diameter were noted. Additionally, a sheen was noted on groundwater within the excavation surrounding the UST, indicating that a historical discharge may have occurred. During the removal of piping from the UST, a spill of approximately three gallons of product occurred discharging to the groundwater and soil adjacent to the tanks. The product and approximately 200 gallons of water and 130 cubic yards of soil were removed as a remedial measure. A discharge was reported to the NJDEPE by ASE on 18 May 1993 and incorporated into Spill Case No. 90-02-09-1542. Groundwater was present in the excavation at approximately eleven feet below ground surface (BGS).

Following removal of UST Nos. 160 and 161, 12 post-excavation samples and one duplicate sample were collected from immediately above groundwater along the sidewalls of the excavation. The samples were analyzed by U.S. Army Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPHC). Analytical results of sample Nos. 1202.12 and 1202.13 indicate elevated concentration of TPHC of 3,570 mg/kg and 1,900 mg/kg, respectively. In addition, 4 post-excavation samples were collected from the southeast wall and bottom of the excavation and below the pipe chase. Analytical results of sample No. 1201.2 indicate an elevated concentration of TPHC of 2630 mg/kg. No soil cleanup criteria has been proposed for TPHC by NJDEPE; however, the NJDEPE has proposed soil cleanup criteria (N.J.A.C. 7:26D-1 et seq.) for total organic compounds of 10,000 mg/kg. All samples contained concentrations of TPHC below the proposed NJDEPE soil cleanup criteria of 10,000 mg/kg.

On 19 May 1993, the NJDEPE submitted a letter indicating that the case had been referred to the Compliance Monitoring Section of the Bureau of Applicability and Compliance. The letter stated that Fort Monmouth was out of compliance and was required to submit a Discharge Investigation and Corrective Action Report.

On 2 July 1993, a standard reporting form, referencing the UST closure was submitted to the NJDEPE.

Based on the remedial measures performed and the analytical results for post excavation soil samples, it is recommended that no further action be required for soil surrounding the former locations of UST Nos. 160 and 161. In addition, it is proposed that groundwater analysis be performed for one (1) year on a quarterly basis to confirm the presence of contamination. Analytical results and recommendations for further action will be summarized and provided to NJDEPE in an addendum to this report upon review of the groundwater analysis described above.

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SECTION 1.0

UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

Two underground storage tanks (USTs), identified as UST Nos. 160 and 161, were closed at Building 1076 at U.S. Army Fort Monmouth, New Jersey on 18 May 1993. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEPE-Division of Hazardous Waste Management (DHWM) on 12 July 1991 and approved 22 October 1991 (Closure Approval No. C-91-2845). UST Nos. 160 and 161 were 15,000-gallon capacity single wall steel tank used for storage of No. 2 fuel oil.

All activities associated with the decommissioning of UST Nos. 160 and 161 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to: N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., N.J.A.C. 7:26E-1 et seq., and Occupational Safety and Health Administration (OSHA) 29 CFR 1910.146 & 29 CFR 1910.120. All permits including but not limited to the NJDEPE-approved Decommissioning/Closure Plan were posted onsite for inspection. ASE was contracted by DPW to decommission the USTs and is currently registered and certified by the NJDEPE for performing UST closure activities.

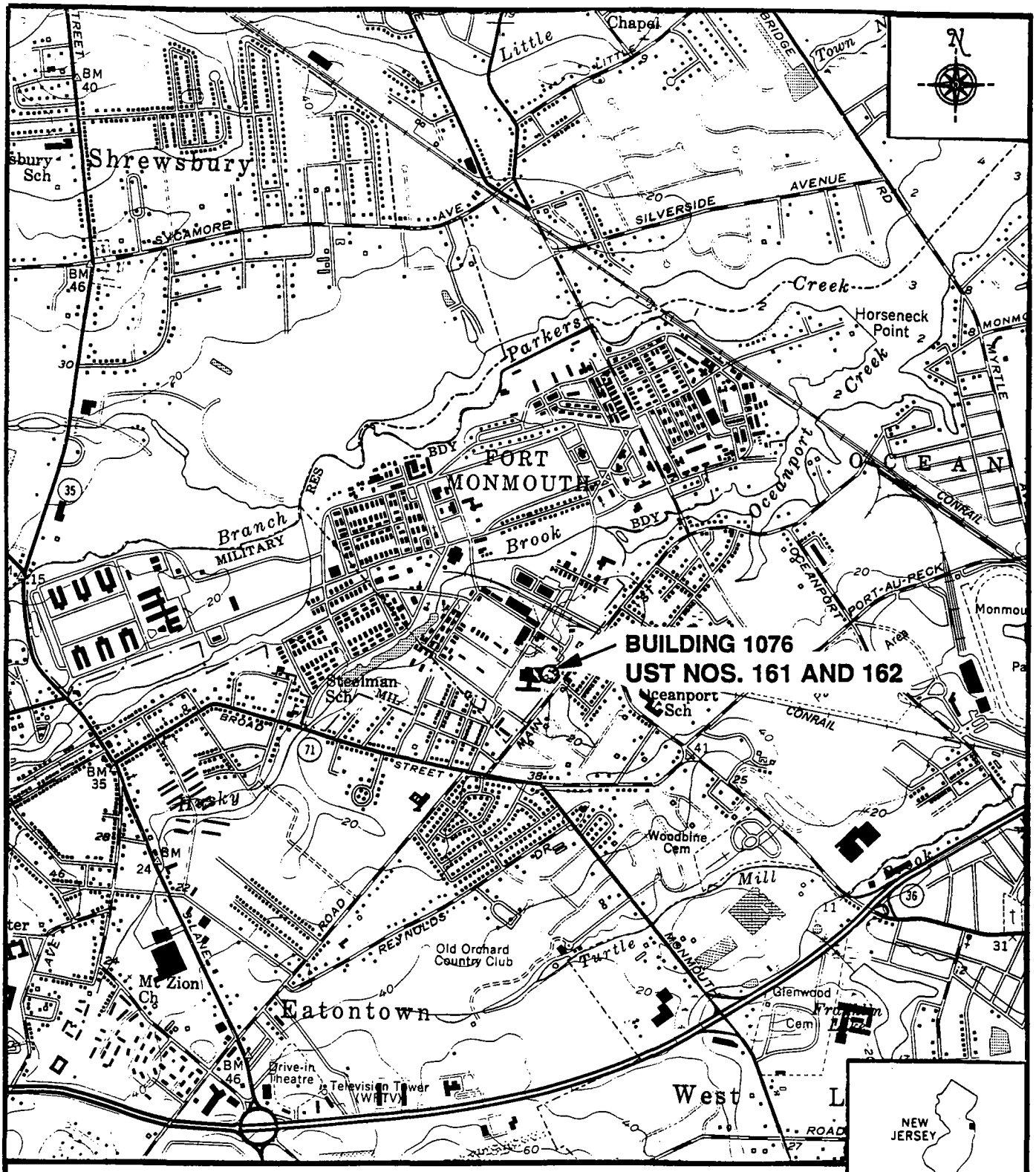
The NJDEPE Closure Approval and correspondence with the NJDEPE is included in Appendix A. The UST Site Assessment Summary Forms are included in Appendix B. The UST Site Assessment Summary Form was signed ~~and sealed~~ CS by Mr. James Ott, Acting Director of DPW.

This UST Closure and Site Investigation Report was prepared by Roy F. Weston Inc. (WESTON®), to assist the DPW in complying with the NJDEPE Bureau of Underground Storage Tanks (NJDEPE-BUST) regulations. The applicable NJDEPE-BUST regulations at the date of closure were the "Technical Requirements for Site Remediation-Proposed New Rules" (N.J.A.C. 7:26E-1 et seq. May 1992).

Section 1 of this UST Closure and Site Investigation Report provides a summary of the tank decommissioning activities. Section 2 describes the site investigation activities. Conclusions and recommendations, including the results of the soil and groundwater sampling investigations, are presented in Section 3 of this report.

1.2 SITE DESCRIPTION AND UST HISTORY

Building 1076 is located in the Main Post area of Fort Monmouth. A site location map is provided in Figure 1-1. Building 1076 is an active boiler plant for the installations hospital



REFERENCE: U.S.G.S. QUADRANGLE LONG BRANCH, NJ: PHOTOREVISED 1981
CONTOUR INTERVAL 20 FEET SCALE 1 INCH = 2000 FEET

UST LATITUDE: N 40 Deg. 18 Min. 30 Sec.
UST LONGITUDE: W 74 Deg. 02 Min. 18 Sec.

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FIGURE 1-1
FACILITY LOCATION MAP
U.S. ARMY - DIRECTORATE OF PUBLIC WORKS
FORT MONMOUTH, NEW JERSEY

facility. Two (2) USTs, identified as Nos. 160 and 161, were located approximately 32 feet west of Building 1076. A site plan is provided in Figure 1-2.

On 2 February 1990, a discharge was reported to the NJDEPE by the DPW during the testing of UST No. 160. The tank had subsequently failed the test and discharged #2 fuel oil to the area surrounding UST No. 160.

On 18 May 1993, UST Nos. 160 and 161 were closed. The USTs were single walled steel, 15,000-gallon, No. 2 fuel oil tanks. During the UST closure, a spill of product from the piping occurred, discharging approximately three (3) gallons of No. 2 fuel oil to the groundwater in the excavation and surface soils. Approximately 200-gallons of groundwater and 130 cubic yards of soil were removed as an immediate remedial action.

The spill was reported by ASE on 18 May 1993. The spill was incorporated into Spill Case No. 90-02-09-1542.

1.3 GEOLOGICAL/HYDROGEOLOGICAL SETTING

The following is a description of the geological/hydrogeological setting of the area surrounding Building 1076. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

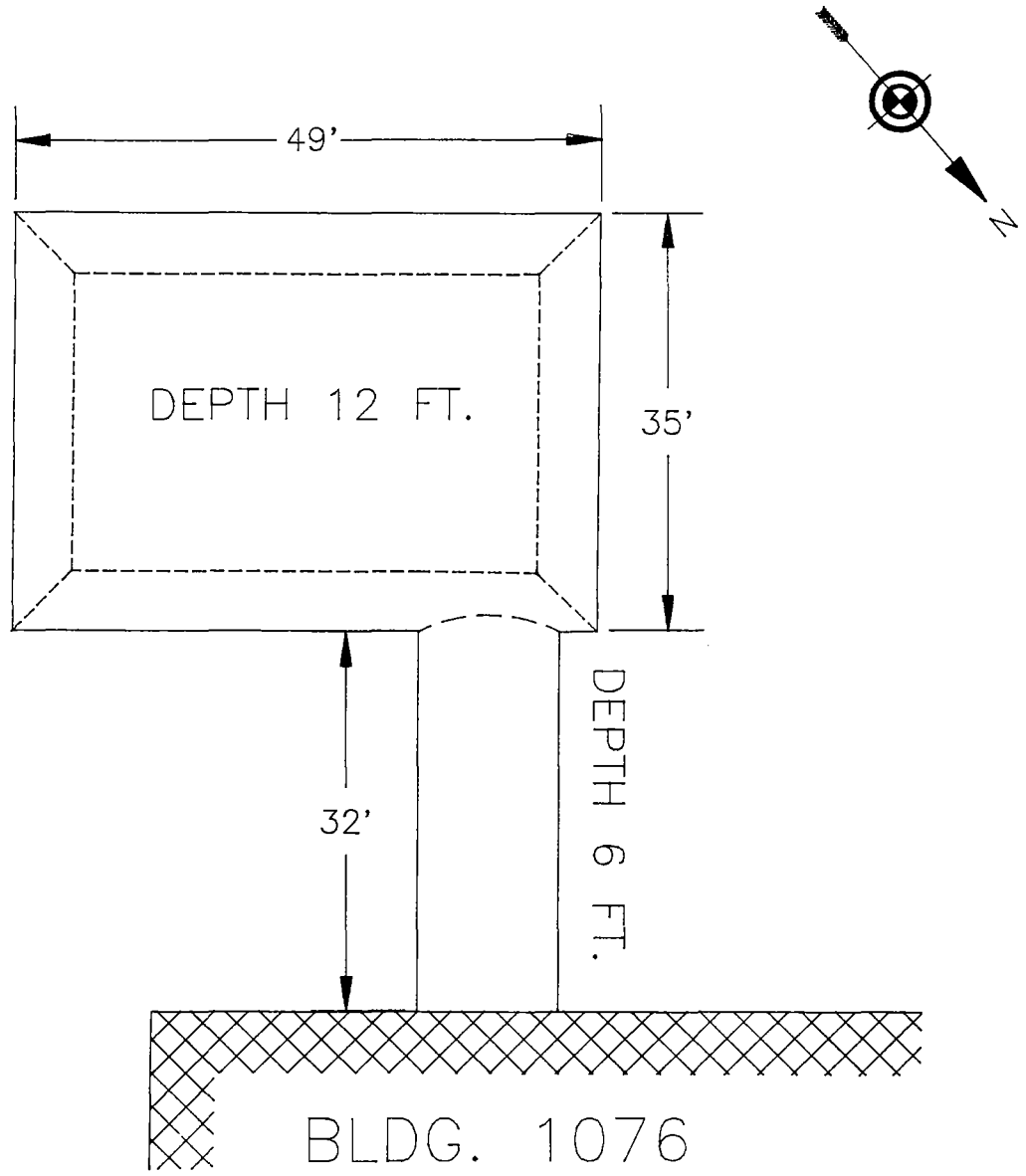
1.3.1 Geological Setting

Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey, Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. Over 20 regional



REVISION #: 1 DATE: 5/16/94 PLOT NAME:
FILE NAME: DEH-1076.DWG DRAWN BY: B. MAC

WESTON MANAGERS DESIGNERS/CONSULTANTS

PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 1076 – UST NOS. 160,161 FORT MONMOUTH, NEW JERSEY

CLIENT NAME: U.S. ARMY – FORT MONMOUTH DIRECTORATE OF PUBLIC WORKS

SITE PLAN

DATE: 5/17/94

FIGURE #: 1–2

geologic units are present within the sediments of the Coastal Plain. Regressive, upward-coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-course-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark grey to black, medium-to-fine grained sand with abundant clay,mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey, medium-to-very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron-oxide encrusted (Minard).

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities by the military. Topographic elevations for the Main Post area range from five feet above mean sea level (MSL) to 31 feet above MSL.

1.3.2 Hydrogeological Setting

The water table aquifer at the Main Post area is identified as part of the "composite confining units", or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records from wells drilled at the Main Post area, groundwater is typically encountered at depths of two to nine feet below ground surface (BGS). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce from 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Shallow groundwater is locally influenced within the Main Post area by the following factors:

- tidal influence (based on proximity to the Atlantic Ocean, rivers and tributaries),
- topography,
- nature of the fill material within the Main Post area,
- presence of clay and silt lenses in the natural overburden deposits, and
- local groundwater recharge areas (i.e. stream, lakes).

Due to the fluvial nature of the overburden deposits (i.e. sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. This is consistent with lithologies observed in borings installed within the Main Post area, which primarily consisted of fine-to-medium grained sands, with occasional lenses or laminations of silt and/or clay.

Three monitoring wells were placed within the area of UST Nos. 160 and 161 to determine the possible impact, if any, to the environment. The monitoring well permit, monitoring well records, and Form B for each well are provided in Appendix C.

The groundwater table in the area of building 1076 ranges from an elevation of 13.22 feet to 15.14 feet. Groundwater was found in monitoring wells MW-1, MW-2 and MW-3 at depths between 3.98 feet to 4.81 feet below ground surface (BGS). From the monitoring well information summarized in Table 1-1, groundwater flows to the north-northeast.

The closest surface water body to the site is Oceanport Creek, located approximately one mile to the east. The Atlantic Ocean is located five miles east of the site. A cross-sectional view indicating depths of the USTs, stratigraphy and location of water table is provided in Figure 1-3.

1.3.3 Offsite Groundwater Usage

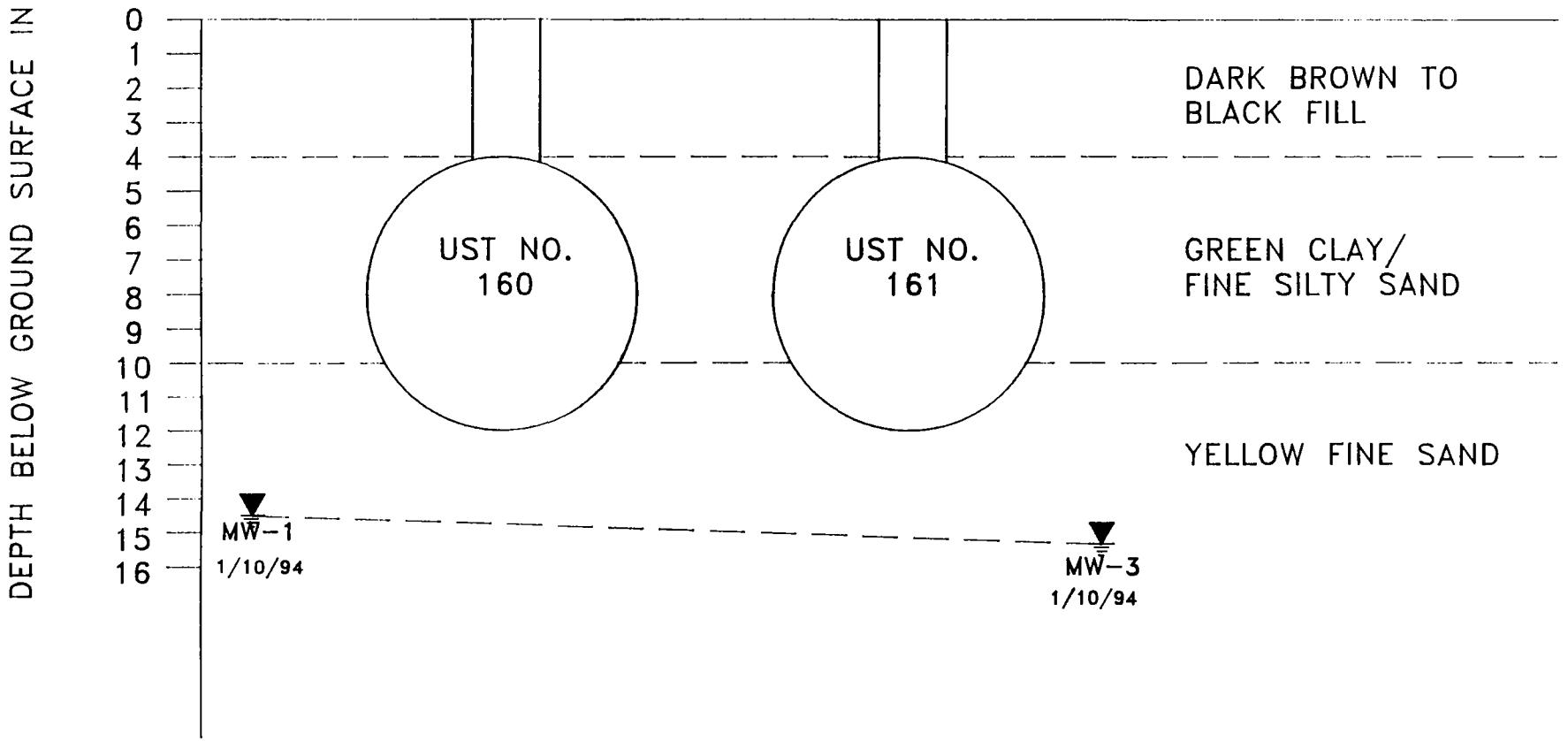
In compliance with the NJDEP regulations, WESTON conducted a well search to identify all irrigation, monitoring, domestic, industrial and public supply wells within one half mile of U.S. Army Fort Monmouth. The file search produced records for 104 wells within one half mile of Building 1076. The well search summary table includes the following information on surrounding wells: well identification number; well owner; well address; total depth (feet BGS); casing length (feet); static water level elevation (feet BGS); use code; and NJDEPE permit number. In addition, a summary table of all U.S. Army wells located at Fort Monmouth, which includes the following information: well number, NJDEPE permit number; New Jersey State Plane Coordinates; casing elevation and, elevation of ground well records for the nearest identified offsite well have also been included, if available. This information is included in Appendix D.

A review of the well records indicated that the majority of the wells within the area of concern are used for monitoring purposes. There were 90 monitoring wells. An irrigation well (Permit

TABLE 1-1

WATER LEVEL ELEVATION FOR MONITORING WELLS MW-1, MW-2 AND MW-3 COLLECTED ON 10 JANUARY 1994

Monitoring Well Permit Number	Time of Collection	Ground Surface Elevation (feet)	Depth to Water (feet)	Groundwater Surface Elevation (feet)
29-26940 (MW-1)	1:28 pm	19.44	4.30	15.14
29-26941 (MW-2)	1:25 pm	18.03	4.81	13.22
29-26942 (MW-3)	1:20 pm	19.36	3.98	15.38



REVISION #: 0000 DATE: 5/09/94
FILE NAME: B1076X.DWG DRAWN BY: R. MAC

WESTON MANAGERS DESIGNERS/CONSULTANTS

PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 1076 – UST NOS. 160,161
FORT MONMOUTH, NEW JERSEY
CLIENT NAME: U.S. ARMY – FORT MONMOUTH DIRECTORATE OF PUBLIC WORKS

SUBSURFACE PROFILE

DATE: 5/10/94

FIGURE #: 1-3

Number 29-22549), owned by Bridgewater Townhouse is the closest to the site in the downgradient flow direction. The well is located at 57 Bridgewater Drive, approximately 3,100 feet northeast of the site.

The well search records indicated the presence of three domestic wells (Well ID Numbers 44, 64 and 100) within the downgradient area of concern. Domestic well, ID Number 44, (Permit Number 2-6499) owned by Kleiner Bros. Construction is the closest to the site in the downgradient flow direction.

1.4 HEALTH AND SAFETY

Before, during, and after all activities, hazards at the work site which may have posed a threat to the health and safety of all personnel who were involved with the decommissioning of the UST system were minimized. All areas which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing approved equipment. The trained individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

1.5 REMOVAL OF UNDERGROUND STORAGE TANK

1.5.1 General Procedures

During May of 1993, UST Nos. 160 and 161 were closed by removal at Building 1076 in the Main Post Area of Fort Monmouth. Tank closure activities were conducted as follows:

- All underground obstructions (utilities,.. etc.) were marked out by the contractor performing the closure prior to excavation activities.
- Surface materials (i.e., asphalt, concrete, etc..) were excavated and staged for recycling/disposal in accordance with applicable laws and regulations.
- Each tank's atmosphere was inerted.
- Access ways on top of the tank were opened.
- Licensed tank closure contractor personnel entered the tanks to visually inspect and manually clean the insides of the tanks.
- All wastes (tank bottom sludge and tank rinsate) generated during cleaning were collected and disposed.
- Post closure soil samples were collected for laboratory analysis.

- The tanks were removed from the excavation and staged on plastic sheeting.

- Soil excavated during the tank closure was transported to Soil Remediation of Philadelphia for characterization and disposal/reuse.

- The excavation was backfilled with clean fill material to the original surface grade.

1.5.2 Underground Storage Tank Excavation

Soil was excavated to expose the UST and the associated piping. During the UST closure, a spill of product from the piping occurred, discharging approximately three (3) gallons of No. 2 fuel oil to the groundwater in the excavation and surface soils. Approximately 200 gallons of groundwater and 130 cubic yards of soil were removed as an immediate remedial action. The spill was reported by ASE on 18 May 1993. The spill was incorporated into Spill Case No. 90-02-09-1542. Soil that was removed from the excavation were stockpiled for analysis at the T-80 yard of U.S. Army Fort Monmouth.

The USTs were rendered vapor free by purging prior to any cutting or access. After the removal of the associated piping, a manway was made in the USTs to allow for the proper cleaning. The USTs were completely emptied of all liquids prior to removal. Tank cleaning liquids and contaminated soil were transported by Casie Protank Environmental Services, Inc. and disposed at Casie Ecology Oil Salvage in New Jersey. Hazardous waste manifests for disposal of liquids are included in Appendix E. All of the openings in the tank were plugged except for one hole (manway) prior to removal.

After the USTs were removed from the excavation, each were staged on polyethylene sheeting and examined for cracks, corrosion or punctures holes. The presence or absence of holes was documented by the Sub-Surface Evaluator.

No holes were observed upon the inspection of UST No. 161; however, several corrosion holes of approximately 1/16-inch diameter were noted during the inspection of UST No. 160.

Soils surrounding the USTs were screened visually and with an organic vapor analyzer (OVA) for evidence of contamination. No evidence of contamination was noted in soils surrounding UST No. 161. Approximately 323 cubic yards of potentially contaminated soil was removed from the area surrounding UST Nos. 160 and 161. This soil was stockpiled and analyzed for TPHC by the U.S. Army Fort Monmouth Environmental Laboratory. A total of 223 cubic yards was CY ~~will be~~ transported to Soil Remediation of Philadelphia for reclamation. The remaining 100 cubic yards of soil were sampled and determined to be free of contamination. This soil will be used as clean fill. Following the removal of the USTs, the excavation was backfilled with clean fill. A certificate of soil reclamation ~~will be~~ is CA presented in an addendum to this report. Attached To the Cover letter CA

1.6 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL:

The tanks were transported by ASE and recycled by A & A Scrap, in compliance with all applicable regulations and laws.

The contractor labelled the UST prior to transport with the following information:

- Site of origin;
- Contact person;
- NJDEPE UST Facility ID number;
- Name of transporter/contact person; and,
- Destination site/contact person.

1.7 MANAGEMENT OF EXCAVATED SOILS:

Approximately 323 cubic yards of potentially contaminated soil were excavated as part of the removal of UST Nos. 160 and 161. Potentially contaminated soils were stockpiled separately from other excavated material and analyzed by the U.S. Army Fort Monmouth Environmental Laboratory for TPHC. A total of 223 cubic yards of contaminated soils ~~will~~ was be transported to Soil Remediation of Philadelphia for reclamation. The remaining 100 cubic yards were determined to be free of contamination and ~~will be~~ were used as clean fill. Following the removal of the USTs, the excavation was backfilled with clean fill. A certificate of soil reclamation ~~will~~ is be presented in an addendum to this report.

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SECTION 2.0

SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site Investigation was managed and carried out by DPW personnel. All analyses were performed and reported by Environmental Profile Laboratories and the U.S. Army Fort Monmouth Environmental Laboratory, both of which are NJDEPE-certified testing laboratories. All sampling was performed under the direct supervision of a NJDEPE Certified Sub-Surface Evaluator according to the methods described in the NJDEPE Field Sampling Procedures Manual (May 1992). Sampling frequency and parameters analyzed complied with the NJDEPE-BUST document " Technical Requirements for Site Remediation-Proposed New Rules" (N.J.A.C. 7:26E-1 et seq., dated May 1992) which was the applicable regulation at the date of closure. All records of the Site Investigation activities are maintained by Fort Monmouth DPW: Environmental Office.

The following Parties participated in closure and site investigation activities:

- Closure Contractor: All Service Environmental, Inc.
  Contact Person: Mark Turoff
  Phone Number: (914) 365-0800
  NJDEPE Company Certification No.: 3100194

- Subsurface Evaluator: Charles Appleby
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (908) 532-6224
  NJDEPE Certification No.: 2056

- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Brian McKee
  Phone Number: (908) 532-4359
  NJDEPE Laboratory Certification No.: 13461

- Analytical Laboratory: Environmental Profile Laboratories
  Contact Person: Daniel Wright
  Phone Number: (908) 244-6278
  NJDEPE Laboratory Certification No.: 15526

- Hazardous Waste Hauler: Casie Protank Environmental Services
  Contact Person: Greg Call
  Phone Number: (609) 696-4401
  USEPA Transporter Identification No.: NJD045995693

2.2 FIELD SCREENING/MONITORING

All soils that were excavated as part of the removal of the UST were screened using a OVA, for evidence of contamination. Soils were also visually inspected for evidence of contamination (staining, free product, etc..). Approximately 323 cubic yards of potentially contaminated soil were excavated as part of the UST Nos. 160 and 161 removal.

Soils on the sidewalls and base of the excavation were screened with a OVA by an NJDEPE Certified Sub-Surface Evaluator. No evidence of contamination was noted within the soils, on the sidewalls or base of the excavation surrounding UST No. 161. Additional soils were removed from the excavation surrounding UST No. 160 until no evidence of contamination remained.

2.3 SOIL AND GROUNDWATER SAMPLING

Soil

Following removal of UST Nos. 160 and 161, 12 post excavation soil samples and one duplicate sample were collected and analyzed for total petroleum hydrocarbons (TPHC) along the sidewalls of the excavation immediately above groundwater (approximately eleven feet BGS) in accordance with NJDEPE procedure and the approved closure plans. In addition, 4 post-excavation samples were collected and analyzed for TPHC from the southeast wall, bottom of the excavation and under the pipe chase. A summary of sampling activities including parameters analyzed is provided in Table 2-1. Figures 2-1 and 2-2 depict the location of the post-excavation samples. The samples were collected using decontaminated stainless steel scoops. Following soil sampling activities, the samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory.

12 + Dup = 13

+4 Post Sam

The frequency of sampling and parameters analyzed were consistent with the applicable NJDEPE regulations at the date of closure, which were the "Technical Requirements for Site Remediation-Proposed New Rules" (N.J.A.C. 7:26E-1 et seq., dated May 1992).

Groundwater

On 9 October 1991, three monitoring wells were placed within the area of UST Nos. 160 and 161 to determine the possible impact, if any, to the environment. Monitoring Wells 1, 2 and 3 were drilled to a depth of 13, 14 and 15 feet, respectively. All three wells were equipped with flush mounted steel protective casings. The monitoring well permit, monitoring well records and Form B for each well is provided in Appendix C.

On 10 December 1991 groundwater samples collected from each monitoring well were analyzed by Environmental Profile Laboratories for volatile organic compounds plus 15 tentatively identified compounds (VO+15) and base neutral compounds plus 15 tentatively identified compounds (BN+15).

On 26 October 1992 a second round of groundwater samples were collected from each monitoring well and analyzed for VO+15, BN+15, and lead. A summary of groundwater sampling activities including parameters analyzed is provided in Table 2-2. Figure 2-3 depicts the location of the monitoring wells. All groundwater samples were collected using decontaminated teflon bailers.

TABLE 2-1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
UST NOS. 160 AND 161
BUILDING NO. 1076
FORT MONMOUTH, NEW JERSEY

Sample Location	Lab ID No.	Date of Collection	Matrix	Sample Type	Analytical Parameters	Sampling Method
SITE A	1202.1	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE B	1202.2	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE C	1202.3	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE D	1202.4	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE E	1202.5	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE F	1202.6	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE G	1202.7	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE H	1202.8	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE I	1202.9	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE J	1202.10	5/25/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE K	1202.11	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE L	1202.12	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE L DUPLICATE	1202.13	5/26/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE A	1201.1	5/25/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE B	1201.2	5/25/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE C	1201.3	5/25/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
SITE D	1201.4	5/25/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop

Abbreviations:

TPHC - Total Petroleum Hydrocarbons.

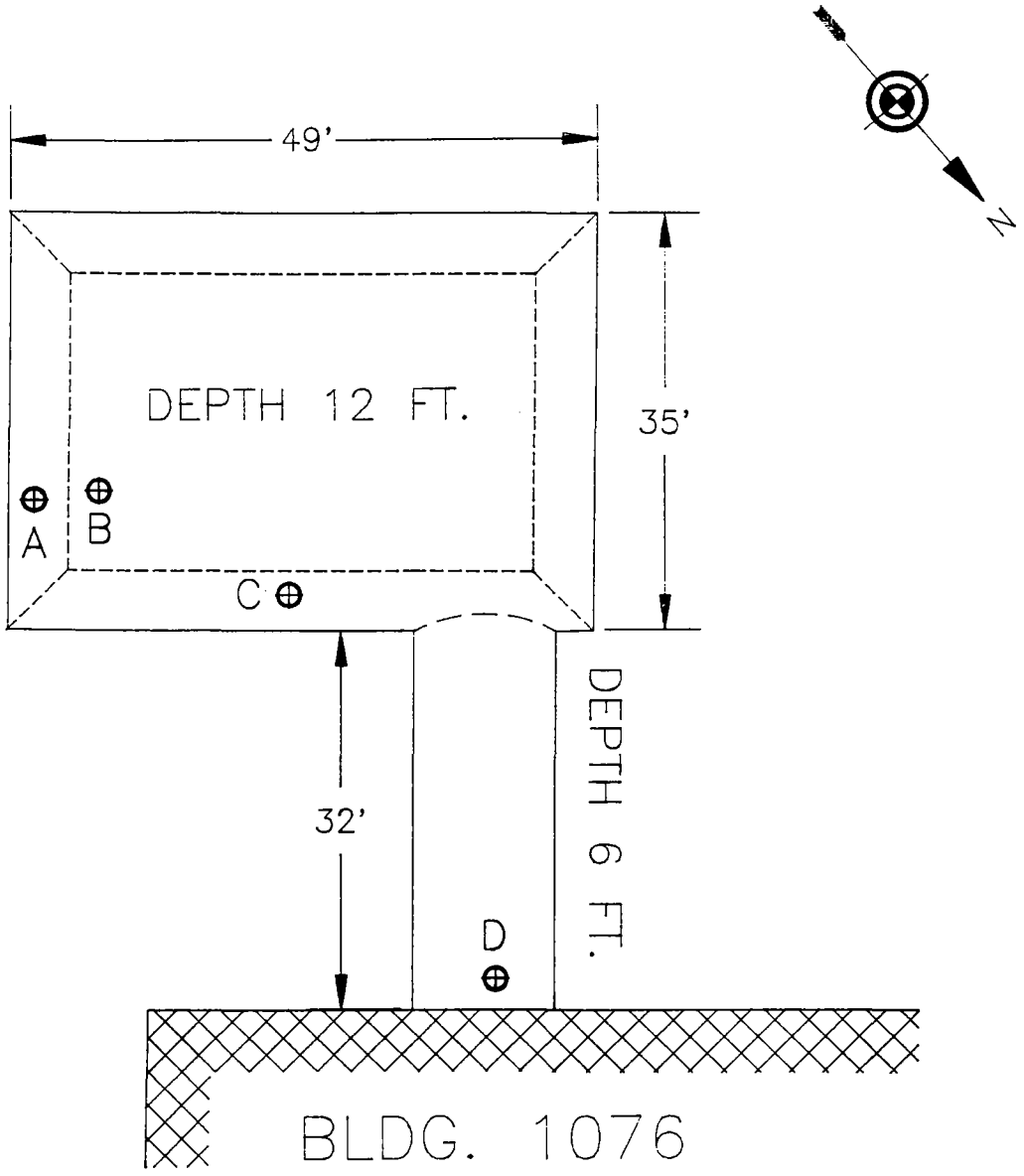
TABLE 2-2

SUMMARY OF GROUNDWATER SAMPLING ACTIVITIES (MONITORING WELLS)
UST NOS. 160 AND 161
BUILDING NO. 1076
FORT MONMOUTH, NEW JERSEY

Sample Location	Sample ID No.	Date of Collection	Matrix	Sample Type	Analytical Parameters	Sampling Method
MW-1	1076-1	10/26/92	Aqueous	Monitoring Well	Lead, VO+15, BN+15	Decontaminated Teflon Bailer
MW-2	1076-2	10/26/92	Aqueous	Monitoring Well	Lead, VO+15, BN+15	Decontaminated Teflon Bailer
MW-3	1076-3	10/26/92	Aqueous	Monitoring Well	Lead, VO+15, BN+15	Decontaminated Teflon Bailer
MW-1	B1076-W1	12/10/91	Aqueous	Monitoring Well	VO+15, BN+15	Decontaminated Teflon Bailer
MW-2	B1076-W2	12/10/91	Aqueous	Monitoring Well	VO+15, BN+15	Decontaminated Teflon Bailer
MW-3	B1076-W3	12/10/91	Aqueous	Monitoring Well	VO+15, BN+15	Decontaminated Teflon Bailer

Abbreviations:

VO+15: - Volatile organic analysis plus 15 tentatively identified compounds.
BN+15: - Base neutral acid analysis plus 15 tentatively identified compounds.



LEGEND

⊕A – POST-EXCAVATION SAMPLING LOCATIONS

0' 16'

SCALE

REVISION #: 1 DATE: 5/16/94 PLOT NAME:
FILE NAME: DEH-1076.DWG DRAWN BY: B. MAC

WESTON MANAGERS DESIGNERS/CONSULTANTS

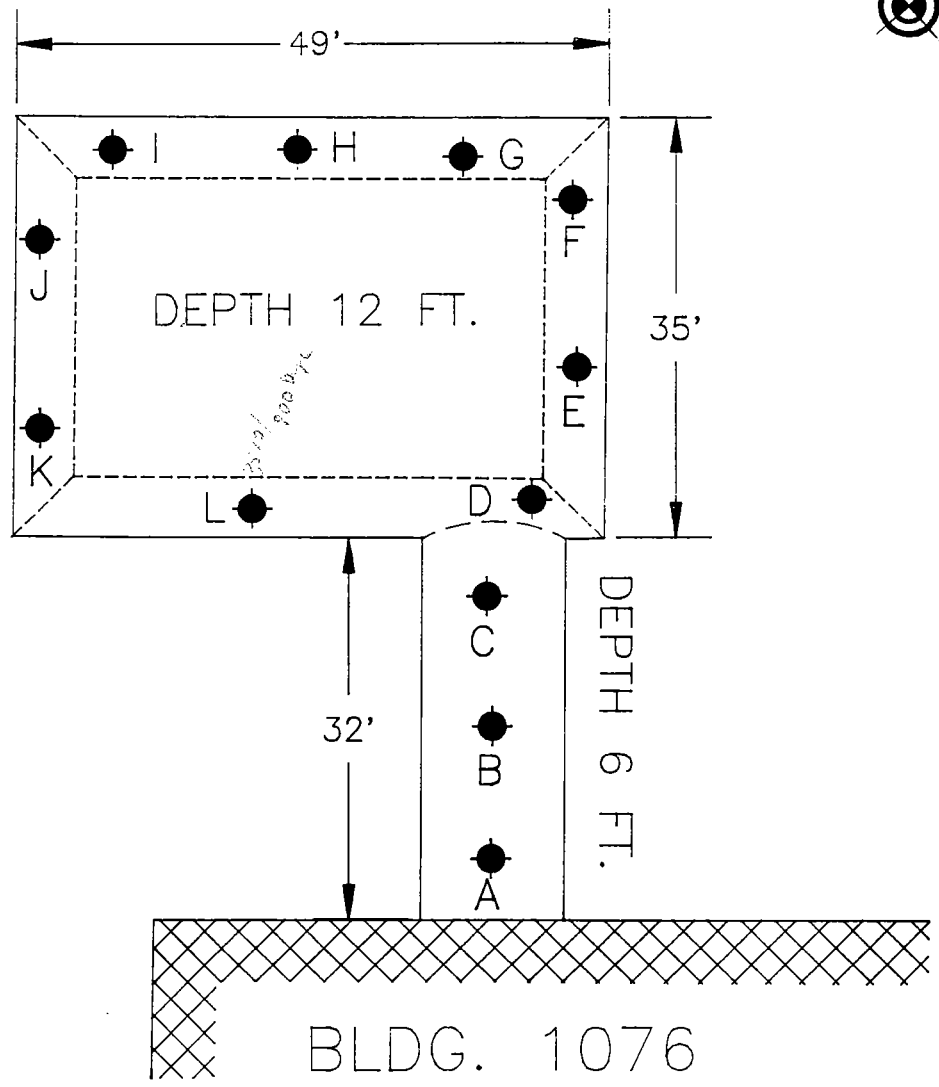
PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 1076 – UST NOS. 160,161 FORT MONMOUTH, NEW JERSEY

CLIENT NAME: U.S. ARMY – FORT MONMOUTH DIRECTORATE OF PUBLIC WORKS

POST EXCAVATION SAMPLE LOCATION MAP
COLLECTED ON 25 MAY 1993

DATE: 5/17/94

FIGURE #: 2-1



LEGEND

A – POST-EXCAVATION SAMPLING LOCATIONS

0' 16'

SCALE

REVISION #: 1 DATE: 5/16/94 PLOT NAME:
FILE NAME: DEH-1076.DWG DRAWN BY: B. MAC

WESTON MANAGERS DESIGNERS/CONSULTANTS

PROJECT NAME:
UNDERGROUND STORAGE TANK CLOSURE
AND SITE INVESTIGATION REPORT
BUILDING 1076 – UST NOS. 160,161
FORT MONMOUTH, NEW JERSEY

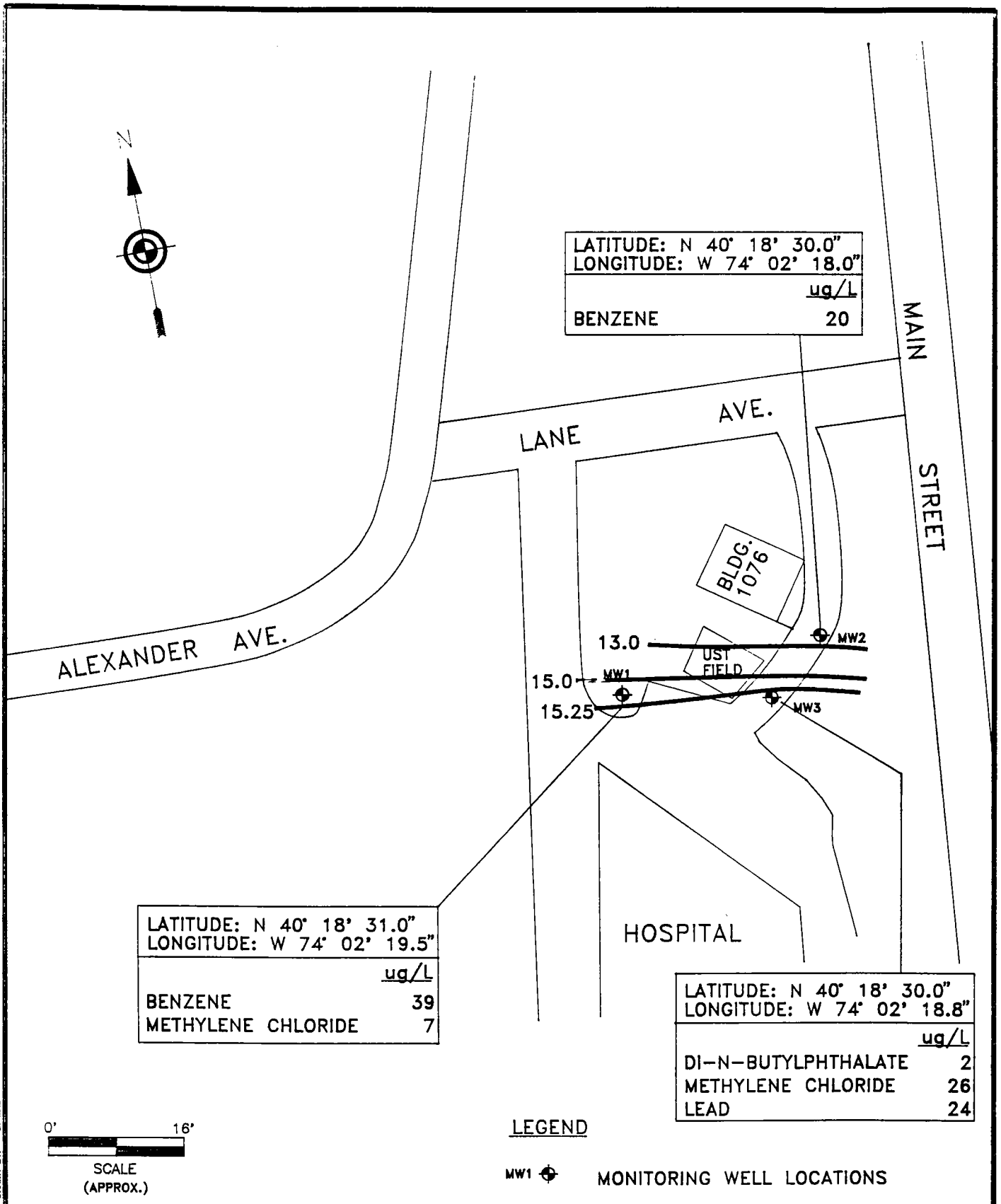
CLIENT NAME: U.S. ARMY – FORT MONMOUTH
DIRECTORATE OF PUBLIC WORKS

POST EXCAVATION SAMPLE LOCATION MAP

COLLECTED ON 26 MAY 1993

DATE: 5/17/94

FIGURE #: 2-2



REVISION #: 1 DATE: 5/16/94 PLOT NAME: 1096_2-2
FILE NAME: 1096_2-2.DWG DRAWN BY: B. MAC

WESTON MANAGERS DESIGNERS/CONSULTANTS

PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 1076 – UST NOS. 160,161
FORT MONMOUTH, NEW JERSEY
CLIENT NAME: U.S. ARMY – FORT MONMOUTH DIRECTORATE OF PUBLIC WORKS

WELL LOCATION AND GROUNDWATER CONTOUR MAP

DATE: 5/17/94 FIGURE #: 2-3

WESTON
MANAGERS DESIGNERS CONSULTANTS

SECTION 3.0

CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL AND GROUNDWATER SAMPLING RESULTS

To evaluate soil conditions following removal of the USTs and associated soils, the post-excavation sample results were compared to NJDEPE Impact to Groundwater Subsurface Cleanup Criteria dated 3 February 1994. To evaluate groundwater conditions following removal of the USTs and associated soils, analytical results from the groundwater samples were compared to NJDEPE Class II-A Ground Water Quality Criteria (N.J.A.C. 7:9-6.4, 6.8 and Table 1). A summary of the analytical results for soils and groundwater are provided in Tables 3-1 and 3-2 respectively. A summary of the analytical methods used and quality assurance information is provided in Table 3-3. The analytical data package summary is provided in Appendix F. The full data package, including associated quality control and chromatograph data is on file at U.S. Army Fort Monmouth, DPW.

Sample Nos. 1201.1 through 1201.4 were (corresponding to post-excavation sample locations A through D on Figure 2-2) collected from the southeast wall, bottom of the excavation and below the pipe chase. TPHC results ranged from 8.96 mg/kg to 2630 mg/kg with only sample 1201.2 exceeding 1,000 mg/kg. Sample Nos. 1202.1 through 1202.12 (corresponding to post-excavation sample locations A through L on Figure 2-1) were collected from the excavation surrounding UST Nos. 160 and 161 and analyzed for TPHC. One duplicate soil sample was collected and analyzed for TPHC (sample No. 1202.13, sample location L). TPHC results ranged from 9.22 mg/kg to 3,570 mg/kg with only sample Nos. 1202.12 and 1202.13 exceeding 1,000 mg/kg. The NJDEPE Impact to Ground Water Subsurface Cleanup Criteria for total organic compounds is 10,000 mg/kg. All samples contained concentrations of total organic compounds below the proposed NJDEPE subsurface criteria of 10,000 mg/kg.

On 10 December 1991 groundwater samples collected from each monitoring well were analyzed by Environmental Profile Laboratories for VO+15 and BN+15. Analytical results for all groundwater samples detected methylene chloride. The reported concentrations of methylene chloride in groundwater samples exceed the NJDEPE's Class II-A Groundwater Quality Criteria. Each test result for methylene chloride was marked with a "B" data qualifier to show that methylene chloride was detected in the laboratory's quality control method blank. The presence of methylene chloride in method blank indicates that the presence in samples is attributable to laboratory induced contamination. In addition, the quality control surrogates were outside of the acceptable range; therefore, the results were disregarded.

On 26 October 1992 a second round of groundwater samples was collected from each monitoring well and analyzed for VO+15, BN+15, and lead. The results indicated that concentrations of lead (24 ug/L) in sample No. 9173.14 (collected from MW-3), benzene (39 ug/L) in sample No. 9173.12 (collected from MW-1), and methylene chloride in all samples were detected in

concentrations which exceed NJDEPE Class II-A Ground Water Quality Criteria. Analytical results for all groundwater samples detected methylene chloride. The reported concentrations of methylene chloride in groundwater samples exceed the NJDEPE's Class II-A Ground Water Quality Criteria. Each result was marked with a "B" data qualifier to show that methylene chloride was detected in the laboratory's quality control method blank. As previously discussed, the presence of methylene chloride in a sample is attributable to laboratory induced contamination. Lead concentrations are not typically associated with fuel oil spills and may be indicative of the fill material common to the site. Quality control surrogates for BN+15 samples were outside of the acceptable range; therefore, the BN+15 results were disregarded.

3.2 CONCLUSIONS AND RECOMMENDATIONS:

DPW removed UST Nos. 160 and 161 at Building 1076 in the Main Post Area of U.S. Army Fort Monmouth. Based on visual inspection of the USTs and field screening of the soils adjacent to the UST, it was determined that no historical discharge had occurred from the tank No. 161. Several corrosion holes were noted during the inspection of UST No. 160. Additionally, a sheen and small amounts of product were noted on the groundwater surface in the excavation surrounding UST No. 160, due to a discharge by the contractor, ASE. A discharge was reported by ASE on 18 May 1993 (Case No. 90-02-09-1542).

The closure plan, approved by NJDEPE on 22 October 1991, was prepared in accordance with UST regulation N.J.A.C. 7:14B-1 et seq. In June of 1993 the "Technical Requirements for Site Remediation" (N.J.A.C. 7:26E-1 et seq.) were adopted amending previous NJDEPE-BUST closure and remedial investigation guidance.

Soil sample analytical data indicate that all detected concentrations of TPHC in soils were below the previously proposed total organics limit of 10,000 mg/kg. The fourteen of seventeen soil samples were determined to have TPHC concentrations below 1,000 mg/kg. Based on the remedial measures performed and the analytical results for post excavation soil samples, it is recommended that no further action be required for soil surrounding the former locations of UST Nos. 160 and 161.

Due to the presence of benzene in sample No. 9173.12 (MW-1), it is recommend that one (1) year of quarterly sampling be performed to confirm the presence of contamination.

Groundwater analytical results will be presented to NJDEPE in an addendum to this report. The report addendum, in addition to providing a certificate of soil reclamation, will also discuss remedial actions if required.

TABLE 3-1

SUMMARY OF SOIL ANALYTICAL RESULTS
UST NOS. 160 AND 161
BUILDING NO. 1076
FORT MONMOUTH, NEW JERSEY

Sample Location		Site A	Site B	Site C	Site D	NJDEPE Impact to Ground Water Soil Cleanup Criteria
Lab ID No.		1202.1	1202.2	1202.3	1202.4	
Matrix		Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	
Date of Collection		5/26/93	5/26/93	5/26/93	5/26/93	
Analytical Parameters	Units					
TPHC	mg/kg	30.8	59.7	112.0	15.9	NC*

Sample Location		Site E	Site F	Site G	Site H	NJDEPE Impact to Ground Water Soil Cleanup Criteria
Lab ID No.		1202.5	1202.6	1202.7	1202.8	
Matrix		Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	
Date of Collection		5/26/93	5/26/93	5/26/93	5/26/93	
Analytical Parameters	Units					
TPHC	mg/kg	24.1	9.22	45.5	23.6	NC*

TABLE 3-1 (CONTINUED)

SUMMARY OF SOIL ANALYTICAL RESULTS
UST NOS. 160 AND 161
BUILDING NO. 1076
FORT MONMOUTH, NEW JERSEY

Sample Location		Site I	Site J	Site K	Site L	Site L Duplicate	NJDEPE Impact to Ground Water Soil Cleanup Criteria
Lab ID No.		1202.9	1202.10	1202.11	1202.12	1202.13	
Matrix		Soil	Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	PE	
Date of Collection		5/26/93	5/26/93	5/26/93	5/26/93	5/26/93	
Analytical Parameters	Units						
TPHC	mg/kg	18.7	71.6	72.3	3570	1900	NC*

Sample Locations		Site A	Site B	Site C	Site D	NJDEPE Impact to Ground Water Soil Cleanup Criteria
Lab ID No.		1201.1	1201.2	1201.3	1201.4	
Matrix		Soil	Soil	Soil	Soil	
Sample Type		PE	PE	PE	PE	
Date of Collection		5/25/93	5/25/93	5/25/93	5/25/93	
Analytical Parameters	Units					
TPHC	mg/kg	20.7	2630	8.96	542	NC*

TABLE 3-1 (CONTINUED)

SUMMARY OF SOIL ANALYTICAL RESULTS
UST NOS. 160 AND 161
BUILDING NO. 1076

Abbreviations:

NC*: - No cleanup criterion has been proposed by NJDEPE; however, the proposed NJDEPE subsurface cleanup criterion for total organic compounds is 10,000 mg/L.
ND: - Indicates compound not detected.
TPHC: - Total Petroleum Hydrocarbons.
PE: - Post-Excavation.
mg/L: - Milligrams per Kilograms.
ug/L: - Micrograms per Liter.

TABLE 3-2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
UST NOS. 160 AND 161
BUILDING NO. 1076
FORT MONMOUTH, NEW JERSEY

Sample Location		1076-1	1076-2	1076-3	Method Blank	NJDEPE Class II-A Ground Water Quality Criteria/Practical Quantitation Limit
Lab ID No.		9173.12	9173.13	9173.14	NA	
Matrix		Aqueous	Aqueous	Aqueous	Aqueous	
Sample Location		MW-1	MW-2	MW-3	NA	
Date of Collection		10/26/92	10/26/92	10/26/92	NA	
Analytical Parameters	Units					
Inorganic						
Lead	ug/L	ND	ND	24	NR	10
Base Neutral Compounds						
Di-n-butylphthalate	ug/L	ND	ND	2JB	2JB	900
Volatile Organic Compounds						
Methylene Chloride	ug/L	7B	20B	26B	13B	2
Benzene	ug/L	39	ND	ND	ND	1
Toluene	ug/L	13	ND	ND	ND	1,000
Ethylbenzene	ug/L	13	ND	ND	ND	700
Total Xylenes	ug/L	29	ND	ND	ND	40

Abbreviations:
NA: - Not Applicable.
NC: - No subsurface cleanup criterion has been proposed for this analyte by NJDEPE.
ND: - Indicate compound not detected.
MW: - Monitoring Well.
NR: - Analysis not requested.
mg/L: - Milligrams per Kilograms.
ug/L: - Micrograms per Liter.

Data Qualifiers:
B: - Indicates also present in blank.
J: - Indicates detected below method detection limit.

TABLE 3-2 (CONTINUED)

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
UST NOS. 160 AND 161
BUILDING NO. 1076
FORT MONMOUTH, NEW JERSEY

Sample Location		B1076-W1	B1076-W2	B1076-W3	NJDEPE Class II-A Ground Water Quality Criteria/Practical Quantitation Limit
Lab ID No.		6944.2	6944.3	6944.4	
Matrix		Aqueous	Aqueous	Aqueous	
Sample Location		MW	MW	MW	
Date of Collection		12/10/91	12/10/91	12/10/91	
Analytical Parameters	Units				
Base Neutral Compounds					
Fluorene	ug/L	18 J	ND	ND	300
Phenanthrene	ug/L	27	ND	ND	NC
2-Methylnaphthalene	ug/L	460	25	ND	NC
Naphthalene	ug/L	53	ND	ND	NC
Acenaphthene	ug/L	18 J	ND	ND	400
Volatile Organic Compounds					
Methylene Chloride	ug/L	56	11 B	11 B	2

Abbreviations:

NC: - No subsurface cleanup criterion has been proposed for this analyte by NJDEPE.
ND: - Indicate compound not detected.
MW: - Monitoring Well.
mg/L: - Milligrams per Kilograms.
ug/L: - Micrograms per Liter.

Data Qualifiers:

B: - Indicates also present in blank.
J: - Indicates detected below method detection limit.

TABLE 3-3

ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY TABLE
UST NOS. 160 AND 161
BUILDING NO. 1076
FORT MONMOUTH, NEW JERSEY

Analytical Parameters	No. of Samples Collected	Matrix	Date Collected	Date Analysis Started	Preservation Method	USEPA SW-846 Analytical Method
VOCs	3	Aqueous	12/10/91	12/11/91	Cool to 4°C	8240
BNAs	3	Aqueous	12/10/91	12/31/91	Cool to 4°C	8270
Lead	3	Aqueous	10/26/92	10/28/92	Cool to 4°C	6010
VOCs	3	Aqueous	10/26/92	10/28/92	Cool to 4°C	8240
BNAs	3	Aqueous	10/26/92	10/31/92	Cool to 4°C	8270
TPHC	13	Soil	5/26/93	5/26/93	Cool to 4°C	418.1
TPHC	4	Soil	5/25/93	5/25/93	Cool to 4°C	418.1

Abbreviations:

TPHC: - Total petroleum hydrocarbons.
C: - Celsius.

APPENDIX A

NJDEPE-BUST CLOSURE APPROVAL AND CORRESPONDENCE

UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF UNDERGROUND STORAGE TANKS
CN-029, TRENTON, NJ 08625-0029

TMS # C-91-2845 **UST #** 0081533

U.S. Army Fort Monmouth
Building 1076
Fort Monmouth

(Monmouth County)

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: 2- 15,000 gallon heating oil storage tanks

Site assessment: Eighteen (18) soil samples will be taken for the tanks, and seven (7) for every 15 feet of piping; samples will be collected and analyzed as per the Technical Guidance Document (TPHC).

ON-SITE MANAGER: Dinkerrai Desai TELEPHONE: (908) 532-1475

OWNER: U.S. Army TELEPHONE:

EFFECTIVE DATE: October 22, 1991

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

Kenneth Goldstein

KENNETH GOLDSTEIN, P.E., CHIEF
BUREAU OF UNDERGROUND STORAGE TANKS

UST-011 GREEN- APPLICANT COPY- APPLICANT COPY- LCO COPY- TMS COPY- R&B

Let's protect our earth

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
Trenton, N.J. 08625-0029

Jorge H. Berkowitz, Ph.D.
Acting Director

(609) 292-1637
Fax # (609) 984-7938

MAR 14 1990

Lieutenant Colonel Booth
U.S. Army
Building 167
Attn: SELFM - EH, Fort Monmouth, NJ 07703

CERTIFIED
RETURN RECEIPT REQUESTED

Re: Discharge from Underground Storage Tank System
Building 1076, Alexander Avenue
Oceanport Boro, Monmouth County
Case #90-02-09-1524

Dear Lt. Col. Booth:

On February 2, 1990 the New Jersey Department of Environmental Protection (the Department) received notification of a discharge of hazardous substances from your facility. During testing of one (1) 15,000 gallon #2 fuel oil underground storage tank, tank had failed.

Any discharge of hazardous substances not in compliance with a valid permit is in violation of the Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq., and the Underground Storage of Hazardous Substances Act, N.J.S.A. 58:10A-21 et seq. Violators are liable for penalties of up to $50,000 per day for each day of a continuing violation.

Enclosed is a Scope of Work specifying the procedures required by the Department to investigate and initiate corrective actions for the discharge from your facility. These procedures are intended to be implemented by a hydrogeologic consultant who meets the technical qualifications of the Department. The hydrogeologic consultant must have sufficient professional training and experience to conduct a satisfactory investigation and cleanup as outlined in the Scope of Work. Since the Department does not license or certify such consultants, it is recommended that you research the qualifications of any consultant prior to retaining their services. Examples of acceptable qualifications include licenses from other states or professional certificates from national trade associations. This information must be submitted along with the Discharge Investigation and Corrective Action Report described later in this letter.

In accordance with the procedures outlined in the Scope of Work, you are required to do the following:

1. Reporting Requirements (Section I, Page 1)

   a. If you have not already done so, notify the Department's Environmental Action Hot Line (609-292-7172) and the local health department of the discharge.

   b. Notify the Department and the local health department if public or private potable supply wells are contaminated or if contamination threatens surface water intakes.

   c. Notify the Department and the local fire and health departments if vapors or other fire hazards are present.

   d. Comply with any other reporting requirements listed in Section I of the Scope of Work.

2. Immediate Cleanup Requirements (Section III, Page 3)

   a. Determine the source of the discharge.

   b. Cease use of the underground storage tank system(s) involved in the discharge.

   c. Mitigate any fire, safety or health hazard including, but not limited to, hazards from combustible vapor or vapor inhalation and the removal of ignition sources.

   d. Conduct an inspection to detect any above ground discharge, and where any discharge is evident, mitigate the effects of the discharge.

3. Discharge Mitigation Requirements (Section IV, Page 4)

In addition to the immediate cleanup requirements, you must also do the following:

   a. Perform activities concerning site characterization as outlined in Section IV A of the Scope of Work.

   b. Determine the horizontal and vertical extent of ground water contamination via installation and sampling of monitoring wells.

   c. Implement recovery of free product, if any, as soon as it has been detected.

   d. Remove and/or treat soils contaminated by free product (i.e. soils at residual saturation). The Department will determine the need for additional soil remediation.

4. Discharge Investigation and Corrective Action Report

(Section I, Page 1)

A written report must be submitted to this Bureau at the above address, within 120 days of the date of this letter, specifying all activities conducted in compliance with the requirements listed in this letter. In addition, a schedule with implementation target dates for those activities remaining to be completed to comply with all requirements must be submitted at the same time. Upon review of the written report, the Department will notify you of any further requirements.

Should the goals noted in the Scope of Work document fail to be completed upon submission of your report, investigation / remediation shall continue in a manner consistent with the guidance provided in the Scope of Work while waiting for comments from the Department.

A cursory review of our registration files indicates no registration information for your facility. If you have not yet registered your tanks, please complete the enclosed forms and return immediately. If you have registered the tank(s) in question advise this office of your registration number.

Failure to comply with the requirements listed in this letter and enclosed Scope of Work may result in the assessment of penalties as provided by law.

If you have any questions, please contact Tom Farrell or any other available member of my staff at (609) 984-3156.

Very truly yours,

Joseph A. Miller
Section Chief
Discharge Investigation Section
Bureau of Underground Storage Tanks

GWQM360: lls

c: Ron Mateyak - Monmouth County Health Department

Enclosures: Scope of Work
Registration Packet

U.S. Army
DEH Bldg. 167
SELFM-EH
Fort Monmouth, NJ 07703

Date: 7/12/91

NJDEP UST REG #: 00815 33 - 160, 161

Underground Storage Tank (UST)
Decommissioning / Closure Plan

A. General Requirments:

All activities associated with the decommissioning of any underground storage tank (UST) shall comply with all applicable Federal, State and Local laws and ordinances. These laws include but are not limited to; NJAC 7:14B et seq., 5:23 et seq. and OSHA 1910.146, 1910.120. All permits including but not limited to this document, the NJDEP Closure Plan Approval Package, etc... , shall be posted on site for inspection. The contractor conducting the decommissioning activities shall be registered by the NJDEP for performing said activities.

B. Safety and Health:

Before, during, and after all activities, the work site shall be made free of all hazards which may pose a threat to the health and safety of all personnel who are involved with, or are affected by, the decommissioning of the UST. All areas which pose, or may be suspected of posing, a vapor hazard shall be monitored by a qualified individual utilizing approved equipment. This individual will ascertain if the area is properly vented to render the area safe, as defined by OSHA.

C. UST Excavation:

1. All underground obstructions (utilities,... etc.) shall be marked out by the contractor performing the excavation.
2. All activities shall be carried out with the greatest regard to safety and health and the safeguarding of the environment.
3. All excavated soils will be evaluated as to the possibility of contamination. Soils suspected to be contaminated with product shall be staged on poly-sheeting separate from soils not suspected to be contaminated (see section E. Excavated Soils Management).
4. Surface materials (ie. asphalt, concrete, ect...) shall be excavated and staged separate from all soils.
5. Soil will be excavated to expose the UST and associated piping. The piping shall not be removed / disturbed until all free product is drained into the UST. The UST will be rendered vapor free prior to any cutting or access. After the removal of the associated piping, a manway will be made in the UST to allow for the proper cleaning of the UST.

6. After the UST is removed from the ground, it will be staged on poly-sheeting and examined for corrosion holes. The presence or absence of corrosion holes will be documented by the contractor. If corrosion holes are observed, or if upon inspection of the excavation site evidence of a discharge to the environment, the NJDEP hotline shall be notified.
7. In the event of a discharge to the environment, additional soils will be excavated. Site assessment activities will determine to what depth the contractor will excavate.
8. After completion of the Site Assessment activities, the excavation will be lined with poly-sheeting and backfilled to grade with noncontaminated soils from the site and additional certified clean fill provided by the contractor.

D. UST Transport / Disposal:
1. The tank will be transported and disposed / recycled in compliance with all applicable regulations and laws.
2. The contractor shall label the tank with the following information:
   a. site of origin
   b. generator / contact person
   c. NJDEP UST ID number
   d. product previously stored
   e. name of transporter / contact person
   f. destination site / contact person
   g. other info. as required
3. The contractor shall provide Fort Monmouth with sufficient documentation certifying that transport / disposal (recycling) of the tank was completed according to all applicable Federal and State regulations.

E. Excavated Soils Management:
1. All excavated soils suspected to be contaminated will be transported, by the contractor, to a designated staging area. The designated area will contain the soils as well as manage all stormwater runoff.
2. All soils stored in the designated staging area will be maintained in piles no larger than 100 cubic yards each. Each pile will be lined and covered with poly-sheeting and weighted to ensure containment.
3. Each soil pile will be sampled and analyzed for waste classification as outlined in the NJDEP document titled "Management of Excavated Soils" dated August 17, 1990.

4. All soils catagorized as Hazardous waste or non-hazardous waste will be managed as such, in accordance with N.J.A.C. 7:26-1 et seq..
5. All soils that contain levels of contaminants below the Catagory 3 soil limits will be used in accordance with Federal and State requirments.

F. Changes / Authorizations:

1. All deviations in activities related to the closure of a UST as outlined in this document shall require prior authorization from the NJDEP-DWR-BUST.

U.S. Army
DEH Bldg. 167
SELFM-EH
Fort Monmouth, NJ 07703

Date: 7/12/91
NJDEP UST REG #: 008533 - 160, 161

UNDERGROUND STORAGE TANK (UST) SITE ASSESSMENT PLAN

A. General:

This site specific assessment plan will be managed and carried out by U.S. Army DEH and Serv-Air Inc. personnel. All analyses will be performed and reported by NJDEP certified testing laboratries. All monitoring wells will be installed by NJDEP licensed well drillers. All sampling will be performed according to methods described in the NJDEP Field Sampling Procedures Manual. All records of the Site Assessment will be maintained by DEH and submitted to the NJDEP-DWR-BUST in accordance with N.J.A.C. 7:14B-9.2 and 9.3.

PHASE I
UST Decommissioning

A. Initial Soil Excavation:

1. Soil will be excavated from the UST site and screened utilizing a Photo Ionization Detector (PID) and/or a Flame Ionization Detector (FID).
2. All soils suspected to be contaminated will be treated in accordance with the UST Decommissioning Plan.

B. Continued Excavation:

1. Excavation of suspect contaminated soil will continue until one of the following situations is encountered:
   a. groundwater
   b. excavated soils no longer exhibit characteristics of contamination
   c. excavation equipment can no longer remove soils due to depth or other restrictive cause.

U.S. Army
DEH Bldg. 167
SELFM-EH
Fort Monmouth, NJ 07703

Date: 7/12/91

NJDEP UST REG #: 0081533 - 160, 161

PHASE II
Site Survey

A. Vapor Screening:
1. An individual trained in the operation of a FID and/or PID shall evaluate the sides and pit bottom of the excavation.
2. All observed instrument readings will be documented and included in the Site Assessment Survey report. This documentation will include all factory and daily calibrations of the instrument.

PHASE III
Site Sampling

A. Soil samples will be collected from the UST excavation and analyzed according to the following schedule:

TANK	CAPACITY	PRODUCT	TPHC SAMPLES	B/N +15 (IF TPHC >100)	VOA +15 LEAD, XYLENE (IF TPHC >100)	PP+15 (IF TPHC >100)
160	15000	#6 oil	9	3	N/A	N/A
161	15000	#6 oil	9	3	N/A	N/A

U.S. Army
DEH Bldg. 167
SELFM-EH
Fort Monmouth, NJ 07703

Date: 7/12/91
NJDEP UST REG #: 0081533 - 160+161

B. Soil samples will be collected from the Pipe excavation and analyzed according to the following schedule:

TANK	LENGTH OF PIPE	PRODUCT	BN +15 (If TPHC >100)	VOA +15 Lead, Xylene (If TPHC >100)	PP+15	TPHC
160	40'	#6 oil	1	N/A	N/A	3
161	54'	#6 oil	1	N/A	N/A	4

C. All samples will be taken in the native soil below the bedding material. The sample locations should be along the mid lines of the tank outline except for at least two of the samples which should be taken within one foot of each of the two highest field survey readings. All of the soil samples should be discrete samples taken within a 6" vertical interval. All samples will be collected by utilizing laboratory decontaminated stainless steel trowels dedicated to each sample location.

D. The excavation will remain open until laboratory results determine all TPHC samples are less than 100 ppm. If levels greater than 100 ppm are reported, further excavation and resampling may be requested for those specific areas. If further excavation is not possible, additional required analyses will be performed and the excavation lined with poly-sheeting and filled to grade with certified clean fill.

U.S. Army
DEH Bldg. 167
SELFM-EH
Fort Monmouth, NJ 07703

Date: 7/12/91
NJDEP UST REG #: 0081533 - 160, 161

PHASE IV
Groundwater Monitoring

A. Monitoring wells will be installed within the UST field at all UST locations where the tank(s) being closed stored gasoline, kerosene, jet fuel and/or site specific factors indicate a known or potential impact of soil contamination exists.

B. Groundwater monitoring wells will be installed by a New Jersey licensed Well Driller in accordance with N.J.S.A 58:4A-4.1 et seq..

C. All monitoring wells will be sampled as described in the NJDEP Field Sampling Procedures Manual, 1988.

D. All monitoring wells will be analyzed in accordance with the following table:

TANK	PRODUCT	MONITORING WELL(S)	(A) EPA Method 624	(B) EPA Method 625
160, 161	#6 oil	Non Required	N/A	N/A

Note (A): Sample must be analyzed by EPA Method 624 + 15 (GC/MS plus identification of non-targeted compounds) modified to include calibration for xylenes, methyl tertiary butyl ether (MTBE), and tertiary butyl alcohol (TBA)

Note (B): Sample must be analyzed by EPA Method 624 + 15 (GC/MS plus identification of non-targeted compounds) modified to include calibration for xylenes; AND EPA Method 625 + 15 (base/neutral extractable extractable organics).

C. All monitoring well sampling will be conducted according to methods described in the NJDEP Field Sampling Procedures Manual February 1988

D. All laboratory analyses will be performed by NJDEP certified Laboratories using approved methods and following all Quality Control/Assurance procedures.

Underground Storage Tank
Removal / Abandonment
Implementation Schedule

Date: 7/12/91

Facility Name: U.S. Army, Fort Monmouth
Facility Location: 1076
Fort Monmouth, Monmouth County NJ 07703

Owners Mailing Address: DEH Bldg. #167
Fort Monmouth, NJ 07703

Owners Name: U.S. Army

Contact Person: Dinkerrai Desai
Phone Number: (908) 532-1475

UST Number: 0081533

Tank ID Number(s)	Product Stored (Oil,Gas,etc.)	Tank Capacity (Gallons)	Site Assessment Required	Monitoring Well Required
160	#6 oil	15000	Yes	NO
161	#6 oil	15000	Yes	NO

Schedule

Activity	Start Date	Completion
Removal	9/9/91	9/13/91
Site Assessment	9/13/91	
Monitoring Well Installation	N/A	
Site Assessment Analytical Results	10/18/91	
Monitoring Well Analytical Results	N/A	
UST Site Assessment Summary	12/12/91	

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 029
Trenton, NJ 08625-0029
Tel. # 609-984-3156
Fax. # 609-292-5604

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

OCT 24 1991

Dear Applicant:

The Department of Environmental Protection and Energy (the Department) received an "Underground Storage Tank Closure Plan Approval Application" for your facility. This application detailed the procedures to be implemented as required by the Underground Storage Tank Systems Technical Requirements and Procedures at N.J.A.C. 7:14B-1 et seq. Based upon our review of the information submitted, a Closure Approval is hereby granted.

A Standard Reporting Form (SRF) must be submitted to the Department within seven (7) days of removal or abandonment of the tank(s). The date of removal or abandonment must be included with the SRF. The SRF will be used to delist the tank(s) from the Bureau of Underground Storage Tanks (BUST) registration files. A copy of the SRF is attached.

Within ninety (90) days of completion of the tank(s) closure, a Site Assessment Summary pursuant to N.J.A.C. 7:14B-9.5 must be submitted to BUST (copy attached). If contamination is discovered during closure, you are required to initiate corrective action as per N.J.A.C. 7:14B-8 and outlined in the Department's Scope of Work document. All discharges must be reported to the Spill Hotline at (609) 292-7172.

Once you have obtained a Closure Approval, a demolition permit issued pursuant to N.J.A.C. 5:23 et seq. and authorized by the Department of Community Affairs (DCA), Construction Code Element must be procured from your local construction code official. For further information in obtaining a demolition permit, please contact the local construction code official directly, or DCA's Code Assistance Unit at (609) 530-8793.

If you require further information or assistance, please contact the Tank Management Section of BUST at (609) 984-3156.

Attachments: Closure Approval
SRF
SAS

PARTMENT OF THE ARMY
Headquarters, U.S. Army Garrison Fort Monmouth
Fort Monmouth, New Jersey 07703-5000

REPLY TO
ATTENTION OF

December 08, 1992

Directorate of Engineering and Housing

New Jersey Department of
Environmental Protection and Energy
Division of Responsible Party Site Remediation
Bureau of Underground Storage Tanks
CN 029
Trenton, NJ 08625 - 0029
ATTN: Mr. Kevin F. Kratina, Acting Bureau Chief

Re: Request for the extension of UST Closure Approvals pertaining to the closure activities as approved by the NJDEPE at Buildings 108, 161, 1076, 2500, 2624, 8003, 8005, 8006, 9099 and 9332, Fort Monmouth, Monmouth County

UST #0090010	Main Post East	
TMS # C-91-2844	CLOSURE	(Bldg. 108)
TMS # C-91-2838	CLOSURE	(Bldg. 161)
UST #0090010	Main Post	
TMS # C-91-2845	CLOSURE	(Bldg. 1076)
UST #0081515	Charles Wood West Area	
TMS # C-92-2950	CLOSURE	(Bldg. 2567)
TMS # C-91-2842	CLOSURE	(Bldg. 2500)
TMS # C-91-2843	CLOSURE	(Bldg. 2624)
UST #00192477	Wayside Area	
TMS # C-92-2953	CLOSURE	(Bldg. 8003)
TMS # C-91-2952	CLOSURE	(Bldg. 8005)
TMS # C-91-2951	CLOSURE	(Bldg. 8006)
UST #0090029	Evans Area	
TMS # C-91-2840	CLOSURE	(Bldg. 9099)
TMS # C-91-2841	CLOSURE	(Bldg. 9332)

Dear Mr. Kratina:

Scheduled closure activities for which Fort Monmouth has received approval from the NJDEPE have been temporarily delayed due to the unforseen changes which have occurred within your organization (e.g. the NJDEPE guidelines regarding the UST removal activities) as well as difficulties within the DOD funding and procurement system in coordinating and obtaining the services required by the NJDEPE in fulfilling our goal of full compliance. I anticipate the UST removal activities to commence at full speed in the early Spring of '93.

At this time, I would appreciate your departments concurrence in this request for an extension of one year for the existing Closure Permits thus far received by the NJDEPE. To date, funding has been provided and a contract has been awarded for the removal of over 350 USTs within the next three years at Fort Monmouth. Monies have been obligated to the sum of over 6 millon dollars for UST Closure and Gasification activities at Fort Monmouth. My Department will make every effort possible to remove all USTs IAW the NJDEPE Guidelines and perform the activities in as timely a manner as possible. We currently have three individuals within my department certified for Closure and SubSurface Evaluation. These Certified individuals will oversee all aspects of the UST Program activities.

The removal of USTs at Fort Monmouth has resulted in a number of complex challenges for my Environmental Staff. Our goal of full compliance with all applicable regulations is on-going. I will continue to place the environmental concerns, which we all support, as a high priority with regard to funding and program management at Fort Monmouth.

If the information provided in this enclosure is inadequate or you require further information with regard to any UST activities please contact Mr. Charles Appleby, Environmental Protection Specialist, at (908) 532-6224.

Sincerely,

For: Mr. James Ott
Acting Director
Directorate of Engineering and Housing

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028
Tel. # 609-633-7141

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

MAY 19 1993

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Charles Appleby
United States Army
HQ - U.S. Army Garrison
Fort Monmouth, NJ 07703

Re: The New Jersey Underground Storage of Hazardous Substances Act (NJUST)
N.J.S.A. 58:10A and N.J.A.C. 7:14B as it pertains to
United States Army and Building 167, Alexander Avenue
Oceanport Borough, Monmouth County
UST #0081533
BAC #UC00745
CASE #90-02-09-1524

Dear Sir\Madam:

This is to inform you that the above referenced case has been referred to the Compliance Monitoring Section within the Bureau of Applicability and Compliance for the failure to submit a Discharge Investigation and Corrective Action Report (DICAR)/Remedial Investigation Report (RIR) and perform all the actions and provide information required by NJDEPE's letter dated March 14, 1990 and pursuant to N.J.S.A. 58:10A and N.J.A.C. 7:14B.

Please be advised that the **owner or operator** of the above referenced underground storage tank facility (UST) are subject to penalties of up to $50,000.00 per day, denial or revocation of the owner's or operator's registration or permit to operate the UST, and the initiation of a criminal action pursuant to N.J.S.A. 58:10A-10.

Penalties will continue to accrue until all the actions and information required by N.J.S.A. 58:10A and N.J.A.C. 7:14B is received by this office.

Additionally, the Proposed "Technical Requirements for Site Remediation" rules (N.J.A.C. 7:26E, which appeared in the May 4, 1992 New Jersey Register), provide guidance concerning the environmental investigation and remediation at contaminated sites or sites at which contamination is suspected. Prior to promulgation, these proposed rules will be used as the Department's primary guidance document, replacing the Bureau of Underground Storage Tanks' Scope of Work Document (and Appendices) and the BUST Technical Guidance Document. A copy of these proposed rules can be obtained from your local library or

Rec'd DEH 21 May 93 ES

through the Office of Administrative Law Publications at (609) 588-6606.

Should you have any further questions regarding this correspondence, please contact Todd Normane of my staff, at (609) 633-7141.

Sincerely,

Anthony Cinque, Section Supervisor
Bureau of Applicability and Compliance

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0029

ATTN: UST Program
(609) 984-3156

For State Use Only	
Date Rec'd.	
Auth.	
Routing	
UST NO.	

STANDARD REPORTING FORM
for reporting activities at an UST facility:

____ General Facility Information Changes	____ Sale or Transfer
_X_ Closure (Abandonment or Removal)	____ Substantial Modification
____ Temporary Closure	____ Financial Responsibility
____ Change in Service	____ Address Change Only

Check ONLY One Type of Activity – Complete Form For That Activity

(More than one tank can be listed per activity)

*** * * NOTE * * * ALL NEW tank installations at existing registered facilities must submit a Registration Questionnaire for the new tanks.**

Answer questions 1 through 5 and others as applicable.

1. Company name and address (as it appears on registration questionnaire): U.S. ARMY Fort Monmouth
DEH Bldg. 167
Fort Monmouth NJ 07703
ATTN: Charles Appleby

2. Facility name and location (if different from above):

3. Contact person for this activity: Charles Appleby
Telephone Number: (908) 532-6224

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire:
Bldg. 1076 160 AND 161

5. Registration Number (if known): UST- 0081533

6. For GENERAL FACILITY INFORMATION changes (address, telephone, contact person, etc. – supply NEW information only):
   a. Facility name:
   b. Facility location:
   c. Owner's mailing address:
   NJ
   d. Block: Lot:
   e. Contact person (facility operator):
   f. Contact telephone number: ( ) -
   g. Other (Specify):

(OVER)

7. For CLOSURE (abandonment or removal – check all that apply):
   a. ☐ Abandonment Date. ___/___/___ Case No: _____
   Attach the necessary implementation schedule (3 copies) and all documentation needed for abandonment per N.J.A.C. 7:14B-9.1 (d).
   b. ☒ Removal Date: 5/18/93 Case No. 90-02-09-1524
   Attach the necessary implementation schedule (3 copies).

8. For CHANGES IN HAZARDOUS SUBSTANCES STORED (check all that apply):
   a. ☐ Temporary Closure (12 month maximum time – see N.J.A.C. 7:14B-9.1(b)). Remove all hazardous substances; leave tank in place.
   b. ☐ Change in service from a regulated substance to a non-regulated substance. Tank must be cleaned and site assessment performed per N.J.A.C. 7:14B-9.1(e).
   c. ☐ Changes in service from one regulated hazardous substance to another regulated hazardous substance.
   Tank No. _____ Old _____ New _____
   Tank No. _____ Old _____ New _____
   Tank No. _____ Old _____ New _____
   (Attach additional sheets if more space is needed)

9. For TRANSFER OF OWNERSHIP: Effective Date: ___/___/___
   a. New Owner (operator) _____
   b. New Facility Name _____
   _____
   _____ NJ _____
   _____
   County
   c. Closing Attorney _____ Tele: (___) _____ - _____

10. For SUBSTANTIAL MODIFICATIONS (to include any retrofitted activity – e.g. the addition of spill/overfill protection, monitoring systems, cathodic protection, etc.):
   a. Type of Modification _____ Date: ___/___/___
   b. * NOTE * Substantial modifications require a permit under N.J.A.C. 7:14B-10.

11. For changes in FINANCIAL RESPONSIBILITY to (check appropriate changes and attach copies of new information):
   a. Policy Type: ☐
   b. Policy Number: ☐
   c. Other: ☐
   d. Company/Carrier: ☐
   e. Expiration Date: ☐
   _____
   _____
   _____
   (Specify)

NOTE: ALL appropriate and applicable permits, licenses and certificates required by the above activity(ies) from any local, state and/or federal agencies must be obtained separately from this notification.

CERTIFICATION

This registration form shall be signed by the highest ranking individual at the facility with overall responsibility for that facility (N.J.A.C. 7:14B-2.3 (a) 1).

"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 civil and criminal penalties for submitting false, inaccurate or incomplete information, including fines and/or imprisonment."

Signature: James Ott

Name (print or type): Mr. James OTT

Title: Acting Dir., Dir of Eng. and Hsng. Date: 7/6/93

SRF-1/80
(INI/MOD-2/92)

APPENDIX B

NJDEPE UST SITE ASSESSMENT SUMMARY FORM

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 029
Trenton, NJ 08625-0029
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 _____

Bldg. 1076

00 81533
FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

U. S. ARMY, FORT MONMOUTH
DEH BUILDING 167
FORT MONMOUTH, NJ 07703 County MONMOUTH
Telephone No. (908) 532-6224

OWNER'S NAME AND ADDRESS, if different from above

Telephone No. _____

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found? X Yes ___ No If Yes, Case No. 90-02-09-1524
(Note: All discharges must be reported to the Environmental Action Hotline (608) 292-7172)

B. The substance(s) discharged was(were) #2 FUEL OIL

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

III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. C-91-2845

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? X Yes ___ No ___ 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 3

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? X Yes ___ No
If "Yes", please answer Question B-E
If "No", please answer Question 8

B. The highest soil contamination still remaining in the ground has been determined to be:
1. N/A ppb total BTEX. N/A ppb total non-targeted VOC
2. N/A ppb total B/N. N/A ppb total non-targeted B/N
3. 3,570 ppm TPHC
4. N/A ppb N/A (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 X Yes ___ No
2. Free product contaminated soils are suspected to exist below the water table ___ Yes X No
3. Free product contaminated soils are suspected to exist off the property boundaries. ___ Yes X No

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

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

VI. GROUND WATER CONTAMINATION

A. Was ground water contamination found? X Yes ___ No
If "Yes", please answer Questions B-G.
If "No", please answer only Question 8.

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. 94 ppb total BTEX. 107 ppb total non-targeted VOC
2. 576 ppb total B/N. 1,182 ppb total non-targeted B/N
3. 0 ppb total MTBE. 0 ppb total TBA
4. 24 ppb LEAD (for non-petroleum substance)
5. greatest thickness of separate phase product found 0
6. separate phase product has been delineated ___ Yes ___ No X 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. X Yes ___ No ___ N/A

2. The number of these wells identified is 10.

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 323 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 7,000 feet from the source and its screening begins at a depth of 317 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 323 feet below grade. This well is located 7,000 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 3,200 feet from the source. This well is 180 feet deep and screening begins at a depth of 175 feet.

E. A plan for separate phase product recovery has been included. ___Yes _X_ No ___N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well.
_X_ 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 _X_ No

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

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

N/A

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) Charles M. Appleby SIGNATURE [signature]

COMPANY NAME U.S. Army, Fort Monmouth DATE 6-7-94
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION NJDEPE CERTIFICATION NUMBER 2056

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) ALL SERVICE ENVIRONMENTAL, INC. SIGNATURE _____

COMPANY NAME 523 Route 303 Orangeburg, NY 10962 DATE 9-30-93

(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) Mr. James OTT SIGNATURE James Ott

COMPANY NAME Act. Dir. Directorate of Public Works DATE 6/9/94

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 _____

WESTON
MANAGERS DESIGNERS CONSULTANTS

ATTACHMENT I

NO/NA RESPONSE EXPLANATION

SAS QUESTION #	RESPONSE	EXPLANATION
V.B.1,2,4	N/A	In accordance with the NJDEPE-BUST closure approval, analyzed in the soil samples collected from the excavation of UST Nos. 160 and 161.
V.C.2	No	All free product contaminated soil on the property boundaries and above the water table are believed to have been removed from the subsurface. Approximately 323 cubic yards of potentially contaminated soil was removed from the area surrounding UST Nos. 160 and 161.
V.C.3	No	Same as above.
V.D	No	Same as above.
V.E	No	Same as above.
VI.B.5	N/A	No free product exists in the groundwater in the area of UST Nos. 160 and 161.
VI.B.6	N/A	Same as above.
VI.E	No	No free product exists in the groundwater in the area of UST Nos. 160 and 161, therefore a separate phase product recovery has not been included.
VI.G.1-3	No	Additional groundwater samples shall be collected in order to confirm the existence of groundwater contamination in the area surrounding UST Nos. 160 and 161.

APPENDIX C

MONITORING WELL INFORMATION

DWR-133M (4/90)

SERIAL # 22274

Mail to

Water Allocation
CN 029
Trenton, N.J. 08625

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
TRENTON, N.J.

MONITORING WELL PERMIT 38

Permit No. mw-1 2926940
mw-2 2926941
mw-3 2926942

VALID ONLY AFTER APPROVAL BY THE D.E.P.

COORD #: 29 . 14 . 4 44

Owner U.S. Army Fort Monmouth
Address Bldg. 167 DPW Environmental
Fort Monmouth

Name of Facility Bldg. 1076
Address

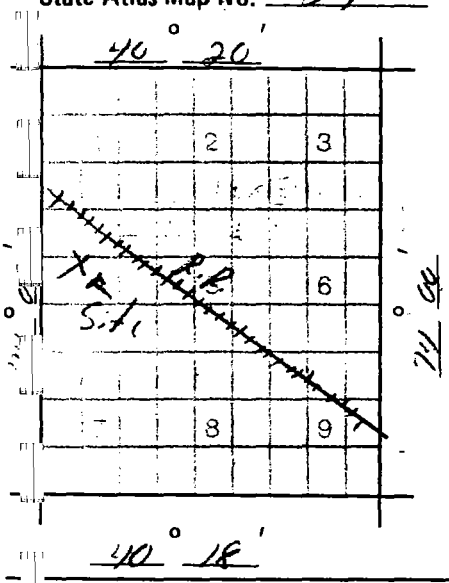
Driller Tabasco Drilling Corp.
Address P.O. Box 747
Hainesport N.J. 08036

Diameter of Well(s)	4 Inches	Proposed Depth of Well(s)	20 Feet
# of Wells Applied for (max. 10)	3	Will pumping equipment be installed? YES ☐ NO ☒	
Type of Well (see reverse)	Monitoring	If Yes, give pump capacity	N/A GPM

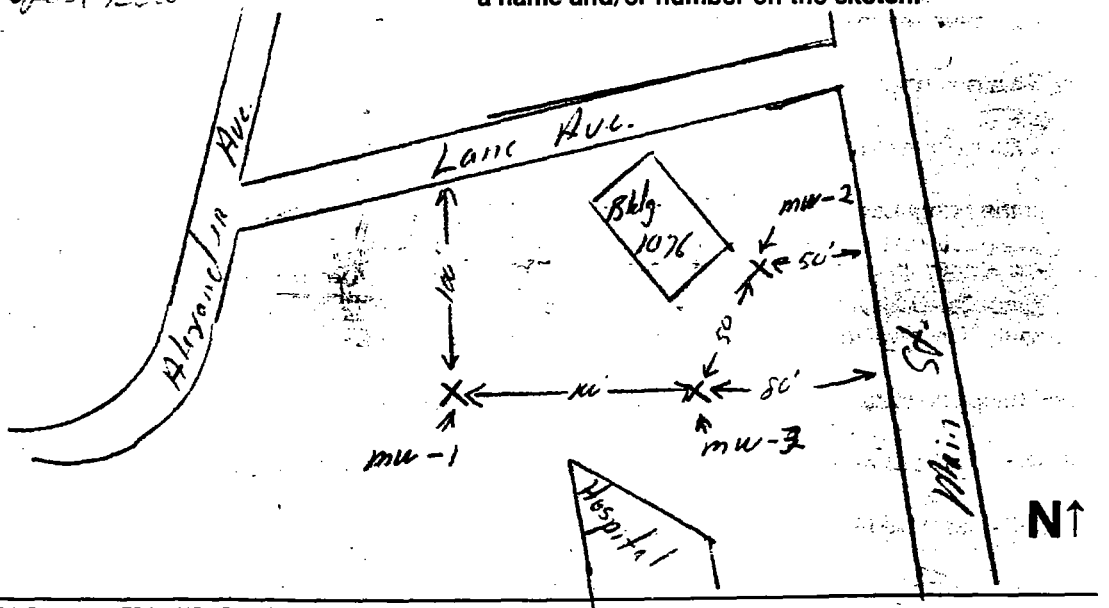
LOCATION OF WELL(S)

Lot #	Block #	Municipality	County
N/A	N/A	Fort Monmouth	Monmouth

State Atlas Map No. 29 Long Branch Area



Draw sketch of well(s) nearest roads, buildings, etc. with marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch.



FOR MONITORING WELLS, RECOVERY WELLS, OR PIEZOMETERS, THE FOLLOWING MUST BE COMPLETED BY THE APPLICANT. PLEASE INDICATE WHY THE WELLS ARE BEING INSTALLED:

- ☐ Spill Fund Case
- ☐ ECRA Case
- ☐ CERCLA (Superfund) Site
- ☐ RCRA Site
- ☐ Underground Storage Tank
- ☐ NJPDES Municipal Discharge Permit
- ☐ NJPDES Industrial Discharge Permit
- ☐ Div. Hazardous Waste Mgmt. Enforcement Case
- ☐ Div. Water Resources Enforcement Case
- ☐ Water Supply Aquifer Test Observation Well
- ☒ Other (explain) U.S. Army Site Investigation

Case I.D. Number Done

This Space for Approval Stamp

WELL PERMIT APPROVED
Dept. of Environmental Protection
Water Resources/Water Allocation
SEP 25 1991

FOR D.E.P. USE

☐ Issuance of this permit is subject to the conditions attached. (see next page)
☒ For monitoring purposes only
☒ The well(s) may not be completed with more than 25 feet of total screen or uncased borehole.
☐ _____

SEE REVERSE SIDE FOR IMPORTANT PROVISIONS AND REGULATIONS PERTAINING TO THIS PERMIT.

In compliance with N.J.S.A. 58:4A-14, application is made for a permit to drill a well as described above.

Date 9/24/91

Signature of Driller [signature] License # 1530

Signature of Owner [signature]

COPIES: Water Allocation - White and Pink; Health Dept. - Yellow; Owner - Blue; Driller - White

WELL ID NO. 1070

DWR-138 M
6/89

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

Well Permit No. [illegible]
Atlas Sheet Coordinates [illegible]

OWNER IDENTIFICATION - Owner [illegible]
Address [illegible]
City [illegible] State NJ Zip Code [illegible]

WELL LOCATION - If not the same as owner please give address. Owner's Well No. [illegible]
County [illegible] Municipality [illegible] Lot No. N/A Block No. N/A
Address [illegible]

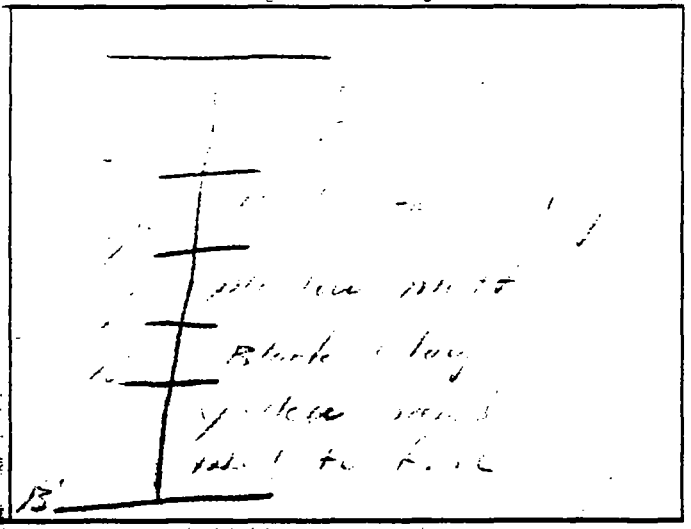
TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed [illegible]
Regulatory Program Requiring Well UST Case I.D. # [illegible]
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) [illegible] Tele. # [illegible]

WELL CONSTRUCTION

Total depth drilled [illegible] ft.
Well finished to [illegible] ft.
Borehole diameter:
Top [illegible] in.
Bottom [illegible] in.
Well was finished: ☐ above grade ☑ flush mounted
If finished above grade, casing height (stick up) above land surface _____ ft.
Was steel protective casing installed? ☑ Yes ☐ No
Static water level after drilling [illegible] ft.
Water level was measured using [illegible]
Well was developed for [illegible] hours at _____ gpm
Method of development [illegible]
Was permanent pumping equipment installed? ☐ Yes ☑ No
Pump capacity N/A gpm
Pump type: N/A
Drilling Method [illegible]
Drilling Fluid [illegible] Type of Rig [illegible]
Name of Driller [illegible]
Health and Safety Plan submitted? ☐ Yes ☑ No
Level of Protection used on site (circle one) None D C B A
SWL Measurement: [illegible]
Company: TABAGOO DRILLING CORP.

	Depth to Top (ft.) [From land surface]	Depth to Bottom (ft.)	Diameter (inches)	Type and Material
Inner Casing	[illegible]	[illegible]	[illegible]	[illegible]
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	[illegible]	[illegible]	[illegible]	[illegible]
Tail Piece				
Gravel Pack				[illegible]
Annular Seal/Grout	[illegible]	[illegible]	[illegible]	[illegible]
Method of Grouting	[illegible]			

GEOLOGIC LOG (Copies of other geologic logs and/or geophysical logs should be attached.)



I certify that I drilled the above referenced well in accordance with all well permit requirements and all applicable State codes and regulations.

Driller's Signature [illegible] Date 10/8/91

WELL ID NO. 1076/

DWR-138 M
5/89

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

Well Permit No. [illegible] 26941

Atlas Sheet Coordinates [illegible]

OWNER IDENTIFICATION - Owner [illegible]

Address [illegible]

City [illegible] State NJ Zip Code [illegible]

WELL LOCATION - If not the same as owner please give address. Owner's Well No. [illegible]

County [illegible] Municipality [illegible] Lot No. N/A Block No. N/A

Address BLDG 1076

TYPE OF WELL (as per Well Permit Categories) [illegible] Date well completed [illegible]

Regulatory Program Requiring Well MONITORING Case I.D. # [illegible]

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) [illegible] Tele. # [illegible]

WELL CONSTRUCTION

Total depth drilled 14 ft.

Well finished to 14 ft.

Borehole diameter:
Top 10 in.
Bottom 10 in.

Well was finished: ☐ above grade ☑ flush mounted

If finished above grade, casing height (stick up) above land surface _____ ft.

Was steel protective casing installed? ☑ Yes ☐ No

	Depth to Top (ft.) From land surface	Depth to Bottom (ft.)	Diameter (inches)	Type and Material
Inner Casing	0	4	4"	Flush Thd PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	4	14	4"	[illegible]
Tail Piece				
Gravel Pack		[illegible]		[illegible]
Annular Seal/Grout	[illegible]	[illegible]		[illegible]
Method of Grouting	[illegible]			

Static water level after drilling [illegible] ft.

Water level was measured using [illegible]

Well was developed for [illegible] hours at [illegible] gpm

Method of development [illegible]

Was permanent pumping equipment installed? ☐ Yes ☑ No

Pump capacity N/A gpm

Pump type N/A

Drilling Method Auger

Drilling Fluid N/A Type of Rig B-61

Name of Driller Charles W. DeMunger

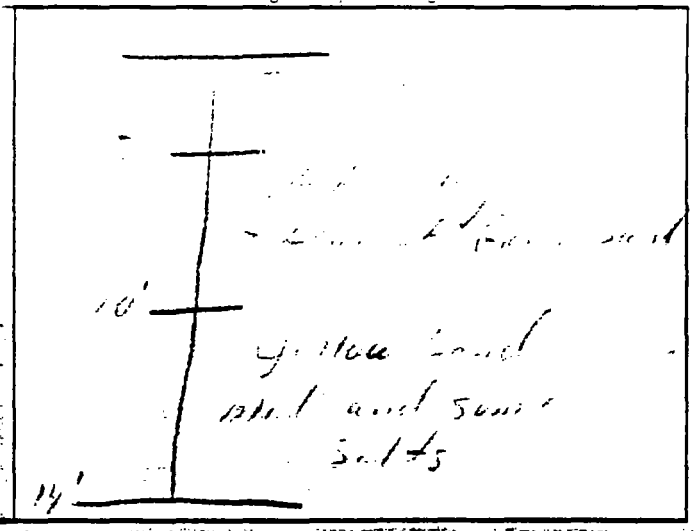
Health and Safety Plan submitted? ☐ Yes ☑ No

Level of protection used on site (circle one) None D C B A

NJ Well Permit No. 26966

Drilling Company TABASCO DRILLING CORP.

GEOLOGIC LOG (Copies of other geologic logs and/or geophysical logs should be attached.)



I hereby certify that I drilled the above referenced well in accordance with all well permit requirements and all applicable State and local regulations.

Driller's Signature [illegible] Date [illegible]

WELL ID NO. 1076

DWR-138 M
6/89

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

Well Permit No. [redacted]
Atlas Sheet Coordinates [redacted]

OWNER IDENTIFICATION - Owner [redacted]
Address [redacted]
City [redacted] State NJ Zip Code [redacted]

WELL LOCATION - If not the same as owner please give address. Owner's Well No. [redacted]
County [redacted] Municipality [redacted] Lot No. N/A Block No. N/A
Address BLDG. 1076 OCEANPORT BOR.

TYPE OF WELL (as per Well Permit Categories) [redacted] Date well completed [redacted]
Regulatory Program Requiring Well MONITORING Case I.D. # [redacted]
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) [redacted] Tele. # [redacted]

WELL CONSTRUCTION

[redacted] ft.
Well [redacted] 25 ft.
Borehole diameter:
Top 10 in.
Bottom 10 in.
Well was finished: ☐ above grade ☒ flush mounted
If finished above grade, casing height (stick up) above land surface [redacted] ft.
Was steel protective casing installed? ☒ Yes ☐ No

	Depth to Top (ft.) [From land surface]	Depth to Bottom (ft.)	Diameter (inches)	Type and Material
Inner Casing	[redacted]	[redacted]	[redacted]	[redacted]
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	[redacted]	[redacted]	[redacted]	[redacted]
Tail Piece				
Gravel Pack	[redacted]	[redacted]		[redacted]
Annular Seal/Grout	[redacted]	[redacted]		[redacted]
Method of Grouting	[redacted]			

Static water level after drilling [redacted] ft.
Water level was measured using [redacted]
Well was developed for [redacted] hours at [redacted] gpm
Method of development [redacted]
Was permanent pumping equipment installed? ☐ Yes ☒ No
Pump capacity N/A gpm
Pump type: N/A
Drilling Method [redacted]
Drilling Fluid WATER Type of Rig [redacted]
Name of Driller [redacted]
Health & Safety Plan submitted? ☐ Yes ☒ No
Sub-contractor used on site (circle one): None D C B A
NJ [redacted]
Name of Company TABASCO DRILLING CORP.

GEOLOGIC LOG (Copies of other geologic logs and/or geophysical logs should be attached.)

[redacted]

I certify that I drilled the above referenced well in accordance with all well permit requirements and all applicable [redacted] regulations.

Driller's Signature [redacted] Date 10/9/91

THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS OR HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION

Name of Permittee: United States Army
Name of Facility: Fort Monmouth - Building No. 1076
Location: Fort Monmouth
New Jersey
NJPDES Permit No: NJ 29-26940

LAND SURVEYOR'S CERTIFICATION

Well Permit Number; As assigned by NJDEPE's Water Allocation Section (609-984-6831): This number must be permanently affixed to the well casing.		29-26940
Longitude (one tenth of a second):	West	74° 02' 19.5"
Latitude (one tenth of a second):	North	40° 18' 31.0"
Elevation of Top of Casing (cap off)		19.44
Distance from Top of Casing (cap off) to ground		0.16
Owner's Well Number (As shown in the application or Plans):		MW-1
Benchmark:		

AUTHENTICATION:

I declare under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

William C. Telling

Professional Land Surveyor's Signature

William E. Telling, P.L.S.
Professional Land Surveyor's Name

SEAL

N.J.P.L.S. License No. 37211
Professional Land Surveyor's License #

(lak41\wp51\ftmonfmb.wet)

THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS OR HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION

Name of Permittee: United States Army
Name of Facility: Fort Monmouth - Building No. 1076
Location: Fort Monmouth
New Jersey
NJPDES Permit No: NJ 29-26941

LAND SURVEYOR'S CERTIFICATION

Well Permit Number; As assigned by NJDEPE's Water Allocation Section (609-984-6831): This number must be permanently affixed to the well casing.		29-26941
Longitude (one tenth of a second):	West	74° 02' 18.0"
Latitude (one tenth of a second):	North	40° 18' 30.0"
Elevation of Top of Casing (cap off)		18.03
Distance from Top of Casing (cap off) to ground		0.42
Owner's Well Number (As shown in the application or Plans):		MW-2
Benchmark:		

AUTHENTICATION:

I declare under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

William E. Telling

Professional Land Surveyor's Signature

William E. Telling, P.L.S.
Professional Land Surveyor's Name

SEAL

N.J.P.L.S. License No. 37211
Professional Land Surveyor's License #

(lak41\wp51\ftmonfmb.wet)

THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS OR HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION

Name of Permittee: United States Army
Name of Facility: Fort Monmouth - Building No. 1076
Location: Fort Monmouth
New Jersey
NJPDES Permit No: NJ 29-26942

LAND SURVEYOR'S CERTIFICATION

Well Permit Number; As assigned by NJDEPE's Water Allocation Section (609-984-6831): This number must be permanently affixed to the well casing.		29-26942
Longitude (one tenth of a second):	West	74° 02' 18.8"
Latitude (one tenth of a second):	North	40° 18' 30.0"
Elevation of Top of Casing (cap off)		19.36
Distance from Top of Casing (cap off) to ground		0.08
Owner's Well Number (As shown in the application or Plans):		MW-3
Benchmark:		

AUTHENTICATION:

I declare under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

William E. Telling

Professional Land Surveyor's Signature

William E. Telling, P.L.S.
Professional Land Surveyor's Name

SEAL

N.J.P.L.S. License No. 37211
Professional Land Surveyor's License #

(lak41\wp51\ftmonfmb.wet)

APPENDIX D

WELL SEARCH INFORMATION

WELL SEARCH SUMMARY TABLE
MAIN POST AREA
U.S. ARMY FORT MONMOUTH

WELL ID NO	WELL OWNER	WELL ADDRESS	TOTAL DEPTH (FEET BGS)	CASING LENGTH (FEET)	STATIC WATER ELEV (FEET BGS)	USE CODE	NJDEPE PERMIT NO.
5	Eatontown Senior Housing	55 Wyckoff Road, Eatontown	192	177	25	G	29-15008
14	Shell Oil Company	Block 110, Lot 25, Oceanport	12	2	4	M	29-24953
15	Shell Oil Company	Block 110, Lot 25, Oceanport	12	2	3	M	29-24953
16	Shell Oil Company	Block 110, Lot 25, Oceanport	12	2	3	M	29-24953
17	Shell Oil Company	Block 110, Lot 25, Oceanport	11	2	3	M	29-24953
34	Boro of Eatowntown	Block 14, Lot 17, Eatontown	20	10	12.1	M	29-28236
35	Redacted - Privacy Act	Orchard St, Block 73, Lot 36, Eatontown	67	52	16	D	29-23690
36	Redacted - Privacy Act	92 Sunnybrook Dr, Shrewsbury Boro	197	191	7	D	29-23608
37	V. J. Russo Realty	170 Ave of Commons, Shrewsbury Boro	250	245	4	G	29-27756
38	Price Communication Corp	1 Register Plaza, Shrewsbury Boro	28	15	8	M	29-26185
39	Redacted - Privacy Act	Trafalger Pl, Block 69.04, Lot 4, Shrewsbury Boro	50	50	5	G	29-22571
40	Redacted - Privacy Act	83 Sunnybrook Dr, Shrewsbury Boro	250	210	8	D	29-26704
41	Boro of Eatontown	Block 14, Lot 17, Eatowtown	20	10	11.7	M	29-29158
42	Boro of Eatontown	Block 14, Lot 17, Eatowtown	18	8	10.1	M	29-29159
43	Redacted - Privacy Act	Relwof Ave, Block 98, Lot 1&2, Oceanport	45	35	2	G	29-21780
44	Kleiner Bros. Construction	Allenhurst & Myrtle Aves, Oceanport	50	40	5	D	29-6499
64	Redacted - Privacy Act	112 Orchid St, Oceanport	323	317	16	D,G	29-14244
65	N.J. Transit Corporation	Silverside & Fairview Ave, Little Silver	*	*	*	M	29-13825
97	Shell Oil Company	1 Main Street, Oceanport	10	2	2.5	M/S	29-12553
98	Shell Oil Company	1 Main Street, Oceanport	9	1	2	M/S	29-12554
99	Shell Oil Company	1 Main Street, Oceanport	9	1	2	M/S	29-12555
100	Redacted - Privacy Act	121 Horseneck Point Rd, Oceanport	15	12	5	D	29-5084
101	Bridgewater Townhouse	57 Bridgewater Dr, Oceanport	180	155	12	G	29-22549
113	Shell Oil Company	Route 35 and South Street, Eatontown	12	2	4.38	M	29-14180
114	Shell Oil Company	Route 35 and South Street, Eatontown	12	2	5.1	M	29-14181
115	Shell Oil Company	Route 35 and South Street, Eatontown	12	2	4.47	M	29-14182
116	Shell Oil Company	Route 35 and South Street, Eatontown	12	2	4.39	M	29-14183
117	Shell Oil Company	Route 35 and South Street, Eatontown	12	2	4.75	M	29-14184
118	Shell Oil Company	Route 35 and South Street, Eatontown	12	2	4.10	M	29-14185
119	Shell Oil Company	Route 35 and South Street, Eatontown	12	2	4.82	M	29-14186
120	Shell Oil Company	Route 35 and South Street, Eatontown	12	2	4.30	M	29-14187
121	Shell Oil Company	Route 35 and South Street, Eatontown	12	2	4.54	M	29-14188
122	Shell Oil Company	Route 35 and South Street, Eatontown	12	2	4.34	M	29-14189

ID – Identification
BGS – Below Ground Surface
G – Irrigation Well
D – Domestic Well
M – Monitoring Well
E – Recovery Well
S – Sealed Well
* – This information was not available during the well search
** – This well has not received a permit by the NJDEPE

WELL SEARCH SUMMARY TABLE
MAIN POST AREA
U.S. ARMY FORT MONMOUTH

WELL ID NO	WELL OWNER	WELL ADDRESS	TOTAL DEPTH (FEET BGS)	CASING LENGTH (FEET)	STATIC WATER ELEV. (FEET BGS)	USE CODE	NJDEPE PERMIT NO.
123	Shell Oil Company	Route 35 & South Street, Eatontown	12	2	4.22	M	29-14190
124	Shell Oil Company	Route 35 & South Street, Eatontown	12	2	3.9	M	29-14191
125	Shell Oil Company	Route 35 & South Street, Eatontown	14.83	4	4	E	29-14192
127	Vincent J. Russo, Bldr	Block 70.1, Lot 90, Shrewsbury	184	165	5	G	29-14168
128	Redacted - Privacy Act	30 Alwin Terrace, Little Silver	173	158	6	G	29-22526
129	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	15	5	*	M	29-23732
130	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	15	5	*	M	29-23733
131	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	15	5	*	M	29-23734
132	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	15	5	*	M	29-23735
133	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	15	5	*	M	29-24138
134	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	15	4	*	M	29-24139
135	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	15	5	*	M	29-24140
136	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	15	5	*	M	29-24141
137	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	20	5	7	M	29-27072
138	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	16	3	6	M	29-29208
138A	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	15	5	6	E	29-30283
138B	Exxon Company, USA	Branch & Sycamore Ave, Little Silver	15	5	6	E	29-30284
139	Hunter's Superior Service	333 Willow Drive, Little Silver	10	1	6.36	M	29-12793
140	Hunter's Superior Service	333 Willow Drive, Little Silver	10	1	7.08	M	29-12794
141	Hunter's Superior Service	333 Willow Drive, Little Silver	10	1	6.34	M	29-12795
142	Hunter's Superior Service	333 Willow Drive, Little Silver	10	1	7.59	M	29-12796
143	Hunter's Superior Service	333 Willow Drive, Little Silver	10	1	6.63	M	29-12797
144	Hunter's Superior Service	333 Willow Drive, Little Silver	10	1	6.07	M	29-12798
145	Citgo Oil Co.	700 Branch Avenue, Little Silver	9	1	*	M	29-12785
146	Citgo Oil Co.	700 Branch Avenue, Little Silver	9	1	*	M	29-12786
147	Citgo Oil Co.	700 Branch Avenue, Little Silver	9	1	*	M	29-12787
148	Citgo Oil Co.	700 Branch Avenue, Little Silver	10	1	*	M	29-12788
149	Citgo Oil Co.	700 Branch Avenue, Little Silver	9	1	*	M	29-12789
150	Citgo Oil Co.	700 Branch Avenue, Little Silver	9	1	*	M	29-12790
151	Citgo Oil Co.	700 Branch Avenue, Little Silver	9	1	*	M	29-12792
152	Mobile Oil Corporation	700 Branch Avenue, Little Silver	10	1	*	M	29-12793
153	Mobile Oil Corporation	700 Branch Avenue, Little Silver	11	1	*	M	29-12794
154	Mobile Oil Corporation	700 Branch Avenue, Little Silver	11	1	*	M	29-12795
155	Mobile Oil Corporation	Highway 35 & Tinton Avenue, Eatontown	15	5	7	M	29-25317

ID – Identification
BGS – Below Ground Surface
G – Irrigation Well
D – Domestic Well
M – Monitoring Well
E – Recovery Well
S – Sealed Well
* – This information was not available during the well search
** – This well has not received a permit by the NJDEPE

WELL SEARCH SUMMARY TABLE
MAIN POST AREA
U.S. ARMY FORT MONMOUTH

WELL ID NO	WELL OWNER	WELL ADDRESS	TOTAL DEPTH (FEET BGS)	CASING LENGTH (FEET)	STATIC WATER ELEV. (FEET BGS)	USE CODE	NJDEPE PERMIT NO.
156	Mobile Oil Corporation	Highway 35 & Tinton Avenue, Eatontown	15	2	7	M	29-25316
157	Mobile Oil Corporation	Highway 35 & Tinton Avenue, Eatontown	15	5	7	M	29-25318
158	Mobile Oil Corporation	Highway 35 & Tinton Avenue, Eatontown	15	5	7	M	29-25319
159	Mobile Oil Corporation	Highway 35 & Tinton Avenue, Eatontown	15	5	7	M	29-25320
160	Exxon Oil Company	Highway 35 & Tinton Avenue, Eatontown	16	3	4.7	M	29-26806
161	Exxon Oil Company	Highway 35 & Tinton Avenue, Eatontown	17	2	6	M	29-26807
162	Exxon Oil Company	Highway 35 & Tinton Avenue, Eatontown	15	3	8.2	M	29-26808
163	Exxon Oil Company	Highway 35 & Tinton Avenue, Eatontown	15	3	5.8	M	29-26809
164	Exxon Oil Company	Highway 35 & Tinton Avenue, Eatontown	12	2	2.35	M	29-28143
165	Allied Signal, Inc.	118 Route 35, Eatontown	*	*	*	M	*
814/1	U.S. Army, Fort Monmouth	Main Post, Building 814, Ft Monmouth	14	4	4	M	29-26939
750/1	U.S. Army, Fort Monmouth	Main Post, Building 750, Ft Monmouth ***	15	5	7.5	M	29-28992
750/2	U.S. Army, Fort Monmouth	Main Post, Building 750, Ft Monmouth ***	15	5	7.5	M	29-28993
750/3	U.S. Army, Fort Monmouth	Main Post, Building 750, Ft Monmouth ***	15	5	7.5	M	29-28994
750/4	U.S. Army, Fort Monmouth	Main Post, Building 750, Ft Monmouth ***	15	5	7.5	M	29-28995
699/1	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	15	2	4	M	29-23677-1
699/2	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	17	1.5	5	M	29-23678-9
699/3	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	15	2	4	M	29-23679-1
699/4	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	20	2	3	M	29-23680-7
699/5	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	15	3	5	M	29-23808-1
699/6	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	15	1	4.5	M	29-23809-9
699/7	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	15	3	3	M	29-23810-2
699/8	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	15	2	4	M	29-23811-1
699/9	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	15	2	3	M	29-24639
699/10	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	14	1	3	M	29-24640
699/11	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	15	*	*	E	29-28031
699/12	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	15	5	7.1	M	29-28907
699/13	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	5	*	*	M	**
699/14	U.S. Army, Fort Monmouth	Main Post, Building 699, Ft Monmouth	5.7	*	*	M	**
1076/1	U.S. Army, Fort Monmouth	Main Post, Building 1076, Ft Monmouth ***	15	3	5.5	M	29-26940
1076/2	U.S. Army, Fort Monmouth	Main Post, Building 1076, Ft Monmouth ***	14	4	5	M	29-26941
1076/3	U.S. Army, Fort Monmouth	Main Post, Building 1076, Ft Monmouth ***	15	5	6	M	29-26942
65A/1	U.S. Army, Fort Monmouth	Main Post, Building 65, Ft Monmouth ***	12	2	4	M	29-26938
L/1	U.S. Army, Fort Monmouth	Main Post, Landfill, Fort Monmouth	9.85	3.05	5.08	M	49-000551
L/2	U.S. Army, Fort Monmouth	Main Post, Landfill, Fort Monmouth	16.99	1.30	*	M	49-000552
L/3	U.S. Army, Fort Monmouth	Main Post, Landfill, Fort Monmouth	16.43	1.62	10.83	M	49-000553
L/4	U.S. Army, Fort Monmouth	Main Post, Landfill, Fort Monmouth	10.25	1.90	*	M	49-000554
108/1	U.S. Army, Fort Monmouth	Main Post, Building 108, Ft Monmouth ***	13	3	4	M	29-29739
108/2	U.S. Army, Fort Monmouth	Main Post, Building 108, Ft Monmouth ***	13	3	4	M	29-29740
108/3	U.S. Army, Fort Monmouth	Main Post, Building 108, Ft Monmouth ***	13	3	4	M	29-29741

ID – Identification
BGS – Below Ground Surface
G – Irrigation Well
D – Domestic Well

M – Monitoring Well
E – Recovery Well
S – Sealed Well
*** –** This information was not available during the well search
**** –** This well has not received a permit by the NJDEPE
***** –** Form B has been completed for this well.

US Army Fort Monmouth Well Coordinates Main Post Area

Well No.	Permit No.	NJ Planar Coord****		Elevation-TOC	Elevation-GRD
		Northing	Easting		
5	29-15008	534833	2172701	***	30
14	29-24953	539699	2176794	***	***
15	29-24953	539699	2176794	***	***
16	29-24953	539699	2176794	***	***
17	29-24953	539699	2176794	***	***
34	29-28236	536866	2169110	***	***
35	29-23690	534905	2173743	31.5	30
36	29-23608	542674	2175219	41.5	40
37	29-27756	541198	2169014	11	10
38	29-26185	541186	2168357	***	***
39	29-22571	542306	2172913	31	30
40	29-26704	542869	2173760	21	21
41	29-29158	536588	2169220	***	***
42	29-29159	536292	2169165	***	***
43	29-21780	540011	2179428	***	9
44	29-6499	539721	2181216	***	48
64	29-14244	541732	2181489	***	***
65	29-13825	544679	2175765	***	***
97	29-12553	539866	2176849	***	***
98	29-12554	539866	2176849	***	***
99	29-12555	539866	2176849	***	***
100	29-5084	542528	2182033	***	5
101	29-22549	539587	2178036	***	30
113	29-14180	534995	2168385	***	***
114	29-14181	534995	2168385	***	***
115	29-14182	534995	2168385	***	***
116	29-14183	534995	2168385	***	***
117	29-14184	534995	2168385	***	***
118	29-14185	534995	2168385	***	***
119	29-14186	534995	2168385	***	***
120	29-14187	534995	2168385	***	***
121	29-14188	534995	2168385	***	***
122	29-14189	534995	2168385	***	***
123	29-14190	534995	2168385	***	***
124	29-14191	534995	2168385	***	***
125	29-14192	534777	2168285	***	***

US Army Fort Monmouth Well Coordinates Main Post Area

Well No.	Permit No.	NJ Planar Coord****		Elevation-TOC	Elevation-GRD
		Northing	Easting		
127	29-14168	541665	2168429	***	60
128	29-22526	545069	2180319	***	20
129	29-23732	545613	2175613	***	***
130	29-23733	545613	2175613	***	***
131	29-23734	545613	2175613	***	***
132	29-23735	545613	2175613	***	***
133	29-24138	545613	2175613	***	***
134	29-24139	545613	2175613	***	***
135	29-24140	545613	2175613	***	***
136	29-24141	545613	2175613	***	***
137	29-27072	545613	2175613	***	***
138	29-29208	545613	2175613	***	***
138A	29-30283	545613	2175613	***	***
138B	29-30284	545613	2175613	***	***
139	29-12793	546086	2175947	***	***
140	29-12794	546086	2175947	***	***
141	29-12795	546086	2175947	***	***
142	29-12796	546086	2175947	***	***
143	29-12797	546086	2175947	***	***
144	29-12798	546086	2175947	***	***
145	29-12785	546225	2174788	***	***
146	29-12786	546225	2174788	***	***
147	29-12787	546225	2174788	***	***
148	29-12788	546225	2174788	***	***
149	29-12789	546225	2174788	***	***
150	29-12790	546225	2174788	***	***
151	29-12792	546225	2174788	***	***
152	29-12793	546393	2175613	***	***
153	29-12794	546393	2175613	***	***
154	29-12795	546393	2175613	***	***
155	29-25317	537562	2168385	***	***
156	29-25316	537562	2168385	***	***
157	29-25318	537562	2168385	***	***
158	29-25319	537562	2168385	***	***
159	29-25320	537562	2168385	***	***
160	29-26806	537896	2168078	***	***

US Army Fort Monmouth Well Coordinates Main Post Area

Well No.	Permit No.	NJ Planar Coord****		Elevation-TOC	Elevation-GRD
		Northing	Easting		
161	29-26807	537896	2168078	***	***
162	29-26808	537896	2168078	***	***
163	29-26809	537896	2168078	***	***
164	29-28143	537896	2168078	***	***
165	*	534471	2171838	***	***
1076/1	29-26940	537975	2175236	19.44	19.28
1076/2	29-26941	537975	2175236	18.03	17.61
1076/3	29-26942	537975	2175236	19.36	19.28
108/1	29-29739	541565	2178231	11.85	8.48
108/2	29-29740	541565	2178231	10.89	7.65
108/3	29-29741	541565	2178231	8.16	8.06
65A/1	29-26938	541114	2178147	8.47	8.47
699/1	29-23677-1	539367	2171941	15.81	***
699/2	29-23678-9	539486	2171973	16.64	***
699/3	29-23679-1	539399	2173050	15.8	***
699/4	29-23680-7	539380	2171986	15.92	***
699/5	29-23808-1	539409	2173150	15.48	***
699/6	29-23809-9	539342	2173066	15.78	***
699/7	29-23810-2	539272	2172914	15.97	***
699/8	29-23811-1	539331	2172842	16.2	***
699/9	29-24639	539220	2173102	15.96	***
699/10	29-24640	539171	2173042	15.97	***
699/11	29-28031	539334	2173025	17.14	***
699/12	29-28907	539194	2172956	16.66	***
699/13	**	539389	2173010	16.21	***
699/14	**	539351	2173021	15.98	***
750/1	29-28992	538342	2171950	18.79	18.69
750/2	29-28993	538342	2171950	18.61	18.51
750/3	29-28994	538342	2171950	19.04	18.88
750/4	29-28995	538342	2171950	18.98	18.79
814/1	29-26939	538025	2173387	***	***
L/1	49-000551	540568	2172144	***	***
L/2	49-000552	540568	2172144	***	***
L/3	49-000553	540568	2172144	***	***
L/4	49-000554	540568	2172144	***	***

US Army Fort Monmouth Well Coordinates Main Post Area

Well No.	Permit No.	NJ Planar Coord****		Elevation-TOC	Elevation-GRD
		Northing	Easting		

Notes: * - This information was not available during the well search

** - This well was not issued a permit by NJDEPE

*** - No elevation data was found for this well location.

**** - Except for wells 699/1-14, all coordinates shown are approximate. The information given does not represent surveyed coordinates.

TOC - Top of Casing

GRD - Ground Surface

Form DWR-138
11/85

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

WELL RECORD

WELL ID NO. 101

Well Permit No. 29 - 22549
Atlas Sheet Coordinates 29 : 14 : 473

OWNER IDENTIFICATION - Owner BRIDGEWATER TOWNHOUSE CON
Address 57 BRIDGEWATERS DRIVE
City OCEANPORT State NJ Zip Code

WELL LOCATION - If not the same owner please give address. Owner's Well No.
Address 57 Bridgewater Drive
County Monmouth Municipality OCEANPORT BORO Lot No. 3/1 Block No. 99/100

WELL USE irrigation Status

WATER USE irrigation Average gals. daily Maximum gals. daily

WELL CONSTRUCTION
BOREHOLE DIMENSIONS
Date well completed 5 / 30 / 89
Depths: Total 180 ft. Finished 180 ft.
Diameter: Top 8 in. Bottom 8 in.
Land Surface Elevation at well 30 ft. Elevation was determined using topography map #29
Casing Height (stick-up) above land surface ft.

	DEPTH TO TOP (FT.)	LENGTH (FT.)	DIAMETER (IN.)	TYPE AND MATERIAL *Screens: Note Slot Size(s)*
Casing 1		155	4	sch 40 PVC
Casing 2				
Casing 3				
Screen 1				
Screen 2	175	20	4	.015" PVC
Tail Piece				
Gravel Pack		5	4	
Grout	170	30	8	800# of #1 sand
Grouting Method	4	min. 50 drop		hole plug/benseal

WELL FLOWS NATURALLY gals. per min. at ft. above the land surface.
Water rises to ft. above the land surface.

RECORD OF TEST Test Date 5 / 30 / 89
Static water-level before pumping 12 ft. below land surface. Water level 100 ft. below land surface after 1 hrs. of pumping.
Water level was measured using dropline/M-scope Drawdown 88 ft.
Discharge rate measured using bucket Discharge Rate 80 gals. per min.
Well was pumped using air Specific Capacity .91 gals. per min. per ft. of drawdown
Observed effects on nearby wells none
Water Quality (taste, odor, color, etc.)

PERMANENT PUMPING EQUIPMENT Installed by David Van Brunt Jr. Pump Type
Mfrs. Name Red Jacker Model submersible
CAPACITY: Pump delivers 25 GPM at 40 PSI pressure.
POWER: 1 1/2 HP at 3450 RPM Power Source electricity
DEPTHS: Pump 175 ft. Footpiece ft. Airline ft.
FLOW METER: Model installed on in. diameter pipe.

CONTRACTOR - Name of Drilling Contractor TIGER CONSTRUCTION CORP.
Address 806 Highway 71, P.O. Box 394
City Spring Lake Heights State N.J. Zip Code 07762
Name of Driller Dennis Buchannan License No. J1393

Signature of Contractor Tiger Construction Service Corp Date 6 / 7 / 89

COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

APPENDIX E

HAZARDOUS WASTE MANIFEST

VHW-001 (REV. 9/86)

State of New Jersey
Department of Environmental Protection
Division of Hazardous Waste Management
Manifest Section
CN 028, Trenton, NJ 08625

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039 Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ3210020971 Manifest Document No. 112222
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
HQ, U.S. Army Communications Electronics Command
Attn: SELFM-DL-EH-HS, Fort Monmouth, NJ 07703
Area c/o James Shirghio, Bldg #2504,

A. State Manifest Document Number: NJA
B. State Generator's ID:

4. Generator's Phone (908) 532-6223 or (908) 532-9911

5. Transporter 1 Company Name: Casie/Protank
6. US EPA ID Number: N J D 0 4 5 9 8 5 5 9 3
C. State Transporter's ID:

7. Transporter 2 Company Name
8. US EPA ID Number
D. Transporter's Phone:
E. State Transporter's ID:

9. Designated Facility Name and Site Address
Casie Ecology Oil Salvage
3209 N. Mill Rd
Vineland, N.J. 08360
10. US EPA ID Number: N J D 0 4 5 9 8 5 5 6 9 3
F. Transporter's Phone:
G. State Facility's ID:
H. Facility's Phone:

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. X Combustible Liquid, N.O.S. Combustible Liquid, NA1993	0 0 1	T T	X2932	G	
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
X Water Wash Oil/Soil
b.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
UST Permit # 6-41-3845-UST, 31537-161
24 hour emergency response phone # (908) 532-9911 Jame Shirghio, Bldg #2504
CFR 009272 E.P.A. 827 Mg 1076 40 gal Waste oil

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
Charles M. Appleby DEH-EV		11	15	89

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
		11	15	89

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete.

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

In case of an emergency or spill immediately call the state the emergency occurred in and the N.J. Dept. of Environmental Protection. (609) 292-5560 (Days) (609) 292-7172 (Night)

EPA-001 (REV. 3.88)

State of New Jersey
Department of Environmental Protection
Division of Hazardous Waste Management
Manifest Section
CN 028. Trenton. NJ 08625

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: NJ3210020597
Manifest Document No.: 25556
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generators Name and Mailing Address
U.S. Army Communications Electronics Command
Main Post Area, c/o James Shirghio, Bldg. #2504,
[illegible], Fort Monmouth, [illegible] 07703
4. Generator's Phone (906) [illegible]

A. State Manifest Document Number: NJA 1567218
B. State Generator's ID: Same

5. Transporter 1 Company Name: Casie/Protank
6. US EPA ID Number: NJD045995693
C. State Trans. ID: NJDEP56747 / 4679
D. Transporter's Phone: (609) 696-4401

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Trans. ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
Casie Ecology Oil Salvage
3209 N. Mill Rd
Vineland, N.J. 08360
10. US EPA ID Number: NJD045995693
G. State Facility's ID: 0614D1HP02
H. Facility's Phone: (609) 696-4401

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Combustible Liquid, N.O.S. Combustible Liquid, NA1993	001	TT	XX7440	G	K 7 2
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. % Water % Wat Oil/Sed. L,T
b.
c.
d.

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information
UST Removal [illegible]
24 hour emergency response phone # (908) 532-9911 James Shirghio, Bldg #2504
CSI# 009282   E.R.G.#27
[illegible] 1071

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: [illegible] | Signature: [signature] | Month Day Year: 05/19/93

TRANSPORTER
17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Jim McLaren | Signature: [signature] | Month Day Year: 05/18/93

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: | Signature: | Month Day Year:

FACILITY
19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: | Signature: | Month Day Year:

In case of an emergency or spill immediately call the state the emergency occurred in and the N.J. Dept. of Environmental Protection, (609) 292-5560 (Day) (609) 292-7172 (Night)

EPA Form 8700-22 (Rev. 9.88) Previous editions are obsolete.

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

VHW-001 (REV. 9/86)

State of New Jersey
Department of Environmental Protection
Division of Hazardous Waste Management
Manifest Section
CN 028, Trenton, NJ 08625

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ321002265 — Manifest Document No. — 2. Page 1 of — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
U.S. Army Communications Electronics Command
Main Post Area c/o James Shirphio, Bldg #2304
Attn: SELFM-DL-EM-Ht, Fort Monmouth, NJ 07703

4. Generator's Phone (908) 532-6223/908-532-9911

5. Transporter 1 Company Name — 6. US EPA ID Number
Casie/Procarb

7. Transporter 2 Company Name — 8. US EPA ID Number

9. Designated Facility Name and Site Address — 10. US EPA ID Number
Casie Ecology Oil Salvage
3209 N. Mill Rd
Vineland, N.J. 08360

A. State Manifest Doc. Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone ( )
G. State Facility's ID
H. Facility's Phone

GENERATOR

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.	X Combustible Liquid, N.O.S. Combustible Liquid, NA1993			XX 3/55		
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above — K. Handling Codes for Wastes Listed Above

a. X Water Spec. Oil/Haz.

b.

15. Special Handling Instructions and Additional Information
24 hour emergency response phone # (908)532-9911 / Bldg 1076 - 055 gal 001523-161,120
CRI#009272 R.E.C. #27 Water Separator Spill
115 gal - Pipe Cleaning

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
Charles M. Apsley DEH Environmentalist		05	25	93

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Tim McLaren		05	25	93

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

In case of an emergency or spill immediately call the state police and the N.J. Dept. of Environmental Protection (609) 292-7172 (DEP) 1-800-424-8802 (Nights)

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete.

SIGNATURE AND INFORMATION MUST BE LEGIBLE ON ALL COPIES

APPENDIX F

ANALYTICAL DATA PACKAGE

Bldg. 1076

ENVIRONMENTAL PROFILE LABORATORIES

ROUTE 37 BUSINESS PARK
SUITE 13
TOMS RIVER, NJ 08755
OFFICE: (908) 244-6278
FAX: (908) 244-6372

ID 6944. 2
" . 3
" . 4

MW #
2926940
2926941
2926942

LABORATORY ANALYSIS REPORT

CLIENT : Serv-Air

PROJECT: Fort Monmouth
VOA+15

Report Number: 6944
Date Received: Dec, 10, 1991
Date Released: Dec, 18, 1991
Data Released By:

Daniel K. Wright
Laboratory Director

CLIENT:Serv-Air

SAMPLE LOCATION AND IDENTIFICATION

LAB ID NUMBER	SAMPLE IDENTIFICATION	MATRIX
6944.1	BLD 814	Aquaous
6944.2	B 1076 W1	Aquaous
6944.3	B 1076 W2	Aquaous
6944.4	B 1076 W3	Aquaous
6944.5	B 3021 W1	Aquaous
6944.6	B 3021 W2	Aquaous
6944.7	B 3021 W3	Aquaous
6944.19	T-65 W1	Aquaous
6944.20	Field Blank	Aquaous

TABLE OF CONTENTS

Environmental Protection Laboratories

CUSTOMER PURCHASE ORDER NO:

CHAIN OF CUSTODY RECORD

PROJECT NO.:

SAMPLER (SIGNATURE): John F. Kh

DATE / TIME: 12/10/91 3pm

ANALYSIS PARAMETERS

START: 700 AM

CUSTOMER (NAME/ADDRESS): E-Systems Serv-Air

SITE NAME: Fort Monmouth

FINISH: 4:00pm

PHONE NO:

FAX NO:

NUMBER OF CONTAINERS

PRESERVATION METHOD

LAB SAMPLE ID NUMBER	DATE/TIME	SAMPLE MATRIX	CUSTOMER SAMPLE LOCATION/ID NUMBER	NUMBER OF CONTAINERS	VOA +15 TH	Lead (Total)	BN +15 TH	REMARKS	PRESERVATION METHOD bel. 4°C
6944.1	12/10 8-3p	H2O	B/d 814	3	X	X	X		Ice
.2			B 1076 W1		X		X		
.3			B 1076 W2		X		X		
.4			B 1076 W3		X		X		
.5			B 3021 W1		X		X		
.6			B 3021 W2		X		X		
.7			B 3021 W3		X		X		
.8			B2567 W1	2	X	X			
.9			B2567 W2		X	X			
.10			B2567 W3		X	X			
.11			B2567 W4		X	X			

Relinquished By (Signature)	DATE / TIME	Received By (Signature)	METHOD OF SHIPPING:
	12-10-91 3:00		C.O.V.
Relinquished By (Signature)	DATE / TIME	Received By (Signature)	SHIPPED BY (Signature):
Relinquished By (Signature)	DATE / TIME	Received for Lab by (Signature):	DATE / TIME
		Robert Chamberlain	12-10-91 4:30pm

NOTE: A DRAWING DEPICTING SAMPLE LOCATION SHOULD BE ATTACHED OR DRAWN ON THE REVERSE SIDE OF THIS CHAIN OF CUSTODY.

PL FORM 002/CHAIN OF CUSTODY PAGE 1 OF 1 PAGES

CUSTOMER PURCHASE ORDER NO:

CHAIN OF CUSTODY RECORD

PROJECT NO.:

CUSTOMER (NAME/ADDRESS): E-Systems Serv-Air

SAMPLER (SIGNATURE): John F. Kl

DATE / TIME: 12/10/91 3pm

ANALYSIS PARAMETERS: VOA's TIC | lead | B/N's TIC | chlordane

START: 7:00 AM

SITE NAME: Fort Monmouth

FINISH: 4:00 pm

PHONE NO:

FAX NO:

NUMBER OF CONTAINERS

PRESERVATION METHOD: <4°C

LAB SAMPLE ID NUMBER	DATE/TIME	SAMPLE MATRIX	CUSTOMER SAMPLE LOCATION/ID NUMBER	NUMBER OF CONTAINERS	VOA's	TIC	lead	B/N's	TIC	chlordane	REMARKS
E944.12	12/10 2pm-3pm	H_2O	B699 W2	2	X	X					
.13			B699 5		X	X					
.14			B699 6		X	X					
.15			B699 7		X	X					
.16			B699 8		X	X					
.17			B699 9		X	X					
.18			B699 10		X	X					
.19			T-65 W1	3	X		X	X	X		
.20			Field blank		X	X	X				
.21			trip blank	2	X		(X)				

Relinquished By (Signature)	DATE / TIME	Received By (Signature)	METHOD OF SHIPPING:
	12-10-91 3:00		C.O.V.
Relinquished By (Signature)	DATE / TIME	Received By (Signature)	SHIPPED BY (Signature):
Relinquished By (Signature)	DATE / TIME	Received for Lab by (Signature):	DATE / TIME
		Robert Brouillette	12/10/91 9:30pm

NOTE: A DRAWING DEPICTING SAMPLE LOCATION SHOULD BE ATTACHED OR DRAWN ON THE REVERSE SIDE OF THIS CHAIN OF CUSTODY.

LABORATORY CHRONICLE

SAMPLE NUMBER	6944.1	6944.2	6944.3	6944.4	6944.5	6944.6	6944.7
Received & Refrigerated Date	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91
Organics Extraction Date							
BN/ABN	NA	NA	NA	NA	NA	NA	NA
PCB's	NA	NA	NA	NA	NA	NA	NA
Analysis Date							
BN/ABN	NA	NA	NA	NA	NA	NA	NA
PCB's	NA	NA	NA	NA	NA	NA	NA
Volatiles	12/13/91	12/13/91	12/13/91	12/18/91	12/18/91	→	→
TPHC's	NA	NA	NA	NA	NA	NA	NA
Metals	NA	NA	NA	NA	NA	NA	NA
Total Solids	NA	NA	NA	NA	NA	NA	NA
Organic Supervisor Review & Approval	Brian K. McKee B.K. McK						12/19/91
Inorganic Supervisor Review & Approval							

LABORATORY CHRONICLE

SAMPLE NUMBER	6944.19	6944.20					
Received & Refrigerated Date	12/10/91	12/10/91					
Organics Extraction Date							
BN/ABN	NA	NA					
PCB's	NA	NA					
Analysis Date							
BN/ABN	NA	NA					
PCB's	NA	NA					
Volatiles	12/18/91	12/18/91					
TPHC's	NA	NA					
Metals	NA	NA					
Total Solids	NA	NA					
Organic Supervisor Review & Approval	Brian K. McKee B. K. McK						12/19/91
Inorganic Supervisor Review & Approval							

METHOD SUMMARY

Base Neutrals / Acid Extractables

The semivolatile samples in this report have been analyzed using the method cited in the USEPA-CLP-IFB version 2/88. The CLP semivolatile method is based on USEPA Method 625 and SW-846 method 8270.

Three acid and/or three base/neutral surrogates are added to each sample. Aqueous samples are extracted with methylene chloride; soil samples are extracted with a 1 to 1 solution of methylene chloride and acetone. The extracts are then concentrated and the internal standards are added. An Hewlett Packard 5890 GC coupled to the HP 5970 MSD was used for the analysis and data collection.

GC/MS

ORGANIC NON-CONFORMANCE SUMMARY

GC/MS TUNE FREQUENCY:- All samples,blanks,standards and matrix spikes were analyzed within the respective 12 hour tune periods.

INITIAL CALIBRATION REQUIREMENTS:
No CCC or SPCC compound was outside of QC limits.

CONTINUING CALIBRATION REQUIREMENTS:
No CCC or SPCC compound was outside of QC limits

DETECTION LIMITS:- Detection limits and search results were modified by dilution or percent solid.*

* All values reported on a DRY WEIGHT basis where applicable

MATRIX SPIKE RECOVERY:- No matrix spike compound was outside QC limits

INTERNAL STANDARD AREA:-

CLIENT ID #	NUMBER OF INTERNAL STANDARD AREA(S) out of QC limits. 2 out of 80 outside units, (see forms 8b+8c)
6944	

SURROGATE RECOVERY:-

Client ID #	Surrogates outside QC limits
6944	1 surrogate out (see form 2)

ANALYSIS TIME:- All samples were extracted and analyzed within the prescribed holding times.

7

DATA REPORTING QUALIFIERS

For reporting results to EPA, the following "results qualifiers" are used:

VALUE - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, "10U". This is not necessarily the instrument detection limit. The figure represents the minimum detection limit attainable for this particular sample based on any concentration or dilution that may have been required.

J - Indicates an estimated value. This flag is used:

1) When estimating a concentration for tentatively identifid compounds (library search hits) where a 1:1 response is assumed.
2) When the mass spectral data indicated the identification criteria, however, the result was less than the specified detection limit but greater than zero. If the detection limit was 10ug/L and a concentration of 3ug/L was calculated, report as "3J".

B - Indicates the analyte was found in the blank as well as the sample; report as "12B".

E - Indicates the analyte concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

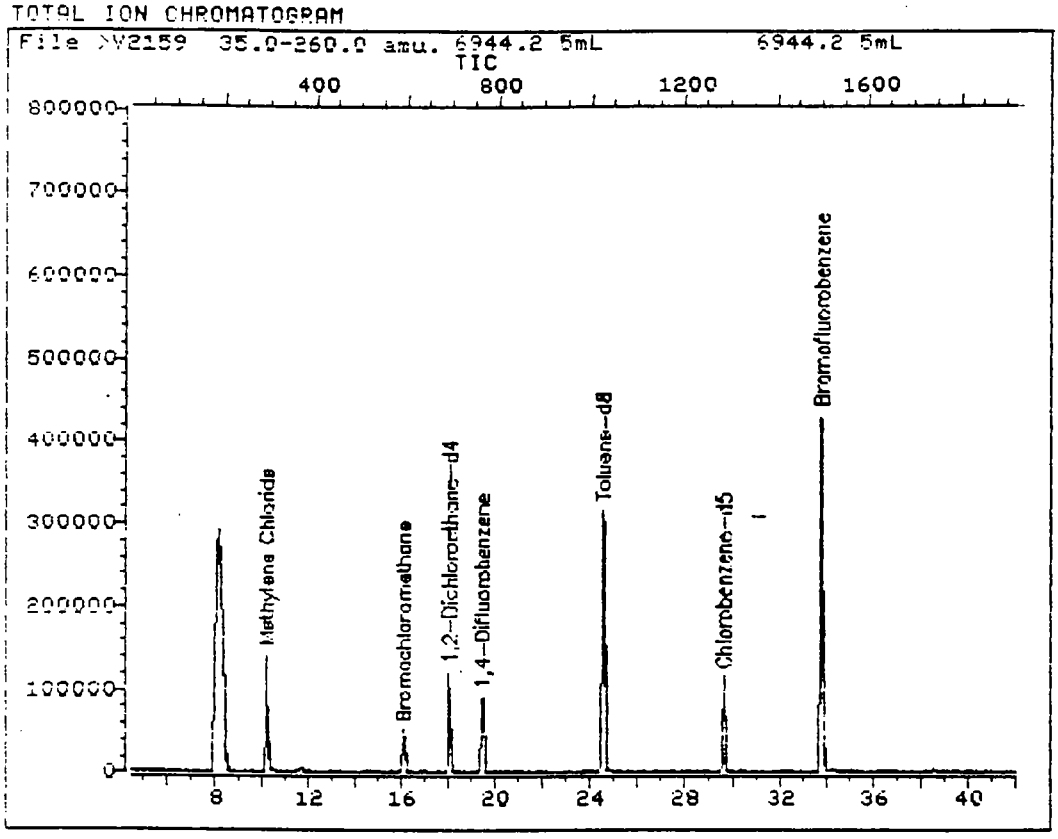
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.2 5mL	DILUTION FACTOR	1.00
CLIENT ID		QA BATCH	
DATA FILE	>V2159	DATE ANALYZED	12/11/91

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Chloromethane	ND	10	Trichloroethene	ND	5
Bromomethane	ND	10	Dibromochloromethane	ND	5
Vinyl Chloride	ND	10	1,1,2-Trichloroethane	ND	5
Chloroethane	ND	10	Benzene	ND	5
Methylene Chloride	56	5	trans-1,3-Dichloropropene	ND	5
Acrolein	ND	50	2-Chloroethylvinyl ether	ND	5
Acrylonitrile	ND	50	Bromoform	ND	5
Acetone	ND	5	2-Hexanone	ND	5
Carbon Disulfide	ND	5	4-Methyl-2-Pentanone	ND	5
1,1-Dichloroethene	ND	5	Tetrachloroethene	ND	5
1,1-Dichloroethane	ND	5	1,1,2,2-Tetrachloroethane	ND	5
trans-1,2-Dichloroethene	ND	5	Toluene	ND	5
Trichlorofluoromethane	ND	5	Chlorobenzene	ND	5
Chloroform	ND	5	Ethylbenzene	ND	5
1,2-Dichloroethane	ND	5	Styrene	ND	5
2-Butanone	ND	5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND	5	m + p-Xylenes	ND	5
Carbon Tetrachloride	ND	5	1,3-Dichlorobenzene	ND	5
Bromodichloromethane	ND	5	1,2-Dichlorobenzene	ND	5
Vinyl Acetate	ND	5	1,4-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5	tert-Butyl Alcohol	ND	50
cis-1,3-Dichloropropene	ND	5	Methyl tert-Butyl Ether	ND	5

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM

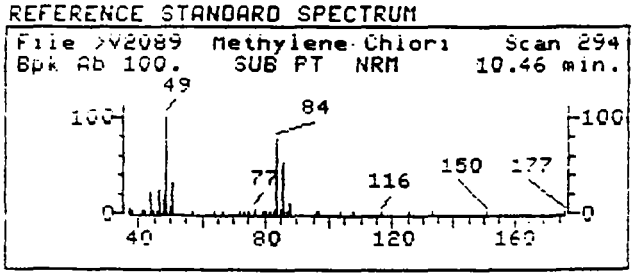


Data File: >V2159::D1 Quant Output File: ^V2159::DB
Name: 6944.2 5mL
Misc: 6944.2 5mL

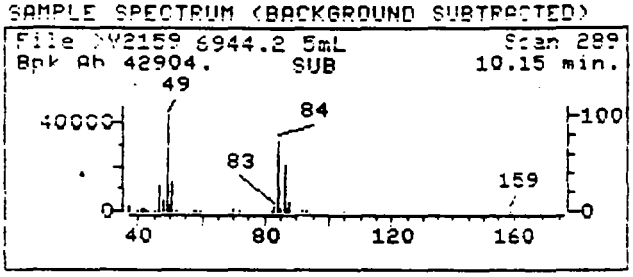
Id File: IDVOA::D4
Title: HSL VOLATILE ORGANICS
Last Calibration: 911211 12:31

Operator ID: MARK
Quant Time: 911211 18:39
Injected at: 911211 17:57

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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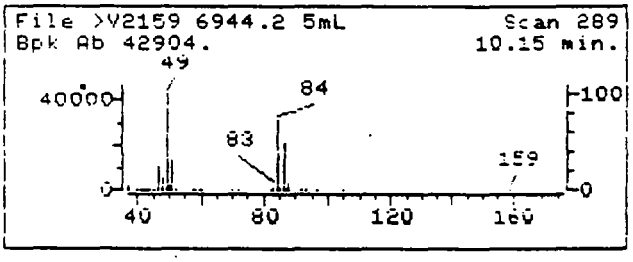
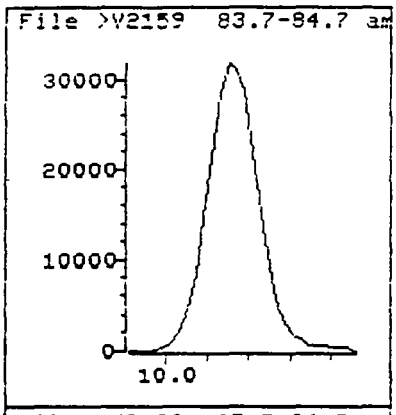
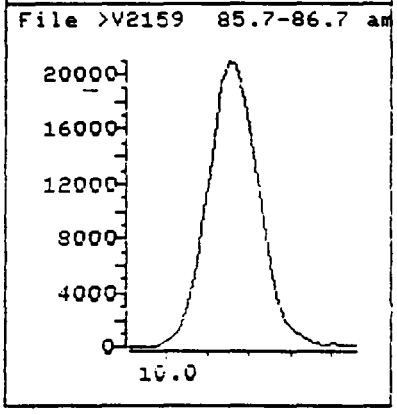






Data File: >V2159::D1 Quant Output File: ^V2159::DB
Name: 6944.2 5mL
Misc: 6944.2 5mL
Quant Time: 911211 18:39 Quant ID File: IDV0A::D4
Injected at: 911211 17:57 Last Calibration: 911211 12:31

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 289
Retention Time: 10.15 min.
Quant Ion: 84.0
Area: 273690
Concentration: 55.87 ppb
q-value: 92

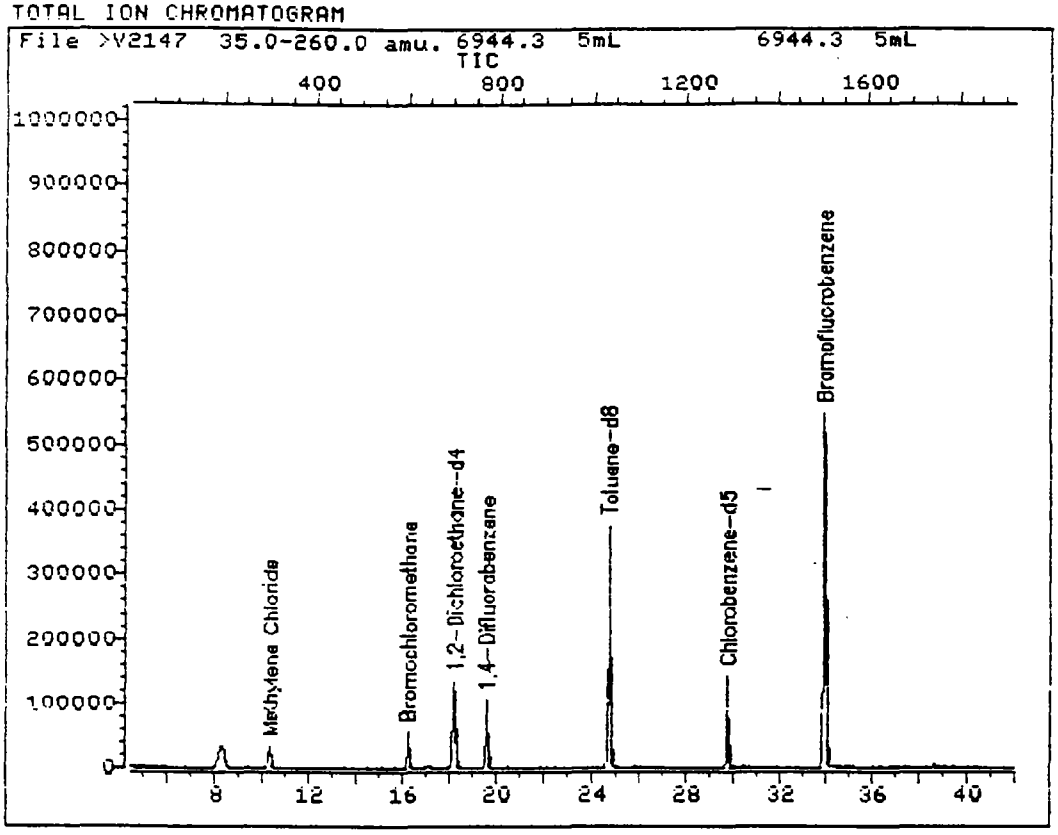
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.3 5mL	DILUTION FACTOR	1.00
CLIENT ID		QA BATCH	
DATA FILE	>V2147	DATE ANALYZED	12/10/91

COMPOUND	UG/L		MDL	COMPOUND	UG/L	MDL
Chloromethane	ND		10	Trichloroethene	ND	5
Bromomethane	ND		10	Dibromochloromethane	ND	5
Vinyl Chloride	ND		10	1,1,2-Trichloroethane	ND	5
Chloroethane	ND		10	Benzene	ND	5
Methylene Chloride	11	B	5	trans-1,3-Dichloropropene	ND	5
Acrolein	ND		50	2-Chloroethylvinyl ether	ND	5
Acrylonitrile	ND		50	Bromoform	ND	5
Acetone	ND		5	2-Hexanone	ND	5
Carbon Disulfide	ND		5	4-Methyl-2-Pentanone	ND	5
1,1-Dichloroethene	ND		5	Tetrachloroethene	ND	5
1,1-Dichloroethane	ND		5	1,1,2,2-Tetrachloroethane	ND	5
trans-1,2-Dichloroethene	ND		5	Toluene	ND	5
Trichlorofluoromethane	ND		5	Chlorobenzene	ND	5
Chloroform	ND		5	Ethylbenzene	ND	5
1,2-Dichloroethane	ND		5	Styrene	ND	5
2-Butanone	ND		5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND		5	m + p-Xylenes	ND	5
Carbon Tetrachloride	ND		5	1,3-Dichlorobenzene	ND	5
Bromodichloromethane	ND		5	1,2-Dichlorobenzene	ND	5
Vinyl Acetate	ND		5	1,4-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND		5	tert-Butyl Alcohol	ND	50
cis-1,3-Dichloropropene	ND		5	Methyl tert-Butyl Ether	ND	5

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM

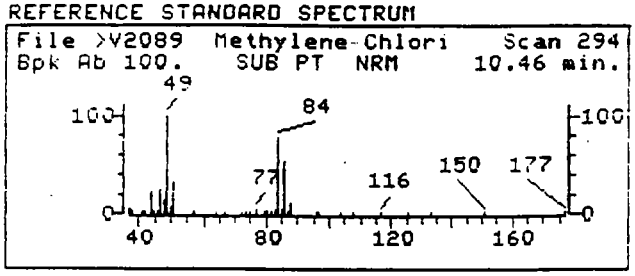


Data File: >V2147::D1 Quant Output File: ^V2147::DB
Name: 6944.3 5mL
Misc: 6944.3 5mL

Id File: IDVOA::D4
Title: HSL VOLATILE ORGANICS
Last Calibration: 911206 11:43

Operator ID: BRIAN
Quant Time: 911210 23:42
Injected at: 911210 22:59

REFERENCE STANDARD SPECTRUM



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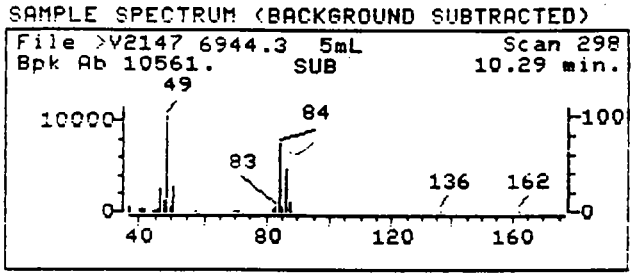

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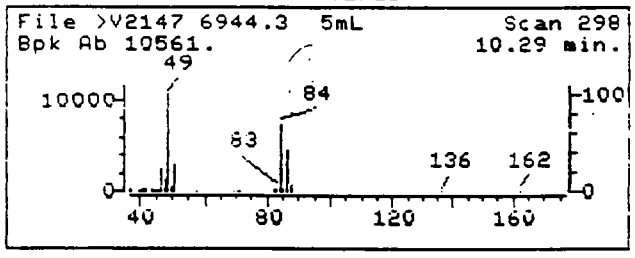
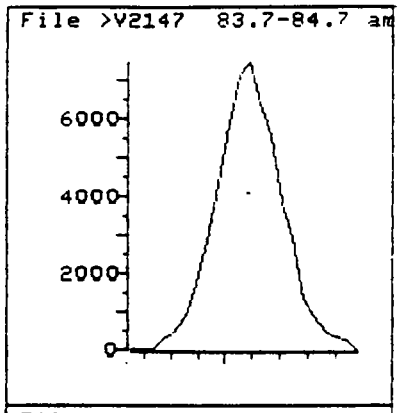
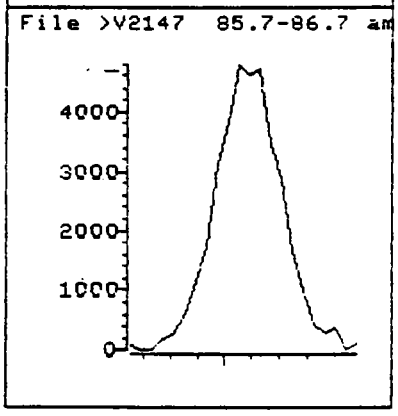






Data File: >V2147::D1 Quant Output File: ^V2147::DB
Name: 6944.3 5mL
Misc: 6944.3 5mL
Quant Time: 911210 23:42 Quant ID File: IDVOA::D4
Injected at: 911210 22:59 Last Calibration: 911206 11:43

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 298
Retention Time: 10.29 min.
Quant Ion: 84.0
Area: 61758
Concentration: 11.13 ppb
q-value: 97

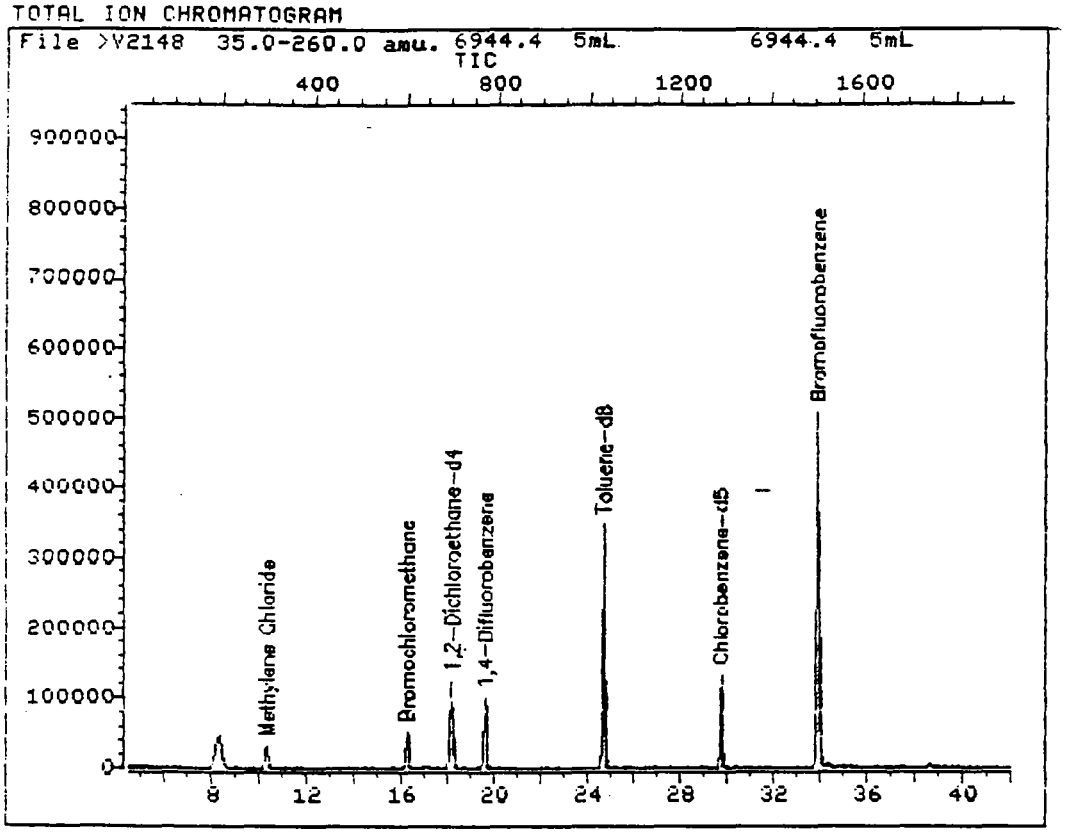
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.4 5mL	DILUTION FACTOR	1.00
CLIENT ID		QA BATCH	
DATA FILE	>V2148	DATE ANALYZED	12/10/91

COMPOUND	UG/L		MDL	COMPOUND	UG/L	MDL
Chloromethane	ND		10	Trichloroethene	ND	5
Bromomethane	ND		10	Dibromochloromethane	ND	5
Vinyl Chloride	ND		10	1,1,2-Trichloroethane	ND	5
Chloroethane	ND		10	Benzene	ND	5
Methylene Chloride	11	B	5	trans-1,3-Dichloropropene	ND	5
Acrolein	ND		50	2-Chloroethylvinyl ether	ND	5
Acrylonitrile	ND		50	Bromoform	ND	5
Acetone	ND		5	2-Hexanone	ND	5
Carbon Disulfide	ND		5	4-Methyl-2-Pentanone	ND	5
1,1-Dichloroethene	ND		5	Tetrachloroethene	ND	5
1,1-Dichloroethane	ND		5	1,1,2,2-Tetrachloroethane	ND	5
trans-1,2-Dichloroethene	ND		5	Toluene	ND	5
Trichlorofluoromethane	ND		5	Chlorobenzene	ND	5
Chloroform	ND		5	Ethylbenzene	ND	5
1,2-Dichloroethane	ND		5	Styrene	ND	5
2-Butanone	ND		5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND		5	m + p-Xylenes	ND	5
Carbon Tetrachloride	ND		5	1,3-Dichlorobenzene	ND	5
Bromodichloromethane	ND		5	1,2-Dichlorobenzene	ND	5
Vinyl Acetate	ND		5	1,4-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND		5	tert-Butyl Alcohol	ND	50
cis-1,3-Dichloropropene	ND		5	Methyl tert-Butyl Ether	ND	5

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM

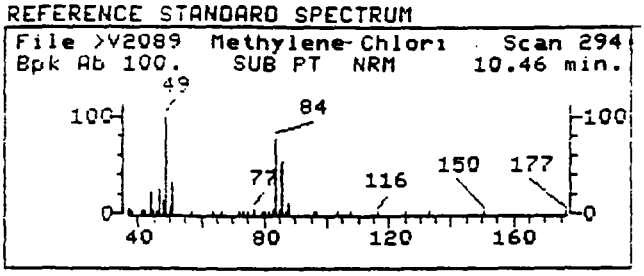


Data File: >V2148::D1 Quant Output File: ^V2148::DB
Name: 6944.4 5mL
Misc: 6944.4 5mL

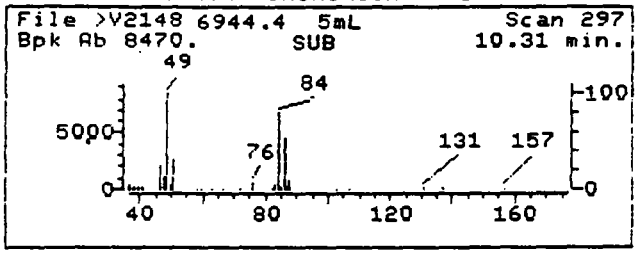
Id File: IDVOA::D4
Title: HSL VOLATILE ORGANICS
Last Calibration: 911206 11:43

Operator ID: BRIAN
Quant Time: 911211 00:29
Injected at: 911210 23:46

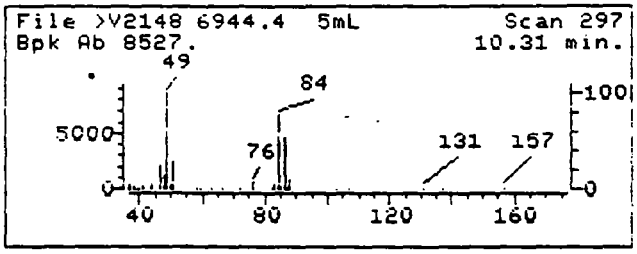
REFERENCE STANDARD SPECTRUM

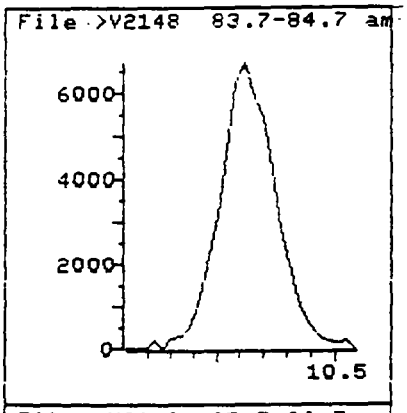


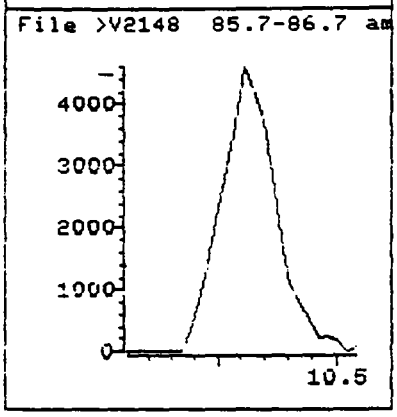
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >V2148::D1 Quant Output File: ^V2148::DB
Name: 6944.4 5mL
Misc: 6944.4 5mL
Quant Time: 911211 00:29 Quant ID File: IDVOA::D4
Injected at: 911210 23:46 Last Calibration: 911206 11:43

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 297
Retention Time: 10.31 min.
Quant Ion: 84.0
Area: 55738
Concentration: 10.56 ppb
q-value: 88

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.: 6944.2 5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Sample wt/vol: 5.0 (g/mL) mL

Level: (low/med) LOW

Column: Capillary

Lab Sample ID: 6944.2 5mL

Lab File ID: >V2159

Date Received: 12-09-91

Date Analyzed: 12/11/91

Dilution Factor: 1

Number of TICs found: 0

CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC 1/87 Rev

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

6944.3 5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Sample wt/vol: 5.0 (g/mL) mL

Level: (low/med) LOW

Column: Capillary

Lab Sample ID: 6944.3 5mL

Lab File ID: >V2147

Date Received: 12-09-91

Date Analyzed: 12/10/91

Dilution Factor: 1

Number of TICs found: 0

CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC 1/87 Rev

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.: 6944.4 5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 6944.4 5mL

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: >02148

Level: (low/med) LOW

Date Received: 12-09-91

Date Analyzed: 12/10/91

Column: Capillary

Dilution Factor: 1

Number of TICs found: 0

CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC 1/87 Rev

Bldg. 1076

ENVIRONMENTAL PROFILE LABORATORIES

ROUTE 37 BUSINESS PARK
SUITE 13
TOMS RIVER, NJ 08755
OFFICE: (908) 244-6278
FAX: (908) 244-6372

ID # 6944.2
" .3
" .4

MW #
2926940
2926941
2926942

LABORATORY ANALYSIS REPORT

CLIENT :Serv-Air

PROJECT: Fort Monmouth
BN+15

Report Number: 6944
Date Received: Dec, 10, 1991
Date Released: Dec, 20, 1991
Data Released By:

Daniel K. Wright
Laboratory Director

TABLE OF CONTENTS

CLIENT:Serv-Air

SAMPLE LOCATION AND IDENTIFICATION

LAB ID NUMBER	SAMPLE IDENTIFICATION	MATRIX
6944.1	BLD 814	Aquaous
6944.2	B 1076 W1	Aquaous
6944.3	B 1076 W2	Aquaous
6944.4	B 1076 W3	Aquaous
6944.5	B 3021 W1	Aquaous
6944.6	B 3021 W2	Aquaous
6944.7	B 3021 W3	Aquaous
6944.19	T-65 W1	Aquaous
6944.20	Field Blank	Aquaous

Environmental Protection Laboratories

CUSTOMER PURCHASE ORDER NO:

CHAIN OF CUSTODY RECORD

PROJECT NO.:	SAMPLER (SIGNATURE): John F. Kl	DATE / TIME 12/10/91 3pm	ANALYSIS PARAMETERS	START: 7:00 AM
CUSTOMER (NAME/ADDRESS) E-Systems Serv-Air	SITE NAME: Fort Monmouth			FINISH: 4:00pm
PHONE NO:	FAX NO:	NUMBER OF CONTAINERS	VOA+15 TH / lead (total) / BN +15 TH	PRESERVATION METHOD

LAB SAMPLE ID NUMBER	DATE/TIME	SAMPLE MATRIX	CUSTOMER SAMPLE LOCATION/ID NUMBER	NUMBER OF CONTAINERS	VOA+15 TH	lead (total)	BN +15 TH	REMARKS	PRESERVATION METHOD
6944.1	12/10 8-3p	H2O	B/d 814	3	X	X			ice
.2			B1076 W1		X	X			
.3			B 1076 W2		X	X			
.4			B 1076 W3		X	X			
.5			B 3021 W1		X	X			
.6			B 3021 W2		X	X			
.7			B 3021 W3		X	X			
.8			B2567 W1	2	X	X			
.9			B2567 W2		X	X			
.10			B2567 W3		X	X			
.11			B2567 W4		X	X			

Relinquished By (Signature)	DATE / TIME 12-10-91 3:00	Received By (Signature)	METHOD OF SHIPPING: C.O.V.
Relinquished By (Signature)	DATE / TIME	Received By (Signature)	SHIPPED BY (Signature):
Relinquished By (Signature)	DATE / TIME	Recieved for Lab by (Signature): Robert Braullette	DATE / TIME 12-10-91 4:30 pm

NOTE: A DRAWING DEPICTING SAMPLE LOCATION SHOULD BE ATTACHED OR DRAWN ON THE REVERSE SIDE OF THIS CHAIN OF CUSTODY.

CUSTOMER PURCHASE ORDER NO:

CHAIN OF CUSTODY RECORD

PROJECT NO.:

SAMPLER (SIGNATURE): John F. Kl

DATE / TIME: 12/10/91 3pm

ANALYSIS PARAMETERS

START: 7:00 Am

CUSTOMER (NAME/ADDRESS): E-Systems Serv-Air

SITE NAME: Fort Monmouth

FINISH: 4:00 pm

PHONE NO:

FAX NO:

LAB SAMPLE ID NUMBER	DATE/TIME	SAMPLE MATRIX	CUSTOMER SAMPLE LOCATION/ID NUMBER	NUMBER OF CONTAINERS	VOA'S TTE	lead	B/N'S TTE	chlordane	REMARKS	PRESERVATION METHOD <4°C
6944.12	12/10 2-3pm	H_2O	B699 cw 2	2	x	x				
.13			B699 5		x	x				
.14			B699 6		x	x				
.15			B699 7		x	x				
.16			B699 8		x	x				
.17			B699 9		x	x				
.18			B699 10		x	x				
.19			T-65 W1	3	x		x	x		
.20			Field blank		x	x	x			
.21			trip blank	2	x		(x)			

Relinquished By (Signature)	DATE / TIME	Received By (Signature)	METHOD OF SHIPPING:
	12-10-91 3:00		C.O.V.
Relinquished By (Signature)	DATE / TIME	Received By (Signature)	SHIPPED BY (Signature):
Relinquished By (Signature)	DATE / TIME	Received for Lab by (Signature): Robert Brouillette	DATE / TIME 12/10/91 4:30p

NOTE: A DRAWING DEPICTING SAMPLE LOCATION SHOULD BE ATTACHED OR DRAWN ON THE REVERSE SIDE OF THIS CHAIN OF CUSTODY.

LABORATORY CHRONICLE

SAMPLE NUMBER	6944.1	6944.2	6944.3	6944.4	6944.5	6944.6	6944.7
Received & Refrigerated Date	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91	12/10/91
Organics Extraction Date							
BN/ABN	NA	NA	NA	NA	NA	NA	NA
PCB's	NA	NA	NA	NA	NA	NA	NA
Analysis Date							
BN/ABN	NA	NA	NA	NA	NA	NA	NA
PCB's	NA	NA	NA	NA	NA	NA	NA
Volatiles	12/13/91	12/13/91	12/13/91	12/18/91	12/18/91	→	→
TPHC's	NA	NA	NA	NA	NA	NA	NA
Metals	NA	NA	NA	NA	NA	NA	NA
Total Solids	NA	NA	NA	NA	NA	NA	NA
Organic Supervisor Review & Approval	Brian K. McKee B. K. McK						12/19/91
Inorganic Supervisor Review & Approval							

LABORATORY CHRONICLE

SAMPLE NUMBER	6944.19	6944.20					
Received & Refrigerated Date	12/10/91	12/10/91					
Organics Extraction Date							
BN/ABN	NA	NA					
PCB's	NA	NA					
Analysis Date							
BN/ABN	NA	NA					
PCB's	NA	NA					
Volatiles	12/18/91	12/18/91					
TPHC's	NA	NA					
Metals	NA	NA					
Total Solids	NA	NA					
Organic Supervisor Review & Approval	Brian K. McKee B. K. McK						12/19/91
Inorganic Supervisor Review & Approval							

METHOD SUMMARY

Base Neutrals / Acid Extractables

The semivolatile samples in this report have been analyzed using the method cited in the USEPA-CLP-IFB version 2/88. The CLP semivolatile method is based on USEPA Method 625 and SW-846 method 8270.

Three acid and/or three base/neutral surrogates are added to each sample. Aqueous samples are extracted with methylene chloride; soil samples are extracted with a 1 to 1 solution of methylene chloride and acetone. The extracts are then concentrated and the internal standards are added. An Hewlett Packard 5890 GC coupled to the HP 5970 MSD was used for the analysis and data collection.

GC/MS

ORGANIC NON-CONFORMANCE SUMMARY

GC/MS TUNE FREQUENCY:- All samples,blanks,standards and matrix spikes were analyzed within the respective 12 hour tune periods.

INITIAL CALIBRATION REQUIREMENTS:
No CCC or SPCC compound was outside of QC limits.

CONTINUING CALIBRATION REQUIREMENTS:
No CCC or SPCC compound was outside of QC limits

DETECTION LIMITS:- Detection limits and search results were modified by dilution or percent solid.*

* All values reported on a DRY WEIGHT basis where applicable

MATRIX SPIKE RECOVERY:- No matrix spike compound was outside QC limits

INTERNAL STANDARD AREA:-

CLIENT ID #	NUMBER OF INTERNAL STANDARD AREA(S) out of QC limits.
6944	2 out of 80 outside units, (see forms 8b+8c)

SURROGATE RECOVERY:-

Client ID #	Surrogates outside QC limits
6944	1 surrogate out (see form 2)

ANALYSIS TIME:- All samples were extracted and analyzed within the prescribed holding times.

7

DATA REPORTING QUALIFIERS

For reporting results to EPA, the following "results qualifiers" are used:

VALUE - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, "10U". This is not necessarily the instrument detection limit. The figure represents the minimum detection limit attainable for this particular sample based on any concentration or dilution that may have been required.

J - Indicates an estimated value. This flag is used:

1) When estimating a concentration for tentatively identifid compounds (library search hits) where a 1:1 response is assumed.
2) When the mass spectral data indicated the identification criteria, however, the result was less than the specified detection limit but greater than zero. If the detection limit was 10ug/L and a concentration of 3ug/L was calculated, report as "3J".

B - Indicates the analyte was found in the blank as well as the sample; report as "12B".

E - Indicates the analyte concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

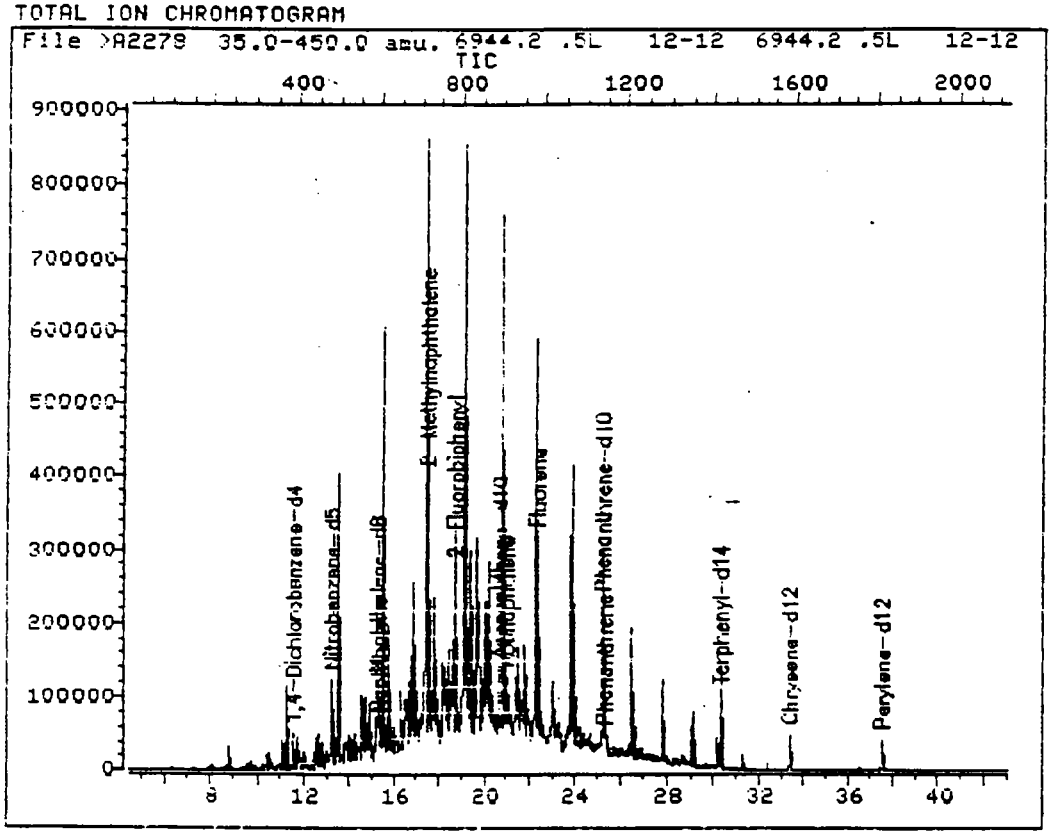
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.2 .5L 12-12	DILUTION FACTOR	2.00
CLIENT ID		QA BATCH	
DATA FILE	>A2278	DATE ANALYZED	12/13/91

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-nitroso-dimethylamine	ND	20	Diethylphthalate	ND	20
bis(2-Chloroethyl)Ether	ND	20	4-Chlorophenyl-phenylether	ND	20
1,3-Dichlorobenzene	ND	20	Fluorene	18 J	20
1,4-Dichlorobenzene	ND	20	N-Nitrosodiphenylamine	ND	20
Benzyl alcohol	ND	20	4-Bromophenyl-phenylether	ND	20
1,2-Dichlorobenzene	ND	20	Hexachlorobenzene	ND	20
bis(2-chloroisopropyl)ether	ND	20	Phenanthrene	27	20
N-Nitroso-Di-n-propylamine	ND	20	Anthracene	ND	20
Hexachloroethane	ND	20	Di-n-butylphthalate	ND	20
Nitrobenzene	ND	20	Fluoranthene	ND	20
Isophorone	ND	20	Benzidine	ND	20
Benzoic Acid	ND	20	Pyrene	ND	20
bis(2-Chloroethoxy)methane	ND	20	Butylbenzylphthalate	ND	20
1,2,4-Trichlorobenzene	ND	20	3,3'-Dichlorobenzidine	ND	20
Naphthalene	53	20	Benzo(a)anthracene	ND	20
Hexachlorobutadiene	ND	20	bis(2-Ethylhexyl)phthalate	ND	20
2-Methylnaphthalene	460	20	Chrysene	ND	20
Hexachlorocyclopentadiene	ND	20	Di-n-octylphthalate	ND	20
2-Chloronaphthalene	ND	20	Benzo(b)fluoranthene	ND	20
Dimethylphthalate	ND	20	Benzo(k)fluoranthene	ND	20
Acenaphthylene	ND	20	Benzo(a)pyrene	ND	20
Acenaphthene	18 J	20	Indeno(1,2,3-cd)pyrene	ND	20
Dibenzofuran	ND	20	Dibenz(a,h)anthracene	ND	20
2,6-Dinitrotoluene	ND	20	Benzo(g,h,i)perylene	ND	20
2,4-Dinitrotoluene	ND	20	1,2-Diphenylhydrazine	ND	20

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM

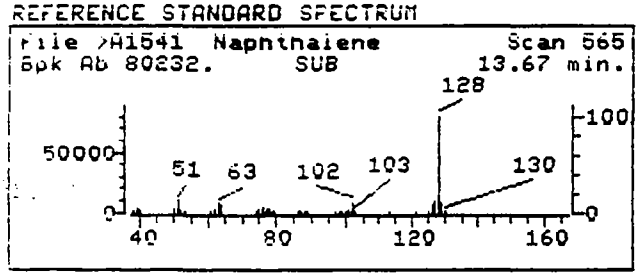


Data File: >A2278::D3 Quant Output File: ^A2278::DB
Name: 6944.2 .5L 12-12
Misc: 6944.2 .5L 12-12 BTL# 9

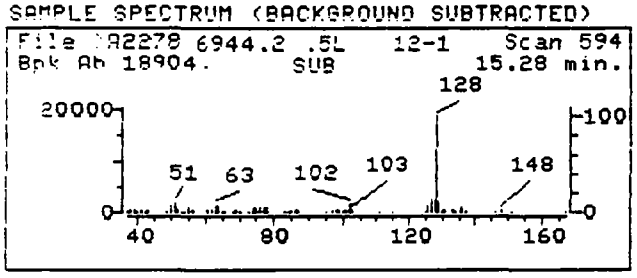
Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 911213 12:34

Operator ID: MARK
Quant Time: 911213 22:14
Injected at: 911213 21:30

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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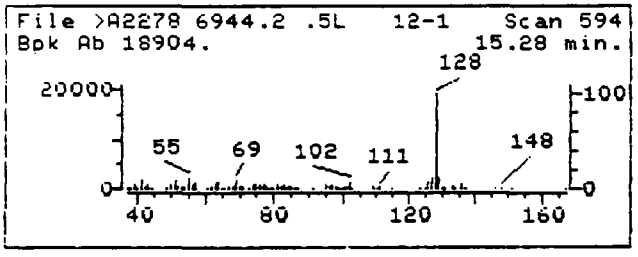
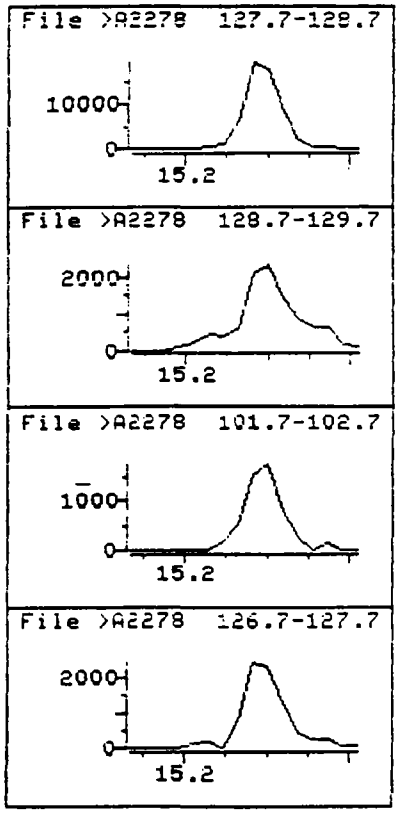




Data File: >A2278::D3
Name: 6944.2 .5L 12-12
Misc: 6944.2 .5L 12-12
Quant Time: 911213 22:14
Injected at: 911213 21:30

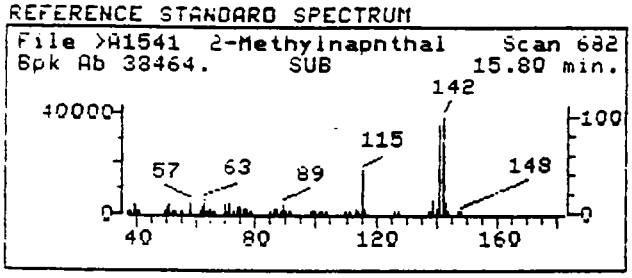
Quant Output File: ^A2278::DB

BTL# 9

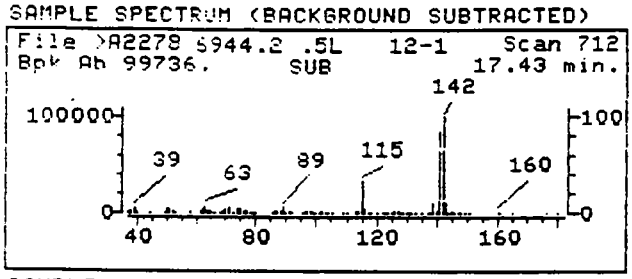
Quant ID File: IDBNA::D4
Last Calibration: 911213 12:34

Compound No: 29
Compound Name: Naphthalene
Scan Number: 594
Retention Time: 15.28 min.
Quant Ion: 128.0
Area: 61359
Concentration: 26.56 ng/uL
q-value: 97

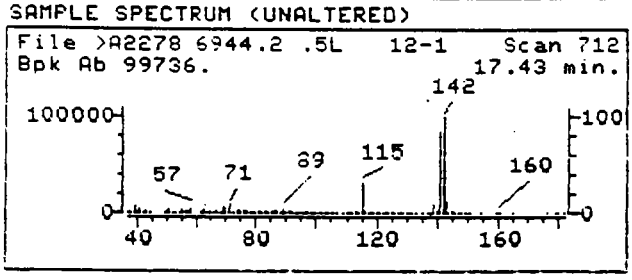
REFERENCE STANDARD SPECTRUM

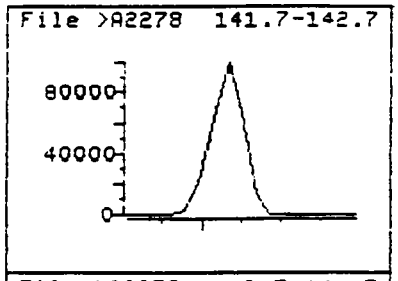


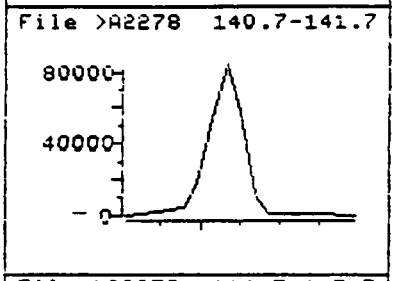
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

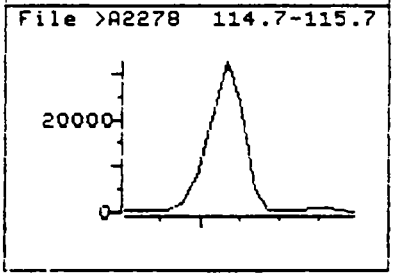


SAMPLE SPECTRUM (UNALTERED)





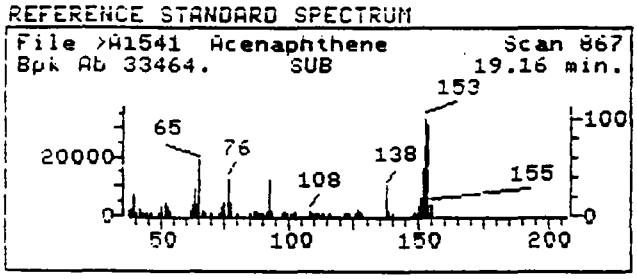




Data File: >A2278::D3 Quant Output File: ^A2278::DB
Name: 6944.2 .5L 12-12
Misc: 6944.2 .5L 12-12 BTL# 9
Quant Time: 911213 22:14 Quant ID File: IDBNA::D4
Injected at: 911213 21:30 Last Calibration: 911213 12:34

Compound No: 33
Compound Name: 2-Methylnaphthalene
Scan Number: 712
Retention Time: 17.43 min.
Quant Ion: 142.0
Area: 295888
Concentration: 228.56 ng/uL
q-value: 87

REFERENCE STANDARD SPECTRUM



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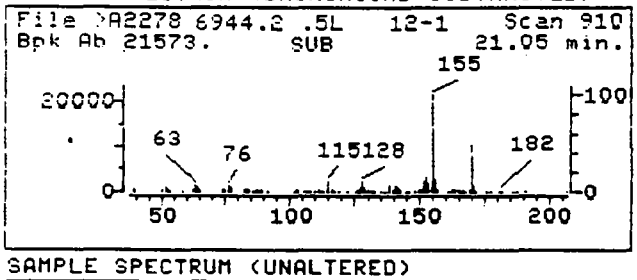
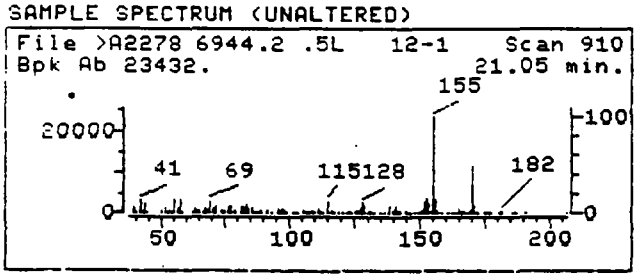
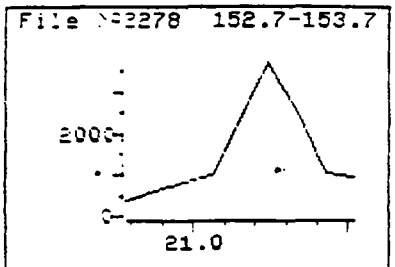
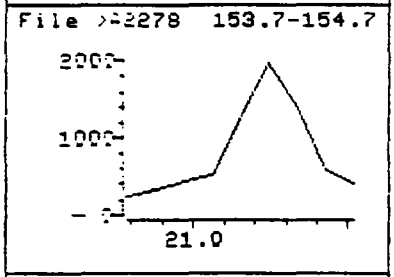
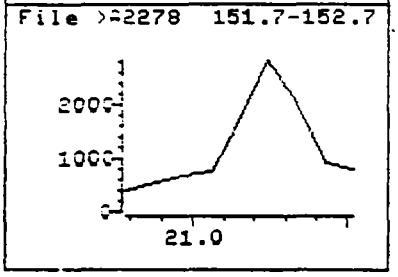


SAMPLE SPECTRUM (UNALTERED)









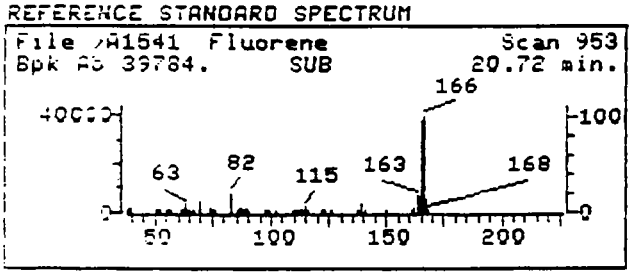
Data File: >A2278::D3
Name: 6944.2 .5L 12-12
Misc: 6944.2 .5L 12-12
Quant Time: 911213 22:14
Injected at: 911213 21:30

Quant Output File: ^A2278::DB

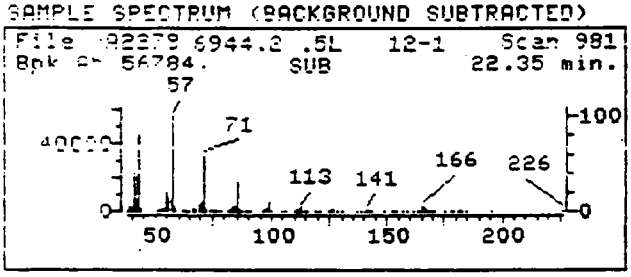
BTL# 9
Quant ID File: IDBNA::D4
Last Calibration: 911213 12:34

Compound No: 44
Compound Name: Acenaphthene
Scan Number: 910
Retention Time: 21.05 min.
Quant Ion: 153.0
Area: 11985
Concentration: 9.17 ng/uL
q-value: 64

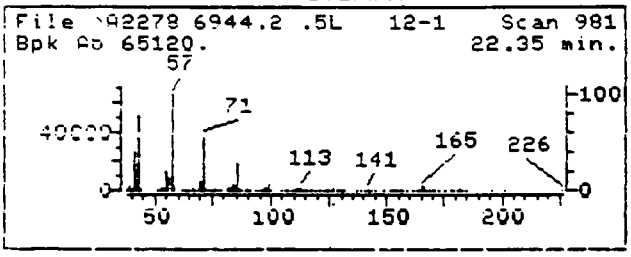
REFERENCE STANDARD SPECTRUM

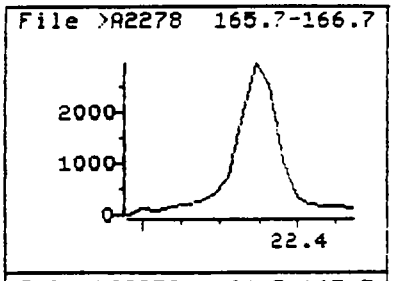


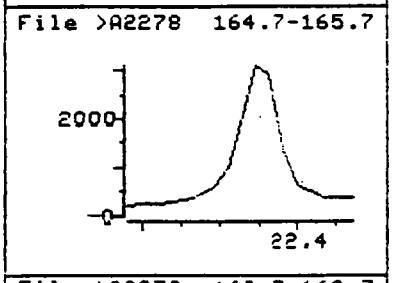
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

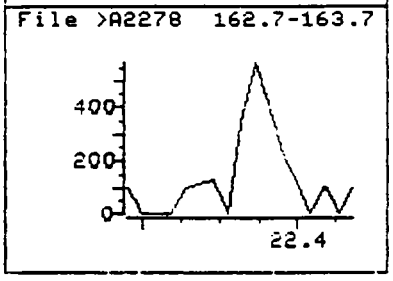


SAMPLE SPECTRUM (UNALTERED)









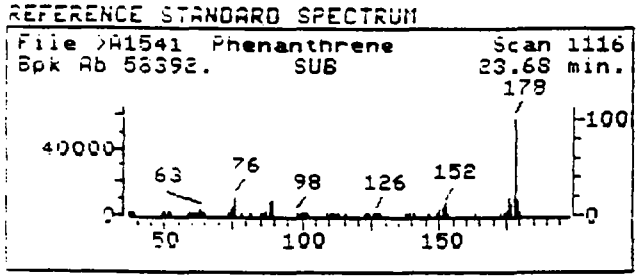
Data File: >A2278::D3
Name: 6944.2 .5L 12-12
Misc: 6944.2 .5L 12-12
Quant Time: 911213 22:14
Injected at: 911213 21:30

Quant Output File: ^A2278::DB

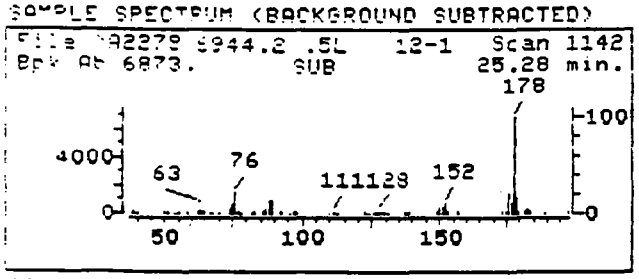
BTL# 9
Quant ID File: IDBNA::D4
Last Calibration: 911213 12:34

Compound No: 52
Compound Name: Fluorene
Scan Number: 981
Retention Time: 22.35 min.
Quant Ion: 166.0
Area: 12488
Concentration: 9.07 ng/uL
q-value: 96

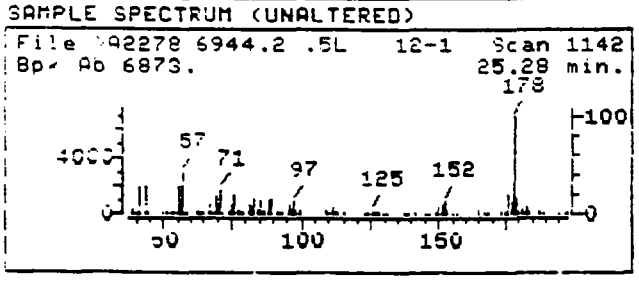
REFERENCE STANDARD SPECTRUM

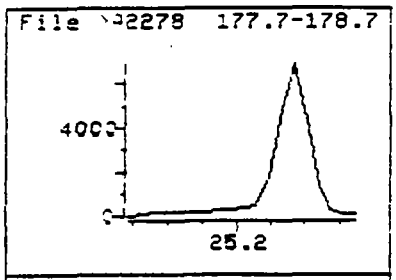


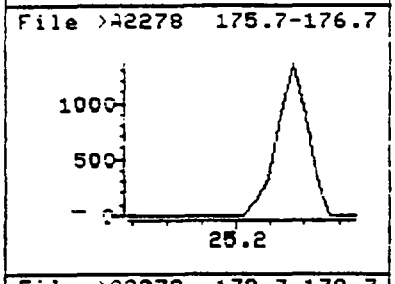
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

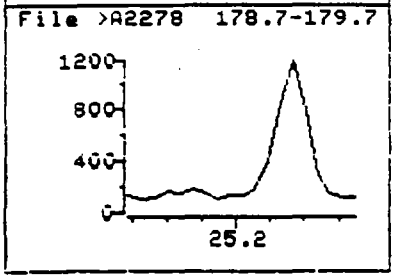


SAMPLE SPECTRUM (UNALTERED)









Data File: >A2278::D3
Name: 6944.2 .5L 12-12
Misc: 6944.2 .5L 12-12
Quant Time: 911213 22:14
Injected at: 911213 21:30

Quant Output File: ^A2278::DB

BTL# 9
Quant ID File: IDBNA::D4
Last Calibration: 911213 12:34

Compound No: 62
Compound Name: Phenanthrene
Scan Number: 1142
Retention Time: 25.28 min.
Quant Ion: 178.0
Area: 24901
Concentration: 13.25 ng/uL
q-value: 96

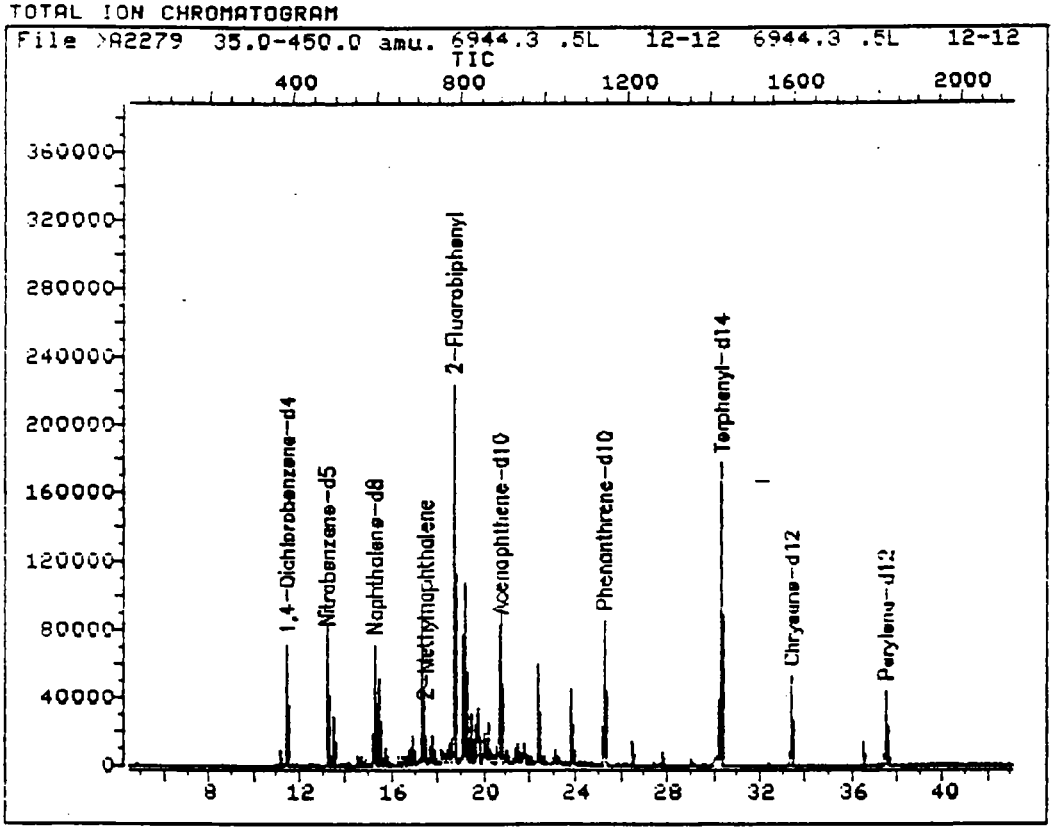
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944:3 .5L 12-12	DILUTION FACTOR	2.00
CLIENT ID		QA BATCH	
DATA FILE	>A2279	DATE ANALYZED	12/13/91

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-nitroso-dimethylamine	ND	20	Diethylphthalate	ND	20
bis(2-Chloroethyl)Ether	ND	20	4-Chlorophenyl-phenylether	ND	20
1,3-Dichlorobenzene	ND	20	Fluorene	ND	20
1,4-Dichlorobenzene	ND	20	N-Nitrosodiphenylamine	ND	20
Benzyl alcohol	ND	20	4-Bromophenyl-phenylether	ND	20
1,2-Dichlorobenzene	ND	20	Hexachlorobenzene	ND	20
bis(2-chloroisopropyl)ether	ND	20	Phenanthrene	ND	20
N-Nitroso-Di-n-propylamine	ND	20	Anthracene	ND	20
Hexachloroethane	ND	20	Di-n-butylphthalate	ND	20
Nitrobenzene	ND	20	Fluoranthene	ND	20
Isophorone	ND	20	Benzidine	ND	20
Benzoic Acid	ND	20	Pyrene	ND	20
bis(2-Chloroethoxy)methane	ND	20	Butylbenzylphthalate	ND	20
1,2,4-Trichlorobenzene	ND	20	3,3`-Dichlorobenzidine	ND	20
Naphthalene	ND	20	Benzo(a)anthracene	ND	20
Hexachlorobutadiene	ND	20	bis(2-Ethylhexyl)phthalate	ND	20
2-Methylnaphthalene	25	20	Chrysene	ND	20
Hexachlorocyclopentadiene	ND	20	Di-n-octylphthalate	ND	20
2-Chloronaphthalene	ND	20	Benzo(b)fluoranthene	ND	20
Dimethylphthalate	ND	20	Benzo(k)fluoranthene	ND	20
Acenaphthylene	ND	20	Benzo(a)pyrene	ND	20
Acenaphthene	ND	20	Indeno(1,2,3-cd)pyrene	ND	20
Dibenzofuran	ND	20	Dibenz(a,h)anthracene	ND	20
2,6-Dinitrotoluene	ND	20	Benzo(g,h,i)perylene	ND	20
2,4-Dinitrotoluene	ND	20	1,2-Diphenylhydrazine	ND	20

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM

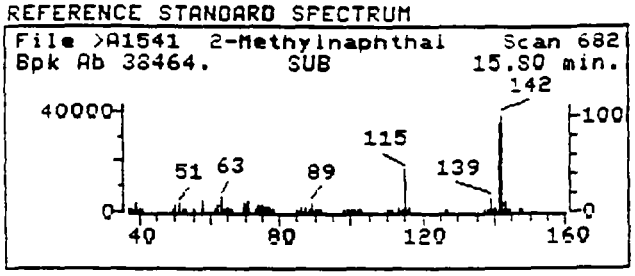


Data File: >A2279::D3 Quant Output File: ^A2279::DB
Name: 6944.3 .5L 12-12
Misc: 6944.3 .5L 12-12 BTL#10

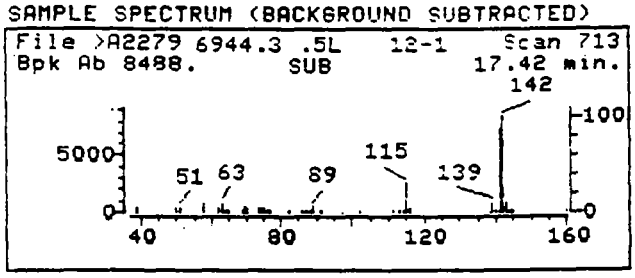
Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 911213 12:34

Operator ID: MARK
Quant Time: 911213 23:07
Injected at: 911213 22:23

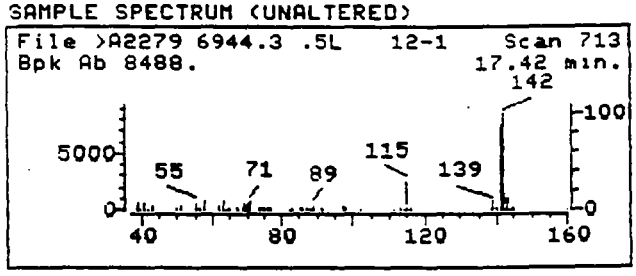
REFERENCE STANDARD SPECTRUM

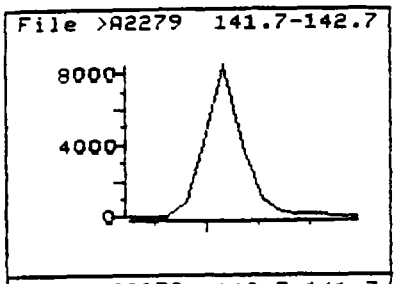


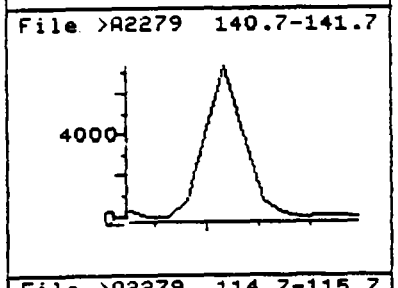
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

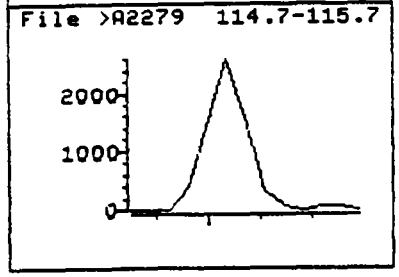


SAMPLE SPECTRUM (UNALTERED)









Data File: >A2279::D3
Name: 6944.3 .5L 12-12
Misc: 6944.3 .5L 12-12
Quant Time: 911213 23:07
Injected at: 911213 22:23

Quant Output File: ^A2279::DB

BTL#10

Quant ID File: 1DBNA::D4
Last Calibration: 911213 12:34

Compound No: 33
Compound Name: 2-Methylnaphthalene
Scan Number: 713
Retention Time: 17.42 min.
Quant Ion: 142.0
Area: 21295
Concentration: 12.63 ng/uL
q-value: 88

20

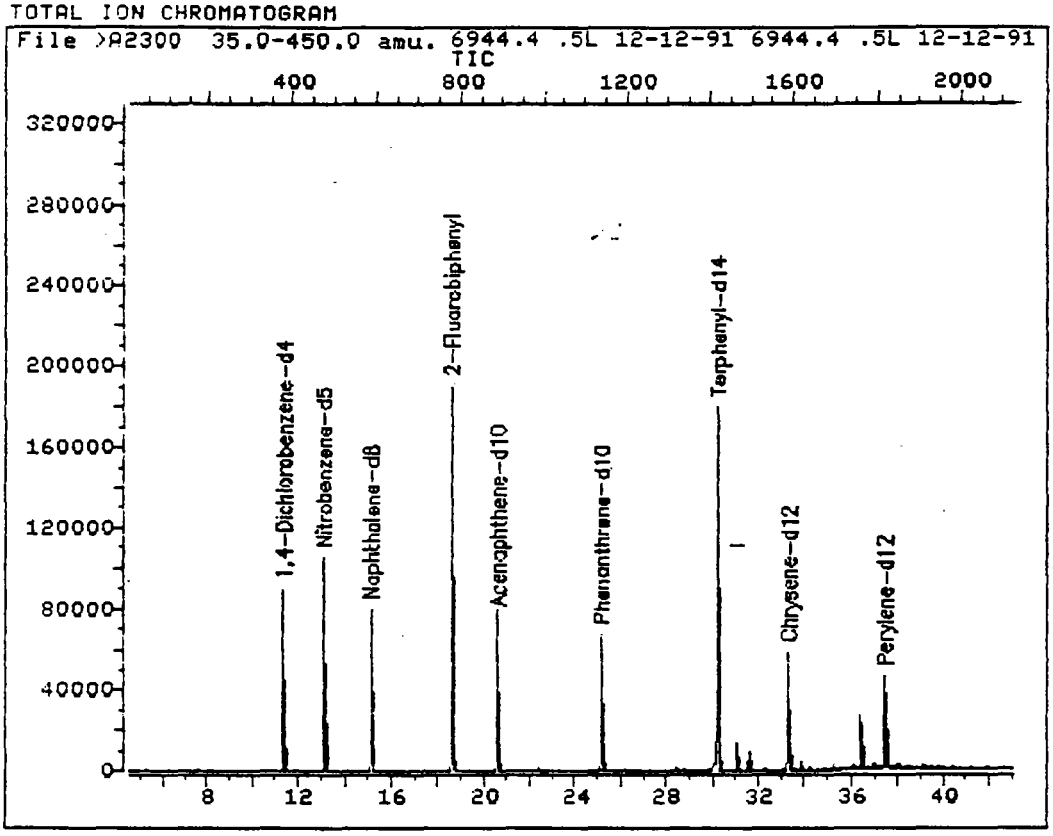
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.4 SL 12-12-91	DILUTION FACTOR	2.00
CLIENT ID		QA BATCH	
DATA FILE	>A2300	DATE ANALYZED	12/18/91

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-nitroso-dimethylamine	ND	20	Diethylphthalate	ND	20
Bis(2-Chloroethyl)Ether	ND	20	4-Chlorophenyl-phenylether	ND	20
1,3-Dichlorobenzene	ND	20	Fluorene	ND	20
1,4-Dichlorobenzene	ND	20	N-Nitrosodiphenylamine	ND	20
Benzyl alcohol	ND	20	4-Bromophenyl-phenylether	ND	20
1,2-Dichlorobenzene	ND	20	Hexachlorobenzene	ND	20
bis(2-chloroisopropyl)ether	ND	20	Phenanthrene	ND	20
N-Nitroso-Di-n-propylamine	ND	20	Anthracene	ND	20
Hexachloroethane	ND	20	Di-n-butylphthalate	ND	20
Nitrobenzene	ND	20	Fluoranthene	ND	20
Isophorone	ND	20	Benzidine	ND	20
Benzoic Acid	ND	20	Pyrene	ND	20
bis(2-Chloroethoxy)methane	ND	20	Butylbenzylphthalate	ND	20
1,2,4-Trichlorobenzene	ND	20	3,3`-Dichlorobenzidine	ND	20
Naphthalene	ND	20	Benzo(a)anthracene	ND	20
Hexachlorobutadiene	ND	20	bis(2-Ethylhexyl)phthalate	ND	20
2-Methylnaphthalene	ND	20	Chrysene	ND	20
Hexachlorocyclopentadiene	ND	20	Di-n-octylphthalate	ND	20
2-Chloronaphthalene	ND	20	Benzo(b)fluoranthene	ND	20
Dimethylphthalate	ND	20	Benzo(k)fluoranthene	ND	20
Acenaphthylene	ND	20	Benzo(a)pyrene	ND	20
Acenaphthene	ND	20	Indeno(1,2,3-cd)pyrene	ND	20
Dibenzofuran	ND	20	Dibenz(a,h)anthracene	ND	20
2,6-Dinitrotoluene	ND	20	Benzo(g,h,i)perylene	ND	20
2,4-Dinitrotoluene	ND	20	1,2-Diphenylhydrazine	ND	20

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM



Data File: >A2300::D3 Quant Output File: ^A2300::DB
Name: 6944.4 .5L 12-12-91
Misc: 6944.4 .5L 12-12-91 BTL# 1

Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 911213 12:34

Operator ID: MARK
Quant Time: 911218 13:43
Injected at: 911218 13:00

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.: 6944.2 .5L

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Sample wt/vol: 500 (g/mL) mL

Level: (Low/med) Low

Extraction: (Sepf/Cont/Sonc) Sep. Funnel

GPC Cleanup: (Y/N) N

Lab Sample ID: 6944.2 .5L

Lab File ID: >A2278

Date Received: 12-09-91

Date Extracted: 12-12-91

Date Analyzed: 12/13/91

Dilution Factor: 2

Number of TICs found: 15

CONCENTRATION UNITS: ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	112403	Dodecane	13.44	174	83
2	629505	Tridecane	15.46	300	88
3	17301289	Undecane, 3,6-dimethyl-	15.74	78	83
4	61141728	Dodecane, 4,6-dimethyl-	16.85	134	70
5	90120	Naphthalene, 1-methyl-	17.76	84	86
6	629594	Tetradecane	19.13	78	87
7	573988	Naphthalene, 1,2-dimethyl-	19.40	32	97
8	573988	Naphthalene, 1,2-dimethyl-	19.68	30	89
9	573988	Naphthalene, 1,2-dimethyl-	19.99	18	70
10	544763	Hexadecane	20.15	20	83
11		Unknown	20.79	14	
12	2245387	Naphthalene, 1,6,7-trimethyl	21.76	18	67
13		Hydrocarbon	23.80	110	
14	31295564	Dodecane, 2,6,11-trimethyl-	23.88	44	83
15	4292197	Dodecane, 1-iodo-	26.52	48	87

MS data file header from : >A2278

Sample: 6944.2 .5L 12-12 Operator: MARK SUPER GRP. 12/13/91 21:30
Misc : 6944.2 .5L 12-12 BTL# 5
Sys. #: 2 MS model 70 SW/HW rev.: IA ALS # : 0
Method file: BNARUN Tuning file: MTUNE2 No. of extra records: 2
Source temp.: 1 Analyzer temp.: 280 Transfer line temp. 0

Chromatographic temperatures :	35.	300.	0.	0.	0.
Chromatographic times, min. :	3.0	6.9	0.0	0.0	0.0
Chromatographic rate, deg/min:	8.0	0.0	0.0	.2	0.0

>A2278 6944.2 .5L 12-12 6944.2 .5L 12-12
35.0 450.0 CLP TIC
Upslope: .20 Area Reject: 28169. Max Peaks: 15 Bunching: 1
Dnslope: 0.00 Results File IA2278 Sorted by Time/Area INT

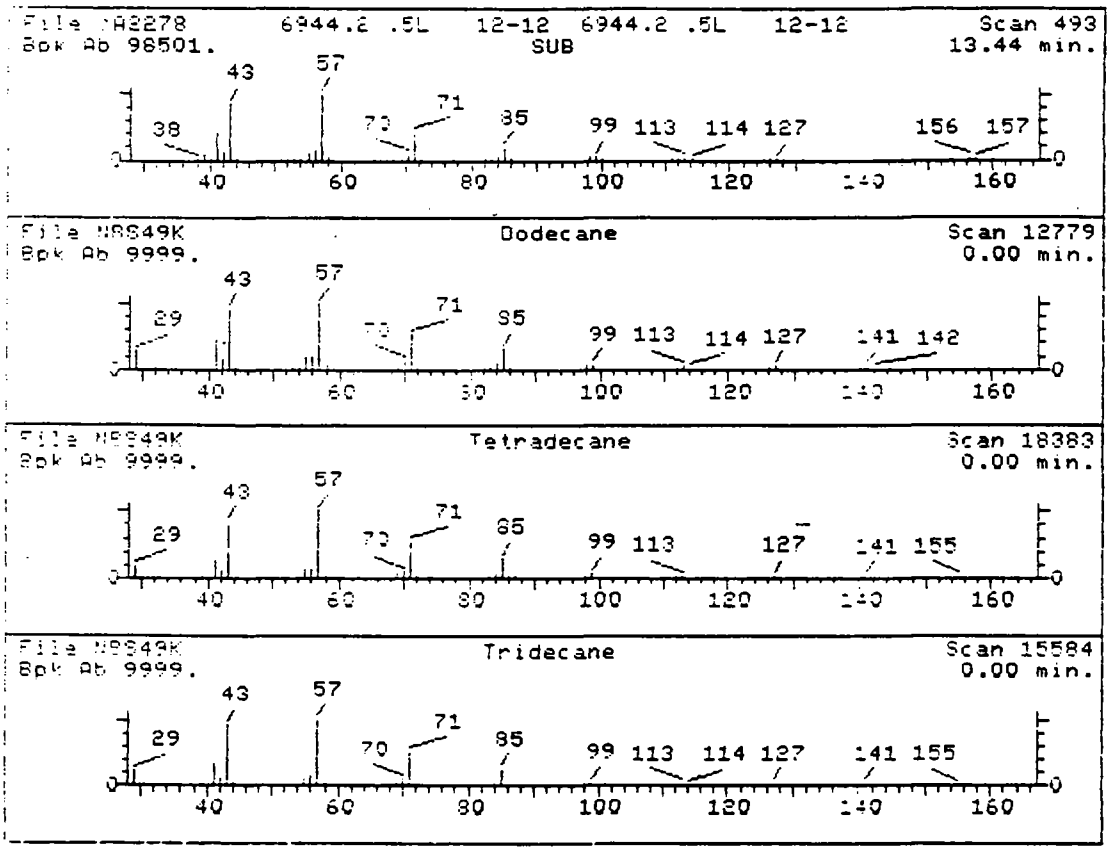
Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	13.44	489	493	496	393097	1039996	963009	41.01	7.72
2	15.46	601	604	607	591173	1784940	1687645	71.87	13.52
3	15.74	616	619	622	173047	584105	429063	18.27	3.43
4	16.85	675	680	684	212081	1174414	748513	31.88	6.00
5	17.76	727	730	732	174526	806035	465835	19.84	3.73
6	19.13	796	805	807	788128	3120849	2348168	100.00	18.82
7	19.40	818	820	826	246840	1505996	949885	40.45	7.61
8	19.68	830	835	836	249860	1336508	903434	38.47	7.24
9	19.99	850	852	855	171514	845360	533933	22.74	4.28
10	20.15	859	861	864	228476	944947	637065	27.13	5.10
11	20.79	895	896	898	376023	640579	446160	19.00	3.57
12	21.76	946	949	954	128001	963050	577187	24.58	4.62
13	23.80	1057	1061	1063	376393	1238460	972425	41.41	7.79
14	23.88	1063	1065	1069	144974	657061	388771	16.56	3.11
15	26.52	1207	1210	1213	177085	530937	423625	18.04	3.39

Sum of corrected areas: 12474724.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	40.0	140845.	11.52	4.51 - 13.37
2	40.0	445189.	15.23	13.37 - 17.96
3	40.0	2430543.	20.68	17.96 - 22.95
4	40.0	705005.	25.21	22.95 - 29.29
5	40.0	177213.	33.37	29.29 - 35.43
6	40.0	157734.	37.48	35.43 - 43.05

Dilution Factor = 1.00 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL



UNKNOWN #,1

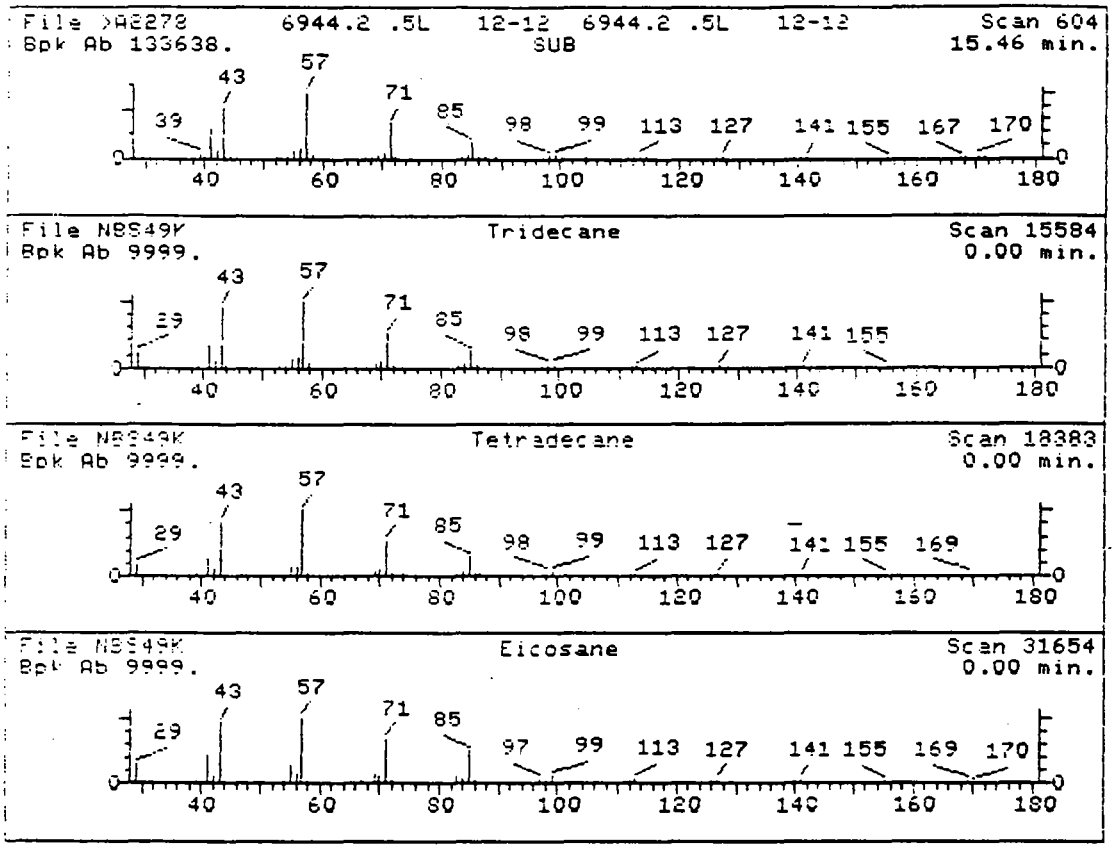
AREA = 963009.0 TENTATIVE CONCENTRATION IS 87.00

1.	Dodecane	170	C12H26
2.	Tetradecane	198	C14H30
3.	Tridecane	184	C13H28
4.	Dodecane, 2,7,10-trimethyl-	212	C15H32
5.	Decane, 2,5,9-trimethyl-	184	C13H28
6.	Decane, 6-ethyl-2-methyl-	184	C13H28

Sample file: >A2278 Spectrum #: 493

Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	R	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	83	112403	6732	NBS49K	86	13	2	4	68	1	57	2E
2.	83	629594	6804	NBS49K	81	27	2	4	85	1	57	23
3.	83	629505	6761	NBS49K	76	30	2	0	79	1	57	27
4.	76	74645980	4422	NBS49K	78	31	2	4	68	8	45	2:
5.	71	62108229	4388	NBS49K	60	31	0	2	98	13	38	3:
6.	70	62108218	6767	NBS49K	69	30	2	4	93	8	42	1:

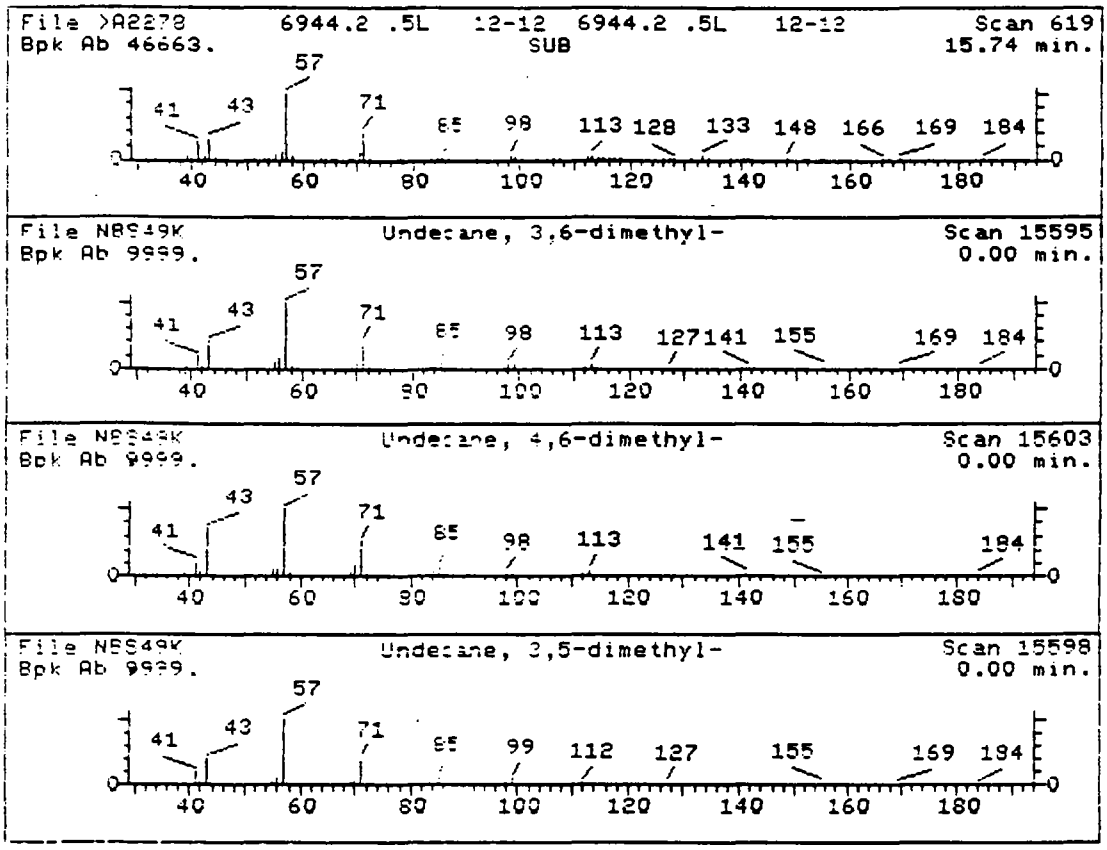


UNKNOWN #,2
AREA = 1687645. TENTATIVE CONCENTRATION IS 150.00

1.	Tridecane	184 C13H28
2.	Tetradecane	198 C14H30
3.	Eicosane	282 C20H42
4.	Decane, 6-ethyl-2-methyl-	184 C13H28
5.	Dodecane	170 C12H26
6.	Heptadecane, 2,6,10,15-tetramethyl-	296 C21H44

Sample file: >A2278 Spectrum #: 604
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	88	629505	6761	NBS49K	86	20	1	0	81	4	65	50
2.	83	629594	6804	NBS49K	80	28	2	0	85	2	57	29
3.	83	112958	6871	NBS49K	93	46	2	4	69	4	57	22
4.	83	62108218	6767	NBS49K	62	37	2	0	96	5	57	21
5.	79*	112403	6732	NBS49K	81	18	0	2	66	38	37	83
6.	78	54833486	6878	NBS49K	88	47	2	4	71	2	55	18



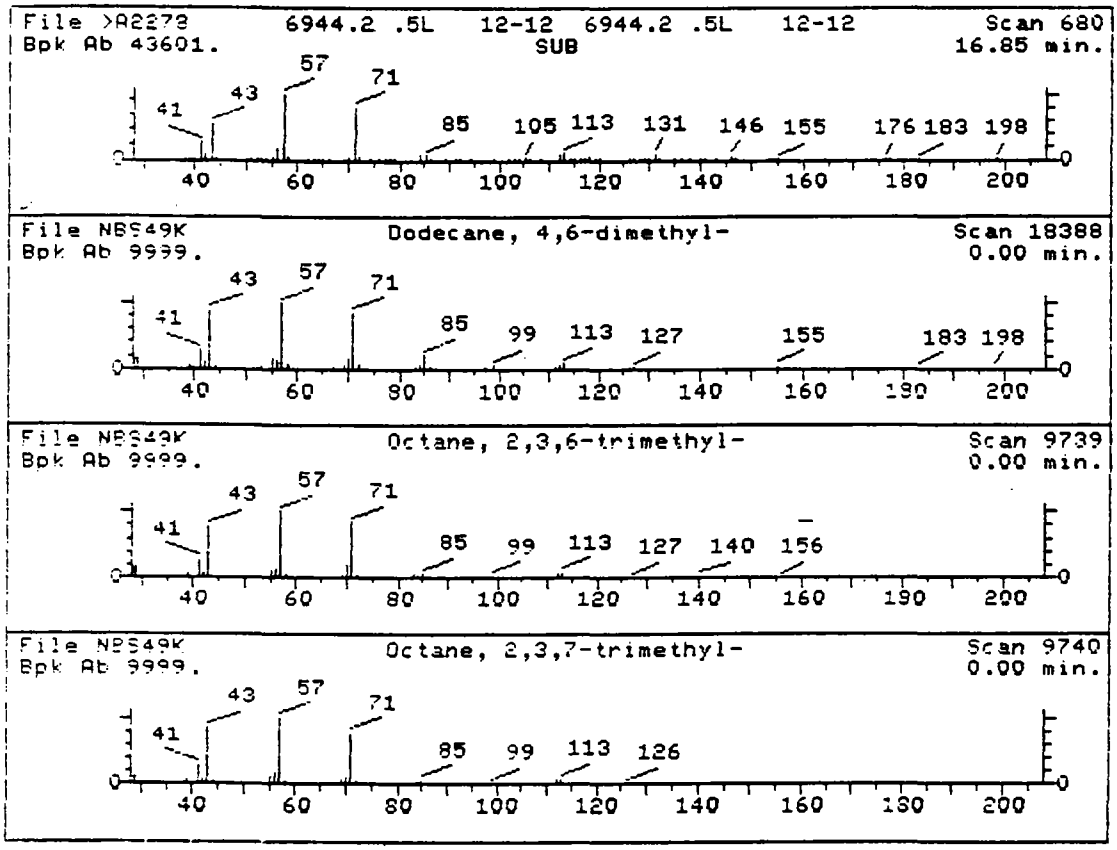
UNKNOWN #,3

AREA = 429063.0 TENTATIVE CONCENTRATION IS 39.00

1.	Undecane, 3,6-dimethyl-	184 C13H28
2.	Undecane, 4,6-dimethyl-	184 C13H28
3.	Undecane, 3,5-dimethyl-	184 C13H28
4.	Octane, 3,6-dimethyl-	142 C10H22
5.	Undecane, 2,5-dimethyl-	184 C13H28
6.	Decane, 2,6,8-trimethyl-	184 C13H28

Sample file: >A2278 Spectrum #: 619
Search speed: 1 Tilting option: F No. of ion ranges searched: 44

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	83*	17301239	4386	NBS49K	74	23	2	1	74	6	54	55
2.	83*	17312822	4387	NBS49K	52	46	2	0	69	4	57	27
3.	76*	17312811	9853	NBS49K	51	47	2	0	87	7	45	26
4.	60	15869940	12333	NBS49K	52	37	2	0	68	14	30	18
5.	59*	17301223	12182	NBS49K	57	42	1	4	75	26	24	39
6.	52*	62108263	4392	NBS49K	36	56	2	0	76	20	20	17

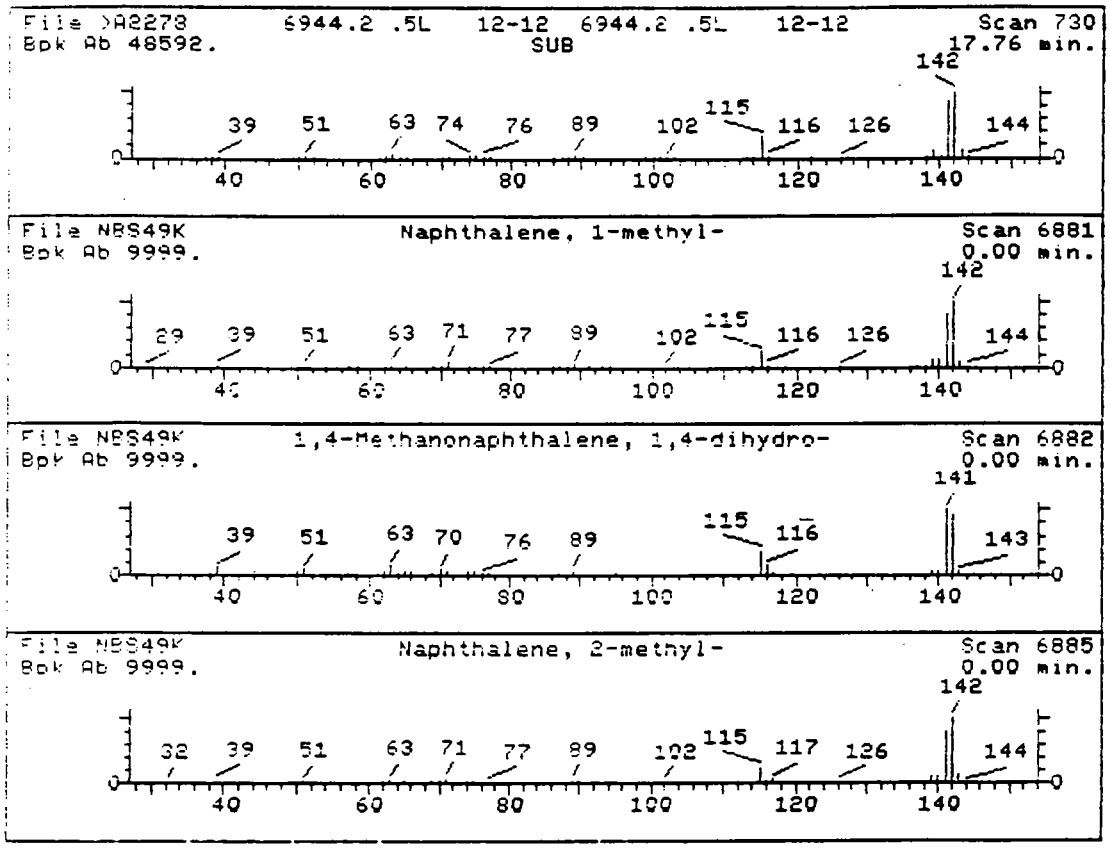


UNKNOWN #,4
AREA = 748513.0 TENTATIVE CONCENTRATION IS 67.00

1.	Dodecane, 4,6-dimethyl-	198	C14H30
2.	Octane, 2,3,6-trimethyl-	156	C11H24
3.	Octane, 2,3,7-trimethyl-	156	C11H24
4.	Nonane, 2,6-dimethyl-	156	C11H24
5.	Heptane, 2,5,5-trimethyl-	142	C10H22
6.	Heptane, 3,3,5-trimethyl-	142	C10H22

Sample file: >A2278 Spectrum #: 680
Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	70*	61141728	4410	NBS49K	44	66	3	0	95	10	42	13
2.	67	62016335	4356	NBS49K	67	25	2	0	70	12	34	23
3.	60	62016346	4357	NBS49K	55	38	3	0	100	12	30	13
4.	60	17302282	4354	NBS49K	55	38	3	0	108	12	30	13
5.	34	1189997	4328	NBS49K	50	40	2	0	83	32	12	17
6.	32	7154805	4330	NBS49K	46	38	2	0	80	32	12	15



UNKNOWN #.5

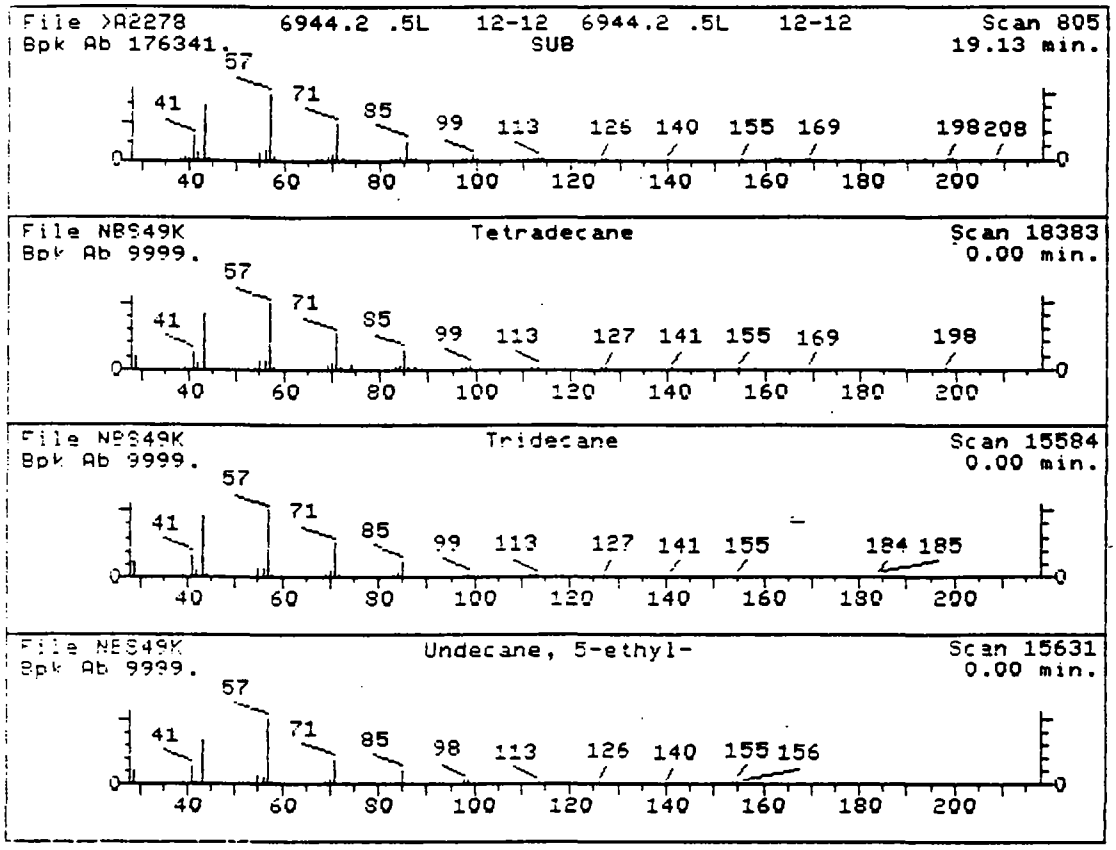
AREA = 465835.0 TENTATIVE CONCENTRATION IS 42.00

1.	Naphthalene, 1-methyl-	142 C11H10
2.	1,4-Methanonaphthalene, 1,4-dihydro-	142 C11H10
3.	Naphthalene, 2-methyl-	142 C11H10
4.	1H-Indene, 1-ethylidene-	142 C11H10
5.	BENZOCYCLOHEPTATRIENE	142 C11H10
6.	Benzeneacetonitrile, 2-cyano-	142 C9H6N2

Sample file: >A2278 Spectrum #: 730

Search speed: 1 Tilting option: F No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	86*	90120	18080	NBS49K	64	36	2	1	85	4	60	38
2.	86*	4453901	18081	NBS49K	64	38	2	-2	87	2	60	32
3.	86*	91576	18084	NBS49K	59	39	2	1	85	4	60	34
4.	58*	2471832	18082	NBS49K	60	40	2	-2	77	20	25	29
5.	32*	264095	18083	NBS49K	59	34	0	0	34	60	12	72
6.	31*	3759282	18075	NBS49K	40	54	2	0	90	42	8	19



UNKNOWN #,6

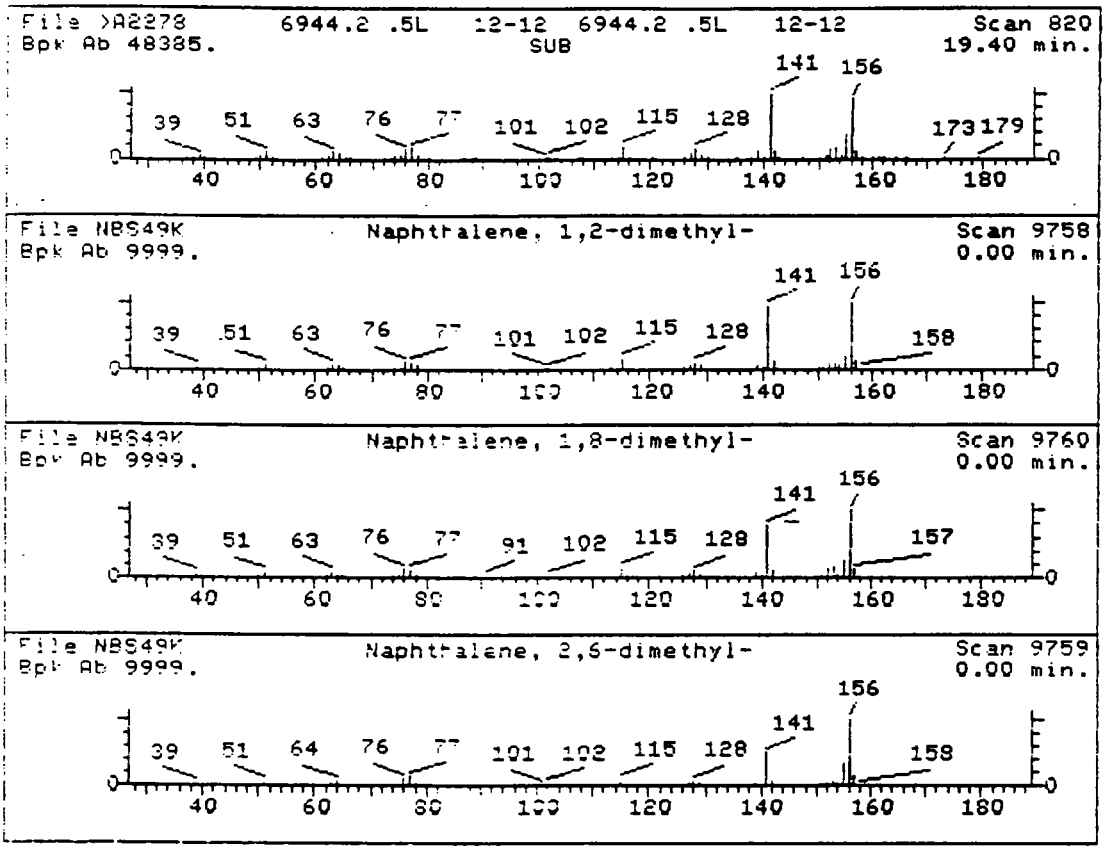
AREA = 2348168. TENTATIVE CONCENTRATION IS 39.00

1.	Tetradecane	198 C14H30
2.	Tridecane	184 C13H28
3.	Undecane, 5-ethyl-	184 C13H28
4.	Undecane, 3,8-dimethyl-	184 C13H28
5.	Decane, 6-ethyl-2-methyl-	184 C13H28
6.	Eicosane, 10-methyl-	296 C21H44

Sample file: >A2278 Spectrum #: 805

Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	87*	629594	6804	NBS49K	75	33	2	2	91	1	63	49
2.	78	629505	6761	NBS49K	65	41	2	0	91	4	55	17
3.	78	17453940	6776	NBS49K	55	43	2	0	100	3	55	15
4.	78	17301303	6766	NBS49K	60	48	2	0	76	4	55	12
5.	76	62108218	6767	NBS49K	67	32	2	0	100	7	45	23
6.	70	54833237	6879	NBS49K	68	69	2	0	68	7	42	15

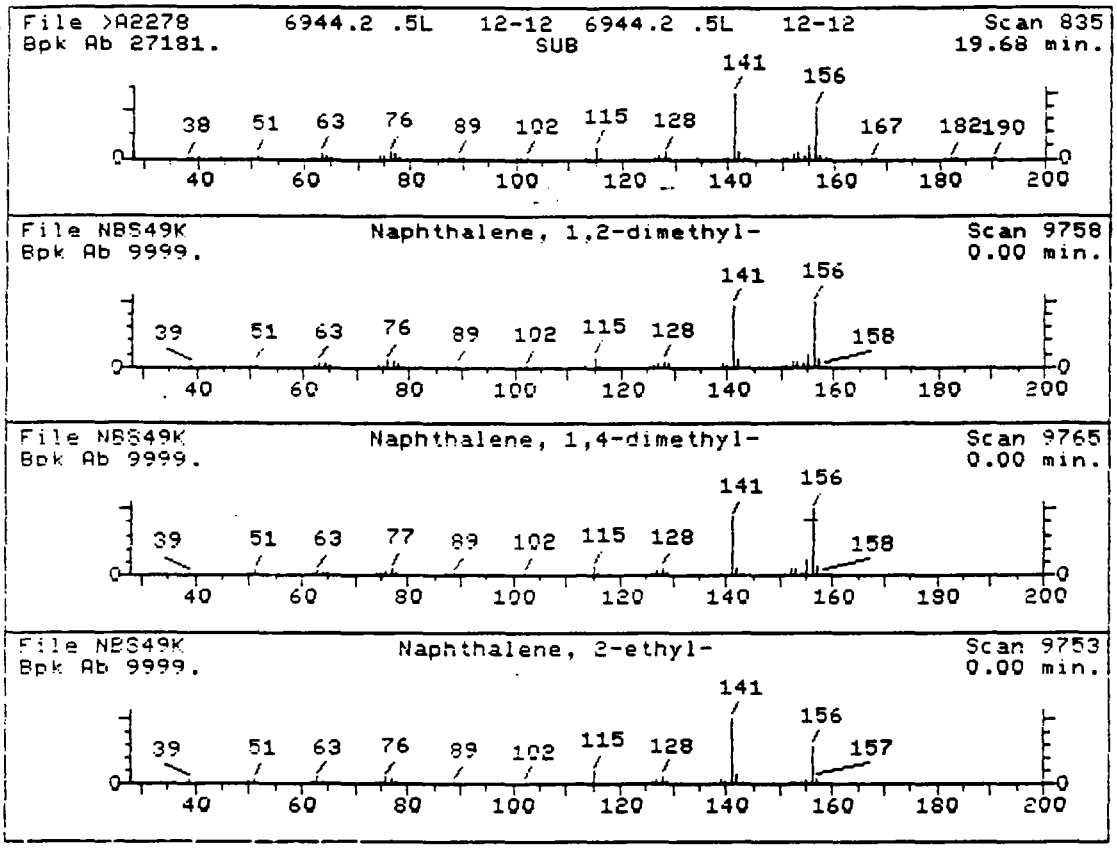


UNKNOWN #,7
AREA = 949885.0 TENTATIVE CONCENTRATION IS 16.00

1.	Naphthalene, 1,2-dimethyl-	156	C12H12
2.	Naphthalene, 1,8-dimethyl-	156	C12H12
3.	Naphthalene, 2,6-dimethyl-	156	C12H12
4.	Naphthalene, 2,7-dimethyl-	156	C12H12
5.	Naphthalene, 2,3-dimethyl-	156	C12H12
6.	Naphthalene, 1,5-dimethyl-	156	C12H12

Sample file: >A2278 Spectrum #: 820
Search speed: 1 Tilting option: F No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	97*	573988	20513	NBS49K	95	18	0	0	87	6	68	97
2.	96*	569415	20515	NBS49K	94	16	0	0	92	2	72	96
3.	94*	581420	20514	NBS49K	82	23	0	0	92	20	60	94
4.	94*	582161	20509	NBS49K	79	29	0	0	92	20	60	94
5.	93*	581408	20512	NBS49K	91	15	0	1	95	10	68	92
6.	93*	571619	20523	NBS49K	78	31	0	0	92	18	60	93



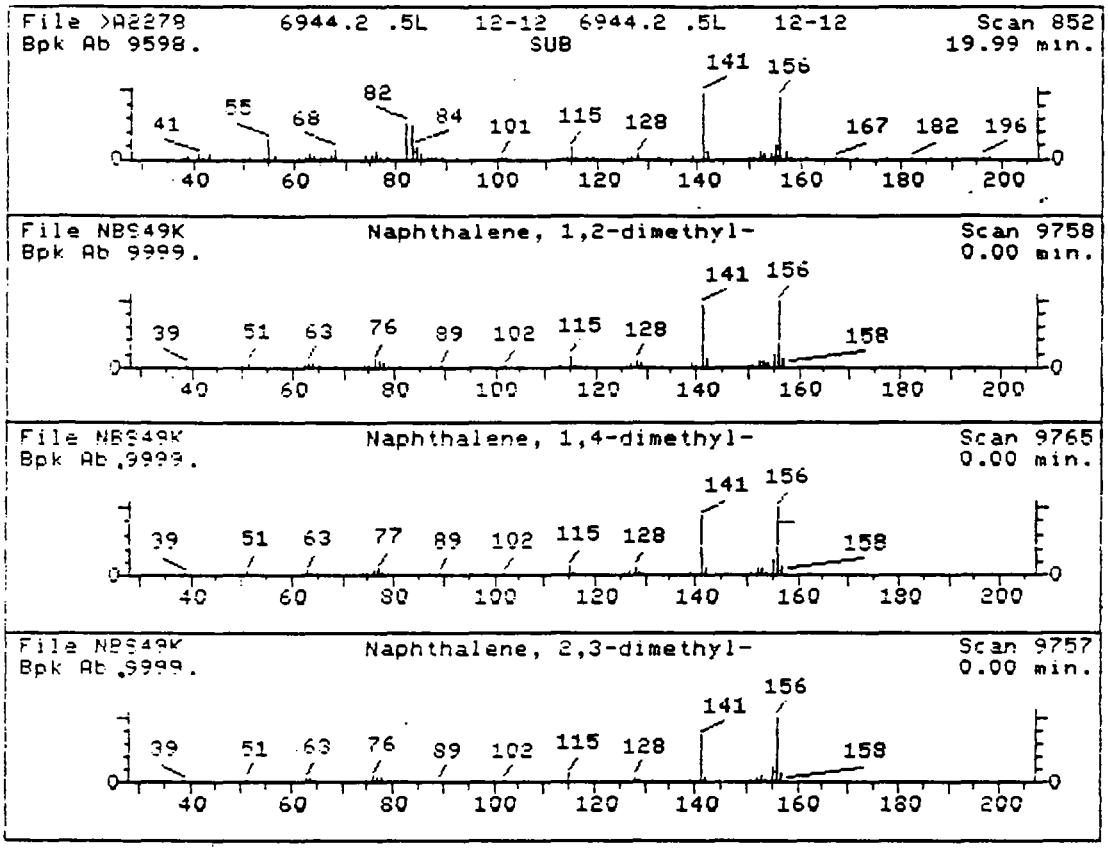
UNKNOWN #,8

AREA = 903434.0 TENTATIVE CONCENTRATION IS 15.00

1.	Naphthalene, 1,2-dimethyl-	156 C12H12
2.	Naphthalene, 1,4-dimethyl-	156 C12H12
3.	Naphthalene, 2-ethyl-	156 C12H12
4.	Naphthalene, 1,7-dimethyl-	156 C12H12
5.	Naphthalene, 1,8-dimethyl-	156 C12H12
6.	Naphthalene, 1,3-dimethyl-	156 C12H12

Sample file: >A2278 Spectrum #: 835
Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	89*	573988	20513	NBS49K	83	30	2	0	78	2	66	65
2.	86*	571584	20520	NBS49K	86	22	1	0	68	19	50	83
3.	71*	939275	20508	NBS49K	67	39	1	0	68	30	29	66
4.	66*	575371	20518	NBS49K	68	40	2	0	73	19	31	49
5.	66*	569415	20515	NBS49K	65	45	2	0	78	19	31	44
6.	66*	575417	20519	NBS49K	63	44	2	0	72	19	31	41



UNKNOWN #,9

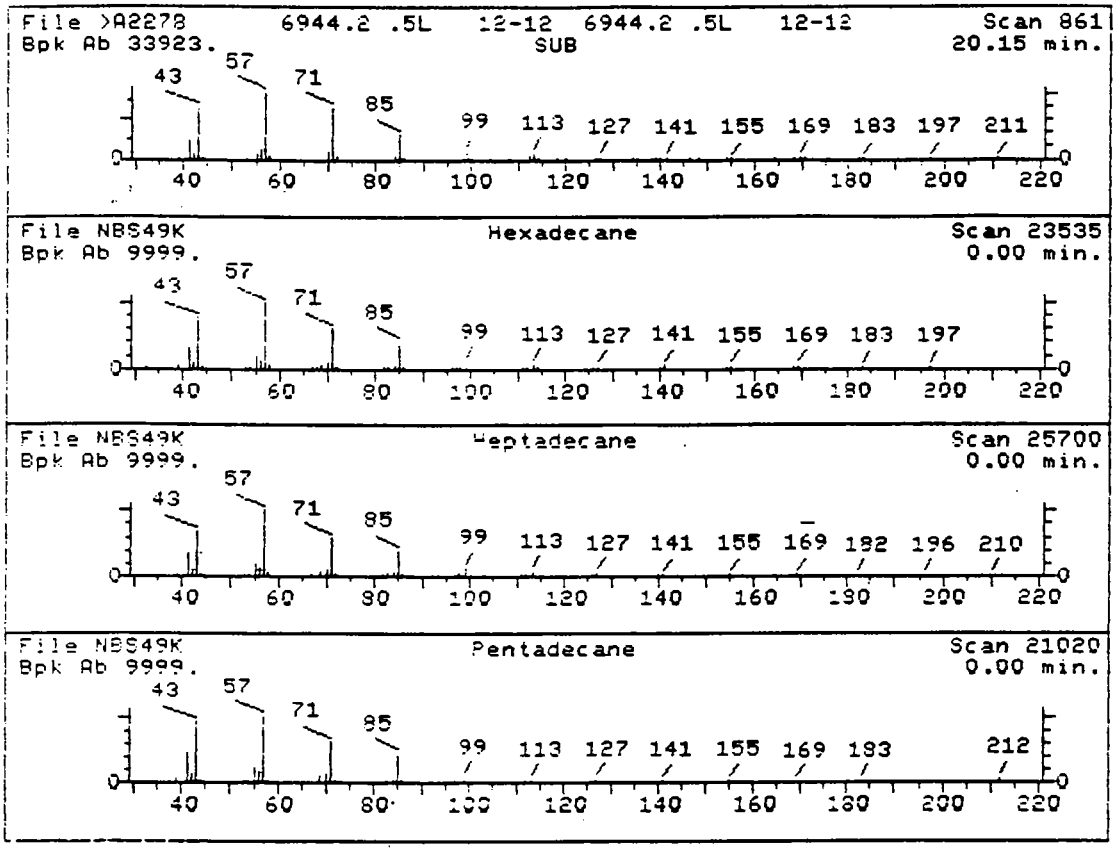
AREA = 533933.0 TENTATIVE CONCENTRATION IS 9.00

1.	Naphthalene, 1,2-dimethyl-	156	C12H12
2.	Naphthalene, 1,4-dimethyl-	156	C12H12
3.	Naphthalene, 2,3-dimethyl-	156	C12H12
4.	Naphthalene, 1,8-dimethyl-	156	C12H12
5.	Naphthalene, 1,6-dimethyl-	156	C12H12
6.	Naphthalene, 1,7-dimethyl-	156	C12H12

Sample file: >A2278 Spectrum #: 852

Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	70*	573988	20513	NBS49K	90	23	1	-1	74	31	32	7
2.	66*	571584	20520	NBS49K	75	33	1	0	68	45	24	7
3.	64*	581408	20512	NBS49K	70	36	1	0	70	45	18	6
4.	58*	569415	20515	NBS49K	64	46	1	0	70	45	18	6
5.	47*	575439	20522	NBS49K	70	38	2	1	74	42	16	4
6.	47*	575371	20518	NBS49K	69	39	1	-1	69	43	16	4

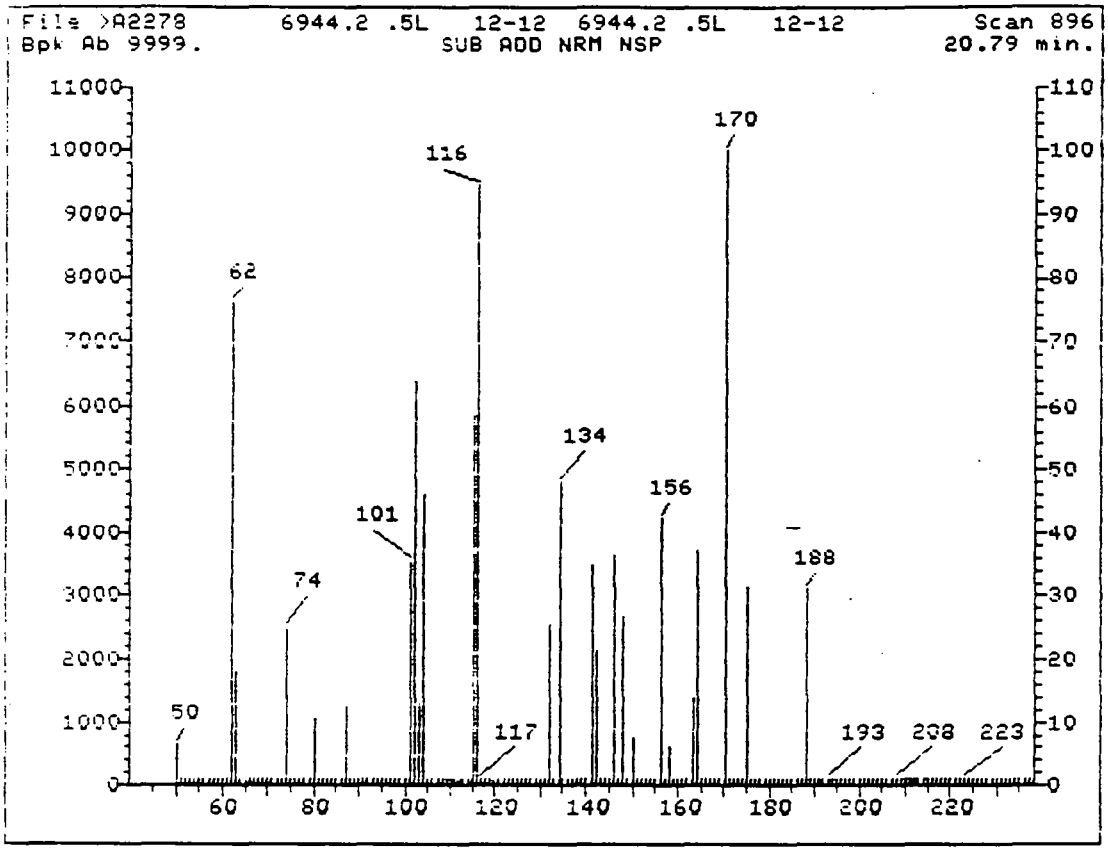


UNKNOWN #,10
AREA = 637065.0 TENTATIVE CONCENTRATION IS 10.00

1.	Hexadecane	226	C16H34
2.	Heptadecane	240	C17H36
3.	Pentadecane	212	C15H32
4.	Iron, tricarbonyl[N-(phenyl-2-pyridinylmethylene)benzenamine-N,N']-	398	C21H14FeN2O3
5.	Undecane, 3,8-dimethyl-	184	C13H28
6.	Decane, 5-propyl-	184	C13H28

Sample file: >A2278 Spectrum #: 861
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

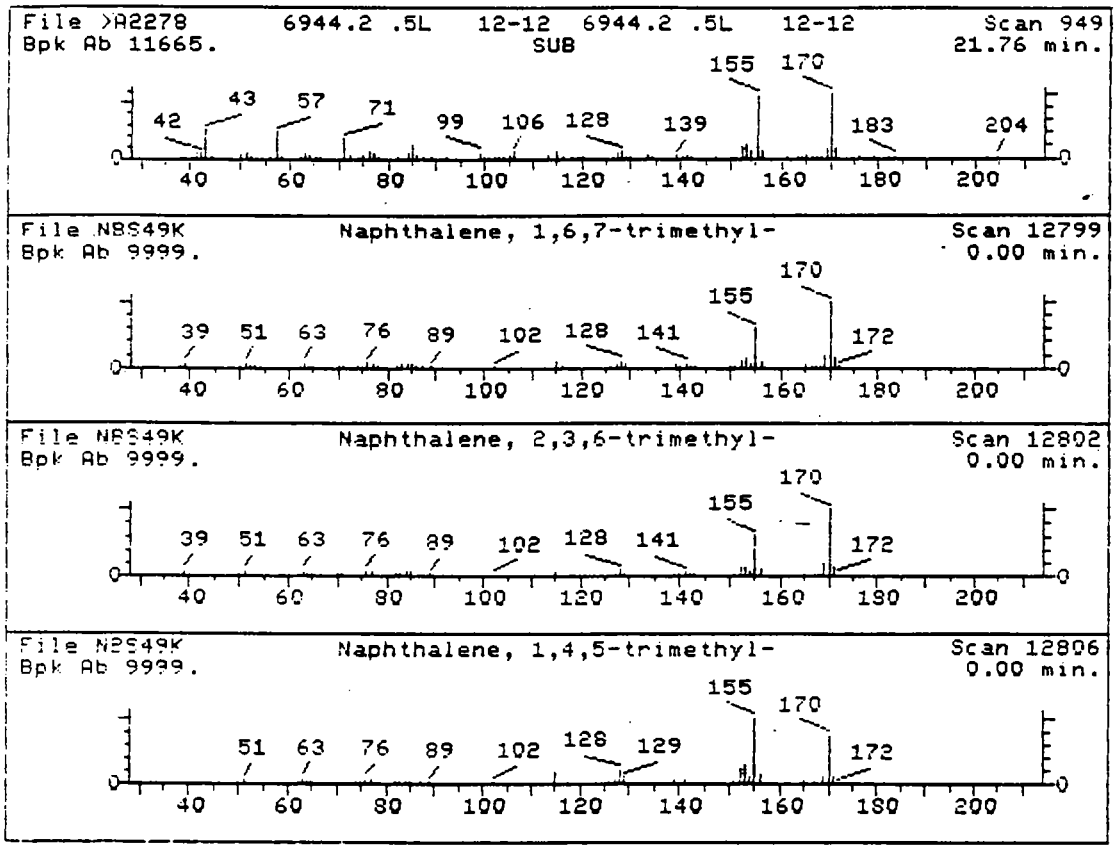
	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	83	544763	6835	NBS49K	81	39	2	0	93	3	57	22
2.	78	629787	6846	NBS49K	75	46	2	0	95	4	55	19
3.	78	629629	6819	NBS49K	74	46	2	0	83	2	55	18
4.	70	74764117	6907	NBS49K	67	70	2	0	90	6	42	14
5.	70	17301303	6766	NBS49K	67	41	2	0	87	7	42	17
6.	70	17312628	4395	NBS49K	68	43	2	2	95	7	42	13



UNKNOWN #,11
AREA = 446160.0 TENTATIVE CONCENTRATION IS 7.00

Sample file: >A2278 Spectrum #: 896

No data base entries were retrieved.



UNKNOWN #,12

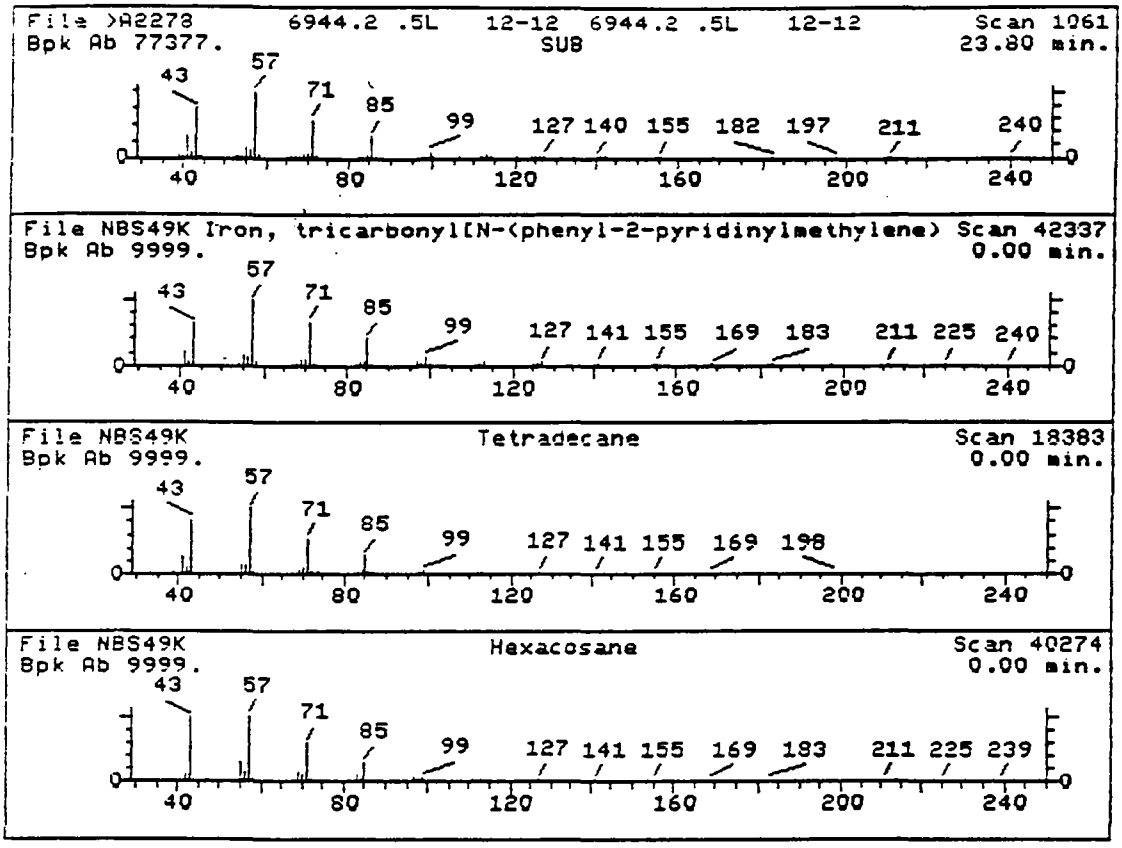
AREA = 577187.0 TENTATIVE CONCENTRATION IS 9.00

1.	Naphthalene, 1,6,7-trimethyl-	170	C13H14
2.	Naphthalene, 2,3,6-trimethyl-	170	C13H14
3.	Naphthalene, 1,4,5-trimethyl-	170	C13H14
4.	Naphthalene, 1,4,6-trimethyl-	170	C13H14
5.	Naphthalene, 2-(1-methylethyl)-	170	C13H14
6.	Naphthalene, 1,3,6-trimethyl-	170	C13H14

Sample file: >A2278 Spectrum #: 949

Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	67*	2245387	22927	NBS49K	76	32	1	-1	73	28	27	5(
2.	62*	829265	22929	NBS49K	71	38	1	-1	72	28	25	4E
3.	51*	2131411	22932	NBS49K	44	59	0	-3	27	27	24	3:
4.	44*	2131422	22933	NBS49K	55	49	0	0	46	51	11	6E
5.	30*	2027170	20305	NBS49K	43	57	1	0	67	46	10	2:
6.	27*	3031081	22928	NBS49K	25	43	3	0	100	38	10	1:

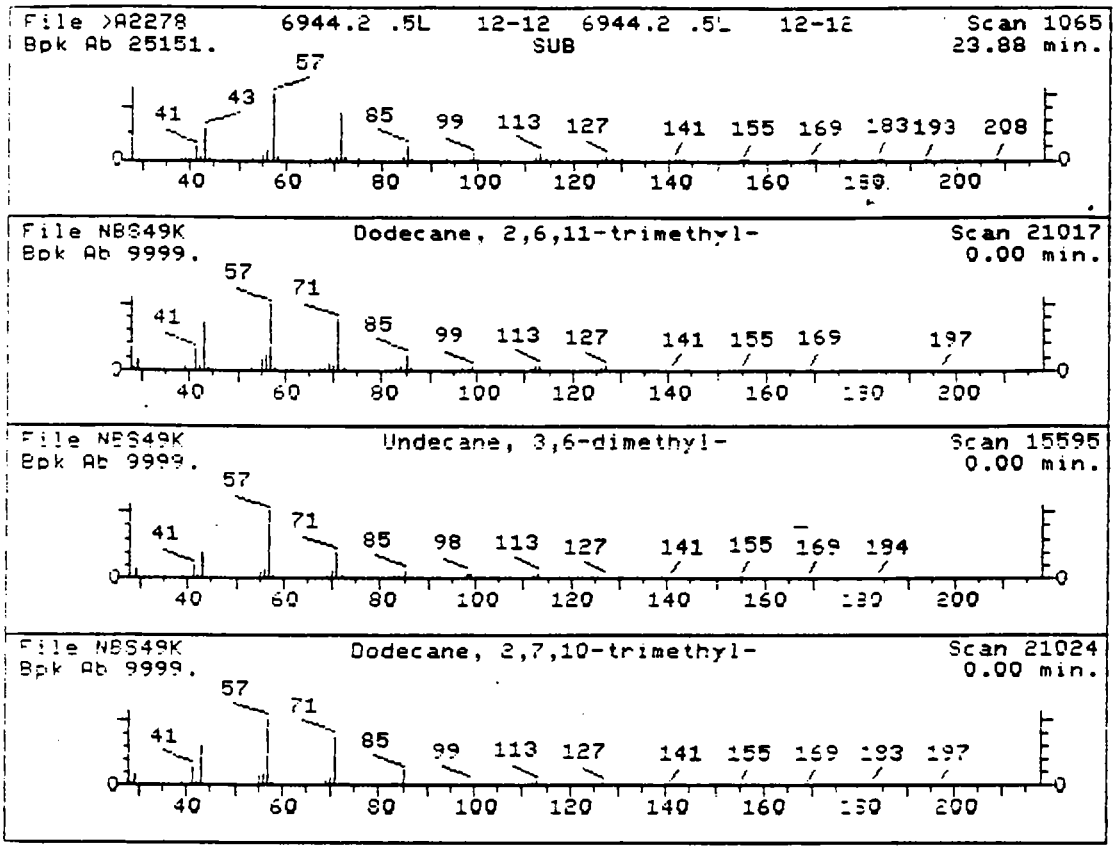


UNKNOWN #,13
AREA = 972425.0 TENTATIVE CONCENTRATION IS 55.00

1.	Iron, tricarbonyl[N-(phenyl-2-pyridinylmethylene)benzenamine-N,N']-	398	C21H14FeN2O3
2.	Tetradecane	198	C14H30
3.	Hexacosane	366	C26H54
4.	Heptadecane, 9-octyl-	352	C25H52
5.	Eicosane, 7-hexyl-	366	C26H54
6.	Hexadecane, 7-methyl-	240	C17H36

Sample File: >A2278 Spectrum #: 1061
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	86	74764117	6907	NBS49K	105	32	2	4	100	1	60	33
2.	83	629594	6804	NBS49K	78	30	2	1	86	5	57	22
3.	78	630013	6903	NBS49K	61	81	2	0	77	5	55	12
4.	78	7225641	6893	NBS49K	63	84	2	0	68	4	55	13
5.	78	55333998	6899	NBS49K	64	85	2	0	71	4	55	14
6.	78*	26730201	4433	NBS49K	40	84	3	0	78	5	55	13



UNKNOWN #,14

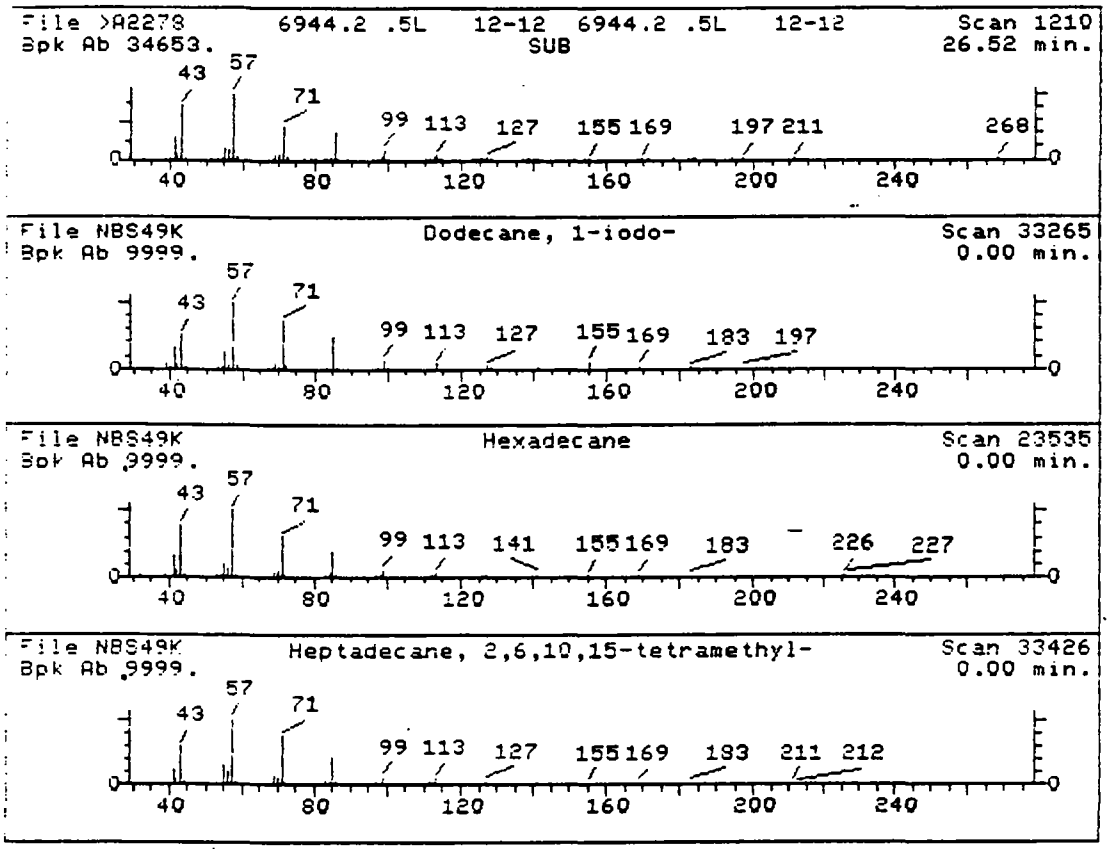
AREA = 388771.0 TENTATIVE CONCENTRATION IS 22.00

1.	Dodecane, 2,6,11-trimethyl-	212 C15H32
2.	Undecane, 3,6-dimethyl-	184 C13H28
3.	Dodecane, 2,7,10-trimethyl-	212 C15H32
4.	Undecane, 4,6-dimethyl-	184 C13H28
5.	Decane, 5-propyl-	184 C13H28
6.	Tridecane	184 C13H28

Sample file: >A2278 Spectrum #: 1065

Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	83	31295564	4421	NBS49K	80	26	2	-1	79	5	57	2
2.	83*	17301289	4386	NBS49K	54	43	2	-2	100	5	57	2
3.	70	74645980	4422	NBS49K	71	38	2	0	89	8	42	1
4.	67*	17312822	4387	NBS49K	53	45	2	0	100	13	34	2
5.	52*	17312628	4395	NBS49K	48	63	2	0	62	17	20	1
6.	52*	629505	6761	NBS49K	32	74	3	0	100	20	20	1



UNKNOWN #,15

AREA = 423625.0 TENTATIVE CONCENTRATION IS 24.00

1.	Dodecane, 1-iodo-	296 C12H25I
2.	Hexadecane	226 C16H34
3.	Heptadecane, 2,6,10,15-tetramethyl-	296 C21H44
4.	Decane, 1-iodo-	268 C10H21I
5.	Heptadecane, 9-octyl-	352 C25H52
6.	Eicosane	282 C20H42

Sample file: >A2278 Spectrum #: 1210

Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	87	4292197	6876	NBS49K	87	42	1	0	71	5	63	4
2.	83	544763	6835	NBS49K	86	34	2	0	85	3	57	2
3.	83	54833486	6878	NBS49K	81	54	2	0	69	3	57	2
4.	81*	2050773	6861	NBS49K	79	46	3	0	76	6	53	4
5.	78	7225641	6893	NBS49K	69	78	2	0	82	5	55	1
6.	78	112958	6871	NBS49K	63	76	2	0	77	5	55	1

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.: 6944.3 .5L

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Sample wt/vol: 500 (g/mL) mL

Level: (Low/med) Low

Extraction: (Sepf/Cont/Sonc) Sep. Funnel

GPC Cleanup: (Y/N) N

Lab Sample ID: 6944.3 .5L

Lab File ID: >A2279

Date Received: 12-09-91

Date Extracted: 12-12-91

Date Analyzed: 12/13/91

Dilution Factor: 2

Number of TICs found: 13

CONCENTRATION UNITS: ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	629505	Tridecane	13.39	28	83
2	56851344	2-Undecene, 5-methyl-	16.84	22	52
3	4453901	1,4-Methanonaphthalene, 1,4-	17.74	14	83
4	629594	Tetradecane	19.11	76	89
5	575439	Naphthalene, 1,6-dimethyl-	19.38	26	99
6	573988	Naphthalene, 1,2-dimethyl-	19.65	32	96
7	575371	Naphthalene, 1,7-dimethyl-	19.71	20	97
8	571584	Naphthalene, 1,4-dimethyl-	19.98	12	71
9	544763	Hexadecane	20.14	18	83
10	2131422	Naphthalene, 1,4,6-trimethyl	21.76	14	89
11	629594	Tetradecane	22.32	46	86
12	629970	Docosane	23.80	26	87
13	1560958	Tetradecane, 2-methyl-	30.15	20	52

MS data file header from : >A2279

Sample: 6944.3 .5L 12-12 Operator: MARK SUPER GRP. 12/13/91 22:23
Misc : 6944.3 .5L 12-12 .BTL#10
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: BNARUN Tuning file: MTUNE2 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 280 Transfer line temp. : 0

Chromatographic temperatures :	35.	300.	0.	0.	0.
Chromatographic times, min. :	3.0	6.9	0.0	0.0	0.0
Chromatographic rate, deg/min:	8.0	0.0	0.0	.2	0.0

>A2279 6944.3 .5L 12-12 6944.3 .5L 12-12
35.0 450.0 CLP TIC
Upslope: .20 Area Reject: 35769. Max Peaks: 13 Bunching: 1
Dnslope: 0.00 Results File IA2279 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	13.39	488	491	495	28360	70755	70267	29.78	6.63
2	16.84	676	681	685	16807	65467	55361	23.46	5.22
3	17.74	728	731	734	14985	53432	38411	16.28	3.62
4	19.11	803	806	808	103519	257437	235980	100.00	22.28
5	19.38	818	821	824	27136	100938	81317	34.46	7.68
6	19.65	833	836	838	31832	112797	98933	41.92	9.34
7	19.71	838	839	846	18432	73410	59405	25.17	5.61
8	19.98	852	854	857	14373	59389	36736	15.59	3.47
9	20.14	861	863	866	21330	72374	53474	22.66	5.05
10	21.76	949	952	957	10881	65738	45808	19.41	4.32
11	22.32	980	983	985	59269	149134	143374	60.76	13.54
12	23.80	1061	1064	1066	44010	98854	95195	40.34	8.99
13	30.15	1403	1414	1416	5799	45886	44470	18.84	4.20

Sum of corrected areas: 1058791.

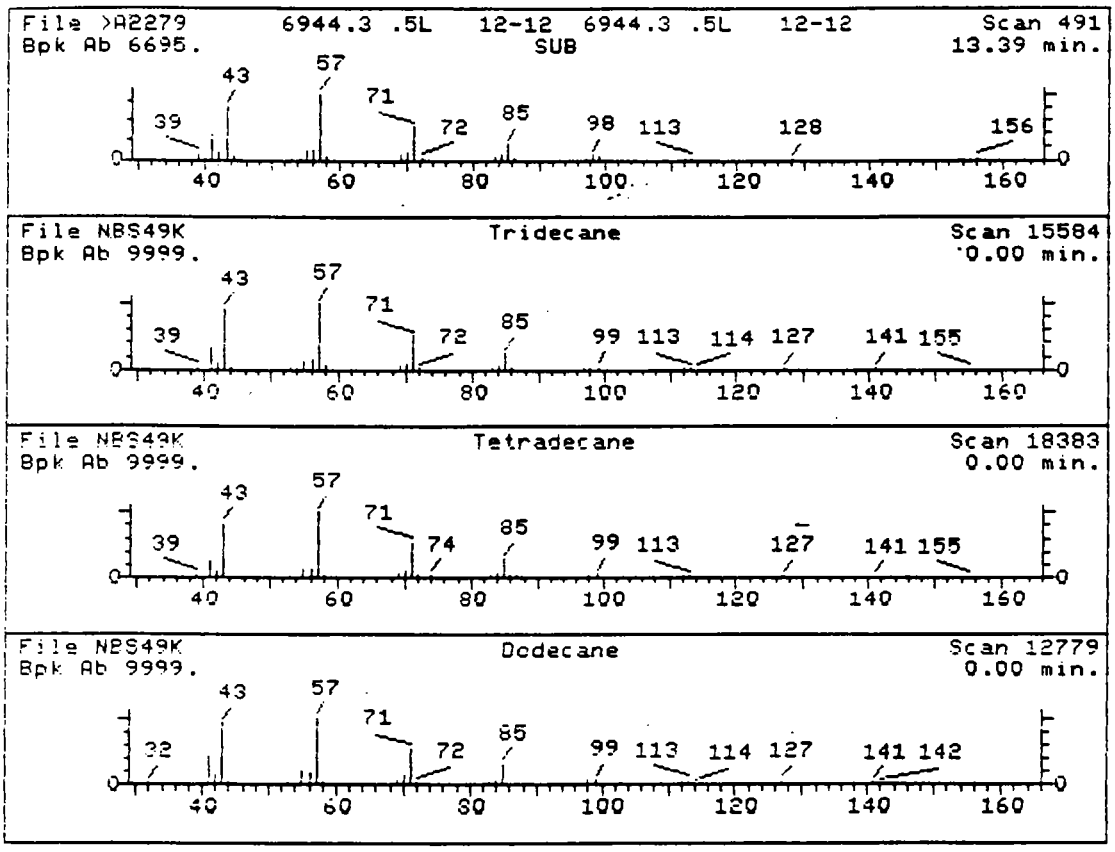
Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	40.0	180594.	11.41	4.48 - 13.31
2	40.0	206626.	15.22	13.31 - 17.95
3	40.0	248137.	20.69	17.95 - 22.95
4	40.0	292089.	25.21	22.95 - 29.30
5	40.0	181356.	33.38	29.30 - 35.43
6	40.0	178847.	37.48	35.43 - 43.06

IA Dilution Factor = 1.00 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

Correction Factor = 1.00

Conc Int Std
+ Area Unknown * Correction Factor

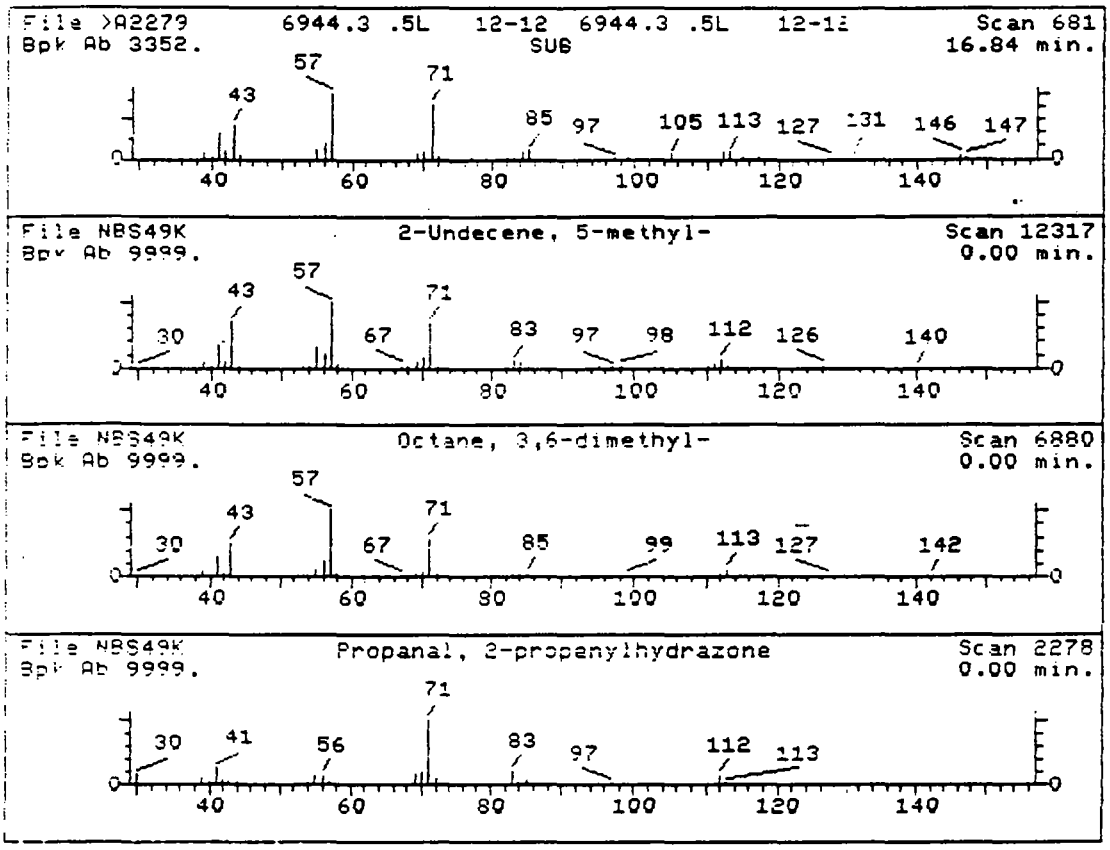


UNKNOWN #,1
AREA = 70267.00 TENTATIVE CONCENTRATION IS 14.00

1.	Tridecane	184 C13H28
2.	Tetradecane	198 C14H30
3.	Dodecane	170 C12H26
4.	Decane, 6-ethyl-2-methyl-	184 C13H28
5.	Heptadecane, 2,6,10,14-tetramethyl-	296 C21H44
6.	Eicosane	282 C20H42

Sample file: >A2279 Spectrum #: 491
Search speed: 1 Tilting option: F No. of ion ranges searched: 44

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	83	629505	6761	NBS49K	77	29	2	0	88	4	57	28
2.	83	629594	6804	NBS49K	76	32	2	0	84	2	57	26
3.	83	112403	6732	NBS49K	69	30	2	0	74	2	57	24
4.	83	62108218	6767	NBS49K	69	30	2	0	95	5	57	24
5.	78	18344371	6880	NBS49K	62	67	2	0	76	2	55	13
6.	78	112958	6871	NBS49K	75	64	2	4	72	5	55	12

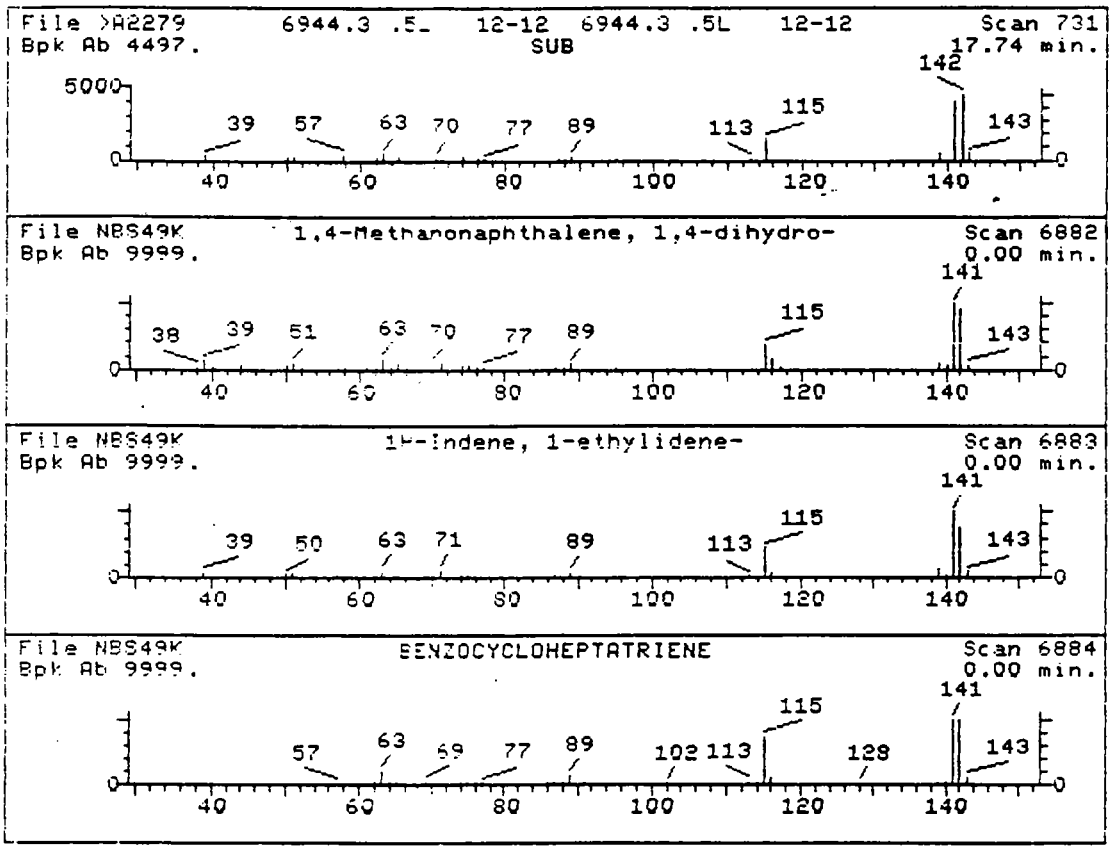


UNKNOWN #,2
AREA = 55361.00 TENTATIVE CONCENTRATION IS 11.00

1.	2-Undecene, 5-methyl-	168	C12H24
2.	Octane, 3,6-dimethyl-	142	C10H22
3.	Propanal, 2-propenylhydrazone	112	C6H12N2
4.	Azetidine, 2-methyl-	71	C4H9N
5.	Ethanamine, N-pentylidene-	113	C7H15N
6.	Ethane, isocyanato-	71	C3H5NO

Sample file: >A2279 Spectrum #: 681
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	52	56851344	12147	NBS49K	49	48	2	0	81	19	20	12
2.	45	15869940	12333	NBS49K	47	42	2	0	99	22	17	16
3.	37*	19031788	4284	NBS49K	29	70	2	0	58	29	14	14
4.	31*	19812498	4253	NBS49K	26	36	2	0	69	35	12	14
5.	30*	10599765	4286	NBS49K	28	62	3	0	107	33	12	13
6.	26*	109900	4251	NBS49K	29	44	2	0	107	44	8	14

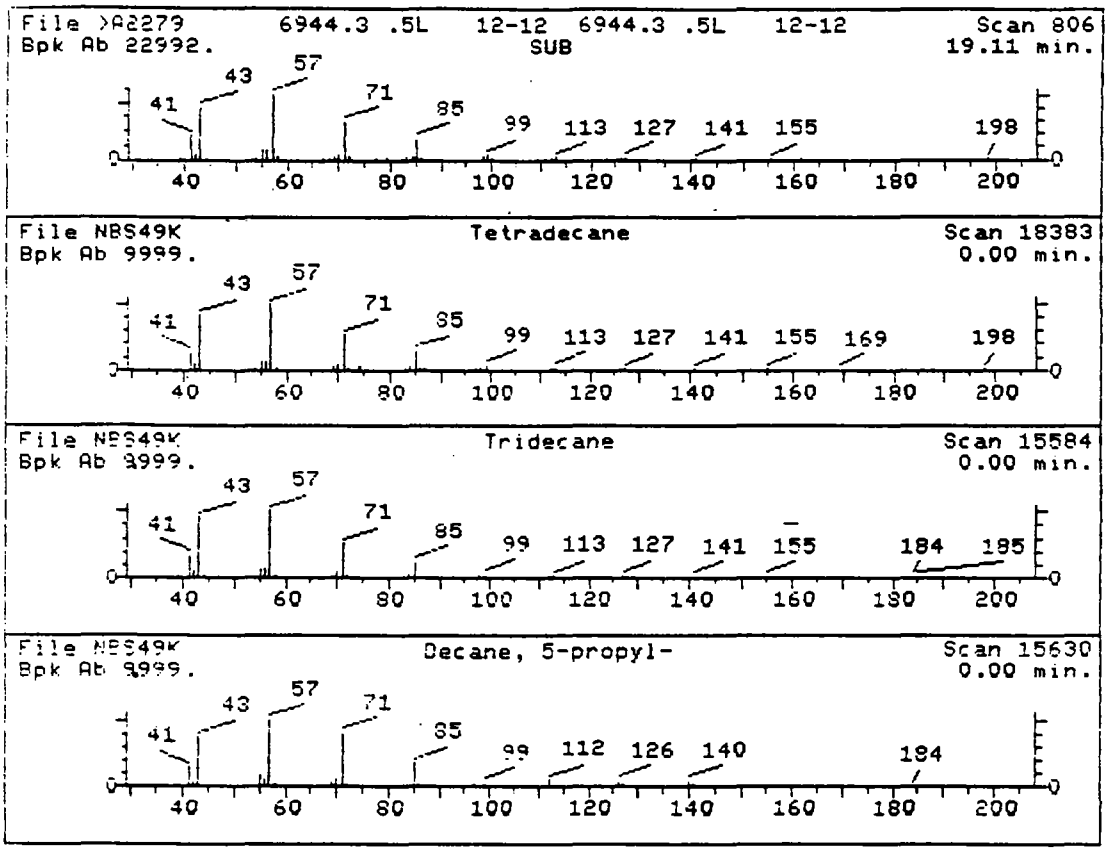


UNKNOWN #,3
AREA = 38411.00 TENTATIVE CONCENTRATION IS 7.00

1.	1,4-Methanonaphthalene, 1,4-dihydro-	142 C11H10
2.	1H-Indene, 1-ethylidene-	142 C11H10
3.	BENZOCYCLOHEPTATRIENE	142 C11H10
4.	Naphthalene, 1-methyl-	142 C11H10
5.	Naphthalene, 2-methyl-	142 C11H10
6.	Benzeneacetonitrile, 2-cyano-	142 C9H6N2

Sample file: >A2279 Spectrum #: 731
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	83*	4453901	18081	NBS49K	69	33	3	-2	88	2	57	2
2.	79*	2471832	18082	NBS49K	64	36	2	-3	87	10	48	3
3.	78*	264095	18083	NBS49K	27	81	3	0	88	4	55	1
4.	70*	90120	18080	NBS49K	46	54	3	0	100	7	42	1
5.	70*	91576	18084	NBS49K	38	60	3	0	100	7	42	1
6.	26*	3759282	18075	NBS49K	24	70	3	0	100	40	10	1

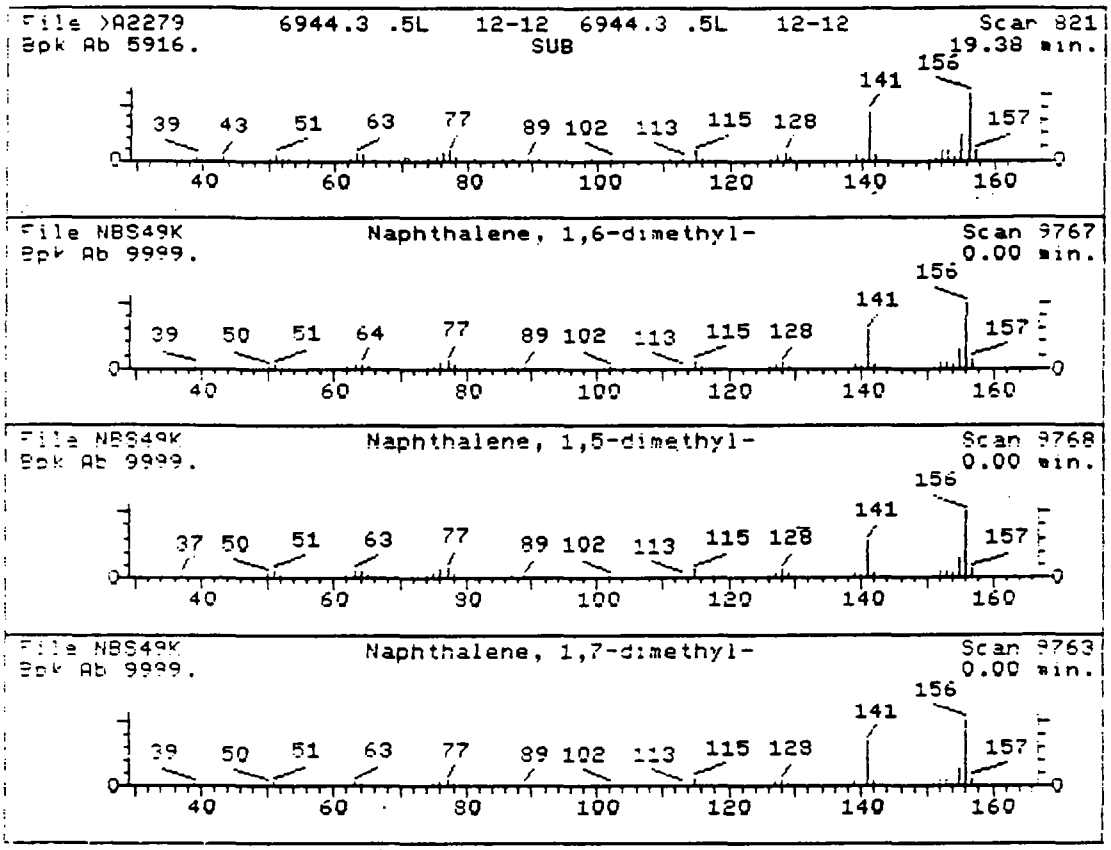


UNKNOWN #,4
AREA = 235980.0 TENTATIVE CONCENTRATION IS 38.00

1.	Tetradecane	198 C14H30
2.	Tridecane	184 C13H28
3.	Decane, 5-propyl-	184 C13H28
4.	Heptadecane, 2,6,10,15-tetramethyl-	296 C21H44
5.	Nonane, 3-methyl-5-propyl-	184 C13H28
6.	Undecane, 3,8-dimethyl-	184 C13H28

Sample file: >A2279 Spectrum #: 806
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	89*	629594	6804	NBS49K	97	11	2	1	93	1	66	7
2.	86	629505	6761	NBS49K	82	24	2	0	88	4	60	3
3.	78	17312628	4395	NBS49K	67	44	2	4	86	4	55	1
4.	78	54833486	6878	NBS49K	77	58	2	4	76	4	55	1
5.	78	31081182	6784	NBS49K	60	45	2	0	70	3	55	1
6.	78	17301303	6766	NBS49K	60	48	2	0	80	4	55	1

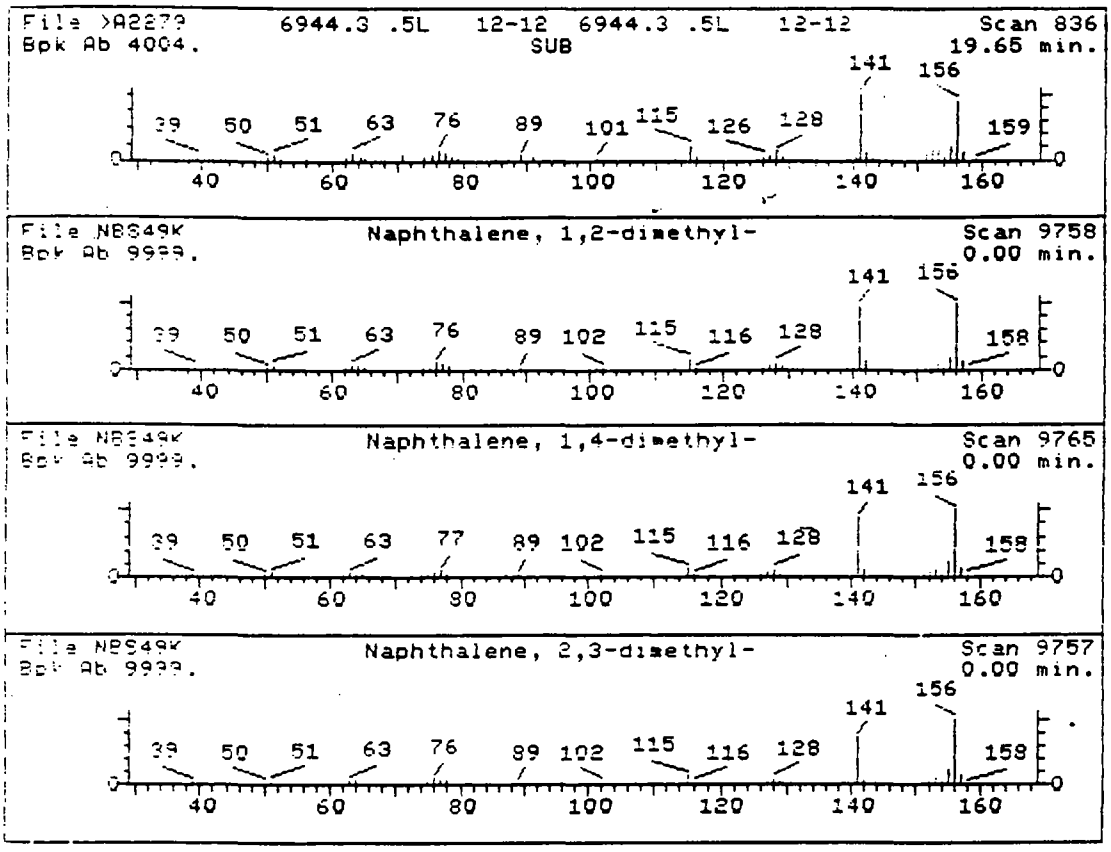


UNKNOWN #,5
AREA = 81317.00 TENTATIVE CONCENTRATION IS 13.00

1.	Naphthalene, 1,6-dimethyl-	156	C12H12
2.	Naphthalene, 1,5-dimethyl-	156	C12H12
3.	Naphthalene, 1,7-dimethyl-	156	C12H12
4.	Naphthalene, 2,7-dimethyl-	156	C12H12
5.	Naphthalene, 2,6-dimethyl-	156	C12H12
6.	Naphthalene, 1,8-dimethyl-	156	C12H12

Sample file: >A2279 Spectrum #: 821
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	99*	575439	20522	NBS49K	108	0	0	0	100	2	72	99
2.	97*	571619	20523	NBS49K	103	6	0	0	92	2	72	97
3.	97*	575371	20518	NBS49K	101	7	0	0	100	2	72	97
4.	96*	582161	20509	NBS49K	98	10	0	0	100	18	60	97
5.	96*	581420	20514	NBS49K	95	10	0	0	100	18	60	97
6.	96*	569415	20515	NBS49K	94	16	0	0	91	2	72	96

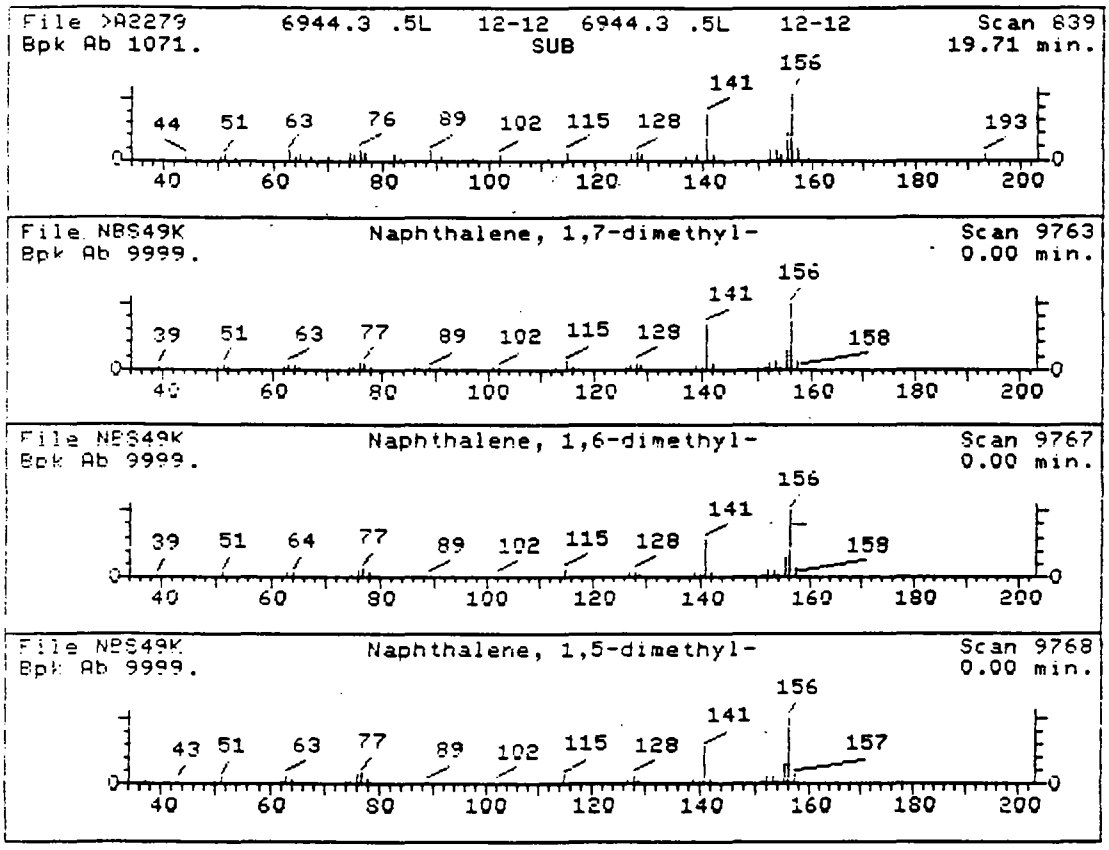


UNKNOWN #,6
AREA = 98933.00 TENTATIVE CONCENTRATION IS 16.00

1.	Naphthalene, 1,2-dimethyl-	156 C12H12
2.	Naphthalene, 1,4-dimethyl-	156 C12H12
3.	Naphthalene, 2,3-dimethyl-	156 C12H12
4.	Naphthalene, 1,8-dimethyl-	156 C12H12
5.	Naphthalene, 1,7-dimethyl-	156 C12H12
6.	Naphthalene, 2,7-dimethyl-	156 C12H12

Sample file: >A2279 Spectrum #: 836
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I(
1.	96*	573988	20513	NBS49K	82	31	0	0	89	5	72	94
2.	95*	571584	20520	NBS49K	87	21	0	0	90	7	68	95
3.	93*	581408	20512	NBS49K	82	24	0	0	83	21	53	94
4.	92*	569415	20515	NBS49K	77	33	0	0	82	21	53	93
5.	92*	575371	20518	NBS49K	75	33	0	0	73	25	53	93
6.	87*	582161	20509	NBS49K	70	38	0	0	64	34	40	89



UNKNOWN #,7

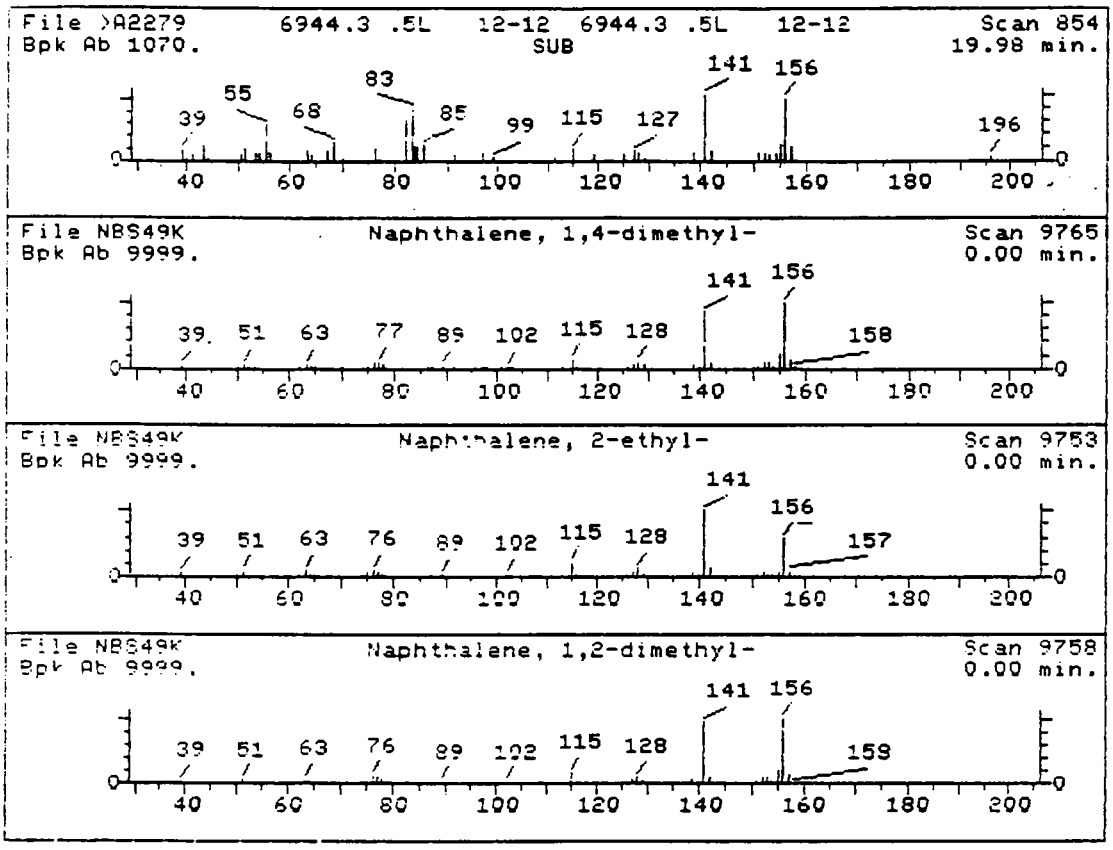
AREA = 59405.00 TENTATIVE CONCENTRATION IS 10.00

1.	Naphthalene, 1,7-dimethyl-	156	C12H12
2.	Naphthalene, 1,6-dimethyl-	156	C12H12
3.	Naphthalene, 1,5-dimethyl-	156	C12H12
4.	Naphthalene, 2,3-dimethyl-	156	C12H12
5.	Naphthalene, 1,2-dimethyl-	156	C12H12
6.	Naphthalene, 2,6-dimethyl-	156	C12H12

Sample file: >A2279 Spectrum #: 839

Search speed: 1 Tilting option: F No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	97*	575371	20518	NBS49K	102	6	0	0	100	10	68	97
2.	96*	575439	20522	NBS49K	88	20	0	0	96	10	68	96
3.	94*	571619	20523	NBS49K	97	12	1	0	94	10	68	93
4.	93*	581408	20512	NBS49K	77	29	0	0	88	19	60	93
5.	93*	573988	20513	NBS49K	79	34	0	0	74	23	53	94
6.	93*	581420	20514	NBS49K	74	31	0	0	86	10	68	92

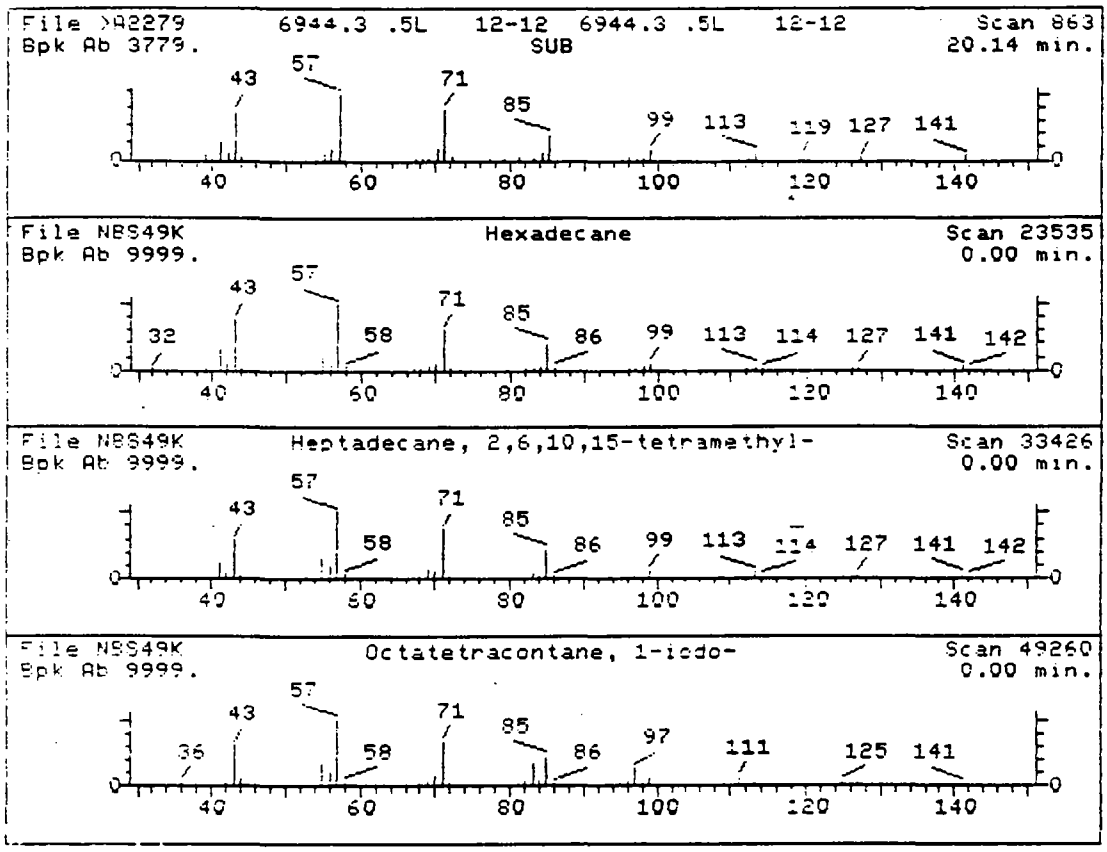


UNKNOWN #,8
AREA = 36796.00 TENTATIVE CONCENTRATION IS 6.00

1.	Naphthalene, 1,4-dimethyl-	156 C12H12
2.	Naphthalene, 2-ethyl-	156 C12H12
3.	Naphthalene, 1,2-dimethyl-	156 C12H12
4.	Naphthalene, 1,7-dimethyl-	156 C12H12
5.	Naphthalene, 1,8-dimethyl-	156 C12H12
6.	Naphthalene, 1,3-dimethyl-	156 C12H12

Sample file: >A2279 Spectrum #: 854
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	71*	571584	20520	NBS49K	82	26	1	2	100	28	29	67
2.	70*	939275	20508	NBS49K	59	47	2	-4	56	6	42	19
3.	47*	573988	20513	NBS49K	59	54	2	0	94	40	17	38
4.	46*	575371	20518	NBS49K	64	44	2	3	84	40	17	35
5.	41*	569415	20515	NBS49K	54	56	1	2	80	41	14	33
6.	41*	575417	20519	NBS49K	59	48	2	1	81	40	17	30

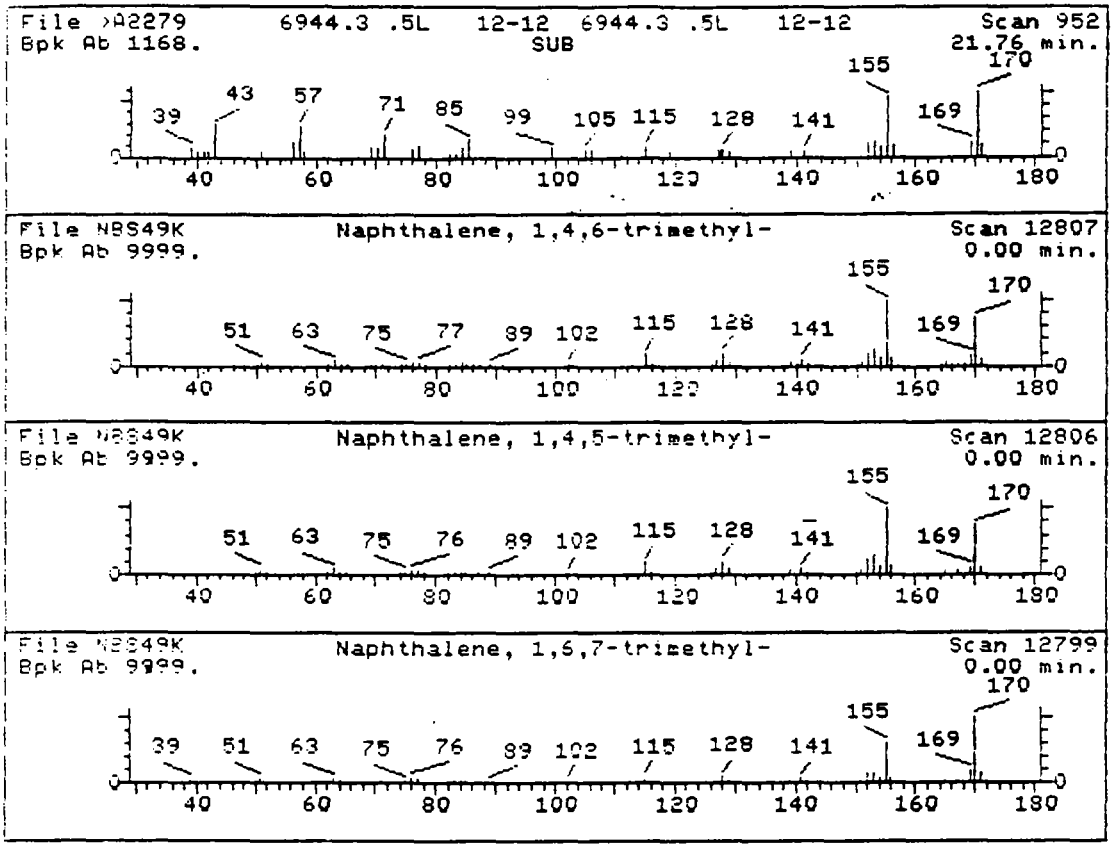


UNKNOWN #,9
AREA = 53474.00 TENTATIVE CONCENTRATION IS 9.00

1.	Hexadecane	226 C16H34-
2.	Heptadecane, 2,6,10,15-tetramethyl-	296 C21H44-
3.	Octatetracontane, 1-iodo-	800 C48H97I
4.	Eicosane	282 C20H42
5.	Undecane, 3,8-dimethyl-	184 C13H28
6.	Tetradecane, 4-methyl-	212 C15H32

Sample file: >A2279 Spectrum #: 863
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	83	544763	6835	NBS49K	30	40	2	0	98	2	57	21
2.	78	54833486	6878	NBS49K	64	71	2	0	88	4	55	14
3.	78	40710701	6919	NBS49K	75	113	3	0	87	2	55	13
4.	78	112958	6871	NBS49K	75	64	3	0	80	2	55	13
5.	70	17301303	6766	NBS49K	69	39	3	0	88	9	42	12
6.	70	25117242	6818	NBS49K	71	58	3	0	76	8	42	12



UNKNOWN #,10

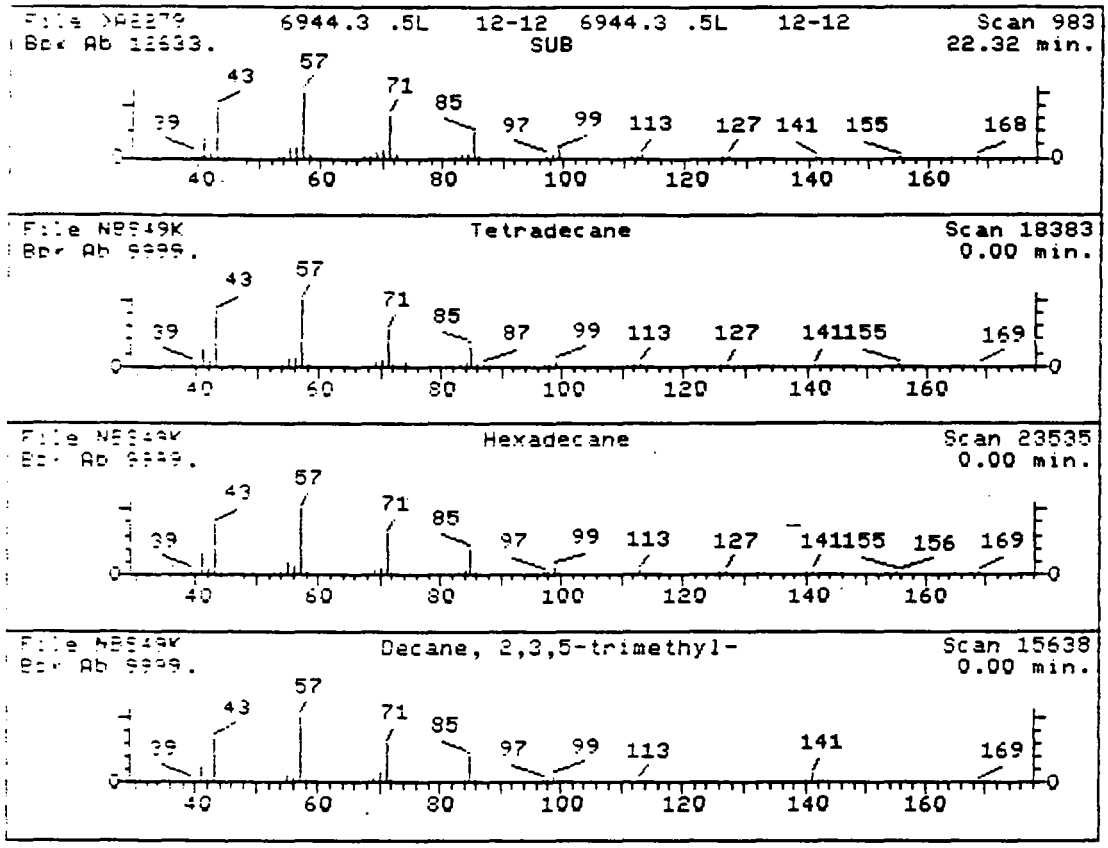
AREA = 45808.00 TENTATIVE CONCENTRATION IS 7.00

1.	Naphthalene, 1,4,6-trimethyl-	170	C13H14
2.	Naphthalene, 1,4,5-trimethyl-	170	C13H14
3.	Naphthalene, 1,6,7-trimethyl-	170	C13H14
4.	Naphthalene, 2,3,6-trimethyl-	170	C13H14
5.	Naphthalene, 1,3,6-trimethyl-	170	C13H14
6.	Naphthalene, 2-(1-methylethyl)-	170	C13H14

Sample file: >A2279 Spectrum #: 952

Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	89*	2131422	22933	NBS49K	102	17	1	-3	55	1	66	76
2.	88*	2131411	22932	NBS49K	88	30	2	-3	52	3	65	56
3.	81*	2245387	22927	NBS49K	74	34	2	2	95	7	53	48
4.	76*	829265	22929	NBS49K	75	34	2	0	100	11	40	57
5.	45*	3031081	22928	NBS49K	34	26	0	-3	44	24	17	16
6.	32*	2027170	20305	NBS49K	48	52	2	2	62	40	10	18

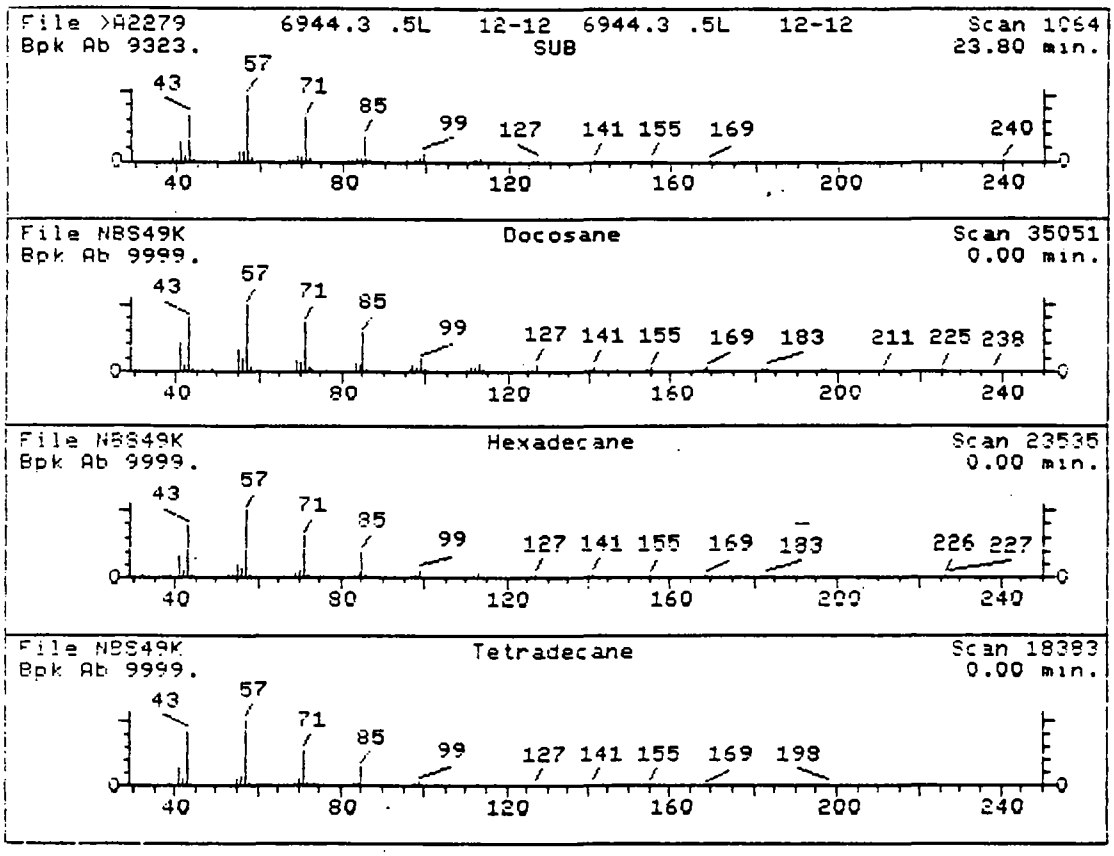


UNKNOWN #,11
AREA = 143374.0 TENTATIVE CONCENTRATION IS 23.00

1.	Tetradecane	198 C14H30
2.	Hexadecane	226 C16H34
3.	Decane, 2,3,5-trimethyl-	184 C13H28
4.	Eicosane	282 C20H42
5.	Docosane	310 C22H46
6.	Eicosane, 10-methyl-	296 C21H44

Sample file: >A2279 Spectrum #: 983
Search speed: 1 Tilting option: F No. of ion ranges searched: 44

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IO
1.	86	629594	6804	NBS49K	91	17	2	0	94	0	60	35
2.	83	544763	6835	NBS49K	93	27	2	3	86	2	57	29
3.	83	62238113	6779	NBS49K	79	24	2	3	96	5	57	23
4.	83	112958	6871	NBS49K	94	45	2	2	77	1	57	22
5.	83	629970	6886	NBS49K	97	52	2	4	81	2	57	24
6.	83	54833237	6879	NBS49K	81	56	2	0	73	2	57	22

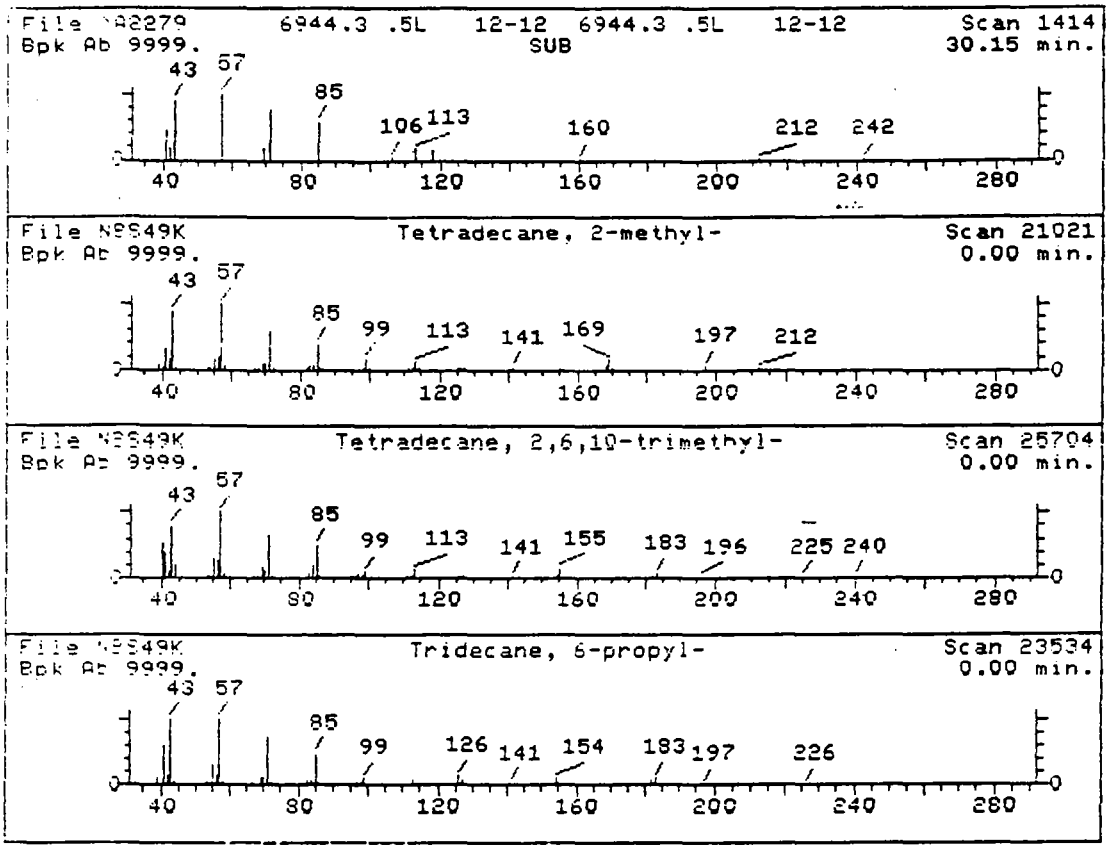


UNKNOWN #,12
AREA = 95195.00 TENTATIVE CONCENTRATION IS 13.00

1.	Docosane	310 C22H46
2.	Hexadecane	226 C16H34
3.	Tetradecane	198 C14H30
4.	Octacosane	394 C28H58
5.	Heptadecane	240 C17H36
6.	Tetratetracontane	618 C44H90

Sample file: >A2279 Spectrum #: 1064
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	87	629970	6886	NBS49K	116	33	2	4	79	1	63	48
2.	83	544763	6835	NBS49K	93	27	2	2	82	3	57	29
3.	83	629594	6804	NBS49K	84	24	2	-1	89	3	57	23
4.	83	630024	6906	NBS49K	80	61	2	0	70	3	57	21
5.	81*	629787	6846	NBS49K	70	51	2	3	95	6	53	43
6.	78	7098228	9995	NBS49K	77	83	2	3	100	3	55	13



UNKNOWN #,13

AREA = 44470.00 TENTATIVE CONCENTRATION IS 10.00

1.	Tetradecane, 2-methyl-	212 C15H32
2.	Tetradecane, 2,6,10-trimethyl-	240 C17H36
3.	Tridecane, 6-propyl-	226 C16H34
4.	Nonadecane	268 C19H40
5.	Hexadecane, 7,9-dimethyl-	254 C18H38
6.	Decane, 1-iodo-	268 C10H21I

Sample file: >A2279 Spectrum #: 1414

Search speed: 1 Tilting option: F No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	52*	1560958	6820	NBS49K	34	90	3	0	100	16	20	13
2.	52*	14905567	6847	NBS49K	37	95	3	0	100	16	20	13
3.	52*	55045108	6834	NBS49K	31	98	2	0	90	19	20	14
4.	52*	629925	6864	NBS49K	20	97	2	0	149	19	20	13
5.	45*	21164954	6857	NBS49K	50	89	2	1	100	25	17	16
6.	42*	2050773	6861	NBS49K	43	82	3	0	93	22	17	13

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.: 6944.4 .5L

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Sample wt/vol: 500 (g/mL) mL

Level (Low/med) Low

Extraction (Sepf/Cont/Sonc) Sep. Funnel

GPC Cleanup: (Y/N) N

Lab Sample ID: 6944.4 .5L

Lab File ID: >A2300

Date Received: 12-09-91

Date Extracted: 12-12-91

Date Analyzed: 12/18/91

Dilution Factor: 2

Number of TICs found: 1

CONCENTRATION UNITS: ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	24524570	Bicyclo[3.1.0]hexane, 6-isop	36.41	34	57

FORM I SV-TIC 1/87 Rev

MS data file header from : >A2300

Sample: 6944.4 .5L 12-12-91 Operator: MARK SUPER GRP. 12/18/91 13:00
Misc : 6944.4 .5L 12-12-91 BTL# 1
Sys. #: 2 MS model: 70 SW/HW rev.: IA ALS # : 0
Method file: BNARUN Tuning file: MTUNE2 No. of extra records: 2
Source temp.: 0 Analyzer temp.: 280 Transfer line temp. : 0

Chromatographic temperatures :	35.	300.	0.	0.	0.
Chromatographic times, min. :	3.0	6.9	0.0	0.0	0.0
Chromatographic rate, deg/min:	8.0	0.0	0.0	.2	0.0

>A2300 6944.4 .5L 12-12-91 6944.4 .5L 12-12-91
35.01 450.0 CLP TIC
Upslope: .20 Area Reject: 35657. Max Peaks: 1 Bunching: 1
Dnslope: 0.00 Results File IA2300 Sorted by Time/Area INT

Peak #	R.T min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	36.41	1757	1760	1771	26545	95150	74459	100.00	100.000

Sum of corrected areas: 74459.

Summary of Unknowns PBM Library Search and Quantitation

Standard	Concentration	Area	Retention Time	Unknown Window
1	40.0	234762.	11.35	4.49 - 13.24
2	40.0	219300.	15.12	13.24 - 17.85
3	40.0	252984.	20.59	17.85 - 22.86
4	40.0	228007.	25.14	22.86 - 29.23
5	40.0	204507.	33.31	29.23 - 35.36
6	40.0	178285.	37.41	35.36 - 43.04

Dilution Factor = 1.00 U dilf = 1.00
Method called for 1000.000 g or mL This sample was 1000.000 g or mL

Correction Factor = 1.00

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unknown} * \text{Correction Factor}$$

10:41 AM FRI., 20 DEC., 1991

15

Diag 1016

ENVIRONMENTAL PROFILE LABORATORIES

ROUTE 37 BUSINESS PARK
SUITE 13
TOMS RIVER, NJ 08755
OFFICE: (908) 244-6278
FAX: (908) 244-6372

REPORT OF ANALYSIS

SERV-AIR FT.MONMOUTH
PO BOX 369 BLDG.#490
FORT MONMOUTH, NJ 07703-5000

EPL# : 9173.12-14
SAMPLE RCD : 10/26/92
ANALYSIS START : 10/28/92
ANALYSIS COMP : 10/28/92
PO# : R2-2672

TEST PARAMETER: LEAD (Pb)

RESULTS AND DETECTION LIMITS ARE EXPRESSED IN mg/L. (ppm)

EPL#	BLDG. #	MW#	DICAR#	RESULTS	DETECTION LIMIT
9173.12	1076	1-2926940	C-90-2-9-1524	ND	0.004 mg/L
9173.13	1076	2-2926941	"	ND	"
9173.14	1076	3-2926942	"	0.024	"

ND = NONE DETECTED

DANIEL K. WRIGHT
LABORATORY DIRECTOR

MONITORING WELL SAMPLING DATASHEET DATE: 10/26/92

SAMPLERS: EPL LABORATORIES, NJDEP 15526, ROBERT BROVILLETTE, JACK KAISER, ERIK JOHNSON
LOCATION (BLDG. #): 1076
WEATHER CONDITIONS:SUNNY 55F

MW # 1 : 2926940

DEPTH TO WATER: 5.19 FT TIME:2:30 PM

DEPTH OF WELL: 12.50 FT.

HEIGHT OF WATER: 7.31 FT.

EVACUATED GAL. H2O: 15 (7.31 X .65 X 3 = 15)

MW # 2 : 2926941

DEPTH TO WATER: 4.82 FT TIME: 2:35 PM

DEPTH OF WELL: 13.60 FT

HEIGHT OF WATER: 8.78 FT

EVACUATED GAL H2O: 17.19 (8.78 X .65 X 3 = 17.19)

MW # 3 : 2926942

DEPTH TO WATER: 5.55 FT TIME: 2:35 PM

DEPTH OF WELL: 13.60 FT

HEIGHT OF WATER: 8.05 FT

EVACUATED GAL H2O: 16 (DRY) (8.05 X .65 X 3 = 15.69)

MONITORING WELL SAMPLING DATASHEET DATE: 10 26 92

SAMPLERS: Robert Brouillette Jack Kaiser, Erik Johnson
LOCATION (BLDG. #): 1076
WEATHER CONDITIONS: Sunny 55°F

LABORATORY: EFL

MW # 1 : 2926940

DEPTH TO WATER: 5.19' TIME: 2:30

DEPTH OF WELL: 12.50' OVA/HnU: ND

HEIGHT OF WATER: 7.31

EVACUATED GAL. H2O: 15g - (7.31 X .65 X 3 = 15g)

MW # 2 : 2926941

DEPTH TO WATER: 4.82 TIME: 2:35

DEPTH OF WELL: 13.60' OVA/HnU: ND

HEIGHT OF WATER: 8.78g

EVACUATED GAL H2O: 17.19 (8.78 X .65 X 3 = 17.19)

MW # 3 : 2926942

DEPTH TO WATER: 5.55' TIME: 2:35

DEPTH OF WELL: 13.60' OVA/HnU: ND

HEIGHT OF WATER: 8.05'

EVACUATED GAL H2O: 16 (8.05 X .65 X 3 = 15.69)

Bldg. 1076

ENVIRONMENTAL PROFILE LABORATORIES

ROUTE 37 BUSINESS PARK
SUITE 13
TOMS RIVER, NJ 08755
OFFICE: (908) 244-6278
FAX: (908) 244-6372

LABORATORY ANALYSIS REPORT

CLIENT: Serv-Air Inc.
Fort Monmouth, N.J.

SITE: UST Assessments
Fort Monmouth, N.J.

PROJECT: BN+15
TIER II

Report Number: 3173.11-.14, .20-.23, .26
Date Received: October 26, 1992
Date Released: December 3, 1992
Data Released By:

Daniel K. Wright
Laboratory Director

CLIENT: Serv-Air, Inc.
Fort Monmouth, N.J.

PROJECT: UST Assesments
Fort Monmouth, N.J.

MATRIX: Aqueous

SAMPLE LOCATION AND IDENTIFICATION

LAB ID NUMBER	Bldg #	MW #	DICAR #
9173.12	1076	1-2926940	C-90-2-9-1524
9173.13	1076	2-2926941	"
9173.14	1076	3-2926942	"
9173.26	Field Blank		

TABLE OF CONTENTS

Environmental Profile Laboratories
1565 Rt. 37-Unit 13
Toms River, NJ 08755
(908) 244-6278

Customer Purchase Order No.:

CHAIN OF CUSTODY RECORD

Sampled by: (Signature) [signature] Date/Time 10/26/12

Customer Name and Address:
[illegible] Inc.
Fort Monmouth NJ

Site Name and Address:
Ft. Monmouth NJ
UST Assessments

Analysis parameters (Be as specific as possible)

Telephone No: _____ Fax: _____

Lab Sample ID Number	Date/Time Sampled	Sample Matrix	Customer Sample Location/ID No.	Number of Containers	624+15	8100+15	Pb								Remarks	Preservation Method
9173.1	10/26 1145	LIQ	699-1	3	✓		✓				DISP	8260	6	1	HNO3, For. Pb	ICE
2	1245		699-2	3	✓		✓									
3	1040		699-5	3	✓		✓									
4	1205		699-6	3	✓		✓									
5	1225		699-8	3	✓		✓									
6	1116		699-9	3	✓		✓									
7	1230		699-11	3	✓		✓									
8	1230		699-11 DUP	3	✓		✓									
9	1155		699-12	3	✓		✓									
10	1245		699-13	3	✓		✓									

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Method of Shipping:
[signature]	10/26/12 1200	[signature]	COV
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipped By:
Relinquished By: (Signature)	Date/Time	Received For EPL By: (Signature)	Date/Time
		[signature]	10/26/12 6:30

QA/QC Required:

✓ NJ Tier II
___ Results Only
___ Other _____

Turnaround Time: _____

...al Promo Laboratories
...37-Unit 13
...ms River, NJ 08755
(908) 244-6278

Customer Purchase Order No.:

CHAIN OF CUSTODY RECORD

Sampled by: (Signature) [signature] Date/Time 10/26/92

Customer Name and Address:
Stratfire Inc
Fort Monmouth NJ

Site Name and Address:
FT. MONMOUTH
UST Assessments

Analysis parameters (Be as specific as possible)

Telephone No: _____ Fax: _____

Lab Sample ID Number	Date/Time Sampled	Sample Matrix	Customer Sample Location/ID No.	Number of Containers	624+15	BTX+1	Pb						Remarks	Preservation Method
11	10/26 213	H2O	814-1	4	✓	✓	✓					DISPOSABLE GLASS BAILERS	HNO3 for Pb	ICE
12	247		1076-1	4	✓	✓	✓							
13	247		1076-2	4	✓	✓	✓							
14	247		1076-3	4	✓	✓	✓							
15	415		2567-1	3	✓		✓							
16	415		2567-1 DUP	3	✓		✓							
17	425		2567-2	3	✓		✓							
18	425		2567-3	3	✓		✓							
19	420		2567-4	2	✓		✓							
20			T-65	1	✓	✓	✓							

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Method of Shipping:
[signature]	10/26/1700	[signature]	COV
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipped By:
Relinquished By: (Signature)	Date/Time	Received For EPL By: (Signature)	Date/Time
[signature]			

QA/QC Required:

✓ NJ Tier II
___ Results Only
___ Other _____

Turnaround Time: _____

Profile Laboratories
Unit 13
River, NJ 08755
08) 244-6278

Customer Purchase Order No.:

CHAIN OF CUSTODY RECORD

Sampled by: (Signature) [signature] Date/Time 10/26/92

Customer Name and Address:
Serv-Air Inc.
Fort Monmouth N.J.

Site Name and Address:
FT. MONMOUTH
UST Assessments

Analysis parameters (Be as specific as possible)

Telephone No: _____ Fax: _____

Lab Sample ID Number	Date/Time Sampled	Sample Matrix	Customer Sample Location/ID No.	Number of Containers	624	625	PD				DISPOSABLE BOTTLES		Remarks	Preservation Method
9173.21	10/26 340	H_2O	3021-1	4	✓	✓	✓						HNO_3 for Pb	ICE
.22	330		3021-2	4	✓	✓	✓							
.23	330		3021-3	4	✓	✓	✓							
.24	115		699-14	3	✓	✓	✓							
.25			TRIP BLANK	1	✓									
.26			FIELD BLANK	4	✓	✓	✓							

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Method of Shipping:
[signature]	10/26/92 1700	[signature]	COV
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipped By:
Relinquished By: (Signature)	Date/Time	Received For EPL By: (Signature)	Date/Time
[signature]			

QA/QC Required:

✓ NJ Tier II
___ Results Only
___ Other _____

Turnaround Time: _____

LABORATORY CHRONICLE

SAMPLE NUMBER	9173.11	9173.12	9173.13	9173.14	9173.20	9173.21	9173.22
Received & Refrigerated Date	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92
Organics Extraction Date							
BN/ABN	10-28-92	10-28-92	10-28-92	10-28-92	10-29-92	10-29-92	10-28-92
PCB's							
Analysis Date							
BN/ABN	10-30-92	10-30-92	10-30-92	10-31-92	10-31-92	10-31-92	10-31-92
PCB's							
Volatiles							
TPHC's							
Metals							
Total Solids							
Organic Supervisor Review & Approval							
Inorganic Supervisor Review & Approval							

LABORATORY CHRONICLE

SAMPLE NUMBER	9173.23	9173.26					
Received & Refrigerated Date	10-26-92	10-26-92					
Organics Extraction Date							
BN/ABN	10-29-92	10-29-92					
PCB's							
Analysis Date							
BN/ABN	10-31-92	10-31-92					
PCB's							
Volatiles							
TPHC's							
Metals							
Total Solids							
Organic Supervisor Review & Approval							
Inorganic Supervisor Review & Approval							

METHOD SUMMARY

Base Neutrals/Acid Extractables

The semivolatile samples in this report have been analyzed using method cited in the USEPA-CLP-IFB version 2/88. The CLP semi-volatile method is based on the USEPA Method 625 and SW-846 method 8270.

Three acid and/or three base/neutral surrogates are added to each sample. Aqueous samples are extracted with methylene chloride; soil samples are extracted with a 1 to 1 solution of methylene chloride and acetone. The extracts are then concentrated and the internal standards are added. An Hewlett Packard 5890 GC coupled to the HP 5970 MSD was used for the analysis and data collection.

GC/MS

ORGANIC NON-CONFORMANCE SUMMARY

GC/MS TUNE FREQUENCY:- All samples, blanks, standards and matrix spikes were analyzed within the respective 12 hour tune periods.

INITIAL CALIBRATION REQUIREMENTS:
All CCC and SPCC values were within QC limits.

CONTINUING CALIBRATION REQUIREMENTS:
All CCC and SPCC values were within QC limits.

DETECTION LIMITS:- Detection limits and search results were modified by dilution or percent solid.*

* All values reported on a DRY WEIGHT basis where applicable

MATRIX SPIKE RECOVERY:- All recoveries were within limits.
All RPD values were within limits.

INTERNAL STANDARD AREA:-

CLIENT ID #	NUMBER OF INTERNAL STANDARD AREA(S)
None	

SURROGATE RECOVERY:-

CLIENT ID #	SURROGATES OUTSIDE QC LIMITS
BNA AQ BLK	2-Fluorobiphenyl
9173.22	2-Fluorobiphenyl

ANALYSIS TIME:- All samples were extracted and analyzed within the prescribed holding times.

DATA REPORTING QUALIFIERS

For reporting results to the EPA, the following "results qualifiers" are used:

VALUE - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, "10U". This is not necessarily the instrument detection limit. The figure represents the minimum detection limit attainable for this particular sample based on any concentration or dilution that may have been required.

J - Indicates an estimated value. This flag is used:

1) When estimating a concentration for tentatively identified compound (library search hits) where a 1:1 response is assumed.

2) When the mass spectral data indicated the identification criteria, however, the result was less than the specified detection limit but greater than zero. If the detection limit was 10 ug/L and a concentratin of 3 ug/L was calculated, report as "3J".

B - Indicates the analyte was found in the blank as well as the sample; report as "12B".

E - Indicates the analyte concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

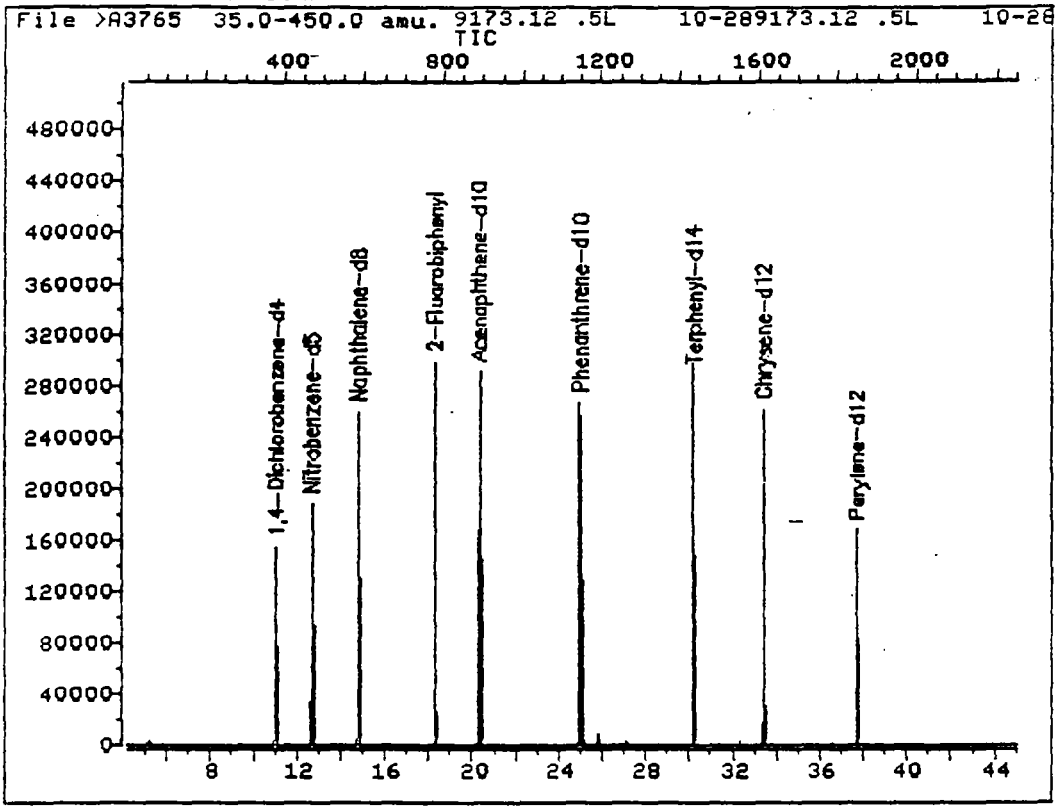
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.12 .5L 10-28	DILUTION FACTOR	2.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>A3765	DATE ANALYZED	10/30/92

Compound	ug/L	MDL	Compound	ug/L	MDL
N-nitroso-dimethylamine	ND	20	Diethylphthalate	ND	20
bis(2-Chloroethyl)Ether	ND	20	4-Chlorophenyl-phenylether	ND	20
1,3-Dichlorobenzene	ND	20	Fluorene	ND	20
1,4-Dichlorobenzene	ND	20	N-Nitrosodiphenylamine	ND	20
Benzyl alcohol	ND	20	4-Bromophenyl-phenylether	ND	20
1,2-Dichlorobenzene	ND	20	Hexachlorobenzene	ND	20
bis(2-chloroisopropyl)ether	ND	20	Phenanthrene	ND	20
N-Nitroso-Di-n-propylamine	ND	20	Anthracene	ND	20
Hexachloroethane	ND	20	Di-n-butylphthalate	ND	20
Nitrobenzene	ND	20	Fluoranthene	ND	20
Isophorone	ND	20	Benzidine	ND	20
Benzoic Acid	ND	100	Pyrene	ND	20
bis(2-Chloroethoxy)methane	ND	20	Butylbenzylphthalate	ND	20
1,2,4-Trichlorobenzene	ND	20	3,3`-Dichlorobenzidine	ND	20
Naphthalene	ND	20	Benzo(a)anthracene	ND	20
Hexachlorobutadiene	ND	20	bis(2-Ethylhexyl)phthalate	ND	20
2-Methylnaphthalene	ND	20	Chrysene	ND	20
Hexachlorocyclopentadiene	ND	20	Di-n-octylphthalate	ND	20
2-Chloronaphthalene	ND	20	Benzo(b)fluoranthene	ND	20
Dimethylphthalate	ND	20	Benzo(k)fluoranthene	ND	20
Acenaphthylene	ND	20	Benzo(a)pyrene	ND	20
Acenaphthene	ND	20	Indeno(1,2,3-cd)pyrene	ND	20
Dibenzofuran	ND	20	Dibenz(a,h)anthracene	ND	20
2,6-Dinitrotoluene	ND	20	Benzo(g,h,i)perylene	ND	20
2,4-Dinitrotoluene	ND	20	1,2-Diphenylhydrazine	ND	20

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates Compound not detected

TOTAL ION CHROMATOGRAM



Data File: >A3765::D3 Quant Output File: ^A3765::DB
Name: 9173.12 .5L 10-28
Misc: 9173.12 .5L 10-28 BTL# 9

Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 921024 20:25

Operator ID: MARK
Quant Time: 921030 21:57
Injected at: 921030 21:11

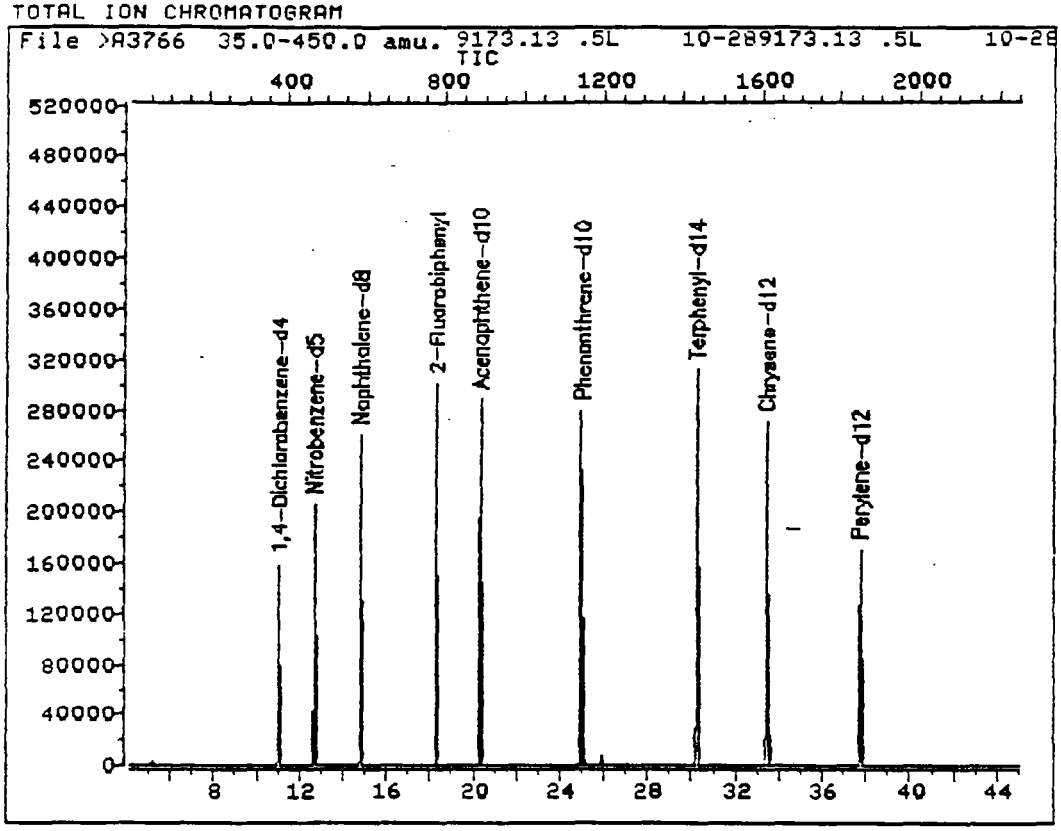
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.13 .5L 10-28	DILUTION FACTOR	2.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>A3766	DATE ANALYZED	10/30/92

Compound	ug/L	MDL	Compound	ug/L	MDL
N-nitroso-dimethylamine	ND	20	Diethylphthalate	ND	20
bis(2-Chloroethyl)Ether	ND	20	4-Chlorophenyl-phenylether	ND	20
1,3-Dichlorobenzene	ND	20	Fluorene	ND	20
1,4-Dichlorobenzene	ND	20	N-Nitrosodiphenylamine	ND	20
Benzyl alcohol	ND	20	4-Bromophenyl-phenylether	ND	20
1,2-Dichlorobenzene	ND	20	Hexachlorobenzene	ND	20
bis(2-chloroisopropyl)ether	ND	20	Phenanthrene	ND	20
N-Nitroso-Di-n-propylamine	ND	20	Anthracene	ND	20
Hexachloroethane	ND	20	Di-n-butylphthalate	ND	20
Nitrobenzene	ND	20	Fluoranthene	ND	20
Isophorone	ND	20	Benzidine	ND	20
Benzoic Acid	ND	100	Pyrene	ND	20
bis(2-Chloroethoxy)methane	ND	20	Butylbenzylphthalate	ND	20
1,2,4-Trichlorobenzene	ND	20	3,3`-Dichlorobenzidine	ND	20
Naphthalene	ND	20	Benzo(a)anthracene	ND	20
Hexachlorobutadiene	ND	20	bis(2-Ethylhexyl)phthalate	ND	20
2-Methylnaphthalene	ND	20	Chrysene	ND	20
Hexachlorocyclopentadiene	ND	20	Di-n-octylphthalate	ND	20
2-Chloronaphthalene	ND	20	Benzo(b)fluoranthene	ND	20
Dimethylphthalate	ND	20	Benzo(k)fluoranthene	ND	20
Acenaphthylene	ND	20	Benzo(a)pyrene	ND	20
Acenaphthene	ND	20	Indeno(1,2,3-cd)pyrene	ND	20
Dibenzofuran	ND	20	Dibenz(a,h)anthracene	ND	20
2,6-Dinitrotoluene	ND	20	Benzo(g,h,i)perylene	ND	20
2,4-Dinitrotoluene	ND	20	1,2-Diphenylhydrazine	ND	20

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates Compound not detected

TOTAL ION CHROMATOGRAM



Data File: >A3766::D3 Quant Output File: ^A3766::DB
Name: 9173.13 .5L 10-28
Misc: 9173.13 .5L 10-28 BTL#10

Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 921024 20:25

Operator ID: MARK
Quant Time: 921030 22:54
Injected at: 921030 22:08

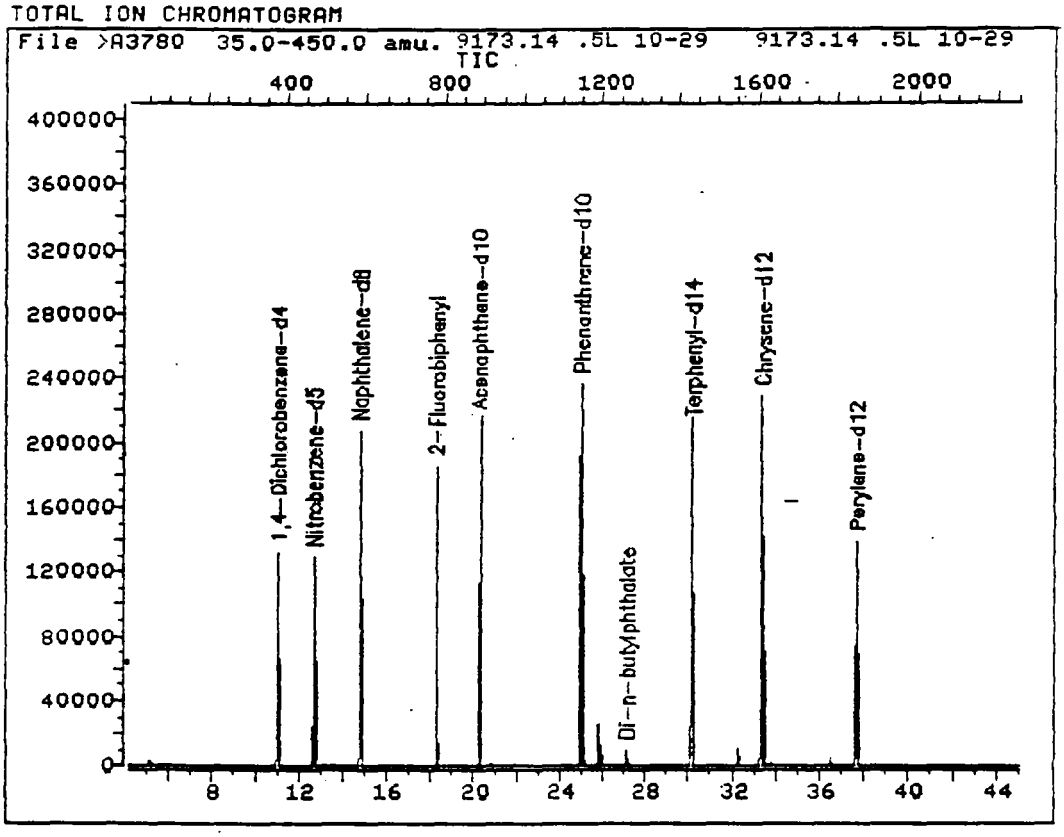
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.14 .5L 10-29	DILUTION FACTOR	2.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>A3780	DATE ANALYZED	10/31/92

Compound	ug/L	MDL	Compound	ug/L	MDL
N-nitroso-dimethylamine	ND	20	Diethylphthalate	ND	20
bis(2-Chloroethyl)Ether	ND	20	4-Chlorophenyl-phenylether	ND	20
1,3-Dichlorobenzene	ND	20	Fluorene	ND	20
1,4-Dichlorobenzene	ND	20	N-Nitrosodiphenylamine	ND	20
Benzyl alcohol	ND	20	4-Bromophenyl-phenylether	ND	20
1,2-Dichlorobenzene	ND	20	Hexachlorobenzene	ND	20
bis(2-chloroisopropyl)ether	ND	20	Phenanthrene	ND	20
N-Nitroso-Di-n-propylamine	ND	20	Anthracene	ND	20
Hexachloroethane	ND	20	Di-n-butylphthalate	2 JB	20
Nitrobenzene	ND	20	Fluoranthene	ND	20
Isophorone	ND	20	Benzidine	ND	20
Benzoic Acid	ND	100	Pyrene	ND	20
bis(2-Chloroethoxy)methane	ND	20	Butylbenzylphthalate	ND	20
1,2,4-Trichlorobenzene	ND	20	3,3`-Dichlorobenzidine	ND	20
Naphthalene	ND	20	Benzo(a)anthracene	ND	20
Hexachlorobutadiene	ND	20	bis(2-Ethylhexyl)phthalate	ND	20
2-Methylnaphthalene	ND	20	Chrysene	ND	20
Hexachlorocyclopentadiene	ND	20	Di-n-octylphthalate	ND	20
2-Chloronaphthalene	ND	20	Benzo(b)fluoranthene	ND	20
Dimethylphthalate	ND	20	Benzo(k)fluoranthene	ND	20
Acenaphthylene	ND	20	Benzo(a)pyrene	ND	20
Acenaphthene	ND	20	Indeno(1,2,3-cd)pyrene	ND	20
Dibenzofuran	ND	20	Dibenz(a,h)anthracene	ND	20
2,6-Dinitrotoluene	ND	20	Benzo(g,h,i)perylene	ND	20
2,4-Dinitrotoluene	ND	20	1,2-Diphenylhydrazine	ND	20

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates Compound not detected

TOTAL ION CHROMATOGRAM

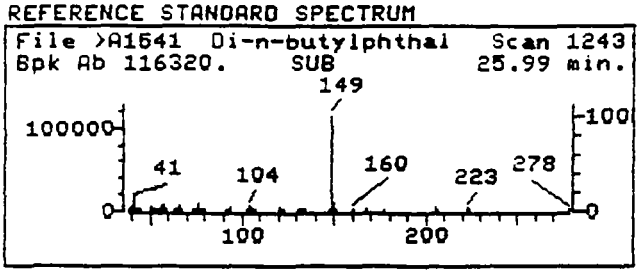


Data File: >A3780::D3 Quant Output File: ^A3780::DB
Name: 9173.14 .5L 10-29
Misc: 9173.14 .5L 10-29 BTL# 2

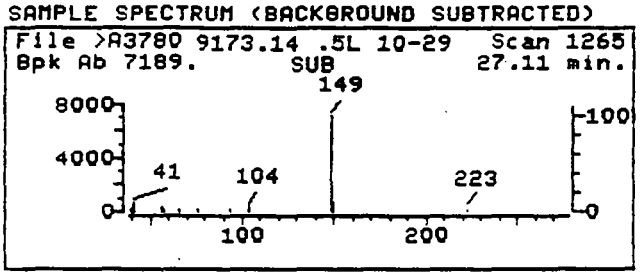
Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 921024 20:25

Operator ID: MARK
Quant Time: 921031 19:24
Injected at: 921031 18:38

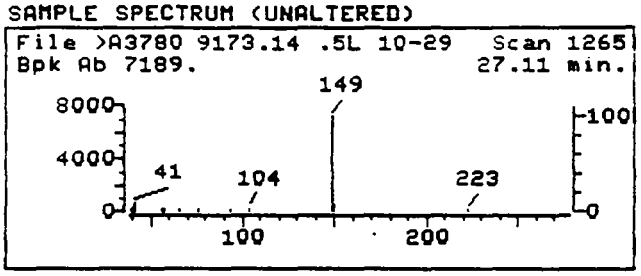
REFERENCE STANDARD SPECTRUM

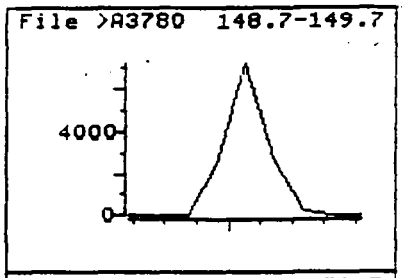


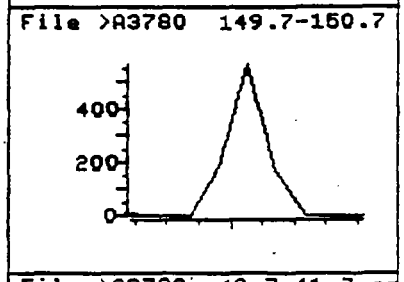
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

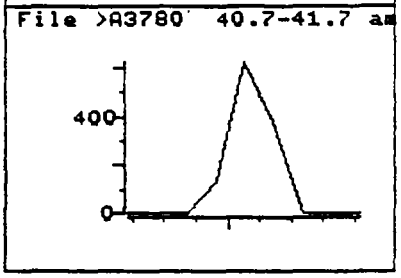


SAMPLE SPECTRUM (UNALTERED)









Data File: >A3780::D3 Quant Output File: ^A3780::DB
Name: 9173.14 .5L 10-29
Misc: 9173.14 .5L 10-29 BTL# 2
Quant Time: 921031 19:24 Quant ID File: IDBNA::D4
Injected at: 921031 18:38 Last Calibration: 921024 20:25

Compound No: 64
Compound Name: Di-n-butylphthalate
Scan Number: 1265
Retention Time: 27.11 min.
Quant Ion: 149.0
Area: 13745
Concentration: 1.11 ng/uL
q-value: 95

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO: 9173.12 .5L

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Sample wt/vol: 500 (g/mL) mL

Level: (low/med) LOW

Extraction: (Sepf/Cont/Sonc) Sep. Funnel

GPC Cleanup: (Y/N) N

Lab Sample ID: 9173.12 .5L

Lab File ID: >A3765

Date Received: 10-26-92

Date Extracted: 10-28-92

Date Analyzed: 10/30/92

Dilution Factor: 2

Number of TICs found: 0

CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO

9173.13 .5L

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.13 .5L

Sample wt/vol: 500 (g/mL) mL

Lab File ID: >A3766

Level: (low/med) LOW

Date Received: 10-26-92

Date Extracted: 10-28-92

Extraction: (Sepf/Cont/Sonc) Sep. Funnel

Date Analyzed: 10/30/92

GPC Cleanup: (Y/N) N

Dilution Factor: 2

CONCENTRATION UNITS:
ug/L

Number of TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I SV-TIC 1/87 Rev

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO

9173.14-.5L

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.14-.5L

Sample wt/vol: 500 (g/mL) mL

Lab File ID: >A3780

Level: (low/med) LOW

Date Received: 10-26-92

Date Extracted: 10-29-92

Extraction: (Sepf/Cont/Sonc) Sep. Funnel

Date Analyzed: 10/31/92

GPC Cleanup: (Y/N) N

Dilution Factor: 2

Number of TICs found: 0

CONCENTRATION UNITS:
ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I SV-TIC 1/87 Rev

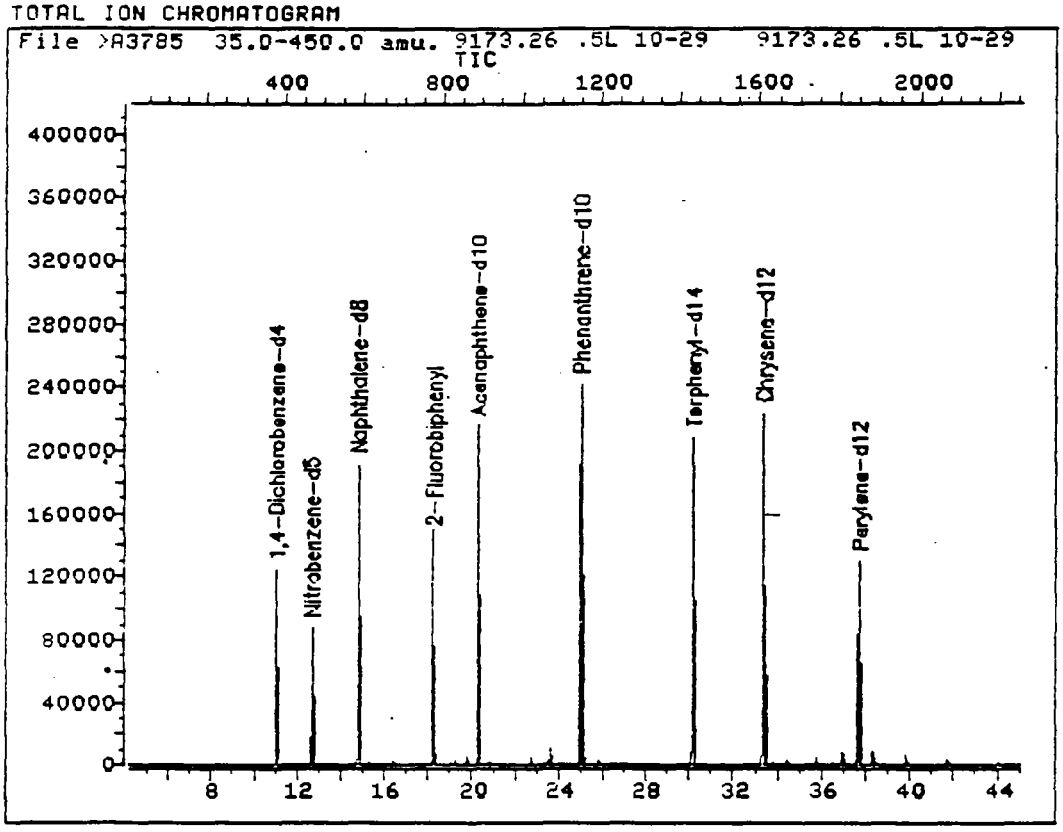
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.26 .5L 10-29	DILUTION FACTOR	2.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>A3785	DATE ANALYZED	10/31/92

Compound	ug/L	MDL	Compound	ug/L	MDL
N-nitroso-dimethylamine	ND	20	Diethylphthalate	ND	20
bis(2-Chloroethyl)Ether	ND	20	4-Chlorophenyl-phenylether	ND	20
1,3-Dichlorobenzene	ND	20	Fluorene	ND	20
1,4-Dichlorobenzene	ND	20	N-Nitrosodiphenylamine	ND	20
Benzyl alcohol	ND	20	4-Bromophenyl-phenylether	ND	20
1,2-Dichlorobenzene	ND	20	Hexachlorobenzene	ND	20
bis(2-chloroisopropyl)ether	ND	20	Phenanthrene	ND	20
N-Nitroso-Di-n-propylamine	ND	20	Anthracene	ND	20
Hexachloroethane	ND	20	Di-n-butylphthalate	ND	20
Nitrobenzene	ND	20	Fluoranthene	ND	20
Isophorone	ND	20	Benzidine	ND	20
Benzoic Acid	ND	100	Pyrene	ND	20
bis(2-Chloroethoxy)methane	ND	20	Butylbenzylphthalate	ND	20
1,2,4-Trichlorobenzene	ND	20	3,3`-Dichlorobenzidine	ND	20
Naphthalene	ND	20	Benzo(a)anthracene	ND	20
Hexachlorobutadiene	ND	20	bis(2-Ethylhexyl)phthalate	ND	20
2-Methylnaphthalene	ND	20	Chrysene	ND	20
Hexachlorocyclopentadiene	ND	20	Di-n-octylphthalate	ND	20
2-Chloronaphthalene	ND	20	Benzo(b)fluoranthene	ND	20
Dimethylphthalate	ND	20	Benzo(k)fluoranthene	ND	20
Acenaphthylene	ND	20	Benzo(a)pyrene	ND	20
Acenaphthene	ND	20	Indeno(1,2,3-cd)pyrene	ND	20
Dibenzofuran	ND	20	Dibenz(a,h)anthracene	ND	20
2,6-Dinitrotoluene	ND	20	Benzo(g,h,i)perylene	ND	20
2,4-Dinitrotoluene	ND	20	1,2-Diphenylhydrazine	ND	20

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates Compound not detected

TOTAL ION CHROMATOGRAM



Data File: >A3785::D3 Quant Output File: ^A3785::DB
Name: 9173.26 .5L 10-29
Misc: 9173.26 .5L 10-29 BTL# 7

Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 921024 20:25

Operator ID: MARK
Quant Time: 921101 00:09
Injected at: 921031 23:23

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE

9173.26

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.26 .5L

Sample wt/vol: 500 (g/mL) mL

Lab File ID: >A3785

Level: (low/med) LOW

Date Received: 10-26-92

Date Extracted: 10-29-92

Extraction: (Sepf/Cont/Sonc) Sep. Funnel

Date Analyzed: 10/31/92

GPC Cleanup: (Y/N) N

Dilution Factor: 2

Number of TICs found: 0

CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >A3754 DFTPP Injection Date: 10/30/92

Instrument ID: 5970 GC/MS #2 DFTPP Injection Time: 10:41

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	59.6
68	Less than 2.0% of mass 69	0.0(0.0)1
69	Mass 69 relative abundance	68.
70	Less than 2.0% of mass 69	0.0(0.0)1
127	40.0 - 60.0% of mass 198	44.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.
199	5.0 - 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	18.3
365	Greater than 1.00% of mass 198	1.49
441	Present, but less than mass 443	8.3
442	Greater than 40.0% of mass 198	55.4
443	17.0 - 23.0% of mass 442	10.3(18.6)2

1-Value is % mass 69 2-Value is % mass 442

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
01	CCC/SPCC	CCC/SPCC	>A3755	10/30/92	11:07
02	BNA AQ BLK	BNA AQ BLK	>A3761	10/30/92	17:21
03	9173.11 .5	9173.11 .5	>A3764	10/30/92	20:14
04	9173.12 .5	9173.12 .5	>A3765	10/30/92	21:11
05	9173.13 .5	9173.13 .5	>A3766	10/30/92	22:08
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

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5B

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >A3777 DFTPP Injection Date: 10/31/92

Instrument ID: 5970 GC/MS #2 DFTPP Injection Time: 16:15

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 60.0% of mass 198	59.0	
68	Less than 2.0% of mass 69	0.0(0.0)1	
69	Mass 69 relative abundance	67.	
70	Less than 2.0% of mass 69	0.0(0.0)1	
127	40.0 - 60.0% of mass 198	42.3	
197	Less than 1.0% of mass 198	0.0	
198	Base Peak, 100% relative abundance	100.	
199	5.0 - 9.0% of mass 198	6.7	
275	10.0 - 30.0% of mass 198	16.6	
365	Greater than 1.00% of mass 198	1.15	
441	Present, but less than mass 443	6.5	
442	Greater than 40.0% of mass 198	47.3	
443	17.0 - 23.0% of mass 442	8.3(17.6)2	

1-Value is % mass 69 2-Value is % mass 442

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
01	CCC/SPCC	CCC/SPCC	>A3778	10/31/92	16:42
02	BNA Aq Bk.	BNA Aq Bk.	>A3779	10/31/92	17:40
03	9173.14 .5	9173.14 .5	>A3780	10/31/92	18:38
04	9173.20 .5	9173.20 .5	>A3781	10/31/92	19:35
05	9173.21 .5	9173.21 .5	>A3782	10/31/92	20:32
06	9173.22 .5	9173.22 .5	>A3783	10/31/92	21:29
07	9173.23 .5	9173.23 .5	>A3784	10/31/92	22:26
08	9173.26 .5	9173.26 .5	>A3785	10/31/92	23:23
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

Continuing Calibration Check
HSL_Compounds

Case No: _____ Calibration Date: 10/30/92

Contractor: E.P.L. Time: 11:07

Contract No: NJDEPE ID# 15526 Laboratory ID: >A3755

Instrument ID: No. 2: Semivolatiles Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Pyridine	1.34978	1.79443	32.94		
N-nitroso-dimethylamine	.93353	1.09087	16.86		
2-Fluorophenol	1.53550	1.46898	4.33		
Phenol-d6	1.84381	2.09697	13.73		
Phenol	3.42875	3.63146	5.91	*	
Aniline	2.78598	2.92313	4.92		
bis(2-Chloroethyl)Ether	1.90466	2.10515	10.53		
2-Chlorophenol	1.98444	2.07574	4.60		
1,3-Dichlorobenzene	1.89716	1.86455	1.72		
1,4-Dichlorobenzene	1.85437	1.86792	.73	*	
Benzyl alcohol	1.18885	1.27145	6.95		
1,2-Dichlorobenzene	2.04202	2.07862	1.79		
2-Methylphenol	1.74650	1.90983	9.35		
bis(2-chloroisopropyl)ether	2.79349	3.15464	12.93		
4-Methylphenol	1.54677	1.88306	21.74		
N-Nitroso-Di-n-propylamine	1.21335	1.87757	54.74		**
Hexachloroethane	.63118	.76170	20.68		
Nitrobenzene-d5	.43621	.46107	5.70		
Nitrobenzene	.49090	.53251	8.48		
Isophorone	1.06938	1.17677	10.04		
2-Nitrophenol	.32209	.33143	2.90	*	
2,4-Dimethylphenol	.42294	.41257	2.45		
Benzoic Acid	.17219	.13727	20.28		
bis(2-Chloroethoxy)methane	.62841	.67159	6.87		
2,4-Dichlorophenol	.43892	.42021	4.26	*	
1,2,4-Trichlorobenzene	.36894	.35511	3.75		
Naphthalene	.85279	.90224	5.80		
4-Chloroaniline	.52825	.53630	1.52		
Hexachlorobutadiene	.17144	.15931	7.07	*	
4-Chloro-3-methylphenol	.50564	.52297	3.43	*	
2-Methylnaphthalene	.64838	.66475	2.52		
Hexachlorocyclopentadiene	.37270	.37631	.97		**

RF - Response Factor from daily standard file at 50.00 ng/uL

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 10/30/92

Contractor: E.P.L. Time: 11:07

Contract No: NJDEPE ID# 15526 Laboratory ID: >A3755

Instrument ID: No. 2: Semivolatiles Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2,4,6-Trichlorophenol	.61438	.62022	.95	*	
2,4,5-Trichlorophenol	.54946	.56140	2.17		
2-Chloronaphthalene	1.38957	1.46163	5.19		
2-Fluorobiphenyl	1.27708	1.35203	5.87		
2-Nitroaniline	.62109	.67788	9.14		
Dimethylphthalate	1.76150	1.85116	5.09		
Acenaphthylene	1.43617	1.59040	10.74		
3-Nitroaniline	.44109	.45768	3.76		
Acenaphthene	1.05760	1.15336	9.05	*	
2,4-Dinitrophenol	.16678	.18621	11.65		**
4-Nitrophenol	.44455	.57444	29.22		**
Dibenzofuran	1.78619	1.97350	10.49		
2,6-Dinitrotoluene	.41168	.41679	1.24		
2,4-Dinitrotoluene	.70570	.71909	1.90		
Diethylphthalate	1.92316	2.00550	4.28		
4-Chlorophenyl-phenylether	.72240	.75795	4.92		
Fluorene	1.13568	1.26826	11.67		
4-Nitroaniline	.49928	.58707	17.58		
4,6-Dinitro-2-methylphenol	.19573	.20175	3.08		
N-Nitrosodiphenylamine	.51030	.54467	6.73	*	
1,2-Diphenylhydrazine	1.20198	1.38893	15.55		
2,4,6-Tribromophenol	.13780	.12755	7.44		
4-Bromophenyl-phenylether	.22386	.21823	2.51		
Hexachlorobenzene	.29539	.27130	8.15		
Pentachlorophenol	.20964	.21277	1.49	*	
Phenanthrene	.87511	.94238	7.69		
Anthracene	.84831	.91163	7.46		
Di-n-butylphthalate	1.68928	1.77664	5.17		
Fluoranthene	.97729	.99613	1.93	*	
Benzidine	.73655	.44271	39.89		
Pyrene	1.53572	1.49772	2.47		
Terphenyl-d14	1.21887	1.14823	5.80		

RF - Response Factor from daily standard file at 50.00 ng/uL

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 10/30/92

Contractor: E.P.L. Time: 11:07

Contract No: NJDEPE ID# 15526 Laboratory ID: >A3755

Instrument ID: No. 2: Semivolatiles Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Butylbenzylphthalate	1.18513	1.14969	2.99		
3,3'-Dichlorobenzidine	.50938	.48319	5.14		
Benzo(a)anthracene	1.18618	1.19821	1.01		
bis(2-Ethylhexyl)phthalate	1.60918	1.61311	.24		
Chrysene	1.19297	1.18650	.54		
Di-n-octylphthalate	2.93044	2.48576	15.17	*	
Benzo(b)fluoranthene	1.16225	1.04596	10.01		
Benzo(k)fluoranthene	.99460	1.00403	.95		
Benzo(a)pyrene	.90613	.95991	5.94	*	
Indeno(1,2,3-cd)pyrene	.48893	.84001	71.81		
Dibenz(a,h)anthracene	.50255	.80535	60.25		
Benzo(g,h,i)perylene	.48078	.81268	69.03		

RF - Response Factor from daily standard file at 50.00 ng/uL

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 10/31/92

Contractor: E.P.L. Time: 16:42

Contract No: NJDEPE ID# 15526 Laboratory ID: >A3778

Instrument ID: No. 2: Semivolatiles Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Pyridine	1.34978	1.66779	23.56		
N-nitroso-dimethylamine	.93353	1.09950	17.78		
2-Fluorophenol	1.53550	1.45910	4.98		
Phenol-d6	1.84381	2.05085	11.23		
Phenol	3.42875	3.56536	3.98	*	
Aniline	2.78598	2.84752	2.21		
bis(2-Chloroethyl)Ether	1.90466	1.99167	4.57		
2-Chlorophenol	1.98444	1.96588	.94		
1,3-Dichlorobenzene	1.89716	1.89936	.12		
1,4-Dichlorobenzene	1.85437	1.90608	2.79	*	
Benzyl alcohol	1.18885	1.29752	9.14		
1,2-Dichlorobenzene	2.04202	2.06721	1.23		
2-Methylphenol	1.74650	1.86832	6.97		
bis(2-chloroisopropyl)ether	2.79349	3.32817	19.14		
4-Methylphenol	1.54677	1.90827	23.37		
N-Nitroso-Di-n-propylamine	1.21335	1.85415	52.81		**
Hexachloroethane	.63118	.73090	15.80		
Nitrobenzene-d5	.43621	.46977	7.69		
Nitrobenzene	.49090	.51445	4.80		
Isophorone	1.06938	1.13544	6.18		
2-Nitrophenol	.32209	.34027	5.64	*	
2,4-Dimethylphenol	.42294	.42282	.03		
Benzoic Acid	.17219	.17344	.73		
bis(2-Chloroethoxy)methane	.62841	.63598	1.20		
2,4-Dichlorophenol	.43892	.45403	3.44	*	
1,2,4-Trichlorobenzene	.36894	.37407	1.39		
Naphthalene	.85279	.89427	4.86		
4-Chloroaniline	.52825	.54414	3.01		
Hexachlorobutadiene	.17144	.18498	7.90	*	
4-Chloro-3-methylphenol	.50564	.51711	2.27	*	
2-Methylnaphthalene	.64838	.68999	6.42		
Hexachlorocyclopentadiene	.37270	.41196	10.53		**

RF - Response Factor from daily standard file at 50.00 ng/uL

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 10/31/92

Contractor: E.P.L. Time: 16:42

Contract No: NJDEPE ID# 15526 Laboratory ID: >A3778

Instrument ID: No. 2: Semivolatiles Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2,4,6-Trichlorophenol	.61438	.63315	3.06	*	
2,4,5-Trichlorophenol	.54946	.56757	3.29		
2-Chloronapnthalene	1.38957	1.39773	.59		
2-Fluorobiphenyl	1.27708	1.33096	4.22		
2-Nitroaniline	.62109	.65106	4.83		
Dimethylphthalate	1.76150	1.79167	1.71		
Acenaonthylene	1.43617	1.50484	4.78		
3-Nitroaniline	.44109	.44989	1.99		
Acenapnthene	1.05760	1.08646	2.73	*	
2,4-Dinitrophenol	.16678	.27766	66.48		**
4-Nitrophenol	.44455	.58723	32.10		**
Dibenzofuran	1.78619	1.86171	4.23		
2,6-Dinitrotoluene	.41168	.41009	.39		
2,4-Dinitrotoluene	.70570	.71306	1.04		
Diethylphthalate	1.92316	1.90434	.98		
4-Chlorophenyl-phenylether	.72240	.76347	5.68		
Fluorene	1.13568	1.20771	6.34		
4-Nitroaniline	.49928	.58318	16.80		
4,6-Dinitro-2-methylphenol	.19573	.25237	28.94		
N-Nitrosodiphenylamine	.51030	.52264	2.42	*	
1,2-Diphenylhydrazine	1.20198	1.26208	5.00		
2,4,6-Tribromophenol	.13780	.14544	5.55		
4-Bromophenyl-phenylether	.22386	.22775	1.74		
Hexachlorobenzene	.29539	.30278	2.50		
Pentachlorophenol	.20964	.24646	17.56	*	
Phenanthrene	.87511	.88969	1.67		
Anthracene	.84831	.85681	1.00		
Di-n-butylphthalate	1.68928	1.68264	.39		
Fluoranthene	.97729	.99087	1.39	*	
Benzidine	.73655	.43508	40.93		
Pyrene	1.53572	1.48456	3.33		
Terphenyl-d14	1.21887	1.19515	1.95		

RF - Response Factor from daily standard file at 50.00 ng/uL

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 10/31/92

Contractor: E.P.L. Time: 16:42

Contract No: NJDEPE ID# 15526 Laboratory ID: >A3778

Instrument ID: No. 2: Semivolatiles Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Butylbenzylphthalate	1.18513	1.11385	6.01		
3,3`-Dichlorobenzidine	.50938	.56025	9.99		
Benzo(a)anthracene	1.18618	1.24210	4.71		
bis(2-Ethylhexyl)phthalate	1.60918	1.53031	4.90		
Chrysene	1.19297	1.28340	7.58		
Di-n-octylphthalate	2.93044	2.21495	24.42	*	
Benzo(b)fluoranthene	1.16225	1.04140	10.40		
Benzo(k)fluoranthene	.99460	.98769	.69		
Benzo(a)pyrene	.90613	.97865	8.00	*	
Indeno(1,2,3-cd)pyrene	.48893	.93955	92.17		
Dibenz(a,h)anthracene	.50255	.90552	80.19		
Benzo(g,h,i)perylene	.48078	.94646	96.86		

RF - Response Factor from daily standard file at 50.00 ng/uL

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: No. 2: Semivolatiles

Contractor: E.P.L. Calibration Date: 10/20/92

Contract No: NJDEPE ID# 15526

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>A3659	>A3658	>A3660	>A3661	>A3662					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Pyridine	1.49983	1.30304	1.17894	1.46307	1.30402	.423	1.34978	9.717		
N-nitroso-dimethylamine	.94969	.84757	.85853	1.01697	.99487	.423	.93353	8.298		
2-Fluorophenol	1.65216	1.43532	1.39181	1.60420	1.59402	.697	1.53550	7.457		
Phenol-d6	2.01693	1.79515	1.67953	1.91787	1.80955	.926	1.84381	6.966		
Phenol	3.78307	3.36135	3.18490	3.51576	3.29865	.930	3.42875	6.747	*	
Aniline	3.01130	2.68924	2.54804	2.86553	2.81578	.922	2.78598	6.319		
bis(2-Chloroethyl)Ether	2.19491	1.90765	1.72839	1.93296	1.75939	.947	1.90466	9.725		
2-Chlorophenol	2.27549	1.94479	1.83296	2.00869	1.86028	.948	1.98444	8.916		
1,3-Dichlorobenzene	2.14034	1.84419	1.74275	1.93164	1.82687	.984	1.89716	7.990		
1,4-Dichlorobenzene	2.12131	1.81552	1.71695	1.89963	1.71842	1.004	1.85437	9.031	*	
Benzyl alcohol	1.21884	1.20064	1.07397	1.26437	1.18641	1.048	1.18885	5.940		
1,2-Dichlorobenzene	2.39761	2.02749	1.88692	2.03712	1.86095	1.041	2.04202	10.489		
2-Methylphenol	1.95117	1.75528	1.61845	1.73720	1.67041	1.078	1.74650	7.256		
bis(2-chloroisopropyl)ether	3.02729	2.59583	2.63789	3.00562	2.70084	1.083	2.79349	7.413		
4-Methylphenol	1.90228	1.61001	1.49158	1.43390	1.29609	1.123	1.54677	14.779		
N-Nitroso-Di-n-propylamine	1.72426	1.49047	1.34699	.88149	.62355	1.121	1.21335	37.171		**
Hexachloroethane	.84611	.67358	.62727	.57019	.43877	1.127	.63118	23.599		
Nitrobenzene-d5	.48823	.42898	.39731	.44388	.42266	.858	.43621	7.701		
Nitrobenzene	.55443	.47676	.44948	.51160	.46224	.863	.49090	8.644		
Isophorone	1.25481	1.06542	.98572	1.05873	.98219	.920	1.06938	10.362		
2-Nitrophenol	.39255	.33064	.29495	.31226	.28005	.925	.32209	13.567	*	
2,4-Dimethylphenol	.48748	.41585	.38310	.42105	.40224	.946	.42294	9.197		
Benzoic Acid	.14121	.12615	.16663	.20198	.22496	.986	.17219	23.915		
bis(2-Chloroethoxy)methane	.73479	.61716	.58039	.62822	.58148	.966	.62841	10.049		
2,4-Dichlorophenol	.51947	.44576	.39876	.43005	.40056	.977	.43892	11.218	*	
1,2,4-Trichlorobenzene	.45368	.38072	.34170	.34732	.32129	.990	.36894	14.084		
Naphthalene	1.00896	.84462	.78726	.83081	.79230	1.005	.85279	10.633		
4-Chloroaniline	.60902	.52257	.47519	.53068	.50381	1.022	.52825	9.454		
Hexachlorobutadiene	.20615	.17448	.15793	.16601	.15261	1.034	.17144	12.306	*	
4-Chloro-3-methylphenol	.57709	.50618	.46197	.50304	.47990	1.132	.50564	8.666	*	

RF - Response Factor (Subscript is amount in ng/uL)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: No. 2: Semivolatiles

Contractor: E.P.L. Calibration Date: 10/20/92

Contract No: NJDEPE ID# 15526

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>A3659	>A3658	>A3660	>A3661	>A3662					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2-Methylnaphthalene	.78266	.65704	.59086	.63105	.58030	1.151	.64838	12.517		
Hexachlorocyclopentadiene	.42712	.36593	.35628	.37277	.34142	.865	.37270	8.751		**
2,4,6-Trichlorophenol	.74011	.63172	.56768	.59159	.54081	.886	.61438	12.666	*	
2,4,5-Trichlorophenol	.65841	.56292	.51265	.52872	.48462	.891	.54946	12.222		
2-Chloronaphthalene	1.69117	1.42336	1.29470	1.30687	1.23175	.914	1.38957	13.115		
2-Fluorobiphenyl	1.53397	1.31158	1.19426	1.22661	1.11896	.901	1.27708	12.479		
2-Nitroaniline	.70359	.62962	.57490	.61597	.58138	.935	.62109	8.294		
Dimethylphthalate	2.06511	1.77464	1.61779	1.72411	1.62587	.971	1.76150	10.344		
Acenaphthylene	1.80968	1.46665	1.33473	1.34869	1.22113	.977	1.43617	15.749		
3-Nitroaniline	.42253	.43181	.42213	.47480	.45420	1.001	.44109	5.192		
Acenaphthene	1.28163	1.07831	.99170	1.00185	.93450	1.006	1.05760	12.793	*	
2,4-Dinitrophenol	.12615	.14882	.14791	.19889	.21214	1.017	.16678	22.068		**
4-Nitrophenol	.46642	.43580	.40102	.46149	.45802	1.035	.44455	6.076		**
Dibenzofuran	2.20657	1.84387	1.66210	1.66189	1.55650	1.033	1.78619	14.373		
2,6-Dinitrotoluene	.48542	.42051	.38761	.39778	.36706	.977	.41168	11.050		
2,4-Dinitrotoluene	.80965	.71344	.65239	.69045	.66259	1.039	.70570	8.906		
Diethylphthalate	2.33576	1.98749	1.81178	1.82088	1.65990	1.083	1.92316	13.423		
4-Chlorophenyl-phenylether	.89466	.74561	.67165	.67119	.62889	1.092	.72240	14.544		
Fluorene	1.40247	1.19494	1.05372	1.06758	.95970	1.087	1.13568	15.060		
4-Nitroaniline	.55266	.50465	.46345	.50004	.47559	1.100	.49928	6.882		
4,6-Dinitro-2-methylphenol	.19564	.18298	.18047	.20509	.21448	.895	.19573	7.380		
N-Nitrosodiphenylamine	.62317	.50625	.47776	.48389	.46043	.903	.51030	12.775	*	
1,2-Diphenylhydrazine	1.43425	1.17113	1.10842	1.16958	1.12653	.906	1.20198	11.037		
2,4,6-Tribromophenol	.15611	.13422	.12854	.13611	.13401	.913	.13780	7.705		
4-Bromophenyl-phenylether	.27152	.22321	.20922	.21250	.20283	.947	.22386	12.351		
Hexachlorobenzene	.35707	.29531	.27004	.28000	.27451	.951	.29539	12.112		
Pentachlorophenol	.23148	.20534	.19200	.21109	.20831	.978	.20964	6.790	*	
Phenanthrene	1.04928	.86984	.80666	.84473	.80503	1.003	.87511	11.553		
Anthracene	1.03125	.84650	.78126	.81457	.76796	1.010	.84831	12.581		
Di-n-butylphthalate	2.08203	1.70172	1.56948	1.61046	1.48269	1.087	1.68928	13.809		

RF - Response Factor (Subscript is amount in ng/uL)

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$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: No. 2: Semivolatiles

Contractor: E.P.L. Calibration Date: 10/20/92

Contract No: NJDEPE ID# 15526

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>A3659	>A3658	>A3660	>A3661	>A3662					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Fluoranthene	1.19499	.95754	.90409	.94480	.88501	1.154	.97729	12.812	*	
Benzidine	.75163	.55315	.69423	.82612	.85761	.880	.73655	16.395		
Pyrene	1.48815	1.48441	1.41483	1.63375	1.65745	.884	1.53572	6.825		
Terphenyl-d14	1.22980	1.20265	1.12027	1.26979	1.27186	.904	1.21887	5.108		
Butylbenzylphthalate	1.14960	1.16619	1.09627	1.24698	1.26663	.955	1.18513	5.964		
3,3'-Dichlorobenzidine	.40689	.48116	.47843	.58486	.59556	1.000	.50938	15.638		
Benzo(a)anthracene	1.16803	1.12742	1.08408	1.25973	1.29165	.998	1.18618	7.390		
bis(2-Ethylhexyl)phthalate	1.62815	1.55856	1.50563	1.65792	1.69565	1.012	1.60918	4.763		
Chrysene	1.11663	1.13386	1.11058	1.28929	1.31451	1.003	1.19297	8.399		
Di-n-octylphthalate	3.27702	3.39334	2.70982	2.71273	2.55929	.949	2.93044	12.862	*	
Benzo(b)fluoranthene	1.10466	1.25967	1.11705	1.16261	1.16724	.970	1.16225	5.247		
Benzo(k)fluoranthene	1.09561	1.01941	.90319	1.02656	.92823	.972	.99460	7.885		
Benzo(a)pyrene	.88902	.88747	.86003	.96624	.92789	.995	.90613	4.568	*	
Indeno(1,2,3-cd)pyrene	.40825	.33759	.46648	.59744	.63487	1.103	.48893	25.666		
Dibenz(a,h)anthracene	.43116	.35694	.47635	.60212	.64618	1.107	.50255	23.864		
Benzo(g,h,i)perylene	.40682	.31697	.45063	.60093	.62857	1.134	.48078	27.415		

RF - Response Factor (Subscript is amount in ng/uL)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Environmental Profile Lab

Lab Code: 15526

Matrix Spike for EPL Sample Number: 9170.7 .25

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	#	QC LIMITS REC
Phenol	200.00	0.00	30.60	15		12-
2-Chlorophenol	200.00	0.00	59.90	29		27-1
1,4-Dichlorobenzene	100.00	0.00	38.30	38		36-
N-Nitroso-di-n-prop.(1)	100.00	0.00	69.80	69		41-1
1,2,4-Trichlorobenzene	100.00	0.00	43.20	43		39-
4-Chloro-3-methylphenol	200.00	0.00	69.90	34		23-
Acenaphthene	100.00	0.00	52.10	52		46-1
4-Nitrophenol	200.00	0.00	43.50	21		10-
2,4-Dinitrotoluene	100.00	0.00	45.10	45		24-
Pentachlorophenol	200.00	0.00	77.00	38		9-1
Pyrene	100.00	0.00	43.50	43		26-1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC
Phenol	200.00	31.90	15		0		42	12- 8
2-Chlorophenol	200.00	63.70	31		6		40	27-12
1,4-Dichlorobenzene	100.00	44.50	44		14		28	36- 9
N-Nitroso-di-n-prop.(1)	100.00	77.80	77		10		38	41-11
1,2,4-Trichlorobenzene	100.00	48.60	48		10		28	39- 9
4-Chloro-3-methylphenol	200.00	75.60	37		8		42	23- 9
Acenaphthene	100.00	59.10	59		12		31	46-11
4-Nitrophenol	200.00	48.50	24		13		50	10- 8
2,4-Dinitrotoluene	100.00	48.80	48		6		38	24- 9
Pentachlorophenol	200.00	83.10	41		7		50	9-10
Pyrene	100.00	48.40	48		10		31	26-12

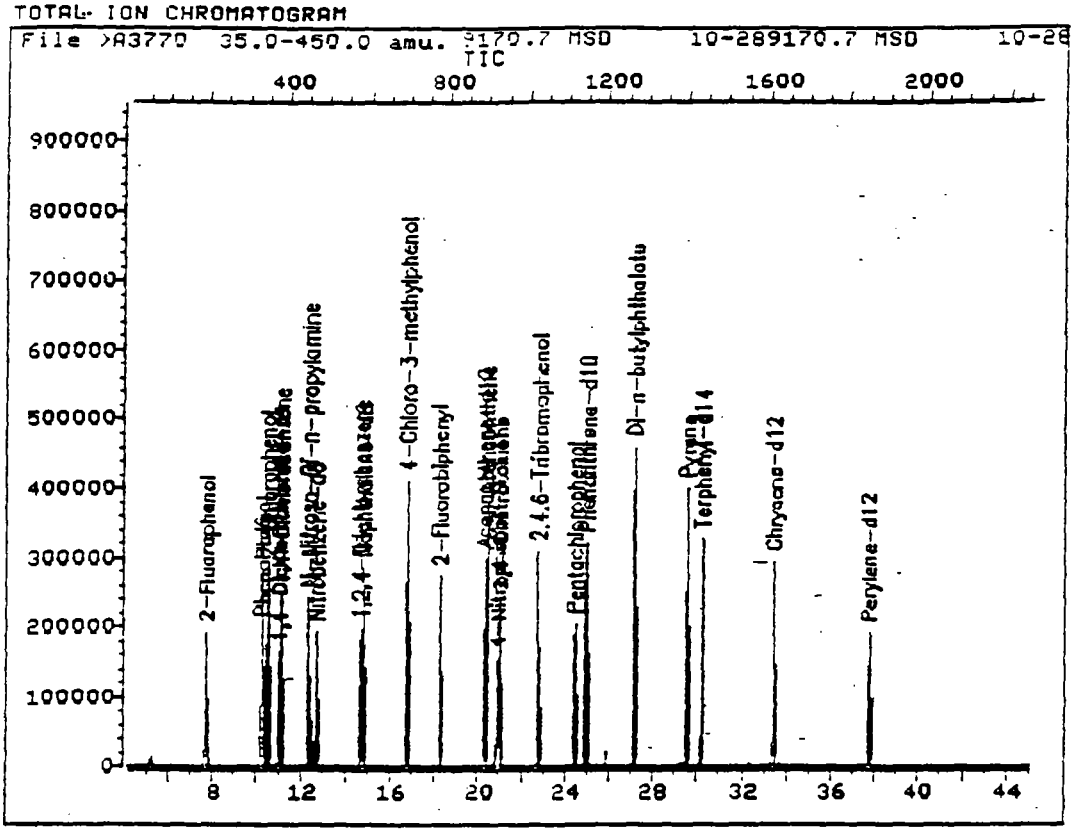
(1) N-Nitroso-di-n-propylamine

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

RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS: _____

TOTAL ION CHROMATOGRAM

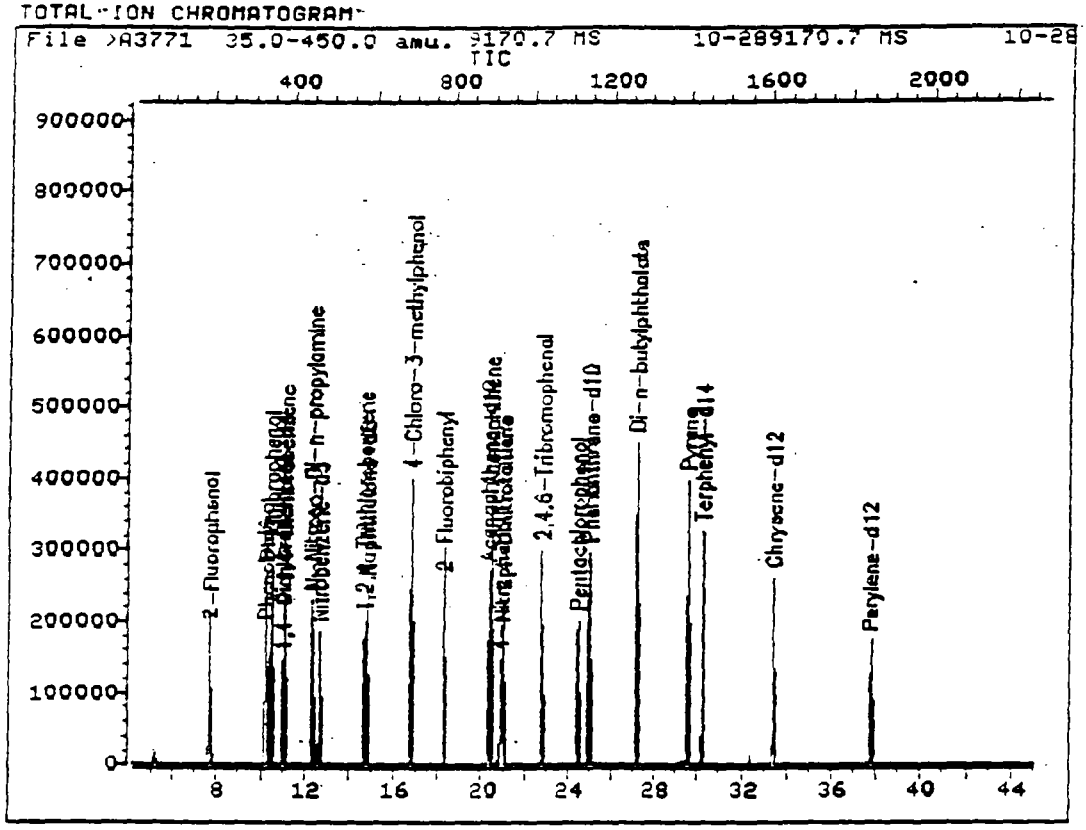


Data File: >A3770::D3 Quant Output File: ^A3770::DB
Name: 9170.7 MSD 10-28
Misc: 9170.7 MSD 10-28 BTL#14

Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 921024 20:25

Operator ID: MARK
Quant Time: 921031 02:07
Injected at: 921031 01:21

TOTAL ION CHROMATOGRAM



Data File: >A3771::D3 Quant Output File: ^A3771::D8
Name: 9170.7 MS 10-28
Misc: 9170.7 MS 10-28 BTL#15

Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 921024 20:25

Operator ID: MARK
Quant Time: 921031 03:04
Injected at: 921031 02:18

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >A3761 Lab Sample ID: BNA AQ BLK

Date Extracted: 10/28/92 Extraction: Sep. Funnel

Date Analyzed: 10/30/92 Time Analyzed: 17:21

Matrix: Water

Instrument ID: GC/MSD 5970 #2

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

	EPL SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9173.11 .5	9173.11 .5	>A3764	10/30/92
02	9173.12 .5	9173.12 .5	>A3765	10/30/92
03	9173.13 .5	9173.13 .5	>A3766	10/30/92
04				
05				
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COMMENTS:

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: Environmental Profile Lab. Contract: Serv-Air

Lab Code: 15526

Lab File ID: >A3779 Lab Sample ID: BNA Aq Blk

Date Extracted: 10/29/92 Extraction: Sep. Funnel

Date Analyzed: 10/31/92 Time Analyzed: 17:40

Matrix: Water

Instrument ID: GC/MSD 5970 #2

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

	EPL SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9173.14 .5	9173.14 .5	>A3780	10/31/92
02	9173.20 .5	9173.20 .5	>A3781	10/31/92
03	9173.21 .5	9173.21 .5	>A3782	10/31/92
04	9173.22 .5	9173.22 .5	>A3783	10/31/92
05	9173.23 .5	9173.23 .5	>A3784	10/31/92
06	9173.26 .5	9173.26 .5	>A3785	10/31/92
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30				

COMMENTS:

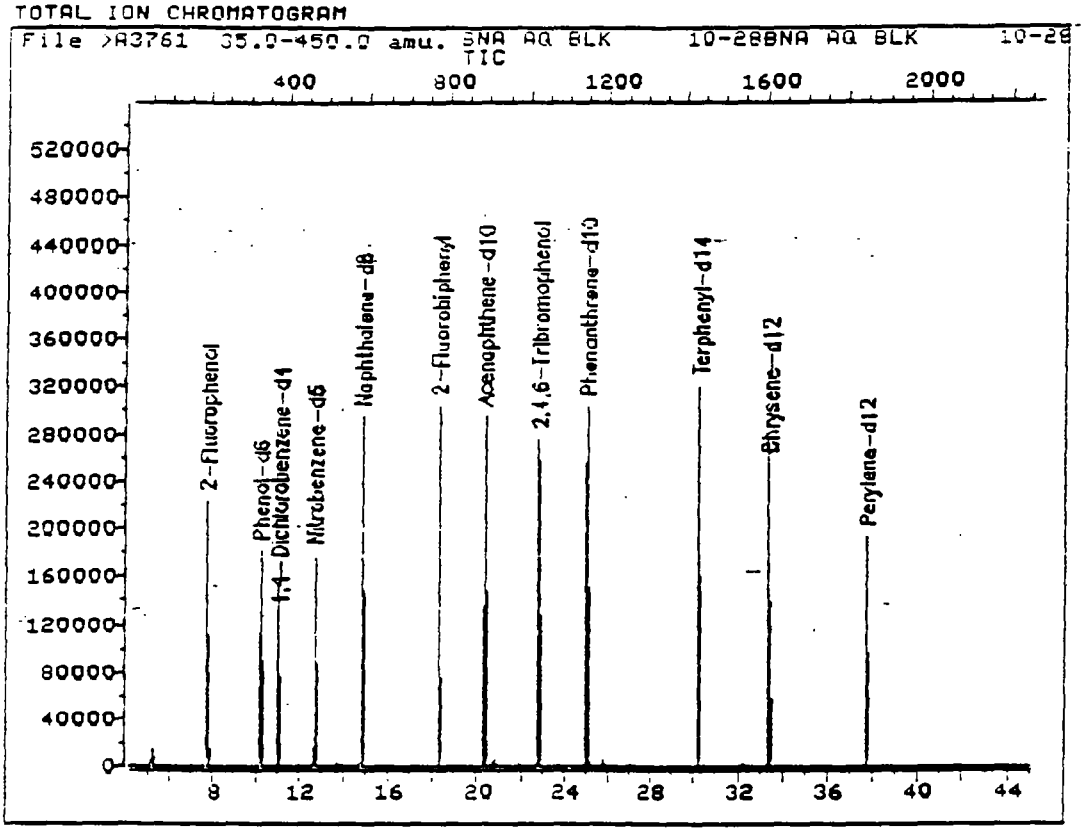
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	BNA AQ BLK 10-28	DILUTION FACTOR	2.00
CLIENT ID		QA BATCH	
DATA FILE	>A3761	DATE ANALYZED	10/30/92

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-nitroso-dimethylamine	ND	20	Diethylphthalate	ND	20
bis(2-Chloroethyl)Ether	ND	20	4-Chlorophenyl-phenylether	ND	20
1,3-Dichlorobenzene	ND	20	Fluorene	ND	20
1,4-Dichlorobenzene	ND	20	N-Nitrosodiphenylamine	ND	20
Benzyl alcohol	ND	20	4-Bromophenyl-phenylether	ND	20
1,2-Dichlorobenzene	ND	20	Hexachlorobenzene	ND	20
bis(2-chloroisopropyl)ether	ND	20	Phenanthrene	ND	20
N-Nitroso-Di-n-propylamine	ND	20	Anthracene	ND	20
Hexachloroethane	ND	20	Di-n-butylphthalate	ND	20
Nitrobenzene	ND	20	Fluoranthene	ND	20
Isophorone	ND	20	Benzidine	ND	20
Benzoic Acid	ND	100	Pyrene	ND	20
bis(2-Chloroethoxy)methane	ND	20	Butylbenzylphthalate	ND	20
1,2,4-Trichlorobenzene	ND	20	3,3'-Dichlorobenzidine	ND	20
Naphthalene	ND	20	Benzo(a)anthracene	ND	20
Hexachlorobutadiene	ND	20	bis(2-Ethylhexyl)phthalate	ND	20
2-Methylnaphthalene	ND	20	Chrysene	ND	20
Hexachlorocyclopentadiene	ND	20	Di-n-octylphthalate	ND	20
2-Chloronaphthalene	ND	20	Benzo(b)fluoranthene	ND	20
Dimethylphthalate	ND	20	Benzo(k)fluoranthene	ND	20
Acenaphthylene	ND	20	Benzo(a)pyrene	ND	20
Acenaphthene	ND	20	Indeno(1,2,3-cd)pyrene	ND	20
Dibenzofuran	ND	20	Dibenz(a,h)anthracene	ND	20
2,6-Dinitrotoluene	ND	20	Benzo(g,h,i)perylene	ND	20
2,4-Dinitrotoluene	ND	20	1,2-Diphenylhydrazine	ND	20

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM



Data File: >A3761::D3 Quant Output File: ^A3761::D8
Name: BNA AQ BLK 10-28
Misc: BNA AQ BLK 10-28 BTL# 5

Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 921024 20:25

Operator ID: MARK
Quant Time: 921030 18:07
Injected at: 921030 17:21

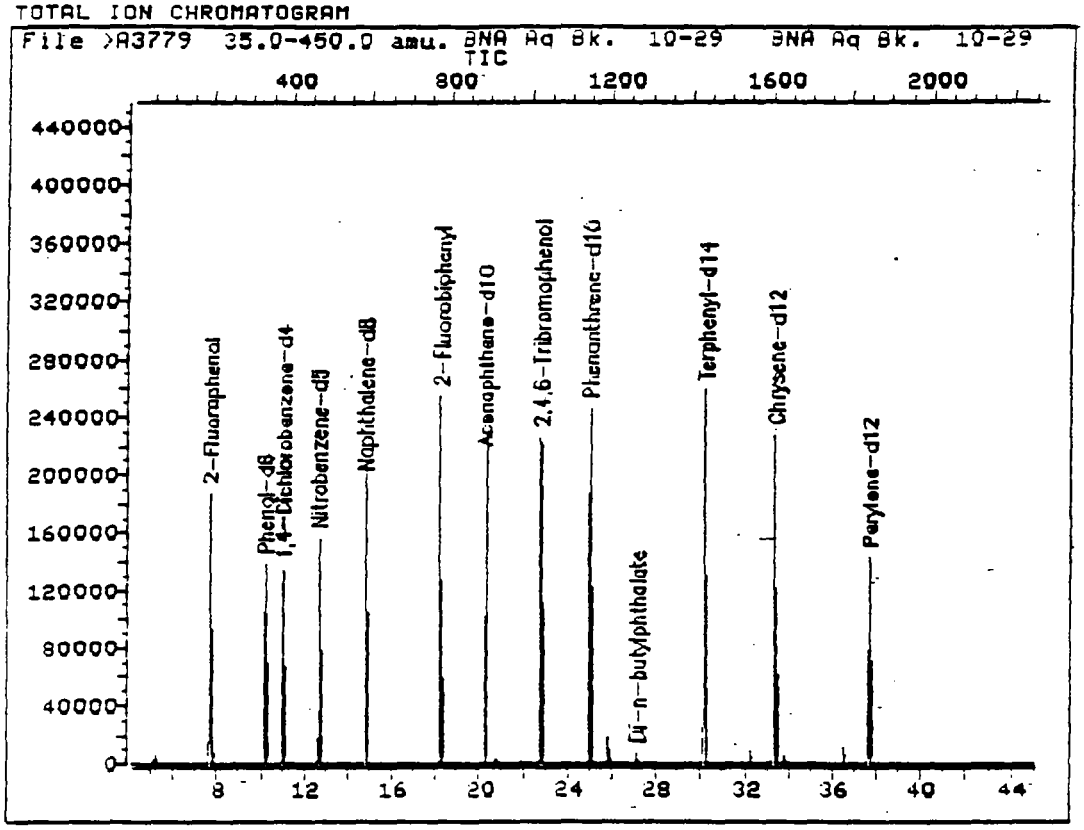
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	BNA Aq Bk. 10-29	DILUTION FACTOR	2.00
CLIENT ID		QA BATCH	
DATA FILE	>A3779	DATE ANALYZED	10/31/92

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-nitroso-dimethylamine	ND	20	Diethylphthalate	ND	20
bis(2-Chloroethyl)Ether	ND	20	4-Chlorophenyl-phenylether	ND	20
1,3-Dichlorobenzene	ND	20	Fluorene	ND	20
1,4-Dichlorobenzene	ND	20	N-Nitrosodiphenylamine	ND	20
Benzyl alcohol	ND	20	4-Bromophenyl-phenylether	ND	20
1,2-Dichlorobenzene	ND	20	Hexachlorobenzene	ND	20
bis(2-chloroisopropyl)ether	ND	20	Phenanthrene	ND	20
N-Nitroso-Di-n-propylamine	ND	20	Anthracene	ND	20
Hexachloroethane	ND	20	Di-n-butylphthalate	2 JB	20
Nitrobenzene	ND	20	Fluoranthene	ND	20
Isophorone	ND	20	Benzidine	ND	20
Benzoic Acid	ND	100	Pyrene	ND	20
bis(2-Chloroethoxy)methane	ND	20	Butylbenzylphthalate	ND	20
1,2,4-Trichlorobenzene	ND	20	3,3'-Dichlorobenzidine	ND	20
Naphthalene	ND	20	Benzo(a)anthracene	ND	20
Hexachlorobutadiene	ND	20	bis(2-Ethylhexyl)phthalate	ND	20
2-Methylnaphthalene	ND	20	Chrysene	ND	20
Hexachlorocyclopentadiene	ND	20	Di-n-octylphthalate	ND	20
2-Chloronaphthalene	ND	20	Benzo(b)fluoranthene	ND	20
Dimethylphthalate	ND	20	Benzo(k)fluoranthene	ND	20
Acenaphthylene	ND	20	Benzo(a)pyrene	ND	20
Acenaphthene	ND	20	Indeno(1,2,3-cd)pyrene	ND	20
Dibenzofuran	ND	20	Dibenz(a,h)anthracene	ND	20
2,6-Dinitrotoluene	ND	20	Benzo(g,h,i)perylene	ND	20
2,4-Dinitrotoluene	ND	20	1,2-Diphenylhydrazine	ND	20

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM

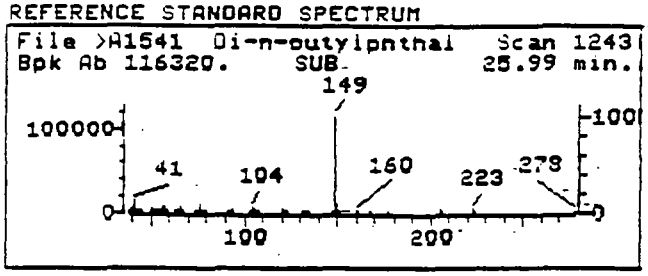


Data File: >A3779::03 Quant Output File: ^A3779::08
Name: BNA Aq Bk. 10-29
Misc: BNA Aq Bk. 10-29 BTL# 1

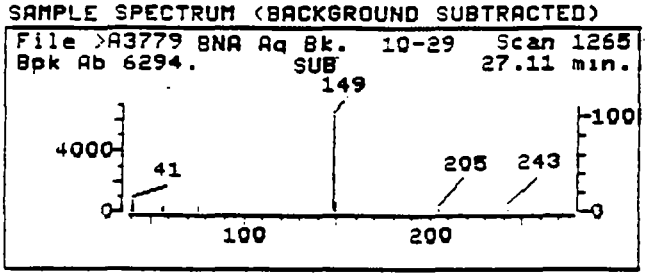
Id File: IDBNA::04
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 921024 20:25

Operator ID: MARK
Quant Time: 921031 18:26
Injected at: 921031 17:40

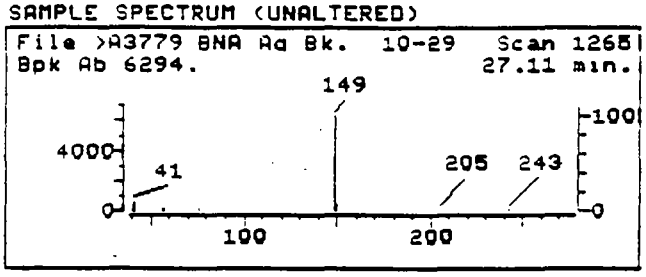
REFERENCE STANDARD SPECTRUM

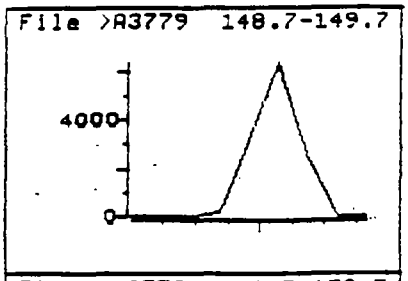


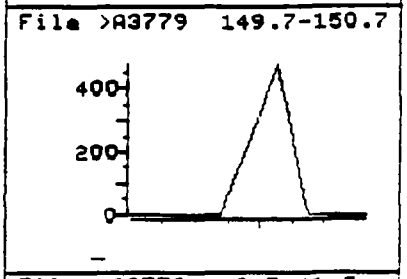
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

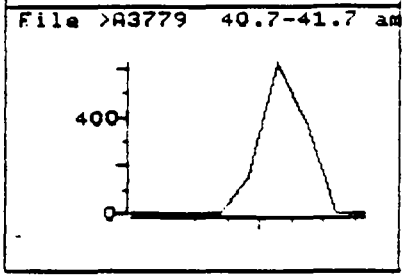


SAMPLE SPECTRUM (UNALTERED)









Data File: >A3779::D3 Quant Output File: ^A3779::DB
Name: BNA Aq Bk. 10-29
Misc: BNA Aq Bk. 10-29 BTL# 1
Quant Time: 921031 18:26 Quant ID File: IDBNA::D4
Injected at: 921031 17:40 Last Calibration: 921024 20:25

Compound No: 64
Compound Name: Di-n-butylphthalate
Scan Number: 1265
Retention Time: 27.11 min.
Quant Ion: 149.0
Area: 13040
Concentration: 1.03 ng/uL
q-value: 96

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE:

BNA-AQ.BL

Lab Name: Environmental Profile Lab   NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: BNA-AQ.BLK

Sample wt/vol: 500 (g/mL) mL

Lab File ID: >A3761

Level: (low/med) LOW

Date Received: NA

Date Extracted: 10-28-92

Extraction: (Sepf/Cont/Sonc) Sep. Funnel

Date Analyzed: 10/30/92

GPC Cleanup: (Y/N) N

Dilution Factor: 2

CONCENTRATION UNITS: ug/L

Number of TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I SV-TIC   1/87 Rev

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE ID: BNA-Aq-Bk

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Sample wt/vol: 500 (g/mL) mL

Level: (low/med) LOW

Extraction: (Sepf/Cont/Sonc) Sep. Funnel

GPC Cleanup: (Y/N) N

Lab Sample ID: BNA-Aq-Bk

Lab File ID: >A3779

Date Received: NA

Date Extracted: 10-29-92

Date Analyzed: 10/31/92

Dilution Factor: 2

Number of TICs found: 0

CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I SV-TIC 1/87 Re

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2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	BNA AQ BLK	45	42 *	36	27	32	50		1
02	9173.11 .5	55	51	41					0
03	9173.12 .5	49	45	37					0
04	9173.13 .5	49	47	37					0
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	QC LIMITS
S1 (NBZ) = Nitrobenzene-d5	(35-114)
S2 (FBP) = 2-Fluorobiphenyl	(43-116)
S3 (TPH) = Terphenyl-d14	(33-141)
S4 (PHL) = Phenol-d5	(10-94)
S5 (2FP) = 2-Fluorophenol	(21-100)
S6 (TBP) = 2,4,6-Tribromophenol	(10-123)

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

83

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: Environmental Profile Lab. Contract: Serv-Air

Lab Code: 15526

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	BNA Aq Bk.	46	44	36	25	31	54		0
02	9173.14 .5	70	68	58					0
03	9173.20 .5	47	48	34					0
04	9173.21 .5	66	68	56					0
05	9173.22 .5	44	43 *	36					1
06	9173.23 .5	74	74	64					0
07	9173.26 .5	52	58	52					0
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		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(35-114)
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)
S3 (TPH)	= Terphenyl-d14	(33-141)
S4 (PHL)	= Phenol-d5	(10-94)
S5 (2FP)	= 2-Fluorophenol	(21-100)
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)

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

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1/87 Rev.

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID (Standard): >A3755 Date Analyzed: 10/30/92

Instrument ID: GC/MSD 5970 #2 Time Analyzed: 11:07

		IS1(DCB) AREA	#	RT	IS2(NPT) AREA	#	RT	IS3(ANT) AREA	#	RT
	12 HOUR STD	59971.		11.03	305928.		14.77	157762.		20.26
	UPPER LIMIT	119942.			611856.			315524.		
	LOWER LIMIT	29986.			152964.			78881.		
	EPA SAMPLE NO.									
01	BNA AQ BLK	71007.		11.04	333790.		14.76	199074.		20.26
02	9173.11 .5	70161.		11.02	324624.		14.76	190355.		20.24
03	9173.12 .5	66755.		11.02	305846.		14.74	185122.		20.24
04	9173.13 .5	67687.		11.03	305807.		14.75	187697.		20.25
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22										

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID (Standard): >A3755 Date Analyzed: 10/30/92

Instrument ID: GC/MSD 5970 #2 Time Analyzed: 11:07

		IS4(PHN) AREA	#	RT	IS5(CRY) AREA	#	RT	IS6(PRY) AREA	#	RT
	12 HOUR STD	333697.		24.96	236793.		33.41	257189.		37.71
	UPPER LIMIT	667394.			473586.			514378.		
	LOWER LIMIT	166848.			118397.			128595.		
	EPA SAMPLE NO.									
01	BNA AQ BLK	385258.		24.96	378515.		33.37	304233.		37.69
02	9173.11 .5	369614.		24.96	377383.		33.36	305959.		37.68
03	9173.12 .5	364407.		24.94	371861.		33.37	288743.		37.67
04	9173.13 .5	370600.		24.95	373460.		33.37	288924.		37.67
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID (Standard): >A3778 Date Analyzed: 10/31/92

Instrument ID: GC/MSD 5970 #2 Time Analyzed: 16:42

		IS1(DCB) AREA	#	RT	IS2(NPT) AREA	#	RT	IS3(ANT) AREA	#	RT
	12 HOUR STD	52076.		11.03	264537.		14.76	144726.		20.26
	UPPER LIMIT	104152.			529074.			289452.		
	LOWER LIMIT	26038.			132268.			72363.		
	EPA SAMPLE NO.									
01	BNA Aq Bk.	57718.		11.02	261375.		14.74	154091.		20.23
02	9173.14 .5	55317.		11.02	257372.		14.74	153076.		20.24
03	9173.20 .5	56953.		11.02	233814.		14.75	135738.		20.27
04	9173.21 .5	53833.		11.00	243706.		14.74	145611.		20.24
05	9173.22 .5	51170.		11.01	233863.		14.73	143519.		20.25
06	9173.23 .5	55086.		11.01	257163.		14.75	155240.		20.23
07	9173.26 .5	52397.		11.01	246663.		14.73	152164.		20.23
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21										
22										

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID (Standard): >A3778 Date Analyzed: 10/31/92

Instrument ID: GC/MSD 5970 #2 Time Analyzed: 16:42

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	300131.	24.96	210560.	33.40	267386.	37.71
	UPPER LIMIT	600262.		421120.		534772.	
	LOWER LIMIT	150065.		105280.		133693.	
	EPA SAMPLE NO.						
01	BNA Aq Bk.	300158.	24.95	298400.	33.37	225274.	37.67
02	9173.14 .5	293669.	24.95	307635.	33.37	219888.	37.67
03	9173.20 .5	247827.	24.99	275716.	33.36	200076.	37.66
04	9173.21 .5	285189.	24.94	299073.	33.36	220226.	37.66
05	9173.22 .5	275915.	24.94	285450.	33.36	202457.	37.66
06	9173.23 .5	302988.	24.95	309094.	33.37	220486.	37.67
07	9173.26 .5	293621.	24.95	302209.	33.37	215660.	37.67
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21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

Bldg 1076

ENVIRONMENTAL PROFILE LABORATORIES

ROUTE 37 BUSINESS PARK
SUITE 13
TOMS RIVER, NJ 08755
OFFICE: (908) 244-6278
FAX: (908) 244-6372

LABORATORY ANALYSIS REPORT

CLIENT: Serv-Air Inc.
Fort Monmouth, N.J.

SITE: UST Assessments
Fort Monmouth, N.J.

PROJECT: VOA+15
TIER II

Report Number: 9173.1 - .26
Date Received: October 26, 1992
Date Released: December 3, 1992
Data Released By:

Daniel K. Wright
Laboratory Director

TABLE OF CONTENTS

CLIENT: Serv-Air, Inc.
Fort Monmouth, N.J.

PROJECT: UST Assesments
Fort Monmouth, N.J.

MATRIX: Aqueous

SAMPLE LOCATION AND IDENTIFICATION

LAB ID NUMBER	Bldg #	MW #	DICAR #
9173.12	1076	1-2926940	C-90-2-9-1524
9173.13	1076	2-2926941	"
9173.14	1076	3-2926942	"
9173.25	Trip Blank		
9173.26	Field Blank		

Environmental Profile Laboratories
1565 Rt. 37-Unit 13
Toms River, NJ 08755
(908) 244-6278

Customer Purchase Order No.:

CHAIN OF CUSTODY RECORD

Sampled by: (Signature) [signature] Date/Time 10/26/92

Customer Name and Address:
Sea-Ate Inc.
Fort Monmouth NJ

Site Name and Address:
Ft. Monmouth NJ
UST Assessments

Telephone No: _____ Fax: _____

Analysis parameters (Be as specific as possible)

Lab Sample ID Number	Date/Time Sampled	Sample Matrix	Customer Sample Location/ID No.	Number of Containers	624+15	BIN +15	Pb							Remarks	Preservation Method
9173.1	10/26 1145	H_2O	699-1	3	✓		✓				DISPOSABLE 1 BEAKERS			HNO_3 FOR Pb	ICE
.2	1245		699-2	3	✓		✓								
.3	1040		699-5	3	✓		✓								
.4	1205		699-6	3	✓		✓								
.5	1225		699-8	3	✓		✓								
.6	1116		699-9	3	✓		✓								
.7	1230		699-11	3	✓		✓								
.8	1230		699-11 DUP	3	✓		✓								
.9	1155		699-12	3	✓		✓								
.10	1245		699-13	3	✓		✓								

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Method of Shipping:
[signature]	10/26/92 1200	[signature]	COV
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipped By:
Relinquished By: (Signature)	Date/Time	Received For EPL By: (Signature)	Date/Time
		[signature]	10/27/92

QA/QC Required:

✓ NJ Tier II
___ Results Only
___ Other _____

Turnaround Time: _____

Environmental Profile Laboratories
1565 Rt. 37-Unit 13
Toms River, NJ 08755
(908) 244-6278

Customer Purchase Order No.:

CHAIN OF CUSTODY RECORD

Sampled by: (Signature) [signature] Date/Time 10/26/92

Customer Name and Address:
Sru-Ake Inc
Fort Monmouth NJ

Site Name and Address:
FT. MONMOUTH
UST Assessments

Analysis parameters (Be as specific as possible)

Telephone No: _____ Fax: _____

Lab Sample ID Number	Date/Time Sampled	Sample Matrix	Customer Sample Location/ID No.	Number of Containers	624 +5	BN +5	Pb					Remarks	Preservation Method
9173.11	10/26 213	H2O	814-1	4	✓	✓	✓				DISPOSABLE 1L BOTTLES	HNO3 For Pb	ICB
.12	247		1076-1	4	✓	✓	✓						
.13	247		1076-2	4	✓	✓	✓						
.14	247		1076-3	4	✓	✓	✓						
.15	415		2567-1	3	✓		✓						
.16	415		2567-1 DUP	3	✓		✓						
.17	425		2567-2	3	✓		✓						
.18	425		2567-3	3	✓		✓						
.19	420		2567-4	2	✓		✓						
.20			T-65	4	✓	✓	✓						

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Method of Shipping:
[signature]	10/26/92 1700	[signature]	COV
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipped By:
Relinquished By: (Signature)	Date/Time	Received For EPL By: (Signature)	Date/Time

QA/QC Required:

✓ NJ Tier II
___ Results Only
___ Other _____

Turnaround Time: _____

Environmental Profile Laboratories
1565 Rt. 37 Unit 13
Toms River, NJ 08755
(908) 244-6278

Customer Purchase Order No.:

CHAIN OF CUSTODY RECORD

Sampled by: (Signature) [signature] Date/Time 10/26/92

Customer Name and Address:
Serv-Air Inc.
Fort Monmouth NJ

Site Name and Address:
FT. MONMOUTH
UST assessments

Analysis parameters (Be as specific as possible)

Telephone No: Fax:

Lab Sample ID Number	Date/Time Sampled	Sample Matrix	Customer Sample Location/ID No.	Number of Containers	624 TCL	BNTCL	Pb							Remarks	Preservation Method
9173.21	10/26 340	H_2O	3021-1	4	✓	✓	✓				DISPOSABLE BEAKERS	1 l		HNO_3 for Pb	ICE
.22	330		3021-2	4	✓	✓	✓								
.23	330		3021-3	4	✓	✓	✓								
.24	115		699-14	3	✓		✓								
.25			TRIP BLANK	1	✓										
.26			FIELD BLANK	4	✓	✓	✓								

Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Method of Shipping:
[signature]	10/26/92 2:00	[signature]	COV
Relinquished By: (Signature)	Date/Time	Received By: (Signature)	Shipped By:
Relinquished By: (Signature)	Date/Time	Received For EPL By: (Signature)	Date/Time

QA/QC Required:

✓ NJ Tier II
Results Only
Other

Turnaround Time:

LABORATORY CHRONICLE

SAMPLE NUMBER	9173.1	9173.2	9173.3	9173.4	9173.5	9173.6	9173.7
Received & Refrigerated Date	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92
Organics Extraction Date							
BN/ABN							
PCB's							
Analysis Date							
BN/ABN							
PCB's							
Volatiles	10-30-92	10-27-92	10-27-92	10-31-92	10-27-92	10-27-92	10-31-92
TPHC's							
Metals							
Total Solids							
Organic Supervisor Review & Approval							
Inorganic Supervisor Review & Approval							

9

LABORATORY CHRONICLE

SAMPLE NUMBER	9173.8	9173.9	9173.10	9173.11	9173.12	9173.13	9173.14
Received & Refrigerated Date	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92
Organics Extraction Date							
BN/ABN							
PCB's							
Analysis Date							
BN/ABN							
PCB's							
Volatiles	10-30-92	10-27-92	10-30-92	10-27-92	10-27-92	10-27-92	10-27-92
TPHC's							
Metals							
Total Solids							
Organic Supervisor Review & Approval							
Inorganic Supervisor Review & Approval							

LABORATORY CHRONICLE

SAMPLE NUMBER	9173.15	9173.16	9173.17	9173.18	9173.19	9173.20	9173.21
Received & Refrigerated Date	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92
Organics Extraction Date							
BN/ABN							
PCB's							
Analysis Date							
BN/ABN							
PCB's							
Volatiles	10-30-92	10-30-92	10-30-92	10-31-92	10-27-92	10-31-92	10-27-92
TPHC's							
Metals							
Total Solids							
Organic Supervisor Review & Approval							
Inorganic Supervisor Review & Approval							

LABORATORY CHRONICLE

SAMPLE NUMBER	9173.22	9173.23	9173.24	9173.25	9173.26		
Received & Refrigerated Date	10-26-92	10-26-92	10-26-92	10-26-92	10-26-92		
Organics Extraction Date							
BN/ABN							
PCB's							
Analysis Date							
BN/ABN							
PCB's							
Volatiles	10-30-92	10-27-92	10-30-92	10-27-92	10-27-92		
TPHC's							
Metals							
Total Solids							
Organic Supervisor Review & Approval							
Inorganic Supervisor Review & Approval							

METHOD SUMMARY

Volatiles

The volatile samples in this report have been analyzed using the method cited in the USEPA-CLP-IFB version 2/88. The CLP volatile method is based on USEPA Method 624 and SW-846.

The method is based on 5 milliliters of an aqueous, or 1 gram of a non-aqueous sample spiked with a known concentration of surrogate and internal standard. The samples and standards are then purged onto a trap using a Tekmar LSC 2 and desorbed onto a capillary column installed in a Hewlett Packard 5890 GC coupled via a jet separator to the HP 5970 MSD. The data was then collected and reduced via a HP 1000 RTE data system.

GC/MS

ORGANIC NON-CONFORMANCE SUMMARY

GC/MS TUNE FREQUENCY:- All samples, blanks, standards and matrix spikes were analyzed within the respective 12 hour tune periods.

INITIAL CALIBRATION REQUIREMENTS:
All CCC and SPCC values were within QC limits.

CONTINUING CALIBRATION REQUIREMENTS:
All CCC and SPCC values were within QC limits.

DETECTION LIMITS:- Detection limits and search results were modified by dilution or percent solid.*

*** All values reported on a DRY WEIGHT basis where applicable**

MATRIX SPIKE RECOVERY:- All recoveries were within limits.
1 out of 5 RPD values were not within limits.

INTERNAL STANDARD AREA:-

CLIENT ID #	NUMBER OF INTERNAL STANDARD AREA(S)
None	

SURROGATE RECOVERY:-

CLIENT ID #	SURROGATES OUTSIDE QC LIMITS
None	

ANALYSIS TIME:- All samples were extracted and analyzed within the prescribed holding times .

NOTE: Methylene Chloride, Freon and Acetone are used extensively in daily laboratory procedures.

DATA REPORTING QUALIFIERS

For reporting results to the EPA, the following "result qualifiers" are used:

VALUE - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, "10U". This is not necessarily the instrument detection limit. The figure represents the minimum detection limit attainable for this particular sample based on any concentration or dilution that may have been required.

J - Indicates an estimated value. This flag is used:

1) When estimating a concentration for tentatively identified compound (library search hits) where a 1:1 response is assumed.

2) When the mass spectral data indicated the identification criteria, however, the result was less than the specified detection limit but greater than zero. If the detection limit was 10 ug/L and a concentratin of 3 ug/L was calculated, report as "3J".

B - Indicates the analyte was found in the blank as well as the sample; report as "12B".

E - Indicates the analyte concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor.

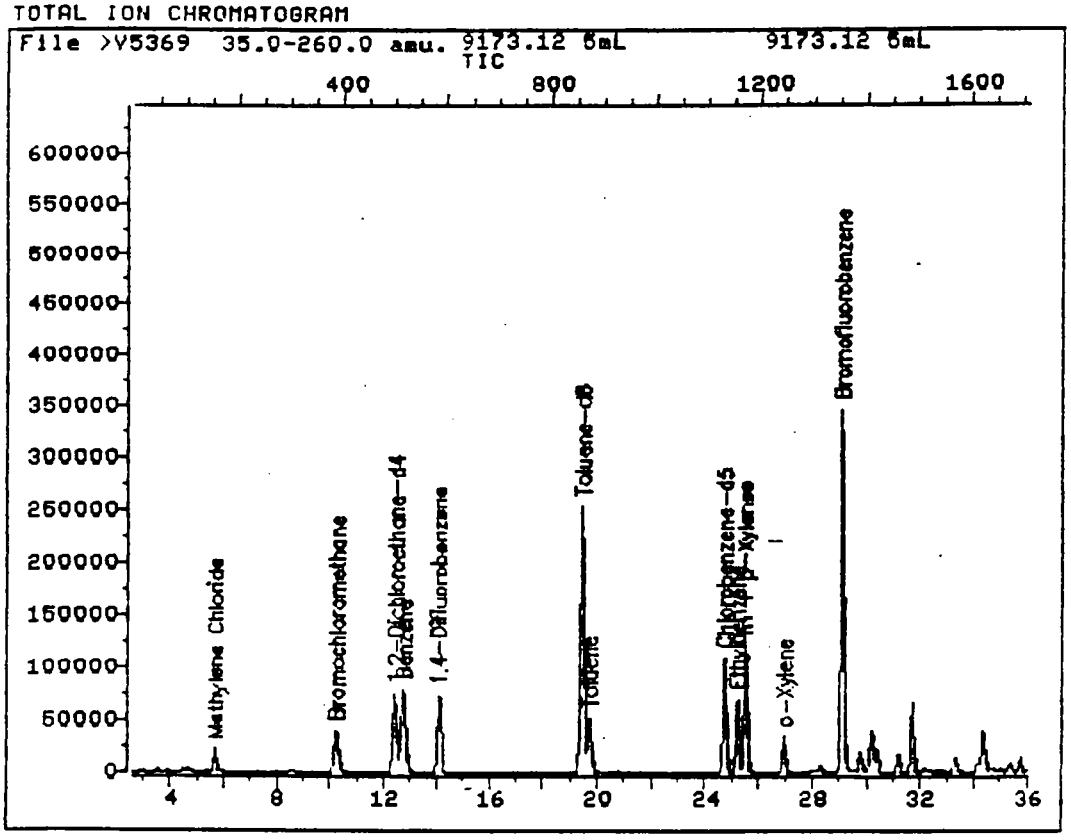
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.12 5mL	DILUTION FACTOR	1.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>U5369	DATE ANALYZED	10/28/92

Compound	ug/L	MDL	Compound	ug/L	MDL
Chloromethane	ND	10	Dibromochloromethane	ND	5
Bromomethane	ND	10	1,1,2-Trichloroethane	ND	5
Vinyl Chloride	ND	10	Benzene	39	5
Chloroethane	ND	10	trans-1,3-Dichloropropene	ND	5
Methylene Chloride	7 B	5	2-Chloroethylvinyl ether	ND	5
Acrolein	ND	50	Bromoform	ND	5
Acrylonitrile	ND	50	2-Hexanone	ND	5
Acetone	ND	5	4-Methyl-2-Pentanone	ND	5
Carbon Disulfide	ND	5	Tetrachloroethene	ND	5
1,1-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	ND	5	Toluene	13	5
trans-1,2-Dichloroethene	ND	5	Chlorobenzene	ND	5
Trichlorofluoromethane	ND	5	Ethylbenzene	13	5
Chloroform	ND	5	Styrene	ND	5
1,2-Dichloroethane	ND	5	o-Xylene	6	5
2-Butanone	ND	5	m + p-Xylenes	23	5
1,1,1-Trichloroethane	ND	5	1,3-Dichlorobenzene	ND	5
Carbon Tetrachloride	ND	5	1,2-Dichlorobenzene	ND	5
Bromodichloromethane	ND	5	1,4-Dichlorobenzene	ND	5
Vinyl Acetate	ND	5	tert-Butyl Alcohol	ND	50
1,2-Dichloropropane	ND	5	Methyl tert-Butyl Ether	ND	5
cis-1,3-Dichloropropene	ND	5	Diethyl ether	ND	50
Trichloroethene	ND	5			0

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates Compound not detected

TOTAL ION CHROMATOGRAM



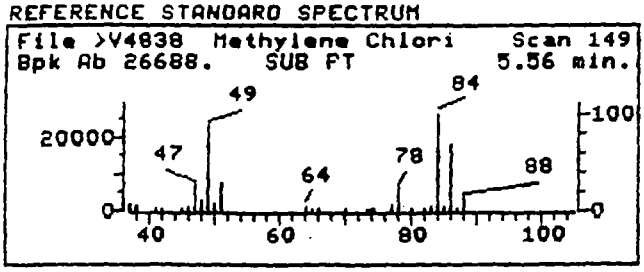
Data File: >V5369::D1
Name: 9173.12 5mL
Misc: 9173.12 5mL

Quant Output File: ^V5369::DB

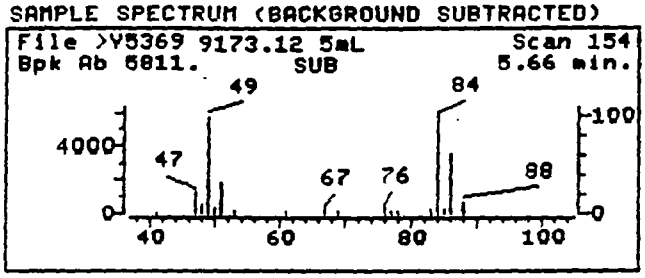
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921028 04:27
Injected at: 921028 03:50

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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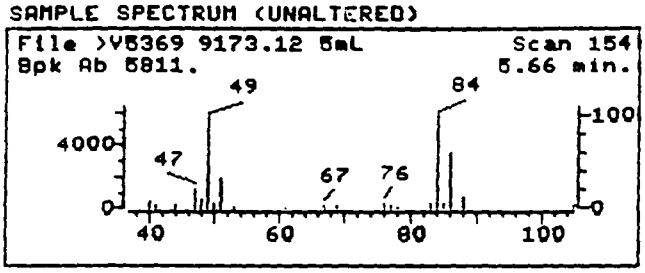
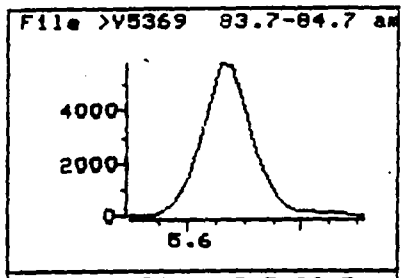
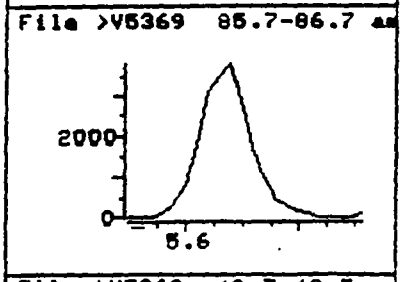
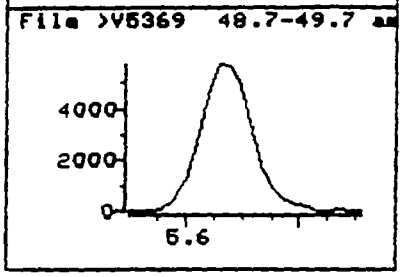




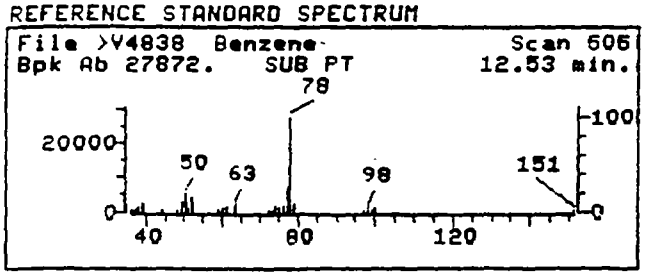




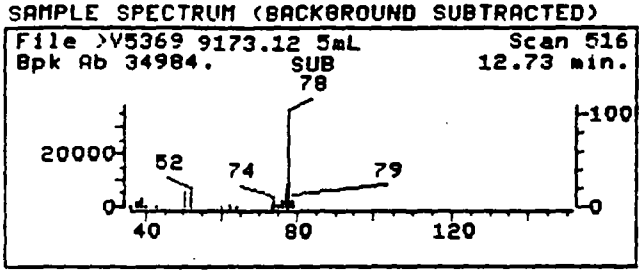
Data File: >V5369::D1 Quant Output File: ^V5369::DB
Name: 9173.12 5mL
Misc: 9173.12 5mL
Quant Time: 921028 04:27 Quant ID File: IDV0A::D2
Injected at: 921028 03:50 Last Calibration: 921027 22:05

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 154
Retention Time: 5.66 min.
Quant Ion: 84.0
Area: 36353
Concentration: 6.53 ppb
q-value: 89

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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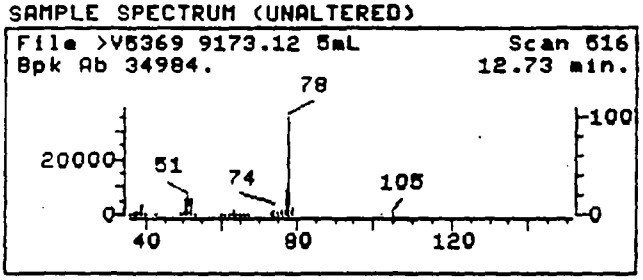
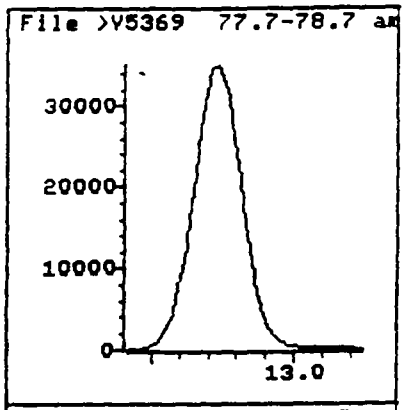
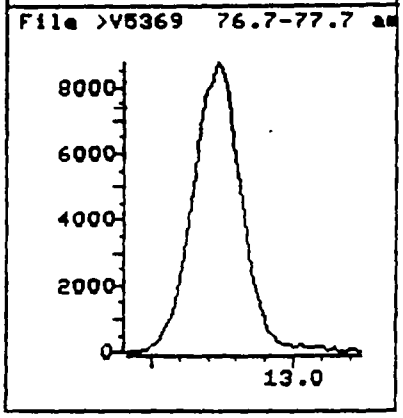






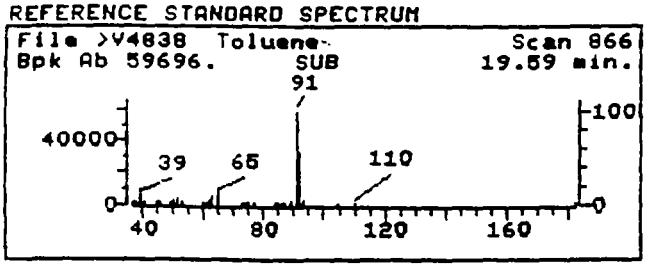
Data File: >V5369::D1
Name: 9173.12 5mL
Misc: 9173.12 5mL
Quant Time: 921028 04:27
Injected at: 921028 03:50

Quant Output File: ^V5369::DB

Quant ID File: IDV0A::D2
Last Calibration: 921027 22:05

Compound No: 31
Compound Name: Benzene
Scan Number: 516
Retention Time: 12.73 min.
Quant Ion: 78.0
Area: 412489
Concentration: 38.54 ppb
q-value: 96

REFERENCE STANDARD SPECTRUM



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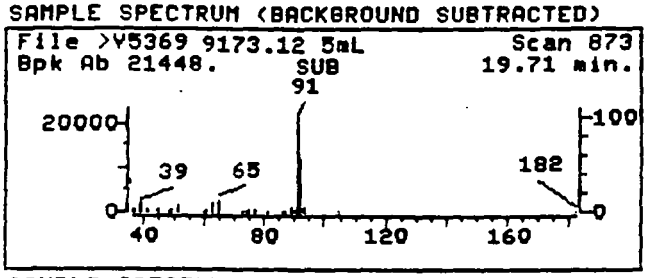

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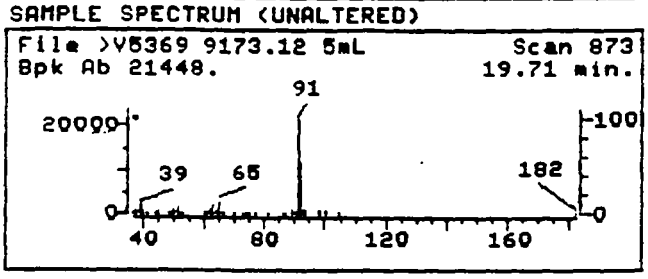
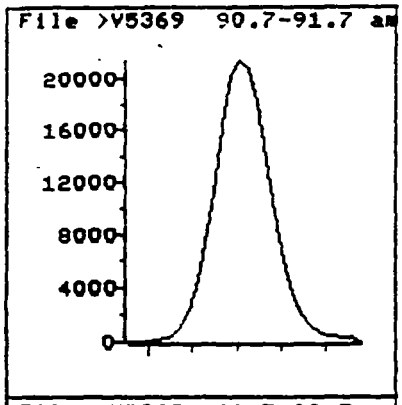
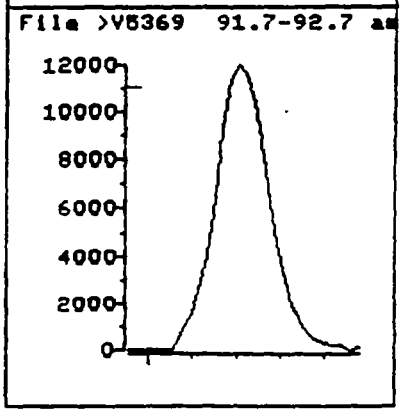






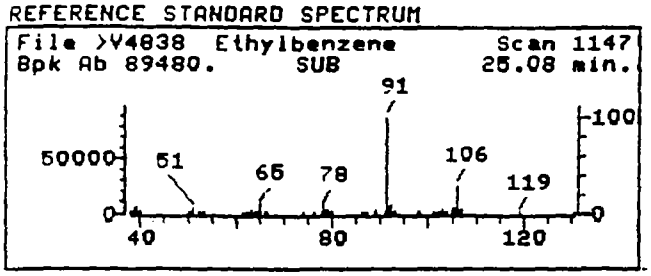
Data File: >V5369::D1
Name: 9173.12 5mL
Misc: 9173.12 5mL
Quant Time: 921028 04:27
Injected at: 921028 03:50

Quant Output File: ^V5369::DB

Quant ID File: IDV0A::D2
Last Calibration: 921027 22:05

Compound No: 40
Compound Name: Toluene
Scan Number: 873
Retention Time: 19.71 min.
Quant Ion: 91.0
Area: 192993
Concentration: 13.25 ppb
q-value: 93

REFERENCE STANDARD SPECTRUM



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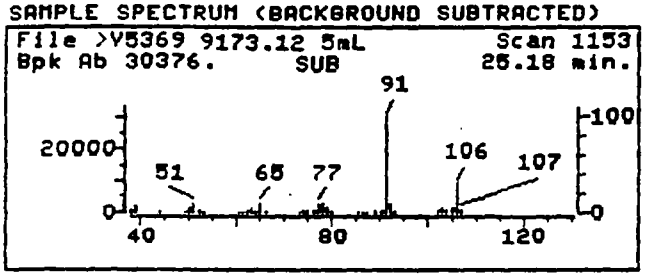

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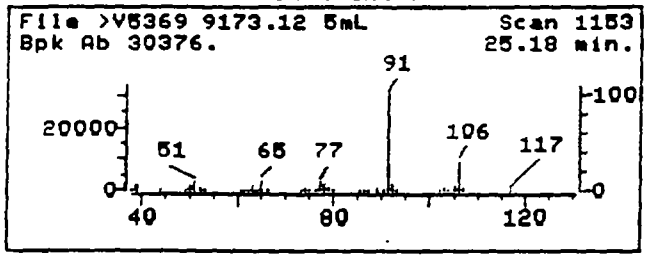
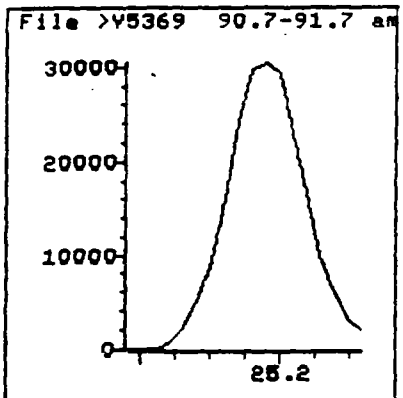
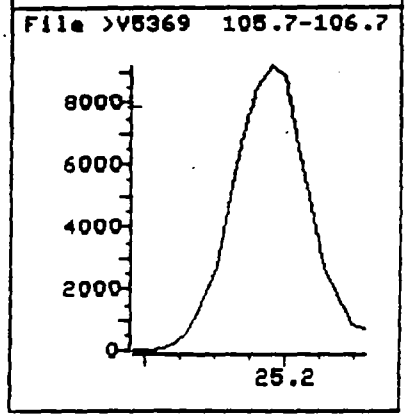






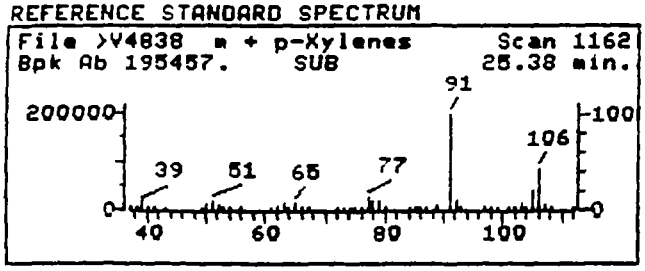
Data File: >V5369::D1
Name: 9173.12 5mL
Misc: 9173.12 5mL
Quant Time: 921028 04:27
Injected at: 921028 03:50

Quant Output File: ^V5369::DB

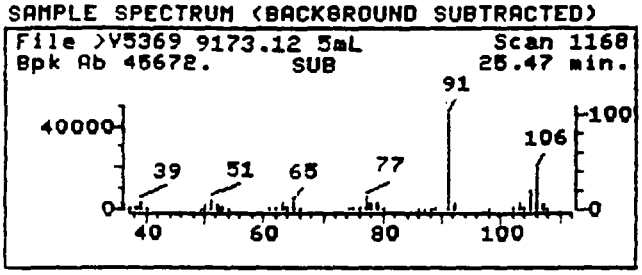
Quant ID File: IDVOA::D2
Last Calibration: 921027 22:05

Compound No: 42
Compound Name: Ethylbenzene
Scan Number: 1153
Retention Time: 25.18 min.
Quant Ion: 91.0
Area: 243379
Concentration: 13.47 ppb
q-value: 97

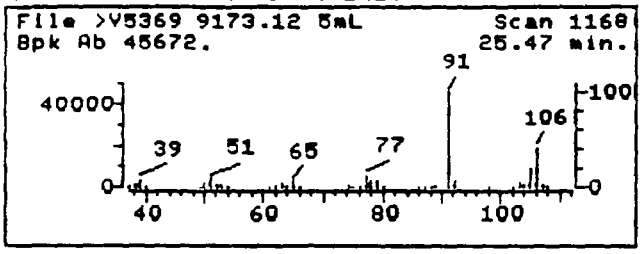
REFERENCE STANDARD SPECTRUM

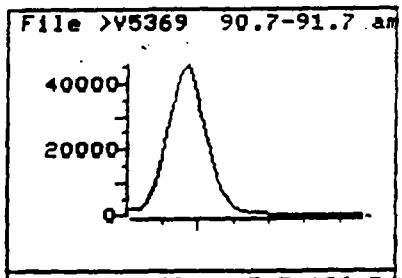


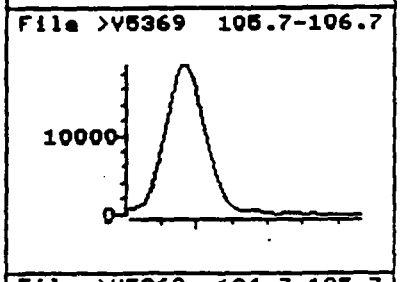
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

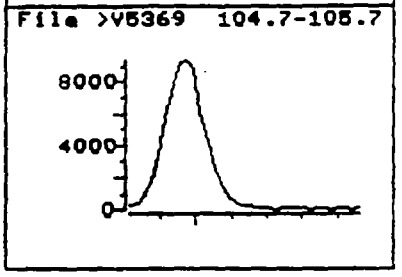


SAMPLE SPECTRUM (UNALTERED)









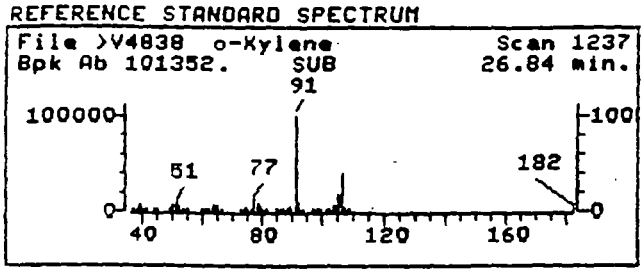
Data File: >V5369::D1
Name: 9173.12 5mL
Misc: 9173.12 5mL
Quant Time: 921028 04:27
Injected at: 921028 03:50

Quant Output File: ^V5369::DB

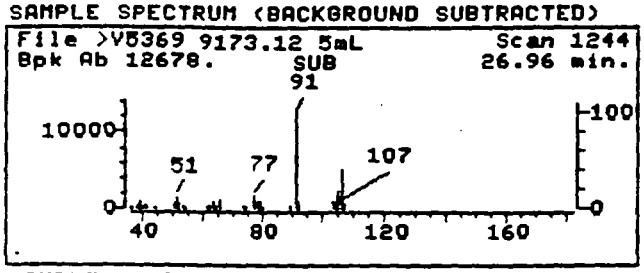
Quant ID File: IDV0A::D2
Last Calibration: 921027 22:05

Compound No: 44
Compound Name: m + p-Xylenes
Scan Number: 1168
Retention Time: 25.47 min.
Quant Ion: 91.0
Area: 354045
Concentration: 23.21 ppb
q-value: 96

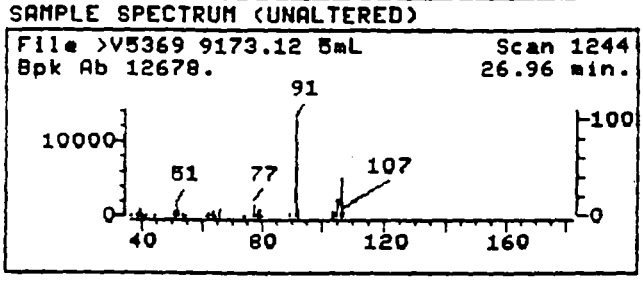
REFERENCE STANDARD SPECTRUM

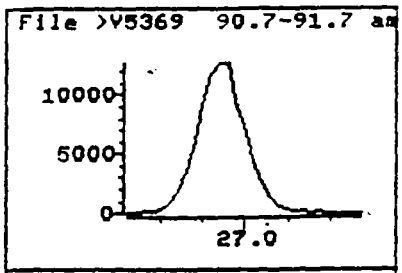


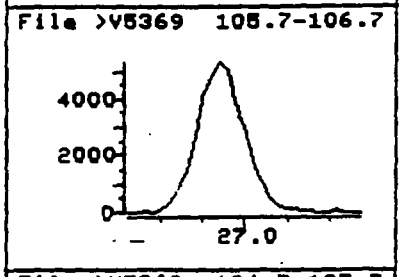
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

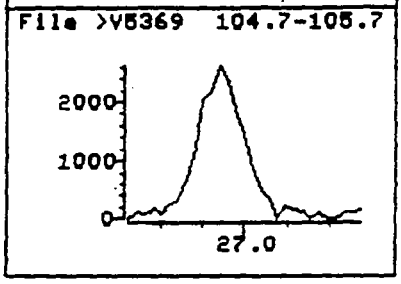


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5369::D1
Name: 9173.12 5mL
Misc: 9173.12 5mL
Quant Time: 921028 04:27
Injected at: 921028 03:50

Quant Output File: ^V5369::DB

Quant ID File: IDVOA::D2
Last Calibration: 921027 22:05

Compound No: 45
Compound Name: o-Xylene
Scan Number: 1244
Retention Time: 26.96 min.
Quant Ion: 91.0
Area: 102310
Concentration: 6.00 ppb
q-value: 95

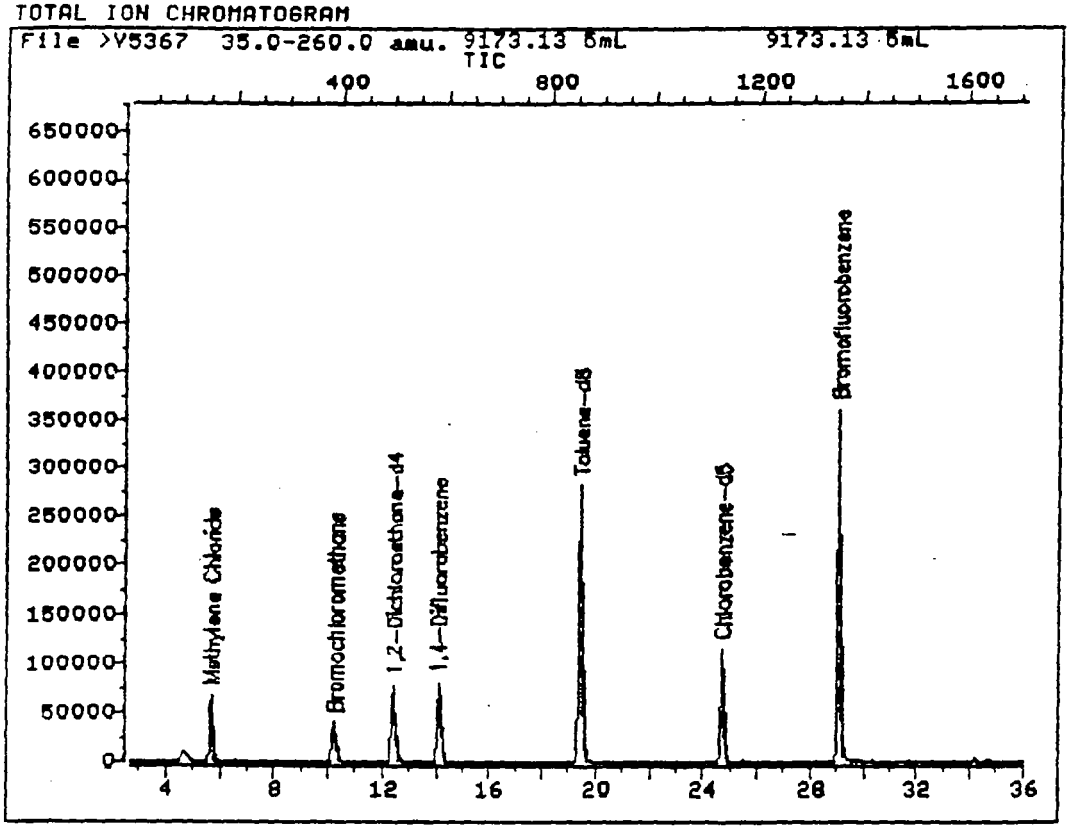
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.13 5ml	DILUTION FACTOR	1.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>V5367	DATE ANALYZED	10/28/92

Compound	ug/L		MDL	Compound	ug/L	MDL
Chloromethane	ND		10	Dibromochloromethane	ND	5
Bromomethane	ND		10	1,1,2-Trichloroethane	ND	5
Vinyl Chloride	ND		10	Benzene	ND	5
Chloroethane	ND		10	trans-1,3-Dichloropropene	ND	5
Methylene Chloride	20	B	5	2-Chloroethylvinyl ether	ND	5
Acrolein	ND		50	Bromoform	ND	5
Acrylonitrile	ND		50	2-Hexanone	ND	5
Acetone	ND		5	4-Methyl-2-Pentanone	ND	5
Carbon Disulfide	ND		5	Tetrachloroethene	ND	5
1,1-Dichloroethene	ND		5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	ND		5	Toluene	ND	5
trans-1,2-Dichloroethene	ND		5	Chlorobenzene	ND	5
Trichlorofluoromethane	ND		5	Ethylbenzene	ND	5
Chloroform	ND		5	Styrene	ND	5
1,2-Dichloroethane	ND		5	o-Xylene	ND	5
2-Butanone	ND		5	m + p-Xylenes	ND	5
1,1,1-Trichloroethane	ND		5	1,3-Dichlorobenzene	ND	5
Carbon Tetrachloride	ND		5	1,2-Dichlorobenzene	ND	5
Bromodichloromethane	ND		5	1,4-Dichlorobenzene	ND	5
Vinyl Acetate	ND		5	tert-Butyl Alcohol	ND	50
1,2-Dichloropropane	ND		5	Methyl tert-Butyl Ether	ND	5
cis-1,3-Dichloropropene	ND		5	Diethyl ether	ND	50
Trichloroethene	ND		5			0

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates Compound not detected

TOTAL ION CHROMATOGRAM



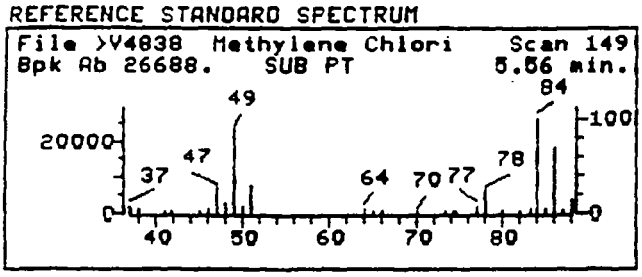
Data File: >V5367::D1
Name: 9173.13 5mL
Misc: 9173.13 5mL

Quant Output File: ^V5367::DB

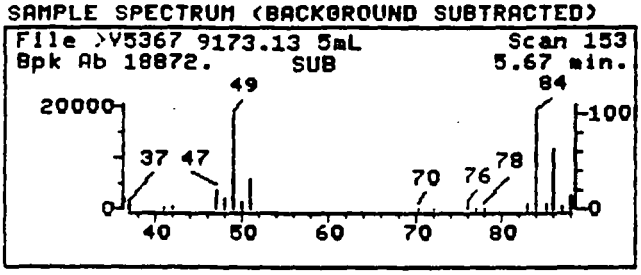
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921028 03:03
Injected at: 921028 02:26

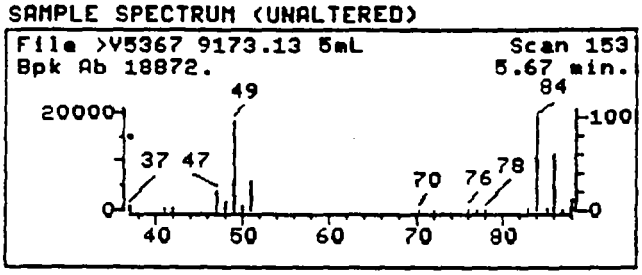
REFERENCE STANDARD SPECTRUM

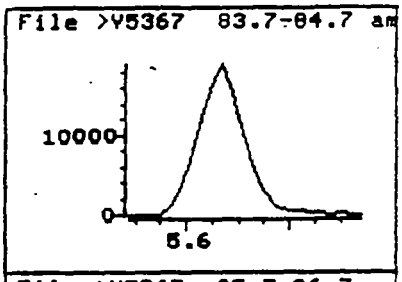


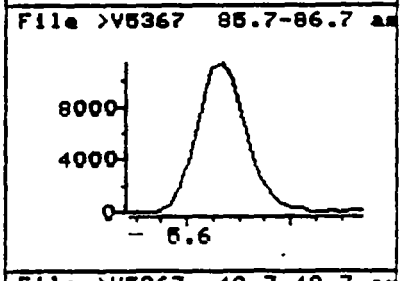
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

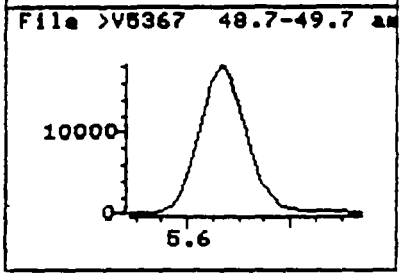


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5367::D1 Quant Output File: ^V5367::DB
Name: 9173.13 5mL
Misc: 9173.13 5mL
Quant Time: 921028 03:03 Quant ID File: IDV0A::D2
Injected at: 921028 02:26 Last Calibration: 921027 22:05

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 153
Retention Time: 5.67 min.
Quant Ion: 84.0
Area: 117553
Concentration: 20.02 ppb
q-value: 90

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

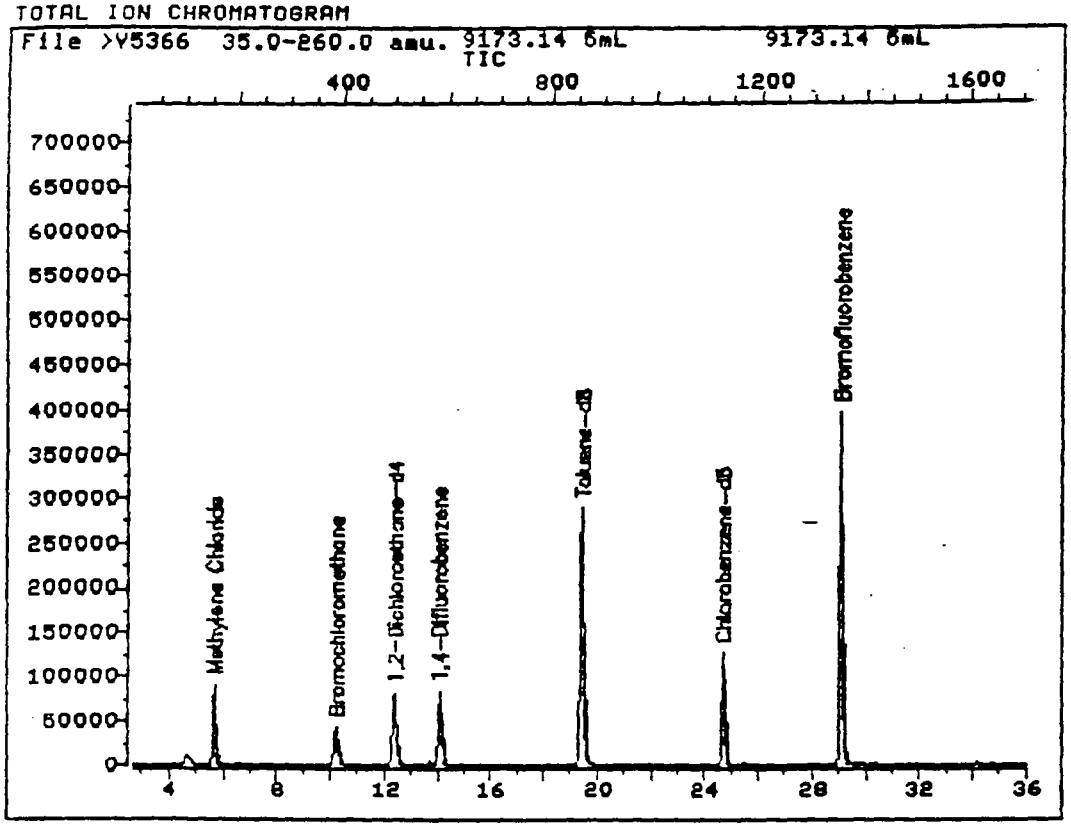
PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.14 5mL	DILUTION FACTOR	1.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>V5366	DATE ANALYZED	10/28/92

Compound	ug/L		MDL
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Methylene Chloride	26	B	5
Acrolein	ND		50
Acrylonitrile	ND		50
Acetone	ND		5
Carbon Disulfide	ND		5
1,1-Dichloroethene	ND		5
1,1-Dichloroethane	ND		5
trans-1,2-Dichloroethene	ND		5
Trichlorofluoromethane	ND		5
Chloroform	ND		5
1,2-Dichloroethane	ND		5
2-Butanone	ND		5
1,1,1-Trichloroethane	ND		5
Carbon Tetrachloride	ND		5
Bromodichloromethane	ND		5
Vinyl Acetate	ND		5
1,2-Dichloropropane	ND		5
cis-1,3-Dichloropropene	ND		5
Trichloroethene	ND		5

Compound	ug/L	MDL
Dibromochloromethane	ND	5
1,1,2-Trichloroethane	ND	5
Benzene	ND	5
trans-1,3-Dichloropropene	ND	5
2-Chloroethylvinyl ether	ND	5
Bromoform	ND	5
2-Hexanone	ND	5
4-Methyl-2-Pentanone	ND	5
Tetrachloroethene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Toluene	ND	5
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Styrene	ND	5
o-Xylene	ND	5
m + p-Xylenes	ND	5
1,3-Dichlorobenzene	ND	5
1,2-Dichlorobenzene	ND	5
1,4-Dichlorobenzene	ND	5
tert-Butyl Alcohol	ND	50
Methyl tert-Butyl Ether	ND	5
Diethyl ether	ND	50
		0

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates Compound not detected

TOTAL ION CHROMATOGRAM

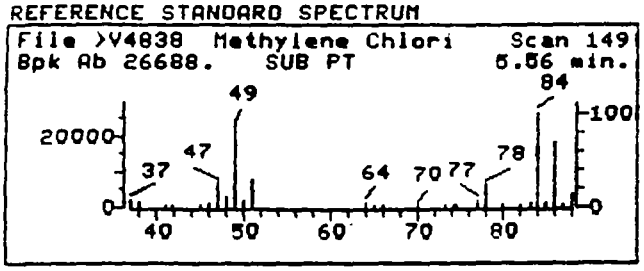


Data File: >V5366::D1 Quant Output File: ^V5366::DB
Name: 9173.14 5mL
Misc: 9173.14 5mL

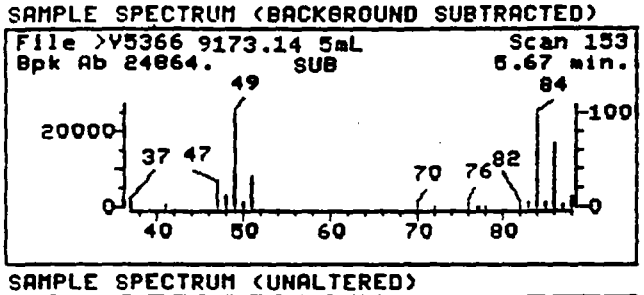
Id File: IDV0A::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921028 02:20
Injected at: 921028 01:43

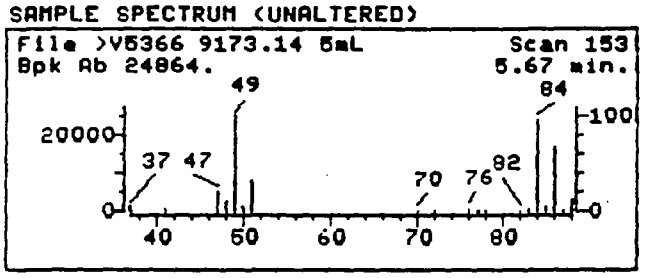
REFERENCE STANDARD SPECTRUM

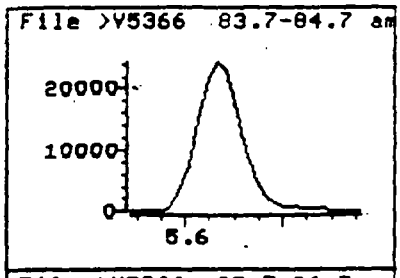


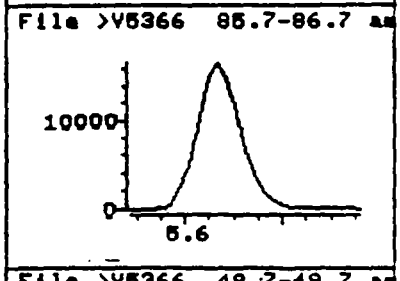
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

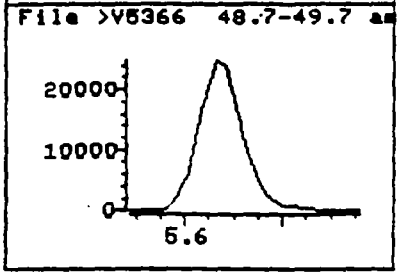


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5366::D1 Quant Output File: ^V5366::DB
Name: 9173.14 5mL
Misc: 9173.14 5mL
Quant Time: 921028 02:20 Quant ID File: IDVOA::D2
Injected at: 921028 01:43 Last Calibration: 921027 22:05

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 153
Retention Time: 5.67 min.
Quant Ion: 84.0
Area: 155686
Concentration: 25.76 ppb
q-value: 88

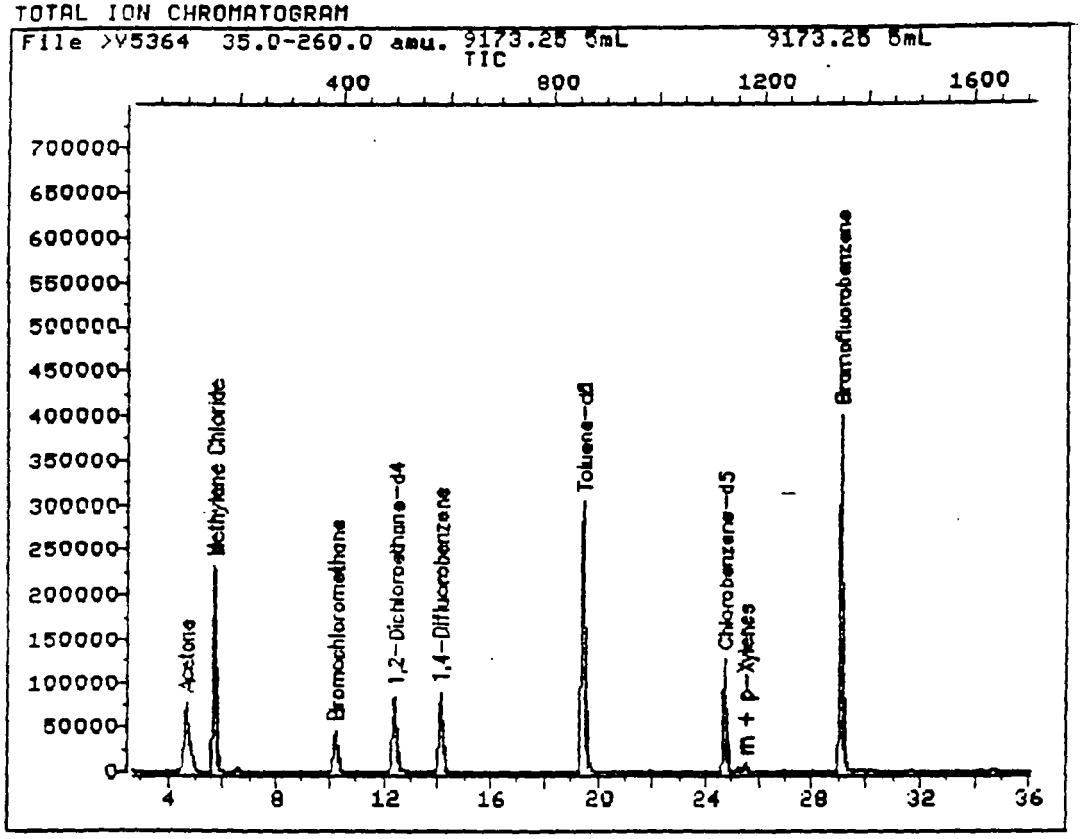
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.25 5mL	DILUTION FACTOR	1.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>V5364	DATE ANALYZED	10/28/92

Compound	ug/L		MDL	Compound	ug/L		MDL
Chloromethane	ND		10	Dibromochloromethane	ND		5
Bromomethane	ND		10	1,1,2-Trichloroethane	ND		5
Vinyl Chloride	ND		10	Benzene	ND		5
Chloroethane	ND		10	trans-1,3-Dichloropropene	ND		5
Methylene Chloride	66	B	5	2-Chloroethylvinyl ether	ND		5
Acrolein	ND		50	Bromoform	ND		5
Acrylonitrile	ND		50	2-Hexanone	ND		5
Acetone	84		5	4-Methyl-2-Pentanone	ND		5
Carbon Disulfide	ND		5	Tetrachloroethene	ND		5
1,1-Dichloroethene	ND		5	1,1,2,2-Tetrachloroethane	ND		5
1,1-Dichloroethane	ND		5	Toluene	ND		5
trans-1,2-Dichloroethene	ND		5	Chlorobenzene	ND		5
Trichlorofluoromethane	ND		5	Ethylbenzene	ND		5
Chloroform	ND		5	Styrene	ND		5
1,2-Dichloroethane	ND		5	o-Xylene	ND		5
2-Butanone	ND		5	m + p-Xylenes	1	J	5
1,1,1-Trichloroethane	ND		5	1,3-Dichlorobenzene	ND		5
Carbon Tetrachloride	ND		5	1,2-Dichlorobenzene	ND		5
Bromodichloromethane	ND		5	1,4-Dichlorobenzene	ND		5
Vinyl Acetate	ND		5	tert-Butyl Alcohol	ND		50
1,2-Dichloropropane	ND		5	Methyl tert-Butyl Ether	ND		5
cis-1,3-Dichloropropene	ND		5	Diethyl ether	ND		50
Trichloroethene	ND		5				0

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates Compound not detected

TOTAL ION CHROMATOGRAM



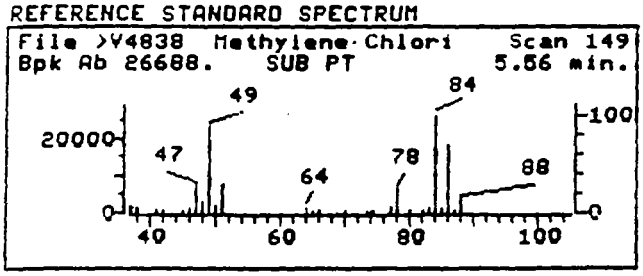
Data File: >V5364::D1
Name: 9173.25 5mL
Misc: 9173.25 5mL

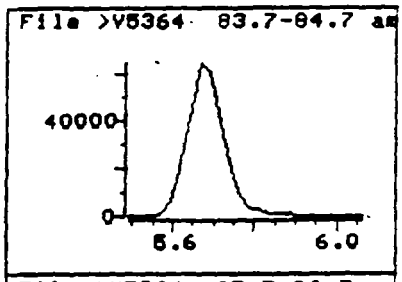
Quant Output File: ^V5364::DB

Id File: IDV0A::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

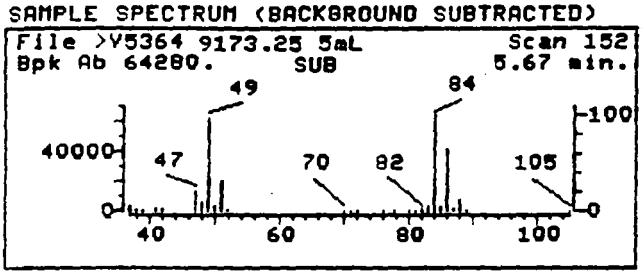
Operator ID: MARK
Quant Time: 921028 00:55
Injected at: 921028 00:19

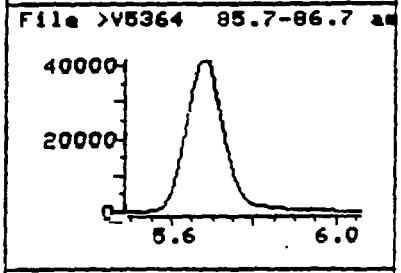
REFERENCE STANDARD SPECTRUM



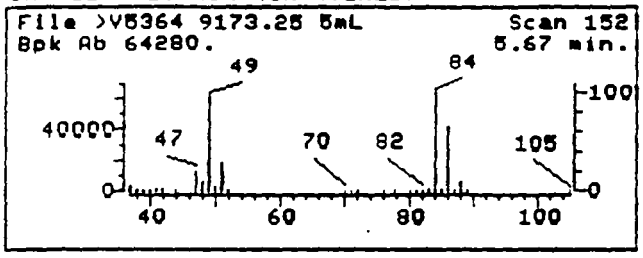


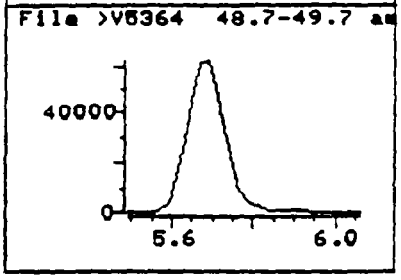
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





SAMPLE SPECTRUM (UNALTERED)

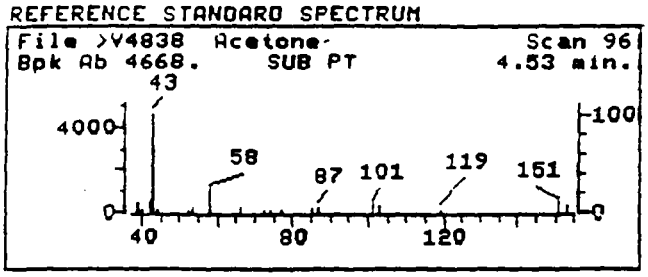




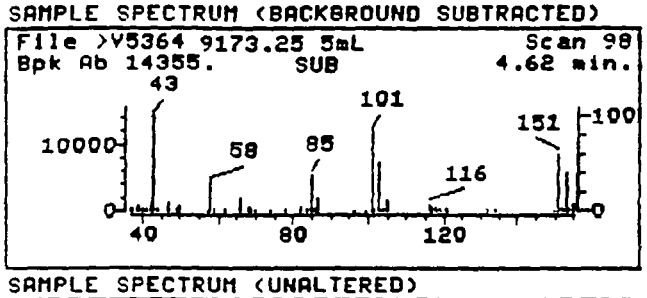
Data File: >V5364::D1 Quant Output File: ^V5364::DB
Name: 9173.25 5mL
Misc: 9173.25 5mL
Quant Time: 921028 00:55 Quant ID File: IDV0A::D2
Injected at: 921028 00:19 Last Calibration: 921027 22:05

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 152
Retention Time: 5.67 min.
Quant Ion: 84.0
Area: 412043
Concentration: 66.23 ppb
q-value: 93

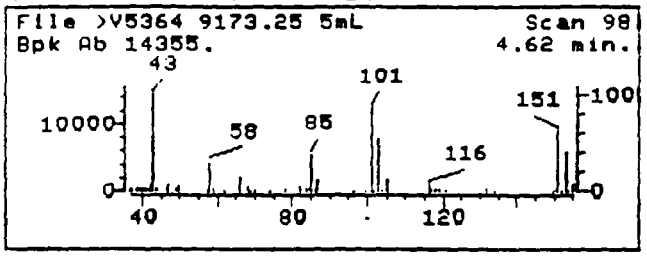
REFERENCE STANDARD SPECTRUM

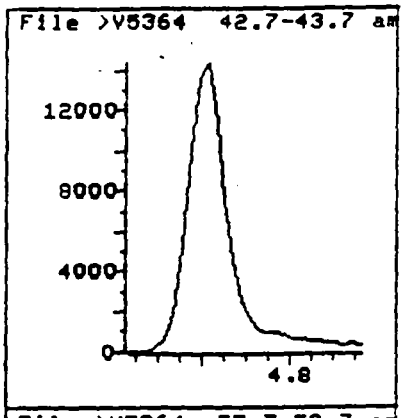


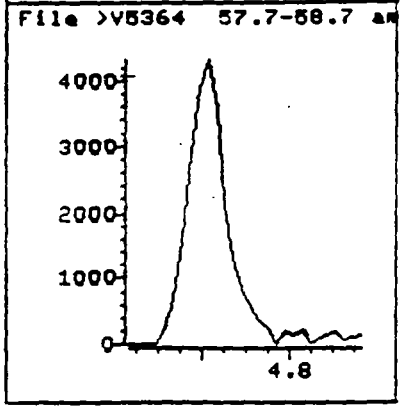
SAMPLE SPECTRUM (BACKBROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







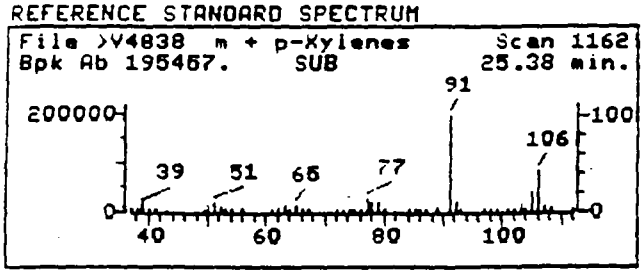
Data File: >V5364::D1
Name: 9173.25 5mL
Misc: 9173.25 5mL
Quant Time: 921028 00:55
Injected at: 921028 00:19

Quant Output File: ^V5364::D8

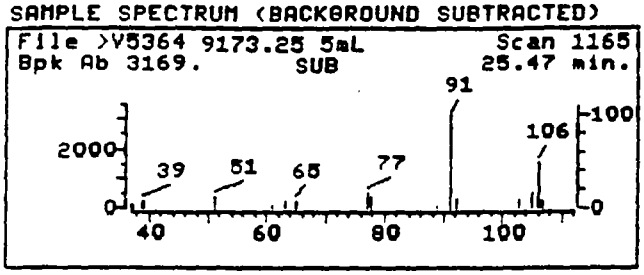
Quant ID File: IDVOA::02
Last Calibration: 921027 22:05

Compound No: 10
Compound Name: Acetone
Scan Number: 98
Retention Time: 4.62 min.
Quant Ion: 43.0
Area: 94984
Concentration: 83.95 ppb
q-value: 96

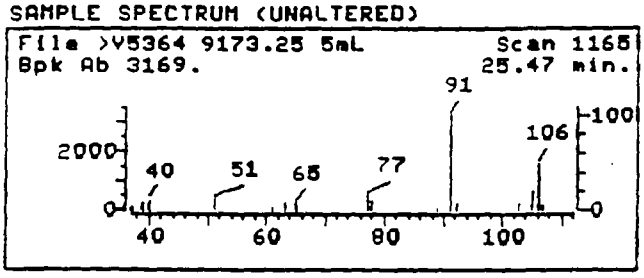
REFERENCE STANDARD SPECTRUM

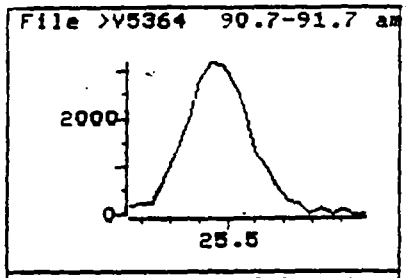


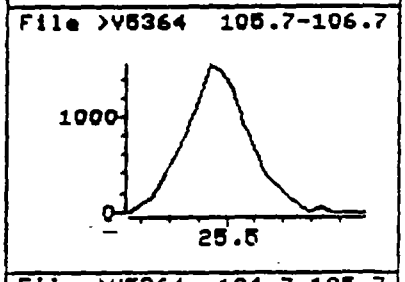
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

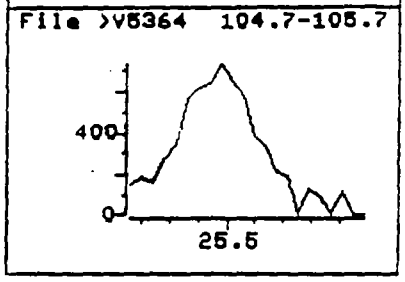


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5364::D1
Name: 9173.25 5mL
Misc: 9173.25 5mL
Quant Time: 921028 00:55
Injected at: 921028 00:19

Quant Output File: ^V5364::DB

Quant ID File: IDV0A::D2
Last Calibration: 921027 22:05

Compound No: 44
Compound Name: m + p-Xylenes
Scan Number: 1165
Retention Time: 25.47 min.
Quant Ion: 91.0
Area: 26208
Concentration: 1.45 ppb
q-value: 95

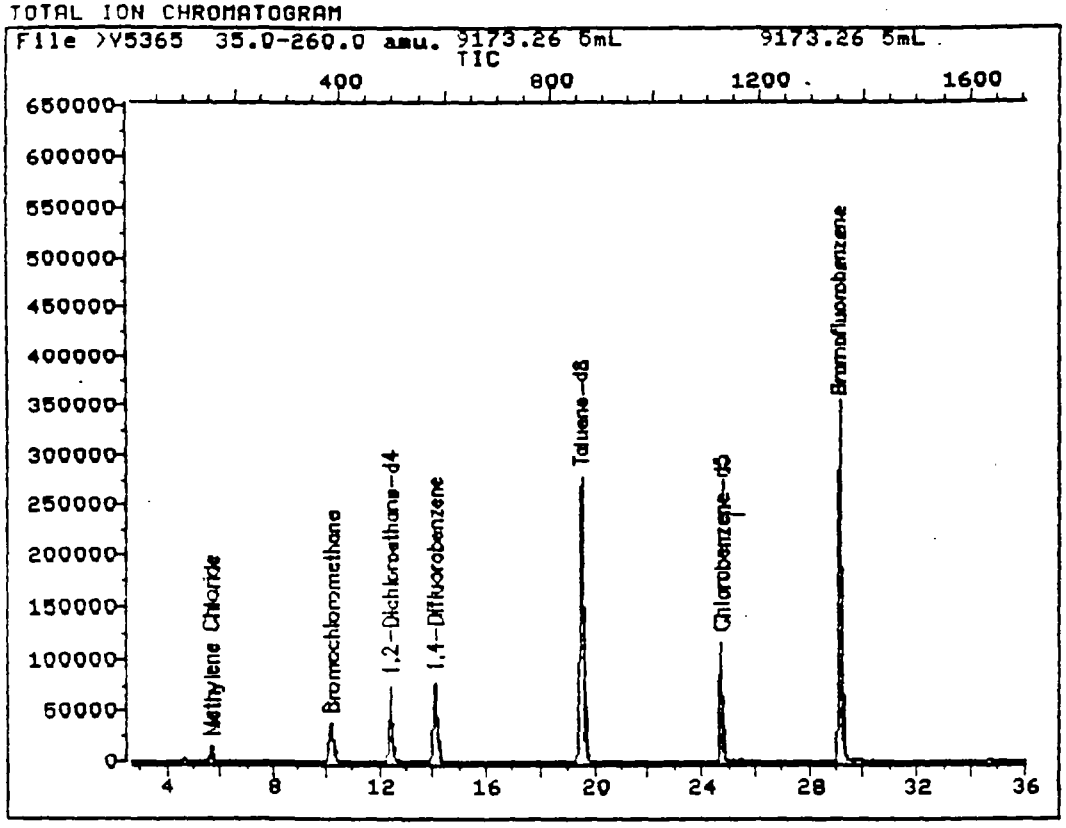
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.26 5ml	DILUTION FACTOR	1.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>U5365	DATE ANALYZED	10/28/92

Compound	ug/L	MDL	Compound	ug/L	MDL
Chloromethane	ND	10	Dibromochloromethane	ND	5
Bromomethane	ND	10	1,1,2-Trichloroethane	ND	5
Vinyl Chloride	ND	10	Benzene	ND	5
Chloroethane	ND	10	trans-1,3-Dichloropropene	ND	5
Methylene Chloride	5 JB	5	2-Chloroethylvinyl ether	ND	5
Acrolein	ND	50	Bromoform	ND	5
Acrylonitrile	ND	50	2-Hexanone	ND	5
Acetone	ND	5	4-Methyl-2-Pentanone	ND	5
Carbon Disulfide	ND	5	Tetrachloroethene	ND	5
1,1-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	ND	5	Toluene	ND	5
trans-1,2-Dichloroethene	ND	5	Chlorobenzene	ND	5
Trichlorofluoromethane	ND	5	Ethylbenzene	ND	5
Chloroform	ND	5	Styrene	ND	5
1,2-Dichloroethane	ND	5	o-Xylene	ND	5
2-Butanone	ND	5	m + p-Xylenes	ND	5
1,1,1-Trichloroethane	ND	5	1,3-Dichlorobenzene	ND	5
Carbon Tetrachloride	ND	5	1,2-Dichlorobenzene	ND	5
Bromodichloromethane	ND	5	1,4-Dichlorobenzene	ND	5
Vinyl Acetate	ND	5	tert-Butyl Alcohol	ND	50
1,2-Dichloropropane	ND	5	Methyl tert-Butyl Ether	ND	5
cis-1,3-Dichloropropene	ND	5	Diethyl ether	ND	50
Trichloroethene	ND	5			0

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates Compound not detected

TOTAL ION CHROMATOGRAM



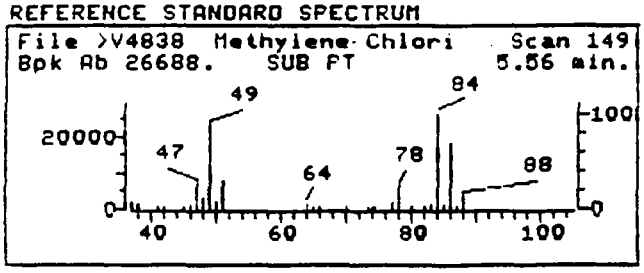
Data File: >V5365::D1
Name: 9173.26 5mL
Misc: 9173.26 5mL

Quant Output File: ^V5365::DB

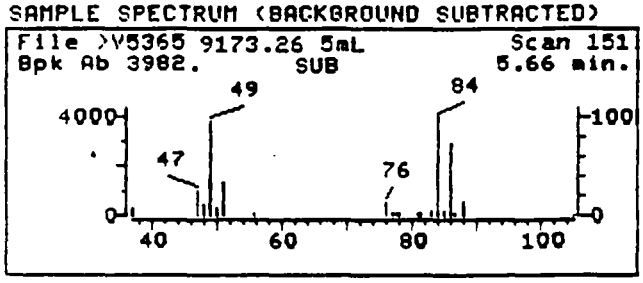
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921028 01:38
Injected at: 921028 01:01

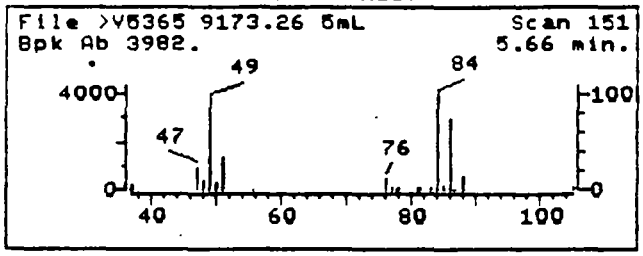
REFERENCE STANDARD SPECTRUM

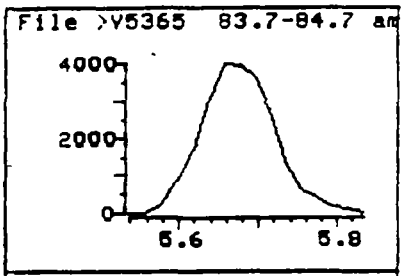


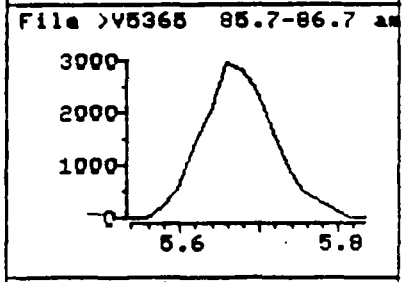
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

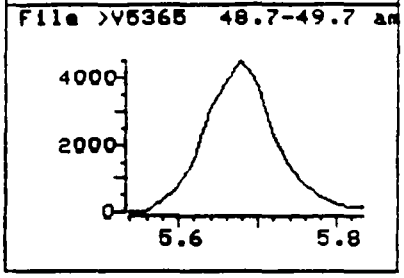


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5365::D1 Quant Output File: ^V5365::DB
Name: 9173.26 5mL
Misc: 9173.26 5mL
Quant Time: 921028 01:38 Quant ID File: IDV0A::D2
Injected at: 921028 01:01 Last Calibration: 921027 22:05

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 151
Retention Time: 5.66 min.
Quant Ion: 84.0
Area: 26436
Concentration: 4.90 ppb
q-value: 90

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE N
9173.12 5mi

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.12 5mL

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: >V5369

Level: (low/med) LOW

Date Received: 10-26-92

Date Analyzed: 10/28/92

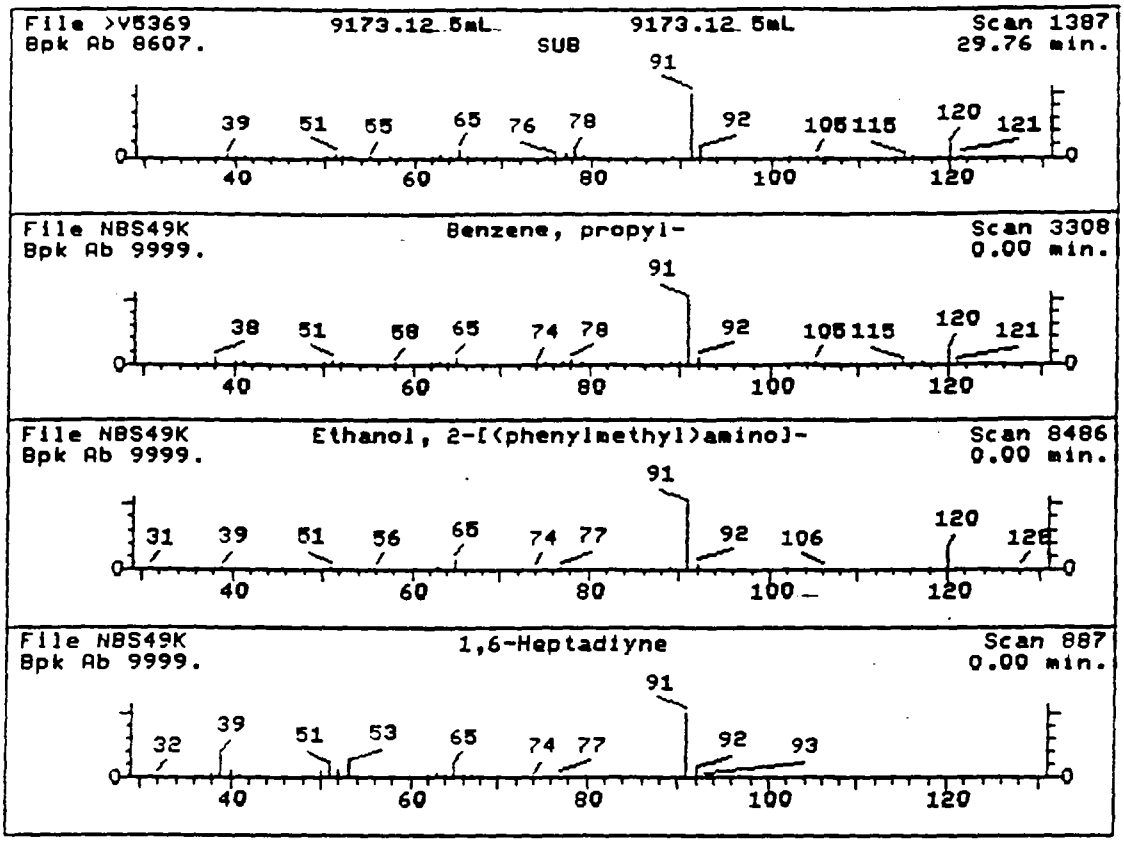
Column: Capillary

Dilution Factor: 1

Number of TICs found: 8

CONCENTRATION UNITS:
ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	103651	Benzene, propyl-	29.76	8	79
2	622968	Benzene, 1-ethyl-4-methyl-	30.15	21	84
3	95636	Benzene, 1,2,4-trimethyl-	30.34	9	67
4	611143	Benzene, 1-ethyl-2-methyl-	31.18	7	94
5	611143	Benzene, 1-ethyl-2-methyl-	31.67	29	93
6	611143	Benzene, 1-ethyl-2-methyl-	33.31	8	70
7	611154	Benzene, 1-ethenyl-2-methyl-	34.31	19	71
8	535773	Benzene, 1-methyl-3-(1-methy	35.74	6	96

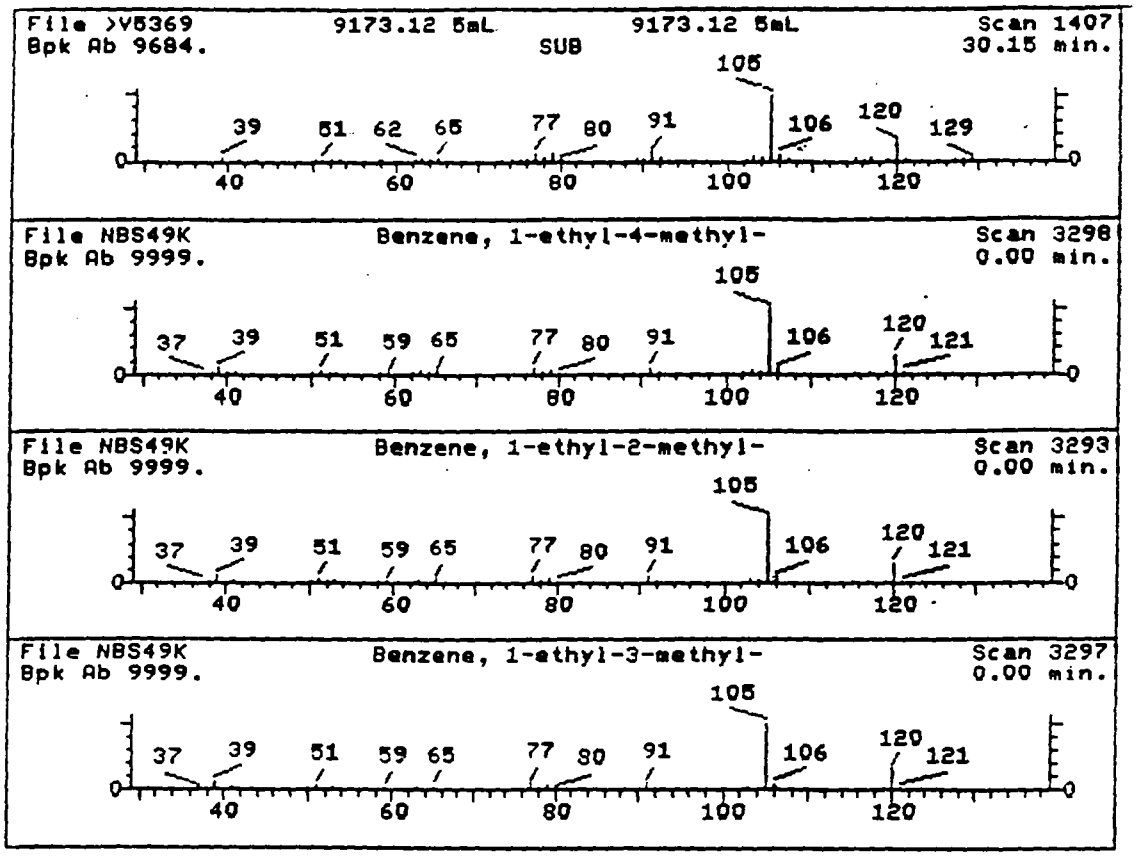


UNKNOWN #,1
AREA = 139869.0 TENTATIVE CONCENTRATION IS 8.00

1.	Benzene, propyl-	120	C9H12
2.	Ethanol, 2-[(phenylmethyl)amino]-	151	C9H13NO
3.	1,6-Heptadiyne	92	C7H8
4.	Benzene, (phenoxymethyl)-	184	C13H12O
5.	Benzaldehyde, 4-(phenylmethoxy)-	212	C14H12O2
6.	Azetidine, 3-methyl-1-(phenylmethyl)-	161	C11H15N

Sample file: >V5369 Spectrum #: 1387
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	79*	103651	13679	NBS49K	53	32	2	0	97	7	48	36
2.	60	104632	13712	NBS49K	42	37	2	0	70	11	30	14
3.	43*	2396636	8477	NBS49K	24	72	2	0	77	23	17	14
4.	43	946805	8439	NBS49K	43	35	2	0	96	23	17	14
5.	42	4397539	8542	NBS49K	39	46	2	0	67	21	17	13
6.	41	55702313	8434	NBS49K	37	42	2	0	100	25	17	12

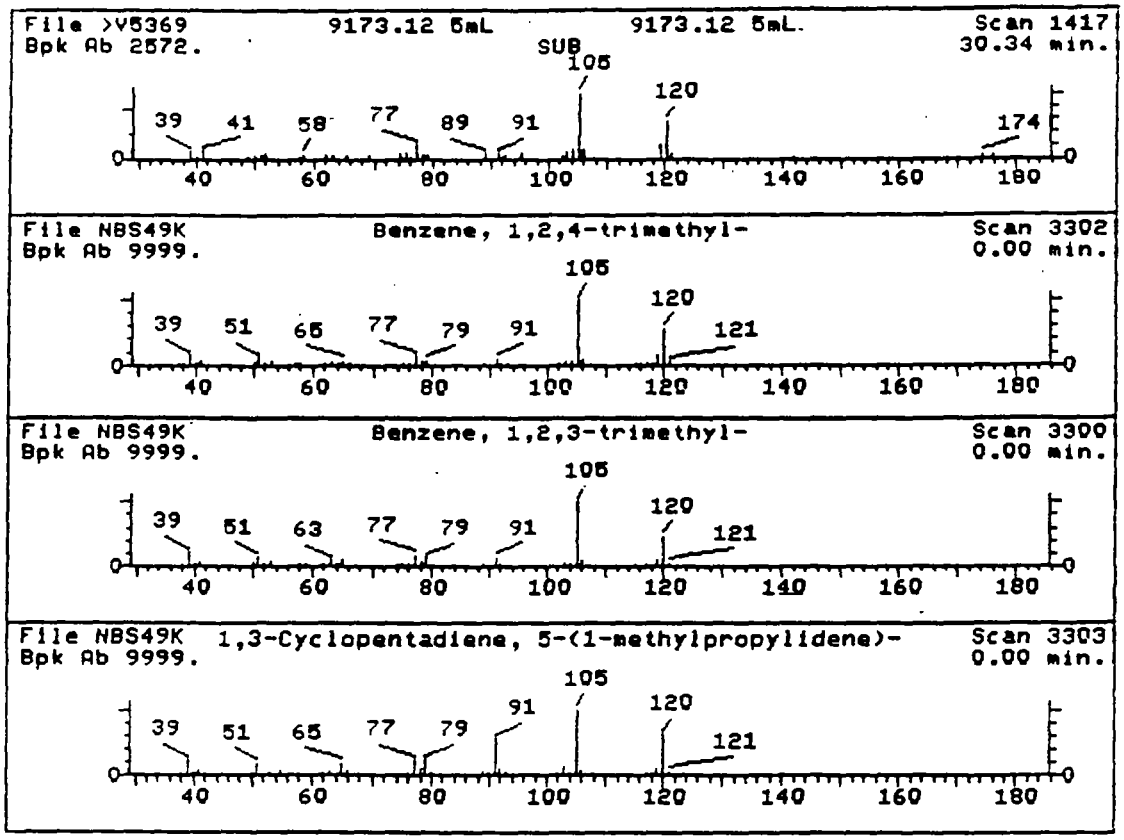


UNKNOWN #,2
AREA = 342332.0 TENTATIVE CONCENTRATION IS 21.00

1.	Benzene, 1-ethyl-4-methyl-	120	C9H12
2.	Benzene, 1-ethyl-2-methyl-	120	C9H12
3.	Benzene, 1-ethyl-3-methyl-	120	C9H12
4.	Benzene, (1-methylethyl)-	120	C9H12
5.	Benzene, 1,1'-(1-methyl-1,2-ethanediyl)bis-	196	C15H16
6.	Benzene, (1-methyl-3-butenyl)-	146	C11H14

Sample file: >V5369 Spectrum #: 1407
Search speed: 1 Tilting option: F No. of ion ranges searched: 44

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	84*	622968	13672	NBS49K	64	21	1	2	96	8	55	66
2.	79*	611143	13669	NBS49K	57	28	0	4	74	12	43	66
3.	71*	620144	13671	NBS49K	53	34	1	3	71	12	38	39
4.	71*	98828	13667	NBS49K	50	37	2	0	96	12	38	31
5.	52	5814857	10954	NBS49K	57	42	2	0	99	20	20	16
6.	43	10340495	10939	NBS49K	41	39	2	0	85	24	17	14

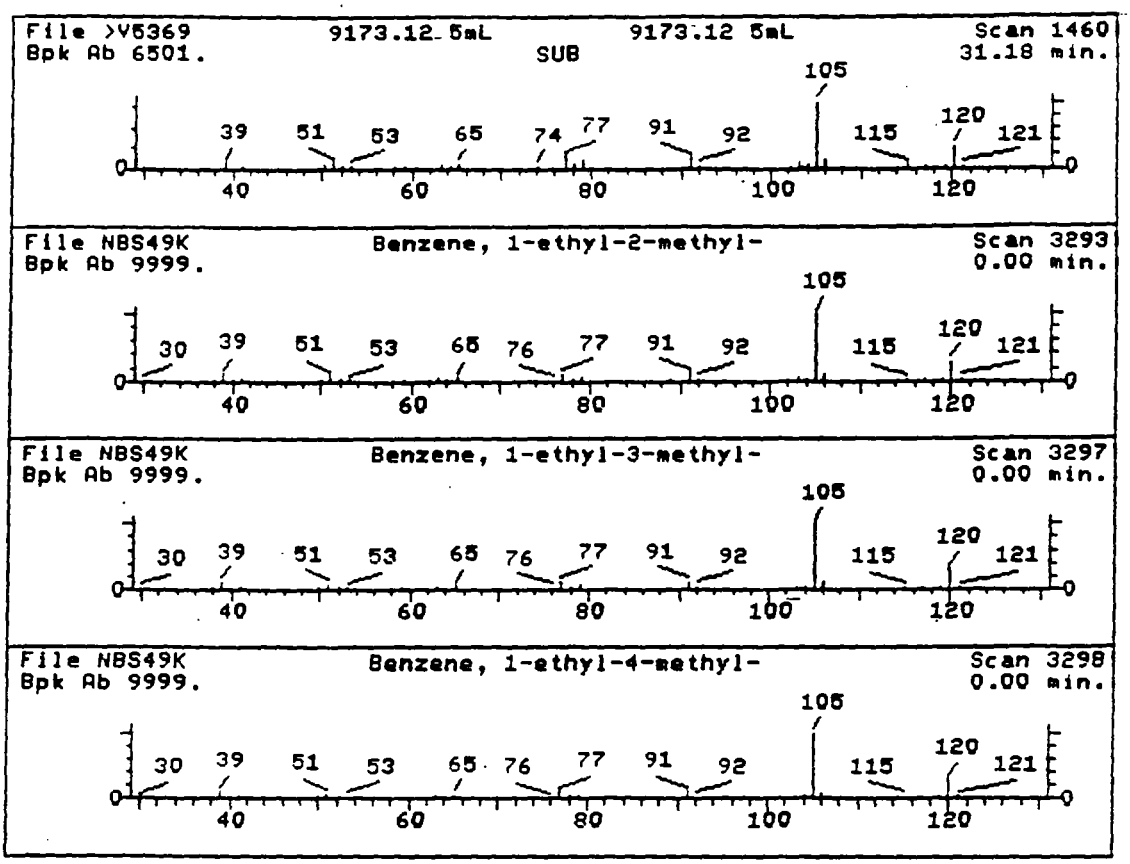


UNKNOWN #,3
AREA = 143301.0 TENTATIVE CONCENTRATION IS 9.00

1.	Benzene, 1,2,4-trimethyl-	120 C9H12
2.	Benzene, 1,2,3-trimethyl-	120 C9H12
3.	1,3-Cyclopentadiene, 5-(1-methylpropylidene)-	120 C9H12
4.	1,3,5-Cycloheptatriene, 7-ethyl-	120 C9H12
5.	2,3-Heptadien-5-yne, 2,4-dimethyl-	120 C9H12
6.	Benzene, 1,3,5-trimethyl-	120 C9H12

Sample file: >V5369 Spectrum #: 1417
Search speed: 1 Tilting option: F No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I(
1.	67*	95636	13676	NBS49K	48	47	2	0	100	11	34	26
2.	60*	526738	13674	NBS49K	40	60	2	0	100	13	30	15
3.	58*	3141024	13677	NBS49K	49	55	2	0	93	16	25	22
4.	52*	17834514	13678	NBS49K	45	56	2	0	135	19	20	17
5.	52*	41898899	13675	NBS49K	41	68	3	0	78	16	20	13
6.	52*	108678	13673	NBS49K	45	43	2	4	100	16	20	17



UNKNOWN #,4

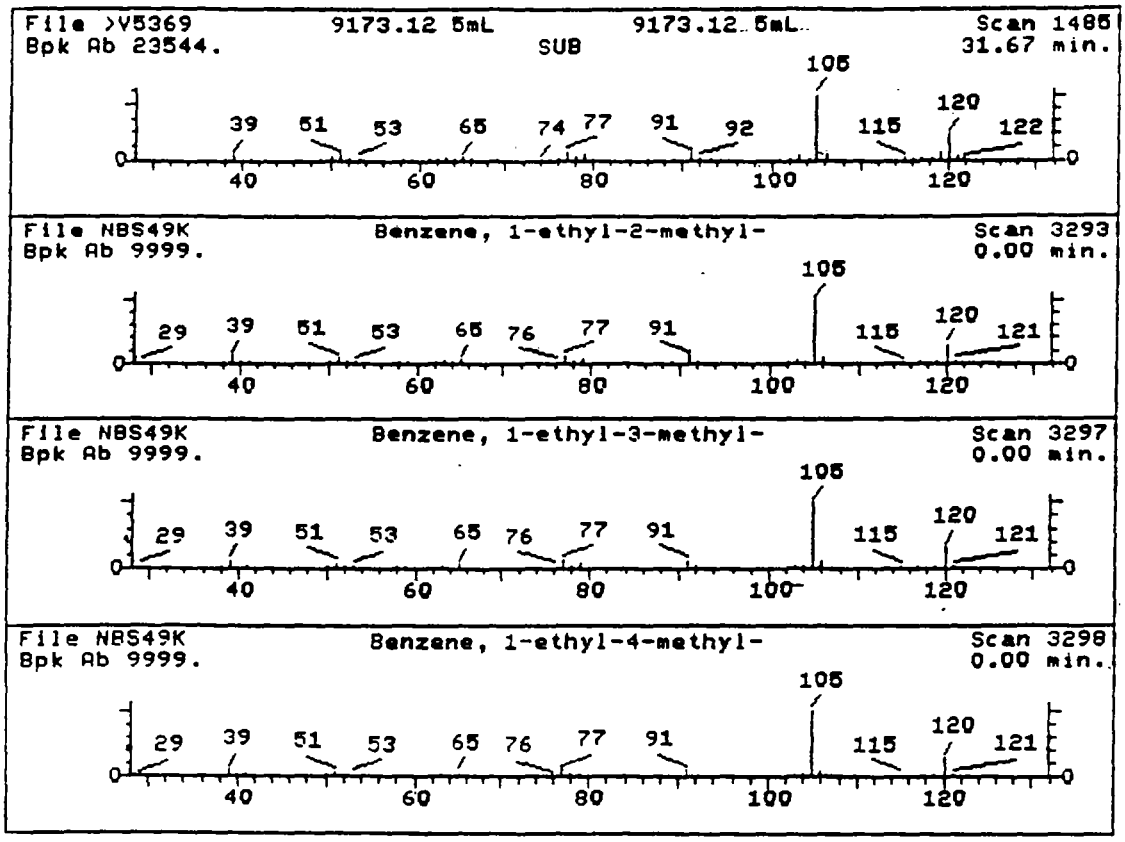
AREA = 121652.0 TENTATIVE CONCENTRATION IS 7.00

1.	Benzene, 1-ethyl-2-methyl-	120 C9H12
2.	Benzene, 1-ethyl-3-methyl-	120 C9H12
3.	Benzene, 1-ethyl-4-methyl-	120 C9H12
4.	Benzene, 1,2,3-trimethyl-	120 C9H12
5.	Benzene, (1-methylethyl)-	120 C9H12
6.	1,3,5-Cycloheptatriene, 7-ethyl-	120 C9H12

Sample file: >V5369 Spectrum #: 1460

Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	94*	611143	13669	NBS49K	73	12	1	0	93	3	72	92
2.	88*	620144	13671	NBS49K	70	17	2	2	100	3	65	53
3.	86*	622968	13672	NBS49K	67	18	1	0	97	9	59	77
4.	81*	526738	13674	NBS49K	70	30	2	3	71	6	53	45
5.	81*	98828	13667	NBS49K	60	27	2	0	100	6	53	46
6.	60*	17634514	13678	NBS49K	39	62	2	0	108	11	30	14

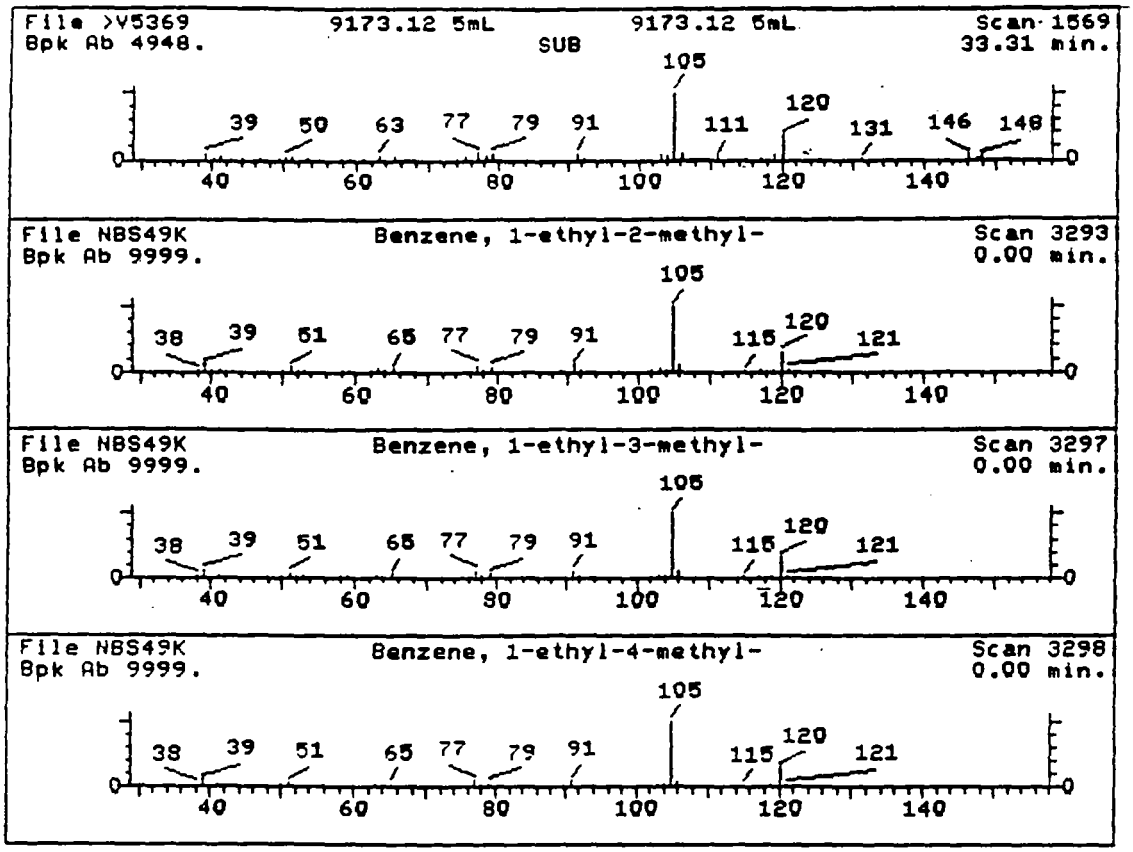


UNKNOWN #,5
AREA = 481051.0 TENTATIVE CONCENTRATION IS 29.00

1.	Benzene, 1-ethyl-2-methyl-	120	C9H12
2.	Benzene, 1-ethyl-3-methyl-	120	C9H12
3.	Benzene, 1-ethyl-4-methyl-	120	C9H12
4.	Benzene, 1,2,4-trimethyl-	120	C9H12
5.	Benzene, (1-methylethyl)-	120	C9H12
6.	Benzene, 1,2,3-trimethyl-	120	C9H12

Sample file: >V5369 Spectrum #: 1485
Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	93*	611143	13669	NBS49K	75	10	1	0	100	12	64	93
2.	93*	620144	13671	NBS49K	75	12	1	0	100	11	64	93
3.	93*	622968	13672	NBS49K	69	16	0	0	88	25	53	94
4.	90*	95638	13676	NBS49K	78	17	0	0	80	31	50	93
5.	86*	98828	13667	NBS49K	76	11	0	-3	94	9	59	73
6.	84*	526738	13674	NBS49K	84	16	2	-3	73	7	55	63



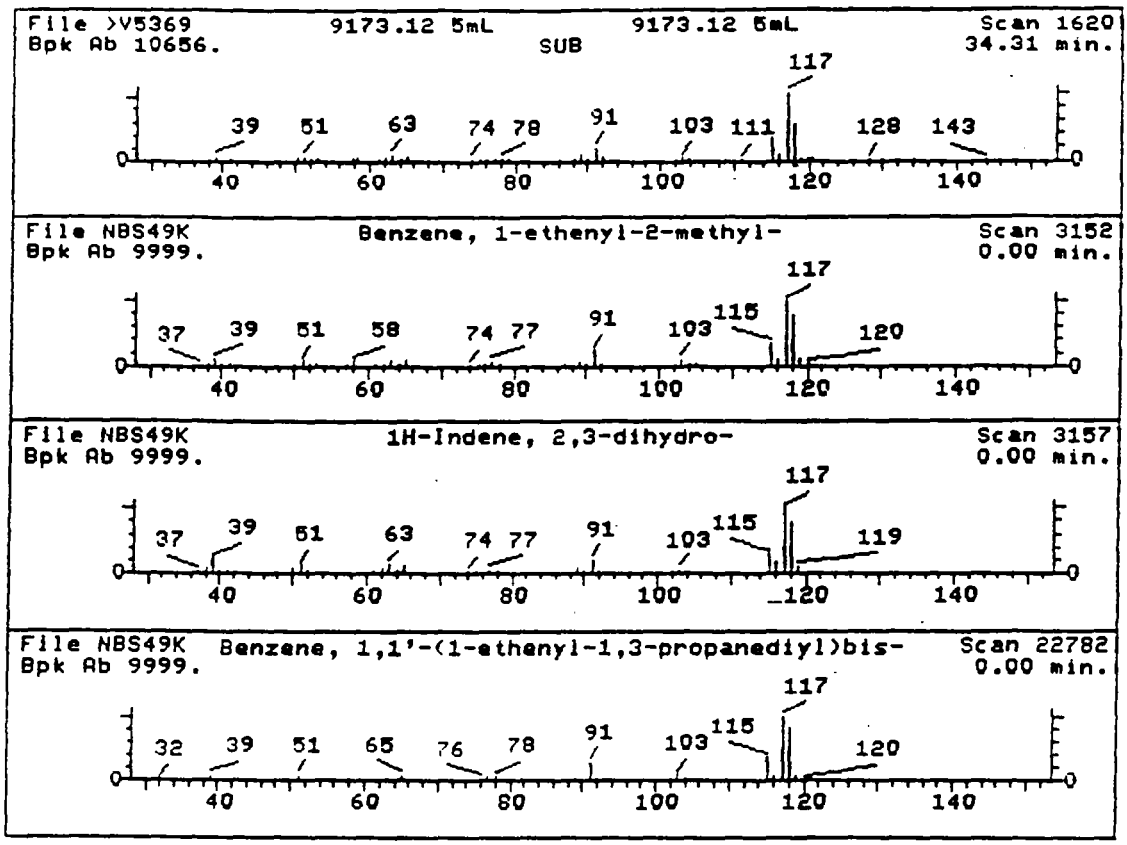
UNKNOWN #,6
AREA = 125138.0 TENTATIVE CONCENTRATION IS 8.00

1.	Benzene, 1-ethyl-2-methyl-	120	C9H12
2.	Benzene, 1-ethyl-3-methyl-	120	C9H12
3.	Benzene, 1-ethyl-4-methyl-	120	C9H12
4.	Benzene, (1-methylethyl)-	120	C9H12
5.	Benzene, 1,3,5-trimethyl-	120	C9H12
6.	Benzene, 1,2,3-trimethyl-	120	C9H12

Sample file: >V5369 Spectrum #: 1569
Search speed: 1 Tilting option: F No. of ion ranges searched:

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I
1.	70*	611143	13669	NBS49K	65	20	2	0	90	19	32
2.	66*	620144	13671	NBS49K	60	27	2	0	91	17	31
3.	63*	622968	13672	NBS49K	54	31	2	0	100	19	30
4.	51*	98828	13667	NBS49K	54	33	2	-1	93	25	22
5.	41*	108678	13673	NBS49K	53	35	2	2	64	41	14
6.	41*	526738	13674	NBS49K	58	42	2	0	64	42	14

2



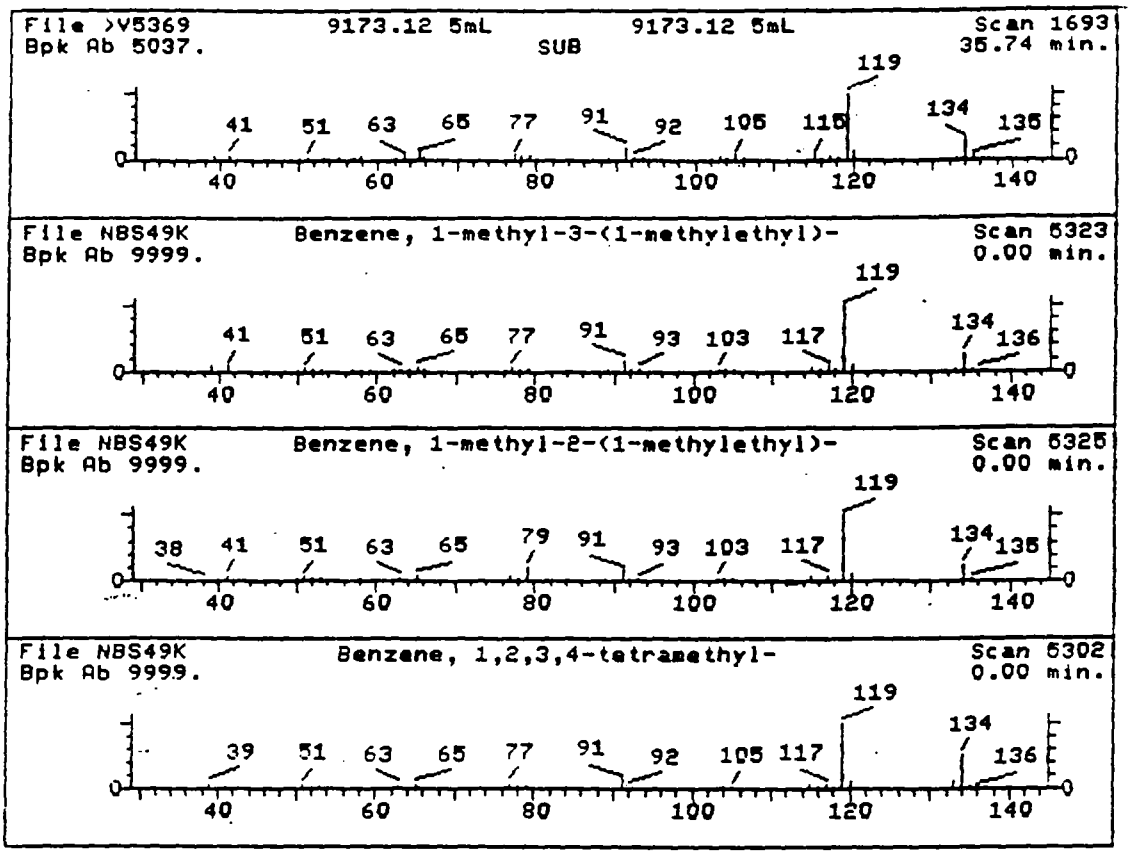
UNKNOWN #,7

AREA = 312206.0 TENTATIVE CONCENTRATION IS 19.00

1.	Benzene, 1-ethenyl-2-methyl-	118 C9H10
2.	1H-Indene, 2,3-dihydro-	118 C9H10
3.	Benzene, 1,1'-(1-ethenyl-1,3-propanediyl)bis-	222 C17H18
4.	Benzene, 1-propenyl-	118 C9H10
5.	Benzene, 1-ethenyl-3-methyl-	118 C9H10
6.	Benzene, ethenylmethyl-	118 C9H10

Sample file: >V5369 Spectrum #: 1620
Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	71*	611154	13346	NBS49K	51	42	2	0	70	15	38	3
2.	70*	496117	13350	NBS49K	43	57	2	0	69	7	42	1
3.	70	61141977	13453	NBS49K	69	46	2	0	67	8	42	1
4.	60*	637503	13345	NBS49K	35	63	2	0	68	15	30	1
5.	41*	100801	13349	NBS49K	51	45	2	0	54	40	14	2
6.	40*	25013154	13348	NBS49K	51	46	2	0	54	40	14	2



UNKNOWN #,8
AREA = 93509.00 TENTATIVE CONCENTRATION IS 6.00

1.	Benzene, 1-methyl-3-(1-methylethyl)-	134 C10H14
2.	Benzene, 1-methyl-2-(1-methylethyl)-	134 C10H14
3.	Benzene, 1,2,3,4-tetramethyl-	134 C10H14
4.	Benzene, 2-ethyl-1,3-dimethyl-	134 C10H14
5.	Benzene, 1-ethyl-2,4-dimethyl-	134 C10H14
6.	Benzene, 2-ethyl-1,4-dimethyl-	134 C10H14

Sample file: >V5369 Spectrum #: 1693
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	96*	535773	13538	NBS49K	83	6	0	2	76	1	72	94
2.	94*	527844	13539	NBS49K	78	14	1	0	86	1	72	92
3.	93*	488233	16251	NBS49K	80	14	1	4	67	1	68	80
4.	93*	2870044	13529	NBS49K	72	17	1	0	99	1	68	80
5.	93*	874419	13536	NBS49K	71	17	1	0	100	1	68	80
6.	89*	1758889	13535	NBS49K	74	20	1	-4	67	3	66	60

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO: 9173.13 5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.13 5mL

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: >V5367

Level: (low/med) LOW

Date Received: 10-26-92

Date Analyzed: 10/28/92

Column: Capillary

Dilution Factor: 1

Number of TICs found: 1

CONCENTRATION UNITS: ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	76131	Freon	4.59	17	84

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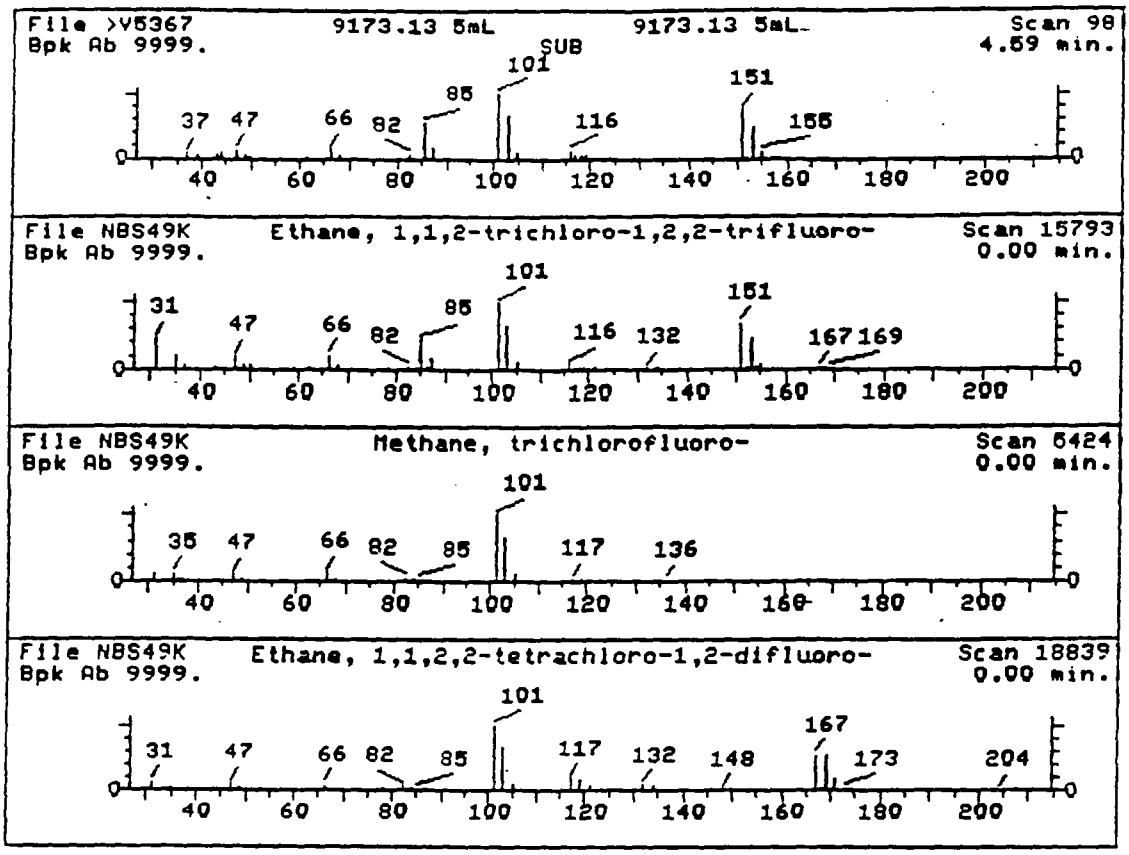

UNKNOWN #,1

AREA = 154793.0 TENTATIVE CONCENTRATION IS 17.00

1. Ethane, 1,1,2-trichloro-1,2,2-trifluoro- 186 C2Cl3F3
2. Methane, trichlorofluoro- 136 CCl3F
3. Ethane, 1,1,2,2-tetrachloro-1,2-difluoro- 202 C2Cl4F2

Sample file: >V5367 Spectrum #: 98
Search speed: 1 Tilting option: F No. of ion ranges searched: 40

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	84	76131	10367	NBS49K	87	51	0	0	74	6	55	65
2.	21	75694	10283	NBS49K	64	32	1	0	83	58	5	30
3.	15*	76120	10400	NBS49K	43	88	3	0	100	58	3	13

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO

9173.14 5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.14 5mL

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: >V5366

Level: (low/med) LOW

Date Received: 10-26-92

Date Analyzed: 10/28/92

Column: Capillary

Dilution Factor: 1

Number of TICs found: 1

CONCENTRATION UNITS: ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	76131	Freon	4.61	19	76

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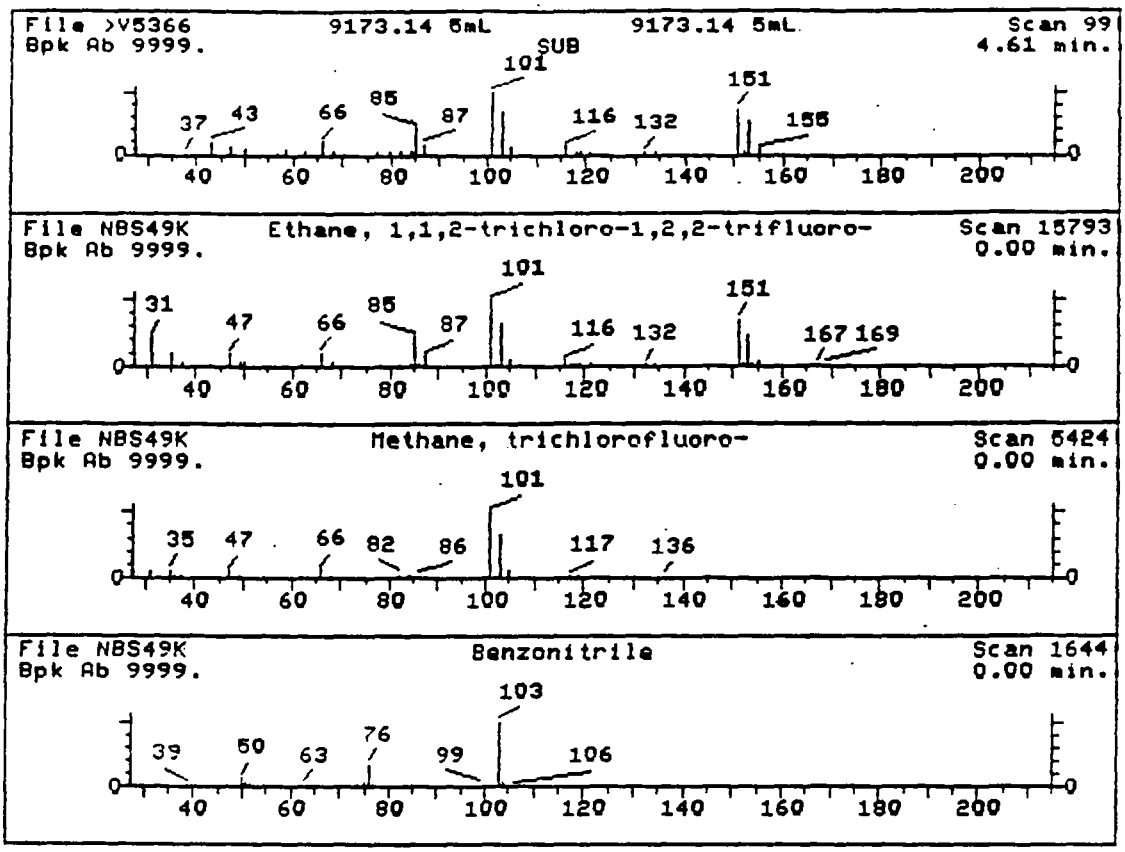

UNKNOWN #,1

AREA = 171127.0 TENTATIVE CONCENTRATION IS 19.00

1.	Ethane, 1,1,2-trichloro-1,2,2-trifluoro-	186 C2C13F3
2.	Methane, trichlorofluoro-	136 CC13F
3.	Benzonitrile	103 C7H5N

Sample file: >V5366 Spectrum #: 99

Search speed: 1 Tilting option: F No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	76	76131	10367	NBS49K	74	64	1	0	75	8	45	2
2.	15	75694	10283	NBS49K	56	40	1	0	77	58	3	1
3.	11*	100470	10691	NBS49K	39	45	1	1	59	61	2	1

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE I
9173.25 5m

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.25 5mL

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: >V5364

Level: (low/med) LOW

Date Received: 10-26-92

Date Analyzed: 10/28/92

Column: Capillary

Dilution Factor: 1

CONCENTRATION UNITS:
ug/L

Number of TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE I
9173.26 5m

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Sample wt/vol: 5.0 (g/mL) mL

Level: (low/med) LOW

Column: Capillary

Lab Sample ID: 9173.26 5mL

Lab File ID: >V5365

Date Received: 10-26-92

Date Analyzed: 10/28/92

Dilution Factor: 1

Number of TICs found: 0

CONCENTRATION UNITS:
ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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5A

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

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >V5345 BFB Injection Date: 10/27/92

Instrument ID: GC/MSD 5970 #1 BFB Injection Time: 9:54

Matrix: Water Column: Capillary

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.9
75	30.0 - 60.0% of mass 95	48.4
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	76.3
175	5.0 - 9.0% of mass 174	5.5(7.2)1
176	Greater than 95.0%, but less than 101.0% of mass 174	73.7(96.6)1
177	5.0 - 9.0% of mass 176	4.7(6.4)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
01	CCC/SPCC	CCC/SPCC	>V5346	10/27/92	10:27
02	VOA BLANK	VOA BLANK	>V5347	10/27/92	11:36
03	9173.9 5mL	9173.9 5mL	>V5352	10/27/92	15:38
04	9173.2 5mL	9173.2 5mL	>V5353	10/27/92	16:20
05	9173.3 5mL	9173.3 5mL	>V5356	10/27/92	18:26
06	9173.5 5mL	9173.5 5mL	>V5358	10/27/92	19:50
07	9173.6 5mL	9173.6 5mL	>V5359	10/27/92	20:33
08					
09					
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18					
19					
20					
21					
22					

5A

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

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >V5361 BFB Injection Date: 10/27/92

Instrument ID: GC/MSD 5970 #1 BFB Injection Time: 21:53

Matrix: Water Column: Capillary

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.5
75	30.0 - 60.0% of mass 95	49.5
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	65.3
175	5.0 - 9.0% of mass 174	5.0(7.6)1
176	Greater than 95.0%, but less than 101.0% of mass 174	63.9(97.9)1
177	5.0 - 9.0% of mass 176	4.1(6.4)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
01	CCC/SPCC	CCC/SPCCC	>V5362	10/27/92	22:24
02	VOA Blank	VOA Blank	>V5363	10/27/92	23:37
03	9173.25 5m	9173.25 5m	>V5364	10/28/92	0:19
04	9173.26 5m	9173.26 5m	>V5365	10/28/92	1:01
05	9173.14 5m	9173.14 5m	>V5366	10/28/92	1:43
06	9173.13 5m	9173.13 5m	>V5367	10/28/92	2:26
07	9173.23.5m	9173.23 5m	>V5368	10/28/92	3:08
08	9173.12 5m	9173.12 5m	>V5369	10/28/92	3:50
09	9173.21-5m	9173.21 5m	>V5370	10/28/92	4:33
10	9173.19-5m	9173.19 5m	>V5371	10/28/92	5:15
11	9173.11-5m	9173.11 5m	>V5372	10/28/92	5:58
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

5A

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

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >V5411 BFB Injection Date: 10/30/92

Instrument ID: GC/MSD 5970 #1 BFB Injection Time: 10:16

Matrix: Water Column: Capillary

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.4
75	30.0 - 60.0% of mass 95	48.0
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	70.7
175	5.0 - 9.0% of mass 174	5.2(7.4)1
176	Greater than 95.0%, but less than 101.0% of mass 174	68.6(97.0)1
177	5.0 - 9.0% of mass 176	4.5(6.6)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
01	CCC/SPCC	CCC/SPCC	>V5412	10/30/92	10:38
02	VOA BLANK	VOA BLANK	>V5413	10/30/92	11:42
03	9173.1 5uL	9173.1 5uL	>V5415	10/30/92	13:26
04	9173.8 50u	9173.8 50u	>V5418	10/30/92	15:31
05	9173.10 50	9173.10 50	>V5419	10/30/92	16:12
06	9173.15 .5	9173.15 .5	>V5421	10/30/92	17:37
07	9173.16 .5	9173.16 .5	>V5422	10/30/92	18:19
08	9173.24 .5	9173.24 .5	>V5423	10/30/92	19:01
09	9173.17 5m	9173.17 5m	>V5424	10/30/92	19:43
10	9173.22 5m	9173.22 5m	>V5426	10/30/92	21:07
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

5A

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

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >V5427 BFB Injection Date: 10/31/92

Instrument ID: GC/MSD 5970 #1 BFB Injection Time: 13:44

Matrix: Water Column: Capillary

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.5
75	30.0 - 60.0% of mass 95	48.9
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	71.3
175	5.0 - 9.0% of mass 174	5.5(7.7)1
176	Greater than 95.0%, but less than 101.0% of mass 174	70.1(98.3)1
177	5.0 - 9.0% of mass 176	4.7(6.7)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
01	CCC/SPCC	CCC/SPCC	>V5428	10/31/92	14:11
02	VOA Blank	VOA Blank	>V5429	10/31/92	15:10
03	9173.22 MS	9173.22 MS	>V5430	10/31/92	15:53
04	9173.22 MS	9173.22 MS	>V5431	10/31/92	16:36
05	9173.7 50u	9173.7 50u	>V5432	10/31/92	17:18
06	9173.4 .5m	9173.4 .5m	>V5433	10/31/92	18:01
07	9173.20 5m	9173.20 5m	>V5434	10/31/92	18:42
08	9173.18 5m	9173.18 5m	>V5436	10/31/92	20:07
09					
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21					
22					

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 10/27/92

Contractor: E.P.L. Time: 10:27

Contract No: NJDEPE ID# 15526 Laboratory ID: >U5346

Instrument ID: GC/MSD #1 Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Chloromethane	1.28136	1.10969	13.40		**	
Bromomethane	3.56350	4.34436	21.91			
Vinyl Chloride	1.97246	1.84004	6.71	*		
Chloroethane	1.85262	1.95151	5.34			
Methyl tert-Butyl Ether	4.64109	4.28257	7.72			
Methylene Chloride	4.28970	4.07719	4.95			
Acrolein	.16356	.15680	4.13			(Conc=500.00)
Acrylonitrile	.25730	.25179	2.14			(Conc=500.00)
Acetone	.78012	.70591	9.51			
Carbon Disulfide	13.8242	12.5381	9.30			
1,1-Dichloroethene	3.15223	3.19648	1.40	*		
1,1-Dichloroethane	6.23895	6.12772	1.78		**	
tert-Butyl Alcohol	.08598	.07902	8.09			(Conc=500.00)
trans-1,2-Dichloroethene	5.26164	4.84898	7.84			
Trichlorofluoromethane	7.49104	7.69633	2.74			
Chloroform	8.86038	9.30035	4.97	*		
1,2-Dichloroethane-d4	2.29358	2.19975	4.09			(Conc=100.00)
1,2-Dichloroethane	4.12337	3.83860	6.91			
2-Butanone	.09677	.08491	12.26			
1,1,1-Trichloroethane	1.36023	1.48732	9.34			
Carbon Tetrachloride	1.18650	1.40226	18.18			
Bromodichloromethane	1.29358	1.38989	7.45			
Vinyl Acetate	.58768	.53142	9.57			
1,2-Dichloropropane	.60165	.61519	2.25	*		
cis-1,3-Dichloropropene	1.50097	1.52344	1.50			
Trichloroethene	.83241	.94431	13.44			
Dibromochloromethane	.95834	1.13720	18.66			
1,1,2-Trichloroethane	.44874	.49892	11.18			
Benzene	1.62988	1.64407	.87			
trans-1,3-Dichloropropene	.27115	.27867	2.77			
2-Chloroethylvinyl ether	.18189	.15307	15.84			
Bromoform	.59286	.62873	13.72		**	

RF - Response Factor from daily standard file at 50.00 ppb

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: | Calibration Date: 10/27/92

Contractor: E.P.L. | Time: 10:27

Contract No: NJDEPE ID# 15526 | Laboratory ID: >U5346

Instrument ID: GC/MSD #1 | Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
4-Methyl-2-Pentanone	.43455	.31830	26.75			
2-Hexanone	.17597	.12124	31.10			
Tetrachloroethene	1.07022	1.15747	8.15			
1,1,2,2-Tetrachloroethane	.70932	.66273	6.57		**	
Toluene	2.66135	2.48907	6.47	*		
Chlorobenzene	1.82137	1.89128	3.84		**	
Ethylbenzene	3.30060	3.23850	1.88	*		
Styrene	2.20138	2.08635	5.23			
m + p-Xylenes	2.78650	2.85973	2.63			(Conc=100.00)
o-Xylene	3.11671	2.95494	5.19			
1,3-Dichlorobenzene	1.83717	1.88150	2.41			
1,4-Dichlorobenzene	1.61421	1.66581	3.20			
1,2-Dichlorobenzene	1.42741	1.49493	4.73			
Toluene-d8	1.69988	1.49723	11.92			(Conc=100.00)
Bromofluorobenzene	1.04741	1.07886	3.00			(Conc=100.00)
Diethyl ether	.22600	.24279	7.43			(Conc=500.00)

RF - Response Factor from daily standard file at 50.00 ppb

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 10/27/92

Contractor: E.P.L. Time: 22:24

Contract No: NJDEPE ID# 15526 Laboratory ID: >05362

Instrument ID: GC/MSD #1 Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Chloromethane	1.28136	1.00891	21.26		**	
Bromomethane	3.56350	3.79699	6.55			
Vinyl Chloride	1.97246	1.75265	11.14	*		
Chloroethane	1.85262	1.70283	8.09			
Methyl tert-Butyl Ether	4.64109	4.35179	6.23			
Methylene Chloride	4.28970	4.24373	1.07			
Acrolein	.16356	.15834	3.19			(Conc=500.00)
Acrylonitrile	.25730	.25680	.19			(Conc=500.00)
Acetone	.78012	.78218	.26			
Carbon Disulfide	13.8242	10.5646	23.58			
1,1-Dichloroethene	3.15223	2.75138	12.72	*		
1,1-Dichloroethane	6.23895	5.33563	14.48		**	
tert-Butyl Alcohol	.08598	.08212	4.49			(Conc=500.00)
trans-1,2-Dichloroethene	5.26164	4.21587	19.88			
Trichlorofluoromethane	7.49104	6.60187	11.87			
Chloroform	8.86038	8.06368	8.99	*		
1,2-Dichloroethane-d4	2.29358	2.15653	5.98			(Conc=100.00)
1,2-Dichloroethane	4.12337	3.58684	13.01			
2-Butanone	.09677	.09095	6.02			
1,1,1-Trichloroethane	1.36023	1.24949	8.14			
Carbon Tetrachloride	1.18650	1.13685	4.18			
Bromodichloromethane	1.29358	1.25370	3.08			
Vinyl Acetate	.58768	.51357	12.61			
1,2-Dichloropropane	.60165	.55803	7.25	*		
cis-1,3-Dichloropropene	1.50097	1.43608	4.32			
Trichloroethene	.83241	.82498	.89			
Dibromochloromethane	.95834	1.02949	7.43			
1,1,2-Trichloroethane	.44874	.47960	6.88			
Benzene	1.62988	1.42725	12.43			
trans-1,3-Dichloropropene	.27115	.26154	3.54			
2-Chloroethylvinyl ether	.18189	.17662	2.90			
Bromoform	.55286	.57041	3.17		**	

RF - Response Factor from daily standard file at 50.00 ppb

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 10/27/92

Contractor: E.P.L. Time: 22:24

Contract No: NJDEPE ID# 15526 Laboratory ID: >V5362

Instrument ID: GC/MSD #1 Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
4-Methyl-2-Pentanone	.43455	.39889	8.21			
2-Hexanone	.17597	.15736	10.57			
Tetrachloroethene	1.07022	1.08033	.94			
1,1,2,2-Tetrachloroethane	.70932	.69714	1.72		**	
Toluene	2.66135	2.47343	7.06	*		
Chlorobenzene	1.82137	1.84446	1.27		**	
Ethylbenzene	3.30060	3.11994	5.47	*		
Styrene	2.20138	2.07044	5.95			
m + p-Xylenes	2.78650	2.84431	2.07			(Conc=100.00)
o-Xylene	3.11671	2.90506	6.79			
1,3-Dichlorobenzene	1.83717	1.78947	2.60			
1,4-Dichlorobenzene	1.61421	1.57625	2.35			
1,2-Dichlorobenzene	1.42741	1.41788	.67			
Toluene-d8	1.69988	1.66654	1.96			(Conc=100.00)
Bromofluorobenzene	1.04741	1.00885	3.68			(Conc=100.00)
Diethyl ether	.22600	.25915	14.67			(Conc=500.00)

RF - Response Factor from daily standard file at 50.00 ppb

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 10/30/92

Contractor: E.P.L. Time: 10:38

Contract No: NJDEPE ID# 15526 Laboratory ID: >U5412

Instrument ID: GC/MSD #1 Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Chloromethane	1.28136	1.42497	11.21		**	
Bromomethane	3.56350	5.25171	47.38			
Vinyl Chloride	1.97246	2.24517	13.83	*		
Chloroethane	1.85262	2.62542	41.71			
Methyl tert-Butyl Ether	4.64109	4.65209	.24			
Methylene Chloride	4.28970	4.64636	8.31			
Acrolein	.16356	.18016	10.15			(Conc=500.00)
Acrylonitrile	.25730	.28763	11.79			(Conc=500.00)
Acetone	.78012	.67769	13.13			
Carbon Disulfide	13.8242	13.7629	.44			
1,1-Dichloroethene	3.15223	3.11384	1.22	*		
1,1-Dichloroethane	6.23895	5.69765	8.68		**	
tert-Butyl Alcohol	.08598	.07386	14.10			(Conc=500.00)
trans-1,2-Dichloroethene	5.26164	4.95498	5.83			
Trichlorofluoromethane	7.49104	6.92690	7.53			
Chloroform	8.86038	7.97901	9.95	*		
1,2-Dichloroethane-d4	2.29358	1.93489	15.64			(Conc=100.00)
1,2-Dichloroethane	4.12337	3.33024	19.24			
2-Butanone	.09677	.09101	5.95			
1,1,1-Trichloroethane	1.36023	1.59743	17.44			
Carbon Tetrachloride	1.18650	1.44374	21.68			
Bromodichloromethane	1.29358	1.35297	4.59			
Vinyl Acetate	.58768	.54273	7.65			
1,2-Dichloropropane	.60165	.61272	1.84	*		
cis-1,3-Dichloropropene	1.50097	1.35777	9.54			
Trichloroethene	.83241	.90926	9.23			
Dibromochloromethane	.95834	.87002	9.22			
1,1,2-Trichloroethane	.44874	.38603	13.97			
Benzene	1.62988	1.74667	7.17			
trans-1,3-Dichloropropene	.27115	.19636	27.58			
2-Chloroethylvinyl ether	.18189	.12213	32.86			
Bromoform	.55286	.50254	9.10		**	

RF - Response Factor from daily standard file at 50.00 ppb

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 10/30/92

Contractor: E.P.L. Time: 10:38

Contract No: NJDEPE ID# 15526 Laboratory ID: >U5412

Instrument ID: GC/MSD #1 Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
4-Methyl-2-Pentanone	.43455	.45656	5.06			
2-Hexanone	.17597	.12670	28.00			
Tetrachloroethene	1.07022	1.29156	20.68			
1,1,2,2-Tetrachloroethane	.70932	.88704	25.05		**	
Toluene	2.66135	3.01024	13.11	*		
Chlorobenzene	1.82137	1.90927	4.83		**	
Ethylbenzene	3.30060	3.44915	4.50	*		
Styrene	2.20138	2.10412	4.42			
m + p-Xylenes	2.78650	3.14011	12.69			(Conc=100.00)
o-Xylene	3.11671	3.72390	19.48			
1,3-Dichlorobenzene	1.83717	2.18733	19.06			
1,4-Dichlorobenzene	1.61421	1.98239	22.81			
1,2-Dichlorobenzene	1.42741	1.95327	36.84			
Toluene-d8	1.69988	1.90992	12.36			(Conc=100.00)
Bromofluorobenzene	1.04741	.96961	7.43			(Conc=100.00)
Diethyl ether	.22600	.36374	60.95			(Conc=500.00)

RF - Response Factor from daily standard file at 50.00 ppb

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 10/31/92

Contractor: E.P.L. Time: 14:11

Contract No: NJDEPE ID# 15526 Laboratory ID:)U5428

Instrument ID: GC/MSD #1 Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Chloromethane	1.28136	.94388	26.34		**	
Bromomethane	3.56350	3.48553	2.19			
Vinyl Chloride	1.97246	1.49094	24.41	*		
Chloroethane	1.85262	1.67619	9.52			
Methyl tert-Butyl Ether	4.64109	3.69393	20.41			
Methylene Chloride	4.28970	3.34148	22.10			
Acrolein	.16356	.14666	10.34			(Conc=500.00)
Acrylonitrile	.25730	.24070	6.45			(Conc=500.00)
Acetone	.78012	.66595	14.63			
Carbon Disulfide	13.8242	9.38635	32.10			
1,1-Dichloroethene	3.15223	2.42613	23.03	*		
1,1-Dichloroethane	6.23895	4.71782	24.38		**	
tert-Butyl Alcohol	.08598	.07476	13.05			(Conc=500.00)
trans-1,2-Dichloroethene	5.26164	3.90874	25.71			
Trichlorofluoromethane	7.49104	5.78736	22.74			
Chloroform	8.86038	7.20816	18.65	*		
1,2-Dichloroethane-d4	2.29358	2.13399	6.96			(Conc=100.00)
1,2-Dichloroethane	4.12337	3.39589	17.64			
2-Butanone	.09677	.09011	6.88			
1,1,1-Trichloroethane	1.36023	1.21163	10.92			
Carbon Tetrachloride.	1.18650	1.11049	6.41			
Bromodichloromethane	1.29358	1.24061	4.09			
Vinyl Acetate	.58768	.49255	16.19			
1,2-Dichloropropane	.60165	.53234	11.52	*		
cis-1,3-Dichloropropene	1.50097	1.38885	7.47			
Trichloroethene	.83241	.78313	5.92			
Dibromochloromethane	.95834	.99353	3.67			
1,1,2-Trichloroethane	.44874	.44642	.52			
Benzene	1.62988	1.39653	14.32			
trans-1,3-Dichloropropene	.27115	.25874	4.57			
2-Chloroethylvinyl ether	.18189	.15617	14.14			
Bromoform	.55286	.61280	10.84		**	

RF - Response Factor from daily standard file at 50.00 ppb

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 10/31/92

Contractor: E.P.L. Time: 14:11

Contract No: NJDEPE ID# 15526 Laboratory ID: >V5428

Instrument ID: GC/MSD #1 Initial Calibration Date: 10/20/92

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
4-Methyl-2-Pentanone	.43455	.40304	7.25			
2-Hexanone	.17597	.16314	7.29			
Tetrachloroethene	1.07022	1.06550	.44			
1,1,2,2-Tetrachloroethane	.70932	.74675	5.28		**	
Toluene	2.66135	2.46072	7.54	*		
Chlorobenzene	1.82137	1.72300	5.40		**	
Ethylbenzene	3.30060	3.13570	5.00	*		
Styrene	2.20138	1.96840	10.58			
m + p-Xylenes	2.78650	2.71732	2.48			(Conc=100.00)
o-Xylene	3.11671	2.76517	11.28			
1,3-Dichlorobenzene	1.83717	1.79836	2.11			
1,4-Dichlorobenzene	1.61421	1.54930	4.02			
1,2-Dichlorobenzene	1.42741	1.45842	2.17			
Toluene-d8	1.69988	1.67960	1.19			(Conc=100.00)
Bromofluorobenzene	1.04741	1.03599	1.09			(Conc=100.00)
Diethyl ether	.22600	.24008	6.23			(Conc=500.00)

RF - Response Factor from daily standard file at 50.00 ppb

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: GC/MSD #1

Contractor: E.P.L. Calibration Date: 10/20/92

Contract No: NJDEPE ID# 15526

Minimum $\overline{RF}$ for SPCC is .30 Maximum % RSD for CCC is 30%

Laboratory ID:	>V5268	>V5267	>V5269	>V5270	>V5271					
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	1.50294	1.49992	1.23329	1.26730	.90332	.287	1.28136	19.207		**
Bromomethane	2.99361	3.06827	4.19806	4.11264	3.44492	.347	3.56350	15.926		
Vinyl Chloride	2.37503	2.39296	1.75423	1.91730	1.42279	.296	1.97246	21.082	*	
Chloroethane	2.06558	1.67363	1.97650	1.95322	1.59418	.350	1.85262	11.116		
Methyl tert-Butyl Ether	5.23012	4.46234	4.55414	4.35144	4.60740	.590	4.64109	7.398		
Methylene Chloride	6.52683	4.31940	3.68406	3.67415	3.24404	.555	4.28970	30.495		
Acrolein	.19388	.14394	.15627	.15387	.16984	.440	.16356	11.804		(Conc=200.0,500.0,100
Acrylonitrile	.31782	.22703	.23784	.23622	.26759	.579	.25730	14.422		(Conc=200.0,500.0,100
Acetone	1.08049	.64897	.68880	.66465	.81769	.458	.78012	23.154		
Carbon Disulfide	14.2782	15.1274	14.0606	13.8156	11.8392	.552	13.8242	8.786		
1,1-Dichloroethene	3.32574	3.32445	3.21478	3.19919	2.69700	.471	3.15223	8.289	*	
1,1-Dichloroethane	6.41226	6.33833	6.46757	6.29424	5.68233	.716	6.23895	5.101		**
tert-Butyl Alcohol	.12654	.06211	.06182	.08538	.09405	.486	.08598	31.121		(Conc=200.0,500.0,1000
trans-1,2-Dichloroethene	5.48229	5.34734	5.44542	5.29069	4.74247	.615	5.26164	5.703		
Trichlorofluoromethane	7.68374	8.19352	7.77534	7.41394	6.38869	.383	7.49104	9.036		
Chloroform	8.97644	9.21552	9.13957	8.79679	8.17359	.947	8.86038	4.699	*	
1,2-Dichloroethane-d4	2.27053	2.26971	2.33545	2.26930	2.32291	1.207	2.29358	1.430		(Conc=100.0,100.0,100
1,2-Dichloroethane	4.26473	4.15584	4.22888	3.94809	4.01933	1.241	4.12337	3.292		
2-Butanone	.14133	.08539	.08184	.08521	.09008	.616	.09677	25.920		
1,1,1-Trichloroethane	1.42998	1.40101	1.37080	1.32401	1.27538	.800	1.36023	4.525		
Carbon Tetrachloride	1.29523	1.22422	1.20203	1.16924	1.13177	.863	1.18650	3.070		
Bromodichloromethane	1.31961	1.31057	1.31020	1.21944	1.30806	1.173	1.29358	3.222		
Vinyl Acetate	.64791	.54036	.56471	.55417	.63126	.531	.58768	8.256		
1,2-Dichloropropane	.61714	.60474	.60838	.57505	.60292	1.118	.60165	2.633	*	
cis-1,3-Dichloropropene	1.52169	1.49737	1.53565	1.40337	1.54677	1.323	1.50097	3.837		
Trichloroethene	.85254	.85548	.84841	.80629	.79933	1.070	.83241	3.273		
Dibromochloromethane	.98735	.94819	.97105	.88207	1.00302	1.597	.95834	4.927		
1,1,2-Trichloroethane	.48914	.43663	.44227	.40730	.46835	1.485	.44874	6.979		
Benzene	1.70335	1.66594	1.63209	1.60501	1.54302	.908	1.62988	3.740		
trans-1,3-Dichloropropene	.27867	.25889	.27571	.25326	.28920	1.454	.27115	5.449		

RF - Response Factor (Subscript is amount in ppb)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GC/MSD #1

Contractor: E.P.L. Calibration Date: 10/20/92

Contract No: NJDEPE ID# 15526

Minimum $\overline{RF}$ for SPCC is .30 Maximum % RSD for CCC is 30%

Compound	Laboratory ID: >V5268 RF 20.00	>V5267 RF 50.00	>V5269 RF 100.00	>V5270 RF 150.00	>V5271 RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
2-Chloroethylvinyl ether	.19725	.16887	.18343	.15994	.19995	1.279	.18189	9.586			
Bromoform	.62420	.51703	.53621	.50415	.58272	1.976	.55286	9.005		**	
4-Methyl-2-Pentanone	.50746	.39358	.41056	.37438	.48678	.736	.43455	13.575			
2-Hexanone	.22675	.15072	.15799	.14286	.20151	.864	.17597	20.662			
Tetrachloroethene	1.07964	1.12434	1.08302	1.05412	1.00996	.890	1.07022	3.929			
1,1,2,2-Tetrachloroethane	.85100	.63396	.66487	.65771	.73904	1.169	.70932	12.466		**	
Toluene	2.71636	2.73374	2.68535	2.59823	2.57307	.800	2.66135	2.698	*		
Chlorobenzene	1.84549	1.80756	1.87468	1.80640	1.77272	1.005	1.82137	2.162		**	
Ethylbenzene	3.34626	3.34865	3.38158	3.27018	3.15631	1.019	3.30060	2.739	*		
Styrene	2.26810	2.19597	2.24196	2.18267	2.11820	1.096	2.20138	2.629			
m + p-Xylenes	3.13549	3.08067	2.53435	2.81919	2.36279	1.031	2.78650	12.070			(Conc=40.0,100.0,200.0
o-Xylene	3.20746	3.15608	3.18110	3.08625	2.95265	1.090	3.11671	3.279			
1,3-Dichlorobenzene	1.92379	1.87945	1.77328	1.85845	1.75086	1.330	1.83717	3.970			
1,4-Dichlorobenzene	1.73771	1.63695	1.54290	1.61479	1.53872	1.346	1.61421	5.047			
1,2-Dichlorobenzene	1.55009	1.48125	1.31546	1.44555	1.34469	1.395	1.42741	6.797			
Toluene-d8	1.67182	1.68428	1.71921	1.70405	1.72806	.789	1.69988	1.258			(Conc=100.0,100.0,100.
Bromofluorobenzene	1.00324	.99381	1.06747	1.15179	1.02073	1.176	1.04741	6.193			(Conc=100.0,100.0,100.
Diethyl ether	.25659	.22226	.21098	.21817	.22199	.178	.22600	7.830			(Conc=200.0,500.0,1000

RF - Response Factor (Subscript is amount in ppb)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

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3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Environmental Profile Labs

Lab Code: 15526

Matrix Spike - EPL Sample No.: 9148.2 5mL

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	#	QC LIMITS REC.
1,1-Dichloroethene	100.00	0.00	74.20	74		61-145
Trichloroethene	100.00	0.00	113.00	113		71-120
Benzene	100.00	0.00	103.00	103		76-127
Toluene	100.00	0.00	95.50	95		76-125
Chlorobenzene	100.00	0.00	109.00	109		75-130

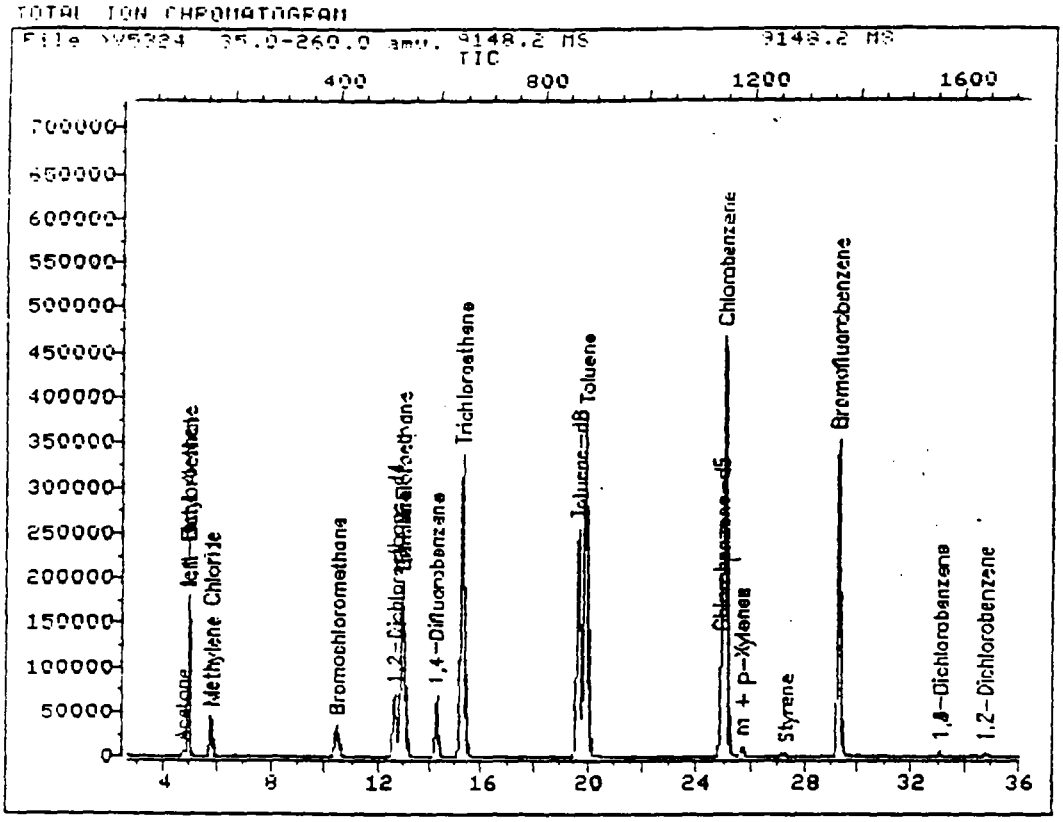
COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	100.00	78.80	78		5		14	61-145
Trichloroethene	100.00	113.00	113		0		14	71-120
Benzene	100.00	104.00	103		0		11	76-127
Toluene	100.00	94.00	93		2		13	76-125
Chlorobenzene	100.00	112.00	112		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 out of	10 outside limits

COMMENTS: _____

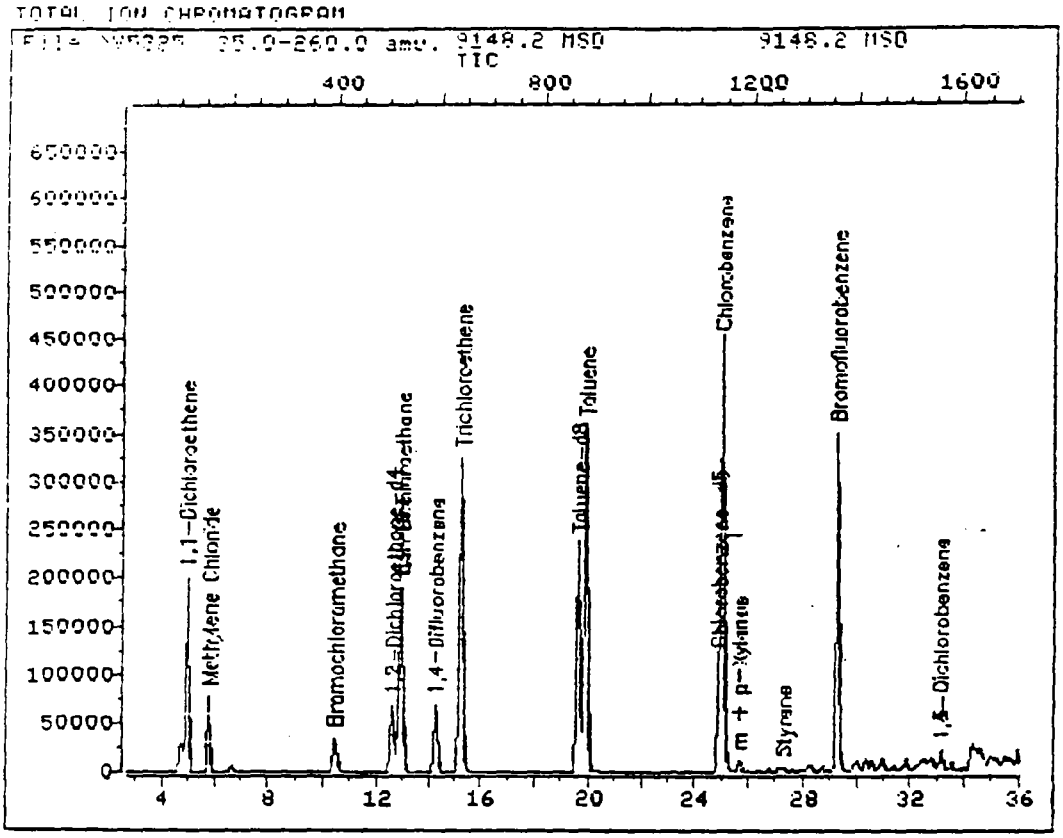


Data File: >V5324::D1
Name: 9148.2 MS
Misc: 9148.2 MS

Quant Output File: ^V5324::DB

Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921020 16:10

Operator ID: MARK
Quant Time: 921023 20:21
Injected at: 921023 19:44



Data File: >V5325::D1
Name: 9148.2 MSD
Misc: 9148.2 MSD

Quant Output File: ^V5325::DB

Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921020 16:10

Operator ID: MARK
Quant Time: 921023 21:03
Injected at: 921023 20:26

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Environmental Profile Labs Contract: CVI

Lab Code: 15526

Matrix Spike - EPL Sample No.: 9173.22 5m

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	#	QC LIMITS REC.
1,1-Dichloroethene	100.00	0.00	77.40	77		61-145
Trichloroethene	100.00	0.00	103.00	103		71-120
Benzene	100.00	2.83	90.60	87		76-127
Toluene	100.00	0.00	89.30	89		76-125
Chlorobenzene	100.00	0.00	102.00	102		75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	#	% RPD	#	QC. LIMITS RPD	REC.
1,1-Dichloroethene	100.00	86.00	85		9		14	61-145
Trichloroethene	100.00	118.00	117		12		14	71-120
Benzene	100.00	105.00	101		14	*	11	76-127
Toluene	100.00	102.00	101		12		13	76-125
Chlorobenzene	100.00	118.00	117		13		13	75-130

Column to be used to flag recovery and RPD values with an asterisk

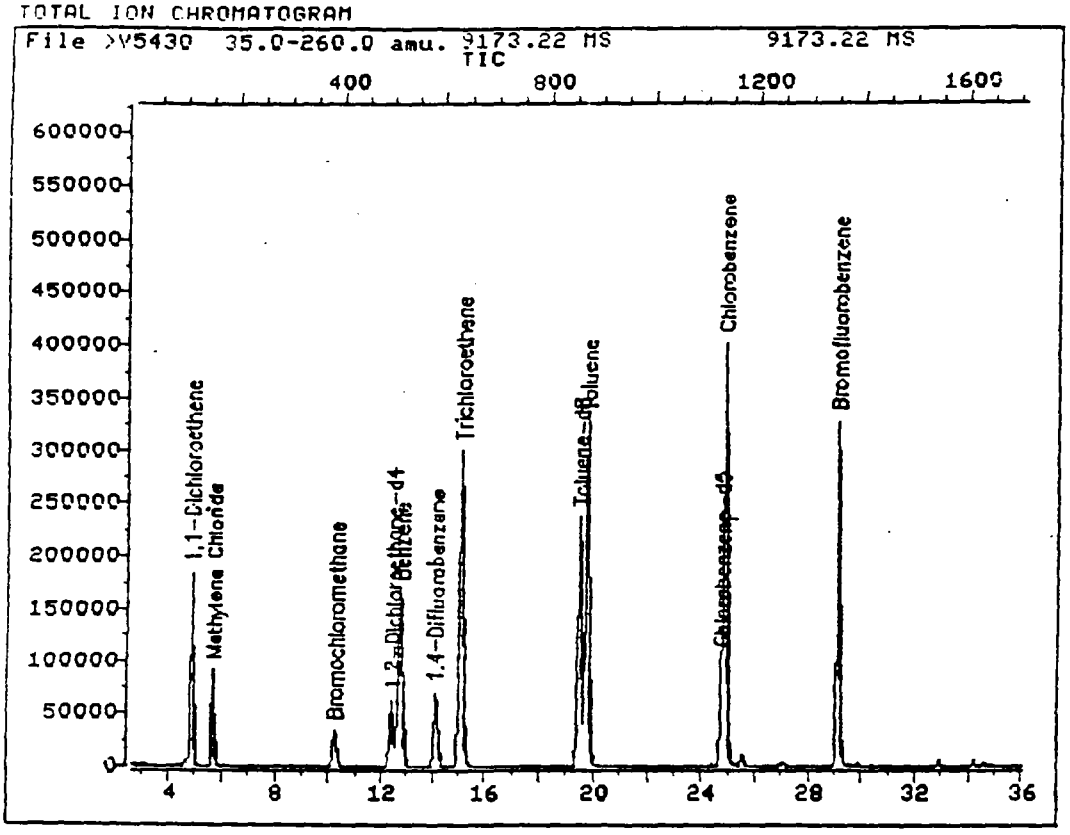
* Values outside of qc limits

RPD: 1 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

TOTAL ION CHROMATOGRAM



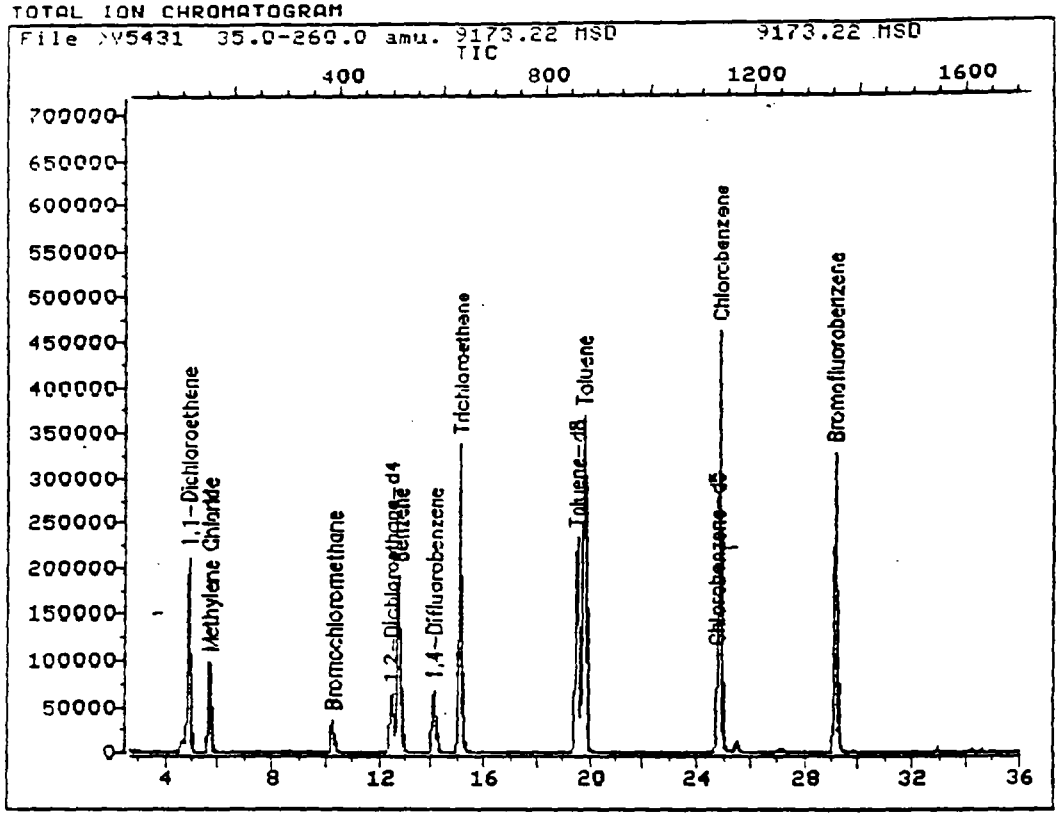
Data File: >V5430::D1 Quant Output File: ^V5430::DB

Name: 9173.22 MS
Misc: 9173.22 MS

Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921031 15:57

Operator ID: MARK
Quant Time: 921031 16:30
Injected at: 921031 15:53

TOTAL ION CHROMATOGRAM



Data File: >V5431::D1 Quant Output File: ^V5431::DB
Name: 9173.22 MSD
Misc: 9173.22 MSD

Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921031 15:57

Operator ID: MARK
Quant Time: 921031 17:13
Injected at: 921031 16:36

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >V5347 Lab Sample ID: VOA BLANK

Date Analyzed: 10/27/92 Time Analyzed: 11:36

Matrix: Water

Instrument ID: GC/MSD 5970 #1

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CCC/SPCC	CCC/SPCC	>V5346	10:27
02	9173.9 5mL	9173.9 5mL	>V5352	15:38
03	9173.2 5mL	9173.2 5mL	>V5353	16:20
04	9173.3 5mL	9173.3 5mL	>V5356	18:26
05	9173.5 5mL	9173.5 5mL	>V5358	19:50
06	9173.6 5mL	9173.6 5mL	>V5359	20:33
07				
08				
09				
10				
11				
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COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >V5363 Lab Sample ID: VOA Blank

Date Analyzed: 10/27/92 Time Analyzed: 23:37

Matrix: Water

Instrument ID: GC/MSD 5970 #1

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CCC/SPCC	CCC/SPCCC	>V5362	22:24
02	9173.25 5m	9173.25 5m	>V5364	0:19
03	9173.26 5m	9173.26 5m	>V5365	1:01
04	9173.14 5m	9173.14 5m	>V5366	1:43
05	9173.13 5m	9173.13 5m	>V5367	2:26
06	9173.23 5m	9173.23 5m	>V5368	3:08
07	9173.12 5m	9173.12 5m	>V5369	3:50
08	9173.21 5m	9173.21 5m	>V5370	4:33
09	9173.19 5m	9173.19 5m	>V5371	5:15
10	9173.11 5m	9173.11 5m	>V5372	5:58
11				
12				
13				
14				
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30				

COMMENTS: _____

FORM IV VOA

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1/87 Rev.

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >V5413 Lab Sample ID: VOA BLANK

Date Analyzed: 10/30/92 Time Analyzed: 11:42

Matrix: Water

Instrument ID: GC/MSD 5970 #1

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CCC/SPCC	CCC/SPCC	>V5412	10:38
02	9173.1 5uL	9173.1 5uL	>V5415	13:26
03	9173.8 50u	9173.8 50u	>V5418	15:31
04	9173.10 50	9173.10 50	>V5419	16:12
05	9173.15 .5	9173.15 .5	>V5421	17:37
06	9173.16 .5	9173.16 .5	>V5422	18:19
07	9173.24 .5	9173.24 .5	>V5423	19:01
08	9173.17 5m	9173.17 5m	>V5424	19:43
09	9173.22 5m	9173.22 5m	>V5426	21:07
10				
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COMMENTS: _____

VOLATILE METHOD BLANK SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID: >V5429 Lab Sample ID: VOA Blank

Date Analyzed: 10/31/92 Time Analyzed: 15:10

Matrix: Water

Instrument ID: GC/MSD 5970 #1

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

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	CCC/SPCC	CCC/SPCC	>V5428	14:11
02	9173.22 MS	9173.22 MS	>V5430	15:53
03	9173.22 MS	9173.22 MS	>V5431	16:36
04	9173.7 50u	9173.7 50u	>V5432	17:18
05	9173.4 .5m	9173.4 .5m	>V5433	18:01
06	9173.20 5m	9173.20 5m	>V5434	18:42
07	9173.18 5m	9173.18 5m	>V5436	20:07
08				
09				
10				
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12				
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COMMENTS: _____

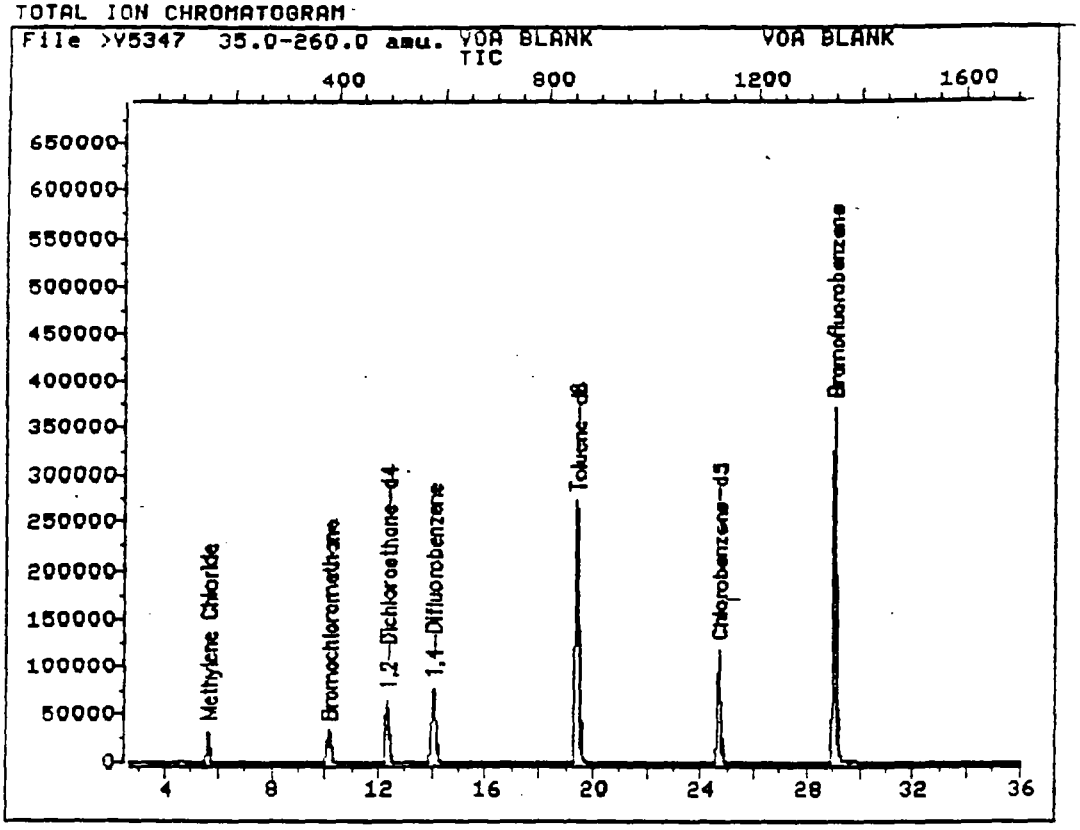
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	VOA BLANK	DILUTION FACTOR	1.00
CLIENT ID		QA BATCH	
DATA FILE	>05347	DATE ANALYZED	10/27/92

COMPOUND	UG/L		MDL	COMPOUND	UG/L	MDL
Chloromethane	ND		10	Dibromochloromethane	ND	5
Bromomethane	ND		10	1,1,2-Trichloroethane	ND	5
Vinyl Chloride	ND		10	Benzene	ND	5
Chloroethane	ND		10	trans-1,3-Dichloropropene	ND	5
Methylene Chloride	12	B	5	2-Chloroethylvinyl ether	ND	5
Acrolein	ND		50	Bromoform	ND	5
Acrylonitrile	ND		50	2-Hexanone	ND	5
Acetone	ND		5	4-Methyl-2-Pentanone	ND	5
Carbon Disulfide	ND		5	Tetrachloroethene	ND	5
1,1-Dichloroethene	ND		5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	ND		5	Toluene	ND	5
trans-1,2-Dichloroethene	ND		5	Chlorobenzene	ND	5
Trichlorofluoromethane	ND		5	Ethylbenzene	ND	5
Chloroform	ND		5	Styrene	ND	5
1,2-Dichloroethane	ND		5	o-Xylene	ND	5
2-Butanone	ND		5	m + p-Xylenes	ND	5
1,1,1-Trichloroethane	ND		5	1,3-Dichlorobenzene	ND	5
Carbon Tetrachloride	ND		5	1,2-Dichlorobenzene	ND	5
Bromodichloromethane	ND		5	1,4-Dichlorobenzene	ND	5
Vinyl Acetate	ND		5	tert-Butyl Alcohol	ND	50
1,2-Dichloropropane	ND		5	Methyl tert-Butyl Ether	ND	5
cis-1,3-Dichloropropene	ND		5	Diethyl ether	ND	50
Trichloroethene	ND		5			0

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM

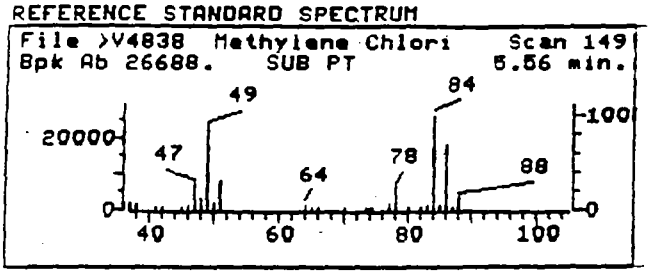


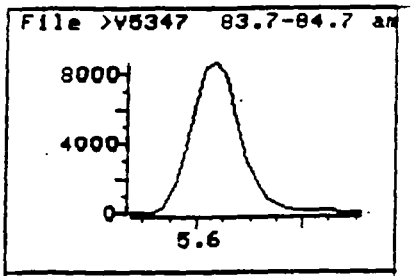
Data File: >V5347::D1 Quant Output File: ^V5347::DB
Name: VOA BLANK
Misc: VOA BLANK

Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921020 16:10

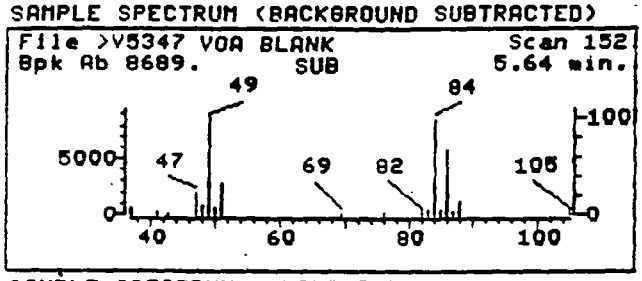
Operator ID: MARK
Quant Time: 921027 12:13
Injected at: 921027 11:36

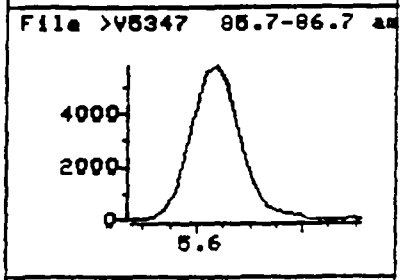
REFERENCE STANDARD SPECTRUM



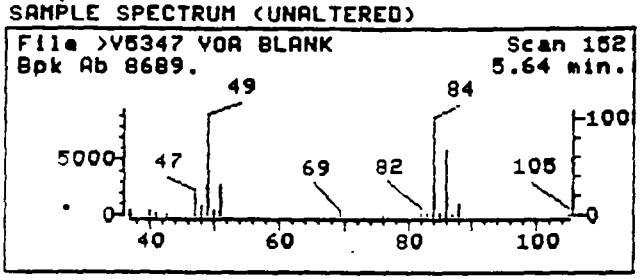


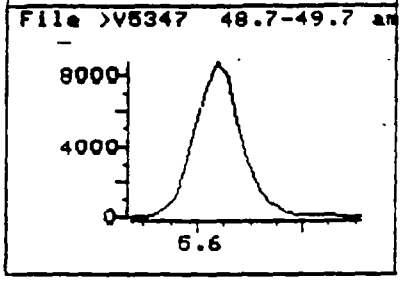
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





SAMPLE SPECTRUM (UNALTERED)





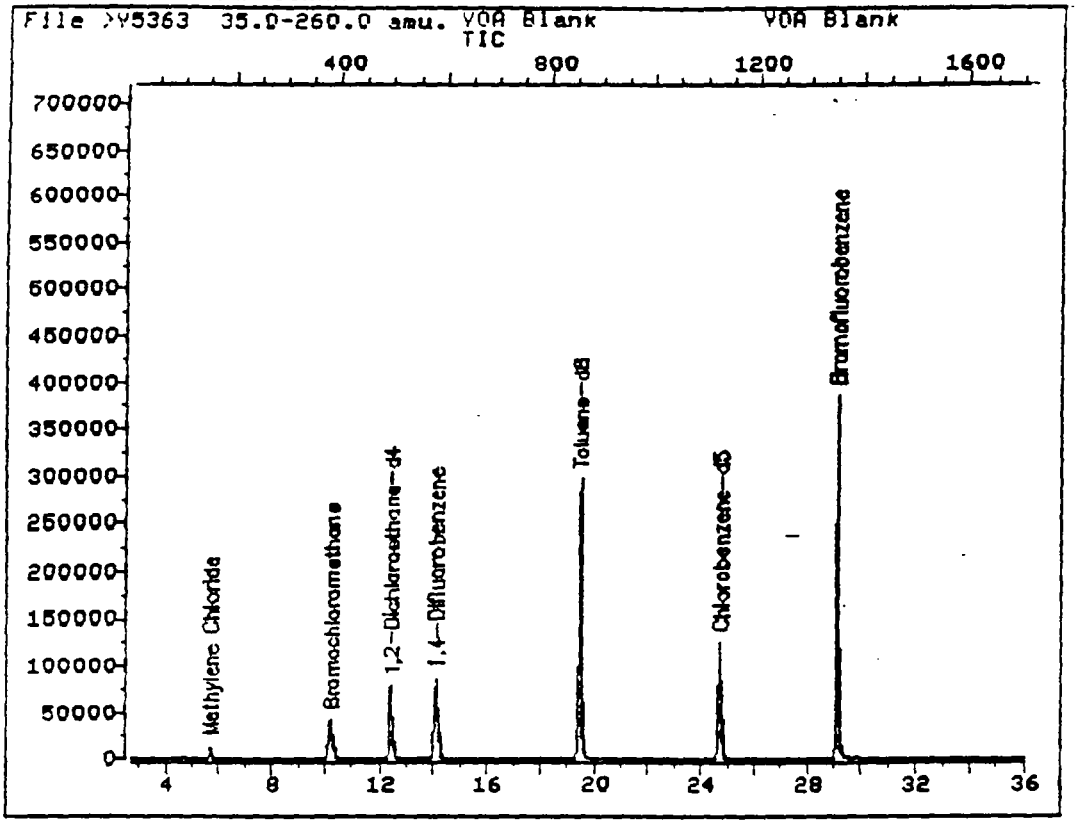
Data File: >V5347::D1 Quant Output File: ^V5347::DB
Name: VOA BLANK
Misc: VOA BLANK
Quant Time: 921027 12:13 Quant ID File: IDVOA::D2
Injected at: 921027 11:36 Last Calibration: 921020 16:10

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 152
Retention Time: 5.64 min.
Quant Ion: 84.0
Area: 56606
Concentration: 11.84 ppb
q-value: 90

Bromomethane	ND	10	1,1,2-Trichloroethane	ND	5
Vinyl Chloride	ND	10	Benzene	ND	5
Chloroethane	ND	10	trans-1,3-Dichloropropene	ND	5
Methylene Chloride	4 JB	5	2-Chloroethylvinyl ether	ND	5
Acrolein	ND	50	Bromoform	ND	5
Acrylonitrile	ND	50	2-Hexanone	ND	5
Acetone	ND	5	4-Methyl-2-Pentanone	ND	5
Carbon Disulfide	ND	5	Tetrachloroethene	ND	5
1,1-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	ND	5	Toluene	ND	5
trans-1,2-Dichloroethene	ND	5	Chlorobenzene	ND	5
Trichlorofluoromethane	ND	5	Ethylbenzene	ND	5
Chloroform	ND	5	Styrene	ND	5
1,2-Dichloroethane	ND	5	o-Xylene	ND	5
2-Butanone	ND	5	m + p-Xylenes	ND	5
1,1,1-Trichloroethane	ND	5	1,3-Dichlorobenzene	ND	5
Carbon Tetrachloride	ND	5	1,2-Dichlorobenzene	ND	5
Bromodichloromethane	ND	5	1,4-Dichlorobenzene	ND	5
Vinyl Acetate	ND	5	tert-Butyl Alcohol	ND	50
1,2-Dichloropropane	ND	5	Methyl tert-Butyl Ether	ND	5
cis-1,3-Dichloropropene	ND	5	Diethyl ether	ND	50
Trichloroethene	ND	5			0

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM



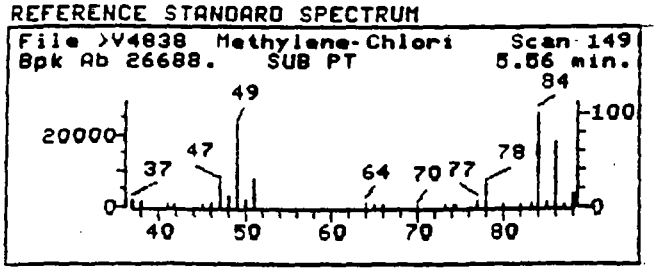
Data File: >V5363::D1
Name: VOA Blank
Misc: VOA Blank

Quant Output File: ^V5363::DB

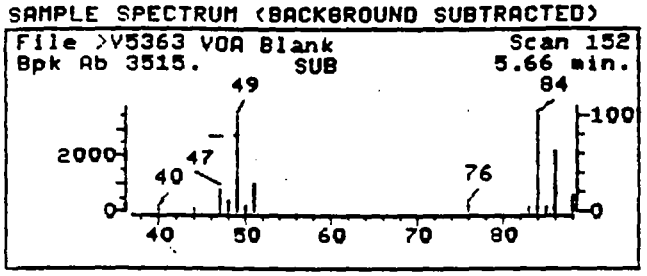
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921028 00:14
Injected at: 921027 23:37

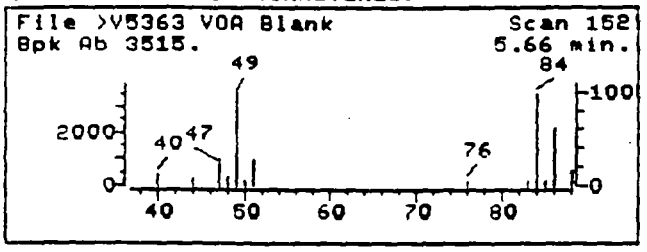
REFERENCE STANDARD SPECTRUM

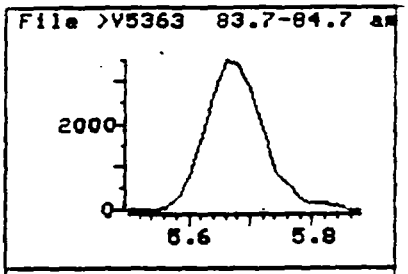


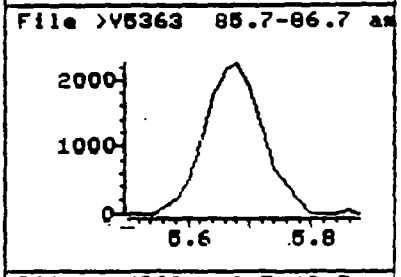
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

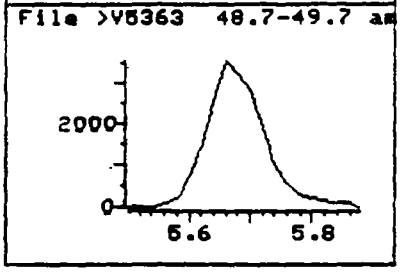


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5363::D1 Quant Output File: ^V5363::D8
Name: VOA Blank
Misc: VOA Blank
Quant Time: 921028 00:14 Quant ID File: IDVOA::D2
Injected at: 921027 23:37 Last Calibration: 921027 22:05

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 152
Retention Time: 5.66 min.
Quant Ion: 84.0
Area: 22779
Concentration: 3.84 ppb
q-value: 88

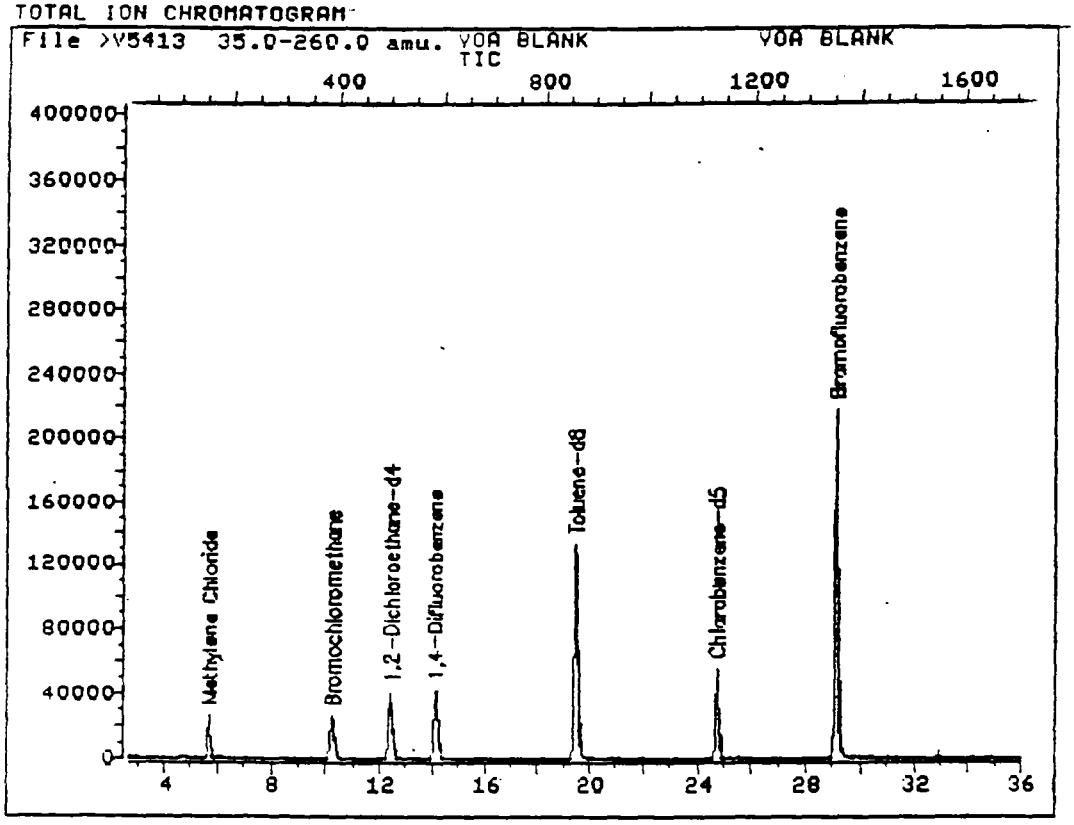
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	VOA BLANK	DILUTION FACTOR	1.00
CLIENT ID		QA BATCH	
DATA FILE	>V5413	DATE ANALYZED	10/30/92

COMPOUND	UG/L		MDL	COMPOUND	UG/L		MDL
Chloromethane	ND		10	Dibromochloromethane	ND		5
Bromomethane	ND		10	1,1,2-Trichloroethane	ND		5
Vinyl Chloride	ND		10	Benzene	ND		5
Chloroethane	ND		10	trans-1,3-Dichloropropene	ND		5
Methylene Chloride	13	B	5	2-Chloroethylvinyl ether	ND		5
Acrolein	ND		50	Bromoform	ND		5
Acrylonitrile	ND		50	2-Hexanone	ND		5
Acetone	ND		5	4-Methyl-2-Pentanone	ND		5
Carbon Disulfide	ND		5	Tetrachloroethene	ND		5
1,1-Dichloroethene	ND		5	1,1,2,2-Tetrachloroethane	ND		5
1,1-Dichloroethane	ND		5	Toluene	ND		5
trans-1,2-Dichloroethene	ND		5	Chlorobenzene	ND		5
Trichlorofluoromethane	ND		5	Ethylbenzene	ND		5
Chloroform	ND		5	Styrene	ND		5
1,2-Dichloroethane	ND		5	o-Xylene	ND		5
2-Butanone	ND		5	m + p-Xylenes	ND		5
1,1,1-Trichloroethane	ND		5	1,3-Dichlorobenzene	ND		5
Carbon Tetrachloride	ND		5	1,2-Dichlorobenzene	ND		5
Bromodichloromethane	ND		5	1,4-Dichlorobenzene	ND		5
Vinyl Acetate	ND		5	tert-Butyl Alcohol	ND		50
1,2-Dichloropropane	ND		5	Methyl tert-Butyl Ether	ND		5
cis-1,3-Dichloropropene	ND		5	Diethyl ether	ND		50
Trichloroethene	ND		5				0

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM



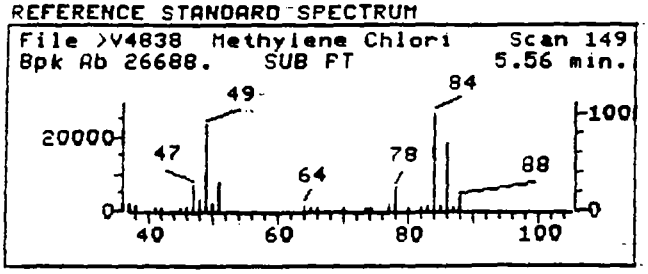
Data File: >V5413::D1
Name: VOA BLANK
Misc: VOA BLANK

Quant Output File: ^V5413::DB

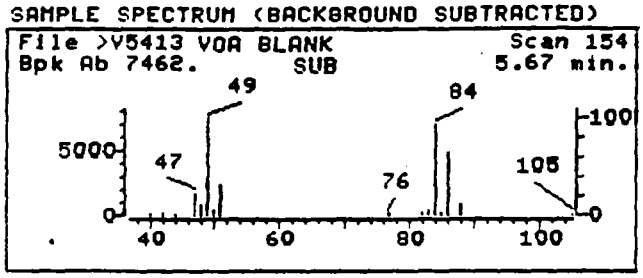
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921030 12:19
Injected at: 921030 11:42

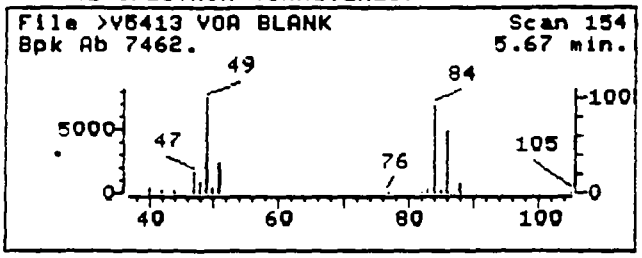
REFERENCE STANDARD SPECTRUM

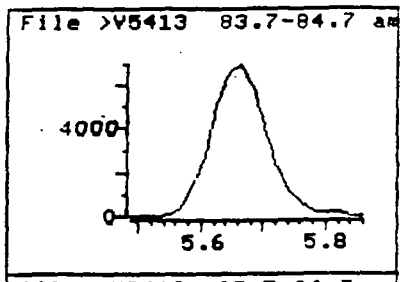


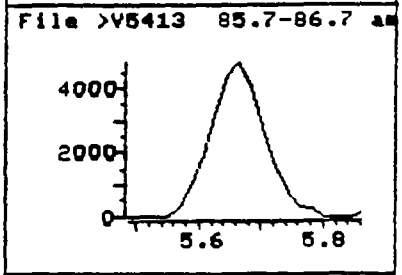
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

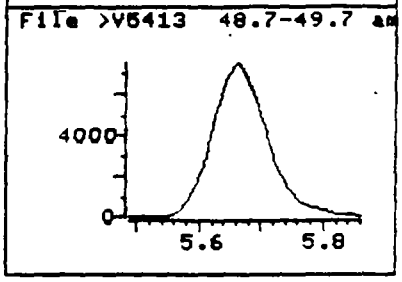


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5413::D1
Name: VOA BLANK
Misc: VOA BLANK
Quant Time: 921030 12:19
Injected at: 921030 11:42

Quant Output File: ^V5413::DB
Quant ID File: IDVOA::D2
Last Calibration: 921027 22:05

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 154
Retention Time: 5.67 min.
Quant Ion: 84.0
Area: 44004
Concentration: 12.63 ppb
q-value: 85

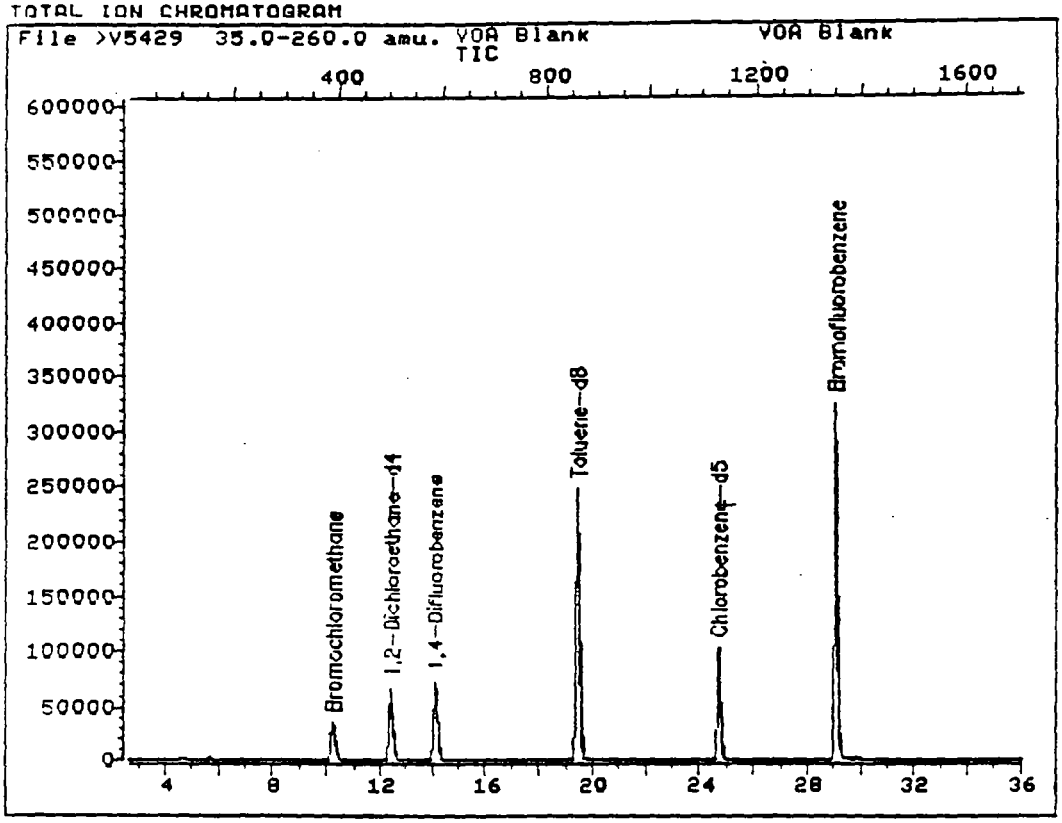
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	VOA Blank	DILUTION FACTOR	1.00
CLIENT ID		QA BATCH	
DATA FILE	>V5429	DATE ANALYZED	10/31/92

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Chloromethane	ND	10	Dibromochloromethane	ND	5
Bromomethane	ND	10	1,1,2-Trichloroethane	ND	5
Vinyl Chloride	ND	10	Benzene	ND	5
Chloroethane	ND	10	trans-1,3-Dichloropropene	ND	5
Methylene Chloride	ND	5	2-Chloroethylvinyl ether	ND	5
Acrolein	ND	50	Bromoform	ND	5
Acrylonitrile	ND	50	2-Hexanone	ND	5
Acetone	ND	5	4-Methyl-2-Pentanone	ND	5
Carbon Disulfide	ND	5	Tetrachloroethene	ND	5
1,1-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	ND	5	Toluene	ND	5
trans-1,2-Dichloroethene	ND	5	Chlorobenzene	ND	5
Trichlorofluoromethane	ND	5	Ethylbenzene	ND	5
Chloroform	ND	5	Styrene	ND	5
1,2-Dichloroethane	ND	5	o-Xylene	ND	5
2-Butanone	ND	5	m + p-Xylenes	ND	5
1,1,1-Trichloroethane	ND	5	1,3-Dichlorobenzene	ND	5
Carbon Tetrachloride	ND	5	1,2-Dichlorobenzene	ND	5
Bromodichloromethane	ND	5	1,4-Dichlorobenzene	ND	5
Vinyl Acetate	ND	5	tert-Butyl Alcohol	ND	50
1,2-Dichloropropane	ND	5	Methyl tert-Butyl Ether	ND	5
cis-1,3-Dichloropropene	ND	5	Diethyl ether	ND	50
Trichloroethene	ND	5			0

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

TOTAL ION CHROMATOGRAM



Data File: >V5429::D1
Name: VOA Blank
Misc: VOA Blank

Quant Output File: ^V5429::DB

Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921030 12:33

Operator ID: MARK
Quant Time: 921031 15:47
Injected at: 921031 15:10

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE N
VOA-BLANK

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: VOA-BLANK

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: >V5347

Date Analyzed: 10/27/92

Column: Capillary

Dilution Factor: 1

CONCENTRATION UNITS:

Number of TICs found: 0

ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC 1/87 Rev

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE

VOA Blank

Lab Name: Environmental Profile Lab   NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: VOA-Blank

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: >V5363

Date Analyzed: 10/27/92

Column: Capillary

Dilution Factor: 1

CONCENTRATION UNITS:

Number of TICs found: 0

ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC   1/87 Rev

LAB SAMPLE NO

VOA-BLANK

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: VOA BLANK

Sample wt/vol: 5.0 (g/mL) mL

Lab File ID: >V5413

Date Analyzed: 10/30/92

Column: Capillary

Dilution Factor: 1

CONCENTRATION UNITS: ug/L

Number of TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC 1/87 Rev

2A-

WATER VOLATILE SURROGATE RECOVERY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	CCC/SPCC	88	103	96		0
02	VOA BLANK	94	94	101		0
03	9173.9 5mL	96	97	105		0
04	9173.2 5mL	93	96	103		0
05	9173.3 5mL	90	98	108		0
06	9173.5 5mL	93	97	102		0
07	9173.6 5mL	94	95	102		0
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	QC LIMITS
S1 (TOL) = Toluene-d8	(76-125)
S2 (BFB) = Bromofluorobenzene	(76-125)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2A

WATER VOLATILE SURROGATE RECOVERY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	CCC/SPCC	98	96	94		0
02	VOA Blank	98	95	96		0
03	9173.25 5m	99	95	98		0
04	9173.26 5m	99	92	99		0
05	9173.14 5m	97	95	98		0
06	9173.13 5m	101	94	99		0
07	9173.23 5m	96	94	102		0
08	9173.12 5m	99	97	98		0
09	9173.21 5m	98	93	103		0
10	9173.19 5m	96	96	103		0
11	9173.11 5m	101	93	103		0
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	QC LIMITS
S1 (TOL) = Toluene-d8	(76-125)
S2 (BFB) = Bromofluorobenzene	(76-125)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

365

FORM II VOA-1

1/87 Rev.

2A

WATER VOLATILE SURROGATE RECOVERY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	CCC/SPCC	112	93	84		0
02	VOA BLANK	100	117	83		0
03	9173.1 5uL	101	93	100		0
04	9173.8 50u	101	93	99		0
05	9173.10 50	98	92	97		0
06	9173.15 .5	97	96	98		0
07	9173.16 .5	99	95	103		0
08	9173.24 .5	97	97	105		0
09	9173.17 5m	100	93	100		0
10	9173.22 5m	99	92	103		0
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	QC LIMITS
S1 (TOL) = Toluene-d8	(76-125)
S2 (BFB) = Bromofluorobenzene	(76-125)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

366

WATER VOLATILE SURROGATE RECOVERY

Lab Name: Environmental Profiles Lab Contract: Serv-Air

Lab Code: 15526

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	CCC/SPCC	99	99	93		0
02	VOA Blank	99	93	96		0
03	9173.22 MS	98	95	99		0
04	9173.22 MS	96	95	97		0
05	9173.7 50u	97	95	94		0
06	9173.4 .5m	97	92	102		0
07	9173.20 5m	96	98	101		0
08	9173.18 5m	91	97	101		0
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	QC LIMITS
S1 (TOL) = Toluene-d8	(76-125)
S2 (BFB) = Bromofluorobenzene	(76-125)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID (Standard): >V5346 Date Analyzed: 10/27/92

Instrument ID: GC/MSD 5970 #1 Time Analyzed: 10:27

Matrix: Water Column: Capillary

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	60835.	10.14	360489.	13.97	332581.	24.65
	UPPER LIMIT	121670.		720978.		665162.	
	LOWER LIMIT	30418.		180244.		166290.	
	EPA SAMPLE NO.						
01	VOA BLANK	55744.	10.15	358504.	14.02	304794.	24.67
02	9173.9 5mL	52411.	10.24	331354.	14.09	290799.	24.72
03	9173.2 5mL	49460.	10.22	305897.	14.06	281602.	24.73
04	9173.3 5mL	52227.	10.25	299326.	14.08	278122.	24.71
05	9173.5 5mL	55898.	10.25	308076.	14.08	272346.	24.72
06	9173.6 5mL	59783.	10.25	335710.	14.08	300453.	24.71
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Environmental Profiles Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID (Standard): >V5362 Date Analyzed: 10/27/92

Instrument ID: GC/MSD 5970 #1 Time Analyzed: 22:24

Matrix: Water Column: Capillary

	IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
12 HOUR STD	60490.	10.22	361830.	14.06	306493.	24.71
UPPER LIMIT	120980.		723660.		612986.	
LOWER LIMIT	30245.		180915.		153247.	
EPA SAMPLE NO.						
01 VOA Blank	69178.	10.21	396368.	14.06	319166.	24.71
02 9173.25 5m	72516.	10.22	398017.	14.08	324081.	24.71
03 9173.26 5m	62939.	10.21	350228.	14.06	296205.	24.71
04 9173.14 5m	70442.	10.22	376073.	14.05	319381.	24.70
05 9173.13 5m	68426.	10.24	362464.	14.07	294665.	24.70
06 9173.23 5m	66281.	10.21	355875.	14.04	311506.	24.71
07 9173.12 5m	64934.	10.23	328325.	14.06	273672.	24.71
08 9173.21 5m	62593.	10.22	334076.	14.05	291079.	24.72
09 9173.19 5m	62023.	10.22	325900.	14.07	280903.	24.70
10 9173.11 5m	66389.	10.24	355432.	14.07	288161.	24.70
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8A-

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID (Standard): >V5412 Date Analyzed: 10/30/92

Instrument ID: GC/MSD 5970 #1 Time Analyzed: 10:38

Matrix: Water Column: Capillary

	IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
12 HOUR STD	44650.	10.19	228874.	14.06	159025.	24.73
UPPER LIMIT	89300.		457748.		318050.	
LOWER LIMIT	22325.		114437.		79513.	
	EPA SAMPLE NO.					
01	VOA BLANK	40625.	10.22	189887.	14.07	139015.	24.73
02	9173.1 5uL	50369.	10.28	291166.	14.09	240904.	24.74
03	9173.8 50u	50705.	10.30	270452.	14.11	219647.	24.76
04	9173.10 50	49769.	10.27	274961.	14.10	234733.	24.75
05	9173.15 .5	55387.	10.25	270531.	14.09	235486.	24.74
06	9173.16 .5	43537.	10.25	236958.	14.10	196077.	24.74
07	9173.24 .5	45462.	10.23	241628.	14.10	200442.	24.74
08	9173.17 5m	51271.	10.24	258374.	14.09	213999.	24.72
09	9173.22 5m	50884.	10.24	264926.	14.07	216604.	24.72
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID (Standard): >V5428 Date Analyzed: 10/31/92

Instrument ID: GC/MSD 5970 #1 Time Analyzed: 14:11

Matrix: Water Column: Capillary

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	58522.	10.18	344471.	14.03	279811.	24.71
	UPPER LIMIT	117044.		688942.		559622.	
	LOWER LIMIT	29261.		172235.		139905.	
	EPA SAMPLE NO.						
01	VOA Blank	57744.	10.23	328188.	14.08	263560.	24.71
02	9173.22 MS	54202.	10.23	306564.	14.08	260880.	24.71
03	9173.22 MS	55367.	10.25	299591.	14.08	258664.	24.72
04	9173.7 50u	62364.	10.26	316891.	14.09	265035.	24.72
05	9173.4 .5m	54046.	10.24	294194.	14.08	249348.	24.73
06	9173.20 5m	56592.	10.22	297390.	14.07	255176.	24.71
07	9173.18 5m	46021.	10.22	215967.	14.05	197363.	24.72
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1202.1-.13
Sample Rec'd: 05/26/93
Analysis Start: 05/26/93
Analysis Comp: 05/26/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard

NJDEPE UST Reg.#: 81533-160+161
TMS #: C-91-2845
DICAR #: 90-02-09-1524
Location #: 1076

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1202.1	SITE A, BOTTOM, next to bldg.	83	30.8	3.3
1202.2	SITE B, BOTTOM, 15' W. of bldg.	86	59.7	3.3
1202.3	SITE C, BOTTOM, 30' W. of bldg.	89	112.	3.3
1202.4	SITE D, N.E. SIDE WALL	84	15.9	3.3
1202.5	SITE E, N-N.E. SIDE WALL	89	24.1	3.3
1202.6	SITE F, N-N.W. SIDE WALL	89	9.22	3.3
1202.7	SITE G, W-N.W. SIDE WALL	86	45.5	3.3
1202.8	SITE H, W. SIDE WALL	91	23.6	3.3
1202.9	SITE I, W-S.W. SIDE WALL	86	18.7	3.3
1202.10	SITE J, S-S.W. SIDE WALL	85	71.6	3.3
1202.11	SITE K, S-S.E. SIDE WALL	86	72.3	3.3
M. Bl.	METHOD BLANK	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added
See COC and site plan for other information.

I certify that all sampling and/or analysis conformed to the appropriate regulations.

Brian K. McKee
Laboratory Director

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1202.1-.13
Sample Rec'd: 05/26/93
Analysis Start: 05/26/93
Analysis Comp: 05/26/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard

NJDEPE UST Reg.#: 81533-160+161
TMS #: C-91-2845
DICAR #: 90-02-09-1524
Location #: 1076

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1202.12	SITE L, S.E. SIDE WALL *	87	3570.	20.
1202.13	SITE L. DUPLICATE *	87	1900.	20.
M. Bl.	METHOD BLANK	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added
See COC and site plan for other information.

I certify that all sampling and/or analysis conformed to the appropriate regulations.

Brian K. McKee
Laboratory Director

SERV-AIR, INC.
An E-SYSTEMS Company

P.O. #:

Chain of Custody

Project #: 1076 UST CLOSURE
Customer: DEH
Phone: 26224.

Sampler: C. Appleby DEH
Site Name: 1076
UST # 6081533-160, 161

Date / Time: 5/26/93 1330

Analysis Parameters: T P H C

Start:
Finish:

Preservation Method:

Lab Sample Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	OVA	Remarks
1202.1	5/26/93 1345	Site A pit btm next to bldg	Soil	1	X	N/D	4/1 DRK Gry
.2	1346	Site B Pit Btm 15' W of Bldg		1	X	1	4/1 Dk Gry
.3	1347	Site C Pit Btm 30' W of Bldg		1	X	3	4/2 Olive Gry
.4	1348	Site D NE Side Wall		1	X	N/D	4/2 Olive Gry
.5	1349	Site E NNE Side Wall		1	X	N/D	5/6 olive (B C S)
.6	1350	Site F NNW Side Wall		1	X	1	5/6 olive (E B W S D)
.7	1351	Site G WNW Side Wall		1	X	N/D	4/3 Olive Grey
.8	1352	Site H W Side Wall		1	X	N/D	4/3 Olive
.9	1353	Site I WSW Side Wall		1	X	1.5	4/2 olive Grey
.10	1354	Site J SSW Side Wall		1	X	.5	3/2 Dk Olive Grey
.11	1355	Site K SSE Side Wall		1	X	N/D	4/3 Olive

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:
C. Appleby	5/26/93 1422	[signature]	
Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time
[signature]	5/26 1450	Sarah J. Hubbard	5/26/93 1453

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody. Attached

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E-SYSTEMS, INC. • P. O. BOX 369, BUILDING 1209 • FT. MONMOUTH, NEW JERSEY 07703-5000 • (201) 544-0995

SERV-AIR, INC.
An E-SYSTEMS Company

P.O. #:

Chain of Custody

Project #: 1076 UST Closure
Customer: DEH
Phone: 26224

Sampler: Charles Appleby DEH
Site Name: 1076
UST # 0081533-160-161

Date / Time: 5/26/93 1330

Analysis Parameters

Start:
Finish:

Lab Sample ID Number	Date/Time		Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	OVA	Preservation Method / Remarks
12	5/26/93	1356	Site L SE Side Wall	Soil	1	X	14	4/2 Olive Gray
13	↓	1357	Site L Duplicate M	Soil	1	X	10	4/2 Olive Gry

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:
	5/26/93 1422		
Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time
	5/26 1450		

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody. Attached

SAI-ENV COC form 01 Page 2 of 2 Pages Rev. A Date: 02 Apr 93

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Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1201.1-.4-
Sample Rec'd: 05/25/93
Analysis Start: 05/25/93
Analysis Comp: 05/25/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard

NJDEPE UST Reg.#: 81533-160+161
TMS #: C-91-2845
DICAR #: 90-02-09-1524
Location #: 1076

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1201.1	SITE A - S.E. WALL	84	20.7	3.3
1201.2	SITE B - S.E. PIT BOTTOM *	82	2630.	13.
1201.3	SITE C - E. WALL BELOW PIPE CHASE	87	8.96	3.3
1201.4	SITE D - BELOW PIPES AT BLDG. *	85	542.	3.3
M. Bl.	METHOD BLANK	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added

I certify that all sampling and/or analysis conformed to the appropriate regulations.

Brian K. McKee
Laboratory Director

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Rec'd 5/18/93 SLM

Report of Analysis

U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1198.1-.5
Sample Rec'd: 05/18/93
Analysis Start: 05/18/93
Analysis Comp: 05/18/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard

NJDEPE UST Reg.#: XXXXXXX-XX
TMS #: X-XX-XXXX
NJDEPE Case #: XXXX
Location #: 1076

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1198.1	PILE 1 - A	82	32.2	3.3
1198.2	PILE 1 - B	81	14.0	3.3
1198.3	PILE 1 - C	83	380.	3.3
1198.4	PILE 1 - D	83	12.1	3.3
1198.5	PILE 1 - E	81	10.6	3.3
M. Bl.	METHOD BLANK	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added

I certify that all sampling and/or analysis conformed to the appropriate regulations.

Brian K. McKee
Laboratory Director