UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 3021 NJDEPE FACILITY UST NO. 00192486 UST NO. 27 SPILL CASE NO. 89-11-02-1052

31 May 1994

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

Prepared For:

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

Prepared by:

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MANAGERS DESIGNERS CONSULTANTS

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EXECUTIVE SUMMARY

On 2 November 1989, one single walled steel, underground storage tank (UST) was closed at U.S. Army Fort Monmouth, in Fort Monmouth, New Jersey. The tank was registered with the New Jersey Department of Environmental Protection and Energy (NJDEPE) and was assigned facility UST No. 00192486. The UST was formerly located adjacent to Building 3021 in the Charles Wood area of Fort Monmouth. UST No. 27 was a 5,000-gallon capacity, No. 2 fuel oil UST. Fabiano and Son, Inc. performed the tank closure.

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 for indications of historical leakage from the tank. Several corrosion holes of approximately 1/16-inch in diameter were noted. A sheen was also noted on the groundwater within the excavation surrounding UST No. 27. A discharge was reported to the NJDEPE by the Directorate of Public Works (DPW) on 2 November 1989 (Case No. 89-11-02-1052). Following removal of the tank, approximately 115 tons of contaminated soil was excavated and disposed of as hazardous waste.

On 19 June 1990, a Standard Reporting Form (SRF) for closure and a site assessment compliance statement with a removal procedures summary was sent to the NJDEPE.

On 3 October 1991, three monitoring wells were placed within the area surrounding the UST No. 27 excavation to determine the possible impact, if any, to the environment. 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), base neutral compounds plus 15 tentatively identified compounds (BN+15) and lead. The results indicated that methylene chloride, a common laboratory chemical, was detected in all samples in concentrations which exceed NJDEPE Class II-A Ground Water Quality Criteria. Laboratory method blanks run with VO+15 samples indicate that methylene chloride was the result of laboratory contamination. Analytical results for the 10 December 1991 sampling was considered questionable due to two internal standards and one surrogate being outside Quality Control limits.

On 26 October 1992 a second round of groundwater samples was collected from each monitoring well and analyzed by Environmental Profile Laboratories for VO+15, BN+15, and lead. The results indicated concentrations of lead (36 ug/L) and benzene (3J ug/L) in sample No. 3021-2 which exceed NJDEPE Class II-A Ground Water Quality Criteria. In addition, concentrations of methylene chloride in Sample Nos. 3021-1 (38B ug/L) and 3021-3 (20B ug/L) exceeded NJDEPE Class II-A Ground Water Quality Criteria. The methylene chloride results were marked with a "B" data qualifier, which indicates methylene chloride was detected in method blanks run with samples. Methylene chloride is present due to laboratory induced

contamination. Lead is not typically associated with No. 2 fuel oil, it is unlikely that the reported spill would be responsible for lead contamination. Lead has been encountered in soils at the site and is considered common to the Charles Wood area.

On 22 November 1993, a third round of groundwater samples was collected and analyzed by 21st Century Laboratories for VO+15, BN+15 and lead. The results indicated that a concentration of methylene chloride in sample MW-3 (4.4 ug/L) exceeds NJDEPE Class II-A Ground Water Quality Criteria. Methylene chloride was present in the field blank and trip blank. The presence of methylene chloride in field and trip blank indicates that the source of contamination is not from the USTs but from another source (e.g., the laboratory). All other sample analyses indicated either non-detectable concentrations or concentrations below NJDEPE Class II-A Ground Water Quality Criteria.

Due to the fact that a discharge was reported to the NJDEPE by the DPW on 2 November 1989 (Case #89-11-02-1052), it is proposed that a minimum of six soil samples from adjacent native soils be collected in the excavation area of UST No. 27 in accordance with NJDEPE requirements. The soil samples will be analyzed for TPHC. VO+10 analysis will be required on 25 percent of samples in which TPHC levels exceed 1,000 ppm.

Additional groundwater sampling is not recommended based on previous monitoring results and soil removal performed at the time of the tank closure. No further action is recommended if soil samples analyses indicates contaminant levels below NJDEPE subsurface cleanup criteria.

Analytical results for soil sampling will be summarized and provided to the NJDEPE in an addendum to this report.

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SECTION 1.0

UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

On 2 November 1989, one underground storage tank (UST) identified as UST No. 27, was closed at Building 3021, U.S. Army Fort Monmouth, Fort Monmouth, New Jersey.

All activities associated with the decommissioning of UST No. 27 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., 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. Fabiano and Son Inc., the contractors that conducted the decommissioning activities, are currently registered and certified by the NJDEPE for performing UST closure activities. The Site Assessment Summary Form (SAS) for the UST has been included in Appendix A. The has been signed and sealed by Mr. James Ott, Director of DPW.

This UST Closure and Site Investigation Report was prepared by Roy F. Weston Inc. (WESTON®), to assist the United State Army Directorate of Public Works (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 "Interim Closure Requirements for Underground Storage Tanks", dated September 1989.

To the extent possible this report has been prepared to comply with NJDEPE's Technical Requirements (N.J.A.C. 7:26E-1 et seq.). However, requirements at the time of UST closure differ from the current regulations and some sections may be missing information requested by NJDEPE.

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

1.2 SITE DESCRIPTION AND UST HISTORY

Building 3021 is located in the Charles Wood area of U.S. Army Fort Monmouth. The area surrounding the buildings is relatively level with a paved parking lot located approximately 30 feet to the east. A facility location map is provided in Figure 1-1. Building 3021 is an active boiler facility. One UST identified as UST No. 27 was registered with the NJDEPE and assigned Facility UST No. 00192486. UST No. 27 was located at the northeast corner and immediately adjacent to Building 3021. Figure 1-2 provides the UST location in relationship to Building 3021.

On 2 November 1989, UST No. 27, was closed. UST No. 27 was a single walled steel, 5,000-gallon capacity, No. 2 fuel oil UST. Fabiano and Son, Inc. performed the tank closure. During closure, several corrosion holes of approximately 1/6-inch diameter were observed in the tank walls. Based on this observation, the DPW reported a discharge to NJDEPE on 2 November 1989 and Spill Case No. 89-11-02-1052 was assigned. Correspondence with the NJDEPE regarding the UST closure and investigation of discharge from the tank are provided in Appendix B.

1.3 GEOLOGICAL/HYDROGEOLOGICAL SETTING

The following is a description of the geological/hydrogeological setting of the area surrounding Building 3021. 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 Charles Wood area.

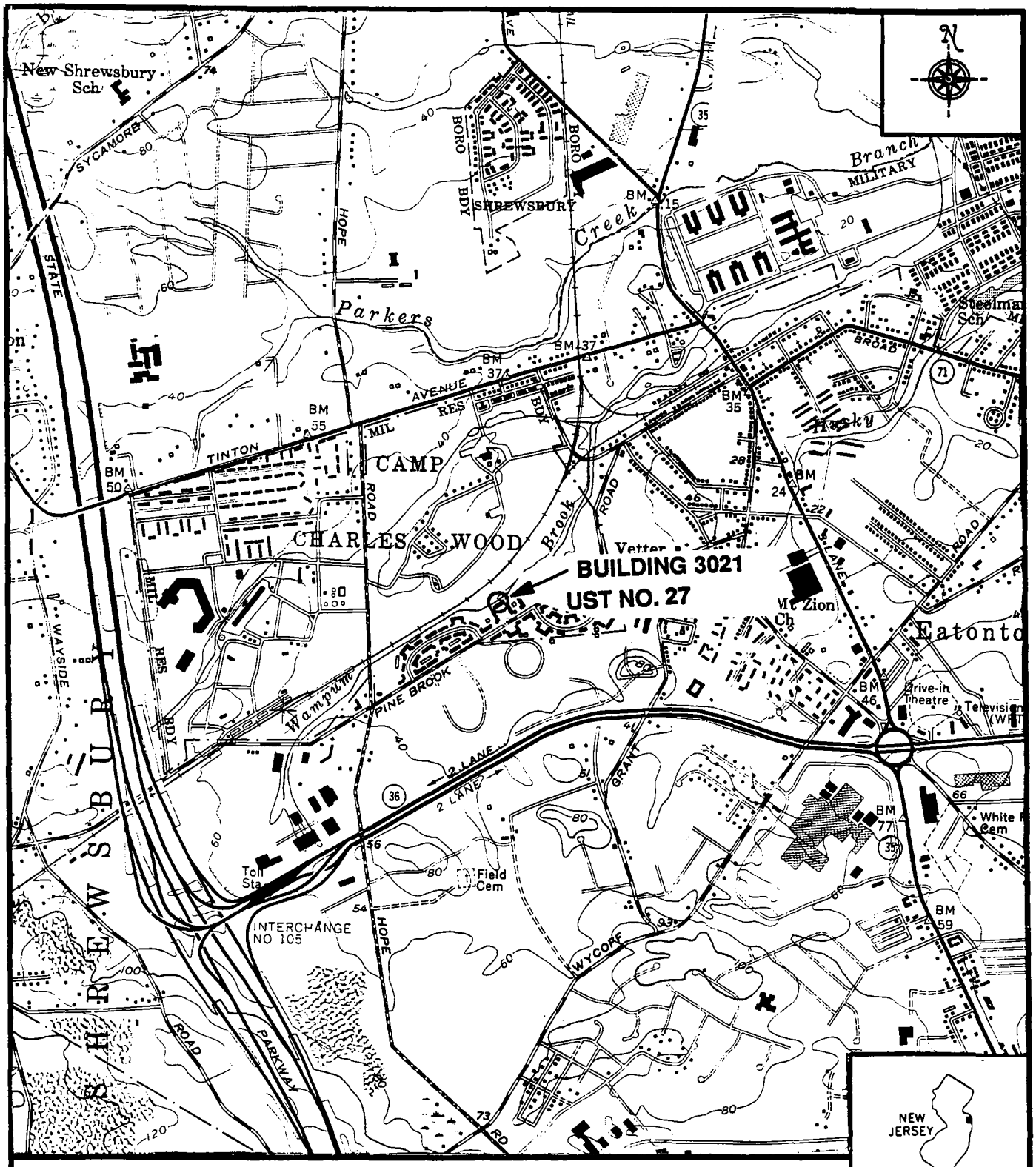
1.3.1 Geological Setting

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



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. 17 Min. 42 Sec.
UST LONGITUDE: W 74 Deg. 3 Min. 48 Sec.

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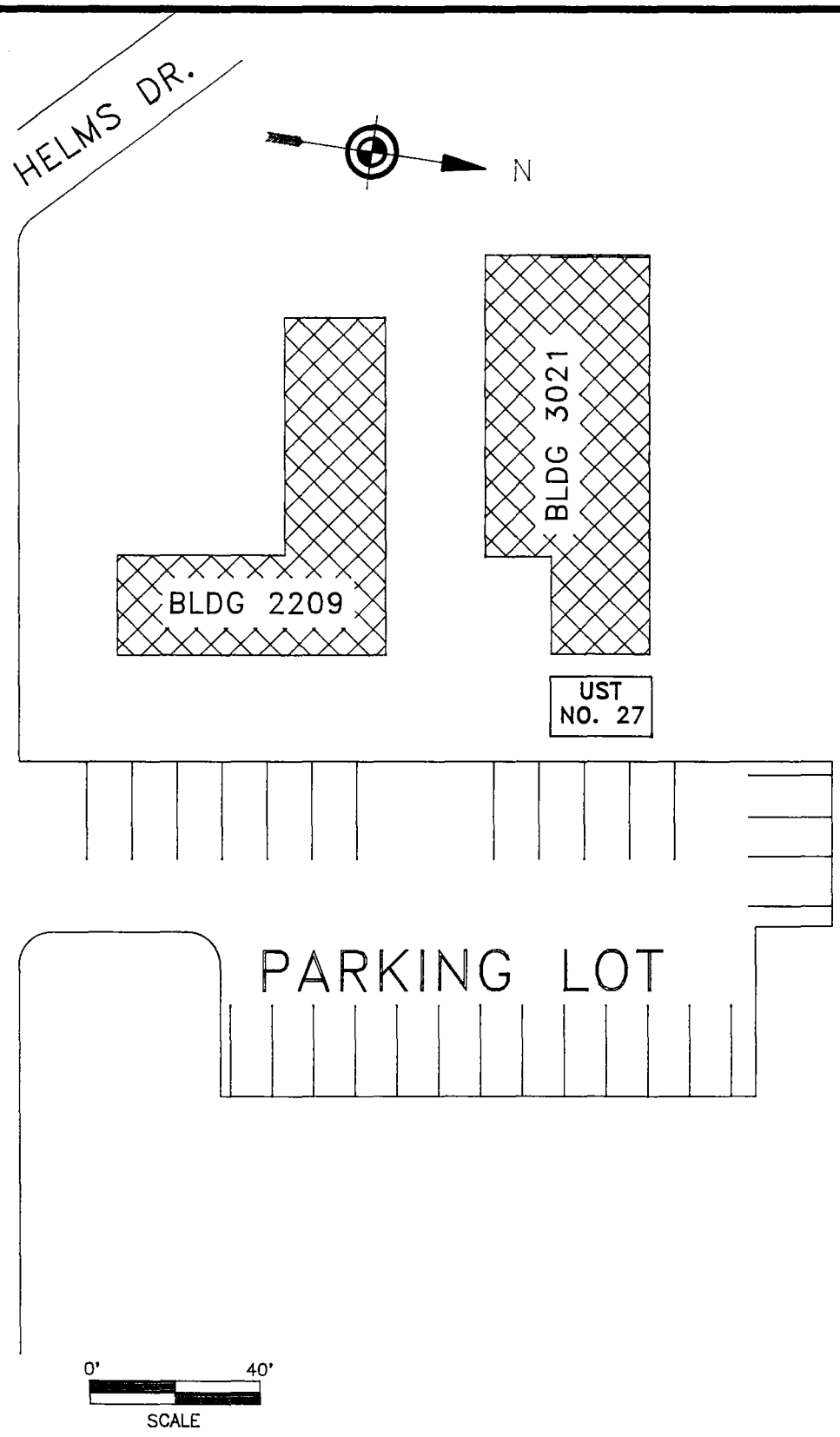
FIGURE 1-1
FACILITY LOCATION MAP
U.S. ARMY - DIRECTORATE OF PUBLIC WORKS
FORT MONMOUTH, NEW JERSEY

008-ESPC.DRW



REVISION #: 1 DATE: 5/24/94 PLOT NAME: B3021-1
FILE NAME: B3021-1.DWG DRAWN BY: B. MAC

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PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 3021 – UST NO. 27
FORT MONMOUTH NEW JERSEY

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

SITE MAP

DATE: 5/25/94

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, 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 Charles Wood 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

Hydrogeology

The water table aquifer at the Charles Wood 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, Provincetown 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 Charles Wood area, around water 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 Charles Wood 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 Charles Wood 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 Charles Wood area, which primarily consisted of fine-to-medium grained sands, with occasional lenses or laminations of silt and/or clay. A subsurface profile of UST No. 27 is provided in Figure 1-3.

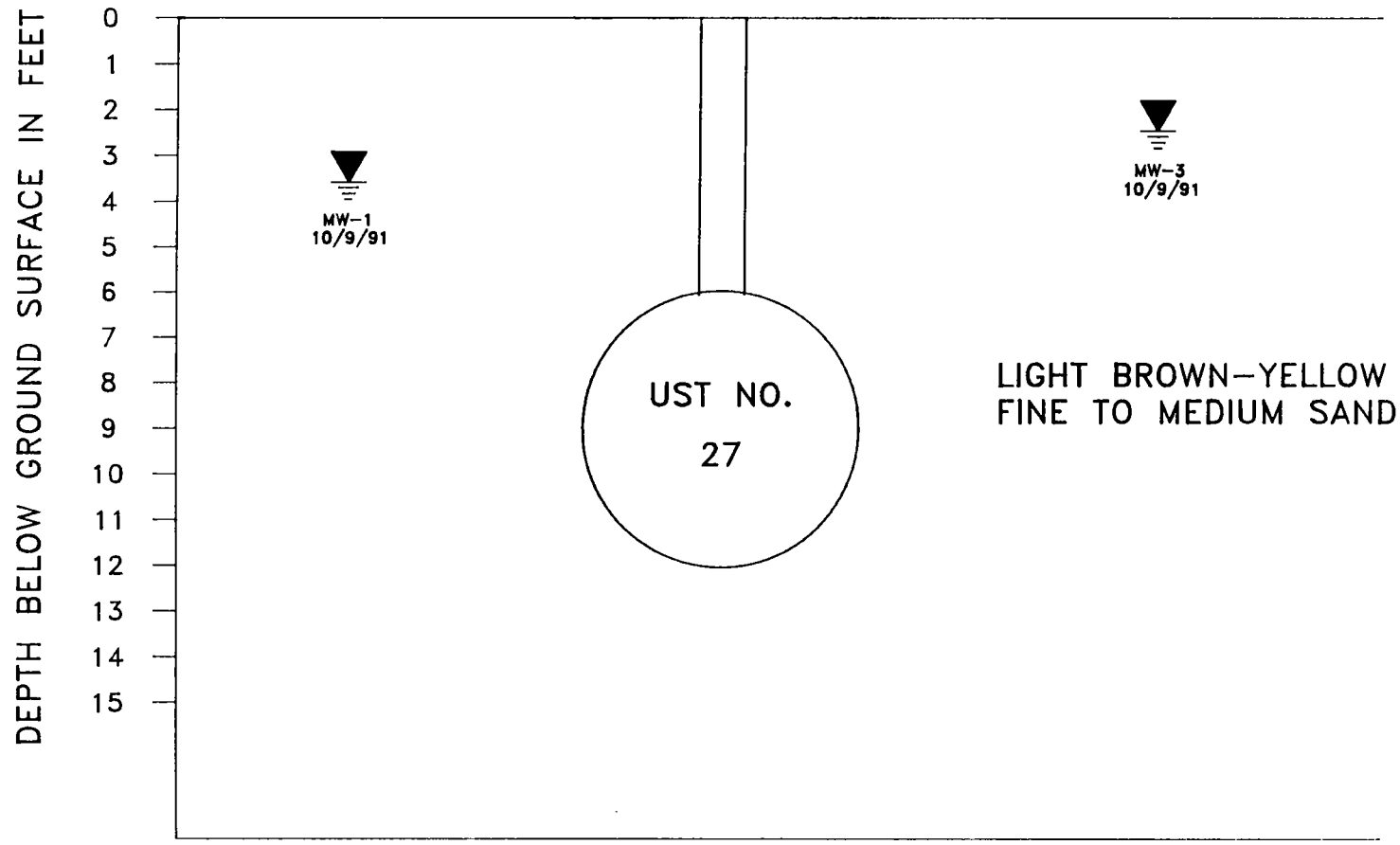
Building 3021 is located less than 1/4 mile south of Wampum Brook, the nearest water body. The Atlantic Ocean is located approximately five miles east of the site.

On 3 October 1991, three monitoring wells were placed within the area surrounding the UST No. 27 excavation to determine the possible impact, if any, to the environment. Figure 1-4 shows the monitoring well placement. The monitoring well permit and monitoring well records are provided in Appendix C. A list of water level depths is provided in Table 1-1.

1.3.3 Off Site 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, Charles Wood area. The file search produced records for 68 wells. 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 is provided, which includes the following information: well number, NJDEPE permit number; New Jersey State Plane Coordinates; casing elevation and, elevation of the ground surface. Well records for the nearest identified offsite well have also been included, if available. This information is presented 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 are 52 monitoring wells. A domestic well (Permit Number 29-13163), owned by Redacted - Privacy Act is the closest to the site. The well is located at 30 Victor Avenue, approximately 4,800 feet east of the site.



REVISION #: 0000 DATE: 5/24/94
FILE NAME: B3021-X.DWG DRAWN BY: B. MAC

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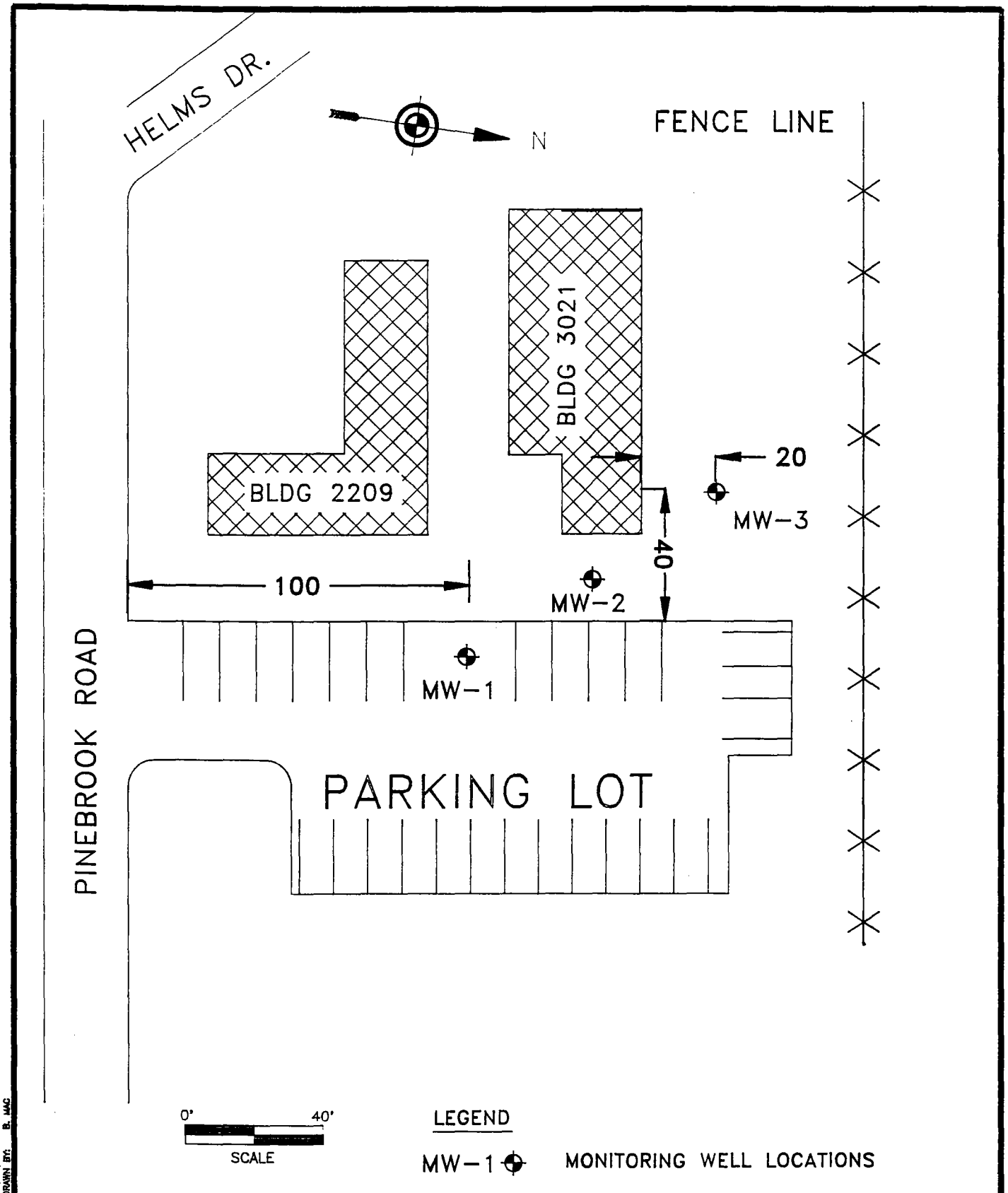
PROJECT NAME:
UNDERGROUND STORAGE TANK CLOSURE
AND SITE INVESTIGATION REPORT
BUILDING 3021 - UST NO. 27
FORT MONMOUTH, NEW JERSEY

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

SUBSURFACE PROFILE

DATE: 5/25/94

FIGURE #: 1-3



REVISION #: 1 DATE: 5/24/94 PLOT NAME: B3021-1
FILE NAME: B3021-1.DWG DRAWN BY: B. MAC

WESTON MANAGERS DESIGNERS/CONSULTANTS

PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 3021 – UST NO. 27
FORT MONMOUTH NEW JERSEY

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

MONITORING WELL LOCATIONS

DATE: 5/25/94

FIGURE #: 1-4

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TABLE 1-1

WATER LEVEL ELEVATIONS FOR MONITORING WELLS MW-1, MW-2 AND MW-3 COLLECTED ON 9 OCTOBER 1991

Monitoring Well Permit Number	Depth to Water (feet)	Ground Surface Elevation (feet)
29-26930 (MW-1)	3.5	*
29-26931 (MW-2)	3.0	*
29-26932 (MW-3)	2.5	*

Note:

* - Due to the lack of evidence of a discharge to groundwater, the well elevations were not surveyed at this location.

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, or were affected by, 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 2 November 1989, UST No. 27 was closed by removal at Building 3021 in the Charles Wood 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.
- The tank's atmosphere was inerted.
- The access way on top of the tank was 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.
- The tank was removed from the excavation and staged on plastic sheeting.
- Soil excavated during the tank closure was manifested and disposed of at the American Landfill Waynesburg, Ohio.
- The excavation was backfilled with clean fill material to the original surface grade.
- A Sub-Surface Evaluator from the DPW was present during all closure activities.

1.5.2 Underground Storage Tank Excavation

Soil was excavated to expose the UST and the associated piping. The piping was not removed/disturbed until all free product was drained into the UST. The UST was rendered vapor free by purging prior to any cutting or access. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the excavation. Liquids were transported and disposed of by L & L Oil Service, Inc. All of the openings in the tank were plugged except for one hole (manway). The Hazardous Waste Manifests are provided in Appendix E.

After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for cracks, corrosion or puncture holes. The presence or absence of holes was documented by the Sub-Surface Evaluator. Several corrosion holes of approximately 1/16 of an inch diameter were noted upon the inspection of UST No. 27. Additionally, a sheen was noted on the groundwater within the excavation surrounding UST No. 27. A discharge was reported to the NJDEPE by the DPW on 2 November 1989 (Case No. 89-11-02-1052).

Soils surrounding the UST were screened visually and with an Photoionization Detector (PID) for evidence of contamination. Approximately 115 tons of potentially contaminated soil were removed from the area surrounding UST No. 27 and placed on and covered with polyethylene sheets. The potentially contaminated soil was manifested, transported and disposed of by Jersey Environmental/Marianne at the American Landfill, Waynesburg, Ohio.

1.6 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL:

The tank was transported by Fabiano and Son, Inc. to Mazza and Sons, Inc., for recycling in compliance with all applicable regulations and laws.

The Subsurface Evaluator 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 115 tons of potentially contaminated soil was excavated as part of the removal of UST No. 27 and placed on and covered with polyethylene sheets. Soil samples were collected from the pile and analyzed for disposal requirements by Northeastern Analytical Corporation (NAC). Soil was manifested, transported and disposed of by Jersey Environmental/Marianne at the American Landfill, Waynesburg, Ohio. Soil that did not exhibit evidence of contamination was backfilled into the excavation following removal of the UST. The Hazardous Waste Manifests for the transport of the contaminated soil are provided in Appendix E. Results of most characterization analysis is provided in Appendix F.

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SECTION 2.0

SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The site investigation activities were managed and carried out by U.S ARMY DPW personnel. All analyses were performed and reported by Northeastern Analytical Corporation (NAC), 21 Century Environmental Laboratories and Environmental Profile Laboratories (EPL), 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 1988). 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: Fabiano and Son, Inc.
  Contact Person: Anthony Fabiano
  Phone Number: (908) 571-1004
  NJDEPE Company Certification No.: PLE01349

- Closure Contractor: Serv-Air, Inc.
  Contact Person: Brian McKee
  Phone Number: (908) 532-6147
  NJDEPE Company Certification No.: 13461

- Subsurface Evaluator: Dinker Desai
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (908) 532-1475
  NJDEPE Certification No.: 2226

- Analytical Laboratory: Northeastern Analytical Corporation
  Contact Person: Paul P. Painter
  Phone Number: (609) 985-8000
  NJDEPE Laboratory Certification No.: 03117

- Analytical Laboratory: 21st Century Environmental, Inc.
  Contact Person: Richard W. Lynch
  Phone Number: (609) 467-9521
  NJDEPE Laboratory Certification No.: 08031

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

- Hazardous Waste Hauler: L & L Oil Service, Inc.
  Contact Person: Frank Labella
  Phone Number: (908) 566-2785
  USEPA ID No.: NJD01427895

2.2 FIELD SCREENING/MONITORING

All soils that were excavated as part of the removal of the UST were screened using a PID, for evidence of contamination. Soils were also inspected visually for evidence of contamination (staining, free product, etc..). Soils on the sidewalls and base of the excavation were screened with a PID. Evidence of contamination was noted during the excavation of soils. Approximately 115 tons of potentially contaminated soil were excavated as part of removal of UST No. 27.

2.3 SOIL SAMPLING

On 11 December 1989, two soil samples were collected by Serve-Air, Inc. from the excavated soil stockpile and analyzed by NAC for total petroleum hydrocarbons (TPHC). A summary of soil sampling activities including parameters analyzed is provided in Table 2-1. The soil samples were collected using stainless steel scoops. Following soil sampling activities, the samples were chilled and transported to NAC located in Marlton, New Jersey.

2.4 GROUNDWATER SAMPLING

On 3 October 1991, three monitoring wells were installed within the area surrounding the UST No. 27 excavation to determine the possible impact of contamination to the environment.

On 10 December 1991, one groundwater sample from each monitoring well was collected by Serv-Air, Inc. Fort Monmouth, NJ, and analyzed for VO+15, BN+15 and lead.

On 26 October 1992, a second round of groundwater samples were collected from each monitoring well by Serv-Air, Inc. and analyzed for VO+15 and BN+15.

On 22 November 1993, a third round of groundwater samples were collected from each monitoring well by Serv-Air, Inc. and analyzed for VO+15, BN+15 and lead.

A summary of sampling activities including parameters analyzed is provided in Table 2-2. Figure 1-4 depicts the location of the monitoring wells. The samples were collected using

TABLE 2-1

SUMMARY OF SOIL SAMPLING ACTIVITIES
BUILDING NO. 3021
UST NO. 27
FORT MONMOUTH, NEW JERSEY

Sample ID No.	Date of Collection	Matrix	Sample Type	Analytical Parameters	Sampling Method
C89-205	12/11/89	Soil	Soil Stockpile	TPHC	Stainless Steel Scoop
C89-206	12/11/89	Soil	Soil Stockpile	TPHC	Stainless Steel Scoop

Abbreviation:

TPHC: - Total petroleum hydrocarbons.

TABLE 2-2

SUMMARY OF GROUNDWATER SAMPLING ACTIVITIES
BUILDING NO. 3021
UST NO. 27
FORT MONMOUTH, NEW JERSEY

Sample ID No.	Date of Collection	Matrix	Sample Type	Analytical Parameters	Sampling Method
B3021-W1	12/10/91	Aqueous	Monitoring Well	VO+15, BN+15	Decontaminated Teflon Bailer
B3021-W2	12/10/91	Aqueous	Monitoring Well	VO+15, BN+15	Decontaminated Teflon Bailer
B3021-W3	12/10/91	Aqueous	Monitoring Well	VO+15, BN+15	Decontaminated Teflon Bailer
3021-1	10/26/92	Aqueous	Monitoring Well	Lead, VO+15, BN+15	Decontaminated Teflon Bailer
3021-2	10/26/92	Aqueous	Monitoring Well	Lead, VO+15, BN+15	Decontaminated Teflon Bailer
3021-3	10/26/92	Aqueous	Monitoring Well	Lead, VO+15, BN+15	Decontaminated Teflon Bailer
MW-1	11/22/93	Aqueous	Monitoring Well	Lead, VO+15, BN+15	Decontaminated Teflon Bailer
MW-2	11/22/93	Aqueous	Monitoring Well	Lead, VO+15, BN+15	Decontaminated Teflon Bailer
MW-3	11/22/93	Aqueous	Monitoring Well	Lead, VO+15, BN+15	Decontaminated Teflon Bailer

Abbreviations:

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

decontaminated teflon bailers. Following groundwater sampling activities, the samples were chilled and transported to the applicable analytical laboratory.

The frequency of sampling and parameters analyzed were consistent with the applicable NJDEPE regulations at the date of closure, which were the "Interim Requirements for Underground Storage Tanks", dated September 1989.

SECTION 3.0

CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL GROUNDWATER SAMPLING RESULTS

To evaluate soil conditions following the removal of UST No. 27, two soil samples were collected and analyzed by NAC for TPHC. The soil sample results were compared to NJDEPE Subsurface Cleanup Criteria (N.J.A.C. 7:26D and revisions dated 3 February 1994). Both samples contained non-detectable concentrations of contaminants.

To evaluate groundwater conditions following removal of the UST and associated soils, analytical results from the groundwater samples were compared to proposed NJDEPE Class II-A Ground Water Quality Criteria (N.J.A.C. 7:9-6.4, 6.8 and Table 1, and revisions dated 8 March 1993). A summary of the analytical results and comparison to NJDEPE Class II-A Ground Water Quality Criteria are provided in Tables 3-1 through 3-3. Table 3-4 provides abbreviations, data, qualifiers and notes used in Table Nos. 3-1 to 3-3. A summary of the analytical methods used and quality assurance information is provided in Table 3-4. 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.

Methylene chloride, a common laboratory chemical, was detected in all samples collected on 10 December 1991. The concentrations in sample Nos. B3021-W1, B3021-W2 and B3021-W3 were 10B ug/L, 31B ug/L and 160 ug/L, respectively. These concentrations exceed NJDEPE Class II-A Ground Water Quality Criteria. The detected values for methylene chloride have been marked with the data qualifier "B" which indicate that methylene chloride was detected in the laboratory blanks. Methylene chloride is not known to have been used at this site, therefore, it is strongly indicated that methylene chloride's presence in sample is attributable to contamination inducted to operations at this site. Analytical results for the 10 December 1991 sampling were reviewed and considered suspect due to two interval standards and one surrogate being outside the laboratory's Quality Control limits.

In the second round of samples collected 26 October 1992, lead and benzene (36 ug/L and 3J ug/L, respectively) were detected in sample No. 3021-2 and methylene chloride was detected in sample Nos. 3021-1 (38B ug/L) and 3021-3 (20B ug/L). These concentrations exceed the NJDEPE Class II-A Ground Water Quality Criteria. As previously discussed, methylene chloride data marked with "B" data qualifier indicates contamination induced by the analytical laboratory and not attributable to operations on site. Lead is not a compound typically associated with No. 2 fuel oil and it would be unlikely that a reported spill would be responsible for lead contamination. Lead has been encountered in soils at the site and is considered common

TABLE 3-1

SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED 10 DECEMBER 1991 BUILDING NO. 3021 UST NO. 27 FORT MONMOUTH, NEW JERSEY

Sample ID No.		B3021-W1	B3021-W2	B3021-W3	NJDEPE Class II-A Ground Water Quality Criteria/Practical Quantitation Limits
Lab ID No.		6944.5	6944.6	6944.7	
Matrix		Aqueous	Aqueous	Aqueous	
Sample Type		MW	MW	MW	
Date of Collection		12/10/91	12/10/91	12/10/91	
Analytical Parameters	Units				
Volatile Organic Compounds					
Methylene Chloride	ug/L	10B	31B	160	2

Abbreviations:

MW: - Monitoring well sample.
NC: - No subsurface cleanup criterion has been proposed for this analyte by NJDEPE.
ug/L: - Micrograms per Liter.

Data Qualifiers:

B: - Indicates also present in blank.
J: - Indicates an estimated value.
ND: - Indicates compound not detected.

TABLE 3-2

SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
COLLECTED 26 OCTOBER 1992
BUILDING NO. 3021
UST NO. 27
FORT MONMOUTH, NEW JERSEY

Sample ID No.		3021-1	3021-2	3021-3	Method Blank	NJDEPE Class II-A Ground Water Quality Criteria/Practical Quantitation Limits
Lab ID No.		9173.21	9173.22	9173.23	NA	
Matrix		Aqueous	Aqueous	Aqueous	Aqueous	
Sample Type		MW	MW	MW	QA	
Date of Collection		10/26/92	10/26/92	10/26/92	NA	
Analytical Parameters	Units					
Inorganics						
Lead	ug/L	ND	36	ND	NR	10
Base Neutral Compounds						
Di-n-butylphthalate	ug/L	4 J	ND	ND	NR	900
Volatile Organic Compounds						
Methylene Chloride	ug/L	38 B	ND	20 B	138	2
Benzene	ug/L	ND	3 J	ND	ND	1
Ethylbenzene	ug/L	ND	1 J	3 J	ND	700
m & p Xylenes	ug/L	ND	2 J	2 J	ND	40[1]

Abbreviations:

MW: - Monitoring well sample.
ND: - Indicates compound not detected.
ug/L: - Micrograms per Liter.

Data Qualifiers:

B: - Indicates also present in blank.
J: - Indicates an estimated value.
NC: - No NJDEPE Class II-A Ground Water Quality Criteria has been proposed for this analyte by NJDEPE.

Note:

[1] - Groundwater Quality Criteria listed is for total xylenes.

TABLE 3-3

SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES
COLLECTED 22 NOVEMBER 1993
BUILDING NO. 3021
UST NO. 27
FORT MONMOUTH, NEW JERSEY

Sample ID No.		MW-1	MW-2	MW-3	Field Blank	Trip Blank	NJDEPE Class II-A Ground Water Quality Criteria/Practical Quantitation Limits
Lab ID No.		A5402	A5403	A5404	A5405	A5404	
Matrix		Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	
Sample Type		MW	MW	MW	MW	MW	
Date of Collection		11/22/93	11/22/93	11/22/93	11/22/93	11/22/93	
Analytical Parameters	Units						
Inorganics							
Lead	ug/L	3	ND	ND	ND	ND	10
Base Neutral Compounds							
Bis(2-ethylhexyl)phthalate	ug/L	3.6 J	21	ND	ND	ND	30
Volatile Organic Compounds							
Methylene Chloride	ug/L	ND	ND	4.4 J	2.5J	2.8J	2
Acetone	ug/L	ND	5.0J	3.4 J	20	5.9J	700

Abbreviations:

MW: - Post-Excavation.
ug/L: - Micrograms per Liter.

Data Qualifier:

J: - Indicates an estimated value.
ND: - Indicates compound not detected.

TABLE 3-4

ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY TABLE (MONITORING WELLS)
BUILDING NO. 3021
UST NO. 27
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	12/18/91	Cool to 4°C	8270
Lead	3	Aqueous	11/22/93	11/29/93	Cool to 4°C	6010
VOCs	3	Aqueous	11/22/93	12/01/93	Cool to 4°C	8240
BNAs	3	Aqueous	11/22/93	12/03/93	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	10/30/92	Cool to 4°C	8240
BNAs	3	Aqueous	10/26/92	10/31/92	Cool to 4°C	8270

Abbreviations:

VOCs: - Volatile organic compounds.
BNAs: - Base neutral acid analysis.
C: - Celsius.

to the Charles Wood area.

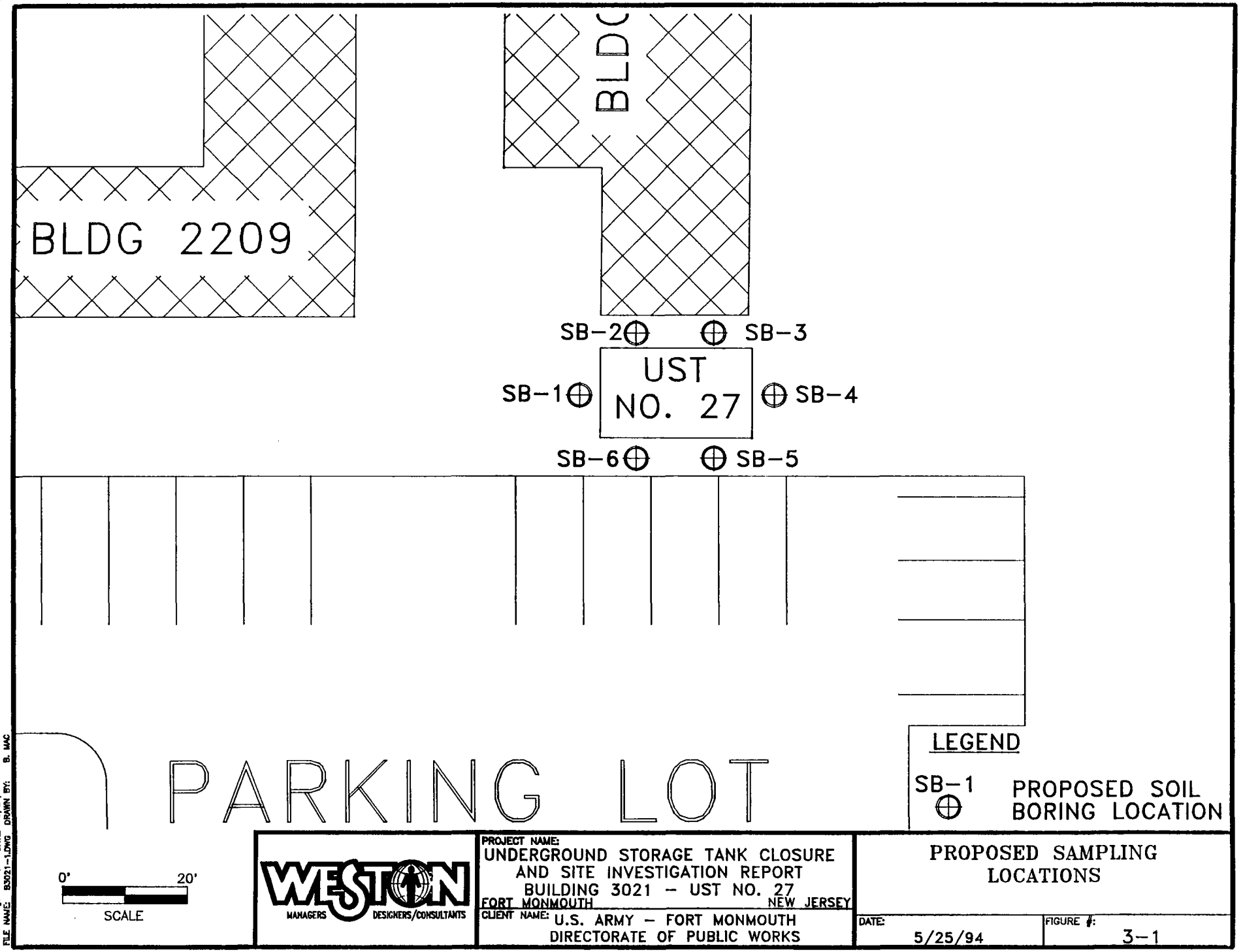
On 22 November 1993, a third round of groundwater samples was collected and analyzed by 21st Century Laboratories for VO+15, BN+15 and lead. The results indicated that a concentration of methylene chloride in sample MW-3 (4.4J ug/L) exceeded NJDEPE Class II-A Ground Water Quality Criteria. Methylene chloride was not utilized during groundwater sampling activities, however, methylene chloride was detected in the field blank and trip blank. The presence of methylene chloride in the field blank and trip blank samples indicate that another source (e.g., analytical laboratory) could have induced contamination of these samples prior ot analysis. Based on this information, the presence of methylene chloride is not considered to be the result of USTs operations at this site. All other sample analyses indicated either non-detectable concentrations or concentrations below NJDEPE Class II-A Ground Water Quality Criteria.

3.2 CONCLUSIONS AND RECOMMENDATIONS:

DPW successfully removed UST No. 27 at Building 3021 in the Charles Wood Area of U.S. Army Fort Monmouth. Based on visual inspection of the UST and field screening of the soils adjacent to the UST, it was determined that a historical discharge had occurred.

Due to the fact that a discharge was reported to the NJDEPE by the DPW on 2 November 1989 (Case # 89-11-02-1052), it is proposed that a minimum of six soil samples from adjacent native soils be collected in the excavation area of UST No. 27 in accordance with NJDEPE requirements. The soil samples should be analyzed for TPHC. VO+10 analysis will be required on 25 percent of samples in which TPHC levels exceed 1,000 ppm. Figure 3-1 depicts the proposed boring locations.

Additional groundwater sampling is not recommended based on previous monitoring results and soil removal performed during the tank closure. Analytical results for soil sampling will be summarized and a recommendation for further action will be provided to the NJDEPE in an addendum to this report.


BLDG 2209
BLDG
SB-2
SB-3
SB-1
UST
NO. 27
SB-4
SB-6
SB-5
PARKING LOT
LEGEND
SB-1
PROPOSED SOIL
BORING LOCATION
0'
20'
SCALE
WESTON
MANAGERS
DESIGNERS/CONSULTANTS
PROJECT NAME:
UNDERGROUND STORAGE TANK CLOSURE
AND SITE INVESTIGATION REPORT
BUILDING 3021 - UST NO. 27
FORT MONMOUTH
NEW JERSEY
CLIENT NAME: U.S. ARMY - FORT MONMOUTH
DIRECTORATE OF PUBLIC WORKS
PROPOSED SAMPLING
LOCATIONS
DATE:
5/25/94
FIGURE #:
3-1
REVISION #: 1 DATE: 5/24/94
FILE NAME: B3021-1.DWG DRAWN BY: B. MAC

APPENDIX A

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 028
Trenton, NJ 08625-0028
Tel. # 609-984-3156
Fax. # 609-292-5604

Scott A. Weiner
Commissioner

Karl J. Delane
Directo

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 6-8-94

192486-27
FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

U.S. Army Fort Monmouth
Directorate of Public Works, Building 167
Fort Monmouth, NJ 07703 County Monmouth
Telephone No. (908) 532-1475

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. 89-11-02-1052
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

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

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

III. DECOMMISSIONING OF TANK SYSTEMS Closure Approval No. N/A

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? ___ Yes X No
If "Yes", please answer Question B-E
If "No", please answer Question 6

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. ___ND___ 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 ___Yes ___No
2. Free product contaminated soils are suspected to exist below the water table ___Yes ___No
3. Free product contaminated soils are suspected to exist off the property boundaries. ___Yes ___No

D. Was the vertical and horizontal extent of contamination determined? ___Yes ___No ___N/A

E. Does soil contamination intersect ground water? ___Yes ___No ___N/A

VI. GROUND WATER CONTAMINATION

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

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

1. ___5.0___ ppb total BTEX. ___49___ ppb total non-targeted VOC
2. ___4.0___ ppb total B/N. ___10.0___ ppb total non-targeted B/N
3. ___0___ ppb total MTBE. ___0___ ppb total TBA
4. ___36___ ppb ___LEAD___ (for non-petroleum substance)
5. greatest thickness of separate phase product found ___0.0___
6. separate phase product has been delineated X Yes ___No ___N/A

C. Result(s) of well search

1. A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. 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 215 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 5,000 feet from the source and its screening begins at a depth of 200 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 150 feet below grade. This well is located 5,700 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 5,700 feet from the source. This well is 150 feet deep and screening begins at a depth of 125 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. ___Yes X 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) DINKER DESAI SIGNATURE [signature]

COMPANY NAME U.S. ARMY FORT MONMOUTH DATE 6/8/94
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION NJDEPE CERTIFICATION NUMBER

UST-014
291

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) DINKER DESAI SIGNATURE [signature]

COMPANY NAME U.S. ARMY FORT MONMOUTH DATE 6/8/94
(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) JAMES OTT SIGNATURE [signature]

COMPANY NAME U.S. ARMY FORT MONMOUTH 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
III	N/A	Closure of UST No. 27 on November 1989, was conducted was conducted in compliance with the "Interim Closure Requirements for Underground Storage Tanks" (N.J.A.C. 7: 14B-1 et seq., September 1989).
V.A	No	Soil sampling results indicated non-detectable concentrations of contaminants.
V.B.1-4	N/A	Soil sampling were analyzed for TPHC only.
V1.E	No	No free product was observed, therefore a plan for separate phase recovery was not included.
V1.F	No	Due to the lack of evidence of a discharge to groundwater, a survey of groundwater elevations was not performed at this location.
VI.G.1	N/A	Additional soil samples will be collected in the native soil adjacent to the UST excavation. Additional groundwater samples will be collected, if soil samples results exceed NJDEPE requirements.
VI.G.2,3	N/A	The plume is not suspected to continue off the property at concentrations greater than MCLs.

APPENDIX B

CORRESPONDENCE BETWEEN THE NJDEPE AND THE DPW

Bldg. 221

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

NOV 19 1992

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Attention: SELFM-EH
United States Army
Building 167
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 the
United States Army
Fort Monmouth Boiler Plant #3
Pine Brook Avenue
Oceanport Borough, Monmouth County
BAC #UC00447
CASE #89-11-02-1052

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

Furthermore, a cursory review of our registration files indicates no

registration information for the above facility. If the underground storage tanks at this facility have not yet been registered, please complete the appropriate forms and return immediately. If the facility has been registered, advise this office of the registration number on all future correspondence.

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

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

REPLY TO
ATTENTION OF

November 24, 1992

Directorate of Engineering and Housing

New Jersey Department of
Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625 - 0028
ATTN: Mr. Todd Normane, Bureau of Applicability and Compliance

Re: Response to Correspondences dated November 11, 1992 pertaining to the closure and DICAR activities as approved by the NJDEPE at Buildings 2500, 2624, 3021 and 2567, Fort Monmouth, Monmouth County

UST #0081515	Charles Wood West Area	
BAC #UC00455		
CASE # 89-12-12-1442	DICAR	(Bldg. 2567)
TMS # C-92-2950	CLOSURE	(Bldg. 2567)
TMS # C-91-2842	CLOSURE	(Bldg. 2500)
TMS # C-91-2843	CLOSURE	(Bldg. 2624)
UST #00192486	Charles Wood East Area	
CASE # 89-11-02-1052	DICAR	(Bldg. 3021)

Dear Mr. Normane:

This is in response to the above referenced correspondence and underground storage tank activities. 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 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.

With regard to Case # 89-12-12-1442 (Bldg. 2567) I would like to provide the following summation of activities to date:

On December 12, 1989, at 1451 hrs., Mr. Guigno of my Department notified the NJDEP of a fuel leak at the Charles Wood Gas Station, Bldg. 2567, Fort Monmouth NJ (Attachment). On March 14, 1990 a formal notification of the initiation of CASE # 89-12-12-1442 and associated requirements were forwarded by the NJDEP to my office (Attachment). My Department responded to the request in a correspondence dated April 11, 1990 (Attachment). In the last correspondence regarding the Case, it was stated that the detected and subsequently reported leak at the Charles Wood Gas Station was a false signal which resulted from the malfunction of leak detection equipment located within the tank field. By mistake, the CASE # which was stated in that correspondence was stated as "CASE # 891212 1242" when it should have been stated as CASE # 89-12-12-1442.

On August 27, 1991, the NJDEPE was notified of a UST test failure and CASE #91-8-27-1414 was assigned by operator #18. In response, the UST was placed out of service and the closure, remediation and construction of a new facility at that location was planned and coordinated by my Department. Currently, four monitoring wells exist at the site and have been sampled/analyzed. I have enclosed a Site Map with pertinent information for your review (Attachment). A Closure Permit, TMS# C-92-2950 has been obtained for the removal of the USTs (Attachment) and I anticipate activities to commence by the second week of December, 1992.

With regard to Case # 89-11-02-1052 (Bldg. 3021) I would like to provide the following summation of activities to date:

On November 02, 1989, Mr. Desai of my Department notified the NJDEP of a fuel leak at Boiler Plant #3, Bldg. 3021, Fort Monmouth NJ. On March 14, 1990 a formal notification of the initiation of CASE # 89-11-02-1052 and associated requirements were forwarded by the NJDEP to my office (Attachment).

On June 19, 1990 a SRF for Closure and a Site Assessment Compliance Statement with a removal procedures summary were sent to the NJDEPE (Attachment). On October 03,1991 three monitoring wells were placed within the area of UST removal to determine the adverse impact (if any) to the environment.

On December 10, 1991 each monitoring well was sampled for VOA+15 and B/N +15 (Tier II). The results indicate no detectable quantities of pollutants were present. Resampling of each monitoring well was conducted October 26, 1992 and results also indicated that no detectable quantities of pollutants were present. The analytical data received from the second round of sampling has not been accepted by reason of failure by the laboratory to maintain quality control measures which include duplicate result correlation and excessive laboratory blank and sample cross contamination. A third round of sampling has been scheduled for the week of November 30, 1992.

A DICAR is being prepared and will be forwarded to your office as soon as possible after receipt of the third round of analytical data is received.

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,

James Ott
Acting Director
Directorate of Engineering and Housing

Attachments

APPENDIX C

MONITORING WELL INFORMATION

NR-133M (4/90) SERIAL # 22273

mw-1 29-26929
mw-2 29-26930
mw-3 29-26931
Permit No.

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 3

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, N.J. 07703-5000
Name of Facility Charles Wood Bldg 3021
Address

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

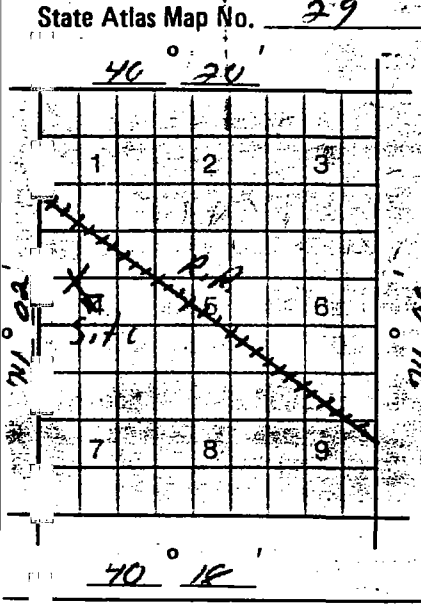
Diameter of Well(s) 4 Inches	Proposed Depth of Well(s) 20 Feet
# of Wells Applied for (max. 10) 3	Will pumping equipment be installed? YES ☐ NO ☑
Type of Well (see reverse) Monitoring	If Yes, give pump capacity N/A GPM

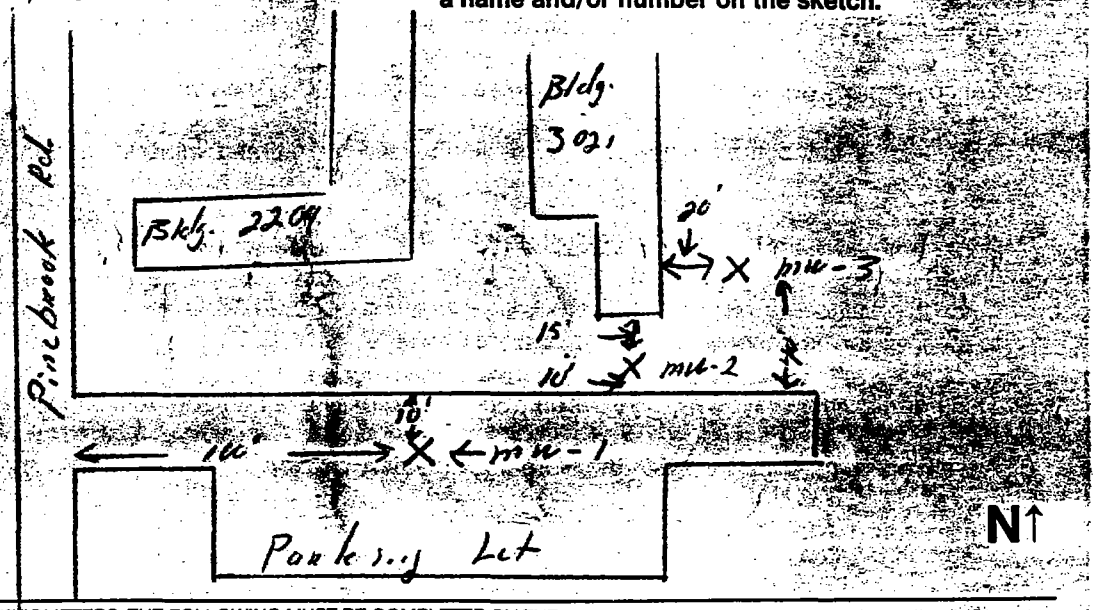
LOCATION OF WELL(S)

Lot #	Block #	Municipality	County
N/A	N/A	Fort Monmouth Camp Charles Wood	Monmouth

State Atlas Map No. 29

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

This Space for Approval Stamp

WELL PERMIT APPROVED
Dept. of Environmental Protection
Water Resources/Water Allocation
SEP 24 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 – Pink; Driller – White

DWR-138 M
6/89

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

Well Permit No. [illegible] - 26930
Atlas Sheet Coordinates [illegible] : 14 : 444

OWNER IDENTIFICATION - Owner U.S. ARMY FORT MONMOUTH
Address BLDG. 167 D & H ENVIRONMENTAL
City FORT MONMOUTH State NJ Zip Code

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1
County Municipality OCEANPORT BORO Lot No. N/A Block No. N/A
Address

TYPE OF WELL (as per Well Permit Categories) Date well completed 10/21/91
Regulatory Program Requiring Well MONITORING WELL Case I.D. #
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Tele. #

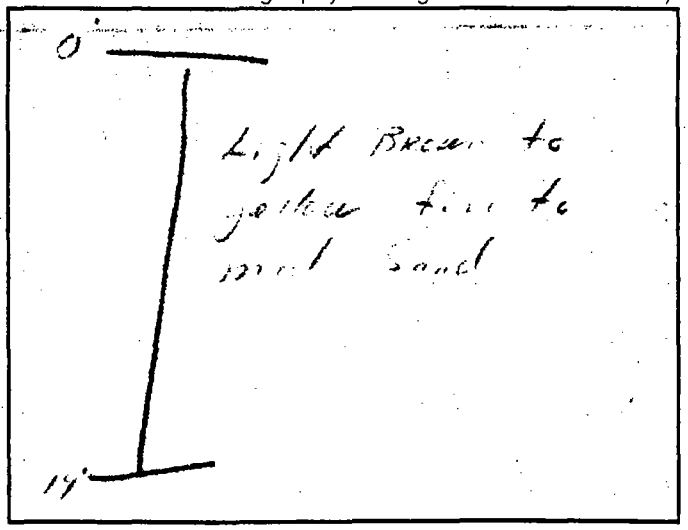
WELL CONSTRUCTION

Total depth drilled 14 ft.
Well finished to 12 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	2	4"	Flush Thd PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	2	12	"	10 Sch 40
Tail Piece				
Gravel Pack	2	14		#2 Silica
Annular Seal/Grout	1	2		Bentonite
Method of Grouting	Placement			

Static water level after drilling 3.5 ft.
Water level was measured using Tape
Well was developed for 1.5 hours at 2 gpm
Method of development Air Lift Pump
Was permanent pumping equipment installed? ☐ Yes ☑ No
Pump capacity N/A gpm
Pump type: N/A
Drilling Method Hollow Stem Auger
Drilling Fluid N/A Type of Rig B-61
Name of Driller [illegible]
Health and Safety Plan submitted? ☐ Yes ☑ No
Level of Protection used on site (circle one) None D C B A
N.J. License No. 24664
Name of Drilling Company TABASCO DRILLING CORP.

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



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

Driller's Signature [illegible] Date 10/24/91

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

DWR-138 M
6/89

Let's protect our earth

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

Well Permit No. [redacted]
Atlas Sheet Coordinates [redacted] : 14 : 444

OWNER IDENTIFICATION - Owner U.S. ARMY FORT MONMOUTH
Address BLDG. 167 D & H ENVIRONMENTAL
City FORT MONMOUTH State NJ Zip Code

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-3
County Municipality OCEANPORT BORO Lot No. N/A Block No. N/A
Address

TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 10/31/91
Regulatory Program Requiring Well UST Case I.D. #
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Tele. #

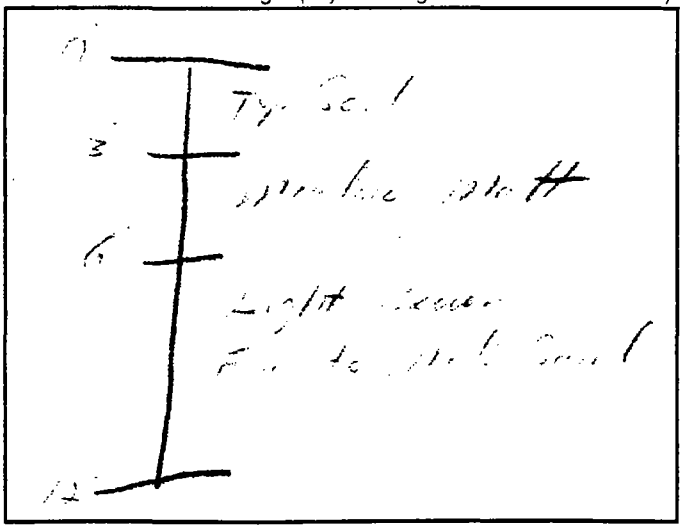
WELL CONSTRUCTION

Total depth drilled 12 ft.
Well finished to 12 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.) [From land surface]	Diameter (inches)	Type and Material
Inner Casing	0	2	4	FI / Thr PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	2	12	4	PVC Sch 40
Tail Piece				
Gravel Pack	1	12		[illegible]
Annular Seal/Grout				
Method of Grouting	Concrete			

Static water level after drilling 2.5 ft.
Water level was measured using Tape
Well was developed for 1.5 hours at 1 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
N.J. License No. [illegible]
Name of Drilling Company TABASCO DRILLING CORP.

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



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

Driller's Signature [illegible] Date 10/31/91

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

DWR-138 M
6/89

Let's protect our earth

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

Well Permit No. [illegible] - [illegible]
Atlas Sheet Coordinates [illegible] : 14 : 444

OWNER IDENTIFICATION - Owner U.S. ARMY FORT MONMOUTH
Address BLDG. 167 I & H ENVIRONMENTAL
City FORT MONMOUTH State NJ Zip Code

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-2
County Municipality Lot No. N/A Block No. N/A
Address GERECHT ROAD

TYPE OF WELL (as per Well Permit Categories) Date well completed 10/2/91
Regulatory Program Requiring Well MONITORING UST Case I.D. #
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Tele. #

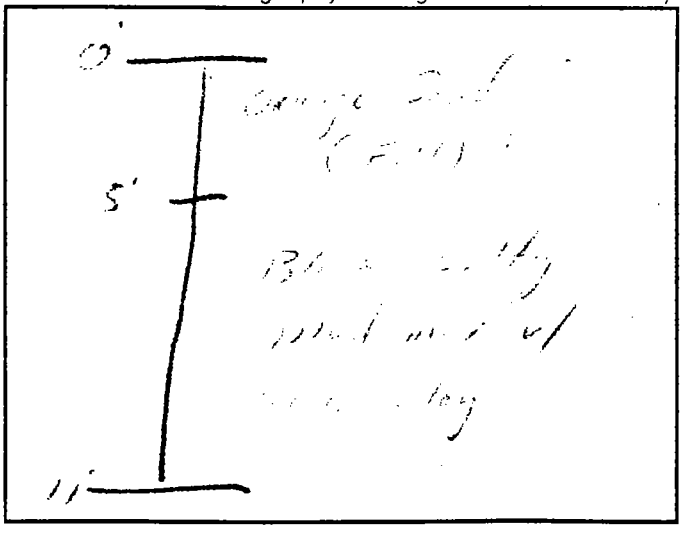
WELL CONSTRUCTION

Total depth drilled 11 ft.
Well finished to 11 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	1	4	[illegible] PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	1	11	4	[illegible] Slot [illegible]
Tail Piece				
Gravel Pack	1	11		[illegible]
Annular Seal/Grout	.5	1		Bentonite
Method of Grouting	Pour mix.			

Static water level after drilling 3 ft.
Water-level was measured using Tape
Well was developed for 1.5 hours at 2 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 N/A Type of Rig [illegible]
Name of Driller Charles H. Jacobsen
Health and Safety Plan submitted? ☐ Yes ☒ No
Level of Protection used on site (circle one) (None) D C B A
N.J. License No. [illegible]
Name of Drilling Company TARACO DRILLING CORP.

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



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

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

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

APPENDIX D

WELL SEARCH INFORMATION

WELL SEARCH SUMMARY TABLE
CHARLES WOOD 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.
1	Wolf Press Redacted - Privacy Act	1138 Pinebrook Rd, Tinton Falls	215	200	33	D	29-19540
2	M&M Fair	7 Violate Court, Eatontown	40	30	8	G	29-28128
3	Redacted - Privacy Act	30 Victor Avenue, Eatontown	51	41	5	D	29-13163
4	Redacted - Privacy Act	144 Grant Avenue, Eatontown	117	111	12	D	29-16207
6	The Ranney School	235 Hope Rd, Tinton Falls	14	4	8	M	29-27751
7	The Ranney School	235 Hope Rd, Tinton Falls	14	4	6	M	29-27752
8	The Ranney School	235 Hope Rd, Tinton Falls	12	2	3.67	M	29-27800
9	The Ranney School	235 Hope Rd, Tinton Falls	25	5	5	G	29-14431
10	Redacted - Privacy Act	27 Devon Court, Tinton Falls	46	32	6	G	29-11142
13	Redacted - Privacy Act	463 Tinton Avenue, Tinton Falls	186	171	32	D	29-21698
18	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	15	4	6.4	M	29-25316
19	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	15	5	6.7	M	29-25317
20	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	15	5	7	M	29-25318
21	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	15	5	7	M	29-25319
22	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	15	5	7	M	29-25320
23	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	15	5	*	M	29-26053
24	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	15	5	*	M	29-26054
25	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	15	5	*	M	29-26055
26	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	15	5	7	M	29-26056
27	Eatontown Bd of Education	250 Pinebrook Rd, Eatontown	12	2	10	M	29-26865
28	Eatontown Bd of Education	250 Pinebrook Rd, Eatontown	12	2	10	M	29-26866
29	Eatontown Bd of Education	250 Pinebrook Rd, Eatontown	12	2	10	M	29-26867
30	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	23	3	8	E	29-27770
31	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	18	5	8	E	29-27771
32	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	18	5	8	E	29-27772
33	Mobil Oil Corporation	Block 8 Lot 5, Eatontown	18	5	8	E	29-27773
45	Redacted - Privacy Act	539 Tinton Avenue, Tinton Falls	261	241	21	D	29-28140
46	County of Monmouth	Hwy District 316 (B97;L21.01), Tinton Falls	17	7	11.08	M	29-28781
47	County of Monmouth	Hwy District 316 (B97;L21.01), Tinton Falls	17	7	7.17	M	29-28782
48	County of Monmouth	Hwy District 316 (B97;L21.01), Tinton Falls	17.5	7.5	8.33	M	29-29607
49	County of Monmouth	Hwy District 316 (B97;L21.01), Tinton Falls	14	4	6.58	M	29-29623
50	NJDOT	Block 113, Lot 8A,9A, Tinton Falls	63	58	*	M	29-16775
51	NJDOT	Block 113, Lot 8A,9A, Tinton Falls	76.5	71.5	*	M	29-16776

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

M – Monitoring Well
E – Recovery Well
S – Sealed Well
* – This information was not available during the well search

WELL SEARCH SUMMARY TABLE
CHARLES WOOD 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.
52	County of Monmouth	143A Wayside Road, Tinton Falls	17	7	11.33	M	29-27443
53	County of Monmouth	143A Wayside Road, Tinton Falls	17	7	11.5	M	29-27444
54	County of Monmouth	143A Wayside Road, Tinton Falls	17.5	7.5	11.75	M	29-27453
55	Redacted - Privacy Aris Corp	Block 114.01, Lot 21.02, Tinton Falls	12	2	4	M	29-23921
56	Redacted - Privacy	Block 114.01, Lot 21.02, Tinton Falls	12	2	4	M	29-25775
57	Redacted - Privacy Act	Block 114.01, Lot 21.02, Tinton Falls	8	0	4	M	29-26312
58	Redacted - Privacy A	46 Park Road, Tinton Falls	13	3	3.5	M	29-29421
59	Redacted - Privacy Aris Corp	Block 114.01, Lot 21.02, Tinton Falls	12	2	3	M	29-23919
60	Aris Corp	Block 114.01, Lot 21.02, Tinton Falls	12	2	3	M	29-23290
61	Aris Corp	Block 114.01, Lot 21.02, Tinton Falls	9	2	3	M	29-23916
62	Aris Corp	Block 114.01, Lot 21.02, Tinton Falls	13	2	3	M	29-23917
63	Aris Corp	Block 114.01, Lot 21.02, Tinton Falls	12	2	3	M	29-23918
102	Exxon Corporation	Block 2; Lot 7.01,8 Eatontown	15	3	5	M	29-26806
103	Exxon Corporation	Block 2; Lot 7.01,8 Eatontown	16	3	5	M	29-26807
104	Exxon Corporation	Block 2; Lot 7.01,8 Eatontown	17	3	6	M	29-26808
105	Exxon Corporation	Block 2; Lot 7.01,8 Eatontown	17	3	5	M	29-26809
107	Amoco Oil Company	Route 35 South, Eatontown	16.5	1.5	12	M	29-14593
108	Amoco Oil Company	Route 35 South, Eatontown	16.5	1.5	12	M	29-14594
109	Amoco Oil Company	Route 35 South, Eatontown	16.5	1.5	12	M	29-14595
110	Amoco Oil Company	Route 35 South, Eatontown	16.5	1.5	12	M	29-14596
111	Redacted - Privacy Act	11 West Street, Eatontown	150	150	7	D	29-2952
126	Tinton Woods	301 Tinton Avenue., Eatontown	80	41	15	G	29-13187
2567/1	U.S. Army, Fort Monmouth	Charles Wood Bldg 2567, Ft Monmouth ***	13	3	4	M	29-26925
2567/2	U.S. Army, Fort Monmouth	Charles Wood Bldg 2567, Ft Monmouth ***	13	3	5.5	M	29-26926
2567/3	U.S. Army, Fort Monmouth	Charles Wood Bldg 2567, Ft Monmouth ***	13	3	4	M	29-26927
2567/4	U.S. Army, Fort Monmouth	Charles Wood Bldg 2567, Ft Monmouth ***	12	2	3	M	29-26928
3021/1	U.S. Army, Fort Monmouth	Charles Wood Bldg 3021, Ft Monmouth	12	2	3.5	M	29-26930
3021/2	U.S. Army, Fort Monmouth	Charles Wood Bldg 3021, Ft Monmouth	11	1	3	M	29-26931
3021/3	U.S. Army, Fort Monmouth	Charles Wood Bldg 3021, Ft Monmouth	12	2	2.5	M	29-26932
2500/1	U.S. Army, Fort Monmouth	Charles Wood Bldg 2500, Ft Monmouth	25	5	7	M	29-29742
2500/2	U.S. Army, Fort Monmouth	Charles Wood Bldg 2500, Ft Monmouth	25	5	7	M	29-29743
2500/3	U.S. Army, Fort Monmouth	Charles Wood Bldg 2500, Ft Monmouth	25	5	7	M	29-29744
2500/4	U.S. Army, Fort Monmouth	Charles Wood Bldg 2500, Ft Monmouth	25	5	7	M	29-29745
P1	U.S. Army, Fort Monmouth	Charles Wood, Ft Monmouth	*	*	*	P	*
P2	U.S. Army, Fort Monmouth	Charles Wood, Ft Monmouth	*	*	*	P	*

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

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

US Army Fort Monmouth Well Coordinates Charles Wood Area

Well No.	Permit No.	NJ Planar Coord****		Elevation-TOC	Elevation-GRD
		Northing	Easting		
1	29-19540	530800	2163200	41.5	40
2	29-28128	537125	2167270	***	***
3	29-13163	532540	2169300	***	***
4	29-16207	530600	2167380	***	52
6	29-27751	538100	2163440	***	***
7	29-27752	538080	2163710	***	***
8	29-27800	537930	2163550	***	***
9	29-14431	537935	2163820	***	***
10	29-11142	537200	2163140	***	90
13	29-21698	536750	2161900	56.5	55
18	29-25316	537000	2168170	***	***
19	29-25317	537000	2168170	***	***
20	29-25318	537000	2168170	***	***
21	29-25319	537000	2168170	***	***
22	29-25320	537000	2168170	***	***
23	29-26053	537000	2168170	***	***
24	29-26054	537000	2168170	***	***
25	29-26055	537000	2168170	***	***
26	29-26056	537000	2168170	***	***
27	29-26865	533000	2168320	***	***
28	29-26866	533000	2168320	***	***
29	29-26867	533000	2168320	***	***
30	29-27770	537220	2168150	***	***
31	29-27771	537220	2168150	***	***
32	29-27772	537220	2168150	***	***
33	29-27773	537220	2168150	***	***
45	29-28140	536165	2159995	***	***
46	29-28781	530650	2158720	***	***
47	29-28782	530650	2158720	***	***
48	29-29607	530650	2158720	***	***
49	29-29623	530650	2158720	***	***
50	29-16775	528720	2160450	***	***
51	29-16776	528720	2160450	***	***
52	29-27443	530480	2158725	***	***
53	29-27444	530480	2158725	***	***
54	29-27453	530480	2158725	***	***
55	29-23921	529100	2162200	***	***
56	29-25775	529100	2162200	***	***

US Army Fort Monmouth Well Coordinates Charles Wood Area

Well No.	Permit No.	NJ Planar Coord****		Elevation-TOC	Elevation-GRD
		Northing	Easting		
57	29-26312	529100	2162200	***	***
58	29-29421	529100	2162200	***	***
59	29-23919	529100	2162200	***	***
60	29-23290	529100	2162200	***	***
61	29-23916	529100	2162200	***	***
62	29-23917	529100	2162200	***	***
63	29-23918	529100	2162200	***	***
102	29-26806	537380	2168125	***	***
103	29-26807	537380	2168125	***	***
104	29-26808	537380	2168125	***	***
105	29-26809	537380	2168125	***	***
106	29-22900	496050	2166050	***	***
107	29-14593	538700	2168050	***	***
108	29-14594	538700	2168050	***	***
109	29-14595	538700	2168050	***	***
110	29-14596	538700	2168050	***	***
111	29-2952	536625	2168160	***	***
126	29-13187	535985	2163975	***	50
2500/1	29-29742	531340	2161910	***	***
2500/2	29-29743	531340	2161910	***	***
2500/3	29-29744	531340	2161910	***	***
2500/4	29-29745	531340	2161910	***	***
2567/1	29-26925	533250	2163740	33.93	33.72
2567/2	29-26926	533250	2163740	35.26	35.24
2567/3	29-26927	533250	2163740	33.88	33.82
2567/4	29-26928	533250	2163740	33.51	33.38
3021/1	29-26930	533265	2165780	***	***
3021/2	29-26931	533265	2165780	***	***
3021/3	29-26932	533265	2165780	***	***

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

WELL ID NO. 1

Form DWR-138
11/85

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

WELL RECORD

Well Permit No. 29 19540
Atlas Sheet Coordinates ~~29~~ : ~~13~~ : ~~829~~

OWNER IDENTIFICATION - Owner WOLF PRESS, Redacted - Privacy Act
Address 1138 PINEBROOK ROAD
City TINTON FALLS (WR:4D) State NJ Zip Code

WELL LOCATION - If not the same owner please give address Owner's Well No.
Address Property: 1138 Pinebrook Road, Tinton Falls, NJ
County City: Monmouth Municipality TINTON FALLS BO Lot No. 8 Block No. 114

WELL USE WITHDRAWAL Status IN USE

WATER USE DOMESTIC Average 1,000 gals. daily Maximum 2,000 gals. daily

WELL CONSTRUCTION
BOREHOLE DIMENSIONS
Date well completed COMPLETED: 87/11/25
Depths: Total TD: 215 ft. Finished ____ ft.
Diameter: Top 8.5 in. Bottom --- in.
Land Surface Elevation at well E: 40 ft. Elevation was determined using Topographic map
Casing Height (stick-up) above land surface 1.5" ft.

	DEPTH TO TOP (FT.)	LENGTH (FT.)	DIAMETER (IN.)	TYPE AND MATERIAL Screens: Note Slot Size(s)
Casing 1		L: 200	4.0"	Sched 40 PVC
Casing 2				
Casing 3	Top: 200			Sched 40 PVC
Screen 1				
Screen 2				Sched 40 PVC
Tail Piece	Top: 190	25'	8.5"	.025 Blended
Gravel Pack	Surface			
Grout				
Grouting Method	Pressure thru tremie pipe			

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

Test Date: 87/11.25

RECORD OF TEST Test Date ____ / ____ / ____ Level: 154
Static water-level before pumping Static: 33 ft. below land surface. Water level ____ ft. below land surface after 1 hrs. of pumping.
Water level was measured using estimated Drawdown DD: [illegible] ft.
Discharge rate measured using measured container Discharge Rate d: 40 gals. per min.
Well was pumped using [illegible] Specific Capacity S: 0.5 gals. per min. per ft. of drawdown
Observed effects on nearby wells none
Water Quality (taste, odor, color, etc.) good

PERMANENT PUMPING EQUIPMENT Installed by PICKWICK WELL DRLG Pump Type Submersible
Mfrs. Name Gould/~~Red Jacket~~ Model Model: 10EJ07422
CAPACITY: Pump delivers 12 ~~gpm~~ GPM at 40 PSI pressure.
POWER: ~~3/4 HP~~ HP at 2450 RPM Power Source Electric
DEPTHS: Pump ~~Set: 130~~ ft. Footpiece ____ ft. Airline ____ ft.
FLOW METER: Model ____ installed on ____ in. diameter pipe.

PICKWICK WELL DRILLING

CONTRACTOR - Name of Drilling Contractor P.O. Box 5, Farmingdale, NJ 07727 (201 938 5300)
Address
City State Zip Code
Name of Driller ~~David Primost~~ M 1041 License No.
Norman Primost J 1040
~~Alice Primost~~ J 1407
Signature of Contractor [signature] Date 88/02/07

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

DWR-138 M
6/89

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

WELL ID NO. 27

Well Permit No. 29 - 26865
Atlas Sheet Coordinates 29 : 13 : 675

OWNER IDENTIFICATION - Owner EATONTOWN BOARD OF ED.
Address 215 BROAD STREET
City EATONTOWN State NJ Zip Code 07724

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-1
County Monmouth Municipality EATONTOWN BORO Lot No. 43 Block No. 55
Address 250 Pine Brook Rd. Eatontown, NJ

TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 9/20/91
Regulatory Program Requiring Well UST Case I.D. # 91-07-24-1525
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Aguilar Tele. #

WELL CONSTRUCTION

Total depth drilled 12 ft.
Well finished to 12 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.) [From land surface]	Diameter (inches)	Type and Material
Inner Casing	0	2	4	PVC
Outer Casing (Not Protective Casing)	N/A			
Screen (Note slot size)	2	12	4	PVC .020
Tail Piece	N/A			
Gravel Pack	1	12		Morie #2
Annular Seal/Grout	0	1		Portland/Bentonite pellets
Method of Grouting	Gravity			

Static water level after drilling 10 ft.
Water level was measured using Tape
Well was developed for 1/2 hours at 1 gpm
Method of development Bail
Was permanent pumping equipment installed? ☐ Yes ☒ No
Pump capacity N/A gpm
Pump type: N/A
Drilling Method HSA
Drilling Fluid N/A Type of Rig Mobil B-57
Name of Driller John Vogt
Health and Safety Plan submitted? ☒ Yes ☐ No
Level of Protection used on site (circle one) None D C B A
N.J. License No. 1544
Name of Drilling Company SUMMIT WELL DRILLING

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

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

Driller's Signature John Vogt Date 10/01/91

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

DWR-138 M
6/89

New Jersey Department of Environmental Protection
Division of Water Resources

MONITORING WELL RECORD

WELL ID NO. 28

Well Permit No. 29 - 26866
Atlas Sheet Coordinates 29 : 13 : 675

OWNER IDENTIFICATION - Owner EATONTOWN BOARD OF ED.
Address 215 BROAD STREET
City EATONTOWN State NJ Zip Code 07724

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-2
County Monmouth Municipality EATONTOWN BORO Lot No. 43 Block No. 55
Address 250 Pine Brook Rd. Eatontown, NJ

TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 9/20/91
Regulatory Program Requiring Well UST Case I.D. # 91-07-24-1525
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Aguilar Tele. #

WELL CONSTRUCTION

Total depth drilled 12 ft.
Well finished to 12 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	2	4	PVC
Outer Casing (Not Protective Casing)	N/A			
Screen (Note slot size)	2	12	4	PVC - .020
Tail Piece	N/A			
Gravel Pack	1	12		Morie #2
Annular Seal/Grout	0	1		Portland Bentonite pellets
Method of Grouting	Gravity			

Static water level after drilling 10 ft.
Water level was measured using Tape
Well was developed for 1/2 hours at 1 gpm
Method of development Bail
Was permanent pumping equipment installed? ☐ Yes ☒ No
Pump capacity N/A gpm
Pump type: N/A
Drilling Method HSA
Drilling Fluid N/A Type of Rig Mobil B-57
Name of Driller John Vogt
Health and Safety Plan submitted? ☒ Yes ☐ No
Level of Protection used on site (circle one) None (D) C B A
N.J. License No. 1544
Name of Drilling Company SUMMIT WELL DRILLING

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

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

Driller's Signature John Vogt Date 10/9/91

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

DWR-138 M
4/89

New Jersey Department of Environmental Protection
Division of Water Resources

WELL ID NO. 29

MONITORING WELL RECORD

Well Permit No. 29 - 26867
Atlas Sheet Coordinates 29 : 13 : 675

OWNER IDENTIFICATION - Owner EATONTOWN BOARD OF ED.
Address 215 BROAD STREET
City EATONTOWN State NJ Zip Code 07724

WELL LOCATION - If not the same as owner please give address. Owner's Well No. MW-3
County Monmouth Municipality _____ Lot No. 43 Block No. 55
Address 250 Pine Brook Rd. EATONTOWN BORD Eatontown, NJ

TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 9/20/91
Regulatory Program Requiring Well UST Case I.D. # 91-07-24-1525
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Aguilar Tele. #

WELL CONSTRUCTION

Total depth drilled 12 ft.
Well finished to 12 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	2	4	PVC
Outer Casing (Not Protective Casing)	N/A			
Screen (Note slot size)	2	12	4	PVC - .020
Tail Piece	N/A			
Gravel Pack	1	12		Morie #2
Annular Seal/Grout	0	1		Portland Bentonite pellets
Method of Grouting	Gravity			

Static water level after drilling 10 ft.
Water level was measured using Tape.
Well was developed for 1/2 hours at 1 gpm
Method of development Bail
Was permanent pumping equipment installed? ☐ Yes ☒ No
Pump capacity N/A gpm
Pump type: N/A
Drilling Method HSA
Drilling Fluid N/A Type of Rig Mobil B-57
Name of Driller John Vogt
Health and Safety Plan submitted? ☒ Yes ☐ No
Level of Protection used on site (circle one) None (D) C B A
N.J. License No. 1544
Name of Drilling Company SUMMIT WELL DRILLING

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

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

Driller's Signature John Vogt Date 10/9/91

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

Form-OWR- 138
11/80

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

Coord: 2913916

PERMIT NO. 29131163

APPLICATION NO. _____

COUNTY Monmouth

WELL RECORD

WELL ID NO. 3

1. OWNER Redacted - Privacy Act ADDRESS 30 VICTOR AVE.

Owner's Well No. _____ SURFACE ELEVATION _____ Feet (Above mean sea level)

2. LOCATION Lot: 3 Block: 83 Municipality: Eatontown Boro

3. DATE COMPLETED 8-25-83 DRILLER Tiger Construction Corp.

4. DIAMETER: Top 4 inches Bottom 4 inches TOTAL DEPTH 51 Feet

5. CASING: Type Pvc Diameter 4 Inches Length 41 Feet

6. SCREEN: Type Pvc Size of Opening .016" Diameter 4 Inches Length 10 Feet

Range in Depth { Top 40 Feet / Bottom 50 Feet } Geologic Formation Vincentown

Tail Piece: Diameter _____ Inches Length _____ Feet

7. WELL FLOWS NATURALLY _____ Gallons per minute at _____ Feet above surface

Water rises to _____ Feet above surface

8. RECORD OF TEST: Date 8-25-83 Yield 35 Gallons per minute

Static water level before pumping 5 Feet below surface

Pumping level 40 feet below surface after 1 hours pumping

Drawdown 35 Feet Specific Capacity 1 Gals. per min. per ft. of drawdown

How pumped Air How measured Orifice

Observed effect on nearby wells none

9. PERMANENT PUMPING EQUIPMENT:

Type S/w Jet Mfrs. Name Gould's

Capacity 10 G.P.M. How Driven Electric H.P. 1/2 R.P.M. 3450

Depth of Pump in well _____ Feet Depth of Footpiece in well _____ Feet

Depth of Air Line in well _____ Feet Type of Meter on Pump _____ Size _____ Inches

10. USED FOR Domestic AMOUNT { Average 1000 Gallons Daily / Maximum 2000 Gallons Daily }

11. QUALITY OF WATER Good Sample: Yes ✓ No ____

Taste _____ Odor _____ Color _____ Temp. _____ °F.

12. LOG on Back Are samples available? no
(Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy.)

13. SOURCE OF DATA Driller

14. DATA OBTAINED BY Dennis B. Davis Date 10/4/83

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements, etc.)

24.13-6 75

FORM 87

DEPARTMENT OF CONSERVATION
AND ECONOMIC DEVELOPMENT
DIVISION OF WATER POLICY & SUPPLY

Permit No. 29-2952
Application No. _____
County _____

WELL RECORD

WELL ID NO. 111

Redacted - Privacy Act

1. OWNER _____ ADDRESS 11- West St. EatonTown, N.J.
   Owner's Well No. _____ SURFACE ELEVATION _____ Feet (Above mean sea level)
2. LOCATION EatonTown
3. DATE COMPLETED 6/26/59 DRILLER A.P.TICE & SON
4. DIAMETER: top 4 Inches Bottom 4 Inches TOTAL DEPTH 150 Feet
5. CASING: Type blk steel Diameter 4 inches Length 150 Feet
6. SCREEN: Type none Size of Opening ___ Diameter _____ Inches Length _____ Feet
   Range in Depth { Top _____ Feet / Bottom _____ Feet } Geologic Formation _____
   Tail piece: Diameter _____ Inches Length _____ Feet
7. WELL FLOWS NATURALLY no Gallons per Minute at _____ Feet above surface
   Water rises to _____ Feet above surface
8. RECORD OF TEST: Date 7/25/59 Yield 5 Gallons per minute
   Static water level before pumping 7 Feet below surface
   Pumping level 137 feet below surface after 6 hours pumping
   Drawdown 30 Feet Specific Capacity _____ Gals. per min. per ft. of drawdown
   How Pumped air compressor How measured [illegible] bucket
   Observed effect on nearby wells none
9. PERMANENT PUMPING EQUIPMENT: Owner installed his own
   Type _____ Mfrs. Name _____
   Capacity _____ G.P.M. How Driven _____ H.P. _____ R.P.M. _____
   Depth of Pump in well _____ Feet Depth of Footpiece in well _____ Feet
   Depth of Air Line in well _____ Feet Type of Meter on Pump _____ Size _____ Inches
10. USED FOR domestic AMOUNT { Average _____ Gallons Daily / Maximum _____ Gallons Daily }
11. QUALITY OF WATER good Sample: Yes ____ No. ____
    Taste none Odor none Color clear Temp. 54 °F
12. LOG _____ Are samples available? _____
    (Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy)
13. SOURCE OF DATA sheet kept every day
14. DATA OBTAINED BY Arthur P. Tice Date 7/1/59

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements etc.)

APPENDIX E

HAZARDOUS WASTE MANIFESTS

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-

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ2100930978 — 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: Ft. Monmouth — Ft Monmouth NJ PO Box 360

A. State Manifest Document Number: NJA 0849429

4. Generator's Phone: 201-532-5990

B. State Generator's ID: SAME

5. Transporter 1 Company Name: L+L Oil Service Inc — 6. US EPA ID Number: NJD011421895

C. State Trans. ID: NJ5060901

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

D. Transporter's Phone: 201-566-2715

E. State Trans. ID

9. Designated Facility Name and Site Address: L+L Oil Service Inc. 740 Lloyds Rd. Bordentown NJ 07747 — 10. US EPA ID Number: NJD011421895

F. Transporter's Phone ( )

G. State Facility's ID

H. Facility's Phone: 609-298-0660

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 WASTE WATER + OIL, COMBUSTIBLE LIQUID, NA 1993	01	TT	1400	G	X 725
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above: a. S01 b. c.

15. Special Handling Instructions and Additional Information: ERG 3021

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.

GENERATOR — Printed/Typed Name: JOHN SATTER — Signature — Month: 11 Day: 01 Year: 89

17. Transporter 1 Acknowledgement of Receipt of Materials

TRANSPORTER — Printed/Typed Name: Richard T DiFienzo — Signature — Month: 11 Day: 01 Year: 89

18. Transporter 2 Acknowledgement of Receipt of Materials

TRANSPORTER — Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

FACILITY

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

FACILITY — Printed/Typed Name: Sherry Stipps — Signature — Month: 11 Day: 01 Year: 89

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

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

3 — TSD MAIL TO - GENERATOR

In case of an emergency call the fire and emergency squad and the N.J. Dept. of Environmental Protection. (609) 292-5560 (Day) (609) 292-7172 (Night)

HW-001 (REV. 9/88)

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 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ 2 2 1 0 0 2 0 9 7 8 — 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: Ft. Monmouth — Ft Monmouth N.J. P.O. Box 360

A. State Manifest Document Number: NJA. [illegible]

4. Generator's Phone (201) 544-5990

B. State Generator's ID: [illegible]

5. Transporter 1 Company Name: L+L Oil Service — 6. US EPA ID Number: NJD 0 1 1 4 2 7 8 9 4

C. State Trans. ID: [illegible]

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

D. Transporter's Phone: [illegible]

E. State Trans. ID

9. Designated Facility Name and Site Address: L+L Oil Service, 740 Lloyd Rd, Aberdeen, N.J. 07747 — 10. US EPA ID Number: NJD 0 1 1 4 2 7 8 9 5

F. Transporter's Phone: [illegible]

G. State Facility's ID

H. Facility's Phone: [illegible]

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. Waste water F.O. contr. Liq. NA/1993	01	TT	600	G	X T 2 2
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above: a. [illegible] b. c. d.

K. Handling Codes for Wastes Listed Above: a. S 0 2 b.

15. Special Handling Instructions and Additional Information: Bldg 3021

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: [illegible] — Month Day Year: 11 01 89

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Richard DiVenzo — Signature: [illegible] — Month Day Year: 11 01 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: Sherry Stipps — Signature: [illegible] — Month Day Year: 11 01 89

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

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

3 — TSD MAIL TO - GENERATOR

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 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ2210020978 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: United States Army; Directorate of Engineering/Housing
Fort Monmouth, NJ 07703

A. State Manifest Document Number NJA 0830251

B. State Generator's ID SAME

4. Generator's Phone (201) 544-0995

5. Transporter 1 Company Name: Jersey Environmental/Marianne
6. US EPA ID Number: NJD982721730

C. State Trans. ID 12513 6 8
D. Transporter's Phone 614-226-4378

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
American Landfill; 7916 Chapel St. SE
Waynesburg, Ohio 44688

10. US EPA ID Number: N O N E

G. State Facility's ID Ohio EPA 3321
H. Facility's Phone 216-866-3265

	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.	*Oil Contaminated Soil; Non-Regulated.	001	DT	00014	Y	X-725
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
Material is not hazardous by Ohio state regulations; not a RCRA/DOT regulated material. (Material is manifested in order to further document the disposal.)

K. Handling Codes for Wastes Listed Above
a. D-80

15. Special Handling Instructions and Additional Information
JOB SITE: United State Army — Fort Monmouth
Building 3021, Pinebrook Rd.

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: Joseph M. Fallon | Signature: Joseph M. Fallon | Month Day Year: 04 27 90

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Dennis J. Koontz | Signature: Dennis J Koontz | Month Day Year: 04 27 90

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

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: C. Downing | Signature: [illegible] | Month Day Year: 4 30 90

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

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

3 — TSD MAIL TO - GENERATOR

VHW-001 (REV. 3/86)

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 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ2210020978 | 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
United State Army; Directorate of Engineering/Housing
Fort Monmouth, NJ 07703

A. State Manifest Document Number NJA 0830252

4. Generator's Phone 201 544-0995

B. State Generator's ID SAME

5. Transporter 1 Company Name | 6. US EPA ID Number
Jersey Environmental/Marianne | NJD982721730

C. State Trans. ID 1 5 3 6 8

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

D. Transporter's Phone 814-226-4336

E. State Trans. ID

9. Designated Facility Name and Site Address | US EPA ID Number
American Landfill; 7916 Chapel St. SE
Waynesburg, Ohio 44688
NONE

F. Transporter's Phone ( )

G. State Facility Ohio EPA 3321

H. Facility's Phone 216-886-3265

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. *Oil Contaminated Soil; Non-Regulated.	001	DT	00014	Y	X-725
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
Material is not hazardous by Ohio state regulations; not a RCRA/DOT regulated material. (Material is manifested in order to further document the disposal.)

K. Handling Codes for Wastes Listed Above
a. D-80 | c. | b. | d.

15. Special Handling Instructions and Additional Information
JOB SITE: United State Army - Fort Monmouth
Building 3021, Pinebrook Rd.

GENERATOR

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
Joseph M. Fallon	Joseph M Fallon	04	27	90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Robert Lane	Robert Lane	04	27	90

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

NJA 0830252

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

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

3 — TSD MAIL TO - GENERATOR

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 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ2210020978 — Manifest Document No.
2. Page 1 of
Information in the shaded areas is not required by Federal

3. Generator's Name and Mailing Address
United State Army; Directorate of Engineering/Housi
Fort Monmouth, NJ 07703

A. State Manifest Document Number NJA 0830253
B. State Generator's ID SAME
4. Generator's Phone 201 544-0995
5. Transporter 1 Company Name — 6. US EPA ID Number
Jersey Environmental/Marianne — NJD982721730
C. State Trans. ID 1 5 1 3 6 8
7. Transporter 2 Company Name — 8. US EPA ID Number
D. Transporter's Phone 614-226-4338
E. State Trans. ID
9. Designated Facility Name and Site Address — 10. US EPA ID Number
American Landfill; 7916 Chapel St. SE
Waynesburg, Ohio 44688
NONE
F. Transporter's Phone ( )
G. State Facility OHio EPA 3321
H. Facility's Phone 216-866-3265

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. Oil Contaminated Soil; Non-Regulated.	001	DT	00014	Y	X-T26
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
Material is not hazardous by Ohio state regulations; not a RCRA/DOT regulated material. (Material is manifested in order to further document the disposal.)
a.
b.
d.

K. Handling Codes for Wastes Listed Above
a. D-80
c.
b.
d.

15. Special Handling Instructions and Additional Information
JOB SITE: United State Army - Fort Monmouth
Building 3021, Pinebrook Rd.

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.

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Printed/Typed Name	Signature	Month	Day	Year
Joseph M. Fallon	Joseph M. Fallon	10	12	90

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Robert E Sarver JR	Robert E Sarver JR	10	12	90

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

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

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3 — TSD MAIL TO - GENERATOR

HW-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 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ2210020978 — 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: United State Army; Directorate of Engineering/Housing
Fort Monmouth, NJ 07703

A. State Manifest Document Number: NJA 0830254

B. State Generator's ID: [illegible]

4. Generator's Phone: 201 544-0995

5. Transporter 1 Company Name: Jersey Environmental/Marianne — 6. US EPA ID Number: NJD982721730

C. State Trans. ID: 1 5 3 6 8

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

D. Transporter's Phone: 814-226-4378

E. State Trans. ID

9. Designated Facility Name and Site Address: American Landfill; 7916 Chapel St. SE
Waynesburg, Ohio 44688 — 10. US EPA ID Number: NONE

F. Transporter's Phone ( )

G. State Facility: Ohio EPA 3321

H. Facility's Phone: 216-866-3265

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. *Oil Contaminated Soil; Non-Regulated.	001	DT	00014	Y	X-725
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above

a. Material is not hazardous by Ohio state regulations; not a RCRA/DOT regulated material. (Material is manifested in order to further document the disposal.)

b.

c.

d.

K. Handling Codes for Wastes Listed Above

a. D-80

b.

c.

d.

15. Special Handling Instructions and Additional Information

JOB SITE: United State Army - Fort Monmouth
Building 3021, Pinebrook Rd.

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GENERATOR — Printed/Typed Name: Joseph M. Fallon — Signature: Joseph M. Fallon — Month 04 Day 27 Year 90

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Edward Pucci — Signature: Edward Pucci — Month 04 Day 27 Year 90

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: [illegible] — Signature: [illegible] — Month 4 Day 30 Year 90

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

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3 — TSD MAIL TO - GENERATOR

HWW-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 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ2210020978 | 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
United State Army; Directorate of Engineering/Housing
Fort Monmouth, NJ 07703

A. State Manifest Document Number NJA 083025

B. State Generator's ID SAME

4. Generator's Phone 201 544-0995

5. Transporter 1 Company Name | 6. US EPA ID Number
Jersey Environmental/Marianne | NJD982721730

C. State Trans. ID 1536

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

D. Transporter's Phone 814-226-4378

E. State Trans. ID

9. Designated Facility Name and Site Address | 10. US EPA ID Number
American Landfill; 7916 Chapel St. SE
Waynesburg, Ohio 44688 | NONE

F. Transporter's Phone ( )

G. State Facility Ohio EPA 3321

H. Facility's Phone 216-866-3265

	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	15. Waste No.
a.	Oil Contaminated Soil; Non-Regulated.	001	DT	00014	Y	X-T25
b.						
c.						
d.						

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a. Material is not hazardous by Ohio state regulations; not a RCRA/DOT regulated material. (Material is manifested in order to further document the disposal.)
b.
d.

K. Handling Codes for Wastes Listed Above
a. D-80
c.
b.
d.

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GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
Joseph M. Fallon	Joseph M. Fallon	04	27	90

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Fred A. Gross	Fred A. Gross	04	27	90

TRANSPORTER

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

FACILITY

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
[illegible]	[illegible]	4	30	90

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

3 — TSD MAIL TO - GENERATOR

APPENDIX F

ANALYTICAL DATA PACKAGE

LABORATORY DELIVERABLES

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following laboratory deliverables shall be included in the data submission. All deviations from the accepted methodology and procedures, or performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The proposed "Technical Requirements for Site Remediation" rules, which appeared in the May 4, 1992 New Jersey Register, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits be included in one section of the data package and in the main body of the report.

		Check if Complete
1.	Cover Page, Title Page listing Lab Certification #, facility name & address, & date of report	✓
2.	Table of Contents	✓
3.	Summary Sheets listing analytical results for all targeted and non-targeted compounds	✓
4.	Summary Table cross-referencing field ID #'s vs. Lab ID #'s	✓
5.	Document bound, paginated and legible	✓
6.	Chain of Custody	✓
7.	Methodology Summary	✓
8.	Laboratory Chronicle and Holding Time Check	✓
9.	Results submitted on a dry weight basis (if applicable)	N/A
10.	Method Detection Limits	✓
11.	Lab certified by NJDEPE for parameters or appropriate category of parameters or a member of the USEPA CLP	✓
12.	Non-Conformance Summary	✓

Laboratory Manager or Environmental Consultant's Signature

Date

I. METHODOLOGY

- Standard Methods for the Examination of Water and Wastewater, 16th Edition.
- EPA Methods for the Chemical Analysis of Water and Wastes, Revised, March 1983.

II. ANALYTICAL RESULTS

Bldg. 3021
U.S.T. Site

Parameter	Sample Designation 89L-2229-1 C89-205	89L-2229-2 C89-206
Petroleum Hydrocarbons by IR, mg/kg*	ND	ND
Total Solids, %	55	54

ND: Not Detected.
*: Results calculated on a dry weight basis.

Detection Limit

Petroleum Hydrocarbons: 50 mg/kg

III. QUALITY ASSURANCE DATA

- Matrix Spike and Matrix Spike Duplicate Recoveries

Parameter	Sample Spiked	Amount of Spike, ug	Initial % Recovery	Duplicate % Recovery	Relative % Difference
PHC	2229-1	4,100	65	67	3.0
TS	2220-1	Duplicate	100	---	---

NAC Northeastern Analytical Corp.

C90-217

February 26, 1990

E-Systems, Inc./Serv-Air
P.O. Box 360
Ft. Monmouth, New Jersey 07703

03117

Attention: Mr. Joseph Fallon

Reference: Test Report No. NAC90L-0236
Project: P.O. #MO-1427

This test report covers the analysis of one (1) solid sample submitted to Northeastern Analytical Corporation (NAC) on February 6, 1990. The following analyses were performed:

- Volatile Organics
- Polychlorinated Biphenyls
- EP Extractable Metals
- Reactivity
- Miscellaneous Parameters

The report is organized as follows:

- Methodology
- Analytical Results
- Quality Assurance Data

If you have any questions concerning this analysis, please do not hesitate to contact your account representative.

Respectfully submitted,

Northeastern Analytical Corp.

Paul P. Painter
Laboratory Manager

bb
Attachment: Chain of Custody
File: 50L\TEST\90L-0236

I. METHODOLOGY

- Standard Methods for the Examination of Water and Wastewater, 16th Edition.
- EPA Methods for the Chemical Analysis of Water and Wastes, Revised, March, 1983.
- Test Methods for Evaluating Solid Waste, SW846, 3rd Edition, November, 1986.
- EPA Method 608 - Organochlorine Pesticides and PCBs, Federal Register, Vol. 40, No. 136, July, 1988.
- ASTM D93-85, Flashpoint by Pensky-Martens Closed Cup Tester.
- EPA Test Method from Land Disposal Restriction.

II. ANALYTICAL RESULTS

• Volatile Organics

Parameter	Sample Designation: 90L-0236 Sample #C90-217	Detection Limit
Chloromethane	ND	1.0
Bromomethane	ND	1.0
Vinyl Chloride	ND	1.0
Chloroethane	ND	1.0
Methylene Chloride	31	1.0
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	4.2	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon Tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Trichloroethene	1.9	1.0
Dibromochloromethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
2-Chloroethylvinyl Ether	ND	1.0
Bromoform	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Tetrachloroethene	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Benzene	ND	1.0
Toluene	4.2	1.0
Ethylbenzene	ND	1.0
Total Xylenes	17	1.0
Units	(ug/kg)	(ug/kg)

ND: Not Detected.

II. ANALYTICAL RESULTS (Continued)

- Polychlorinated Biphenyls

Parameter	Sample Designation 90L-0236 Sample #C90-217	Detection Limit
Polychlorinated Biphenyls:		
. as Aroclor 1016	ND	1.0
. as Aroclor 1221	ND	2.0
. as Aroclor 1232	ND	1.0
. as Aroclor 1242	ND	1.0
. as Aroclor 1248	ND	1.0
. as Aroclor 1254	ND	1.0
. as Aroclor 1260	ND	1.0
Units	(mg/kg)	(mg/kg)

ND: Not Detected.

- EP Extractable Metals

Parameter	Sample Designation 90L-0236 Sample #C90-217	Detection Limit	EP Toxicity Limits
Arsenic	ND	0.10	5.0
Barium	ND	0.20	100
Cadmium	ND	0.0050	1.0
Chromium	ND	0.010	5.0
Lead	ND	0.10	5.0
Mercury	ND	0.00020	0.20
Selenium	ND	0.10	1.0
Silver	ND	0.010	5.0
Units	(mg/l)	(mg/l)	(mg/l)

II. ANALYTICAL RESULTS (Continued)

- Reactivity

The results for reactivity are as follows:

- The sample was not unstable and did not readily undergo violent changes under normal conditions.
- The sample did not react violently with water or form a potentially explosive mixture, or generate toxic gases, vapors or fumes.
- The results for the reactive sulfide and cyanide are as follows:

	Sample Designation	
Parameter	90L-0236 Sample #C90-217	Detection Limit
Reactive Cyanide, mg/kg	ND	1.0
Reactive Sulfide, mg/kg	ND	1.0

- Miscellaneous Parameters

	Sample Designation	
Parameter	90L-0236 Sample #C90-217	Detection Limit
pH, units	5.2	NA
Flashpoint, Closed Cup, °C	>60	NA
Petroleum Hydrocarbons by IR, mg/kg	1,300	50
Total Solids, %	84	NA

NA: Not Applicable.
ND: Not Detected.

III. QUALITY ASSURANCE DATA

- Volatile Organic Surrogate Recoveries

	% Recovery	
Sample Designation	1-Chloro-2-Bromopropane	Fluorobenzene
90L-0236	82	97
Control Limits	(55-132)	(51-124)

- Polychlorinated Biphenyl Surrogate Recoveries

	% Recovery
Sample Designation	Dibutylchlorendate
90L-0236	40

- Matrix Spike and Matrix Spike Duplicate Recoveries

Parameter	Sample Spiked	Amount of Spike, ug	Initial % Recovery	Duplicate % Recovery	Relative % Difference
Arsenic	0288-1	120	92	95	3.2
Barium	0288-1	50	90	91	1.1
Cadmium	0288-1	12	94	96	2.1
Chromium	0288-1	25	93	93	0
Lead	0288-1	25	89	90	1.1
Mercury	0019-2	0.20	85	71	18
Selenium	0288-1	120	83	85	2.4
Silver	0288-1	50	90	92	2.2
R.Cyanide	0220-1	40	96	100	4.1
R.Sulfide	0220-1	14	108	100	7.7
PCB	0149-12	10	109	112	2.7
PHC	0232-1	4,100	*	*	*
TS	0246-1	Duplicate	99	---	---

* Due to the high level of analyte in the sample, the matrix spikes for Petroleum Hydrocarbons were not recovered. However, the control sample demonstrated acceptable recovery.

Bldg. 3021

ENVIRONMENTAL PROFILE LABORATORIES

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

ID#
6944.5
" .6
" .7

MW#
292629
292630
292631

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

TABLE OF CONTENTS

CLIENT: Serv-Air

SAMPLE LOCATION AND IDENTIFICATION

LAB ID NUMBER	SAMPLE IDENTIFICATION	MATRIX
6944.1	BLD 314	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

8-of-16
Laboratories

CUSTOMER PURCHASE ORDER NO:

CHAIN OF CUSTODY RECORD

PROJECT NO.:	SAMPLER (SIGNATURE): John F. Kl	DATE / TIME 12/10/91 3pm	ANALYSIS PARAMETERS
CUSTOMER (NAME/ADDRESS) E-Systems Serv-Air	SITE NAME: Fort Monmouth		START: 700 AM 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 4°C
8441	12/10 8-3p	H2O	B/d 8/4	3	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 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 Boudette	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.:

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

SAMPLER (SIGNATURE): John F. Kl

SITE NAME: Fort Monmouth

DATE / TIME: 12/10/91 3pm

ANALYSIS PARAMETERS: VOA's 15 TIC; Lead; BNA's TIC; Chlordane

START: 7:00 AM

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 15 TIC	Lead	BNA's TIC	Chlordane	REMARKS	PRESERVATION METHOD <4°C
6944.12	12/10 2-3pm	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		
.20			Field blank		X	X	X			
.21			trip blank	2	X		(X)			

Relinquished By (Signature)	DATE / TIME	Received By (Signature)	METHOD OF SHIPPING:
[signature]	12-10-91 3:00	[signature]	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 Braultte	DATE / TIME 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.

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.

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.

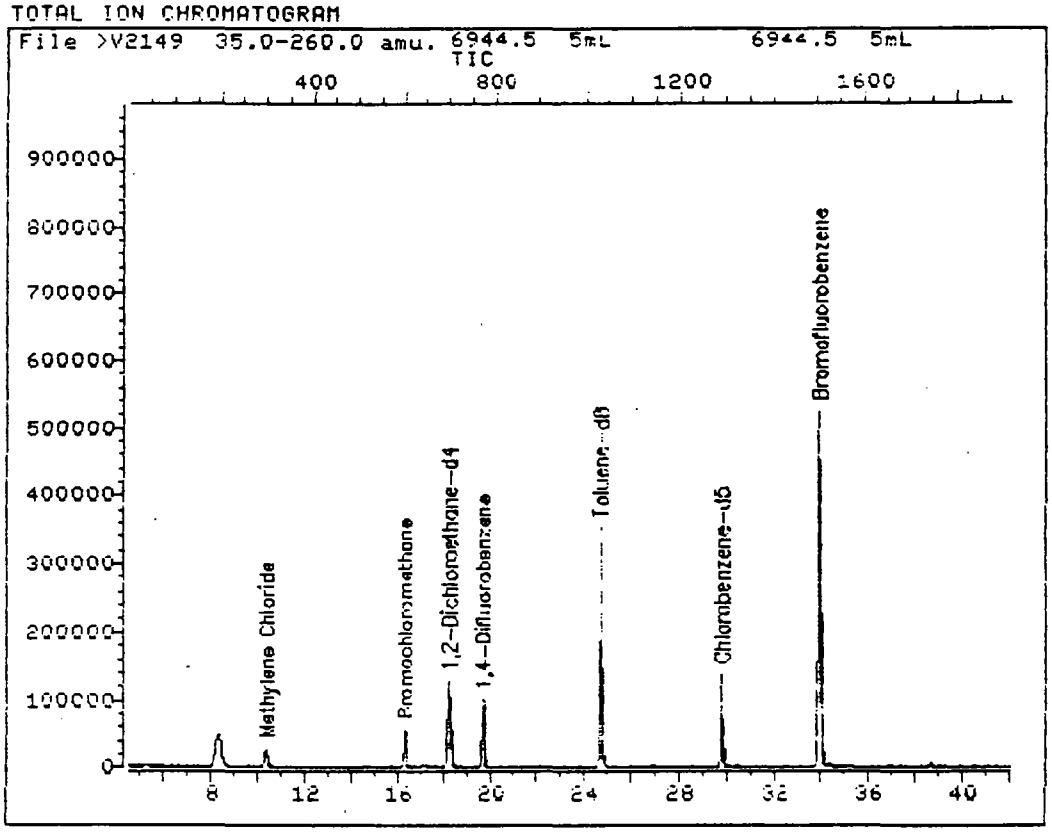
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.5 5mL	DILUTION FACTOR	1.00
CLIENT ID		QA BATCH	
DATA FILE	>V2149	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	10	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

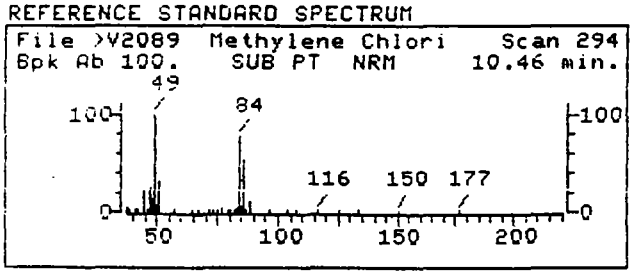


Data File: >V2149::D1 Quant Output File: ^V2149::DE
Name: 6944.5 5mL
Misc: 6944.5 5mL

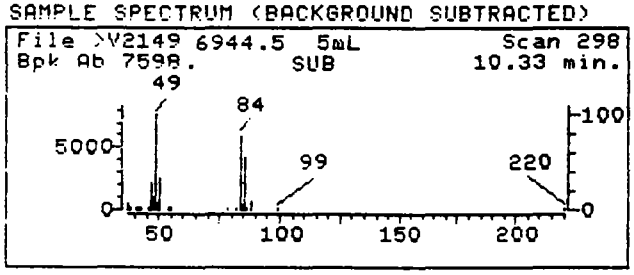
Id File: IDVOA::D4
Title: HSL VOLATILE ORGANICS
Last Calibration: 911206 11:43

Operator ID: BRIAN
Quant Time: 911211 01:16
Injected at: 911211 00:33

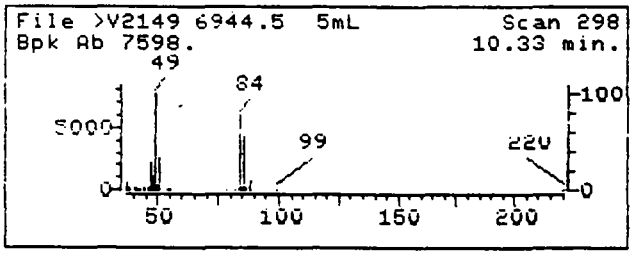
REFERENCE STANDARD SPECTRUM

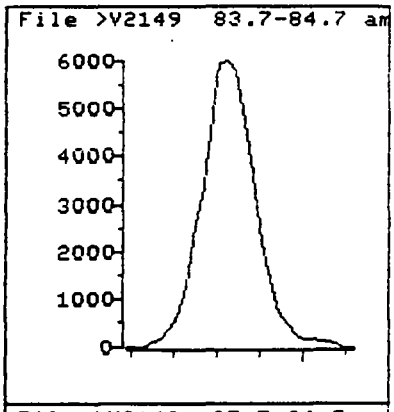


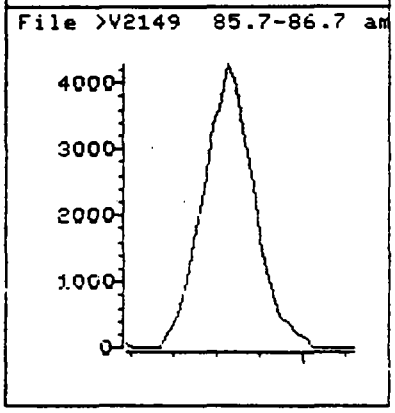
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >V2149::D1 Quant Output File: ^V2149::DB
Name: 6944.5 5mL
Misc: 6944.5 5mL
Quant Time: 911211 01:16 Quant ID File: IDV0A::D4
Injected at: 911211 00:33 Last Calibration: 911206 11:43

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 298
Retention Time: 10.33 min.
Quant Ion: 84.0
Area: 52847
Concentration: 9.67 ppb
q-value: 84

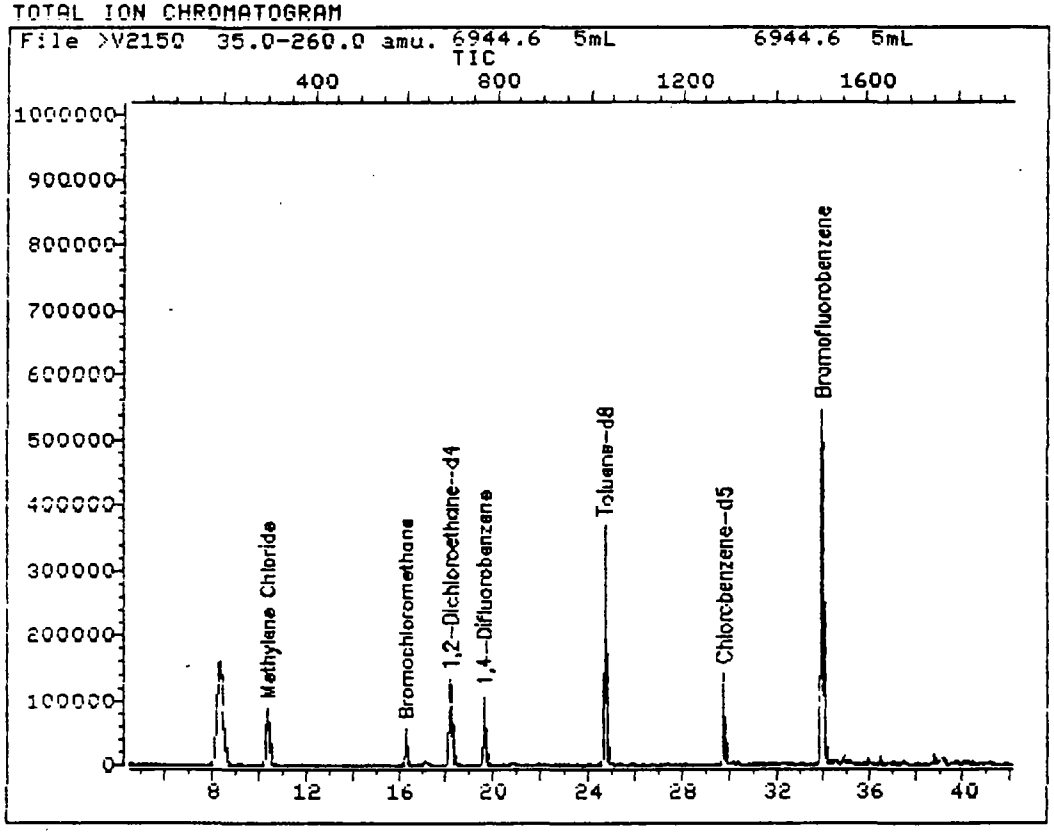
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.6 5mL	DILUTION FACTOR	1.00
CLIENT ID		QA BATCH	
DATA FILE	>02150	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	31	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

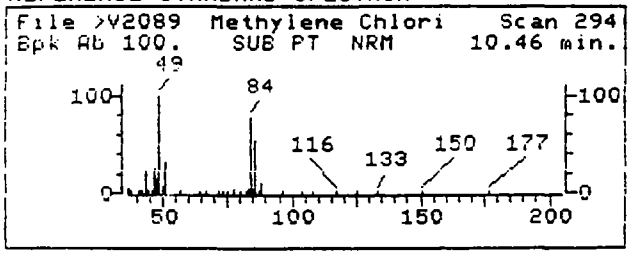


Data File: >V2150::D1 Quant Output File: ^V2150::DB
Name: 6944.6 5mL
Misc: 6944.6 5mL

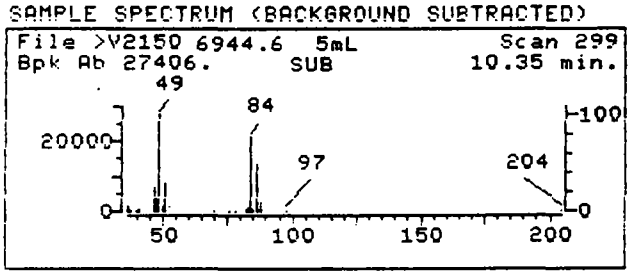
Id File: IDVOA::D4
Title: HSL VOLATILE ORGANICS
Last Calibration: 911206 11:43

Operator ID: BRIAN
Quant Time: 911211 02:03
Injected at: 911211 01:20

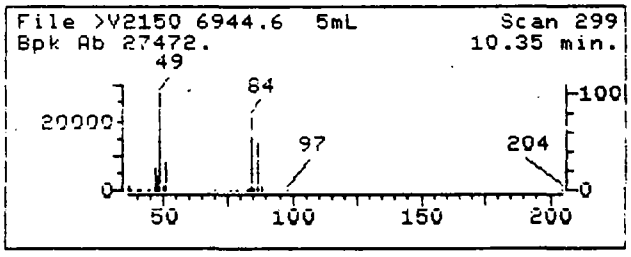
REFERENCE STANDARD SPECTRUM

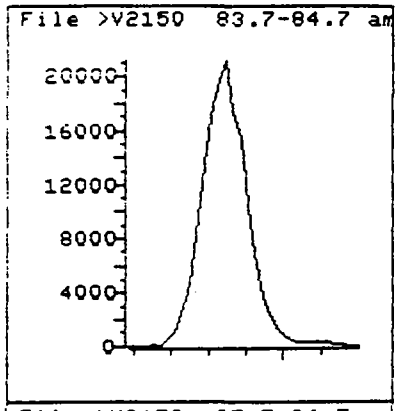


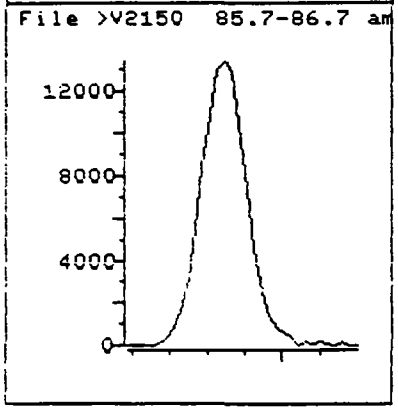
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >V2150::D1 Quant Output File: ^V2150::DB
Name: 6944.6 5mL
Misc: 6944.6 5mL
Quant Time: 911211 02:03 Quant ID File: IDVOA::D4
Injected at: 911211 01:20 Last Calibration: 911206 11:43

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 299
Retention Time: 10.35 min.
Quant Ion: 84.0
Area: 172616
Concentration: 31.45 ppb
q-value: 95

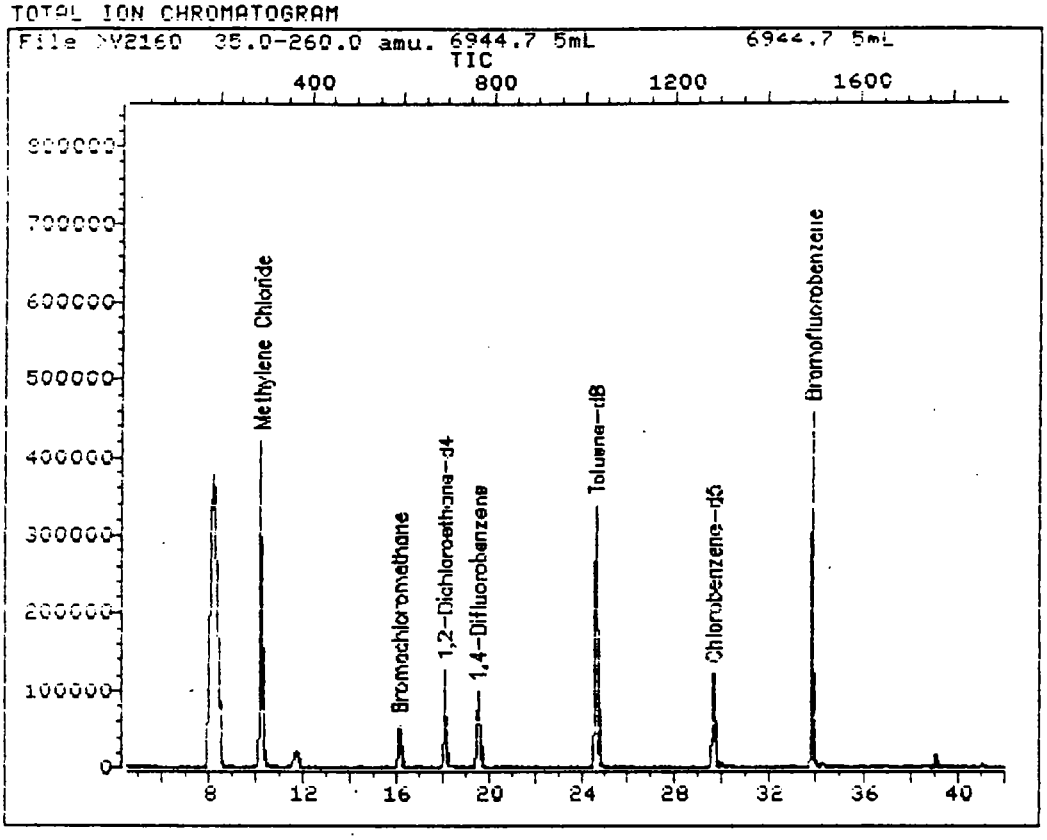
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.7 5mL	DILUTION FACTOR	1.00
CLIENT ID		QA BATCH	
DATA FILE	>02160	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	160	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

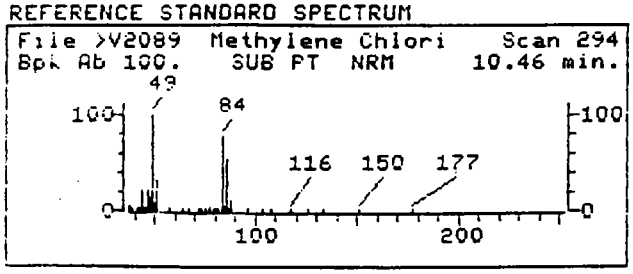


Data File: >V2160::D1 Quant Output File: ^V2160::DB
Name: 6944.7 5mL
Misc: 6944.7 5mL

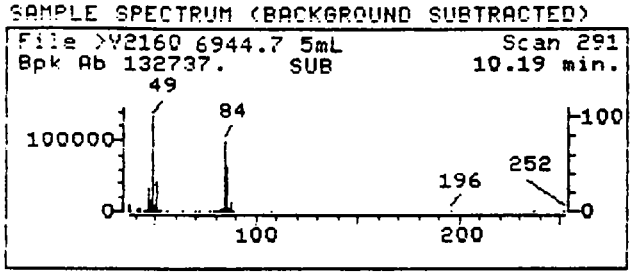
Id File: IDVOA::D4
Title: HSL VOLATILE ORGANICS
Last Calibration: 911211 12:31

Operator ID: MARK
Quant Time: 911211 19:28
Injected at: 911211 18:45

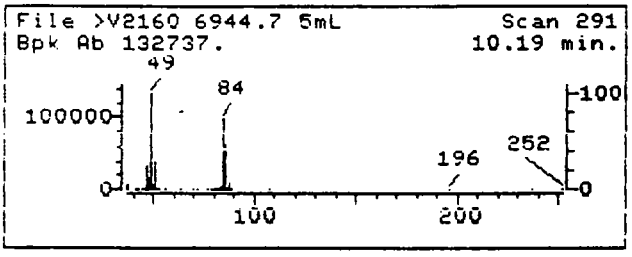
REFERENCE STANDARD SPECTRUM

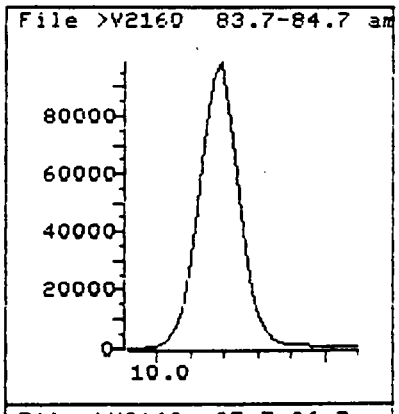


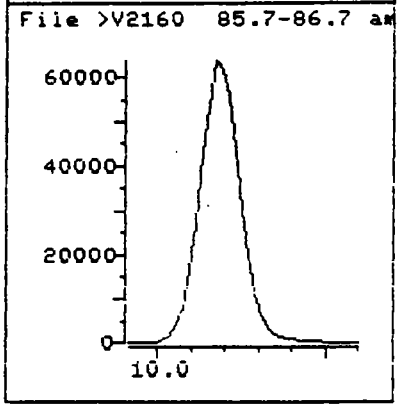
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >V2160::D1 Quant Output File: ^V2160::DB
Name: 6944.7 5mL
Misc: 6944.7 5mL
Quant Time: 911211 19:28 Quant ID File: IDV0A::D4
Injected at: 911211 18:45 Last Calibration: 911211 12:31

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 291
Retention Time: 10.19 min.
Quant Ion: 84.0
Area: 815513
Concentration: 155.53 ppb
q-value: 96

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

6944.5 5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 6944.5 5mL

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

Lab File ID: >V2149

Level: (low/med) LOW

Date Received: 12-09-91

Date Analyzed: 12/11/91

Column: Capillary

Dilution Factor: 1

Number of TICs found: 0

CONCENTRATION UNITS: ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

6944.6 5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 6944.6 5mL

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

Lab File ID: >V2150

Level: (low/med) LOW

Date Received: 12-09-91

Date Analyzed: 12/11/91

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.: 6944.7 5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 6944.7 5mL

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

Lab File ID: >V2160

Level: (low/med) LOW

Date Received: 12-09-91

Date Analyzed: 12/11/91

Column: Capillary

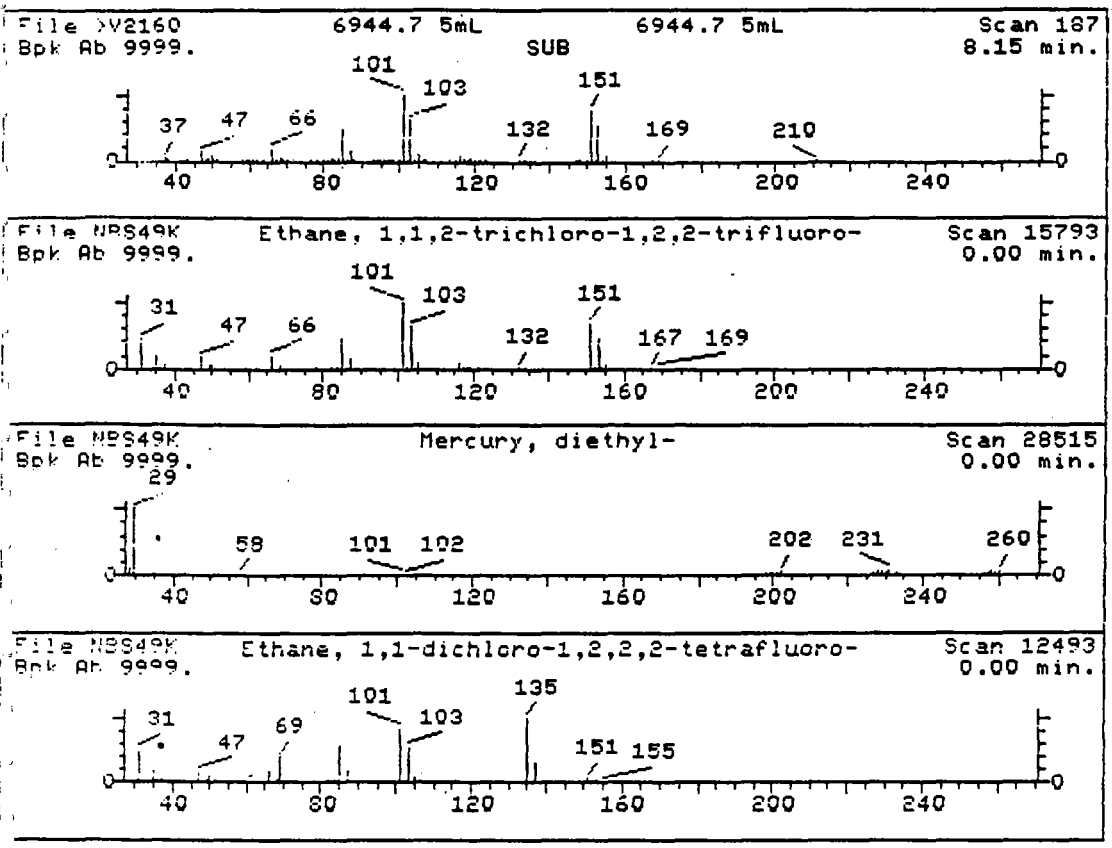
Dilution Factor: 1

Number of TICs found: 3

CONCENTRATION UNITS: ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	76131	Freon	8.15	830	89
2	110543	Hexane	11.68	33	76
3	496117	1H-Indene, 2,3-dihydro-	39.04	7	76

91



UNKNOWN #,1

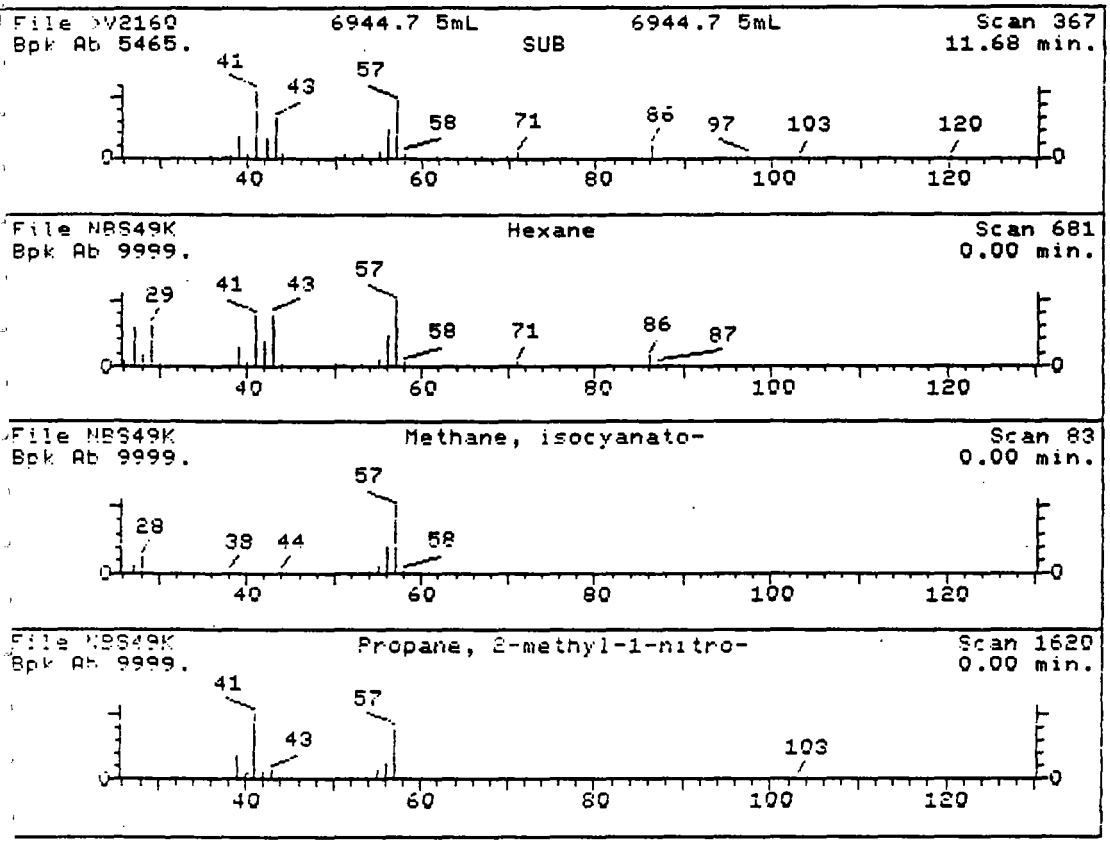
AREA = 6994080. TENTATIVE CONCENTRATION IS 830.00

1.	Ethane, 1,1,2-trichloro-1,2,2-trifluoro-	186	C2Cl3F3
2.	Mercury, diethyl-	260	C4H10Hg
3.	Ethane, 1,1-dichloro-1,2,2,2-tetrafluoro-	170	C2Cl2F4
4.	2-UNDECYLTHIACYCLOHEXANE	256	C16H32S
5.	Methane, trichlorofluoro-	136	CCl3F
6.	Ethane, 1,1,2,2-tetrachloro-1,2-difluoro-	202	C2Cl4F2

Sample file: >V2160 Spectrum #: 187

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

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	89	76131	10367	NBS49K	107	31	0	0	82	0	66	76
2.	30*	627441	71	NBS49K	40	60	2	3	36	32	12	13
3.	28	374072	10339	NBS49K	64	56	2	0	84	37	10	14
4.	25*	1801985	10474	NBS49K	38	79	2	4	64	47	7	12
5.	21	75694	10283	NBS49K	59	37	0	0	95	58	5	36
6.	15*	76120	10400	NBS49K	43	88	3	0	97	60	3	13

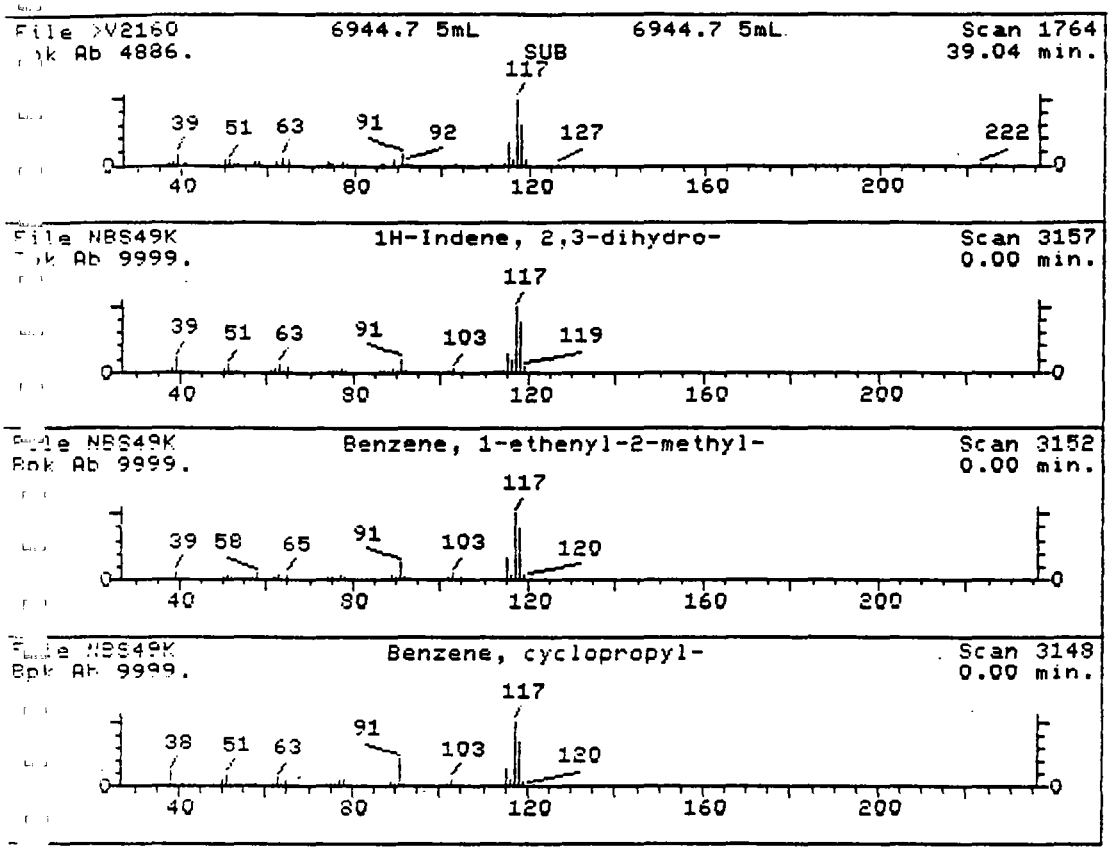


UNKNOWN #,2
AREA = 273889.0 TENTATIVE CONCENTRATION IS 33.00

1.	Hexane	86 C6H14
2.	Methane, isocyanato-	57 C2H3NO
3.	Propane, 2-methyl-1-nitro-	103 C4H9NO2
4.	Pentane, 3-methyl-	86 C6H14
5.	2-Penten-1-ol, (E)-	86 C5H10O

Sample file: >V2160 Spectrum #: 367
Search speed: 1 Tilting option: F No. of ion ranges searched: 40

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IO
1.	76*	110543	6971	NBS49K	45	51	0	0	74	13	40	53
2.	38*	624839	1000	NBS49K	27	37	1	0	86	27	14	15
3.	27*	625741	1240	NBS49K	22	27	2	0	88	38	10	13
4.	25*	96140	1025	NBS49K	24	60	1	0	86	48	7	14
5.	25*	1576961	6953	NBS49K	20	71	2	0	86	44	8	13



UNKNOWN #,3
AREA = 118217.0 TENTATIVE CONCENTRATION IS 7.00

1.	1H-Indene, 2,3-dihydro-	118	C9H10
2.	Benzene, 1-ethenyl-2-methyl-	118	C9H10
3.	Benzene, cyclopropyl-	118	C9H10
4.	Benzene, 1-propenyl-	118	C9H10
5.	Benzene, 1-ethenyl-3-methyl-	118	C9H10
6.	Benzene, ethenylmethyl-	118	C9H10

Sample file: >V2160 Spectrum #: 1764
Search speed: 1 Tilting option: F No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	76*	496117	13350	NBS49K	50	50	2	0	76	8	45	23
	63*	611154	13346	NBS49K	52	41	2	0	68	18	30	34
	60*	873494	13342	NBS49K	44	66	3	0	85	13	30	13
4.	58*	637503	13345	NBS49K	54	44	2	-1	66	17	25	23
	31*	100801	13349	NBS49K	43	53	2	0	59	43	8	19
	31*	25013154	13348	NBS49K	43	54	2	0	59	43	8	19

Bldg. 302A

ENVIRONMENTAL PROFILE LABORATORIES

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

ID #
6944.5
" .6
" .7

mw #
292629
292630
292631

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 Profile 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: 700 AM

CUSTOMER (NAME/ADDRESS)
G-Systems
Ser-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 6pH ~ 4°C
6944.1	12/10 8-3p	H2O	Bld 814	3	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			B 2567 W1	2	X	X		
.9			B 2567 W2		X	X		
.10			B 2567 W3		X	X		
.11			B 2567 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 Brouillette	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.

PL FORM 002/CHAIN OF CUSTODY PAGE _ OF _

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

SITE NAME: Fort Monmouth

ANALYSIS PARAMETERS: VOA's TCL; Lead; B/N's TCL; Chlordane

START: 7:00 Am

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 TCL	Lead	B/N's TCL	Chlordane	REMARKS
6944.12	12/10 2-3pm	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	
.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 4:30pm

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.
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.

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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.

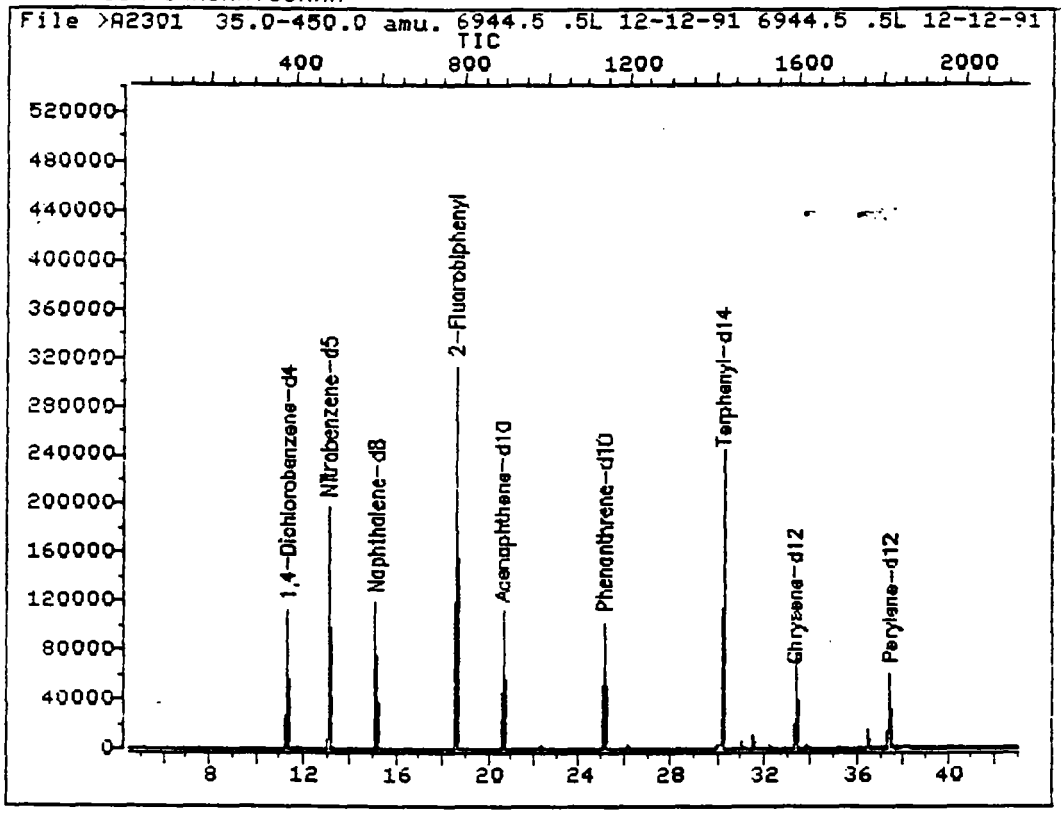
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.5 .5L 12-12-91	DILUTION FACTOR	2.00
CLIENT ID		QA BATCH	
DATA FILE	>A2301	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: >A2301::D3 Quant Output File: ^A2301::DB
Name: 6944.5 .5L 12-12-91
Misc: 6944.5 .5L 12-12-91 BTL# 2

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 14:41
Injected at: 911218 13:57

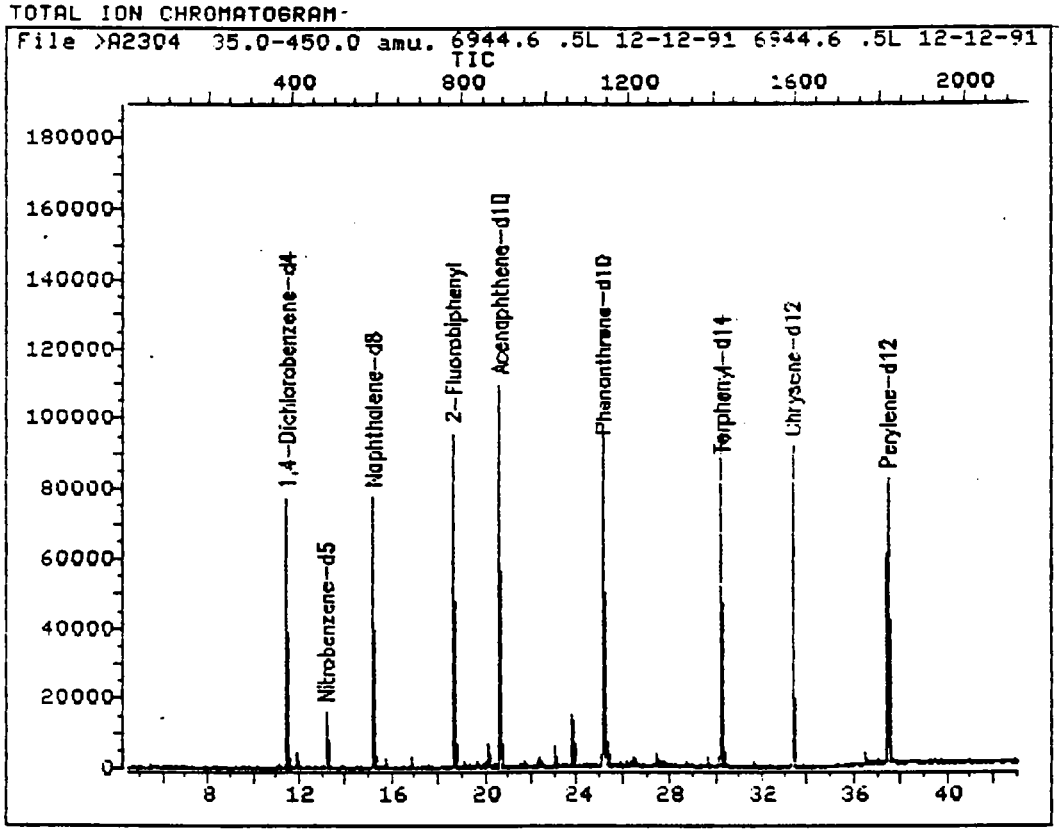
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.6 .5L 12-12-91	DILUTION FACTOR	2.00
CLIENT ID		QA BATCH	
DATA FILE	>A2304	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: >A2304::D3 Quant Output File: ^A2304::DB
Name: 6944.6 .5L 12-12-91
Misc: 6944.6 .5L 12-12-91 BTL# 5

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 17:24
Injected at: 911218 16:40

Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

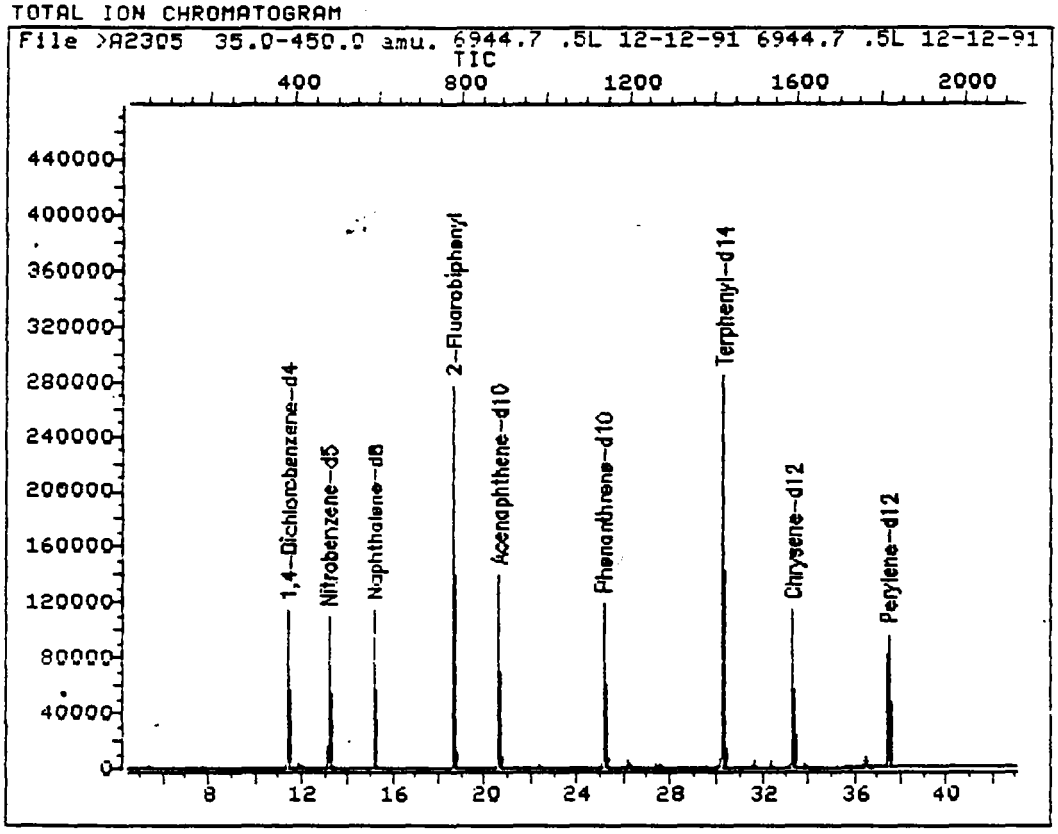
JOB NUMBER		MATRIX	Water
SAMPLE NAME	6944.7 SL 12-12-91	DILUTION FACTOR	2.00
CLIENT ID		QA BATCH	
DATA FILE	>A2305	DATE ANALYZED	12/18/91

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

5

TOTAL ION CHROMATOGRAM



Data File: >A2305::D3 Quant Output File: ^A2305::DB
Name: 6944.7 .5L 12-12-91
Misc: 6944.7 .5L 12-12-91 BTL# 6

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 18:17
Injected at: 911218 17:33

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.: 6944.5 .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: 6944.5 .5L

Lab File ID: >A2301

Date Received: 12-09-91

Date Extracted: 12-12-91

Date Analyzed: 12/18/91

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

6944.6 .5L

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 6944.6 .5L

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

Lab File ID: >A2304

Level: (Low/med) Low

Date Received: 12-09-91

Date Extracted: 12-12-91

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

Date Analyzed: 12/18/91

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

71

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

6944.7 .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: 6944.7 .5L

Lab File ID: >A2305

Date Received: 12-09-91

Date Extracted: 12-12-91

Date Analyzed: 12/18/91

Dilution Factor: 2

Number of TICs found: 0

CONCENTRATION UNITS:
ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

7

Bldg. 3021

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# : 9173.21-24,2(
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
9173.21	3021	1-2926929	89-11-2-1052	ND	0.004 mg/L
9173.22	3021	2-2926930	"	0.036	"
9173.23	3021	3-2926931	"	ND	"
9173.26	FIELD BLANK	N/A		ND	"

ND = NONE DETECTED

DANIEL K. WRIGHT
LABORATORY DIRECTOR

MONITORING WELL SAMPLING DATASHEET DATE: 10/26/92

SAMPLERS: EPL LABORATORIES, ROBERT BROUILLETTE , NJDEP # 15526
LOCATION (BLDG. #): 3021
WEATHER CONDITIONS: SUNNY, 55 F

MW # 1 : 2926929

DEPTH TO WATER: 3.28 TIME: 3:17

DEPTH OF WELL: 11.55

HEIGHT OF WATER: 8.27 HNu = 0.0

EVACUATED GAL. H2O: 17 (8.27 X .65 X 3 = 16.12)

MW # 2 : 2926930

DEPTH TO WATER: 3.25 TIME: 3:17

DEPTH OF WELL: 9.81

HEIGHT OF WATER: 6.56 HNu = 0.0

EVACUATED GAL H2O: 13 (6.56 X .65 X 3 = 12.74)

MW # 3 : 2926931

DEPTH TO WATER: 3.002.59 TIME: 3:06

DEPTH OF WELL: 11.40

HEIGHT OF WATER: 8.40 HNu = 0.0

EVACUATED GAL H2O: 17 (8.4 X .65 X 3 = 16.38)

MONITORING WELL SAMPLING DATASHEET DATE: 10-26-92

SAMPLERS: Robert Brouillette Jack Kaiser, Erik Johnson
LOCATION (BLDG. #): 3021
WEATHER CONDITIONS: Sunny 55°F

LABORATORY: EPL

MW # 1 : 2926929

DEPTH TO WATER: 3.28' TIME: 3:17

DEPTH OF WELL: 11.55' OVA/HnU: ND

HEIGHT OF WATER: 8.27

EVACUATED GAL. H2O: 17gals (8.27 X .65 X 3 = 16.12)

MW # 2 : 2926930

DEPTH TO WATER: 3.25 TIME: 3:17

DEPTH OF WELL: 9.81 OVA/HnU: ND

HEIGHT OF WATER: 6.56

EVACUATED GAL H2O: 13gals (6.56 X .65 X 3 = 12.74)

MW # 3 : 2926931

DEPTH TO WATER: 3.00 TIME: 3:06

DEPTH OF WELL: 11.40 OVA/HnU: ND

HEIGHT OF WATER: 8.4

EVACUATED GAL H2O: 17gals (8.4 X .65 X 3 = 16.38)

Bldg. 3021

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: 9173.11-.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 #
9173.21	3021	1-2926929	89-11-2-1052
9173.22	3021	2-2926930	"
9173.23	3021	3-2926931	"
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 10/26/92

Customer Name and Address: 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	8100 MS	Pb							Remarks	Preservation Method
9173.1	10/26 1145	H2O	699-1	3	✓		✓				DISSOLVABLE 1 OUTLIERS			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]	10/26/92 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]	10-26-92 1730

QA/QC Required:

✓ NJ Tier II
___ Results Only
___ Other ______

Turnaround Time: ______

...al Profile 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:
Sov-Bloc 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	B/N+15	Pb						Remarks	Preservative Method
11	10/26 213	H2O	814-1	4	✓	✓	✓					DISPOSABLE GL 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	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: ___

...ronte 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 NJ

Site Name and Address: FT. MONMOUTH UST ASSESSMENTS

Telephone No: Fax:

Analysis parameters (Be as specific as possible): 624+15, 602+15, Pb

Lab Sample ID Number	Date/Time Sampled	Sample Matrix	Customer Sample Location/ID No.	Number of Containers	624+15	602+15	Pb							Remarks	Preservation Method
9173.21	10/26 340	H_2O	3021-1	4	✓	✓	✓			DISPOSABLE BAILERS				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	[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	9173.11	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.

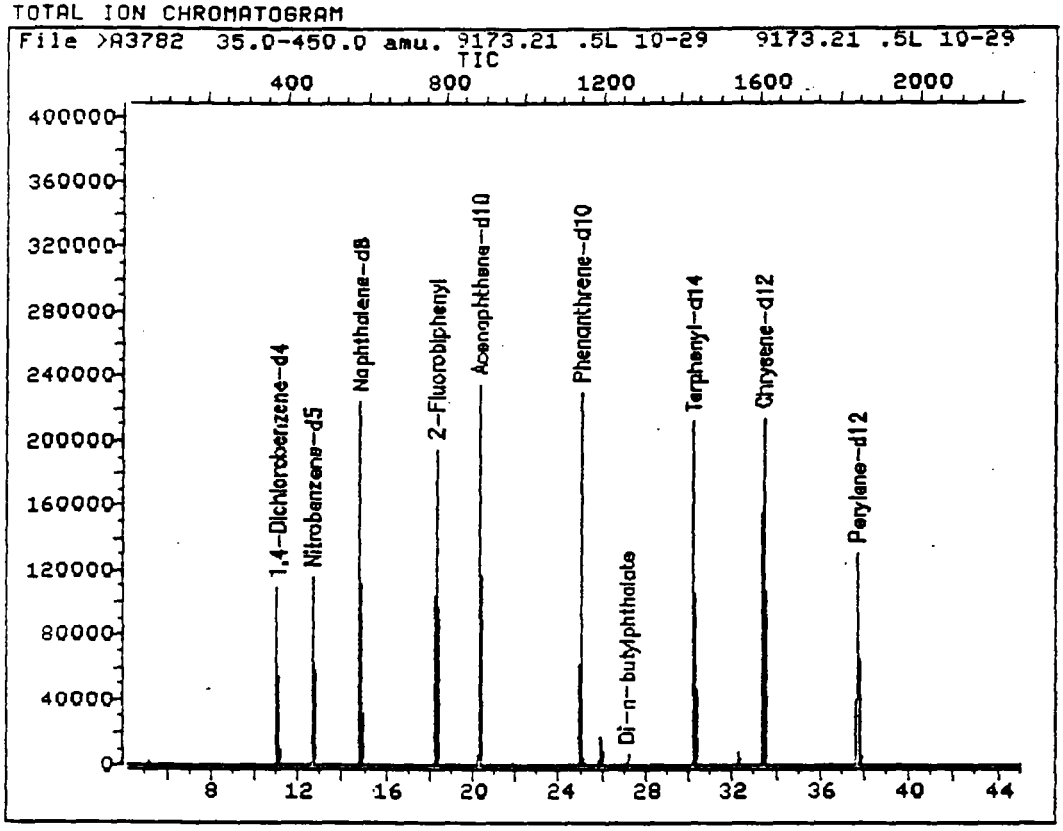
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.21 .5L 10-29	DILUTION FACTOR	4.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>A3782	DATE ANALYZED	10/31/92

Compound	ug/L	MDL	Compound	ug/L	MDL
N-nitroso-dimethylamine	ND	40	Diethylphthalate	ND	40
bis(2-Chloroethyl)Ether	ND	40	4-Chlorophenyl-phenylether	ND	40
1,3-Dichlorobenzene	ND	40	Fluorene	ND	40
1,4-Dichlorobenzene	ND	40	N-Nitrosodiphenylamine	ND	40
Benzyl alcohol	ND	40	4-Bromophenyl-phenylether	ND	40
1,2-Dichlorobenzene	ND	40	Hexachlorobenzene	ND	40
bis(2-chloroisopropyl)ether	ND	40	Phenanthrene	ND	40
N-Nitroso-Di-n-propylamine	ND	40	Anthracene	ND	40
Hexachloroethane	ND	40	Di-n-butylphthalate	4 J	40
Nitrobenzene	ND	40	Fluoranthene	ND	40
Isophorone	ND	40	Benzidine	ND	40
Benzoic Acid	ND	200	Pyrene	ND	40
bis(2-Chloroethoxy)methane	ND	40	Butylbenzylphthalate	ND	40
1,2,4-Trichlorobenzene	ND	40	3,3`-Dichlorobenzidine	ND	40
Naphthalene	ND	40	Benzo(a)anthracene	ND	40
Hexachlorobutadiene	ND	40	bis(2-Ethylhexyl)phthalate	ND	40
2-Methylnaphthalene	ND	40	Chrysene	ND	40
Hexachlorocyclopentadiene	ND	40	Di-n-octylphthalate	ND	40
2-Chloronaphthalene	ND	40	Benzo(b)fluoranthene	ND	40
Dimethylphthalate	ND	40	Benzo(k)fluoranthene	ND	40
Acenaphthylene	ND	40	Benzo(a)pyrene	ND	40
Acenaphthene	ND	40	Indeno(1,2,3-cd)pyrene	ND	40
Dibenzofuran	ND	40	Dibenz(a,h)anthracene	ND	40
2,6-Dinitrotoluene	ND	40	Benzo(g,h,i)perylene	ND	40
2,4-Dinitrotoluene	ND	40	1,2-Diphenylhydrazine	ND	40

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

TOTAL ION CHROMATOGRAM



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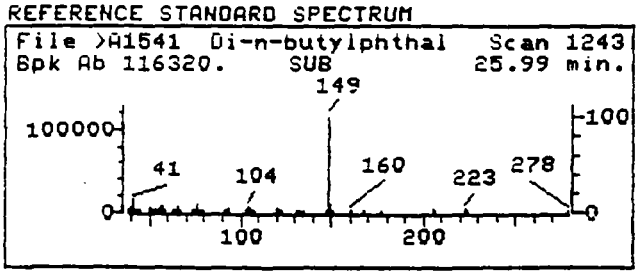
Name: 9173.21 .5L 10-29
Misc: 9173.21 .5L 10-29 BTL# 4

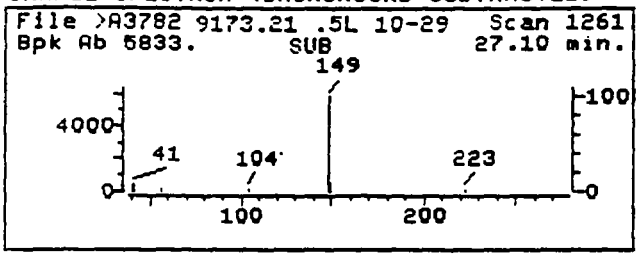
Id File: IDBNA::D4
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 921024 20:25

Operator ID: MARK
Quant Time: 921031 21:18
Injected at: 921031 20:32

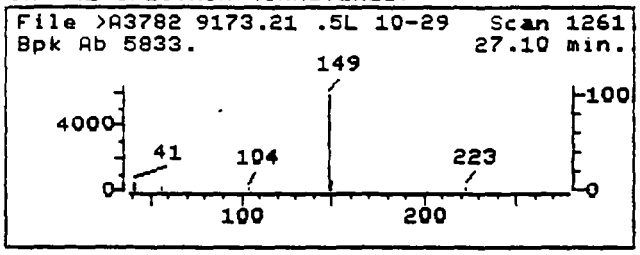
REFERENCE STANDARD SPECTRUM

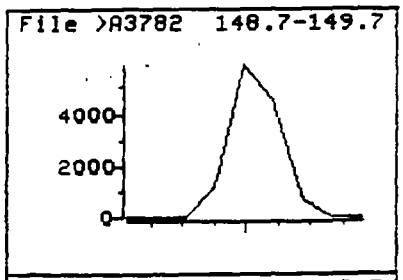


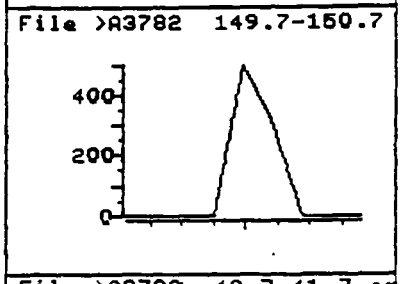
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

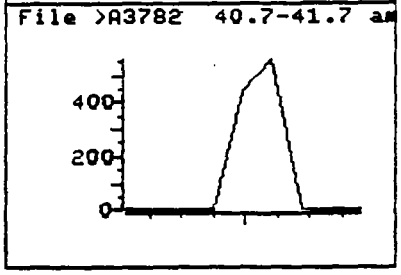


SAMPLE SPECTRUM (UNALTERED)









Data File: >A3782::D3 Quant Output File: ^A3782::DB
Name: 9173.21 .5L 10-29
Misc: 9173.21 .5L 10-29 BTL# 4
Quant Time: 921031 21:18 Quant ID File: IDBNA::D4
Injected at: 921031 20:32 Last Calibration: 921024 20:25

Compound No: 64
Compound Name: Di-n-butylphthalate
Scan Number: 1261
Retention Time: 27.10 min.
Quant Ion: 149.0
Area: 13305
Concentration: 1.10 ng/uL
q-value: 94

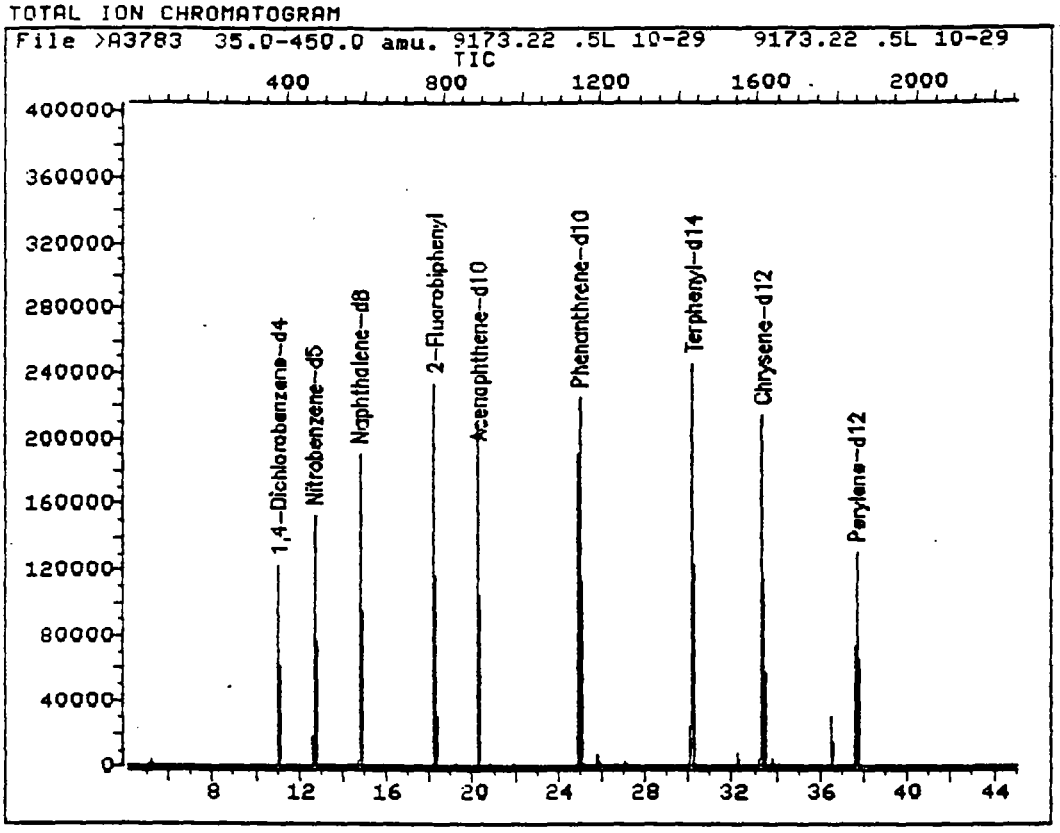
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.22 .5L 10-29	DILUTION FACTOR	2.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>A3783	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: >A3783::D3 Quant Output File: ^A3783::DB
Name: 9173.22 .5L 10-29
Misc: 9173.22 .5L 10-29 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: 921031 22:15
Injected at: 921031 21:29

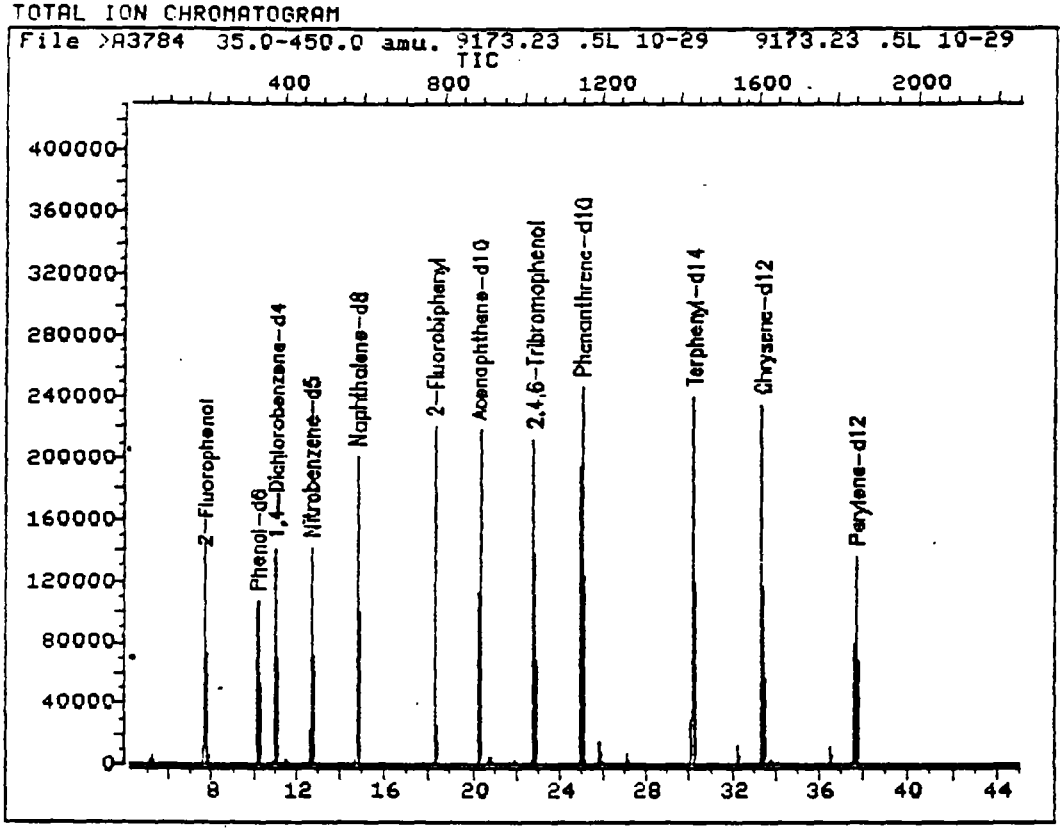
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.23 .5L 10-29	DILUTION FACTOR	2.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>A3784	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: >A3784::D3 Quant Output File: ^A3784::DB
Name: 9173.23 .5L 10-29
Misc: 9173.23 .5L 10-29 BTL# 6

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 23:12
Injected at: 921031 22:26

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO: 9173.21 .5L

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.21 .5L

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

Lab File ID: >A3782

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE I
9173.22 .5

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: 9173.22 .5L

Lab File ID: >A3783

Date Received: 10-26-92

Date Extracted: 10-29-92

Date Analyzed: 10/31/92

Dilution Factor: 2

Number of TICs found: 1

CONCENTRATION UNITS:
ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	18476578	2,6-Octadiene, 4,5-dimethyl-	36.52	10	64

FORM I SV-TIC 1/87 Rev

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE N

9173.23 .5

Lab Name: Environmental Profile Lab   NJDEP Cert.# 15526

Matrix: Water   Lab Sample ID: 9173.23 .5L

Sample wt/vol: 500 (g/mL) mL   Lab File ID: >A3784

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

CONCENTRATION UNITS:

Number of TICs found: 0   ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

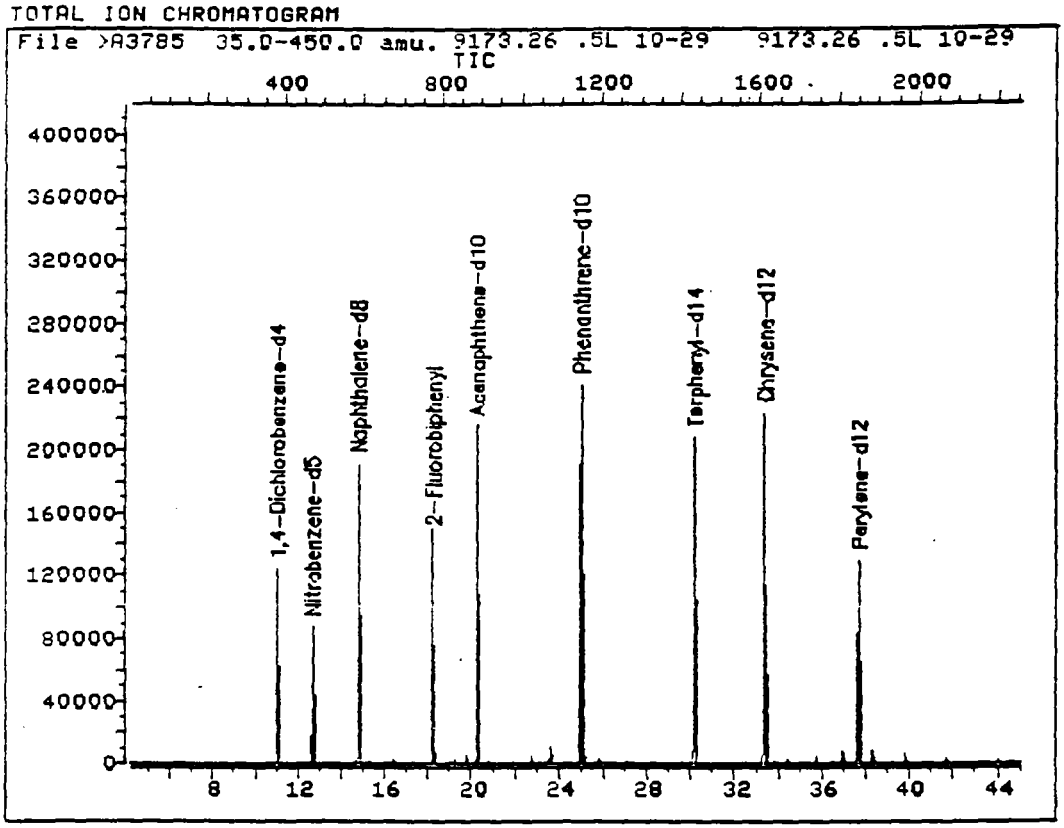
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

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 .5

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

CONCENTRATION UNITS: ug/L

Number of TICs found: 0

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					
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16					
17					
18					
19					
20					
21					
22					

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-Chloronaphthalene	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		
Acenaphthylene	1.43617	1.50484	4.78		
3-Nitroaniline	.44109	.44989	1.99		
Acenaphthene	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	.40724	.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)

$\overline{RRT}$ - 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
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 (**)

3C

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 LIMI 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	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

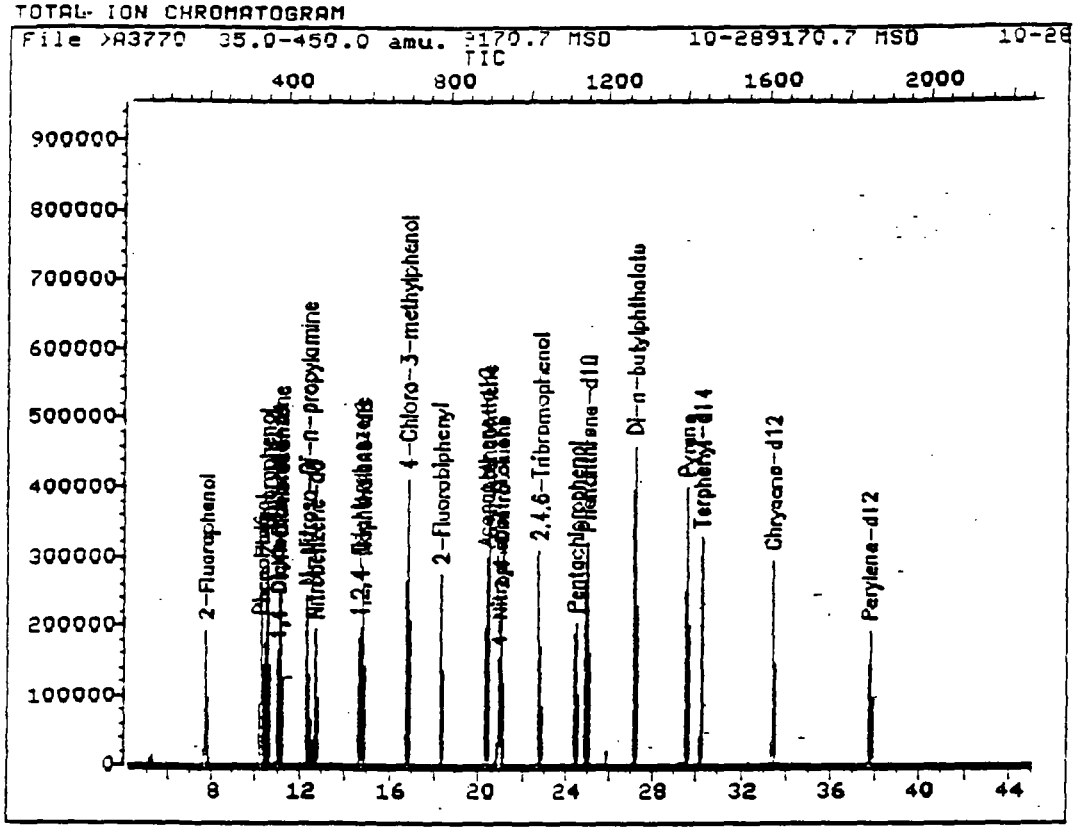
(1) N-Nitroso-di-n-propylamine

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



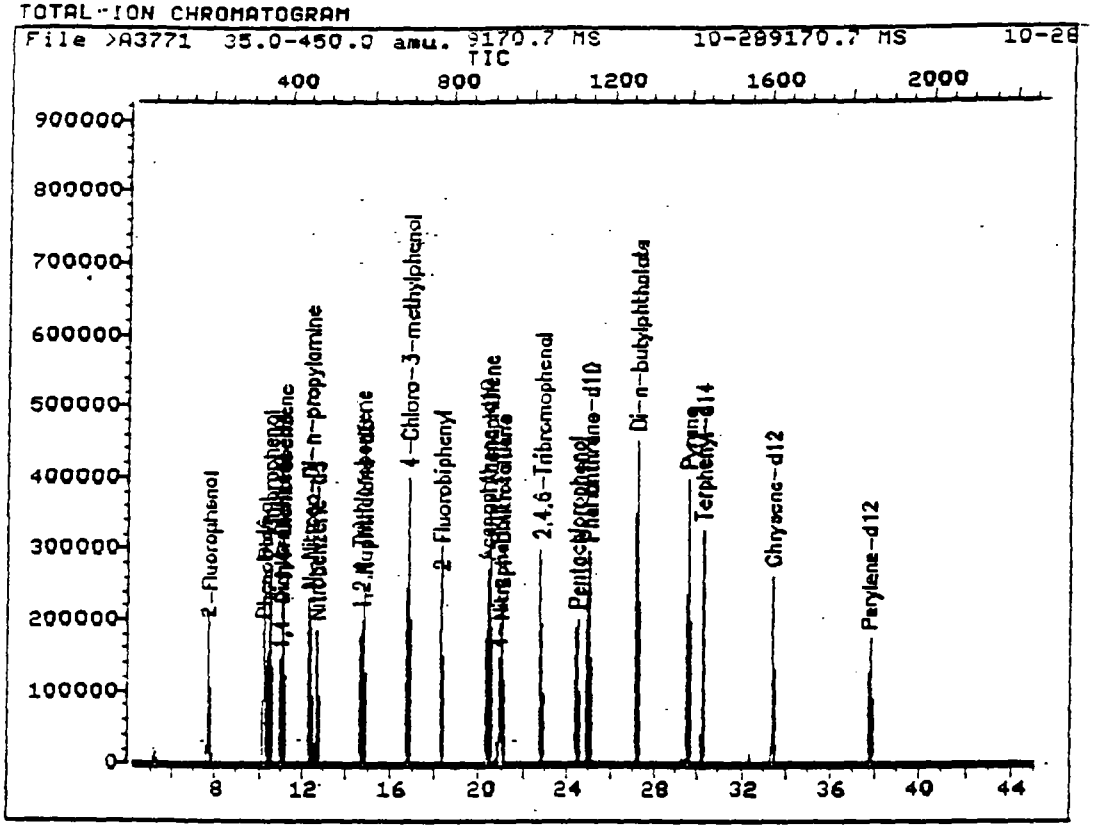
Data File: >A3770::D3 Quant Output File: ^A3770::DB
Name: 9170.7 MSD 10-28
Misc: 9170.7 MSD 10-28 BTL#14

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

72

TOTAL ION CHROMATOGRAM



Data File: >A3771::D3 Quant Output File: ^A3771::DB
Name: 9170.7 MS 10-28
Misc: 9170.7 MS 10-28 BTL#15

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 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				
06				
07				
08				
09				
10				
11				
12				
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23				
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26				
27				
28				
29				
30				

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 Bk:

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
07				
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29				
30				

COMMENTS: _____

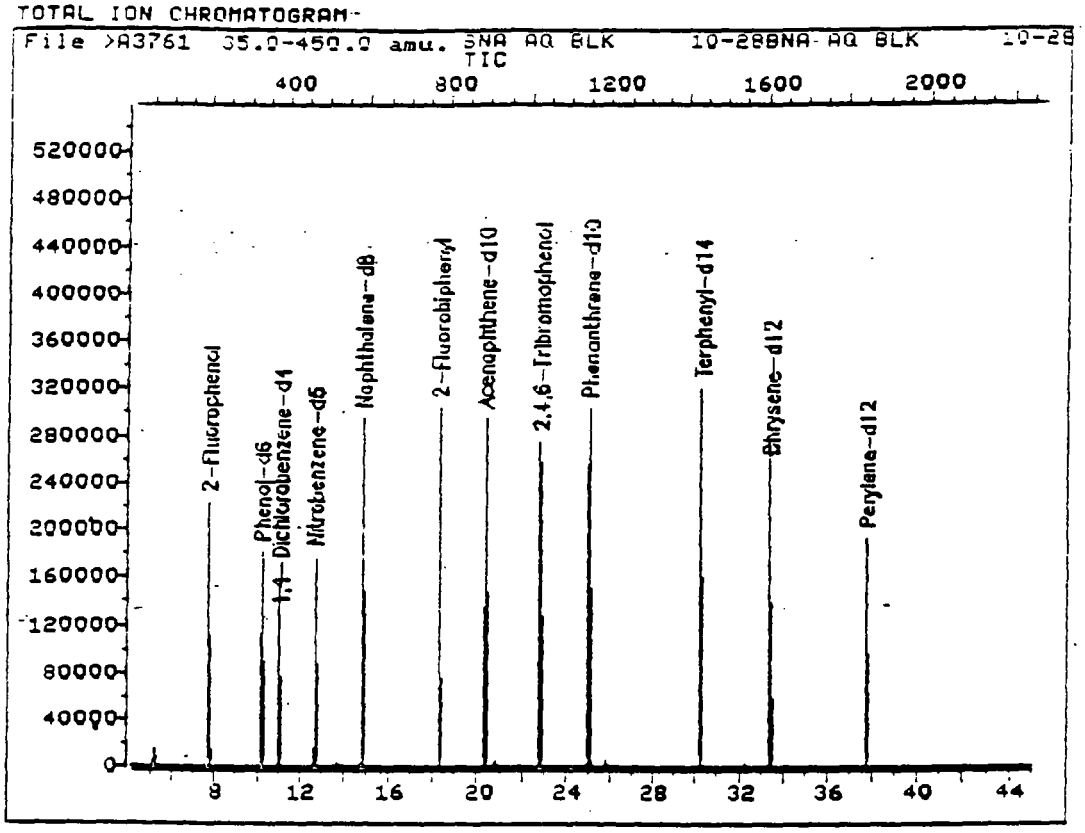
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

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

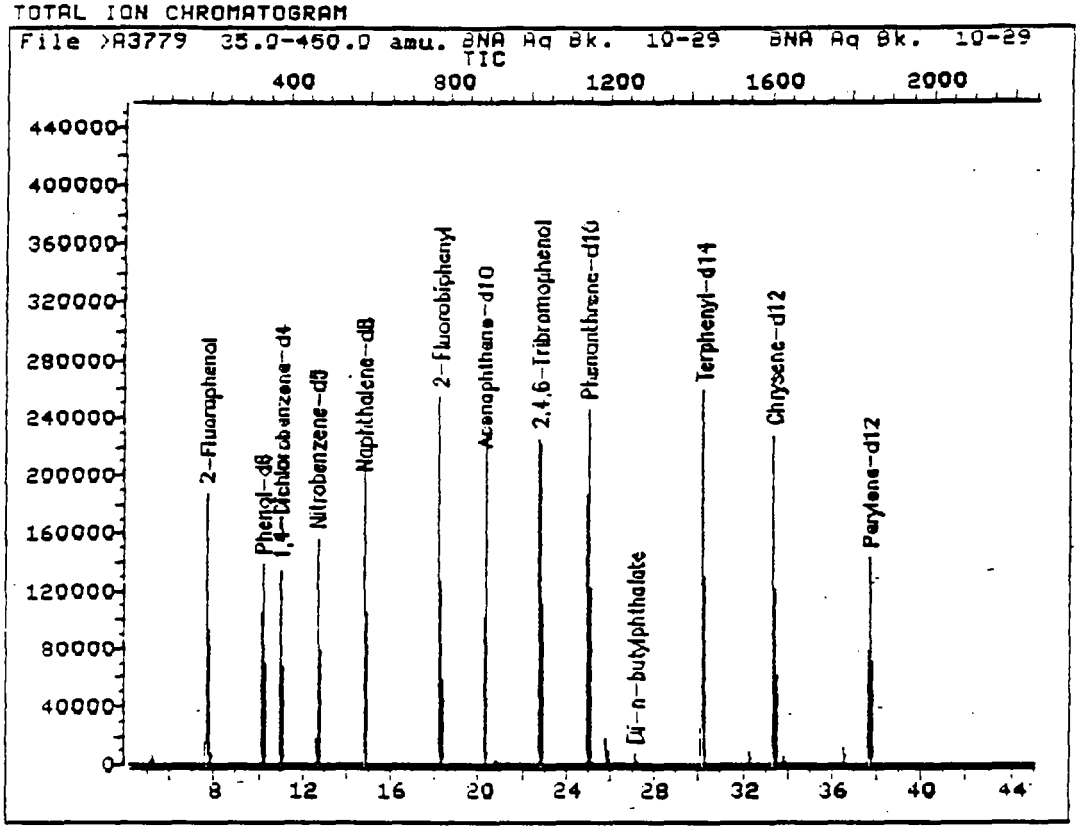
Environmental Profile Laboratories
BASE/NEUTRAL/ACID ANALYSIS DATA

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

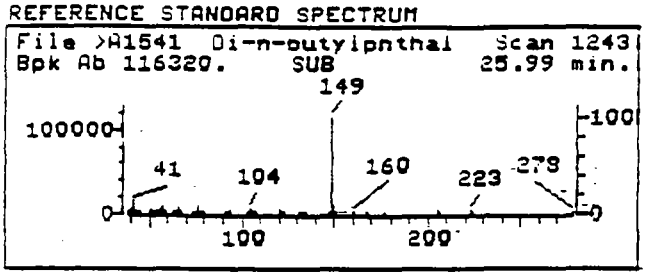


Data File: >A3779::03 Quant Output File: ^A3779::08
Name: BNA Aq Bk. 10-29
Misc: BNA Aq Bk. 10-29 BTL# 1

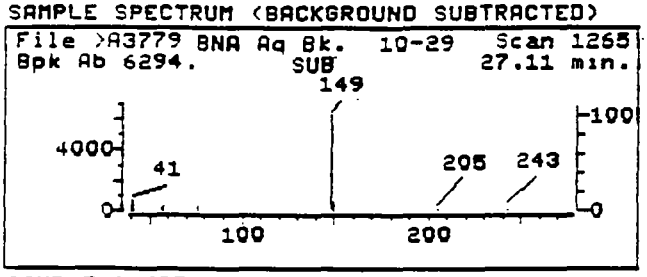
Id File: IDBNA::04
Title: Semivolatile Organics (EPA Methods 625/8270) by GC/MS
Last Calibration: 921024 20:25

Operator ID: MARK
Quant Time: 921031 18:26
Injected at: 921031 17:40

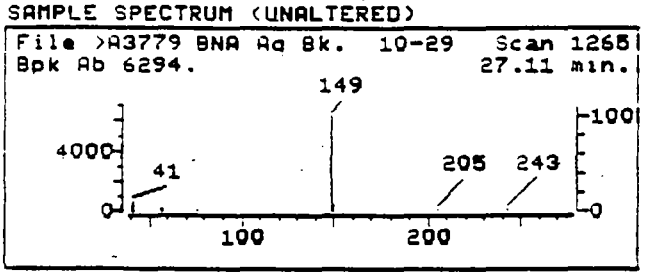
REFERENCE STANDARD SPECTRUM

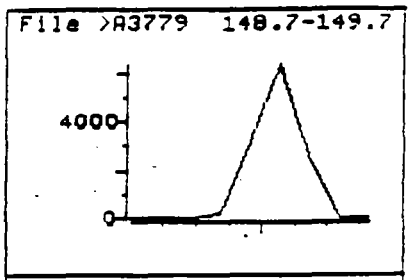


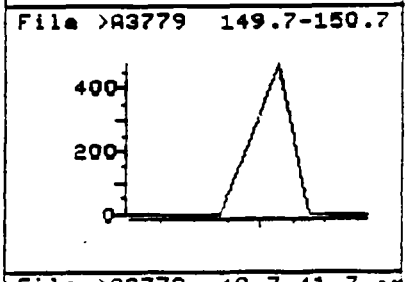
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

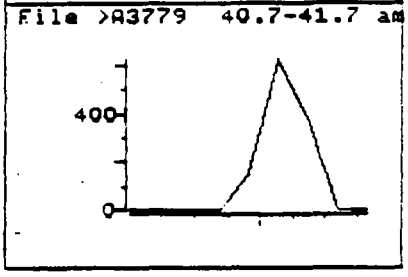


SAMPLE SPECTRUM (UNALTERED)









Data File: >A3779::03 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:
Number of TICs found: 0   ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I SV-TIC   1/87 Re

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE :

BNA Aq Bk

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: BNA Aq Bk.

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

Lab File ID: >A3779

Level: (low/med) LOW

Date Received: NA

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 SU-TIC 1/87 Re

82

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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30									

	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

FORM II SV-1

1/87 Rev

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
08									
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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

84

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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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

3B

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
08							
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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): >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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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. 5091

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 #
9173.21	3021	1-2926929	89-11-2-1052
9173.22	3021	2-2926930	"
9173.23	3021	3-2926931	"
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-Bee 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	BTEX+15	Pb							Remarks	Preservation Method
9173.1	10/26 1145	H_2O	699-1	3	✓		✓				DISPOSABLE 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]	10.31.92 1:17

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-Ate Inc.
Fort Monmath NJ

Site Name and Address:
FT. MONMOUTH
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	B/N+15	Pb						Remarks	Preservation Method
9173.11	10/26 213	H2O	814-1	4	✓	✓	✓					DISPOSABLE BAILERS	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 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's	BNA's	Pb						Remarks	Preservation Method
9173.21	10/26 340	H_2O	3021-1	4	✓	✓	✓				DISPOSABLE BOTTLES	ll	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							

6

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 CRL, 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
VOLATILE ORGANIC ANALYSIS DATA

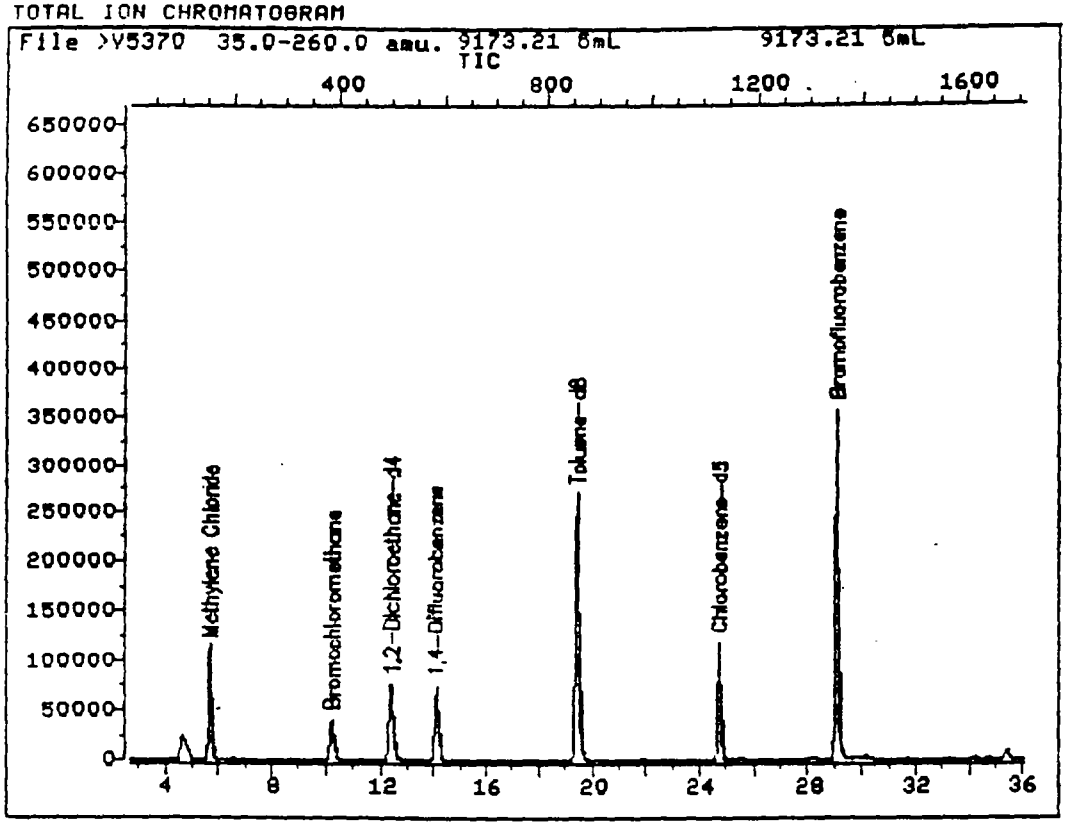
PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.21 5mL	DILUTION FACTOR	1.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>V5370	DATE ANALYZED	10/28/92

Compound	ug/L		MDL
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Methylene Chloride	38	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



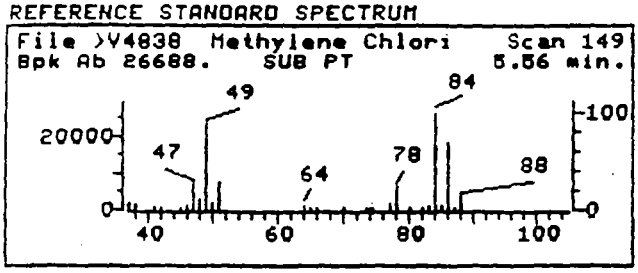
Data File: >V5370::D1
Name: 9173.21 5mL
Misc: 9173.21 5mL

Quant Output File: ^V5370::DB

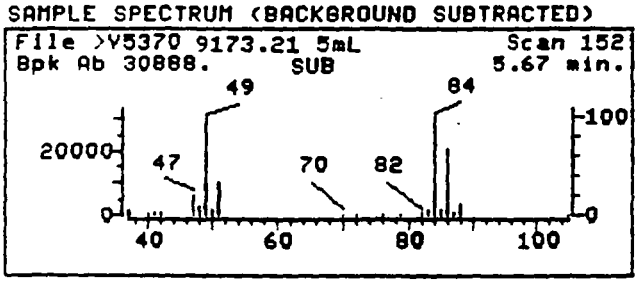
Id File: IDV0A::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921028 05:10
Injected at: 921028 04:33

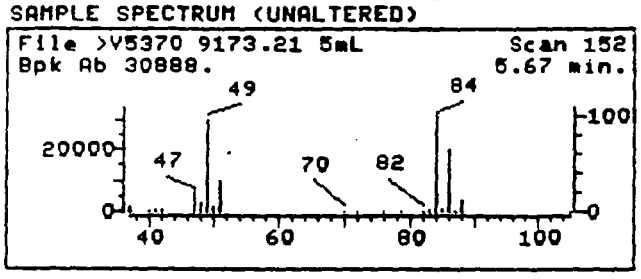
REFERENCE STANDARD SPECTRUM

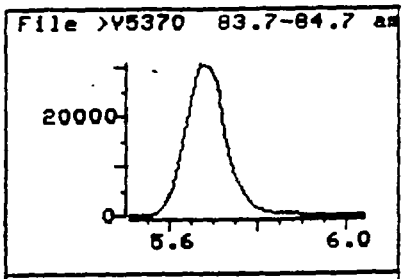


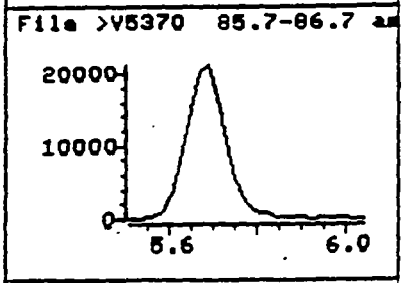
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

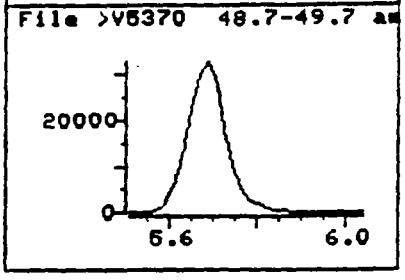


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5370::D1 Quant Output File: ^V5370::DB
Name: 9173.21 5mL
Misc: 9173.21 5mL
Quant Time: 921028 05:10 Quant ID File: IDV0A::D2
Injected at: 921028 04:33 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: 202908
Concentration: 37.78 ppb
q-value: 93

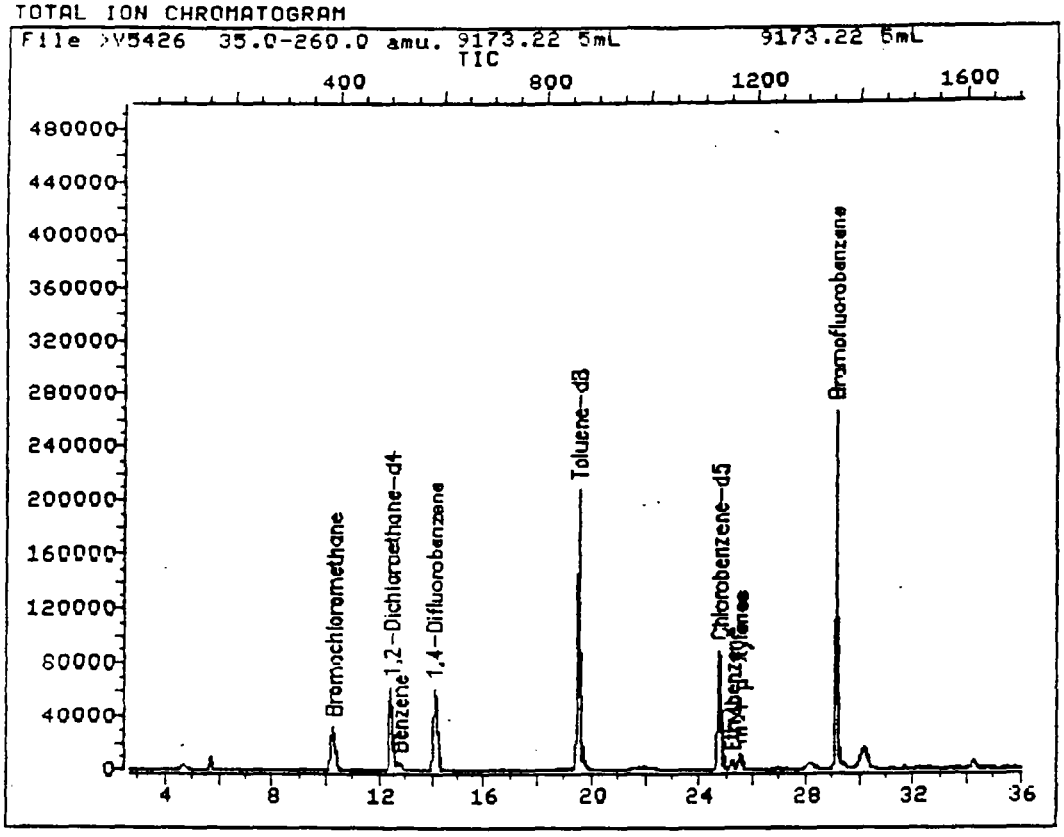
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173,22 5mL	DILUTION FACTOR	1.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>05426	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	3 J	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	1 J	5
Chloroform	ND	5	Styrene	ND	5
1,2-Dichloroethane	ND	5	o-Xylene	ND	5
2-Butanone	ND	5	m + p-Xylenes	2 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



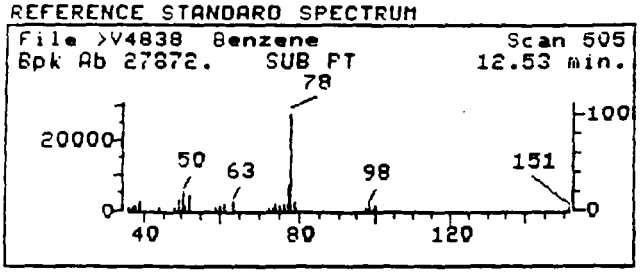
Data File: >V5426::D1
Name: 9173.22 5mL
Misc: 9173.22 5mL

Quant Output File: ^V5426::DB

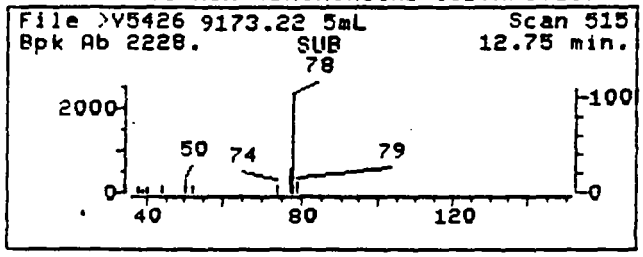
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921030 12:33

Operator ID: MARK
Quant Time: 921030 21:44
Injected at: 921030 21:07

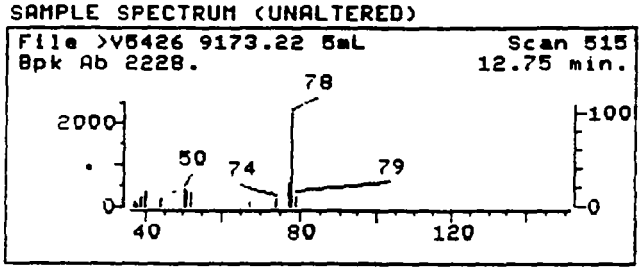
REFERENCE STANDARD SPECTRUM

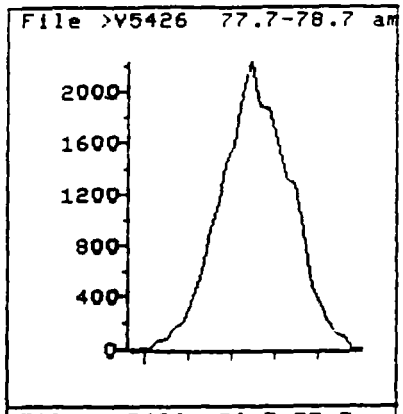


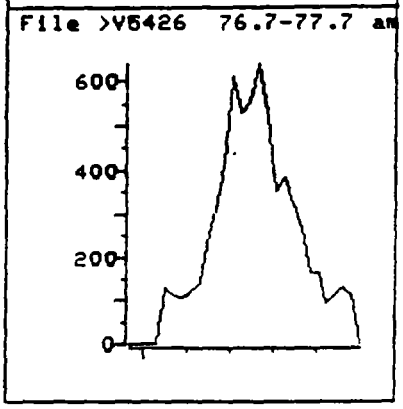
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







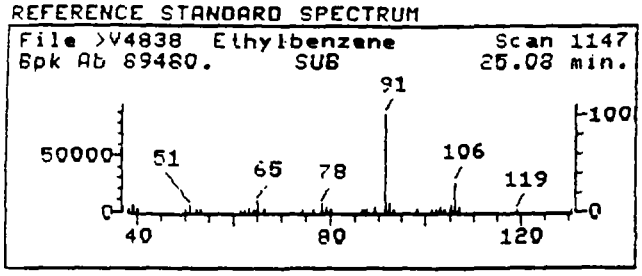
Data File: >V5426::D1
Name: 9173.22 5mL
Misc: 9173.22 5mL
Quant Time: 921030 21:44
Injected at: 921030 21:07

Quant Output File: ^V5426::DB

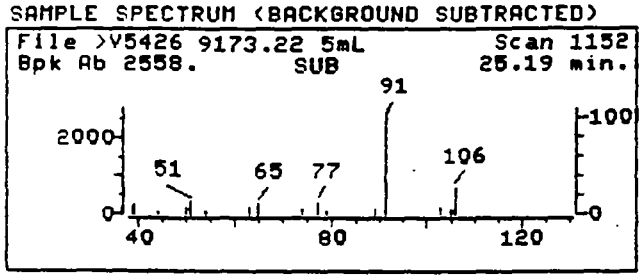
Quant ID File: IDVOA::D2
Last Calibration: 921030 12:33

Compound No: 31
Compound Name: Benzene
Scan Number: 515
Retention Time: 12.75 min.
Quant Ion: 78.0
Area: 24438
Concentration: 2.83 ppb
q-value: 95

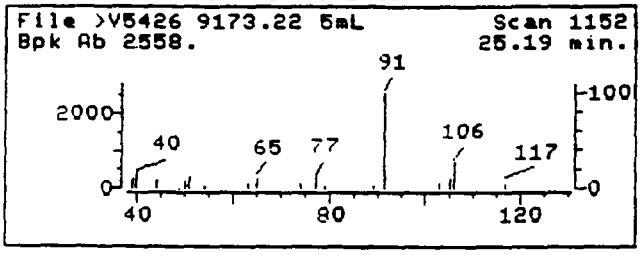
REFERENCE STANDARD SPECTRUM

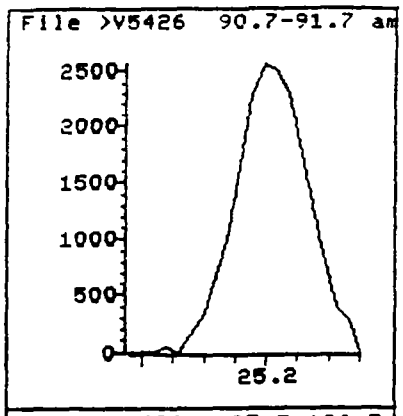


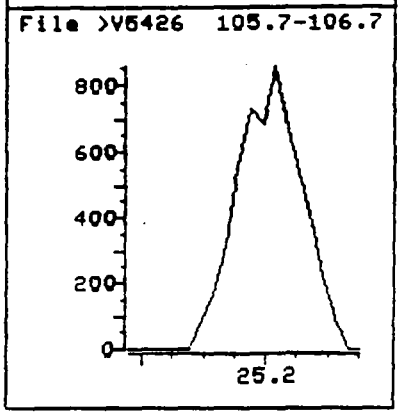
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







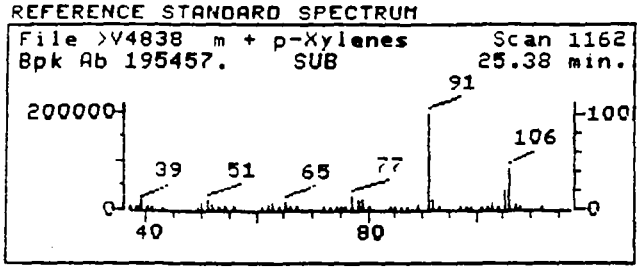
Data File: >V5426::D1
Name: 9173.22 5mL
Misc: 9173.22 5mL
Quant Time: 921030 21:44
Injected at: 921030 21:07

Quant Output File: ^V5426::DB

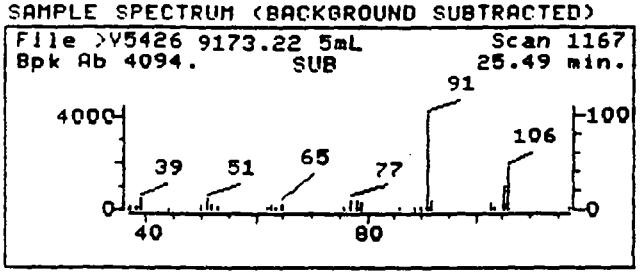
Quant ID File: IDVOA::D2
Last Calibration: 921030 12:33

Compound No: 42
Compound Name: Ethylbenzene
Scan Number: 1152
Retention Time: 25.19 min.
Quant Ion: 91.0
Area: 21030
Concentration: 1.47 ppb
q-value: 95

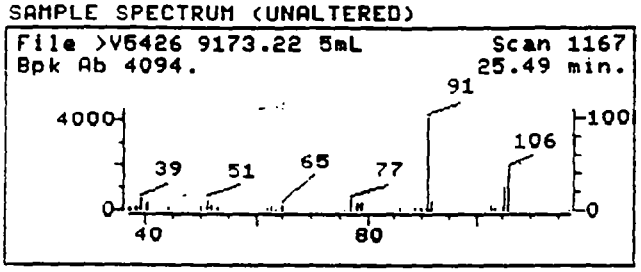
REFERENCE STANDARD SPECTRUM

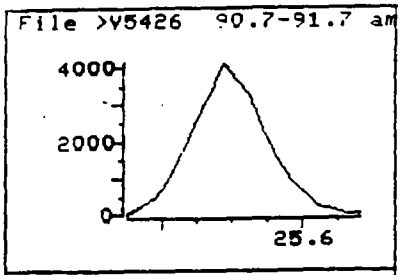


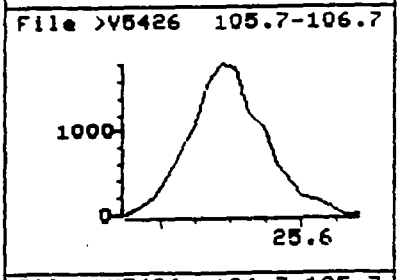
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

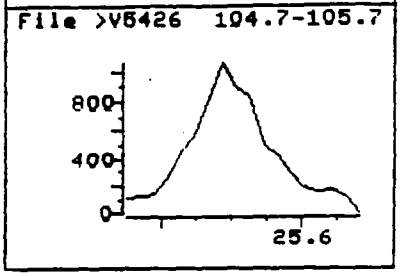


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5426::D1
Name: 9173.22 5mL
Misc: 9173.22 5mL
Quant Time: 921030 21:44
Injected at: 921030 21:07

Quant Output File: ^V5426::DB

Quant ID File: IDVOA::D2
Last Calibration: 921030 12:33

Compound No: 44
Compound Name: m + p-Xylenes
Scan Number: 1167
Retention Time: 25.49 min.
Quant Ion: 91.0
Area: 29889
Concentration: 2.48 ppb
q-value: 95

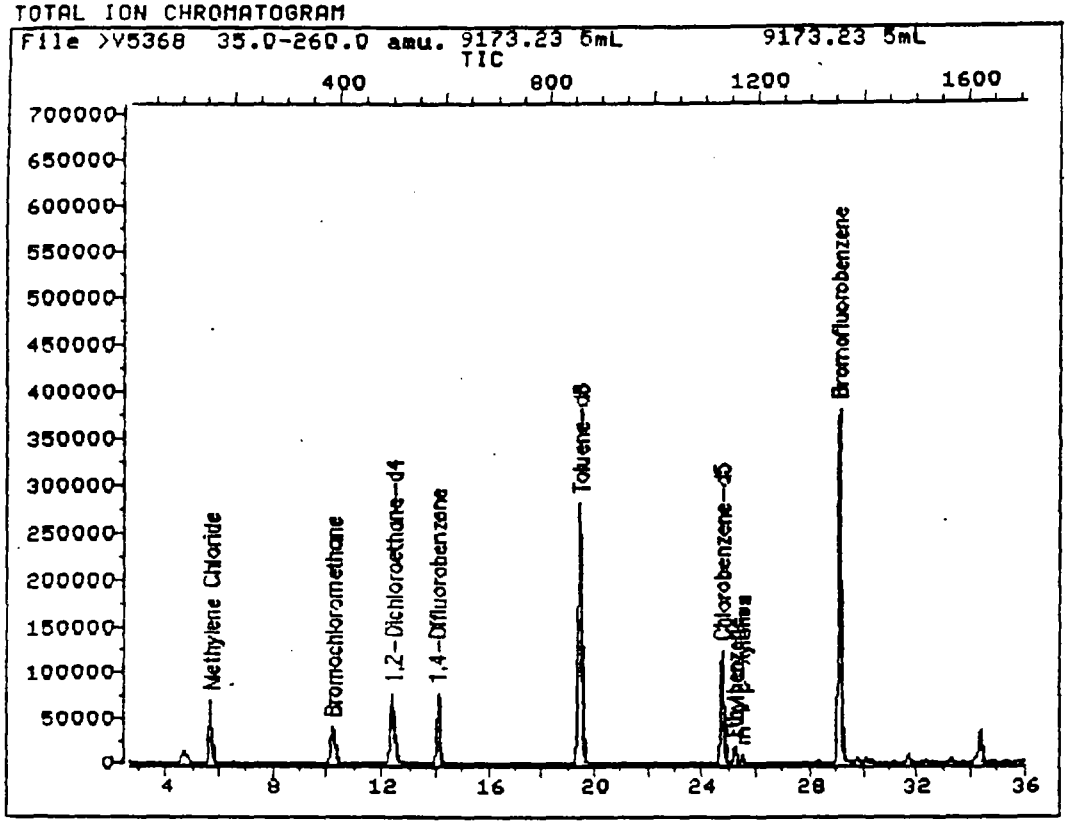
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.23 5mL	DILUTION FACTOR	1.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>U5368	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	3	J	5
Chloroform	ND		5	Styrene	ND		5
1,2-Dichloroethane	ND		5	o-Xylene	ND		5
2-Butanone	ND		5	m + p-Xylenes	2	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

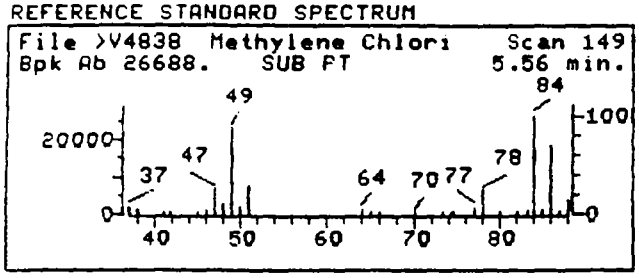


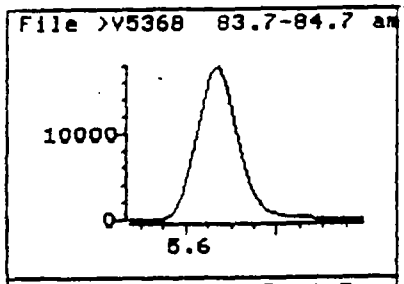
Data File: >V5368::D1 Quant Output File: ^V5368::DB
Name: 9173.23 5mL
Misc: 9173.23 5mL

Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

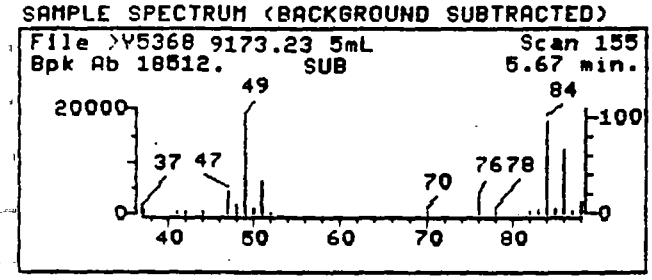
Operator ID: MARK
Quant Time: 921028 03:45
Injected at: 921028 03:08

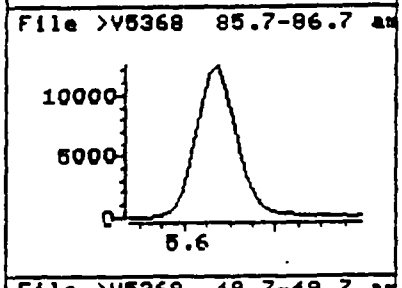
REFERENCE STANDARD SPECTRUM



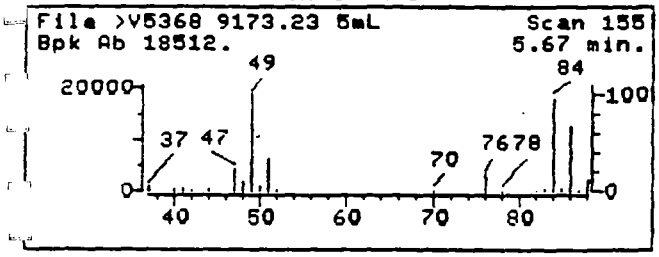


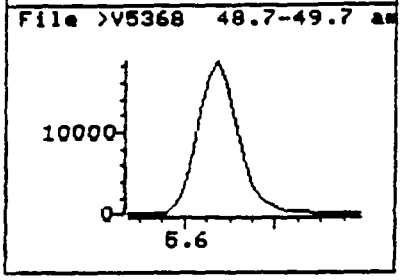
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





SAMPLE SPECTRUM (UNALTERED)

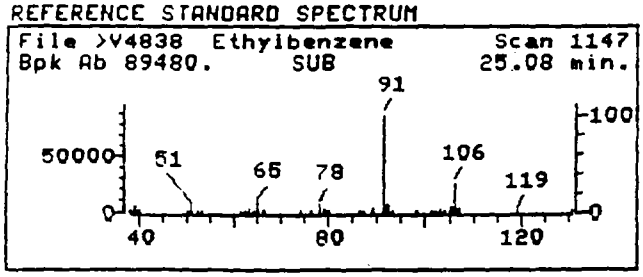




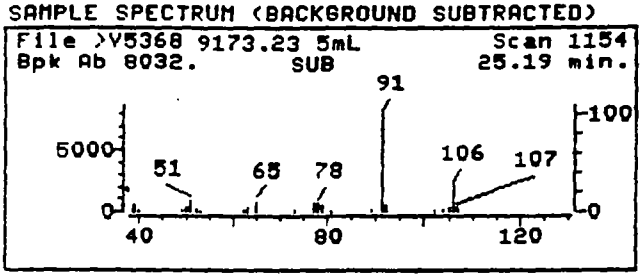
Data File: >V5368::D1 Quant Output File: ^V5368::DB
Name: 9173.23 5mL
Misc: 9173.23 5mL
Quant Time: 921028 03:45 Quant ID File: IDVOA::D2
Injected at: 921028 03:08 Last Calibration: 921027 22:05

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 155
Retention Time: 5.67 min.
Quant Ion: 84.0
Area: 115540
Concentration: 20.32 ppb
q-value: 88

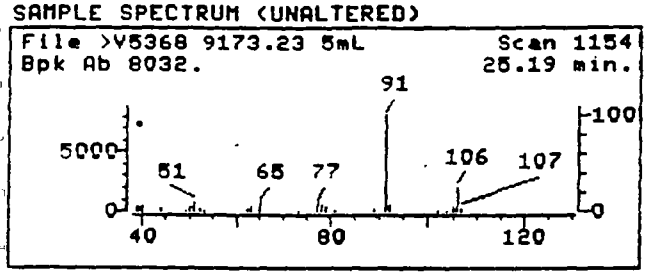
REFERENCE STANDARD SPECTRUM

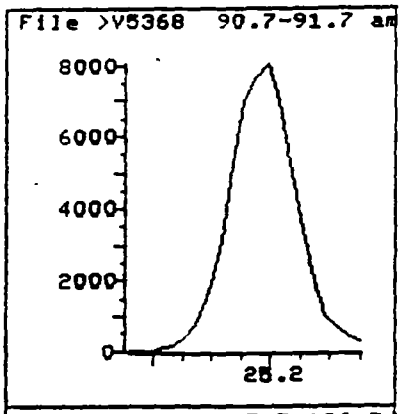


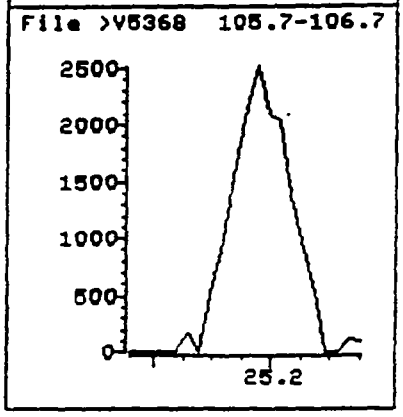
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







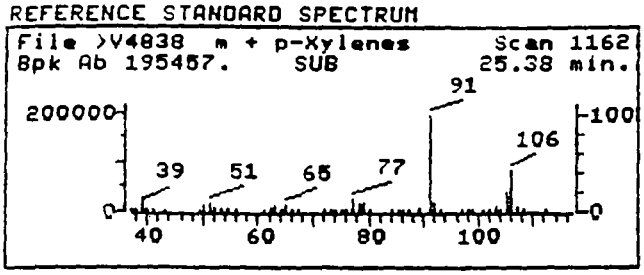
Data File: >V5368::D1
Name: 9173.23 5mL
Misc: 9173.23 5mL
Quant Time: 921028 03:45
Injected at: 921028 03:08

Quant Output File: ^V5368::DB

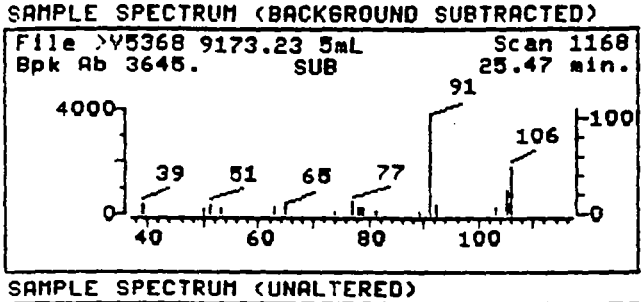
Quant ID File: IDVOA::D2
Last Calibration: 921027 22:05

Compound No: 42
Compound Name: Ethylbenzene
Scan Number: 1154
Retention Time: 25.19 min.
Quant Ion: 91.0
Area: 63692
Concentration: 3.10 ppb
q-value: 94

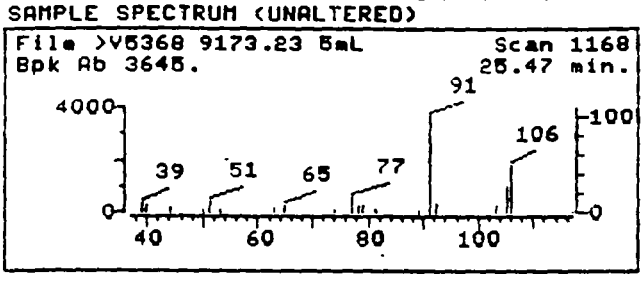
REFERENCE STANDARD SPECTRUM

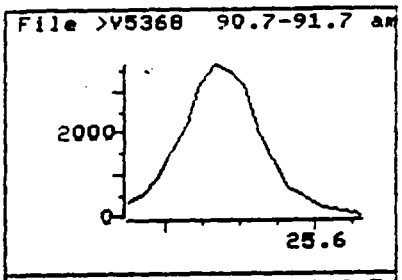


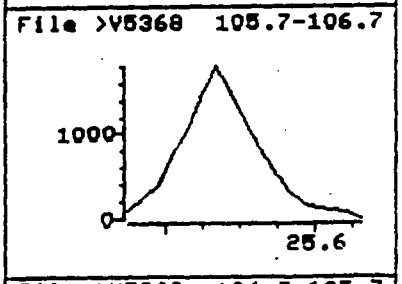
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

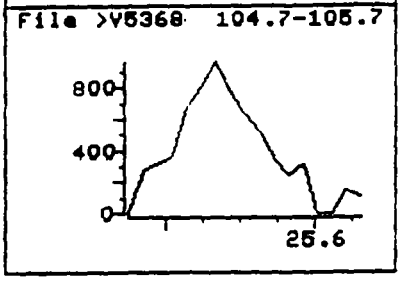


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5368::D1
Name: 9173.23 5mL
Misc: 9173.23 5mL
Quant Time: 921028 03:45
Injected at: 921028 03:08

Quant Output File: ^V5368::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: 27629
Concentration: 1.59 ppb
q-value: 91

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

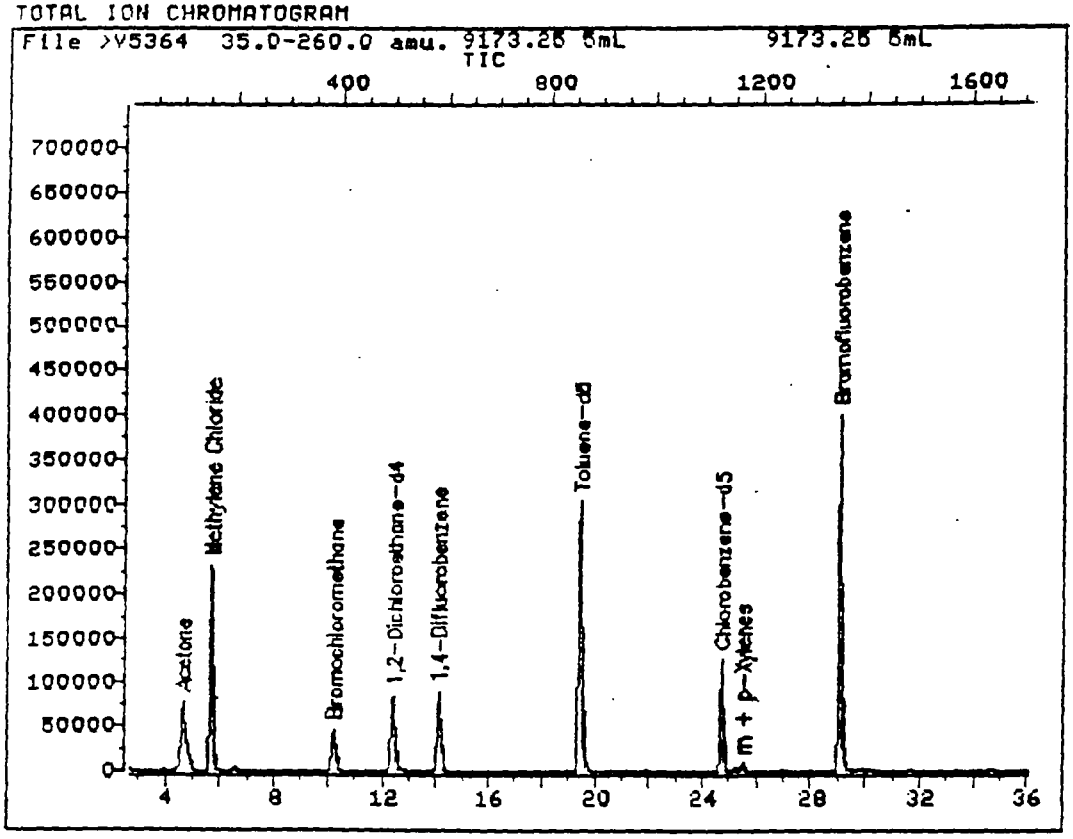
PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.25 5mL	DILUTION FACTOR	1.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>V5364	DATE ANALYZED	10/28/92

Compound	ug/L		MDL
Chloromethane	ND		10
Bromomethane	ND		10
Vinyl Chloride	ND		10
Chloroethane	ND		10
Methylene Chloride	66	B	5
Acrolein	ND		50
Acrylonitrile	ND		50
Acetone	84		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	1	J	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



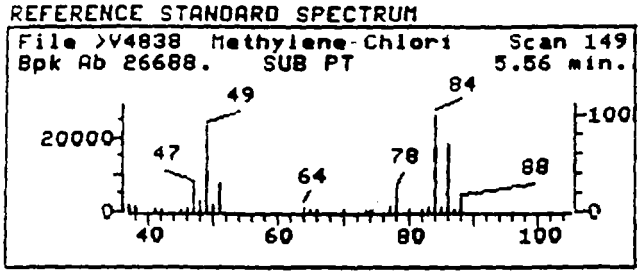
Data File: >V5364::D1
Name: 9173.25 5mL
Misc: 9173.25 5mL

Quant Output File: ^V5364::DB

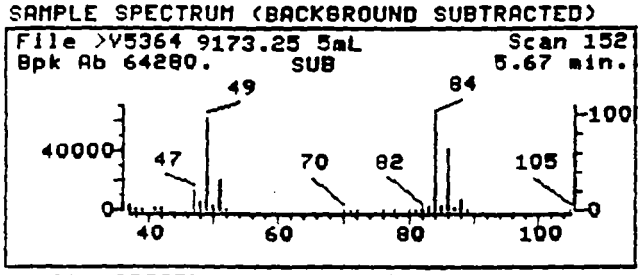
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921028 00:55
Injected at: 921028 00:19

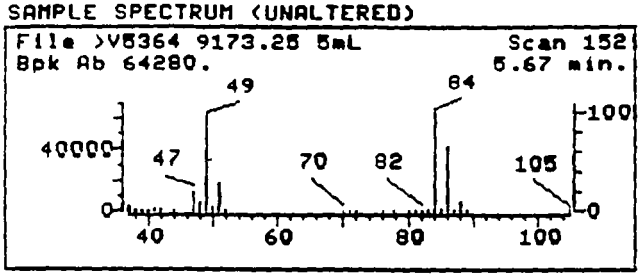
REFERENCE STANDARD SPECTRUM

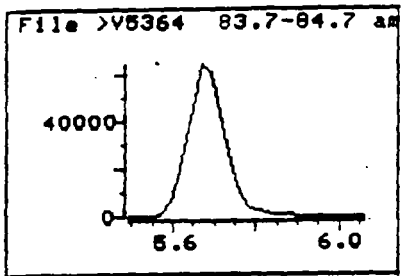


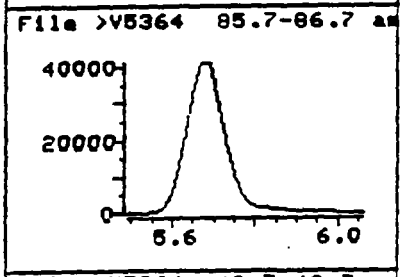
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

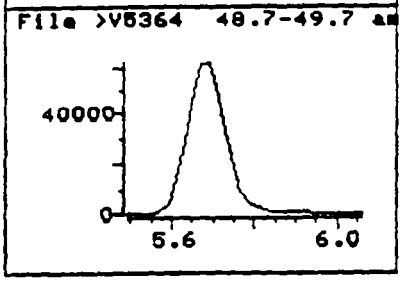


SAMPLE SPECTRUM (UNALTERED)





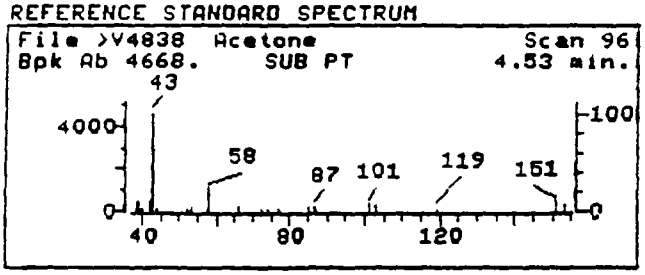




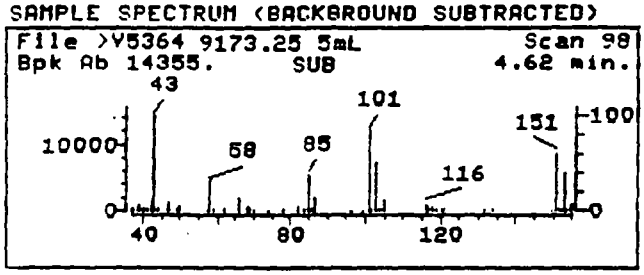
Data File: >V5364::D1 Quant Output File: ^V5364::DB
Name: 9173.25 5mL
Misc: 9173.25 5mL
Quant Time: 921028 00:55 Quant ID File: IDV0A::D2
Injected at: 921028 00:19 Last Calibration: 921027 22:05

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

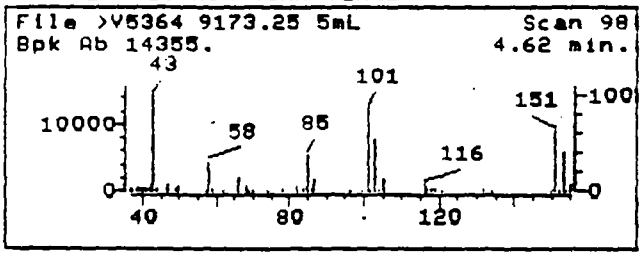
REFERENCE STANDARD SPECTRUM

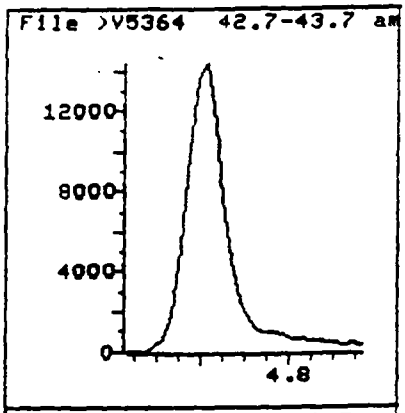


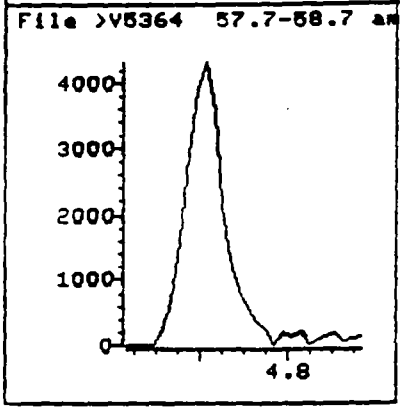
SAMPLE SPECTRUM (BACKBROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







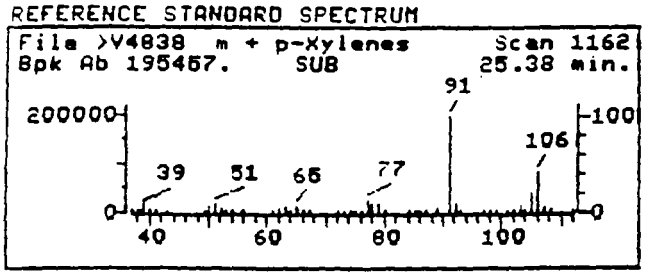
Data File: >V5364::D1
Name: 9173.25 5mL
Misc: 9173.25 5mL
Quant Time: 921028 00:55
Injected at: 921028 00:19

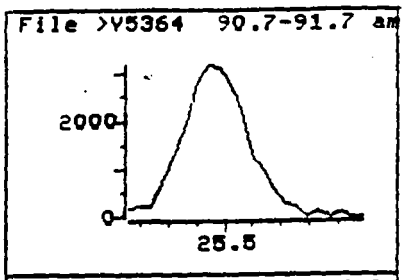
Quant Output File: ^V5364::DB

Quant ID File: IDV0A::D2
Last Calibration: 921027 22:05

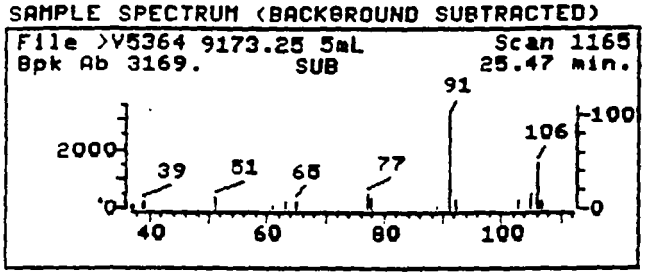
Compound No: 10
Compound Name: Acetone
Scan Number: 98
Retention Time: 4.62 min.
Quant Ion: 43.0
Area: 94984
Concentration: 83.95 ppb
q-value: 96

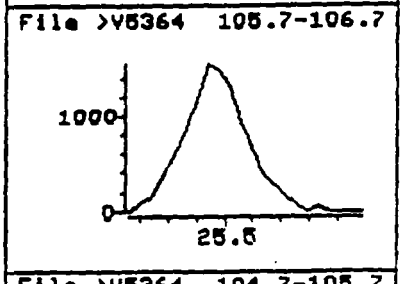
REFERENCE STANDARD SPECTRUM



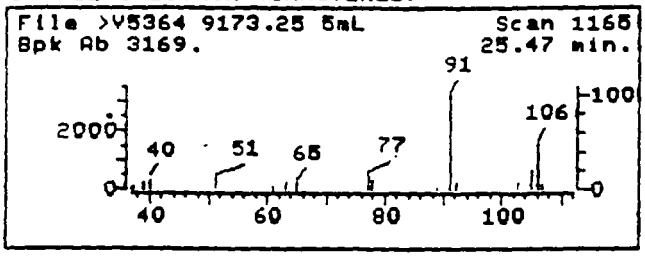


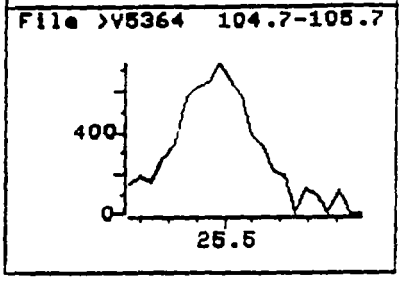
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





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::D8

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

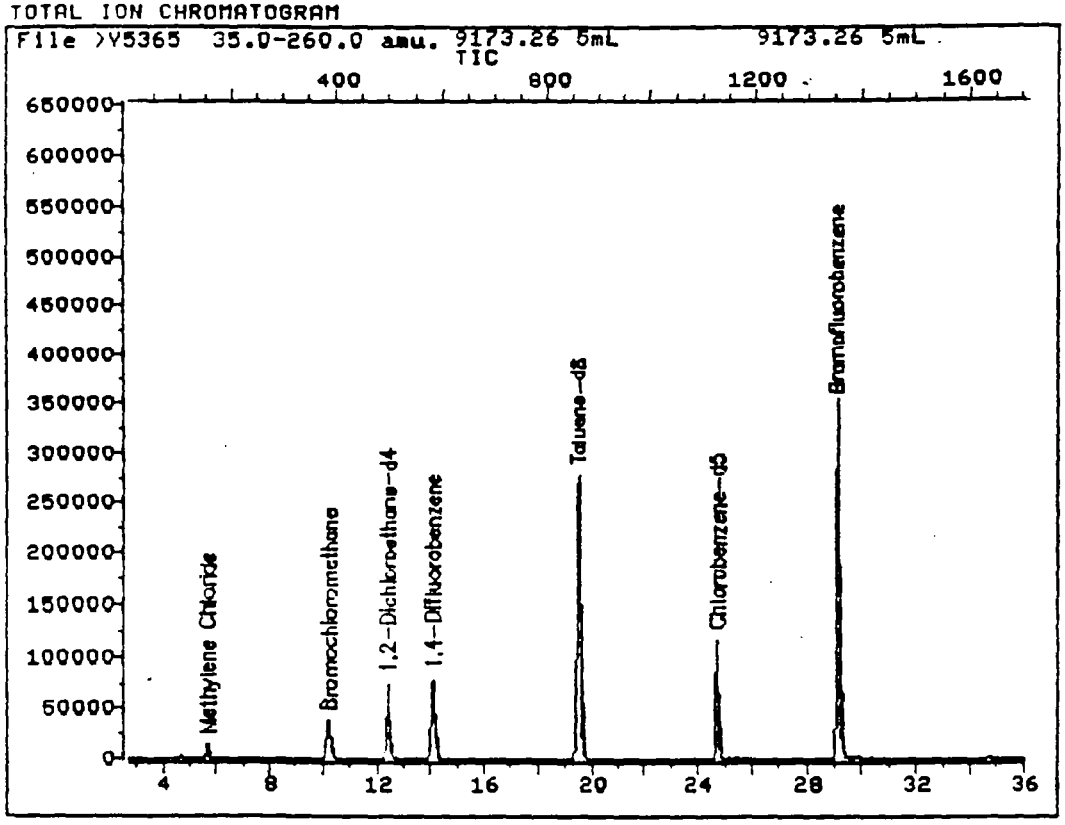
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

PROJECT	9173	MATRIX	Water
SAMPLE ID	9173.26 5mL	DILUTION FACTOR	1.00
CLIENT NAME	Serv-Air	DATE RECEIVED	10-26-92
DATA FILE	>V5365	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



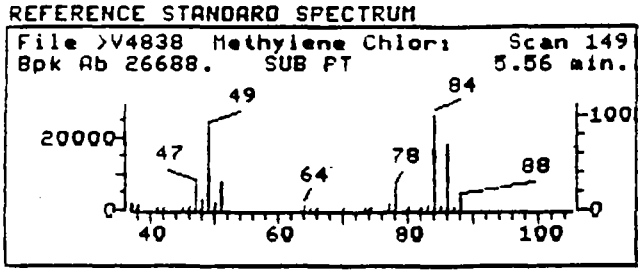
Data File: >V5365::D1
Name: 9173.26 5mL
Misc: 9173.26 5mL

Quant Output File: ^V5365::DB

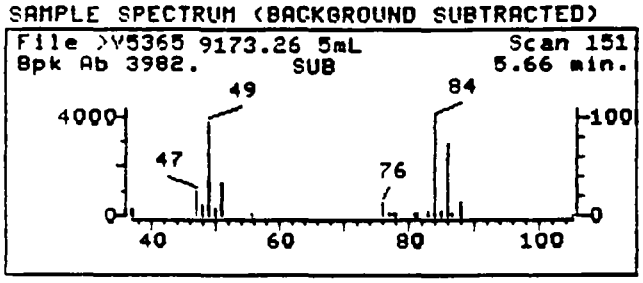
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921028 01:38
Injected at: 921028 01:01

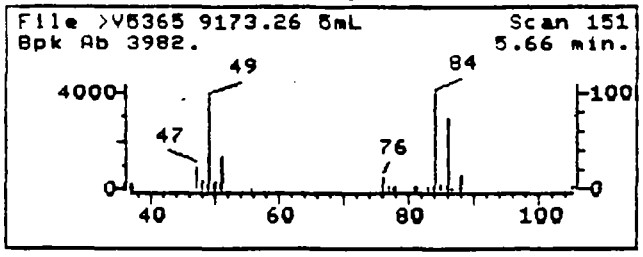
REFERENCE STANDARD SPECTRUM

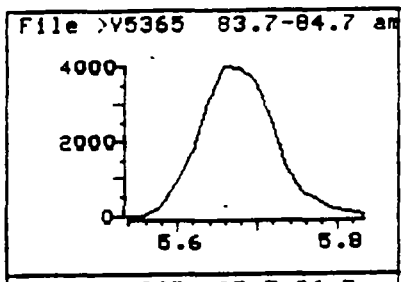


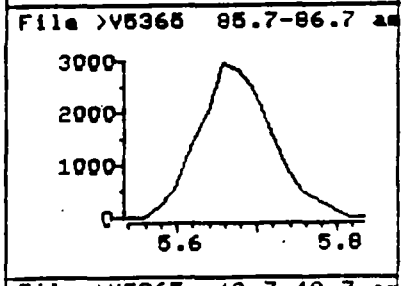
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

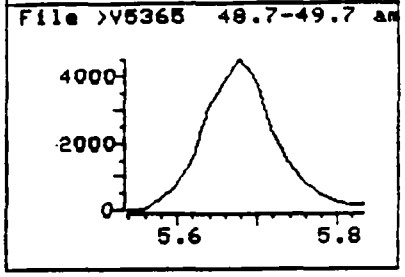


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5365::D1
Name: 9173.26 5mL
Misc: 9173.26 5mL
Quant Time: 921028 01:38
Injected at: 921028 01:01

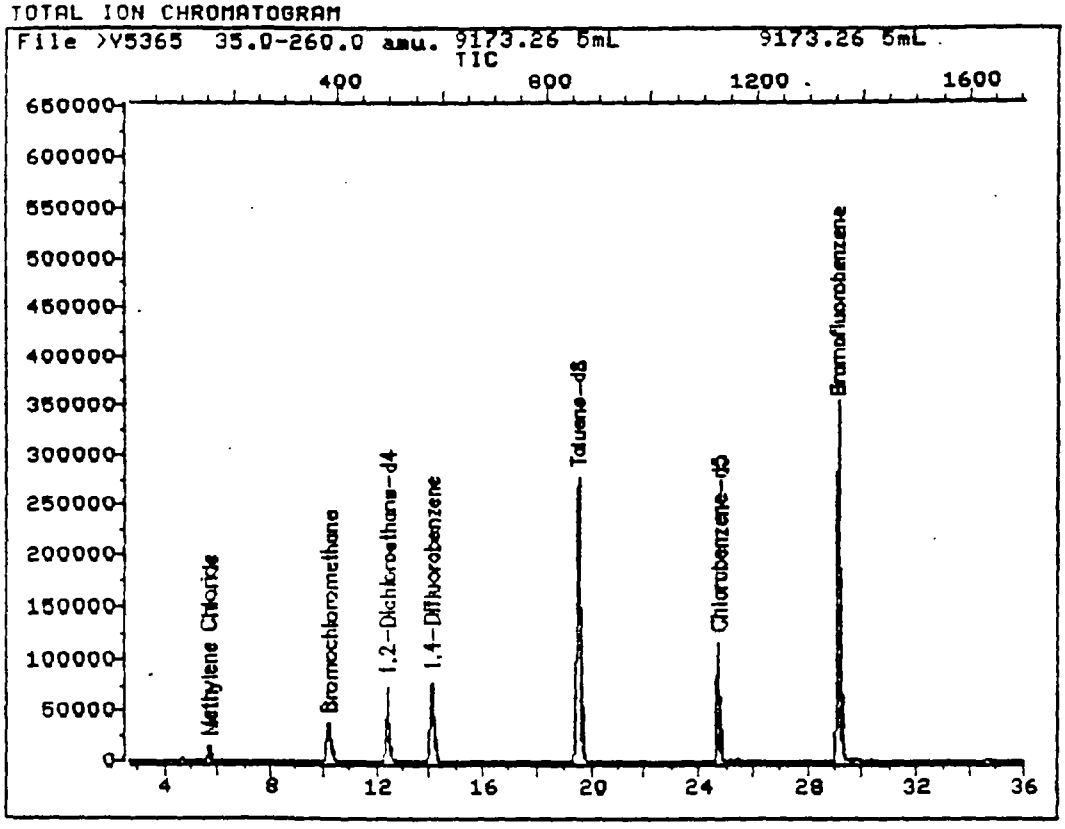
Quant Output File: ^V5365::DB

Quant ID File: IDV0A::D2
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

IIE

TOTAL ION CHROMATOGRAM



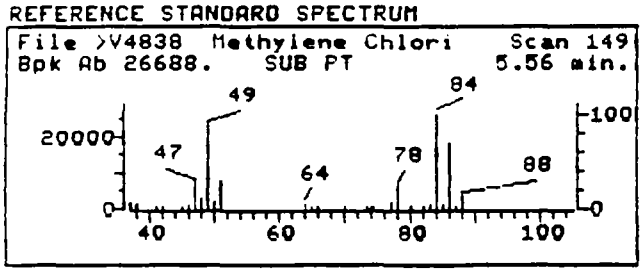
Data File: >V5365::D1
Name: 9173.26 5mL
Misc: 9173.26 5mL

Quant Output File: ^V5365::DB

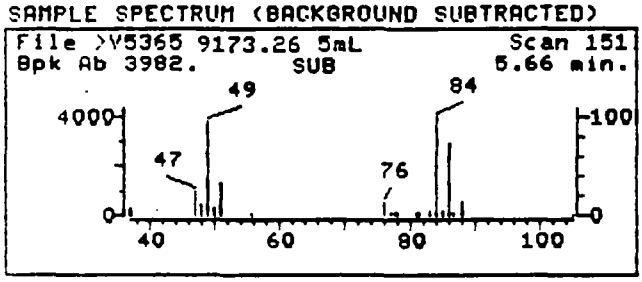
Id File: IDV0A::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921028 01:38
Injected at: 921028 01:01

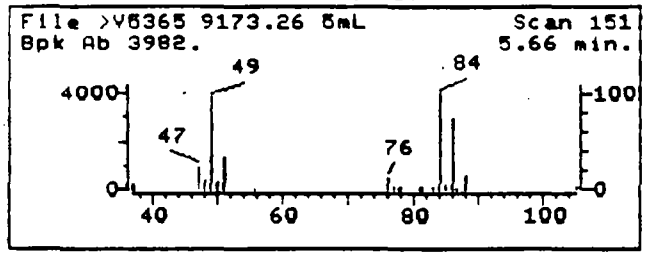
REFERENCE STANDARD SPECTRUM

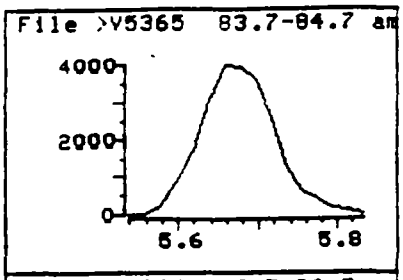


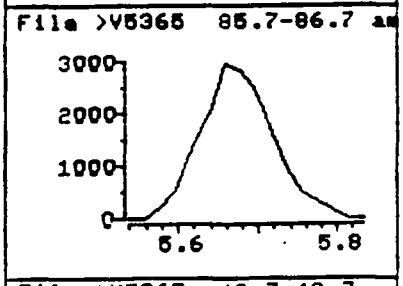
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

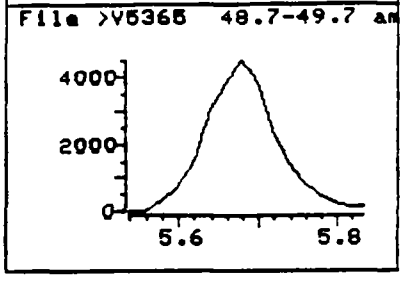


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5365::D1
Name: 9173.26 5mL
Misc: 9173.26 5mL
Quant Time: 921028 01:38
Injected at: 921028 01:01

Quant Output File: ^V5365::DB
Quant ID File: IDVOA::D2
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

IDE

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.: 9173.21 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: 9173.21 5mL

Lab File ID: >V5370

Date Received: 10-26-92

Date Analyzed: 10/28/92

Dilution Factor: 1

Number of TICs found: 2

CONCENTRATION UNITS: ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	76131	Freon	4.61	44	89
2	275514	Azulene	35.39	5	87

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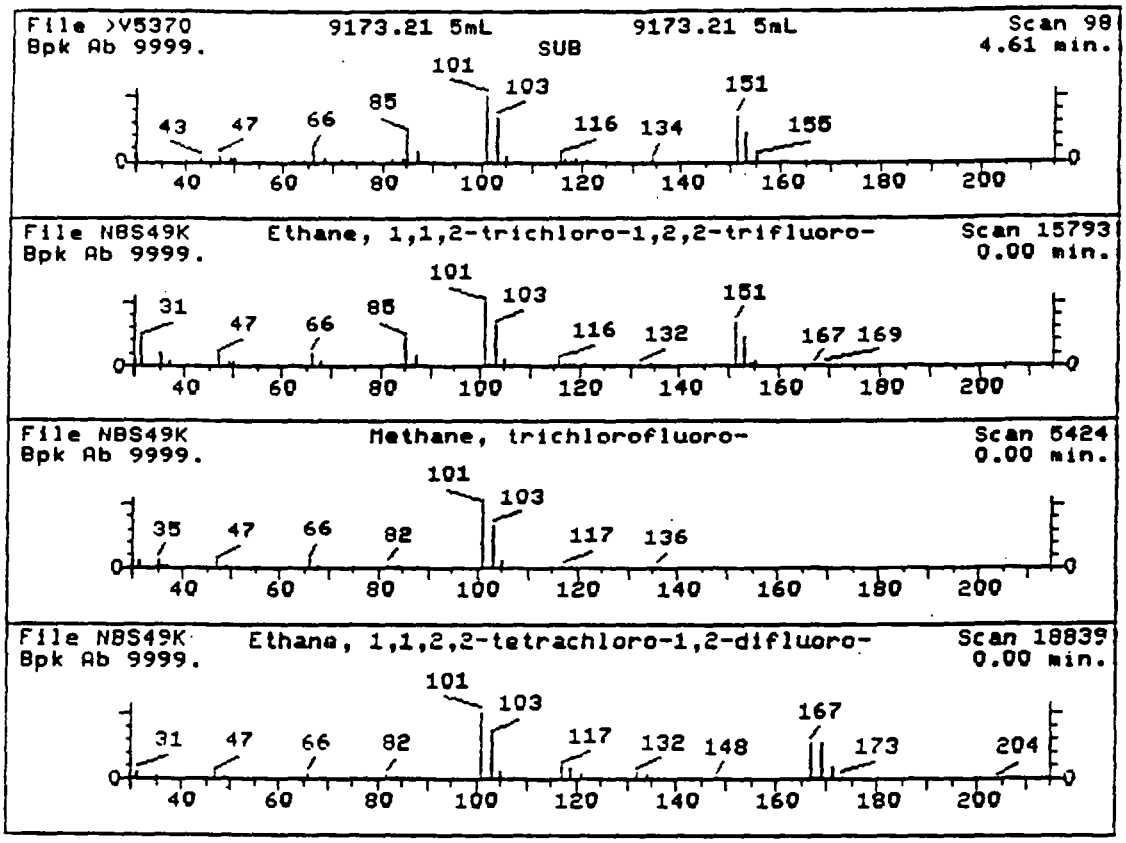
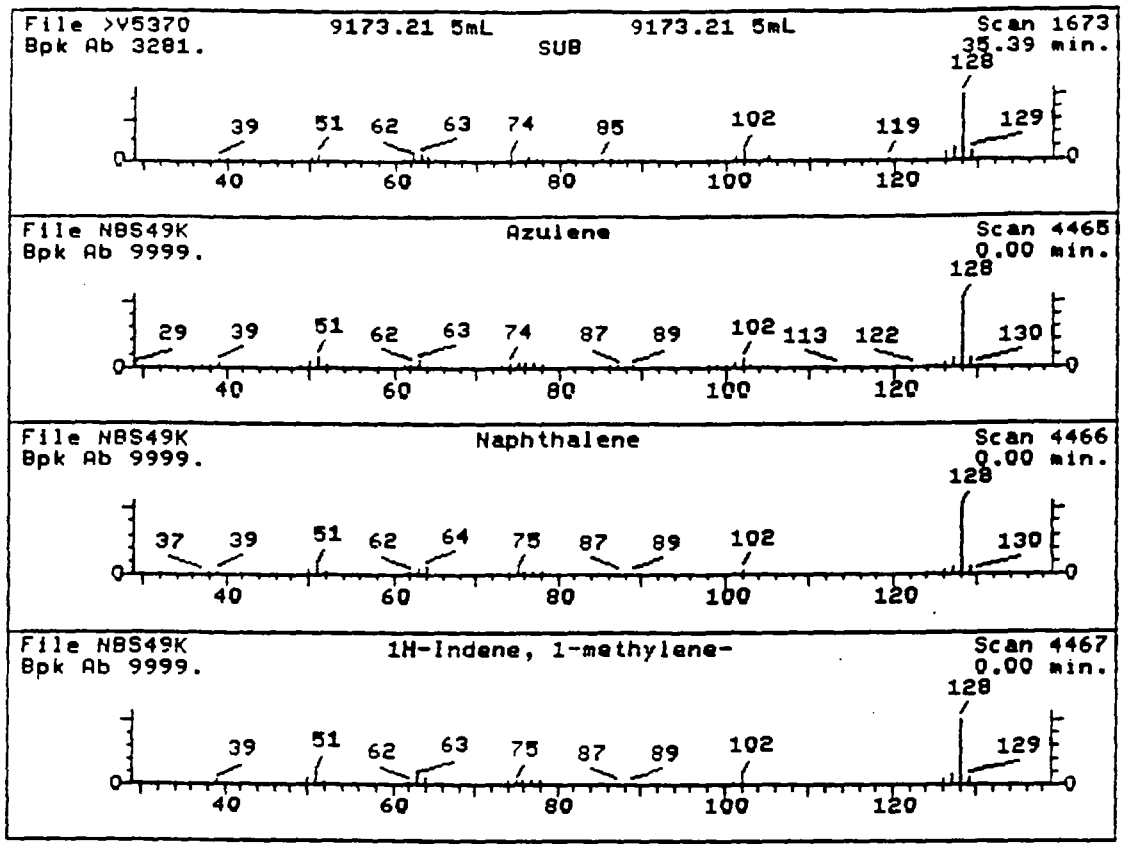


UNKNOWN #,1
AREA = 372247.0 TENTATIVE CONCENTRATION IS 44.00

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
4.	2,4-Dioxabicyclo[3.2.0]hept-6-en-3-one, 1,5-dichloro -6,7-dimethyl-	208	C7H6Cl2O3

Sample file: >V5370 Spectrum #: 98
Search speed: 1 Tilting option: F No. of ion ranges searched: 44

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I(
1.	89	76131	10367	NBS49K	102	36	1	0	79	3	66	61
2.	30	75694	10283	NBS49K	51	45	0	0	76	49	10	29
3.	25*	76120	10400	NBS49K	43	88	3	0	100	49	7	13
4.	11*	35436205	10418	NBS49K	24	76	1	0	95	61	2	14



UNKNOWN #,2
AREA = 92934.00 TENTATIVE CONCENTRATION IS 5.00

1.	Azulene	128	C10H8
2.	Naphthalene	128	C10H8
3.	1H-Indene, 1-methylene-	128	C10H8
4.	Bicyclo[4.4.1]undeca-1,3,5,7,9-pentaen-11-one	156	C11H8O
5.	1,2-Benzenedicarbonitrile	128	C8H4N2
6.	1,3-Benzenedicarbonitrile	128	C8H4N2

Sample file: >V5370 Spectrum #: 1673
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*	275514	15264	NBS49K	63	35	2	0	97	1	63	4
2.	86*	91203	15265	NBS49K	54	37	2	2	80	3	60	3
3.	81*	2471843	15266	NBS49K	74	27	2	-3	93	6	53	4
4.	60	36628805	15284	NBS49K	50	42	2	0	95	11	30	1
5.	38*	91156	15260	NBS49K	32	60	2	0	100	27	14	1
6.	37*	626175	15262	NBS49K	28	63	2	0	100	28	14	1

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO: 9173.22 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: 9173.22 5mL

Lab File ID: >V5426

Date Received: 10-26-92

Date Analyzed: 10/30/92

Dilution Factor: 1

Number of TICs found: 1

CONCENTRATION UNITS: ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	824635	1H-Indene, 2,3-dihydro-2-met	30.18	17	81

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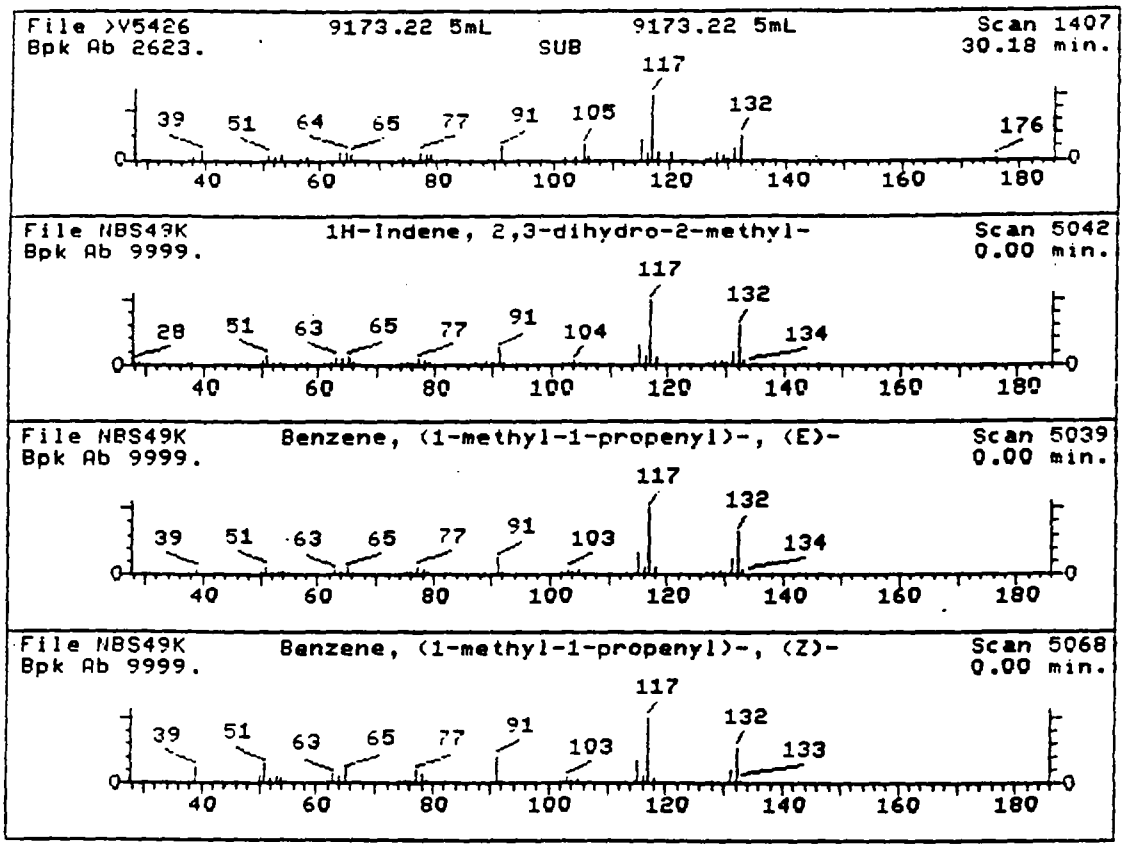

UNKNOWN #,1
AREA = 221238.0 TENTATIVE CONCENTRATION IS 17.00

1.	1H-Indene, 2,3-dihydro-2-methyl-	132	C10H12
2.	Benzene, (1-methyl-1-propenyl)-, (E)-	132	C10H12
3.	Benzene, (1-methyl-1-propenyl)-, (Z)-	132	C10H12
4.	1H-Indene, 2,3-dihydro-5-methyl-	132	C10H12
5.	1H-Indene, 2,3-dihydro-4-methyl-	132	C10H12
6.	Benzene, 1-methyl-2-(2-propenyl)-	132	C10H12

Sample file: >V5426 Spectrum #: 1407
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.	81*	824635	15892	NBS49K	73	33	2	3	75	9	53	46
2.	76*	768003	15889	NBS49K	67	39	3	3	70	9	45	27
3.	76*	767997	15907	NBS49K	61	52	3	0	71	9	45	28
4.	74*	874351	15898	NBS49K	66	40	2	0	73	14	39	45
5.	74*	824226	15903	NBS49K	66	41	2	0	78	15	39	45
6.	67*	1587048	15897	NBS49K	58	49	2	4	77	14	34	28

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

9173.23 5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.23 5mL

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

Lab File ID: >V5368

Level: (low/med) LOW

Date Received: 10-26-92

Date Analyzed: 10/28/92

Column: Capillary

Dilution Factor: 1

Number of TICs found: 2

CONCENTRATION UNITS: ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	76131	Freon	4.62	23	86
2	496117	1H-Indene, 2,3-dihydro-	34.32	19	83

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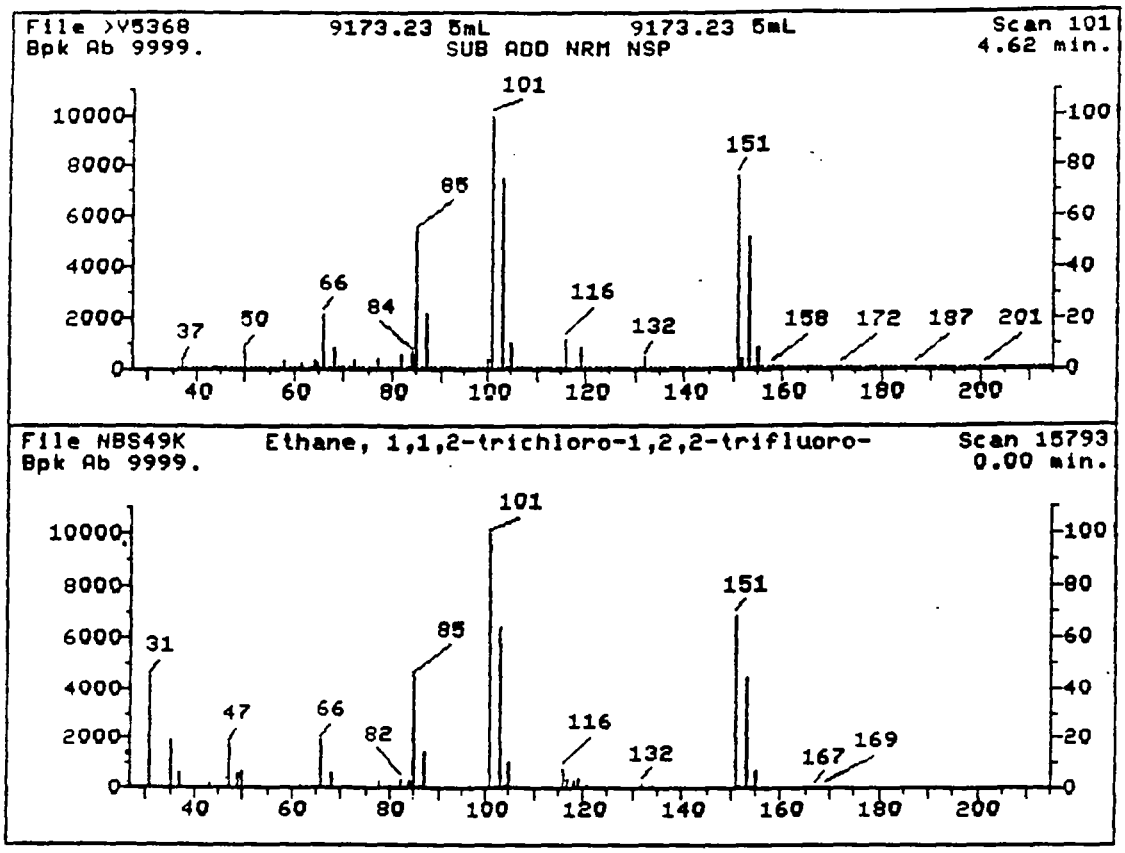
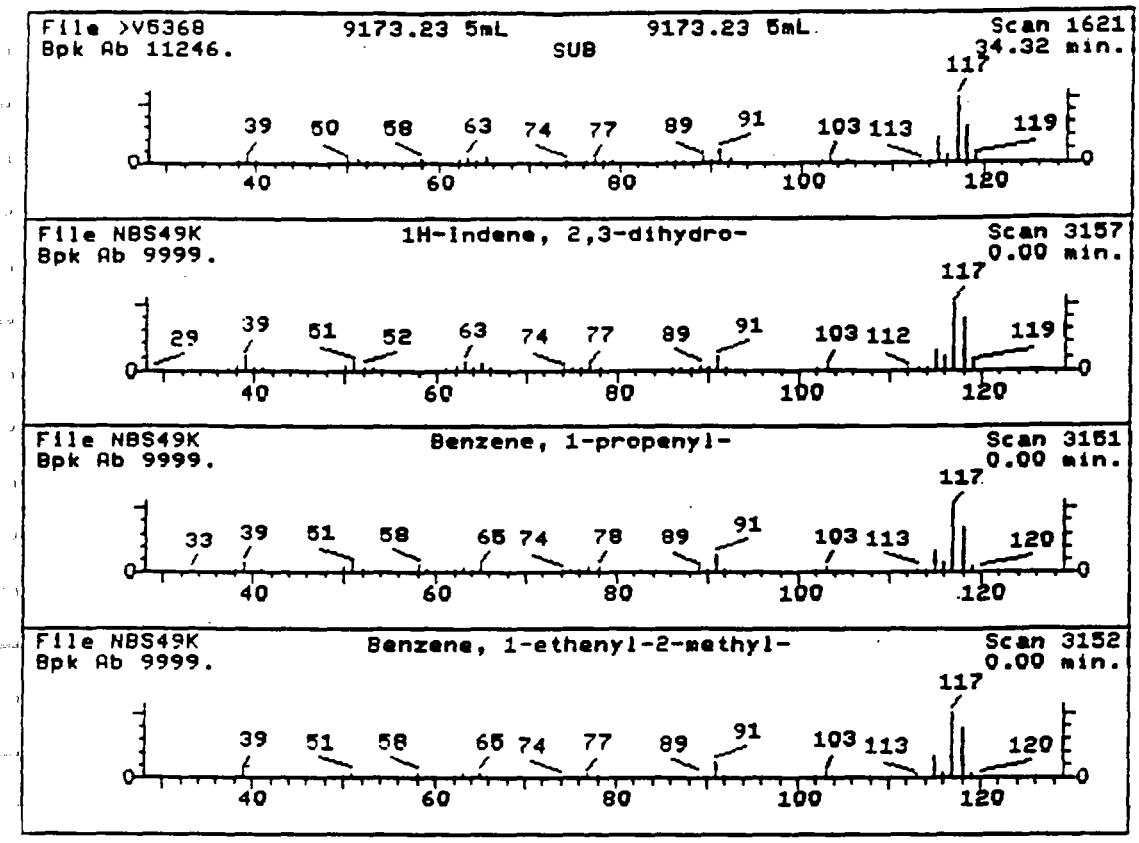


UNKNOWN #,1
AREA = 205322.0 TENTATIVE CONCENTRATION IS 23.00

1. Ethane, 1,1,2-trichloro-1,2,2-trifluoro- 186 C2Cl3F3

Sample file: >V5368 Spectrum #: 101
Search speed: 1 Tilting option: F No. of ion ranges searched: 40

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I(
1.	86	76131	10367	NBS49K	83	55	1	0	100	0	60	3(



UNKNOWN #,2
AREA = 344671.0 TENTATIVE CONCENTRATION IS 19.00

1.	1H-Indene, 2,3-dihydro-	118 C9H10
2.	Benzene, 1-propenyl-	118 C9H10
3.	Benzene, 1-ethenyl-2-methyl-	118 C9H10
4.	Benzeneethanol, .beta.-ethenyl-	148 C10H12O
5.	Benzene, 2-propenyl-	118 C9H10
6.	Benzene, ethenylmethyl-	118 C9H10

Sample file: >V5368 Spectrum #: 1621
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.	83*	496117	13350	NBS49K	53	47	2	0	66	5	57	28
2.	76*	637503	13345	NBS49K	46	52	2	0	68	10	45	21
3.	74*	611154	13346	NBS49K	63	30	2	1	68	11	39	43
4.	70	6052637	13383	NBS49K	49	45	2	0	76	8	42	14
5.	46*	300572	13344	NBS49K	59	38	1	-2	58	37	17	35
6.	45*	25013154	13348	NBS49K	58	39	2	1	52	37	17	34

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE

9173.25 5

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

Number of TICs found: 0

CONCENTRATION UNITS:
ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO

9173.26 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: 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

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					
10					
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: >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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12					
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16					
17					
18					
19					
20					
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: >05346

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	.55286	.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 (**)

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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: >V5346

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 (**)

330

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: >U5362

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: >V5412

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 (**)

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 (**)

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:	>U5268	>U5267	>U5269	>U5270	>U5271					
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	.598	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=200.0,500.0,1000
Acrylonitrile	.31782	.22703	.23784	.23622	.26759	.579	.25730	14.422		(Conc=200.0,500.0,1000
Acetone	1.08049	.64897	.68880	.66465	.81769	.450	.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=100.0,100.0,100.0
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	1.20523	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%

Laboratory ID:	>U5268	>U5267	>U5269	>U5270	>U5271					
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	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	1.72006	.789	1.69988	1.258		(Conc=100.0,100.0,100.0
Bromofluorobenzene	1.00324	.99381	1.06747	1.15179	1.02073	1.176	1.04741	6.193		(Conc=100.0,100.0,100.0
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 (**)

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

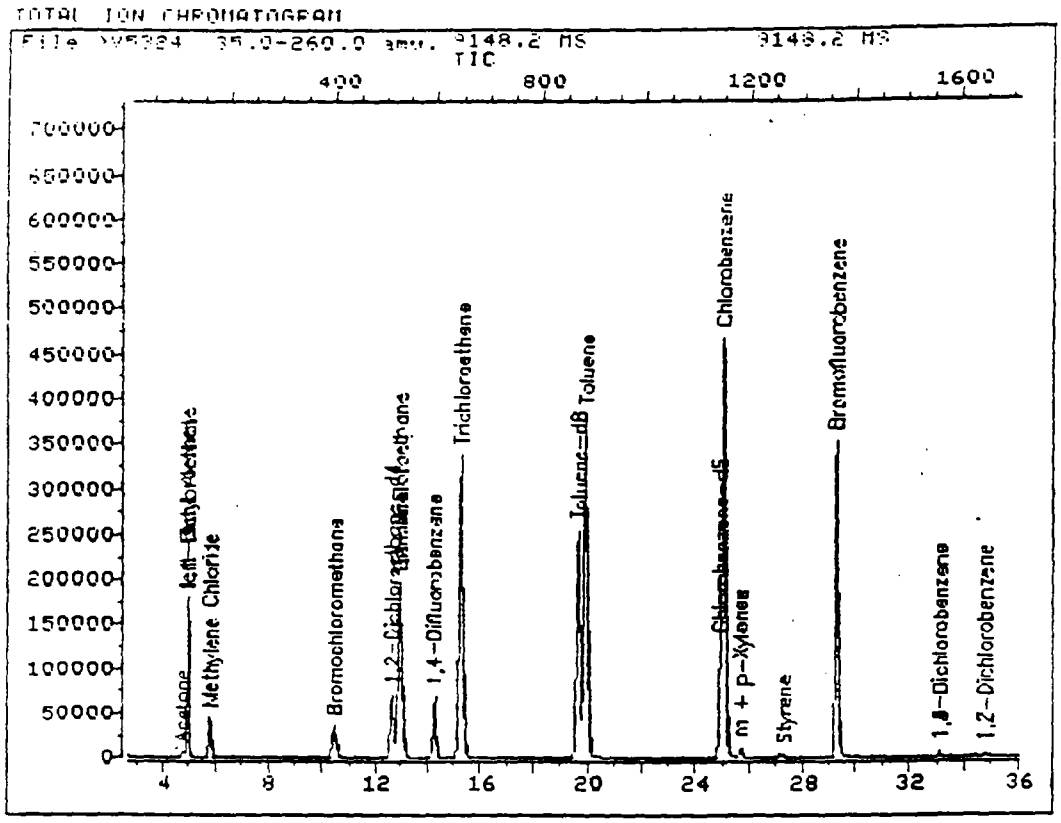
Column to be used to flag recovery and RPD values with an asterisk

* Values outside of qc limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

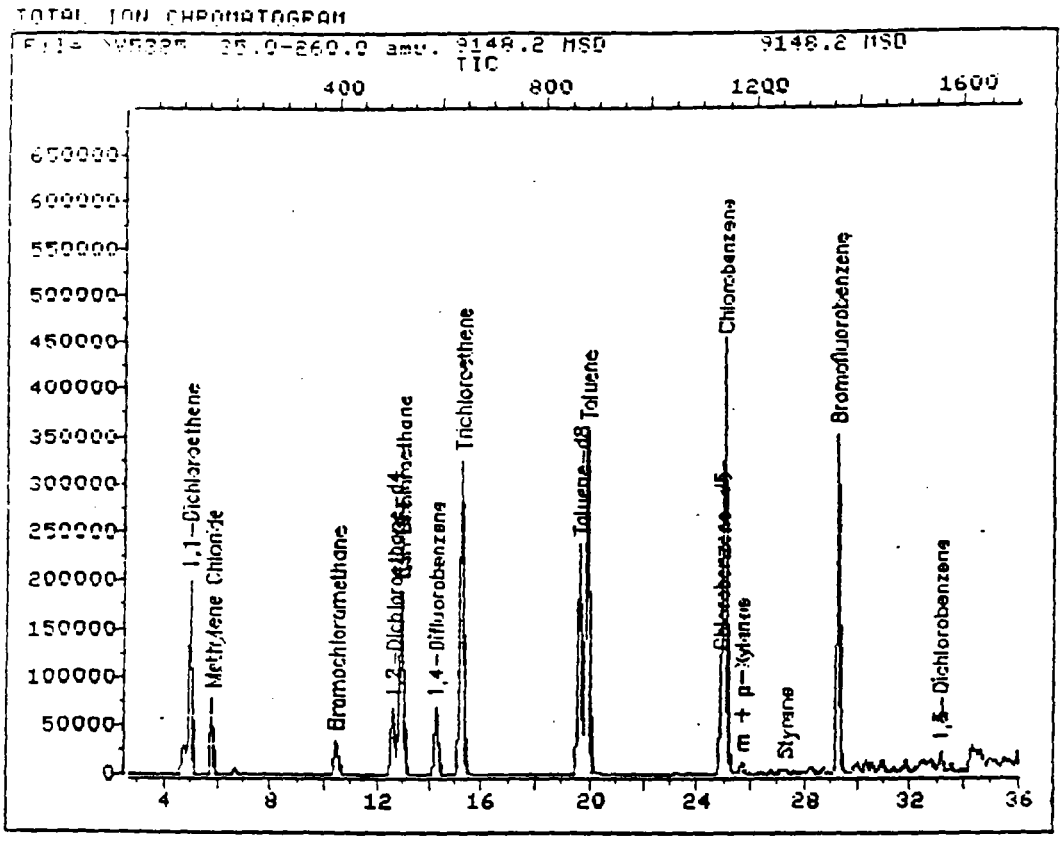
COMMENTS: _____



Data File: >V5324::D1 Quant Output File: ^V5324::DB
Name: 9148.2 MS
Misc: 9148.2 MS

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	QC LIMITS 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

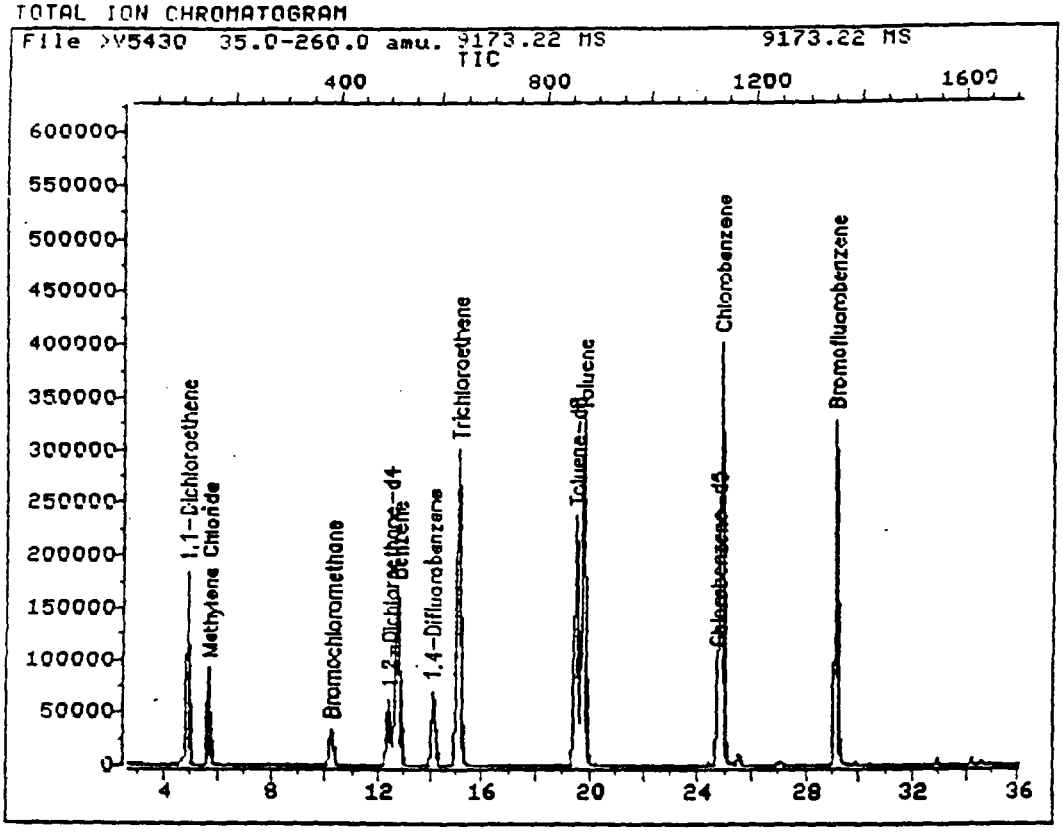
Column to be used to flag recovery and RPD values with an asterisk

* Values outside of qc limits

RPD: 1 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

TOTAL ION CHROMATOGRAM

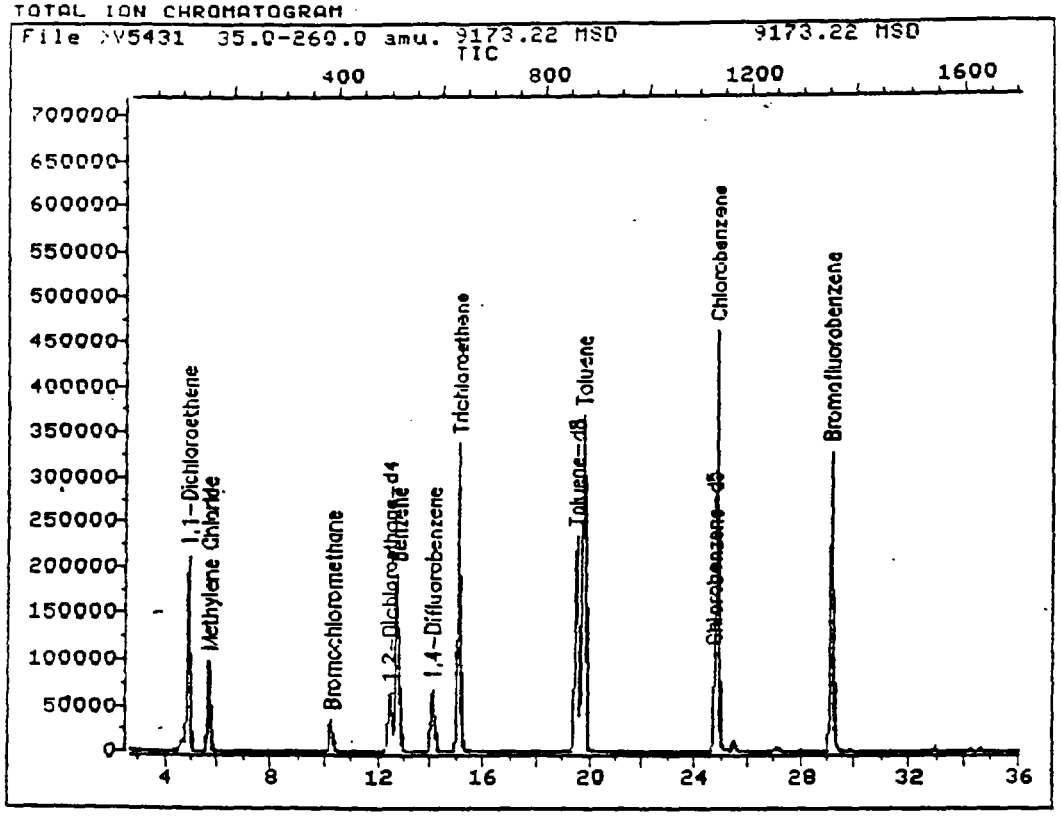


Data File: >V5430::D1 Quant Output File: ^V5430::DB.
Name: 9173.22 MS
Misc: 9173.22 MS

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				
12				
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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: >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
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COMMENTS: _____

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
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COMMENTS: _____

4A

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
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COMMENTS: _____

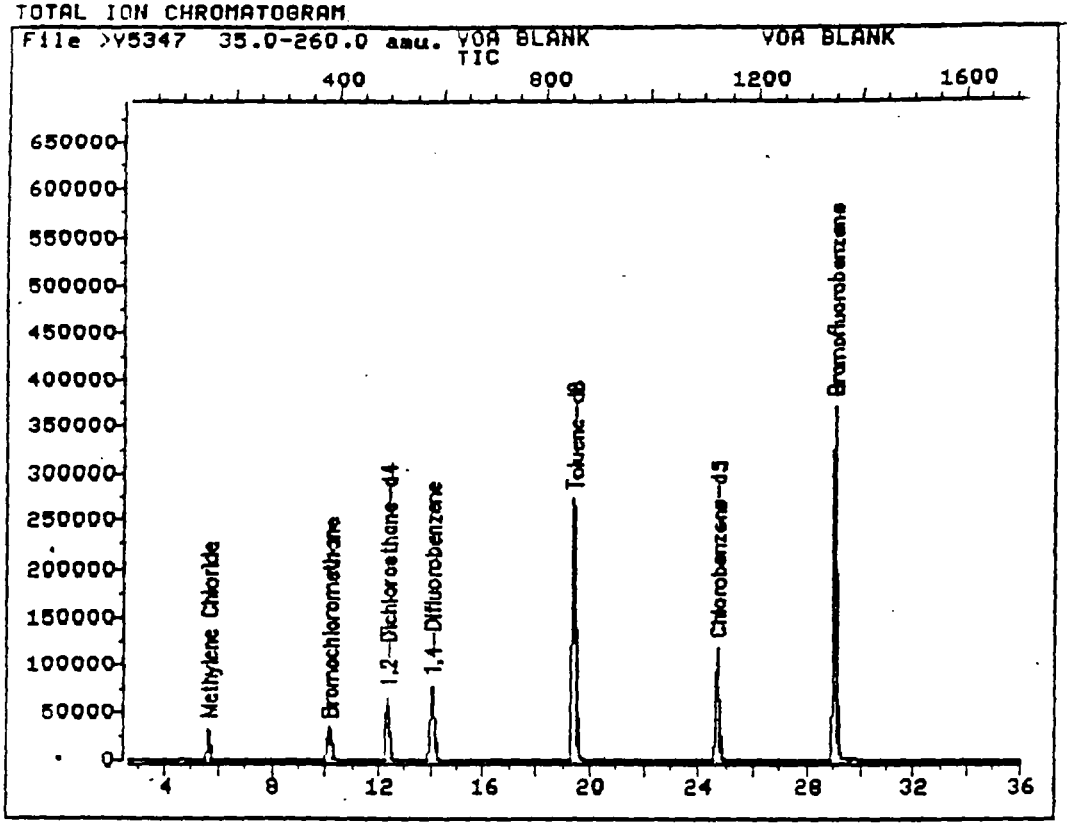
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

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



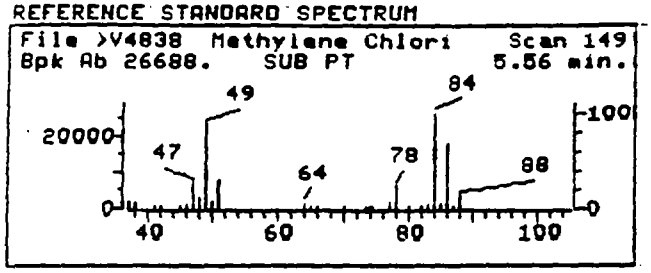
Data File: >V5347::D1
Name: VOA BLANK
Misc: VOA BLANK

Quant Output File: ^V5347::DB

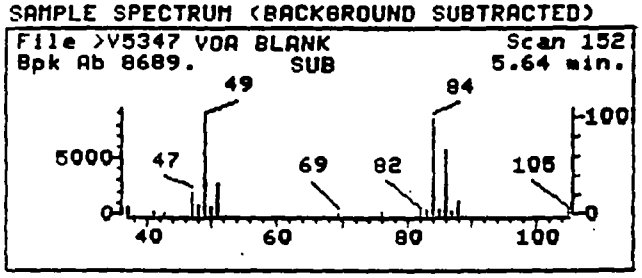
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921020 16:10

Operator ID: MARK
Quant Time: 921027 12:13
Injected at: 921027 11:36

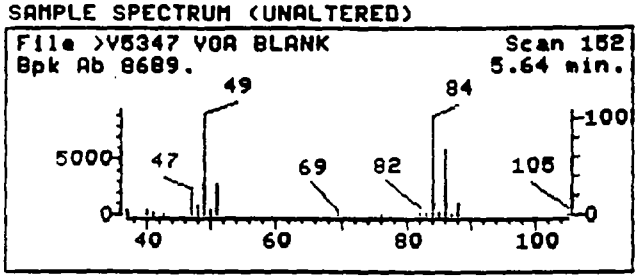
REFERENCE STANDARD SPECTRUM

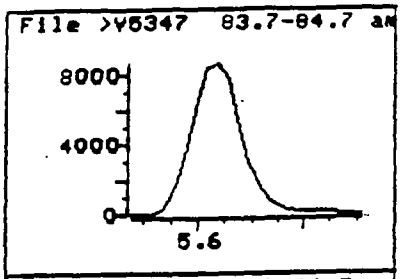


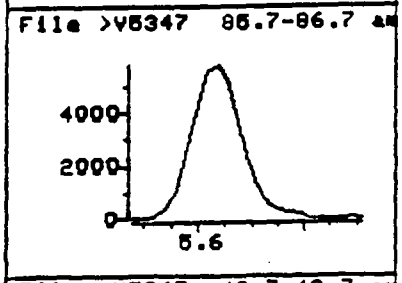
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

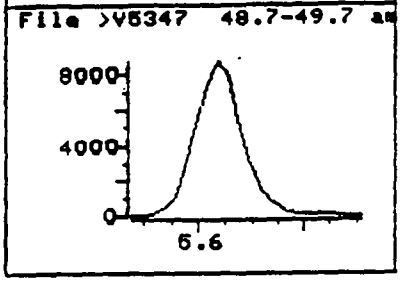


SAMPLE SPECTRUM (UNALTERED)









Data File: >V5347::D1
Name: VOA BLANK
Misc: VOA BLANK
Quant Time: 921027 12:13
Injected at: 921027 11:36

Quant Output File: ^V5347::DB
Quant ID File: IDVOA::D2
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

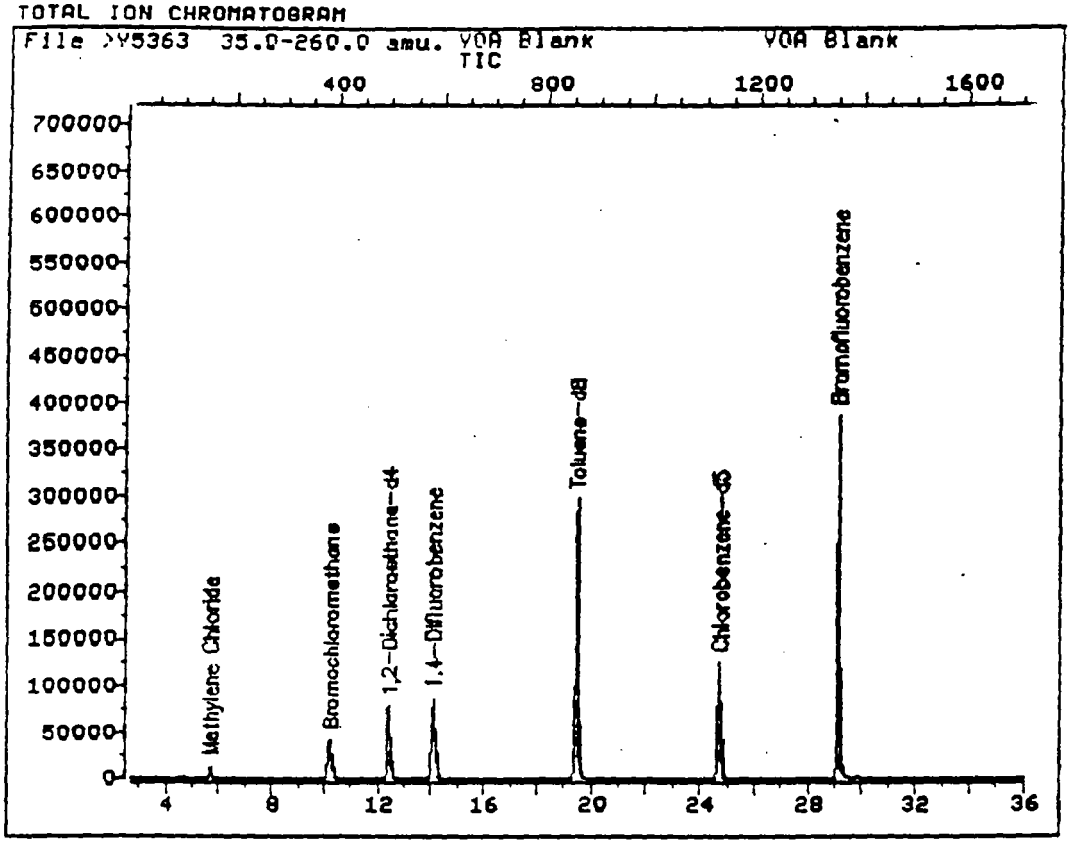
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NAME	VOA Blank	DILUTION FACTOR	1.00
CLIENT ID		QA BATCH	
DATA FILE	>V5363	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	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

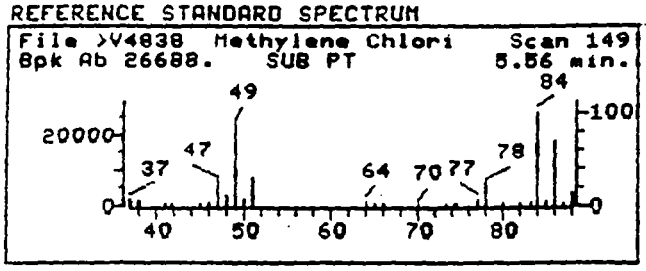


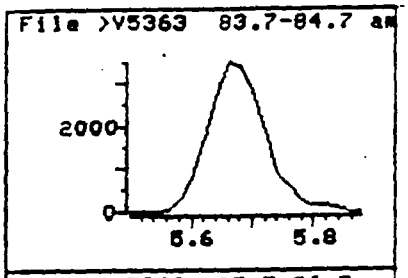
Data File: >V5363::D1 Quant Output File: ^V5363::DB
Name: VOA Blank
Misc: VOA Blank

Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

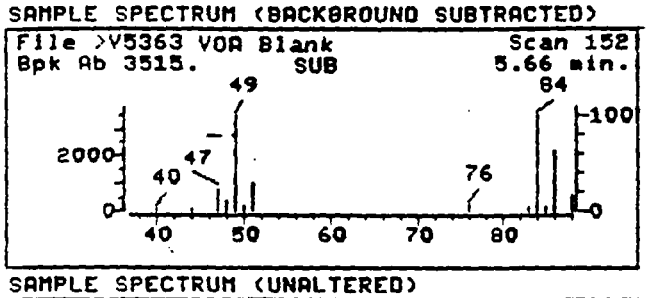
Operator ID: MARK
Quant Time: 921028 00:14
Injected at: 921027 23:37

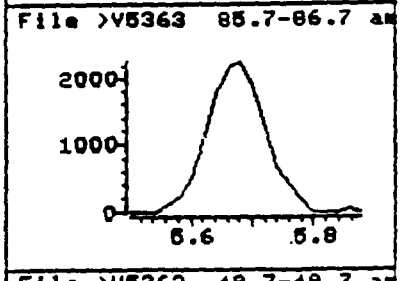
REFERENCE STANDARD SPECTRUM



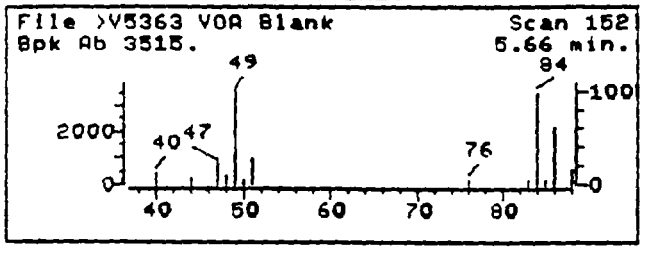


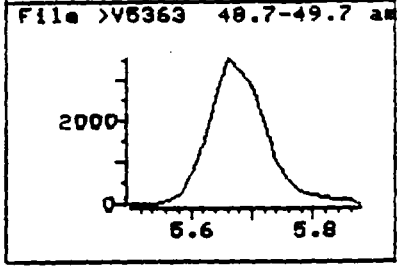
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





SAMPLE SPECTRUM (UNALTERED)





Data File: >V5363::01 Quant Output File: ^V5363::08
Name: VOA Blank
Misc: VOA Blank
Quant Time: 921028 00:14 Quant ID File: IDVOA::02
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

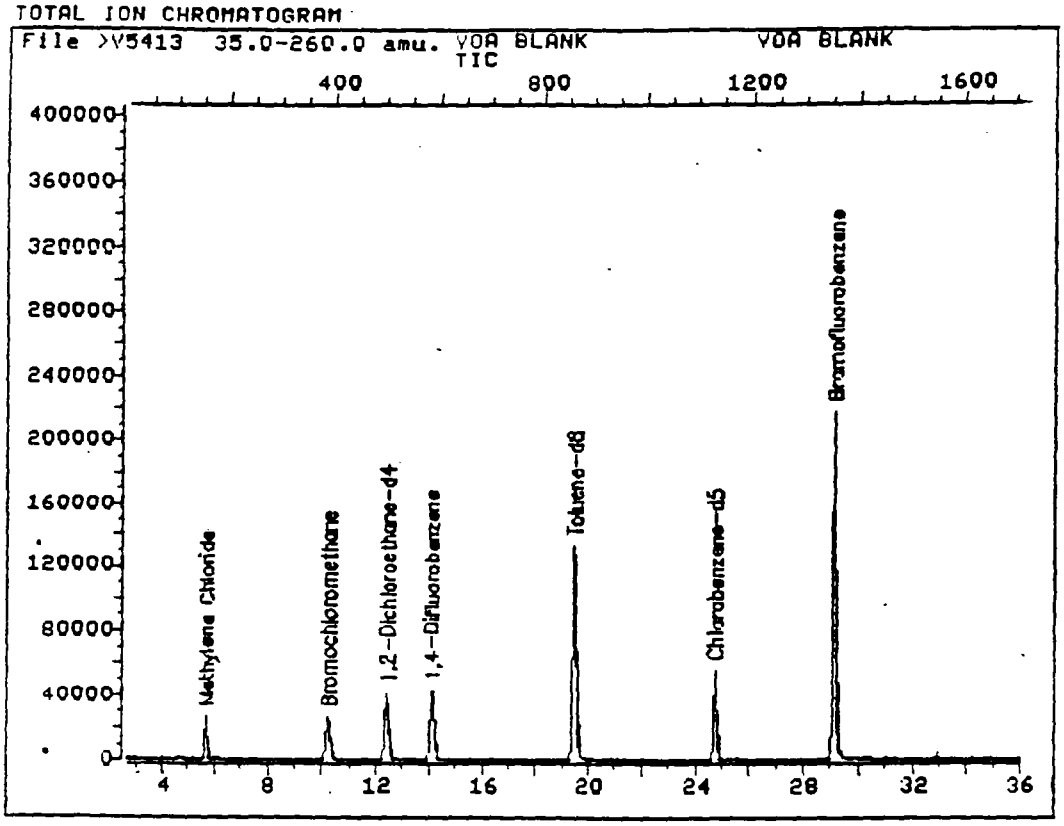
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

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



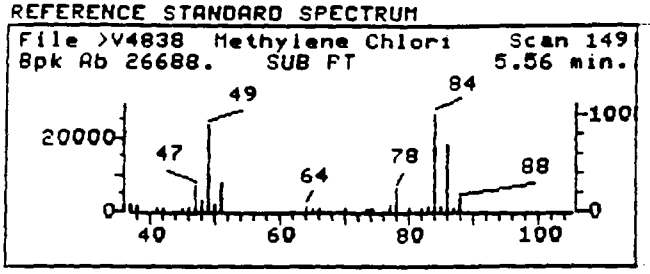
Data File: >V5413::D1
Name: VOA BLANK
Misc: VOA BLANK

Quant Output File: ^V5413::DB

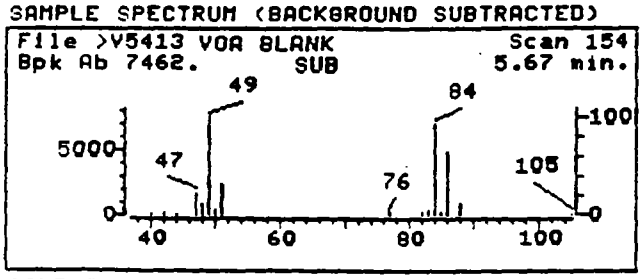
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

Operator ID: MARK
Quant Time: 921030 12:19
Injected at: 921030 11:42

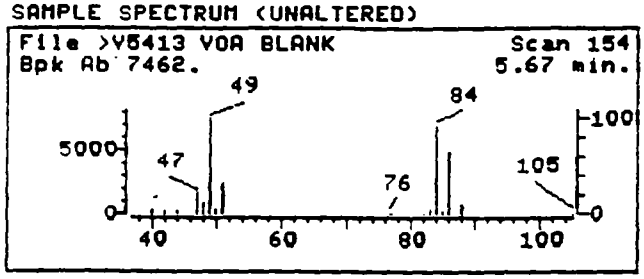
REFERENCE STANDARD SPECTRUM

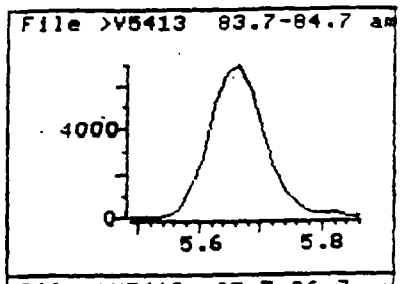


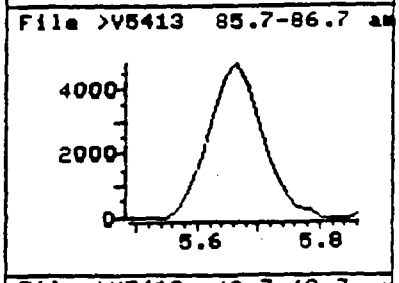
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

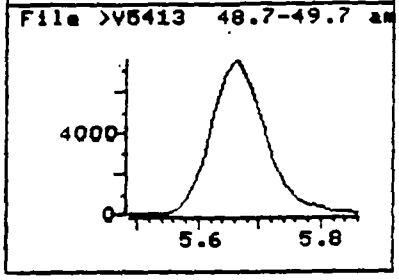


SAMPLE SPECTRUM (UNALTERED)









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

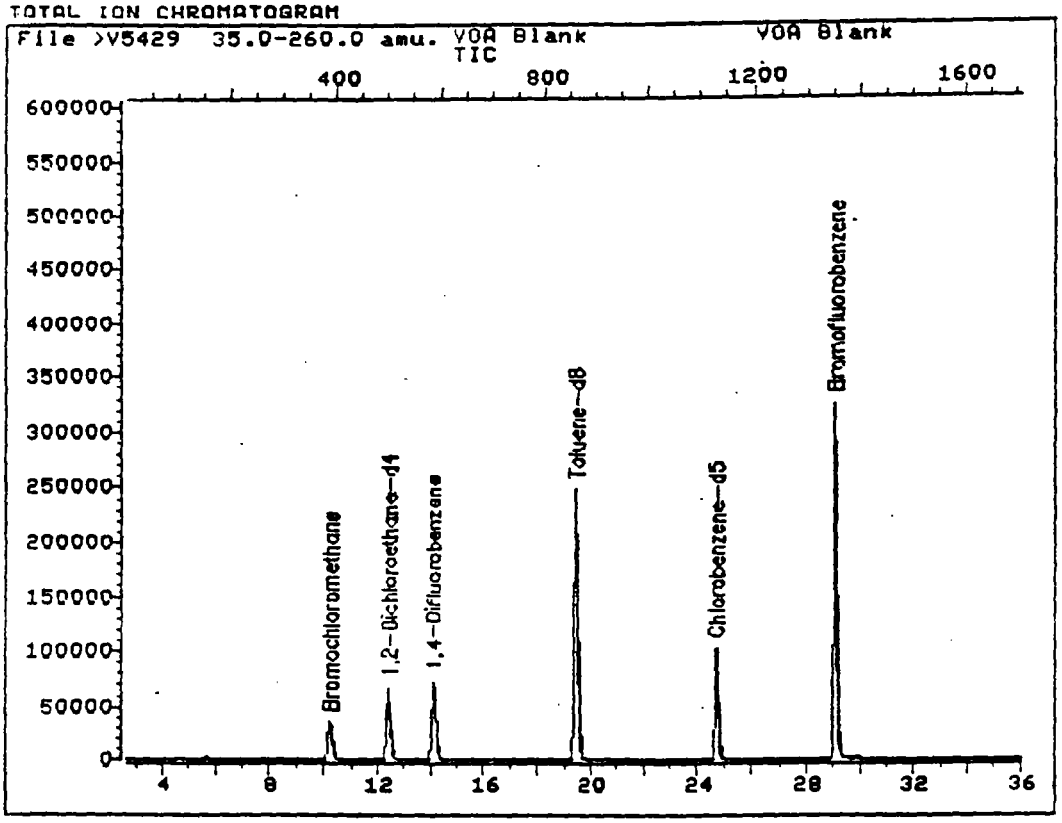
Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

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

Number of TICs found: 0

CONCENTRATION UNITS:
ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC 1/87 Rev

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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: >V5363

Date Analyzed: 10/27/92

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

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: >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

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: >V5429

Date Analyzed: 10/31/92

Column: Capillary

Dilution Factor: 1

CONCENTRATION UNITS: ug/L

Number of TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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
08						
09						
10						
11						
12						
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26						
27						
28						
29						
30						

	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
12						
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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

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

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	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

367

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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 Profile 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): >05412 Date Analyzed: 10/30/92

Instrument ID: GC/MSD 5970 #1 Time Analyzed: 10:38

Matrix: Water Column: Capillary

	EPA SAMPLE NO.	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.	
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

METAL ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		No	Yes
1.	Calibration Summary Meet Criteria	___	N/A
2.	ICP Interference Check Sample Results Summary Submitted (if applicable) / Meet Criteria.	___	N/A
3.	Serial Dilution Summary Submitted (if applicable) / Meet Criteria.	___	N/A
4.	Laboratory Control Sample Summary Submitted (if applicable) / Meet Criteria.	___	N/A
5.	Blank Contamination - If yes, list compounds and concentrations in each blank: None		
6.	Matrix Spike/ Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries which fall outside the acceptable range)	___	✓
7.	Extraction Holding Time Met	___	✓
	If not met, list number of days exceeded for each sample:		
8.	Analysis Holding Time Met	___	✓
	If not met, list number of days exceeded for each sample:		

Additional Comments:

Laboratory Manager: Brian MK Date: 1-24-94

Samples 5402 - 5405

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		No	Yes
1.	Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	___	✓
2.	GC/MS Tune Specifications		
	a. BFB Meet Criteria	___	✓
	b. DFTPP Meet Criteria	___	✓
3.	GC/MS Tuning Frequency - Performed every 24 hours for 600 series and 12 hours for 8000 series.	___	✓
4.	GC/MS Calibration - Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	___	✓
5.	GC/MS Calibration Requirements		
	a. Calibration Check Compounds	___	✓
	b. System Performance Check Compounds	___	✓

6. Blank Contamination - If yes, list compounds and concentrations in each blank:

   a. VOA Fraction None
   b. B/N Fraction None
   c. Acid Fraction _____

7.	Surrogate Recoveries Meet Criteria	___	✓

If not met, list those compounds and their recoveries which fall outside the acceptable range:

   a. VOA Fraction _____
   b. B/N Fraction _____
   c. Acid Fraction _____

	If not met, were the calculations checked and the results qualified as "estimated"?	___	N/A
8.	Matrix Spike/ Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries which fall outside the acceptable range)	___	✓

   a. VOA Fraction _____
   b. B/N Fraction _____
   c. Acid Fraction _____

9.	Internal Standard Area/Retention Time Shift Meet Criteria	___	✓

Samples 5402 to 5405

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (CONTINUED)

	No	Yes
10. Extraction Holding Time Met	___	✓

If not met, list number of days exceeded for each sample: _____

11. Analysis Holding Time Met	___	✓

If not met, list number of days exceeded for each sample: _____

Additional Comments: _____

Laboratory Manager: B- MK Date: 1-24-94

Samples 5402 to 5405

missing Fraction
TB + FB from 9332/5

File Copy

618 HERON DRIVE, P.O. BOX 489 • BRIDGEPORT, NJ 08014-0489 • 609-467-9521

E-SYSTEMS, INC.

PROJECT: U.S. ARMY-FORT MONMOUTH, NJ BLDG 3021

ANALYSIS NO:	CLIENT ID:
A 5402	MW 1
A 5403	MW 2
A 5404	MW 3
A 5405	FIELD BLANK

DATE RECEIVED: NOVEMBER 22, 1993

TWENTY FIRST CENTURY
ENVIRONMENTAL, INC.

Richard W Lynch

RICHARD W. LYNCH
LABORATORY MANAGER

TABLE OF CONTENTS

NARRATIVE

Please note that the BN portion for samples A5403 and A5404 (Client ID MW 2 and MW 3) was re-extracted out of hold due to surrogate problems. The results for both runs are included. There were no other problems encountered during the analysis of this batch of samples (A5402 to A5405). All other extractions and analysis were completed within proper hold times.

CHAIN OF CUSTODY

21ST CENTURY ENVIRONMENTAL

618 HERON DRIVE, P.O. BOX 489 • BRIDGEPORT, NJ 08014-0489
609.467.9521 • 609.467.4523 FAX

A5403 - A5405

CUSTOMER: FT Monmouth
ADDRESS:
TELEPHONE:
PROJECT:
PROJECT MANAGER:
PROJECT LOCATION: 8 & 21 STATE:
PO NUMBER:

TURNAROUND (INDICATE CALENDAR DAYS, CONFIRM WITH LAB): 2 5 7 14 21 OTHER:
DELIVERABLES (PLEASE CIRCLE): TIER 1 TIER II ECRA
CLP RESULTS ONLY OTHER: BIAS CORRECTION
FAX RESULTS TO:

COC 02

ADDITIONAL INFORMATION / SPECIAL INSTRUCTIONS

SAMPLE NUMBER	SAMPLE DESCRIPTION	MATRIX	DATE	TIME	COMP	GRAB	NUMBER OF CONTAINERS	METHOD / ANALYSIS: VOLATILE ORGANICS	SEMI VOA'S (BNA'S)	PESTICIDES / PCB'S	PCB'S	BTEX	TPH-PETROLEUM HYDROCARBONS	CORROSIVITY	IGNITABILITY	FLASHPOINT	REACTIVITY	TOC	TCLP METALS	TCLP VOLATILE ORGANICS	TCLP SEMI VOA'S (BNA'S)	TCLP PEST / HERB	PRIORITY POLLUTANT METALS	HSL METALS (23)	ADDITIONAL ANALYSIS
	MW1	WATER	11/22	15:30			2	2	2															2	1
	MW2			16:00			2	2																2	1
	MW3			16:30			2	2																2	1
	FIELD BLANK			16:00			2	2																2	1

8260, 1,4-Dioxane
PB

Relinquished By:	Date	Time	Received By:	Date	Time
			G. Cal	11/22/13	1830

WHITE
LAB COPY

YELLOW
CUSTOMER COPY

Purgeables	U.S.E.P.A. Method 624 - This is a purge and trap Gas Chromatograph/ Mass Spectrometer (GC/MS) method applicable to the determination of the compounds listed in the U.S.E.P.A. Manual entitled "Test Procedures for the Analysis of Organic Pollutants". An HP5996 GC/MS was used with a capillary column. Method detection limits are as stated. Soil samples are prepared for analysis as prescribed in Method 8240/8260 from SW-846.
Acid Extractables Base Neutrals	U.S.E.P.A. Method 625 - This method covers the determination of a number of organic compounds that are partitioned in an organic solvent and amenable to gas chromatography/mass spectrometer (GC/MS) method applicable to the determination of the compounds listed in the U.S.E.P.A. manual entitled "Test Procedures for the Analysis of Organic Pollutants". A HP5970 was used with a DB-5 FSCC. Method detection limits are as stated. Soil samples were prepared for analysis as prescribed in Method and analyzed as prescribed in Method 8270 from SW-846.
Metals	Soil samples for metal analysis were run in accordance with the methods prescribed in SW-846. This includes a nitric acid digestion followed by either Furnace, Flame Atomic Absorption, Flameless Atomic Absorption, or Inductively Coupled Plasma analysis. Aqueous samples for metals analysis were run in accordance with the methods prescribed in Methods for Chemical Analysis of Water and Wastes, EPA-600-4-79-020 March 1983.

LABORATORY CHRONICLE

RECEIPT/REFRIGERATION 11/22/93

ORGANICS
EXTRACTION

1. Acids NA
2. Base/Neutrals 11/24/93-12/9/93
3. Pesticides/PCB's/Herbicides NA
4. Petroleum Hydrocarbons/Oil & Grease NA

ANALYSIS

1. Volatiles 11/29/93-12/1/93
2. Acids NA
3. Base/Neutrals 12/2/93-12/9/93
4. Pesticides/PCB's/Herbicides NA
5. Petroleum Hydrocarbons/Oil & Grease NA
6. Total Organic Carbon NA

Section Supervisor
Review & Approval Jeffrey G Martin

INORGANICS

1. Metals 11/23/93 - 1/14/94
2. Cyanides NA
3. Phenols NA

OTHER ANALYTES

Section Supervisor
Review & Approval Matthew R. Lee

Quality Control Supervisor
Review & Approval

Laboratory Director
Review & Approval Richard W Symonds

If fractions are re-extracted and re-analyzed because initial endeavors did not meet quality control acceptance criteria, include dates for both.

RESULT SUMMARY

CERTIFICATE OF ANALYSIS

U.S. ARMY-FORT MONMOUTH, NJ BLDG 3021

LEAD

ANALYSIS NO:	CLIENT ID:	MDL (mg/L)	RESULT (mg/L)
A 5402	MW 1	0.003	0.003

CERTIFICATE OF ANALYSIS

U.S. ARMY-FORT MONMOUTH, NJ BLDG 3021

LEAD

ANALYSIS NO:	CLIENT ID:	MDL (mg/L)	RESULT (mg/L)
A 5403	MW2	0.003	N.D.

CERTIFICATE OF ANALYSIS

U.S. ARMY-FORT MONMOUTH, NJ BLDG 3021

LEAD

ANALYSIS NO:	CLIENT ID:	MDL (mg/L)	RESULT (mg/L)
A 5404	MW3	0.003	N.D.

CERTIFICATE OF ANALYSIS

U.S. ARMY-FORT MONMOUTH, NJ BLDG 3021

LEAD

ANALYSIS NO:	CLIENT ID:	MDL (mg/L)	RESULT (mg/L)
A 5405	Field Blank	0.003	N.D.

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A5402	DILUTION FACTOR	1.00
CLIENT ID	MW-1 BLDG 3021	COMMENTS	HNU NA
DATA FILE	>A4528	DATE ANALYZED	11/30/93

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

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	100	76 - 114	OK
Toluene-d8	98.2	88 - 110	OK
Bromofluorobenzene	105	86 - 115	OK

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

21st Century Environmental Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY, FT. MONMOUTH, NJ	MATRIX	Water
SAMPLE NUMBER	A5402 E-SYSTEM	DILUTION FACTOR	1.00
CLIENT ID	BLDG 3021 MW-1	COMMENTS	NONE
DATA FILE	>C3195	DATE ANALYZED	12/02/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-Nitrosodimethylamine	ND	10	2,6-Dinitrotoluene	ND	10
bis(-2-Chloroethyl)Ether	ND	10	Diethylphthalate	ND	10
1,3-Dichlorobenzene	ND	10	4-Chlorophenyl-phenylether	ND	10
1,4-Dichlorobenzene	ND	10	Fluorene	ND	10
Benzyl Alcohol	ND	10	4-Nitroaniline	ND	50
1,2-Dichlorobenzene	ND	10	N-Nitrosodiphenylamine	ND	10
bis(2-chloroisopropyl)Ether	ND	10	4-Bromophenyl-phenylether	ND	10
N-Nitroso-Di-n-Propylamine	ND	10	Hexachlorobenzene	ND	10
Hexachloroethane	ND	10	Phenanthrene	ND	10
Nitrobenzene	ND	10	Anthracene	ND	10
Isophorone	ND	10	Di-n-Butylphthalate	ND	10
Benzoic Acid	ND	50	Fluoranthene	ND	10
bis(-2-Chloroethoxy)Methane	ND	10	Pyrene	ND	10
1,2,4-Trichlorobenzene	ND	10	Butylbenzylphthalate	ND	10
Naphthalene	ND	10	3,3'-Dichlorobenzidine	ND	20
4-Chloroaniline	ND	10	Benzo(a)Anthracene	ND	10
Hexachlorobutadiene	ND	10	Bis(2-Ethylhexyl)Phthalate	3.6 J	10
2-Methylnaphthalene	ND	10	Chrysene	ND	10
Hexachlorocyclopentadiene	ND	10	Di-n-Octyl Phthalate	ND	10
2-Chloronaphthalene	ND	10	Benzo(b)Fluoranthene	ND	10
2-Nitroaniline	ND	50	Benzo(k)Fluoranthene	ND	10
Dimethyl Phthalate	ND	10	Benzo(a)Pyrene	ND	10
Acenaphthylene	ND	10	Indeno(1,2,3-cd)Pyrene	ND	10
3-Nitroaniline	ND	50	Dibenzo(a,h)Anthracene	ND	10
Acenaphthene	ND	10	Benzo(g,h,i)Perylene	ND	10
Dibenzofuran	ND	10	Benzidine	ND	20
2,4-Dinitrotoluene	ND	10			

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

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-1

Lab Name: 21st Century Environmental Contract: N/A

Client Name: US Army Ft. Monmouth, NJ Client ID: BLDG 3021

Matrix: (soil/water) WATER Lab Sample ID: A5402

Sample wt/vol: 5 (g/mL) ml Lab File ID: >A4528

Level: (low/med) LOW Date Received: NA

% Moisture: NA Date Analyzed: 11/30/93

Column: DB-624 Dilution Factor: 1

Number TICs found: 0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	NO UNKNOWNS			

FORM I VOA-TIC 1/87 Rev.

C0011

E1

EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BLDG 3021
MW-1

Client: US Army, Ft. Monmouth, NJ

Comments: None

Matrix: (soil/water) WATER

Lab Sample ID: A5402

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: >C3195

Level: LOW

Date Received: NA

% Moisture: 100

Date Analyzed 12/02/93

Extraction: (Sepf/Cont/Sonc) SEPF

Date Extracted 11/24/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 1

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST CONC
	NO NON-TARGETED COMPOUNDS IDENTIFIED		

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A5403	DILUTION FACTOR	1.00
CLIENT ID	MW-2 BLDG 3021	COMMENTS	HNU NA
DATA FILE	>82221	DATE ANALYZED	12/01/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	2-Chloroethylvinylether	ND	10
Acrylonitrile	ND	50	2-Hexanone	ND	10
Chloromethane	ND	10	trans-1,3-Dichloropropene	ND	5
Bromomethane	ND	10	Toluene	ND	5
Vinyl Chloride	ND	10	cis-1,3-Dichloropropene	ND	5
Chloroethane	ND	10	1,1,2,2-Tetrachloroethane	ND	5
Acetone	4.1 J	10	1,1,2-Trichloroethane	ND	5
1,1-Dichloroethene	ND	5	4-Methyl-2-pentanone	ND	10
Carbon Disulfide	ND	10	Tetrachloroethene	ND	5
Methylene Chloride	ND	5	Dibromochloromethane	ND	5
1,2-Dichloroethene(trans)	ND	5	Chlorobenzene	ND	5
1,1-Dichloroethane	ND	5	Ethylbenzene	ND	5
Vinyl Acetate	ND	5	m&p-Xylenes	ND	5
2-Butanone	ND	10	o-Xylene	ND	5
Chloroform	ND	5	Styrene	ND	5
1,1,1-Trichloroethane	ND	5	Bromoform	ND	5
Carbon Tetrachloride	ND	5	m-Dichlorobenzene	ND	5
1,2-Dichloroethane	ND	5	p-Dichlorobenzene	ND	5
Benzene	ND	5	o-Dichlorobenzene	ND	5
Trichloroethene	ND	5	Methyl Tertiary Butyl Ether	ND	10
1,2-Dichloropropane	ND	5	Tertiary Butyl Alcohol	ND	50
Bromodichloromethane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	94.0	76 - 114	OK
Toluene-d8	98.5	88 - 110	OK
Bromofluorobenzene	95.6	86 - 115	OK

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

C8014

21st Century Environmental Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH,NJ	MATRIX	Water
SAMPLE NUMBER	A5403 E-SYSTEM	DILUTION FACTOR	1.00
CLIENT ID	BLDG 3021, MW-2	QA BATCH	
DATA FILE	>C3196	DATE ANALYZED	12/02/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-Nitrosodimethylamine	ND	10	2,6-Dinitrotoluene	ND	10
bis(-2-Chloroethyl)Ether	ND	10	Diethylphthalate	ND	10
1,3-Dichlorobenzene	ND	10	4-Chlorophenyl-phenylether	ND	10
1,4-Dichlorobenzene	ND	10	Fluorene	ND	10
Benzyl Alcohol	ND	10	4-Nitroaniline	ND	50
1,2-Dichlorobenzene	ND	10	N-Nitrosodiphenylamine	ND	10
bis(2-chloroisopropyl)Ether	ND	10	4-Bromophenyl-phenylether	ND	10
N-Nitroso-Di-n-Propylamine	ND	10	Hexachlorobenzene	ND	10
Hexachloroethane	ND	10	Phenanthrene	ND	10
Nitrobenzene	ND	10	Anthracene	ND	10
Isophorone	ND	10	Di-n-Butylphthalate	ND	10
Benzoic Acid	ND	50	Fluoranthene	ND	10
bis(-2-Chloroethoxy)Methane	ND	10	Pyrene	ND	10
1,2,4-Trichlorobenzene	ND	10	Butylbenzylphthalate	ND	10
Naphthalene	ND	10	3,3'-Dichlorobenzidine	ND	20
4-Chloroaniline	ND	10	Benzo(a)Anthracene	ND	10
Hexachlorobutadiene	ND	10	Bis(2-Ethylhexyl)Phthalate	21	10
2-Methylnaphthalene	ND	10	Chrysene	ND	10
Hexachlorocyclopentadiene	ND	10	Di-n-Octyl Phthalate	ND	10
2-Chloronaphthalene	ND	10	Benzo(b)Fluoranthene	ND	10
2-Nitroaniline	ND	50	Benzo(k)Fluoranthene	ND	10
Dimethyl Phthalate	ND	10	Benzo(a)Pyrene	ND	10
Acenaphthylene	ND	10	Indeno(1,2,3-cd)Pyrene	ND	10
3-Nitroaniline	ND	50	Dibenzo(a,h)Anthracene	ND	10
Acenaphthene	ND	10	Benzo(g,h,i)Perylene	ND	10
Dibenzofuran	ND	10	Benzidine	ND	20
2,4-Dinitrotoluene	ND	10			

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

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-2

Lab Name: 21st Century Environmental Contract: N/A

Client Name: US Army Ft. Monmouth, NJ Client ID: BLDG 3021

Matrix: (soil/water) WATER Lab Sample ID: A5403

Sample wt/vol: 5 (g/mL) ml Lab File ID: >B2221

Level: (low/med) LOW Date Received: NA

% Moisture: NA Date Analyzed: 12/01/93

Column: DB-624 Dilution Factor: 1

Number TICs found: 0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	NO UNKNOWNS			

FORM I VOA-TIC 1/87 Rev.

C0016

E1

EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BLDG 3021
MW-2

Client: US Army, Ft. Monmouth, NJ

Comments: None

Matrix: (soil/water) WATER

Lab Sample ID: A5403

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: >C3196

Level: LOW

Date Received: NA

% Moisture: 100

Date Analyzed 12/02/93

Extraction: (Sepf/Cont/Sonc) SEPF

Date Extracted 11/24/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 1

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST CONC
	NO NON-TARGETED COMPOUNDS IDENTIFIED		

21st Century Environmental Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY, FT. MONMOUTH, NJ	MATRIX	Water
SAMPLE NUMBER	A5403 E-SYSTEM	DILUTION FACTOR	1.00
CLIENT ID	BLDG 3021, MW-2	COMMENTS	NONE
DATA FILE	>C3247	DATE ANALYZED	12/02/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-Nitrosodimethylamine	ND	10	2,6-Dinitrotoluene	ND	10
bis(-2-Chloroethyl)Ether	ND	10	Diethylphthalate	ND	10
1,3-Dichlorobenzene	ND	10	4-Chlorophenyl-phenylether	ND	10
1,4-Dichlorobenzene	ND	10	Fluorene	ND	10
Benzyl Alcohol	ND	10	4-Nitroaniline	ND	50
1,2-Dichlorobenzene	ND	10	N-Nitrosodiphenylamine	ND	10
bis(2-chloroisopropyl)Ether	ND	10	4-Bromophenyl-phenylether	ND	10
N-Nitroso-Di-n-Propylamine	ND	10	Hexachlorobenzene	ND	10
Hexachloroethane	ND	10	Phenanthrene	ND	10
Nitrobenzene	ND	10	Anthracene	ND	10
Isophorone	ND	10	Di-n-Butylphthalate	ND	10
Benzoic Acid	ND	50	Fluoranthene	ND	10
bis(-2-Chloroethoxy)Methane	ND	10	Pyrene	ND	10
1,2,4-Trichlorobenzene	ND	10	Butylbenzylphthalate	ND	10
Naphthalene	ND	10	3,3'-Dichlorobenzidine	ND	20
4-Chloroaniline	ND	10	Benzo(a)Anthracene	ND	10
Hexachlorobutadiene	ND	10	Bis(2-Ethylhexyl)Phthalate	5.0 J	10
2-Methylnaphthalene	ND	10	Chrysene	ND	10
Hexachlorocyclopentadiene	ND	10	Di-n-Octyl Phthalate	ND	10
2-Chloronaphthalene	ND	10	Benzo(b)Fluoranthene	ND	10
2-Nitroaniline	ND	50	Benzo(k)Fluoranthene	ND	10
Dimethyl Phthalate	ND	10	Benzo(a)Pyrene	ND	10
Acenaphthylene	ND	10	Indeno(1,2,3-cd)Pyrene	ND	10
3-Nitroaniline	ND	50	Dibenzo(a,h)Anthracene	ND	10
Acenaphthene	ND	10	Benzo(g,h,i)Perylene	ND	10
Dibenzofuran	ND	10	Benzidine	ND	20
2,4-Dinitrotoluene	ND	10			

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

E1 EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BLDG 3021
MW-2

Client: US Army, Ft. Monmouth, NJ

Comments: None

Matrix: (soil/water) WATER

Lab Sample ID: A5403R

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: >C3247

Level: LOW

Date Received: NA

% Moisture: 100

Date Analyzed 12/09/93

Extraction: (Sepf/Cont/Sonc) SEPF

Date Extracted 12/09/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 1

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	UNKNOWN	28.94	8.4

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A5404	DILUTION FACTOR	1.00
CLIENT ID	MW-3 BLDG 3021	COMMENTS	HNU NA
DATA FILE	>B2222	DATE ANALYZED	12/01/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	2-Chloroethylvinylether	ND	10
Acrylonitrile	ND	50	2-Hexanone	ND	10
Chloromethane	ND	10	trans-1,3-Dichloropropene	ND	5
Bromomethane	ND	10	Toluene	ND	5
Vinyl Chloride	ND	10	cis-1,3-Dichloropropene	ND	5
Chloroethane	ND	10	1,1,2,2-Tetrachloroethane	ND	5
Acetone	3.4 J	10	1,1,2-Trichloroethane	ND	5
1,1-Dichloroethene	ND	5	4-Methyl-2-pentanone	ND	10
Carbon Disulfide	ND	10	Tetrachloroethene	ND	5
Methylene Chloride	4.4 J	5	Dibromochloromethane	ND	5
1,2-Dichloroethene(trans)	ND	5	Chlorobenzene	ND	5
1,1-Dichloroethane	ND	5	Ethylbenzene	ND	5
Vinyl Acetate	ND	5	m&p-Xylenes	ND	5
2-Butanone	ND	10	o-Xylene	ND	5
Chloroform	ND	5	Styrene	ND	5
1,1,1-Trichloroethane	ND	5	Bromoform	ND	5
Carbon Tetrachloride	ND	5	m-Dichlorobenzene	ND	5
1,2-Dichloroethane	ND	5	p-Dichlorobenzene	ND	5
Benzene	ND	5	o-Dichlorobenzene	ND	5
Trichloroethene	ND	5	Methyl Tertiary Butyl Ether	ND	10
1,2-Dichloropropane	ND	5	Tertiary Butyl Alcohol	ND	50
Bromodichloromethane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	93.3	76 - 114	OK
Toluene-d8	96.6	88 - 110	OK
Bromofluorobenzene	98.3	86 - 115	OK

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

C5024

21st Century Environmental Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH,NJ	MATRIX	Water
SAMPLE NUMBER	A5404 E-SYSTEM	DILUTION FACTOR	1.00
CLIENT ID	BLDG 3021, MW-3	QA BATCH	
DATA FILE	>C3203	DATE ANALYZED	12/03/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-Nitrosodimethylamine	ND	10	2,6-Dinitrotoluene	ND	10
bis(-2-Chloroethyl)Ether	ND	10	Diethylphthalate	ND	10
1,3-Dichlorobenzene	ND	10	4-Chlorophenyl-phenylether	ND	10
1,4-Dichlorobenzene	ND	10	Fluorene	ND	10
Benzyl Alcohol	ND	10	4-Nitroaniline	ND	50
1,2-Dichlorobenzene	ND	10	N-Nitrosodiphenylamine	ND	10
bis(2-chloroisopropyl)Ether	ND	10	4-Bromophenyl-phenylether	ND	10
N-Nitroso-Di-n-Propylamine	ND	10	Hexachlorobenzene	ND	10
Hexachloroethane	ND	10	Phenanthrene	ND	10
Nitrobenzene	ND	10	Anthracene	ND	10
Isophorone	ND	10	Di-n-Butylphthalate	ND	10
Benzoic Acid	ND	50	Fluoranthene	ND	10
bis(-2-Chloroethoxy)Methane	ND	10	Pyrene	ND	10
1,2,4-Trichlorobenzene	ND	10	Butylbenzylphthalate	ND	10
Naphthalene	ND	10	3,3'-Dichlorobenzidine	ND	20
4-Chloroaniline	ND	10	Benzo(a)Anthracene	ND	10
Hexachlorobutadiene	ND	10	Bis(2-Ethylhexyl)Phthalate	ND	10
2-Methylnaphthalene	ND	10	Chrysene	ND	10
Hexachlorocyclopentadiene	ND	10	Di-n-Octyl Phthalate	ND	10
2-Chloronaphthalene	ND	10	Benzo(b)Fluoranthene	ND	10
2-Nitroaniline	ND	50	Benzo(k)Fluoranthene	ND	10
Dimethyl Phthalate	ND	10	Benzo(a)Pyrene	ND	10
Acenaphthylene	ND	10	Indeno(1,2,3-cd)Pyrene	ND	10
3-Nitroaniline	ND	50	Dibenzo(a,h)Anthracene	ND	10
Acenaphthene	ND	10	Benzo(g,h,i)Perylene	ND	10
Dibenzofuran	ND	10	Benzidine	ND	20
2,4-Dinitrotoluene	ND	10			

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

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-3

Lab Name: 21st Century Environmental Contract: N/A

Client Name: US Army Ft. Monmouth, NJ

Client ID: BLDG 3021

Matrix: (soil/water) WATER

Lab Sample ID: A5404

Sample wt/vol: 5 (g/mL) ml

Lab File ID: >B2222

Level: (low/med) LOW

Date Received: NA

% Moisture: NA

Date Analyzed: 12/01/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	NO UNKNOWNS			

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E1

EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Bldg 3021
MW-3

Client: US Army, Ft. Monmouth, NJ

Comments: None

Matrix: (soil/water) WATER

Lab Sample ID: A5404

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: >C3203

Level: LOW

Date Received: NA

% Moisture: 100

Date Analyzed 12/03/93

Extraction: (Sepf/Cont/Sonc) SEPF

Date Extracted 11/24/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 0

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST CONC
	NO UNKNOWN COMPOUNDS IDENTIFIED		

21st Century Environmental Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY, FT. MONMOUTH, NJ	MATRIX	Water
SAMPLE NUMBER	A5404 E-SYSTEM RESET	DILUTION FACTOR	1.00
CLIENT ID	BLDG 3021 MW-3	COMMENTS	NONE
DATA FILE	>C3246	DATE ANALYZED	12/02/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-Nitrosodimethylamine	ND	10	2,6-Dinitrotoluene	ND	10
bis(-2-Chloroethyl)Ether	ND	10	Diethylphthalate	ND	10
1,3-Dichlorobenzene	ND	10	4-Chlorophenyl-phenylether	ND	10
1,4-Dichlorobenzene	ND	10	Fluorene	ND	10
Benzyl Alcohol	ND	10	4-Nitroaniline	ND	50
1,2-Dichlorobenzene	ND	10	N-Nitrosodiphenylamine	ND	10
bis(2-chloroisopropyl)Ether	ND	10	4-Bromophenyl-phenylether	ND	10
N-Nitroso-Di-n-Propylamine	ND	10	Hexachlorobenzene	ND	10
Hexachloroethane	ND	10	Phenanthrene	ND	10
Nitrobenzene	ND	10	Anthracene	ND	10
Isophorone	ND	10	Di-n-Butylphthalate	ND	10
Benzoic Acid	ND	50	Fluoranthene	ND	10
bis(-2-Chloroethoxy)Methane	ND	10	Pyrene	ND	10
1,2,4-Trichlorobenzene	ND	10	Butylbenzylphthalate	ND	10
Naphthalene	ND	10	3,3'-Dichlorobenzidine	ND	20
4-Chloroaniline	ND	10	Benzo(a)Anthracene	ND	10
Hexachlorobutadiene	ND	10	Bis(2-Ethylhexyl)Phthalate	ND	10
2-Methylnaphthalene	ND	10	Chrysene	ND	10
Hexachlorocyclopentadiene	ND	10	Di-n-Octyl Phthalate	ND	10
2-Chloronaphthalene	ND	10	Benzo(b)Fluoranthene	ND	10
2-Nitroaniline	ND	50	Benzo(k)Fluoranthene	ND	10
Dimethyl Phthalate	ND	10	Benzo(a)Pyrene	ND	10
Acenaphthylene	ND	10	Indeno(1,2,3-cd)Pyrene	ND	10
3-Nitroaniline	ND	50	Dibenzo(a,h)Anthracene	ND	10
Acenaphthene	ND	10	Benzo(g,h,i)Perylene	ND	10
Dibenzofuran	ND	10	Benzidine	ND	20
2,4-Dinitrotoluene	ND	10			

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

E1

EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BLDG 3021
MW-3

Client: US Army, Ft. Monmouth, NJ

Comments: None

Matrix: (soil/water) WATER

Lab Sample ID: A5404R

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: >C3246

Level: LOW

Date Received: NA

% Moisture: 100

Date Analyzed 12/09/93

Extraction: (Sepf/Cont/Sonc) SEPF

Date Extracted 12/09/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 1

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	UNKNOWN	28.94	13

C0026

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A5405	DILUTION FACTOR	1.00
CLIENT ID	FIELD BLANK	COMMENTS	HNU NA
DATA FILE	>A4525	DATE ANALYZED	11/29/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	2-Chloroethylvinylether	ND	10
Acrylonitrile	ND	50	2-Hexanone	ND	10
Chloromethane	ND	10	trans-1,3-Dichloropropene	ND	5
Bromomethane	ND	10	Toluene	ND	5
Vinyl Chloride	ND	10	cis-1,3-Dichloropropene	ND	5
Chloroethane	ND	10	1,1,2,2-Tetrachloroethane	ND	5
Acetone	20	10	1,1,2-Trichloroethane	ND	5
1,1-Dichloroethene	ND	5	4-Methyl-2-pentanone	ND	10
Carbon Disulfide	ND	10	Tetrachloroethene	ND	5
Methylene Chloride	2.5 J	5	Dibromochloromethane	ND	5
1,2-Dichloroethene(trans)	ND	5	Chlorobenzene	ND	5
1,1-Dichloroethane	ND	5	Ethylbenzene	ND	5
Vinyl Acetate	ND	5	m&p-Xylenes	ND	5
2-Butanone	ND	10	o-Xylene	ND	5
Chloroform	ND	5	Styrene	ND	5
1,1,1-Trichloroethane	ND	5	Bromoform	ND	5
Carbon Tetrachloride	ND	5	m-Dichlorobenzene	ND	5
1,2-Dichloroethane	ND	5	p-Dichlorobenzene	ND	5
Benzene	ND	5	o-Dichlorobenzene	ND	5
Trichloroethene	ND	5	Methyl Tertiary Butyl Ether	ND	10
1,2-Dichloropropane	ND	5	Tertiary Butyl Alcohol	ND	50
Bromodichloromethane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	102	76 - 114	OK
Toluene-d8	101	88 - 110	OK
Bromofluorobenzene	105	86 - 115	OK

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

21st Century Environmental Inc.
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY, FT. MONMOUTH, NJ	MATRIX	Water
SAMPLE NUMBER	A5405 E-SYSTEM	DILUTION FACTOR	1.00
CLIENT ID	BLDG 3021, FIELD BLANK	COMMENTS	NONE
DATA FILE	>C3197	DATE ANALYZED	12/02/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-Nitrosodimethylamine	ND	10	2,6-Dinitrotoluene	ND	10
bis(-2-Chloroethyl)Ether	ND	10	Diethylphthalate	ND	10
1,3-Dichlorobenzene	ND	10	4-Chlorophenyl-phenylether	ND	10
1,4-Dichlorobenzene	ND	10	Fluorene	ND	10
Benzyl Alcohol	ND	10	4-Nitroaniline	ND	50
1,2-Dichlorobenzene	ND	10	N-Nitrosodiphenylamine	ND	10
bis(2-chloroisopropyl)Ether	ND	10	4-Bromophenyl-phenylether	ND	10
N-Nitroso-Di-n-Propylamine	ND	10	Hexachlorobenzene	ND	10
Hexachloroethane	ND	10	Phenanthrene	ND	10
Nitrobenzene	ND	10	Anthracene	ND	10
Isophorone	ND	10	Di-n-Butylphthalate	ND	10
Benzoic Acid	ND	50	Fluoranthene	ND	10
bis(-2-Chloroethoxy)Methane	ND	10	Pyrene	ND	10
1,2,4-Trichlorobenzene	ND	10	Butylbenzylphthalate	ND	10
Naphthalene	ND	10	3,3'-Dichlorobenzidine	ND	20
4-Chloroaniline	ND	10	Benzo(a)Anthracene	ND	10
Hexachlorobutadiene	ND	10	Bis(2-Ethylhexyl)Phthalate	ND	10
2-Methylnaphthalene	ND	10	Chrysene	ND	10
Hexachlorocyclopentadiene	ND	10	Di-n-Octyl Phthalate	ND	10
2-Chloronaphthalene	ND	10	Benzo(b)Fluoranthene	ND	10
2-Nitroaniline	ND	50	Benzo(k)Fluoranthene	ND	10
Dimethyl Phthalate	ND	10	Benzo(a)Pyrene	ND	10
Acenaphthylene	ND	10	Indeno(1,2,3-cd)Pyrene	ND	10
3-Nitroaniline	ND	50	Dibenzo(a,h)Anthracene	ND	10
Acenaphthene	ND	10	Benzo(g,h,i)Perylene	ND	10
Dibenzofuran	ND	10	Benzidine	ND	20
2,4-Dinitrotoluene	ND	10			

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

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD BLANK

Lab Name: 21st Century Environmental Contract: N/A

Client Name: US Army Ft. Monmouth, NJ Client ID:

Matrix: (soil/water) WATER Lab Sample ID: A5405

Sample wt/vol: 5 (g/mL) ml Lab File ID: >A4525

Level: (low/med) LOW Date Received: NA

% Moisture: NA Date Analyzed: 11/29/93

Column: DB-624 Dilution Factor: 1

Number TICs found: 0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	NO UNKNOWNS			

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C0030

E1 EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BLDG 3021
FIELD BLK

US Army, Ft. Monmouth, NJ

soil/water) WATER

wt/vol: 1000 (g/mL) ML

LOW

e: 100

tion: (Sepf/Cont/Sonc) SEPF

r N): N

DB-5

TICs Found 1

Comments: None

Lab Sample ID: A5405

Lab File ID: >C3197

Date Received: NA

Date Analyzed 12/02/93

Date Extracted 11/24/93

Dilution Factor: 1

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/L

METR	COMPOUND NAME	RT	EST CONC
	NO NON-TARGETED COMPOUNDS IDENTIFIED		

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A5400	DILUTION FACTOR	1.00
CLIENT ID	TRIP BLANK	COMMENTS	HNU NA
DATA FILE	>A4524	DATE ANALYZED	11/29/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	2-Chloroethylvinylether	ND	10
Acrylonitrile	ND	50	2-Hexanone	ND	10
Chloromethane	ND	10	trans-1,3-Dichloropropene	ND	5
Bromomethane	ND	10	Toluene	ND	5
Vinyl Chloride	ND	10	cis-1,3-Dichloropropene	ND	5
Chloroethane	ND	10	1,1,2,2-Tetrachloroethane	ND	5
Acetone	5.9 J	10	1,1,2-Trichloroethane	ND	5
1,1-Dichloroethene	ND	5	4-Methyl-2-pentanone	ND	10
Carbon Disulfide	ND	10	Tetrachloroethene	ND	5
Methylene Chloride	2.8 J	5	Dibromochloromethane	ND	5
1,2-Dichloroethene(trans)	ND	5	Chlorobenzene	ND	5
1,1-Dichloroethane	ND	5	Ethylbenzene	ND	5
Vinyl Acetate	ND	5	m&p-Xylenes	ND	5
2-Butanone	ND	10	o-Xylene	ND	5
Chloroform	ND	5	Styrene	ND	5
1,1,1-Trichloroethane	ND	5	Bromoform	ND	5
Carbon Tetrachloride	ND	5	m-Dichlorobenzene	ND	5
1,2-Dichloroethane	ND	5	p-Dichlorobenzene	ND	5
Benzene	ND	5	o-Dichlorobenzene	ND	5
Trichloroethene	ND	5	Methyl Tertiary Butyl Ether	ND	10
1,2-Dichloropropane	ND	5	Tertiary Butyl Alcohol	ND	50
Bromodichloromethane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	102	76 - 114	OK
Toluene-d8	96.6	88 - 110	OK
Bromofluorobenzene	104	86 - 115	OK

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

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TRIP BLANK

Lab Name: 21st Century Environmental Contract: N/A

Client Name: US Army Ft. Monmouth, NJ Client ID:

Matrix: (soil/water) WATER Lab Sample ID: A5400

Sample wt/vol: 5 (g/mL) ml Lab File ID: >A4524

Level: (low/med) LOW Date Received: NA

% Moisture: NA Date Analyzed: 11/29/93

Column: DB-624 Dilution Factor: 1

Number TICs found: 0 CONCENTRATION UNITS (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	NO UNKNOWNS			

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