



**UNDERGROUND STORAGE TANK
CLOSURE AND SITE
INVESTIGATION REPORT
BUILDING 2567
NJDEP FACILITY UST NO. 081515
UST NOS. 42, 43, 44 AND 45
TMS NO. C-92-2950
SPILL CASE NOS. 89-12-12-1442 AND 91-8-27-1414**

Volume 1 of 2

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Prepared For:

UNITED STATES ARMY
Directorate of Public Works
Building 167
Fort Monmouth, New Jersey 07703

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EXECUTIVE SUMMARY

On 12 December 1989, the Directorate of Public Works (DPW) notified the New Jersey Department of Environmental Protection and Energy (NJDEP) of a suspected fuel leak at the Charles Wood gas station, Building 2567. Spill Case No. 89-12-12-1442 was assigned by the NJDEP. The U.S. Army-DPW investigated the suspected release by performing a tightness test of the premium gas line which was suspected of leaking. On 30 January 1990, this line passed the tightness test.

On 15 and 16 January 1991, routine tightness tests were performed of three underground storage tanks (USTs), identified as Nos. 42, 43, and 44. UST Nos. 42 and 44 passed the tank system tightness test, however UST No. 43 failed. In response to the failed tightness test, the DPW issued a purchase order for the removal of USTs of Building 2567 gas station and notified the NJDEP of the failed tightness test. NJDEP issued Spill Case No. 91-8-27-1414.

In response to the suspected discharges, four groundwater monitor wells were installed at the Building 2567 gas station on 9 October 1991. These wells were sampled on 10 December 1991 and sample results indicated lead and all volatile organic compounds were less than the NJDEP's Ground Water Quality Criteria, except for benzene, 1,2-dichloroethene, total xylene, and methylene chloride.

The groundwater monitor wells were resampled on 26 October 1992, 21 April 1993, 3 February and 31 March 1994. In general, the detected concentrations of volatile organic compounds declined during the subsequent samplings. However, lead was detected in groundwater samples at greater levels with each sampling. Results from 31 March 1994 indicated that all detected volatile organic compounds were less than the NJDEP's Class IIA Ground Water Quality Criteria, except for benzene, total xylene, and methylene chloride. Lead was detected only in monitor well MW-3 above the NJDEP's Class II A Ground Water Quality Criteria.

Concurrent with the groundwater sampling investigation program, the DPW pursued the closure of UST Nos. 42 through 45. On 26 June 1992, a UST Decommissioning/Closure Plan was submitted to the NJDEP, followed by submittal of an UST Closure Plan Approval Application on 5 August 1992. The NJDEP issued Closure Approval, TMS No. C-92-2950 on 14 September 1992.

During 2 to 5 February 1993, the four USTs were closed at U.S. Army Fort Monmouth, in Fort Monmouth, New Jersey. UST Nos. 42 to 45 were located adjacent to Building 2567 in the Charles Wood area of Fort Monmouth. UST Nos. 42 to 44 were single walled steel, 10,000-gallon capacity, unleaded gasoline tanks. UST No. 45 was a single walled steel, 6,000-gallon capacity, leaded gasoline tank. UST Nos. 42 to 45 were located adjacent to each other. Cycle Construction Incorporated (CCI) performed the tank closure. The tanks were inspected



following removal for cracks, corrosion holes and puncture holes for indications of historical leakage from the tanks. UST Nos. 42 to 45 were found to be in good condition with no corrosion holes.

Soils surrounding the tanks were screened visually and with air monitoring instruments for evidence of contamination. Based on visual observations and screening approximately 936 cubic yards of soil were removed from the area surrounding the USTs and pump island. In both areas excavation was continued until either no evidence of contamination was found, based on field observations, or until further removal of soil would have endangered the integrity of structures, and roadways adjacent to the areas of investigation. Despite the groundwater levels in the monitoring wells, groundwater was not encountered until the excavation reached 7 feet BGS. The excavations were therefore extended to 7 feet BGS when necessary. When the excavation was completed the area was backfilled with clean soil and the surface paved.

Post excavation soil samples were collected on 2 February 1993 and 24 February 1993. Soil samples were analyzed for total petroleum hydrocarbons (TPHC), volatile organic compounds, and lead. Analytical results were compared to both the Impact to Ground Water (ITGW) and Residential Direct Contact (RDC) Soil Cleanup Criteria established by NJDEP. TPHC and lead were detected in post-excavation samples, however, the results were below both the ITGW and RDC soil cleanup criteria. Thirteen of 23 samples analyzed for volatile organics exceeded the ITGW and/or RDC soil cleanup criteria for xylenes, benzene, or ethylbenzene.

Based on the reduction in groundwater contaminant levels, future impact on the environment is not anticipated. The reduction in groundwater contaminant levels is attributable to the following:

- The contaminant sources, tank Nos. 42 to 45, 936 cubic yards of soil and the pump island piping were successfully removed. The analytical testing of soil had indicated that limited residual contamination exists in the soil below the surface.
- The site was backfilled with clean material and paved. The asphalt pavement caps the site and precludes the infiltration of precipitation and other surface water to the ground, which reduces the potential for residual soil contaminants leaching from the soil into the groundwater.

On 23 September 1994 one additional monitoring well (MW-5) was installed to determine if contaminants were present downgradient from the site. Well MW-5 is located southeast of the site on the eastern side of Hope Road. The well was placed downgradient of the site based on previous groundwater level measurements. Well MW-5 will be used for future sampling events and to confirm groundwater flow patterns on the site. An addendum to this report will be provided to the NJDEP when groundwater sample analysis is complete.



SECTION 1.0

UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

On 5 February 1993, four underground storage tanks (USTs), UST Nos. 42 to 45, were closed at Building 2567 at U.S. Army Fort Monmouth, New Jersey. UST Nos. 42 to 44 were single wall steel, 10,000-gallon capacity, unleaded gasoline tanks. UST No. 45 was a single wall steel, 6,000-gallon capacity, leaded fuel tank. UST Nos. 42 to 45 were located immediately adjacent to each other. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP-DHWM on 26 June 1992 and approved 14 September 1992 (Closure approval No. C-92-2950).

All activities associated with the decommissioning of UST Nos. 42 to 45 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to: N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., N.J.A.C. 7:26E-1 et seq. and Occupational Safety and Health Administration (OSHA) 29 CFR 1910.146 & 29 CFR 1910.120. All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted onsite for inspection. Cycle Construction, Inc. (CCI), the contractors that conducted the decommissioning activities, are currently registered and certified by the NJDEP for performing UST closure activities.

The NJDEP Closure Approval and correspondence with the NJDEP have been included in Appendix A. The UST Site Assessment Summary Form for UST Nos. 42 to 45 has been included in Appendix B. The UST Site Assessment Summary Form has been signed and sealed by Mr. James Ott, Acting Director of DPW, U.S. Army Fort Monmouth.

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 NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST) regulations.

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 soil sampling investigation, are presented in the final section of this report.

The applicable NJDEP-BUST regulations at the date of closure were the "Technical Requirements for Site Remediation" (N.J.A.C. 7:26E-1 et seq., dated May 1992).



1.2 SITE DESCRIPTION AND UST HISTORY

Building 2567 is located off Laboratory Road in the Charles Wood area of U.S. Army, Fort Monmouth. A facility location map is provided in Figure 1-1. Building 2567 is used as the installation gas station and is situated on level ground. The gasoline dispenser area was located approximately 50 feet west of the UST field. A pipe chase approximately 60 feet in length connected the dispenser area to the UST field. Figure 1-2 provides a site map of the former UST location and dispenser area.

On 12 December 1989, the Directorate of Public Works (DPW) notified the New Jersey Department of Environmental Protection and Energy (NJDEP) of a fuel leak at the Charles Wood gas station, Building 2567 (Case No. 89-12-12-1442).

On 30 January 1990, a tightness test was conducted on the premium gasoline line by Herbert Lutz and Company located in Linden, New Jersey. The line tested tight.

On 15 and 16 January 1991, three underground storage tanks (USTs) identified by Nos. 42, 43, 44 and 45 were tightness tested by Tank Test Inc. (TTI). UST Nos. 42 and 44 passed the tank system tightness test, although UST No. 43 failed.

On 1 August 1991, a purchase order to obtain permits for the removal of USTs at Buildings 2567, 8003, 8005 and 8006 was sent to the NJDEP by E-Systems Inc./Serv-Air (SAI).

On 27 August 1991, the NJDEP was notified of the UST which failed the tank system tightness test on 15 and 16 January 1991 (Case No. 91-8-27-1414). 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 the DPW.

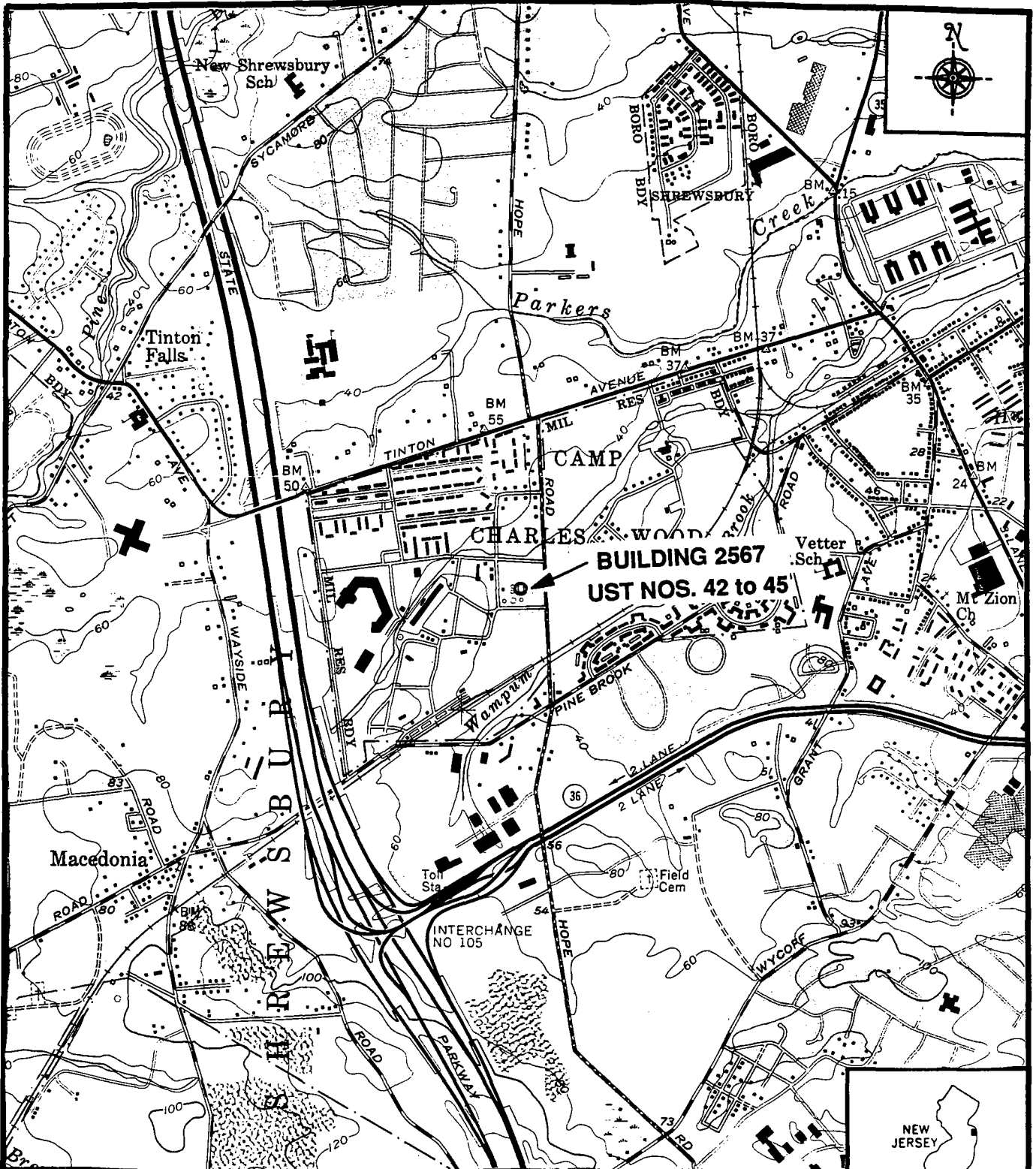
On 26 June 1992, a UST Decommissioning/Closure Plan was submitted to NJDEP.

On 5 August 1992, a UST Closure Plan Approval Application was submitted to NJDEP. The state responded on 14 September 1992 with a Closure Approval (TMS No. C-92-2950).

On 29 October 1992, a pre-construction conference was conducted between CCI and DPW.

On 24 November 1992, DPW sent a correspondence to NJDEP requesting a one year extension for the existing closure permits.

Between 2 and 5 February 1993, four USTs were closed at U.S. Army Fort Monmouth, in Fort Monmouth, New Jersey. UST Nos. 42 to 45 were located adjacent to Building 2567 in the Charles Wood area of Fort Monmouth. UST Nos. 42 to 44 were single walled steel, 10,000-



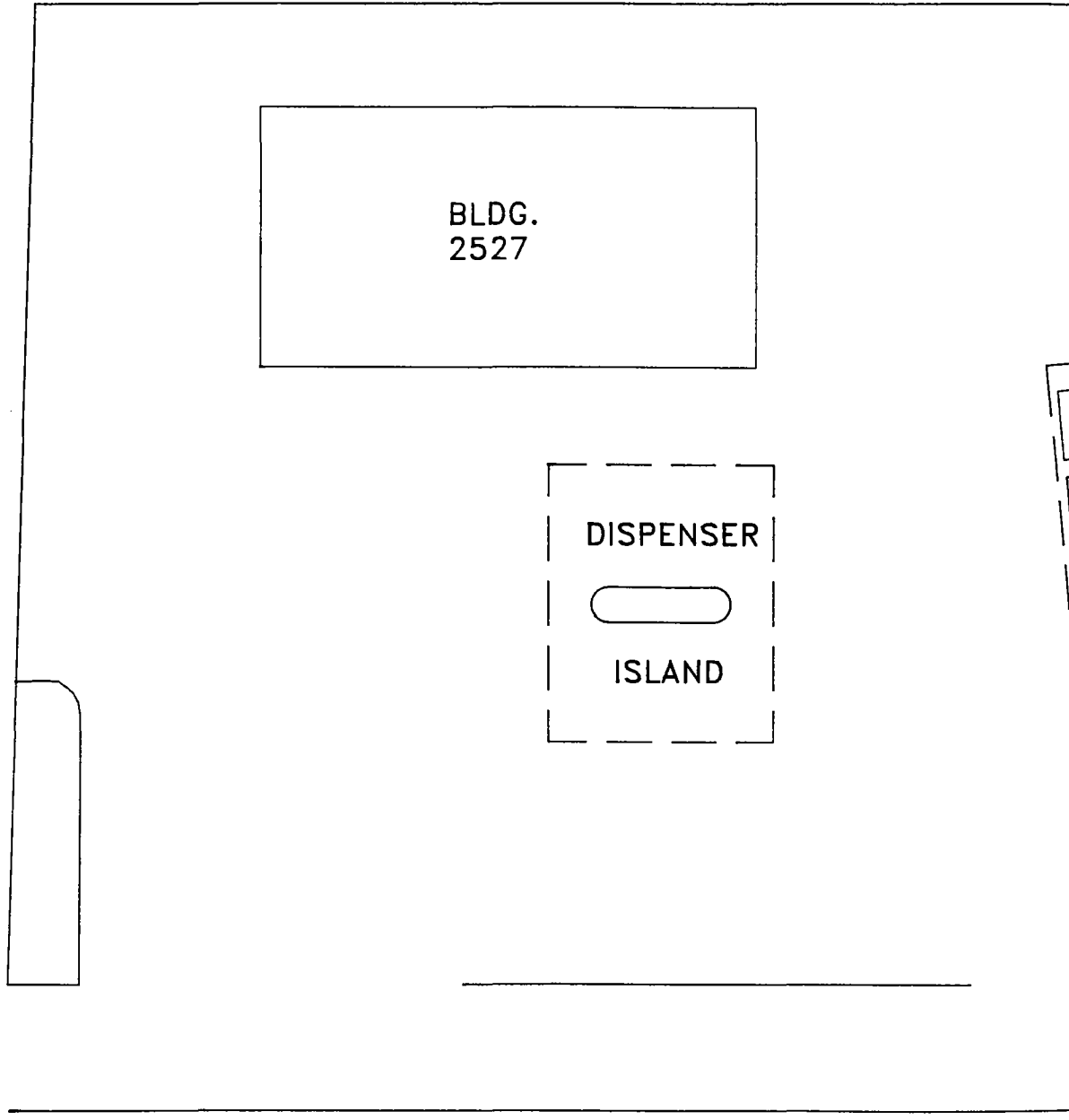
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 CONTOUR INTERVAL 20 FEET SCALE 1 INCH = 2000 FEET

UST LATITUDE: N 40 Deg. 17 Min. 44 Sec.
 UST LONGITUDE: W 74 Deg. 4 Min. 46 Sec.



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

REVISION # 000 DATE 7/1/84
FILE NAME E2527.DWG DRAWN BY: B. MAC



0' 20'
SCALE



gallon capacity, unleaded gasoline tanks. UST No. 45 was a single walled steel, 6,000-gallon capacity, leaded gasoline tank. UST Nos. 42 to 45 were located adjacent to each other. CCI performed the tank closure.

1.3 GEOLOGICAL/HYDROGEOLOGICAL SETTING

The following is a description of the geological/hydrogeological setting of the area surrounding Building 2567. 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 (Zapeczka, 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 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 Zapeczka, 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 Charles Wood area range from five feet above mean sea level (MSL) to 31 feet above MSL.

A Subsurface Profile of the USTs located at Building 2567 is provided in Figure 1-3.

1.3.2 Hydrogeological Setting

Hydrogeology

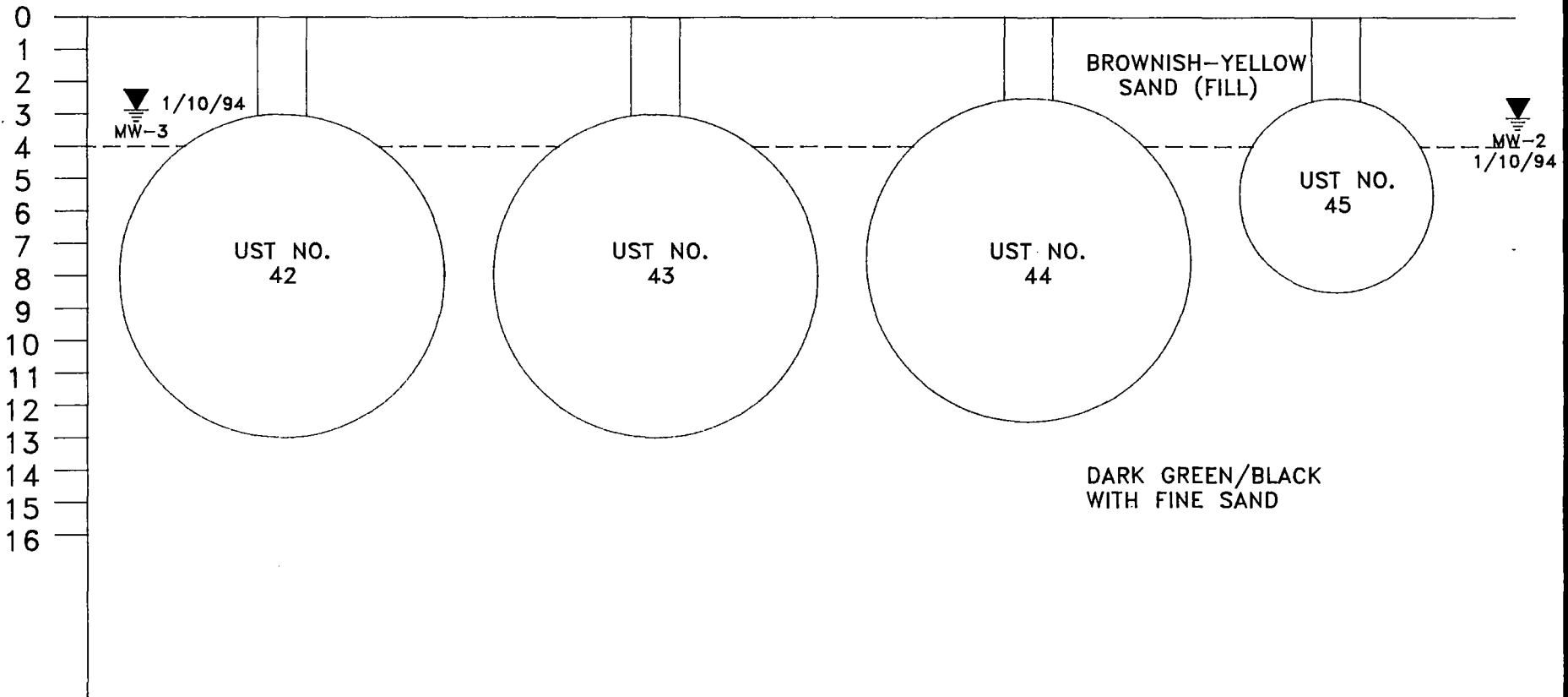
The water table aquifer at the Charles Wood area is identified as part of the "composite confining units", or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point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

Based on records from wells drilled at the Charles Wood area, ground 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.

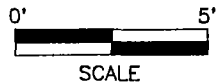
Shallow groundwater is locally influenced within the Charles Wood area by the following factors:

- tidal influence (based on proximity to the Atlantic Ocean, rivers and tributaries),
- topography,

1-7



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PROJECT NAME:
**UNDERGROUND STORAGE TANK CLOSURE
 AND SITE INVESTIGATION REPORT**
 BUILDING 2567 - UST NOS. 42-45
 FORT MONMOUTH, NEW JERSEY
 CLIENT NAME: U.S. ARMY - FORT MONMOUTH
 DIRECTORATE OF PUBLIC WORKS

SUBSURFACE PROFILE

DATE: 06/29/94

FIGURE #: 1-3



- nature of the fill material within the Main Post area,
- presence of clay and silt lenses in the natural overburden deposits, and
- local groundwater recharge areas (i.e. stream, lakes).

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

On 9 October 1991, four monitoring wells were placed in the area surrounding UST Nos. 42 to 45. The monitoring well permit, monitoring well records, and Form B for each well are provided in Appendix C. A fifth monitoring well (MW-5) was installed downgradient, southeast of the site, on 23 September 1994. Well MW-5 had not been surveyed or sampled when this report was completed. Information provided by the well will be included in future submittals. The monitoring well permit and well records are included in Appendix C.

Building 2567 is less than 1/2 mile north of Mill Brook, the nearest water body. The groundwater flow in the area of Building 2567 has been determined to be in a southeastern direction. A table of water level elevations collected from the four monitoring wells located in the area of Building 2567 is provided in Table 1-1. The Atlantic Ocean is located approximately 15 miles east of the site.

1.3.3 Offsite Groundwater Usage

In compliance with the NJDEP regulations, WESTON conducted a well search to identify all irrigation, monitoring, domestic, industrial and public supply wells within one half mile of U.S. Army Fort Monmouth, 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 NJDEP 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; NJDEP permit number; New Jersey State Plane Coordinates; casing elevation and; elevation of the ground surface; and well records for the nearest identified offsite well have been included, if available. This information is included in Appendix D.

A review of the well records indicated that the majority of the wells within the area of concern are used for monitoring purposes. There are 52 monitoring wells. A domestic well (Permit Number 29-16207), owned by Redacted - Privacy Act is the closest to the site in the downgradient flow direction. The well is located at 144 Grant Avenue, approximately 6,500 feet southeast of the site.

TABLE 1-1
WATER LEVEL ELEVATIONS FOR
MONITORING WELLS MW-1, MW-2, MW-3 AND MW-4
LOCATED AT BUILDING 2567

Monitoring Well Permit Number	Date	Time of Collection	Ground Surface Elevation (feet)	Depth to Water (feet)	Groundwater Surface Elevation (feet)
29-26925 (MW-1)	12/10/91	11:05 am	33.93	4.45	29.48
29-26926 (MW-2)	12/10/91	10:55 am	35.26	3.65	31.61
29-26927 (MW-3)	12/10/91	11:00 am	33.88	4.25	29.63
29-26928 (MW-4)	12/10/91	10:50 am	33.51	2.20	31.31

Monitoring Well Permit Number	Date	Time of Collection	Ground Surface Elevation (feet)	Depth to Water (feet)	Groundwater Surface Elevation (feet)
29-26925 (MW-1)	10/26/92	3:55 pm	33.93	5.17	28.76
29-26926 (MW-2)	10/26/92	4:05 pm	35.26	3.16	32.10
29-26927 (MW-3)	10/26/92	4:10 pm	33.88	4.52	29.36
29-26928 (MW-4)	10/26/92	4:13 pm	33.51	4.38	29.13

Monitoring Well Permit Number	Date	Time of Collection	Ground Surface Elevation (feet)	Depth to Water (feet)	Groundwater Surface Elevation (feet)
29-26925 (MW-1)	1/28/93	9:10 to 9:40 am	33.93	4.05	29.88
29-26926 (MW-2)	1/29/93	9:10 to 9:40 am	35.26	3.65	31.61
29-26927 (MW-3)	1/29/93	9:10 to 9:40 am	33.88	4.15	29.73
29-26928 (MW-4)	1/29/93	9:10 to 9:40 am	33.51	2.50	31.01

TABLE 1-1 (CONTINUED)

**WATER LEVEL ELEVATIONS FOR
MONITORING WELLS MW-1, MW-2, MW-3 AND MW-4
LOCATED AT BUILDING 2567**

Monitoring Well Permit Number	Date	Time of Collection	Ground Surface Elevation (feet)	Depth to Water (feet)	Groundwater Surface Elevation (feet)
29-26925 (MW-1)	2/25/93	10:45 to 11:15 am	33.93	4.65	29.28
29-26926 (MW-2)	2/25/93	10:45 to 11:15 am	35.26	4.25	31.01
29-26927 (MW-3)	2/25/93	10:45 to 11:15 am	33.88	4.20	29.68
29-26928 (MW-4)	2/26/93	10:45 to 11:15 am	33.51	2.75	30.76

Monitoring Well Permit Number	Date	Time of Collection	Ground Surface Elevation (feet)	Depth to Water (feet)	Groundwater Surface Elevation (feet)
29-26925 (MW-1)	4/21/93	9:53 am	33.93	4.60	29.33
29-26926 (MW-2)	4/21/93	10:58 am	35.26	4.30	30.96
29-26927 (MW-3)	4/21/93	11:02 am	33.88	4.00	29.88
29-26928 (MW-4)	4/21/93	9:45 am	33.51	2.90	30.61

Monitoring Well Permit Number	Date	Time of Collection	Ground Surface Elevation (feet)	Depth to Water (feet)	Groundwater Surface Elevation (feet)
29-26925 (MW-1)	1/10/94	8:15 am	33.93	3.70	30.23
29-26926 (MW-2)	1/10/94	8:05 am	35.26	3.18	32.08
29-26927 (MW-3)	1/10/94	8:20 am	33.88	2.85	31.03
29-26928 (MW-4)	1/10/94	8:10 am	33.51	2.16	31.35

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

Between 2 and 5 February 1993, UST No. 42 to 45 were closed by removal at Building 2567 on 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 separate from all soils. These materials were later recycled in accordance with all applicable laws and regulations.
- Each tank's atmosphere was inerted.
- Access ways on top of the tank's were opened.
- Licensed tank closure contractor personnel entered the tanks to visually inspect and manually clean the insides of the tanks.
- All wastes (tank bottom sludge and tank rinsate) generated during cleaning were collected and disposed.
- The tanks were removed from the excavation and staged on plastic sheeting.
- Soil was excavated until field screening no longer indicated the presence of contamination or the structural integrity of buildings and road ways were threatened.
- Soil excavated during the tank closure was transported to Soil Remediation of Philadelphia for characterization and disposal/reuse.

- Post closure soil samples were collected for laboratory analysis.
- The excavation was backfilled with clean fill material to the original surface grade, and the area paved.
- 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 USTs and the associated piping. The piping was not removed/disturbed until all free product was drained into the USTs. The USTs were rendered vapor free by purging prior to any cutting or access. After removal of the associated piping, a manway from each UST was made to allow for proper cleaning. The USTs were completely emptied of all liquids prior to removal. Liquids were transported and disposed of by L & L Oil Service, Inc. L & L is a licensed hazardous waste transporter (USEPA ID# NJD01427895). Approximately 180 gallons of hazardous liquid was transported by L & L Oil Service, Inc. to S & W Wastes, Inc. in South Kearny, New Jersey. Hazardous waste manifests were completed and can be found in Appendix C. All of the openings in the tanks were plugged except for one hole (manway).

After the USTs were removed from the excavation, they were 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. UST Nos. 42 to 45 were found to be in good condition with no corrosion holes. Groundwater was present in the excavation at approximately four feet BGS.

Soils surrounding the UST were screened visually and with a Photoionization Detector (PID) for evidence of contamination. Based on visual observations and screening approximately 936 cubic yards of soil were removed from the area surrounding the USTs and pump island. In both areas excavation was continued until either no evidence of contamination was found, based on field observations, or until further removal of soil would endanger their integrity of structures and roadways adjacent to the area of investigation. Groundwater noted in the wells at 4 feet BGS was not encountered in the excavation above the 7 feet BGS. Therefore, the excavations were extended to 7 feet BGS when necessary. When excavation was completed, the area was backfilled and the site paved. The potentially contaminated soil was manifested and transported to Soil Remediation of Philadelphia for recycling. A certificate of soil remediation is provided in Appendix E.



1.6 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tanks were transported by Cycle Construction, Inc. to Mazza and Sons, Inc., for recycling in compliance with all applicable regulations and laws. The Tank Reclamation Certificates are provided in Appendix F.

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

- site of origin,
- contact person,
- NJDEP UST Facility ID number,
- name of transporter/contact person, and
- destination site/contact person.

1.7 MANAGEMENT OF EXCAVATED SOIL

Approximately 936 cubic yards of contaminated soil were removed from the area surrounding UST Nos. 42 to 45 and the pump island. Soil was placed on and covered with polyethylene sheets. Potentially contaminated soils were stockpiled separately from other excavated material. Potentially contaminated soils were transported to Soil Remediation of Philadelphia. A certificate of soil remediation is provided in Appendix F. All soils free of evidence of contamination were backfilled into the excavation following removal of the USTs.



SECTION 2.0

SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S ARMY DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, Environmental Profile Laboratories and 21st Century Environmental, which are NJDEP-certified testing laboratories. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (May 1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document "Technical Requirements for Site Remediation-Proposed New Rules" (May 1992) which was the applicable regulation at the date of closure. All records of the Site Investigation activities are maintained by Fort Monmouth DPW: Environmental Office.

The following Parties participated in Closure and Site Investigation activities.

- Closure Contractor #1: Cycle Construction, Inc.
Contact Person: Peter P. Maglow
Phone Number: (908) 264-7177
NJDEP Company Certification No.: G0000592
- Hazardous Waste Hauler: L & L Oil Service, Inc.
Contact Person: Frank Labella
Phone Number: (908) 566-2785
USEPA ID No.: NJD01427895
- Subsurface Evaluator: Charles Appleby
Employer: U.S. Army, Fort Monmouth
Phone Number: (908) 532-6224
NJDEP Certification No.: 2056
- Analytical Laboratory: Environmental Profile Laboratories
Contact Person: Daniel Wright
Phone Number: (908) 244-6278
NJDEP Laboratory Certification No.: 15526



- Analytical Laboratory: 21st Century Environmental, Inc.
Contact Person: Richard W. Lynch
Phone Number: (609) 467-9521
NJDEP Laboratory Certification No.: 08031
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Testing Laboratory
Contact Person: Brian McKee
Phone Number: (609) 532-4359
NJDEP Laboratory Certification No.: 13461

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 by an individual under the direct supervision of the NJDEP Certified Sub-Surface Evaluator. Evidence of contamination was noted during excavation of soils surrounding the UST and soils were subsequently removed.

2.3 SOIL AND GROUNDWATER SAMPLING

On 10 December 1991, one groundwater sample was collected from each monitoring well and analyzed by Environmental Profile Laboratories for volatile organic compounds plus 15 tentatively identified compounds (VO+15) and lead.

On 26 October 1992, one groundwater sample was collected from each monitoring well and analyzed by Environmental Profile Laboratories for VO+15 and lead.

On 2 February 1993, four post excavation soil samples were collected from the bottom and north side wall of the excavation and analyzed by U.S. Army Fort Monmouth Laboratory (FML) for total petroleum hydrocarbons (TPHC). In addition, on 8 February 1993, two post excavation soil samples were collected from the east side wall of the excavation and analyzed by FML for TPHC.

On 24 February 1993, 23 post-excavation soil samples were collected from the side walls of the excavation and analyzed by FML for TPHC and 21st Century Laboratories for VO+15 and lead.

On 21 April 1993, one groundwater sample was collected from each monitoring well and analyzed by 21st Century Laboratories for VO+15, base neutral compounds plus 15 tentatively identified compounds (BN+15) and lead.

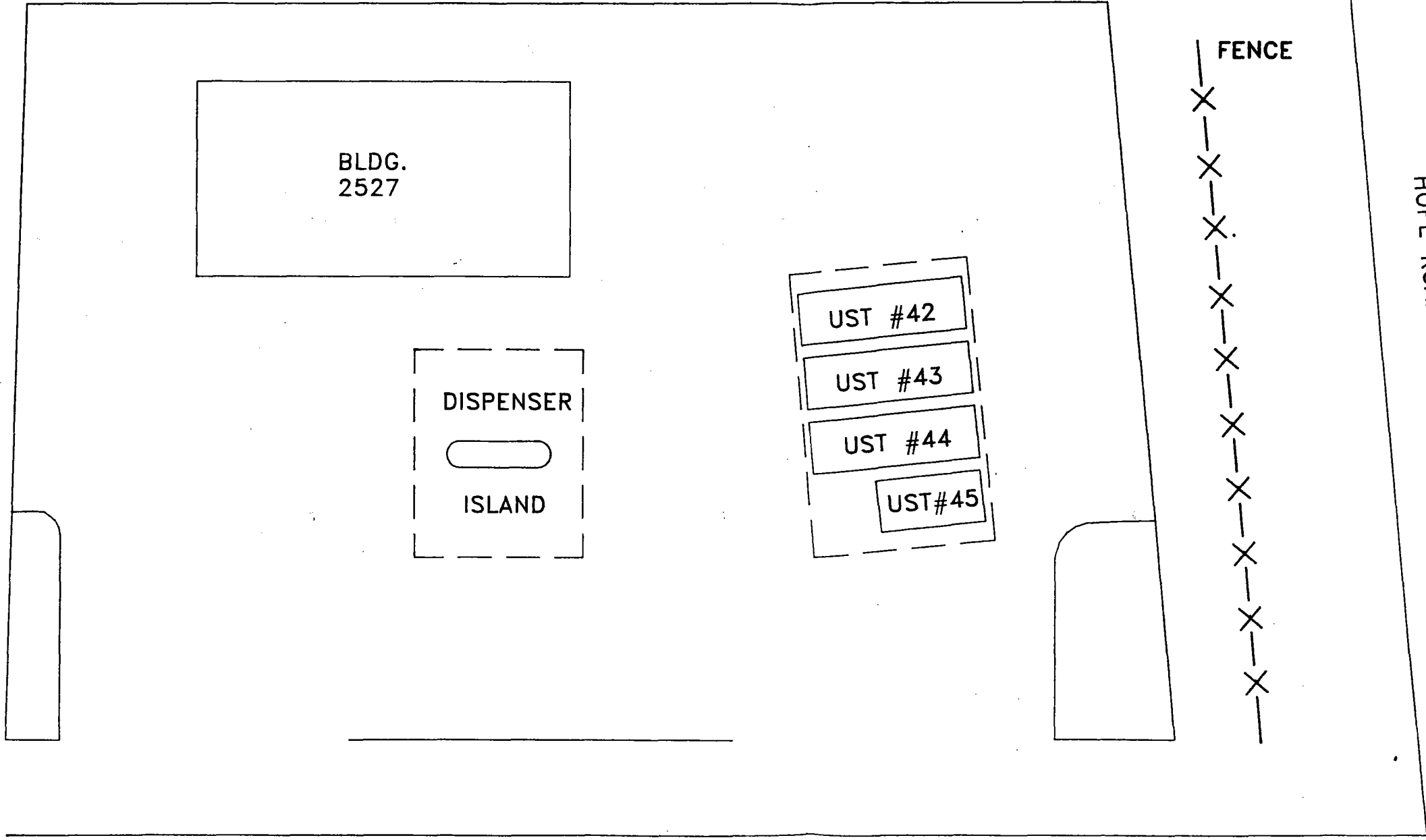


On 3 February 1994, one groundwater sample was collected from each monitoring well and analyzed by 21st Century Laboratories for VO+15 and lead.

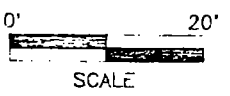
On 31 March 1994, one groundwater sample was collected from each monitoring well and analyzed by 21st Century Laboratories for VO+15 and lead.

A summary of sampling activities including parameters analyzed is provided in Table 2-1. Figure 2-1 depicts the location of the post-excavation soil samples. Figure 2-2 depicts the locations of the monitoring wells. The post-excavation soil samples were collected using decontaminated stainless steel scoops and groundwater samples were collected using decontaminated teflon bailers. Following soil and groundwater sampling activities, the samples were chilled and delivered to the applicable testing laboratory.

The frequency of sampling and parameters analyzed were consistent with the applicable NJDEP regulations at the date of closure, which were the "Technical Requirements for Site Remediation" (NJAC 7:26E-1 et seq., dated May 1992).



REVISION # 000 DATE 7/1/94
 FILE NAME E2527.DWG DRAWN BY B. MAC



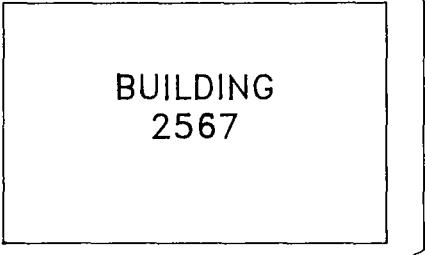
	PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 2567 - UST NOS. 42-45 FORT MONMOUTH, NEW JERSEY	SITE MAP	
	CLIENT NAME: U.S. ARMY - FORT MONMOUTH DIRECTORATE OF PUBLIC WORKS	DATE: 7/1/94	FIGURE #: 1-2



PARAMETER	AR	ITG	DC
BENZENE	27	1	3
ETHYLBENZENE	210	100	1,000
XYLENES (TOTAL)	1,200	10	410

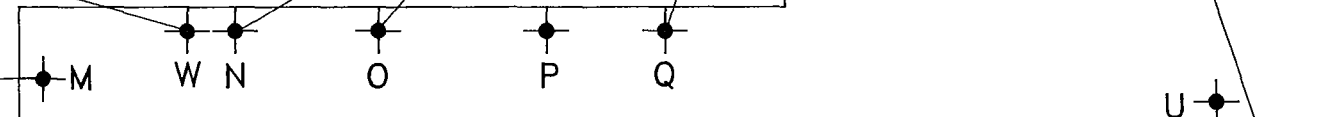
PARAMETER	AR	ITG	DC
ACETONE	110B	100	1,000
BENZENE	85J	1	3
ETHYLBENZENE	120	100	1,000
XYLENES (TOTAL)	710	10	410

PARAMETER	AR	ITG	DC
BENZENE	25J	1	3
ETHYLBENZENE	200	100	1,000
XYLENES (TOTAL)	1,200	10	410

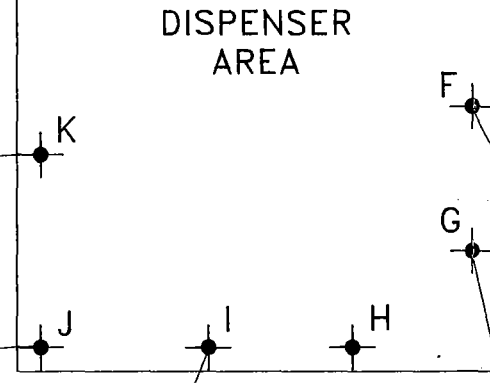


PARAMETER	AR	ITG	DC
BENZENE	45	1	3
XYLENES (TOTAL)	126	10	410

PARAMETER	AR	ITG	DC
BENZENE	56	1	3
ETHYLBENZENE	140	100	1,000
XYLENES (TOTAL)	550	10	410



PARAMETER	AR	ITG	DC
BENZENE	11	1	3
ETHYLBENZENE	170	100	1,000
XYLENES (TOTAL)	890	10	410



UST NOS.
42,43,44,45

PARAMETER	AR	ITG	DC
BENZENE	2.3	1	3
XYLENES (TOTAL)	74	10	410

PARAMETER	AR	ITG	DC
BENZENE	1.8J	1	3
XYLENES (TOTAL)	230	10	410

PARAMETER	AR	ITG	DC
XYLENES (TOTAL)	195	10	410

PARAMETER	AR	ITG	DC
BENZENE	1.9	1	3

PARAMETER	AR	ITG	DC
XYLENES (TOTAL)	11.74	10	410

PARAMETER	AR	ITG	DC
BENZENE	2.9J	1	3
XYLENES (TOTAL)	230	10	410

PARAMETER	AR	ITG	DC
BENZENE	14	1	3
XYLENES (TOTAL)	67	10	410

LEGEND

- A** SOIL SAMPLING LOCATION
- AR - ANALYTICAL RESULT (MG/KG)
- ITG - NJDEP-IMPACT TO GROUNDWATER SOIL CLEANUP CRITERIA
- DC - NJDEP-DIRECT CONTACT SOIL CLEANUP CRITERIA
- J - INDICATES ESTIMATED VALUE
- B - INDICATES ALSO PRESENT IN BLANK



REVISION # 000 DATE 2/9/96
 FILE NAME 8267-SHW DRAWN BY B. WAG

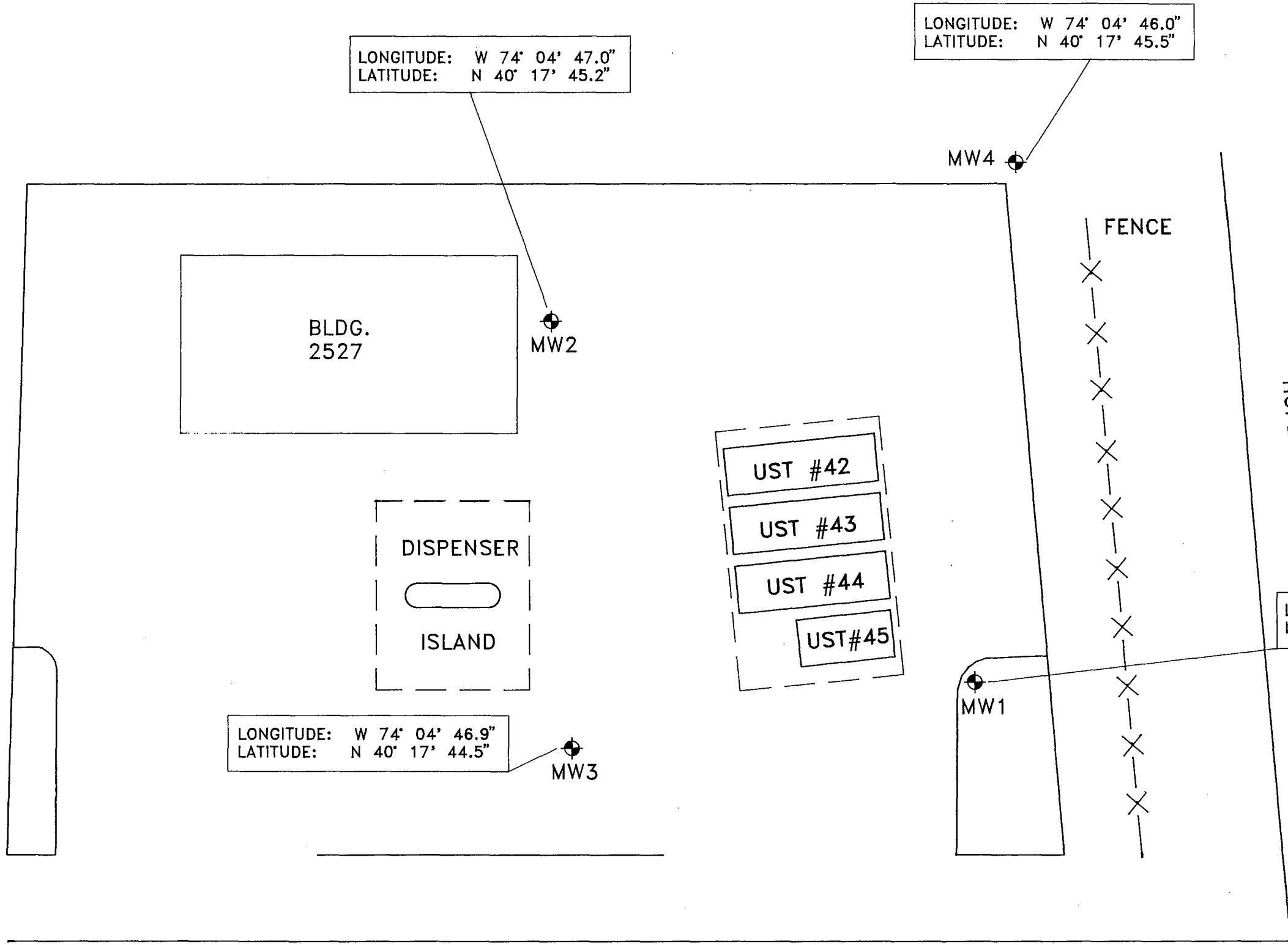
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	CLIENT NAME:	BUILDING 2567 - UST NOS. 42-45 FORT MONMOUTH, NEW JERSEY U.S. ARMY - FORT MONMOUTH DIRECTORATE OF PUBLIC WORKS	
		DATE:	6/9/94
		FIGURE #:	2-1

LONGITUDE: W 74° 04' 47.0"
LATITUDE: N 40° 17' 45.2"

LONGITUDE: W 74° 04' 46.0"
LATITUDE: N 40° 17' 45.5"

LONGITUDE: W 74° 04' 46.1"
LATITUDE: N 40° 17' 44.6"

LONGITUDE: W 74° 04' 46.9"
LATITUDE: N 40° 17' 44.5"



REVISION # 000 DATE 2/9/96
FILE NAME: B2527-UST.DWG DRAWN BY: B. MAG

LEGEND

 MONITORING WELL

MW3

0' 20'
SCALE

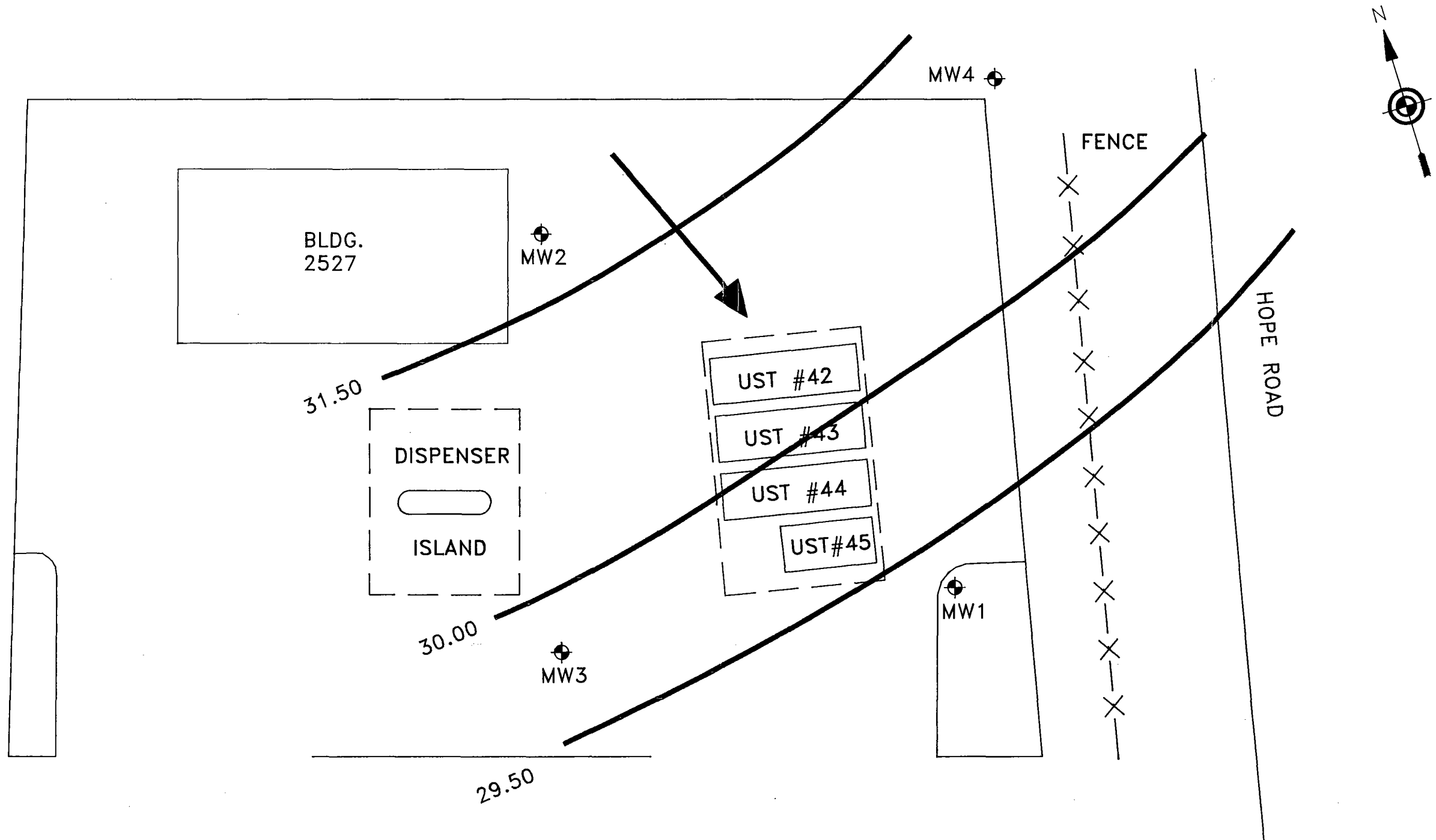


PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT
BUILDING 2567 - UST NOS. 42-45
FORT MONMOUTH, NEW JERSEY
CLIENT NAME: U.S. ARMY - FORT MONMOUTH DIRECTORATE OF PUBLIC WORKS

WELL LOCATION MAP

DATE: 7/1/94

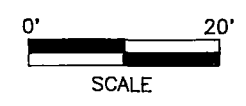
FIGURE #: 2-2



REVISION # 000 DATE 7/25/94
 FILE NAME BR557.DWG DRAWN BY B. MAC

LEGEND

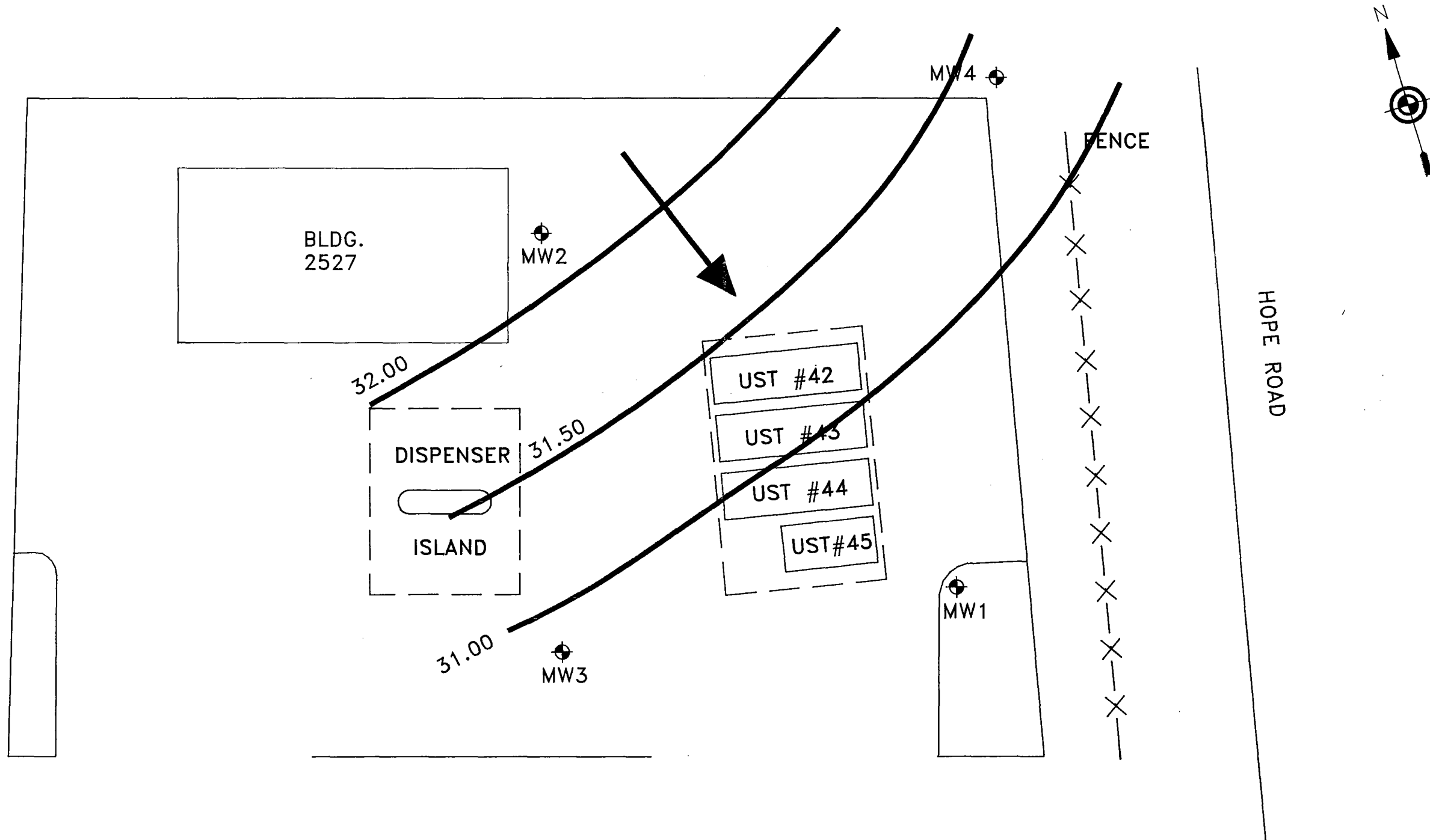
 MONITORING WELL
 MW3



PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE
 AND SITE INVESTIGATION REPORT
 BUILDING 2567 - UST NOS. 42-45
 FORT MONMOUTH, NEW JERSEY
 CLIENT NAME: U.S. ARMY - FORT MONMOUTH
 DIRECTORATE OF PUBLIC WORKS

GROUNDWATER CONTOUR MAP
 (DATA COLLECTED 12/10/91)

DATE: 7/1/94 FIGURE #: 2-3



REVISION # 000 DATE 7/25/94
 BY B. MAC

LEGEND



MW3

MONITORING WELL



PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE
 AND SITE INVESTIGATION REPORT
 BUILDING 2567 - UST NOS. 42-45
 FORT MONMOUTH, NEW JERSEY
 CLIENT NAME: U.S. ARMY - FORT MONMOUTH
 DIRECTORATE OF PUBLIC WORKS

GROUNDWATER CONTOUR MAP
 (DATA COLLECTED 1/10/94)

DATE: 7/1/94

FIGURE #: 2-4

TABLE 2-1
SUMMARY OF POST-EXCAVATION SOIL SAMPLING
BUILDING NO. 2567
UST NOS. 42 TO 45
FORT MONMOUTH, NEW JERSEY

Sample ID No.	Lab ID No.	Date of Collection	Matrix	Sample Depth (Feet BGS)	Sample Type	Analytical Parameters	Sampling Method
# 1	1140.1	2/2/93	Soil	3	Post Excavation	TPHC	Stainless Steel Scoop
# 2	1140.2	2/2/93	Soil	3	Post Excavation	TPHC	Stainless Steel Scoop
# 3	1140.3	2/2/93	Soil	12	Post Excavation	TPHC	Stainless Steel Scoop
# 4	1140.4	2/2/93	Soil	12	Post Excavation	TPHC	Stainless Steel Scoop

Sample ID No.	Lab ID No.	Date of Collection	Matrix	Sample Depth (Feet BGS)	Sample Type	Analytical Parameters	Sampling Method
S-1	1142.3	2/8/93	Soil	4	Post Excavation	TPHC	Stainless Steel Scoop
S-2	1142.4	2/8/93	Soil	2	Post Excavation	TPHC	Stainless Steel Scoop
S-3 Duplicate	1142.4	2/8/93	Soil	2	Post Excavation	TPHC	Stainless Steel Scoop
S-4 Spike	1142.4	2/8/93	Soil	2	Post Excavation	TPHC	Stainless Steel Scoop

Abbreviation:

TPHC: - Total Petroleum Hydrocarbons.

TABLE 2-1 (CONTINUED)

**SUMMARY OF POST-EXCAVATION SOIL SAMPLING
BUILDING NO. 2567
UST NOS. 42 TO 45
FORT MONMOUTH, NEW JERSEY**

Sample ID No.	Lab ID No.	Date of Collection	Matrix	Sample Type	Analytical Parameters	Sampling Method
A	1151.1	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
B	1151.2	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
C	1151.3	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
D	1151.4	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
E	1151.5	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
F	1151.6	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
G	1151.7	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
H	1151.8	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
I	1151.9	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
J	1151.10	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
K	1151.11	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
L	1151.12	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
M	1151.13	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
N	1151.14	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
O	1151.15	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop
P	1151.16	2/24/93	Soil	Post Excavation	TPHC	Stainless Steel Scoop

Abbreviation:

TPHC: - Total Petroleum Hydrocarbons.

TABLE 2-1 (CONTINUED)

SUMMARY OF POST-EXCAVATION SOIL SAMPLING
 BUILDING NO. 2567
 UST NOS. 42 TO 45
 FORT MONMOUTH, NEW JERSEY

Sample ID No.	Lab ID No.	Date of Collection	Matrix	Sample Type	Analytical Parameters	Sampling Method
Q	1151.17	2/24/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
R	1151.18	2/24/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
S	1151.19	2/24/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
T	1151.20	2/24/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
U	1151.21	2/24/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
V	1151.22	2/24/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
W	1151.23	2/24/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
Duplicate	1151.23 Dup	2/24/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
Spike	1151.23 Spike	2/24/93	Soil	Post-Excavation	TPHC	Stainless Steel Scoop

Abbreviation:

TPHC: - Total Petroleum Hydrocarbons.

TABLE 2-1 (CONTINUED)

**SUMMARY OF POST-EXCAVATION SOIL SAMPLING
BUILDING NO. 2567
UST NOS. 42 TO 45
FORT MONMOUTH, NEW JERSEY**

Sample ID No.	Lab ID No.	Date of Collection	Matrix	Sample Type	Analytical Parameters	Sampling Method
A	A0995	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
B	A0996	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
C	A0997	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
D	A0998	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
E	A0999	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
F	A1000	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
G	A1001	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
H	A1002	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
I	A1003	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
J	A1004	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
K	A1005	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
L	A1006	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
M	A1007	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
N	A1008	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
O	A1009	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
P	A1010	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
Q	A1011	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
R	A1012	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
S	A1013	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
T	A1014	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop

TABLE 2-1 (CONTINUED)

**SUMMARY OF POST-EXCAVATION SOIL SAMPLING
BUILDING NO. 2567
UST NOS. 42 TO 45
FORT MONMOUTH, NEW JERSEY**

Sample ID No.	Lab ID No.	Date of Collection	Matrix	Sample Type	Analytical Parameters	Sampling Method
U	A1015	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
V	A1016	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
W	A1017	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
Trip Blank	A1018	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop
Field Blank	A1019	2/24/93	Soil	Post-Excavation	VO+15, LEAD	Stainless Steel Scoop

Abbreviation:

VO+15: - Volatile Organic Analysis Plus 15 tentatively identified compounds.

TABLE 2-2

**SUMMARY OF GROUNDWATER SAMPLING
BUILDING NO. 2567
UST NOS. 42 TO 45
FORT MONMOUTH, NEW JERSEY**

Sample ID No.	Lab ID No.	Date of Collection	Matrix	Sample Type	Analytical Parameters	Sampling Method
MW-1	6944.8	12/10/91	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-2	6944.9	12/10/91	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-3	6944.10	12/10/91	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-4	6944.11	12/10/91	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-1	9173.15	10/26/92	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-1 (Dup)	9173.16	10/26/92	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-2	9173.17	10/26/92	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-3	9173.18	10/26/92	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-4	9173.19	10/26/92	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-1	A1634	4/21/93	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-1 (Dup)	A1635	4/21/93	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-2	A1636	4/21/93	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-3	A1637	4/21/93	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-4	A1633	4/21/93	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-1	A1745	4/28/93	Aqueous	Monitoring Well	BN+15	Decontaminated Teflon Bailer
MW-2	A1747	4/28/93	Aqueous	Monitoring Well	BN+15	Decontaminated Teflon Bailer
MW-3	A1746	4/28/93	Aqueous	Monitoring Well	BN+15	Decontaminated Teflon Bailer
MW-4	A1748	4/28/93	Aqueous	Monitoring Well	BN+15	Decontaminated Teflon Bailer
MW-1	B0244	2/3/94	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer

TABLE 2-2 (CONTINUED)
SUMMARY OF GROUNDWATER SAMPLING
BUILDING NO. 2567
UST NOS. 42 TO 45
FORT MONMOUTH, NEW JERSEY

Sample ID No.	Lab ID No.	Date of Collection	Matrix	Sample Type	Analytical Parameters	Sampling Method
MW-2	B0243	2/3/94	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-3	B0245	2/3/94	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-4	B0242	2/3/94	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-1	B0658	3/31/94	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-2	B0660	3/31/94	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-3	B0659	3/31/94	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-4	B0656	3/31/94	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer
MW-4 (Dup)	B0657	3/31/94	Aqueous	Monitoring Well	Lead, VO+15	Decontaminated Teflon Bailer

Abbreviations:

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



SECTION 3.0

CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL AND GROUNDWATER SAMPLING RESULTS

To evaluate soil conditions following removal of the USTs and associated soils, the post-excavation sample results were compared to NJDEP ITGW and RDC Soil Cleanup Criteria (N.J.A.C. 7:26D and revisions dated 3 February 1994). Summaries of analytical results for soils are presented in Table No. 3-1.

To evaluate groundwater conditions following removal of the USTs and associated soils, analytical results from the groundwater samples were compared to NJDEP Class II-A Ground Water Quality Criteria (N.J.A.C. 7:9-6.4, 6.8 and Table 1). A summary of the analytical results and comparison to NJDEP Class II Groundwater Cleanup Standards is provided in Table No. 3-2.

A summary of the analytical methods used and quality assurance information is provided in Table 3-3. The analytical data package summary is provided in Appendix E. The full data package, including associated quality control and chromatograph data are on file at U.S. Army Fort Monmouth, DPW.

Soil

On 2 February 1993, four post excavation soil samples were collected from the bottom and north sidewall of the excavation and analyzed by U.S. Army Fort Monmouth Laboratory (FML) for total petroleum hydrocarbons (TPHC). In addition, on 8 February 1993, two post excavation soil samples were collected from the east sidewall of the excavation and analyzed by FML for TPHC. In accordance with NJDEP requirements, those samples which exhibited a concentration of TPHC exceeding 1,000 milligrams per kilogram (mg/kg) would have been also analyzed for VO+15. Based on the concentrations of TPHC detected in the post excavation samples, no samples were analyzed for VO+15.

On 24 February 1993, 23 post-excavation soil samples were collected from the sidewalls of the excavation and analyzed by FML for TPHC and 21st Century Laboratories for VO+15 and lead. TPHC was detected in all samples, although only sample L (4539.3 mg/kg) exceeded the 1,000 mg/kg requirement. Lead was detected in samples A (129 mg/kg), B (55.1 mg/kg), C (15 mg/kg), F (19.6 mg/kg), G (37.4 mg/kg), H (15.2 mg/kg), I (39 mg/kg), J (15.5 mg/kg), K (6.19 mg/kg), L (25.8 mg/kg), M (87.5 mg/kg), N (49.3 mg/kg), O (92.5 mg/kg), R (7.77 mg/kg), S (10.8 mg/kg), T (9.38 mg/kg), V (22.7 mg/kg) and W (47.2 mg/kg). Benzene was

TABLE 3-1

SUMMARY OF ANALYTICAL RESULTS FOR SOILS
 BUILDING NO. 2567
 UST NOS. 42 TO 45
 FORT MONMOUTH, NEW JERSEY

Sample ID No.	#1	#2	#3	#4	S-1	S-2	S-3 Duplicate	S-4 Spike	A	B	C	D	E	F	NJDEP Impact to Groundwater Soil Cleanup Criteria	Residential Direct Contact Soil Cleanup Criteria		
Lab ID No.	1140.1	1140.2	1140.3	1140.4	1142.3	1142.4	1142.4	1142.4	1151.1	1151.2	1151.3	1151.4	1151.3	1151.6				
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Sample Type	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE				
Date of Collection	2/2/93	2/2/93	2/2/93	2/2/93	2/8/93	2/8/93	2/8/93	2/8/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93				
Analytical Parameter	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
TPHC		65.1	ND	ND	ND	141	7.9	2.0	382	9.1	31	31.4	37.4	41.5	44.1	NC*	NC*	

Sample ID No.	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	NJDEP Impact to Groundwater Soil Cleanup Criteria	Residential Direct Contact Soil Cleanup Criteria		
Lab ID No.	1511.7	1151.8	1151.9	1151.10	1151.11	1151.12	1151.13	1151.14	1151.15	1151.16	1151.17	1151.18	1151.19	1151.20				
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Sample Type	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE				
Date of Collection	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/8/93	2/8/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93				
Analytical Parameter	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
TPHC		50.4	53.4	28.9	66.3	90.4	4539.3	290.5	246.3	279.6	151.2	362.7	147.8	59.2	120.5	NC*	NC*	

Abbreviations:

- NC*: - No cleanup criterion has been proposed by NJDEP; however, the proposed NJDEP subsurface cleanup criterion for total organic compounds is 10,000 mg/kg.
- PE: - Post Excavation
- TPHC: - Total petroleum hydrocarbons
- mg/kg: - Milligrams per kilogram

TABLE 3-1 (CONTINUED)
SUMMARY OF ANALYTICAL RESULTS FOR SOILS
BUILDING NO. 2567
UST NOS. 42 TO 45
FORT MONMOUTH, NEW JERSEY

Sample ID No.	U	V	W	W-Duplicate	W-Spike	NJDEP Impact to Groundwater Soil Cleanup Criteria	
Lab ID No.	1151.21	1151.22	1151.23	1151.23 Dup	1151.23 Spike		
Matrix	Soil	Soil	Soil	Soil	Soil		
Sample Type	PE	PE	PE	PE	PE		
Date of Collection	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93		
Analytical Parameter	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
TPHC		187.4	217.3	321.5	307	1043.1	NC*

Abbreviations:

- NC*: - No cleanup criterion has been proposed by NJDEP; however, the proposed NJDEP subsurface cleanup criterion for total organic compounds is 10,000 mg/kg.
- PE: - Post Excavation
- TPHC: - Total petroleum hydrocarbons
- mg/kg: - Milligrams per kilogram

TABLE 3-1 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR SOILS
 BUILDING NO. 2567
 UST NOS. 42 TO 45
 FORT MONMOUTH, NEW JERSEY

Sample ID No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	NJDEP Impact to Groundwater Soil Cleanup Criteria	Residential Direct Contact Soil Cleanup Criteria	
Lab ID No.	A0995	A0996	A0997	A0998	A0999	A1000	A1001	A1002	A1003	A1004	A1005	A1006	A1007	A1008			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Type	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE			
Date of Collection	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93			
Analytical Parameter	Units																
Volatile Organic Compounds																	
Acetone	mg/kg	0.014	ND B	0.35	0.020	0.14	ND	ND	ND	ND	ND	ND	ND	ND	39 JB	100	1,000
Methylene Chloride	mg/kg	ND	ND B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	49
2-Butanone	mg/kg	ND	ND	0.069	ND	ND	ND	ND	0.39J	2.4J	ND	ND	ND	ND	ND	50	1,000
Benzene	mg/kg	ND	ND	ND	ND	1.9	0.68J	14	0.25J	2.9J	1.8J	2.3	11	5.6	27	1	3
Toluene	mg/kg	ND	ND	0.0036J	ND	0.044	1.0	14	1.2	30	68	32	320	110	460	500	1,000
Ethylbenzene	mg/kg	ND	44	ND	ND	0.02 J	0.78J	9.3	1.4	45	37	14	170	140	210	100	1,000
Xylenes (Total)	mg/kg	ND	195	0.024	0.019	0.116	11.74	67	8.6	230	229	74	890	550	1,200	10	410
Inorganics																	
Lead	mg/kg	129	55.1	15.0	ND	ND	19.6	37.4	15.2	39.0	15.5	6.19	25.8	87.5	49.3	NC	400

TABLE 3-1 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR SOILS
 BUILDING NO. 2567
 UST NOS. 42 TO 45
 FORT MONMOUTH, NEW JERSEY

Sample ID No.	O	P	Q	R	S	T	U	V	W	Trip Blank	Field Blank	NJDEP Impact to Groundwater Soil Cleanup Criteria	Residential Direct Contact Soil Cleanup Criteria	
Lab ID No.	A1009	A1010	A1011	A1012	A1013	A1014	A1015	A1016	A1017	A1018	A1019			
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Sample Type	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE	PE			
Date of Collection	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93	2/24/93			
Analytical Parameter	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/L	mg/kg	mg/kg
Volatile Organic Compounds														
Acetone	ND	ND	110B	0.059B	0.14B	0.068B	0.0073JB	0.12B	ND	0.0065JB	3.3B	100	1,000	
Methylene Chloride	ND	ND	ND	ND	ND	ND	0.0033JB	0.007J	ND	ND	ND	1	49	
2-Butanone	ND	0.018 J	ND	ND	0.037	ND	ND	0.031	ND	ND	ND	50	1,000	
Benzene	45	0.032 J	85 J	ND	0.029	0.0023J	ND	0.026	25J	ND	0.038	1	3	
Xylene (Total)	126	1.11	710	0.0087J	0.0099J	0.0046J	0.0052J	0.0099J	1200	ND	0.38	10	410	
Toluene	11	0.29	220	0.0014J	0.0087	0.0021J	0.0038J	0.0097	450	ND	0.29	500	1,000	
Ethylbenzene	29	0.14	120	ND	0.002J	ND	ND	0.002J	200	ND	0.074J	100	1,000	
Inorganics														
Lead	92.5	ND	ND	7.77	10.8	9.38	ND	22.7	47.2	ND	ND	NC	400	



TABLE 3-1 (CONTINUED)

**ABBREVIATIONS, DATA QUALIFIERS AND NOTES
BUILDING NO. 2567
UST NOS. 42 TO 45
FORT MONMOUTH, NEW JERSEY**

Abbreviations:

- PE: - Post Excavation
- NC: - No groundwater cleanup criterion has been proposed for this analyte by NJDEP.
- ND: - Not detected.
- mg/kg: - Milligrams per Kilogram.

Data Qualifiers:

- J: - Indicates an estimated value.
- B: - Indicates also present in blank.

TABLE 3-2

**SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
BUILDING 2567
UST NOS. 42 TO 45**

Sample ID No.	MW-1	MW-2	MW-3	MW-4	NJDEP Class II-A Groundwater Cleanup Criteria	
Lab ID No.	6944.8	6944.9	6944.10	6944.11		
Matrix	Aqueous	Aqueous	Aqueous	Aqueous		
Sample Type	MW	MW	MW	MW		
Date of Collection	12/10/91	12/10/91	12/10/91	12/10/91		
Analytical Parameter	Units					
Lead	ug/L	4	ND	ND	5	10
VOLATILE ORGANIC COMPOUNDS						
Methylene Chloride	ug/L	240	7	240	27	2
1,2-Dichloroethane	ug/L	55	ND	ND	ND	2
Benzene	ug/L	2400	3 J	110	ND	1
Xylenes (Total)	ug/L	42 J	ND	200	ND	40
tert-Butyl Alcohol	ug/L	4400	ND	ND	ND	NC
Methyl tert-Butyl Ether	ug/L	2200	ND	69	ND	NC

TABLE 3-2 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
 BUILDING 2567
 UST NOS. 42 TO 45
 FORT MONMOUTH, NEW JERSEY

Sample ID No.	MW-1	MW-1 (Dup)	MW-2	MW-3	MW-4	Field Blank	Trip Blank	NJDEP Class II-A Groundwater Cleanup Criteria	
Lab ID No.	9173.15	9173.16	9173.17	9173.18	9173.19	9173.25	9173.26		
Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous		
Sample Type	MW	MW	MW	MW	MW	QA	QA		
Date of Collection	10/26/92	10/26/92	10/26/92	10/26/92	10/26/92	10/26/92	10/26/92		
Analytical Parameter	Units								
Lead	ug/L	ND	ND	11	5	ND	NA	NA	10
VOLATILE ORGANIC COMPOUNDS									
Methylene Chloride	ug/L	420 B	130 B	23 B	24	27 B	66 B	5 JB	2
Bromodichloromethane	ug/L	77	ND	ND	ND	ND	ND	ND	NC
1,2-Dichloropropane	ug/L	62	ND	ND	ND	ND	ND	ND	1
Cis-1,3-Dichloropropene	ug/L	48 J	ND	ND	ND	ND	ND	ND	0.2
Trichloroethene	ug/L	32 J	ND	ND	ND	ND	ND	ND	1
Dibromochloromethane	ug/L	130	ND	ND	ND	ND	ND	ND	10
1,1,2-Trichloroethane	ug/L	140	ND	ND	ND	ND	ND	ND	3
Benzene	ug/L	2800	3200	ND	ND	ND	ND	ND	1
Trans-1,3-Dichloropropene	ug/L	220	ND	ND	ND	ND	ND	ND	0.2
Bromoform	ug/L	140	ND	ND	ND	ND	ND	ND	4
Tetrachloroethene	ug/L	51	ND	ND	ND	ND	ND	ND	1
1,1,2,2-Tetrachloroethane	ug/L	170	ND	ND	ND	ND	ND	ND	2
Toluene	ug/L	73	ND	ND	ND	ND	ND	ND	1,000
Chlorobenzene	ug/L	99	ND	ND	ND	ND	ND	ND	2

TABLE 3-2 (CONTINUED)
SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
BUILDING 2567
UST NOS. 42 TO 45
FORT MONMOUTH, NEW JERSEY

Sample ID No.	MW-1	MW-1 (Dup)	MW-2	MW-3	MW-4	Field Blank	Trip Blank	NJDEP Class II-A Groundwater Cleanup Criteria
Lab ID No.	9173.15	9173.16	9173.17	9173.18	9173.19	9173.25	9173.26	
Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	
Sample Type	MW	MW	MW	MW	MW	QA	QA	
Date of Collection	10/26/92	10/26/92	10/26/92	10/26/92	10/26/92	10/26/92	10/26/92	
Analytical Parameter	Units							
Ethylbenzene	ug/L	90	ND	ND	ND	ND	ND	700
Styrene	ug/L	84	ND	ND	ND	ND	ND	100
Xylenes (Total)	ug/L	302	57	3 J	3 J	ND	ND	40
1,3-Dichlorobenzene	ug/L	100	ND	ND	ND	ND	ND	600
1,2-Dichlorobenzene	ug/L	120	ND	ND	ND	ND	ND	600
1,4 - Dichlorobenzene	ug/L	120	ND	ND	ND	ND	ND	75
Tert-butyl Alcohol	ug/L	5400	7000	ND	ND	ND	ND	NC
Methyl Tert-butyl Ether	ug/L	1200	1500	ND	ND	ND	ND	NC
Acetone	ug/L	ND	ND	ND	1 J	ND	84	700

Abbreviations:

- NC - No NJDEP Class II-A groundwater cleanup criterion has been proposed for this analyte by NJDEP.
- ND - Not detected.
- NR - Analysis not requested.
- MW - Monitoring Well.
- QA - Quality Assurance sample.
- ug/L - Micrograms per liter.

Data Qualifiers:

- B - Indicates also present in blank.
- J - Indicates an estimated value.

TABLE 3-2 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
 BUILDING 2567
 UST NOS. 42 TO 45
 FORT MONMOUTH, NEW JERSEY

Sample ID No.	MW-1	MW-1 Dup	MW-2	MW-3	MW-4	Field Blank	Trip Blank	NJDEP Class II-A Groundwater Cleanup Criteria	
Lab ID No.	A 1634	A 1635	A 1636	A 1637	A 1633	A 1638	A 1639		
Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous		
Sample Type	MW	MW	MW	MW	MW	MW	MW		
Date of Collection	4/21/93	4/21/93	4/21/93	4/21/93	4/21/93	4/21/93	4/21/93		
Analytical Parameter	Units								
Lead	ug/L	70	ND	ND	60	ND	ND	NA	10
VOLATILE ORGANIC COMPOUNDS									
Acetone	ug/L	ND	28 JB	2.5 JB	7.7 JB	2.4 JB	2.5 JB	ND	700
Methylene Chloride	ug/L	16 J	ND	ND	ND	ND	3.8 J	4.8 J	2
Benzene	ug/L	520	470	ND	180	ND	ND	ND	1
Toluene	ug/L	ND	ND	ND	15	ND	ND	ND	1,000
Methyl Tertiary Butyl Ether	ug/L	890	970	ND	27	ND	ND	ND	NC
Tert-butyl alcohol	ug/L	470 J	640	ND	ND	ND	ND	ND	NC
Xylenes (Total)	ug/L	ND	ND	2.0 J	74.2 J	ND	ND	ND	40

Abbreviations:

- MW - Monitoring Well.
- ND - Not detected.
- J - Indicates an estimated value.
- ug/L - Micrograms per liter.

TABLE 3-2 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
 BUILDING 2567
 UST NOS. 42 TO 45
 FORT MONMOUTH, NEW JERSEY

Sample ID No.	MW-1	MW-2	MW-3	MW-4	Field Blank	NJDEP Class II-A Groundwater Cleanup Criteria	
Lab ID No.	A 1745	A 1747	A 1746	A 1748	A 1749		
Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous		
Sample Type	MW	MW	MW	MW	QA		
Date of Collection	4/28/93	4/28/93	4/28/93	4/28/93	4/28/93		
Analytical Parameter	Units						
BASE NEUTRAL COMPOUNDS							
Butylbenzylphthalate	ug/L	12	18	12	10	ND	NC
Naphthalene	ug/L	ND	ND	1.2 J	ND	ND	NC
Bis(2-Ethylhexyl)Phthalate	ug/L	ND	ND	2.8 J	ND	ND	30

Abbreviations:

- MW - Monitoring Well.
- NC - No NJDEP Class II-A groundwater criterion has been proposed for this analyte by NJDEP.
- ug/L - Micrograms per liter.
- QA - Quality Assurance

Data Qualifiers:

- ND - Not detected.
- J - Indicates an estimated value.

TABLE 3-2 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
 BUILDING 2567
 UST NOS. 42 TO 45
 FORT MONMOUTH, NEW JERSEY

Sample ID No.	MW-1	MW-2	MW-3	MW-4	Field Blank	Trip Blank	NJDEP Class II-A Groundwater Cleanup Criteria	
Lab ID No.	B 0244	B 0243	B 0245	B 0242	B 0246	B 0241		
Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous		
Sample Type	MW	MW	MW	MW	QA	QA		
Date of Collection	2/3/94	2/3/94	2/3/94	2/3/94	2/3/94	2/3/94		
Analytical Parameter	Units							
INORGANIC								
Lead	ug/L	ND	260	41	ND	ND	NA	10
VOLATILE ORGANIC COMPOUNDS								
Methylene Chloride	ug/L	26 JB	4.0 J	4.4 J	5.0	7.3	5.2	2
Vinyl Acetate	ug/L	ND	ND	ND	1.3 J	ND	ND	NC
Benzene	ug/L	21 J	19	19	14	ND	ND	1
Toluene	ug/L	66	55	43	56	ND	ND	1000
Ethylbenzene	ug/L	16 J	7.4	7.0	8.9	ND	ND	700
Xylenes (Total)	ug/L	41	43	65	60	ND	ND	40
Tert-butyl alcohol	ug/L	28 J	ND	ND	ND	ND	ND	NC
Carbon Disulfide	ug/L	ND	3.1 J	ND	ND	ND	ND	NC
Acetone	ug/L	54 JB	ND	ND	ND	12	ND	700
Methyl tert-butyl ether	ug/L	650	7.0 J	9.1	ND	ND	ND	NC

Abbreviations:

- MW - Monitoring Well.
- NC - No NJDEP Class II-A groundwater cleanup criterion has been proposed for this analyte by NJDEP.
- ND - Not detected.
- J - Indicates an estimated value.
- B - Indicates also present in blank.
- ug/L - Micrograms per liter.

TABLE 3-2 (CONTINUED)

SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER
 BUILDING 2567
 UST NOS. 42 TO 45
 FORT MONMOUTH, NEW JERSEY

Sample ID No.	MW-1	MW-2	MW-3	MW-4	MW-4 (Dup)	Field Blank	Trip Blank	NJDEP Class II-A Groundwater Cleanup Criteria	
Lab ID No.	B 0658	B 0660	B 0659	B 0656	B 0657	B 0661	B 0662		
Matrix	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous	Aqueous		
Sample Type	MW	MW	MW	MW	MW	QA	QA		
Date of Collection	3/31/94	3/31/94	3/31/94	3/31/94	3/31/94	3/31/94	3/31/94		
Analytical Parameter	Units								
VOLATILE ORGANIC COMPOUNDS									
Xylene (Total)	ug/L	ND	2.5 J	ND	ND	ND	ND	ND	40
Methyl Tert-Butyl Ether (MTBE)	ug/L	10	11	ND	1.3 J	1.3 J	ND	ND	NC
Acetone	ug/L	6.9 J	140 B	ND	ND	4.4 JB	7.2 JB	11 B	700
Methylene Chloride	ug/L	ND	17	ND	2.3 J	2.9 J	2.3 J	3.1 J	2
Tertiary Butyl Alcohol	ug/L	22 J	ND	ND	ND	ND	ND	ND	NC
INORGANIC COMPOUNDS									
Lead	ug/L	ND	ND	25	ND	ND	ND	NA	100

Abbreviations:

- NC - No NJDEP Class II-A groundwater cleanup criterion has been proposed for this analyte by NJDEP.
- ND - Not detected.
- NR - Analysis not requested.
- MW - Monitoring Well.
- QA - Quality Assurance sample.
- ug/L - Micrograms per liter.

Data Qualifiers:

- B - Indicates also present in blank.
- J - Indicates an estimated value.

TABLE 3-3

ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY TABLE
 UST NO. 2567
 BUILDING NO. 42 TO 45
 FORT MONMOUTH, NEW JERSEY

Analytical Parameter	No. of Samples Collected	Matrix	Date Collected	Date Analysis Completed	Preservation Method	USEPA SW-846 Analytical Method
TPHC	4	S	2/2/93	2/3/93	Cool to 4°C	418.1
TPHC	4	S	2/8/93	2/8/93	Cool to 4°C	418.1
TPHC	23	S	2/24/93	2/24/93	Cool to 4°C	418.1
VOCs	23	S	2/24/93	2/26/93	Cool to 4°C	USEPA-CLP-IFB
Lead	23	S	2/24/93	2/25/93	Cool to 4°C	6010
Lead	4	Aqueous	12/10/91	12/11/91	Cool to 4°C	418.1
VOCs	4	Aqueous	12/10/91	12/13/91	Cool to 4°C	USEPA-CLP-IFB
Lead	4	Aqueous	10/26/92	10/28/92	Cool to 4°C	418.1
VOCs	4	Aqueous	10/26/92	10/30/92	Cool to 4°C	USEPA-CLP-IFB
Lead	4	Aqueous	4/21/93	4/27/93	Cool to 4°C	418.1
VOCs	4	Aqueous	4/21/93	4/27/93	Cool to 4°C	USEPA-CLP-IFB
BNAs	4	Aqueous	4/28/93	5/12/93	Cool to 4°C	8270
Lead	4	Aqueous	2/3/94	2/7/94	Cool to 4°C	418.1
VOCs	4	Aqueous	2/3/94	2/7/94	Cool to 4°C	USEPA-CLP-IFB
Lead	4	Aqueous	3/31/94	4/5/94	Cool to 4°C	418.1
VOCs	4	Aqueous	3/31/94	4/5/94	Cool to 4°C	USEPA-CLP-IFB

Abbreviations:

- USEPA-CLP-IFB - Volatile samples were 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.
- TPHC - Total Petroleum Hydrocarbons.
- VOCs - Volatile Organic Compounds.
- BNAs - Base Neutral Acid Extractable Compounds.
- C - Celsius.

detected in samples E (1.9 mg/kg), G (14 mg/kg), I (2.9 mg/kg), J (1.8 mg/kg), K (2.3 mg/kg), L (11 mg/kg), M (5.6 mg/kg), N (27 mg/kg), O (45 mg/kg), Q (8.5 mg/kg) and W (34 mg/kg). Total xylenes were detected in samples B (195 mg/kg), F (11.7 mg/kg), G (67 mg/kg), I (230 mg/kg), J (229 mg/kg), K (74 mg/kg), L (890 mg/kg), M (550 mg/kg), N (1200 mg/kg), O (126 mg/kg), Q (710 mg/kg) and W (1200 mg/kg). Ethyl benzene was detected in samples L (170 mg/kg), M (140 mg/kg), N (210 mg/kg), Q (120 mg/kg) and W (170 mg/kg). All other samples contained either non-detectable concentrations of contaminants or concentrations of contaminants below NJDEP ITGW or RDC Soil Cleanup Criteria.

Groundwater

On 10 December 1991, one groundwater sample was collected from each monitoring well and analyzed by Environmental Profile Laboratories for volatile organic compounds plus 15 tentatively identified compounds (VO+15) and lead. Benzene was detected in MW-1 (2400 ug/l), MW-2 (3 ug/l) and MW-3 (110 ug/l), 1,2-dichloroethane in MW-1 (55 ug/l), total xylene in MW-1 (42 ug/l) and MW-3 (200 ug/l), and methylene chloride in MW-1 (240 ug/l), MW-2 (7 ug/l), MW-3 (240 ug/l) and MW-4 (27 ug/l). These concentrations of contaminants exceed NJDEP Class II-A Ground Water Quality Criteria. All other samples contained either non-detectable concentrations of contaminants or concentrations of contaminants below NJDEP Class II-A Ground Water Quality Criteria.

On 26 October 1992, one groundwater sample was collected from each monitoring well and analyzed by Environmental Profile Laboratories for VO+15 and lead. Due to an unusual amount of contaminants present which exceeded NJDEP Class II-A ground water quality criteria in MW-1, a duplicate sample was analyzed. The MW-1 duplicate sample indicated concentrations of benzene (3200 ug/l), total xylene (57 ug/l) and methylene chloride (130 ug/l). In addition, methylene chloride was detected in MW-2 (23 ug/l), MW-3 (24 ug/l) and MW-4 (27 ug/l), and lead in MW-2 (11 ug/l) which exceed NJDEP Class II-a ground water quality criteria. All other samples contained either non-detectable concentrations of contaminants or concentrations of contaminants below NJDEP Class II-A ground water quality criteria. Class II Groundwater Cleanup Standards.

On 21 April 1993, one groundwater sample was collected from each monitoring well and analyzed by 21st Century Laboratories for VO+15 and lead. Lead was detected in MW-1 (70 ug/l) and MW-3 (60 ug/l) in concentrations which exceed NJDEP Class II-A ground water quality criteria. In addition, benzene was detected in MW-1 (520 ug/l) and MW-1 duplicate (470 ug/l), total xylene in MW-3 (74.2 ug/l) and methylene chloride in MW-1 (16 ug/l). Methylene chloride was also detected in the field blank (3.8 ug/l) and the trip blank (4.8 ug/l). The presence of methylene chloride in these quality assurance samples indicates laboratory induced contamination of sample may have occurred and is not related to the operation of the UST system. All other samples contained either non-detectable concentrations of contaminants or concentrations of contaminants below NJDEP Class II-A ground water quality criteria.



On 28 April 1993, one groundwater sample was collected from each monitoring well and analyzed by 21st Century Laboratories for base neutral compounds plus 15 tentatively identified compounds (BN+15). All samples contained either non-detectable concentrations of contaminated or concentrations of contaminants below NJDEP Class II-A Ground Water Quality Criteria.

On 3 February 1994, one groundwater sample was collected from each monitoring well and analyzed by 21st Century Laboratories for VO+15 and lead. Lead was detected in MW-2 (260 ug/l) and MW-3 (41 ug/l) in concentrations which exceed NJDEP Class II-A ground water quality criteria. Benzene was detected in MW-1 (21 ug/l), MW-2 (19 ug/l), MW-3 (19 ug/l) and MW-4 (14 ug/l). Total xylene was detected in MW-1 (42 ug/l), MW-2 (43 ug/l), MW-3 (65 ug/l) and MW-4 (60 ug/l). Methylene chloride was detected in MW-1 (26 ug/l), MW-2 (4 ug/l), MW-3 (4.4 ug/l) and MW-4 (5 ug/l). All other samples contained either non-detectable concentrations of contaminants or concentrations of contaminants below NJDEP Class II-A ground water quality criteria.

On 31 March 1994, one groundwater sample was collected from each monitoring well and analyzed by 21st Century Laboratories for VO+15 and lead. Lead was detected in MW-3 (25 ug/l) in concentrations which exceed NJDEP Class II-A ground water quality criteria. Methylene chloride was detected in MW-2 (17 ug/l), MW-4 (2.3 ug/l) and MW-4 duplicate (2.9 ug/l). Since methylene chloride was also detected in the field blank (2.3 ug/l) and the trip blank (3.1 ug/l), its presence indicates laboratory induced contamination of sample may have occurred and is not related to the operation of the UST system. All other samples contained either non-detectable concentrations of contaminants or concentrations of contaminants below NJDEP Class II-A ground water quality criteria.

3.2 CONCLUSIONS AND RECOMMENDATIONS

Prior to the closure of UST No. 42, 43, 44 and 45, four monitoring wells were installed and sampled. Based on the analysis of groundwater samples elevated volatile and semivolatile parameters were detected. The most notable of the parameters were benzene (3 ug/L to 3,200 ug/L) and total xylenes (55 ug/L to 200 ug/L).

During closure, the tanks were observed to be intact and potentially contaminated soil was excavated until further removal would threatened the integrity of structure and roadways or until field screening indicated sufficient reduction in contaminant levels. Upon completion the excavation was backfilled with clean material and the surface paved.

Monitoring well samples, obtained after the closure, indicated significant reductions in groundwater contamination. Samples obtained on 31 March 1994 indicated the presence of only methylene chloride above NJDEP Class IIA groundwater quality criteria.

The reduction in groundwater contaminant levels is attributable to the following:

- The contaminant sources, Tank Nos. 42 to 45, 936 cubic yards of soil and the pump island piping were successfully removed. The analytical testing of soil has indicated that limited residual contamination exists in the soil below the surface.
- The site was backfilled with clean material and paved. The asphalt pavement caps the site precludes the infiltration of precipitation and other surface water to the ground; which reduces the potential for residual soil contaminants leaching from the soil into ground water.

Based on the above actions that have been implement on-site, the future impact of the site on the groundwater is considered to be insignificant. On 23 September 1994 a fifth monitoring well (MW-5) was installed to assess groundwater downgradient from the site. The four on-site and one downgradient wells will be sampled quarterly and analyzed for VO+15, xylenes, methyl tertiary butyl ether, tertiarybutyl alcohol and lead using Method 524.2. Information regarding these samples will be forwarded to the State.



APPENDIX A
NJDEP-BUST CLOSURE APPROVAL

UNDERGROUND STORAGE TANK SYSTEM CLOSURE APPROVAL

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL
PROTECTION AND ENERGY

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

TMS #

UST #

C-92-2950

0081515

US Army Fort Monmouth
DEH Bldg. 167
Ft. Monmouth, NJ 07703

(Monmouth)

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

Removal of Three 10,000 and one 6,000 unleaded gasoline UST's and
associated piping.

SITE ASSESSMENT: soil samples will be taken every 5 ft along
the centerline of each tank. Samples will be analyzed for VO+10.
Two additional samples will be taken from around each tank biased
toward the two highest field screened areas.

ON-SITE MANAGER:

Dinkerrai Desai

TELEPHONE:

908-532-1475

OWNER:

TELEPHONE:

EFFECTIVE DATE:

September 14, 1992

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

Michael S. Kelly (for)

KEVIN F. KRATINA, ACTING BUREAU CHIEF
BUREAU OF UNDERGROUND STORAGE TANKS

PRESSURE DROP vs. FLOW TEST DATA

Test Date: 1/30/90 Tester: KEVIN KURZWEIL

Site Operator: _____ Contractor: _____

Facility Address: Charles Wood (Shoreline) STORE
2567 FT. MONMOUTH, NJ.

SKETCH OF SITE*



PRESSURE DROP TEST DATA

<u>FLOWMETER (CFH)</u>	#1	<u>DRY PRESSURE ("WCG)</u>	<u>WET PRESSURE ("WCG)</u>
20		<u>.03</u>	
60		<u>.17</u>	<u>.17</u>
100		<u>.34</u>	

<u>FLOWMETER (CFH)</u>	#2	<u>DRY PRESSURE ("WCG)</u>	<u>WET PRESSURE ("WCG)</u>
20		_____	_____
60		_____	_____
100		_____	_____

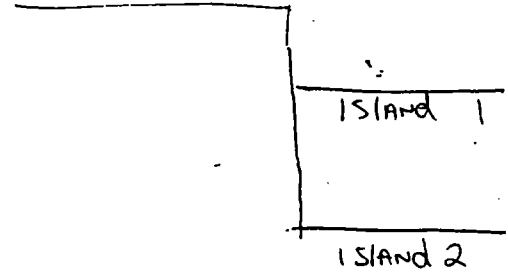
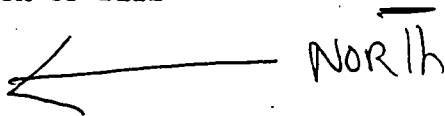
<u>FLOWMETER (CFH)</u>	#3	<u>DRY PRESSURE ("WCG)</u>	<u>WET PRESSURE ("WCG)</u>
20		_____	_____
60		_____	_____
100		_____	_____

*Provide a sketch of the site indicating where location of #1, #2, etc. are in relation to the building. Indicate by arrow the direction north.

PRESSURE DROP vs. FLOW TEST DATA

Test Date: 1-31-90 Tester: Kevin Kurzweil
 Site Operator: _____ Contractor: Lutz
 Facility Address: Building # 699
Fort Monmouth

SKETCH OF SITE*



PRESSURE DROP TEST DATA

		#1	
<u>FLOWMETER (CFH)</u>		<u>DRY PRESSURE ("WCG)</u>	<u>WET PRESSURE ("WCG)</u>
20		<u>.03</u>	
60		<u>.09</u>	<u>.09</u>
100		<u>.27</u>	
		#2	
<u>FLOWMETER (CFH)</u>		<u>DRY PRESSURE ("WCG)</u>	<u>WET PRESSURE ("WCG)</u>
20		<u>.05</u>	
60		<u>.10</u>	<u>.10</u>
100		<u>.29</u>	
		#3	
<u>FLOWMETER (CFH)</u>		<u>DRY PRESSURE ("WCG)</u>	<u>WET PRESSURE ("WCG)</u>
20		_____	
60		_____	_____
100		_____	

*Provide a sketch of the site indicating where location of #1, #2, etc. are in relation to the building. Indicate by arrow the direction north.

0658H

TTI TANK MANAGEMENT SERVICES

A Division of TankTest Incorporated

200 256 1
COPY

August 30, 1991

E-Systems Inc. / Serv-Air
P.O. Box 360
Fort Monmouth, NJ 07703

Attention: Mr. Charles Appleby

Reference: UST Testing - Building No. 2567, Fort Monmouth, New Jersey
TTI Project Report No. 3099

Dear Mr. Appleby:

This report covers the testing of three (3) underground storage tank(s) by TankTest Inc. (TTI). The testing was conducted on August 15th and 16th, 1991, at Building 2567, Fort Monmouth, New Jersey facility. For your ease of review, this report is organized as follows:

- . Summary of Test Results
- . Methodology
- . Field Data Sheets

If you have any questions or comments concerning this report, please do not hesitate to contact me at anytime.

Respectfully submitted,

TankTest, Inc.

Robert W. Giunta / yu

Robert W. Giunta
Tank Testing Supervisor

RG/bc
Test\3099

Sound Environmental Solutions

Evesham Corporate Center • 4 East Stow Road • Marlton, New Jersey 08053
TEL (609) 985-8800 • FAX (609) 985-9200

UST #3 Failed,
Discontinued UST
Notified NJDEPE



SUMMARY OF PROJECT RESULTS

PROJECT NUMBER: 3099-1

Date Tested	08-15-91
System Location	Building 2567 Right Tank <i>From Hope Rd.</i>
Tank Size	10,000 Gallons
Product	Regular Unleaded
Ground water depth	Below 56"
Standpipe elevation *	254"
Results **	- 0.010 Gallons Per Hour
Conclusion	System Passed Inspection

* From tank bottom to the twelve (12) inch mark on the standpipe, meets 4 pound rule requirement.

** The NFPA (National Fire Protection Association) criteria of plus or minus 0.050 gallons per hour used to certify tank system tightness is a mathematical calculation based on actual liquid volume change and temperature change and is not intended as permission of a leak.



E-Systems Inc. / Serv-Air
TTI Test Report Number 3099
August 30, 1991
Page 3 of 6

SUMMARY OF PROJECT RESULTS

PROJECT NUMBER: 3099-2

Date Tested	08-16-91
System Location	Building 2567 Left Tank <i>From Hope Rd.</i>
Tank Size	10,000 Gallons
Product	Unleaded Plus
Ground water depth	Below 56"
Standpipe elevation *	254"
Results **	>2.0 Gallons Per Hour
Conclusion	System Failed Inspection

* From tank bottom to the twelve (12) inch mark on the standpipe, meets 4 pound rule requirement.

** The NFPA (National Fire Protection Association) criteria of plus or minus 0.050 gallons per hour used to certify tank system tightness is a mathematical calculation based on actual liquid volume change and temperature change and is not intended as permission of a leak.



E-Systems Inc. / Serv-Air
TTI Test Report Number 3099
August 30, 1991
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SUMMARY OF PROJECT RESULTS

PROJECT NUMBER: 3099-3

Date Tested	08-16-91
System Location	Building 2567 Middle Tank <i>From Hoge Tank.</i>
Tank Size	10,000 Gallons
Product	Super Unleaded
Ground water depth	Below 56"
Standpipe elevation *	254"
Results **	- 0.033 Gallons Per Hour
Conclusion	System Passed Inspection

* From tank bottom to the twelve (12) inch mark on the standpipe, meets 4 pound rule requirement.

** The NFPA (National Fire Protection Association) criteria of plus or minus 0.050 gallons per hour used to certify tank system tightness is a mathematical calculation based on actual liquid volume change and temperature change and is not intended as permission of a leak.



II. METHODOLOGY

TTI tests underground storage tanks through the use of the Petro Tite system. This system, also known as the Kent-Moore system was developed in cooperation with the American Petroleum Institute (API). TTI uses this system for the leak testing of a wide variety of tanks, systems, and tank contents.

The Petro Tite testing process is by definition a "temperature compensated standpipe test with product circulation". The tank testing equipment is connected to the tank system (and associated piping) subsequently filled with the existing product in the tank. Any observable decrease in liquid volume in the standpipe gives a direct measurable reading of loss if the system is leaking. However a drop in the standpipe liquid level can also be the result of other factors such as temperature change or a change in the tank volume due to a phenomenon known as "tank end deflection". The temperature variable is compensated for using the Petro Tite system by accurate temperature measurement while vigorously circulating the tank contents. Tank end deflection is also compensated for by stabilizing the tank geometry using procedures developed for the testing system. When these factors are controlled, loss in the standpipe means loss in the system, with compensation for all of the important factors that can give false results. The Petro Tite process is the only approved system that compensates for all these important variables, thus providing the user with the most reliable results available.

The Petro Tite system as applied by TTI using certified testers, adheres to the National Fire Protection Association (NFPA) guidelines as described in NFPA Bulletin No. 329, Recommended Practice for Handling Underground Leakage of Flammable and Combustible Liquids.



E-Systems Inc. / Serv-Air
TTI Test Report Number 3099
August 30, 1991
Page 6 of 6

III. FIELD DATA AND CALCULATIONS

Data Chart for Tank System Tightness Test

SEE PRINT

OWNER Property Tank(s)

Name: Fort Monmouth Address: PO Box 366 Fort Monmouth NJ Representative: Charles Appleby Telephone: 201-532-4359

OPERATOR

Name: _____ Address: _____ Telephone: _____

REASON FOR TEST
Explain Fully)

Integrity

WHO REQUESTED TEST AND WHEN

Name: Charles Appleby Title: E-Systems Company or Affiliation: same Date: _____
Address: _____ Telephone: _____

TANK INVOLVED	Identify by Direction	Capacity	Brand/Supplier	Grade	Approx. Age	Steel/Fiberglass
Use additional lines for manifolded tanks	<u>Right</u>	<u>10,000</u>		<u>Reg</u>		<u>Steel</u>
	<u>TANK</u>			<u>UNLEADED</u>		
	<u>BLDG #2567</u>					

INSTALLATION DATA	Location	Cover	Fills	Vents	Siphones	Pumps
		<u>Concrete</u>	<u>1-4"</u>	<u>1-2"</u>	<u>—</u>	<u>Sub</u>
	North inside driveway, Rear of station, etc.	Concrete, Black Top, Earth, etc.	Size, Tilefill make, Drop tubes, Remote Fills	Size, Manifolded	Which tanks?	Suction, Remote, Make if known

UNDERGROUND WATER

Depth to the Water table: 56" is the water over the tank? Yes No

FILL-UP ARRANGEMENTS

Tanks to be filled _____ hr. _____ Date Arranged by _____ Name _____ Telephone _____

Extra product to "top off" and run tank tester. How and who to provide? Consider NO Lead.

Terminal or other contact for notice or inquiry _____ Company _____ Name _____ Telephone _____

CONTRACTOR, MECHANICS, any other contractor involved

OTHER INFORMATION OR REMARKS

Additional information on any items above. Officials or others to be advised when testing is in progress or completed. Visitors or observers present during test, etc.

TEST RESULTS

Tests were made on the above tank systems in accordance with test procedures prescribed for as detailed on attached test charts with results as follows:

Tank Identification	Tight	Leakage Indicated	Date Tested
<u>Reg, UNLEADED</u>	<u>YES</u>	<u>-0.010 GPH</u>	<u>8-15-91</u>

SENSOR CERTIFICATION

13. This is to certify that these tank systems were tested on the date(s) shown. Those indicated as "Tight" meet the criteria established by the National Fire Protection Association Pamphlet 323.

Technicians: R GIUNTA

1. TANIK TEST INC Testing Contractor or Company. By: Signature
4 E. STOW RD MARLTON NJ Address

Date: 200

Serial No. of Thermal Sensor: _____

Certification #: _____

2. _____

Certification #: _____

15. TANK TO TEST

Right Tank Bldg #2547
Identity by position
Reg. Unlead
Brand and Grade

15a. BRIEF DIAGRAM OF TANK FIELD

16. CAPACITY

Nominal Capacity 10000 Gallons
By most accurate capacity chart available 10152 Gallons

From

- Station Chart
 Tank Manufacturer's Chart
 Company Engineering Data
 Charts supplied with
 Other

17. FILL-UP FOR TEST

Slick Water Bottom
before fill-up

0 in.
to 1/4"

0 Gallons

96 in.
Tank Diameter

Inventory

96

Gallons

Total Gallons
on Handing

10152

Water

±0

Topsoil

+10

1062

Transfer total to line 25a

18. SPECIAL CONDITIONS AND PROCEDURES TO TEST THIS TANK

Water in tank Line(s) being tested with LVLLT

High water table in tank excavation

See manual sections applicable. Check below and record procedure in log (27).¹

Use maximum allowable test pressure for all tests.
Four pound rule does not apply to doublewalled tanks.

Complete section below:

1 Is four pound rule required?

Yes No

2 Height to 12" mark from bottom of tank

254 in.

3 Pressure at bottom of tank

4 P.S.I.

4 Pressure at top of tank

- P.S.I.

Depth of burial

31 in.

Tank dia

96 in.

Water table

↓ 56 in.

NOTES:

$$71 \times 0.036 = 2.6 + 4 = 6.6$$

$$6.6 \div 0.026 = 254$$

$$254 - 127 = 127$$

The above calculations are to be used for dry soil conditions to establish a positive pressure advantage, or when using the four pound rule to compensate for the presence of subsurface water in the tank area.

Refer to N.F.P.A. 30, Sections 2-3.2.4 and 2-7.2 and the tank manufacturer regarding allowable system test pressures.

19. TANK MEASUREMENTS FOR TSTT ASSEMBLY

Bottom of tank to grade* 127 in.
Add 30" for "T" probe assembly 30 in.
Total tubing to assembly - approximate 157 in.

20. EXTENSION HOSE SETTING

Tank top to grade* 31 in.
Extend hose on suction tube 6" or more
below tank top 6+ 37 in.

*If fill pipe extends above grade, use top of fill

22. Thermal-Sensor reading after circulation

 digits
*F

23. Digits per *F in range of expected change

1000
Between digits

COEFFICIENT OF EXPANSION (Complete after circulation)

24a. Corrected A.P.I. Gravity

Observed A.P.I. Gravity

Hydrometer employed

Observed Sample Temperature

Corrected A.P.I. Gravity
@ 60°F. From Table A

Coefficient of Expansion
for Involved Product
From Table B

Transfer COE to Line 25b.

25.

(a)
Total quantity in
full tank (16 or 17)

(b)
Coefficient of expansion for
involved product

(c)
Volume change in this tank
per *F

gallons

26.

(a) 6.75215
Volume change per *F (25 or 24b)

1000
Digits per *F in test

0.0067521
Volume change per digit

This is
test21. VAPOR RECOVERY SYSTEM Stage I Stage II24b. COEFFICIENT OF EXPANSION
RECIPROCAL METHOD

Type of Product

GASOLINE

Hydrometer Employed

6 II

Temperature in Tank

After Circulation

*F

Temperature of Sample

*F

Difference (+/-)

*F

Observed A.P.I. Gravity

56.5

Reciprocal 1565

Page # 60

1062
Total quantity in
full tank (16 or 17)

1505
Reciprocal

6.75215
Volume change in
this tank per *F

Transfer to Line 26a.

24c. FOR TESTING WITH WATER see Table C & D

Water Temperature after Circulation

Table C

*F

Coefficient of Water

Table D

Added Surfactant? Yes No Transfer COE to Line 25b.

gallons

This is
test

27. Sensor Calibration _____ / _____		30. HYDROSTATIC PRESSURE CONTROL		31. VOLUME MEASUREMENTS (V) RECORD TO .001 GAL.			TEMPERATURE COMPENSATION USE FACTOR (a)			CHANGES EACH READING	CHANGE	
LOG OF TEST PROCEDURES			29. Reading No.		32. Product in Graduate		33. Product Replaced (-)	35. Thermal Sensor Reading	36. Change Higher + Lower - (c)	37. Computation (c) + (a) = Expansion - Contraction -	Temperature Adjustment Volume Minus Expansion (+) or Contraction (-) #33(V) - #37(I)	At Low Level compute Change per Hour (HFA criteria)
28. DATE	Record details of setting up and running test (Use full length of line if needed)	29. Reading No.	Beginning of Reading	Level to which Restored	Before Reading	After Reading	Product Recovered (+)	Thermal Sensor Reading	Change Higher + Lower - (c)	Computation (c) + (a) = Expansion - Contraction -	Temperature Adjustment Volume Minus Expansion (+) or Contraction (-) #33(V) - #37(I)	At Low Level compute Change per Hour (HFA criteria)
1245	STARTED CIRCULATION							Thermal Sensor			ser	200
1335	Completed										Ref	81.694
											INIT	81.694
1340	START High Level TEST			42				76.971	FA =	0.0068	FIN	81.694
55	1 Readings			42	0.460	0.490	to.030	.991	+20	to.136	0.106	
1410	2 "			42	0.490	0.535	to.045	77.001	+10	to.068	0.023	
25	3 "			42	0.535	0.580	to.045	.010	+9	to.061	0.016	
40	4 "			42	0.580	0.635	to.055	.021	+11	to.075	0.020	
55	5 "			42	0.635	0.695	to.060	.031	+10	to.068	0.008	
1510	6 "			42	0.695	0.755	to.060	.083	+12	to.082	0.022	
25	7 "			42	0.755	0.820	to.065	.053	+10	to.068	0.003	
40	8 "			42	0.820	0.880	to.060	1.063	+10	to.068	0.008	
1545	Dropped to Low Level			12				77.069				
1600	Readings			12	0.190	0.295	to.105	.077	+8	to.054	to.051	
15	"			12	0.295	0.380	to.085	.086	+9	to.061	to.024	
1620	START Low Level TEST			12				77.091				
25	1 Readings			12	0.380	0.400	to.020	.093	+2	to.014	to.006	to.006
30	2 "			12	0.400	0.415	to.015	.094	+1	to.007	to.008	to.014
35	3 "			12	0.415	0.430	to.015	.096	+2	to.014	to.001	to.015
40	4 "			12	0.430	0.450	to.020	1.098	+2	to.014	to.006	to.021
45	5 "			12	0.450	0.465	to.015	.101	+3	to.020	0.005	to.016
50	6 "			12	0.465	0.480	to.015	.103	+2	to.014	to.001	to.017
55	7 "			12	0.480	0.495	to.015	.106	+3	to.020	0.005	to.022
1700	8 "			12	0.495	0.510	to.015	.109	+3	to.020	0.005	to.007
05	9 "			12	0.510	0.525	to.015	.111	+2	to.014	to.001	to.008
10	10 "			12	0.525	0.540	to.015	.113	+2	to.014	to.001	to.009

Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
15	11	12	0.540	12	0.555	12	0.015	115	+2	12	to.014	12	to.010
20	12	12	0.555	12	0.575	12	to.020	117	+2	12	to.014	12	to.006
25	13	12	0.575	12	0.590	12	to.015	119	+2	12	to.014	12	to.001
30	14	12	0.590	12	0.605	12	to.015	122	+3	12	to.020	12	-0.005
35	15	12	0.605	12	0.620	12	to.015	125	+3	12	to.020	12	-0.005
40	16	12	0.620	12	0.635	12	to.015	128	+3	12	to.020	12	-0.005
45	17	12	0.635	12	0.650	12	to.015	130	+2	12	to.014	12	to.001
50	18	12	0.650	12	0.665	12	to.015	132	+2	12	to.014	12	to.001
55	19	12	0.665	12	0.685	12	to.020	134	+2	12	to.014	12	to.006
18 00	20	12	0.685	12	0.705	12	to.020	136	+2	12	to.014	12	to.006
05	21	12	0.705	12	0.720	12	to.015	138	+2	12	to.014	12	to.001
10	22	12	0.720	12	0.735	12	to.015	140	+2	12	to.014	12	to.001
15	23	12	0.735	12	0.750	12	to.015	142	+2	12	to.014	12	to.001
20	24	12	0.750	12	0.765	12	to.015	144	+2	12	to.014	12	to.001
TEST COMPLETE										to.020 ÷ 2 = 0.010			
										-0.010 GPH			
										SYSTEM PASSED TEST.			

**P-T Tank Test Data Chart
Additional Info**

1. Net Volume Change at Conclusion of Precision Test -0.010 gph
 Signature of Tester: [Signature]
 Date: 8-15-91

2. Statement:
 Tank and product handling system has been tested tight according to the Precision Test Criteria as established by N.F.P.A. publication 329. This is not intended to indicate permission of a leak.
 OR
 Tank and product handling system has failed the tank tightness test according to the Precision Test Criteria as established by N.F.P.A. publication 329.

It is the responsibility of the owner and/or operator of this system to immediately advise state and local authorities of any implied hazard and the possibility of any reportable pollution to the environment as a result of the indicated failure of the system. Health Consultants Incorporated does not assume any responsibility or liability for any loss of product to the environment.

Tank Owner/Operator _____

Date _____

Data Chart for Tank System Tightness Test

PRINT

OWNER Property Tank(s)

FORT MONMOUTH **Charles Appleby**

Name: **Paper 360** Address: **FORT MONMOUTH NJ** Zip: **08054** Representative: **Charles Appleby** Telephone: **201-532-4359**

OPERATOR

Name: _____ Address: _____ Zip: _____ Telephone: _____

REASON FOR TEST (State Fully)

Integrity

WHO REQUESTED TEST AND WHEN

Name: **Charles Appleby** Title: **SAFETY** Company or Affiliation: **E-Systems-** Date: _____

Address: _____ Zip: _____ Telephone: _____

TANK INVOLVED	Identify by Direction	Capacity	Brand/Supplier	Grade	Approx. Age	Steel/Fiberglass
	TANK # 3	10,000		Unleaded PLUS	20+	STEEL
Additional lines manifolded tanks	Side #2567					

INSTALLATION DATA	Location	Cover	Fills	Vents	Sionones	Pumps
		CONCRETE	1-4" 1-3" VR	1-2"	—	sub's
	North inside driveway, Rear of station, etc.	Concrete, Black Top, Earth, etc.	Size, Titelfill make, Drop tubes, Remote Fills	Size, Manifolded	Which tanks?	Suction, Remote, Make if known

UNDERGROUND WATER

Depth to the water table from grade **↓ 56"**

Is the water over the tank? Yes No

SET-UP ARRANGEMENTS

Tanks to be filled _____ hr. _____ Date Arranged by _____ Name _____ Telephone _____

Extra product to "top off" and run tank tester. How and who to provide? Consider NO Lead.

Terminal or other contact for notice or inquiry _____ Company _____ Name _____ Telephone _____

CONTRACTOR, MECHANICS, or other contractor involved

OTHER INFORMATION OR REMARKS

Additional information on any items above. Officials or others to be advised when testing is in progress or completed. Visitors or observers present during test, etc.

1. TEST METHOD

PETRO TITE II PETRO COMP QUICK CHECK 2000

11a. TEST RESULTS

Tests were made on the above tank systems in accordance with test procedures prescribed for as detailed on attached test charts with results as follows:

Tank Identification	Tight	Leakage Indicated	Date Tested
Unleaded PLUS	NO	72.0 GPH	8-16-91

12. SENSOR CERTIFICATION

Date _____

Serial No. of Thermal Sensor _____

13. CONTRACTOR CERTIFICATION

Technicians

1. **R GIUNTA**

Certification # _____

2. _____

TANK TEST INC

Testing Contractor or Company. By: Signature

4 ESTON RD MARLTON NJ

Address

15. TANK TO TEST
TANK # 3 - Bldg # 2567
Identity by position
Unleaded Plus
Brand and Grade

15a. BRIEF DIAGRAM OF TANK FIELD

16. CAPACITY
 Nominal Capacity 10000 Gallons
 By most accurate capacity chart available 10152 Gallons

- From
- Station Chart
 - Tank Manufacturer's Chart
 - Company Engineering Data
 - Charts supplied with Tank Tester
 - Other _____

17. FILL-UP FOR TEST

Stick Water Bottom before Fill-up 3" in. 106 Gallons 96 Tank Diameter in.

Total Gallons as Reading

Inventory in Tank 10152

Water Bottom - 106

Top off equipment + 10

Total Quantity 10056

18. SPECIAL CONDITIONS AND PROCEDURES TO TEST THIS TANK

- Water in tank Line(s) being tested with LVLLT
- High water table in tank excavation

- See manual sections applicable. Check below and record procedure in log (27).
- Use maximum allowable test pressure for all tests. Four pound rule does not apply to doublewalled tanks.
- Complete section below:
1. Is four pound rule required? Yes No
2. Height to 12" mark from bottom of tank 254 in.
3. Pressure at bottom of tank 4 P.S.I.
4. Pressure at top of tank - P.S.I.

19. TANK MEASUREMENTS FOR TSTT ASSEMBLY

Bottom of tank to grade* 128 in.

Add 30" for "T" probeassy. 30 in.

Total tubing to assemble - approximate 158 in.

20. EXTENSION HOSE SETTING

Tank top to grade* 32 in.

Extend hose on suction tube 6" or more below tank top 6" 38 in.

*If fill pipe extends above grade, use top of fill

USE WITH THERMAL SENSOR PN5039 (Blue Box)

22. Thermal-Sensor reading after circulation _____ digits

Between _____ °F

23. Digits per °F in range of expected change _____ digits

24a. IF USING THERMAL SENSOR DTS-2000 OR QC-2000 WHICH READ 1000 DIGITS PER °F TRANSFER 1000 TO LINE 26, DIGITS PER °F IN TEST RANGE.

21. VAPOR RECOVERY SYSTEM Stage 1 Stage II

21b. COEFFICIENT OF EXPANSION RECIPROCAL METHOD

Type of Product _____

Hydrometer Employed _____

Temperature In Tank After Circulation _____ °F

Temperature of Sample _____ °F

Difference (+/-) _____ °F

Observed A.P.I. Gravity _____

Reciprocal _____ Page # _____

10056 : _____

Total quantity in full tank (17) _____ Reciprocal _____ Volume change in this tank per °F _____

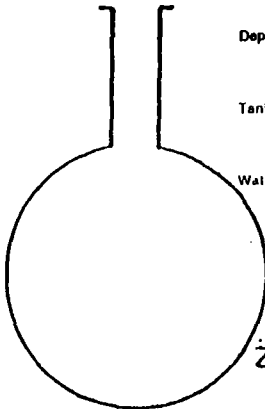
Transfer to Line 26a

24c. FOR TESTING WITH WATER see Table C & D

Water Temperature after Circulation Table C from Thermal Sensor _____ °F

Coefficient of Water Table D _____

Added Surfactant? Yes No Transfer COE to Line 25b.



Depth of burial 32 in.

Tank dia. 96 in.

Water table to tank bottom 156 in.

NOTES:

$7.6 \times 0.036 = 2.6 + 4 = 6.6$

$6.6 + 0.026 = 254$

$254 - 128 = 126$

$12" = 126"$

The above calculations are to be used for dry soil conditions to establish a positive pressure advantage, or when using the four pound rule to compensate for the presence of subsurface water in the tank area.

Refer to N.F.P.A. 30, Sections 2-3.2.4 and 2-7.2 and the tank manufacturer regarding allowable system test pressures.

25. (a) _____ × (b) _____ = (c) _____ gallons

Total quantity in full tank (17) _____ Coefficient of expansion for involved product _____ Volume change in this tank per °F _____

26. (a) _____ + _____ = _____ This is test

Volume change per °F (25° or 75°) _____ Digits per °F in test _____ Volume change per digit _____

Data Chart for Tank System Tightness Test

PLEASE PRINT

1. OWNER Property Tank(s)

Fort Monmouth Charles Appleby
 Name Address Representative Telephone
Po Box 360 FT Monmouth NJ
 Name Address Representative Telephone

2. OPERATOR
 Name Address Telephone

3. REASON FOR TEST (Explain Fully)
INTEGRITY

4. WHO REQUESTED TEST AND WHEN
Charles Appleby E-Systems
 Name Title Company or Affiliation Date
Po Box 360 FT Monmouth NJ 201-532-4359
 Address Telephone

5. TANK INVOLVED

Identity by Direction	Capacity	Brand/Supplier	Grade	Approx. Age	Steel/Fiberglass
<u>middle</u>	<u>10,000</u>		<u>Super</u>		<u>Steel</u>
<u>TANK</u>			<u>untlead</u>		
<u>RUC #2567</u>					

Use additional lines for manifolded tanks

6. INSTALLATION DATA

Location	Cover	Fills	Vents	Siphones	Pumps
	<u>Concrete</u>	<u>1-4"</u>	<u>1-2"</u>	<u>—</u>	<u>SUBS</u>
North inside driveway, Rear of station, etc.	Concrete, Black Top, Earth, etc.	Size, Titfill max. Drop tubes, Remote Fills	Size, Manifolded	Which tanks?	Suction, Remote, Make if known

7. UNDERGROUND WATER

Depth to the Water table 56" Yes No

is the water over the tank?

8. FILL-UP ARRANGEMENTS

Tanks to be filled _____ hr. _____ Date Arranged by _____ Name Telephone

Extra product to "top off" and run tank tester. How and who to provide? Consider NO Lead.

Terminal or other contact for notice or inquiry _____ Company Name Telephone

9. CONTRACTOR, MECHANICS, any other contractor involved

10. OTHER INFORMATION OR REMARKS

Additional information on any items above. Officials or others to be advised when testing is in progress or completed. Visitors or observers present during test, etc.

11. TEST RESULTS

Tests were made on the above tank systems in accordance with test procedures prescribed for as detailed on attached test charts with results as follows:

Tank Identification	Tight	Leakage Indicated	Date Tested
<u>Middle TANK</u>	<u>YES</u>	<u>-0.033 GPH</u>	<u>8-16-91</u>

12. SENSOR CERTIFICATION

Date 200
 Serial No. of Thermal Sensor _____

13. This is to certify that these tank systems were tested on the date(s) shown. Those indicated as "Tight" meet the criteria established by the National Fire Protection Association Pamphlet 329.

Technicians
 1. R GIUNTA
 Certification # _____

TANK TEST INC
 Testing Contractor or Company. By: Signature
4 STOW Rd MALTON NJ
 Address

2. _____
 Certification # _____

15. TANK TO TEST
middle Tank Bldg #2567
 Identity by position
Unleaded Super
 Brand and Grade

15a. BRIEF DIAGRAM OF TANK FIELD

16. CAPACITY
 Nominal Capacity 10,000 Gallons
 By most accurate capacity chart available 10152 Gallons

From
 Station Chart
 Tank Manufacturer's Chart
 Company Engineering Data
 Charts supplied with
 Other

17. FILL-UP FOR TEST

Slick Water Bottom before Fill-up 0 in. 0 Gallons 96 Tank Diameter in. Inventory 96 Gallons 10152 Total Gallons on Handing
WATER 10
Tyfoff 1010
10162
 Transfer total to line 25a

18. SPECIAL CONDITIONS AND PROCEDURES TO TEST THIS TANK, Water in tank Line(s) being tested with LVLLT

See manual sections applicable. Check below and record procedure in log (27):
 High water table in tank excavation

Use maximum allowable test pressure for all tests. Four pound rule does not apply to doublewalled tanks.

Complete section below:

- 1 Is four pound rule required? Yes No
- 2 Height to 12" mark from bottom of tank 254 in.
- 3 Pressure at bottom of tank 4 P.S.I.
- 4 Pressure at top of tank - P.S.I.

19. TANK MEASUREMENTS FOR TSTT ASSEMBLY
 Bottom of tank to grade* 128 in.
 Add 30" for "T" probe assy. 30 in.
 Total tubing to assemble - approximate 158 in.

20. EXTENSION HOSE SETTING
 Tank top to grade* 32 in.
 Extend hose on suction tube 6" or more below tank top 6+ 38 in.
 *If fill pipe extends above grade, use top of fill.

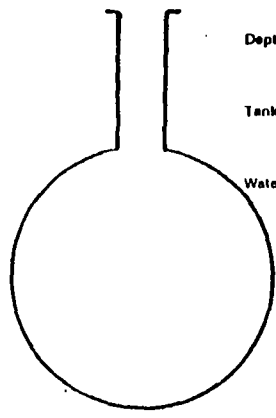
22. Thermal-Sensor reading after circulation 76.291 digits
76.77 °F Between
 23. Digits per °F in range of expected change 1000 digits

COEFFICIENT OF EXPANSION (Complete after circulation)
 24a. Corrected A.P.I. Gravity
 Observed A.P.I. Gravity _____
 Hydrometer employed _____ H
 Observed Sample Temperature _____ °F
 Corrected A.P.I. Gravity @ 60°F. From Table A _____
 Coefficient of Expansion for Involved Product From Table B _____
 Transfer COE to Line 25b.

21. VAPOR RECOVERY SYSTEM Stage I Stage II

24b. COEFFICIENT OF EXPANSION RECIPROCAL METHOD
 Type of Product Gasoline
 Hydrometer Employed 6 II
 Temperature in Tank After Circulation 76.2 °F
 Temperature of Sample 76.2 °F
 Difference (+/-) 50 °F
 Observed A.P.I. Gravity 57.3
 Reciprocal 1495 Page # 61
10162 : 1495 : 6.79732
 Total quantity in full tank (16 or 17) Reciprocal Volume change in this tank per °F
 Transfer to Line 26a

24c. FOR TESTING WITH WATER see Table C & D
 Water Temperature after Circulation Table C _____ °F
 Coefficient of Water Table D _____
 Added Surfactant? Yes No Transfer COE to Line 25b



Depth of burial 32 in.
 Tank dia. 96 in.
 Water table 156 in.

NOTES:
 $77 \times 0.036 = 2.6$
 $+ 4.0$
 $= 254 - 128$
 $12" = 126$
 $6.6 \div 0.026$

The above calculations are to be used for dry soil conditions to establish a positive pressure advantage, or when using the four pound rule to compensate for the presence of subsurface water in the tank area.

Refer to N.F.P.A. 30, Sections 2-3.2.4 and 2-7.2 and the tank manufacturer regarding allowable system test pressures.

25. (a) _____ x (b) _____ = (c) _____ gallons
 Total quantity in full tank (16 or 17) Coefficient of expansion for Involved product Volume change in this tank per °F
 26. (a) 6.79732 x 1000 = 6.79732 (0.0068)
 This is

27. Sensor Calibration _____ / _____		30. HYDROSTATIC PRESSURE CONTROL		31. VOLUME MEASUREMENTS (V) RECORD TO 001 GAL.		TEMPERATURE CORRECTIONS USE FACTOR (a)			38. TEMPERATURE EACH READING	CHANGE
LOG OF TEST PROCEDURES		29. Reading No		32. Product in Graduate		33. Product Replaced (-)	35. Thermal Sensor Reading	36. Change Higher + Lower - (c)	37. Computation (c) - (a) = Expansion + Contraction -	At Low Level compute Change per Hour (HFA criteria)
28. DATE	Record details of setting up and running test. (Use full length of line if needed)	Beginning of Reading	Level to which Restored	Before Reading	After Reading	Product Recovered (+)			Temperature Adjustment - Volume Minus Expansion (+) or Contraction (-) #33(V) - #37(I)	
TIME (24 hr)										
1350	STARTED Circulation						Thermal Sensor		ser	200
1440	Completed								REF	81.694
									INIT	81.694
1445	START High Level TEST		42				76.291	FA = 0.0068	FIN	81.694
1500	1 Readings		42	0.910	0.780	0.130	.294	+3	to .020	-0.150
15	2 "		42	0.780	0.700	0.080	.297	+3	to .020	-0.100
30	3 "		42	0.700	0.610	0.090	.301	+4	to .027	-0.117
45	4 "		42	0.610	0.550	0.060	.304	+3	to .020	-0.080
1600	5 "		42	0.550	0.440	0.110	.307	+3	to .020	-0.130
15	6 "		42	0.440	0.420	0.020	.310	+3	to .020	-0.040
30	7 "		42	0.420	0.410	0.010	.313	+3	to .020	-0.030
45	8 "		42	0.410	0.400	0.010	.316	+3	to .020	-0.030
1650	Dropped To Low Level		12				76.318			
1705	Readings		12	0.350	0.410	to .060	.322	+4	to .027	
20	"		12	0.410	0.440	to .030	.325	+3	to .020	
1725	START Low Level TEST		12				76.327			
30	1 Readings		12	0.460	0.465	to .005	.328	+1	to .007	-0.002
45	2 "		12	0.465	0.470	to .005	.329	+1	to .007	-0.004
10	3 "		12	0.470	0.475	to .005	.330	+1	to .007	-0.006
15	4 "		12	0.475	0.480	to .005	.332	+2	to .014	-0.011
50	5 "		12	0.480	0.485	to .005	.333	+1	to .007	-0.002
55	6 "		12	0.485	0.490	to .005	.334	+1	to .007	-0.002
1800	7 "		12	0.490	0.495	to .005	.335	+1	to .007	-0.002
05	8 "		12	0.495	0.500	to .005	.336	+1	to .007	-0.002
10	9 "		12	0.500	0.505	to .005	.338	+2	to .014	-0.011
15	10 "		12	0.505	0.510	to .005	.339	+1	to .007	-0.002

18	20	11	Reading	12	0.510	0.515	10.005	.340	+1	10.007	-0.002	-0.040
25	12	"	"	12	0.515	0.520	10.005	.341	+1	10.007	-0.002	-0.042
30	13	"	"	12	0.210	0.215	10.005	.342	+1	10.007	-0.002	-0.044
35	14	"	"	12	0.215	0.220	10.005	.343	+1	10.007	-0.002	-0.046
40	15	"	"	12	0.220	0.225	10.005	.344	+1	10.007	-0.002	-0.048
45	16	"	"	12	0.225	0.230	10.005	.345	+1	10.007	-0.002	-0.050
50	17	"	"	12	0.230	0.235	10.005	.346	+1	10.007	-0.002	-0.052
55	18	"	"	12	0.235	0.240	10.005	.347	+1	10.007	-0.002	-0.054
900	19	"	"	12	0.240	0.245	10.005	.348	+1	10.007	-0.002	-0.056
05	20	"	"	12	0.245	0.250	10.005	.349	+1	10.007	-0.002	-0.058
10	21	"	"	12	0.250	0.255	10.005	.350	+1	10.007	-0.002	-0.060
15	22	"	"	12	0.255	0.260	10.005	.351	+1	10.007	-0.002	-0.062
20	23	"	"	12	0.260	0.265	10.005	.352	+1	10.007	-0.002	-0.064
25	24	"	"	12	0.265	0.270	10.005	.353	+1	10.007	-0.002	-0.066
TEST COMPLETE												
-0.066 GPH $\div 2 = 0.033$												
-0.033 GPH												
SYSTEM PASSED INSPECTION												

**P-T Tank Test Data Chart
Additional Info**

1. Net Volume Change at Conclusion of Precision Test 0.033 gph
 Signature of Tester: [Signature]
 Date: 8-16-91

2. Statement:

Tank and product handling system has been tested (light according to the Precision Test Criteria as established by N.F.P.A. publication 329. This is not intended to indicate permission of a leak.

OR

Tank and product handling system has failed the tank tightness test according to the Precision Test Criteria as established by N.F.P.A. publication 329.

It is the responsibility of the owner and/or operator of this system to immediately advise state and local authorities of any implied hazard and the possibility of any reportable pollution to the environment as a result of the indicated failure of this system. Heath Consultants Incorporated does not assume any responsibility or liability for any loss of product to the environment.

Tank Owner/Operator _____

Date _____

TTI TANK MANAGEMENT SERVICES

A Division of TankTest Incorporated

July 2, 1991

E-Systems Inc./Serv-Air
P.O. Box 360 Building 166
Forth Monmouth, NJ 07703

COPY

Attention: Mr. Charles Appleby

Reference: Leak Testing of Underground Storage Tanks
TTI Proposal 91-538

Dear Mr. Appleby:

In response to our recent conversation, TTI Tank Management Services (TTI), is pleased to provide you with this proposal. For your ease of review, the proposal is organized in the following manner:

- . Our Understanding of the Task
- . Our Approach to the Task
- . Timing & Scheduling
- . Reporting
- . Costs
- . General Terms & Conditions

I. OUR UNDERSTANDING OF THE TASK

E-Systems Inc./Serv-Air, desires the leak testing of three (3) underground storage tanks at Fort Monmouth New Jersey. **E-Systems Inc./Serv-Air** has issued Purchase Order No. R1-0150-02 for the testing of the following tanks:

<u>Location</u>	<u>Qty</u>	<u>Gallons</u>	<u>Contents</u>
Fort Monmouth Gas Station	3	10,000	Gasoline

Information from **E-Systems Inc./Serv-Air**, indicates there is a 6,000 gallon UST manifolded to one of the USTs to be tested. This proposal is to remove the concrete over the manifolded line, excavate to and disconnect the line.

Sound Environmental Solutions

Evesham Corporate Center • 4 East Stow Road • Marlton, New Jersey 08053
TEL (609) 985-8800 • FAX (609) 985-9200



E-Systems Inc./Serv-Air
July 2, 1991
TTI Proposal 91-538
Page 2 of 6

II. OUR APPROACH TO THE TASK

TTI will saw-cut the concrete covering the manifolded line. The concrete will be broken-up with a Jackhammer and compressor. The concrete will be disposed of in accordance with New Jersey Solid Waste Regulations. TTI will then excavate down to the manifold line. The line will be cut and capped to allow TTI to test the associated UST. Costs in TTI's proposal are based on removing an area of approximately 4' x 4'. Upon capping of the manifold line, TTI shall backfill the area with the excavated material. TTI shall supply and install new concrete to replace the removed concrete.

III. SCHEDULING & TIMING

TTI is prepared to conduct this project within ten (10) days of notice. If necessary TTI can conduct the project on weekends for a slight premium. Due to the requirements of this project, the scheduling of the work must be coordinated with TTI Operations availability.

IV. REPORTING

The testing of the UST systems will be conducted approximately two (2) days after this project. All test information will be held in confidence and will not be released to anyone without the express and written authorization of **E-Systems Inc./Serv-Air**

V. COSTS

Fees to conduct the this project are as follows:

Labor	\$2,640.00
Equipment	675.00
Material (Concrete)	307.34
6% Pollution/Professional Liability Surcharge	217.34
ESTIMATED PROJECT TOTAL	\$3,839.68



E-Systems Inc./Serv-Air
July 2, 1991
TTI Proposal 91-538
Page 3 of 6

VI. GENERAL CONDITIONS

Warranty

- .. TTI warrants that its services are performed in accordance with the standards for professional services at the time those services are rendered. TTI warrants that it is familiar with the State, Federal and local laws and regulations governing the services to be provided under this contract and further warrants that it will comply fully with all such laws and regulations, including obtaining any required permits or making any required filings, in the performance of the work covered by this contract. TTI agrees to notify **E-Systems Inc./Serv-Air** immediately of any occurrence or condition associated with its performance of services that might require notification to regulatory authorities. Except as provided herein, no other warranty or representation, either express or implied is included or intended in its proposals, contracts, reports.

Liability

- .. TTI's pollution liability shall not exceed \$1,000,000. for total allowable losses.
- .. TTI's professional liability shall not exceed \$1,000,000. for total allowable losses.
- .. TTI's liability for bodily injury and property damage shall not exceed \$1,000,000.
- .. TTI's automobile liability for bodily injury/property damage shall not exceed \$1,000,000.

Indemnification

- .. TTI shall indemnify, defend and hold harmless **E-Systems Inc./Serv-Air** from any and all suits, costs, claims penalties, damages, proceedings and expenses (including reasonable attorneys fees) arising from (i) injury or property damage caused by TTI's negligence; (ii) TTI's failure to comply with applicable laws and regulations in the performance of its work; (iii) the breach of this contract by TTI or (iv) any claims by TTI's employees for injuries sustained in connection with their performance of services pursuant to this contract. This indemnity shall benefit and be binding upon the parties' successors and assigns and shall survive completion of the services hereunder. **E-Systems Inc./Serv-Air** acknowledges that TTI has not created any pre-existing hazardous or dangerous substances or condition at the premises.



E-Systems Inc./Serv-Air
July 2, 1991
TTI Proposal 91-538
Page 4 of 6

Payment Terms - Invoicing

- .. Invoices will be issued at the completion of work, delivery of materials and/or the end of each month, payable upon receipt, unless otherwise agreed.
- .. Interest of 1 1/2% per month (but not exceeding the maximum rate allowable by law) will be payable on any amount not paid within 30 days, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Any attorney's fees or other costs in collecting any delinquent amount shall be paid by the client.
- .. In the event that the client requests termination of the work prior to the completion of a report, TTI reserves the right to complete such analyses and records as are necessary to place its files in order and where considered by it necessary to protect its professional reputation, to complete a report on the work performed to date. A termination charge to cover the cost thereof in an amount not to exceed 30% of all charges incurred up to date of the stoppage of the work may, at the discretion of TTI be made.
- .. The pricing quoted herein will remain in effect for a period of sixty (60) days from the date of this quotation. After this time period, TTI reserves the right to revise the quotation. This proposal is based on regulations currently in effect. Should any regulations change, TTI reserves the right to amend this proposal.
- .. Prices quoted are for the excavation and restoration of the immediate tank areas only and does not include any additional excavation, materials, or backfill. The tank area is defined as the area required to be excavated in order to remove the tanks from the ground.
- .. Prices quoted do not include soil disposal or remediation. Should contamination be present at any site, additional materials (backfill, plastic, etc.) and labor and equipment will be required to excavate and stage contaminated soil. No additional work will be performed without the written authorization of **E-Systems Inc./Serv-Air**.



E-Systems Inc./Serv-Air
July 2, 1991
TTI Proposal 91-538
Page 5 of 6

- Prepayment of 50% - \$1,919.84
- Final Payment - Net 10 days of invoice date
- The fees quoted herein will remain in effect for a period of sixty (60) days from the date of the proposal. After this time period, TTI reserves the right to revise the proposal.
- Per diem charges such as mileage, meals, and lodging will not be charges unless otherwise noted in this proposal.
- Any delays beyond the control of TTI (E.G. insufficient fuel, non-accessibility of associated piping) or transferring of product over 50 gallons will be invoiced at \$100./hour with a minimum of one hour.
- Cancellation of a scheduled test will be invoiced as follows:
 - . Within 48 hours - 10% of Cost
 - . Within 24 hours - 25% of Cost
 - . On-Site Cancellation - 50% of Cost + time on site as per T and M Rates
- Any modifications to the tank system required to perform the test in excess of one hour will be invoiced on a time and materials basis as follows:
 - . Testing Supervisor - \$55.00/hour
 - . Testing Technician - \$45.00/hour
 - . Materials - Cost + 20%
- Costs quoted are based on conducting the testing during normal business hours (Monday - Friday, 8:00 a.m. to 4:30 p.m.) Scheduled testing outside normal hours will incur the following premiums:
 - . Nights and Saturdays - 25%
 - . Sundays and Holidays - 50%

INVOICE

91-05696

TankTest Inc. TTI

Professional Leak Testing and Tank Management Services

Evesham Corporate Center
4 East Stow Road, Marlton, New Jersey 08053
(609) 985-8800 FAX (609) 985-9200

INVOICE

91-05696
E-Systems Inc.

SOLD TO

E- Systems Inc./Serv-Air
P.O. Box 360
Fort Monmouth, NJ 07703
Bldg
Att: Accounts Payable
cc: Mr. Charles Appleby

SHIP TO

SAME

PLEASE SEND YOUR REMITTANCE TO:
P.O. Box No. 8500-S41980
Philadelphia, Pennsylvania 19178

DATE
08-30-91

TERMS: NET 10 DAYS

DATE
08-30-91

SALESPERSON	CUSTOMER ORDER NO.	ORDER DATE	CUSTOMER CODE	PROJECT NO.	QUOTATION NO.
TW	PO No. R1-0150-02	04-15-91			91-357

QUANTITY	DESCRIPTION	CODE	UNIT PRICE	AMOUNT
3	Project: Tank Testing of Three USTs at the Fort Monmouth Facility			
	Tested (3) 10,000 Gallon Gasoline Tanks	4105-100	600.00/UST	1,800.00
	6% Insurance Surcharge	9220		108.00

PAST DUE BALANCES SUBJECT TO:
1 1/2% PER MONTH FINANCE CHARGE

INVOICE TOTAL  1,908.00

TankTest Inc.
Evesham Corporate Center
4 East Stow Road, Marlton, New Jersey 08053
(609) 985-8800 FAX (609) 985-9200

INVOICE TOTAL
1,908.00

PLEASE PAY THIS AMOUNT

PLEASE SEND THIS STUB WITH YOUR REMITTANCE TO:

Cont No. 5E20 Mat. UN 071A PWS 07 Requisition 407091

PURCHASE ORDER

E-SYSTEMS INC./SERV-AIR
 A Subsidiary of E-SYSTEMSINC.

No. ~~M~~ ~~XX~~ ~~R1-1223~~
 THE ABOVE NUMBER MUST
 APPEAR ON ALL INVOICES,
 PACKAGES, SHIPPING PAPERS
 AND CORRESPONDENCE.

TO STATE OF NJ, NJDEP 522000004
 DIV OF WATER RESOURCES
 CN 029
 TRENTON NJ 08625

BILLING TO E-SYSTEMSINC./SERV-AIR **SHIP TO** E-SYSTEMSINC./SERV-AIR
 P.O. Box 360 Bldg. 490
 Ft. Monmouth, N.J. 07703 Ft. Monmouth, N.J. 07703
 Attn. Accounts Payable

DELIVERY REQUIRED AT DESTINATION ON OR BEFORE N.J. EXEMPT NO. 751-425-564/001
 SHIP VIA

8/15/91 PICKUP
 PLEASE ENTER OUR ORDER FOR THE FOLLOWING SUBJECT TO TERMS AND CONDITIONS OF FACE AND BACK HEREOF:

DATE OF ORDER 8/01/91	MARK PACKAGES: P.O. NO. R1-1223	F.O.B. DEST	TERMS: PREPAY
--------------------------	------------------------------------	----------------	------------------

ITEM	REC'D	QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTAL
		4	EA	PERMITS FOR THE REMOVAL OF UNDERGROUND STORAGE TANKS LOCATED AT FORT MONMOUTH REGULATED BY THE NJDEP BUST-USTS LOCATED AT THE FOLLOWING SITES: 2567, 8003, 8005 AND 8006.	170.00	680.00
PURCHASED FOR PERFORMANCE OF U.S. GOVERNMENT CONTRACT, DEPARTMENT OF ARMY, IAW, CONTRACT					TOTAL	680.00

BUYER RESERVES THE RIGHT TO CANCEL ORDERS FOR GOODS NOT SHIPPED AT SPECIFIED TIME. GOODS NOT AS ORDERED OR NOT EQUAL TO SAMPLE WILL BE RETURNED AT SHIPPER'S EXPENSE. THIS ORDER NOT BINDING UNTIL ACCEPTED BY SELLER.

IMPORTANT

1. DELIVERY TICKET AND/OR PACKING SLIP MUST ACCOMPANY INVOICE.
2. ORIGINAL INVOICE AND 3 COPIES ARE REQUIRED FOR PAYMENT.
3. BILLS OF LADING MUST BE MAILED ON SAME DAY AS SHIPMENT.
4. ADVISE AT ONCE OF ANY SHORTAGE OR DELAY IN SHIPMENT.
5. SHIP CHEAPEST WAY UNLESS OTHERWISE SPECIFIED.
6. NOTIFY BEFORE SHIPPING IF PRICE OF ANY ITEM IS IN EXCESS OF PRICE SPECIFIED HEREON.

E-SYSTEMS INC./SERV-AIR
 (908) 542-5995 FAX (908) 542-5994

BY Helene Sacknowitz
 PURCHASING AGENT

ORIGINAL INVOICE IS REQUIRED FOR PAYMENT

ORIGINAL FOR VENDOR

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

Date: JUNE 26, 1992
NJDEPE UST Reg. #:0081515-42,43,44,45
Building #:2567

**UNDERGROUND STORAGE TANK (UST)
DECOMMISSIONING / CLOSURE PLAN**

A. General Requirements:

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

B. Safety and Health:

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

C. UST Excavation:

1. All underground obstructions (utilities,... etc.) shall be marked out by the contractor performing the excavation.
2. All activities shall be carried out with the greatest regard to safety and health and the safeguarding of the environment.
3. All excavated soils will be evaluated as to the possibility of contamination. Soils suspected to be contaminated with product shall be staged on poly-sheeting separate from soils not suspected to be contaminated (see section E Excavated Soils management).
4. Surface materials (ie. asphalt, concrete, etc...) shall be excavated and staged separate from all soils.

U.S. Army
DEH Bldg. 167
SELM-EM
Fort Monmouth, NJ 07703

Date: JUNE 26, 1992

NJDEPE UST Reg. #:0081515-42,43,44,45
Building #:2567

5. Soil will be excavated to expose the UST and associated piping. The piping shall not be removed/disturbed until all free product is drained into the UST. The UST will be rendered vapor free by purging or addition of dry ice prior to any cutting or access. After the removal of the associated piping, a manway will be made in the UST to allow for the proper cleaning of the UST. The UST will be completely emptied of all liquids prior to removal of the UST from the ground. All of the openings in the tank will be plugged except for one vent hole.

6. After the UST is removed from the ground, it will be staged on poly-sheeting and examined for corrosion holes. The presence or absence of corrosion holes will be documented by the Sub-Surface Evaluator. If corrosion holes are observed, or if upon inspection of the excavation site evidence of a discharge to the environment exists, the NJDEP hotline shall be notified at (609)292-7172.

7. In the event of a discharge to the environment, additional soils will be excavated as needed. Site assessment activities under the direct supervision of the Sub-Surface Evaluator will determine to what extent the contractor will excavate.

8. After completion of the Site Assessment activities, the excavation will be backfilled to grade with noncontaminated soils from the site and additional certified clean fill provided by the contractor.

D. UST Transport / Disposal:

1. The tank will be transported and disposed / recycled in compliance with all applicable regulations and laws.

2. The contractor shall label the tank with the following information:

- a. site of origin
- b. generator / contact person
- c. NJDEP UST ID number
- d. product previously stored
- e. name of transporter / contract person
- f. destination site / contact person
- g. other information as required

U.S. Army
DEH Bldg. 167
SELFM-EH
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Date: JUNE 26, 1992
NJDEPE UST Reg. #:0081515-42,43,44,45
Building #:2567

3. The contractor shall provide Fort Monmouth with sufficient documentation certifying that transport / disposal (recycling) of the tank was completed according to all applicable Federal and State regulations.

E. Excavated Soils Management:

1. All excavated soils suspected to be contaminated will be transported, by the contractor, to a designated staging area within Fort Monmouth. The designated area will contain the soils and direct all stormwater runoff away from any contact with the soil.

2. All soils stored in the designated staging areas will be maintained in piles no larger than 100 cubic yards each. Each pile will be lined and covered with poly-sheeting and weighted to ensure containment.

3. Each soil pile will be sampled and analyzed for waste classification as outlined in the NJDEP document titled "Management of Excavated Soils" dated August 17, 1990.

4. All soils categorized as Hazardous waste or nonhazardous waste will be managed as such, in accordance with N.J.A.C. 7:26-1 et seq..

5. All soils that contain levels of contaminants below the Category 3 soil limits will be used in accordance with Federal and State requirements.

F. Changes / Authorizations:

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

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

Date: JUNE 26, 1992

NJDEPE UST Reg. #:0081515-42,43,44,45
Building #:2567

**UNDERGROUND STORAGE TANK (UST)
SITE ASSESSMENT PLAN**

General:

This site specific assessment plan will be managed and carried out by U.S. Army DEH and Serv-Air Inc. personnel. All analyses will be performed and reported by NJDEP certified testing laboratories. All monitoring wells will be installed by NJDEP licensed well drillers. All sampling will be performed under the direct supervision of a NJDEPE Certified Sub-Surface Evaluator and according to the methods described in the 1992 NJDEP Field Sampling Procedures Manual. All records of the Site Assessment will be maintained by DEH and submitted to the NJDEP-DWR-Bust in accordance with NJAC 7:14B-9.2 and 9.3.

**PHASE I
UST DECOMMISSIONING**

A. Initial Soil Excavation:

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

B. Continued Excavation:

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

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

Date: JUNE 26, 1992

NJDEPE UST Reg. #:0081515-42,43,44,45
 Building #:2567

**PHASE II
 Site Survey**

Vapor Screening:

1. An individual under the direct supervision of a NJDEPE Sub-Surface Evaluator and trained in the operation of a FID and/or PID shall evaluate the sides and pit bottom of the excavation.
2. All observed instrument readings will be documented and included in the Site Assessment Survey report. This documentation will include all factory and daily calibrations of the instrument.

**PHASE III
 Site Sampling**

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

UST ID CAP.GAL.	PRODUCT	TPHC	VOA +15 XYLENE (IF TPHC>1000)	VOA +15 XYLENE,LEAD
42-10000..	GASOLINE..	4	0	4
43-10000..	GASOLINE..	4	0	4
44-10000..	GASOLINE..	4	0	4
45-6000..	GASOLINE..	4	0	4
	FIELD BLANKS:	0	0	1
	DUPLICATES:	1	0	1
=====				
	SAMPLE TOTALS:	17	0	18

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

Date: JUNE 26, 1992

NJDEPE UST Reg. #:0081515-42,43,44,45
 Building #:2567

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

TANKS-LENGTH OF PIPE--PRODUCT--TPHC--(IF TPHC>1000)--LEAD, XYLENE	VOA +15	Lead, Xylene	VOA +15
ALL.. 75 FEET ..GASOLINE. 5 .. 0 .. 5			
FIELD BLANKS:	0	0	1
DUPLICATES:	1	0	1

SAMPLE TOTAL:	6	0	7

C. All TPHC samples will be taken in the native soil below the bedding material. The sample locations should be along the mid-lines of the tank outline except for at least two of the samples which should be taken within one foot of each of the two highest field survey readings. All of the soil samples should be discrete samples taken within a 6" vertical interval. All samples will be collected by utilizing laboratory decontaminated stainless steel trowels dedicated to each sample location. All VOA+15 samples will be taken within 24 hours of UST excavation at a depth of 0-6" with the use of a laboratory decontaminated stainless steel core sampler. Each VOA+15 sample will be screened with an FID and/or PID and recorded immediately after collection.

D. The excavations of USTs containing #2 Fuel Oil will remain open until laboratory results determine all TPHC samples are less than 1000 ppm. If levels greater than 1000 ppm are reported, further excavation and resampling may be requested by the Sub-Surface Evaluator for those contaminated areas. If further excavation is not possible, additional VOA+15 analyses on 25% of the TPHC samples with the highest results will be performed and the excavation will be filled to grade with certified clean fill. In the case of USTs containing gasoline, all samples will be sampled for TPHC and VOA+15. If TPHC results are greater than 100 ppm additional excavation and subsequent sampling may be requested by the Sub-Surface Evaluator. When TPHC results are less than 100 ppm the discrete VOA+15 samples will be analyzed and the excavation will be filled to grade with certified clean fill.

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

Date: JUNE 26, 1992
 NJDEPE UST Reg. #:0081515-42,43,44,45
 Building #:2567

**PHASE IV
 Groundwater Monitoring**

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

B. Groundwater monitoring wells will be installed by a New Jersey licensed Well Driller in accordance with N.J.S.A 58:4A-4.1 et seq.. The well driller will obtain all required permits prior to well installation.

C. All monitoring wells will be sampled as described in the NJDEP Field Sampling Procedures Manual, 1992.

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

TANK	PRODUCT	REQUIRED MONITORING WELL(S)	(A) EPA METHOD 624	(B) EPA METHOD 625
	ALL..GASOLINE..NONE,	FOUR EXISTING..	4	N/A
	TRIP BLANK:		1	0
	FIELD BLANK:		1	0
	DUPLICATES:		0	0
=====				
	TOTAL:		6	0

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

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

C. All monitoring well sampling will be conducted according to methods described in the NJDEP Field Sampling Procedure Manual 1992.

D. All laboratory analyses will be performed by NJDEP certified Laboratories using approved methods and follow all Quality Control/Assurance procedures as described for each method.

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

Date: JUNE 26, 1992

NJDEPE UST Reg. #:0081515-42,43,44,45
 Building #:2567

**UNDERGROUND STORAGE TANK
 REMOVAL / ABANDONMENT
 IMPLEMENTATION SCHEDULE**

Facility Name: U.S. Army, Fort Monmouth
 Facility
 Location: BLDG. 2567 CHARLES WOOD AREA
 Fort Monmouth, Monmouth County NJ 07703

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

Owners Name: U.S. Army

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

UST Number: 0081515

TANK ID NUMBERS	PRODUCT STORED (OIL, GAS)	TANK CAPACITY (GALLONS)	SITE ASSESSMENT REQUIRED	MONITORING WELL REQUIRED
<u>ALL</u>	<u>GASOLINE</u>	<u>36000</u>	<u>YES</u>	<u>NONE, FOUR EXIST</u>

SCHEDULE

ACTIVITY	START DATE	COMPLETION
Removal.....	<u>SEPTEMBER 21</u>	<u>SEPTEMBER 25</u>
Site Assessment.....	<u>SEPTEMBER 25</u>	<u>SEPTEMBER 25</u>
Monitoring Well Installation.....	<u>NONE; FOUR MWS EXISTING</u>	<u>(NO PRODUCT)</u>
Site Assessment Analytical Results....	<u>SEPTEMBER 25</u>	<u>OCTOBER 01</u>
Monitoring Well Analytical Results....	<u>SEPTEMBER 25</u>	<u>OCTOBER 01</u>
UST Site Assessment Summary.....	<u>SEPTEMBER 25</u>	<u>NOVEMBER 02</u>

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WATER RESOURCES
BUREAU OF UNDERGROUND STORAGE TANKS
TANK MANAGEMENT SECTION

CN 029, 401 EAST STATE STREET
TRENTON, N.J. 08625-0029

FOR STATE USE ONLY	
UST #	_____
Date Rec'd	_____
CA #	_____
Staff	_____

UNDERGROUND STORAGE TANK CLOSURE PLAN
APPROVAL APPLICATION

*Under the provisions of the Underground Storage
of Hazardous Substances Act
in accordance with N.J.A.C. 7:14B-9 et seq.*

This application form shall be used by all applicants who plan to close Underground Storage Tank Systems pursuant to N.J.A.C. 7:14B-9 et seq.

INSTRUCTIONS:

- Before completing application form please refer to the attached Application Instruction Sheet.
- Please print legibly or type.
- Fill in all appropriate blanks. This application form requires that additional sheets be attached for some of the information requested. You may call the Bureau of Underground Storage Tanks/Tank Management Section (609/984-3155) for assistance.
- Return one original of this form (including all attachments required) and a copy of the complete Standard Reporting Form (SRF) to the address above. You must sign all forms as required and attach a check for the proper fee (see the fee schedule on Page 3). Make check payable to the Treasurer, State of New Jersey.
- If the subject facility is not registered the Closure Plan will not be approved.
- Please Note: Make sure that all required information on the Standard Reporting Form (SRF) is submitted. The SRF and this Closure Plan Application must be submitted together.

Date of Application 05 August 92

FACILITY REGISTRATION #

81515-42,43,44,45

Bldg. 2567

I. FACILITY NAME AND ADDRESS

U.S. Army Fort Monmouth

DEH Bldg. 167

Fort Monmouth NJ 07703

Telephone No. (908) 532-1475 Dinkerrai Desai

II. THIS CLOSURE PLAN IS FOR:

A. Substance stored in subject tank(s):

1. Petroleum Products

Indicate Type of Product Gasoline
(Write out product name, e.g.)

- a. Gasoline, Jet Fuel, or Kerosene
- b. Heating Oil (#2, 4, 6), or Diesel
- c. Waste Oil (Please indicate total storage capacity of waste oil at the facility [including the tank(s) being closed]) 36000 gals.

2. Hazardous Substances other than Petroleum Products (Describe)

Indicate Type of Product _____
(Write out product name; add sheet if necessary.)

B. Type of Activity: (Circle one)

1. Abandonment of Tank(s)

Attach the closure plan for abandonment, as required by N.J.A.C. 7:14B-9.2(b) or 9.3(b), which must contain the following items:

- a. Implementation schedule (3 copies per N.J.A.C. 7:14B-9.2(a)3)
- b. Site assessment plan
- c. Tank decommissioning plan
- d. A site map
- e. Attach all justification for abandonment-in-place as required by N.J.A.C. 7:14-9.1(d). Attach the certification statement (on the back page) for abandonment-in-place, if applicable.

2. Removal of Tank(s)

Attach the closure plan for removal as required by N.J.A.C. 7:14B-9.2(b) or 9.3(b). The following items must be included:

- ✓ a. Implementation schedule (3 copies)
- ✓ b. Site assessment plan
- ✓ c. Tank decommissioning plan
- ✓ d. A site map

3. Temporary Closure

Indicate which situation applies and attach appropriate documentation.

- a. Temporary closure for 12 months or less is subject to requirements of N.J.A.C. 7:14B-9.1(a).
- b. Requesting an extension of temporary closure for more than 12 months per N.J.A.C. 7:14B-9.1(b) must perform site assessment and submit results.

4. Change in Service

Attach documentation that the tank system being changed from the storage of a regulated to a non-regulated substance has been emptied and cleaned and that a site assessment has been performed, as required by N.J.A.C. 7:14B-9.1(e).

U.S. ARMY, Fort Monmouth
Directorate of Engineering and Housing
Fort Monmouth, New Jersey 07703

marked CS

August 6, 1992

New Jersey Department of
Environmental Protection and Energy
DIVISION OF WATER RESOURCES
BUREAU OF UNDERGROUND STORAGE TANKS
TANK MANAGEMENT SECTION
CN 029
401 EAST STATE STREET
Trenton, NJ 08625 - 0029
ATTN: Monmouth County UST Closure Specialist

Dear Sir:

Enclosed please find UST Closure Plan Approval Applications for the following Fort Monmouth Areas:

Charles Wood West - 0081515
UST #'s: 42,43,44 and 45
Closure Activity Fee 1 @ \$170.00..... \$ 170.00

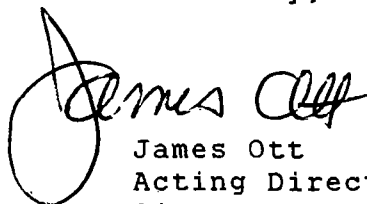
Wayside Area - 192477
UST #'s: 01,02 and 03
Closure Activity Fees 3 @ \$170.00 \$ 510.00

Total: \$ 680.00

To identify any specific UST location, correlate the corresponding building number located in the Closure Plan with the building number on the detailed area map which was issued with the initial UST Registrations. Due to the complexity of our facility's registrations, we have developed and are currently using this system for locating and managing our USTs.

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



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 unforeseen 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 million 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

DIRECTORATE OF ENGINEERING AND HOUSING
FORT MONMOUTH, NEW JERSEY 07703-5108

23 OCT 1992

Contract Management Division

SUBJECT: Pre-Construction Conference, Contract No.
DAAB08-92-C-0047, Upgrade CWA Gas Station Bldg 2567

Cycle Construction Co., Inc.
Locust Street P.O. Box 780
Keyport, N.J. 07735

Gentlemen:

Reference is made to telephone conversation between Richard Ellison of your office and Edith Phipps of this office on October 22, 1992, subject as captioned above.

This is to confirm that a Pre-Construction conference has been scheduled for October 29, 1992 at 10:00 a.m. in the conference room, Directorate of Engineering and Housing, Building 167, Fort Monmouth, New Jersey.

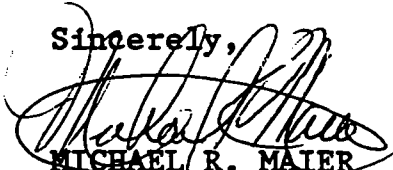
You are reminded that parties attending from your office must be authorized to speak on behalf of your firm.

The Construction Inspector for this project is Frank Cifelli. You may reach him at (201) 532-1663 for further questions.

The addresses listed below are requested to send representatives to attend this conference. You should be prepared to address impacts of the subject contract upon your areas of expertise.

*Start Date
12/15/92 by pm
T. Matthews 12/16/92. CM*

Sincerely,



MICHAEL R. MAIER
C, Contr Mgmt Div
Directorate of Engr & Hsg
Contracting Officer's
Representative

Copy Furnished:

Director, DEH
C, EPSD
C, Engrg Svcs Br
Ft Monmouth Procurement
C, MPRPB
Betty Smith Bldg 2567
E-Systems
Daniel Melsala(AAFFES Mgr)

Safety Office(Bldg 2529)
Logistics Support Div(Bldg 1150)
Project Engineer(James Lee)
Inspector(Frank Cifelli)
C, Contr Mgmt Div
Fire Department
C, Preventive Medicine, Bldg 876



13106y 03277 11/13 02

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

ATTN: UST Program
(609) 984-3156

For State Use Only

Date Rec'd. _____
Auth. _____
Routing _____
UST NO. _____

STANDARD REPORTING FORM
for reporting activities at an UST facility:

- | | |
|--|---|
| <input type="checkbox"/> General Facility Information Changes | <input type="checkbox"/> Sale or Transfer |
| <input checked="" type="checkbox"/> Closure (Abandonment or Removal) | <input type="checkbox"/> Substantial Modification |
| <input type="checkbox"/> Temporary Closure | <input type="checkbox"/> Financial Responsibility |
| <input type="checkbox"/> Change in Service | <input type="checkbox"/> Address Change Only |

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

(More than one tank can be listed per activity)

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

Answer questions 1 through 5 and others as applicable.

1. Company name and address (as it appears on registration questionnaire):

U.S. ARMY Fort Monmouth
Charles Wood West
Fort Monmouth NJ 07703

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

3. Contact person for this activity:

Charles M. Appleby
Telephone Number: (908) 532-6223

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

42, 43, 44, 45

5. Registration Number (if known):

UST - 0081515

6. For GENERAL FACILITY INFORMATION changes (address, telephone, contact person, etc. - supply NEW information only):

- a. Facility name: _____
- b. Facility location: _____
- c. Owner's mailing address: _____

_____ NJ _____
- d. Block: _____ Lot: _____
- e. Contact person (facility operator): _____
- f. Contact telephone number: (_____) _____ - _____
- g. Other (Specify): _____

(OVER)



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

MAY 27 1993

Scott A. Weiner
 Commissioner

Karl J. Delaney
 Director

Mr. Charles M. Appleby
 U.S. Army Fort Monmouth
 Charles Wood West
 Fort Monmouth, NJ 07703

CERTIFIED
RETURN RECEIPT REQUESTED

Subject: Deficiency in Site Investigation
 / Remedial Investigation Report

Facility Name: U.S. Army Fort Monmouth
 Location: Charles Wood West, Building 2567
Fort Monmouth, Mon. County

Case # _____
 TMS # C92-3355, 3356
 UST # 0081515

Dear Mr. Appleby

On May 14, 1993 the New Jersey Department of Environmental Protection and Energy (the Department) received a Site Investigation / Remedial Investigation Report for the above referenced facility.

A review of the information submitted indicates the following administrative deficiencies:

1. _____ Comprehensive narrative describing site activities / investigation not provided
2. _____ Site Assessment Summary not provided
3. _____ Site plan (to scale) deficient
 - a. _____ Site plan not submitted
 - b. _____ Tank locations not indicated on site plan
 - c. _____ Sample locations not indicated on site plan
 - d. _____ Scale not indicated on site plan

Rec'd 6/1/93 BLS

4. Data package deficient (Laboratory Deliverables checklist attached)
5. Report not signed by a New Jersey Certified Subsurface Evaluator (Interim Guidance Document attached)
6. Soil disposed and no disposal documentation provided

Comments

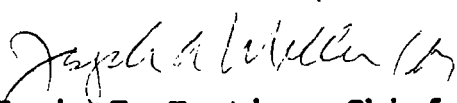
Soil disposal documentation is unreadable. Copies of documentation are smeared. Please send a clear copy.

The above noted deficiencies should be corrected and submitted to the undersigned at the above address, within 15 days of receipt of this letter. The Department will not conduct a technical review of the information provided until all administrative deficiencies are corrected. Please include a copy of this letter to expedite processing, and note the Case, TMS and UST Numbers on all correspondence. Failure to comply with the requirements in this letter may result in the assessment of penalties in accordance with N.J.S.A. 58:10A-10.

As per N.J.A.C. 7:14B-12.1, the owner and operator of regulated underground storage tanks are jointly and severally liable for compliance with these requirements.

If you have any question, please contact Leonid Carnett, at (609) 984-3156.

Sincerely,


Kevin F. Kratina, Chief
Bureau of Underground Storage Tanks

c: Leonid Carnett



APPENDIX B

NJDEP UST SITE ASSESSMENT SUMMARY FORM



UST# _____
Date Recd: _____
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
Director

**UNDERGROUND STORAGE TANK
SITE ASSESSMENT SUMMARY**

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

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

INSTRUCTIONS:

- Please print legibly or type.
- Fill in all applicable blanks. This form will require various attachments in order to complete the Summary. The technical guidance document, Interim Closure Requirements for USTs, 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 sealed 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 3-23-95

0081515
FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

U.S. Army Fort Monmouth
Charles Wood West
Fort Monmouth, NJ 07703 County _____
Telephone No. (908) 532-6224

OWNER'S NAME AND ADDRESS, if different from above

U.S. Army Fort Monmouth
DEH Bldg. 167
Fort Monmouth, NJ 07703
Telephone No. (908) 532-6224

II. DISCHARGE REPORTING REQUIREMENTS

- A. Was contamination found? Yes No If Yes, Case No. 91-8-27-1414
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)
- B. The substance(s) discharged was(were) gasoline
- C. Have any vapor hazards been mitigated? Yes No N/A

III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. C-92-2950

The site assessment requirements associated with tank decommissioning are explained in the Technical Guidance Document, Interim Closure Requirements for UST's, Section V. A-0. 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? Yes No N/A
2. Were soil borings taken at the tank system closure site as prescribed? 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. 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 261 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 6,700 feet from the source and its screening begins at a depth of 241 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 117 feet below grade. This well is located 6,500 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 6,500 feet from the source. This well is 117 feet deep and screening begins at a depth of 111 feet.

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

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

G. Delineation of contamination

- 1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. Yes No
- 2. The plume is suspected to continue off the property at concentrations greater than MCLs. Yes No
- 3. Off property access (circle one): is being sought has been approved has been denied

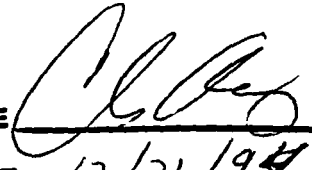
VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:14B-8.3(b) & 9.5(a)3]

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

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

NAME (Print or Type) Charles M. Appleby

SIGNATURE



COMPANY NAME U.S. Army Fort Monmouth

(Preparer of Site Assessment Plan)

DATE

12/21/94

CERTIFYING ORGANIZATION

NJDEPE

CERTIFICATION NUMBER

2056

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

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

NAME (Print or Type) Ken Meglow SIGNATURE Ken Meglow
COMPANY NAME Cock Construction Co. Inc. DATE 5/12/93
(Performer of Tank Decommissioning)
Cert # 1300035

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)1].

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

NAME (Print or Type) James Ott SIGNATURE James Ott
COMPANY NAME U.S. Army Fort Monmouth DATE 3/25/95

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

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 _____

ATTACHMENT I

NO/NA RESPONSE EXPLANATION

<u>SAS QUESTION #</u>	<u>RESPONSE</u>	<u>EXPLANATION</u>
V.C.2	No	No free product is suspected to exist below the water table or off the property boundary. Approximately 936 cubic yards of contaminated soil was removed from the area surrounding UST Nos. 42, 43, 44 and 45.
V.C.3	No	Same as above.
V.D	No	Same as above.
V.E	No	Same as above.
VI.B.6	N/A	Same as above.
VI.E	N/A	A plan for separate phase product recovery has not been included. No free product is suspected to exist.
VI.G.2	No	Groundwater contaminants are not suspected to continue off the property at concentrations greater than MCLs.



APPENDIX C
MONITORING WELL INFORMATION

MONITORING WELL PERMIT

WELL No. 1111-1
 Date of Completion 9/13/91

OWNER IDENTIFICATION: U.S. ARMY FORT MONMOUTH
 Address: 1000 10th St
 City: FORT MONMOUTH State: NJ Zip Code: 08401

WELL LOCATION -- If not the same as owner please give address. Owners Well No. 1111-1
 County: Ocean Municipality: JACKSONBURGH Lot No: N/A Block No: N/A
 Address: Bldg 2567

TYPE OF WELL (as per Well Permit Categories): MONITORING Date well completed: 9/13/91
 Regulatory Program Requiring Well: 1ST Case I.D. # _____

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 12 ft.
 Well finished to 5 ft.
 Borehole diameter:
 Top 4 in.
 Bottom 4 in.
 Well was finished: above grade
 flush mounted
 If finished above grade, casing height (stick up) above land surface 0 ft.

	Depth to Top (ft.) [From land surface]	Depth to Bottom (ft.)	Diameter (inches)	Type and Material
Inner Casing	0	2	4	4" PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	2	18		1/8"
Tail Piece				
Gravel-Pack	2	18	2	1/4" sand
Annular Seal/Grout	1	2		100% cement
Method of Grouting	100% cement			

Was steel protective casing installed?
 Yes No

Static water level after drilling: 4 ft.

Water level was measured 1 hour at 5 gpm

Well was developed for 1 hours at 5 gpm

Method of development: Com. Pump

Was permanent pumping equipment installed? Yes No

Pump capacity 1/4 gpm

Pump type: 1/4"

Drilling Method: 2"

Drilling Fluid: 1114 Type of Rig: 2-1/2"

Name of Driller: _____

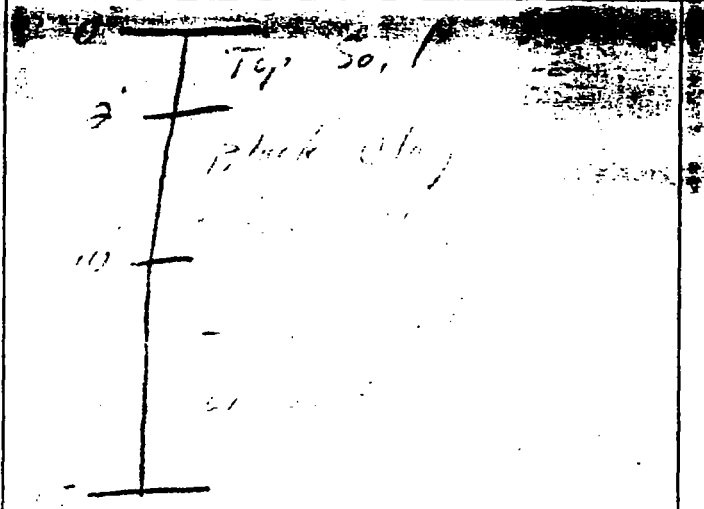
Health and Safety Plan submitted? Yes No

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

N.J. License No. _____

Name of Drilling Company: TABACCO 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 _____ Date 9/13/91

MIDDLESEX COUNTY, NEW JERSEY

Well Permit No. 28-28828

Amendment No. 28-14

OWNER IDENTIFICATION - Owner: U.S. ARMY FORT MONMOUTH

Address: BLDG 167 D-4 DE BRUNNENBERG

City: FORT MONMOUTH State: NJ Zip Code: 08028

WELL LOCATION - If not the same as owner please give address:

Owner's Well No. MW-2

County: Ocean County Municipality: OCEANPORT BORO Lot No: N/A Block: N/A

Address: Bldg 2567

TYPE OF WELL (as per Well Permit Categories): MONITORING

Date well completed: 11/1/92

Regulatory Program Requiring Well: NST

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: 12 in.

Bottom: 12 in.

Well was finished: above grade

flush mounted

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

Was steel protective casing installed? Yes No

Static water level after drilling: 5.5 ft.

Water level was measured using: Tape

Well was developed for 1.5 hours at: .6 gpm

Method of development: Cent. Pump

Was permanent pumping equipment installed? Yes No

Pump capacity: 1/4 gpm

Pump type: 1/4

Drilling Method: 1/4

Drilling Fluid: 1/4 Type of Rig: 2-1/2

Name of Driller: 1/4

Health and Safety Plan submitted? Yes No

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

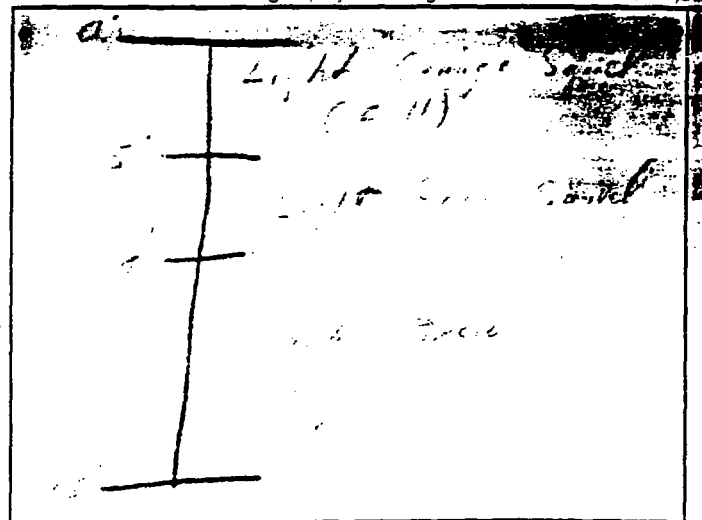
N.J. License No. 1/4

Name of Drilling Company: TABASCO DRILLING CORP.

	Depth to Top (ft.) [From land surface]	Depth to Bottom (ft.)	Diameter (inches)	Type and Material
Inner Casing	0	0	1	2" x 1/4" PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	0	12		1/2" x 1/4" 40
Tail Piece				
Gravel Pack	0	12		2" x 1/4"
Annular Seal/Grout	1	2		1/2" x 1/4"
Method of Grouting	1/4			

GEOLOGIC LOG

(Copies of other geologic logs and 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: [Signature]

Date: 1/1/92

MONITORING WELL PERMIT

Well Permit No. 20-28921

App. State No. 20-21888

OWNER IDENTIFICATION - Owner: U.S. AIR FORCE RESERVE
 Address: POB: 147 D.C. F. WASHINGTON
 City: POB WASHINGTON State: NT Zip Code: _____

WELL LOCATION - If not the same as owner please give address: Owners Well No. 1714-5
 County: _____ Municipality: OCEANPORT BORO Lot No.: N/A Block No.: N/A
 Address: Bldg 2567

TYPE OF WELL (as per Well Permit Categories): MONITORING Date well completed: 11/1/77
 Regulatory Program Requiring Well: EST Case I.D. #: _____
 CONSULTING FIRM/FIELD SUPERVISOR (if applicable): _____ Tele: # _____

WELL CONSTRUCTION

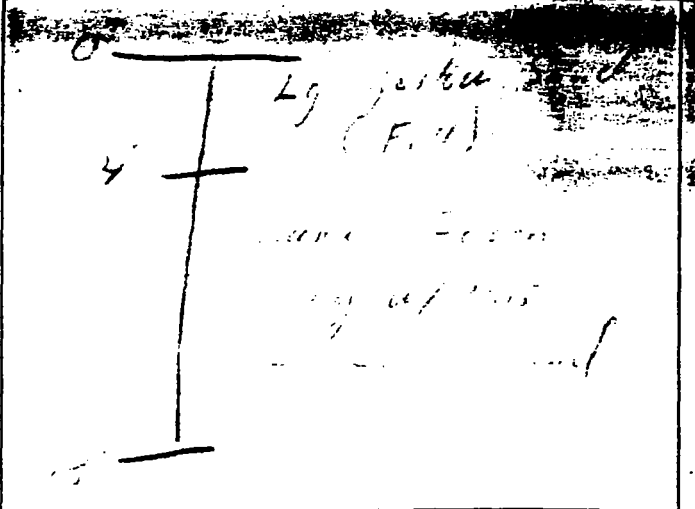
Total depth drilled 13 ft.
 Well finished to 13 ft.
 Borehole diameter:
 Top _____ in.
 Bottom 16 in.
 Well was finished: above grade
 flush mounted
 If finished above grade, casing height (stick up) above land surface _____ ft.

	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Type and Materials
Inner Casing	1	5	4	4" Th. PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)		17	4	4" slot 200
Tail Piece				
Gravel Pack	2	17		5" mesh
Annular Seal/Grout	1	2		1" tail pipe
Method of Grouting	<u>Grout</u>			

Was steel protective casing installed?
 Yes No
 Static water level after drilling: 4 ft.
 Water level was measured at _____

Well was developed for: 1.5 hours at 12 gpm
 Method of development: 1.5 hours
 Was permanent pumping equipment installed? Yes No
 Pump capacity 4/4 gpm
 Pump type: 1/4"
 Drilling Method: 1"
 Drilling Fluid: 1/15 Type of Rig: 1"
 Name of Driller: 1"
 Health and Safety Plan submitted? Yes No
 Level of Protection used on site (circle one) .None D C B A
 N.J. License No. _____
 Name of Drilling Company: TABASTY DRILLING CORP.

GEOLOGIC LOG (Copies of other geologic logs 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 _____ Date 11/1/77

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

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION

Name of Permittee: United States Army
Name of Facility: Fort Monmouth - Building No. 2567
Location: Fort Monmouth
New Jersey
NJPDES Permit No: NJ 29-26925

LAND SURVEYOR'S CERTIFICATION

Well Permit Number; As assigned by NJDEPE's Water Allocation Section (609-984-6831):

This number must be permanently affixed to the well casing.

Longitude (one tenth of a second): West 29-26925
Latitude (one tenth of a second): North 74° 04' 46.1"
Elevation of Top of Casing (cap off) 40° 17' 44.6"
Distance from Top of Casing (cap off) to ground 33.93
Owner's Well Number (As shown in the application or Plans): 0.21
Benchmark: MW-1

AUTHENTICATION:

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

William E. Telling
Professional Land Surveyor's Signature

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

SEAL

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

(lak41\wp51\ftmonfmb.wet)

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

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION

Name of Permittee: United States Army
Name of Facility: Fort Monmouth - Building No. 2567
Location: Fort Monmouth
New Jersey
NJPDES Permit No: NJ 29-26926

LAND SURVEYOR'S CERTIFICATION

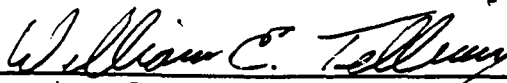
Well Permit Number; As assigned by NJDEPE's Water Allocation Section (609-984-6831):

This number must be permanently affixed to the well casing.

Longitude (one tenth of a second):	West	<u>29-26926</u> <u>74° 04' 47.0"</u>
Latitude (one tenth of a second):	North	<u>40° 17' 45.2"</u>
Elevation of Top of Casing (cap off)		<u>35.26</u>
Distance from Top of Casing (cap off) to ground		<u>0.02</u>
Owner's Well Number (As shown in the application or Plans):		<u>MW-2</u>
Benchmark:		<u></u>

AUTHENTICATION:

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



Professional Land Surveyor's Signature

William E. Telling, P.L.S.

Professional Land Surveyor's Name

SEAL

N.J.P.L.S. License No. 37211

Professional Land Surveyor's License #

(lak41\wp51\ftmonfmb.wet)

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

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION

Name of Permittee: United States Army
Name of Facility: Fort Monmouth - Building No. 2567
Location: Fort Monmouth
New Jersey
NJPDES Permit No: NJ 29-26947

LAND SURVEYOR'S CERTIFICATION

Well Permit Number; As assigned by NJDEPE's Water Allocation Section (609-984-6831):
This number must be permanently affixed to the well casing.

Longitude (one tenth of a second):	West	<u>74° 04' 46.9"</u>
Latitude (one tenth of a second):	North	<u>40° 17' 44.5"</u>
Elevation of Top of Casing (cap off)		<u>33.88</u>
Distance from Top of Casing (cap off) to ground		<u>0.06</u>
Owner's Well Number (As shown in the application or Plans):		<u>MW-3</u>
Benchmark:		

AUTHENTICATION:

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

William E. Telling

Professional Land Surveyor's Signature

William E. Telling, P.L.S.

Professional Land Surveyor's Name

SEAL

N.J.P.L.S. License No. 37211

Professional Land Surveyor's License #

(lak41\wp51\ftmonfmb.wet)

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

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION

Name of Permittee: United States Army
Name of Facility: Fort Monmouth - Building No. 2567
Location: Fort Monmouth
New Jersey
NJPDES Permit No: NJ 29-26948

LAND SURVEYOR'S CERTIFICATION

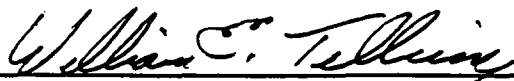
Well Permit Number; As assigned by NJDEPE's Water Allocation Section (609-984-6831):

This number must be permanently affixed to the well casing.

Longitude (one tenth of a second):	West	<u>29-26948</u> <u>74° 04' 46.0"</u>
Latitude (one tenth of a second):	North	<u>40° 17' 45.5"</u>
Elevation of Top of Casing (cap off)		<u>33.51</u>
Distance from Top of Casing (cap off) to ground		<u>0.13</u>
Owner's Well Number (As shown in the application or Plans):		<u>MW-4</u>
Benchmark:		<u></u>

AUTHENTICATION:

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



Professional Land Surveyor's Signature

William E. Telling, P.L.S.

Professional Land Surveyor's Name

SEAL

N.J.P.L.S. License No. 37211

Professional Land Surveyor's License #

(lak41\wp51\ftmonfmb.wet)

MONITORING WELL RECORD

Well Permit No. 29 31783
Atlas Sheet Coordinates 29 13 651

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH
Address SELPH FW-BV
City FORT MONMOUTH State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. Bldg. 3567 MW-5
County BUNMOUTH Municipality OCEANPORT BORO Lot No. _____ Block No. _____
Address _____

TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 9, 23, 94
Regulatory Program Requiring Well UST Case I.D. # 01-9-27-1414
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION

Total depth drilled 12 1/2 ft.

Well finished to 12 1/2 ft.

Borehole diameter:

Top 8 in.

Bottom 8 in.

Well was finished: above grade
 flush mounted

If finished above grade, casing height (stick up) above land surface 2 1/2 ft.

Was steel protective casing installed? Yes No

Static water level after drilling 7 ft.

Water level was measured using tape

Well was developed for 1 hours at 10 gpm

Method of development pump
Was permanent pumping equipment installed? Yes No

Pump capacity _____ gpm

Pump type: _____

Drilling Method Auger

Drilling Fluid J Type of Rig B 80

Name of Driller Michael E Beck

Health and Safety Plan submitted? Yes No

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

N.J. License No. 1421

Name of Drilling Company _____

	Depth to Top (ft.) [From land surface]	Depth to Bottom (ft.)	Diameter (inches)	Type and Material
Inner Casing	0	2 1/2'	4	PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	2 1/2'	12 1/2'	4	20 slot PVC
Tail Piece				
Gravel Pack	1'	12 1/2'		#2 Marine sand
Annular Seal/Grout	0	1'		Bestonite Portland
Method of Grouting	Tremie			

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

0-6 Topsoil, vegetation
6-1' Brown, fine sand
1-2' Black, soft clay
2-3' Brown, fine sand +
sh
3-12 1/2' Gray, well sand w/
well sorted gravel

TYPE OF PROTECTION: NONE

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 Michael E Beck Date 10-10-94

MONITORING WELL RECORD

Well Permit No. 28 3170
Atlas Sheet Coordinates 20 15 651

OWNER IDENTIFICATION - Owner US ARMY FORT MONMOUTH
Address 3121 FM HWY
City FORT MONMOUTH State NJ Zip Code _____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. B14, 3567 MW-5
County MONMOUTH Municipality OCEANPORT BORO Lot No. _____ Block No. _____
Address _____

TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 9, 23, 94
Regulatory Program Requiring Well 057 Case I.D. # 01-9-27-1414
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) _____ Tele. # _____

WELL CONSTRUCTION
Total depth drilled 12 1/2 ft.
Well finished to 12 1/2 ft.
Borehole diameter:
Top 8 in.
Bottom 8 in.

	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Type and Material
Inner Casing	0	2 1/2'	4	PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	2 1/2'	12 1/2'	4	20 slot PVC
Tail Piece				
Gravel Pack	1'	12 1/2'		#2 Marine sand
Annular Seal/Grout	0	1'		Berlinite Portland
Method of Grouting	Tremie			

Well was finished: above grade
 flush mounted
If finished above grade, casing height (stick up) above land surface 2 1/2 ft.

Was steel protective casing installed? Yes No

Static water level after drilling 7 ft.
Water level was measured using tape
Well was developed for 1 hours at 10 gpm
Method of development pump
Was permanent pumping equipment installed? Yes No
Pump capacity _____ gpm
Pump type: _____
Drilling Method Auger
Drilling Fluid J Type of Rig B80
Name of Driller Michael F. Berk
Health and Safety Plan submitted? Yes No
Level of Protection used on site (circle one) None D C B A
N.J. License No. 1421
Name of Drilling Company _____

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

0-6" Topsoil, vegetation
6"-1' Brown, fine sand
1'-2' Black, soft clay
2'-3' Brown, fine sands + silts
3'-12 1/2' Gray, med. sand w/ well rounded gravel

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 Michael F. Berk Date 10-10-94



APPENDIX D
WELL SEARCH INFORMATION



SECTION 2.0

CHARLES WOOD AREA - 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.
1	Wolf Press/ <i>Redacted - Privacy Act</i>	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	<i>Redacted - Privacy Act</i>	30 Victor Avenue, Eatontown	51	41	5	D	29-13163
4	<i>Redacted - Privacy Act</i>	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	<i>Redacted - Privacy Act</i>	27 Devon Court, Tinton Falls	46	32	6	G	29-11142
13	<i>Redacted - Privacy Act</i>	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	<i>Redacted - Privacy Act</i>	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 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	***	***

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 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 Cty: 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 Date well completed COMPLETED: 27/11/25
BOREHOLE DIMENSIONS 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 <small>Screens: Note Slot Sizes!</small>
Casing 1		L: 200	4.0"	Sched 40 PVC
Casing 2				
Casing 3	Top: 200			Sched 40 PVC
Screen 1				
Screen 2			4.0"	Sched 40 PVC
Tail Piece	Top: 190	25	8.5"	.025 Blended
Gravel Pack	Surface	215		2" 100% Bentonite
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: 27/11/25

RECORD OF TEST Test Date ____/____/____ Level: 154
Static water-level before pumping: 33 ft. below land surface. Water level _____ ft. below land surface after 1 hrs. of pumping.
Water level was measured using estimated Drawdown DD: 121 ft.
Discharge rate measured using measured container Discharge Rate dr: 40 gals. per min.
Well was pumped using air lift Specific Capacity: 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 PICKNICK WELL DRILLING Pump Type Submersible
Mfr. Name Gould/Rod Jacket Model Model: 10E107422
CAPACITY: Pump delivers 12 GPM at 40 PSI pressure.
POWER: 3/4 HP HP at 3450 RPM Power Source Electric
DEPTHS: Pump Set: 130 ft. Footpiece _____ ft. Airline _____ ft.
FLOW METER: Model _____ installed on _____ in. diameter pipe.

PICKNICK 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
Alien Primost J 1407

Signature of Contractor [Signature] Date 28/02/27
COPIES: White - DEP Canary - Driller Pink - Owner Goldenrod - Health Dept.

29-13-839

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

PERMIT NO. 29-16207

APPLICATION NO. _____

COUNTY Monmouth

WELL ID NO. 4

WELL RECORD

Redacted - Privacy Act

- OWNER Redacted - Privacy Act ADDRESS 144 Grant Ave, Eatontown
Owner's Well No. 1 SURFACE ELEVATION 52 Feet
(Above mean sea level)
- LOCATION 144 Grant Ave. Lot 2 Blk 94 Eatontown
- DATE COMPLETED 8-2-86 DRILLER Vin Peltier #661
- DIAMETER: Top 4 inches Bottom 4 inches TOTAL DEPTH 117 Feet
- CASING: Type DRIVE STEEL Diameter 4 Inches Length 111 Feet
- SCREEN: Type SWANNERS STEEL Size of Opening: 016 Diameter 4 Inches Length 6 Feet
Range in Depth { Top 111 Feet
Bottom 117 Feet } Geologic Formation GREEN CLAY + BLACK SAND
Tail Piece: Diameter — Inches Length — Feet
- WELL FLOWS NATURALLY — Gallons per minute at — Feet above surface
Water rises to — Feet above surface
- RECORD OF TEST: Date 8-2-86 Yield 20 Gallons per minute
Static water level before pumping 12 Feet below surface
Pumping level 63 feet below surface after 2 hours pumping
Drawdown 51 Feet Specific Capacity 22+ Gals. per min. per ft. of drawdown
How pumped TEST Pumped - Rod + cylinder How measured STOP WATCH + 5 GAL PAIL
Observed effect on nearby wells —
- PERMANENT PUMPING EQUIPMENT:
Type Submersible Mfrs. Name Myers
Capacity 19 G.P.M. How Driven ELEC H.P. 1 R.P.M. 3450
Depth of Pump in well 70 Feet Depth of Footpiece in well — Feet
Depth of Air Line in well — Feet Type of Meter on Pump — Size — Inches
- USED FOR DOMESTIC AMOUNT { Average 150 Gallons Daily
Maximum 300 Gallons Daily }
- QUALITY OF WATER Good Sample: Yes No
Taste Good Odor NONE Color Clear Temp. 54 °F.
- LOG — Are samples available? No
(Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy.)
- SOURCE OF DATA —
- DATA OBTAINED BY GREAT WATER INC MFB Date 8-2-86

(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.)

WELL RECORD

WELL ID NO. 45

Well Permit No. 27 25140
Atlas Sheet Coordinates 12 17 50

OWNER IDENTIFICATION - Owner Redacted - Privacy Act
Address _____
City Redacted - Privacy Act State _____ Zip Code _____

WELL LOCATION - If not the same owner please give address. Owner's Well No. _____
Address 539 TINTON AVE
County MONMOUTH Municipality TINTON HILLS NJ Lot No. _____ Block No. _____

WELL USE WITHDRAWAL Status IN USE
PUBLIC NON COMMUNITY
WATER USE DOMESTIC Average: 600 gals. daily Maximum 28,800 gal

WELL CONSTRUCTION BOREHOLE DIMENSIONS
Date well completed 7-18-92
Depths: Total 261 ft. Finished 261 ft.
Diameter: Top 8 in. Bottom 8 in.
Land Surface Elevation at well _____ ft. Elevation was determined using _____
Casing Height (stick-up) above land surface 1 1/2 ft.

	DEPTH TO TOP (FT.)	LENGTH (FT.)	DIAMETER (IN.)	TYPE AND MATERIAL Screens: Note Slot Size(s)
Casing 1		<u>241</u>	<u>4</u>	<u>SCH 40 PVC</u>
Casing 2				
Casing 3				
Screen 1	<u>241</u>	<u>20</u>	<u>4</u>	<u>SCH 40 PVC 0.15 SLOT</u>
Screen 2				
Tail Piece				
Gravel Pack	<u>238</u>	<u>23</u>		<u>#1 SAND</u>
Grout	<u>4</u>	<u>234</u>		<u>SUDOLIT BENTONITE</u>
Grouting Method			<u>PUMP</u>	

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

RECORD OF TEST Test Date 7-18-92
Static water-level before pumping 21 ft. below land surface. Water level 130 ft. below land surface after 3 hrs. of pump
Water level was measured using ELECT. TAPE Drawdown 109 ft.
Discharge rate measured using CALIBRATED BUCKET Discharge Rate 70 gals. per min.
Well was pumped using AIR LIFT Specific Capacity 0.642 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 TILTON PUMP INC. Pump Type SUB
Mfrs. Name STA RITE Model 20FAL
CAPACITY: Pump delivers 20 GPM at 50 PSI pressure.
POWER: 1 HP at 3450 RPM Power Source 230 VOLT
DEPTHS: Pump 100 ft. Footpiece _____ ft. Airline _____ ft.
FLOW METER: Model _____ installed on _____ in. diameter pipe.
G. COLANGELO

CONTRACTOR - Name of Drilling Contractor _____
Address P.O. BOX 457
City CULTS NECK State N.J. Zip Code 07722
Name of Driller D. VAN BRUNT JR License No. IP1414

Signature of Contractor [Signature] Date 7-24-92

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

24.13-6 75
Permit No. 29-2952
Application No. _____
County _____

WELL RECORD

WELL ID NO. 111

1. OWNER Redacted - Privacy Act 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 Geologic Formation _____
Bottom _____ Feet
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 12" 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 gal. by crest
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 of
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 MANIFEST



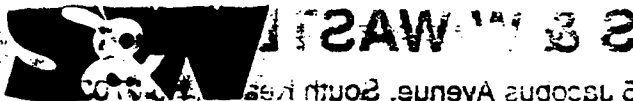
State of New Jersey
 Department of Environmental Protection
 Division of Hazardous Waste Management
 Manifest Section
 CN 028, Trenton, NJ 08625

Form Approved, OMB No. 2050-0038, Expires 9-30-89

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

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. NJ00000000000000000000	Manifest Document No. NJ00000000000000000000	2. Page 1 of 1	Information in the checked areas is not required by Federal law.
3. Generator's Name and Mailing Address US Army Communications Electronics Command Hark's Wood Area 210 James Street Fort Monmouth NJ 07703		6. US EPA ID Number		A. State Manifest Document Number NJA 154982	B. State Generator ID
4. Generator's Phone (908) 727-6228	5. Transporter 1 Company Name L & L Service Inc		6. US EPA ID Number	C. State Transporter ID	D. Transporter's Phone
7. Transporter 2 Company Name		8. US EPA ID Number		E. State Transporter ID	F. Transporter's Phone
9. Designated Facility Name and Site Address JW Waste Inc 105 Tarkenton Ave South Plainfield NJ 07080		10. US EPA ID Number		G. State Facility ID	H. Facility's Phone
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		12. Containers	13. Total Quantity	14. Unit Wt/Vol	
a. Waste Solvent (6000, 5015) Flammable Liquid N 23		No. Type			
b.					
c.					
d.					
15. Special Handling Instructions and Additional Information Special #9637 8-16-87 USE REGA 20R15-4-11-11 BY HAZARDOUS WASTE					
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 by the best waste management method that is available to me and that I can afford.					
Printed/Typed Name Charles M. Apple		Signature			
17. Transporter 1 Acknowledgment of Receipt of Materials		Signature			
Printed/Typed Name		Signature			
18. Transporter 2 Acknowledgment of Receipt of Materials		Signature			
Printed/Typed Name		Signature			
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			

NJ 154982



WASTE INC. 300A-448 (105)

WASTE MATERIAL PROFILE SHEET INSTRUCTIONS

The following information is required of all waste to be considered for transportation, storage, treatment or disposal. It is used to determine that the waste may be transported, stored, treated or disposed of in a legal, safe and environmentally sound manner. Answers must be to all questions and must be completed in ink. Response of "NONE" or "NOT APPLICABLE" should be made if appropriate. Most items required are self-explanatory. Other items need definition or instruction as follows:

PART A - GENERATOR INFORMATION

GENERATOR NAME & ADDRESS- Self explanatory.

USEPA ID- For the facility generating the waste.

TECHNICAL CONTACT- A person who could give additional information about the waste if needed.

COMMON NAME OF WASTE- A name which will be generally descriptive of the waste, a generic classification (e.g. paint, oil and water).

PROCESS GENERATING WASTE- Specific descriptive process or source which generates the waste.

PART F - SARA/OSHA

See back of WPS for further instructions.

PART G - SHIPPING INFORMATION

Indicate method of shipment, type of container, if drums they must be as specified in 49 CFR 173, 178 or 179. Indicate quantity shipped during specified time frame (e.g. 10 drums per month).

PART H - MANIFEST INFORMATION

PART B - PHYSICAL/CHEMICAL CHARACTERISTICS OF WASTE

ODOR- If present describe as well as possible (e.g. solvent, acrid, sweet).

COLOR- Self explanatory.

PHYSICAL STATE- Check as many as apply.

FLASH POINT/IGNITABILITY- A value attained using the appropriate testing method as set forth in 40 CFR 261.21.

AIR REACTIVE- Will ignite spontaneously in air.

SHOCK SENSITIVE- Normally unstable and readily undergoes violent change without detonating.

GENERATES TOXIC FUMES- In sufficient quantity to endanger human health or the environment when mixed with water, acid or base.

PERCENT LIQUID/SOLID- List the % total of suspended solids, free liquids or water.

FUELS/SOLVENTS- Necessary for supplemental fuels program.

SPECIFIC GRAVITY- The weight of the water compared to the weight of an equal volume of another substance.

AQUEOUS- Necessary for waste water treatment of aqueous streams.

Is the waste a USDOT hazardous material as defined in 49 CFR 172.101? If YES, enter the SHIPPING NAME, HAZARD CLASS, DOT ID NUMBER and R.Q. (Reportable Quantity) as defined in 49 CFR 302. Enter the technical names of at least two components most predominately contributing to the hazards of the mixture or solution for all proper shipping names found in 40 CFR 172.203 (K) 3. Enter the Emergency Response Telephone number and contact name as required by 40 CFR 172.604.

PART C - CHEMICAL COMPOSITION

List all organic and/or inorganic components of the waste using specific chemical names. If trade names are used, attach Material Safety Data Sheets or other documents which adequately describe the composition of the waste for each component. Indicate exposed percent or range in which the component is present. In case of extreme pH (less than 2 or greater than 12.5) indicate specific acid or caustic species. Any hazardous components present in trace amounts and not specifically mentioned in PARTS D, F and/or H should be included, even if specific concentrations are not known. Any components listed in PARTS D, F, and/or H which exceed 10,000 PPM (1%) must be included. Components must total to 100% including water, earth or other components. If a unit of measure other than percent must be used, indicate that unit.

PART I - WASTE CHARACTERIZATION

Use this section to properly list all applicable USEPA/STATE Hazardous Waste Numbers and Hazard codes. Use this section to help identify any waste that may be prohibited from land disposal under 40 CFR Part 268. Use question 9 to identify if waste is subject to BENZENE/STYRENE Requirements of 40 CFR, Part 61, Subpart FF. (See Federal Register Vol. 55, No. 45 dated March 7, 1990). A worksheet is available from your Technical Representative.

PART D - TOXICITY CHARACTERISTIC

Use the appropriate line to indicate the actual level or specified ranges for each toxicity characteristic as defined by 40 CFR part 261.24 (see Federal Register Vol. 55 No. 61, Thursday March 29, 1990).

PART J - VIRGIN PETROLEUM CONTAMINATED SOIL AND MEDIA CERTIFICATION

Provide generator's signature in this section if waste source is from a virgin petroleum spill.

PART K - AUTHORIZATION TO CORRECT WPS

Provide generator's signature in this section to allow S&W to make corrections on the WPS that are consistent with the results of sample analysis and regulatory requirements. Signing this section will help expedite the approval process in the event corrections need to be made.

PART E - HAZARDOUS CHARACTERISTICS

Complete if the waste exhibits any of the hazardous characteristics as per OSHA 29 CFR 1910.1200 Hazard Communications Standard.

PART L - SPECIAL HANDLING / COMMENTS

Use this section to alert the handlers of the waste of any precautions that should be taken or if the waste requires special safety or personal protective equipment. Use this space to list any additional information that may help in managing this waste.

PARTS M - WARRANTIES / SIGNATURE

Please read these warranties carefully. If any of these warranties cannot be certified, state the reason in Section I (Comments). The generator of the waste must sign and date the Generator's Waste Material Profile Sheet.

S & W WASTE INC.

115 Jacobus Avenue, South Kearny, NJ 07032

(201) 344-4004 WASTE INC.

APPROVAL CODE _____

CUSTOMER # _____

LSR # _____

WASTE SERIAL PROFILE SHEET INSTRUCTIONS

Use Ball Point Pen Press Firmly

APPROVAL DATE _____

A. GENERATOR INFORMATION

GENERATORS NAME US Army Electronics Command Charleswood Area C/O James Shingler Bldg 7567

MAILING ADDRESS ATTN: SCLM-AL-EM-AS

WASTE PICK-UP ADDRESS Bldg 7567

TECH CONTACT _____

TECH CONTACT PHONE # _____

COMMON NAME OF WASTE Gasoline Virgin unleaded

PROCESS GENERATING WASTE VST CLEANING

IS THIS WASTE FROM A PLANT CLOSURE OR PLANT CLEAN UP? YES NO

B. PHYSICAL/CHEMICAL CHARACTERISTICS

<p>ODOR</p> <p><input type="checkbox"/> NONE</p> <p><input type="checkbox"/> MILD</p> <p><input checked="" type="checkbox"/> STRONG</p> <p><input type="checkbox"/> DESCRIBE _____</p> <p><u>As above</u></p> <p>COLOR: _____</p>	<p>PHYSICAL STATE @ 70°F</p> <p><input type="checkbox"/> SOLID</p> <p><input checked="" type="checkbox"/> LIQUID</p> <p><input type="checkbox"/> POWDER</p> <p><input type="checkbox"/> SEMI-SOLID</p> <p><input checked="" type="checkbox"/> SINGLE PHASE</p> <p><input type="checkbox"/> BI-LAYERED</p> <p><input type="checkbox"/> MULTI-LAYERED</p>	<p>FLASH POINT (F/C.C.) LIQUIDS</p> <p><input checked="" type="checkbox"/> < 100</p> <p><input type="checkbox"/> 100-140</p> <p><input type="checkbox"/> 140-200</p> <p><input type="checkbox"/> > 200</p> <p>AGTUAL <u>10</u></p>	<p>CORROSIVITY (pH)</p> <p><input type="checkbox"/> ≤ 2.0</p> <p><input checked="" type="checkbox"/> > 2.01-5</p> <p><input type="checkbox"/> > 5.01-9</p> <p><input type="checkbox"/> > 9.01-12.50</p> <p><input type="checkbox"/> ≥ 12.50</p> <p>EXACT pH <u>7</u></p>
---	---	--	---

<p>PERCENT LIQUID/SOLID</p> <p>TOTAL SOLIDS _____</p> <p>SUSPENDED SOLIDS _____</p> <p>FREE LIQUIDS _____</p> <p>WATER _____</p> <p>SPECIFIC GRAVITY</p> <p>< 0.8 _____</p> <p>> 1.0-1.2 _____</p> <p><u>0.81</u> > 1.2</p>	<p>REACTIVITY (PPM)</p> <p>TOTAL CYANIDES <u>0</u></p> <p>AMENABLE CYANIDES _____</p> <p>REACTIVE SULFIDES _____</p> <p>WATER REACTIVE</p> <p><input type="checkbox"/> AIR REACTIVE</p> <p><input type="checkbox"/> SHOCK SENSITIVE</p> <p><input type="checkbox"/> GENERATES TOXIC FUMES</p> <p>when mixed with H₂O, acid or base</p>	<p>FUELS/SOLVENTS</p> <p>BUTANE <u>5000</u></p> <p>HALOGEN _____</p> <p>WASH _____</p> <p>SULFUR _____</p> <p>OTHER _____</p>	<p>AQUEOUS</p> <p>TOTAL ORGANIC CARBON</p> <p><input checked="" type="checkbox"/> < 1,000 mg/l</p> <p><input type="checkbox"/> 10,000 mg/l</p> <p><input type="checkbox"/> 25,000 mg/l</p> <p><input type="checkbox"/> 50,000 mg/l</p> <p><input type="checkbox"/> 100,000 mg/l</p> <p>EXACT _____</p>
--	---	---	---

C. CHEMICAL COMPOSITION

Gasoline Virgin unleaded

Water

RANGE: _____

MIN-MAX _____

PART I - AUTHORIZATION TO CORRECT WPB

Worker and Company Signature _____

PART II - SPECIAL HANDLING COMMENTS

PART III - WARRANTER SIGNATURE

D. TOXICITY CHARACTERISTIC

Contaminant	EPA HW No. 1	CAS No. 2	Regulatory Level (mg/L)	Actual Level
Arsenic	0004	7440-382	5.0	0
Barium	0005	7440-39-9	1000	0
Cadmium	0006	7440-08-9	100	0
Chromium	0007	7440-47-3	100	0
Lead	0008	7439-92-1	100	0
Mercury	0009	7439-97-6	100	0
Selenium	0010	7439-94-1	100	0
Silver	0011	7439-96-5	100	0
Benzene	0018	71-43-2	100	0
Carbon tetrachloride	0019	76-15-6	100	0
Chlordane	0020	76-47-3	100	0
Chlorobenzene	0021	108-90-7	100	0
Chloroform	0022	75-07-0	100	0
o-Cresol	0023	95-47-6	200	0
m-Cresol	0024	95-49-8	200	0
p-Cresol	0025	95-44-4	200	0
Cresol	0026	108-90-7	200	0
2,4-D	0018	94-75-1	100	0
1,2-Dichlorobenzene	0027	106-46-7	100	0
1,1-Dichloroethane	0028	107-06-2	100	0
1,1-Dichloroethylene	0029	75-35-4	100	0
1,2-Dichloroethane	0030	78-10-9	100	0
Endrin	0031	76-51-0	100	0
Heptachlor (and isomers)	0032	76-44-7	100	0
Heptachlor epoxide	0033	76-44-7	100	0
Hexachlorobutadiene	0034	76-44-7	100	0
Hexachlorocyclopentadiene	0035	76-44-7	100	0
Heptachlor epoxide	0036	76-44-7	100	0
Methyl Ethyl Ketone	0037	78-93-3	100	0
Nitrobenzene	0038	78-08-6	100	0
o-Trichlorophenol	0039	76-05-1	100	0
Pyridine	0040	110-82-7	100	0
Tetrachloroethylene	0041	127-18-6	100	0
Toluene	0042	108-88-6	100	0
Trichloroethylene	0043	79-01-84	100	0
2,4,5-Trichlorophenol	0044	88-06-2	100	0
2,4,6-Trichlorophenol	0045	88-06-2	100	0
2,4,5-TP (Silvex)	0046	88-06-2	100	0
Vinyl chloride	0047	75-01-3	100	0

PLEASE NOTE THE CHEMICAL COMPOSITION TOTAL IN THE MAXIMUM COLUMN MUST BE GREATER THAN OR EQUAL TO 100 PERCENT.

TOTAL 100 %

1 Hazardous waste number.

2 Chemical abstracts service number.

3 Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

4 m- and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total Cresol is 200 mg/L.

E. HAZARDOUS CHARACTERISTICS

- RADIOACTIVE
 - INFECTIOUS
 - TOXIC
 - EXPLOSIVE
 - PYROPHORIC
 - OXIDIZER
 - COMPRESSED GAS
 - FLAMMABLE SOLID
 - ORGANIC PEROXIDE
 - REACTIVE
 - SHOCK SENSITIVE
 - REACTIVE METALS
- (SPECIFY IN SECTION D)
- OTHER DESCRIBE: FLAMM LIQ
- NONE OF THE ABOVE

F. NOTIFY THE HEALTH HAZARD CHARACTERISTICS FROM IT

1. IMMEDIATE (ACUTE) HEALTH HAZARD: NONE HIGHLY TOXIC TOXIC IRRITANT SENSITIZER
2. IDENTIFY WHAT EXTREMELY HAZARDOUS SUBSTANCE(S) AS DEFINED IN SECTION 355 IS IN THE WASTE STREAM, ITS PERCENTAGE AND WEIGHT. NONE
3. IDENTIFY ANY TOXIC/HAZARDOUS (OSHA 1910.1000 SUBPART Z) REGULATED SUBSTANCES IN THE WASTE STREAM. LIST SUBSTANCES AND PERCENTAGE. NONE

G. SHIPPING INFORMATION

- BULK LIQUID
 - BULK SLUDGE
 - OTHER
 - BULK SOLID
 - DRUMS (POLY)
 - DRUMS (STEEL)
- SHIPPING FREQUENCY QUANTITY 700 PER once

H. MANIFEST INFORMATION

IS THIS A D.O.T. HAZARDOUS MATERIAL? YES NO

PROPER D.O.T. SHIPPING NAME (Table 172.101 49 CFR): Waste Gasoline

D.O.T. HAZARD CLASS: FLAMM LIQ

ADDITIONAL DESCRIPTIONS/REQUIREMENTS (49 CFR 172.203): N/A

EMERGENCY RESPONSE TELEPHONE NUMBER (172.604): 408-566-7885

CONTACT (Print Name): Robbette Jr

I. WASTE CHARACTERISTICS

- 1) IS THIS A USEPA HAZARDOUS WASTE? YES NO
- 2) USEPA HAZARDOUS WASTE NUMBER(S): D001 D018
- 3) STATE HAZARDOUS WASTE NUMBER(S): X 773
- 4) DOES THIS WASTE CONTAIN ANY PCB'S? YES NO
- 5) DOES THIS WASTE CONTAIN ANY HERBICIDES, PESTICIDES, DIOXIN OR RESIDUES THEREOF? YES NO
- 6) IS THIS WASTE PROHIBITED FROM LAND DISPOSAL UNDER 40 CFR PART 268? YES NO
- 7) IS WASTE A (CHECK ONE): NON-WASTEWATER WASTEWATER
- 8) IS THIS WASTE SUBJECT TO ANY CALIFORNIA LIST RESTRICTIONS? YES NO
- 9) BENZENE NESHAIP APPLICABILITY: YES NO
- 10) DOES THIS WASTE CONTAIN ANY N-NITROSO-N-METHYLUREA? YES NO
- 11) WAS THE INFORMATION ON THIS WPS BASED ON GENERATORS KNOWLEDGE OR ACTUAL CHEMICAL ANALYSIS?
- 12) ARE THERE ANY SPECIAL HANDLING INSTRUCTIONS FOR THE DISPOSAL OF THIS WASTE? YES NO

STATEMENT OF CERTIFICATION: I hereby certify that the waste described on this manifest is the only source of contamination for the waste stream described on this manifest and is not contaminated by any other source.

AUTHORIZATION TO CORRECT WPS: I authorize S&W WASTE INC. to make corrections to this WPS. Such corrections being consistent with the results of sample analysis and regulatory requirements. I understand that a corrected copy of the WPS will be sent to me.

SIGNATURE: [Signature]

L. SPECIAL HANDLING COMMENTS	OFFICIAL USE ONLY	APPROVAL COMMITTEE
	DATE	DATE

N. POLYCHLORINATED BIPHENYL (PCB)/HERBICIDE/PESTICIDE/INSECTICIDE/ALUMINUM AND REACTIVE METAL WARRANTY

I hereby warrant that the material transferred to S&W WASTE INC. for transportation, treatment, storage and/or disposal is not contaminated by either POLYCHLORINATED BIPHENYL (PCB) at a level greater than 39 PPM or HERBICIDE/INSECTICIDE/PESTICIDE or Dioxins or Furans of any value unless it is listed in Section C and approved by S&W WASTE, INC. nor does it contain Elemental Aluminum or Reactive Metal Paste, Powder or Pigment unless it is listed in Section C and approved by S&W WASTE, INC. and hereby agree to indemnify and hold S&W WASTE, INC. harmless from any costs, damages or other liability resulting from breach of this warranty or any other terms and conditions of this Waste Material Profile Sheet.

I certify that all information submitted is complete and accurate.

DATE: 2-8-93 PRINT NAME/TITLE: Charles M. Arley, Dept. Engrs GENERATOR'S SIGNATURE: [Signature]

S&W WASTE INC.

SOIL REMEDIATION of Philadelphia, Inc.

3201 South 61st Street

Philadelphia, PA 19153

Pennsylvania Department of Environmental Resources Permitted Facility

CERTIFICATE OF SOIL REMEDIATION

Soil Remediation of Philadelphia, Inc. certifies that 2422.69 tons of non-hazardous petroleum contaminated soil delivered by ALLIED ENVIRONMENTAL and identified as lot # 4.71 has been processed to destroy the hydrocarbon contamination. This soil has been remediated to meet Level A Protection as established by the Pennsylvania Department of Environmental Resources Cleanup Standards issued October 18, 1991. This states that the hydrocarbons are removed so that they are non-detectable thereby allowing the soil to be considered clean fill.

Certificate Issued to: U.S. ARMY FORT MONMOUTH

Authorized Signature: *Philip J. Matis*

Date: 8-3-93



APPENDIX F
TANK RECLAMATION CERTIFICATE

MAZZA & SONS, INC.

**Metal Recyclers
 Auto and Truck
 3230 Shafto F.d.
 Tinton Falls, NJ
 (908) 922-9292**

NO. _____

DATE 5 Feb 93

Customer's Name Cycle Coast

Address _____

Make of
 Autos

 Tires _____
 Tank _____
 Price: _____

43780 LB G

Weight Price

Cast Iron X

Steel TANK 104.00

33380 LB G

Lt. Iron _____

10,400

Copper #1 _____

Copper #2 _____

Lt. Copper _____

Brass _____

Alum Clean _____

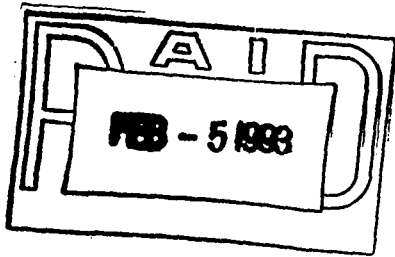
Lead _____

Stainless _____

Radiators _____

Battery _____

TOTAL AMOUNT: _____



Weigher _____ Customer John Kell

MAZZA & SONS, INC.

Metal Recyclers
 Auto and Truck
 3230 Shafto Rd.
 Tinton Falls, NJ
 (908) 922-9292

NO. _____

DATE 4 Feb 93

Customer's Name Cycle const

Address _____

Make of
 Autos

 Tires _____
 Tank _____
 Price: _____

42080 LB G

Weight Price

Cast Iron 11

33540 LB G

Steel TRUCK 85.40

Lt. Iron _____

Copper #1 _____

Copper #2 _____

Lt. Copper _____

Brass _____

Alum Clean _____

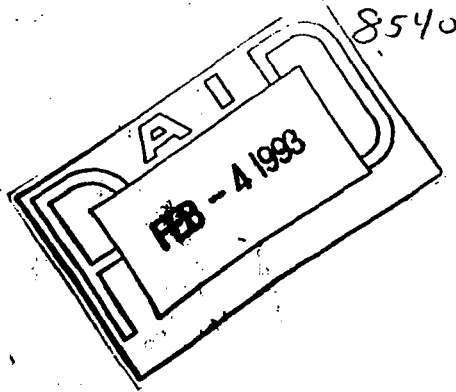
Lead _____

Stainless _____

Radiators _____

Battery _____

TOTAL AMOUNT: _____



Weigher _____ Customer [Signature]

MAZZA & SONS, INC.

**Metal Recyclers
Auto and Truck
3230 Shatto Rd.
Tinton Falls, NJ
(908) 922-9292**

NO. _____

DATE 4 Feb 93

Customer's Name Cyate Cust

Address _____

Make of
Autos

Tires _____
Tank _____
Price: _____

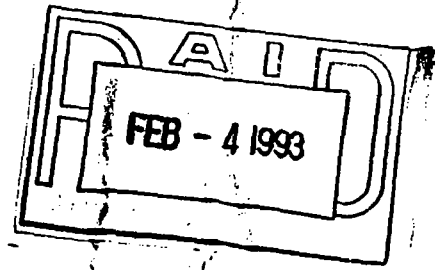
41860 LB G

Weight Price

33280 LB G

8580

Cast Iron	
Steel <u>TANK</u>	<u>85.80</u>
Lt. Iron	
Copper #1	
Copper #2	
Lt. Copper	
Brass	
Alum Clean	
Lead	
Stainless	
Radiators	
Battery	
TOTAL AMOUNT:	



Weigher _____

Customer [Signature]



APPENDIX G
ANALYTICAL DATA PACKAGE

Report of Analysis
 U.S. Army, Fort Monmouth Environmental Laboratory
 NJDEPE Certification # 13461

Client: U.S. Army
 DEH, SELFM-EH-EV
 Bldg. 167
 Ft. Monmouth, NJ 07703

Lab. ID #: 1140.1-.4
 Sample Rec'd: 02/02/93
 Analysis Start: 02/03/93
 Analysis Comp: 02/03/93

Analysis: 418.1 (TPH)
 Matrix: Soil
 Analyst: S. Hubbard

NJDEPE UST Reg. #: XXXXXXX-XX,XX,XX,XX
 Closure Approval #: X-XX-XXXX/XX
 NJDEPE Case #: XX-XX-XX-XXXX
 Building #: 2567

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1140.1	#1 N. Side hole 3' down	85	65.1	6.6
1140.2	#2 NW. Corner N. Wall	91	ND	6.6
1140.3	#3 Bottom 12' down West	80	ND	50.
1140.4	#4 Bottom Center S. Wall	83	ND	50.
M Bl.	Method Blank	--	ND	6.6

Notes: ND = Not Detected, MDL = Method Detection Limit



Brian K. McKee
 Laboratory Director



SERV-AIR, INC.

An E-SYSTEMS Company

CHAIN OF CUSTODY RECORD

CLIENT: J. Monmouth

PROJECT ID: _____

ADDRESS: B2567 Shoppette

SAMPLER: C. Appleby

CITY/STATE: _____

PHONE #: X26224

LAB ID #	SAMPLE ID	SAMPLE DATE	SAMPLE TIME	SAMPLE TYPE			NO. OF BOTTLES	ANALYSIS REQUESTED
				GRAB	SOIL	COMP		
1140.1	#1 N side hole 3' down	2/2	1357		X		1	TPHC
1140.2	#2 NW Corner Sewall	2/2	1400		X		1	
1140.3	#3 Btm 12' down West	2/2	1515		X		1	
1140.4	#4 Btm Center Sewall	2/2	1520		X		1	

SAMPLE COLLECTED BY: <u>C. Appleby</u>	DATE	TIME	PRESERVED WITH:
			NaOH H2SO4 HNO3 NONE OTHER
RELINQUISHED BY:			RECEIVED BY:
<u>Rochinsky</u>	<u>2/2</u>	<u>1600</u>	<u>Sarah J. Hubbard</u>

Report of Analysis
 U.S. Army, Fort Monmouth Environmental Laboratory
 NJDEPE Certification # 13461

Client: U.S. Army
 DEH, SELFM-EH-EV
 Bldg. 167
 Ft. Monmouth, NJ 07703

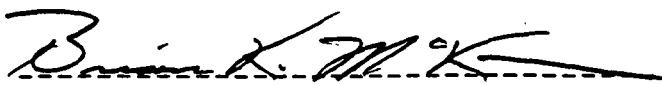
Lab. ID #: 1142.3+.4
 Sample Rec'd: 02/08/93
 Analysis Start: 02/08/93
 Analysis Comp: 02/08/93

Analysis: 418.1 (TPH)
 Matrix: Soil
 Analyst: S. Hubbard

NJDEPE UST Reg. #: XXXXXXX-XX,XX,XX,XX
 Closure Approval #: X-XX-XXXX/XX
 NJDEPE Case #: XX-XX-XX-XXXX
 Building #: 2567

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1142.3	Mid East Wall 4'	84	141.	3.3
1142.4	Mid East Wall 2'	84	7.9	3.3
1142.4	Duplicate	84	2.0	3.3
1142.4	Spike	84	382.	3.3
M Bl.	Method Blank	--	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
 % Duplication = 25%
 % Spike Recovery = 99%


 Brian K. McKee
 Laboratory Director



SERV-FORUM

An E-SYSTEMS Company

CHAIN OF CUSTODY RECORD

CLIENT: DEH - Bldg 2567 Shoppett

PROJECT ID: _____

ADDRESS: H. Monmouth, N.J.

SAMPLER: C. APPL

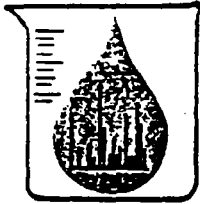
CITY/STATE: _____

PHONE #: 5326224

(135m)

LAB ID #	SAMPLE ID	SAMPLE DATE	SAMPLE TIME	SAMPLE TYPE			NO. OF BOTTLES	ANALYSIS REQUESTED
				GRAB	SOIL	COMP		
1142.3	mid east wall 4'	2-8-93	10:00		x		1	TPHC
1142.4	mid east wall 2'	2-8-93	10:05		x		1	TPHC

SAMPLE COLLECTED BY: <u>C. Appl</u>	DATE	TIME	PRESERVED WITH:
	2-8-93	10:20	NaOH H2SO4 HNO3 NONE OTHER
RELINQUISHED BY:	2-8-93	RECEIVED BY:	<u>Sarah J. Hubbard</u>



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
PO BOX 369 BLDG. 490
FT. MONMOUTH, NJ 07703

EPL# : 6944.8-18.20
SAMPLE RCD : 12/10/91
ANALYSIS START : 12/11/91
ANALYSIS COMP : 12/11/91

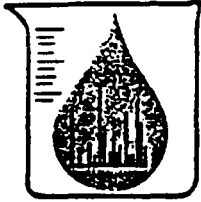
MATRIX: WATER

TEST PARAMETER: TOTAL LEAD

CLIENT ID.	EPL ID.#	RESULTS (ppm)	DETECTIO LIMIT
B2567 W1	6944.8	0.004 mg/L	0.004 mg/
B2567 W2	6944.9	ND "	"
B2567 W3	6944.10	ND "	"
B2567 W4	6944.11	0.005 "	"
B699 W2	6944.12	ND "	"
B699 5	6944.13	ND "	"
B699 6	6944.14	0.006 "	"
B699 7	6944.15	ND "	"
B699 8	6944.16	ND "	"
B699 9	6944.17	ND "	"
B699 10	6944.18	0.004 "	"
FIELD BLANK	6944.20	ND "	"

ND= NONE DETECTED

DANIEL K. WRIGHT
LABORATORY DIRECTOR



ENVIRONMENTAL PROFILE LABORATORIES

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

Idg 2567

ID#

6944.8

" .9

" .10

" .11

LABORATORY ANALYSIS REPORT

MW#

2926925

2926926

2926927

2926928

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

PROJECT NO.:
 CUSTOMER (NAME/ADDRESS): *E-Systems Serv-Air*
 PHONE NO: _____ FRAX NO: _____
 SAMPLER (SIGNATURE): *John F. Kh*
 DATE / TIME: *12/10/91 3pm*
 ANALYSIS PARAMETERS:
 SITE NAME: *Fort Monmouth*
 NUMBER OF CONTAINERS: *3*
 START: *7:00 AM*
 FINISH: *4:00 PM*
 PRESERVATION METHOD: *below 4°C*

LAB SAMPLE ID NUMBER	DATE/TIME	SAMPLE MATRIX	CUSTOMER SAMPLE LOCATION/ID NUMBER	NUMBER OF CONTAINERS	ANALYSIS PARAMETERS	REMARKS
<i>6944.1</i>	<i>12/10 8-3p</i>	<i>H₂O</i>	<i>Bld 814</i>	<i>3</i>	<i>VIA 15 TH (total) BN 115 TH</i>	<i>ice</i>
<i>.2</i>			<i>B 1076 W1</i>		<i>X X</i>	
<i>.3</i>			<i>B 1076 W2</i>		<i>X X</i>	
<i>.4</i>			<i>B 1076 W3</i>		<i>X X</i>	
<i>.5</i>			<i>B 3021 W1</i>		<i>X X</i>	
<i>.6</i>			<i>B 3021 W2</i>		<i>X X</i>	
<i>.7</i>			<i>B 3021 W3</i>	<i>↓</i>	<i>X X</i>	
<i>.8</i>			<i>B 2567 W1</i>	<i>2</i>	<i>X X</i>	
<i>.9</i>			<i>B 2567 W2</i>		<i>X X</i>	
<i>.10</i>			<i>B 2567 W3</i>		<i>X X</i>	
<i>.11</i>			<i>B 2567 W4</i>		<i>X X</i>	

Relinquished By (Signature): *[Signature]* DATE / TIME: *12-10-91 3:00*
 Received By (Signature): *[Signature]* METHOD OF SHIPPING: *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 Braultette* DATE / TIME: *12-10-91 4:30 AM*

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

ORDER NUMBER: _____ ORDER NO: _____

CHAIN OF CUSTODY RECORD

ST NO.:	SAMPLER (SIGNATURE): <i>John F. RL</i>	DATE / TIME 12/10/91 3pm	ANALYSIS PARAMETERS	START: 7:00 AM
CUSTOMER (NAME/ADDRESS): E-Systems Serv-Air	SITE NAME: FORT MONMOUTH		VOA+15 III lead B/W+15 III chloroform	FINISH: 4:00 pm

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	ANALYSIS PARAMETERS	REMARKS
0944.12	12/10 2-3pm	H ₂ O	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			frip blank	2	X (X)	

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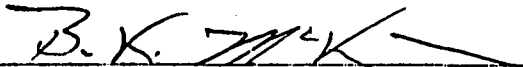
Relinquished By (Signature):	DATE / TIME:	Received for Lab by (Signature): <i>Robert Brouillette</i>	DATE / TIME: 12/10/91 4:30pm
------------------------------	--------------	---	---------------------------------

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							
DH/ADN	NA	NA	NA	NA	NA	NA	NA
PCB's	NA	NA	NA	NA	NA	NA	NA
Analysis Date							
DN/ADN	NA	NA	NA	NA	NA	NA	NA
PCP's	NA	NA	NA	NA	NA	NA	NA
Volatiles	12/13/91	12/13/91	12/13/91	12/10/91	12/10/91		→
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 <i>B.K. McKee</i>						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							
DN/DBN	NA	NA					
PCB's	NA	NA					
Analysis Date							
DN/DBN	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 						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.

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,
6944	(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.

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 identified 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.

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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
VOLATILE ORGANIC ANALYSIS DATA

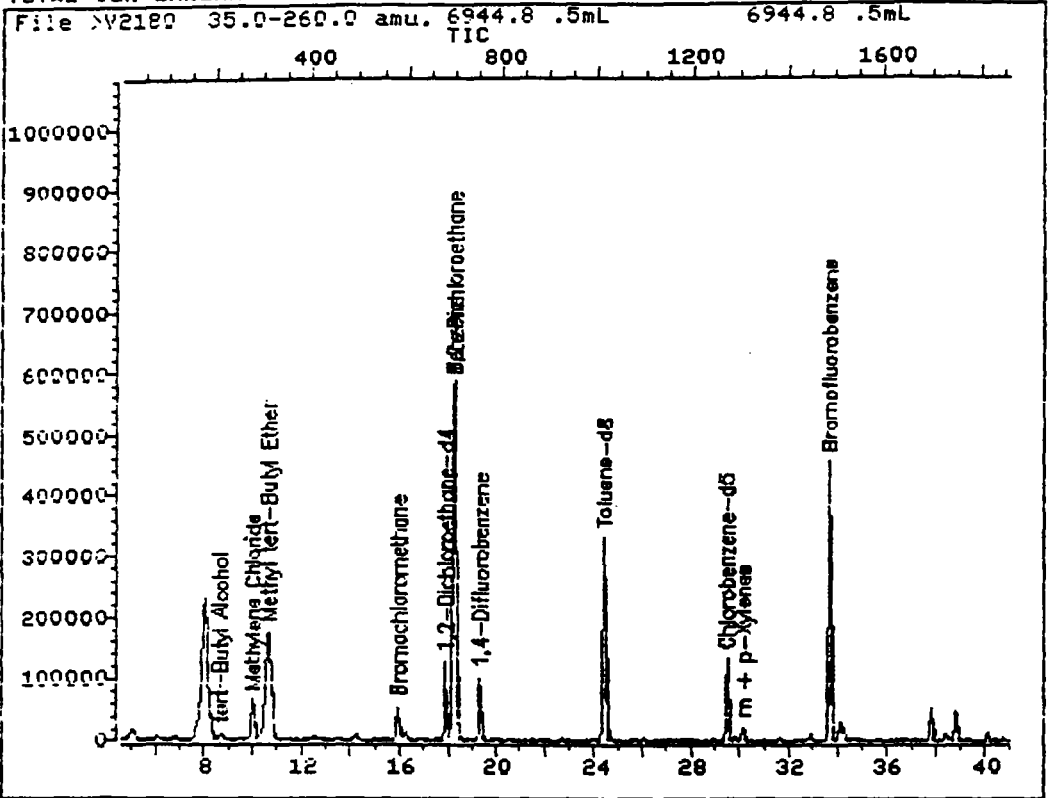
JOB NUMBER _____
 SAMPLE NAME 6944.8 .5ml
 CLIENT ID _____
 DATA FILE >U2180

MATRIX Water
 DILUTION FACTOR 10.00
 QA BATCH _____
 DATE ANALYZED 12/13/91

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Chloromethane	ND	100	Trichloroethene	ND	50
Bromomethane	ND	100	Dibromochloromethane	ND	50
Vinyl Chloride	ND	100	1,1,2-Trichloroethane	ND	50
Chloroethane	ND	100	Benzene	2400	50
Methylene Chloride	240	50	trans-1,3-Dichloropropene	ND	50
Acrolein	ND	500	2-Chloroethylvinyl ether	ND	50
Acrylonitrile	ND	500	Bromoform	ND	50
Acetone	ND	50	2-Hexanone	ND	50
Carbon Disulfide	ND	50	4-Methyl-2-Pentanone	ND	50
1,1-Dichloroethene	ND	50	Tetrachloroethene	ND	50
1,1-Dichloroethane	ND	50	1,1,2,2-Tetrachloroethane	ND	50
trans-1,2-Dichloroethene	ND	50	Toluene	ND	50
Trichlorofluoromethane	ND	50	Chlorobenzene	ND	50
Chloroform	ND	50	Ethylbenzene	ND	50
1,2-Dichloroethane	55	50	Styrene	ND	50
2-Butanone	ND	50	o-Xylene	ND	50
1,1,1-Trichloroethane	ND	50	m + p-Xylenes	42 J	50
Carbon Tetrachloride	ND	50	1,3-Dichlorobenzene	ND	50
Bromodichloromethane	ND	50	1,2-Dichlorobenzene	ND	50
Vinyl Acetate	ND	50	1,4-Dichlorobenzene	ND	50
1,2-Dichloropropane	ND	50	tert-Butyl Alcohol	4400	500
cis-1,3-Dichloropropene	ND	50	Methyl tert-Butyl Ether	2200	50

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

TOTAL ION CHROMATOGRAM



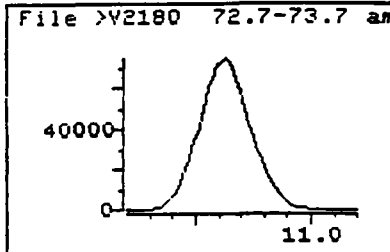
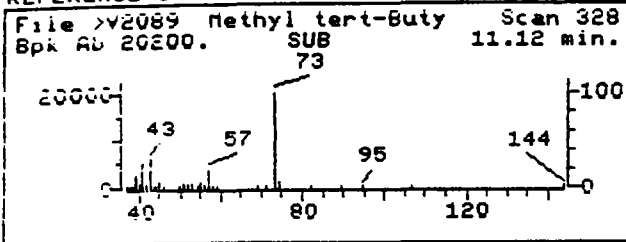
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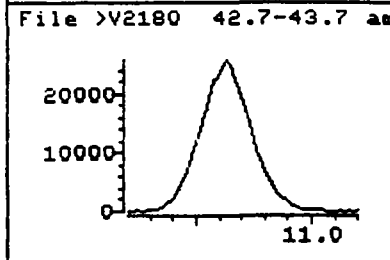
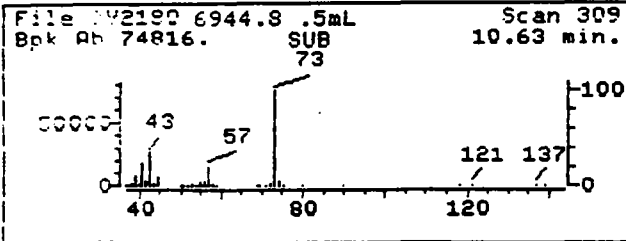
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Title: HSL VOLATILE ORGANICS
Last Calibration: 911211 12:31

Operator ID: MARK
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Injected at: 911213 14:20

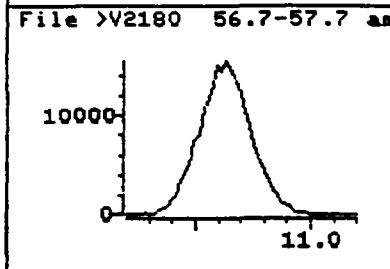
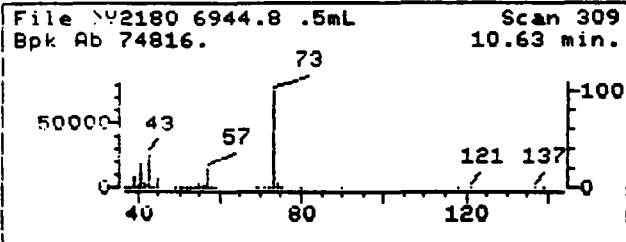
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



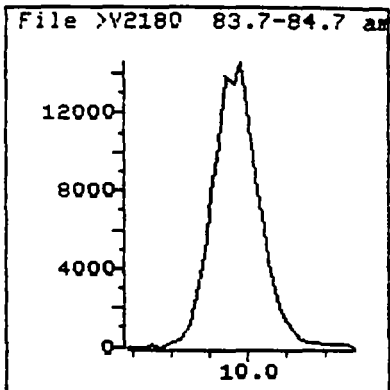
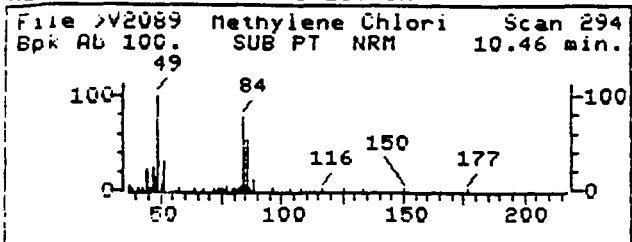
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Injected at: 911213 14:20

Quant Output File: ^V2180::DB

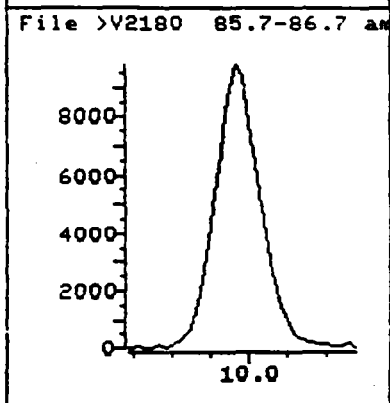
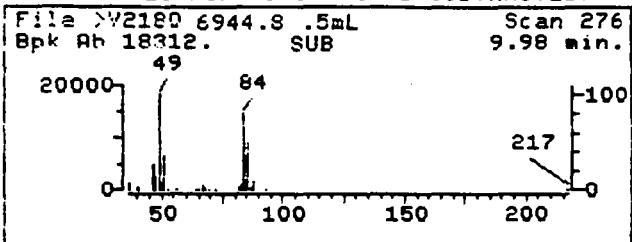
Quant ID File: IDUOA::D4
Last Calibration: 911211 12:31

Compound No: 6
Compound Name: Methyl tert-Butyl Ether
Scan Number: 309
Retention Time: 10.63 min.
Quant Ion: 73.0
Area: 1201217
Concentration: 219.08 ppb
q-value: 95

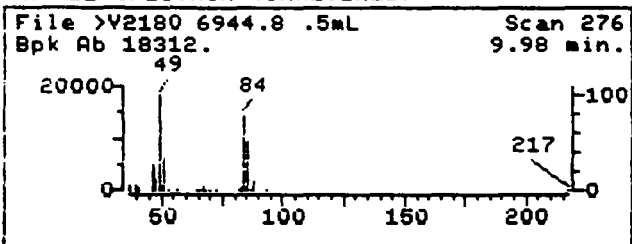
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SAMPLE SPECTRUM (UNALTERED)



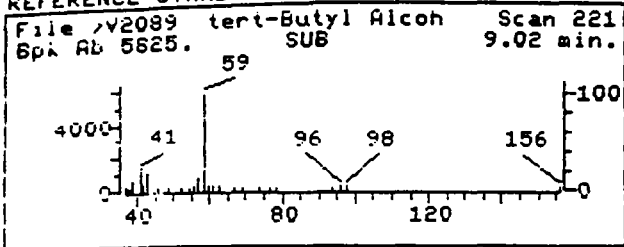
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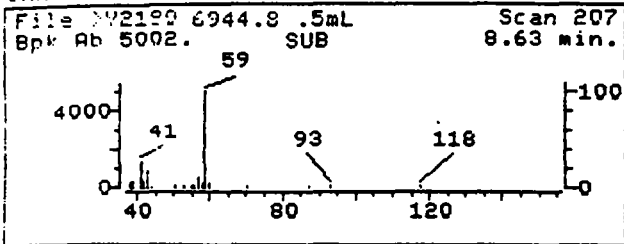
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Last Calibration: 911211 12:31

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 276
Retention Time: 9.98 min.
Quant Ion: 84.0
Area: 124383
Concentration: 24.46 ppb
q-value: 94

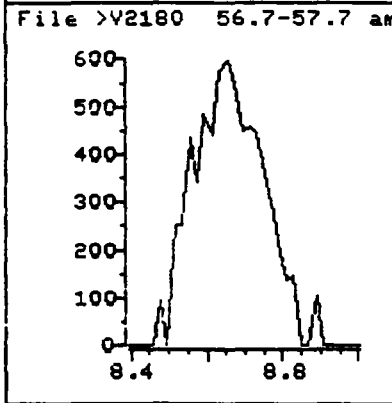
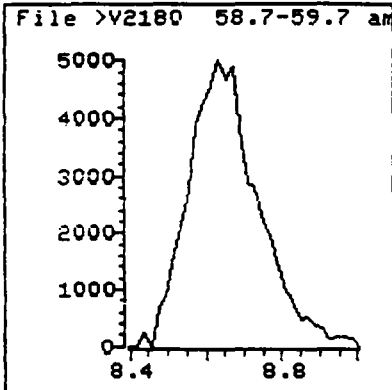
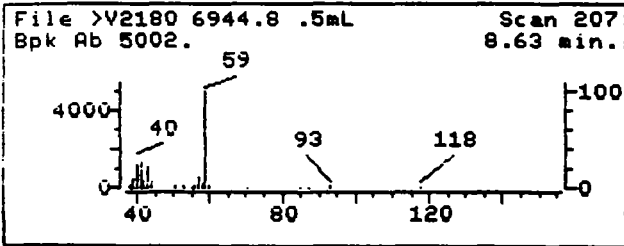
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SAMPLE SPECTRUM (UNALTERED)



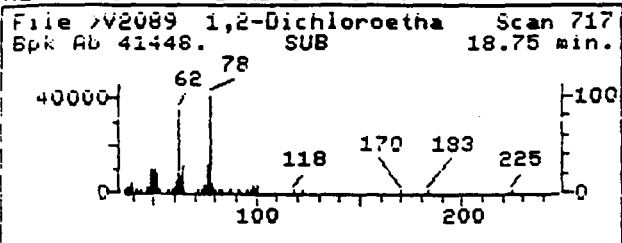
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Injected at: 911213 14:20

Quant Output File: ^U2180::DB

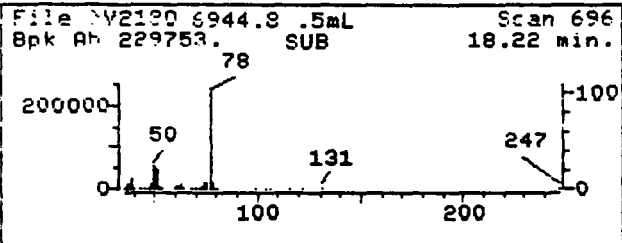
Quant ID File: IDUOA::D4
Last Calibration: 911211 12:31

Compound No: 14
Compound Name: tert-Butyl Alcohol
Scan Number: 207
Retention Time: 8.63 min.
Quant Ion: 59.0
Area: 63781
Concentration: 442.81 ppb
q-value: 96

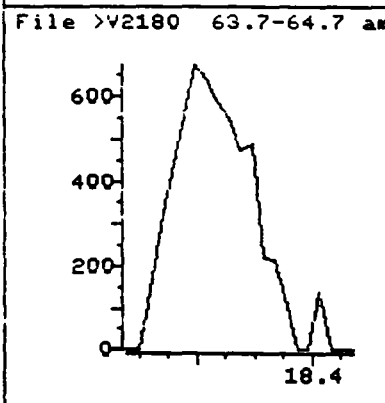
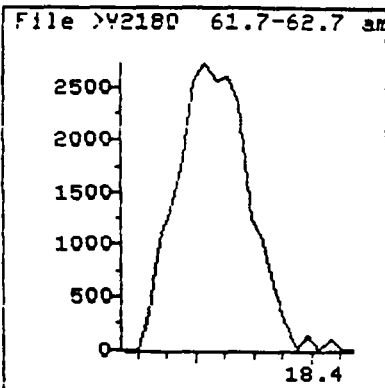
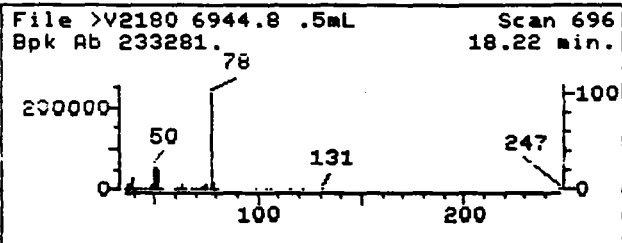
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SAMPLE SPECTRUM (UNALTERED)



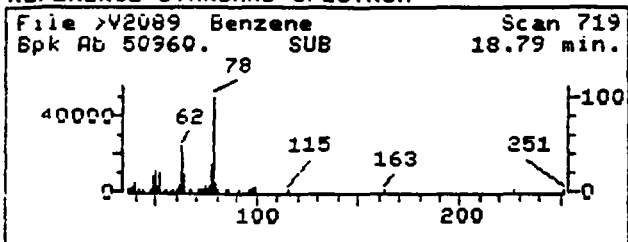
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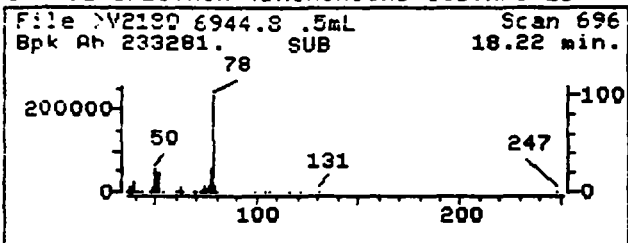
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Last Calibration: 911211 12:31

Compound No: 19
Compound Name: 1,2-Dichloroethane
Scan Number: 696
Retention Time: 18.22 min.
Quant Ion: 62.0
Area: 24289
Concentration: 5.53 ppb
q-value: 82

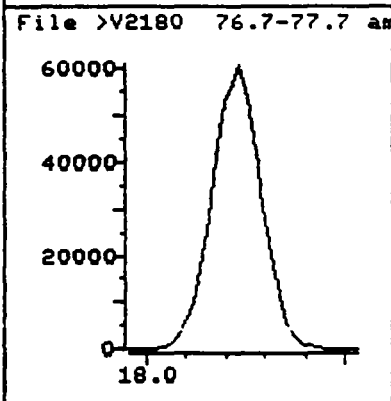
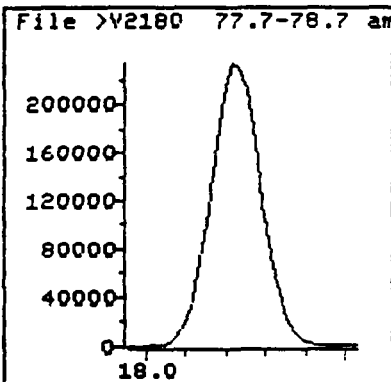
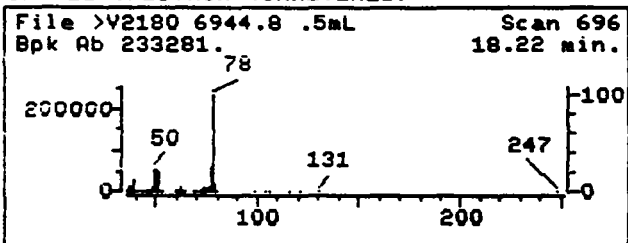
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



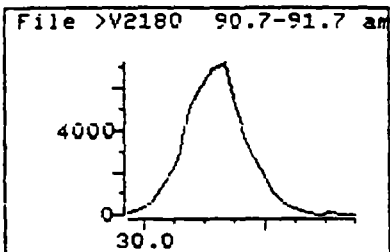
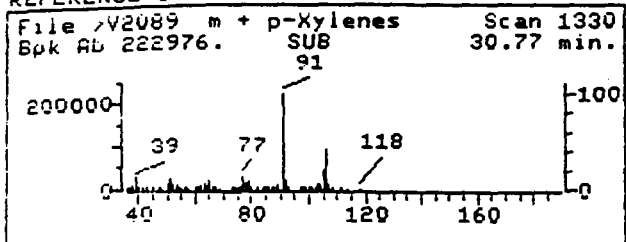
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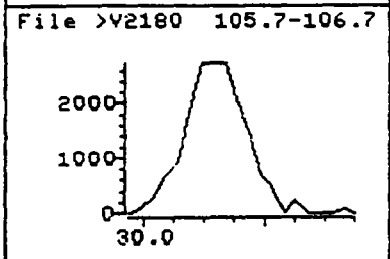
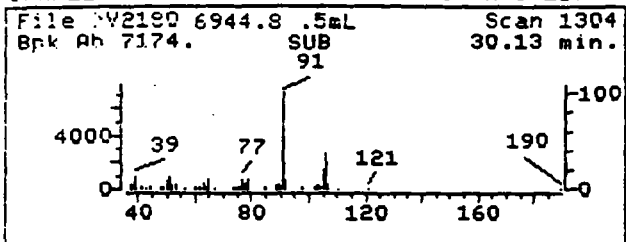
Quant ID File: IDUOA::D4
Last Calibration: 911211 12:31

Compound No: 31
Compound Name: Benzene
Scan Number: 696
Retention Time: 18.22 min.
Quant Ion: 78.0
Area: 2047908
Concentration: 241.40 ppb
q-value: 94

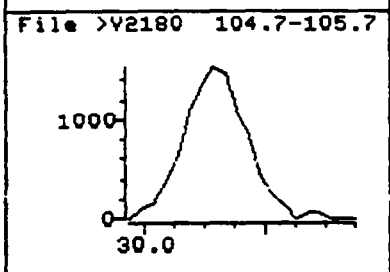
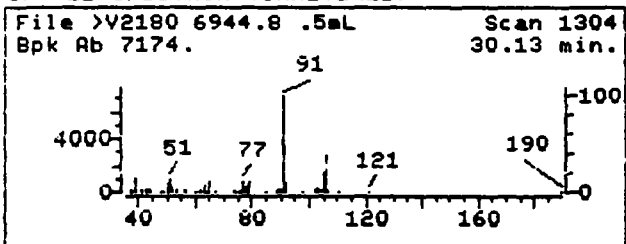
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >V2180::D1
Name: 6944.8 .5mL
Misc: 6944.8 .5mL
Quant Time: 911213 15:02
Injected at: 911213 14:20

Quant Output File: ^V2180::DB

Quant ID File: IDUOA::D4
Last Calibration: 911211 12:31

Compound No: 44
Compound Name: m + p-Xylenes
Scan Number: 1304
Retention Time: 30.13 min.
Quant Ion: 91.0
Area: 50411
Concentration: 4.18 ppb
q-value: 91

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

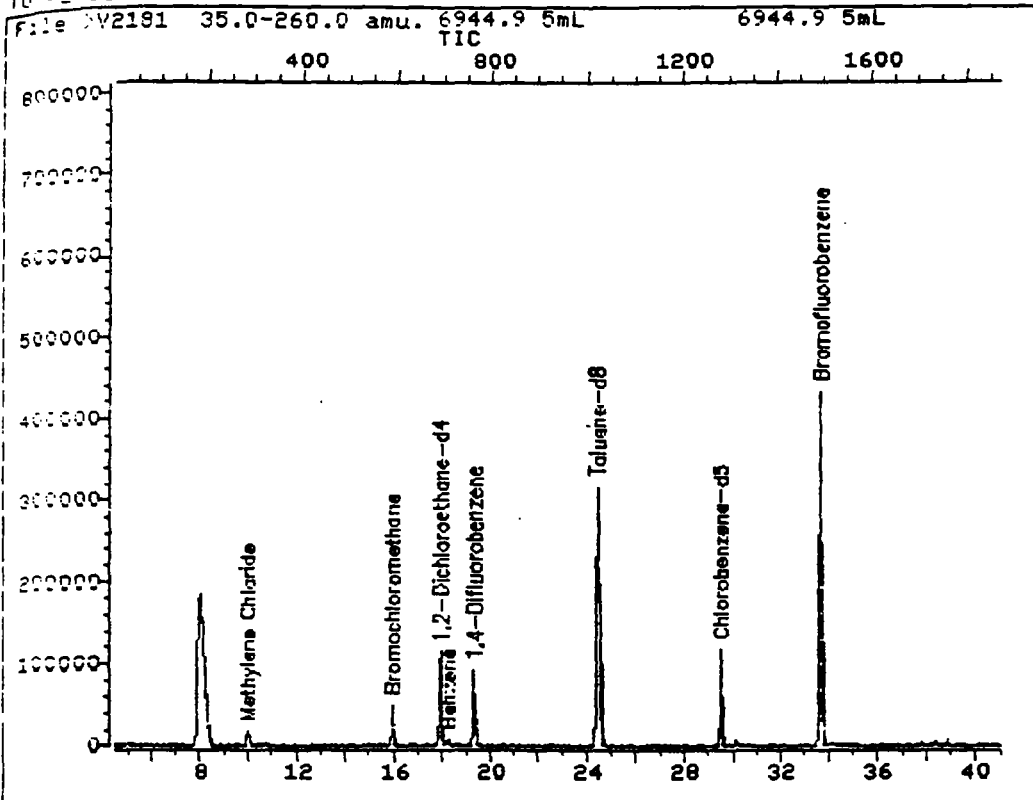
JOB NUMBER _____
 SAMPLE NAME 6944.9 5mL
 CLIENT ID _____
 DATA FILE >V2181

MATRIX Water
 DILUTION FACTOR 1.00
 QA BATCH _____
 DATE ANALYZED 12/13/91

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	3 J	5
Methylene Chloride	7	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



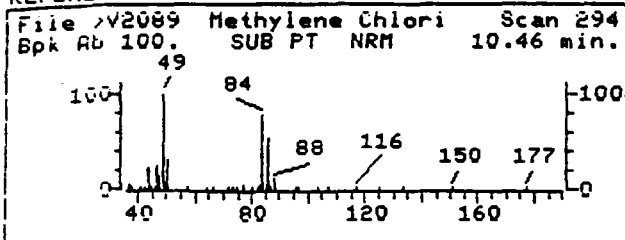
Data File: >V2181::D1
Name: 6944.9 5mL
Misc: 6944.9 5mL

Quant Output File: ^V2181::DB

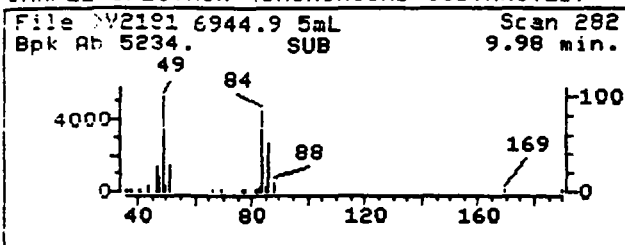
Id File: IDUOA::D4
Title: HSL VOLATILE ORGANICS
Last Calibration: 911211 12:31

Operator ID: MARK
Quant Time: 911213 15:51
Injected at: 911213 15:09

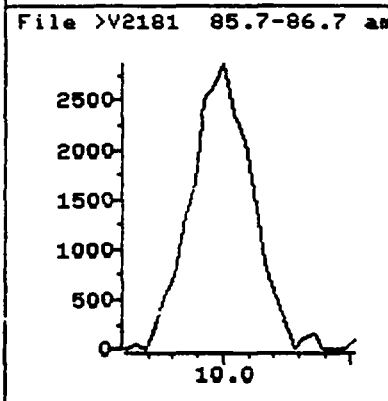
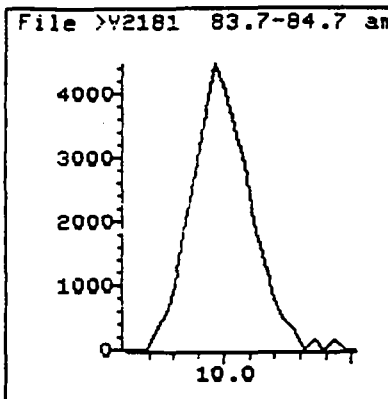
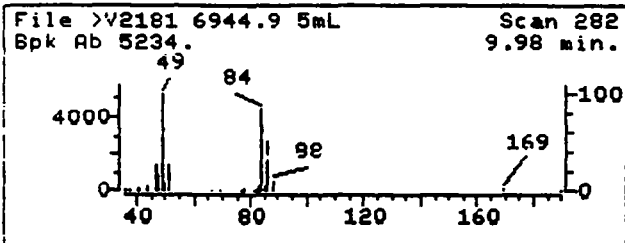
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



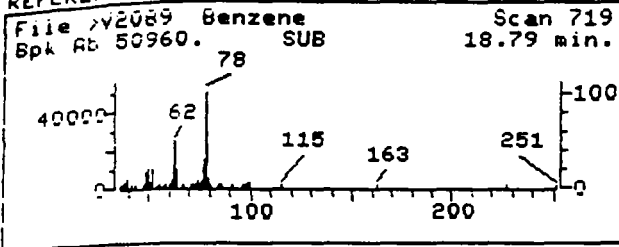
Data File: >V2181::D1
Name: 6944.9 5mL
Misc: 6944.9 5mL
Quant Time: 911213 15:51
Injected at: 911213 15:09

Quant Output File: ^V2181::DB

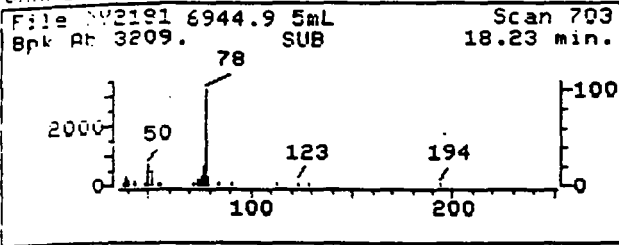
Quant ID File: IDUOA::D4
Last Calibration: 911211 12:31

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 282
Retention Time: 9.98 min.
Quant Ion: 84.0
Area: 35308
Concentration: 7.42 ppb
q-value: 99

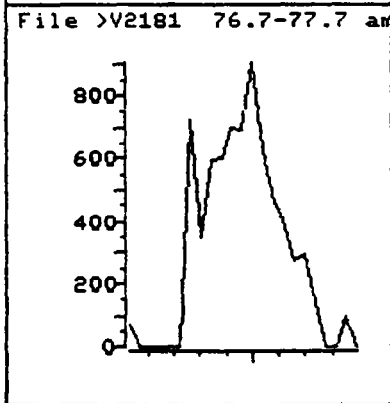
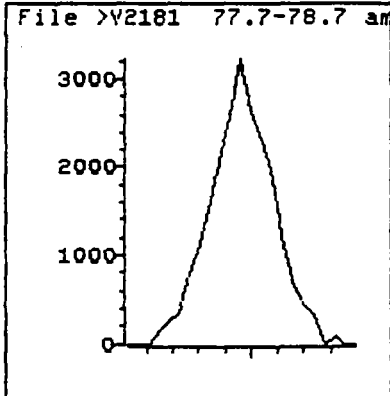
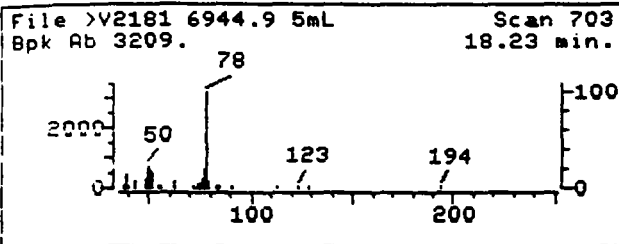
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >V2181::D1
Name: 6944.9 5mL
Misc: 6944.9 5mL
Quant Time: 911213 15:51
Injected at: 911213 15:09

Quant Output File: >V2181::DB

Quant ID File: IDUOR::D4
Last Calibration: 911211 12:31

Compound No: 31
Compound Name: Benzene
Scan Number: 703
Retention Time: 18.23 min.
Quant Ion: 78.0
Area: 25708
Concentration: 3.08 ppb
q-value: 89

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER _____
 SAMPLE NAME 6944.10 .5ml
 CLIENT ID _____
 DATA FILE >U2182

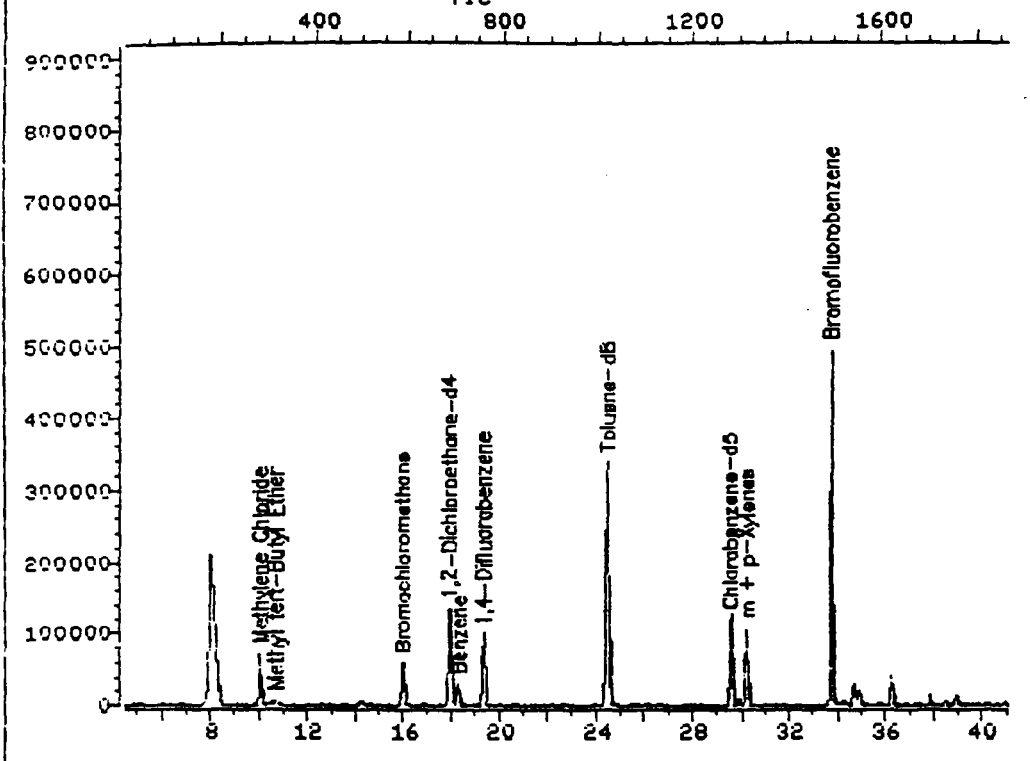
MATRIX Water
 DILUTION FACTOR 10.00
 QA BATCH _____
 DATE ANALYZED 12/13/91

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Chloromethane	ND	100	Trichloroethene	ND	50
Bromomethane	ND	100	Dibromochloromethane	ND	50
Vinyl Chloride	ND	100	1,1,2-Trichloroethane	ND	50
Chloroethane	ND	100	Benzene	110	50
Methylene Chloride	240	50	trans-1,3-Dichloropropene	ND	50
Acrolein	ND	500	2-Chloroethylvinyl ether	ND	50
Acrylonitrile	ND	500	Bromoform	ND	50
Acetone	ND	50	2-Hexanone	ND	50
Carbon Disulfide	ND	50	4-Methyl-2-Pentanone	ND	50
1,1-Dichloroethene	ND	50	Tetrachloroethene	ND	50
1,1-Dichloroethane	ND	50	1,1,2,2-Tetrachloroethane	ND	50
trans-1,2-Dichloroethene	ND	50	Toluene	ND	50
Trichlorofluoromethane	ND	50	Chlorobenzene	ND	50
Chloroform	ND	50	Ethylbenzene	ND	50
1,2-Dichloroethane	ND	50	Styrene	ND	50
2-Butanone	ND	50	o-Xylene	ND	50
1,1,1-Trichloroethane	ND	50	m + p-Xylenes	200	50
Carbon Tetrachloride	ND	50	1,3-Dichlorobenzene	ND	50
Bromodichloromethane	ND	50	1,2-Dichlorobenzene	ND	50
Vinyl Acetate	ND	50	1,4-Dichlorobenzene	ND	50
1,2-Dichloropropane	ND	50	tert-Butyl Alcohol	ND	500
cis-1,3-Dichloropropene	ND	50	Methyl tert-Butyl Ether	69	50

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

TOTAL ION CHROMATOGRAM

File >V2182 35.0-260.0 amu. 6944.10 .5mL 6944.10 .5mL
TIC



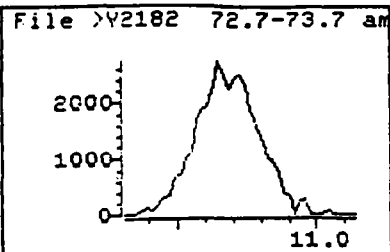
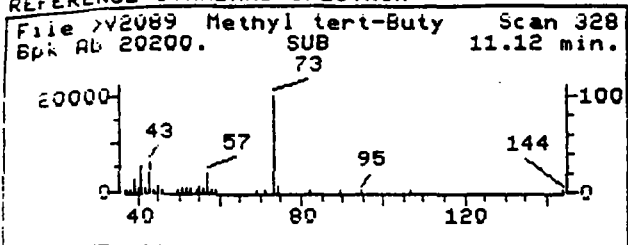
Data File: >V2182::D1
Name: 6944.10 .5mL
Misc: 6944.10 .5mL

Quant Output File: ^V2182::DE

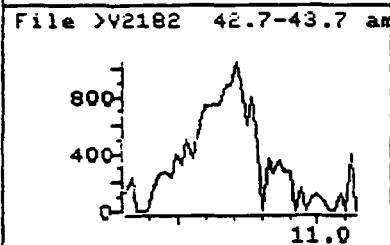
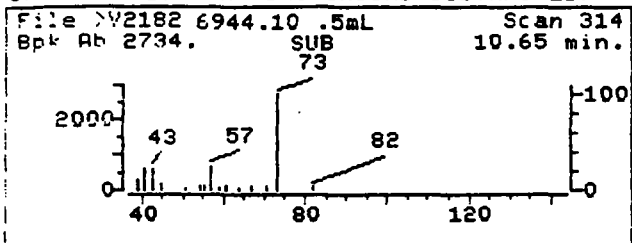
Id File: IDVOA::D4
Title: HSL VOLATILE ORGANICS
Last Calibration: 911211 12:31

Operator ID: MARK
Quant Time: 911213 16:39
Injected at: 911213 15:57

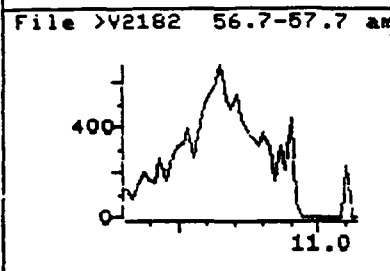
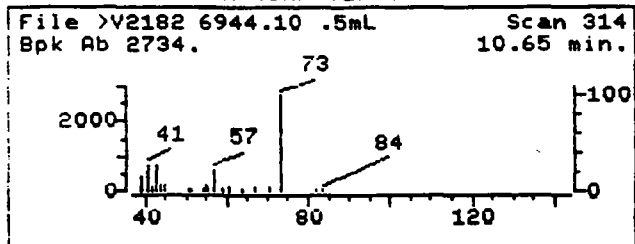
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



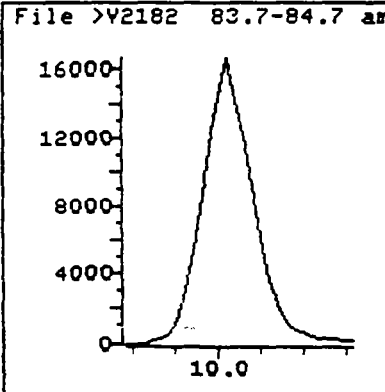
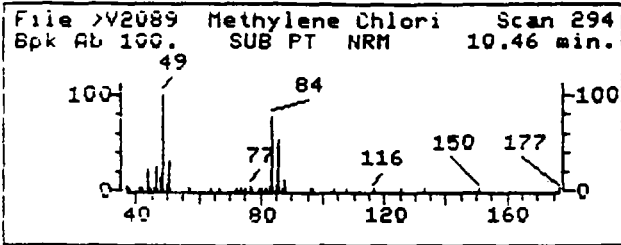
Data File: >V2182::D1
Name: 6944.10 .5mL
Misc: 6944.10 .5mL
Quant Time: 911213 16:39
Injected at: 911213 15:57

Quant Output File: ^V2182::DE

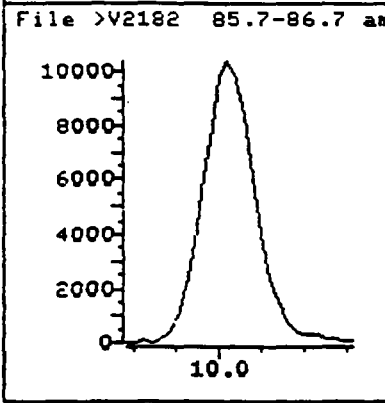
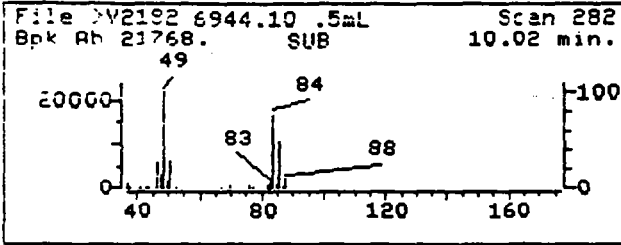
Quant ID File: IDUOA::D4
Last Calibration: 911211 12:31

Compound No: 6
Compound Name: Methyl tert-Butyl Ether
Scan Number: 314
Retention Time: 10.65 min.
Quant Ion: 73.0
Area: 42388M
Concentration: 6.89 ppb
q-value: 90

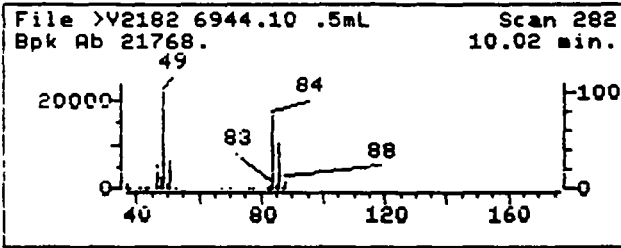
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



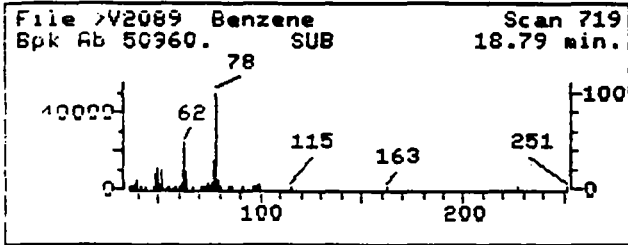
Data File: >V2182::D1
Name: 6944.10 .5mL
Misc: 6944.10 .5mL
Quant Time: 911213 16:39
Injected at: 911213 15:57

Quant Output File: ^V2182::DB

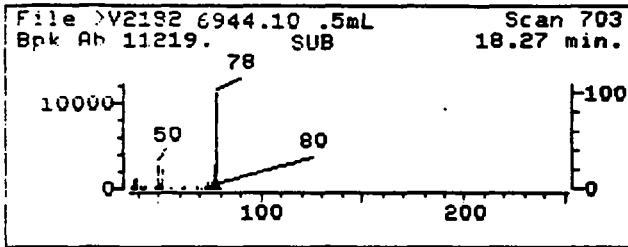
Quant ID File: IDUOR::D4
Last Calibration: 911211 12:31

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 282
Retention Time: 10.02 min.
Quant Ion: 84.0
Area: 134797
Concentration: 23.61 ppb
q-value: 96

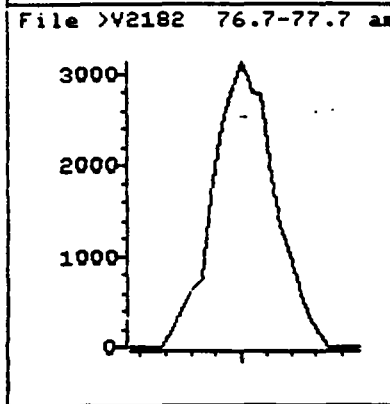
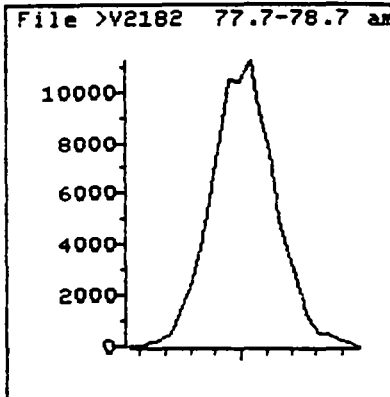
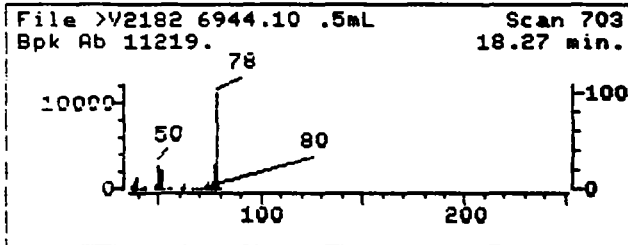
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



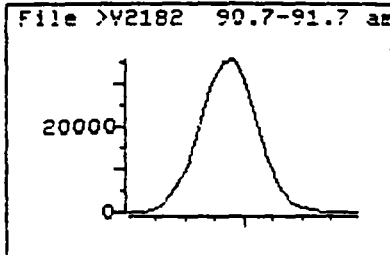
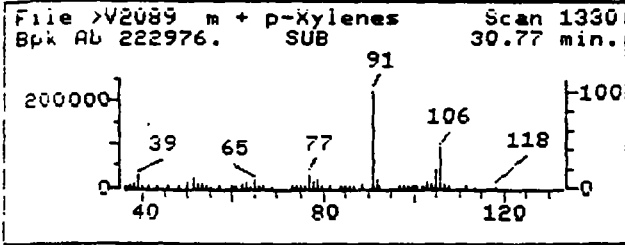
Data File: >U2182::D1
Name: 6944.10 .5mL
Misc: 6944.10 .5mL
Quant Time: 911213 16:39
Injected at: 911213 15:57

Quant Output File: ^U2182::DB

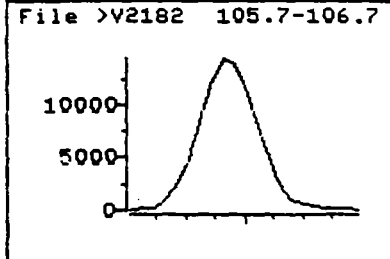
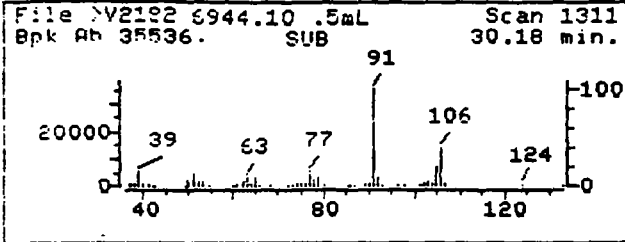
Quant ID File: IDUOA::D4
Last Calibration: 911211 12:31

Compound No: 31
Compound Name: Benzene
Scan Number: 703
Retention Time: 18.27 min.
Quant Ion: 78.0
Area: 99004
Concentration: 11.24 ppb
q-value: 96

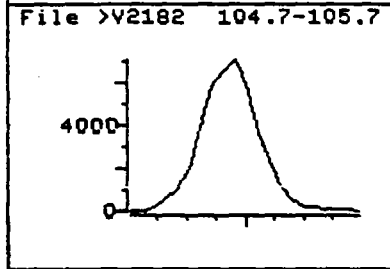
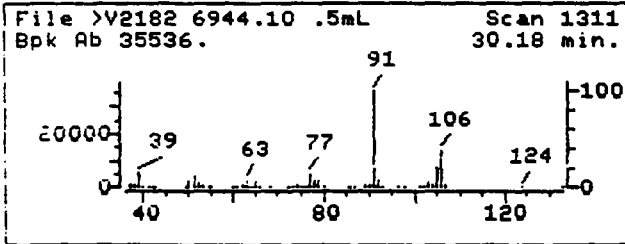
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U2182::D1
Name: 6944.10 .5mL
Misc: 6944.10 .5mL
Quant Time: 911213 16:39
Injected at: 911213 15:57

Quant Output File: ^U2182::DB

Quant ID File: IDUOA::D4
Last Calibration: 911211 12:31

Compound No: 44
Compound Name: m + p-Xylenes
Scan Number: 1311
Retention Time: 30.18 min.
Quant Ion: 91.0
Area: 251413
Concentration: 20.43 ppb
q-value: 91

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

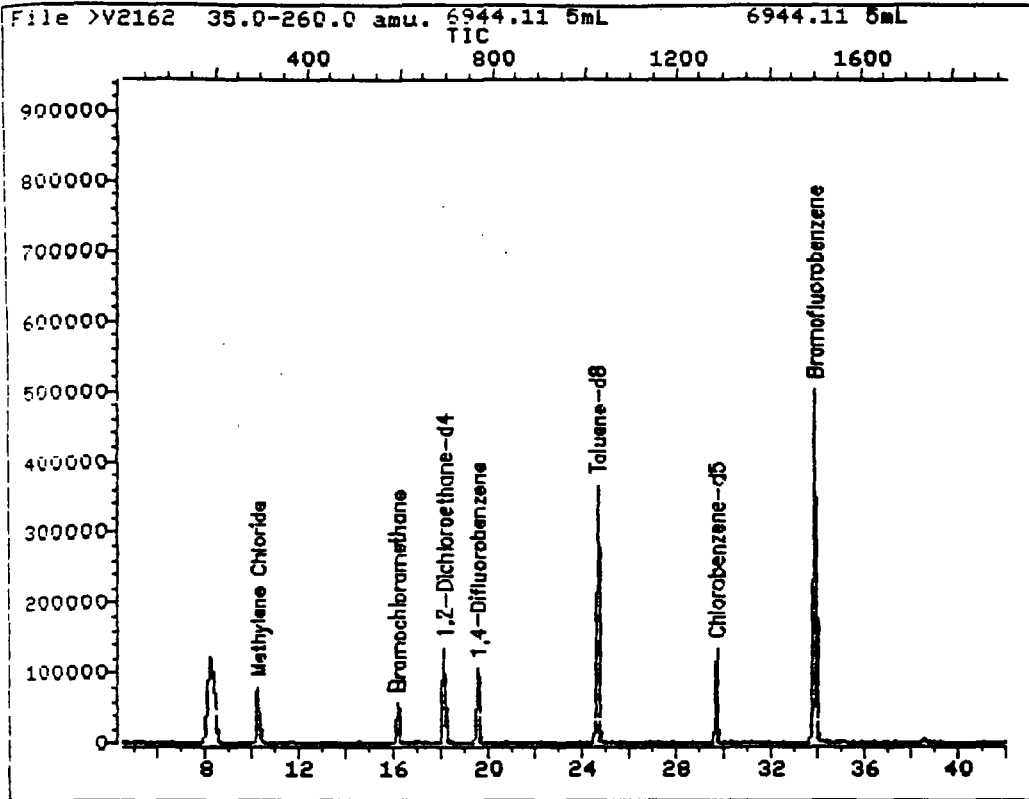
JOB NUMBER _____
 SAMPLE NAME 6944.11 5mL
 CLIENT ID _____
 DATA FILE >U2162

MATRIX Water
 DILUTION FACTOR 1.00
 QA BATCH _____
 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	27	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



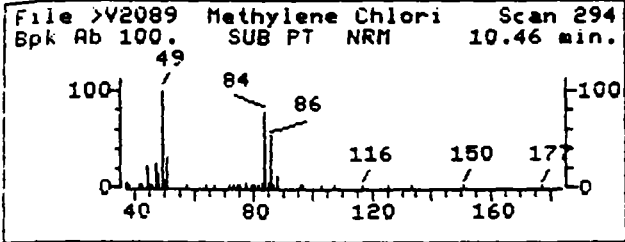
Data File: >U2162::D1
Name: 6944.11 5mL
Misc: 6944.11 5mL

Quant Output File: ^U2162::DB

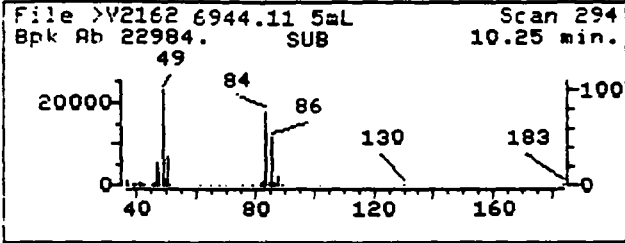
Id File: IDVOA::D4
Title: HSL VOLATILE ORGANICS
Last Calibration: 911211 12:31

Operator ID: MARK
Quant Time: 911211 21:05
Injected at: 911211 20:22

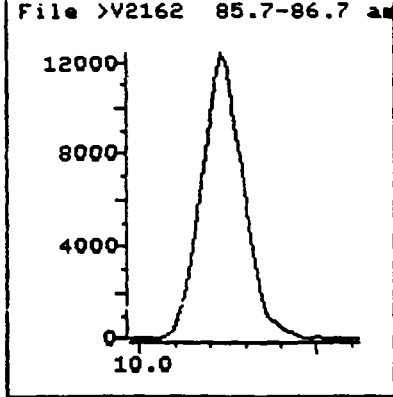
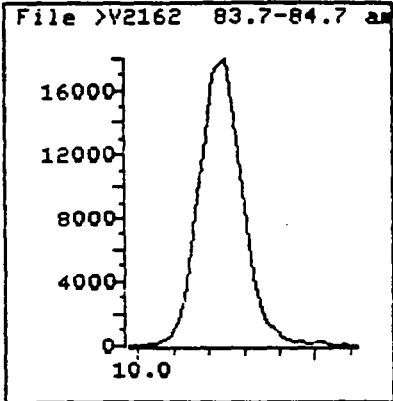
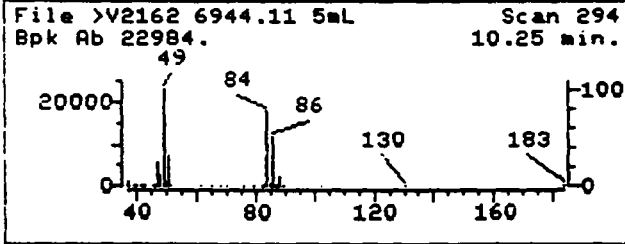
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >V2162::D1
 Name: 6944.11 5mL
 Misc: 6944.11 5mL
 Quant Time: 911211 21:05
 Injected at: 911211 20:22

Quant Output File: ^V2162::DB

Quant ID File: IDU0A::D4
 Last Calibration: 911211 12:31

Compound No: 7
 Compound Name: Methylene Chloride
 Scan Number: 294
 Retention Time: 10.25 min.
 Quant Ion: 84.0
 Area: 154986
 Concentration: 27.05 ppb
 q-value: 92

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

6944.8 .5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 6944.8 .5mL

Sample wt/vol: 0.5 (g/mL) mL

Lab File ID: >U2180

Level: (low/med) LOW

Date Received: 12-09-91

Date Analyzed: 12/13/91

Column: Capillary

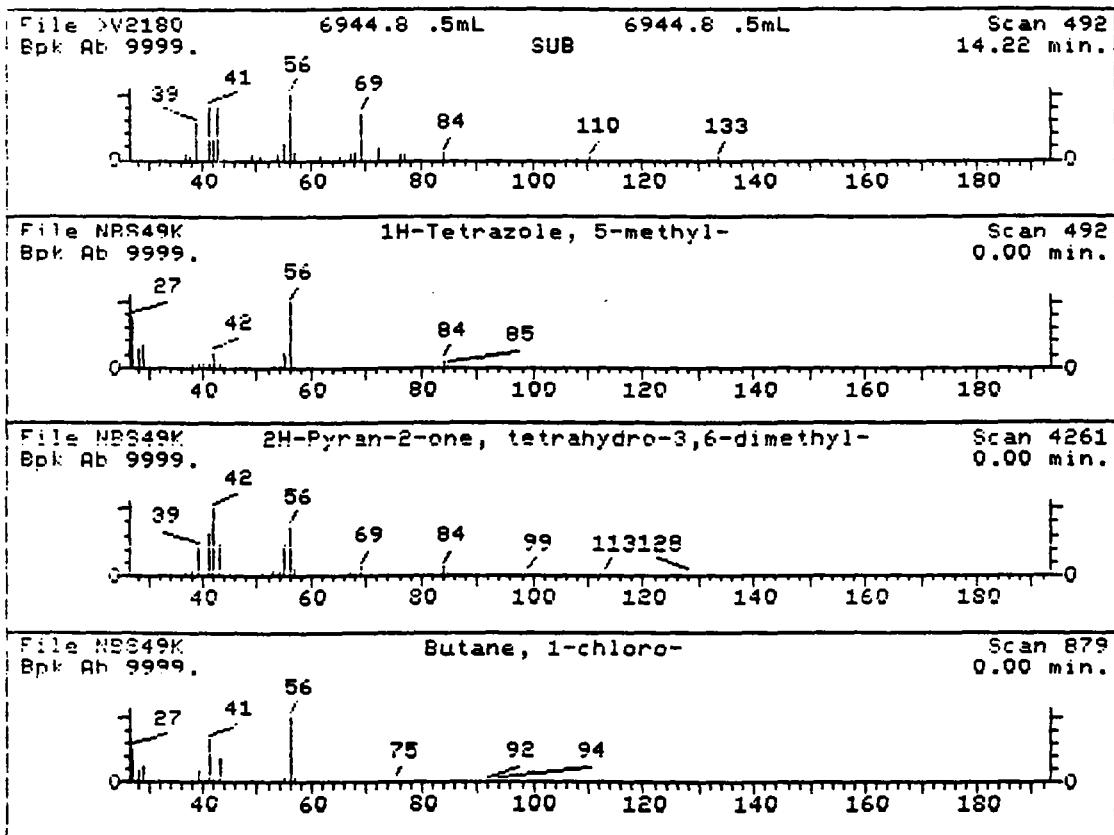
Dilution Factor: 10

CONCENTRATION UNITS:
ug/L

Number of TICs found: 10

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
11	4076362 1H-Tetrazole, 5-methyl-	14.22	160	34
21	285585 Bicyclo[3.1.0]hexane	16.22	90	25
31	1112352 1,4-Pentadiene, 3,3-dimethyl	22.69	30	42
41	18997198 Propanoic acid, 2,2-dimethyl	26.06	30	37
51	98828 Benzene, (1-methylethyl)-	32.86	50	81
61	124185 Decane	34.13	140	79
71	622968 Benzene, 1-ethyl-4-methyl-	37.80	200	95
81	17302237 Nonane, 4,5-dimethyl-	38.37	60	52
91	6052637 Benzeneethanol, ethenyl-	38.84	180	60
101	25155151 Benzene, methyl(1-methylethyl)	40.13	50	88

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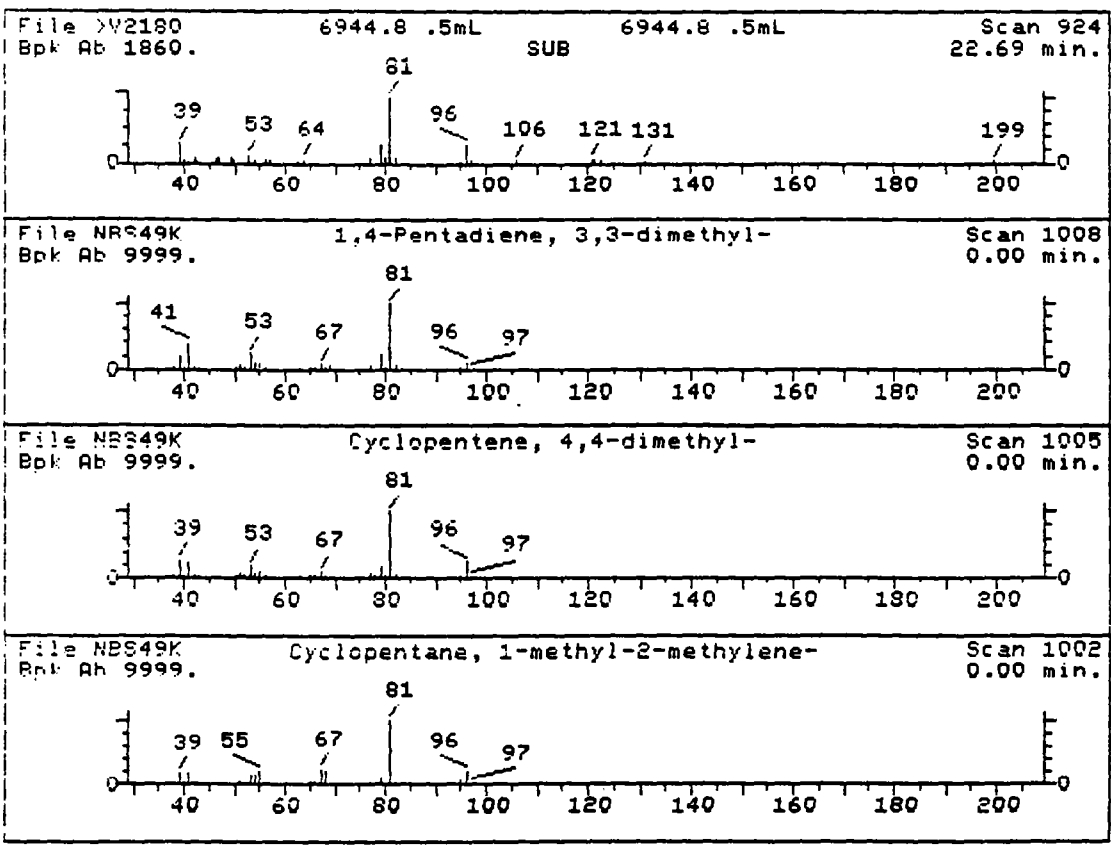
UNKNOWN # ~~1~~ 1

AREA = 140937.0 TENTATIVE CONCENTRATION IS 16.00

- | | |
|---|-------------|
| 1. 1H-Tetrazole, 5-methyl- | 84 C2H4N4 |
| 2. 2H-Pyran-2-one, tetrahydro-3,6-dimethyl- | 128 C7H12O2 |
| 3. Butane, 1-chloro- | 92 C4H9Cl |
| 4. Cyclopentane, methyl- | 84 C6H12 |
| 5. 1-Hexanamine, 3,5,5-trimethyl- | 143 C9H21N |
| 6. 2H-Pyran-2-one, tetrahydro-5,6-dimethyl-, trans- | 128 C7H12O2 |

Sample file: >U2180 Spectrum #: 492
 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.	34*	4076362	1009	NBS49K	38	46	1	0	100	36	14	21
2.	34*	3720227	1114	NBS49K	47	47	3	0	132	31	12	17
3.	33*	109693	1030	NBS49K	36	51	1	0	100	36	10	19
4.	32*	96377	1015	NBS49K	34	56	1	0	80	36	10	18
5.	32*	3378630	105	NBS49K	55	28	1	1	74	51	9	44
6.	31*	24405161	1117	NBS49K	24	59	2	0	89	32	12	14



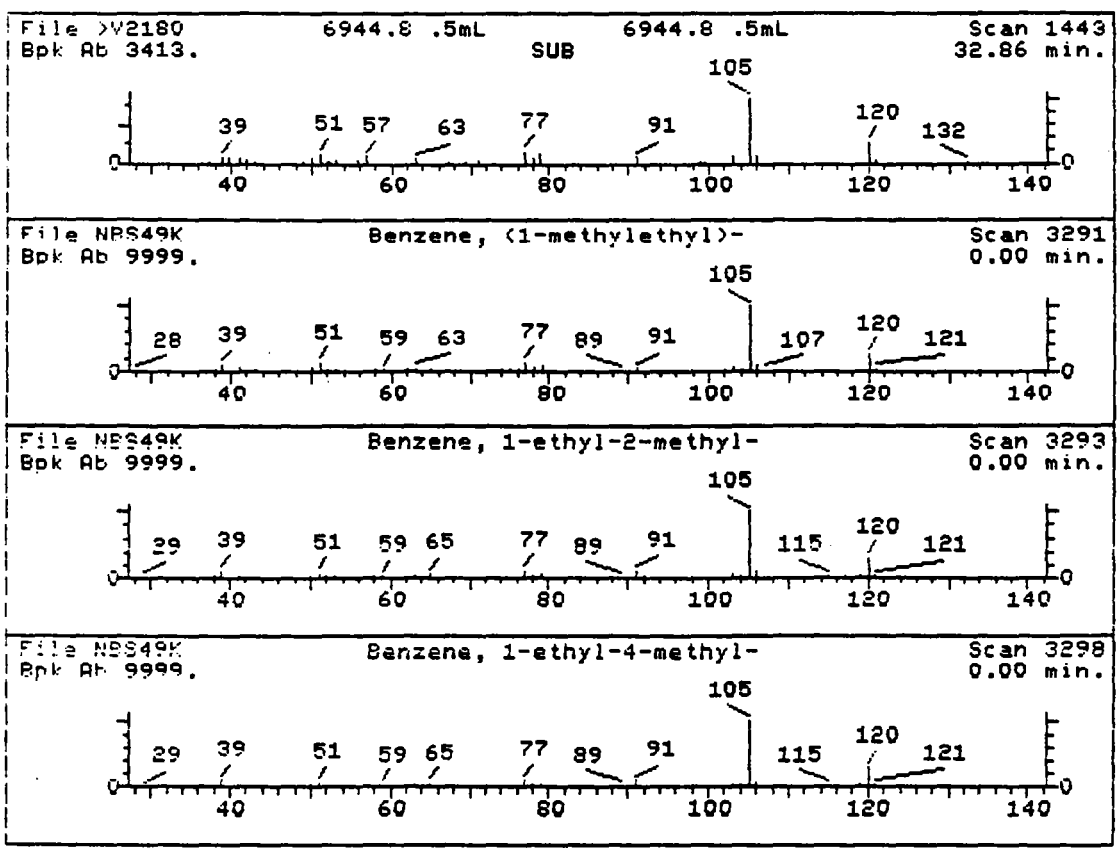
UNKNOWN # 3

AREA = 52188.00 TENTATIVE CONCENTRATION IS 3.00

- | | |
|--|-------------|
| 1. 1,4-Pentadiene, 3,3-dimethyl- | 96 C7H12 |
| 2. Cyclopentene, 4,4-dimethyl- | 96 C7H12 |
| 3. Cyclopentane, 1-methyl-2-methylene- | 96 C7H12 |
| 4. Cyclopentene, 1,5-dimethyl- | 96 C7H12 |
| 5. Silane, difluorodimethyl- | 96 C2H6F2Si |

Sample file: >U2180 Spectrum #: 924
 Search speed: 1 Tilting option: F No. of ion ranges searched: 43

Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV	
1.	42*	1112352	5732	NBS49K	25	63	3	0	100	23	17	13
2.	42*	19037720	5731	NBS49K	26	65	3	0	100	23	17	13
3.	42*	41158412	5730	NBS49K	26	71	3	0	100	23	17	13
4.	37*	16491159	5738	NBS49K	29	60	2	0	81	30	14	14
5.	30*	353662	5729	NBS49K	23	63	2	0	100	31	12	13



UNKNOWN #, 205

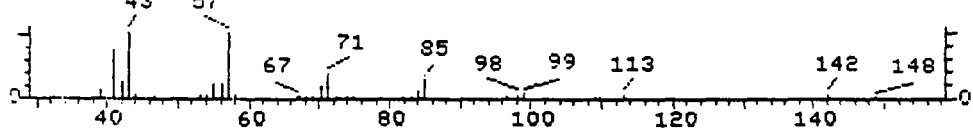
AREA = 81113.00 TENTATIVE CONCENTRATION IS 5.00

- | | | |
|--|-----|-------------|
| 1. Benzene, (1-methylethyl)- | 120 | C9H12 |
| 2. Benzene, 1-ethyl-2-methyl- | 120 | C9H12 |
| 3. Benzene, 1-ethyl-4-methyl- | 120 | C9H12 |
| 4. Benzene, 1-ethyl-3-methyl- | 120 | C9H12 |
| 5. 1-Propanone, 2,2-dimethyl-1-phenyl- | 162 | C11H14O |
| 6. Glycine, N-benzoyl-N-(2,2,3,3,3-pentafluoro-1-oxopro
pyl)-, methyl ester | 339 | C13H10F5NO4 |

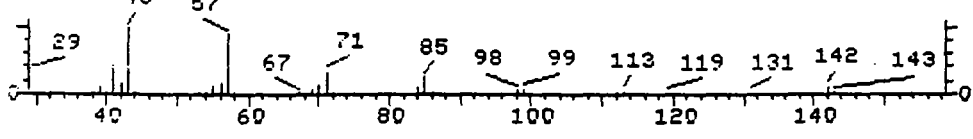
Sample file: >V2180 Spectrum #: 1443
Search speed: 1 Tilting option: F No. of ion ranges searched: 42

Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU	
1.	81*	98828	13667	NBS49K	55	32	2	0	100	9	53	41
2.	67*	611143	13669	NBS49K	48	37	2	3	85	12	34	22
3.	60*	622968	13672	NBS49K	32	53	2	0	100	12	30	16
4.	60*	620144	13671	NBS49K	32	55	2	0	99	12	30	16
5.	35	938169	10944	NBS49K	36	44	2	0	74	30	14	12
6.	29	72347423	10984	NBS49K	37	49	2	0	73	32	12	12

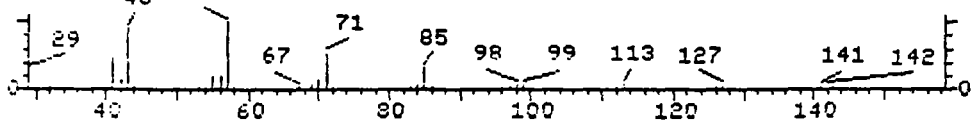
>U2180 6944.8 .5mL SUB 6944.8 .5mL Scan 1508
 Ab 5253. 34.13 min.



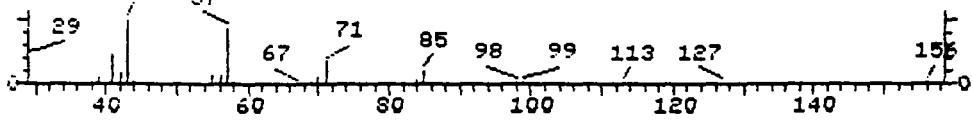
NBS49K Decane Scan 6851
 Ab 9999. 0.00 min.



NBS49K Dodecane Scan 12779
 Ab 9999. 0.00 min.



NBS49K Undecane Scan 9747
 Ab 9999. 0.00 min.



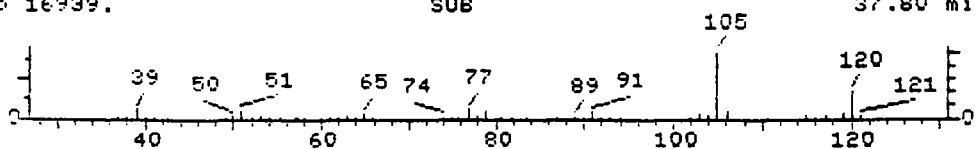
UNKNOWN # 110
 EA = 259057.0 TENTATIVE CONCENTRATION IS 14.00

- .. Decane 142 C10H22
- .. Dodecane 170 C12H26
- .. Undecane 156 C11H24
- .. Tetradecane, 1-chloro- 232 C14H29Cl
- .. Undecane, 3-methyl- 170 C12H26
- .. Decane, 2,9-dimethyl- 170 C12H26

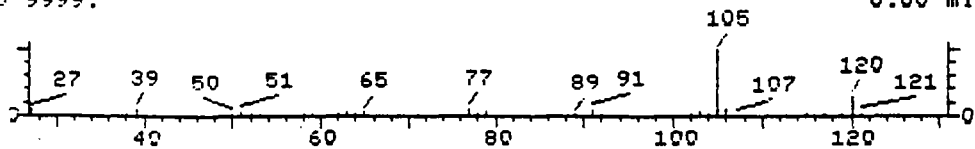
Sample file: >U2180 Spectrum #: 1508
 Arch speed: 1 Tilting option: F No. of ion ranges searched: 48

Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
79*	124185	18079	NBS49K	67	33	3	2	90	6	48	33
78	112403	6732	NBS49K	61	38	2	1	77	3	55	14
78	1120214	6682	NBS49K	53	44	2	0	99	5	55	14
70	2425549	6839	NBS49K	71	63	3	0	90	7	42	12
60	1002433	6739	NBS49K	42	46	2	0	72	11	30	13
60	1002171	6738	NBS49K	50	42	2	0	92	15	30	16

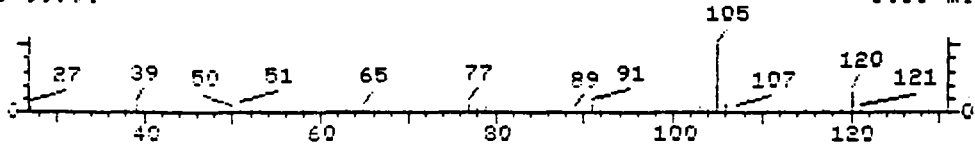
File QV2180 6944.8 .5mL SUB 6944.8 .5mL Scan 1695
 Bpk Ab 16939. 37.80 min.



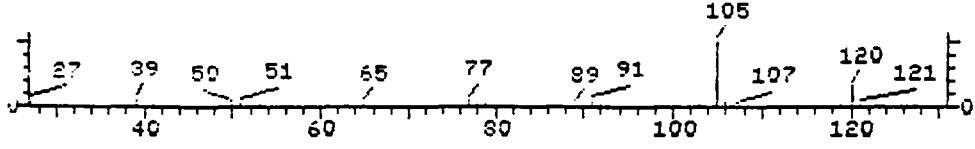
File NBS49K Benzene, 1-ethyl-4-methyl- Scan 3298
 Bpk Ab 9999. 0.00 min.



File NBS49K Benzene, 1-ethyl-2-methyl- Scan 3293
 Bpk Ab 9999. 0.00 min.



File NBS49K Benzene, 1-ethyl-3-methyl- Scan 3297
 Bpk Ab 9999. 0.00 min.



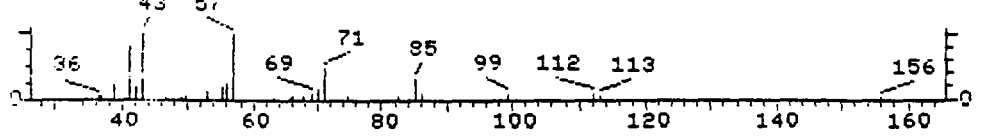
UNKNOWN # 127
 AREA = 359703.0 TENTATIVE CONCENTRATION IS 20.00

- | | |
|-------------------------------|-----------|
| 1. Benzene, 1-ethyl-4-methyl- | 120 C9H12 |
| 2. Benzene, 1-ethyl-2-methyl- | 120 C9H12 |
| 3. Benzene, 1-ethyl-3-methyl- | 120 C9H12 |
| 4. Benzene, 1,2,3-trimethyl- | 120 C9H12 |
| 5. Benzene, 1,3,5-trimethyl- | 120 C9H12 |
| 6. Benzene, 1,2,4-trimethyl- | 120 C9H12 |

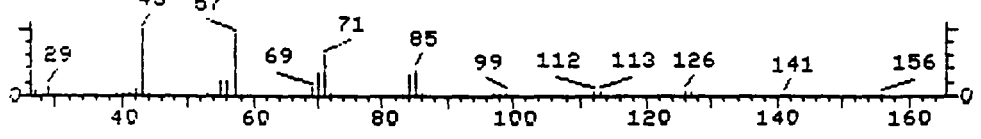
Sample file: >Q2180 Spectrum #: 1695
 Search speed: 1 Tilting option: F No. of ion ranges searched: 41

Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	95*	622968	13672	NBS49K	72	13	0	0	97	10	68 95
2.	94*	611143	13669	NBS49K	75	10	1	0	94	10	68 93
3.	94*	620144	13671	NBS49K	75	12	1	0	95	9	68 93
4.	92*	526738	13674	NBS49K	80	20	0	0	63	29	57 94
5.	81*	108678	13673	NBS49K	62	26	2	4	74	6	53 42
6.	72*	95636	13676	NBS49K	61	34	0	0	54	35	32 73

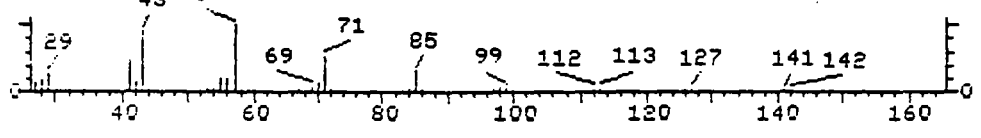
File: U2180 6944.8 .5mL SUB 6944.8 .5mL Scan 1724
 Ab: 1980. 38.37 min.



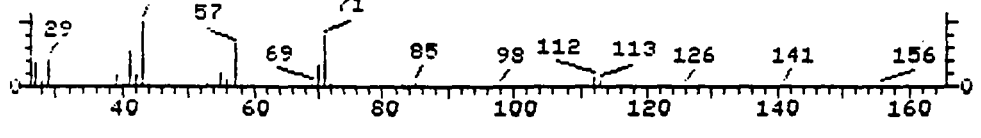
File: NBS49K Nonane, 4,5-dimethyl- Scan 9748
 Ab: 9999. 0.00 min.



File: NBS49K Dodecane Scan 12779
 Ab: 9999. 0.00 min.



File: NBS49K Decane, 4-methyl- Scan 9751
 Ab: 9999. 0.00 min.



UNKNOWN # 138

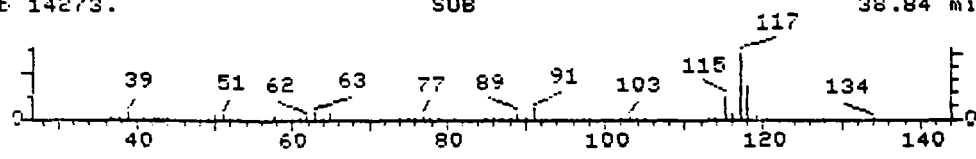
EA = 112999.0 TENTATIVE CONCENTRATION IS 6.00

- | | |
|------------------------------|------------|
| 1. Nonane, 4,5-dimethyl- | 156 C11H24 |
| 2. Dodecane | 170 C12H26 |
| 3. Decane, 4-methyl- | 156 C11H24 |
| 4. Undecane, 3-methyl- | 170 C12H26 |
| 5. Decane, 2-methyl- | 156 C11H24 |
| 6. Decane, 6-ethyl-2-methyl- | 184 C13H28 |

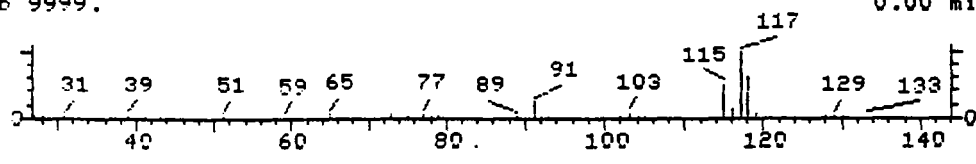
Sample file: >U2180 Spectrum #: 1724
 Arch speed: 1 Tilting option: F No. of ion ranges searched: 49

Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
52*	17302237	6683	NBS49K	52	53	3	0	78	19	20	15
52	112403	6732	NBS49K	56	43	2	0	89	19	20	15
38*	2847725	4358	NBS49K	30	56	2	0	44	30	14	15
36	1002433	6739	NBS49K	42	46	2	0	87	28	14	13
36*	6975980	12379	NBS49K	31	69	3	0	100	28	14	13
35	62108218	6767	NBS49K	51	48	2	0	99	28	14	12

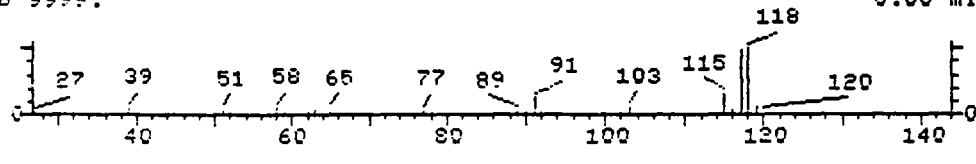
file U2180 6944.8 .5mL SUB 6944.8 .5mL Scan 1748
 Ab 14273. 38.84 min.



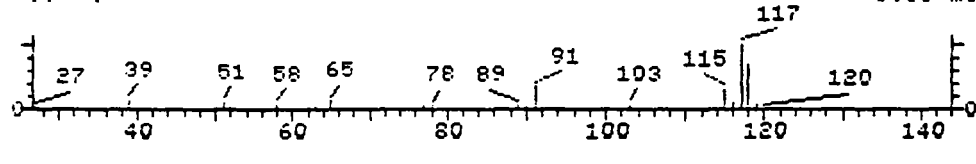
file NBS49K Benzeneethanol, .beta.-ethenyl- Scan 7899
 Ab 9999. 0.00 min.



file NBS49K Benzene, ethenylmethyl- Scan 3154
 Ab 9999. 0.00 min.



file NBS49K Benzene, 2-propenyl- Scan 3150
 Ab 9999. 0.00 min.



UNKNOWN # 149

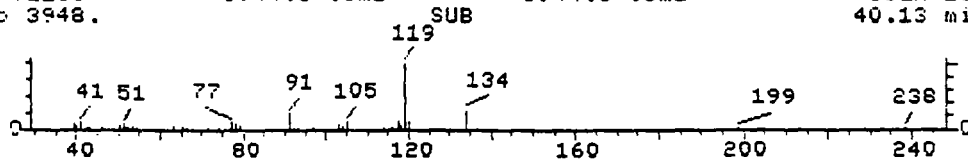
EA = 319786.0 TENTATIVE CONCENTRATION IS 18.00

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

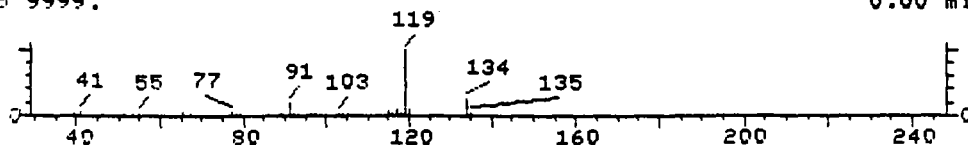
sample file: >U2180 Spectrum #: 1748
 arch speed: 1 Tilting option: F No. of ion ranges searched: 41

Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
60	6052637	13383	NBS49K	49	45	2	0	72	15	30	14
59*	25013154	13348	NBS49K	63	34	1	2	51	40	21	52
41*	300572	13344	NBS49K	60	37	1	-1	54	44	14	36
41*	100801	13349	NBS49K	57	39	1	1	50	44	14	39
40*	622979	13347	NBS49K	49	41	0	0	40	53	10	59
40*	611154	13346	NBS49K	39	39	0	0	45	46	12	48

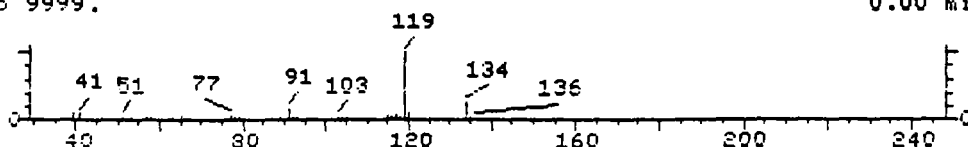
File >U2180 6944.8 .5mL SUB 6944.8 .5mL Scan 1814
 Bpk Ab 3948. 40.13 min.



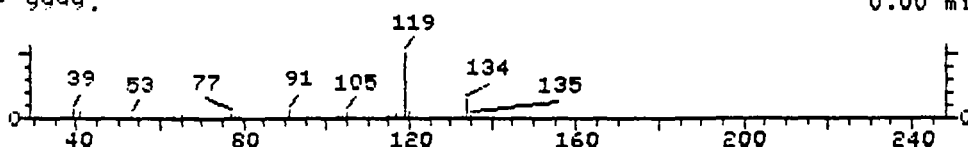
File NBS49K Benzene, methyl(1-methylethyl)- Scan 5307
 Bpk Ab 9999. 0.00 min.



File NBS49K Benzene, 1-methyl-3-(1-methylethyl)- Scan 5323
 Bpk Ab 9999. 0.00 min.



File NBS49K Benzene, 4-ethyl-1,2-dimethyl- Scan 5316
 Bpk Ab 9999. 0.00 min.



UNKNOWN #, 1510

AREA = 81004.00 TENTATIVE CONCENTRATION IS 5.00

- | | |
|---|------------|
| 1. Benzene, methyl(1-methylethyl)- | 134 C10H14 |
| 2. Benzene, 1-methyl-3-(1-methylethyl)- | 134 C10H14 |
| 3. Benzene, 4-ethyl-1,2-dimethyl- | 134 C10H14 |
| 4. Benzene, 2-ethyl-1,4-dimethyl- | 134 C10H14 |
| 5. Benzene, 2-ethyl-1,3-dimethyl- | 134 C10H14 |
| 6. Benzene, 1-methyl-2-(1-methylethyl)- | 134 C10H14 |

Sample file: >U2180 Spectrum #: 1814
 Search speed: 1 Tilting option: F No. of ion ranges searched: 43

Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU	
1.	88*	25155151	13531	NBS49K	65	25	2	0	100	5	65	55
2.	87*	535773	13538	NBS49K	59	30	2	0	100	5	63	45
3.	87*	934805	13534	NBS49K	58	35	2	0	96	5	63	43
4.	81*	1758889	13535	NBS49K	58	36	2	0	78	8	53	41
5.	79*	2870044	13529	NBS49K	53	36	2	4	100	10	48	30
6.	79*	527844	13539	NBS49K	54	38	2	0	100	7	48	38

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

6944.10 .5ml

Matrix: Water

Lab Sample ID: 6944.10 .5m

Sample wt/vol: 0.5 (g/mL) mL

Lab File ID: >V2182

Level: (low/med) LOW

Date Received: 12-09-91

Date Analyzed: 12/13/91

Column: Capillary

Dilution Factor: 10

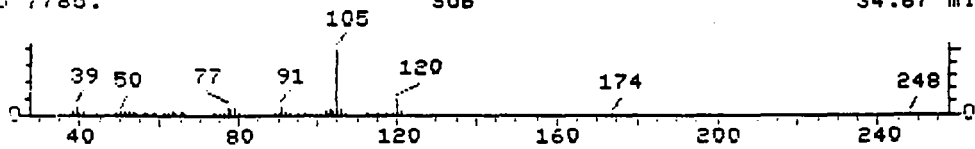
CONCENTRATION UNITS:

Number of TICs found: 6

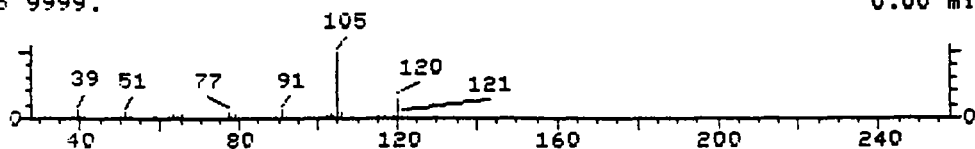
ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1	611143 Benzene, 1-ethyl-2-methyl-	34.67	140	95
2	526738 Benzene, 1,2,3-trimethyl-	34.88	90	71
3	108678 Benzene, 1,3,5-trimethyl-	36.22	170	76
4	95636 Benzene, 1,2,4-trimethyl-	37.84	60	52
5	1120214 Undecane	38.43	40	52
6	120729 1H-Indole	38.90	60	30

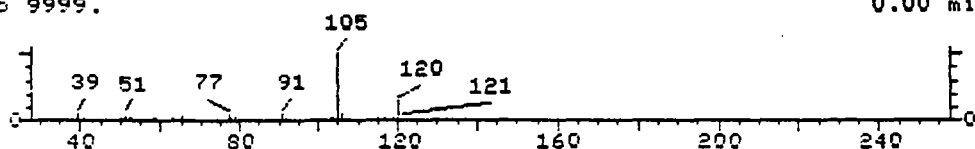
File >U2182 6944.10 .5mL SUB 6944.10 .5mL Scan 1540
 Bpk Ab 7785. 34.67 min.



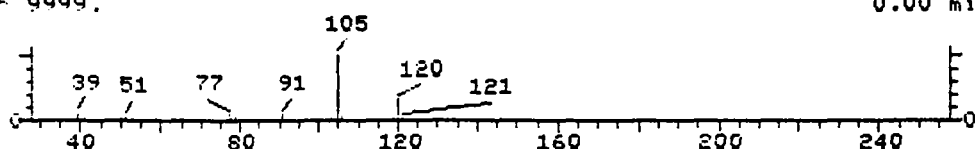
File NBS49K Benzene, 1-ethyl-2-methyl- Scan 3293
 Bpk Ab 9999. 0.00 min.



File NBS49K Benzene, 1-ethyl-4-methyl- Scan 3298
 Bpk Ab 9999. 0.00 min.



File NBS49K Benzene, 1-ethyl-3-methyl- Scan 3297
 Bpk Ab 9999. 0.00 min.



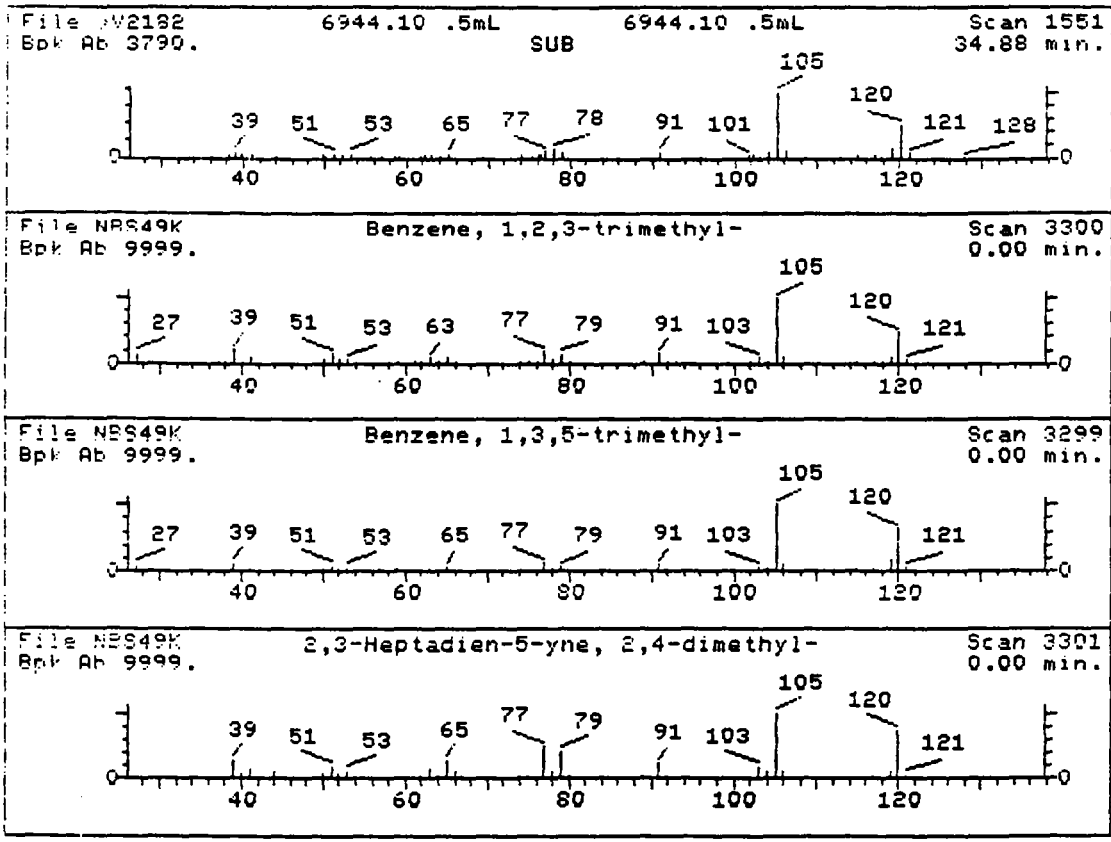
UNKNOWN # 21

AREA = 235493.0 TENTATIVE CONCENTRATION IS 14.00

- | | |
|-------------------------------|-----------|
| 1. Benzene, 1-ethyl-2-methyl- | 120 C9H12 |
| 2. Benzene, 1-ethyl-4-methyl- | 120 C9H12 |
| 3. Benzene, 1-ethyl-3-methyl- | 120 C9H12 |
| 4. Benzene, (1-methylethyl)- | 120 C9H12 |
| 5. Ethanone, 1-phenyl- | 120 C8H8O |
| 6. Benzene, 1,2,3-trimethyl- | 120 C9H12 |

Sample file: >U2182 Spectrum #: 1540
 Search speed: 1 Tilting option: F No. of ion ranges searched: 42

Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU	
1.	95*	611143	13669	NBS49K	80	5	0	3	89	7	68	94
2.	89*	622968	13672	NBS49K	67	18	0	2	83	7	62	83
3.	86*	620144	13671	NBS49K	74	13	1	4	79	7	59	74
4.	83*	98828	13667	NBS49K	59	28	1	0	93	7	54	59
5.	67*	98862	13662	NBS49K	46	46	2	0	72	15	34	26
6.	46*	526738	13674	NBS49K	62	38	2	1	53	36	17	35



UNKNOWN # 22

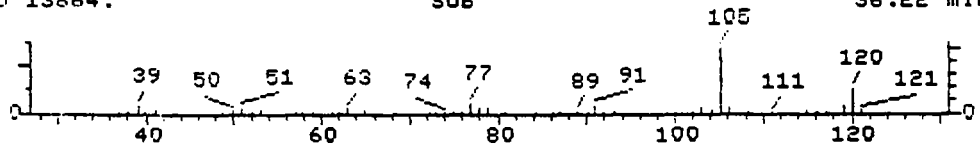
AREA = 145084.0 TENTATIVE CONCENTRATION IS 9.00

- | | |
|--|-----------|
| 1. Benzene, 1,2,3-trimethyl- | 120 C9H12 |
| 2. Benzene, 1,3,5-trimethyl- | 120 C9H12 |
| 3. 2,3-Heptadien-5-yne, 2,4-dimethyl- | 120 C9H12 |
| 4. 1,3,5-Cycloheptatriene, 7-ethyl- | 120 C9H12 |
| 5. 1,3-Cyclopentadiene, 5-(1-methylpropylidene)- | 120 C9H12 |
| 6. Benzene, 1,2,4-trimethyl- | 120 C9H12 |

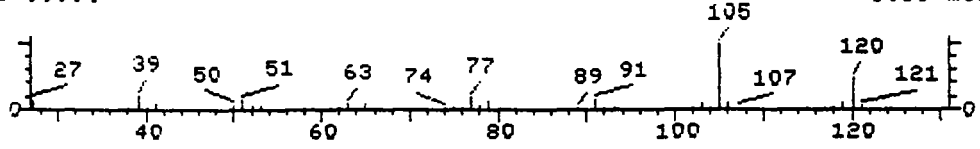
Sample file: >V2182 Spectrum #: 1551
 Search speed: 1 Tilting option: F No. of ion ranges searched: 40

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	71*	526738	13674	NBS49K	68	32	2	-3	76	15	38	39
2.	67*	108678	13673	NBS49K	47	41	2	0	76	15	34	27
3.	60*	41898899	13675	NBS49K	48	61	3	0	69	14	30	13
4.	60*	17634514	13678	NBS49K	32	69	3	0	154	14	30	13
5.	60*	3141024	13677	NBS49K	52	52	3	0	82	11	30	15
6.	58*	95636	13676	NBS49K	54	41	2	-2	74	17	25	23

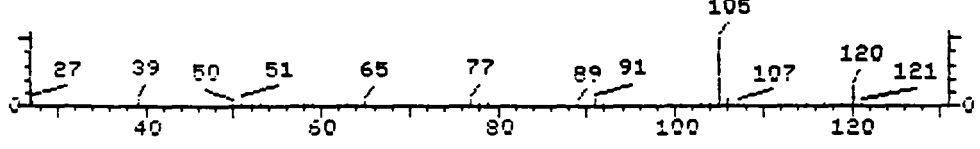
File >U2182 6944.10 .5mL SUB 6944.10 .5mL Scan 1619
 Bpk Ab 13884. 36.22 min.



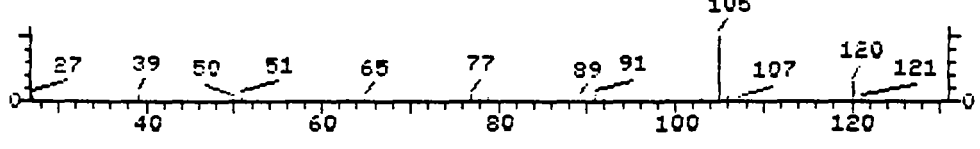
File NBS49K Benzene, 1,2,3-trimethyl- Scan 3300
 Bpk Ab 9999. 0.00 min.



File NBS49K Benzene, 1-ethyl-4-methyl- Scan 3298
 Bpk Ab 9999. 0.00 min.



File NBS49K Benzene, 1-ethyl-2-methyl- Scan 3293
 Bpk Ab 9999. 0.00 min.

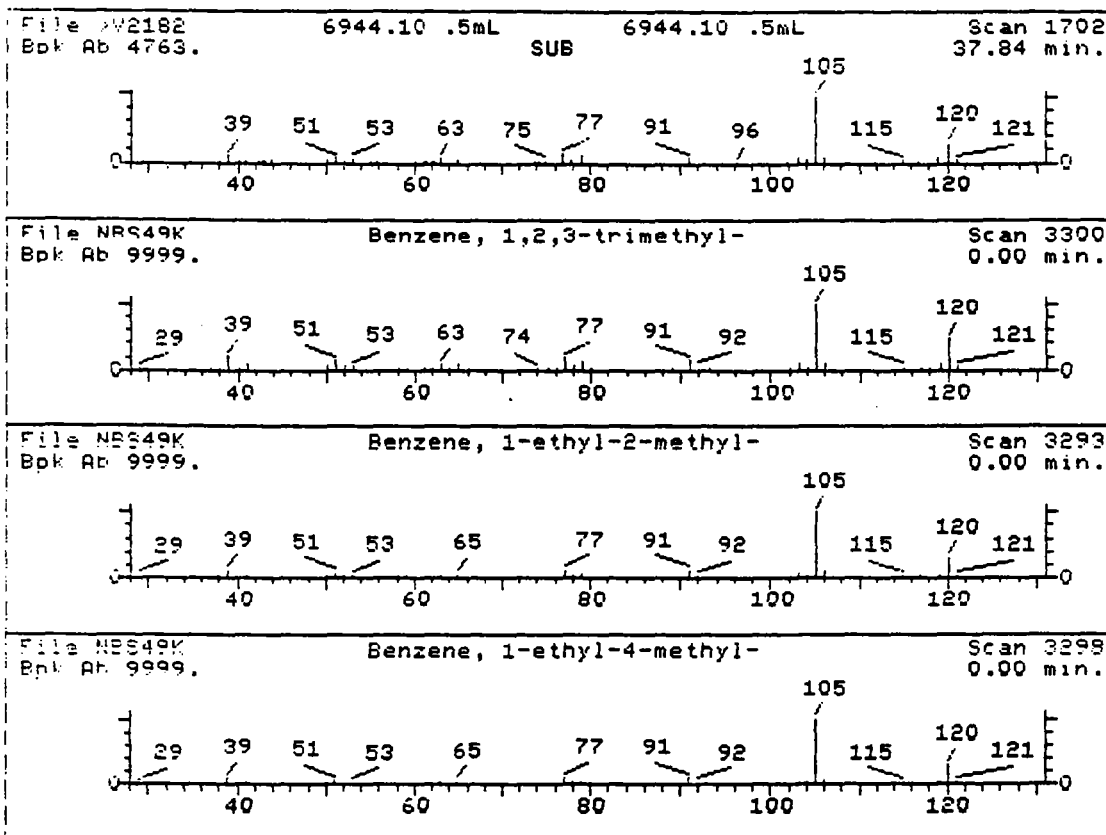


UNKNOWN # **A3**
 AREA = 293656.0 TENTATIVE CONCENTRATION IS 17.00

- | | |
|-------------------------------|-----------|
| 1. Benzene, 1,2,3-trimethyl- | 120 C9H12 |
| 2. Benzene, 1-ethyl-4-methyl- | 120 C9H12 |
| 3. Benzene, 1-ethyl-2-methyl- | 120 C9H12 |
| 4. Benzene, 1-ethyl-3-methyl- | 120 C9H12 |
| 5. Benzene, (1-methylethyl)- | 120 C9H12 |
| 6. Benzene, 1,3,5-trimethyl- | 120 C9H12 |

Sample file: >U2182 Spectrum #: 1619
 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.	96*	526738	13674	NBS49K	90	10	0	0	66	9	68 96
2.	96*	622968	13672	NBS49K	78	7	0	0	91	16	60 97
3.	86*	611143	13669	NBS49K	68	17	1	0	93	16	50 80
4.	83*	620144	13671	NBS49K	75	12	1	3	94	14	51 76
5.	81*	98828	13667	NBS49K	62	25	0	0	77	16	45 74
6.	76*	108678	13673	NBS49K	73	15	2	4	73	11	40 57



UNKNOWN # *5A*

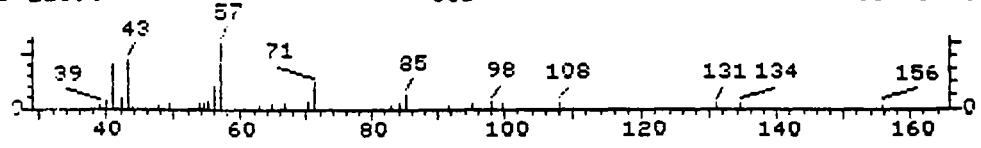
AREA = 100839.0 TENTATIVE CONCENTRATION IS 6.00

- | | |
|-------------------------------|-----------|
| 1. Benzene, 1,2,3-trimethyl- | 120 C9H12 |
| 2. Benzene, 1-ethyl-2-methyl- | 120 C9H12 |
| 3. Benzene, 1-ethyl-4-methyl- | 120 C9H12 |
| 4. Benzene, (1-methylethyl)- | 120 C9H12 |
| 5. Benzene, 1-ethyl-3-methyl- | 120 C9H12 |
| 6. Benzene, 1,2,4-trimethyl- | 120 C9H12 |

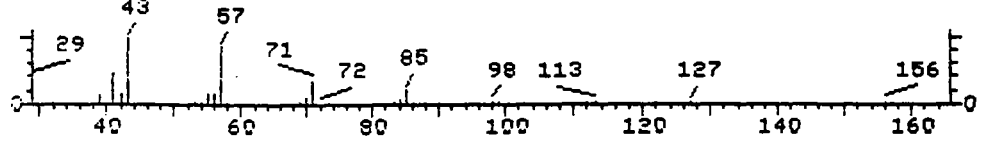
Sample file: >U2182 Spectrum #: 1702
 Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	91*	526738	13674	NBS49K	80	20	0	0	57	35	50	94
2.	76*	611143	13669	NBS49K	63	22	2	0	97	14	40	50
3.	76*	622968	13672	NBS49K	63	22	2	0	100	14	40	50
4.	74*	98828	13667	NBS49K	60	27	2	0	100	12	39	46
5.	74*	620144	13671	NBS49K	58	29	2	0	91	12	39	44
6.	52*	95636	13676	NBS49K	60	35	2	0	52	38	19	43

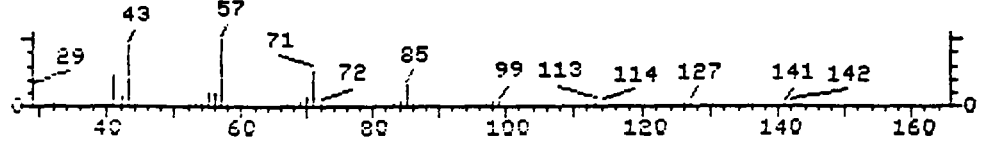
le >U2182 6944.10 .5mL 6944.10 .5mL Scan 1732
 k Ab 1189. SUB 38.43 min.



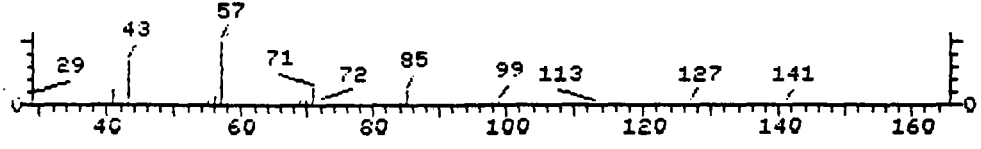
le NBS49K Undecane Scan 9747
 k Ab 9999. 0.00 min.



le NBS49K Dodecane Scan 12779
 k Ab 9999. 0.00 min.



le NBS49K Octane, 2,4,6-trimethyl- Scan 9743
 k Ab 9999. 0.00 min.



UNKNOWN # 65

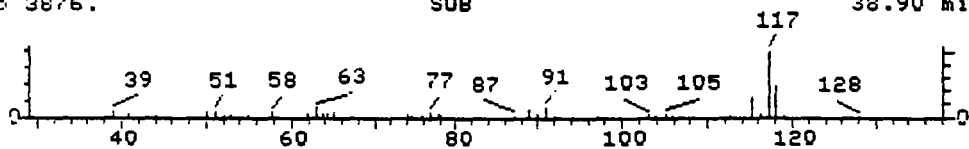
AREA = 62357.00 TENTATIVE CONCENTRATION IS 4.00

- | | | |
|--------------------------------------|-----|---------|
| 1. Undecane | 156 | C11H24 |
| 2. Dodecane | 170 | C12H26 |
| 3. Octane, 2,4,6-trimethyl- | 156 | C11H24 |
| 4. 3,4-Hexanedione, 2,2,5-trimethyl- | 156 | C9H16O2 |
| 5. Isooctane, (ethenyloxy)- | 156 | C10H20O |
| 6. Octane, 2,5,6-trimethyl- | 156 | C11H24 |

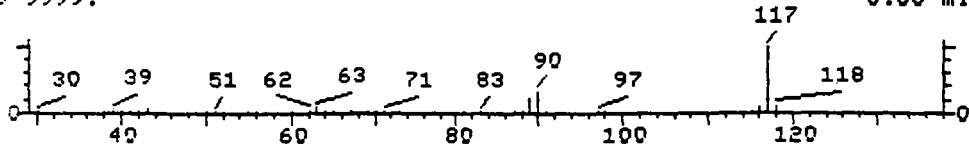
Sample file: >U2182 Spectrum #: 1732
 Arch speed: 1 Tilting option: F No. of ion ranges searched: 44

Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
52*	1120214	6682	NBS49K	60	37	3	-2	81	19	20	18
35	112403	6732	NBS49K	56	43	2	2	73	30	14	12
25	62016379	6679	NBS49K	36	49	2	0	92	50	7	12
25*	20633038	4349	NBS49K	25	54	3	0	170	41	8	13
20*	37769623	4352	NBS49K	28	75	3	0	73	52	5	13
11*	62016142	6680	NBS49K	26	61	2	0	100	63	2	14

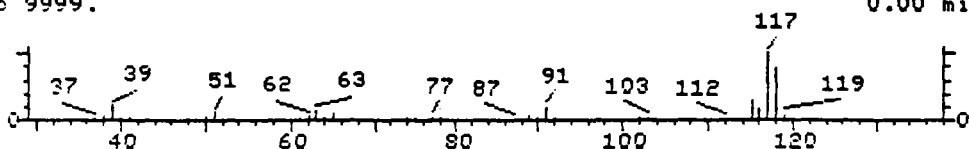
file >U2182 6944.10 .5mL SUB 6944.10 .5mL Scan 1756
 pk Ab 3876. 38.90 min.



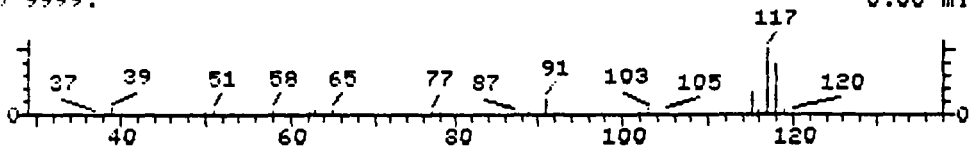
file NBS49K 1H-Indole Scan 3015
 pk Ab 9999. 0.00 min.



file NBS49K 1H-Indene, 2,3-dihydro- Scan 3157
 pk Ab 9999. 0.00 min.



file NBS49K Benzene, 1-ethenyl-2-methyl- Scan 3152
 pk Ab 9999. 0.00 min.



UNKNOWN #, 6
 REA = 102565.0 TENTATIVE CONCENTRATION IS 6.00

- | | |
|---------------------------------|-----------|
| 1. 1H-Indole | 117 C8H7N |
| 2. 1H-Indene, 2,3-dihydro- | 118 C9H10 |
| 3. Benzene, 1-ethenyl-2-methyl- | 118 C9H10 |
| 4. Benzene, 1-propenyl- | 118 C9H10 |
| 5. Benzeneacetonitrile | 117 C8H7N |
| 6. Benzonitrile, 2-methyl- | 117 C8H7N |

Sample file: >U2182 Spectrum #: 1756
 Search speed: 1 Tilting option: F No. of ion ranges searched: 43

Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
30*	120729	13196	NBS49K	33	56	3	0	100	32	12	13
28*	496117	13350	NBS49K	37	63	2	0	60	37	10	14
26*	611154	13346	NBS49K	30	63	2	0	61	45	8	14
25*	637503	13345	NBS49K	30	68	2	0	58	47	7	14
20*	140294	13192	NBS49K	24	74	2	0	50	54	5	14
20*	529191	13194	NBS49K	24	76	2	0	52	51	5	14

1E
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

 6944.11 5mL

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 6944.11 5mL

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

Lab File ID: >U2162

Level: (low/med) LOW

Date Received: 12-09-91

Column: Capillary

Date Analyzed: 12/11/91

Dilution Factor: 1

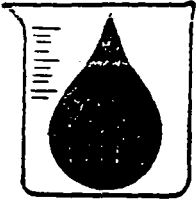
CONCENTRATION UNITS:
 ug/L

Number of TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
-----	-----	-----	-----	-----

121

151dg. 2361



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# : 9173.15-19
SAMPLE RCD : 10/26/92
ANALYSIS START : 10/28/92
ANALYSIS COMP : 10/28/92
PO# : R2-2672

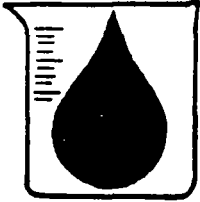
TEST PARAMETER: LEAD (Pb)

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

EPL#	BLDG. #	MW#	DICAR#	RESULTS	DETECTION LIMIT
9173.15	2567	1-2926925	89-12-12-1442	ND	0.004 mg/L
9173.16	2567	1-2926925 DUP	"	ND	"
9173.17	2567	2-2926926	"	0.011	"
9173.18	2567	3-2926947	"	0.005	"
9173.19	2567	4-2926948	"	ND	"

ND = NONE DETECTED

DANIEL K. WRIGHT
LABORATORY DIRECTOR



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

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

PROJECT: UST Assesments
Fort Monmouth, N.J.

MATRIX: Aqueous

SAMPLE LOCATION AND IDENTIFICATION

<u>LAB ID NUMBER</u>	<u>Bldg #</u>	<u>MW #</u>	<u>DICAR #</u>
9173.15	2567	1-2926925	89-12-12-1442
9173.16	2567 dup	1-2926925	"
9173.17	2567	2-2926926	"
9173.18	2567	3-2926947	"
9173.19	2567	4-2926948	"
9173.25	Trip Blank		
9173.26	Field Blank		

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

CAL - ORIAN McKee at Serv Air

Customer Purchase Order No.:

CHAIN OF CUSTODY RECORD

Sampled by: (Signature) *ACR*

Date/Time 10/26/92

Customer Name and Address:

Serv Air Inc.
Fort Monmouth NJ

Site Name and Address:

FR. 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	Analysis parameters (Be as specific as possible)						Remarks	Preservation Method	
9173.1	10/26 1145	IS ₂₀	699-1	3	✓	✓					DISPOSABLE 10 BALSORS	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	✓	✓							

624-15
BIN 115
PB

Relinquished By: (Signature) *ACR*

Date/Time 10/26/92

Received By: (Signature) *ACR*

Method of Shipping: COV

QA/QC Required:

- NJ Tier II
- Results Only
- Other

Turnaround Time:

Relinquished By: (Signature)

Date/Time

Received By: (Signature)

Shipped By:

Relinquished By: (Signature)

Date/Time

Received For EPL By: (Signature) *Robert R...*

Date/Time 10.21.92

2

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:

*Srv-Ate Inc.
 Fort Monmouth NJ*

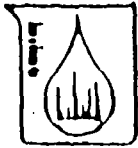
Site Name and Address:

*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	Analysis parameters (Be as specific as possible)								Remarks	Preservation Method			
9173.11	10/26 213	1120	814-1	4	✓	✓	✓							DISPOSABLE 1L BAILERS	14NJ3 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) <i>[Signature]</i>	Date/Time <u>10/26/92</u>	Received By: (Signature) <i>[Signature]</i>	Method of Shipping: <u>COV</u>
Relinquished By: (Signature) <i>[Signature]</i>	Date/Time	Received By: (Signature)	Shipped By:
Relinquished By: (Signature) <i>[Signature]</i>	Date/Time	Received For EPL By: (Signature)	Date/Time

QA/QC Required:

NJ Tier II

Results Only

Other

Turnaround Time: _____

W

Environmental Profile Laboratories
1565 Rt. 37-Unit 13
Tom's 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.
Ft Monmouth NJ

Site Name and Address:

FT. MONMOUTH
WT Assessments

Analyse parameters (Be as specific as possible)

GZ4715 MINTIS PB		
------------------------	--	--



Telephone No:

Fax:

Lab Sample ID Number	Date/Time Sampled	Sample Matrix	Customer Sample Location/ID No.	Number of Containers	Analyse parameters										Remarks	Preservation Method							
9173.21	10/26	340	H ₂ O	3021-1	4	✓	✓	✓													DISPOSABLE BASIC	11NO ₃ EOL 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) *[Signature]*

Date/Time 10/26/92

Received By: (Signature) *[Signature]*

Method of Shipping: 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							

5

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							

7

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/RBN							
PCB's							
Analysis Date							
BN/RBN							
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							

8

METHOD SUMMARY

Volatiles

The volatile samples in this report have been analyzed using the method cited in the USEPA-CLP-IFB version 2/88. The CLP volatile method is based on USEPA Method 624 and SW-846.

The method is based on 5 milliliters of an aqueous, or 1 gram of a non-aqueous sample spiked with a known concentration of surrogate and internal standard. The samples and standards are then purged onto a trap using a Tekmar LSC 2 and desorbed onto a capillary column installed in a Hewlett Packard 5890 GC coupled via a jet separator to the HP 5970 MSD. The data was then collected and reduced via a HP 1000 RTE data system.

GC/MS

ORGANIC NON-CONFORMANCE SUMMARY

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

INITIAL CALIBRATION REQUIREMENTS:

All CCC and SPCC values were within QC limits.

CONTINUING CALIBRATION REQUIREMENTS:

All CCC and SPCC values were within QC limits.

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

* All values reported on a DRY WEIGHT basis where applicable

MATRIX SPIKE RECOVERY:- All recoveries were within limits.
1 out of 5 RPD values were not within limits.

INTERNAL STANDARD AREA:-

CLIENT ID #	NUMBER OF INTERNAL STANDARD AREA(S)
-------------	-------------------------------------

None	:
------	---

SURROGATE RECOVERY:-

CLIENT ID #	SURROGATES OUTSIDE QC LIMITS
-------------	------------------------------

None	:
------	---

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

NOTE: Methylene Chloride, Freon and Acetone are used extensively in daily laboratory procedures.

DATA REPORTING QUALIFIERS

For reporting results to the EPA, the following "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 concentration 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
 SAMPLE ID 9173.15 .5ml
 CLIENT NAME Serv-Air
 DATA FILE >U5421

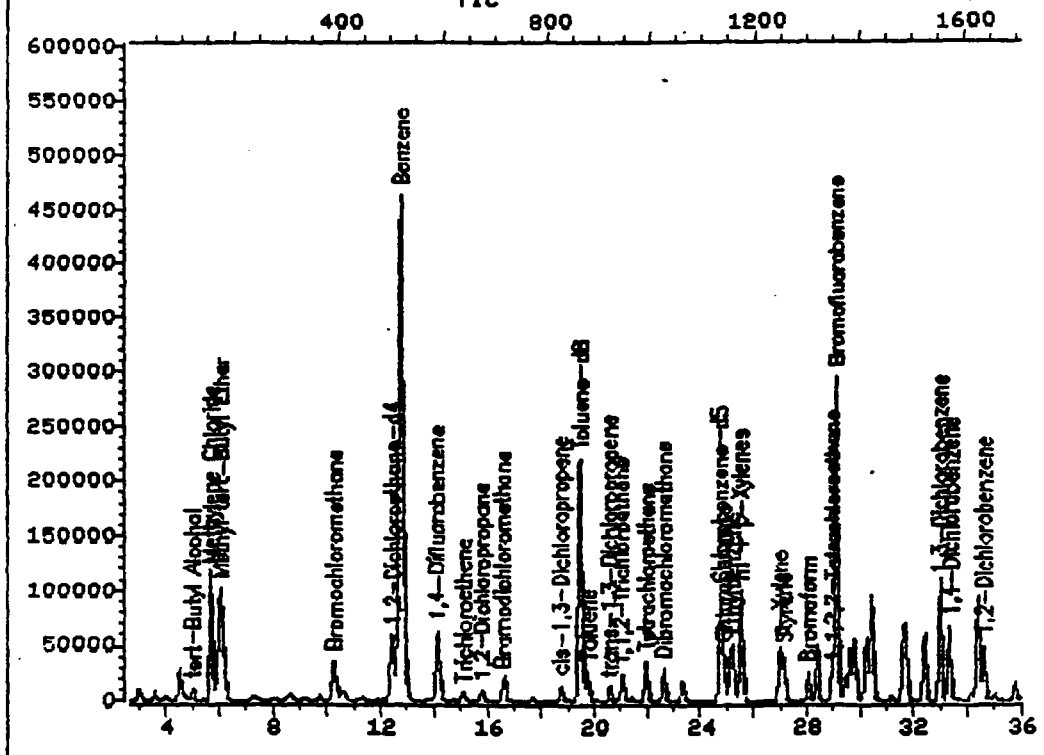
MATRIX Water
 DILUTION FACTOR 10.00
 DATE RECEIVED 10-26-92
 DATE ANALYZED 10/30/92

Compound	ug/L	MDL	Compound	ug/L	MDL
Chloromethane	ND	100	Dibromochloromethane	130	50
Bromomethane	ND	100	1,1,2-Trichloroethane	140	50
Vinyl Chloride	ND	100	Benzene	2800	50
Chloroethane	ND	100	trans-1,3-Dichloropropene	220	50
Methylene Chloride	420 B	50	2-Chloroethylvinyl ether	ND	50
Acrolein	ND	500	Bromoform	140	50
Acrylonitrile	ND	500	2-Hexanone	ND	50
Acetone	ND	50	4-Methyl-2-Pentanone	ND	50
Carbon Disulfide	ND	50	Tetrachloroethene	51	50
1,1-Dichloroethene	ND	50	1,1,2,2-Tetrachloroethane	170	50
1,1-Dichloroethane	ND	50	Toluene	73	50
trans-1,2-Dichloroethene	ND	50	Chlorobenzene	99	50
Trichlorofluoromethane	ND	50	Ethylbenzene	90	50
Chloroform	ND	50	Styrene	84	50
1,2-Dichloroethane	ND	50	o-Xylene	92	50
2-Butanone	ND	50	m + p-Xylenes	210	50
1,1,1-Trichloroethane	ND	50	1,3-Dichlorobenzene	100	50
Carbon Tetrachloride	ND	50	1,2-Dichlorobenzene	120	50
Bromodichloromethane	77	50	1,4-Dichlorobenzene	120	50
Vinyl Acetate	ND	50	tert-Butyl Alcohol	5400	500
1,2-Dichloropropane	62	50	Methyl tert-Butyl Ether	1200	50
cis-1,3-Dichloropropene	48 J	50	Diethyl ether	ND	500
Trichloroethene	32 J	50			0

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

TOTAL ION CHROMATOGRAM

File >V5421 35.0-260.0 amu. 9173.15 .5mL 9173.15 .5mL
TIC



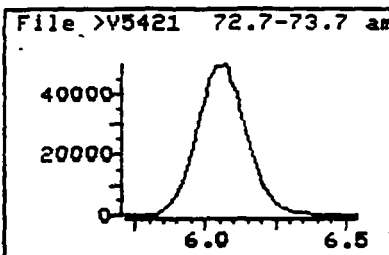
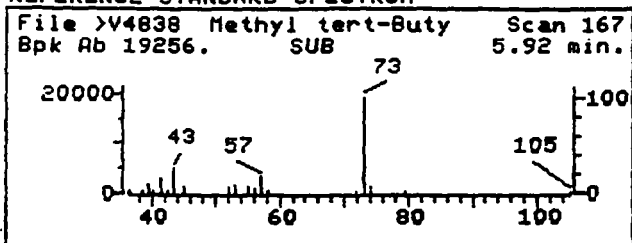
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Name: 9173.15 .5mL
Misc: 9173.15 .5mL

Quant Output File: ^U5421::D1

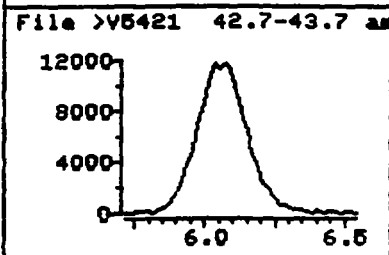
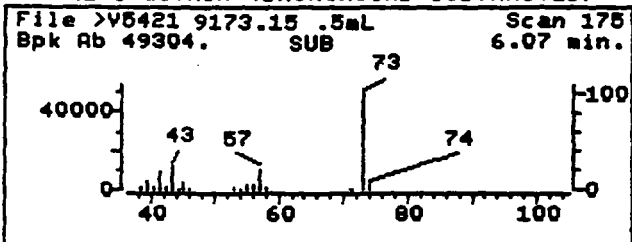
Id File: IDUOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921030 12:33

Operator ID: MARK
Quant Time: 921030 18:14
Injected at: 921030 17:37

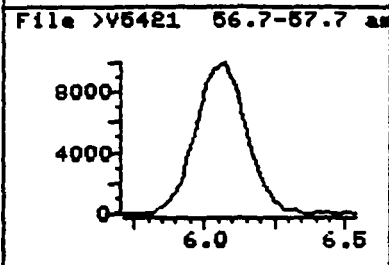
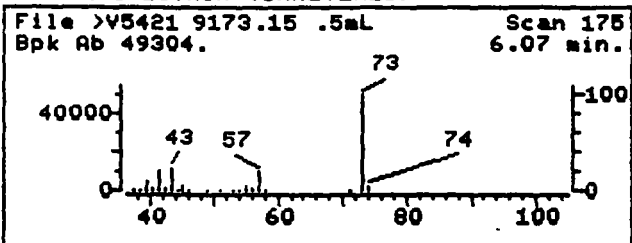
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



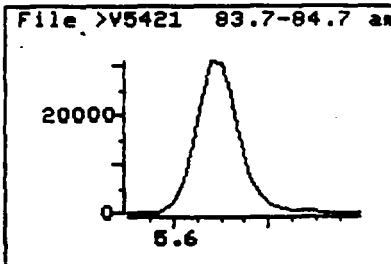
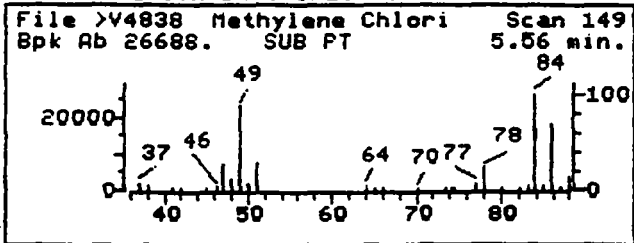
Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^U5421::D1

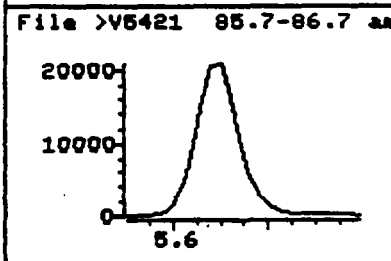
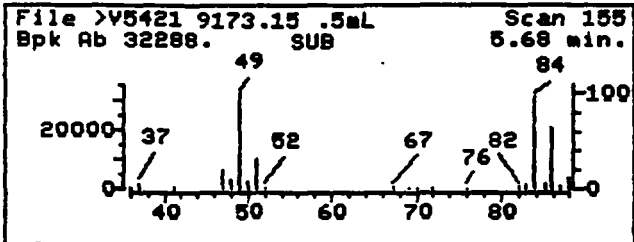
Quant ID File: IDVOA::D2
Last Calibration: 921030 12:33

Compound No: 6
Compound Name: Methyl tert-Butyl Ether
Scan Number: 175
Retention Time: 6.07 min.
Quant Ion: 73.0
Area: 618633
Concentration: 120.33 ppb
q-value: 92

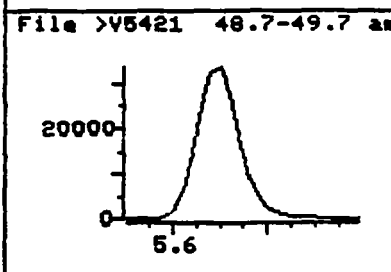
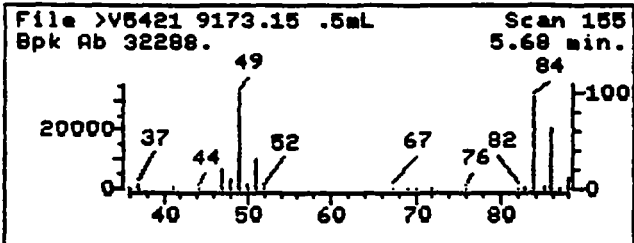
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



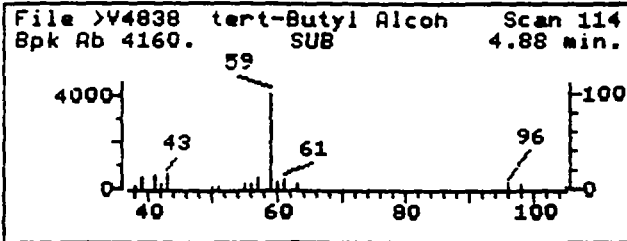
Data File: >V5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^V5421::D1

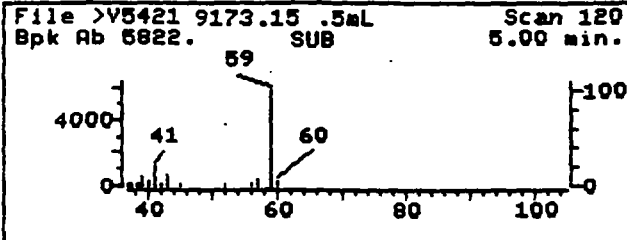
Quant ID File: IDVOR::D2
Last Calibration: 921030 12:33

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 155
Retention Time: 5.68 min.
Quant Ion: 84.0
Area: 198899
Concentration: 41.86 ppb
q-value: 89

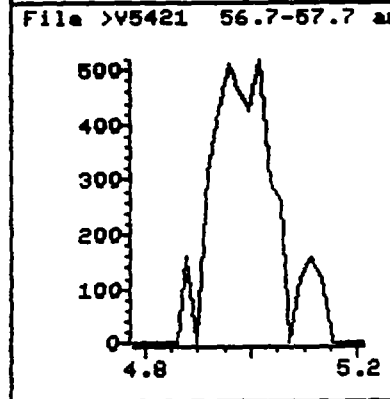
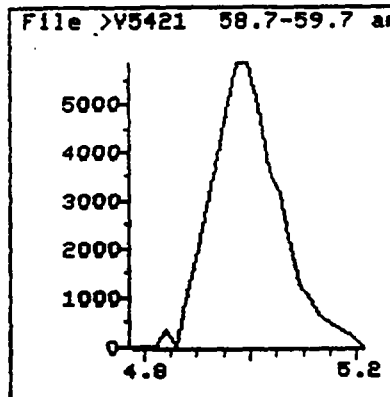
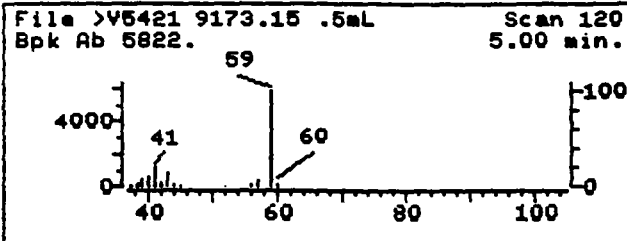
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



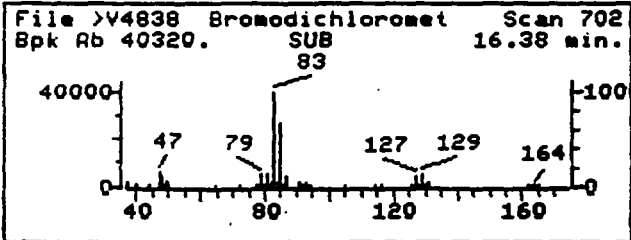
Data File: >U5421::D1
 Name: 9173.15 .5mL
 Misc: 9173.15 .5mL
 Quant Time: 921030 18:14
 Injected at: 921030 17:37

Quant Output File: ^U5421::D1

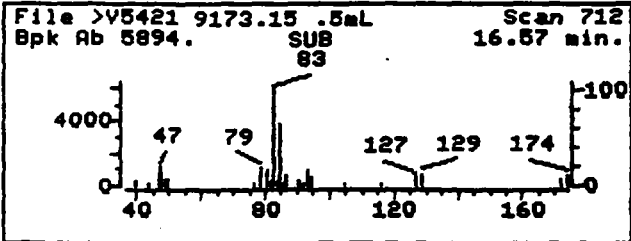
Quant ID File: IDUOA::D2
 Last Calibration: 921030 12:33

Compound No: 14
 Compound Name: tert-Butyl Alcohol
 Scan Number: 120
 Retention Time: 5.00 min.
 Quant Ion: 59.0
 Area: 51594
 Concentration: 541.72 ppb
 q-value: 94

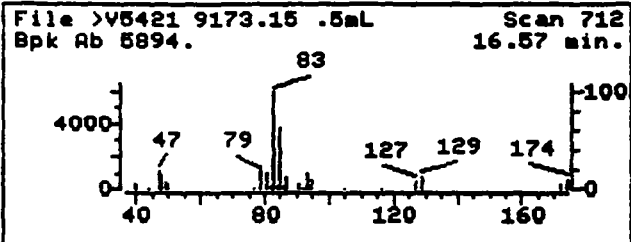
REFERENCE STANDARD SPECTRUM



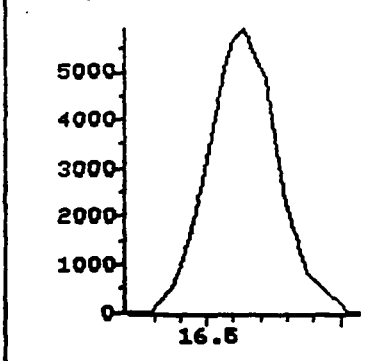
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



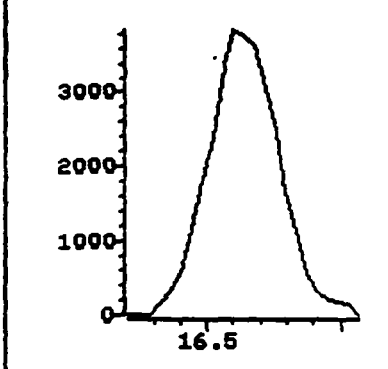
SAMPLE SPECTRUM (UNALTERED)



File >V5421 82.7-83.7 am



File >V5421 84.7-85.7 am



Data File: >U5421::D1
 Name: 9173.15 .5mL
 Misc: 9173.15 .5mL
 Quant Time: 921030 18:14
 Injected at: 921030 17:37

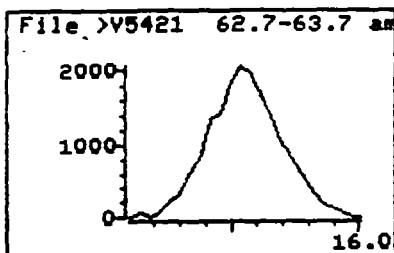
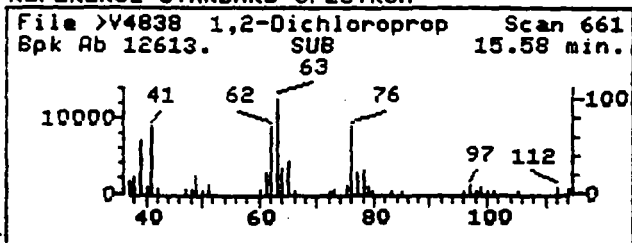
Quant Output File: ^U5421::D1

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

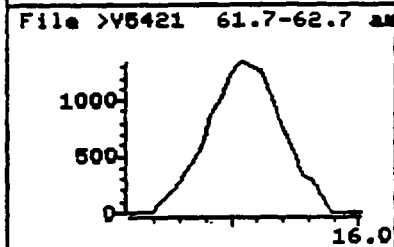
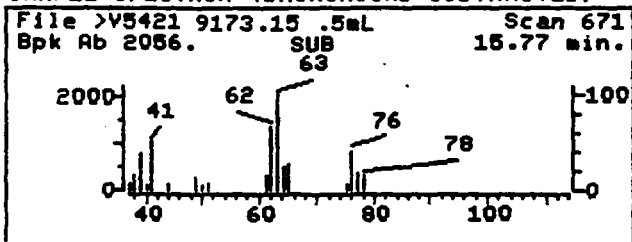
Compound No: 24
 Compound Name: Bromodichloromethane
 Scan Number: 712
 Retention Time: 16.57 min.
 Quant Ion: 83.0
 Area: 53904
 Concentration: 7.70 ppb
 q-value: 99

106

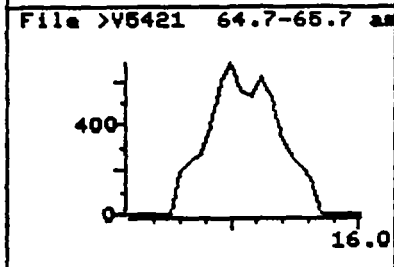
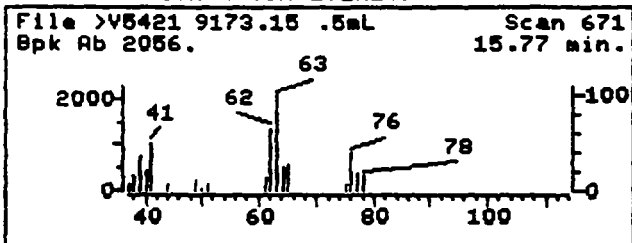
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



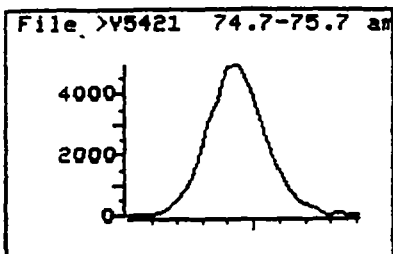
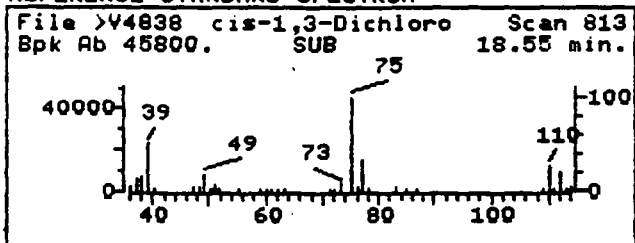
Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^U5421::D1

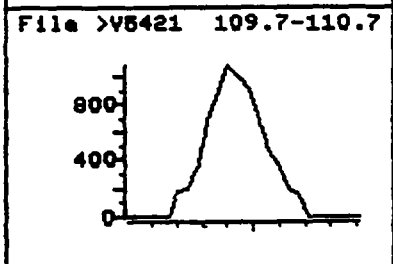
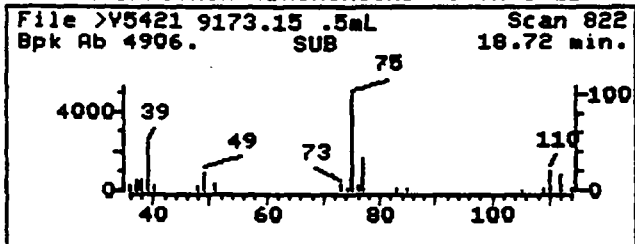
Quant ID File: IDUOA::D2
Last Calibration: 921030 12:33

Compound No: 26
Compound Name: 1,2-Dichloropropane
Scan Number: 671
Retention Time: 15.77 min.
Quant Ion: 63.0
Area: 20109
Concentration: 6.18 ppb
q-value: 92

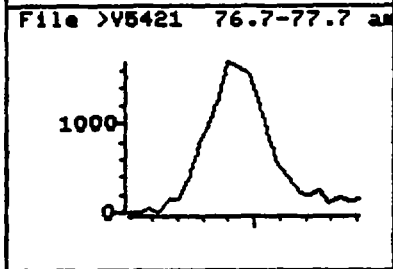
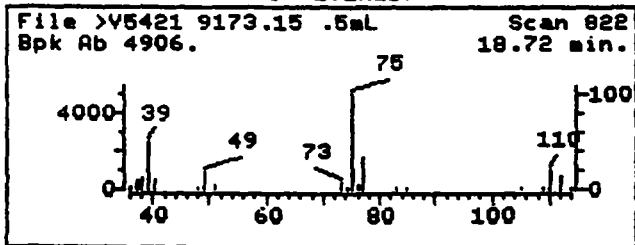
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



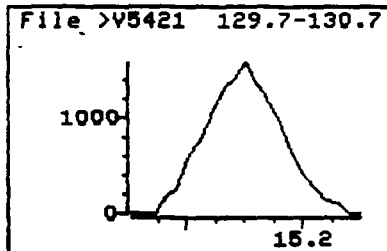
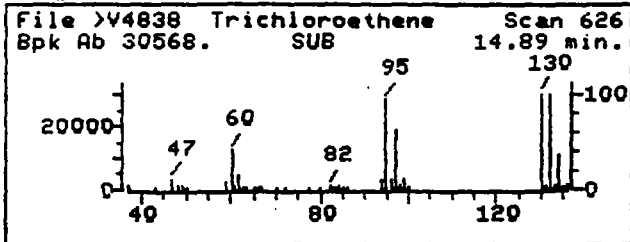
Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^U5421::D1

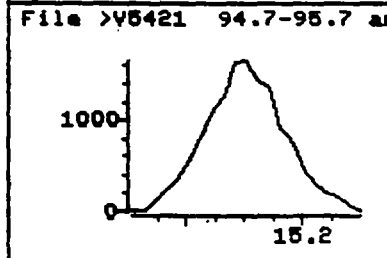
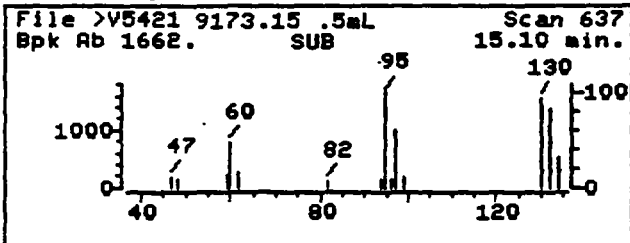
Quant ID File: IDUOA::D2
Last Calibration: 921030 12:33

Compound No: 27
Compound Name: cis-1,3-Dichloropropene
Scan Number: 822
Retention Time: 18.72 min.
Quant Ion: 75.0
Area: 39273
Concentration: 4.84 ppb
q-value: 99

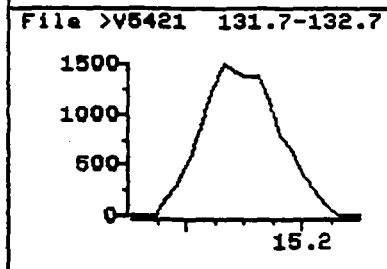
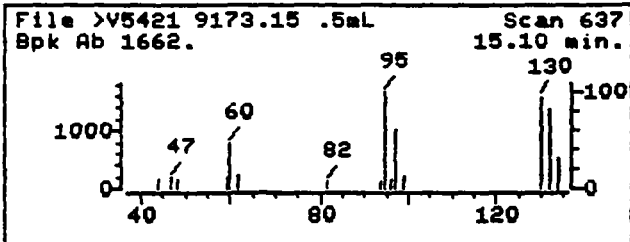
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



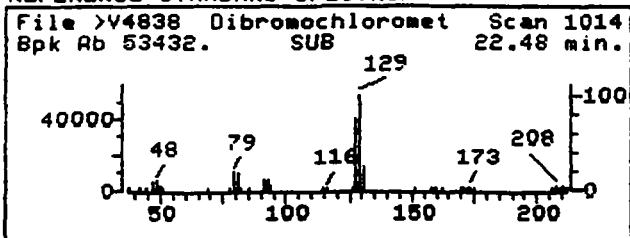
Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^U5421::D1

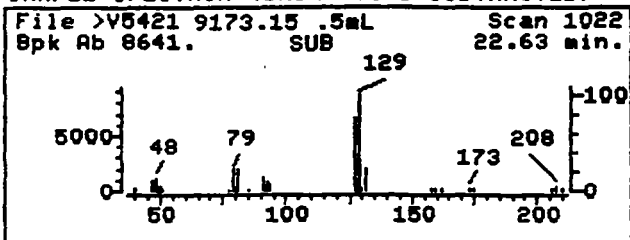
Compound No: 28
Compound Name: Trichloroethene
Scan Number: 637
Retention Time: 15.10 min.
Quant Ion: 130.0
Area: 14245
Concentration: 3.16 ppb
q-value: 91

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

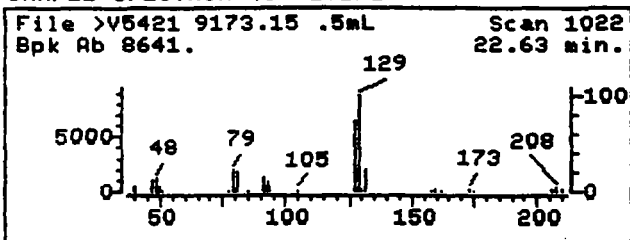
REFERENCE STANDARD SPECTRUM



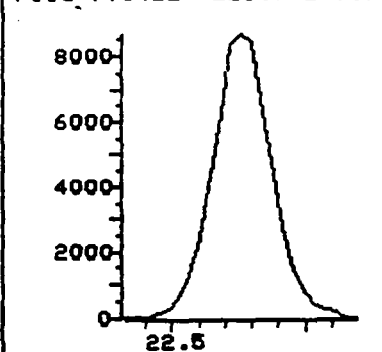
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



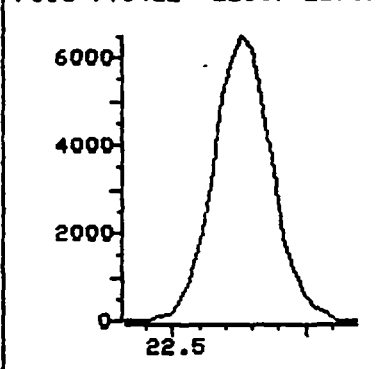
SAMPLE SPECTRUM (UNALTERED)



File >V5421 128.7-129.7



File >V5421 126.7-127.7



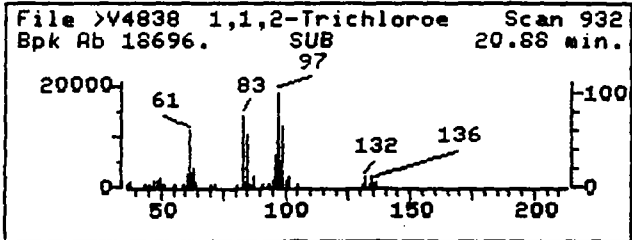
Data File: >V5421::D1
 Name: 9173.15 .5mL
 Misc: 9173.15 .5mL
 Quant Time: 921030 18:14
 Injected at: 921030 17:37

Quant Output File: ^V5421::D1

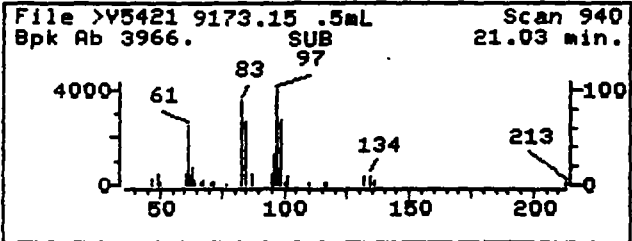
Quant ID File: IDUOA::D2
 Last Calibration: 921030 12:33

Compound No: 29
 Compound Name: Dibromochloromethane
 Scan Number: 1022
 Retention Time: 22.63 min.
 Quant Ion: 129.0
 Area: 66467
 Concentration: 12.82 ppb
 q-value: 95

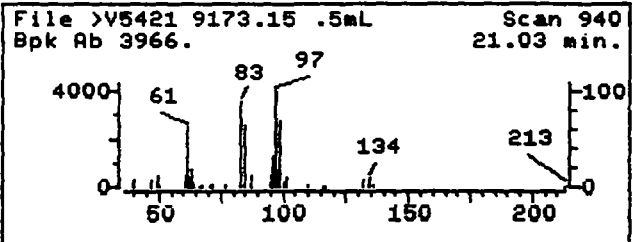
REFERENCE STANDARD SPECTRUM



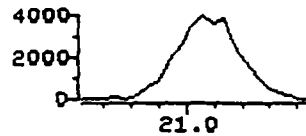
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



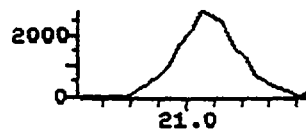
SAMPLE SPECTRUM (UNALTERED)



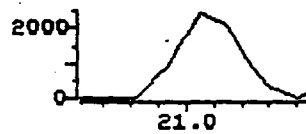
File >V5421 96.7-97.7 am



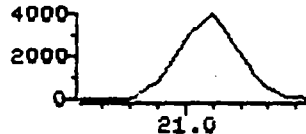
File >V5421 98.7-99.7 am



File >V5421 60.7-61.7 am



File >V5421 82.7-83.7 am



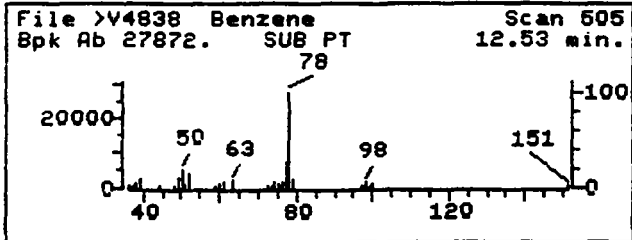
Data File: >U5421::D1
 Name: 9173.15 .5mL
 Misc: 9173.15 .5mL
 Quant Time: 921030 18:14
 Injected at: 921030 17:37

Quant Output File: ^U5421::D1

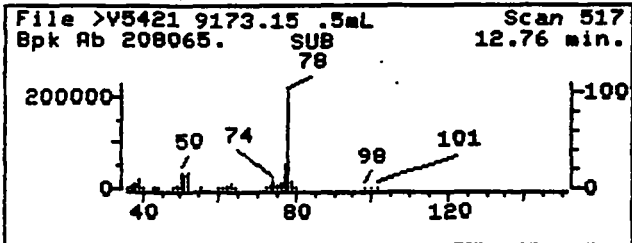
Quant ID File: IDVOA::D2
 Last Calibration: 921030 12:33

Compound No: 30
 Compound Name: 1,1,2-Trichloroethane
 Scan Number: 940
 Retention Time: 21.03 min.
 Quant Ion: 97.0
 Area: 32807
 Concentration: 13.51 ppb
 q-value: 89

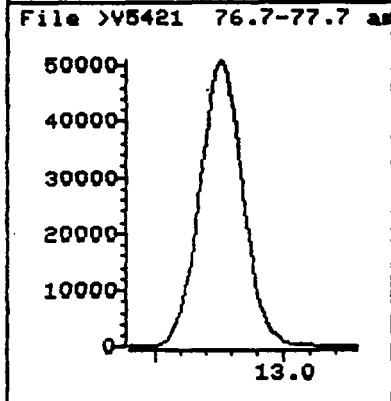
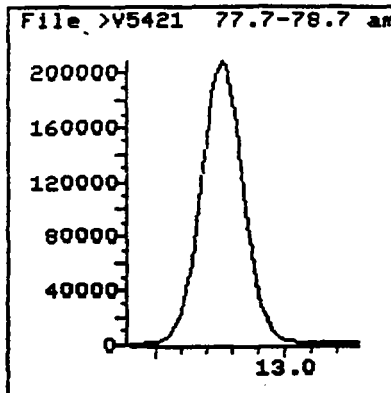
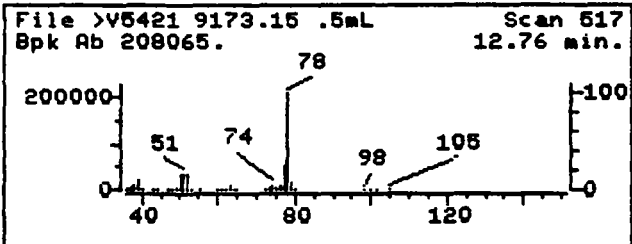
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >V5421::D1
 Name: 9173.15 .5mL
 Misc: 9173.15 .5mL
 Quant Time: 921030 18:14
 Injected at: 921030 17:37

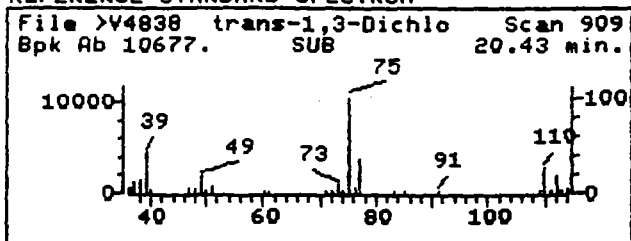
Quant Output File: ^V5421::D1

Quant ID File: IDU0A::D2
 Last Calibration: 921030 12:33

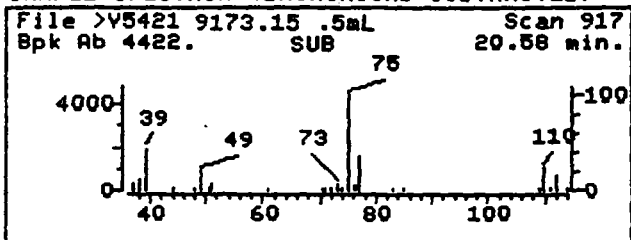
Compound No: 31
 Compound Name: Benzene
 Scan Number: 517
 Retention Time: 12.76 min.
 Quant Ion: 78.0
 Area: 2431323
 Concentration: 275.70 ppb
 q-value: 94

112

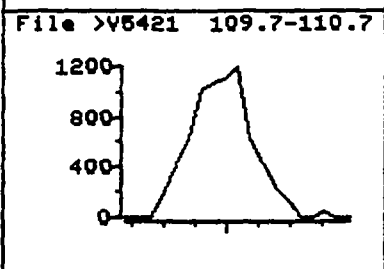
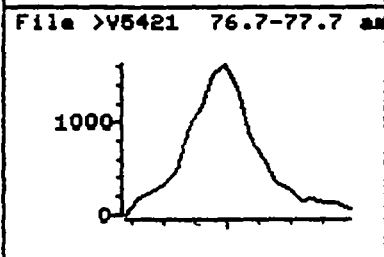
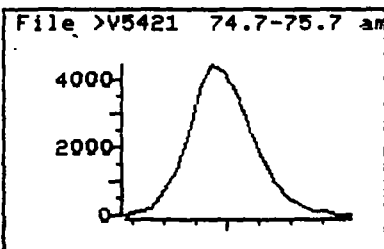
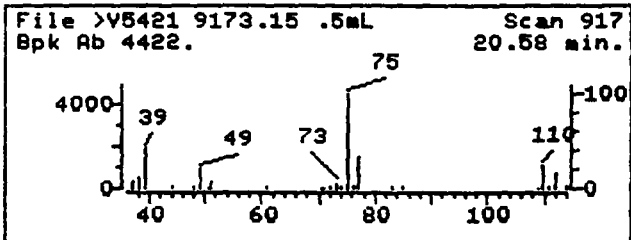
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



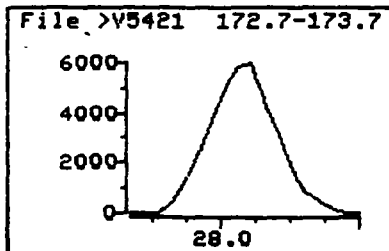
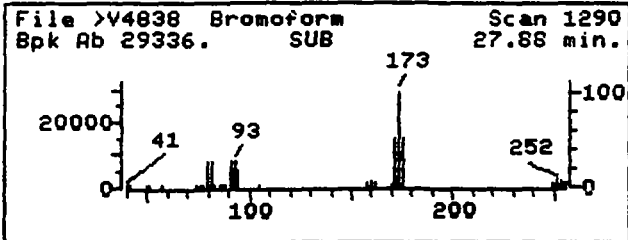
Data File: >U5421::D1
 Name: 9173.15 .5mL
 Misc: 9173.15 .5mL
 Quant Time: 921030 18:14
 Injected at: 921030 17:37

Quant Output File: ^U5421::D1

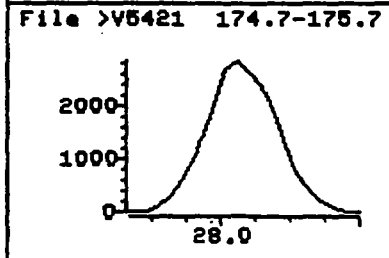
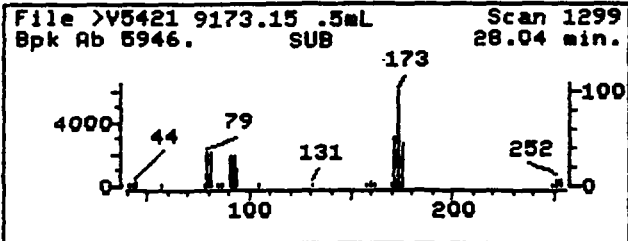
Quant ID File: IDVOA::D2
 Last Calibration: 921030 12:33

Compound No: 32
 Compound Name: trans-1,3-Dichloropropene
 Scan Number: 917
 Retention Time: 20.58 min.
 Quant Ion: 75.0
 Area: 31979
 Concentration: 21.80 ppb
 q-value: 95

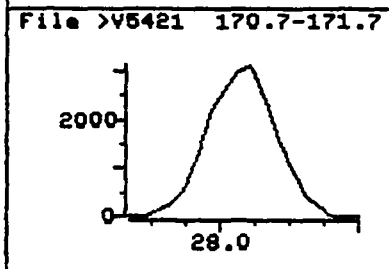
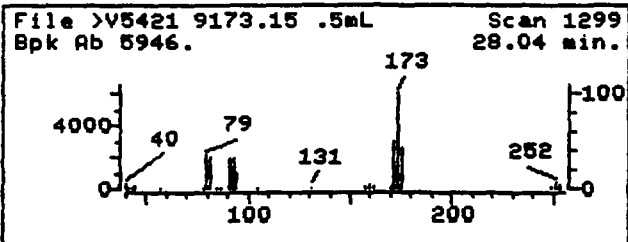
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



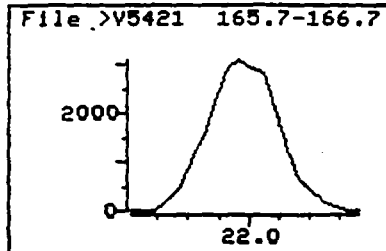
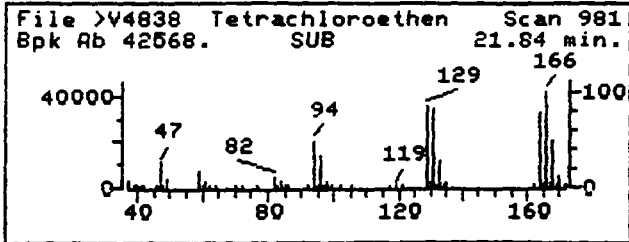
Data File: >U5421::D1
 Name: 9173.15 .5mL
 Misc: 9173.15 .5mL
 Quant Time: 921030 18:14
 Injected at: 921030 17:37

Quant Output File: ^U5421::D1

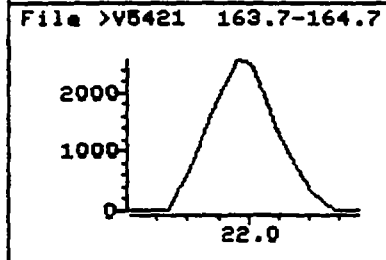
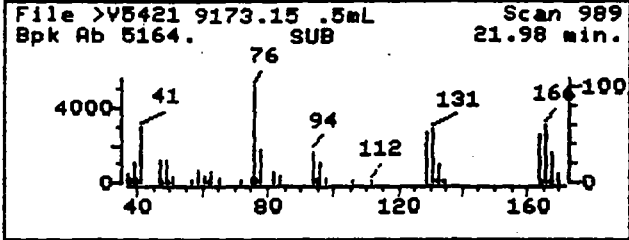
Quant ID File: IDUOA::D2
 Last Calibration: 921030 12:33

Compound No: 34
 Compound Name: Bromoform
 Scan Number: 1299
 Retention Time: 28.04 min.
 Quant Ion: 173.0
 Area: 41046
 Concentration: 13.72 ppb
 q-value: 93

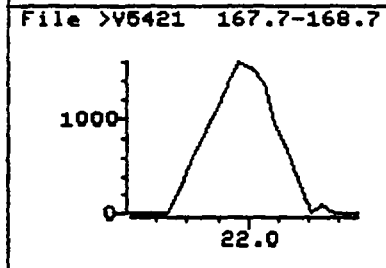
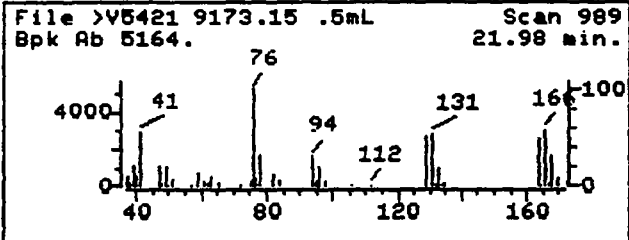
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



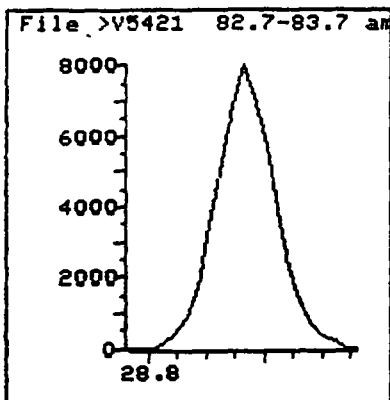
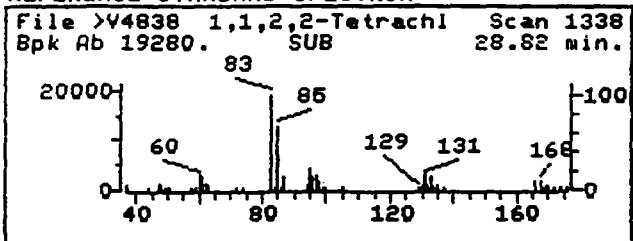
Data File: >V5421::D1
 Name: 9173.15 .5mL
 Misc: 9173.15 .5mL
 Quant Time: 921030 18:14
 Injected at: 921030 17:37

Quant Output File: ^V5421::D1

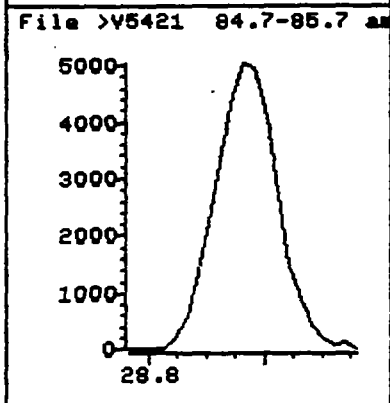
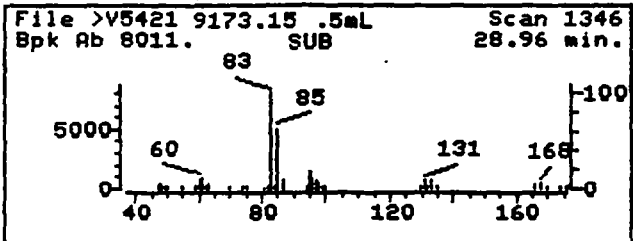
Quant ID File: IDUOA::D2
 Last Calibration: 921030 12:33

Compound No: 38
 Compound Name: Tetrachloroethene
 Scan Number: 989
 Retention Time: 21.98 min.
 Quant Ion: 166.0
 Area: 25885
 Concentration: 5.14 ppb
 q-value: 92

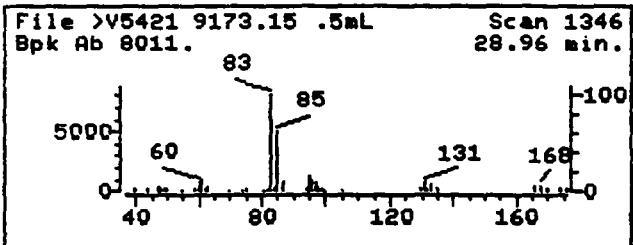
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



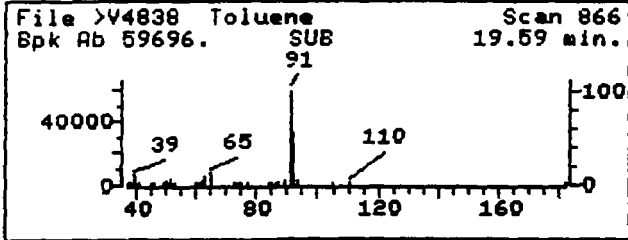
Data File: >V5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^V5421::D1

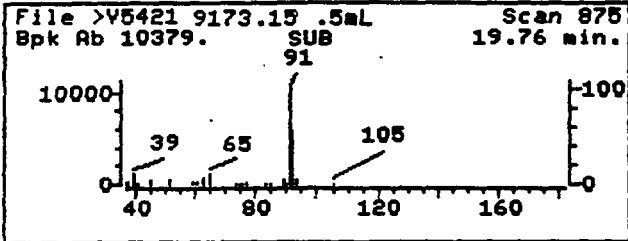
Quant ID File: IDUOA::D2
Last Calibration: 921030 12:33

Compound No: 39
Compound Name: 1,1,2,2-Tetrachloroethane
Scan Number: 1346
Retention Time: 28.96 min.
Quant Ion: 83.0
Area: 56475
Concentration: 16.91 ppb
q-value: 98

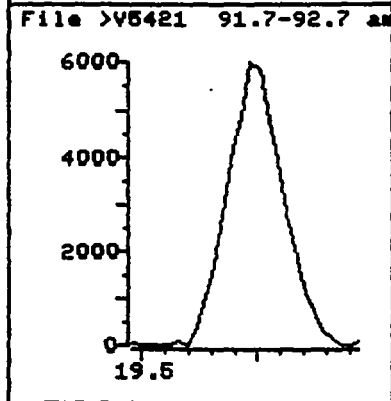
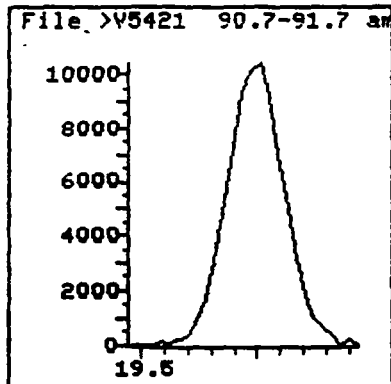
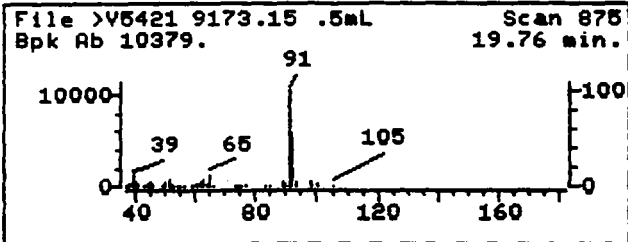
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

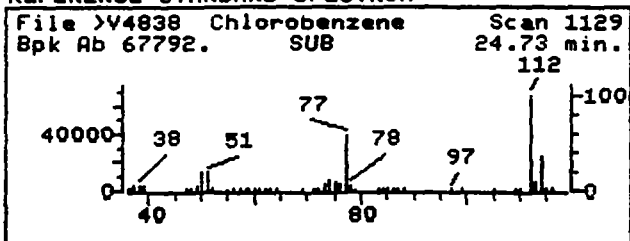
Quant Output File: ^U5421::D1

Quant ID File: IDV0A::D2
Last Calibration: 921030 12:33

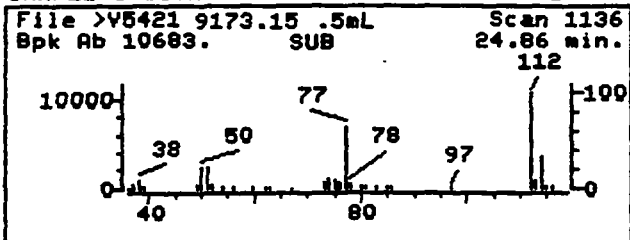
Compound No: 40
Compound Name: Toluene
Scan Number: 875
Retention Time: 19.76 min.
Quant Ion: 91.0
Area: 90884
Concentration: 7.25 ppb
q-value: 92

119

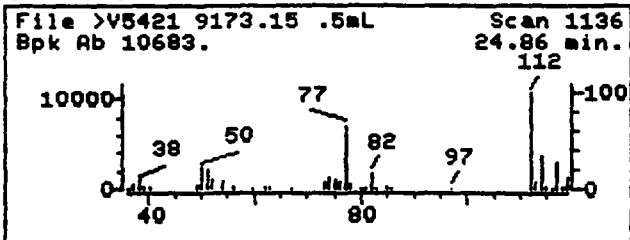
REFERENCE STANDARD SPECTRUM



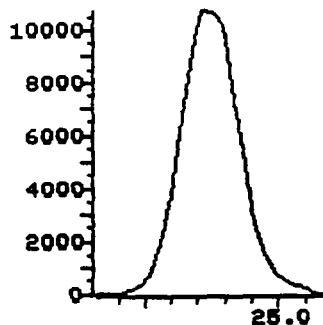
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



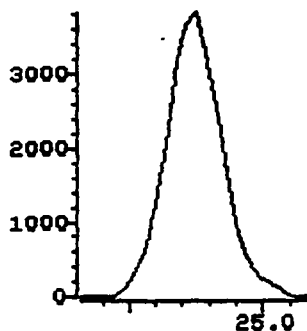
SAMPLE SPECTRUM (UNALTERED)



File >V5421 111.7-112.7



File >V5421 113.7-114.7



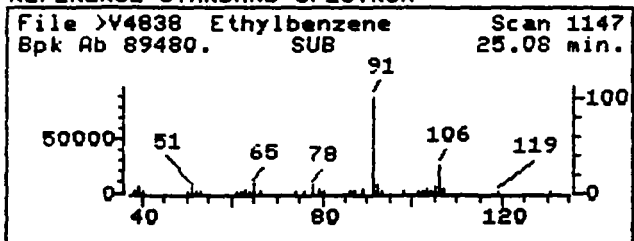
Data File: >V5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^V5421::D1

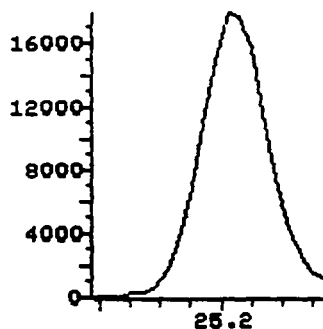
Quant ID File: IDVOA::D2
Last Calibration: 921030 12:33

Compound No: 41
Compound Name: Chlorobenzene
Scan Number: 1136
Retention Time: 24.86 min.
Quant Ion: 112.0
Area: 84657
Concentration: 9.87 ppb
q-value: 95

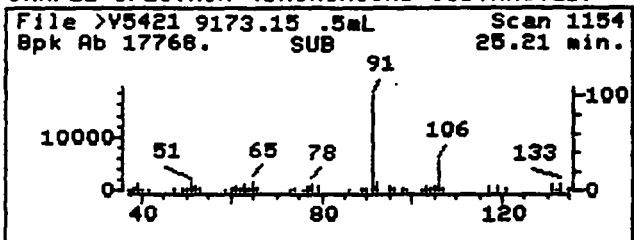
REFERENCE STANDARD SPECTRUM



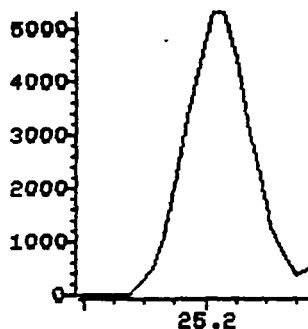
File >V5421 90.7-91.7 am



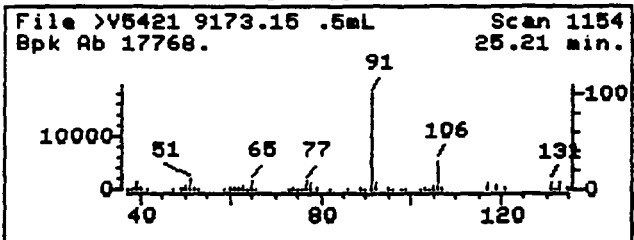
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



File >V5421 105.7-106.7



SAMPLE SPECTRUM (UNALTERED)



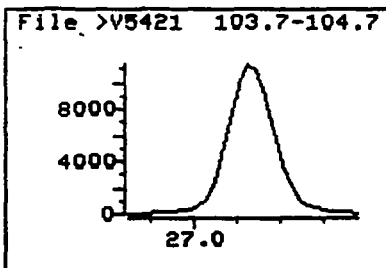
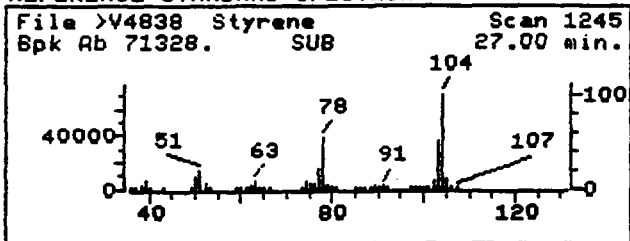
Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^U5421::D1

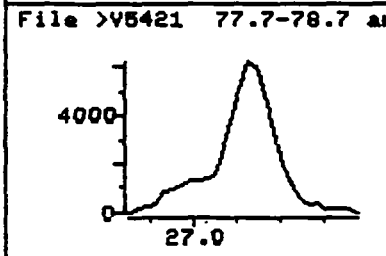
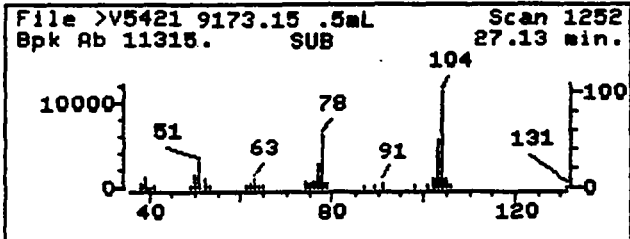
Quant ID File: IDUOA::D2
Last Calibration: 921030 12:33

Compound No: 42
Compound Name: Ethylbenzene
Scan Number: 1154
Retention Time: 25.21 min.
Quant Ion: 91.0
Area: 139491
Concentration: 8.97 ppb
q-value: 98

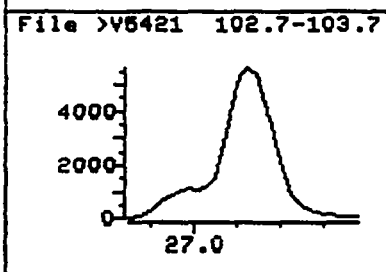
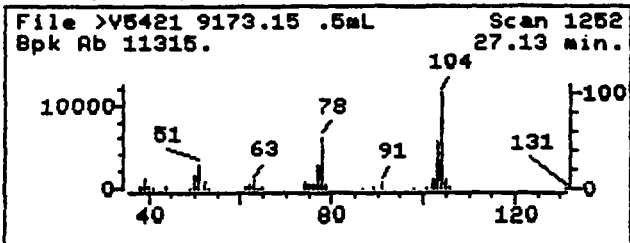
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



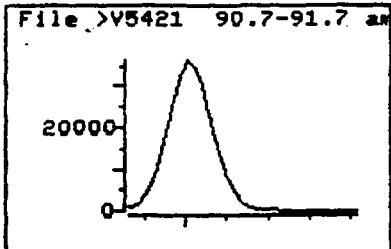
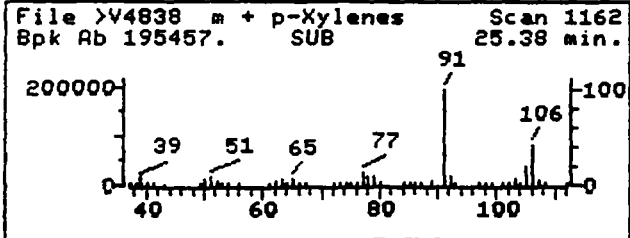
Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^U5421::D1

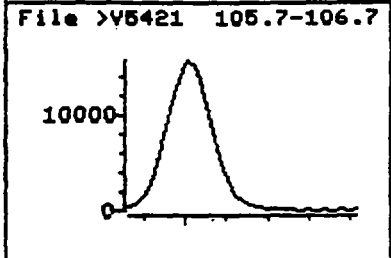
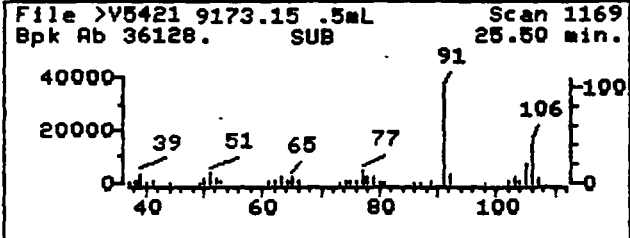
Compound No: 43
Compound Name: Styrene
Scan Number: 1252
Retention Time: 27.13 min.
Quant Ion: 104.0
Area: 86601
Concentration: 8.35 ppb
q-value: 97

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

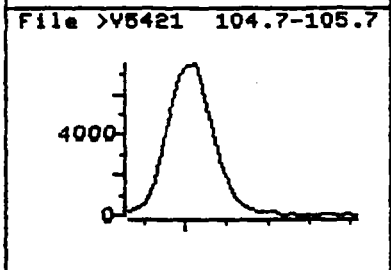
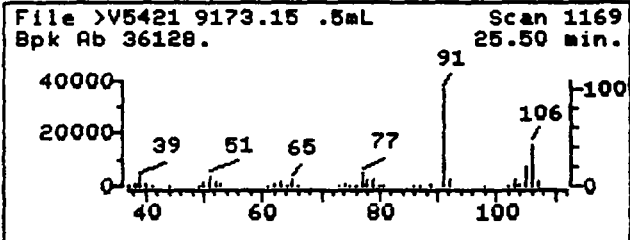
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

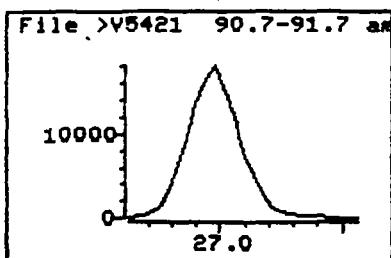
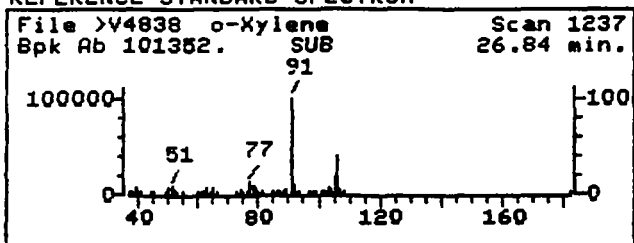
Quant Output File: ^U5421::D1

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

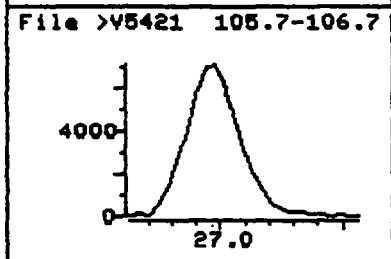
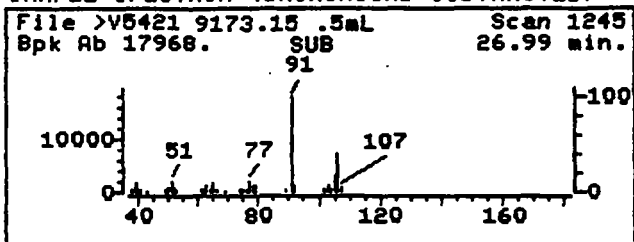
Compound No: 44
Compound Name: m + p-Xylenes
Scan Number: 1169
Retention Time: 25.50 min.
Quant Ion: 91.0
Area: 279326
Concentration: 21.28 ppb
q-value: 98

121

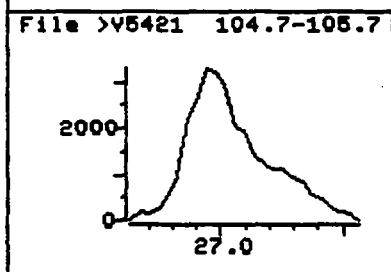
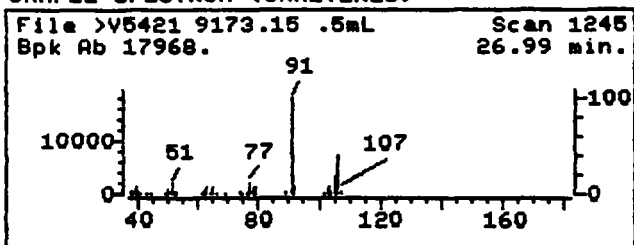
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^U5421::D1

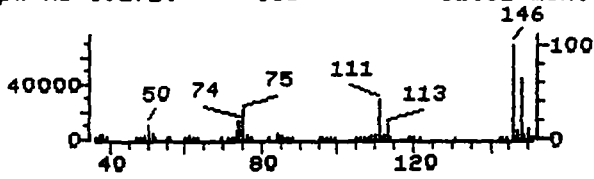
Quant ID File: IDUOA::D2
Last Calibration: 921030 12:33

Compound No: 45
Compound Name: o-Xylene
Scan Number: 1245
Retention Time: 26.99 min.
Quant Ion: 91.0
Area: 135544
Concentration: 9.23 ppb
q-value: 94

122

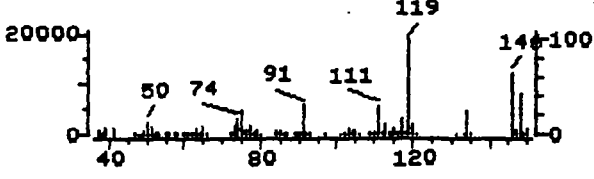
REFERENCE STANDARD SPECTRUM

File >V4838 1,3-Dichlorobenz Scan 1542
Bpk Ab 69272. SUB 32.81 min.



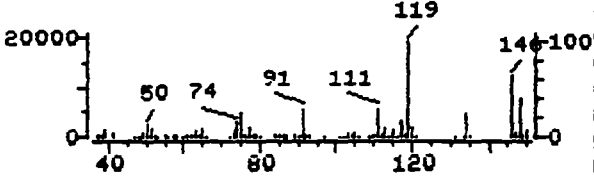
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

File >V5421 9173.15 .5mL Scan 1550
Bpk Ab 18936. SUB 32.96 min.

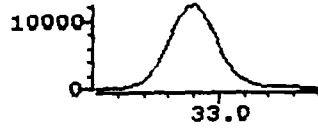


SAMPLE SPECTRUM (UNALTERED)

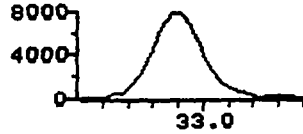
File >V5421 9173.15 .5mL Scan 1550
Bpk Ab 18936. SUB 32.96 min.



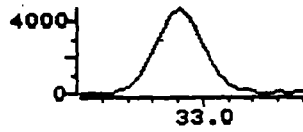
File >V5421 145.7-146.7



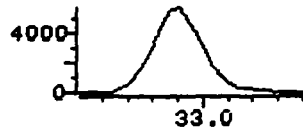
File >V5421 147.7-148.7



File >V5421 74.7-75.7



File >V5421 110.7-111.7



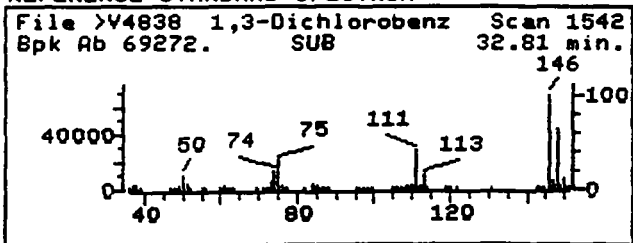
Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^U5421::D1

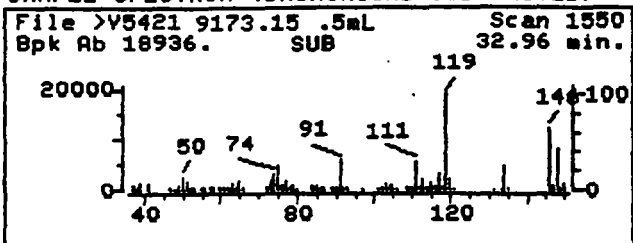
Quant ID File: IDUOA::D2
Last Calibration: 921030 12:33

Compound No: 46
Compound Name: 1,3-Dichlorobenzene
Scan Number: 1550
Retention Time: 32.96 min.
Quant Ion: 146.0
Area: 87069
Concentration: 10.06 ppb
q-value: 92

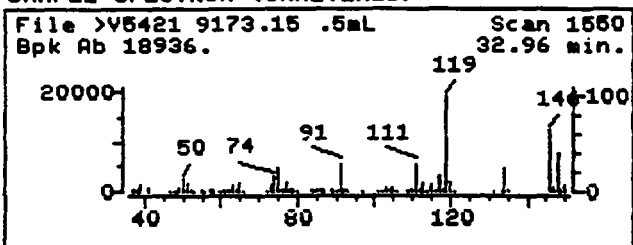
REFERENCE STANDARD SPECTRUM



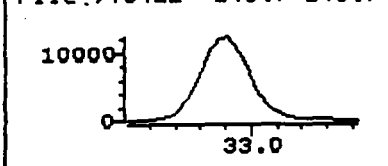
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



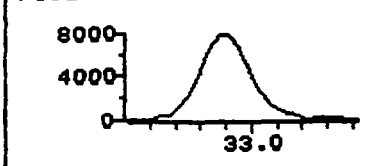
SAMPLE SPECTRUM (UNALTERED)



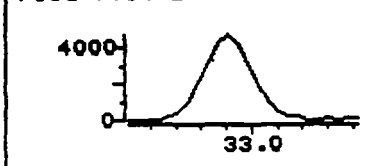
File >V5421 145.7-146.7



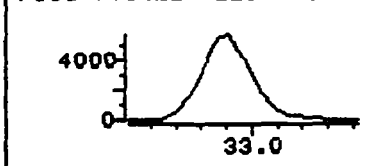
File >V5421 147.7-148.7



File >V5421 74.7-75.7 am



File >V5421 110.7-111.7



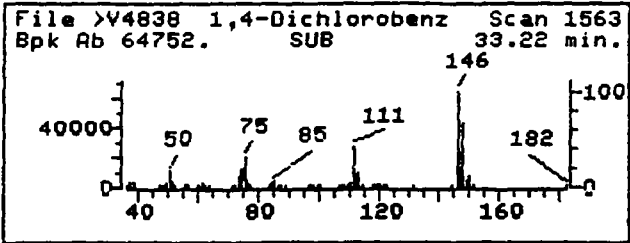
Data File: >U5421::D1
 Name: 9173.15 .5mL
 Misc: 9173.15 .5mL
 Quant Time: 921030 18:14
 Injected at: 921030 17:37

Quant Output File: ^U5421::D1

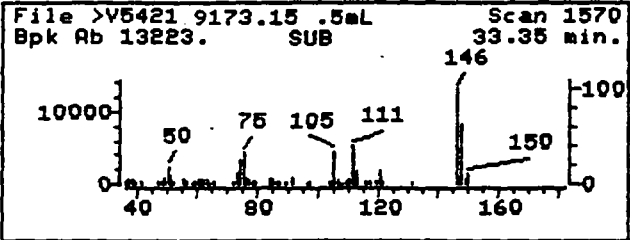
Quant ID File: IDUOA::D2
 Last Calibration: 921030 12:33

Compound No: 46
 Compound Name: 1,3-Dichlorobenzene
 Scan Number: 1550
 Retention Time: 32.96 min.
 Quant Ion: 146.0
 Area: 87069
 Concentration: 10.06 ppb
 q-value: 92

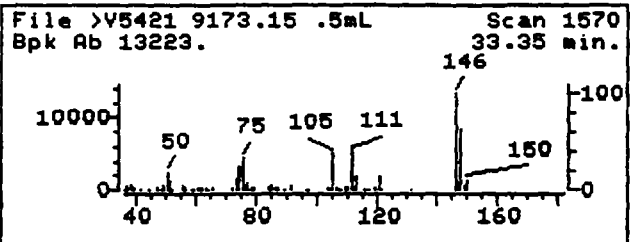
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



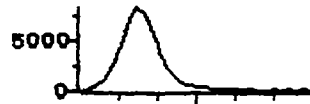
SAMPLE SPECTRUM (UNALTERED)



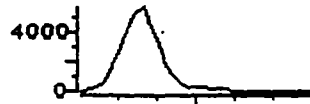
File >V5421 145.7-146.7



File >V5421 147.7-148.7



File >V5421 110.7-111.7



File >V5421 74.7-75.7



Data File: >U5421::D1
 Name: 9173.15 .5mL
 Misc: 9173.15 .5mL
 Quant Time: 921030 18:14
 Injected at: 921030 17:37

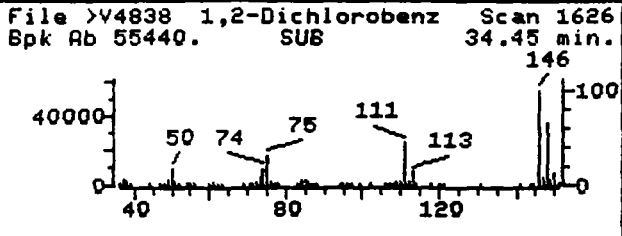
Quant Output File: ^U5421::D1

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

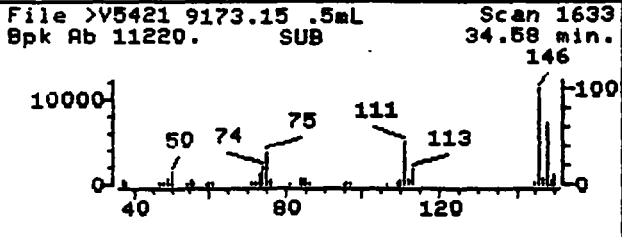
Compound No: 47
 Compound Name: 1,4-Dichlorobenzene
 Scan Number: 1570
 Retention Time: 33.35 min.
 Quant Ion: 146.0
 Area: 90415
 Concentration: 11.89 ppb
 q-value: 95

124

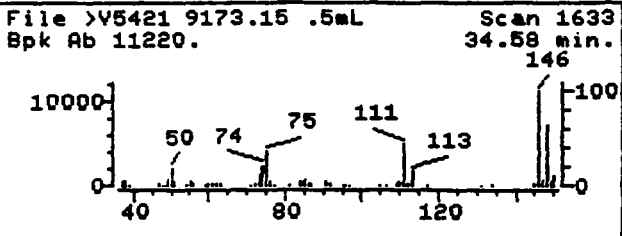
REFERENCE STANDARD SPECTRUM



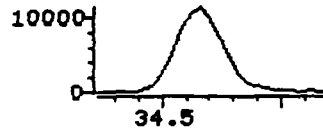
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



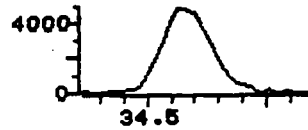
SAMPLE SPECTRUM (UNALTERED)



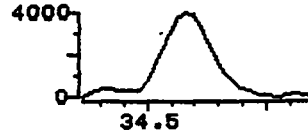
File >V5421 145.7-146.7



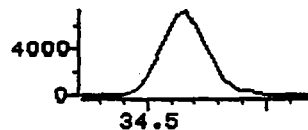
File >V5421 110.7-111.7



File >V5421 74.7-75.7



File >V5421 147.7-148.7



Data File: >U5421::D1
Name: 9173.15 .5mL
Misc: 9173.15 .5mL
Quant Time: 921030 18:14
Injected at: 921030 17:37

Quant Output File: ^U5421::D1

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

Compound No: 48
Compound Name: 1,2-Dichlorobenzene
Scan Number: 1633
Retention Time: 34.58 min.
Quant Ion: 146.0
Area: 80374
Concentration: 11.96 ppb
q-value: 95

125

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

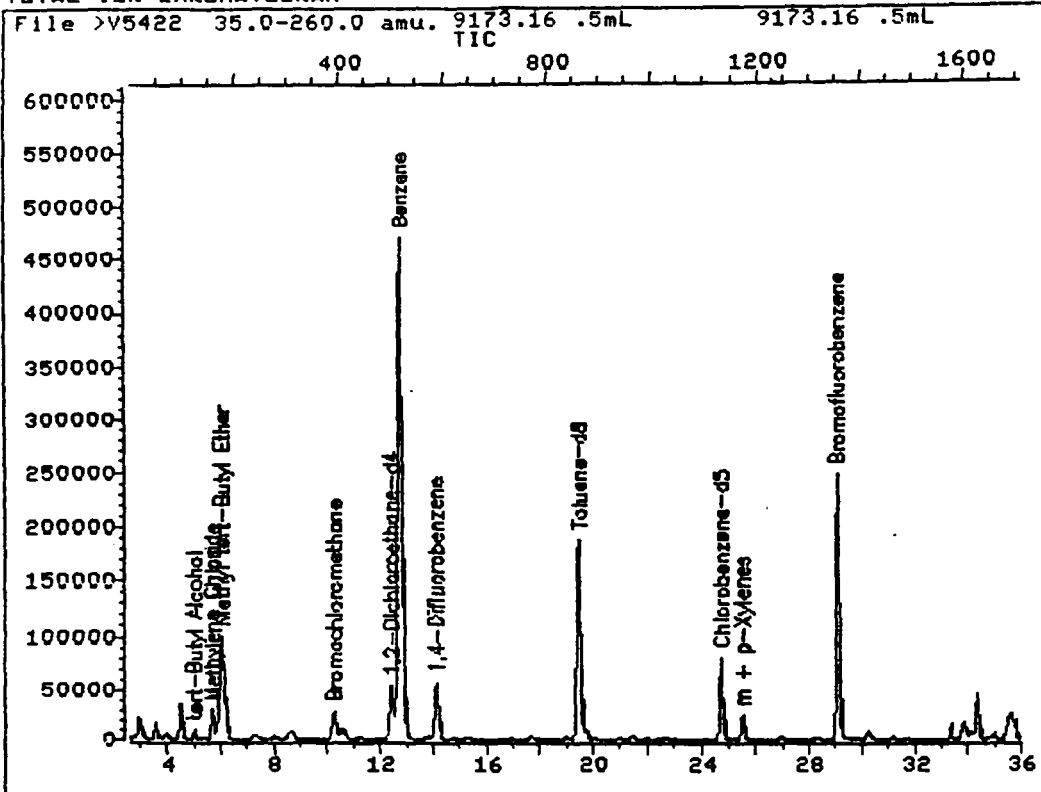
PROJECT 9173
 SAMPLE ID 9173.16 .5mL
 CLIENT NAME Serv-Air
 DATA FILE >V5422

MATRIX Water
 DILUTION FACTOR 10.00
 DATE RECEIVED 10-26-92
 DATE ANALYZED 10/30/92

Compound	ug/L	MDL	Compound	ug/L	MDL
Chloromethane	ND	100	Dibromochloromethane	ND	50
Bromomethane	ND	100	1,1,2-Trichloroethane	ND	50
Vinyl Chloride	ND	100	Benzene	3200	50
Chloroethane	ND	100	trans-1,3-Dichloropropene	ND	50
Methylene Chloride	130 B	50	2-Chloroethylvinyl ether	ND	50
Acrolein	ND	500	Bromoform	ND	50
Acrylonitrile	ND	500	2-Hexanone	ND	50
Acetone	ND	50	4-Methyl-2-Pentanone	ND	50
Carbon Disulfide	ND	50	Tetrachloroethene	ND	50
1,1-Dichloroethene	ND	50	1,1,2,2-Tetrachloroethane	ND	50
1,1-Dichloroethane	ND	50	Toluene	ND	50
trans-1,2-Dichloroethene	ND	50	Chlorobenzene	ND	50
Trichlorofluoromethane	ND	50	Ethylbenzene	ND	50
Chloroform	ND	50	Styrene	ND	50
1,2-Dichloroethane	ND	50	o-Xylene	ND	50
2-Butanone	ND	50	m + p-Xylenes	57	50
1,1,1-Trichloroethane	ND	50	1,3-Dichlorobenzene	ND	50
Carbon Tetrachloride	ND	50	1,2-Dichlorobenzene	ND	50
Bromodichloromethane	ND	50	1,4-Dichlorobenzene	ND	50
Vinyl Acetate	ND	50	tert-Butyl Alcohol	7000	500
1,2-Dichloropropane	ND	50	Methyl tert-Butyl Ether	1500	50
cis-1,3-Dichloropropene	ND	50	Diethyl ether	ND	500
Trichloroethene	ND	50			0

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

TOTAL ION CHROMATOGRAM



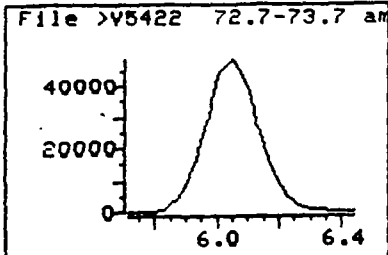
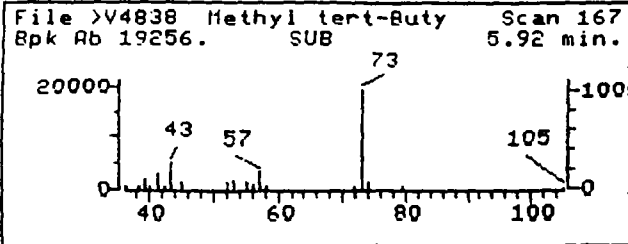
Data File: >U5422
Name: 9173.16 .5mL
Misc: 9173.16 .5mL

Quant Output File: ^U5422::D6

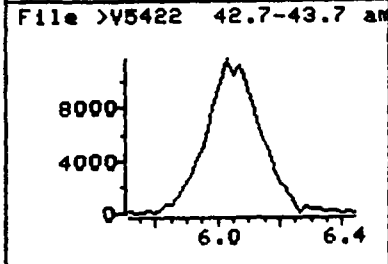
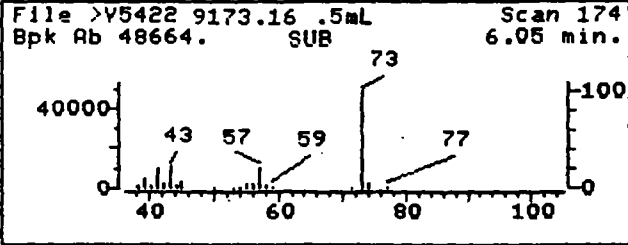
Id File: IDUOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921030 12:33

Operator ID: MARK
Quant Time: 921030 18:56
Injected at: 921030 18:19

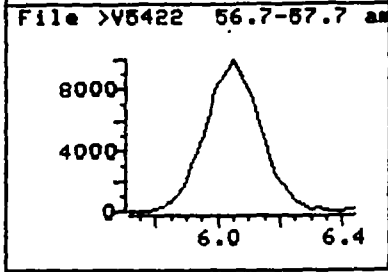
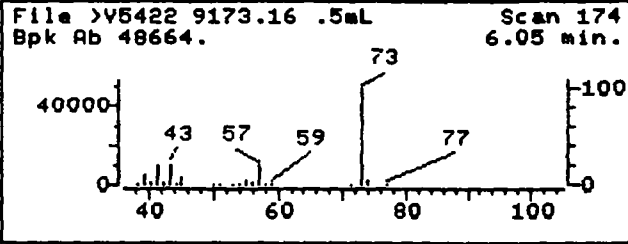
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



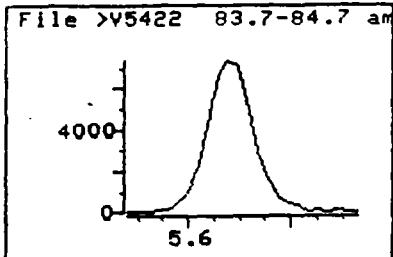
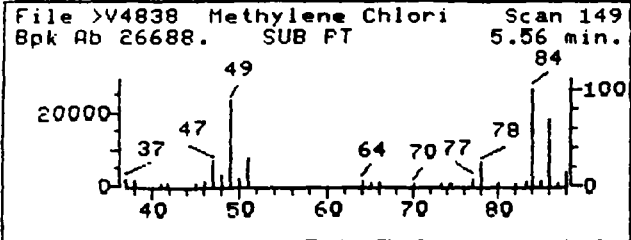
Data File: >V5422::D1
Name: 9173.16 .5mL
Misc: 9173.16 .5mL
Quant Time: 921030 18:56
Injected at: 921030 18:19

Quant Output File: ^V5422::DB

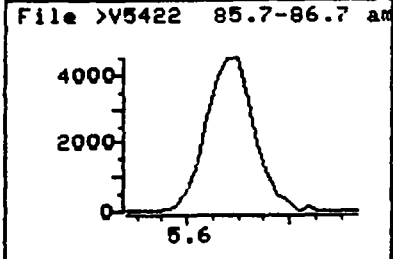
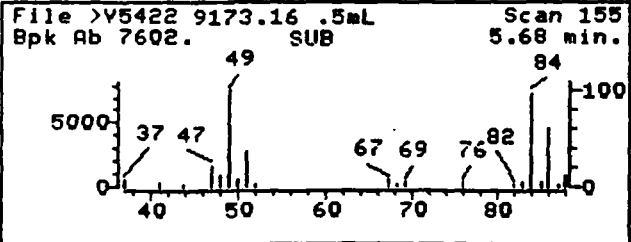
Quant ID File: IDUOA::D2
Last Calibration: 921030 12:33

Compound No: 6
Compound Name: Methyl tert-Butyl Ether
Scan Number: 174
Retention Time: 6.05 min.
Quant Ion: 73.0
Area: 594892
Concentration: 147.21 ppb
q-value: 90

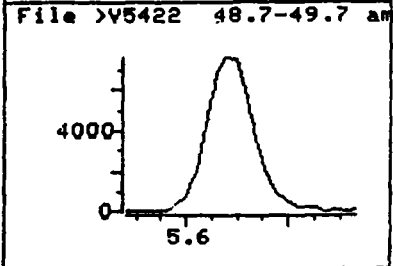
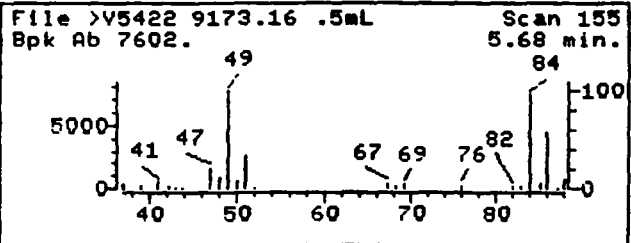
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



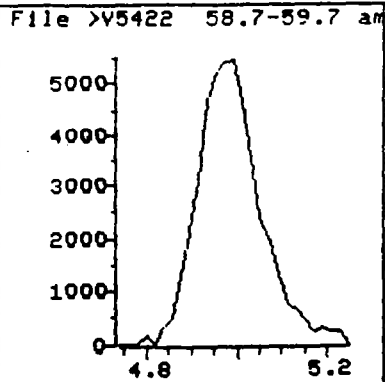
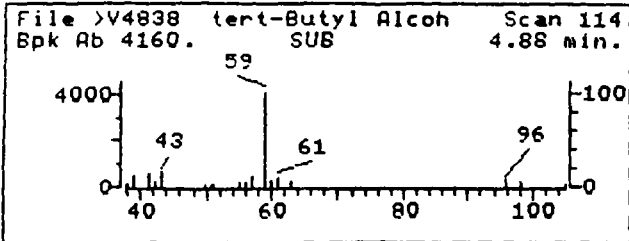
Data File: >U5422::D1
Name: 9173.16 .5mL
Misc: 9173.16 .5mL
Quant Time: 921030 18:56
Injected at: 921030 18:19

Quant Output File: ^U5422::DB

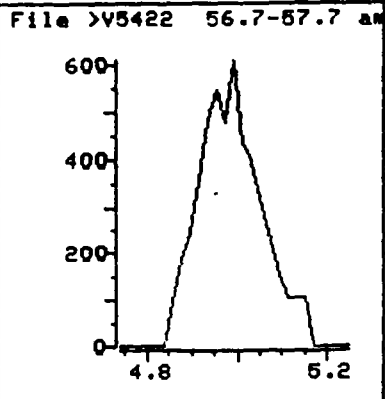
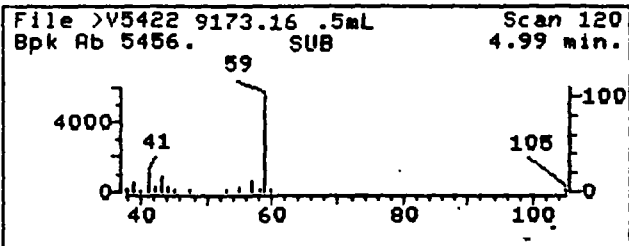
Quant ID File: IDUOA::D2
Last Calibration: 921030 12:33

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 155
Retention Time: 5.68 min.
Quant Ion: 84.0
Area: 47253
Concentration: 12.65 ppb
q-value: 86

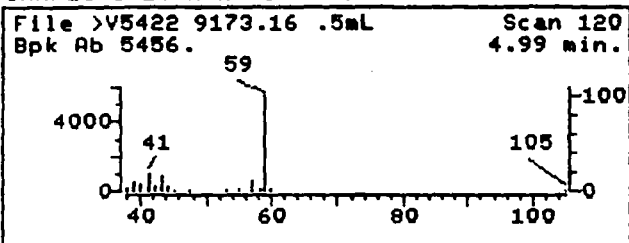
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5422::D1
Name: 9173.16 .5mL
Misc: 9173.16 .5mL
Quant Time: 921030 18:56
Injected at: 921030 18:19

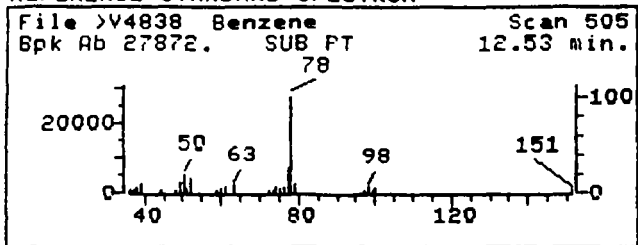
Quant Output File: ^U5422::DB

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

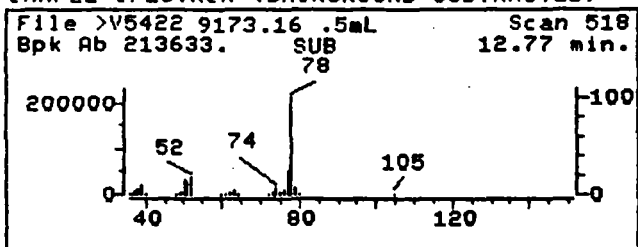
Compound No: 14
Compound Name: tert-Butyl Alcohol
Scan Number: 120
Retention Time: 4.99 min.
Quant Ion: 59.0
Area: 52585
Concentration: 702.40 ppb
q-value: 95

130

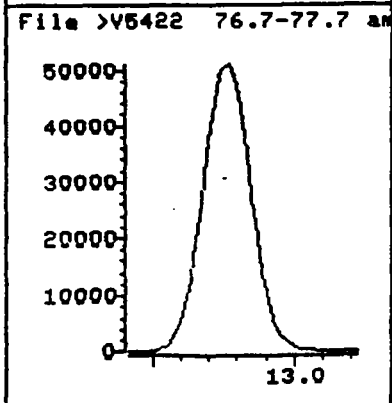
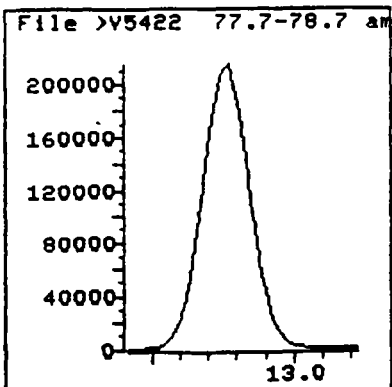
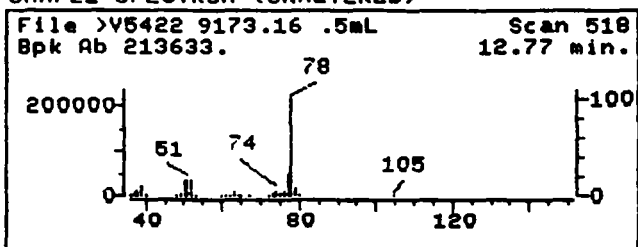
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



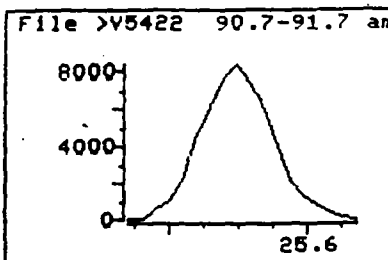
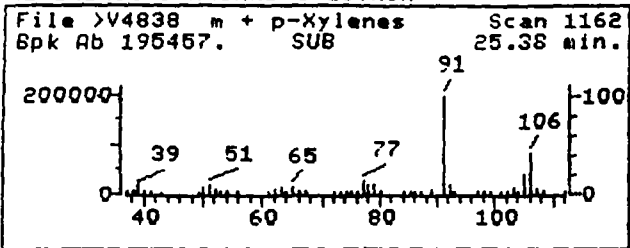
Data File: >U5422::D1
Name: 9173.16 .5mL
Misc: 9173.16 .5mL
Quant Time: 921030 18:56
Injected at: 921030 18:19

Quant Output File: ^U5422::DB

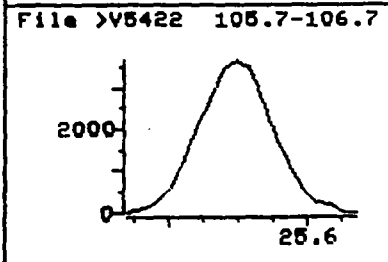
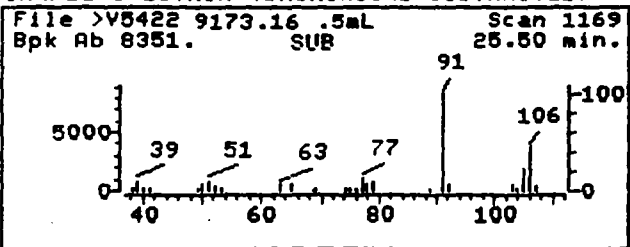
Quant ID File: IDUOA::D2
Last Calibration: 921030 12:33

Compound No: 31
Compound Name: Benzene
Scan Number: 518
Retention Time: 12.77 min.
Quant Ion: 78.0
Area: 2476185
Concentration: 320.57 ppb
q-value: 93

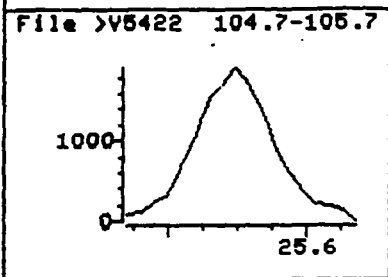
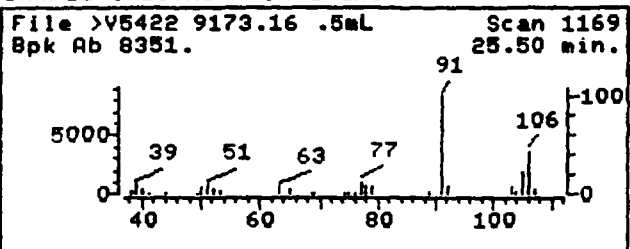
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5422::D1
Name: 9173.16 .5mL
Misc: 9173.16 .5mL
Quant Time: 921030 18:56
Injected at: 921030 18:19

Quant Output File: ^U5422::DB

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

Compound No: 44
Compound Name: m + p-Xylenes
Scan Number: 1169
Retention Time: 25.50 min.
Quant Ion: 91.0
Area: 62041
Concentration: 5.68 ppb
q-value: 97

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

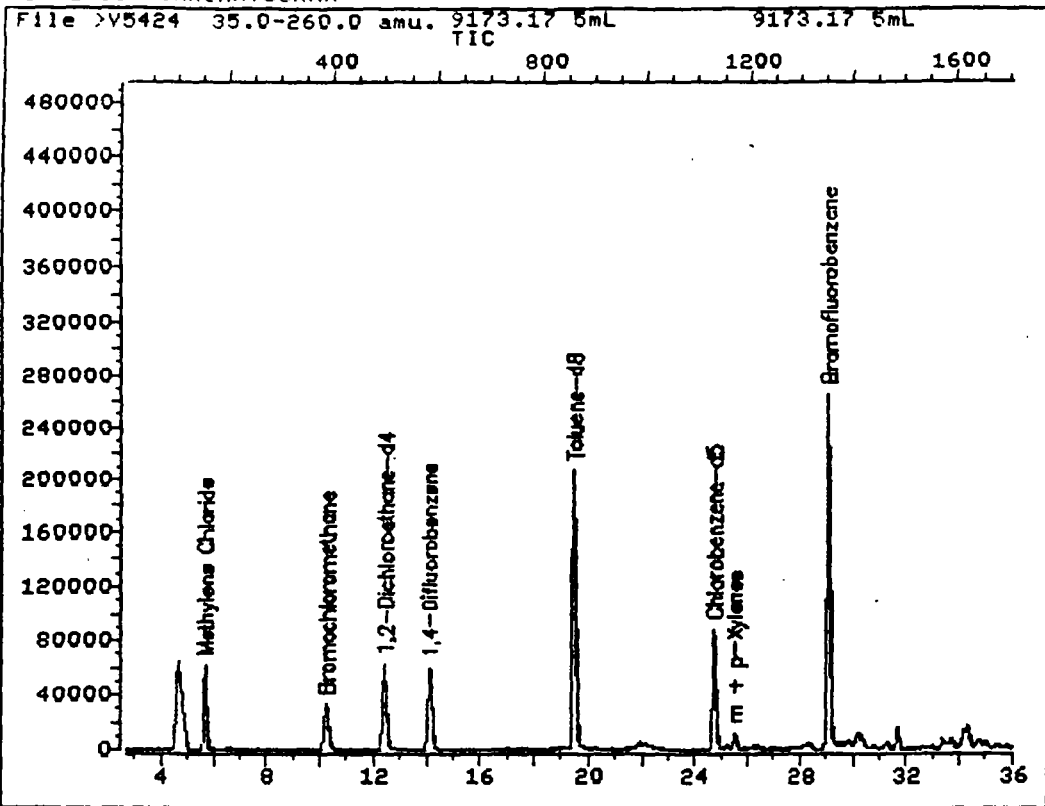
PROJECT 9173
 SAMPLE ID 9173.17 5mL
 CLIENT NAME Serv-Air
 DATA FILE >US424

MATRIX Water
 DILUTION FACTOR 1.00
 DATE RECEIVED 10-26-92
 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	23 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	3 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: >U5424::D1

Quant Output File: ^U5424::DB

Name: 9173.17 5mL

Misc: 9173.17 5mL

Id File: IDVOA::D2

Title: HSL VOLATILE ORGANICS

Last Calibration: 921030 12:33

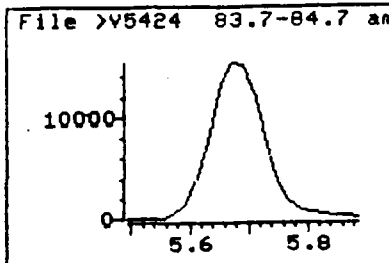
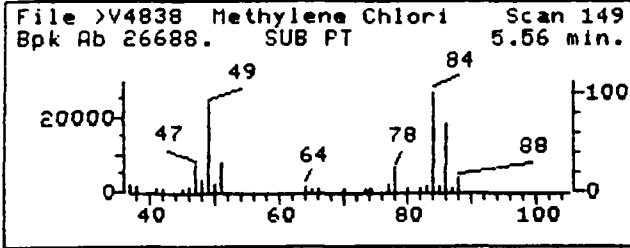
Operator ID: MARK

Quant Time: 921030 20:20

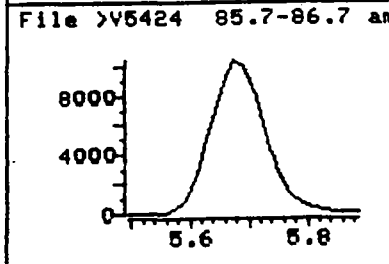
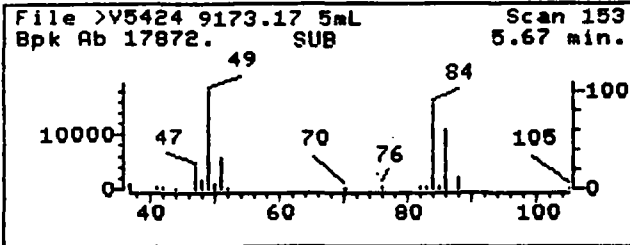
Injected at: 921030 19:43

134

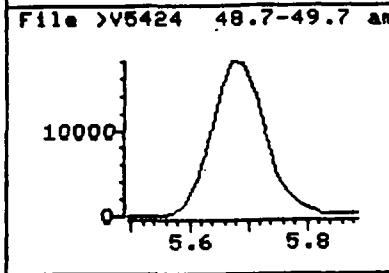
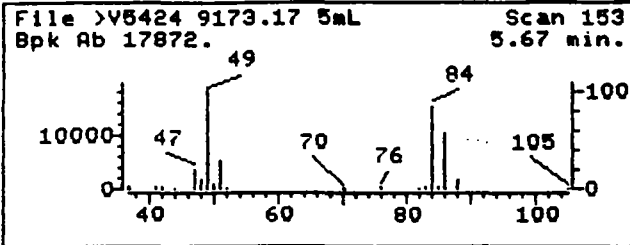
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



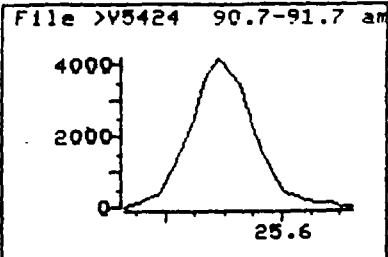
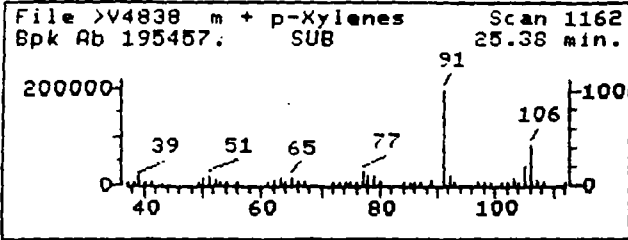
Data File: >U5424::D1
Name: 9173.17 5mL
Misc: 9173.17 5mL
Quant Time: 921030 20:20
Injected at: 921030 19:43

Quant Output File: ^U5424::DB

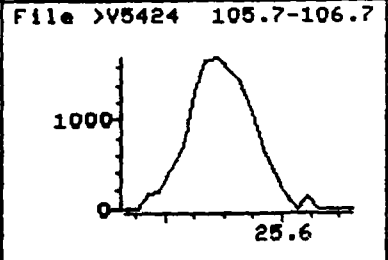
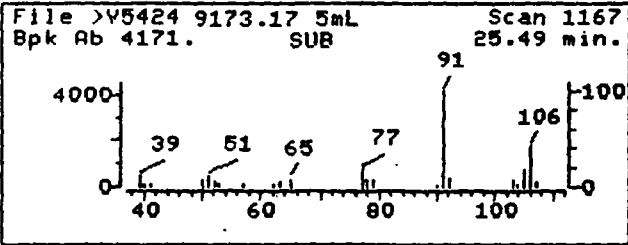
Quant ID File: IDUOA::D2
Last Calibration: 921030 12:33

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 153
Retention Time: 5.67 min.
Quant Ion: 84.0
Area: 99836
Concentration: 22.70 ppb
q-value: 80

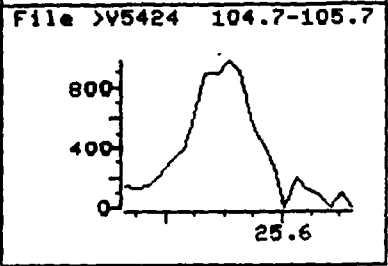
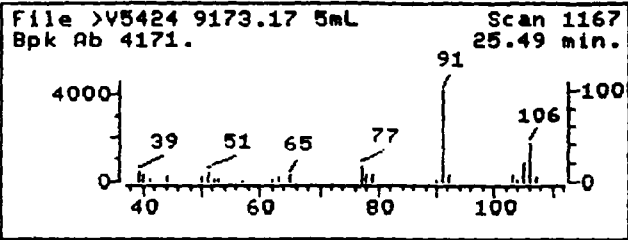
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5424::D1
Name: 9173.17 5mL
Misc: 9173.17 5mL
Quant Time: 921030 20:20
Injected at: 921030 19:43

Quant Output File: ^U5424::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: 31719
Concentration: 2.66 ppb
q-value: 95

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

PROJECT 9173
 SAMPLE ID 9173.18 5ml
 CLIENT NAME Serv-Air
 DATA FILE U5436

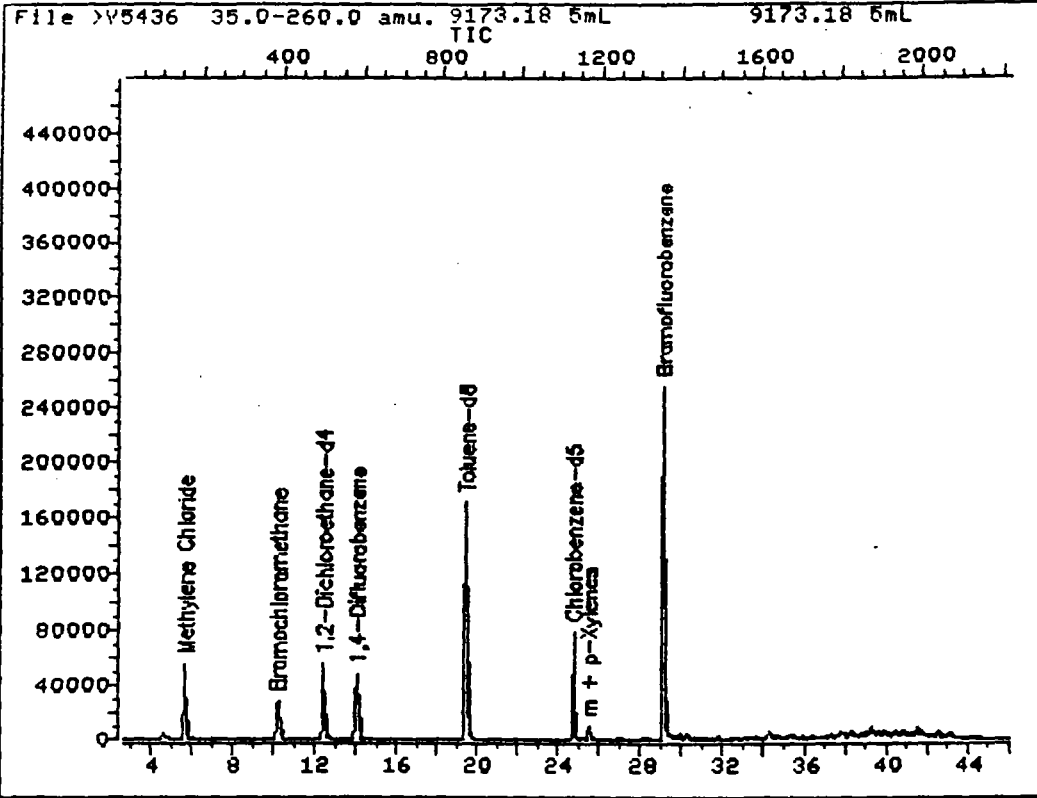
MATRIX Water
 DILUTION FACTOR 1.00
 DATE RECEIVED 10-26-92
 DATE ANALYZED 10/31/92

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	24	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	3 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

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TOTAL ION CHROMATOGRAM



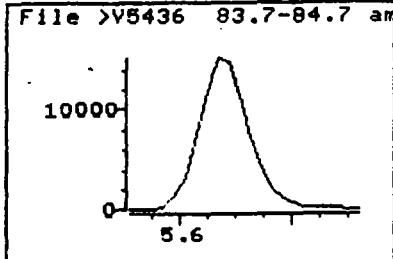
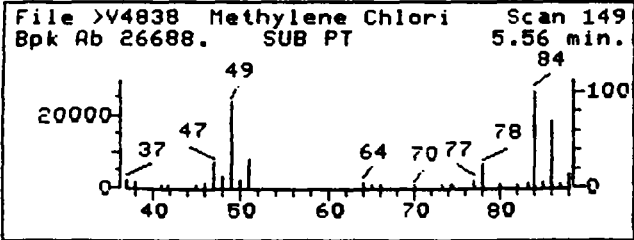
Data File: >U5436::D1
Name: 9173.18 5mL
Misc: 9173.18 5mL

Quant Output File: ^U5436::DB

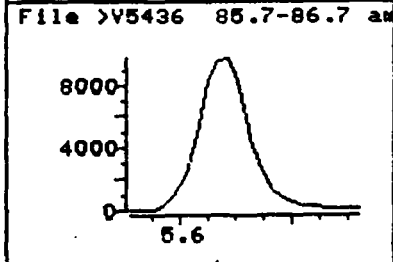
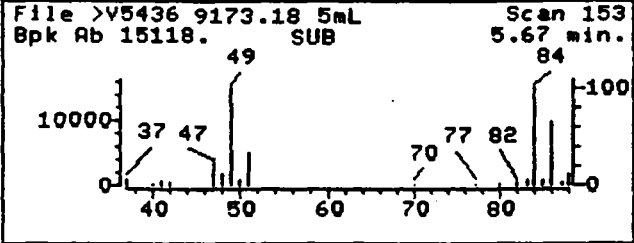
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921031 15:57

Operator ID: MARK
Quant Time: 921101 13:55
Injected at: 921031 20:07

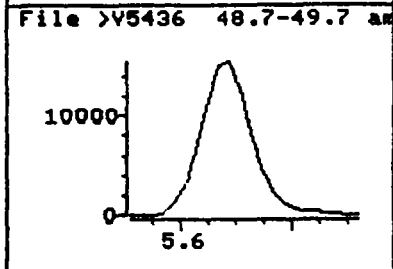
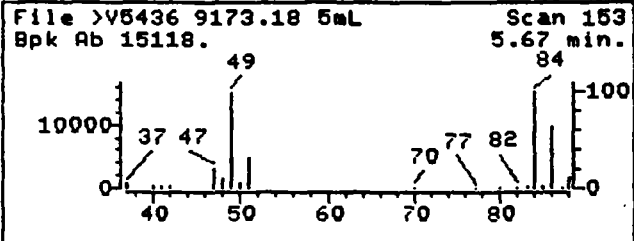
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5436::D1
Name: 9173.18 5mL
Misc: 9173.18 5mL
Quant Time: 921101 13:55
Injected at: 921031 20:07

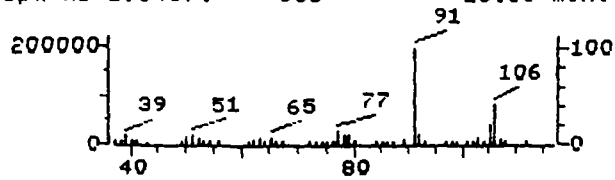
Quant Output File: ^U5436::DB

Quant ID File: IDUOA::D2
Last Calibration: 921031 15:57

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 153
Retention Time: 5.67 min.
Quant Ion: 84.0
Area: 96128
Concentration: 24.35 ppb
q-value: 90

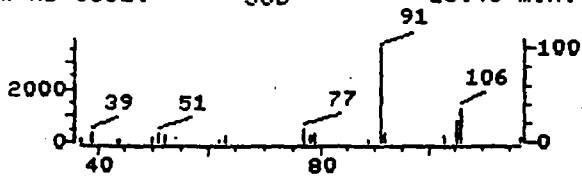
REFERENCE STANDARD SPECTRUM

File >V4838 m + p-Xylenes Scan 1162
Bpk Ab 195457. SUB 25.38 min.



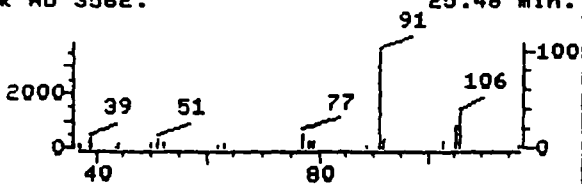
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

File >V5436 9173.18 5mL Scan 1167
Bpk Ab 3562. SUB 25.48 min.

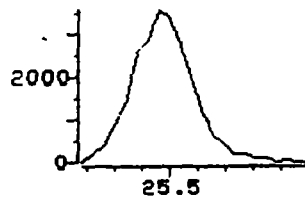


SAMPLE SPECTRUM (UNALTERED)

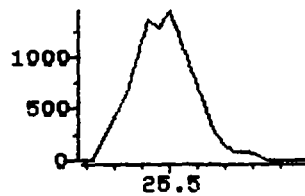
File >V5436 9173.18 5mL Scan 1167
Bpk Ab 3562. SUB 25.48 min.



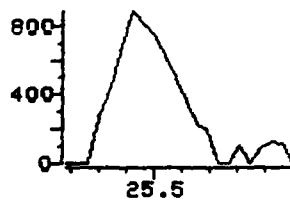
File >V5436 90.7-91.7 am



File >V5436 105.7-106.7



File >V5436 104.7-105.7



Data File: >V5436::D1
Name: 9173.18 5mL
Misc: 9173.18 5mL
Quant Time: 921101 13:55
Injected at: 921031 20:07

Quant Output File: ^V5436::DB

Compound No: 44
Compound Name: m + p-Xylenes
Scan Number: 1167
Retention Time: 25.48 min.
Quant Ion: 91.0
Area: 27505
Concentration: 2.50 ppb
q-value: 89

Quant ID File: IDUOA::D2
Last Calibration: 921031 15:57

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

PROJECT 9173
 SAMPLE ID 9173.19 5ml
 CLIENT NAME Serv-Air
 DATA FILE 05371

MATRIX Water
 DILUTION FACTOR 1.00
 DATE RECEIVED 10-26-92
 DATE ANALYZED 10/28/92

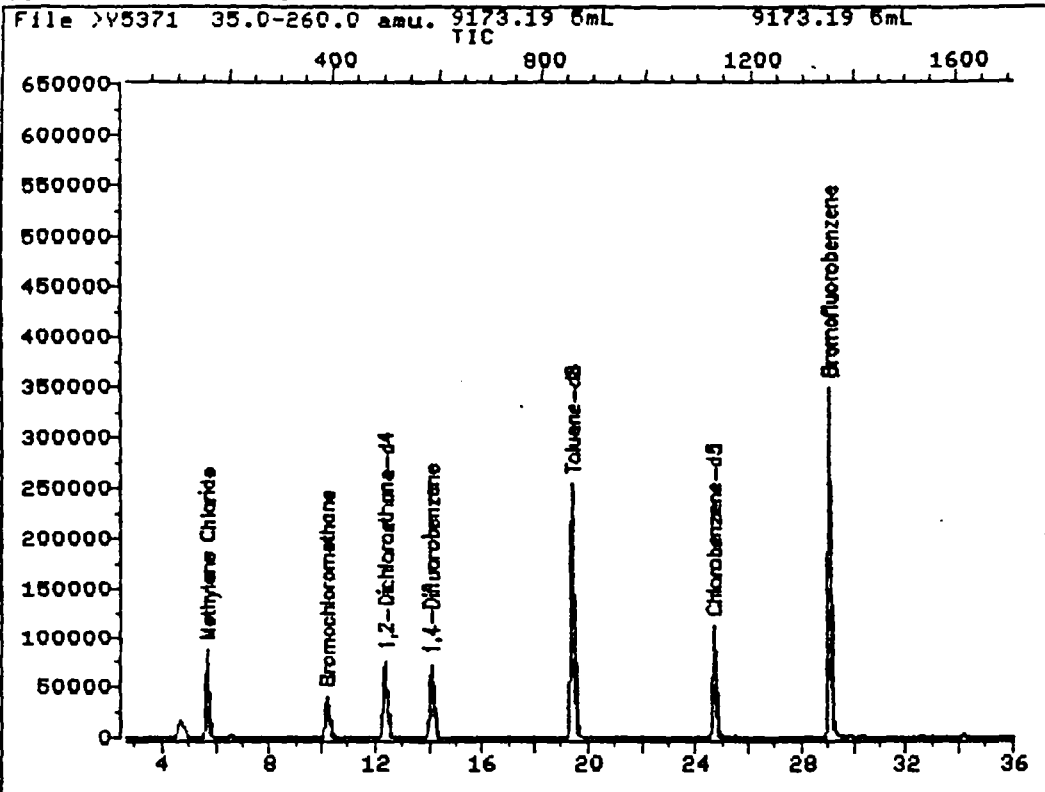
Compound	ug/L	MDL	Compound	ug/L	MDL
Chloromethane	ND	10	Dibromochloromethane	ND	5
Bromomethane	ND	10	1,1,2-Trichloroethane	ND	5
Vinyl Chloride	ND	10	Benzene	ND	5
Chloroethane	ND	10	trans-1,3-Dichloropropene	ND	5
Methylene Chloride	27 B	5	2-Chloroethylvinyl ether	ND	5
Acrolein	ND	50	Bromoform	ND	5
Acrylonitrile	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: >U5371::D1
Name: 9173.19 5mL
Misc: 9173.19 5mL

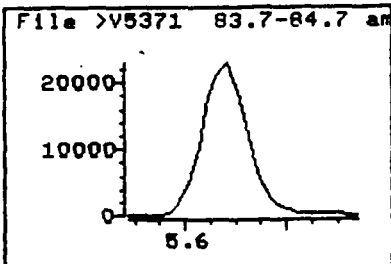
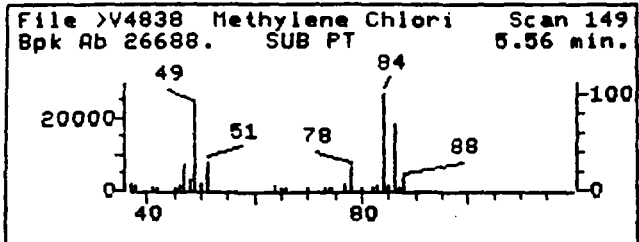
Quant Output File: ^U5371::DB

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

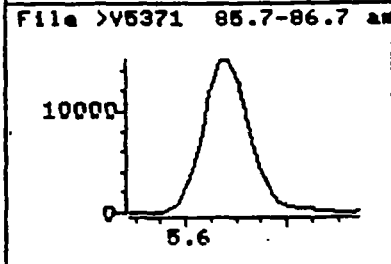
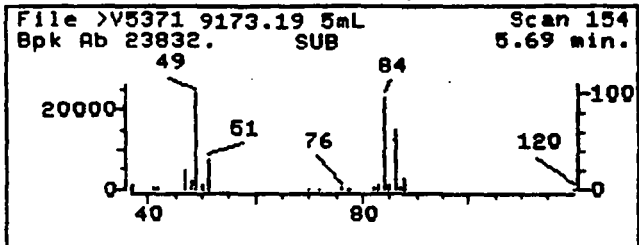
Operator ID: MARK
Quant Time: 921028 05:52
Injected at: 921028 05:15

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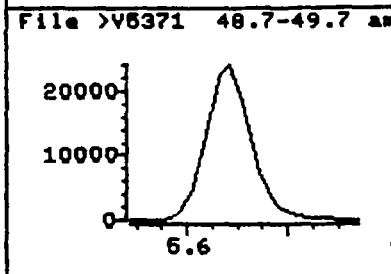
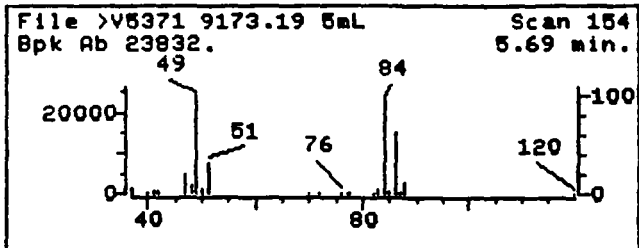
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5371::D1
Name: 9173.19 5mL
Misc: 9173.19 5mL
Quant Time: 921028 05:52
Injected at: 921028 05:15

Quant Output File: ^U5371::DB

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

Compound No: 7
Compound Name: Methylene Chloride
Scan Number: 154
Retention Time: 5.69 min.
Quant Ion: 84.0
Area: 146148
Concentration: 27.47 ppb
q-value: 88

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

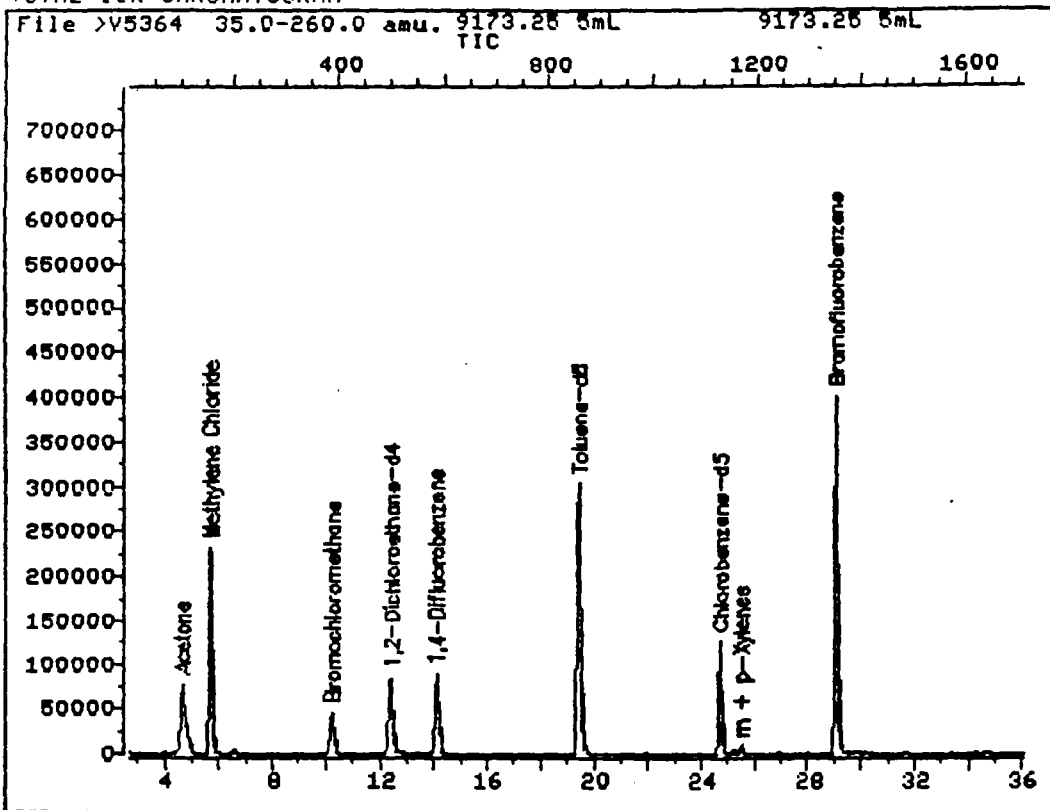
PROJECT 9173
SAMPLE ID 9173.25 5ml
CLIENT NAME Serv-Air
DATA FILE >V5364

MATRIX Water
DILUTION FACTOR 1.00
DATE RECEIVED 10-26-92
DATE ANALYZED 10/28/92

Compound	ug/L	MDL	Compound	ug/L	MDL
Chloromethane	ND	10	Dibromochloromethane	ND	5
Bromomethane	ND	10	1,1,2-Trichloroethane	ND	5
Vinyl Chloride	ND	10	Benzene	ND	5
Chloroethane	ND	10	trans-1,3-Dichloropropene	ND	5
Methylene Chloride	66 B	5	2-Chloroethylvinyl ether	ND	5
Acrolein	ND	50	Bromoform	ND	5
Acrylonitrile	ND	50	2-Hexanone	ND	5
Acetone	84	5	4-Methyl-2-Pentanone	ND	5
Carbon Disulfide	ND	5	Tetrachloroethene	ND	5
1,1-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	ND	5	Toluene	ND	5
trans-1,2-Dichloroethene	ND	5	Chlorobenzene	ND	5
Trichlorofluoromethane	ND	5	Ethylbenzene	ND	5
Chloroform	ND	5	Styrene	ND	5
1,2-Dichloroethane	ND	5	o-Xyleno	ND	5
2-Butanone	ND	5	m + p-Xylenes	1 J	5
1,1,1-Trichloroethane	ND	5	1,3-Dichlorobenzene	ND	5
Carbon Tetrachloride	ND	5	1,2-Dichlorobenzene	ND	5
Bromodichloromethane	ND	5	1,4-Dichlorobenzene	ND	5
Vinyl Acetate	ND	5	tert-Butyl Alcohol	ND	50
1,2-Dichloropropane	ND	5	Methyl tert-Butyl Ether	ND	5
cis-1,3-Dichloropropene	ND	5	Diethyl ether	ND	50
Trichloroethene	ND	5			0

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

TOTAL ION CHROMATOGRAM



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

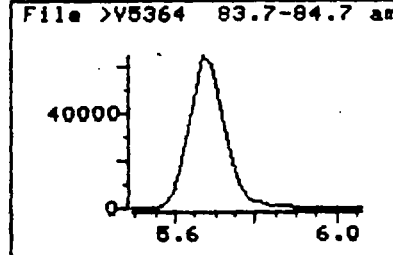
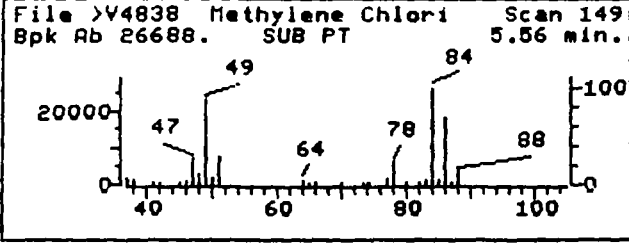
Quant Output File: ^V5364::DB

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

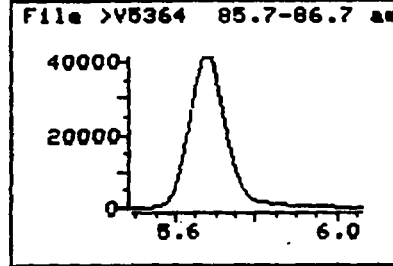
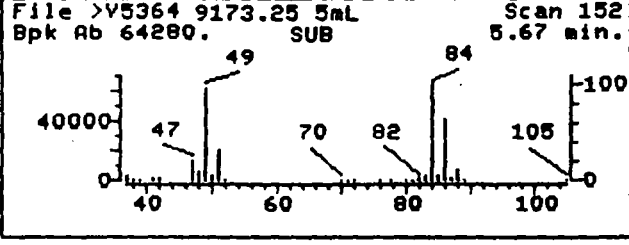
Operator ID: MARK
Quant Time: 921028 00:55
Injected at: 921028 00:19

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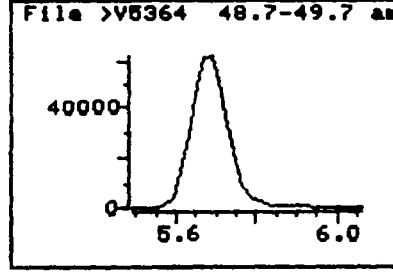
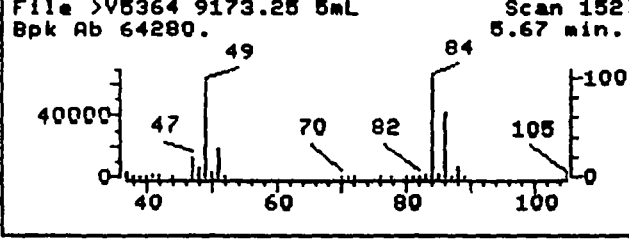
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



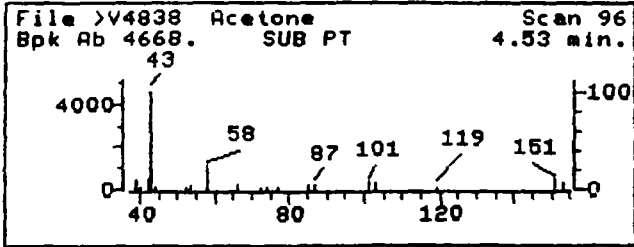
Data File: >V5364::D1
 Name: 9173.25 5mL
 Misc: 9173.25 5mL
 Quant Time: 921028 00:55
 Injected at: 921028 00:19

Quant Output File: ^V5364::DB
 Quant ID File: IDV0A::D2
 Last Calibration: 921027 22:05

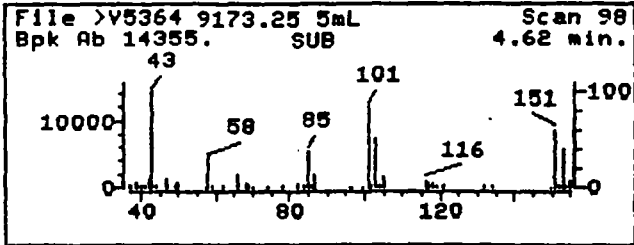
Compound No: 7
 Compound Name: Methylene Chloride
 Scan Number: 152
 Retention Time: 5.67 min.
 Quant Ion: 84.0
 Area: 412043
 Concentration: 66.23 ppb
 q-value: 93

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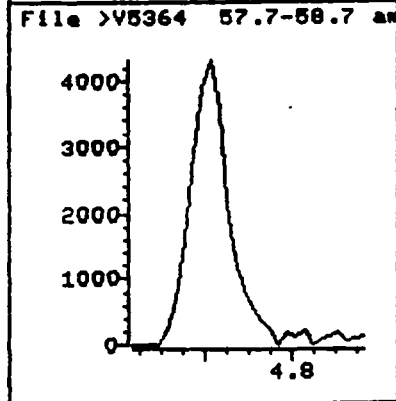
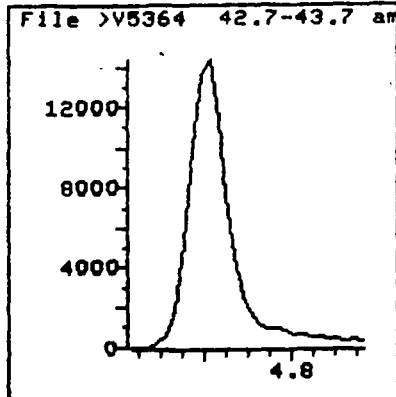
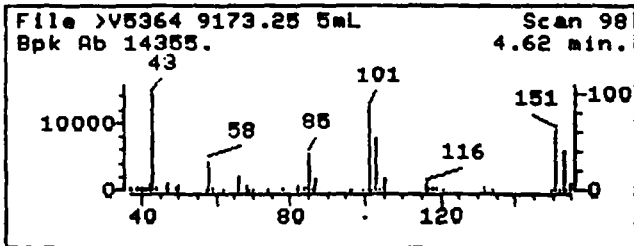
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



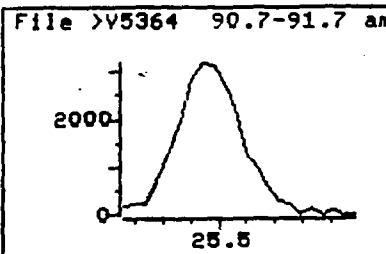
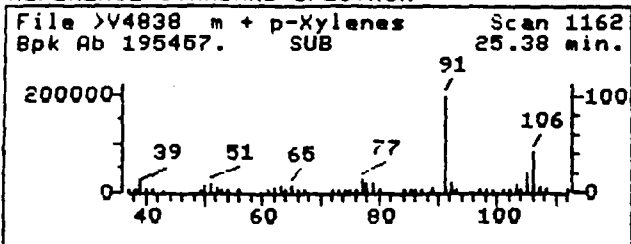
Data File: >V5364::D1
 Name: 9173.25 5mL
 Misc: 9173.25 5mL
 Quant Time: 921028 00:55
 Injected at: 921028 00:19

Quant Output File: ^V5364::DB

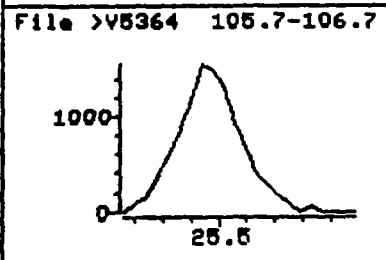
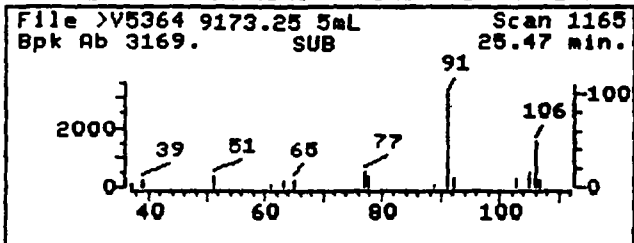
Quant ID File: IDVOA::D2
 Last Calibration: 921027 22:05

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

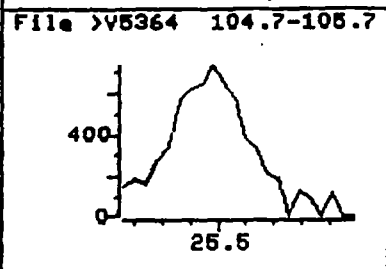
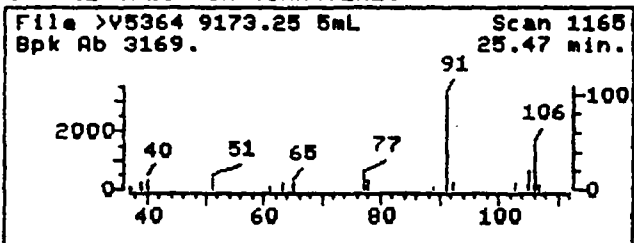
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5364::D1
Name: 9173.25 5mL
Misc: 9173.25 5mL
Quant Time: 921028 00:55
Injected at: 921028 00:19

Quant Output File: ^U5364::DB

Quant ID File: IDUOA::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

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Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

PROJECT 9173
 SAMPLE ID 9173.26 5ml
 CLIENT NAME Serv-Air
 DATA FILE 05365

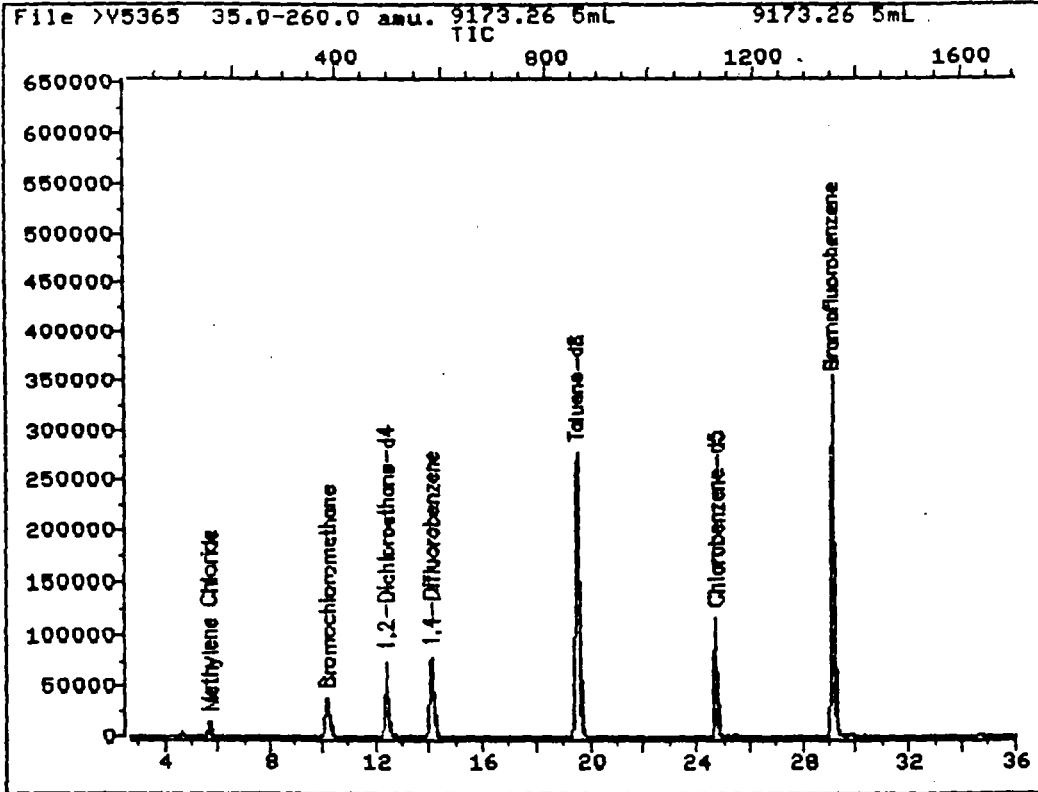
MATRIX Water
 DILUTION FACTOR 1.00
 DATE RECEIVED 10-26-92
 DATE ANALYZED 10/28/92

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

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TOTAL ION CHROMATOGRAM



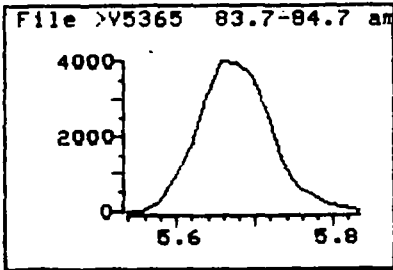
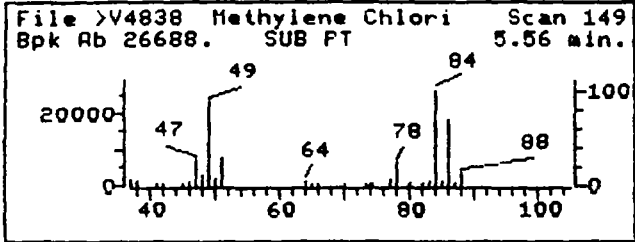
Data File: >V5365::D1
Name: 9173.26 5mL
Misc: 9173.26 5mL

Quant Output File: ^V5365::DB

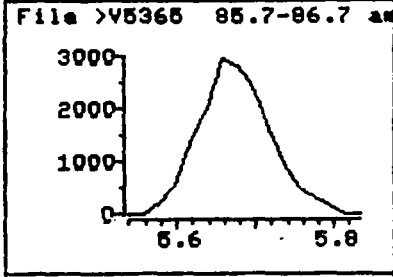
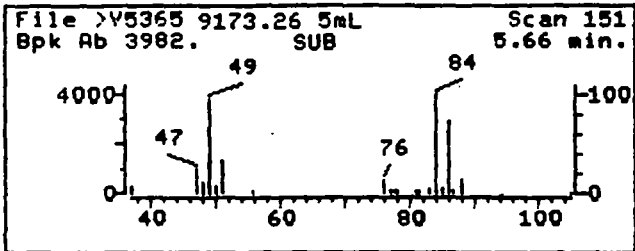
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

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

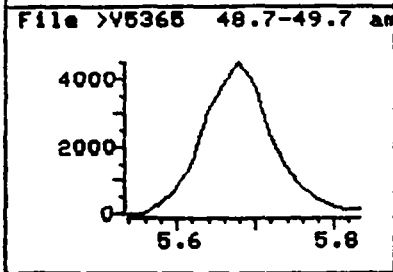
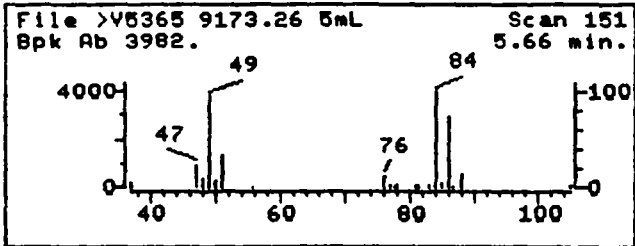
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5365::D1
 Name: 9173.26 5mL
 Misc: 9173.26 5mL
 Quant Time: 921028 01:38
 Injected at: 921028 01:01

Quant Output File: ^U5365::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

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO.

9173.15 .5m

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.15 .5m

Sample wt/vol: 0.5 (g/mL) mL

Lab File ID: >U5421

Level: (low/med) LOW

Date Received: 10-26-92

Date Analyzed: 10/30/92

Column: Capillary

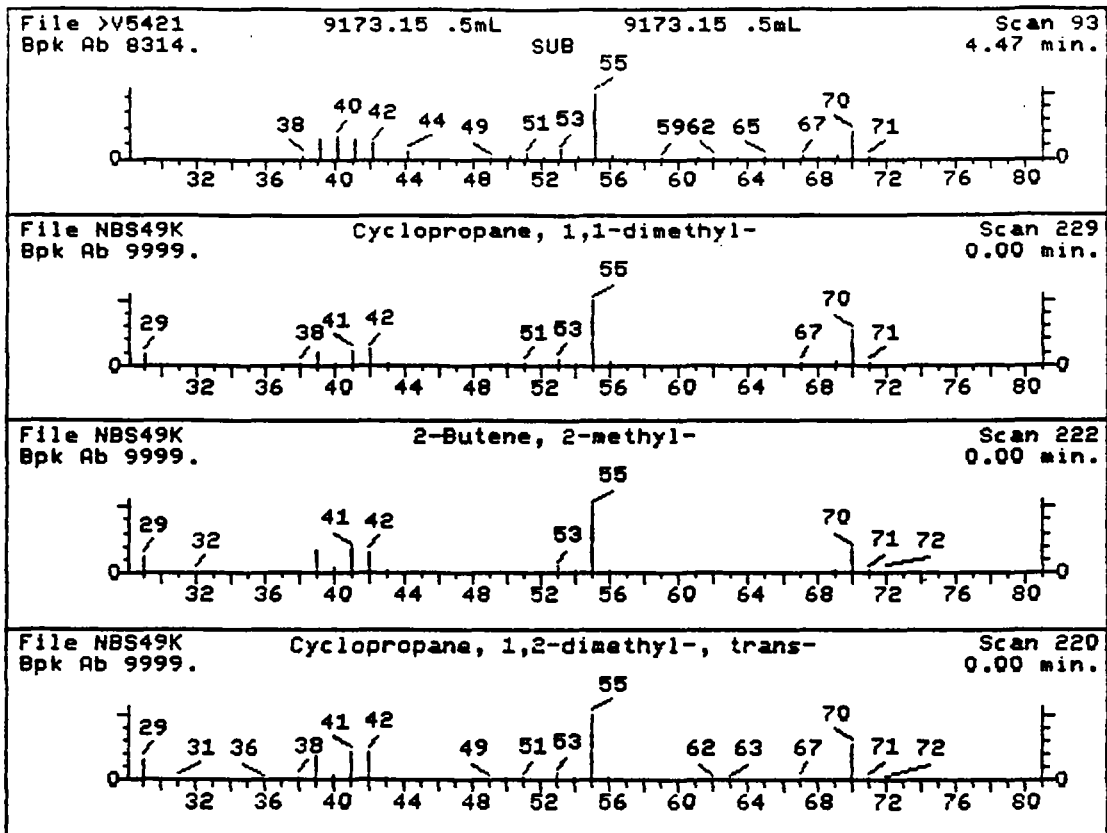
Dilution Factor: 10

CONCENTRATION UNITS:
ug/L

Number of TICs found: 12

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
11	1630940 Cyclopropane, 1,1-dimethyl-	4.47	270	75
21	106934 Ethane, 1,2-dibromo-	23.29	70	83
31	98828 Benzene, (1-methylethyl)-	28.36	210	89
41	Unknown	29.45	40	
51	108861 Benzene, bromo-	29.61	180	62
61	103651 Benzene, propyl-	29.79	200	78
71	95498 Benzene, 1-chloro-2-methyl-	30.22	210	90
81	108418 Benzene, 1-chloro-3-methyl-	30.41	380	82
91	93538 Benzeneacetaldehyde, .alpha.	31.68	430	82
101	135988 Benzene, (1-methylpropyl)-	32.39	240	96
111	Unknown	34.34	130	
121	934805 Benzene, 4-ethyl-1,2-dimethyl	35.77	60	96

250



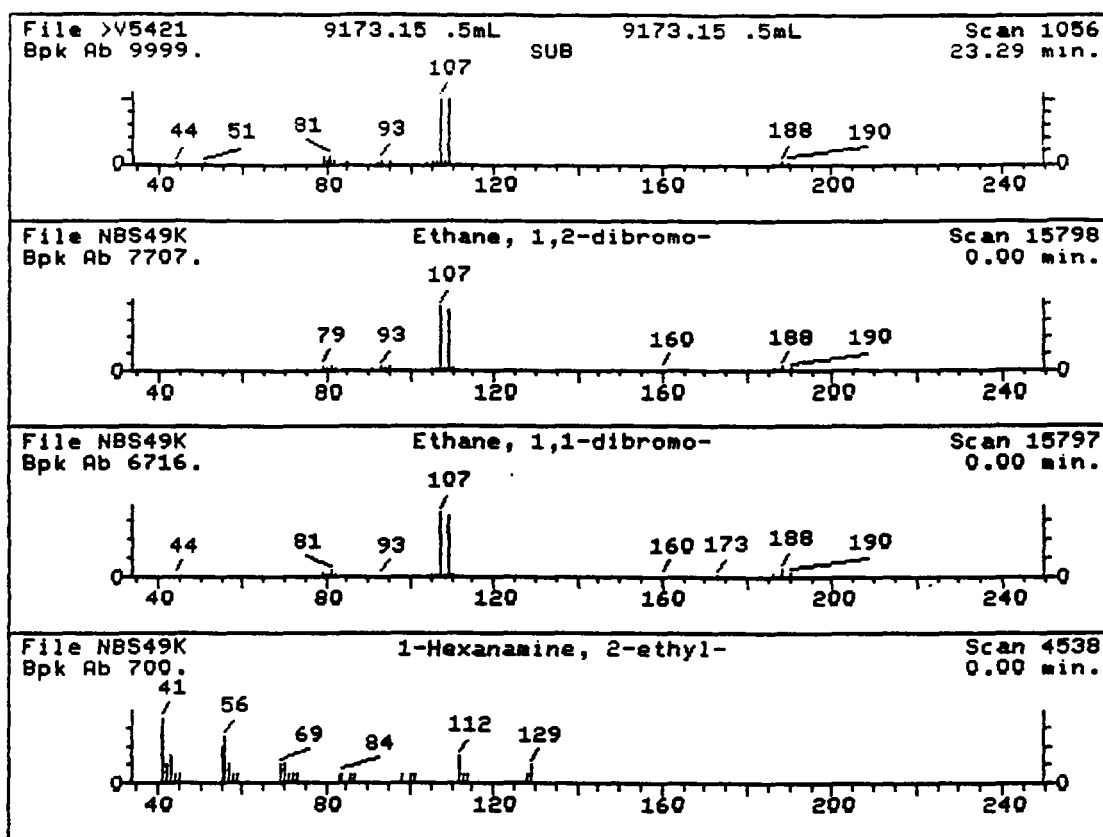
UNKNOWN #,1
 AREA = 199237.0 TENTATIVE CONCENTRATION IS 27.00

- | | |
|--|----------|
| 1. Cyclopropane, 1,1-dimethyl- | 70 C5H10 |
| 2. 2-Butene, 2-methyl- | 70 C5H10 |
| 3. Cyclopropane, 1,2-dimethyl-, trans- | 70 C5H10 |
| 4. Cyclopropane, 1,2-dimethyl-, cis- | 70 C5H10 |
| 5. 1-Butene, 2-methyl- | 70 C5H10 |
| 6. 2-Pentene, (Z)- | 70 C5H10 |

Sample file: >U5421 Spectrum #: 93
 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.	75*	1630940	3820	NBS49K	48	35	0	0	75	16	35	60
2.	71*	513359	3813	NBS49K	47	36	0	0	77	28	29	60
3.	55*	2402064	3811	NBS49K	48	42	1	0	75	29	24	35
4.	55*	930187	3817	NBS49K	48	43	1	0	75	29	24	35
5.	49*	563462	3810	NBS49K	45	35	1	0	90	28	19	27
6.	48*	627203	3809	NBS49K	44	36	1	0	100	28	19	26

251



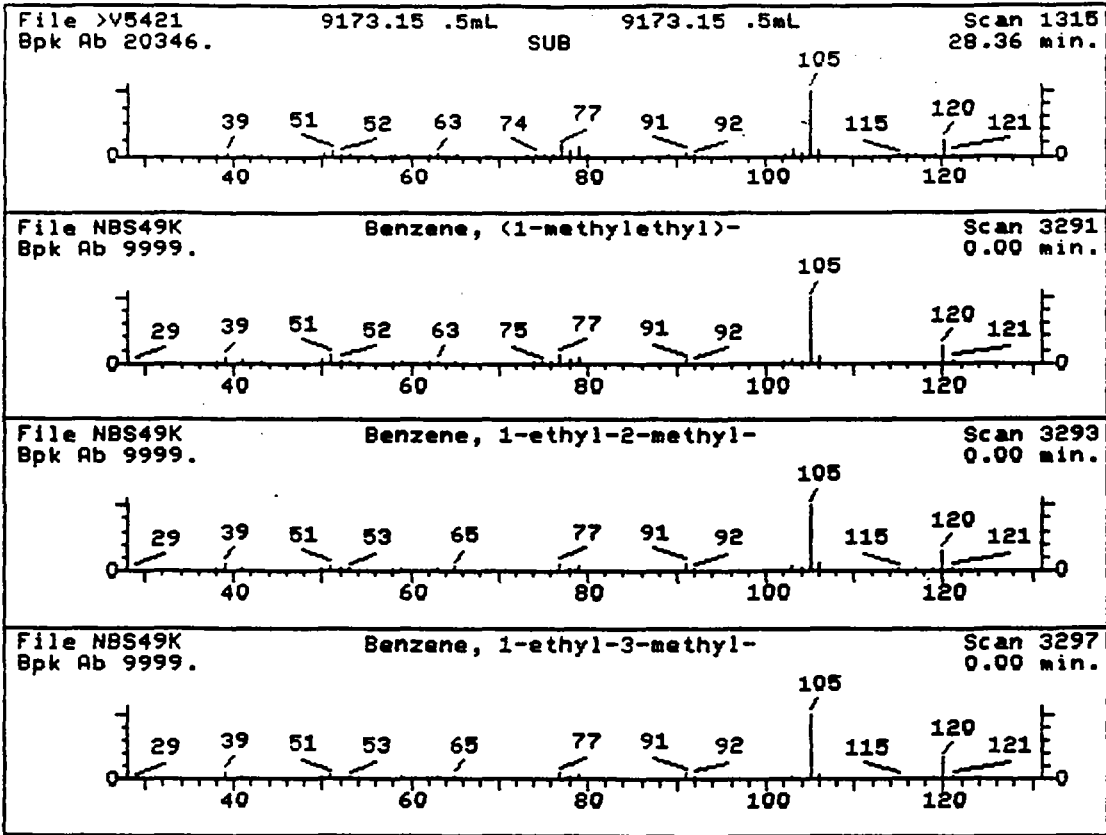
UNKNOWN #,2
 AREA = 129967.0 TENTATIVE CONCENTRATION IS 7.00

- | | |
|---------------------------------------|-------------|
| 1. Ethane, 1,2-dibromo- | 186 C2H4Br2 |
| 2. Ethane, 1,1-dibromo- | 186 C2H4Br2 |
| 3. 1-Hexanamine, 2-ethyl- | 129 C8H19N |
| 4. Benzene, 1-(bromomethyl)-4-fluoro- | 188 C7H6BrF |
| 5. Benzenamine, 2-methyl- | 107 C7H9N |
| 6. 2,3-Pyridinediamine | 109 C5H7N3 |

Sample file: >U5421 Spectrum #: 1056
 Search speed: 1 Tilting option: F No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	83*	106934	11241	NBS49K	61	41	1	0	129	6	54	57
2.	81*	557915	11618	NBS49K	71	27	2	4	144	6	53	49
3.	66*	104756	102	NBS49K	63	16	2	3	58	17	31	43
4.	26*	459461	11620	NBS49K	27	78	2	0	100	45	8	14
5.	20*	95534	11144	NBS49K	26	76	2	0	95	54	5	14
6.	15*	452584	11494	NBS49K	24	57	2	0	70	56	3	14

252



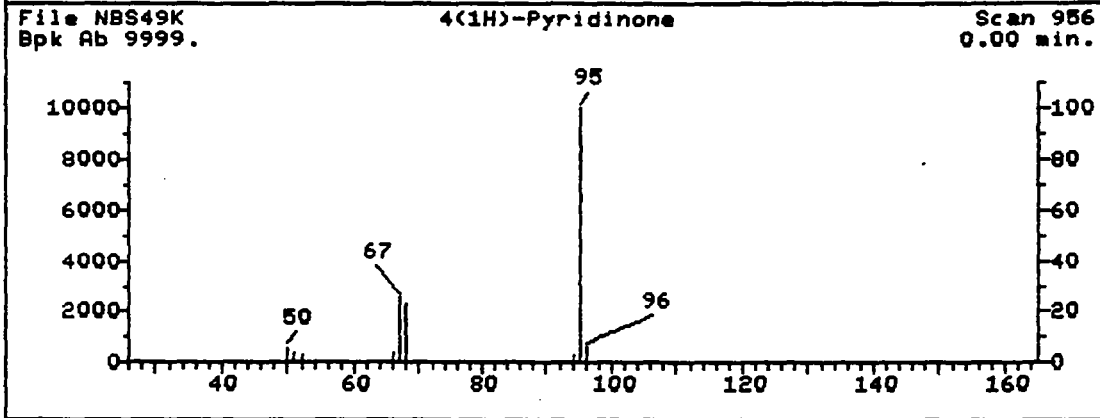
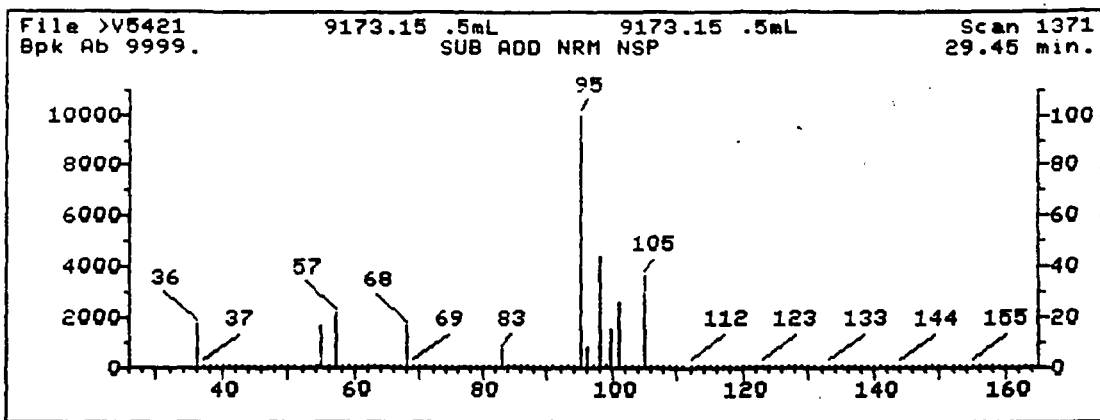
UNKNOWN #,3
 AREA = 409948.0 TENTATIVE CONCENTRATION IS 21.00

- | | |
|---------------------------------------|------------|
| 1. Benzene, (1-methylethyl)- | 120 C9H12 |
| 2. Benzene, 1-ethyl-2-methyl- | 120 C9H12 |
| 3. Benzene, 1-ethyl-3-methyl- | 120 C9H12 |
| 4. Benzene, 1-(bromomethyl)-4-methyl- | 184 C8H9Br |
| 5. Benzene, 1-ethyl-4-methyl- | 120 C9H12 |
| 6. Benzene, (1-methyl-3-butenyl)- | 146 C11H14 |

Sample file: >U5421 Spectrum #: 1315
 Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	89*	98828	13667	NBS49K	68	19	1	0	75	5	66	76
2.	76*	611143	13669	NBS49K	41	44	2	0	82	10	45	21
3.	76*	620144	13671	NBS49K	41	46	2	0	77	10	45	21
4.	70	104814	11090	NBS49K	61	38	2	2	71	7	42	14
5.	67*	622968	13672	NBS49K	41	44	2	0	85	12	34	21
6.	52	10340495	10939	NBS49K	44	36	2	0	100	19	20	14

252



UNKNOWN #,4
 AREA = 78663.00 TENTATIVE CONCENTRATION IS 4.00

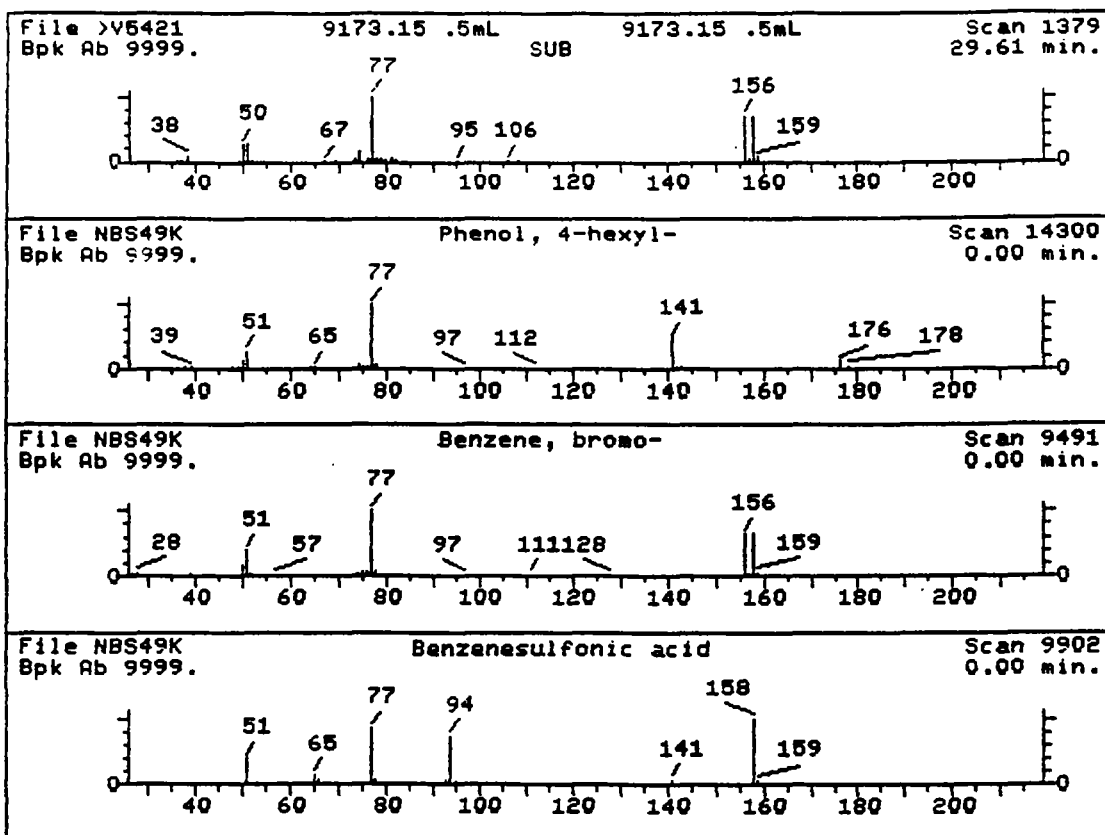
1. 4(1H)-Pyridinone

95 C5H5NO

Sample file: >U5421 Spectrum #: 1371
 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.	20*	108963	8815	NBS49K	22	33	1	0	71	54	5 14

254



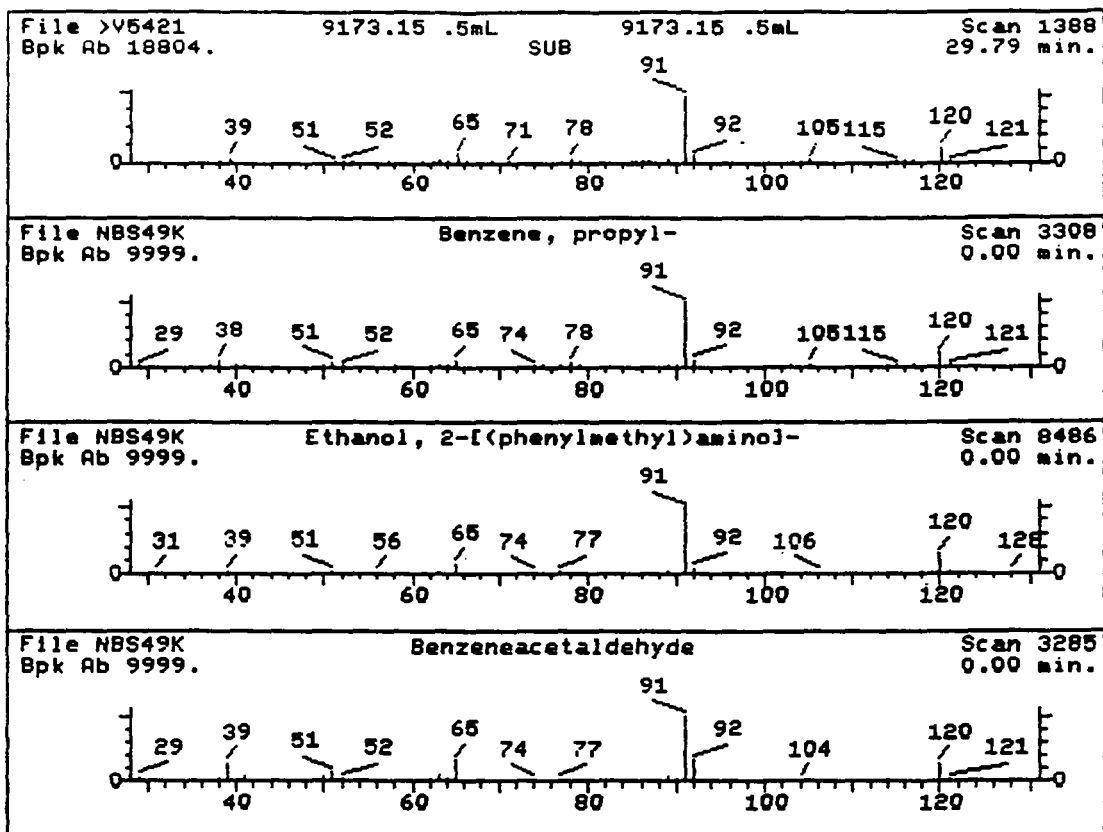
UNKNOWN #,5
 AREA = 361381.0 TENTATIVE CONCENTRATION IS 18.00

- | | |
|--|--------------|
| 1. Phenol, 4-hexyl- | 178 C12H18O |
| 2. Benzene, bromo- | 156 C6H5Br |
| 3. Benzenesulfonic acid | 158 C6H6O3S |
| 4. Propane, 2-bromo-1-chloro- | 156 C3H6BrCl |
| 5. 1,5-Hexadiene, 3,3,4,4-tetrafluoro- | 154 C6H6F4 |

Sample file: >U5421 Spectrum #: 1379
 Search speed: 1 Tilting option: F No. of ion ranges searched: 40

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	67*	2446697	5288	NBS49K	46	28	0	3	26	30	27	56
2.	62*	108861	20440	NBS49K	62	30	1	-2	62	30	25	48
3.	15*	98113	20798	NBS49K	28	51	2	0	69	60	3	14
4.	15*	3017956	5285	NBS49K	32	55	2	0	100	56	3	16
5.	11*	1763219	5282	NBS49K	28	42	1	0	100	62	2	15

255

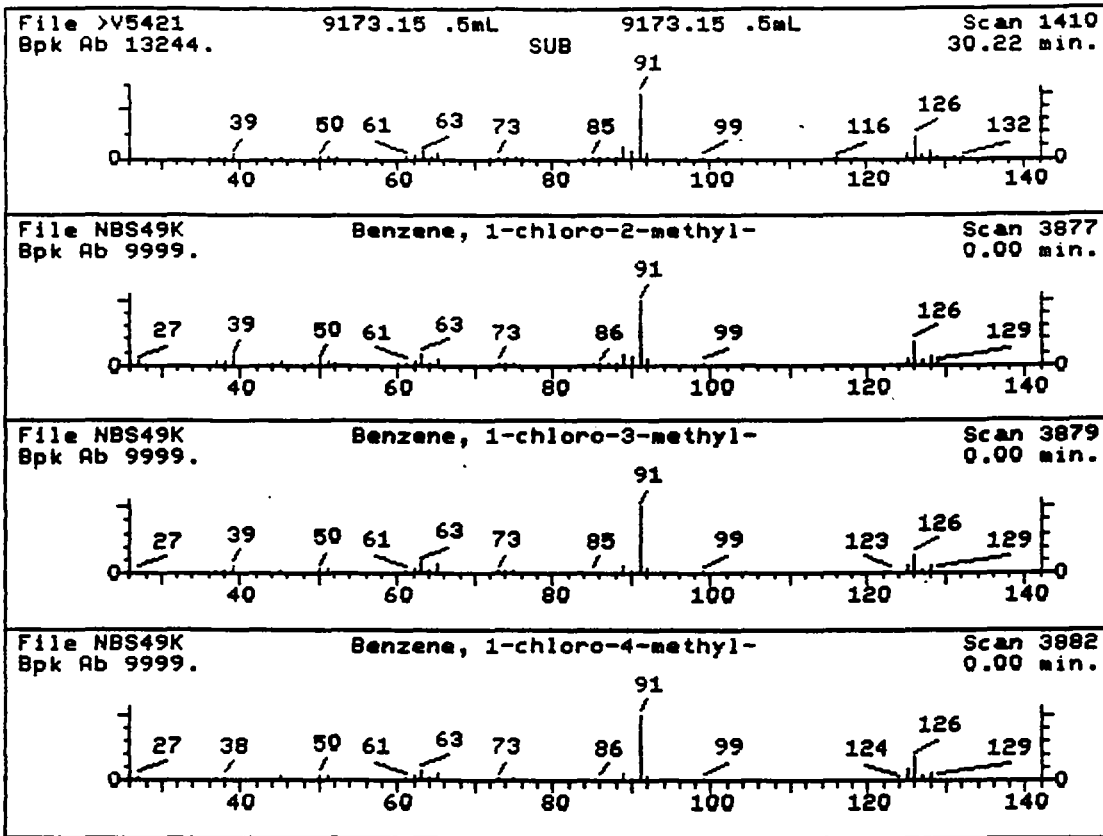


UNKNOWN #,6
AREA = 397850.0 TENTATIVE CONCENTRATION IS 20.00

- | | |
|---------------------------------------|-------------|
| 1. Benzene, propyl- | 120 C9H12 |
| 2. Ethanol, 2-[(phenylmethyl)aminol]- | 151 C9H13NO |
| 3. Benzeneacetaldehyde | 120 C8H8O |
| 4. Spiro[3.3]hepta-1,5-diene | 92 C7H8 |

Sample file: >V5421 Spectrum #: 1388
Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	78*	103651	13679	NBS49K	33	52	2	0	100	3	55	16
2.	70	104632	13712	NBS49K	42	37	2	0	76	10	42	14
3.	20*	122781	13663	NBS49K	25	54	2	0	33	52	5	14
4.	11*	22635785	8473	NBS49K	22	44	2	0	34	61	2	13



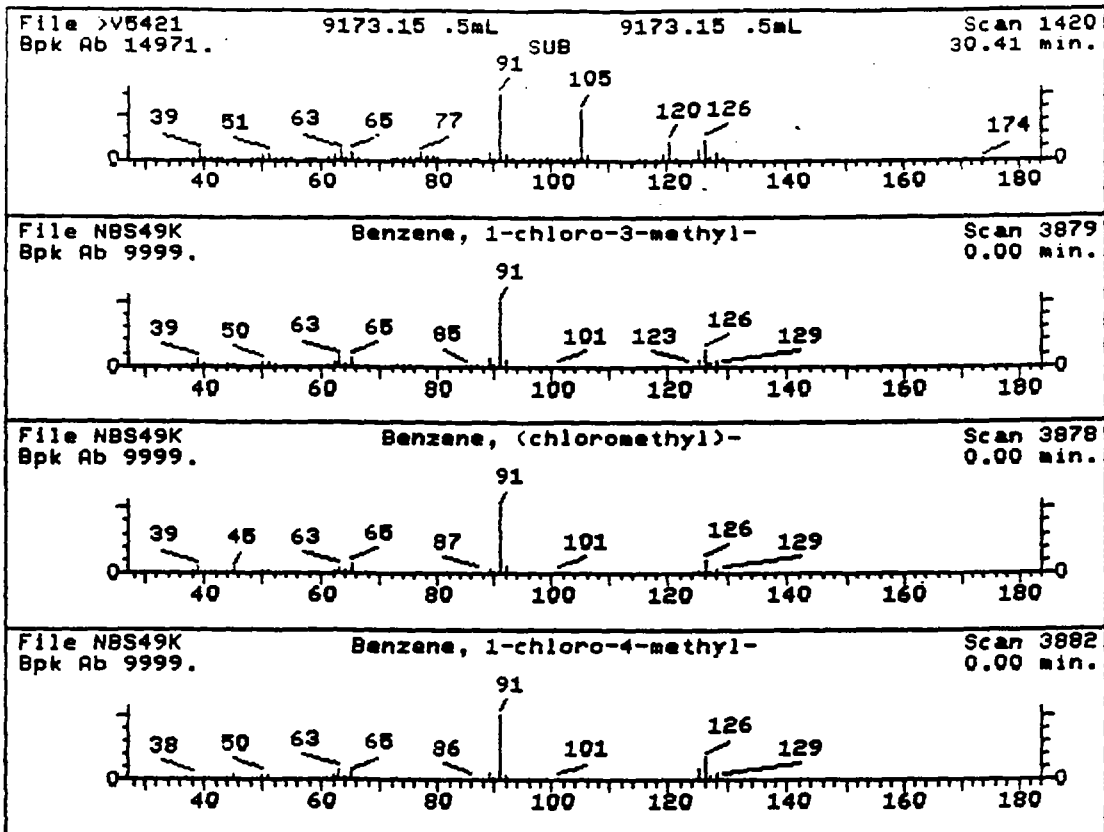
UNKNOWN #,7
AREA = 421170.0 TENTATIVE CONCENTRATION IS 21.00

- | | |
|---|---------------|
| 1. Benzene, 1-chloro-2-methyl- | 126 C7H7C1 |
| 2. Benzene, 1-chloro-3-methyl- | 126 C7H7C1 |
| 3. Benzene, 1-chloro-4-methyl- | 126 C7H7C1 |
| 4. BENZYL CHLORIDE | 126 C7H7C1 |
| 5. Benzene, (chloromethyl)- | 126 C7H7C1 |
| 6. Hydrazinecarboxylic acid, phenylmethyl ester | 166 C8H10N2O2 |

Sample file: >U5421 Spectrum #: 1410
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.	90*	95498	14713	NBS49K	73	29	0	0	63	26	57	92
2.	79*	108418	14715	NBS49K	68	23	0	-2	75	13	43	67
3.	74*	106434	14718	NBS49K	65	35	0	0	55	36	28	78
4.	60*	25168052	14717	NBS49K	37	48	2	0	100	13	30	18
5.	60*	100447	14714	NBS49K	31	53	2	0	100	14	30	15
6.	37	5331431	14821	NBS49K	39	46	1	0	95	26	14	14

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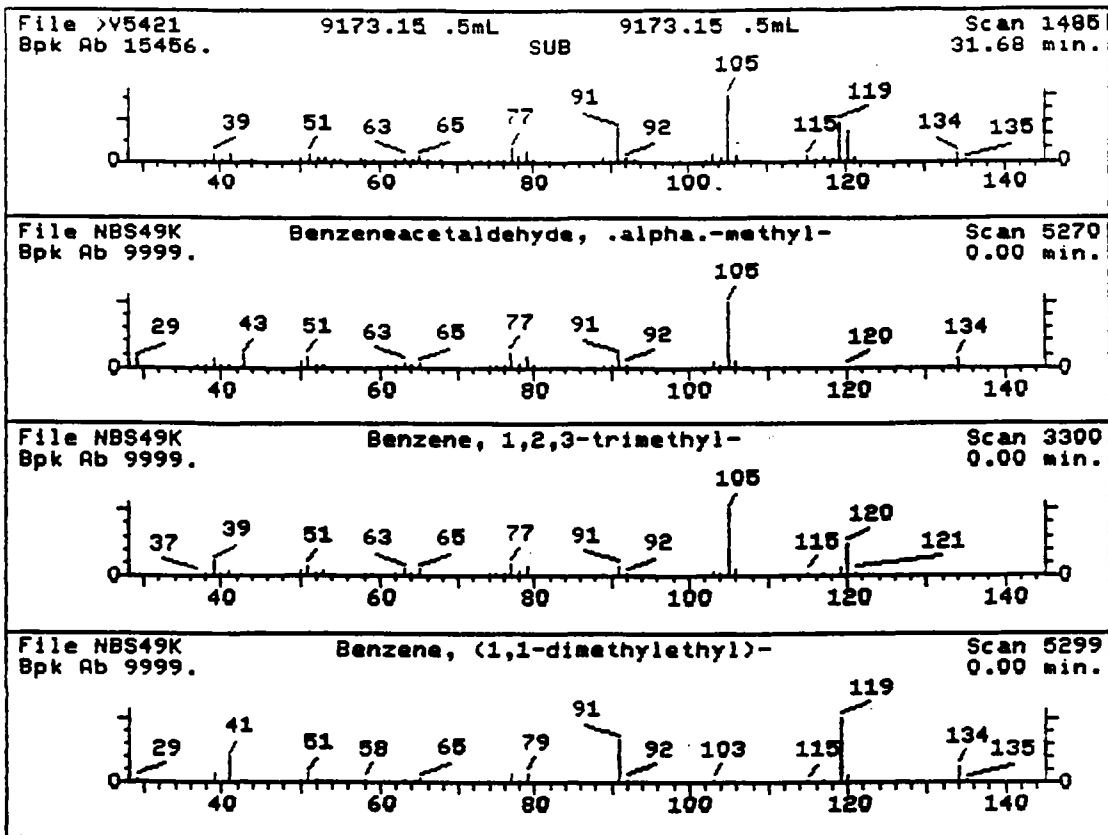
UNKNOWN #,8
AREA = 740128.0 TENTATIVE CONCENTRATION IS 38.00

- | | |
|-------------------------------------|------------|
| 1. Benzene, 1-chloro-3-methyl- | 126 C7H7Cl |
| 2. Benzene, (chloromethyl)- | 126 C7H7Cl |
| 3. Benzene, 1-chloro-4-methyl- | 126 C7H7Cl |
| 4. 1,3,5-Cycloheptatriene, 7-ethyl- | 120 C9H12 |
| 5. Benzene, (1-methylethyl)- | 120 C9H12 |
| 6. Benzene, 1-ethyl-2-methyl- | 120 C9H12 |

Sample file: >U5421 Spectrum #: 1420
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.	82*	108418	14715	NBS49K	76	15	1	0	91	42	33	8.
2.	51*	100447	14714	NBS49K	54	30	1	-2	90	29	24	3
3.	49*	106434	14718	NBS49K	72	28	0	0	52	57	18	8:
4.	48*	17634514	13678	NBS49K	53	48	2	-1	76	22	17	1.
5.	44*	98828	13667	NBS49K	65	22	0	-2	69	53	11	6:
6.	41*	611143	13669	NBS49K	52	33	0	0	76	55	11	6:

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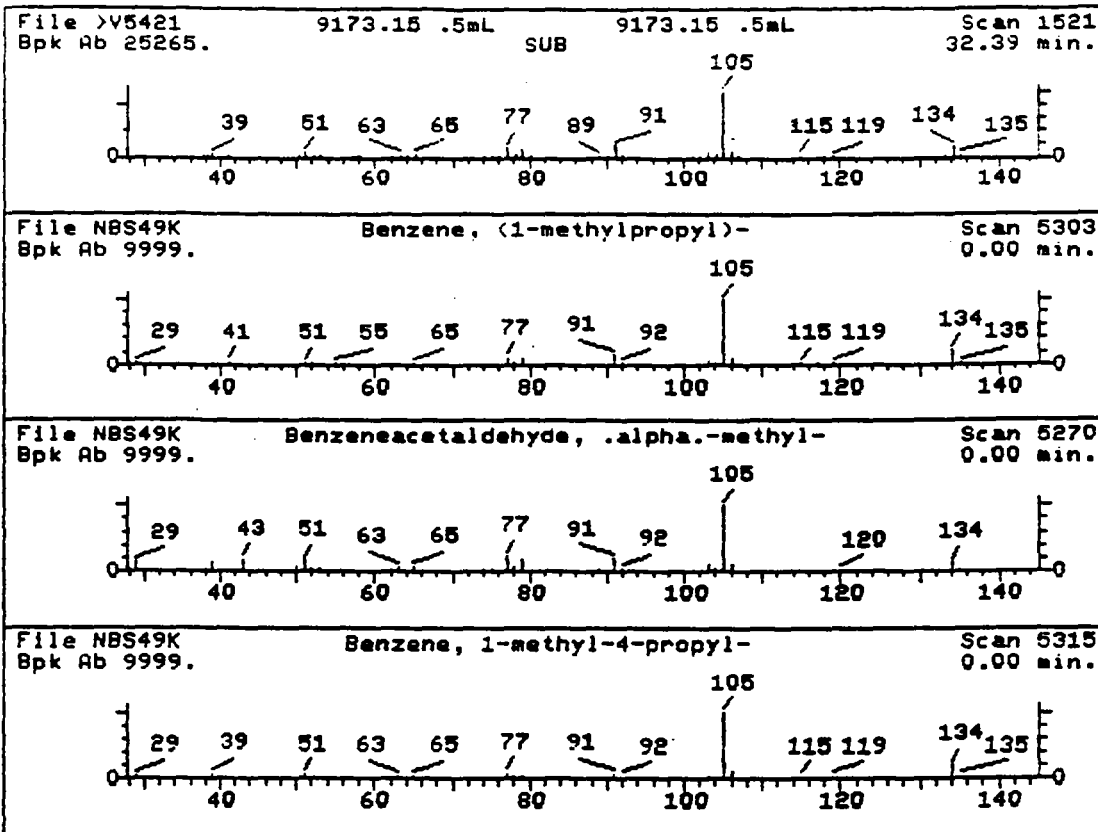
UNKNOWN #,9
 AREA = 841885.0 TENTATIVE CONCENTRATION IS 43.00

- | | |
|---|------------|
| 1. Benzeneacetaldehyde, .alpha.-methyl- | 134 C9H10O |
| 2. Benzene, 1,2,3-trimethyl- | 120 C9H12 |
| 3. Benzene, (1,1-dimethylethyl)- | 134 C10H14 |
| 4. Benzene, 1,2,4-trimethyl- | 120 C9H12 |
| 5. Benzene, 1,3,5-trimethyl- | 120 C9H12 |
| 6. Benzene, 1-methyl-2-(1-methylethyl)- | 134 C10H14 |

Sample file: >V5421 Spectrum #: 1485
 Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	82*	93538	16228	NBS49K	74	20	0	0	80	46	40	92
2.	73*	526738	13674	NBS49K	71	29	1	0	92	26	37	71
3.	67*	98066	13528	NBS49K	52	43	0	3	55	30	27	54
4.	67*	95636	13676	NBS49K	49	46	0	0	77	30	27	59
5.	62*	108678	13673	NBS49K	42	46	0	0	66	30	25	49
6.	62*	527844	13539	NBS49K	41	51	0	3	51	29	25	40

259



UNKNOWN #,10
AREA = 465435.0 TENTATIVE CONCENTRATION IS 24.00

- | | |
|--|------------|
| 1. Benzene, (1-methylpropyl)- | 134 C10H14 |
| 2. Benzeneacetaldehyde, .alpha.-methyl- | 134 C9H10O |
| 3. Benzene, 1-methyl-4-propyl- | 134 C10H14 |
| 4. Benzene, (2-iodoethyl)- | 232 C8H9I |
| 5. Benzene, 1,1'-(1-methyl-1,2-ethanediyl)bis- | 196 C15H16 |
| 6. Benzene, 1-methyl-3-propyl- | 134 C10H14 |

Sample file: >V5421 Spectrum #: 1521
Search speed: 1 Tilting option: F No. of ion ranges searched: 42

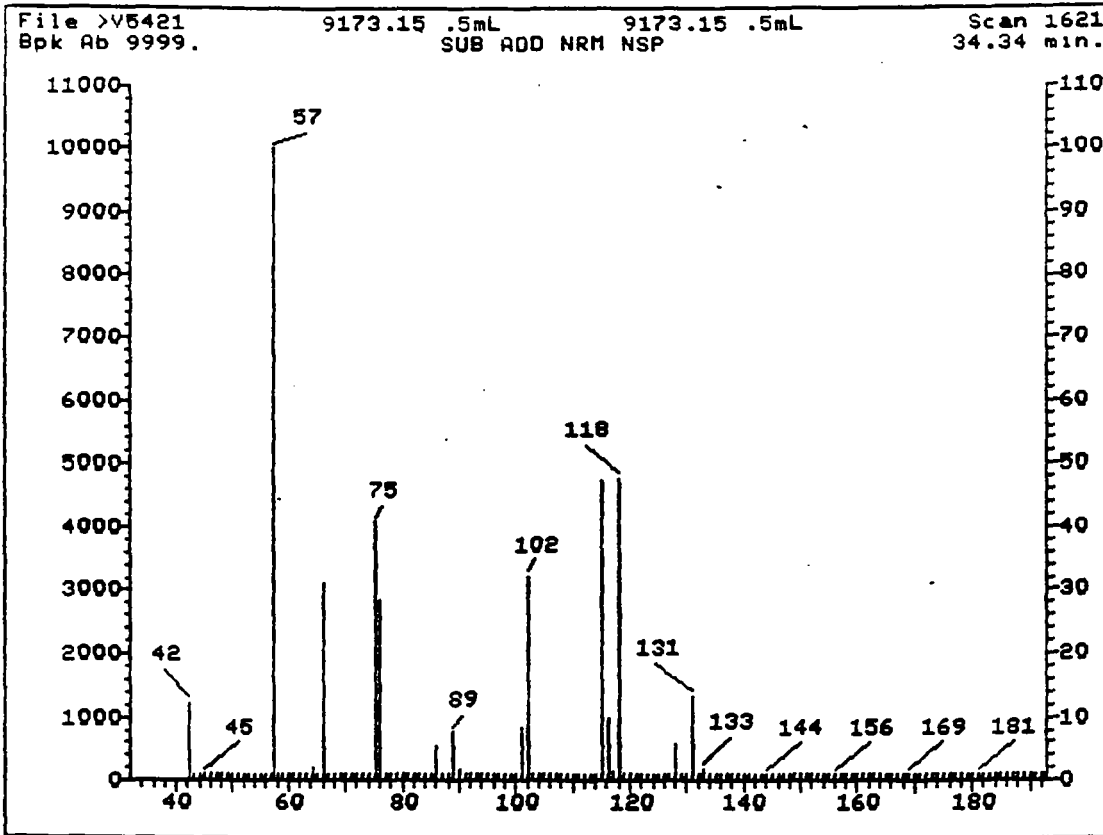
	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	96*	135988	16252	NBS49K	78	5	0	4	80	5	72	9
2.	86*	93538	16228	NBS49K	64	30	2	-2	77	3	60	3
3.	79*	1074551	16260	NBS49K	61	22	1	0	87	12	43	6
4.	70	17376044	11115	NBS49K	65	47	2	0	79	7	42	1
5.	70	5814857	10954	NBS49K	56	43	2	0	100	7	42	1
6.	67*	1074437	16249	NBS49K	48	39	2	0	70	14	34	2

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File >V5421
Bpk Ab 9999.

9173.15 .5mL
SUB ADD NRM NSP

Scan 1621
34.34 min.

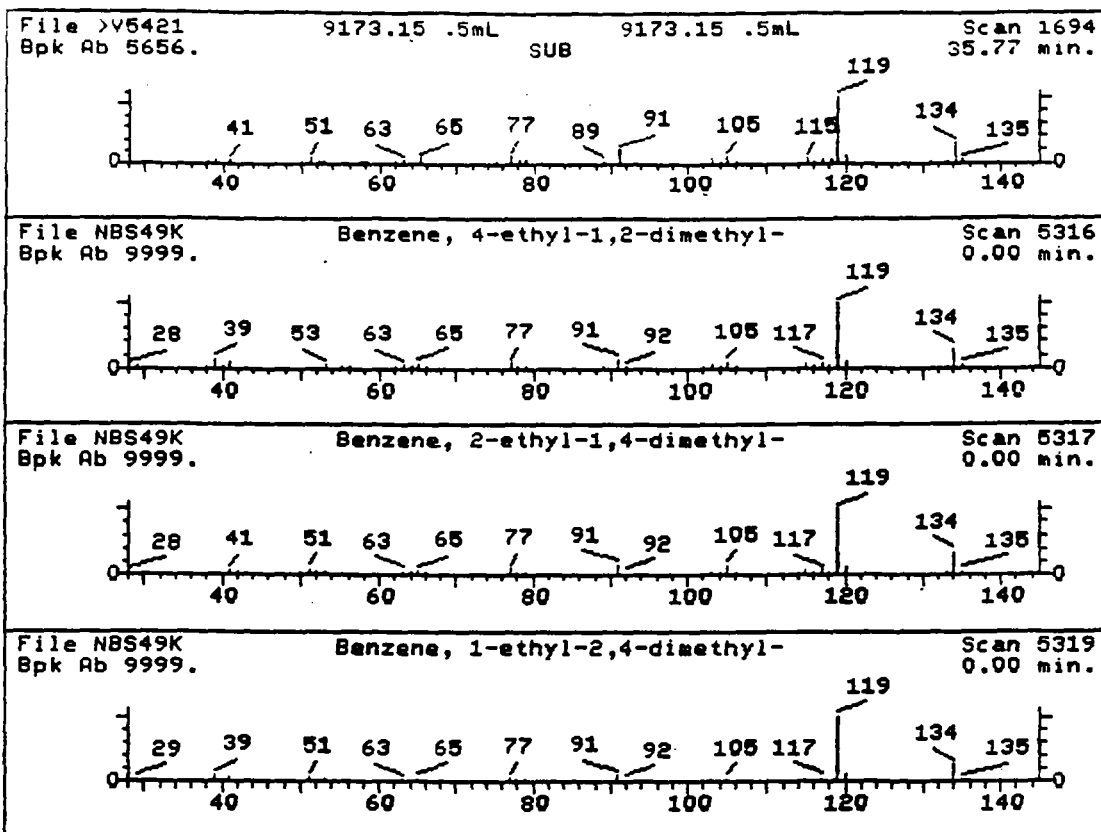


UNKNOWN #,11
AREA = 256436.0 TENTATIVE CONCENTRATION IS 13.00

Sample file: >V5421 Spectrum #: 1621

No data base entries were retrieved.

261



UNKNOWN #,12
AREA = 110270.0 TENTATIVE CONCENTRATION IS 6.00

- | | |
|---|------------|
| 1. Benzene, 4-ethyl-1,2-dimethyl- | 134 C10H14 |
| 2. Benzene, 2-ethyl-1,4-dimethyl- | 134 C10H14 |
| 3. Benzene, 1-ethyl-2,4-dimethyl- | 134 C10H14 |
| 4. Benzene, 2-ethyl-1,3-dimethyl- | 134 C10H14 |
| 5. Benzene, 1-ethyl-2,3-dimethyl- | 134 C10H14 |
| 6. Benzene, 1-methyl-3-(1-methylethyl)- | 134 C10H14 |

Sample file: >V5421 Spectrum #: 1694
Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	96*	934805	13534	NBS49K	77	16	0	0	80	1	72	94
2.	95*	1758889	13535	NBS49K	80	14	0	0	72	3	72	95
3.	89*	874419	13536	NBS49K	78	10	1	4	100	3	66	76
4.	89*	2870044	13529	NBS49K	74	15	1	4	100	3	66	74
5.	89*	933982	13533	NBS49K	73	18	1	0	87	3	66	77
6.	89*	535773	13538	NBS49K	68	21	2	0	100	5	66	60

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE NO

9173.16 .5m

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.16 .5m

Sample wt/vol: 0.5 (g/mL) mL

Lab File ID: >U5422

Level: (low/med) LOW

Date Received: 10-26-92

Date Analyzed: 10/30/92

Column: Capillary

Dilution Factor: 10

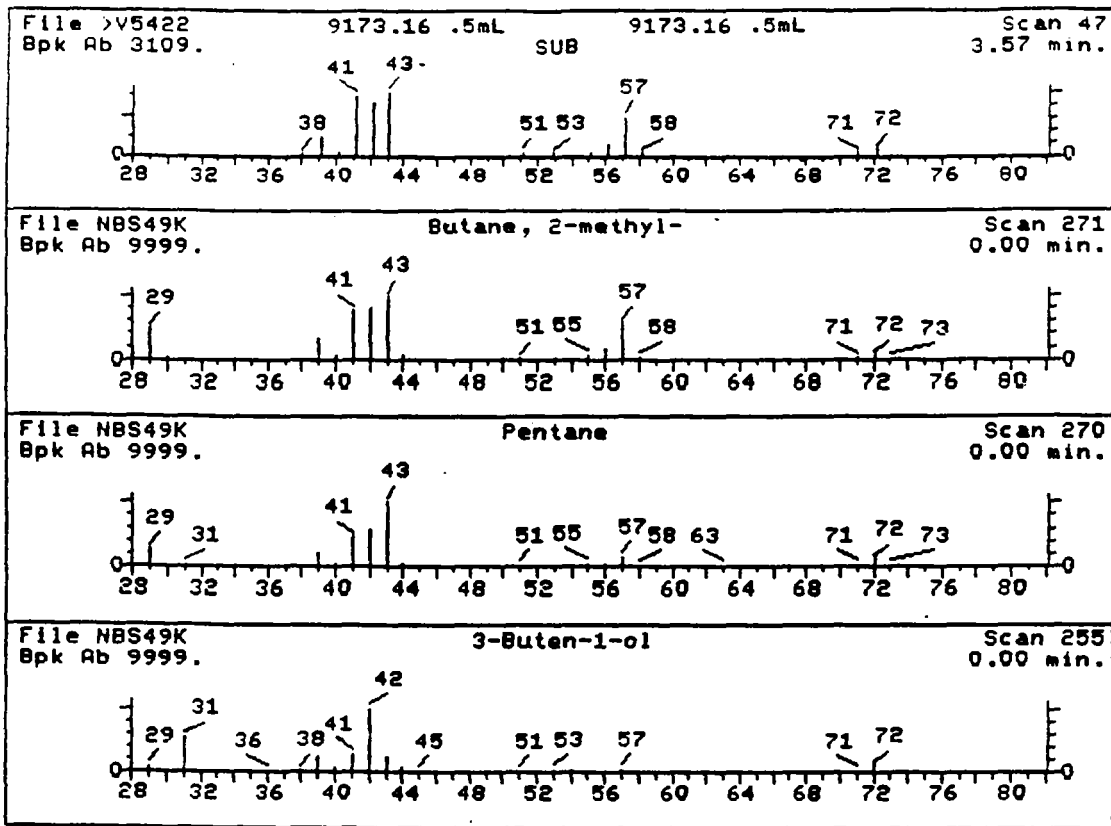
CONCENTRATION UNITS:

Number of TICs found: 9

ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
11 78784	Butane, 2-methyl-	3.57	180	81
21 1630940	Cyclopropane, 1,1-dimethyl-	4.47	430	76
31	Hydrocarbon	8.57	110	
41 98862	Ethanone, 1-phenyl-	30.21	60	36
51 526738	Benzene, 1,2,3-trimethyl-	33.34	90	91
61 87616	Benzene, 1,2,3-trichloro-	33.88	170	89
71 496117	1H-Indene, 2,3-dihydro-	34.33	280	86
81 87683	1,3-Butadiene, 1,1,2,3,4,4-h	35.55	310	58
91 933982	Benzene, 1-ethyl-2,3-dimethyl	35.76	110	83

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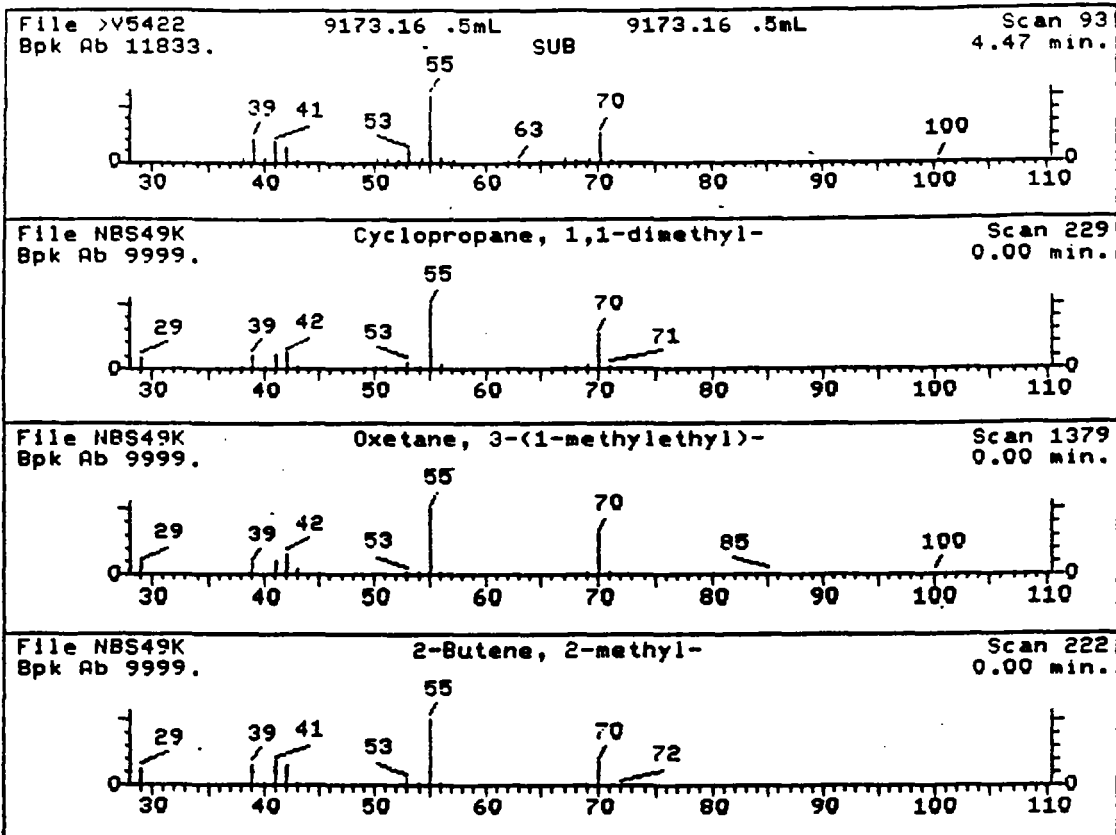
UNKNOWN #,1
 AREA = 108310.0 TENTATIVE CONCENTRATION IS 18.00

- | | |
|-------------------------|----------|
| 1. Butane, 2-methyl- | 72 C5H12 |
| 2. Pentane | 72 C5H12 |
| 3. 3-Buten-1-ol | 72 C4H8O |
| 4. Aziridine, 1-methyl- | 57 C3H7N |

Sample file: >U5422 Spectrum #: 47
 Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_I
1.	81*	78784	241	NBS49K	54	37	1	0	94	6	53	42
2.	43*	109660	240	NBS49K	24	60	1	0	100	24	17	14
3.	20*	627270	4456	NBS49K	28	54	2	0	82	55	5	14
4.	20*	1072442	237	NBS49K	20	60	1	0	78	53	5	14

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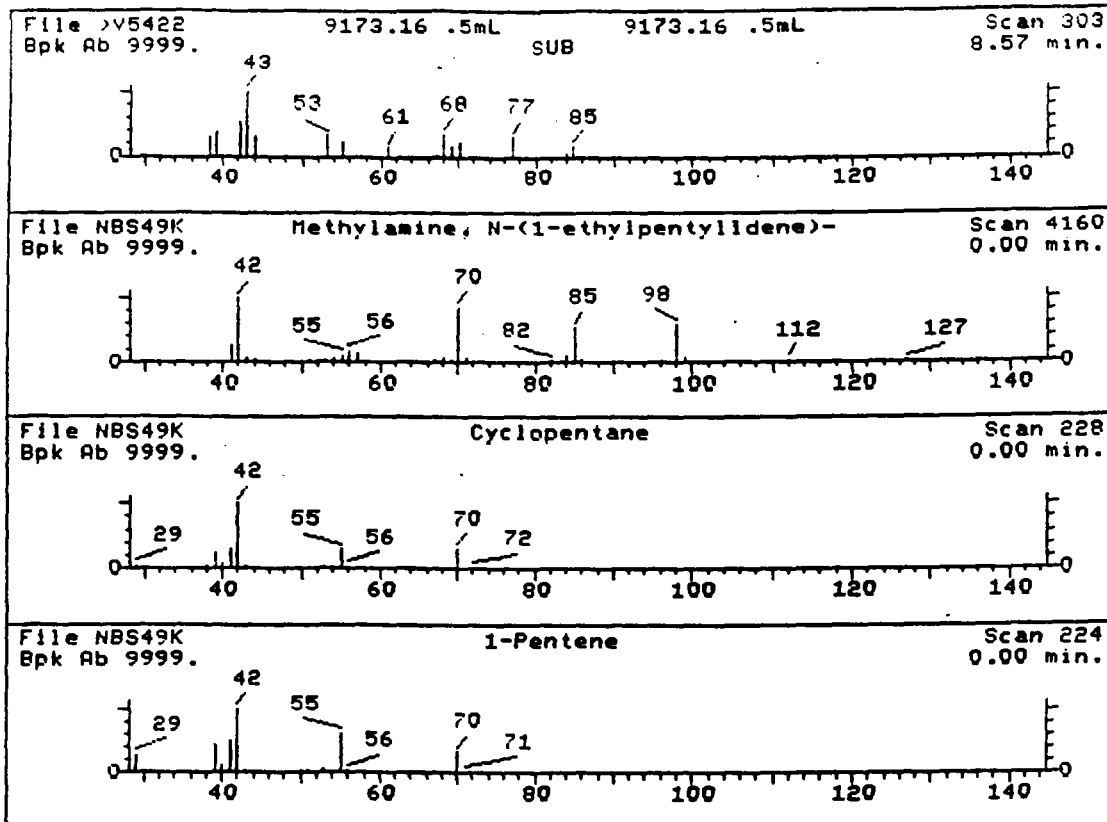
UNKNOWN #,2
 AREA = 253687.0 TENTATIVE CONCENTRATION IS 43.00

- | | |
|--|------------|
| 1. Cyclopropane, 1,1-dimethyl- | 70 C5H10 |
| 2. Oxetane, 3-(1-methylethyl)- | 100 C6H12O |
| 3. 2-Butene, 2-methyl- | 70 C5H10 |
| 4. 2-Pentene, (Z)- | 70 C5H10 |
| 5. 2-Pentene, (E)- | 70 C5H10 |
| 6. Cyclopropane, 1,2-dimethyl-, trans- | 70 C5H10 |

Sample file: >V5422 Spectrum #: 93
 Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_
1.	76*	1630940	3820	NBS49K	42	41	0	0	69	11	40	9
2.	60*	10317176	3865	NBS49K	35	39	1	0	69	15	30	:
3.	59*	513359	3813	NBS49K	47	36	1	0	86	22	27	:
4.	58*	627203	3809	NBS49K	44	36	1	0	100	20	25	:
5.	58*	646048	3818	NBS49K	44	36	1	0	100	20	25	:
6.	56*	2402064	3811	NBS49K	48	42	2	0	74	22	22	:

265



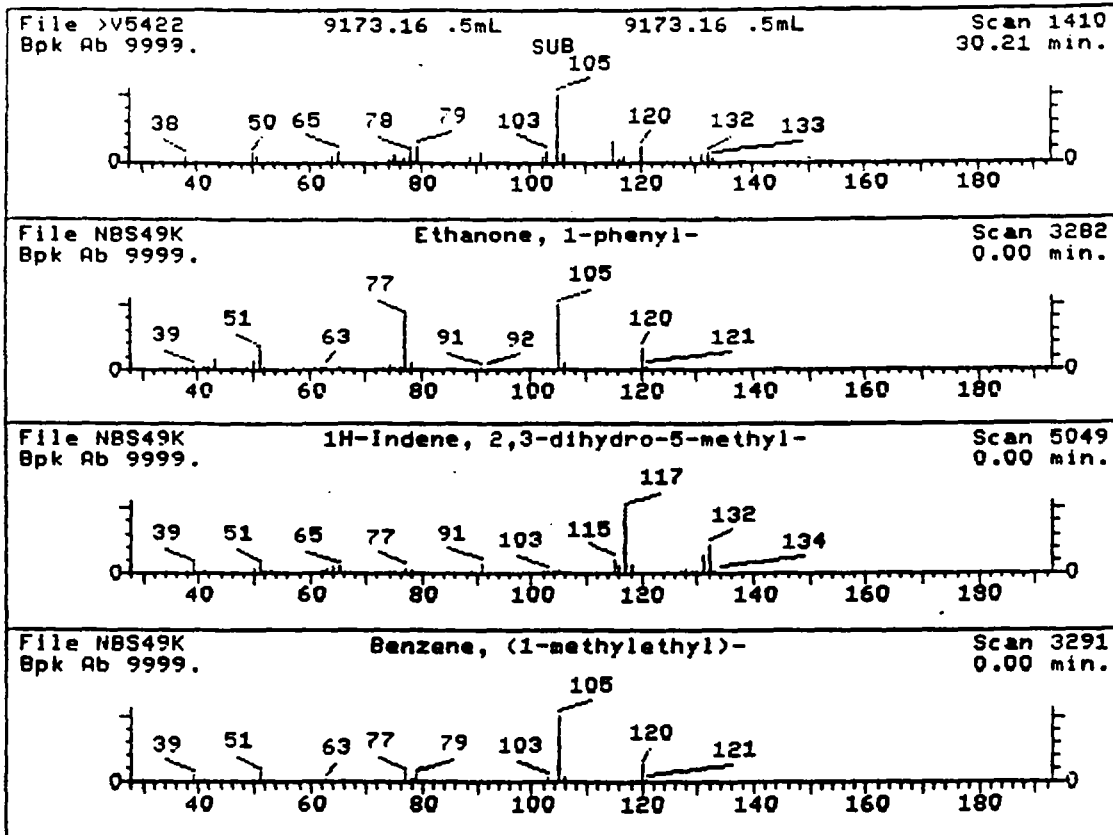
UNKNOWN #,3
 AREA = 65666.00 TENTATIVE CONCENTRATION IS 11.00

- | | |
|---|-------------|
| 1. Methylamine, N-(1-ethylpentylidene)- | 127 C8H17N |
| 2. Cyclopentane | 70 C5H10 |
| 3. 1-Pentene | 70 C5H10 |
| 4. Propanenitrile, 2-methyl- | 69 C4H7N |
| 5. Azetidine, 1,3-dimethyl- | 85 C5H11N |
| 6. Hydroxylamine, O-pentyl- | 103 C5H13NO |

Sample file: >U5422 Spectrum #: 303
 Search speed: 1 Tilting option: F No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	20*	18641731	3957	NBS49K	23	77	3	0	54	54	5	12
2.	15*	287923	3819	NBS49K	33	41	1	0	54	60	3	18
3.	15*	109671	3815	NBS49K	23	63	2	0	54	60	3	13
4.	15*	78820	3542	NBS49K	21	72	1	0	54	59	3	14
5.	11*	55683380	6514	NBS49K	25	65	1	0	54	62	2	14
6.	11*	5963746	3873	NBS49K	23	69	2	0	78	63	2	13

266



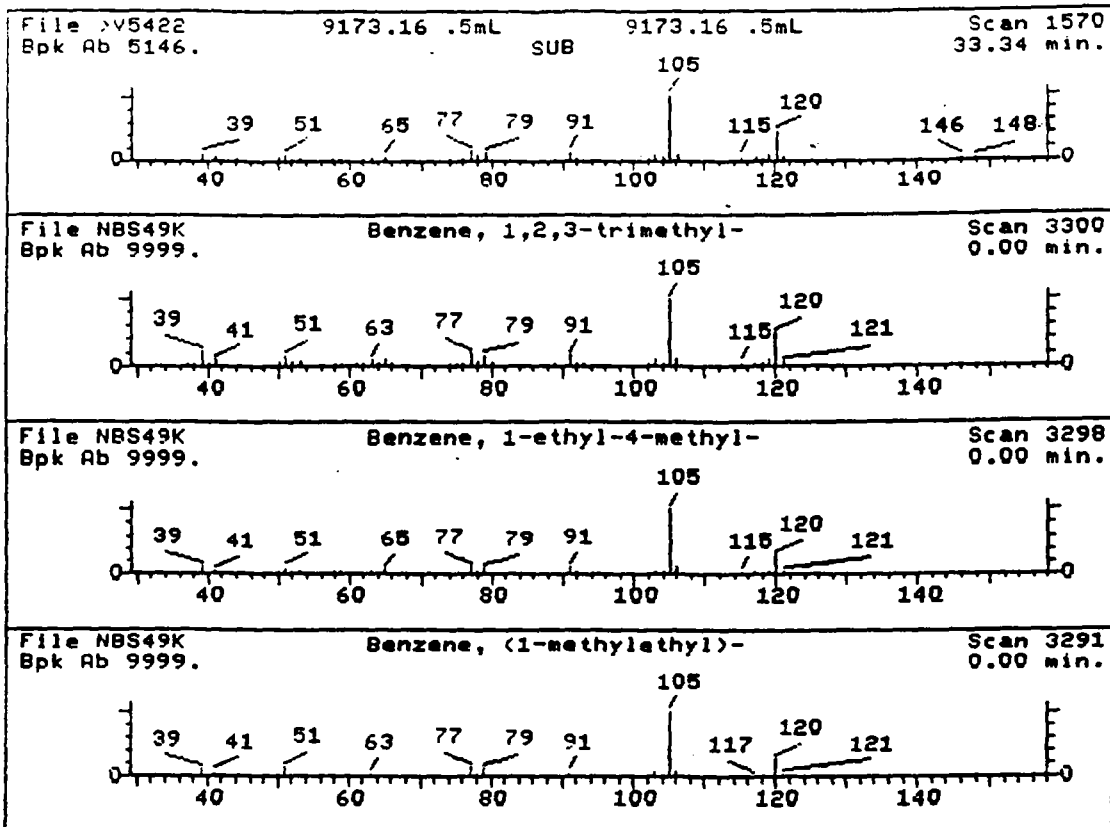
UNKNOWN #,4
 AREA = 70169.00 TENTATIVE CONCENTRATION IS 6.00

- | | |
|-------------------------------------|------------|
| 1. Ethanone, 1-phenyl- | 120 C8H8O |
| 2. 1H-Indene, 2,3-dihydro-5-methyl- | 132 C10H12 |
| 3. Benzene, (1-methylethyl)- | 120 C9H12 |
| 4. Benzene, 1-ethyl-2-methyl- | 120 C9H12 |
| 5. Benzene, 1-ethyl-4-methyl- | 120 C9H12 |
| 6. Benzene, 1-ethyl-3-methyl- | 120 C9H12 |

Sample file: >U5422 Spectrum #: 1410
 Search speed: 1 Tilting option: F No. of ion ranges searched: 55

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	36*	98862	13662	NBS49K	47	45	2	0	68	45	12	27
2.	30*	874351	15898	NBS49K	46	60	2	4	50	31	12	13
3.	29*	98828	13667	NBS49K	35	52	2	0	90	41	8	17
4.	28*	611143	13669	NBS49K	26	59	2	0	76	40	10	14
5.	28*	622968	13672	NBS49K	26	59	2	0	79	40	10	14
6.	28*	620144	13671	NBS49K	26	61	2	0	71	40	10	14

267



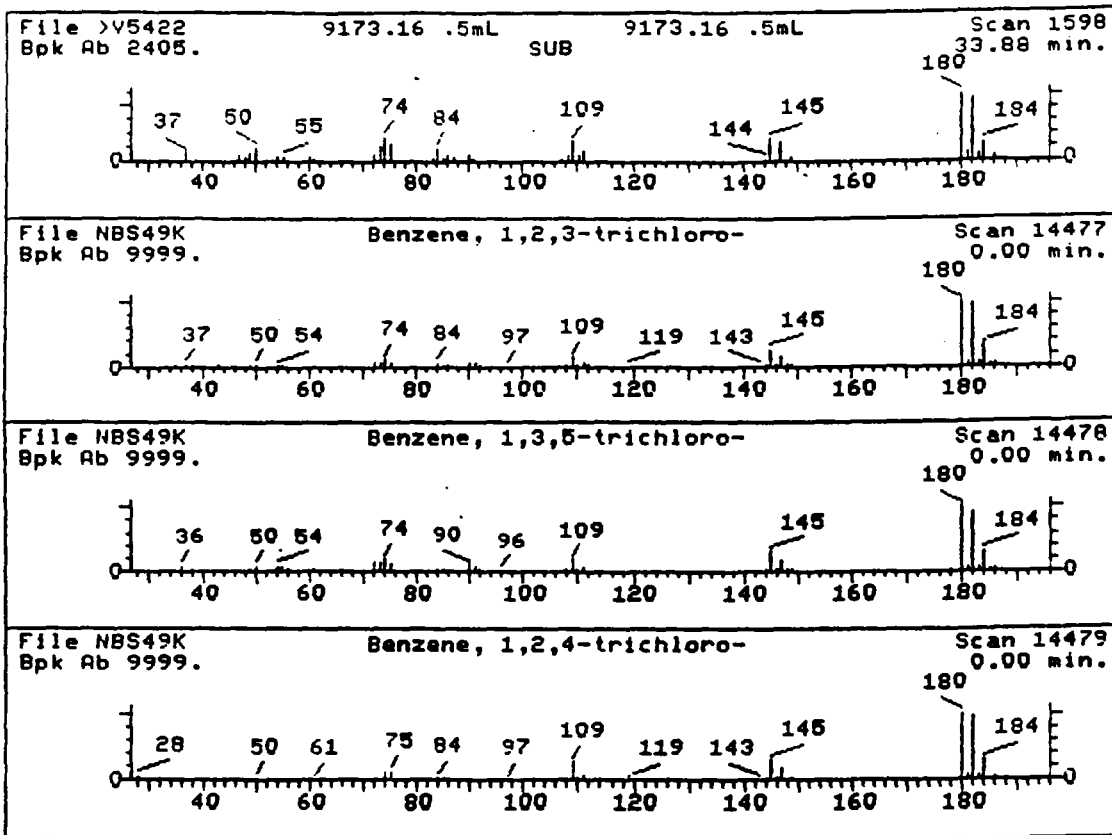
UNKNOWN #,5
 AREA = 105922.0 TENTATIVE CONCENTRATION IS 9.00

- | | |
|-------------------------------|-----------|
| 1. Benzene, 1,2,3-trimethyl- | 120 C9H12 |
| 2. Benzene, 1-ethyl-4-methyl- | 120 C9H12 |
| 3. Benzene, (1-methylethyl)- | 120 C9H12 |
| 4. Benzene, 1-ethyl-3-methyl- | 120 C9H12 |
| 5. Benzene, 1-ethyl-2-methyl- | 120 C9H12 |
| 6. Benzene, 1,3,5-trimethyl- | 120 C9H12 |

Sample file: >U5422 Spectrum #: 1570
 Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	91*	526738	13674	NBS49K	75	25	0	0	63	26	57	93
2.	89*	622968	13672	NBS49K	70	15	1	0	100	8	62	86
3.	86*	98828	13667	NBS49K	72	15	0	-2	100	8	59	71
4.	86*	620144	13671	NBS49K	70	17	1	2	100	7	59	72
5.	86*	611143	13669	NBS49K	65	20	1	0	100	8	59	73
6.	83*	108678	13673	NBS49K	73	15	2	4	72	7	54	57

268



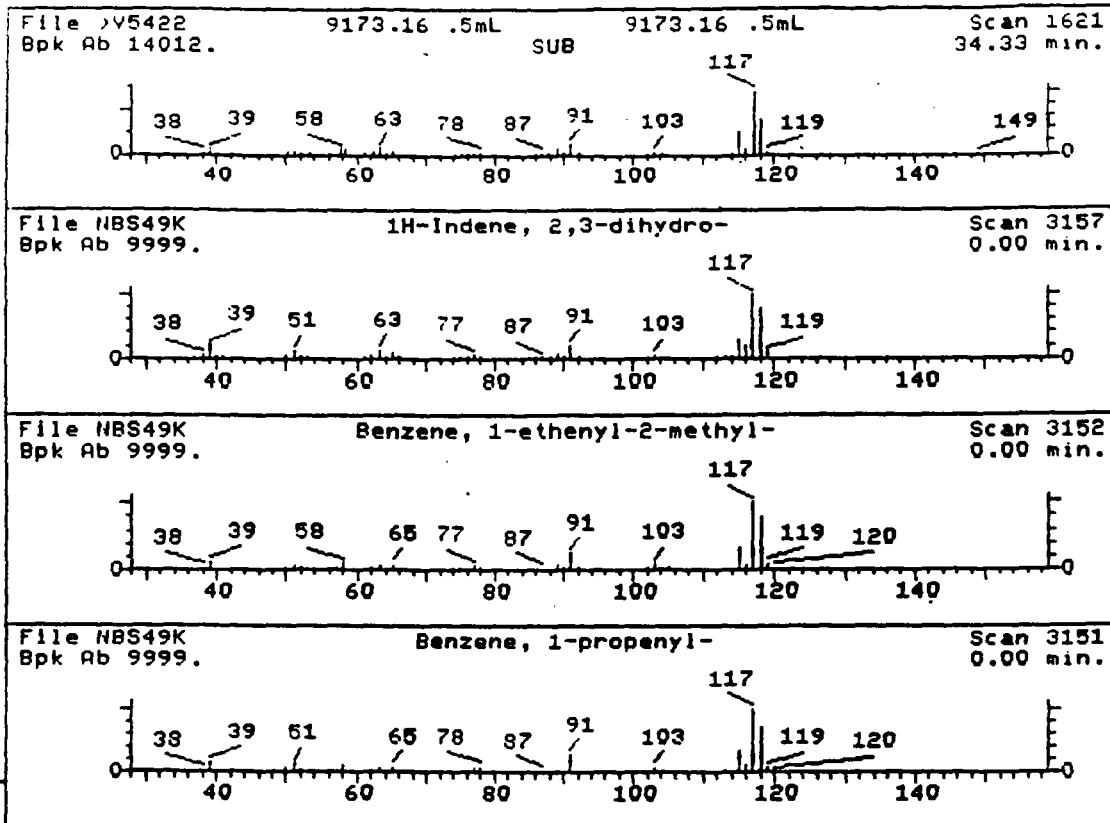
UNKNOWN #,6
 AREA = 200051.0 TENTATIVE CONCENTRATION IS 17.00

- | | |
|--|---------------|
| 1. Benzene, 1,2,3-trichloro- | 180 C6H3Cl3 |
| 2. Benzene, 1,3,5-trichloro- | 180 C6H3Cl3 |
| 3. Benzene, 1,2,4-trichloro- | 180 C6H3Cl3 |
| 4. 1,2-Cyclopentanedione, dichloromethyl- | 180 C6H6Cl2O2 |
| 5. 1H-Purine-2,6-dione, 3,7-dihydro-3,7-dimethyl- | 180 C7H8N4O2 |
| 6. 2-Cyclopenten-1-one, 4-hydroxy-3-methyl-2-(2-pentenyl)- | 180 C11H16O2 |

Sample file: >V5422 Spectrum #: 1598
 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*	87616	24708	NBS49K	97	17	2	3	86	3	66	66
2.	84*	108703	24709	NBS49K	93	28	2	2	76	7	55	61
3.	83*	120821	24710	NBS49K	77	40	1	0	84	11	51	74
4.	52*	56272992	24711	NBS49K	22	97	3	0	174	18	20	12
5.	15*	83670	24432	NBS49K	29	75	3	0	100	60	3	13
6.	15*	22054393	24477	NBS49K	25	104	3	0	100	60	3	13

269



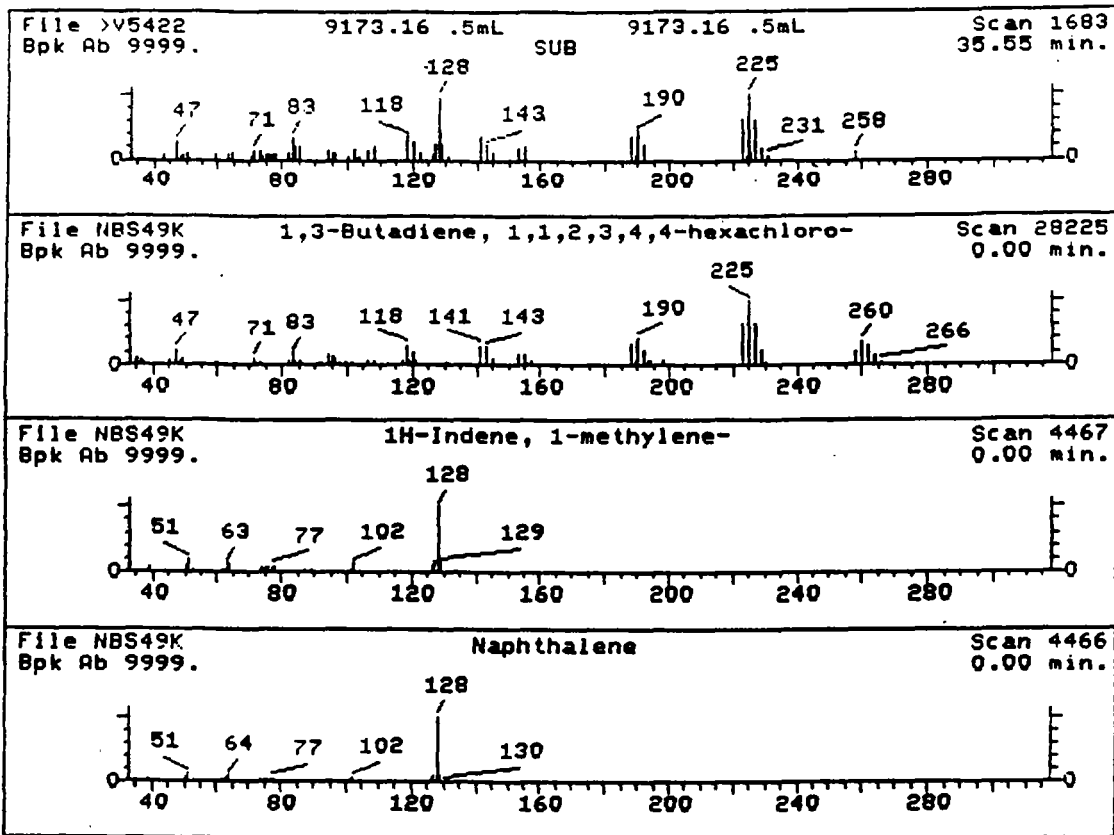
UNKNOWN #,7
AREA = 333318.0 TENTATIVE CONCENTRATION IS 28.00

- | | |
|-----------------------------------|------------|
| 1. 1H-Indene, 2,3-dihydro- | 118 C9H10 |
| 2. Benzene, 1-ethenyl-2-methyl- | 118 C9H10 |
| 3. Benzene, 1-propenyl- | 118 C9H10 |
| 4. Benzene, (2-bromocyclopropyl)- | 196 C9H9Br |
| 5. Benzene, ethenylmethyl- | 118 C9H10 |
| 6. Benzonitrile, 3-methyl- | 117 C8H7N |

Sample file: >U5422 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_IU
1.	86*	496117	13350	NBS49K	55	45	2	0	69	5	60	32
2.	67*	611154	13346	NBS49K	56	37	3	0	71	15	34	28
3.	60*	637503	13345	NBS49K	53	45	2	-3	71	14	30	19
4.	42	36617024	13256	NBS49K	62	50	2	0	72	21	17	13
5.	31*	25013154	13348	NBS49K	40	57	2	0	54	40	10	17
6.	31*	620224	13198	NBS49K	31	68	2	0	80	35	12	14

270



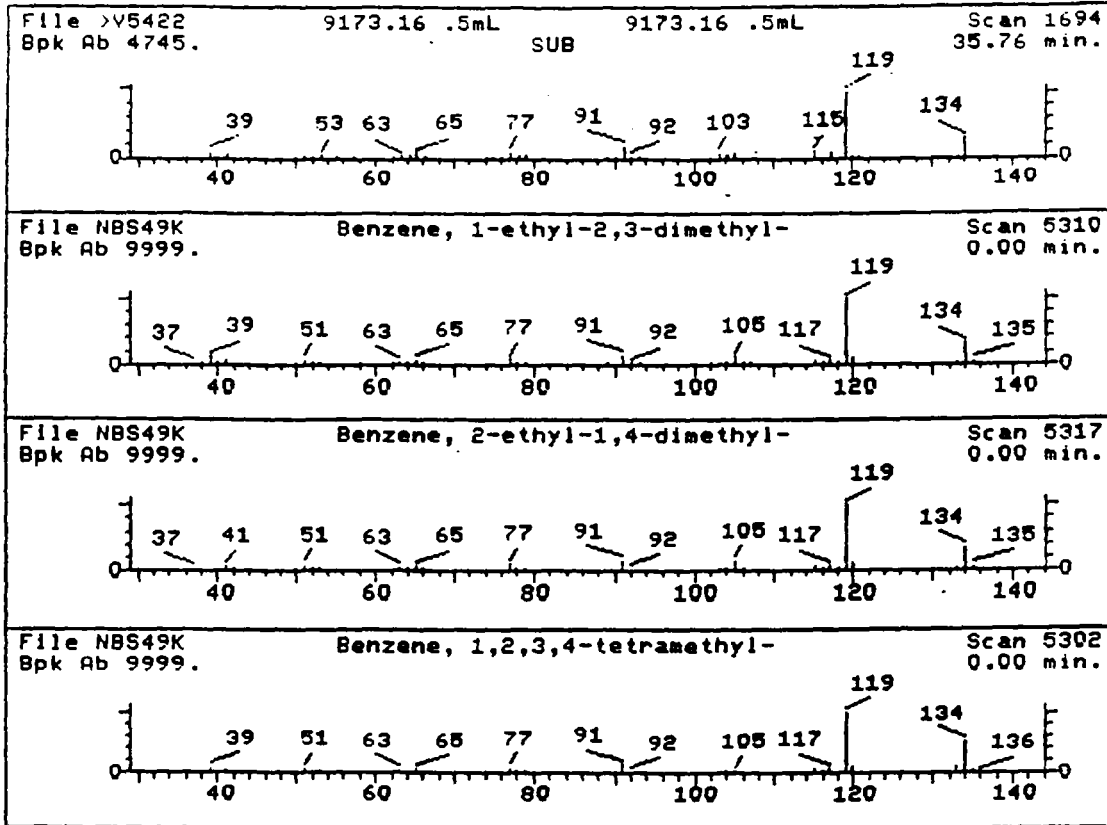
UNKNOWN #,8
 AREA = 369574.0 TENTATIVE CONCENTRATION IS 31.00

- | | |
|--|------------|
| 1. 1,3-Butadiene, 1,1,2,3,4,4-hexachloro- | 258 C4C16 |
| 2. 1H-Indene, 1-methylene- | 128 C10H8 |
| 3. Naphthalene | 128 C10H8 |
| 4. Azulene | 128 C10H8 |
| 5. Bicyclo[4.4.1]undeca-1,3,5,7,9-pentaen-11-one | 156 C11H8O |

Sample file: >U5422 Spectrum #: 1683
 Search speed: 1 Tilting option: F No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	58	87683	31485	NBS49K	103	81	3	0	95	20	25	24
2.	26*	2471843	15266	NBS49K	41	45	2	2	36	42	8	14
3.	20*	91203	15265	NBS49K	41	50	1	1	60	53	5	16
4.	20*	275514	15264	NBS49K	44	54	1	1	52	53	5	19
5.	11	36828805	15284	NBS49K	50	42	1	1	69	63	2	12

271



UNKNOWN #,9

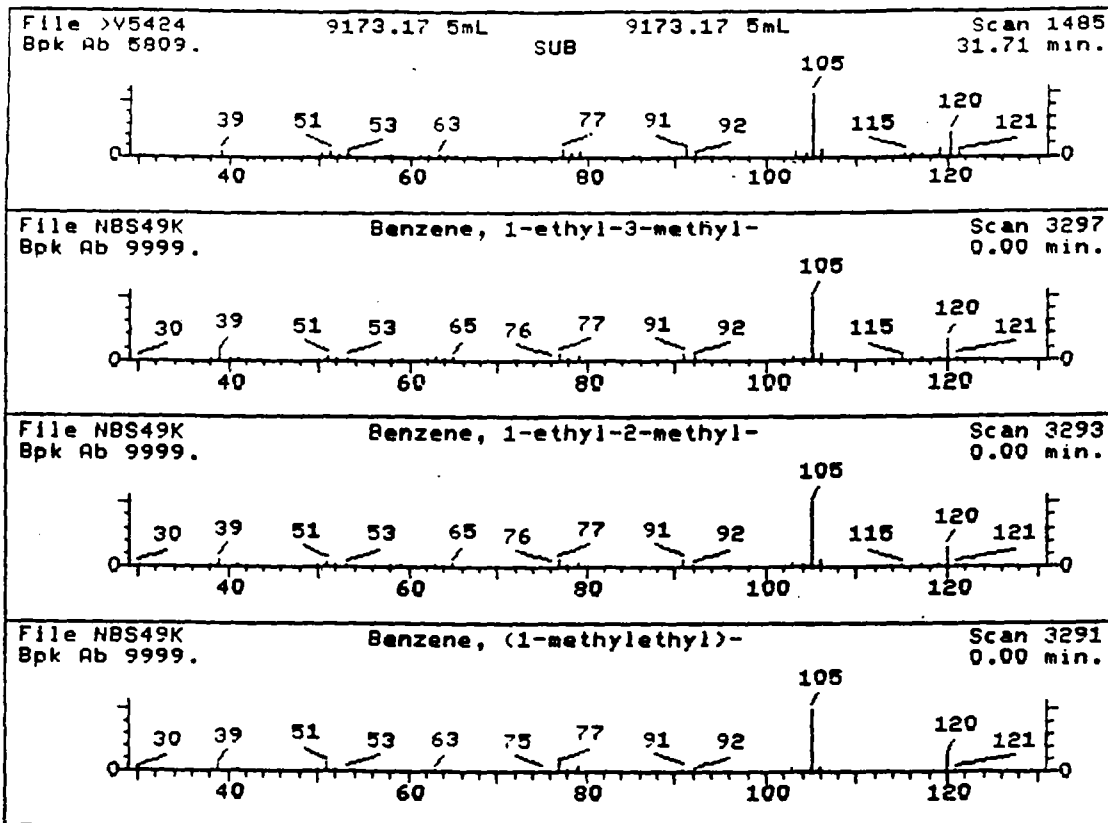
AREA = 132148.0 TENTATIVE CONCENTRATION IS 11.00

- | | |
|---|------------|
| 1. Benzene, 1-ethyl-2,3-dimethyl- | 134 C10H14 |
| 2. Benzene, 2-ethyl-1,4-dimethyl- | 134 C10H14 |
| 3. Benzene, 1,2,3,4-tetramethyl- | 134 C10H14 |
| 4. Benzene, 1-methyl-3-(1-methylethyl)- | 134 C10H14 |
| 5. Benzene, 1-methyl-2-(1-methylethyl)- | 134 C10H14 |
| 6. Benzene, 4-ethyl-1,2-dimethyl- | 134 C10H14 |

Sample file: >U5422 Spectrum #: 1694
 Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	83*	933982	13533	NBS49K	51	40	2	4	96	5	57	27
2.	83*	1758889	13535	NBS49K	51	43	2	4	87	5	57	27
3.	83*	488233	16251	NBS49K	51	43	2	4	72	5	57	27
4.	81*	535773	13538	NBS49K	55	34	2	0	100	8	53	41
5.	81*	527844	13539	NBS49K	55	37	2	0	100	8	53	40
6.	70*	934805	13534	NBS49K	40	53	2	0	100	10	42	19

272



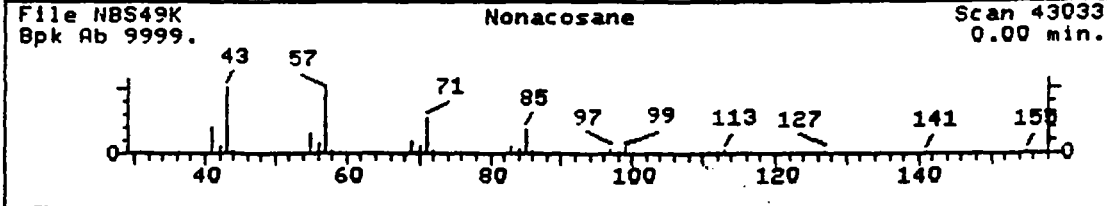
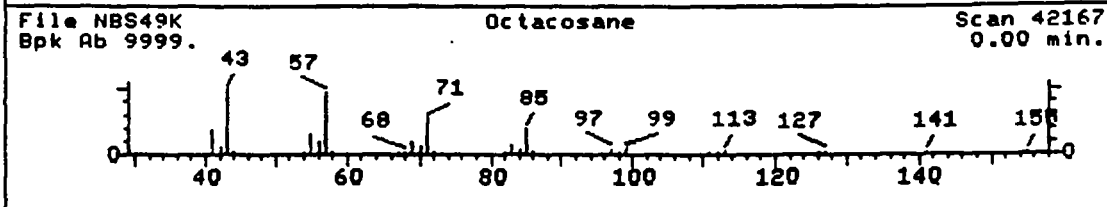
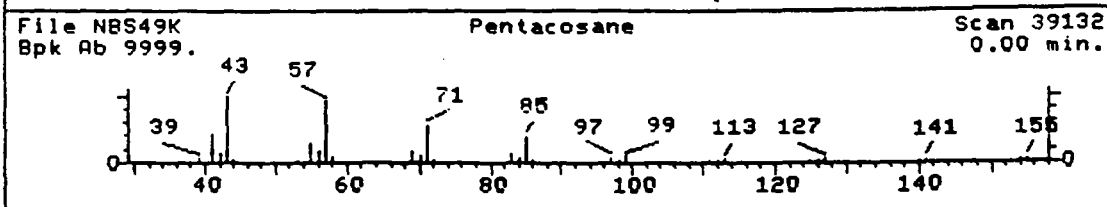
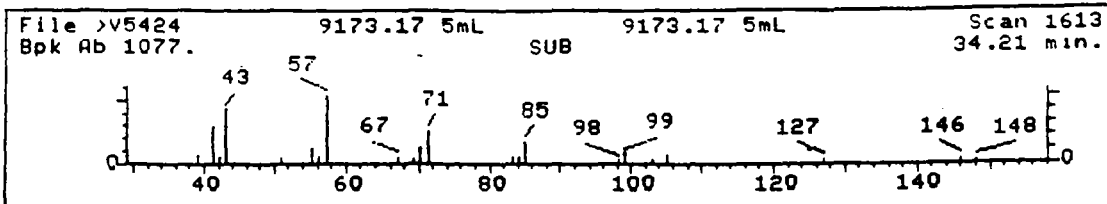
UNKNOWN #,2
AREA = 112144.0 TENTATIVE CONCENTRATION IS 8.00

- | | |
|-------------------------------|-----------|
| 1. Benzene, 1-ethyl-3-methyl- | 120 C9H12 |
| 2. Benzene, 1-ethyl-2-methyl- | 120 C9H12 |
| 3. Benzene, (1-methylethyl)- | 120 C9H12 |
| 4. Benzene, 1,3,5-trimethyl- | 120 C9H12 |
| 5. Benzene, 1-ethyl-4-methyl- | 120 C9H12 |
| 6. Benzene, 1,2,3-trimethyl- | 120 C9H12 |

Sample file: >U5424 Spectrum #: 1485
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IC
1.	84*	620144	13671	NBS49K	70	17	2	0	98	10	55	61
2.	79*	611143	13669	NBS49K	70	15	2	0	97	12	43	61
3.	79*	98828	13667	NBS49K	62	25	2	-3	100	10	48	31
4.	79*	108678	13673	NBS49K	57	31	2	3	70	7	48	35
5.	76*	622968	13672	NBS49K	65	20	2	0	100	12	40	55
6.	69*	526738	13674	NBS49K	69	31	1	0	60	32	26	67

275



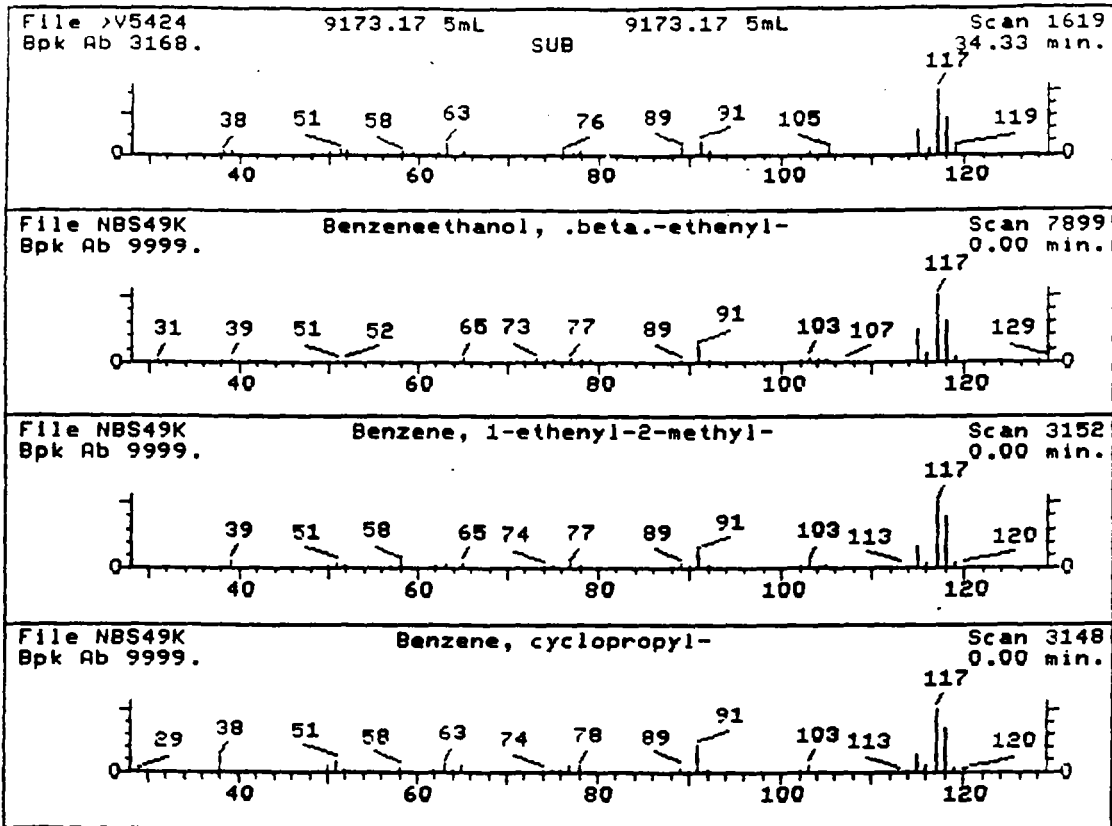
UNKNOWN #,3
AREA = 112094.0 TENTATIVE CONCENTRATION IS 8.00

- | | | |
|-----------------------------|-----|--------|
| 1. Pentacosane | 352 | C25H52 |
| 2. Octacosane | 394 | C28H58 |
| 3. Nonacosane | 408 | C29H60 |
| 4. Hexadecane | 226 | C16H34 |
| 5. Eicosane, 7-hexyl- | 366 | C26H54 |
| 6. Octane, 2,4,6-trimethyl- | 156 | C11H24 |

Sample file: >U5424 Spectrum #: 1613
Search speed: 1 Tilting option: F No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	52	629992	6894	NBS49K	68	74	2	0	79	18	20	15
2.	52	630024	6906	NBS49K	67	74	2	0	79	18	20	14
3.	52	630035	9983	NBS49K	69	78	2	0	77	18	20	15
4.	52	544763	6835	NBS49K	62	58	2	0	78	18	20	13
5.	42	55333998	6899	NBS49K	63	86	2	0	77	21	17	13
6.	35	62016379	6679	NBS49K	36	49	2	0	100	30	14	12

276



UNKNOWN #,4
AREA = 120213.0 TENTATIVE CONCENTRATION IS 9.00

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

Sample file: >V5424 Spectrum #: 1619
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.	60	6052637	13383	NBS49K	52	42	2	0	75	13	30	16
2.	55*	611154	13346	NBS49K	47	46	2	0	72	24	22	27
3.	52*	873494	13342	NBS49K	43	67	3	0	80	18	20	13
4.	44*	837503	13345	NBS49K	37	61	2	0	68	25	17	15
5.	42*	300572	13344	NBS49K	56	41	2	-3	70	31	16	25
6.	29*	496117	13350	NBS49K	40	60	2	0	54	40	10	15

277

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

LAB SAMPLE N

9173.18 5ml

Lab Name: Environmental Profile Lab NJDEP Cert.# 15526

Matrix: Water

Lab Sample ID: 9173.18 5mL

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

Lab File ID: >U5436

Level: (low/med) LOW

Date Received: 10-26-92

Date Analyzed: 10/31/92

Column: Capillary

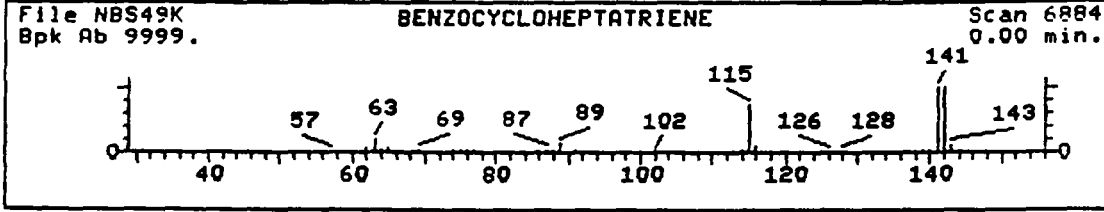
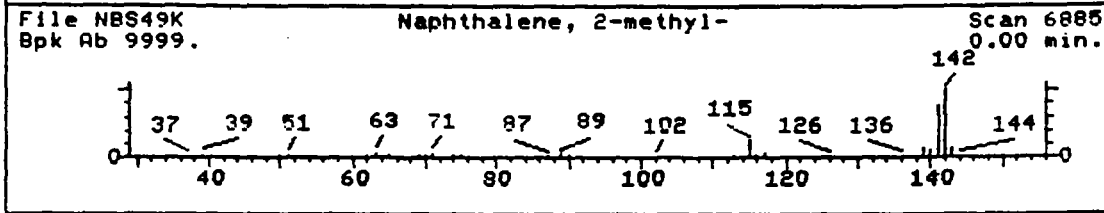
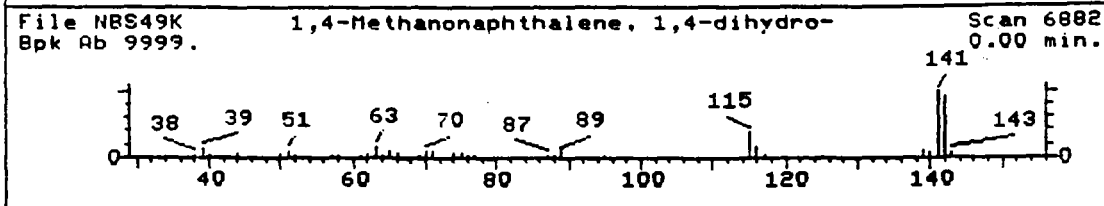
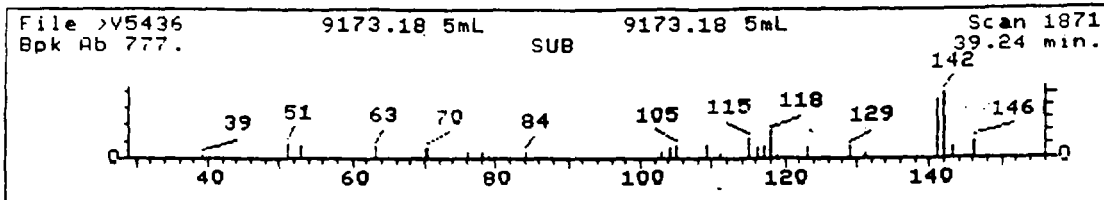
Dilution Factor: 1

CONCENTRATION UNITS:
ug/L

Number of TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
11 4453901	1,4-Methanonaphthalene, 1,4-	39.24	5	45

278



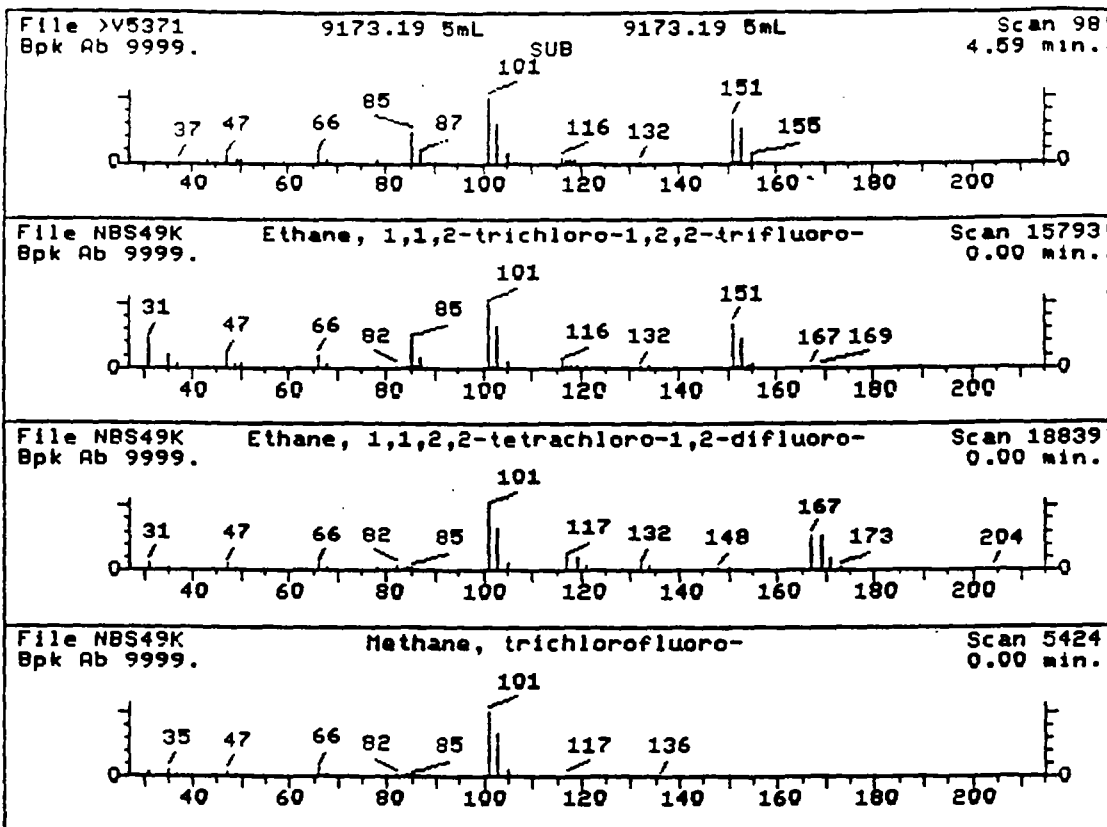
UNKNOWN #,1
AREA = 58758.00 TENTATIVE CONCENTRATION IS 5.00

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

Sample file: >U5436 Spectrum #: 1871
Search speed: 1 Tilting option: F No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	45*	4453901	18081	NBS49K	48	54	2	1	73	25	17	16
2.	30*	91576	18084	NBS49K	35	63	3	0	100	32	12	13
3.	30*	284098	18083	NBS49K	34	74	3	0	91	31	12	13
4.	30*	90120	18080	NBS49K	27	73	3	0	100	33	12	13
5.	30*	2471832	18082	NBS49K	26	74	3	0	91	32	12	13
6.	20*	876313	18074	NBS49K	28	71	3	0	100	55	5	13

279



UNKNOWN #,1
AREA = 245919.0 TENTATIVE CONCENTRATION IS 29.00

- | | |
|--|-------------|
| 1. Ethane, 1,1,2-trichloro-1,2,2-trifluoro- | 186 C2C13F3 |
| 2. Ethane, 1,1,2,2-tetrachloro-1,2-difluoro- | 202 C2C14F2 |
| 3. Methane, trichlorofluoro- | 136 CC13F |

Sample file: >U5371 Spectrum #: 98
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.	74	76131	10367	NBS49K	71	67	0	0	67	14	39	48
2.	25*	76120	10400	NBS49K	36	95	3	0	93	50	7	13
3.	25	75694	10283	NBS49K	59	37	1	1	85	49	7	19

281

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: >U5345

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	>U5346	10/27/92	10:27
02	VOA BLANK	VOA BLANK	>U5347	10/27/92	11:36
03	9173.9 5mL	9173.9 5mL	>U5352	10/27/92	15:38
04	9173.2 5mL	9173.2 5mL	>U5353	10/27/92	16:20
05	9173.3 5mL	9173.3 5mL	>U5356	10/27/92	18:26
06	9173.5 5mL	9173.5 5mL	>U5358	10/27/92	19:50
07	9173.6 5mL	9173.6 5mL	>U5359	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: >U5361

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/SPCC	>U5362	10/27/92	22:24
02	VOA Blank	VOA Blank	>U5363	10/27/92	23:37
03	9173.25 5m	9173.25 5m	>U5364	10/28/92	0:19
04	9173.26 5m	9173.26 5m	>U5365	10/28/92	1:01
05	9173.14 5m	9173.14 5m	>U5366	10/28/92	1:43
06	9173.13 5m	9173.13 5m	>U5367	10/28/92	2:26
07	9173.23 5m	9173.23 5m	>U5368	10/28/92	3:08
08	9173.12 5m	9173.12 5m	>U5369	10/28/92	3:50
09	9173.21 5m	9173.21 5m	>U5370	10/28/92	4:33
10	9173.19 5m	9173.19 5m	>U5371	10/28/92	5:15
11	9173.11 5m	9173.11 5m	>U5372	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: >U5411

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	>U5412	10/30/92	10:38
02	VOA BLANK	VOA BLANK	>U5413	10/30/92	11:42
03	9173.1 5uL	9173.1 5uL	>U5415	10/30/92	13:26
04	9173.8 50u	9173.8 50u	>U5418	10/30/92	15:31
05	9173.10 50	9173.10 50	>U5419	10/30/92	16:12
06	9173.15 .5	9173.15 .5	>U5421	10/30/92	17:37
07	9173.16 .5	9173.16 .5	>U5422	10/30/92	18:19
08	9173.24 .5	9173.24 .5	>U5423	10/30/92	19:01
09	9173.17 5m	9173.17 5m	>U5424	10/30/92	19:43
10	9173.22 5m	9173.22 5m	>U5426	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: >U5427

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	>U5428	10/31/92	14:11
02	VOA Blank	VOA Blank	>U5429	10/31/92	15:10
03	9173.22 MS	9173.22 MS	>U5430	10/31/92	15:53
04	9173.22 MS	9173.22 MS	>U5431	10/31/92	16:36
05	9173.7 50u	9173.7 50u	>U5432	10/31/92	17:18
06	9173.4 .5m	9173.4 .5m	>U5433	10/31/92	18:01
07	9173.20 5m	9173.20 5m	>U5434	10/31/92	18:42
08	9173.18 5m	9173.18 5m	>U5436	10/31/92	20:07
09					
10					
11					
12					
13					
14					
15					
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 10# 15526 Laboratory ID: 105346
 Instrument ID: GC/MSD #1 Initial Calibration Date: 10/20/92

Minimum RF for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	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	3.83060	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

RF - Average Response Factor from Initial Calibration Form UI

%Diff - % Difference from original average or curve

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

Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 10/27/92
 Contractor: E.P.L. Time: 10:27
 Contract No: NJDEPE ID# 15526 Laboratory ID: >U5346
 Instrument ID: GC/MSD #1 Initial Calibration Date: 10/20/92

Minimum RF for SPCC is .30

Maximum % Diff for CCC is 25%

Compound	RF	RF	%Diff	CCC	SPCC
4-Methyl-2-Pentanone	.43455	.31830	26.75		
2-Hexanone	.17597	.12124	31.10		
Tetrachloroethens	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	1.84741	1.07886	3.80		(Conc=100.00)
Diethyl ether	.22600	.24279	7.43		(Conc=500.00)

RF - Response Factor from daily standard file at 50.00 ppb

RF - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

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

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Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 10/27/92
 Contractor: E.P.L. Time: 22:24
 Contract No: NJDEPE ID# 15526 Laboratory ID: 145362
 Instrument ID: GC/MSD #1 Initial Calibration Date: 10/20/92

Minimum \bar{RF} for SPCC is .30

Maximum % Diff for CCC is 25%

Compound	\bar{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-Dichloroethane	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-Dichloroethane	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	.09895	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

\bar{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 10# 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
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	1.02137	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 UI

%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-Dichloropropene	.68165	.61272	1.84	*	
cis-1,3-Dichloropropene	1.50097	1.35777	9.54		
Trichloroethene	.83241	.98926	9.23		
Dibromochloromethane	.95834	.87002	9.22		
1,1,2-Trichloroethane	.44874	.38683	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: 145412
 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	1.84741	.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 (**)

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-Dichloroethene-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	4.89		
Vinyl Acetate	.58768	.49255	16.19		
1,2-Dichloropropane	.60165	.53234	11.52	*	
cis-1,3-Dichloropropene	1.50097	1.38885	7.47		
Trichloroethene	.63241	.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 UI

%Diff - % Difference from original average or curve

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

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Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 10/31/92
 Contractor: E.P.L. Time: 14:11
 Contract No: NJDEPE ID# 15526 Laboratory ID: 05428
 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	.24808	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 (**)

336

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 RF for SPCC is .30 Maximum % RSD for CCC is 30%

Compound	Laboratory ID: >U5268 >U5267 >U5269 >U5270 >U5271					RRT	RF	% RSD	CCC	SPCC
	RF	RF	RF	RF	RF					
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-1,2-Dichloropropene	1.52169	1.49737	1.53565	1.40337	1.54677	1.323	1.50097	3.837		
Trichloroethene	.85254	.85548	.84841	.88629	.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	.48730	.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)

RRT - Average Relative Retention Time (RT Std/RT Istd)

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 RF for SPCC is .30 Maximum % RSD for CCC is 30%

Compound	Laboratory ID:					RRT	RF	% RSD	CCC	SPCC
	>U5268	>U5267	>U5269	>U5270	>U5271					
	RF	RF	RF	RF	RF					
	20.00	50.00	100.00	150.00	200.00					
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	1.80324	.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=200.0,500.0,1000.0)

- RF - Response Factor (Subscript is amount in ppb)
 RRT - Average Relative Retention Time (RT Std/RT Istd)
 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 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

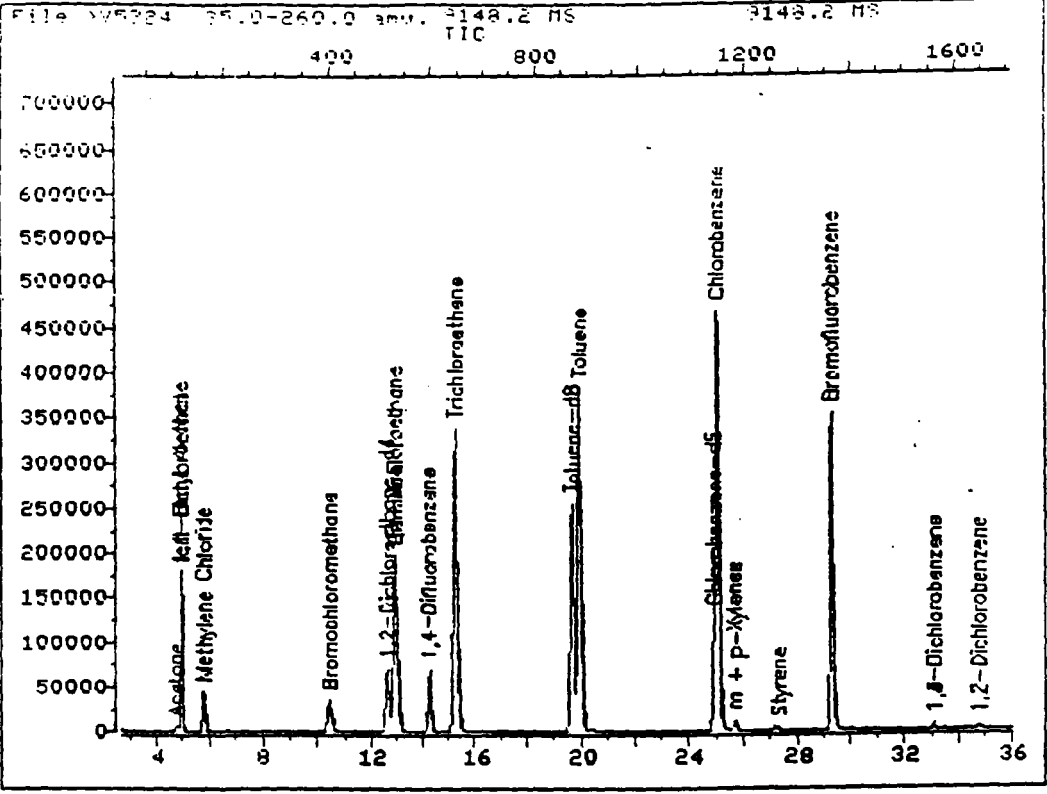
* Values outside of qc limits

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

COMMENTS: _____

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TOTAL ION CHROMATOGRAM



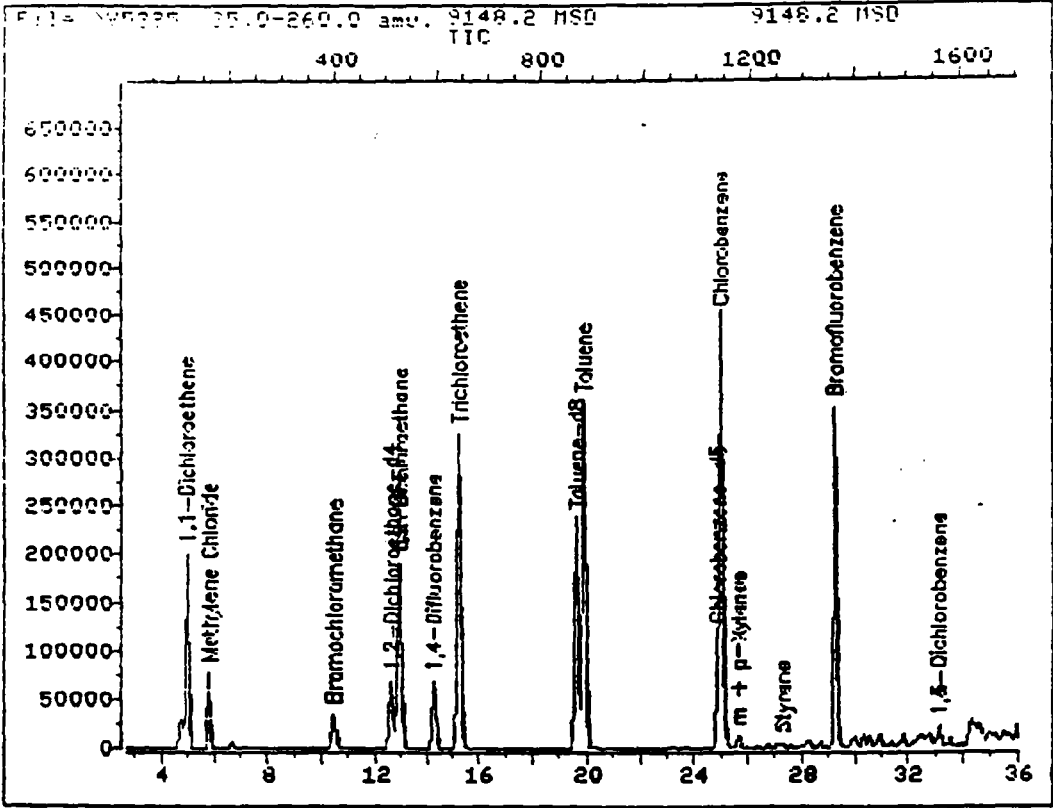
Data File: >U5324::D1
 Name: 9148.2 MS
 Misc: 9148.2 MS

Quant Output File: ^U5324::DB

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

Operator ID: MARK
 Quant Time: 921023 20:21
 Injected at: 921023 19:44

TOTAL ION CHROMATOGRAM



Data File: >U5325::D1
 Name: 9148.2 MSD
 Misc: 9148.2 MSD

Quant Output File: ^U5325::DB

Id File: IDUOA::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: CUI

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	161-145
Trichloroethene	100.00	0.00	103.00	103	171-120
Benzene	100.00	2.83	90.60	87	176-127
Toluene	100.00	0.00	89.30	89	176-125
Chlorobenzene	100.00	0.00	102.00	102	175-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
1,1-Dichloroethene	100.00	86.00	85	9	14 161-145
Trichloroethene	100.00	118.00	117	12	14 171-120
Benzene	100.00	105.00	101	14 *	11 176-127
Toluene	100.00	102.00	101	12	13 176-125
Chlorobenzene	100.00	118.00	117	13	13 175-130

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

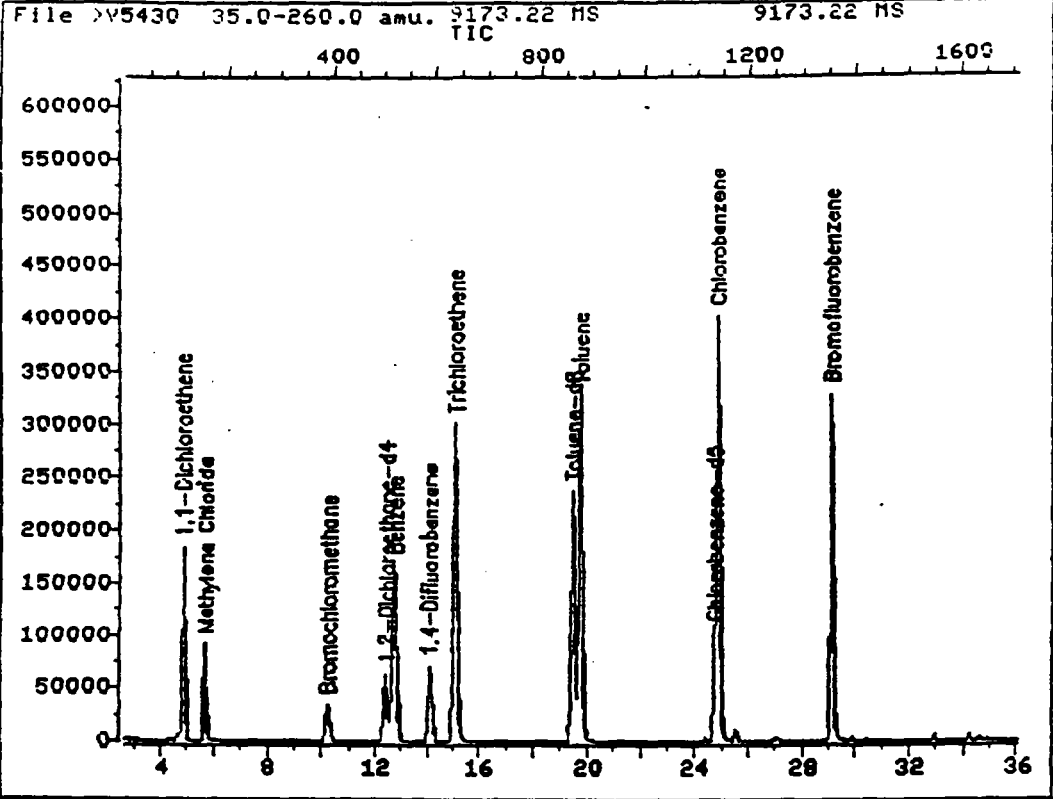
* Values outside of qc limits

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

COMMENTS: _____

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TOTAL ION CHROMATOGRAM



Data File: >U5430::D1

Quant Output File: ^U5430::DB

Name: 9173.22 MS

Misc: 9173.22 MS

Id File: IDUOA::D2

Title: HSL VOLATILE ORGANICS

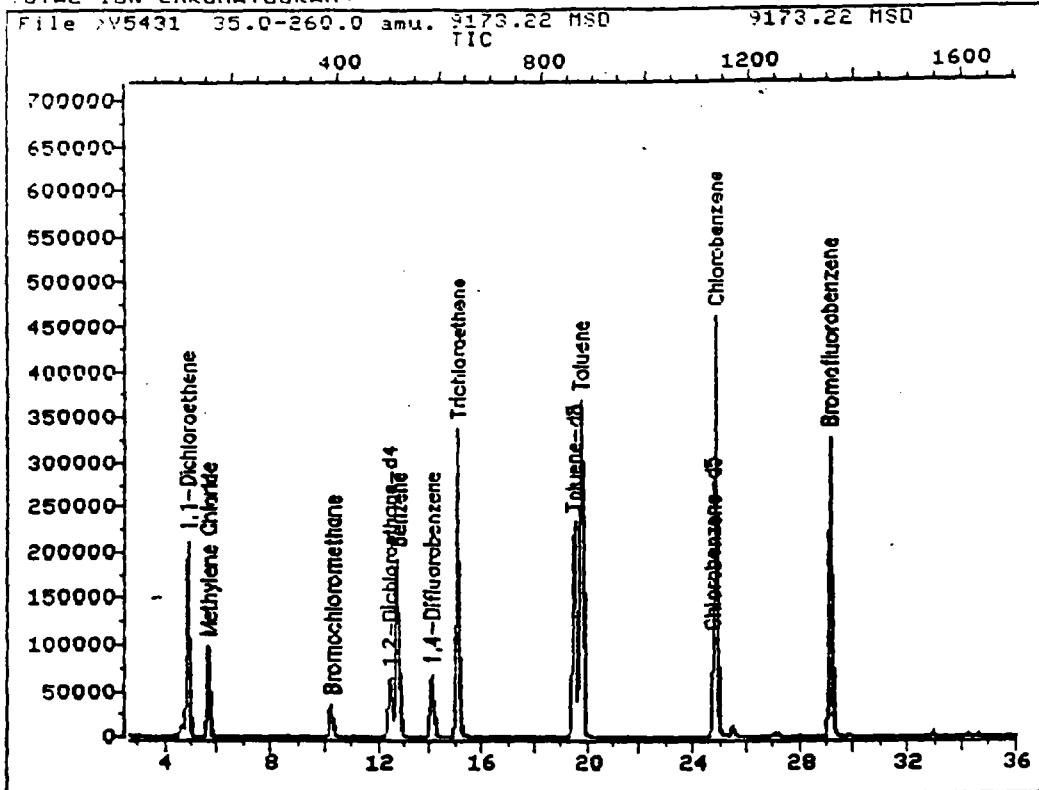
Last Calibration: 921031 15:57

Operator ID: MARK

Quant Time: 921031 16:30

Injected at: 921031 15:53

TOTAL ION CHROMATOGRAM.



Data File: >U5431::D1
Name: 9173.22 MSD
Misc: 9173.22 MSD

Quant Output File: ^U5431::DB

Id File: IDUOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921031 15:57

Operator ID: MARK
Quant Time: 921031 17:13
Injected at: 921031 16:36

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4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air
 Lab Code: 15526
 Lab File ID: >U5347 Lab Sample ID: UOA 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	>U5346	10:27
02	9173.9 5mL	9173.9 5mL	>U5352	15:38
03	9173.2 5mL	9173.2 5mL	>U5353	16:20
04	9173.3 5mL	9173.3 5mL	>U5356	18:26
05	9173.5 5mL	9173.5 5mL	>U5358	19:50
06	9173.6 5mL	9173.6 5mL	>U5359	20:33
07				
08				
09				
10				
11				
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COMMENTS: _____

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air
 Lab Code: 15526
 Lab File ID: >U5363 Lab Sample ID: UOA 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	>U5362	22:24
02	9173.25 5m	9173.25 5m	>U5364	0:19
03	9173.26 5m	9173.26 5m	>U5365	1:01
04	9173.14 5m	9173.14 5m	>U5366	1:43
05	9173.13 5m	9173.13 5m	>U5367	2:26
06	9173.23 5m	9173.23 5m	>U5368	3:08
07	9173.12 5m	9173.12 5m	>U5369	3:50
08	9173.21 5m	9173.21 5m	>U5370	4:33
09	9173.19 5m	9173.19 5m	>U5371	5:15
10	9173.11 5m	9173.11 5m	>U5372	5:58
11				
12				
13				
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29				
30				

COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: Environmental Profile Lab

Contract: Serv-Air

Lab Code: 15526

Lab File ID: >U5413

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	>U5412	10:38
02	9173.1 5uL	9173.1 5uL	>U5415	13:26
03	9173.8 50u	9173.8 50u	>U5418	15:31
04	9173.10 50	9173.10 50	>U5419	16:12
05	9173.15 .5	9173.15 .5	>U5421	17:37
06	9173.16 .5	9173.16 .5	>U5422	18:19
07	9173.24 .5	9173.24 .5	>U5423	19:01
08	9173.17 5m	9173.17 5m	>U5424	19:43
09	9173.22 5m	9173.22 5m	>U5426	21:07
10				
11				
12				
13				
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29				
30				

COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air
 Lab Code: 15526
 Lab File ID: >U5429 Lab Sample ID: UOA 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	>U5428	14:11
02	9173.22 MS	9173.22 MS	>U5430	15:53
03	9173.22 MS	9173.22 MS	>U5431	16:36
04	9173.7 50u	9173.7 50u	>U5432	17:18
05	9173.4 .5m	9173.4 .5m	>U5433	18:01
06	9173.20 5m	9173.20 5m	>U5434	18:42
07	9173.18 5m	9173.18 5m	>U5436	20:07
08				
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COMMENTS:

Environmental Profile Laboratories
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER _____
 SAMPLE NAME VOA BLANK
 CLIENT ID _____
 DATA FILE >U5347

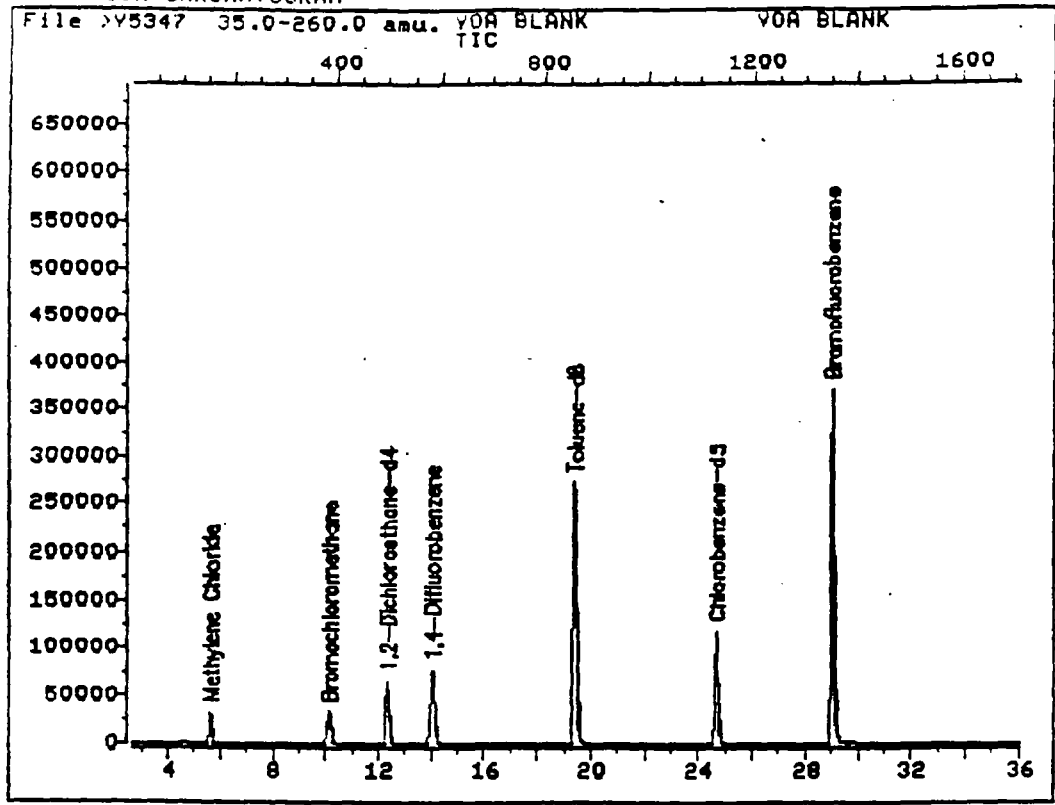
MATRIX Water
 DILUTION FACTOR 1.00
 QA BATCH _____
 DATE ANALYZED 10/27/92

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

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

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TOTAL ION CHROMATOGRAM



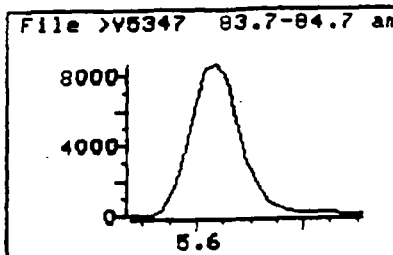
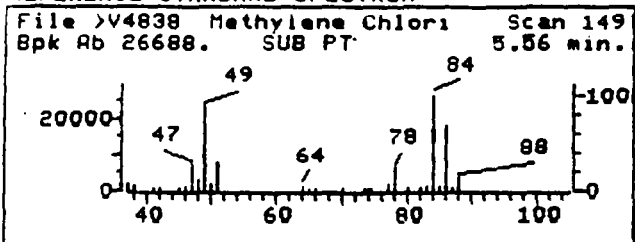
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Name: VOA BLANK
Misc: VOA BLANK

Quant Output File: ^U5347::DB

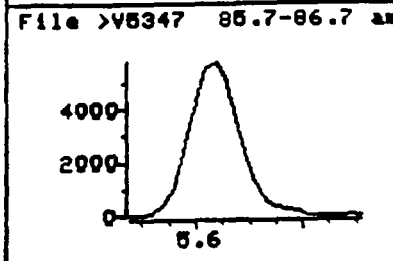
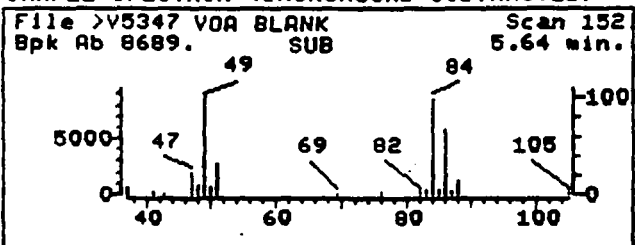
Id File: IDUOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921020 16:10

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

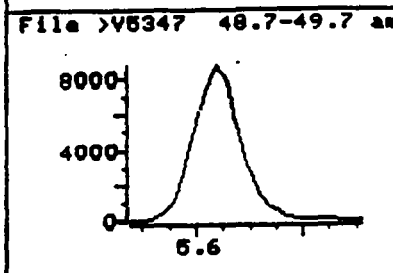
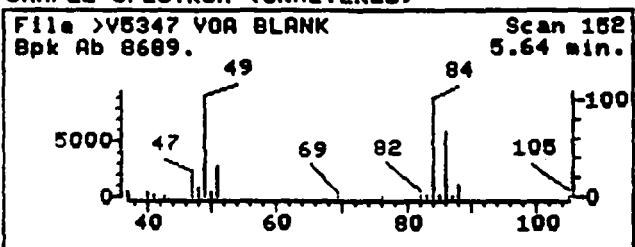
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5347::D1
Name: VOA BLANK
Misc: VOA BLANK
Quant Time: 921027 12:13
Injected at: 921027 11:36

Quant Output File: ^U5347::DB

Quant ID File: EDUOA::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

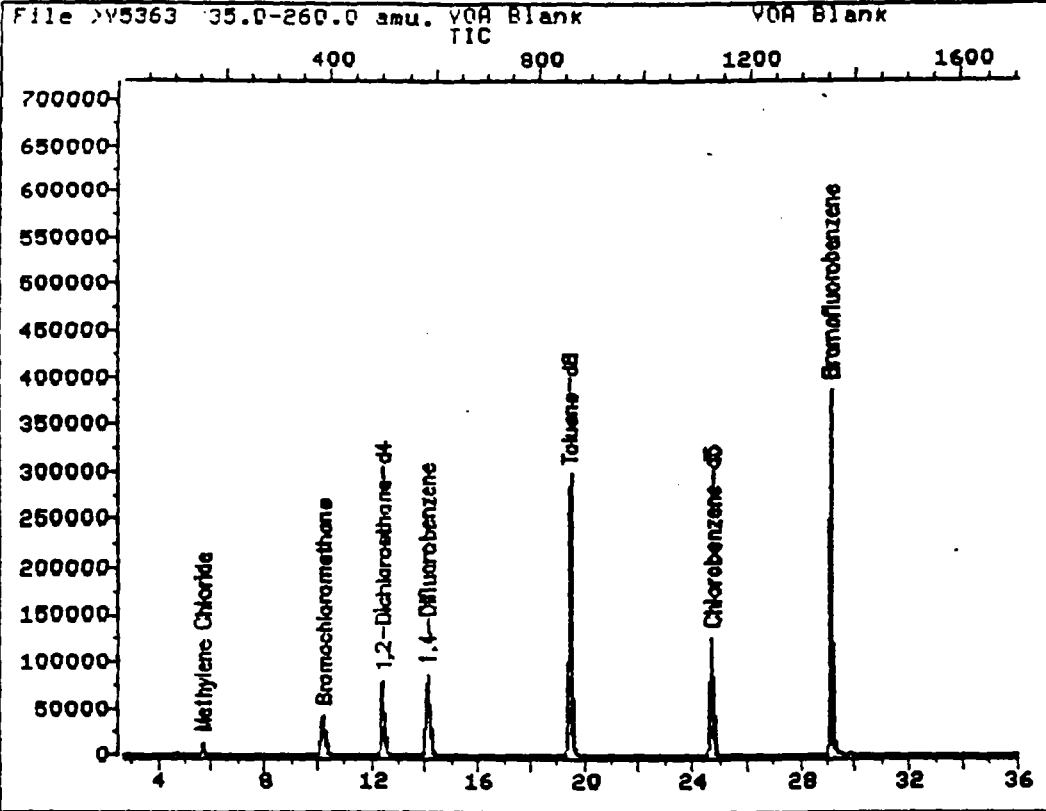
JOB NUMBER _____
 SAMPLE NAME VOA Blank
 CLIENT ID _____
 DATA FILE >V5363

MATRIX Water
 DILUTION FACTOR 1.00
 QA BATCH _____
 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	Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	ND	5	Toluene	ND	5
trans-1,2-Dichloroethene	ND	5	Chlorobenzene	ND	5
Trichlorofluoromethane	ND	5	Ethylbenzene	ND	5
Chloroform	ND	5	Styrene	ND	5
1,2-Dichloroethane	ND	5	o-Xylene	ND	5
2-Butanone	ND	5	m + p-Xylenes	ND	5
1,1,1-Trichloroethane	ND	5	1,3-Dichlorobenzene	ND	5
Carbon Tetrachloride	ND	5	1,2-Dichlorobenzene	ND	5
Bromodichloromethane	ND	5	1,4-Dichlorobenzene	ND	5
Vinyl Acetate	ND	5	tert-Butyl Alcohol	ND	50
1,2-Dichloropropane	ND	5	Methyl tert-Butyl Ether	ND	5
cis-1,3-Dichloropropene	ND	5	Diethyl ether	ND	50
Trichloroethene	ND	5			0

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

TOTAL ION CHROMATOGRAM



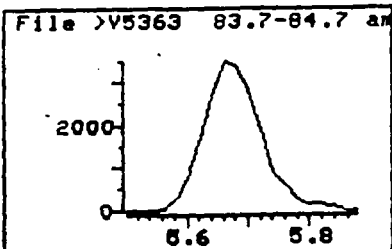
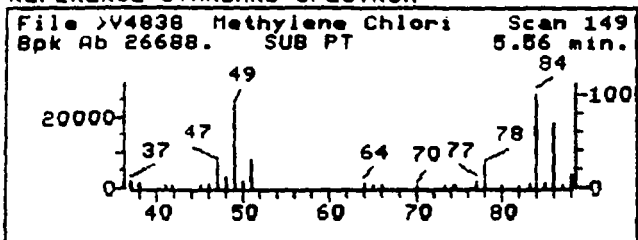
Data File: >V5363::D1
Name: VOA Blank
Misc: VOA Blank

Quant Output File: ^V5363::DB

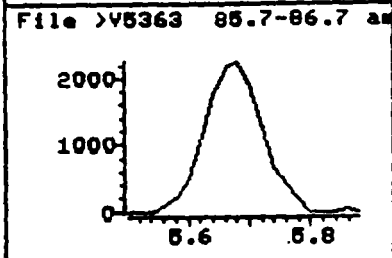
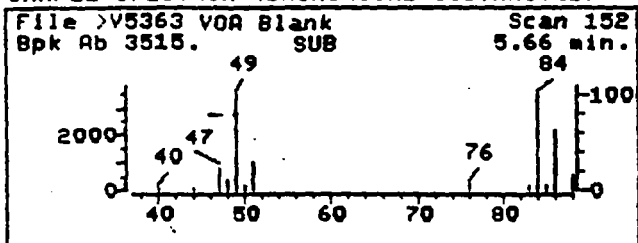
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

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

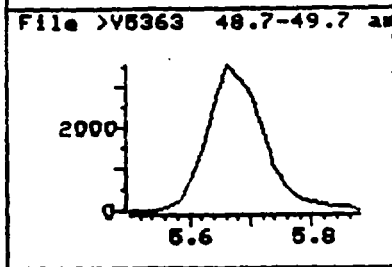
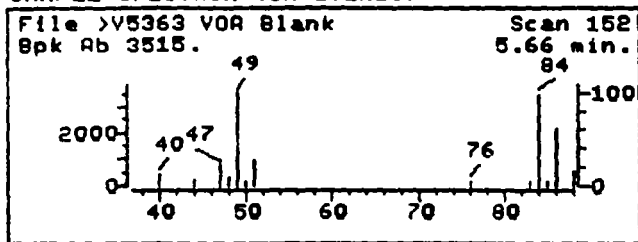
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5363::D1
Name: VOA Blank
Misc: VOA Blank
Quant Time: 921028 00:14
Injected at: 921027 23:37

Quant Output File: ^U5363::DB

Quant ID File: IDVOA::D2
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

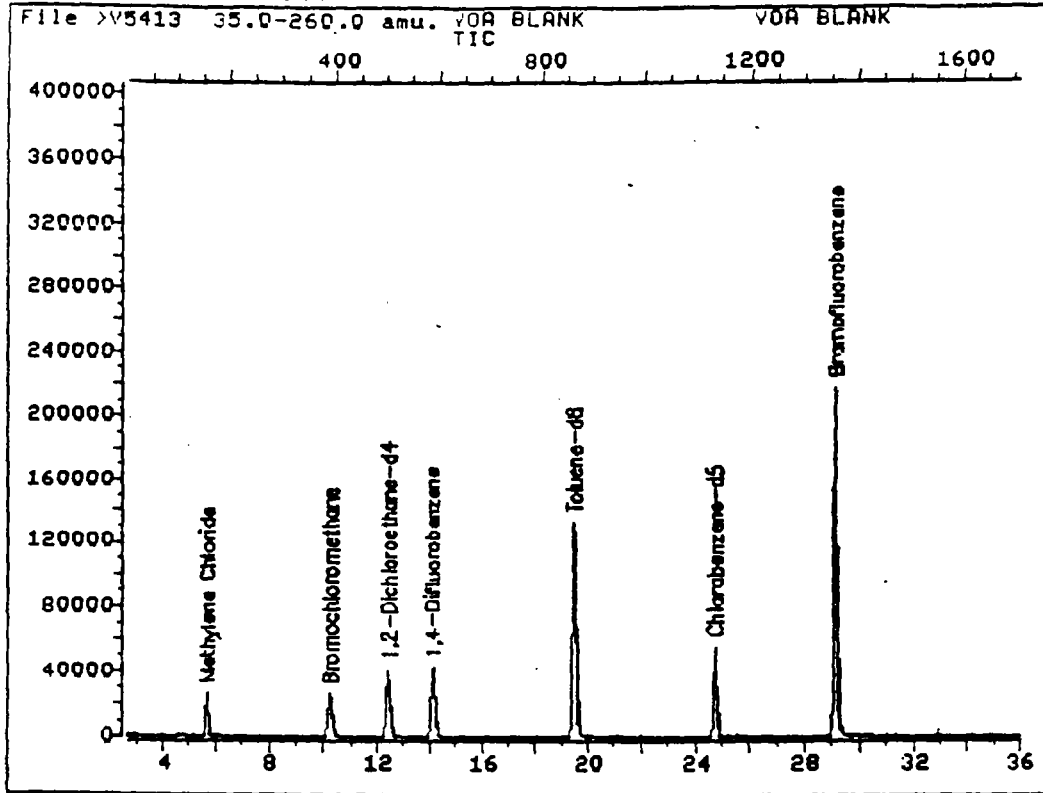
JOB NUMBER _____
 SAMPLE NAME VOA BLANK
 CLIENT ID _____
 DATA FILE >V5413

MATRIX Water
 DILUTION FACTOR 1.00
 QA BATCH _____
 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



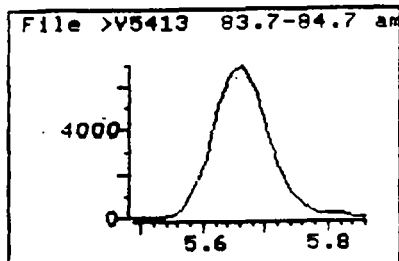
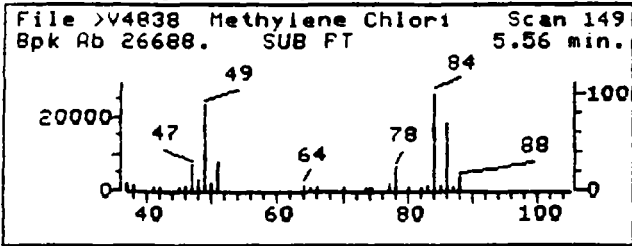
Data File: >U5413::D1
Name: VOA BLANK
Misc: VOA BLANK

Quant Output File: ^U5413::DB

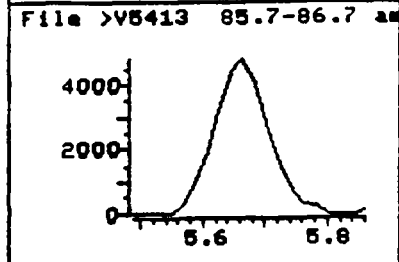
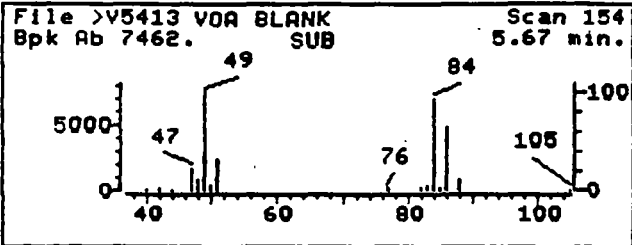
Id File: IDVOA::D2
Title: HSL VOLATILE ORGANICS
Last Calibration: 921027 22:05

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

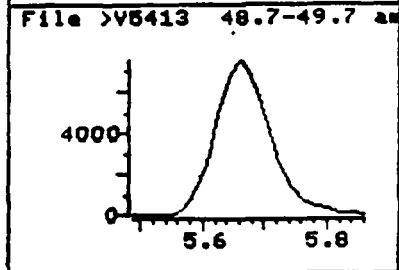
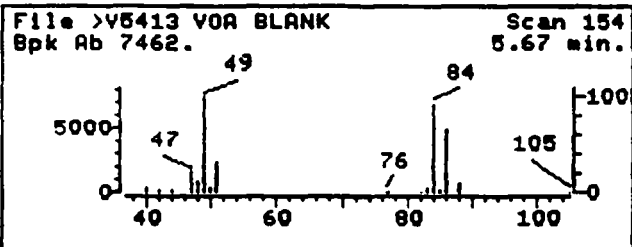
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >U5413::D1
Name: VOA BLANK
Misc: VOA BLANK
Quant Time: 921030 12:19
Injected at: 921030 11:42

Quant Output File: ^U5413::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 _____
 SAMPLE NAME VQA Blank
 CLIENT ID _____
 DATA FILE >U5429

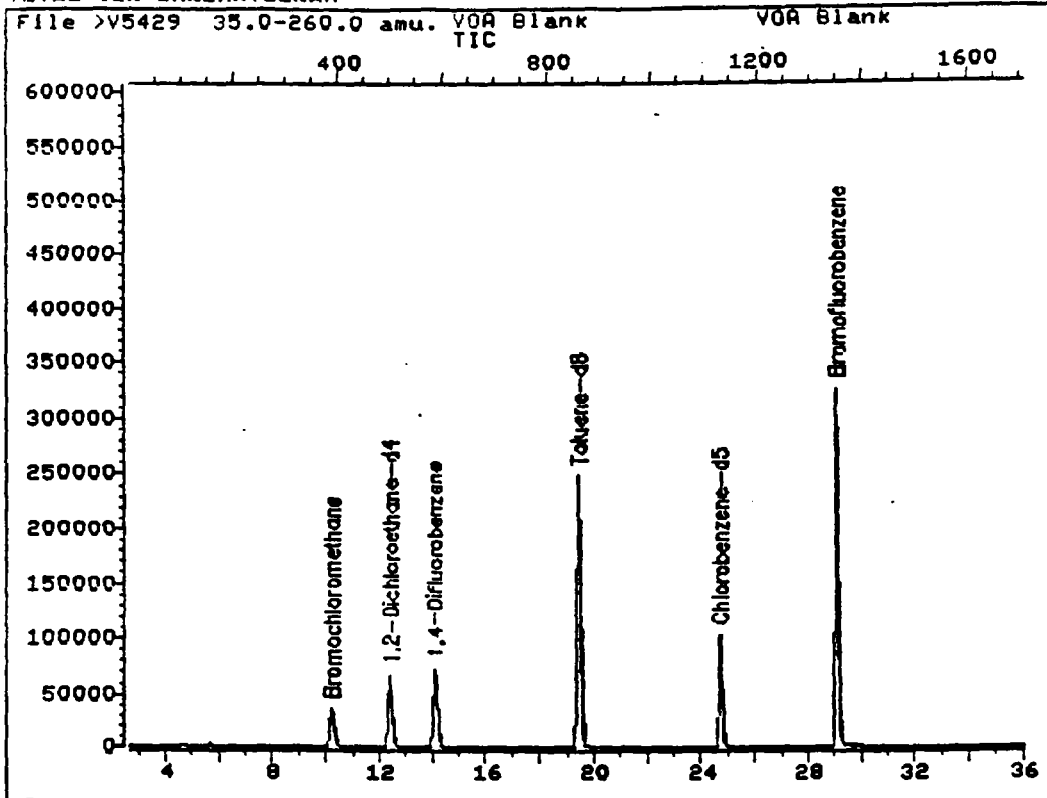
MATRIX Water
 DILUTION FACTOR 1.00
 QA BATCH _____
 DATE ANALYZED 10/31/92

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

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TOTAL ION CHROMATOGRAM



Data File: >U5429::D1
Name: UOA Blank
Misc: UOA Blank

Quant Output File: ^U5429::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

359

2A
WATER VOLATILE SURROGATE RECOVERY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	CCC/SPCC	88	103	96		0
02	VOA BLANK	94	94	101		0
03	9173.9 5mL	96	97	105		0
04	9173.2 5mL	93	96	103		0
05	9173.3 5mL	90	98	108		0
06	9173.5 5mL	93	97	102		0
07	9173.6 5mL	94	95	102		0
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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
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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

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Environmental Profile Lab Contract: Serv-Air

Lab Code: 15526

Lab File ID (Standard): >U5346

Date Analyzed: 10/27/92

Instrument ID: GC/MSD 5970 #1

Time Analyzed: 10:27

Matrix: Water

Column: Capillary

	IS1(BCM)		IS2(DFB)		IS3(CBZ)	
	AREA #	RT	AREA #	RT	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 UOA 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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22						

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

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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): >U5362

Date Analyzed: 10/27/92

Instrument ID: GC/MSD 5970 #1

Time Analyzed: 22:24

Matrix: Water

Column: Capillary

	IS1(BCM)	RT	IS2(DFB)	RT	IS3(CBZ)	RT
	AREA #		AREA #		AREA #	
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 UOA 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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22						

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): >U5412

Date Analyzed: 10/30/92

Instrument ID: GC/MSD 5970 #1

Time Analyzed: 10:38

Matrix: Water

Column: Capillary

	IS1(BCM)	RT	IS2(DFB)	RT	IS3(CBZ)	RT
	AREA #		AREA #		AREA #	
12 HOUR STD	44650.	10.19	228874.	14.06	159025.	24.73
UPPER LIMIT	89300.		457748.		318050.	
LOWER LIMIT	22325.		114437.		79513.	
EPA SAMPLE NO.						
01 VOA BLANK	40625.	10.22	189887.	14.07	139015.	24.73
02 9173.1 5uL	50369.	10.28	291166.	14.09	240904.	24.74
03 9173.8 50u	50705.	10.30	270452.	14.11	219647.	24.76
04 9173.10 50	49769.	10.27	274961.	14.10	234733.	24.75
05 9173.15 .5	55387.	10.25	270531.	14.09	235486.	24.74
06 9173.16 .5	43537.	10.25	236958.	14.10	196077.	24.74
07 9173.24 .5	45462.	10.23	241628.	14.10	200442.	24.74
08 9173.17 5m	51271.	10.24	258374.	14.09	213999.	24.72
09 9173.22 5m	50884.	10.24	264926.	14.07	216604.	24.72
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22						

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): >U5428

Date Analyzed: 10/31/92

Instrument ID: GC/MSD 5970 #1

Time Analyzed: 14:11

Matrix: Water

Column: Capillary

	IS1(BCM)		IS2(DFB)		IS3(CBZ)	
	AREA #	RT	AREA #	RT	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 UOA 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
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

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

MONITORING WELL SAMPLING DATASHEET

DATE: 10-26-92

SAMPLERS: Robert Brown, Kette

LOCATION (BLDG. #): 2567

WEATHER CONDITIONS: Sunny 55°F

LABORATORY: EPL

MW # 1 : 2926925

DEPTH TO WATER: 5.17

TIME: 3:55

DEPTH OF WELL: 13.14

OVA/HNU: ND

HEIGHT OF WATER: 7.97

EVACUATED GAL. H2O: 16 (7.97 X .65 X 3 = 15.54)

MW # 2 : 2926926

DEPTH TO WATER: 3.16'

TIME: 4:05

DEPTH OF WELL: 11.63'

OVA/HNU: ND

HEIGHT OF WATER: 8.47

EVACUATED GAL H2O: 17gals (8.47 X .65 X 3 = 16.51)

MW # 3 : 2926927

DEPTH TO WATER: 4.52'

TIME: 4:10

DEPTH OF WELL: 12.30'

OVA/HNU: ND

HEIGHT OF WATER: 7.78'

EVACUATED GAL H2O: 16 (7.78 X .65 X 3 = 15.17)

MW # 4 : 2926928

DEPTH TO WATER: 4.38

TIME: 4:13

DEPTH OF WELL: 12.59

OVA/HNU: ND

HEIGHT OF WATER: 8.21

EVACUATED GAL H2O: 16 (8.21 X .65 X 3 = 16)

Report of Analysis
 U.S. Army, Fort Monmouth Environmental Laboratory
 NJDEPE Cert. # 13461

Client: U.S. Army, FM
 DEH

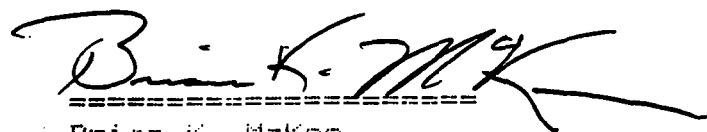
Project: Bldg. 2567
 Sample Rec'd:
 Start:
 Complete:

1151
 02/24/93
 02/24/93
 03/01/93

Analysite: PFH
 Matrix: Soil

Lab. ID	Description	mg/L	grams	%S	mg/Kg	D. Limit
1151.1	A	2.32	30	85	9.1	3.3
1151.2	B	6.14	30	66	31	3.3
1151.3	C	5.38	26	66	31.4	3.3
1151.4	D	7.67	25	82	37.4	3.3
1151.5	E	7.67	22	66	41.3	3.3
1151.6	F	8.82	27	74	44.1	3.3
1151.7	G	6.53	18	72	50.4	3.3
1151.8	H	10.7	26	77	53.4	3.3
1151.9	I	7.29	30	84	28.9	3.3
1151.10	J	13.8	26	80	66.3	3.3
1151.11	K	21	28	83	90.4	3.3
1151.12	L	1212	30	89	4539.3	13.2
1151.13	M	58.4	30	67	290.5	3.3
1151.14	N	53.2	30	72	246.3	3.3
1151.15	O	56.2	30	67	279.6	3.3
1151.16	P	38.1	30	84	151.2	3.3
1151.17	Q	92.5	30	85	362.7	3.3
1151.18	R	37.7	30	85	147.8	3.3
1151.19	S	13.5	30	76	59.2	3.3
1151.20	T	26.4	30	73	120.5	3.3
1151.21	U	48.9	30	87	187.4	3.3
1151.22	V	55.4	30	85	217.3	3.3
1151.23	W	70.4	30	73	321.5	3.3
1151.23DUP	DUP	70	30	76	307	3.3
1151.23SPK	SPK	234.7 *	30	75	1043.1	3.3

Notes: ND = Not Detected
 mg/Kg value is based on dry weight.
 * = Calibration limit exceeded
 96% DUPLICATION
 140% SPIKE RECOVERY



Brian K. McKee
 Laboratory Director



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SERV-AIR, INC.

PROJECT: FORT MONMOUTH

BUILDING 2567

ANALYSIS NO:

CLIENT ID:

A 0995
A 0996
A 0997
A 0998
A 0999
A 1000
A 1001
A 1002
A 1003
A 1004
A 1005
A 1006
A 1007
A 1008
A 1009
A 1010
A 1011
A 1012
A 1013
A 1014
A 1015
A 1016
A 1017
A 1018
A 1019

SITE A
SITE B
SITE C
SITE D
SITE E
SITE F
SITE G
SITE H
SITE I
SITE J
SITE K
SITE L
SITE M
SITE N
SITE O
SITE P
SITE Q
SITE R
SITE S
SITE T
SITE U
SITE V
SITE W
TRIP BLANK
FIELD BLANK

DATE RECEIVED: FEBRUARY 24, 1993

TWENTY FIRST CENTURY
ENVIRONMENTAL, INC.

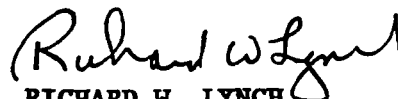

RICHARD W. LYNCH
LABORATORY MANAGER

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Narrative..... 00001

Chain of Custody Forms..... 00002

Methodology..... 00005

Laboratory Chronicle..... 00006

Result Summary..... 00007

Data Package..... 00059

Quality Control Data..... 00161

NARRATIVE

There were no problems encountered during the analysis of this batch of samples (A0995 to A1019). A review of the chronicle verifies that all analysis were performed within proper hold time. Please note A1019 (Client ID Field Blank) showed contamination. The initial results were confirmed by analyzing a second 40 ml vial.

CLIENT: SEKV-HIR Lnc

A0995-A1019

ADDRESS: Bldg 1209

PROJECT DESCRIPTION:

CITY: Fort Monmouth

Bldg 2567

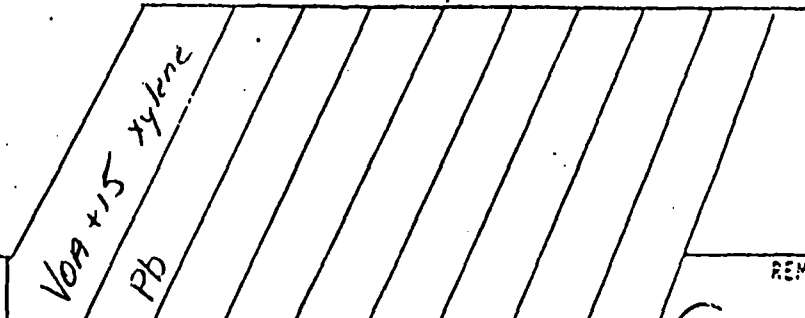
STATE: NJ ZIP: 07703

VST Closure - (1-92-7950)

ATTN: Environmental Laboratory

P.O.# _____

ANALYSES REQUESTED



0000

SAMPLE IDENTIFICATION	MATRIX	SAMPLE DATE	SAMPLE TIME	TYPE		PRESERV.	# OF CONT.	ANALYSES REQUESTED										REMARKS					
				GR	C			1	2	3	4	5	6	7	8	9	10		11	12			
Site A	Soil	2/24/93	1032	x		NONE	2	x	x														
Site B			1130					x	x														
Site C			1125					x	x														
Site D			1120					x	x														
Site E			1115					x	x														
Site F			1506					x	x														
Site G			1250					x	x														
Site H			1245					x	x														
Site I			1240					x	x														
Site J			1235					x	x														

See Cont.

SAMPLED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
SIG:	see above	Richard W. Condit	2/24/93	Richard W. Condit	2/24/93	Mark D. Feitelson
PRINT: Charles Apples		Serv Air	1320	Serv Air	1350	Mark D. Feitelson
COMPANY: U.S. Army		Env. Field Tech		Env. Field Tech		21st Cent. Env.

RELINQUISHED BY:	DATE/TIME	RECEIVED FOR LAB:
SIG: Mark D. Feitelson	2/24/93	Richard W. Condit
PRINT: Mark D. Feitelson	1630	Richard W. Condit
COMPANY: 21st Cent. Env.		21st Cent. Env.

DATA DELIVERABLES

Tier II

Results only

Other _____

TURNAROUND TIME

STANDARD (2-3 wks.)

The following need prior lab authorization:

1 wk. 72 hrs.

48 hrs. 24 hrs.

AUTHORIZED BY:

DELIVERY METHOD: In Person: UPS: Fed Ex: Lab Courier:

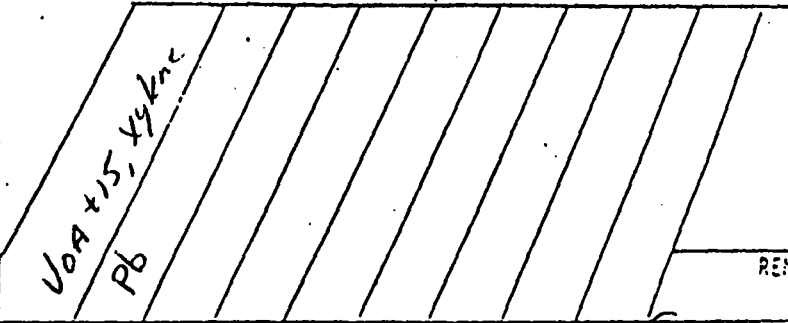
CLIENT: SERV AIR Inc.
 ADDRESS: Bldg. 1209
 CITY: Fort Monmouth
 STATE: NJ ZIP: 07703
 ATTN: Environmental Laboratory

A0995-A1019

30000

PROJECT DESCRIPTION:
Bldg 2567
UST closure C-92-2950
 P.O.# _____

ANALYSES REQUESTED



SAMPLE IDENTIFICATION	MATRIX	SAMPLE DATE	SAMPLE TIME	TYPE		PRESERV.	# OF CONT.	ANALYSES REQUESTED										REMARKS			
				GR	C																
Site K	Soil	2/24/93	1215	x		None	2	x	x												
Site L			1213					x	x												
Site M			1210					x	x												
Site N			1200					x	x												
Site O			1150					x	x												
Site P			1148					x	x												
Site Q			1105					x	x												
Site R			1100					x	x												
Site S			1041					x	x												
Site T			1040					x	x												

See Contract

SAMPLED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
SIG:	see sure	Roddenberg	2/24/93	Roddenberg	2/24/93	Mark D. Feitelberg
PRINT: <u>Charles Appley</u>			1320		1350	Mark D. Feitelberg
COMPANY: <u>U.S. Army</u> <u>Cat # 2056</u>						21st Cent Env

RELINQUISHED BY:	DATE/TIME	RECEIVED FOR LAB:
SIG: <u>Mark D. Feitelberg</u>	2/2-1/93	<u>Richard W. Lynch</u>
PRINT: <u>Mark D. Feitelberg</u>	1630	<u>Richard W. Lynch</u>
COMPANY: <u>U.S. Army</u> <u>21st Cent Env</u>		<u>21ST CENT. ENV.</u>

DATA DELIVERABLES

Tier II

Results only

Other _____

TURNAROUND TIME

STANDARD (2-3 wks.)

The following need prior lab authorization:

1 wk. 72 hrs.

48 hrs. 24 hrs.

AUTHORIZED BY: _____

DELIVERY METHOD:

In Person UPS Fed Ex Other _____

CLIENT: SERV-AIR Inc.

ADDRESS: Bldg 1209

CITY: Fort Monmouth

STATE: NJ ZIP: 07703

ATTN: Environmental Laboratory

A0995-A1019

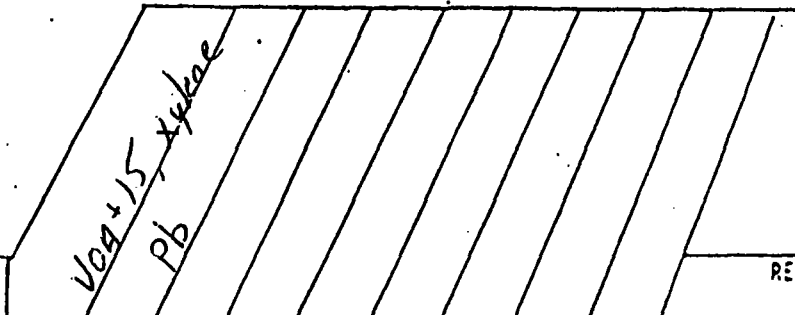
PROJECT DESCRIPTION:

Bldg 2567

UST Closure C-92-2950

P.O.# _____

ANALYSES REQUESTED



10000

SAMPLE IDENTIFICATION	MATRIX	SAMPLE DATE	SAMPLE TIME	TYPE GR C	PRESERV.	# OF CONT.	ANALYSES REQUESTED										REMARKS			
Site U	Soil	2/24/93	1034	x		2	x	x												[See Contract]
Site V	Soil		1035	x		2	x	x												
Site W	Soil		1200	x		2	x	x												
TRIP BLANK	AQ		—	x		1	x													
Field BLANK	AQ		1310	x		4	x	x												

SAMPLED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
SIG: _____	see above	<u>Rodriguez</u>	2/24/93	<u>Rodriguez</u>	2/24/93	<u>Mark D. Feltson</u>
PRINT: <u>Charles Appley</u>			1320		1350	<u>Mark D. Feltson</u>
COMPANY: <u>U.S. Army</u>						<u>21st Cent Env.</u>

Ext. # 2056

RELINQUISHED BY:	DATE/TIME	RECEIVED FOR LAB:
SIG: <u>Mark D. Feltson</u>	2/24/93	<u>Richard W. Lynch</u>
PRINT: <u>Mark D. Feltson</u>	1630	<u>Richard W. Lynch</u>
COMPANY: <u>21st Cent Env.</u>		<u>21st Cent. Env.</u>

DATA DELIVERABLES

Tier II

Results only

Other _____

TURNAROUND TIME

STANDARD (2-3 wks.)

The following need prior lab authorization:

1 wk. 72 hrs.

48 hrs. 24 hrs.

AUTHORIZED BY: _____

DELIVERY METHOD: In Person: UPS: Fed Ex: Lab Courier:

LABORATORY CHRONICLE

RECEIPT/REFRIGERATION

2/24/93

ORGANICS
EXTRACTION

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

ANALYSIS

- 1. Volatiles 2/25/93-3/4/93
- 2. Acids NA
- 3. Base/Neutrals NA
- 4. Pesticides/PCB's/Herbicides NA
- 5. Petroleum Hydrocarbons/Oil & Grease NA
- 6. Total Organic Carbon NA

Section Supervisor
Review & Approval

Jeffery G. Martin

INORGANICS

- 1. Metals 2/25/93-3/3/93
- 2. Cyanides NA
- 3. Phenols NA

OTHER ANALYTES

Section Supervisor
Review & Approval

Mari Luves

Quality Control Supervisor
Review & Approval

John East

Laboratory Director
Review & Approval

Richard W. Lynd

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

00000

Metals

Soil samples for metal analysis were run in accordance with the methods prescribed in SW846. 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.

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 from SW846.



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CERTIFICATE OF ANALYSIS

LEAD

U.S. ARMY FORT MONMOUTH

Bldg. 2567

<u>ANALYSIS NO:</u>	<u>CLIENT ID:</u>	<u>MDL (mg/kg)</u>	<u>RESULT (mg/kg)</u>
A 0995	Site A	5.0	129
A 0996	Site B	5.0	55.1
A 0997	Site C	5.0	15.0
A 0998	Site D	5.0	N.D.
A 0999	Site E	5.0	N.D.
A 1000	Site F	5.0	19.6
A 1001	Site G	5.0	37.4
A 1002	Site H	5.0	15.2
A 1003	Site I	5.0	39.0
A 1004	Site J	5.0	15.5
A 1005	Site K	5.0	6.19
A 1006	Site L	5.0	25.8
A 1007	Site M	5.0	87.5
A 1008	Site N	5.0	49.3
A 1009	Site O	5.0	92.5
A 1010	Site P	5.0	N.D.
A 1011	Site Q	5.0	N.D.
A 1012	Site R	5.0	7.77
A 1013	Site S	5.0	10.8
A 1014	Site T	5.0	9.38
A 1015	Site U	5.0	N.D.
A 1016	Site V	5.0	22.7
A 1017	Site W	5.0	47.2
A 1019 *	Field Blank	0.05 mg/L	N.D.

* Aqueous Field Blank - Results in mg/L with an MDL of 0.05 mg/L

00008

RESULT SUMMARY

1E
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SITE A

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

Job Number: US ARMY FT MONMOUTH, NJ BLDG #2567
 SITE A

COMMENT-

Matrix: (soil/water) Soil

Lab Sample ID: A 0995

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

Lab File ID: >A0851

Level: (low/med) LDW

Date Received: 02/24/93

% Moisture: 17

Date Analyzed: 02/25/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

	No Unknowns			

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	<u>US ARMY-FT MONMOUTH, NJ</u>	MATRIX	<u>Soil</u>
SAMPLE NUMBER	<u>A0995</u>	DILUTION FACTOR	<u>1.00</u>
CLIENT ID	<u>BLDG 2567 SITE A</u>	COMMENT	<u></u>
DATA FILE	<u>>A0851</u>	DATE ANALYZED	<u>02/25/93</u>

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	60	Bromodichloromethane	ND	6
Acrylonitrile	ND	60	2-Chloroethylvinylether	ND	12
Chloromethane	ND	12	2-Hexanone	ND	12
Bromomethane	ND	12	trans-1,3-Dichloropropene	ND	6
Vinyl Chloride	ND	12	Toluene	ND	6
Chloroethane	ND	12	cis-1,3-Dichloropropene	ND	6
Acetone	14	12	1,1,2,2-Tetrachloroethane	ND	6
1,1-Dichloroethene	ND	6	1,1,2-Trichloroethane	ND	6
Carbon Disulfide	ND	12	4-Methyl-2-pentanone	ND	12
Methylene Chloride	ND	6	Tetrachloroethene	ND	6
1,2-Dichloroethene(trans)	ND	6	Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6	Chlorobenzene	ND	6
Vinyl Acetate	ND	6	Ethylbenzene	ND	6
2-Butanone	ND	12	m&p-Xylenes	ND	6
Chloroform	ND	6	o-Xylene	ND	6
1,1,1-Trichloroethane	ND	6	Styrene	ND	6
Carbon Tetrachloride	ND	6	Bromoform	ND	6
1,2-Dichloroethane	ND	6	m-Dichlorobenzene	ND	6
Benzene	ND	6	p-Dichlorobenzene	ND	6
Trichloroethene	ND	6	o-Dichlorobenzene	ND	6
1,2-Dichloropropane	ND	6			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	98.6	70 - 121	OK
Toluene-d8	97.2	81 - 117	OK
Bromofluorobenzene	95.7	74 - 121	OK

Percent Solid of 83.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE B

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567

COMMENT-

Matrix: (soil/water) SOIL SITE B

Lab Sample ID: A 0996

Sample wt/vol: .004 (g/mL) g

Lab File ID: >A0904

Level: MED

Date Received: 02/24/93

% Moisture: 35

Date Analyzed 02/28/93

Column: CAP

Dilution Factor: 1250

Number TICs Found 20

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	108872 Cyclohexane, methyl- (8CI9CI)	11.38	17000
2	592132 Hexane, 2,5-dimethyl- (8CI9CI)	12.34	20000
3	589811 Heptane, 3-methyl- (8CI9CI)	12.58	17000
4	111659 Octane (DOT)(8CI9CI)	13.26	12000
5	921471 Hexane, 2,3,4-trimethyl- (8CI9CI)	14.97	20000
6	2216333 Octane, 3-methyl- (8CI9CI)	15.18	12000
7	98828 Benzene, (1-methylethyl)- (9CI)	17.15	26000
8	103651 Benzene, propyl- (8CI9CI)	17.90	40000
9	611143 Benzene, 1-ethyl-2-methyl- (9CI)	18.05	200000
10	108678 Benzene, 1,3,5-trimethyl- (9CI)	18.21	77000
11	622968 Benzene, 1-ethyl-4-methyl- (9CI)	18.59	37000
12	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	18.91	220000
13	622968 Benzene, 1-ethyl-3-methyl- (9CI)	19.68	58000
14	611154 Benzene, 1-ethenyl-2-methyl- (9CI)	20.06	89000
15	1758889 Benzene, 2-ethyl-1,4-dimethyl- (9CI)	20.21	68000
16	1074551 Benzene, 1-methyl-4-propyl- (9CI)	20.56	12000
17	535773 Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	20.71	26000
18	2870044 Benzene, 2-ethyl-1,3-dimethyl- (9CI)	20.90	38000
19	55319727 Benzene, 1-ethenyl-3-ethyl-, mixt. with 1-et	21.12	25000
20	934805 Benzene, 4-ethyl-1,2-dimethyl- (9CI)	21.47	11000

00012

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY-FT MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A0996	DILUTION FACTOR	1250.00
CLIENT ID	BLDG 2567 SITE B	COMMENT	
DATA FILE	>A0904	DATE ANALYZED	02/28/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	96000	Bromodichloromethane	ND	9600
Acrylonitrile	ND	96000	2-Chloroethylvinylether	ND	19000
Chloromethane	ND	19000	2-Hexanone	ND	19000
Bromomethane	ND	19000	trans-1,3-Dichloropropene	ND	9600
Vinyl Chloride	ND	19000	Toluene	ND	9600
Chloroethane	ND	19000	cis-1,3-Dichloropropene	ND	9600
Acetone	ND B	19000	1,1,2,2-Tetrachloroethane	ND	9600
1,1-Dichloroethene	ND	9600	1,1,2-Trichloroethane	ND	9600
Carbon Disulfide	ND	19000	4-Methyl-2-pentanone	ND	19000
Methylene Chloride	ND B	9600	Tetrachloroethene	ND	9600
1,2-Dichloroethene(trans)	ND	9600	Dibromochloromethane	ND	9600
1,1-Dichloroethane	ND	9600	Chlorobenzene	ND	9600
Vinyl Acetate	ND	9600	Ethylbenzene	44000	9600
2-Butanone	ND	19000	m&p-Xylenes	170000	9600
Chloroform	ND	9600	o-Xylene	25000	9600
1,1,1-Trichloroethane	ND	9600	Styrene	ND	9600
Carbon Tetrachloride	ND	9600	Bromoform	ND	9600
1,2-Dichloroethane	ND	9600	m-Dichlorobenzene	ND	9600
Benzene	ND	9600	p-Dichlorobenzene	ND	9600
Trichloroethene	ND	9600	o-Dichlorobenzene	ND	9600
1,2-Dichloropropane	ND	9600			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	92.3	70 - 121	OK
Toluene-d8	101	81 - 117	OK
Bromofluorobenzene	100	74 - 121	OK

Percent Solid of 65.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE C

Lab Name: 21st Century Environmental
 Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
 Matrix: (soil/water) SOIL
 Sample wt/vol: 5 (g/mL) g
 Level: LOW
 % Moisture: 44
 Column: CAP
 Number TICs Found 17

COMMENT
 Lab Sample ID: A 0997
 Lab File ID: >A0852
 Date Received: 02/24/93
 Date Analyzed 02/25/93
 Dilution Factor: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	115071 1-Propene (9CI)	4.27	21
2	78784 Butane, 2-methyl- (8CI9CI)	5.02	250
3	109660 Pentane (ACN)(DOT)(8CI9CI)	5.16	36
4	109660 Pentane (ACN)(DOT)(8CI9CI)	5.47	180
5	1630940 Cyclopropane, 1,1-dimethyl- (8CI9CI)	5.99	38
6	67641 2-Propanone (9CI)	6.25	34
7	107835 Pentane, 2-methyl- (8CI9CI)	6.98	170
8	1438148 Oxirane, (1-methylethyl)- (9CI)	7.35	110
9	110543 Hexane (DOT)(8CI9CI)	7.77	23
10	616126 2-Pentene, 3-methyl-, (E)- (8CI9CI)	8.48	16
11	96377 Cyclopentane, methyl- (8CI9CI)	8.71	210
12	1120623 Cyclopentene, 3-methyl- (8CI9CI)	9.47	13
13	4806615 Cyclobutane, ethyl- (8CI9CI)	9.79	30
14	2532583 Cyclopentane, 1,3-dimethyl-, cis- (8CI9CI)	10.31	16
15	108872 Cyclohexane, methyl- (8CI9CI)	11.51	20
16	UNKNOWN	12.17	5
17	16491159 Cyclopentene, 1,5-dimethyl- (8CI9CI)	12.36	20

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	<u>US ARMY-FT MONMOUTH, NJ</u>	MATRIX	<u>Soil</u>
SAMPLE NUMBER	<u>A0997</u>	DILUTION FACTOR	<u>1.00</u>
CLIENT ID	<u>BLDG_2567 SITE C</u>	COMMENT	
DATA FILE	<u>>A0852</u>	DATE ANALYZED	<u>02/25/93</u>

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	89	Bromodichloromethane	ND	9
Acrylonitrile	ND	89	2-Chloroethylvinylether	ND	18
Chloromethane	ND	18	2-Hexanone	ND	18
Bromomethane	ND	18	trans-1,3-Dichloropropene	ND	9
Vinyl Chloride	ND	18	Toluene	3.6 J	9
Chloroethane	ND	18	cis-1,3-Dichloropropene	ND	9
Acetone	350	18	1,1,2,2-Tetrachloroethane	ND	9
1,1-Dichloroethene	ND	9	1,1,2-Trichloroethane	ND	9
Carbon Disulfide	ND	18	4-Methyl-2-pentanone	ND	18
Methylene Chloride	ND	9	Tetrachloroethene	ND	9
1,2-Dichloroethene(trans)	ND	9	Dibromochloromethane	ND	9
1,1-Dichloroethane	ND	9	Chlorobenzene	ND	9
Vinyl Acetate	ND	9	Ethylbenzene	ND	9
2-Butanone	69	18	m&p-Xylenes	19	9
Chloroform	ND	9	o-Xylene	5.2 J	9
1,1,1-Trichloroethane	ND	9	Styrene	ND	9
Carbon Tetrachloride	ND	9	Bromoform	ND	9
1,2-Dichloroethane	ND	9	m-Dichlorobenzene	ND	9
Benzene	ND	9	p-Dichlorobenzene	ND	9
Trichloroethene	ND	9	o-Dichlorobenzene	ND	9
1,2-Dichloropropane	ND	9			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	102	70 - 121	OK
Toluene-d8	95.2	81 - 117	OK
Bromofluorobenzene	80.5	74 - 121	OK

Percent Solid of 56.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

STIE D

Lab Name: 21st Century Environmental
Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
SITE D

COMMENT-

Matrix: (soil/water) SOIL

Lab Sample ID: A 0998

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

Lab File ID: >A0855

Level: LOW

Date Received: 02/24/93

% Moisture: 19

Date Analyzed 02/25/93

Column: CAP

Dilution Factor: 1

Number TICs Found 7

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	611143 Benzene, 1-ethyl-2-methyl- (9CI)	18.36	20
2	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	18.51	7
3	620144 Benzene, 1-ethyl-3-methyl- (9CI)	18.88	5
4	108678 Benzene, 1,3,5-trimethyl- (9CI)	19.20	26
5	622968 Benzene, 1-ethyl-4-methyl- (9CI)	19.97	6
6	496117 1H-Indene, 2,3-dihydro- (9CI)	20.35	7
7	1758889 Benzene, 2-ethyl-1,4-dimethyl- (9CI)	20.50	5

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ MATRIX Soil
 SAMPLE NUMBER A0998 DILUTION FACTOR 1.00
 CLIENT ID BLDG 2567 SITE D COMMENT _____
 DATA FILE A0855 DATE ANALYZED 02/25/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	62	Bromodichloromethane	ND	6
Acrylonitrile	ND	62	2-Chloroethylvinylether	ND	12
Chloromethane	ND	12	2-Hexanone	ND	12
Bromomethane	ND	12	trans-1,3-Dichloropropene	ND	6
Vinyl Chloride	ND	12	Toluene	ND	6
Chloroethane	ND	12	cis-1,3-Dichloropropene	ND	6
Acetone	20	12	1,1,2,2-Tetrachloroethane	ND	6
1,1-Dichloroethene	ND	6	1,1,2-Trichloroethane	ND	6
Carbon Disulfide	ND	12	4-Methyl-2-pentanone	ND	12
Methylene Chloride	ND	6	Tetrachloroethene	ND	6
1,2-Dichloroethene(trans)	ND	6	Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6	Chlorobenzene	ND	6
Vinyl Acetate	ND	6	Ethylbenzene	ND	6
2-Butanone	ND	12	m,p-Xylenes	14	6
Chloroform	ND	6	o-Xylene	5.5 J	6
1,1,1-Trichloroethane	ND	6	Styrene	ND	6
Carbon Tetrachloride	ND	6	Bromoform	ND	6
1,2-Dichloroethane	ND	6	m-Dichlorobenzene	ND	6
Benzene	ND	6	p-Dichlorobenzene	ND	6
Trichloroethene	ND	6	o-Dichlorobenzene	ND	6
1,2-Dichloropropane	ND	6			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	106	70 - 121	OK
Toluene-d8	97.6	81 - 117	OK
Bromofluorobenzene	96.6	74 - 121	OK

Percent Solid of 81.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE E

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH BLDG 2567

SITE E

Matrix: (soil/water) SOIL

Sample wt/vol: 1 (g/mL) g

Level: LDW

% Moisture: 33

Column: CAP

Number TICs Found 11

COMMENT

Lab Sample ID: A 0999

Lab File ID: >A0858

Date Received: 02/24/93

Date Analyzed 02/25/93

Dilution Factor: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1 107017	2-Butene (8CI9CI)	4.13	42
2	UNKNOWN	5.11	40
3 109660	Pentane (ACN)(DOT)(8CI9CI)	5.56	64
4 513359	2-Butene, 2-methyl- (8CI9CI)	6.06	420
5 1191964	Cyclopropane, ethyl- (8CI9CI)	7.11	97
6 1634044	Propane, 2-methoxy-2-methyl- (9CI)	7.45	280
7 563791	2-Butene, 2,3-dimethyl- (8CI9CI)	8.16	110
8 922623	2-Pentene, 3-methyl-, (Z)- (8CI9CI)	8.28	40
9 616126	2-Pentene, 3-methyl-, (E)- (8CI9CI)	8.54	75
10 96377	Cyclopentane, methyl- (8CI9CI)	8.78	130
11 693890	Cyclopentene, 1-methyl- (8CI9CI)	9.52	120

00018

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A0999	DILUTION FACTOR	5.00
CLIENT ID	BLDG 2567 SITE E	COMMENT	
DATA FILE	>A085E	DATE ANALYZED	02/25/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	370	Bromodichloromethane	ND	37
Acrylonitrile	ND	370	2-Chloroethylvinylether	ND	75
Chloromethane	ND	75	2-Hexanone	ND	75
Bromomethane	ND	75	trans-1,3-Dichloropropene	ND	37
Vinyl Chloride	ND	75	Toluene	44	37
Chloroethane	ND	75	cis-1,3-Dichloropropene	ND	37
Acetone	140	75	1,1,2,2-Tetrachloroethane	ND	37
1,1-Dichloroethene	ND	37	1,1,2-Trichloroethane	ND	37
Carbon Disulfide	ND	75	4-Methyl-2-pentanone	ND	75
Methylene Chloride	ND	37	Tetrachloroethene	ND	37
1,2-Dichloroethene(trans)	ND	37	Dibromochloromethane	ND	37
1,1-Dichloroethane	ND	37	Chlorobenzene	ND	37
Vinyl Acetate	ND	37	Ethylbenzene	20 J	37
2-Butanone	ND	75	m&p-Xylenes	100	37
Chloroform	ND	37	o-Xylene	16 J	37
1,1,1-Trichloroethane	ND	37	Styrene	ND	37
Carbon Tetrachloride	ND	37	Bromoform	ND	37
1,2-Dichloroethane	ND	37	m-Dichlorobenzene	ND	37
Benzene	1900	37	p-Dichlorobenzene	ND	37
Trichloroethene	ND	37	o-Dichlorobenzene	ND	37
1,2-Dichloropropane	ND	37			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	107	70 - 121	OK
Toluene-d8	94.1	81 - 117	OK
Bromofluorobenzene	94.2	74 - 121	OK

Percent Solid of 67.0 is used for all Target compounds.

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

00017

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

Lab Name: 21st Century Environmental

SITE F

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
SITE F

COMMENT

Matrix: (soil/water) SOIL

Lab Sample ID: A 1000

Sample wt/vol: .04 (g/mL) g

Lab File ID: >A0872

Level: MED

Date Received: 02/24/93

% Moisture: 24

Date Analyzed 02/26/93

Column: CAP

Dilution Factor: 125

Number TICs Found 20

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	107835 Pentane, 2-methyl- (8CI9CI)	6.89	6100
2	16747254 Hexane, 2,2,3-trimethyl- (8CI9CI)	7.28	3400
3	110543 Hexane (DOT)(8CI9CI)	7.71	5500
4	96377 Cyclopentane, methyl- (8CI9CI)	8.65	5100
5	16747389 Pentane, 2,3,3,4-tetramethyl- (8CI9CI)	9.62	4900
6	589344 Hexane, 3-methyl- (8CI9CI)	9.90	4700
7	4468648 Oxetane, 2-propyl- (9CI)	10.57	2600
8	108872 Cyclohexane, methyl- (8CI9CI)	11.48	2900
9	592278 Heptane, 2-methyl- (8CI9CI)	12.45	2400
10	589811 Heptane, 3-methyl- (8CI9CI)	12.68	2400
11	111657 Octane (DOT)(8CI9CI)	13.38	1800
12	921471 Hexane, 2,3,4-trimethyl- (8CI9CI)	15.09	2100
13	103651 Benzene, propyl- (8CI9CI)	18.00	1800
14	611143 Benzene, 1-ethyl-3-methyl- (9CI)	18.16	7900
15	108678 Benzene, 1,3,5-trimethyl- (9CI)	18.32	3600
16	622968 Benzene, 1-ethyl-4-methyl- (9CI)	18.68	2400
17	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	19.00	7600
18	611143 Benzene, 1-ethyl-2-methyl- (9CI)	19.78	2200
19	496117 1H-Indene, 2,3-dihydro- (9CI)	20.15	3200
20	1758889 Benzene, 2-ethyl-1,4-dimethyl- (9CI)	20.29	2500

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ
SAMPLE NUMBER A1000
CLIENT ID BLDG 256Z SITE F
DATA FILE >A0872

MATRIX Soil
DILUTION FACTOR 125.00
COMMENT
DATE ANALYZED 02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	8200	Bromodichloromethane	ND	820
Acrylonitrile	ND	8200	2-Chloroethylvinylether	ND	1600
Chloromethane	ND	1600	2-Hexanone	ND	1600
Bromomethane	ND	1600	trans-1,3-Dichloropropene	ND	820
Vinyl Chloride	ND	1600	Toluene	1000	820
Chloroethane	ND	1600	cis-1,3-Dichloropropene	ND	820
Acetone	ND	1600	1,1,2,2-Tetrachloroethane	ND	820
1,1-Dichloroethene	ND	820	1,1,2-Trichloroethane	ND	820
Carbon Disulfide	ND	1600	4-Methyl-2-pentanone	ND	1600
Methylene Chloride	ND	820	Tetrachloroethene	ND	820
1,2-Dichloroethene(trans)	ND	820	Dibromochloromethane	ND	820
1,1-Dichloroethane	ND	820	Chlorobenzene	ND	820
Vinyl Acetate	ND	820	Ethylbenzene	780 J	820
2-Butanone	ND	1600	m,p-Xylenes	11000	820
Chloroform	ND	820	o-Xylene	740 J	820
1,1,1-Trichloroethane	ND	820	Styrene	ND	820
Carbon Tetrachloride	ND	820	Bromoform	ND	820
1,2-Dichloroethane	ND	820	m-Dichlorobenzene	ND	820
Benzene	680 J	820	p-Dichlorobenzene	ND	820
Trichloroethene	ND	820	o-Dichlorobenzene	ND	820
1,2-Dichloropropane	ND	820			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	105	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	98.9	74 - 121	OK

Percent Solid of 76.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE G

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
SITE G

COMMENT

Lab Sample ID: A 1001

Matrix: (soil/water) SOIL

Sample wt/vol: .02 (g/mL) g

Lab File ID: >A0873

Level: MED

Date Received: 02/24/93

% Moisture: 34

Date Analyzed 02/26/93

Column: CAP

Dilution Factor: 250

Number TICs Found 20

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	107835 Pentane, 2-methyl- (8CI9CI)	6.91	24000
2	110543 Hexane (DOT)(8CI9CI)	7.73	15000
3	96377 Cyclopentane, methyl- (8CI9CI)	8.69	14000
4	591764 Hexane, 2-methyl- (8CI9CI)	9.66	18000
5	589344 Hexane, 3-methyl- (8CI9CI)	9.94	17000
6	142825 Heptane (DOT)(8CI9CI)	10.62	8000
7	108872 Cyclohexane, methyl- (8CI9CI)	11.51	8500
8	565753 Pentane, 2,3,4-trimethyl- (8CI9CI)	12.16	6400
9	560214 Pentane, 2,3,3-trimethyl- (8CI9CI)	12.36	10000
10	592278 Heptane, 2-methyl- (8CI9CI)	12.47	8500
11	589811 Heptane, 3-methyl- (8CI9CI)	12.71	8600
12	111659 Octane (DOT)(8CI9CI)	13.41	6200
13	921471 Hexane, 2,3,4-trimethyl- (8CI9CI)	15.10	10000
14	2216333 Octane, 3-methyl- (8CI9CI)	15.31	6200
15	611143 Benzene, 1-ethyl-2-methyl- (9CI)	18.19	21000
16	108678 Benzene, 1,3,5-trimethyl- (9CI)	18.35	14000
17	622968 Benzene, 1-ethyl-4-methyl- (9CI)	18.72	6400
18	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	19.03	24000
19	1074437 Benzene, 1-methyl-3-propyl- (9CI)	20.20	12000
20	1758889 Benzene, 2-ethyl-1,4-dimethyl- (9CI)	20.32	13000

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ
 SAMPLE NUMBER A1001
 CLIENT ID BLDG. 2567 SITE G
 DATA FILE >A0873

MATRIX Soil
 DILUTION FACTOR 250.00
 COMMENT
 DATE ANALYZED 02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	1900	Bromodichloromethane	ND	1900
Acrylonitrile	ND	1900	2-Chloroethylvinylether	ND	3800
Chloromethane	ND	3800	2-Hexanone	ND	3800
Bromomethane	ND	3800	trans-1,3-Dichloropropene	ND	1900
Vinyl Chloride	ND	3800	Toluene	14000	1900
Chloroethane	ND	3800	cis-1,3-Dichloropropene	ND	1900
Acetone	ND	3800	1,1,2,2-Tetrachloroethane	ND	1900
1,1-Dichloroethene	ND	1900	1,1,2-Trichloroethane	ND	1900
Carbon Disulfide	ND	3800	4-Methyl-2-pentanone	ND	3800
Methylene Chloride	ND	1900	Tetrachloroethene	ND	1900
1,2-Dichloroethene(trans)	ND	1900	Dibromochloromethane	ND	1900
1,1-Dichloroethane	ND	1900	Chlorobenzene	ND	1900
Vinyl Acetate	ND	1900	Ethylbenzene	9300	1900
2-Butanone	ND	3800	m,p-Xylenes	47000	1900
Chloroform	ND	1900	o-Xylene	20000	1900
1,1,1-Trichloroethane	ND	1900	Styrene	ND	1900
Carbon Tetrachloride	ND	1900	Bromoform	ND	1900
1,2-Dichloroethane	ND	1900	m-Dichlorobenzene	ND	1900
Benzene	14000	1900	p-Dichlorobenzene	ND	1900
Trichloroethene	ND	1900	o-Dichlorobenzene	ND	1900
1,2-Dichloropropane	ND	1900			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	106	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	98.9	74 - 121	OK

Percent Solid of 66.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE H

Lab Name: 21st Century Environmental
Job Number: US ARMY FT MONMOUTH BLDG 2567
SITE H

COMMENT

Matrix: (soil/water) SOIL
Sample wt/vol: .04 (g/mL) g

Lab Sample ID: LA 1002
Lab File ID: >A0880

Level: MED

Date Received: 02/24/93

% Moisture: 31

Date Analyzed 02/26/93

Column: CAP

Dilution Factor: 125

Number TICs Found 19

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	540841 Pentane, 2,2,4-trimethyl- (8CI9CI)	110.32	1600
2	584941 Hexane, 2,3-dimethyl- (8CI9CI)	112.33	1300
3	592132 Hexane, 2,5-dimethyl- (8CI9CI)	112.43	1300
4	589811 Heptane, 3-methyl- (8CI9CI)	112.67	1400
5	111659 Octane (DOT)(8CI9CI)	113.37	990
6	2216344 Octane, 4-methyl- (8CI9CI)	115.06	1400
7	2216333 Octane, 3-methyl- (8CI9CI)	115.28	900
8	103651 Benzene, propyl- (8CI9CI)	117.99	1200
9	611143 Benzene, 1-ethyl-2-methyl- (9CI)	118.15	6400
10	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	118.31	3200
11	622968 Benzene, 1-ethyl-4-methyl- (9CI)	118.67	1400
12	108678 Benzene, 1,3,5-trimethyl- (9CI)	118.98	8100
13	620144 Benzene, 1-ethyl-3-methyl- (9CI)	119.76	1900
14	1074437 Benzene, 1-methyl-3-propyl- (9CI)	120.15	3600
15	1758889 Benzene, 2-ethyl-1,4-dimethyl- (9CI)	120.27	3900
16	1120214 Undecane (8CI9CI)	120.51	900
17	933982 Benzene, 1-ethyl-2,3-dimethyl- (9CI)	120.78	1400
18	535773 Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	120.97	2000
19	767588 1H-Indene, 2,3-dihydro-1-methyl- (9CI)	121.20	1400

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A1002	DILUTION FACTOR	125.00
CLIENT ID	BLDG 2567 STIE H	COMMENT	
DATA FILE	>A0880	DATE ANALYZED	02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	9000	Bromodichloromethane	ND	900
Acrylonitrile	ND	9000	2-Chloroethylvinylether	ND	1800
Chloromethane	ND	1800	2-Hexanone	ND	1800
Bromomethane	ND	1800	trans-1,3-Dichloropropene	ND	900
Vinyl Chloride	ND	1800	Toluene	1200	900
Chloroethane	ND	1800	cis-1,3-Dichloropropene	ND	900
Acetone	ND	1800	1,1,2,2-Tetrachloroethane	ND	900
1,1-Dichloroethene	ND	900	1,1,2-Trichloroethane	ND	900
Carbon Disulfide	ND	1800	4-Methyl-2-pentanone	ND	1800
Methylene Chloride	390 J	900	Tetrachloroethene	ND	900
1,2-Dichloroethene(trans)	ND	900	Dibromochloromethane	ND	900
1,1-Dichloroethane	ND	900	Chlorobenzene	ND	900
Vinyl Acetate	ND	900	Ethylbenzene	1400	900
2-Butanone	ND	1800	m,p-Xylenes	7100	900
Chloroform	ND	900	o-Xylene	1500	900
1,1,1-Trichloroethane	ND	900	Styrene	ND	900
Carbon Tetrachloride	ND	900	Bromoform	ND	900
1,2-Dichloroethane	ND	900	m-Dichlorobenzene	ND	900
Benzene	250 J	900	p-Dichlorobenzene	ND	900
Trichloroethene	ND	900	o-Dichlorobenzene	ND	900
1,2-Dichloropropane	ND	900			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	103	70 - 121	OK
Toluene-d8	101	81 - 117	OK
Bromofluorobenzene	100	74 - 121	OK

Percent Solid of 69.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE I

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
SITE I

Matrix: (soil/water) SOIL

COMMENT

Lab Sample ID: A 1003

Sample wt/vol: .004 (g/mL) g

Lab File ID: >A0874

Level: MED

Date Received: 02/24/93

% Moisture: 18

Date Analyzed 02/26/93

Column: CAP

Dilution Factor: 1250

Number TICs Found 20

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1 591764	Hexane, 2-methyl- (8CI9CI)	9.61	72000
2 589344	Hexane, 3-methyl- (8CI9CI)	9.90	70000
3 590738	Hexane, 2,2-dimethyl- (8CI9CI)	10.30	80000
4 142825	Heptane (DOT)(8CI9CI)	10.56	30000
5 592132	Hexane, 2,5-dimethyl- (8CI9CI)	11.47	43000
6 565753	Pentane, 2,3,4-trimethyl- (8CI9CI)	12.12	56000
7 20278879	Heptane, 3,3,4-trimethyl- (8CI9CI)	12.32	78000
8 592278	Heptane, 2-methyl- (8CI9CI)	12.43	45000
9 589811	Heptane, 3-methyl- (8CI9CI)	12.67	48000
10 111659	Octane (DOT)(8CI9CI)	13.36	33000
11 17302282	Nonane, 2,6-dimethyl- (8CI9CI)	15.07	44000
12 103651	Benzene, propyl- (8CI9CI)	17.99	37000
13 611143	Benzene, 1-ethyl-2-methyl- (9CI)	18.15	180000
14 108678	Benzene, 1,3,5-trimethyl- (9CI)	18.31	78000
15 622968	Benzene, 1-ethyl-4-methyl- (9CI)	18.68	45000
16 95636	Benzene, 1,2,4-trimethyl- (8CI9CI)	19.00	200000
17 620144	Benzene, 1-ethyl-3-methyl- (9CI)	19.77	44000
18 1074437	Benzene, 1-methyl-3-propyl- (9CI)	20.18	71000
19 1758889	Benzene, 2-ethyl-1,4-dimethyl- (9CI)	20.30	71000
20 535773	Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	21.00	37000

00026

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ
 SAMPLE NUMBER A1003
 CLIENT ID BLDG 2567 SITE I
 DATA FILE >A0874

MATRIX Soil
 DILUTION FACTOR 1250.00
 COMMENT _____
 DATE ANALYZED 02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	76000	Bromodichloromethane	ND	7600
Acrylonitrile	ND	76000	2-Chloroethylvinylether	ND	15000
Chloromethane	ND	15000	2-Hexanone	ND	15000
Bromomethane	ND	15000	trans-1,3-Dichloropropene	ND	7600
Vinyl Chloride	ND	15000	Toluene	30000	7600
Chloroethane	ND	15000	cis-1,3-Dichloropropene	ND	7600
Acetone	ND	15000	1,1,2,2-Tetrachloroethane	ND	7600
1,1-Dichloroethene	ND	7600	1,1,2-Trichloroethane	ND	7600
Carbon Disulfide	ND	15000	4-Methyl-2-pentanone	ND	15000
Methylene Chloride	2400 J	7600	Tetrachloroethene	ND	7600
1,2-Dichloroethene(trans)	ND	7600	Dibromochloromethane	ND	7600
1,1-Dichloroethane	ND	7600	Chlorobenzene	ND	7600
Vinyl Acetate	ND	7600	Ethylbenzene	45000	7600
2-Butanone	ND	15000	m,p-Xylenes	170000	7600
Chloroform	ND	7600	o-Xylene	60000	7600
1,1,1-Trichloroethane	ND	7600	Styrene	ND	7600
Carbon Tetrachloride	ND	7600	Bromoform	ND	7600
1,2-Dichloroethane	ND	7600	m-Dichlorobenzene	ND	7600
Benzene	2900 J	7600	p-Dichlorobenzene	ND	7600
Trichloroethene	ND	7600	o-Dichlorobenzene	ND	7600
1,2-Dichloropropane	ND	7600			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	107	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	98.0	74 - 121	OK

Percent Solid of 82.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE J

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
SITE J

COMMENT

Matrix: (soil/water) SOIL

Lab Sample ID: A 1004

Sample wt/vol: .004 (g/mL) g

Lab File ID: >A0871

Level: MED

Date Received: 02/24/93

% Moisture: 18

Date Analyzed 02/26/93

Column: CAP

Dilution Factor: 1250

Number TICs Found 20

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	591764 Hexane, 2-methyl- (8CI9CI)	9.64	50000
2	589344 Hexane, 3-methyl- (8CI9CI)	9.92	50000
3	590738 Hexane, 2,2-dimethyl- (8CI9CI)	10.32	23000
4	142825 Heptane (DOT)(8CI9CI)	10.59	27000
5	108872 Cyclohexane, methyl- (8CI9CI)	11.48	26000
6	560214 Pentane, 2,3,3-trimethyl- (8CI9CI)	12.33	34000
7	592278 Heptane, 2-methyl- (8CI9CI)	12.44	44000
8	589811 Heptane, 3-methyl- (8CI9CI)	12.67	44000
9	921471 Hexane, 2,3,4-trimethyl- (8CI9CI)	15.07	48000
10	2216333 Octane, 3-methyl- (8CI9CI)	15.27	28000
11	103651 Benzene, propyl- (8CI9CI)	17.98	24000
12	611143 Benzene, 1-ethyl-2-methyl- (9CI)	18.14	150000
13	108678 Benzene, 1,3,5-trimethyl- (9CI)	18.31	74000
14	622968 Benzene, 1-ethyl-4-methyl- (9CI)	18.68	40000
15	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	18.99	170000
16	620144 Benzene, 1-ethyl-3-methyl- (9CI)	19.77	40000
17	1074437 Benzene, 1-methyl-3-propyl- (9CI)	20.17	65000
18	535773 Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	20.30	62000
19	1758889 Benzene, 2-ethyl-1,4-dimethyl- (9CI)	20.81	23000
20	527844 Benzene, 1-methyl-2-(1-methylethyl)- (9CI)	21.00	33000

00028

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ
 SAMPLE NUMBER A1004
 CLIENT ID BLDG 2567 SITE J
 DATA FILE >A0871

MATRIX Soil
 DILUTION FACTOR 1250.00
 COMMENT
 DATE ANALYZED 02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	76000	Bromodichloromethane	ND	7600
Acrylonitrile	ND	76000	2-Chloroethylvinylether	ND	15000
Chloromethane	ND	15000	2-Hexanone	ND	15000
Bromomethane	ND	15000	trans-1,3-Dichloropropene	ND	7600
Vinyl Chloride	ND	15000	Toluene	68000	7600
Chloroethane	ND	15000	cis-1,3-Dichloropropene	ND	7600
Acetone	ND	15000	1,1,2,2-Tetrachloroethane	ND	7600
1,1-Dichloroethene	ND	7600	1,1,2-Trichloroethane	ND	7600
Carbon Disulfide	ND	15000	4-Methyl-2-pentanone	ND	15000
Methylene Chloride	ND	7600	Tetrachloroethene	ND	7600
1,2-Dichloroethene(trans)	ND	7600	Dibromochloromethane	ND	7600
1,1-Dichloroethane	ND	7600	Chlorobenzene	ND	7600
Vinyl Acetate	ND	7600	Ethylbenzene	37000	7600
2-Butanone	ND	15000	m,p-Xylenes	160000	7600
Chloroform	ND	7600	o-Xylene	69000	7600
1,1,1-Trichloroethane	ND	7600	Styrene	ND	7600
Carbon Tetrachloride	ND	7600	Bromoform	ND	7600
1,2-Dichloroethane	ND	7600	m-Dichlorobenzene	ND	7600
Benzene	1800 J	7600	p-Dichlorobenzene	ND	7600
Trichloroethene	ND	7600	o-Dichlorobenzene	ND	7600
1,2-Dichloropropane	ND	7600			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	106	70 - 121	OK
Toluene-d8	103	81 - 117	OK
Bromofluorobenzene	99.1	74 - 121	OK

Percent Solid of 82.0 is used for all Target compounds.

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

00027

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE K

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567

COMMENT

Matrix: (soil/water) SOIL SITE K

Lab Sample ID: A 1005

Sample wt/vol: .02 (g/mL) g

Lab File ID: >A0876

Level: MED

Date Received: 02/24/93

% Moisture: 31

Date Analyzed 02/26/93

Column: CAP

Dilution Factor: 250

Number TICs Found 20

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1 107835	Pentane, 2-methyl- (8CI9CI)	6.94	13000
2 16747287	Hexane, 2,3,3-trimethyl- (8CI9CI)	9.63	16000
3 107119	2-Propen-1-amine (9CI)	9.76	14000
4 589344	Hexane, 3-methyl- (8CI9CI)	9.91	14000
5 590738	Hexane, 2,2-dimethyl- (8CI9CI)	10.31	16000
6 142825	Heptane (DOT)(8CI9CI)	10.58	7400
7 108872	Cyclohexane, methyl- (8CI9CI)	11.46	9000
8 565753	Pentane, 2,3,4-trimethyl- (8CI9CI)	12.11	9400
9 56728100	1-Hexene, 3,4,5-trimethyl- (9CI)	12.31	13000
10 592132	Hexane, 2,5-dimethyl- (8CI9CI)	12.42	7100
11 1067089	Pentane, 3-ethyl-3-methyl- (8CI9CI)	12.65	7200
12 103651	Benzene, propyl- (8CI9CI)	17.95	7100
13 611143	Benzene, 1-ethyl-2-methyl- (9CI)	18.11	36000
14 108678	Benzene, 1,3,5-trimethyl- (9CI)	18.27	14000
15 622968	Benzene, 1-ethyl-4-methyl- (9CI)	18.65	9700
16 95636	Benzene, 1,2,4-trimethyl- (8CI9CI)	18.96	41000
17 620144	Benzene, 1-ethyl-3-methyl- (9CI)	19.74	9400
18 873494	Benzene, cyclopropyl- (8CI9CI)	20.12	12000
19 1758889	Benzene, 2-ethyl-1,4-dimethyl- (9CI)	20.25	11000
20 535773	Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	20.96	6200

00030

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A1005	DILUTION FACTOR	250.00
CLIENT ID	BLDG 2567 SITE K	COMMENT	
DATA FILE	>A0876	DATE ANALYZED	02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	18000	Bromodichloromethane	ND	1800
Acrylonitrile	ND	18000	2-Chloroethylvinylether	ND	3600
Chloromethane	ND	3600	2-Hexanone	ND	3600
Bromomethane	ND	3600	trans-1,3-Dichloropropene	ND	1800
Vinyl Chloride	ND	3600	Toluene	32000	1800
Chloroethane	ND	3600	cis-1,3-Dichloropropene	ND	1800
Acetone	ND	3600	1,1,2,2-Tetrachloroethane	ND	1800
1,1-Dichloroethene	ND	1800	1,1,2-Trichloroethane	ND	1800
Carbon Disulfide	ND	3600	4-Methyl-2-pentanone	ND	3600
Methylene Chloride	ND	1800	Tetrachloroethane	ND	1800
1,2-Dichloroethene(trans)	ND	1800	Dibromochloromethane	ND	1800
1,1-Dichloroethane	ND	1800	Chlorobenzene	ND	1800
Vinyl Acetate	ND	1800	Ethylbenzene	14000	1800
2-Butanone	ND	3600	m,p-Xylenes	51000	1800
Chloroform	ND	1800	o-Xylene	23000	1800
1,1,1-Trichloroethane	ND	1800	Styrene	ND	1800
Carbon Tetrachloride	ND	1800	Bromoform	ND	1800
1,2-Dichloroethane	ND	1800	m-Dichlorobenzene	ND	1800
Benzene	2300	1800	p-Dichlorobenzene	ND	1800
Trichloroethene	ND	1800	o-Dichlorobenzene	ND	1800
1,2-Dichloropropane	ND	1800			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	106	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	100.0	74 - 121	OK

Percent Solid of 69.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE L

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
Matrix: (soil/water) SOIL SITE L

COMMENT
Lab Sample ID: A 1006

Sample wt/vol: .0008 (g/mL) g

Lab File ID: >A0877

Level: MED

Date Received: 02/24/93

% Moisture: 20

Date Analyzed 02/26/93

Column: CAP

Dilution Factor: 6250

Number TICs Found 20

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	591764 Hexane, 2-methyl- (8CI9CI)	9.61	150000
2	565593 Pentane, 2,3-dimethyl- (8CI9CI)	9.74	130000
3	589344 Hexane, 3-methyl- (8CI9CI)	9.89	140000
4	590738 Hexane, 2,2-dimethyl- (8CI9CI)	10.29	200000
5	142825 Heptane (DOT)(8CI9CI)	10.56	73000
6	108872 Cyclohexane, methyl- (8CI9CI)	11.45	98000
7	589537 Heptane, 4-methyl- (8CI9CI)	12.11	120000
8	584941 Hexane, 2,3-dimethyl- (8CI9CI)	12.31	190000
9	592132 Hexane, 2,5-dimethyl- (8CI9CI)	12.42	94000
10	16747389 Pentane, 2,3,3,4-tetramethyl- (8CI9CI)	12.64	100000
11	921471 Hexane, 2,3,4-trimethyl- (8CI9CI)	15.06	81000
12	103651 Benzene, propyl- (8CI9CI)	17.98	91000
13	611143 Benzene, 1-ethyl-2-methyl- (9CI)	18.14	480000
14	622968 Benzene, 1-ethyl-4-methyl- (9CI)	18.30	190000
15	620144 Benzene, 1-ethyl-3-methyl- (9CI)	18.67	120000
16	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	18.99	510000
17	98828 Benzene, (1-methylethyl)- (9CI)	19.75	110000
18	1074437 Benzene, 1-methyl-3-propyl- (9CI)	20.15	150000
19	535773 Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	20.28	140000
20	933982 Benzene, 1-ethyl-2,3-dimethyl- (9CI)	20.97	78000

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ
SAMPLE NUMBER A1006
CLIENT ID BLDG 2567 SITE L
DATA FILE >A0877

MATRIX Soil
DILUTION FACTOR 6250.00
COMMENT
DATE ANALYZED 02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	39000	Bromodichloromethane	ND	39000
Acrylonitrile	ND	39000	2-Chloroethylvinylether	ND	78000
Chloromethane	ND	78000	2-Hexanone	ND	78000
Bromomethane	ND	78000	trans-1,3-Dichloropropene	ND	39000
Vinyl Chloride	ND	78000	Toluene	320000	39000
Chloroethane	ND	78000	cis-1,3-Dichloropropene	ND	39000
Acetone	ND	78000	1,1,2,2-Tetrachloroethane	ND	39000
1,1-Dichloroethene	ND	39000	1,1,2-Trichloroethane	ND	39000
Carbon Disulfide	ND	78000	4-Methyl-2-pentanone	ND	78000
Methylene Chloride	ND	39000	Tetrachloroethene	ND	39000
1,2-Dichloroethene(trans)	ND	39000	Dibromochloromethane	ND	39000
1,1-Dichloroethane	ND	39000	Chlorobenzene	ND	39000
Vinyl Acetate	ND	39000	Ethylbenzene	170000	39000
2-Butanone	ND	78000	m,p-Xylenes	620000	39000
Chloroform	ND	39000	o-Xylene	270000	39000
1,1,1-Trichloroethane	ND	39000	Styrene	ND	39000
Carbon Tetrachloride	ND	39000	Bromoform	ND	39000
1,2-Dichloroethane	ND	39000	m-Dichlorobenzene	ND	39000
Benzene	11000 J	39000	p-Dichlorobenzene	ND	39000
Trichloroethene	ND	39000	o-Dichlorobenzene	ND	39000
1,2-Dichloropropane	ND	39000			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	109	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	106	74 - 121	OK

Percent Solid of 80.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE M

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567

Matrix: (soil/water) SOIL SITE M

Sample wt/vol: .002 (g/mL) g

Level: MED

% Moisture: 41

Column: CAP

Number TICs Found 20

COMMENT

Lab Sample ID: A 1007

Lab File ID: >A0875

Date Received: 02/24/93

Date Analyzed 02/26/93

Dilution Factor: 2580

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	591764 Hexane, 2-methyl- (8CI9CI)	9.66	69000
2	UNKNOWN	9.78	69000
3	590738 Hexane, 2,2-dimethyl- (8CI9CI)	10.33	120000
4	108872 Cyclohexane, methyl- (8CI9CI)	11.49	56000
5	589537 Heptane, 4-methyl- (8CI9CI)	12.15	78000
6	560214 Pentane, 2,3,3-trimethyl- (8CI9CI)	12.35	110000
7	592278 Heptane, 2-methyl- (8CI9CI)	12.45	53000
8	589811 Heptane, 3-methyl- (8CI9CI)	12.68	59000
9	111659 Octane (DOT) (8CI9CI)	13.37	41000
10	921471 Hexane, 2,3,4-trimethyl- (8CI9CI)	15.06	49000
11	103651 Benzene, propyl- (8CI9CI)	17.99	78000
12	611143 Benzene, 1-ethyl-2-methyl- (9CI)	18.15	370000
13	622968 Benzene, 1-ethyl-4-methyl- (9CI)	18.31	130000
14	620144 Benzene, 1-ethyl-3-methyl- (9CI)	18.68	93000
15	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	18.99	410000
16	98828 Benzene, (1-methylethyl)- (9CI)	19.77	85000
17	1074437 Benzene, 1-methyl-3-propyl- (9CI)	20.16	110000
18	535773 Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	20.29	100000
19	1758889 Benzene, 2-ethyl-1,4-dimethyl- (9CI)	20.80	39000
20	527844 Benzene, 1-methyl-2-(1-methylethyl)- (9CI)	20.99	56000

0003i

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A1007	DILUTION FACTOR	2500.00
CLIENT ID	BLDG 2567 SITE M	COMMENT	
DATA FILE	>A0875	DATE ANALYZED	02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	210000	Bromodichloromethane	ND	21000
Acrylonitrile	ND	210000	2-Chloroethylvinylether	ND	42000
Chloromethane	ND	42000	2-Hexanone	ND	42000
Bromomethane	ND	42000	trans-1,3-Dichloropropene	ND	21000
Vinyl Chloride	ND	42000	Toluene	110000	21000
Chloroethane	ND	42000	cis-1,3-Dichloropropene	ND	21000
Acetone	ND	42000	1,1,2,2-Tetrachloroethane	ND	21000
1,1-Dichloroethene	ND	21000	1,1,2-Trichloroethane	ND	21000
Carbon Disulfide	ND	42000	4-Methyl-2-pentanone	ND	42000
Methylene Chloride	ND	21000	Tetrachloroethene	ND	21000
1,2-Dichloroethene(trans)	ND	21000	Dibromochloromethane	ND	21000
1,1-Dichloroethane	ND	21000	Chlorobenzene	ND	21000
Vinyl Acetate	ND	21000	Ethylbenzene	140000	21000
2-Butanone	ND	42000	m,p-Xylenes	520000	21000
Chloroform	ND	21000	o-Xylene	230000	21000
1,1,1-Trichloroethane	ND	21000	Styrene	ND	21000
Carbon Tetrachloride	ND	21000	Bromoform	ND	21000
1,2-Dichloroethane	ND	21000	m-Dichlorobenzene	ND	21000
Benzene	5600 J	21000	p-Dichlorobenzene	ND	21000
Trichloroethene	ND	21000	o-Dichlorobenzene	ND	21000
1,2-Dichloropropane	ND	21000			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	108	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	100	74 - 121	OK

Percent Solid of 59.0 is used for all Target compounds.

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

00033

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE N

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
SITE N

Matrix: (soil/water) SOIL

Sample wt/vol: .002 (g/mL) g

Level: MED

% Moisture: 43

Column: CAP

Number TICs Found 20

COMMENT

Lab Sample ID: A 1008

Lab File ID: >A0888

Date Received: 02/24/93

Date Analyzed 02/26/93

Dilution Factor: 2500

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	107835 Pentane, 2-methyl- (8CI9CI)	6.96	190000
2	591764 Hexane, 2-methyl- (8CI9CI)	9.66	190000
3	589344 Hexane, 3-methyl- (8CI9CI)	9.94	170000
4	590738 Hexane, 2,2-dimethyl- (8CI9CI)	10.35	160000
5	142825 Heptane (DOT)(8CI9CI)	10.62	82000
6	108872 Cyclohexane, methyl- (8CI9CI)	11.51	100000
7	565753 Pentane, 2,3,4-trimethyl- (8CI9CI)	12.16	110000
8	560214 Pentane, 2,3,3-trimethyl- (8CI9CI)	12.36	150000
9	592278 Heptane, 2-methyl- (8CI9CI)	12.47	98000
10	589811 Heptane, 3-methyl- (8CI9CI)	12.71	110000
11	2213232 Heptane, 2,4-dimethyl- (8CI9CI)	15.10	91000
12	103651 Benzene, propyl- (8CI9CI)	18.01	98000
13	611143 Benzene, 1-ethyl-2-methyl- (9CI)	18.17	530000
14	108678 Benzene, 1,3,5-trimethyl- (9CI)	18.33	210000
15	622968 Benzene, 1-ethyl-4-methyl- (9CI)	18.70	140000
16	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	19.01	600000
17	620144 Benzene, 1-ethyl-3-methyl- (9CI)	19.79	140000
18	UNKNOWN	20.17	190000
19	535773 Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	20.31	170000
20	527844 Benzene, 1-methyl-2-(1-methylethyl)- (9CI)	21.00	96000

00036

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	<u>US ARMY FT MONMOUTH, NJ</u>	MATRIX	<u>Soil</u>
SAMPLE NUMBER	<u>A1008</u>	DILUTION FACTOR	<u>2500.00</u>
CLIENT ID	<u>BLDG 2567 SITE N</u>	COMMENT	
DATA FILE	<u>>A0888</u>	DATE ANALYZED	<u>02/26/93</u>

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	220000	Bromodichloromethane	ND	22000
Acrylonitrile	ND	220000	2-Chloroethylvinylether	ND	44000
Chloromethane	ND	44000	2-Hexanone	ND	44000
Bromomethane	ND	44000	trans-1,3-Dichloropropene	ND	22000
Vinyl Chloride	ND	44000	Toluene	460000	22000
Chloroethane	ND	44000	cis-1,3-Dichloropropene	ND	22000
Acetone	39000 JB	44000	1,1,2,2-Tetrachloroethane	ND	22000
1,1-Dichloroethene	ND	22000	1,1,2-Trichloroethane	ND	22000
Carbon Disulfide	ND	44000	4-Methyl-2-pentanone	ND	44000
Methylene Chloride	ND	22000	Tetrachloroethene	ND	22000
1,2-Dichloroethene(trans)	ND	22000	Dibromochloromethane	ND	22000
1,1-Dichloroethane	ND	22000	Chlorobenzene	ND	22000
Vinyl Acetate	ND	22000	Ethylbenzene	210000	22000
2-Butanone	ND	44000	m&p-Xylenes	840000	22000
Chloroform	ND	22000	o-Xylene	360000	22000
1,1,1-Trichloroethane	ND	22000	Styrene	ND	22000
Carbon Tetrachloride	ND	22000	Bromoform	ND	22000
1,2-Dichloroethane	ND	22000	m-Dichlorobenzene	ND	22000
Benzene	27000	22000	p-Dichlorobenzene	ND	22000
Trichloroethene	ND	22000	o-Dichlorobenzene	ND	22000
1,2-Dichloropropane	ND	22000			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	105	70 - 121	OK
Toluene-d8	101	81 - 117	OK
Bromofluorobenzene	101	74 - 121	OK

Percent Solid of 57.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE 0

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567

COMMENT

Lab Sample ID: A 1009

Matrix: (soil/water) SOIL SITE 0

Lab File ID: >A0959

Sample wt/vol: .004 (g/mL) g

Date Received: 02/24/93

Level: MED

Date Analyzed 03/04/93

% Moisture: 49

Dilution Factor: 1250

Column: CAP

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

Number TICs Found 7

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	107835 Pentane, 2-methyl- (8CI9CI)	7.04	13000
2	96377 Cyclopentane, methyl- (8CI9CI)	8.77	14000
3	590738 Hexane, 2,2-dimethyl- (8CI9CI)	10.43	8400
4	UNKNOWN	12.45	8600
5	611143 Benzene, 1-ethyl-2-methyl- (9CI)	18.29	11000
6	526738 Benzene, 1,2,3-trimethyl- (8CI9CI)	19.14	13000
7	624839 Methane, isocyanato- (9CI)	20.03	7800

00038

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	<u>U.S. ARMY FT MONMOUTH, NJ</u>	MATRIX	<u>Soil</u>
SAMPLE NUMBER	<u>A1009</u>	DILUTION FACTOR	<u>1250.00</u>
CLIENT ID	<u>BLDG 2567 SITE 0</u>	COMMENT	
DATA FILE	<u>2A0959</u>	DATE ANALYZED	<u>03/04/93</u>

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	120000	Bromodichloromethane	ND	12000
Acrylonitrile	ND	120000	2-Chloroethylvinylether	ND	24000
Chloromethane	ND	24000	2-Hexanone	ND	24000
Bromomethane	ND	24000	trans-1,3-Dichloropropene	ND	12000
Vinyl Chloride	ND	24000	Toluene	11000 J	12000
Chloroethane	ND	24000	cis-1,3-Dichloropropene	ND	12000
Acetone	ND B	24000	1,1,2,2-Tetrachloroethane	ND	12000
1,1-Dichloroethene	ND	12000	1,1,2-Trichloroethane	ND	12000
Carbon Disulfide	ND	24000	4-Methyl-2-pentanone	ND	24000
Methylene Chloride	ND	12000	Tetrachloroethane	ND	12000
1,2-Dichloroethene(trans)	ND	12000	Dibromochloromethane	ND	12000
1,1-Dichloroethane	ND	12000	Chlorobenzene	ND	12000
Vinyl Acetate	ND	12000	Ethylbenzene	29000	12000
2-Butanone	ND	24000	m,p-Xylenes	90000	12000
Chloroform	ND	12000	o-Xylene	36000	12000
1,1,1-Trichloroethane	ND	12000	Styrene	ND	12000
Carbon Tetrachloride	ND	12000	Bromoform	ND	12000
1,2-Dichloroethane	ND	12000	m-Dichlorobenzene	ND	12000
Benzene	45000	12000	p-Dichlorobenzene	ND	12000
Trichloroethane	ND	12000	o-Dichlorobenzene	ND	12000
1,2-Dichloropropane	ND	12000			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	101	70 - 121	OK
Toluene-d8	98.8	81 - 117	OK
Bromofluorobenzene	99.7	74 - 121	OK

Percent Solid of 51.0 is used for all Target compounds.

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

00037

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE P

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
Matrix: (soil/water) SOIL SITE P

COMMENT

Lab Sample ID: A 1010

Sample wt/vol: 1 (g/mL) g

Lab File ID: >A0879

Level: ~~MED~~ LOW

Date Received: 02/24/93

% Moisture: 22

Date Analyzed 02/26/93

Column: CAP

Dilution Factor: 5

Number TICs Found 19

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1 1634044	Propane, 2-methoxy-2-methyl- (9CI)	7.31	140
2 540841	Pentane, 2,2,4-trimethyl- (8CI9CI)	10.26	44
3 109933	Ethene, 1,1'-oxybis- (9CI)	12.27	42
4 592278	Heptane, 2-methyl- (8CI9CI)	12.38	58
5 589811	Heptane, 3-methyl- (8CI9CI)	12.61	63
6 921471	Hexane, 2,3,4-trimethyl- (8CI9CI)	15.02	90
7 2216333	Octane, 3-methyl- (8CI9CI)	15.23	51
8 103651	Benzene, propyl- (8CI9CI)	17.94	44
9 611143	Benzene, 1-ethyl-2-methyl- (9CI)	18.11	420
10 108678	Benzene, 1,3,5-trimethyl- (9CI)	18.26	210
11 622968	Benzene, 1-ethyl-3-methyl- (9CI)	18.63	140
12 95636	Benzene, 1,2,4-trimethyl- (8CI9CI)	18.94	600
13 622968	Benzene, 1-ethyl-4-methyl- (9CI)	19.71	170
14 611154	Benzene, 1-ethenyl-2-methyl- (9CI)	20.09	230
15 535773	Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	20.24	170
16 1074551	Benzene, 1-methyl-4-propyl- (9CI)	20.59	33
17 933982	Benzene, 1-ethyl-2,3-dimethyl- (9CI)	20.75	72
18 874419	Benzene, 1-ethyl-2,4-dimethyl- (9CI)	20.95	110
19 767588	1H-Indene, 2,3-dihydro-1-methyl- (9CI)	21.17	64

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ
 SAMPLE NUMBER A101a
 CLIENT ID BLDG 2567 SITE P
 DATA FILE >A0879

MATRIX Soil
 DILUTION FACTOR 5.00
 COMMENT
 DATE ANALYZED 02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	320	Bromodichloromethane	ND	32
Acrylonitrile	ND	320	2-Chloroethylvinylether	ND	64
Chloromethane	ND	64	2-Hexanone	ND	64
Bromomethane	ND	64	trans-1,3-Dichloropropene	ND	32
Vinyl Chloride	ND	64	Toluene	290	32
Chloroethane	ND	64	cis-1,3-Dichloropropene	ND	32
Acetone	ND	64	1,1,2,2-Tetrachloroethane	ND	32
1,1-Dichloroethene	ND	32	1,1,2-Trichloroethane	ND	32
Carbon Disulfide	ND	64	4-Methyl-2-pentanone	ND	64
Methylene Chloride	18 J	32	Tetrachloroethene	ND	32
1,2-Dichloroethene(trans)	ND	32	Dibromochloromethane	ND	32
1,1-Dichloroethane	ND	32	Chlorobenzene	ND	32
Vinyl Acetate	ND	32	Ethylbenzene	140	32
2-Butanone	ND	64	m&p-Xylenes	730	32
Chloroform	ND	32	o-Xylene	380	32
1,1,1-Trichloroethane	ND	32	Styrene	ND	32
Carbon Tetrachloride	ND	32	Bromoform	ND	32
1,2-Dichloroethane	ND	32	m-Dichlorobenzene	ND	32
Benzene	32 J	32	p-Dichlorobenzene	ND	32
Trichloroethene	ND	32	o-Dichlorobenzene	ND	32
1,2-Dichloropropane	ND	32			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	104	70 - 121	OK
Toluene-d8	101	81 - 117	OK
Bromofluorobenzene	97.9	74 - 121	OK

Percent Solid of 78.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE Q

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 567
Matrix: (soil/water) SOIL SITE

COMMENT

Lab Sample ID: A 1011

Sample wt/vol: .0008 (g/mL) g

Lab File ID: >A0889

Level: MED

Date Received: 02/24/93

% Moisture: 16

Date Analyzed 02/26/93

Column: CAP

Dilution Factor: 6250

Number TICs Found 20

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

CAS NUMBER	COMPOUND NAME	RT	TEST CONC
1	591764 Hexane, 2-methyl- (8CI9CI)	9.70	150000
2	565593 Pentane, 2,3-dimethyl- (8CI9CI)	9.83	240000
3	589344 Hexane, 3-methyl- (8CI9CI)	9.98	140000
4	540841 Pentane, 2,2,4-trimethyl- (8CI9CI)	10.38	260000
5	142825 Heptane (DOT)(8CI9CI)	10.65	68000
6	108872 Cyclohexane, methyl- (8CI9CI)	11.54	90000
7	109900 Ethane, isocyanato- (9CI)	12.19	120000
8	111717 Heptanal (8CI9CI)	12.40	130000
9	592278 Heptane, 2-methyl- (8CI9CI)	12.51	99000
10	589811 Heptane, 3-methyl- (8CI9CI)	12.73	100000
11	111659 Octane (DOT)(8CI9CI)	13.44	71000
12	17302237 Nonane, 4,5-dimethyl- (8CI9CI)	15.14	95000
13	611143 Benzene, 1-ethyl-2-methyl- (9CI)	18.20	330000
14	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	18.37	150000
15	622968 Benzene, 1-ethyl-4-methyl- (9CI)	18.73	81000
16	108678 Benzene, 1,3,5-trimethyl- (9CI)	19.05	380000
17	620144 Benzene, 1-ethyl-3-methyl- (9CI)	19.82	79000
18	135988 Benzene, (1-methylpropyl)- (9CI)	20.21	120000
19	535773 Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	20.34	110000
20	1758889 Benzene, 2-ethyl-1,4-dimethyl- (9CI)	21.04	58000

00042

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ
 SAMPLE NUMBER A1011
 CLIENT ID BLDG 2567 SITE Q
 DATA FILE >A0889

MATRIX Soil
 DILUTION FACTOR 6250.00
 COMMENT _____
 DATE ANALYZED 02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	37000	Bromodichloromethane	ND	37000
Acrylonitrile	ND	37000	2-Chloroethylvinylether	ND	74000
Chloromethane	ND	74000	2-Hexanone	ND	74000
Bromomethane	ND	74000	trans-1,3-Dichloropropene	ND	37000
Vinyl Chloride	ND	74000	Toluene	220000	37000
Chloroethane	ND	74000	cis-1,3-Dichloropropene	ND	37000
Acetone	110000 B	74000	1,1,2,2-Tetrachloroethane	ND	37000
1,1-Dichloroethene	ND	37000	1,1,2-Trichloroethane	ND	37000
Carbon Disulfide	ND	74000	4-Methyl-2-pentanone	ND	74000
Methylene Chloride	ND	37000	Tetrachloroethene	ND	37000
1,2-Dichloroethene(trans)	ND	37000	Dibromochloromethane	ND	37000
1,1-Dichloroethane	ND	37000	Chlorobenzene	ND	37000
Vinyl Acetate	ND	37000	Ethylbenzene	120000	37000
2-Butanone	ND	74000	m,p-Xylenes	510000	37000
Chloroform	ND	37000	o-Xylene	200000	37000
1,1,1-Trichloroethane	ND	37000	Styrene	ND	37000
Carbon Tetrachloride	ND	37000	Bromoform	ND	37000
1,2-Dichloroethane	ND	37000	m-Dichlorobenzene	ND	37000
Benzene	8500 J	37000	p-Dichlorobenzene	ND	37000
Trichloroethene	ND	37000	o-Dichlorobenzene	ND	37000
1,2-Dichloropropane	ND	37000			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	106	70 - 121	OK
Toluene-d8	100	81 - 117	OK
Bromofluorobenzene	100	74 - 121	OK

Percent Solid of 84.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE R

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
Matrix: (soil/water) SOIL SITE R

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

Level: LOW

% Moisture: 22

Column: CAP

Number TICs Found 2

COMMENT

Lab Sample ID: A 1012

Lab File ID: >A0890

Date Received: 02/24/93

Date Analyzed 02/26/93

Dilution Factor: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	611143 Benzene, 1-ethyl-2-methyl- (9CI)	18.21	4
2	620144 Benzene, 1-ethyl-3-methyl- (9CI)	19.03	6

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A1012	DILUTION FACTOR	1.00
CLIENT ID	BLDG 2567 SITE R	COMMENT	
DATA FILE	>A0890	DATE ANALYZED	02/26/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	64	Bromodichloromethane	ND	6
Acrylonitrile	ND	64	2-Chloroethylvinylether	ND	13
Chloromethane	ND	13	2-Hexanone	ND	13
Bromomethane	ND	13	trans-1,3-Dichloropropene	ND	6
Vinyl Chloride	ND	13	Toluene	1.4 J	6
Chloroethane	ND	13	cis-1,3-Dichloropropene	ND	6
Acetone	59 B	13	1,1,2,2-Tetrachloroethane	ND	6
1,1-Dichloroethene	ND	6	1,1,2-Trichloroethane	ND	6
Carbon Disulfide	ND	13	4-Methyl-2-pentanone	ND	13
Methylene Chloride	ND	6	Tetrachloroethene	ND	6
1,2-Dichloroethene(trans)	ND	6	Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6	Chlorobenzene	ND	6
Vinyl Acetate	ND	6	Ethylbenzene	ND	6
2-Butanone	ND	13	m,p-Xylenes	6.3 J	6
Chloroform	ND	6	o-Xylene	2.4 J	6
1,1,1-Trichloroethane	ND	6	Styrene	ND	6
Carbon Tetrachloride	ND	6	Bromoform	ND	6
1,2-Dichloroethane	ND	6	m-Dichlorobenzene	ND	6
Benzene	ND	6	p-Dichlorobenzene	ND	6
Trichloroethene	ND	6	o-Dichlorobenzene	ND	6
1,2-Dichloropropane	ND	6			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	107	70 - 121	OK
Toluene-d8	99.6	81 - 117	OK
Bromofluorobenzene	99.2	74 - 121	OK

Percent Solid of 78.0 is used for all Target compounds.

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

00043

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE S

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
Matrix: (soil/water) SOIL SITE S

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

Level: LOW

% Moisture: 25

Column: CAP

Number TICs Found 4

COMMENT

Lab Sample ID: A 1013

Lab File ID: >A0929

Date Received: 02/24/93

Date Analyzed 03/02/93

Dilution Factor: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	UNKNOWN	7.38	8
2 541059	Cyclotrisiloxane, hexamethyl- (8CI9CI)	13.83	8
3 62016379	Octane, 2,4,6-trimethyl- (9CI)	19.41	5
4 1071814	Hexane, 2,2,5,5-tetramethyl- (8CI9CI)	19.88	8

00046

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ
 SAMPLE NUMBER A1013
 CLIENT ID BLDG 2567 SITE S
 DATA FILE A0929

MATRIX Soil
 DILUTION FACTOR 1.00
 COMMENT _____
 DATE ANALYZED 03/02/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	67	Bromodichloromethane	ND	7
Acrylonitrile	ND	67	2-Chloroethylvinylether	ND	13
Chloromethane	ND	13	2-Hexanone	ND	13
Bromomethane	ND	13	trans-1,3-Dichloropropene	ND	7
Vinyl Chloride	ND	13	Toluene	8.7	7
Chloroethane	ND	13	cis-1,3-Dichloropropene	ND	7
Acetone	140 B	13	1,1,2,2-Tetrachloroethane	ND	7
1,1-Dichloroethene	ND	7	1,1,2-Trichloroethane	ND	7
Carbon Disulfide	ND	13	4-Methyl-2-pentanone	ND	13
Methylene Chloride	ND	7	Tetrachloroethene	ND	7
1,2-Dichloroethene(trans)	ND	7	Dibromochloromethane	ND	7
1,1-Dichloroethane	ND	7	Chlorobenzene	ND	7
Vinyl Acetate	ND	7	Ethylbenzene	2.0 J	7
2-Butanone	37	13	m,p-Xylenes	8.2	7
Chloroform	ND	7	o-Xylene	1.7 J	7
1,1,1-Trichloroethane	ND	7	Styrene	ND	7
Carbon Tetrachloride	ND	7	Bromoform	ND	7
1,2-Dichloroethane	ND	7	m-Dichlorobenzene	ND	7
Benzene	29	7	p-Dichlorobenzene	ND	7
Trichloroethene	ND	7	o-Dichlorobenzene	ND	7
1,2-Dichloropropane	ND	7			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	102	70 - 121	OK
Toluene-d8	98.3	81 - 117	OK
Bromofluorobenzene	81.0	74 - 121	OK

Percent Solid of 75.0 is used for all Target compounds.

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

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE T

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
Matrix: (soil/water) SOIL SITE T

COMMENT

Lab Sample ID: A 1014

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

Lab File ID: >A0892

Level: LDW

Date Received: 02/24/93

% Moisture: 34

Date Analyzed 02/26/93

Column: CAP

Dilution Factor: 1

Number TICs Found 5

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	78784 Butane, 2-methyl- (8CI9CI)	4.97	11
2	109660 Pentane (ACN)(DOT)(8CI9CI)	5.43	9
3	107835 Pentane, 2-methyl- (8CI9CI)	6.95	23
4	1438148 Oxirane, (1-methylethyl)- (9CI)	7.34	12
5	96377 Cyclopentane, methyl- (8CI9CI)	8.68	17

00048

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	<u>US ARMY FT MONMOUTH, NJ</u>	MATRIX	<u>Soil</u>
SAMPLE NUMBER	<u>A1014</u>	DILUTION FACTOR	<u>1.00</u>
CLIENT ID	<u>BLDG 2567 SITE T</u>	COMMENT	
DATA FILE	<u>>A0892</u>	DATE ANALYZED	<u>02/26/93</u>

COMPOUND	US/KG	MDL	COMPOUND	US/KG	MDL
Acrolein	ND	76	Bromodichloromethane	ND	8
Acrylonitrile	ND	76	2-Chloroethylvinylether	ND	15
Chloromethane	ND	15	2-Hexanone	ND	15
Bromomethane	ND	15	trans-1,3-Dichloropropene	ND	8
Vinyl Chloride	ND	15	Toluene	2.1 J	8
Chloroethane	ND	15	cis-1,3-Dichloropropene	ND	8
Acetone	68 B	15	1,1,2,2-Tetrachloroethane	ND	8
1,1-Dichloroethene	ND	8	1,1,2-Trichloroethane	ND	8
Carbon Disulfide	ND	15	4-Methyl-2-pentanone	ND	15
Methylene Chloride	ND	8	Tetrachloroethene	ND	8
1,2-Dichloroethene(trans)	ND	8	Dibromochloromethane	ND	8
1,1-Dichloroethane	ND	8	Chlorobenzene	ND	8
Vinyl Acetate	ND	8	Ethylbenzene	ND	8
2-Butanone	ND	15	m,p-Xylenes	4.6 J	8
Chloroform	ND	8	o-Xylene	ND	8
1,1,1-Trichloroethane	ND	8	Styrene	ND	8
Carbon Tetrachloride	ND	8	Bromoform	ND	8
1,2-Dichloroethane	ND	8	m-Dichlorobenzene	ND	8
Benzene	2.3 J	8	p-Dichlorobenzene	ND	8
Trichloroethene	ND	8	o-Dichlorobenzene	ND	8
1,2-Dichloropropane	ND	8			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	112	70 - 121	OK
Toluene-d8	97.2	81 - 117	OK
Bromofluorobenzene	85.1	74 - 121	OK

Percent Solid of 66.0 is used for all Target compounds.

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

00047

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

A 1015

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
SITE U

Matrix: (soil/water) SOIL

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

Level: LOW

% Moisture: 21

Column: CAP

Number TICs Found 7

COMMENT

Lab Sample ID: A 1015

Lab File ID: >A0900

Date Received: 02/24/93

Date Analyzed 02/28/93

Dilution Factor: 1

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

CAS NUMBER	COMPOUND NAME	RT	TEST CONC
1	UNKNOWN	3.18	91
2 541059	Cyclotrisiloxane, hexamethyl- (8CI9CI)	13.73	9
3 620144	Benzene, 1-ethyl-3-methyl- (9CI)	18.23	4
4 622968	Benzene, 1-ethyl-4-methyl- (9CI)	18.92	5
5 611143	Benzene, 1-ethyl-2-methyl- (9CI)	19.69	8
6 1758889	Benzene, 2-ethyl-1,4-dimethyl- (9CI)	20.22	6
7 934805	Benzene, 4-ethyl-1,2-dimethyl- (9CI)	20.91	4

00050

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A1015	DILUTION FACTOR	1.00
CLIENT ID	BLDG 2567 SITE U	COMMENT	
DATA FILE	>AVYUU	DATE ANALYZED	02/28/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	63	Bromodichloromethane	ND	6
Acrylonitrile	ND	63	2-Chloroethylvinylether	ND	13
Chloromethane	ND	13	2-Hexanone	ND	13
Bromomethane	ND	13	trans-1,3-Dichloropropene	ND	6
Vinyl Chloride	ND	13	Toluene	3.8 J	6
Chloroethane	ND	13	cis-1,3-Dichloropropene	ND	6
Acetone	7.3 JB	13	1,1,2,2-Tetrachloroethane	ND	6
1,1-Dichloroethene	ND	6	1,1,2-Trichloroethane	ND	6
Carbon Disulfide	ND	13	4-Methyl-2-pentanone	ND	13
Methylene Chloride	3.3 JB	6	Tetrachloroethene	ND	6
1,2-Dichloroethene(trans)	ND	6	Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6	Chlorobenzene	ND	6
Vinyl Acetate	ND	6	Ethylbenzene	ND	6
2-Butanone	ND	13	m,p-Xylenes	3.4 J	6
Chloroform	ND	6	o-Xylene	1.8 J	6
1,1,1-Trichloroethane	ND	6	Styrene	ND	6
Carbon Tetrachloride	ND	6	Bromoform	ND	6
1,2-Dichloroethane	ND	6	m-Dichlorobenzene	ND	6
Benzene	ND	6	p-Dichlorobenzene	ND	6
Trichloroethene	ND	6	o-Dichlorobenzene	ND	6
1,2-Dichloropropane	ND	6			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	102	70 - 121	OK
Toluene-d8	98.4	81 - 117	OK
Bromofluorobenzene	93.5	74 - 121	OK

Percent Solid of 79.0 is used for all Target compounds.

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

00049

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

SITE V

Lab Name: 21st Century Environmental

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567

COMMENT

Matrix: (soil/water) SOIL

SITE V

Lab Sample ID: A 1016

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

Lab File ID: >A0931

Level: LOW

Date Received: 02/24/93

% Moisture: 34

Date Analyzed 03/02/93

Column: CAP

Dilution Factor: 1

Number TICs Found 4

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1 3522949	Hexane, 2,2,5-trimethyl- (8CI9CI)	118.87	8
2 4316658	1-Hexene, 3,5,5-trimethyl- (8CI9CI)	119.32	9
3 1071814	Hexane, 2,2,5,5-tetramethyl- (8CI9CI)	119.80	18
4 4418615	1H-Tetrazol-5-amine (9CI)	120.17	8

00052

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A1016	DILUTION FACTOR	1.00
CLIENT ID	BLDG 2567 SITE V	COMMENT	
DATA FILE	>A0931	DATE ANALYZED	03/02/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	76	Bromodichloromethane	ND	8
Acrylonitrile	ND	76	2-Chloroethylvinylether	ND	15
Chloromethane	ND	15	2-Hexanone	ND	15
Bromomethane	ND	15	trans-1,3-Dichloropropene	ND	8
Vinyl Chloride	ND	15	Toluene	9.7	8
Chloroethane	ND	15	cis-1,3-Dichloropropene	ND	8
Acetone	120 B	15	1,1,2,2-Tetrachloroethane	ND	8
1,1-Dichloroethene	ND	8	1,1,2-Trichloroethane	ND	8
Carbon Disulfide	ND	15	4-Methyl-2-pentanone	ND	15
Methylene Chloride	7.0 J	8	Tetrachloroethene	ND	8
1,2-Dichloroethene(trans)	ND	8	Dibromochloromethane	ND	8
1,1-Dichloroethane	ND	8	Chlorobenzene	ND	8
Vinyl Acetate	ND	8	Ethylbenzene	2.0 J	8
2-Butanone	31	15	m&p-Xylenes	8.2	8
Chloroform	ND	8	o-Xylene	1.7 J	8
1,1,1-Trichloroethane	ND	8	Styrene	ND	8
Carbon Tetrachloride	ND	8	Bromoform	ND	8
1,2-Dichloroethane	ND	8	m-Dichlorobenzene	ND	8
Benzene	26	8	p-Dichlorobenzene	ND	8
Trichloroethene	ND	8	o-Dichlorobenzene	ND	8
1,2-Dichloropropane	ND	8			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	99.7	70 - 121	OK
Toluene-d8	98.9	81 - 117	OK
Bromofluorobenzene	93.9	74 - 121	OK

Percent Solid of 66.0 is used for all Target compounds.

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

00051

E1
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

Lab Name: 21st Century Environmental

SITE W

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
SITE W

COMMENT

Matrix: (soil/water) SOIL

Lab Sample ID: A 1017

Sample wt/vol: .0008 (g/mL) g

Lab File ID: >A0960

Level: MED

Date Received: 02/24/93

% Moisture: 39

Date Analyzed 03/04/93

Column: CAP

Dilution Factor: 6250

Number TICs Found 19

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	594821 Butane, 2,2,3,3-tetramethyl- (8CI9CI)	110.43	72000
2	108872 Cyclohexane, methyl- (8CI9CI)	111.60	51000
3	565753 Pentane, 2,3,4-trimethyl- (8CI9CI)	112.25	62000
4	560214 Pentane, 2,3,3-trimethyl- (8CI9CI)	112.46	100000
5	592132 Hexane, 2,5-dimethyl- (8CI9CI)	112.57	61000
6	589811 Heptane, 3-methyl- (8CI9CI)	112.80	64000
7	111659 Octane (DOT)(8CI9CI)	113.50	48000
8	2213232 Heptane, 2,4-dimethyl- (8CI9CI)	115.21	62000
9	103651 Benzene, propyl- (8CI9CI)	118.14	100000
10	611143 Benzene, 1-ethyl-2-methyl- (9CI)	118.30	570000
11	108678 Benzene, 1,3,5-trimethyl- (9CI)	118.46	210000
12	622968 Benzene, 1-ethyl-4-methyl- (9CI)	118.82	150000
13	95636 Benzene, 1,2,4-trimethyl- (8CI9CI)	119.13	670000
14	620144 Benzene, 1-ethyl-3-methyl- (9CI)	119.90	150000
15	873494 Benzene, cyclopropyl- (8CI9CI)	120.28	200000
16	1758889 Benzene, 2-ethyl-1,4-dimethyl- (9CI)	120.42	180000
17	934805 Benzene, 4-ethyl-1,2-dimethyl- (9CI)	120.94	61000
18	535773 Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	120.97	46000
19	2870044 Benzene, 2-ethyl-1,3-dimethyl- (9CI)	121.11	95000

0005i

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ
SAMPLE NUMBER A1017
CLIENT ID BLDG 2567 SITE W
DATA FILE >A0960

MATRIX Soil
DILUTION FACTOR 6250.00
COMMENT
DATE ANALYZED 03/04/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	510000	Bromodichloromethane	ND	51000
Acrylonitrile	ND	510000	2-Chloroethylvinylether	ND	100000
Chloromethane	ND	100000	2-Hexanone	ND	100000
Bromomethane	ND	100000	trans-1,3-Dichloropropene	ND	51000
Vinyl Chloride	ND	100000	Toluene	450000	51000
Chloroethane	ND	100000	cis-1,3-Dichloropropene	ND	51000
Acetone	ND B	100000	1,1,2,2-Tetrachloroethane	ND	51000
1,1-Dichloroethene	ND	51000	1,1,2-Trichloroethane	ND	51000
Carbon Disulfide	ND	100000	4-Methyl-2-pentanone	ND	100000
Methylene Chloride	ND	51000	Tetrachloroethane	ND	51000
1,2-Dichloroethene(trans)	ND	51000	Dibromochloromethane	ND	51000
1,1-Dichloroethane	ND	51000	Chlorobenzene	ND	51000
Vinyl Acetate	ND	51000	Ethylbenzene	200000	51000
2-Butanone	ND	100000	m,p-Xylenes	840000	51000
Chloroform	ND	51000	o-Xylene	360000	51000
1,1,1-Trichloroethane	ND	51000	Styrene	ND	51000
Carbon Tetrachloride	ND	51000	Bromoform	ND	51000
1,2-Dichloroethane	ND	51000	m-Dichlorobenzene	ND	51000
Benzene	25000 J	51000	p-Dichlorobenzene	ND	51000
Trichloroethene	ND	51000	o-Dichlorobenzene	ND	51000
1,2-Dichloropropane	ND	51000			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	97.4	78 - 121	OK
Toluene-d8	98.6	81 - 117	OK
Bromofluorobenzene	98.9	74 - 121	OK

Percent Solid of 61.0 is used for all Target compounds.

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

00053

1E
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

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

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
 Matrix: (soil/water) Water
 Sample wt/vol: 5 (g/mL) mL
 Level: (low/med) LOW
 Moisture: NA
 Column: DB-624

COMMENT
 Lab Sample ID: A 1018
 Lab File ID: >A0897
 Date Received: 02/24/93
 Date Analyzed: 02/28/93
 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				

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT MONMOUTH, NJ	MATRIX	Water
SAMPLE NUMBER	A1018	DILUTION FACTOR	1.00
CLIENT ID	BLDG 2567 TRIP BLANK	COMMENT	
DATA FILE	>A0897	DATE ANALYZED	02/28/93

COMPOUND	US/L	MDL	COMPOUND	US/L	MDL
Acrolein	ND	50	Bromodichloromethane	ND	5
Acrylonitrile	ND	50	2-Chloroethylvinylether	ND	10
Chloromethane	ND	10	2-Hexanone	ND	10
Bromomethane	ND	10	trans-1,3-Dichloropropene	ND	5
Vinyl Chloride	ND	10	Toluene	ND	5
Chloroethane	ND	10	cis-1,3-Dichloropropene	ND	5
Acetone	6.5 JB	10	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2-Trichloroethane	ND	5
Carbon Disulfide	ND	10	4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND B	5	Tetrachloroethene	ND	5
1,2-Dichloroethene(trans)	ND	5	Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5	Chlorobenzene	ND	5
Vinyl Acetate	ND	5	Ethylbenzene	ND	5
2-Butanone	ND	10	m,p-Xylenes	ND	5
Chloroform	ND	5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND	5	Styrene	ND	5
Carbon Tetrachloride	ND	5	Bromoform	ND	5
1,2-Dichloroethane	ND	5	m-Dichlorobenzene	ND	5
Benzene	ND	5	p-Dichlorobenzene	ND	5
Trichloroethene	ND	5	o-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5			

<u>SURROGATE COMPOUNDS</u>	<u>% RECOVERY</u>	<u>LIMITS</u>	<u>STATUS</u>
1,2-Dichloroethane-d4	107	76 - 114	OK
Toluene-d8	99.8	88 - 110	OK
Bromofluorobenzene	99.7	86 - 115	OK

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

00055

1E
 VOLATILE ORGANICS ANALYSIS DATA SHEET
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIELD BLANK

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

Job Number: US ARMY FT MONMOUTH, NJ BLDG 2567
 Matrix: (soil/water) Water TRIP BLANK

COMMENT
 Lab Sample ID: A 1019

Sample wt/vol: .1 (g/mL) mL

Lab File ID: >A0927

Level: (low/med) MED

Date Received: 02/24/93

% Moisture: NA

Date Analyzed: 03/02/93

Column: DB-624

Dilution Factor: 50

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

	No Unknowns			

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER US ARMY FT MONMOUTH, NJ
 SAMPLE NUMBER A1019
 CLIENT ID BLDG 2567 FIELD BLANK
 DATA FILE >A0927

MATRIX Water
 DILUTION FACTOR 50.00
 COMMENT
 DATE ANALYZED 03/02/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	2500	Bromodichloromethane	ND	250
Acrylonitrile	ND	2500	2-Chloroethylvinylether	ND	500
Chloromethane	ND	500	2-Hexanone	ND	500
Bromomethane	ND	500	trans-1,3-Dichloropropene	ND	250
Vinyl Chloride	ND	500	Toluene	290	250
Chloroethane	ND	500	cis-1,3-Dichloropropene	ND	250
Acetone	3300 B	500	1,1,2,2-Tetrachloroethane	ND	250
1,1-Dichloroethene	ND	250	1,1,2-Trichloroethane	ND	250
Carbon Disulfide	ND	500	4-Methyl-2-pentanone	ND	500
Methylene Chloride	ND	250	Tetrachloroethene	ND	250
1,2-Dichloroethene(trans)	ND	250	Dibromochloromethane	ND	250
1,1-Dichloroethane	ND	250	Chlorobenzene	ND	250
Vinyl Acetate	ND	250	Ethylbenzene	74 J	250
2-Butanone	ND	500	m&p-Xylenes	310	250
Chloroform	ND	250	o-Xylene	70 J	250
1,1,1-Trichloroethane	ND	250	Styrene	ND	250
Carbon Tetrachloride	ND	250	Bromoform	ND	250
1,2-Dichloroethane	ND	250	m-Dichlorobenzene	ND	250
Benzene	380	250	p-Dichlorobenzene	ND	250
Trichloroethene	ND	250	o-Dichlorobenzene	ND	250
1,2-Dichloropropane	ND	250			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	101	76 - 114	OK
Toluene-d8	102	88 - 110	OK
Bromofluorobenzene	100	86 - 115	OK

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