United States Army
Fort Monmouth, New Jersey

Site/Remedial Investigation Report

Former Building 2337
Charles Wood Area

August 2001

SITE/REMEDIAL INVESTIGATION REPORT

FORMER BUILDING 2337

CHARLES WOOD AREA

AUGUST 2001

PREPARED FOR:

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

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PROJECT NO. 4936-127

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TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLES

FIGURES

APPENDICES

EXECUTIVE SUMMARY

Site/Remedial Investigation and Post-Excavation Soil Sampling

SMC was retained by the U.S. Army DPW to implement a site/remedial investigation adjacent to a former No. 2 fuel oil UST. The UST was associated with former Building 2337 at the Charles Wood area of the U.S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities was to remove all potentially impacted soil resulting from past operation of the former UST. The site/remedial investigation was performed by SMC personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual.*

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs, were excavated. Excavation activities continued until potentially impacted soil had been removed. To confirm PID readings and verify the effectiveness of the soil excavation activities, 29 post-excavation soil samples were collected from within the excavation between April 17 and June 23, 1997. All samples were analyzed for TPHC and total solids. The post-excavation soil samples collected from the excavation contained concentrations of TPHC below the NJDEP soil cleanup criteria.

Management of Excavated Soils

A total of approximately 900 cubic yards of contaminated soil was excavated from around the former UST location and placed on and covered with tarps. All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW.

Site Restoration

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was backfilled to grade with certified clean crushed stone, sand and clean overburden soil removed from the excavation.

Conclusions and Recommendations

All post excavation soil samples collected from the UST excavation at Building 2337 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994).

In response to the observation of potentially contaminated soil near the shallow water table, two (2) groundwater samples were collected at Building 2337. On March 31, 2001 and April 28, 2001 groundwater at Building 2337 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOCs), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOCs).

All groundwater analytical results were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment at Building 2337.

1.0 BACKGROUND INFORMATION

1.1 OVERVIEW

SMC Environmental Services Group (SMC) was retained by the United States Army Directorate of Public Works (DPW) to implement a site/remedial investigation adjacent to a former No. 2 fuel oil underground storage tank (UST). The New Jersey Department of Environmental Protection (NJDEP) UST Registration No. 81515-65, was associated with former Building 2337 at the Main Post-East area of the U.S. Army Fort Monmouth Base, Fort Monmouth, New Jersey. Refer to the site location map in Figure 1.

This report describes the results of the site/remedial investigation activities completed at the site. The objective of the site/remedial investigation activities was to remove all potentially impacted soil resulting from the past operation of the former UST.

This report outlines background information, the site/remedial investigation activities, results of these activities, and conclusions and recommendations drawn from these results.

1.2 SITE DESCRIPTION

Former Building 2337 is located in Charles Wood area of the Fort Monmouth Army Base. The former UST was located a few feet east of Building 2337. A site map is provided in Figure 2.

1.3 GEOLOGICAL/HYDROGEOLOGICAL SETTING

The following is a description of the geological/hydrogeological setting of the area surrounding former Building 2337. 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.

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, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. More than 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 thickness' for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Charles Wood area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray 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 20 feet above mean seal level (MSL) to 71 feet above MSL.

Hydrogeology

The water table aquifer in 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.

Six well records for monitor wells installed at locations within the Charles Wood area in February 1981 were used for reference. The wells were completed to total depths ranging from 20 to 25 feet below ground surface (bgs). Water was encountered at depths ranging from 5 to 12 feet bgs.

The lithologic descriptions for these borings described deposits that were primarily fine to coarse, glauconitic sands, with traces of gravel, silt, and clay. These sediments are

part of the Hornerstown Marl, from the Tertiary Period (Paleocene Series, approximately 58 to 66 Ma). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce from 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

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

- tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
- topography
- nature of the fill material within the Charles Wood area
- presence of clay and silt lenses in the natural overburden deposits
- local groundwater recharge areas (i.e., streams, 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. Former Building 2337 is located approximately 200 feet north of an unnamed stream, which runs from west to east through the Charles Wood area. Based on the Charles Wood area topography, groundwater flow in the area of the former Building 2337 is anticipated to be to the south.

1.4 HEALTH AND SAFETY

During all site/remedial investigation activities, hazards at the work site, which may have posed a threat to the Health and Safety of personnel, were minimized. All areas, which posed, or may have been suspected to pose a vapor hazard, were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was safe, as defined by the Occupational Safety & Health Administration (OSHA).

2.0 SITE/REMEDIAL INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site/Remedial Investigation was managed and carried out by SMC personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, an NJDEP-certified testing laboratory. 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.* Sampling frequency and parameters analyzed complied with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E).

The following Parties participated in Site/Remedial Investigation Activities:

- Subsurface Evaluator: David H. Daniels
  Employer: SMC Environmental Services Group
  Phone Number: (215) 788-7844
  NJDEP Certification No.: 10279

- Project Manager: Charles Appleby
  Employer: DPW U.S. Army, Fort Monmouth
  Phone Number: (732) 532-6224
  NJDEP Certification No.: 2056

- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Daniel K. Wright
  Phone Number: (732) 532-4359
  NJDEP Company Certification No.: 13461

2.2 FIELD SCREENING/MONITORING

Field screening and visual observations to identify potentially contaminated material was performed by a NJDEP Certified Sub-Surface Evaluator. During the excavation activities, all soil removed was screened with a photoionization detector (PID) to check for the presence of elevated volatile organic concentrations (VOCs).

Soils that displayed elevated PID readings (i.e., above 5 ppm) were stockpiled separate from those soils which did not display elevated PID readings (i.e., less than 5 ppm). The ground surface in the areas used to stockpile contaminated soils was covered with tarps. All stockpiled contaminated soil was covered with tarps at the completion of each day of excavation.

2.3 MANAGEMENT OF EXCAVATED SOILS

A total of approximately 900 cubic yards of material was excavated during the remediation activities. Of this amount, approximately 400 cubic yards of clean overburden soil (soil displaying PID readings below 5 ppm) was removed and stockpiled separately from the contaminated soil. The clean soil pile was later used as backfill. There was approximately 900 cubic yards of contaminated soil (soil displaying PID readings above 5 ppm) excavated and placed on and covered with tarps.

All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth Directorate of Public Works.

2.4 POST-EXCAVATION SOIL SAMPLING AND RESULTS

The excavation of the impacted soil proceeded in all directions until non-detectable field screening readings (i.e., less than 5 ppm) were obtained with the PID. The excavation extended vertically to groundwater, which was encountered at a depth of 8-½ feet bgs.

To confirm the PID readings and verify the effectiveness of the soil excavation activities, 29 post-excavation soil samples were collected from within the excavation between April 17 and June 23, 1997. Of these, 19 soil samples were collected from the excavation sidewalls at a depth of 8 feet below ground service (bgs). The sidewall samples were designated 2337-S1 through 2337-S21, whereas sample 2337-S17 was a duplicate. Sample 2337-S3 was further remediated and resampled. The remaining 10 post-excavation soil samples were collected from the bottom of the excavation at a depth of 8-½ feet bgs. The bottom samples were designated 2337-B1 through 2337-B14, whereas samples 2337-B2, 2337-B4, 2337-B9 and 2337-B14 were duplicates. The locations of the 29 post-excavation soil samples are shown in Figure 3.

SMC personnel, in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual, performed the post-excavation soil sampling activities. A summary of sampling activities, including parameters analyzed, is provided in Table 1. Following soil sampling activities, the samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids. The TPHC post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the TPHC analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2. The analytical data packages are provided in Appendix A.

The post-excavation soil samples collected from the excavation contained concentrations of TPHC below the NJDEP soil cleanup criteria.

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was backfilled to grade with certified clean crushed stone and sand. Four samples were collected from the overburden material and analyzed for TPHC. The clean stockpile soil samples revealed non-detectable TPHC levels; therefore, the soil was used as backfill material. Appendix C provides photographs of the site/remedial investigations.

2.5 GROUNDWATER SAMPLING

On March 31, 2001 and April 28, 2001, groundwater at Building 2337 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOCs), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOCs). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation.*

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

SMC was retained by the U.S. Army DPW to implement a site/remedial investigation adjacent to a former No. 2 fuel oil UST. The UST was associated with former Building 2337 at Charles Wood area of the U.S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities was to remove all potentially impacted soil resulting from past operation of the former UST.

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs were excavated. Excavation activities continued until potentially impacted soil had been removed. In all, a total of approximately 900 cubic yards of contaminated soil was excavated from around the former UST location. All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW.

To confirm the PID readings and verify the effectiveness of the soil excavation activities, 29 post-excavation soil samples were collected from within the excavation between April 17 and June 23, 1997. All samples were analyzed for TPHC and total solids. The post-excavation soil samples collected from the excavation contained concentrations of TPHC below the NJDEP soil cleanup criteria.

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was backfilled to grade with certified clean crushed stone, sand and clean overburden material.

3.2 GROUNDWATER SAMPLING RESULTS

The sample collected from Building 2337 on March 31, 2001, contained 8.87 ug/L acetone and 15.25 ug/L 2-butanone. None of the compound concentrations exceeded GWQS criteria. No other compounds were detected in the sample or the sample duplicate.

No compounds were detected in the sample collected from Building 2337 on April 28, 2001. Toluene was detected in the trip blank at a concentration of 1.13 ug/L. The toluene concentration does not exceeds the GWQS of 5 ug/L. No other compounds were detected in sample blanks. The analytical data package is provided in Appendix B. The full data package, including quality control, is on file at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey.

3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 2337 were below the NJDEP soil cleanup criteria for total organic contaminants.

Based on the post-excavation sampling results, soil with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg, do not exist in the former location of the UST or associated piping.

Based on the analytical results of the groundwater samples collected at Building 2337, groundwater quality has not been impacted by the former UST. All results were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment at Building 2337.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 1220-K, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
B1	4/17/97	4/18/97	Soil	Post-Excavation	TPH	OQA-QAM-025
B2	4/17/97	4/18/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S1	4/17/97	4/18/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S2	4/17/97	4/18/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S3	4/17/97	4/18/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S4	4/17/97	4/18/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S5	4/17/97	4/18/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S6	4/17/97	4/18/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S7	4/17/97	4/18/97	Soil	Post-Excavation	TPH	OQA-QAM-025
B3	4/21/97	4/21/97	Soil	Post-Excavation	TPH	OQA-QAM-025
B4	4/21/97	4/21/97	Soil	Post-Excavation	TPH	OQA-QAM-025
B5	4/21/97	4/21/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S8	4/21/97	4/21/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S9	4/21/97	4/21/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S10	4/21/97	4/21/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S11	4/21/97	4/21/97	Soil	Post-Excavation	TPH	OQA-QAM-025
SP1	4/21/97	4/21/97	Soil	Post-Excavation	TPH	OQA-QAM-025
SP2	4/21/97	4/21/97	Soil	Post-Excavation	TPH	OQA-QAM-025
SP3	4/21/97	4/21/97	Soil	Post-Excavation	TPH	OQA-QAM-025
T1	4/29/97	4/29/97	Soil	Post-Excavation	TPH	OQA-QAM-025
C1	6/5/97	6/6/97	Soil	Post-Excavation	TPH	OQA-QAM-025
B6	6/5/97	6/6/97	Soil	Post-Excavation	TPH	OQA-QAM-025
B7	6/5/97	6/6/97	Soil	Post-Excavation	TPH	OQA-QAM-025
B8	6/5/97	6/6/97	Soil	Post-Excavation	TPH	OQA-QAM-025
B9	6/5/97	6/6/97	Soil	Post-Excavation	TPH	OQA-QAM-025
B10	6/5/97	6/6/97	Soil	Post-Excavation	TPH	OQA-QAM-025
B11	6/5/97	6/6/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S12	6/5/97	6/6/97	Soil	Post-Excavation	TPH	OQA-QAM-025
SP1	6/5/97	6/6/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S13	6/13/97	6/13/97	Soil	Post-Excavation	TPH	OQA-QAM-025

S14	6/13/97	6/13/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S15	6/13/97	6/13/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S16	6/13/97	6/13/97	Soil	Post-Excavation	TPH	OQA-QAM-025
S17	6/13/97	6/13/97	Soil	Post-Excavation	TPH	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

TABLE 2
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 1220-K, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (% solid) (mg/kg)	NJDEP Soil Cleanup Criteria * (mg/kg)	Exceeds Cleanup Criteria
B1	2460.1	4/17/97	4/18/97	Total Solid	--	--	76.64	--	--
				TPH	244	Yes	ND	10,000	No
B2	2460.2	4/17/97	4/18/97	Total Solid	--	--	75.96	--	--
				TPH	244	Yes	ND	10,000	No
S1	2460.3	4/17/97	4/18/97	Total Solid	--	--	81.75	--	--
				TPH	219	Yes	ND	10,000	No
S2	2460.4	4/17/97	4/18/97	Total Solid	--	--	82.21	--	--
				TPH	228	Yes	356.79	10,000	No
S3	2460.5	4/17/97	4/18/97	Total Solid	--	--	83.62	--	--
				TPH	224	Yes	9927.06	10,000	No
S4	2460.6	4/17/97	4/18/97	Total Solid	--	--	79.22	--	--
				TPH	235	Yes	ND	10,000	No
S5	2460.7	4/17/97	4/18/97	Total Solid	--	--	81.04	--	--
				TPH	231	Yes	ND	10,000	No
S6	2460.8	4/17/97	4/18/97	Total Solid	--	--	73.52	--	--
				TPH	251	Yes	ND	10,000	No
S7	2460.9	4/17/97	4/18/97	Total Solid	--	--	82.37	--	--
				TPH	227	Yes	ND	10,000	No
B3	2466.01	4/21/97	4/21/97	Total Solid	--	--	72.43	--	--
				TPH	215	Yes	302.79	10,000	No
B4	2466.02	4/21/97	4/21/97	Total Solid	--	--	72.53	--	--
				TPH	212	Yes	ND	10,000	No
B5	2466.03	4/21/97	4/21/97	Total Solid	--	--	76.87	--	--
				TPH	203	Yes	ND	10,000	No
S8	2466.04	4/21/97	4/21/97	Total Solid	--	--	81.38	--	--
				TPH	190	Yes	ND	10,000	No
S9	2466.05	4/21/97	4/21/97	Total Solid	--	--	84.04	--	--
				TPH	179	Yes	628.91	10,000	No
S10	2466.06	4/21/97	4/21/97	Total Solid	--	--	83.30	--	--
				TPH	186	Yes	ND	10,000	No
S11	2466.07	4/21/97	4/21/97	Total Solid	--	--	75.34	--	--

				TPH	207	Yes	ND	10,000	No
SP1	2465.01	4/21/97	4/21/97	Total Solid	--	--	86.68	--	--
				TPH	179	Yes	276.72	10,000	No
SP2	2465.02	4/21/97	4/21/97	Total Solid	--	--	89.05	--	--
				TPH	172	Yes	ND	10,000	No
SP3	2465.03	4/21/97	4/21/97	Total Solid	--	--	84.92	--	--
				TPH	184	Yes	330.10	10,000	No
T1	2485.01	4/29/97	4/29/97	Total Solid	--	--	85.07	--	--
				TPH	183	Yes	7342.14	10,000	No
C1	2648.01	6/5/97	6/6/97	Total Solid	--	--	82.10	--	--
				TPH	191	Yes	4650.80	10,000	No
B6	2647.01	6/5/97	6/6/97	Total Solid	--	--	72.14	--	--
				TPH	209	Yes	nd	10,000	No
B7	2647.02	6/5/97	6/6/97	Total Solid	--	--	71.22	--	--
				TPH	219	Yes	ND	10,000	No
B8	2647.03	6/5/97	6/6/97	Total Solid	--	--	71.27	--	--
				TPH	217	Yes	ND	10,000	No
B9	2647.04	6/5/97	6/6/97	Total Solid	--	--	70.02	--	--
				TPH	221	Yes	ND	10,000	No
B10	2647.05	6/5/97	6/6/97	Total Solid	--	--	71.51	--	--
				TPH	209	Yes	ND	10,000	No
B11	2647.06	6/5/97	6/6/97	Total Solid	--	--	71.31	--	--
				TPH	218	Yes	ND	10,000	No
S12	2647.07	6/5/97	6/6/97	Total Solid	--	--	92.38	--	--
				TPH	170	Yes	ND	10,000	No
SP1	2647.08	6/5/97	6/6/97	Total Solid	--	--	89.98	--	--
				TPH	173	Yes	ND	10,000	No
S13	2693.01	6/13/97	6/13/97	Total Solid	--	--	86.52	--	--
				TPH	176	Yes	ND	10,000	No
S14	2693.02	6/13/97	6/13/97	Total Solid	--	--	80.38	--	--
				TPH	185	Yes	ND	10,000	No
S15	2693.03	6/13/97	6/13/97	Total Solid	--	--	83.34	--	--
				TPH	176	Yes	ND	10,000	No
S16	2693.04	6/13/97	6/13/97	Total Solid	--	--	81.08	--	--
				TPH	187	Yes	ND	10,000	No
S17	2693.05	6/13/97	6/13/97	Total Solid	--	--	83.13	--	--
				TPH	187	Yes	ND	10,000	No
B12	2727.01	6/23/97	6/23/97	Total Solid	--	--	73.41	--	--
				TPH	209	Yes	ND	10,000	No

B13	2727.02	6/23/97	6/23/97	Total Solid	--	--	73.31	--	--
				TPH	205	Yes	ND	10,000	No
B14	2727.03	6/23/97	6/23/97	Total Solid	--	--	72.77	--	--
				TPH	211	Yes	ND	10,000	No
S18	2727.04	6/23/97	6/23/97	Total Solid	--	--	82.47	--	--
				TPH	190	Yes	404.93	10,000	No
S19	2727.05	6/23/97	6/23/97	Total Solid	--	--	81.38	--	--
				TPH	189	Yes	ND	10,000	No
S20	2727.06	6/23/97	6/23/97	Total Solid	--	--	82.43	--	--
				TPH	189	Yes	ND	10,000	No
S21	2727.07	6/23/97	6/23/97	Total Solid	--	--	80.35	--	--
				TPH	181	Yes	ND	10,000	No

Note:

* NJDEP Residential Direct Contact soil cleanup criteria for total organics

-- Not detected above stated sample quantitation limit

TPH Total Petroleum Hydrocarbons

FIGURES

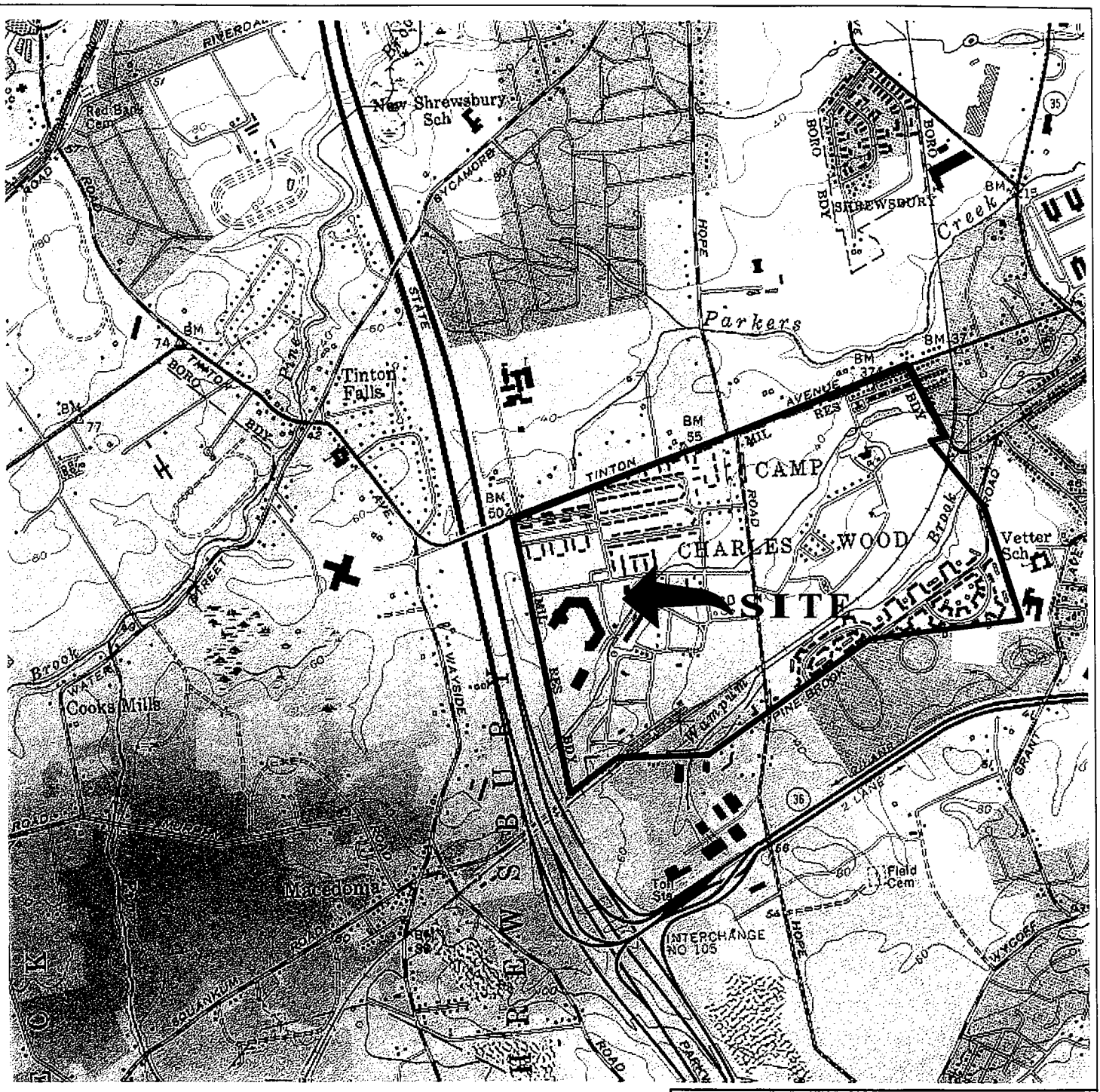


FIGURE 1

SITE LOCATION MAP
Building 2337
Charles Wood Area
Fort Monmouth Army Base
Monmouth County, NJ

LONG BRANCH, N. J.
40073-C8-TF-024

1954
PHOTOREVISED 1981
DMA 6164 I SE-SERIES V822

NEW JERSEY
QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

SMC Environmental Services Group
Engineers, Managers, Scientists & Planners
Valley Forge, PA.

SCALE: 1"= 2000'

DATE: APRIL 1997

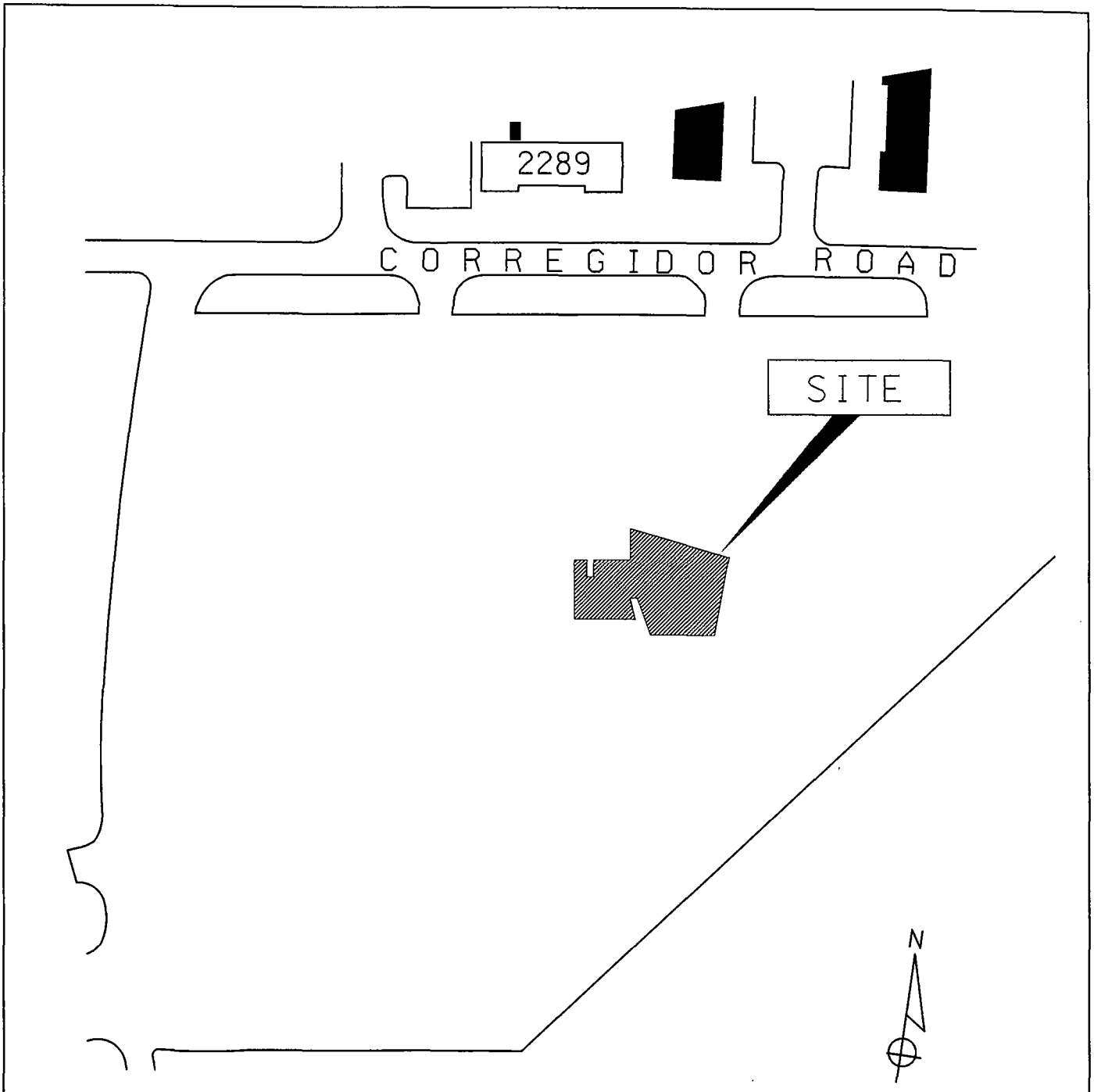


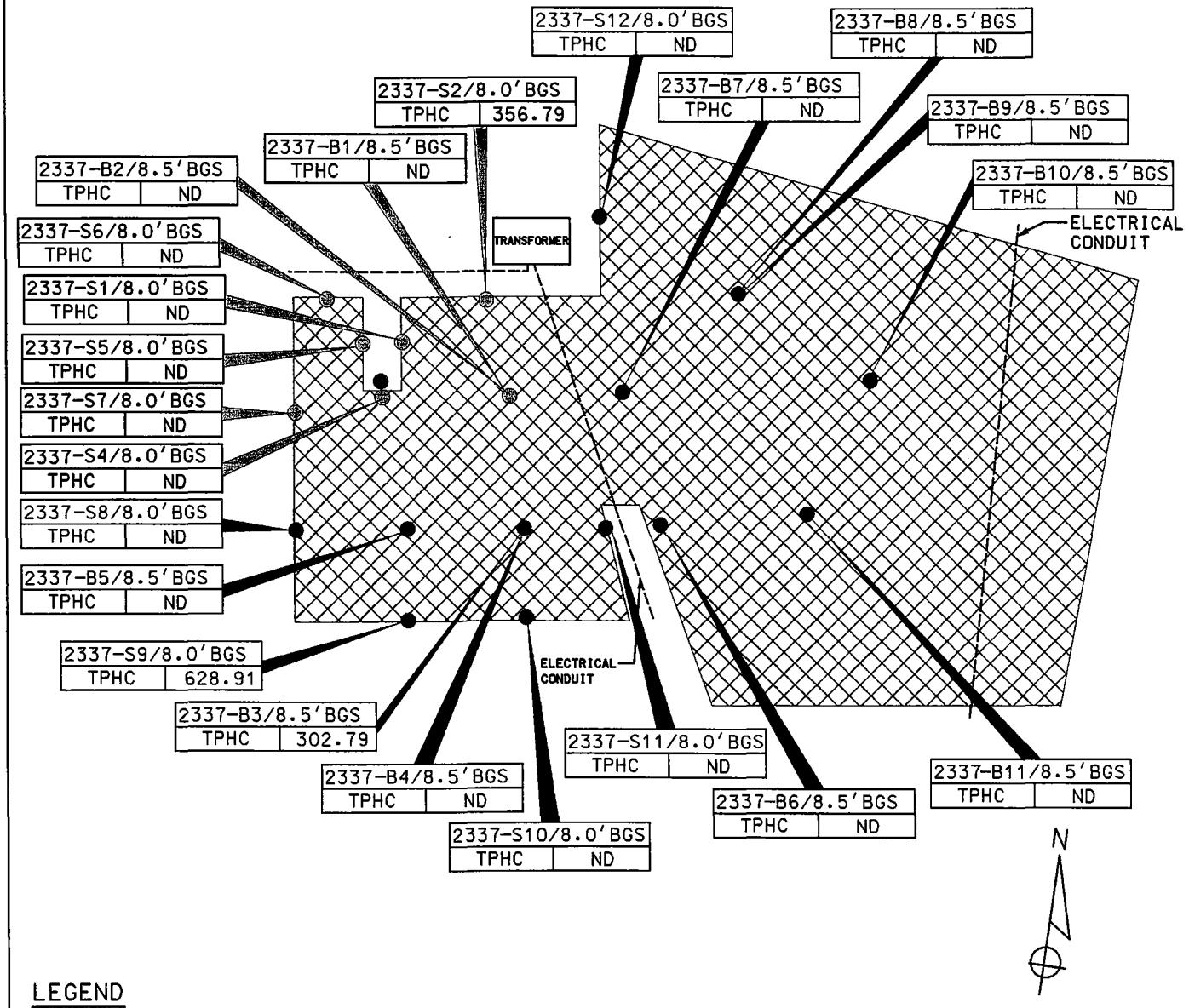
FIGURE 2
SITE MAP
BUILDING 2337
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL
SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=100'

DATE: APRIL 1997

2337 2429 FIG2



LEGEND

- GROUNDWATER MONITORING WELL
- SOIL SAMPLE LOCATION (APRIL 17, 1997)
- SOIL SAMPLE LOCATION (APRIL 21, 1997)
- SOIL SAMPLE LOCATION (JUNE 5, 1997)
- LIMIT OF EXCAVATION (JUNE 23, 1997)

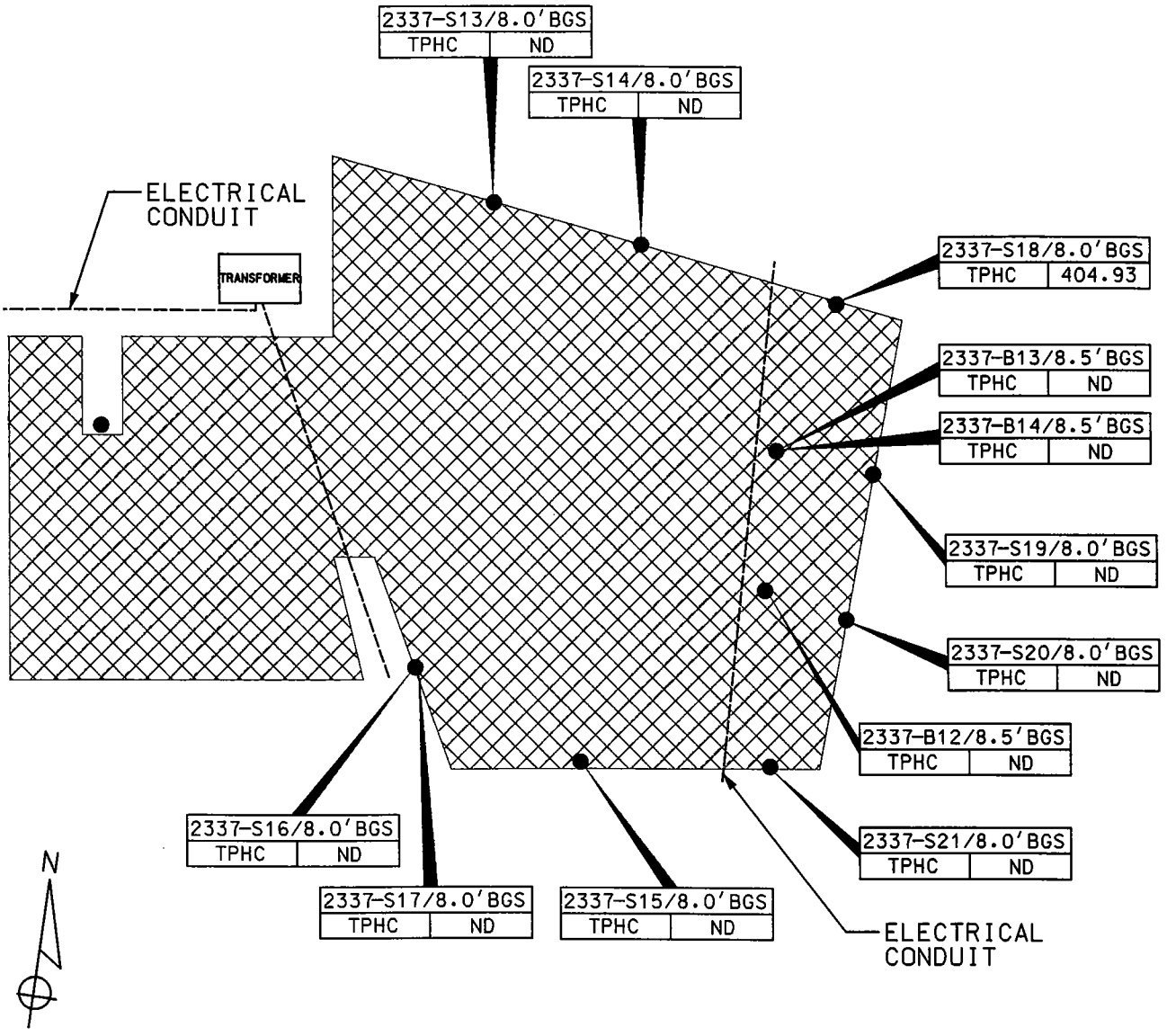
NOTES:
1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE

2337 2429 FIG3

FIGURE 3
SOIL SAMPLING LOCATION MAP
BUILDING 2337
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=20' | DATE: APRIL 1997



LEGEND

- GROUNDWATER MONITORING WELL
- SOIL SAMPLE LOCATION (JUNE 13, 1997)
- SOIL SAMPLE LOCATION (JUNE 23, 1997)
- LIMIT OF EXCAVATION (JUNE 23, 1997)

NOTES:
1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE

FIGURE 3
SOIL SAMPLING LOCATION MAP
BUILDING 2337
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=20'

DATE: APRIL 1997

2337 2429 FIG3

APPENDIX A

UST REPORT CERTIFICATION FORM

Let's protect our earth

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

ATTN: UST Program
(609) 984-3156

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

STANDARD REPORTING FORM
for reporting activities at an UST facility:

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

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

(More than one tank can be listed per activity)

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

Answer questions 1 through 5 and others as applicable.

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

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

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

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire: 0081515
Bldg 2337

5. Registration Number (if known): UST - 65

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

a. Facility name:
b. Facility location:
c. Owner's mailing address:
NJ
d. Block: Lot:
e. Contact person (facility operator):
f. Contact telephone number: ( ) -
g. Other (Specify):

(OVER)

7. For CLOSURE (abandonment or removal – check all that apply):
   a. ☐ Abandonment Date: ___/___/___ Case No: ___
   Attach the necessary implementation schedule (3 copies) and all documentation needed for abandonment per N.J.A.C. 7:14B-9.1 (d).
   b. ☒ Removal Date: 5/24/94 Case No. 94-5-24-1422-56
   Attach the necessary implementation schedule (3 copies). TMS-C-93-3674

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

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

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

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

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

CERTIFICATION

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

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

Signature: James Ott

Name (print or type): Mr. James OTT

Title: Acting Dir. Directorate of Public Works Date: 5/27/94

SRF-1/90
(INT/MOD-2/92)

APPENDIX B

WASTE MANIFEST

U.S. ARMY, FORT MONMOUTH UST HAZARDOUS WASTE TRACKING FORM
(ONE PER EACH CONTAINER)

WASTE DESCRIPTION	SOURCE (BLDG.#)	NJDEPE WASTE CODE	QUANT. (GAL.)	HANDLERS NAME/COMPANY	DATE/TIME
		X722			
		X722	C		
Fuel Oil	2337	X722	17	CATE; Lawrence	5/24
	MTL Sludge + PPE				

THIS CONTAINER WAS ACCEPTED INTO (CIRCLE ONE) MP / (CW) / EA
HAZARDOUS WASTE STORAGE AREA ON

(DATE) 5-25-94 BY

(GOV. REP.) DPW-EV

THIS FORM MUST ACCOMPANY THE CONTAINER UNTIL A MANIFEST IS COMPLETED AND SIGNED BY THE GOVERNMENT HAZARDOUS WASTE COORDINATOR OR HIS REPRESENTAITIVE

Case Protocol
NJA 908881
C. Apply 6-28-94

Bldg 2337

Bldg. 2337 - X722 - 17 gal - NJA 1908881

State of New Jersey
Department of Environmental Protection and Energy
Hazardous Waste Regulation Program
Manifest Section
CN 421, Trenton, NJ 08625-0421

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.) *Form Approved. OMB No. 2050-0039. Expires 9-30-94*

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. NJ221002027 Manifest Document No. 85092 8	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
U. S. Army X Communications Electronics Command
Charles Wood Area Hexagon C/O James Shirghio, Bldg. 2504
ATTN: SELFM-DL-EN-HS
Fort Monmouth, NJ 07703
4. Generator's Phone (908) 532-4359

A. State Manifest Document Number [illegible]
B. State Generator's ID [illegible]

5. Transporter 1 Company Name	6. US EPA ID Number	C. State Trans. ID NJDEP [illegible]
Casie Ecology Oil Salvage, Inc. TA Casie/Rm Protank	NJD045995693	Decal No. [illegible]
		D. Transporter's Phone (609) 696-4401
7. Transporter 2 Company Name	**8. US EPA ID Number**	E. State Trans. ID NJDEP [illegible]
		Decal No. [illegible]
		F. Transporter's Phone ( )

9. Designated Facility Name and Site Address	10. US EPA ID Number	
Casie Ecology Oil Salvage, Inc. TA Casie/Protank 3209 N. Mill Road Vineland, NJ 08360	NJD045995693	G. State Facility's ID [illegible]
		H. Facility's Phone (609) 696-4401

11. US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group) HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Oil contaminated solids Non D.O.T. regulated	1	DM	1000	P	X721
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. S,T
b.

K. Handling Codes for Wastes Listed Above
a. [illegible]
b. [illegible]

15. Special Handling Instructions and Additional Information
This is a NJ regulated waste not a RCRA hazardous waste.
24 hr emergency response #609-696-4401 Greg Clifford

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

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

Printed/Typed Name	Signature	Month Day Year
X Charles M. Appleby SELFM-EW-EV	X [signature]	01 25 94

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Tim Vrasty	[signature]	01 25 94

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space

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

Printed/Typed Name	Signature	Month Day Year

EPA Form 8700-22 (Rev. 9/88) Previous editions are obsolete.
SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES
2 GENERATOR COPY

In case of an emergency or spill immediately call the National Response Center (800) 424-8802 and the NJ Department of Environmental Protection and Energy (609) 292-7172

7-94 TUE 13:52 C. U. T. E. FAX NO. 201 423 6050 P. 04

FCI

FREEHOLD CARIAGE, INC.

P.O. BOX 5010
FREEHOLD, NJ 07728-5010
PHONE: (908) 462-1001
FAX: (908) 308-0924

178 BARTOW MUN. AIRPORT
BARTOW, FL 33830
PHONE: (813) 533-4500
FAX: (813) 533-1613

168 MONAHAN AVENUE
DUNMORE, PA 18512
PHONE: (717) 342-7232
FAX: (717) 342-7367

MANIFEST

FCI EPA ID NO.: NJD054126164

G 52826

STATE MANIFEST NO.:

(X) HM		PROPER U.S. DOT SHIPPING NAME	U.S. DOT HAZARDOUS CLASS	PACKING GROUP	NA/UN NO.	FORM	NET QTY.	UNIT MEASURE
	1	NON-HAZARDOUS WASTE-WATER	N/A	N/A	N/A	Liq.	5291	G
	2							
	3							

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (I.E., IDENTIFICATION SHIPMENT OF A NON-HAZARDOUS NATURE WHICH DOES NOT HAVE TO BE MANIFESTED)

OW-1905 Rel- NJDEPE 15939-23520

GENERATOR NAME/ADDRESS: US. ARMY COMMUNICATIONS ELECTRONIC COMMAND (...) FORT MONMOUTH NJ

PHONE: (908) 532-6224

GENERATOR EPA ID NO.:

TRACTOR: 63 TRAILER: 314

TIME AT GENERATOR (MILITARY TIME ONLY): 14:30 ARRIVAL TIME / DEPARTURE TIME

FCI REP. LOADING (PRINT): David Smith | PROCEDURE: VAC | BOX SPOTTED: * | BOX REMOVED: *

EQUIPMENT USED: Bldg 2500 - 0019246-1 1590 gals; Bldg 2337-0081575-LS 3701 gallons

COMMENTS OR DELAYS AT GENERATOR: [illegible] Company ... The [illegible], Inc. Middletown ...

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the State. The wastes described above were consigned to the Transported named. The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

Payment to the contractor for waste removal does not constitute payment to the carrier and if the contractor does not pay the carrier, the generator is obligated to pay the agreed rate offered to the contractor.

GENERATOR'S SIGNATURE: X [signature] I HAVE READ THE ABOVE AND UNDERSTAND AND AGREE TO ALL OF ITS CONTENT.

PLEASE PRINT NAME/TITLE: Environ. Prot. Spec. Charles M. Appleby Staff [illegible]

DATE LOADED: 5/31/94 MO. DAY YR.

TSDF NAME/ADDRESS: E.I. DUPONT COMPANY CHAMBERS WORKS RT #130 DEEPWATER NJ 08023

PHONE: (609) 540-2773

TSDF EPA ID NO.: NJD002385730

TRACTOR: TRAILER:

TIME AT TSDF (MILITARY TIME ONLY): ARRIVAL TIME / DEPARTURE TIME

FCI REP. UNLOADING (PRINT): | PROCEDURE: | BOX SPOTTED: | BOX REMOVED: | EQUIPMENT USED:

COMMENTS OR DELAYS AT TSDF:

TSDF SIGNATURE: X

PLEASE PRINT NAME/TITLE:

DATE UNLOADED: / / MO. DAY YR.

AR H-0287 PC 944	ME ME-HWT-47 ME-WOT-47	MO H-1490	NOVA SCOTIA, CANADA NSC 000 147	QUEBEC, CANADA QC-6ML-047
CT CT-HW-307	ND HWH-197 81-OP-1785	ND WH-429	OH 883-HW	RI RI-536
DE DE-HW-203 DE-SW-203	MA MA-294	NH TNH-0047	OK 3358	TX 40705
IL SWH-1540	MN 61572	NJ S-2269 15939	ONTARIO, CANADA A 840943	WI 11002
		NY JA-119	PA PA-AH-0067	

Original - FCI Office Copy
Yellow - FCI Office Copy
Blue - FCI Office Copy/Customer
Green - Retained by TSDF
Gold - Retained by Generator

G 52826

Pumped excavation due to sheen

State of New Jersey
Department of Environmental Protection and Energy
Hazardous Waste Regulation Program
Manifest Section
CN 028, Trenton, NJ 08625-0028

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039. Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. N J 2 2 1 0 0 2 0 9 7 8 | Manifest Document No. 03793 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: US Army Communications Electronics Command
Charles Wood Area, c/o James Shirghio, Bldg 2504
ATTN: SELFM-DL-EM-MS, Fort Monmouth, NJ 07703
4. Generator's Phone (908) 532-6223

Manifest Document Number: NJA 1603193
B. State Generator's ID: SAME

5. Transporter 1 Company Name: Freehold Cartage, Inc. | 6. US EPA ID Number: NJD054112616
C. State Trans. ID: NJDEPE 522665

7. Transporter 2 Company Name | 8. US EPA ID Number
D. Transporter's Phone (908) 462-1001
E. State Trans. ID

9. Designated Facility Name and Site Address: Lionetti Oil Recovery, Co., Inc.
Runyon & Cheesequake Rds.
Old Bridge, NJ 08857 | 10. US EPA ID Number: NJD084044064
F. Transporter's Phone ( )
G. State Facility's ID
H. Facility's Phone (908) 721-0900

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.	I. Waste No.
a.	X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III	001	TT	XX523G	X	712
b.	X Petroleum Oil, N.O.S. Class 3 Combustible Liquid UN1270 PG III	001	TT	XX222G	X	722
c.	X Petroleum Oil, N.O.S. Class 3 Combustible Liquid UN1270 PG III	001	TT	XX775G	X	722
d.	X Petroleum Oil, N.O.S. Class 3 Combustible Liquid UN1270 PG III	001	TT	XX572G	X	722

J. Additional Descriptions for Materials Listed Above
a. Petroleum Oil 95 % Water 5 % LT
b. Petroleum Oil 95% Water 5% LT
c. Petroleum Oil 95% Water 5% LT
d. Petroleum Oil 95% Water 5% LT

K. Handling Codes for Wastes Listed Above
a. T04 Filtration T01
b. T04 Filtration T01
c. T04 Filtration T01
d. T04 Filtration T01

15. Special Handling Instructions and Additional Information
NOT EPA REGULATED. REGULATED AS HAZARDOUS WASTE IN NJ. 11a. ERG #27 Bldg.
24 HOUR EMERGENCY PHONE: 201-427-2681 a) Bldg 2337 c) 2000
NJ DECAL# 55182 b) Bldg 2534 d) Bldg 2067

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

Printed/Typed Name: Joseph M. Fallon | Signature: Joseph M. Fallon | Month 05 | Day 12 | Year 94

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: David S. Smith | Signature: David S. Smith | Month 05 | Day 12 | Year 94

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

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 18.
Printed/Typed Name | Signature | Month | Day | Year

EPA Form 8700-22 Rev. 9-88. Previous editions are obsolete.
SIGNATURE AND INFORMATION MUST BE LEGIBLE ON ALL COPIES
1. TO MAIL TO - TSDYS STATE

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

APPENDIX C

UST DISPOSAL CERTIFICATE

MAZZA & SONS, INC.

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

Fort Monmouth
Bldg 2534 0081515-24
2337 0081515-65
117

NO. ______

DATE 3 Jun 94

Customer's Name Cute inc

Address ______

Make of Autos

Bldg 2534
Bldg 2337
Bldg 117
Done For Sites-Act

43390 LB 6
38820 LB 6
4/56

Tires
Tank
Pros:

-3 1994

	Weight	Price
Cast Iron		
Steel (circled)	91.20	
Lt. Iron		
Copper #1		
Copper #2		
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Radiators		
Battery		
TOTAL AMOUNT:		

Weigher ______ Customer [signature]

APPENDIX D

SOIL ANALYTICAL DATA PACKAGE

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
96-1226
AREA-2337

Project # 2460
Date Rec. 04/17/97
Date Comp. 04/18/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

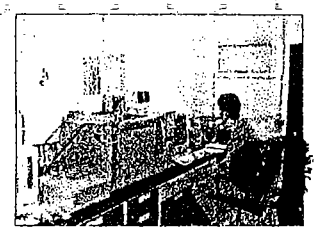
	No	Yes
1. Method Detection Limits provided.	__	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	✓	__
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	__	✓
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).		✓
5. IR Spectra submitted for standards, blanks, & samples	__	NA __
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	__	✓
7. Analysis holding time met. (If not met, list number of days exceeded for each sample)	__	✓

Additional Comments: _____

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: SMC / Chuck Appleby
Phone #: 610 265-2700
( )DERA (X)OMA ( )Other:
Project No: 96-1226
Location: Area 2337
Samplers Name / Company: David H. Daniels / SMC

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% solids	VOA+15	Remarks / Preservation Method
2460 ,1	2337 - B1	4.17.97	14:20	Soil	1	X	X		
,2	2337 - B2		14:25		1				
,3	2337 - S1		14:30		1				
,4	2337 - S2		14:35		1				
,5	2337 - S3		14:40		2			X	High OVA readings Hold, if TPHC about 1000 ppm then run other jars for VOA+15
,6	2337 - S4		14:45		1				
,7	2337 - S5		14:50		1				
,8	2337 - S6		14:55		1				
,9	2337 - S7		15:00		1				OVER 1000 ppm DO VOA

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	4.17.97 15:40	[signature] 4-17-97			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified
Turnaround time: ( )Standard 4 wks, (X)Rush 1 Days, ( )ASAP Verbal 24 Hrs.

Remarks:

Need by Monday Morning (TPHs)

print legibly

Custody.xls4/3/97

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

Client :	U.S. Army	**Lab. ID # :**	2460
	DPW. SELFM-PW-EV	**Date Rec'd:**	17-Apr-97
	Bldg. 173	**Analysis Start:**	18-Apr-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	18-Apr-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	P. Skelton	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	Area 2337

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2460.01	2337-B1	**1.00**	15.10	76.64	244	**ND**
2460.02	2337-B2	**1.00**	15.21	75.96	244	**ND**
2460.03	2337-S1	**1.00**	15.75	81.75	219	**ND**
2460.04	2337-S2	**1.00**	15.03	82.21	228	**356.79**
2460.05	2337-S3	**1.00**	15.08	83.62	224	**9927.06**
2460.06	2337-S4	**1.00**	15.12	79.22	235	**ND**
2460.07	2337-S5	**1.00**	15.05	81.04	231	**ND**
2460.08	2337-S6	**1.00**	15.28	73.52	251	**ND**
2460.09	2337-S7	**1.00**	15.05	82.37	227	**ND**
METHOD BLANK	18-Apr-97	**1.00**	15.00	100.00	157	**0.00**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

6

Response Factor Report FID/TCD

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997

Calibration Files
1 =T01046.D 2 =T01045.D 3 =T01042.D
4 =T01041.D 5 =T01040.D

	Compound	1	2	3	4	5	Avg	%RSD
1) s	o-terphenyl	4.421	3.506	3.685	3.771	3.467	3.770 E4	10.22
2) t	tphc	7.383	5.401	5.059	5.716	4.569	5.626 E4	19.03

(#) = Out of Range

7

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970418\T01082.D Vial: 11
Acq On : 18 Apr 97 9:43 am Operator:
Sample : 50 PPM STD Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	37.699	39.267 E3	-4.2	107	0.00
2	t	tphc	56.257	45.868 E3	18.5	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

8

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970418\T01093.D Vial: 11
Acq On : 18 Apr 97 5:45 pm Operator:
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	37.699	40.370 E3	-7.1	110	0.00
2	t	tphc	56.257	45.883 E3	18.4	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970418\T01100.D Vial: 11
Acq On : 18 Apr 97 10:33 pm Operator:
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	37.699	42.126 E3	-11.7	114	0.00
2	t	tphc	56.257	51.003 E3	9.3	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

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

Surrogate Recovery Report

Lab. ID # : 2460

Location #: Area 2337

Sample	Field ID	Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2460.01	2337-B1	10.00	7.92	**79.21**
2460.02	2337-B2	10.00	8.40	**84.01**
2460.03	2337-S1	10.00	11.34	**113.35**
2460.04	2337-S2	10.00	6.96	**69.62**
2460.05	2337-S3	10.00	7.63	**76.30**
2460.06	2337-S4	10.00	10.71	**107.07**
2460.07	2337-S5	10.00	10.78	**107.77**
2460.08	2337-S6	10.00	11.20	**111.99**
2460.09	2337-S7	10.00	10.10	**101.01**
METHOD BLANK	18-Apr-97	10.00	7.78	**77.84**

Surrogate Added : **o-Terphenyl**

4/21/97

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

Matrix Spike Recovery Report

Lab. ID # : 2460

Location #: Area 2337

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2460.09MS	630	0.00	692.63	109.94	75-125
2460.09MSD	630	0.00	621.75	98.69	75-125

RPD	10.79	20.00

4/21/97

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

Blank Spike Recovery Report

Lab. ID # : 2460

Location #: Area 2337

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	18-Apr-97	630	609.98	96.82	75-125

4/21/97

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970418\T01088.D Vial: 6
Acq On : 18 Apr 97 1:55 pm Operator:
Sample : 2460.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 8:45 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
1) s	o-terphenyl	13.39	362076	7.921	mg/L m
	Target Compounds				
2) t	tphc	0.00	0	N.D.	mg/L

(f)=RT Delta > 1/2 Window (m)=manual int.

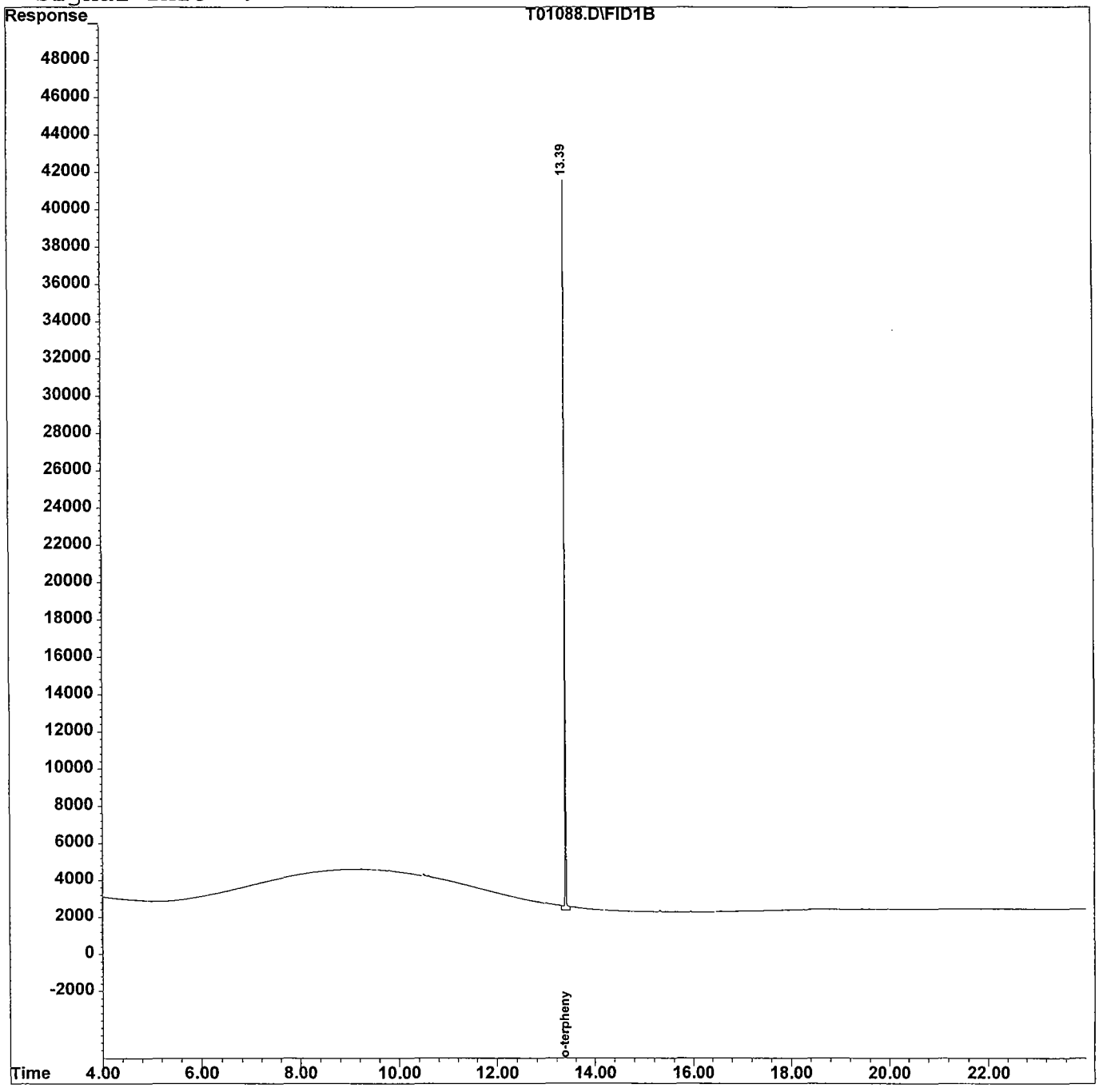
14

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970418\T01088.D Vial: 6
Acq On : 18 Apr 97 1:55 pm Operator:
Sample : 2460.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 8:45 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970418\T01089.D Vial: 7
Acq On : 18 Apr 97 2:41 pm Operator:
Sample : 2460.02 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 8:45 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
1)	s o-terphenyl	13.39	378776	8.401	mg/L	m
	Target Compounds					
2)	t tphc	0.00	0	N.D.	mg/L	

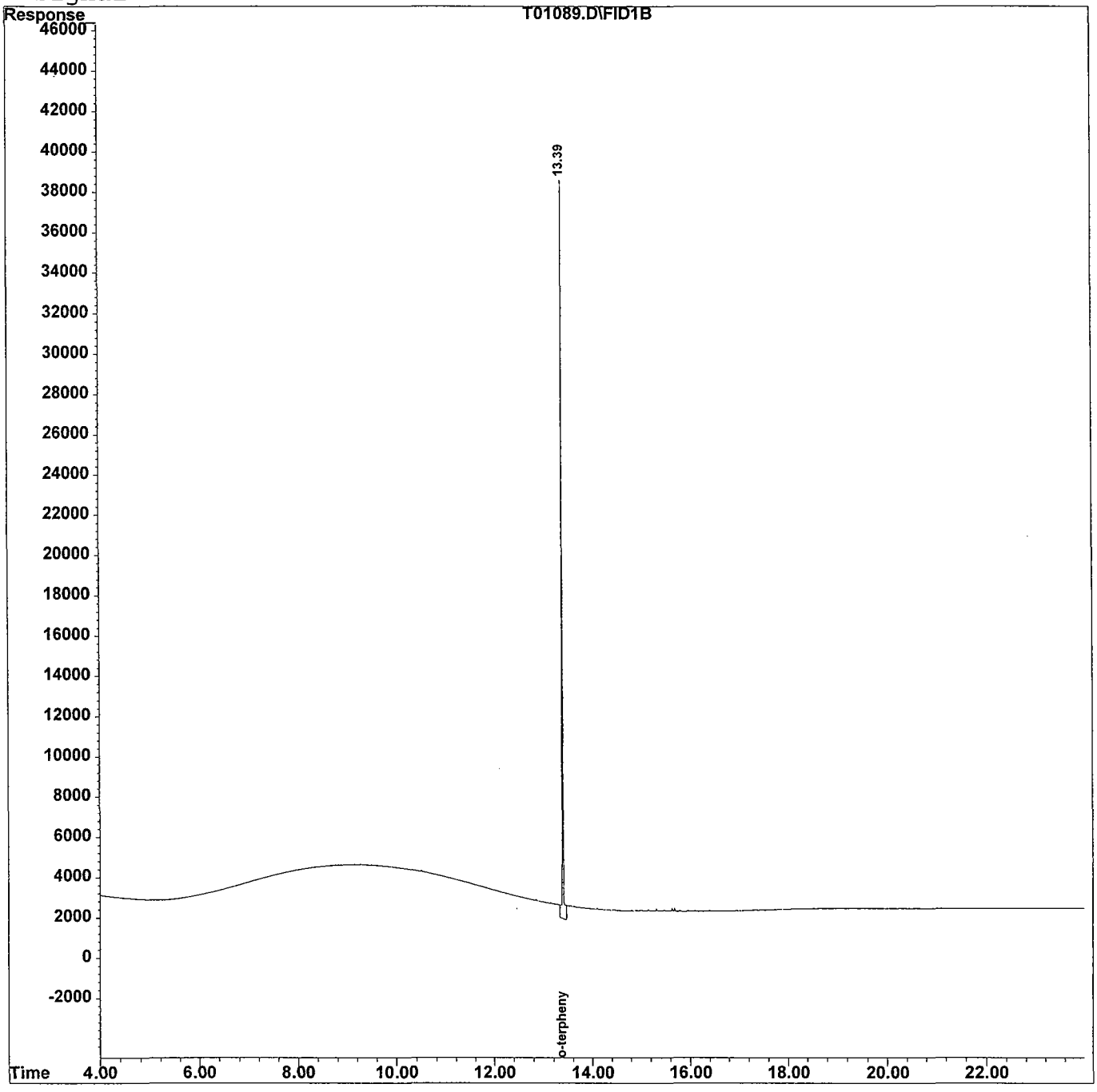
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970418\T01089.D Vial: 7
Acq On : 18 Apr 97 2:41 pm Operator:
Sample : 2460.02 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 8:45 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



17

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970418\T01090.D Vial: 8
Acq On : 18 Apr 97 3:34 pm Operator:
Sample : 2460.03 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 8:45 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) s o-terphenyl	13.39	480729	11.335	mg/L m
Target Compounds				
2) t tphc	0.00	0	N.D.	mg/L

(f)=RT Delta > 1/2 Window (m)=manual int.

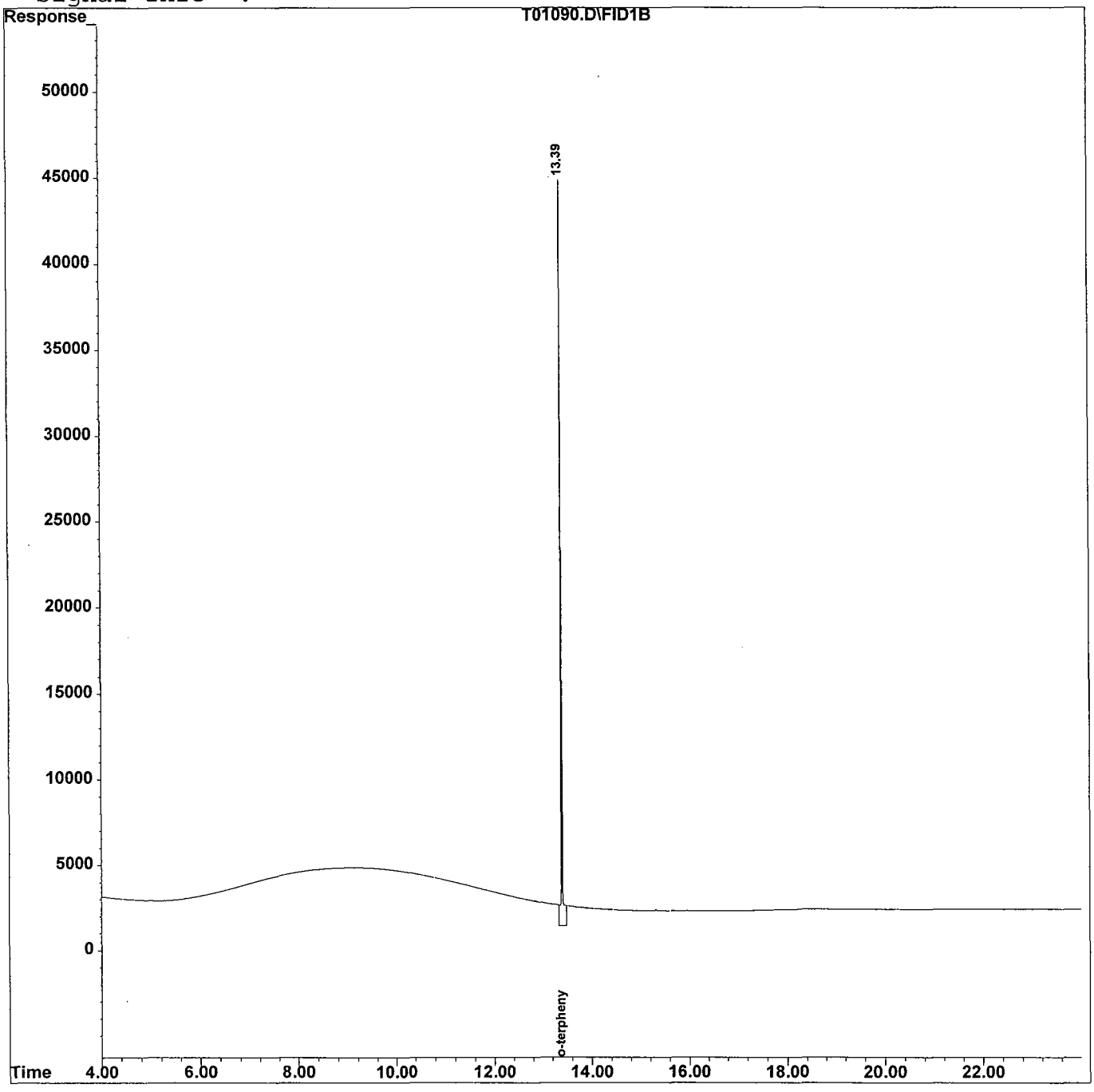
18

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970418\T01090.D Vial: 8
Acq On : 18 Apr 97 3:34 pm Operator:
Sample : 2460.03 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 8:45 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



19

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970418\T01091.D Vial: 9
Acq On : 18 Apr 97 4:19 pm Operator:
Sample : 2460.04 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:30 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) s o-terphenyl	13.39	328750	6.962 mg/L m
Target Compounds			
2) t tphc	13.39	8968322	73.475 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

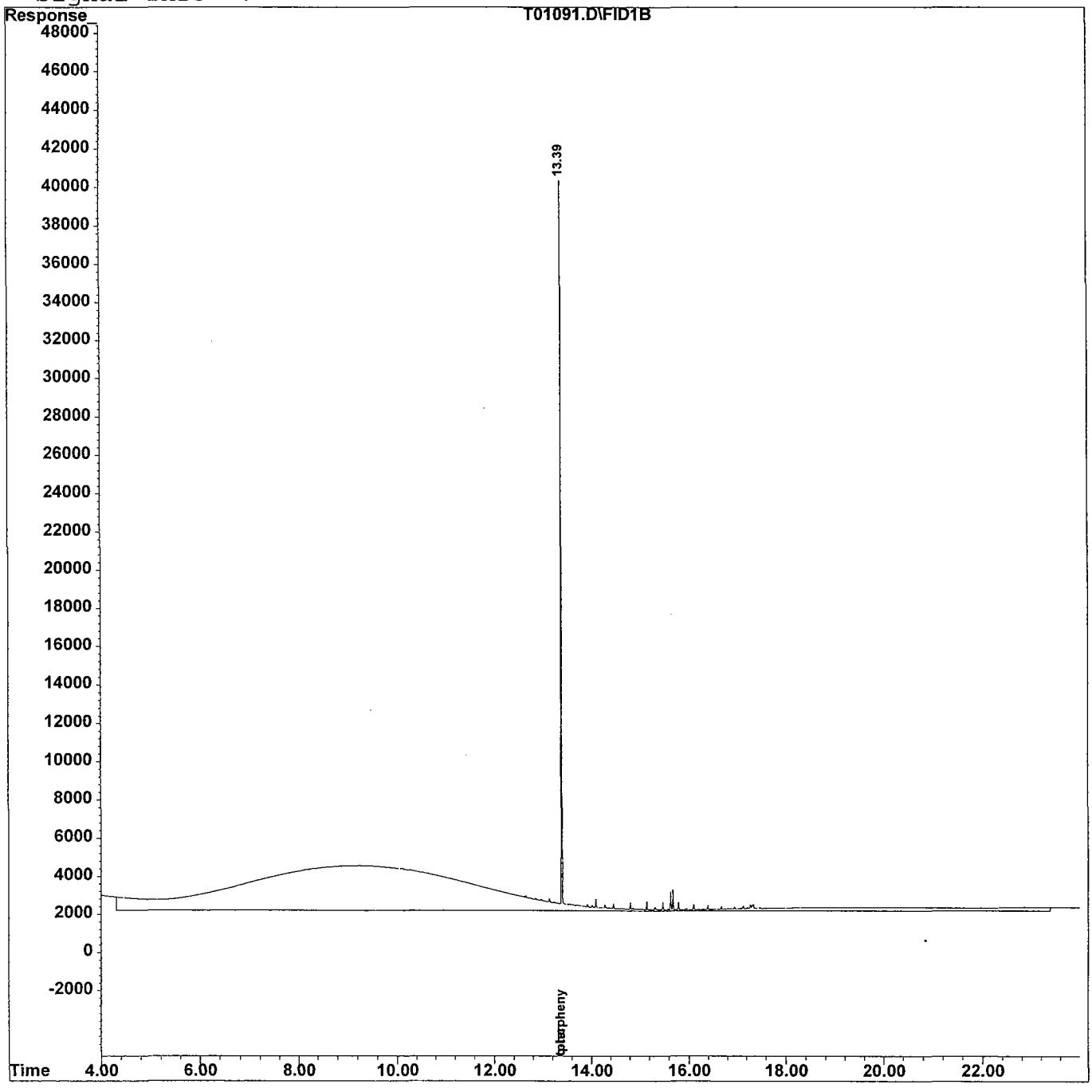
20

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970418\T01091.D Vial: 9
Acq On : 18 Apr 97 4:19 pm Operator:
Sample : 2460.04 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:30 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



21

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970418\T01092.D Vial: 10
Acq On : 18 Apr 97 5:02 pm Operator:
Sample : 2460.05 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:31 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
1) s	o-terphenyl	13.39	351968	7.630	mg/L	m
	Target Compounds					
2) t	tphc	12.49	101744075	2086.319	mg/L	m

(f)=RT Delta > 1/2 Window (m)=manual int.

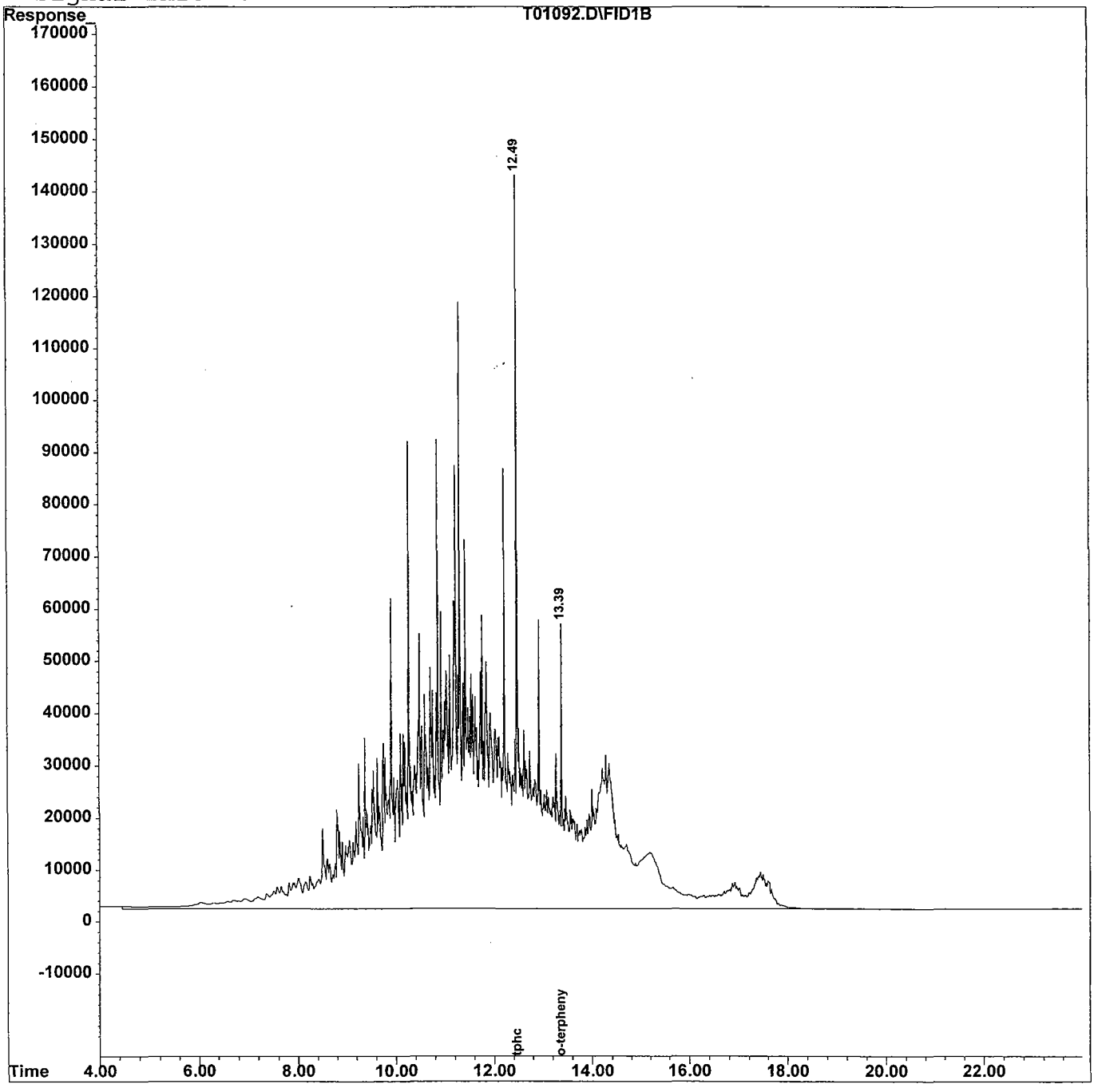
12

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970418\T01092.D Vial: 10
Acq On : 18 Apr 97 5:02 pm Operator:
Sample : 2460.05 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:31 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



23

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970418\T01094.D Vial: 12
Acq On : 18 Apr 97 6:27 pm Operator:
Sample : 2460.06 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:32 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) s o-terphenyl	13.39	458899	10.707	mg/L m
Target Compounds				
2) t tphc	0.00	0	N.D.	mg/L

(f)=RT Delta > 1/2 Window (m)=manual int.

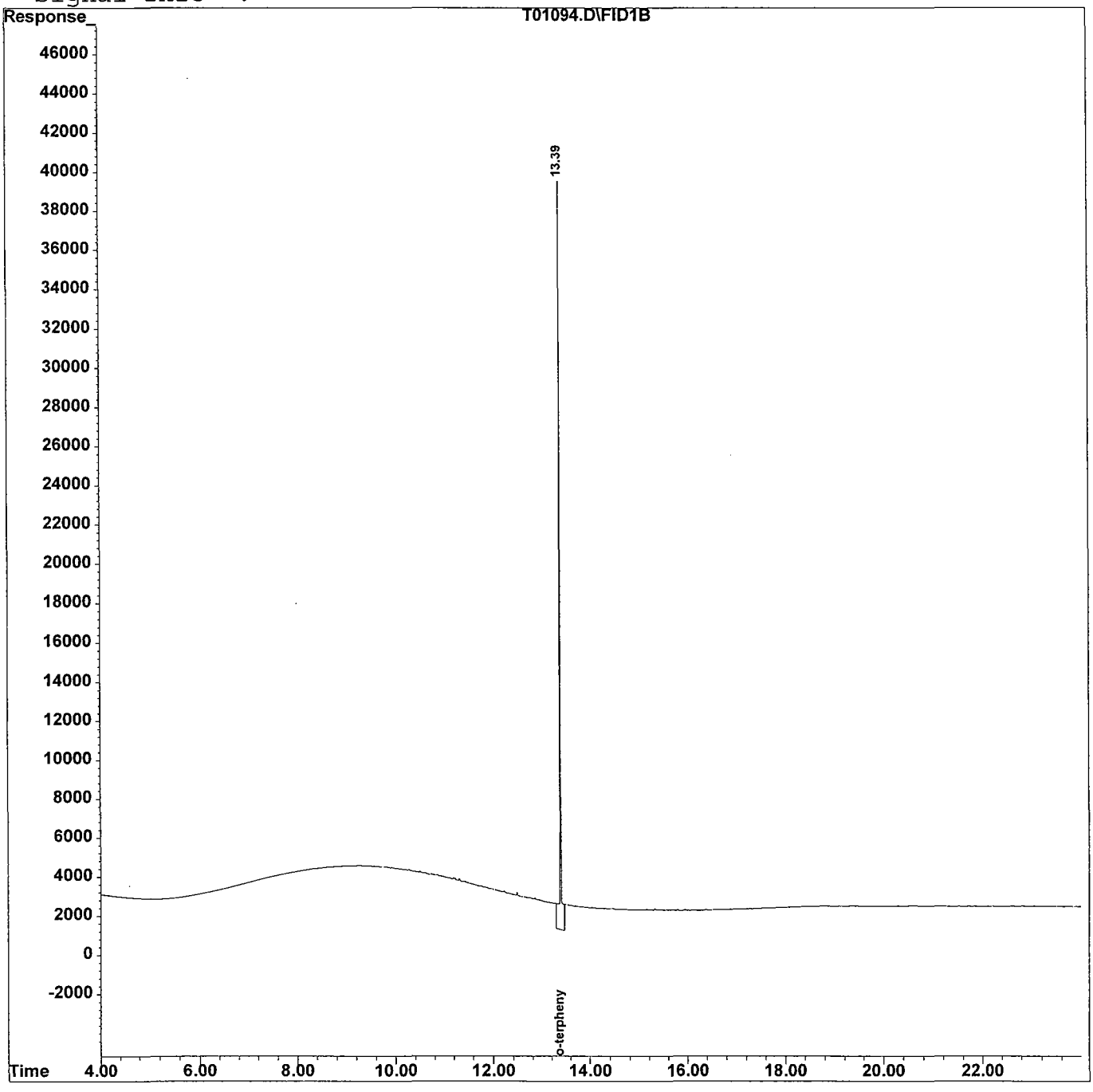
24

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970418\T01094.D Vial: 12
Acq On : 18 Apr 97 6:27 pm Operator:
Sample : 2460.06 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:32 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



25

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970418\T01095.D Vial: 13
Acq On : 18 Apr 97 7:08 pm Operator:
Sample : 2460.07 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:32 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
1)	s o-terphenyl	13.39	461313	10.777	mg/L	m
	Target Compounds					
2)	t tphc	0.00	0	N.D.	mg/L	

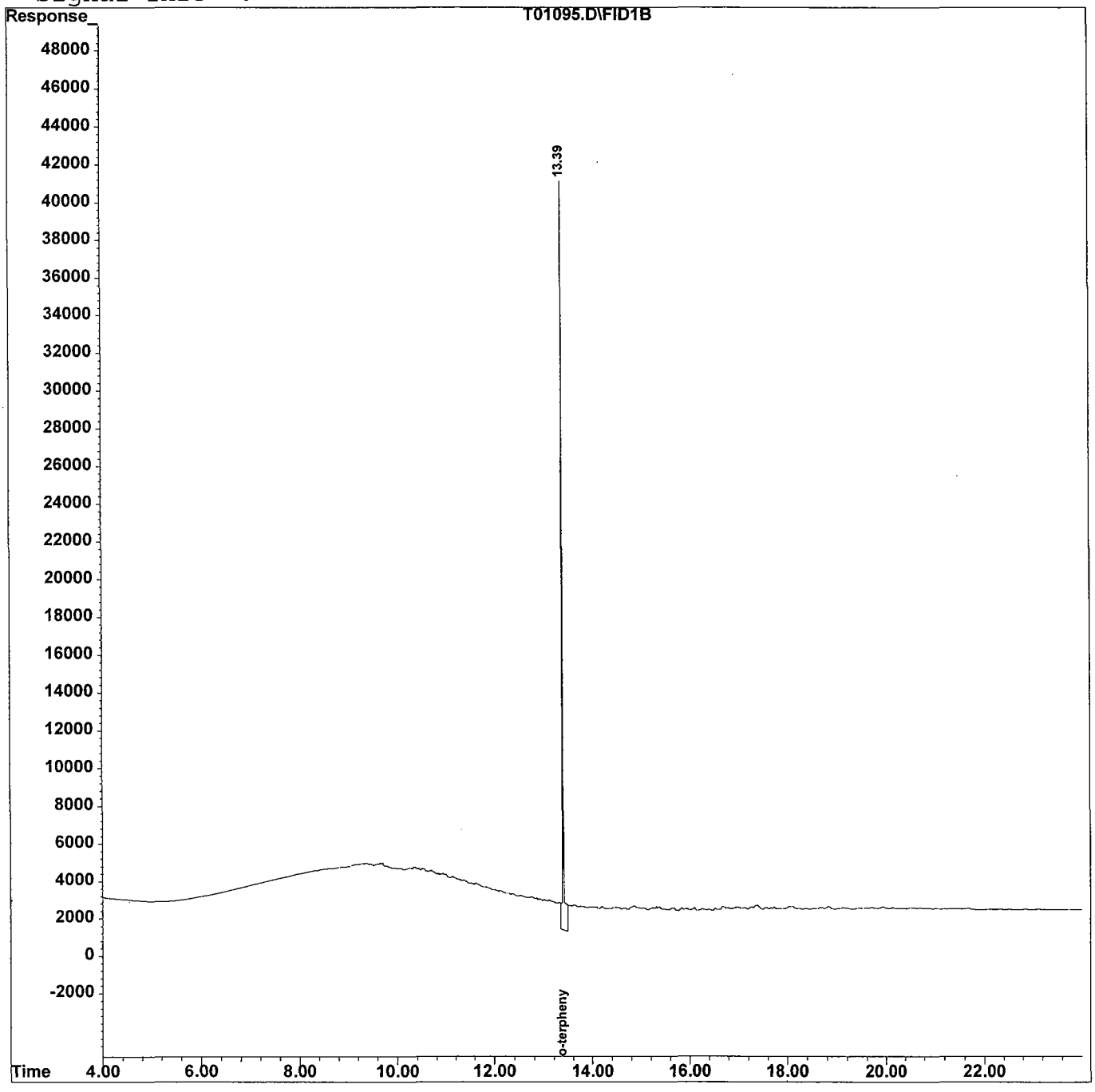
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970418\T01095.D Vial: 13
Acq On : 18 Apr 97 7:08 pm Operator:
Sample : 2460.07 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:32 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970418\T01096.D Vial: 14
Acq On : 18 Apr 97 7:49 pm Operator:
Sample : 2460.08 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:33 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
1)	s o-terphenyl	13.39	476008	11.199	mg/L	m
	Target Compounds					
2)	t tphc	0.00	0	N.D.	mg/L	

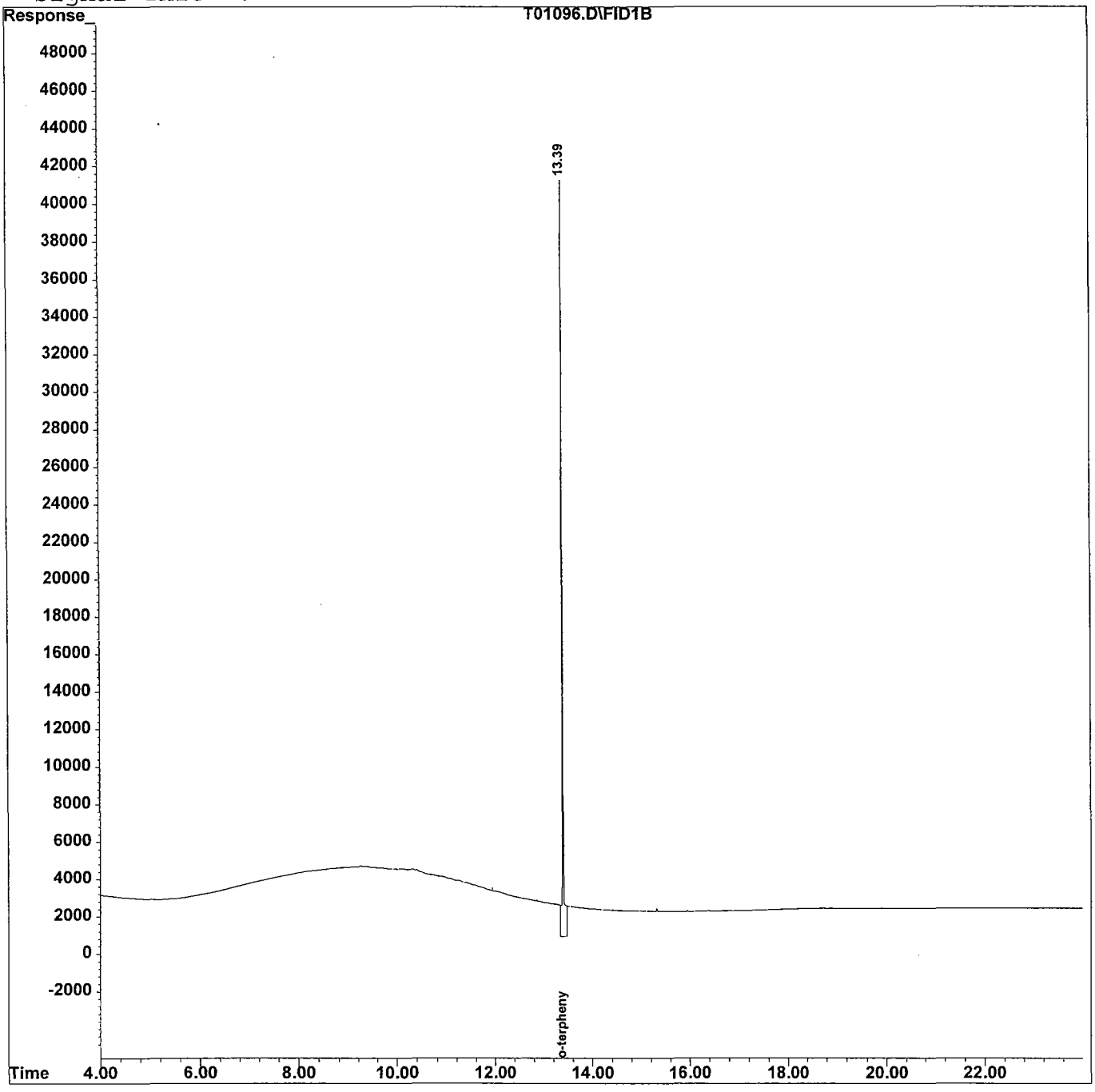
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970418\T01096.D Vial: 14
Acq On : 18 Apr 97 7:49 pm Operator:
Sample : 2460.08 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:33 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970418\T01097.D Vial: 15
Acq On : 18 Apr 97 8:30 pm Operator:
Sample : 2460.09 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 21 9:33 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) s o-terphenyl	13.39	437832	10.101	mg/L	m
Target Compounds					
2) t tphc	0.00	0	N.D.	mg/L	

(f)=RT Delta > 1/2 Window (m)=manual int.

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

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

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
4. Document paginated and legible ✓
5. Chain of Custody submitted ✓
6. Samples submitted to lab within 48 hours of sample collection ✓
7. Methodology Summary submitted ✓
8. Laboratory Chronicle and Holding Time Check submitted ✓
9. Results submitted on a dry weight basis ✓
10. Method Detection Limits submitted ✓
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ✓

Laboratory Manager or Environmental Consultant's Signature _____

Date 12/3/97

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
96-1226
AREA-2337

Project # 2466
Date Rec. 04/21/97
Date Comp. 04/22/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Method Detection Limits provided.	__	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	✓	__
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	__	✓
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).		✓
5. IR Spectra submitted for standards, blanks, & samples	__	NA __
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	__	✓
7. Analysis holding time met.	__	✓

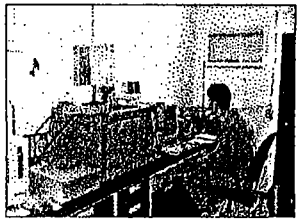
(If not met, list number of days exceeded for each sample)

Additional Comments:

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army mil
NJDEP Certification #13461

Chain of Custody Record

Customer: SMC / Chuck Appleby
Phone #: (610) 265-2700
( )DERA (X)OMA ( )Other:_____
Project No: 96-1226
Location: Area 2337
Samplers Name / Company: David H. Daniels / SMC

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPH	% Solids							Comments: Remarks / Preservation Method
						Analysis Parameters								
2466.01	2337-B3	4.21.97	13:55	Soil	1	X	X							RUSH
.02	2337-B4		14:00											
.03	2337-B5		14:05											
.04	2337-58		14:10											
.05	2337-59		14:15											
.06	2337-510		14:20											
.07	2337-511		14:25											

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	4-21-97 15:45				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified
Turnaround time: ( )Standard 4 wks, (X)Rush 1 Days, ( )ASAP Verbal 24 Hrs

Remarks:

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

Client :	U.S. Army	**Lab. ID # :**	2466
	DPW. SELFM-PW-EV	**Date Rec'd:**	21-Apr-97
	Bldg. 173	**Analysis Start:**	21-Apr-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	22-Apr-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	P. Skelton	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	Area 2337

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2466.01	2337-B3	1.00	15.09	72.43	215	**302.79**
2466.02	2337-B4	1.00	15.27	72.53	212	**ND**
2466.03	2337-B5	1.00	15.05	76.87	203	**ND**
2466.04	2337-S8	1.00	15.21	81.38	190	**ND**
2466.05	2337-S9	1.00	15.58	84.04	179	**628.91**
2466.06	2337-S10	1.00	15.17	83.30	186	**ND**
2466.07	2337-S11	1.00	15.06	75.34	207	**ND**
METHOD BLANK	21-Apr-97	1.00	15.00	100.00	157	**0.00**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

6

Response Factor Report FID/TCD

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997

Calibration Files
1 =T01046.D 2 =T01045.D 3 =T01042.D
4 =T01041.D 5 =T01040.D

		Compound	1	2	3	4	5	Avg	%RSD
1)	s	o-terphenyl	4.421	3.506	3.685	3.771	3.467	3.770 E4	10.22
2)	t	tphc	7.383	5.401	5.059	5.716	4.569	5.626 E4	19.03

(#) = Out of Range

7

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970421\T01102.D Vial: 1
Acq On : 21 Apr 97 7:21 pm Operator:
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	37.699	38.254 E3	-1.5	104	0.00
2	t	tphc	56.257	50.414 E3	10.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

8

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970421\T01113.D Vial: 1
Acq On : 22 Apr 97 3:42 am Operator:
Sample : 50 PPM CHECK Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	37.699	40.782 E3	-8.2	111	0.00
2	t	tphc	56.257	54.390 E3	3.3	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970421\T01118.D Vial: 1
Acq On : 22 Apr 97 7:34 am Operator:
Sample : 50 ppm Check Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	37.699	45.482 E3	-20.6	123	0.01
2	t	tphc	56.257	51.665 E3	8.2	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

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

Surrogate Recovery Report

Lab. ID # : 2466

Location #: Area 2337

Sample	Field ID	Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2466.01	2337-B3	10.00	7.87	**78.71**
2466.02	2337-B4	10.00	8.02	**80.15**
2466.03	2337-B5	10.00	9.09	**90.93**
2466.04	2337-S8	10.00	10.00	**99.95**
2466.05	2337-S9	10.00	10.08	**100.75**
2466.06	2337-S10	10.00	11.67	**116.73**
2466.07	2337-S11	10.00	9.04	**90.37**
METHOD BLANK	21-Apr-97	10.00	8.12	**81.17**

Surrogate Added : **o-Terphenyl**

4/22/97

11

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

Matrix Spike Recovery Report

Lab. ID # : 2466

Location #: Area 2337

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2466.07MS	630	0.00	687.17	109.08	75-125
2466.07MSD	630	0.00	687.46	109.12	75-125

RPD	0.04	20.00

4/22/97

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

Blank Spike Recovery Report

Lab. ID # : 2466

Location #: Area 2337

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	21-Apr-97	630	603.48	95.79	75-125

4/22/97

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970421\T01107.D Vial: 7
Acq On : 21 Apr 97 11:01 pm Operator:
Sample : 2466.02 Inst : FID/TCD
Misc : 2337-B4 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:26 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
1)	s o-terphenyl	13.39	365357	8.015	mg/L	m
	Target Compounds					
2)	t tphc	0.00	0	N.D.	mg/L	

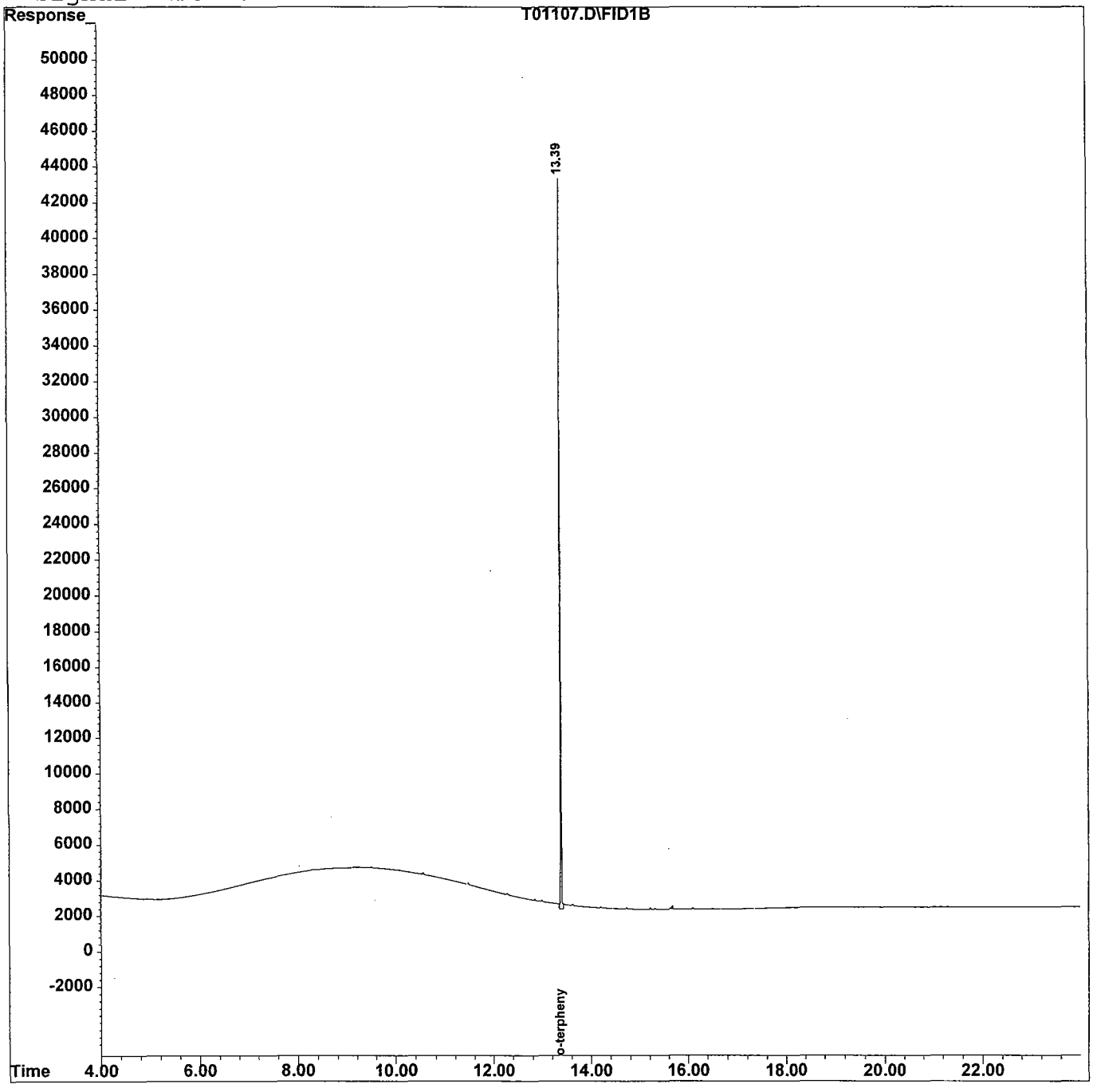
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970421\T01107.D Vial: 7
Acq On : 21 Apr 97 11:01 pm Operator:
Sample : 2466.02 Inst : FID/TCD
Misc : 2337-B4 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:26 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



17

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970421\T01108.D Vial: 8
Acq On : 21 Apr 97 11:43 pm Operator:
Sample : 2466.03 Inst : FID/TCD
Misc : 2337-B5 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:26 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) s o-terphenyl	13.39	402804	9.093 mg/L m
Target Compounds			
2) t tphc	0.00	0	N.D. mg/L

(f)=RT Delta > 1/2 Window (m)=manual int.

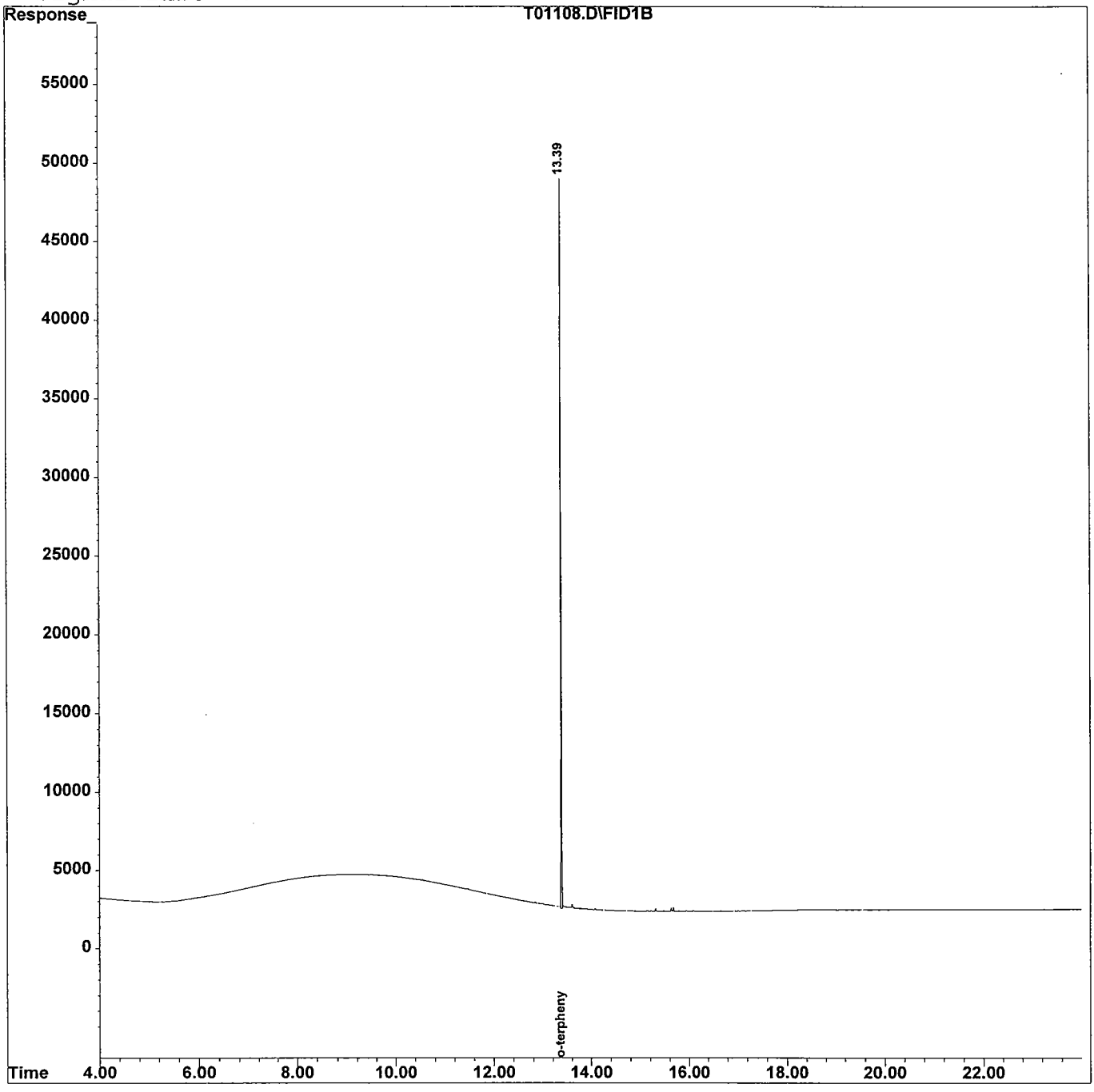
18

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970421\T01108.D Vial: 8
Acq On : 21 Apr 97 11:43 pm Operator:
Sample : 2466.03 Inst : FID/TCD
Misc : 2337-B5 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:26 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970421\T01109.D Vial: 9
Acq On : 22 Apr 97 12:25 am Operator:
Sample : 2466.04 Inst : FID/TCD
Misc : 2337-S8 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:37 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) s o-terphenyl	13.39	434164	9.995	mg/L m
Target Compounds				
2) t tphc	0.00	0	N.D.	mg/L

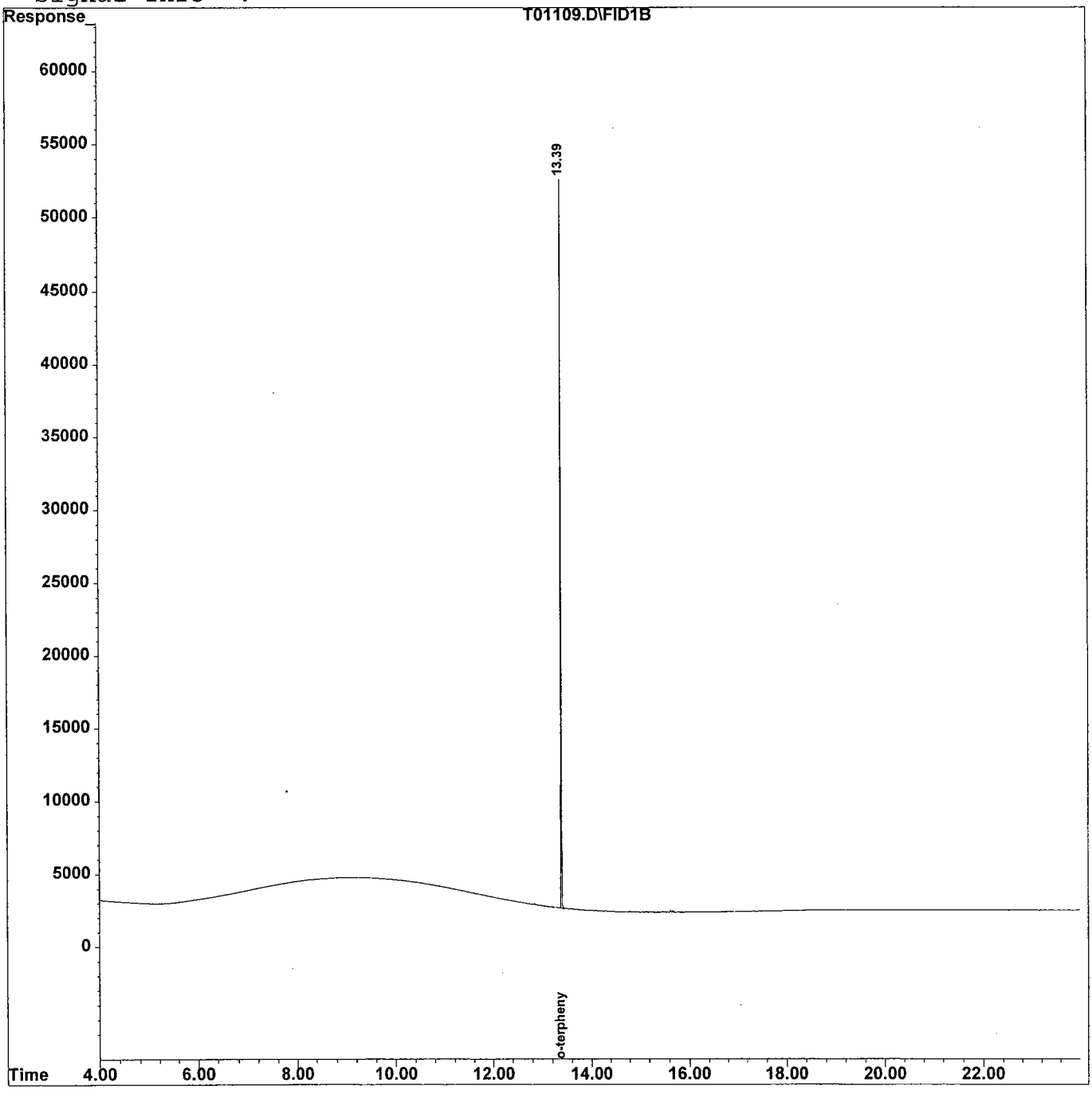
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970421\T01109.D Vial: 9
Acq On : 22 Apr 97 12:25 am Operator:
Sample : 2466.04 Inst : FID/TCD
Misc : 2337-S8 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:37 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



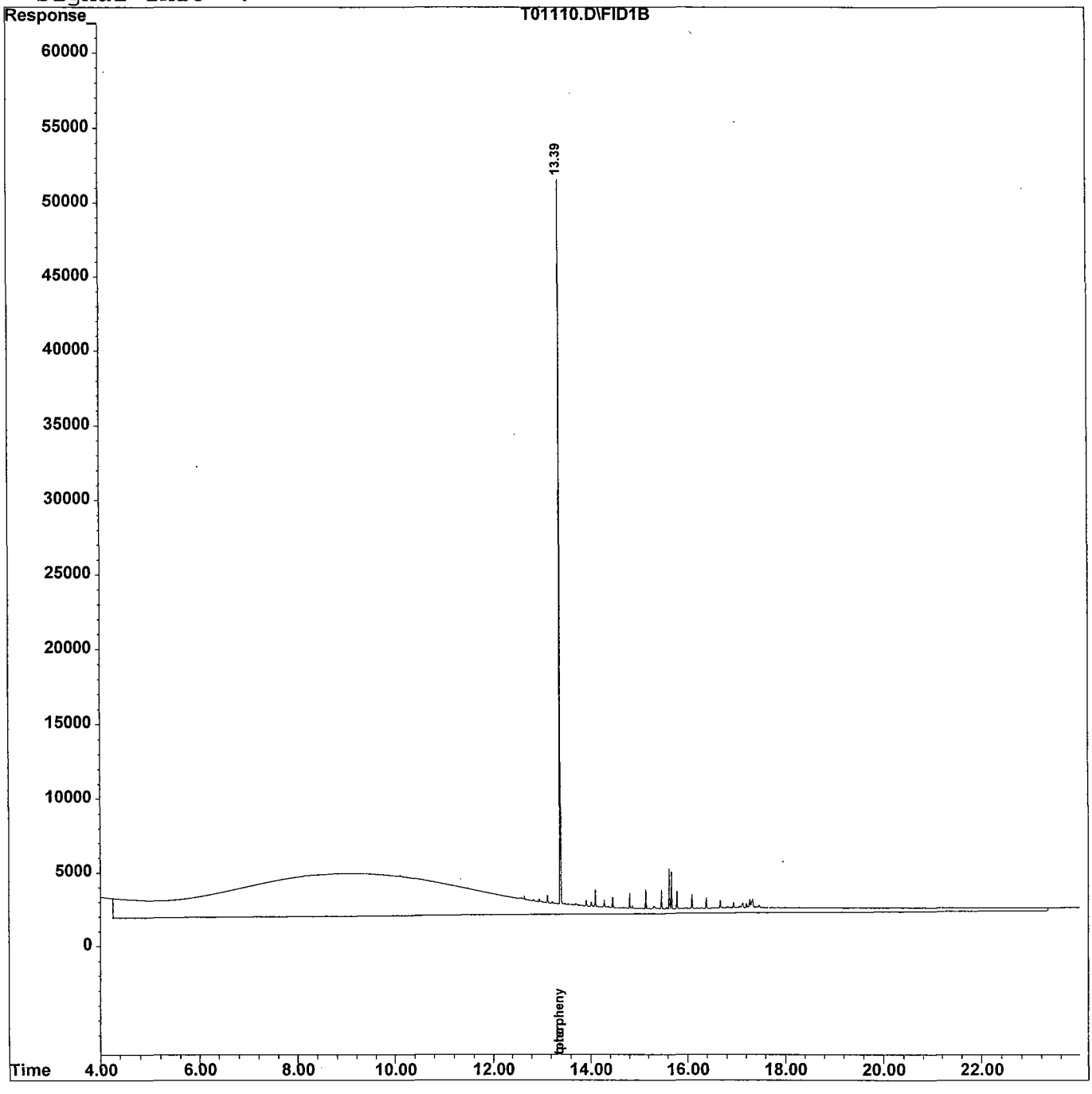
21

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970421\T01110.D Vial: 10
Acq On : 22 Apr 97 1:12 am Operator:
Sample : 2466.05 Inst : FID/TCD
Misc : 2337-S9 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:38 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



23

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970421\T01111.D Vial: 11
Acq On : 22 Apr 97 2:05 am Operator:
Sample : 2466.06 Inst : FID/TCD
Misc : 2337-S10 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:38 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) s o-terphenyl	13.39	492465	11.673	mg/L m
Target Compounds				
2) t tphc	0.00	0	N.D.	mg/L

(f)=RT Delta > 1/2 Window (m)=manual int.

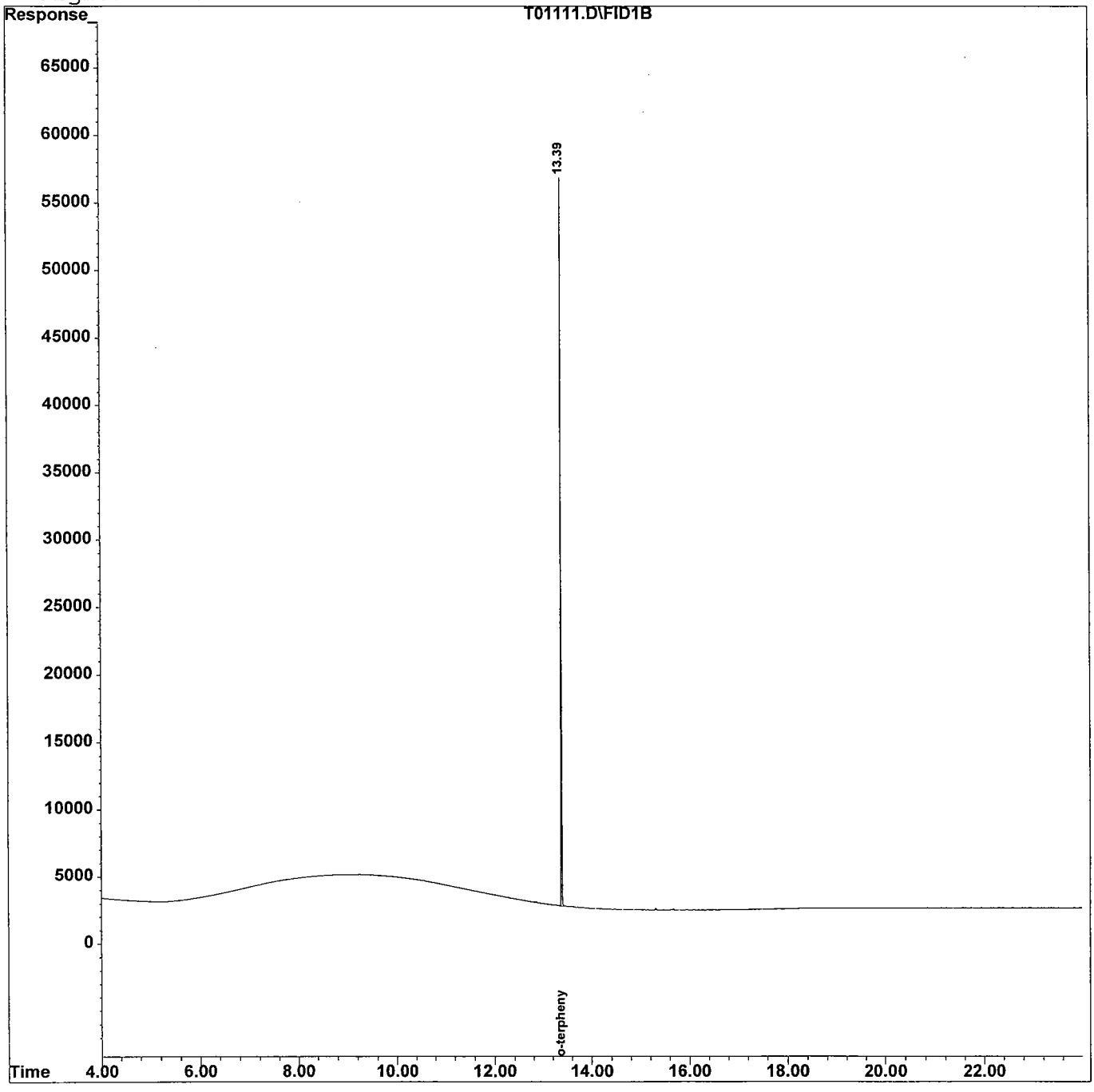
24

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970421\T01111.D Vial: 11
Acq On : 22 Apr 97 2:05 am Operator:
Sample : 2466.06 Inst : FID/TCD
Misc : 2337-S10 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:38 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



25

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970421\T01112.D Vial: 12
Acq On : 22 Apr 97 2:58 am Operator:
Sample : 2466.07 Inst : FID/TCD
Misc : 2337-S11 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:39 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) s o-terphenyl	13.39	400876	9.037	mg/L	m
Target Compounds					
2) t tphc	0.00	0	N.D.	mg/L	

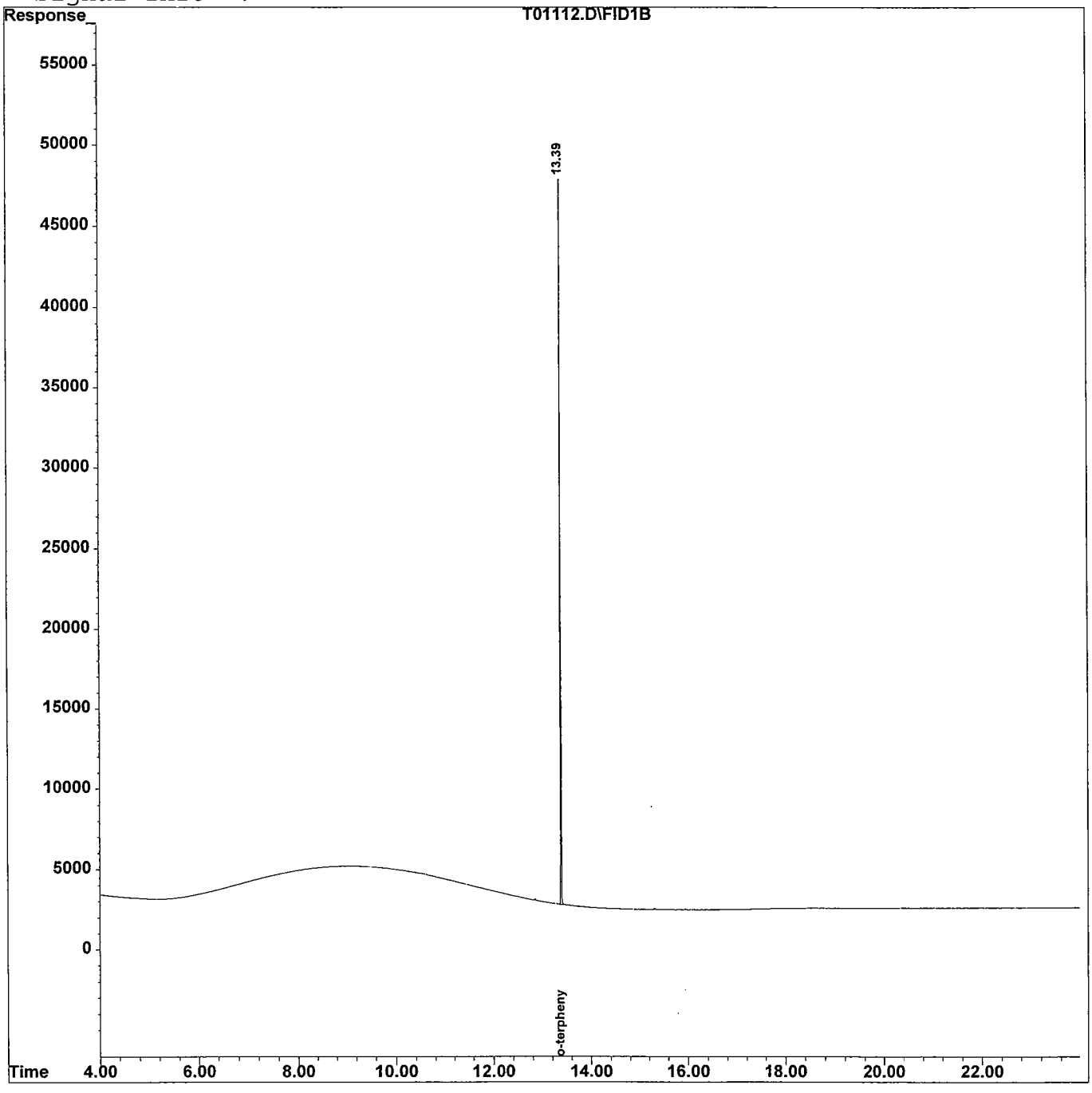
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970421\T01112.D Vial: 12
Acq On : 22 Apr 97 2:58 am Operator:
Sample : 2466.07 Inst : FID/TCD
Misc : 2337-S11 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:39 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



27

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package <u>and</u> in the main body of the report.

1.	Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted	✓
2.	Table of Contents submitted	✓
3.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	✓
4.	Document paginated and legible	✓
5.	Chain of Custody submitted	✓
6.	Samples submitted to lab within 48 hours of sample collection	✓
7.	Methodology Summary submitted	✓
8.	Laboratory Chronicle and Holding Time Check submitted	✓
9.	Results submitted on a dry weight basis	✓
10.	Method Detection Limits submitted	✓
11.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	✓

Laboratory Manager or Environmental Consultant's Signature 

Date 11/25/07

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
96-1226
AREA-2337

Project # 2465
Date Rec. 04/21/97
Date Comp. 04/22/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Method Detection Limits provided.	__	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	✓	__
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	__	✓
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).		✓
5. IR Spectra submitted for standards, blanks, & samples	__	NA __
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	__	✓
7. Analysis holding time met.	__	✓

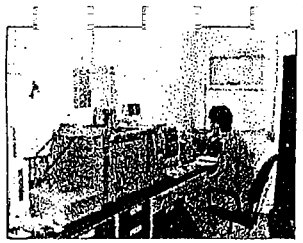
(If not met, list number of days exceeded for each sample)

Additional Comments:

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: SMC/Chuck Appleby | Project No: 96-1226 | Location: Area 2337

Phone #: (609) 265-2700 | ( )DERA (X)OMA ( )Other:

Samplers Name / Company: David H. Daniels / SMC

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPH	% Solids	Comments: Remarks / Preservation Method
2465.01	2337-SP1	4.21.97	14:35	Soil	1	X	X	RUSH
.02	2337-SP2	↓	14:40	↓	↓	↓	↓	
.03	2337-SP3	↓	14:45	↓	↓	↓	↓	

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	4.21.97 15:45	Sarah Hubbard			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified

Turnaround time: ( )Standard 4 wks, (X)Rush 10 Days, ( )ASAP Verbal 24 Hrs.

Remarks:

print legibly

Page 1 of 1

Custody.xls4/3/97

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

Client :	U.S. Army	**Lab. ID # :**	2465
	DPW. SELFM-PW-EV	**Date Rec'd:**	21-Apr-97
	Bldg. 173	**Analysis Start:**	21-Apr-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	22-Apr-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	P. Skelton	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	Area 2337

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2465.01	2337-SP1	**1.00**	15.13	86.68	179	**276.72**
2465.02	2337-SP2	**1.00**	15.33	89.05	172	**ND**
2465.03	2337-SP3	**1.00**	15.03	84.92	184	**330.10**
METHOD BLANK	21-Apr-97	**1.00**	15.00	100.00	157	**0.00**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

6

Response Factor Report FID/TCD

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997

Calibration Files
1 =T01046.D 2 =T01045.D 3 =T01042.D
4 =T01041.D 5 =T01040.D

		Compound	1	2	3	4	5	Avg	%RSD
1)	s	o-terphenyl	4.421	3.506	3.685	3.771	3.467	3.770 E4	10.22
2)	t	tphc	7.383	5.401	5.059	5.716	4.569	5.626 E4	19.03

(#) = Out of Range

1

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970421\T01102.D Vial: 1
Acq On : 21 Apr 97 7:21 pm Operator:
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	37.699	38.254 E3	-1.5	104	0.00
2	t	tphc	56.257	50.414 E3	10.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

8

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970421\T01113.D Vial: 1
Acq On : 22 Apr 97 3:42 am Operator:
Sample : 50 PPM CHECK Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	37.699	40.782 E3	-8.2	111	0.00
2	t	tphc	56.257	54.390 E3	3.3	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970421\T01118.D Vial: 1
Acq On : 22 Apr 97 7:34 am Operator:
Sample : 50 ppm Check Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	37.699	45.482 E3	-20.6	123	0.01
2	t	tphc	56.257	51.665 E3	8.2	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

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

Surrogate Recovery Report

Lab. ID # : 2465

Location #: Area 2337

Sample	Field ID	Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2465.01	2337-SP1	10.00	7.88	**78.76**
2465.02	2337-SP2	10.00	7.93	**79.32**
2465.03	2337-SP3	10.00	9.57	**95.73**
METHOD BLANK	21-Apr-97	10.00	8.12	**81.17**

Surrogate Added : **o-Terphenyl**

4/22/97

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

Matrix Spike Recovery Report

Lab. ID # : 2465

Location #: Area 2337

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2466.07MS	630	0.00	687.17	109.08	75-125
2466.07MSD	630	0.00	687.46	109.12	75-125

RPD	0.04	20.00

4/22/97

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

Blank Spike Recovery Report

Lab. ID # : 2465

Location #: Area 2337

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	21-Apr-97	630	603.48	95.79	75-125

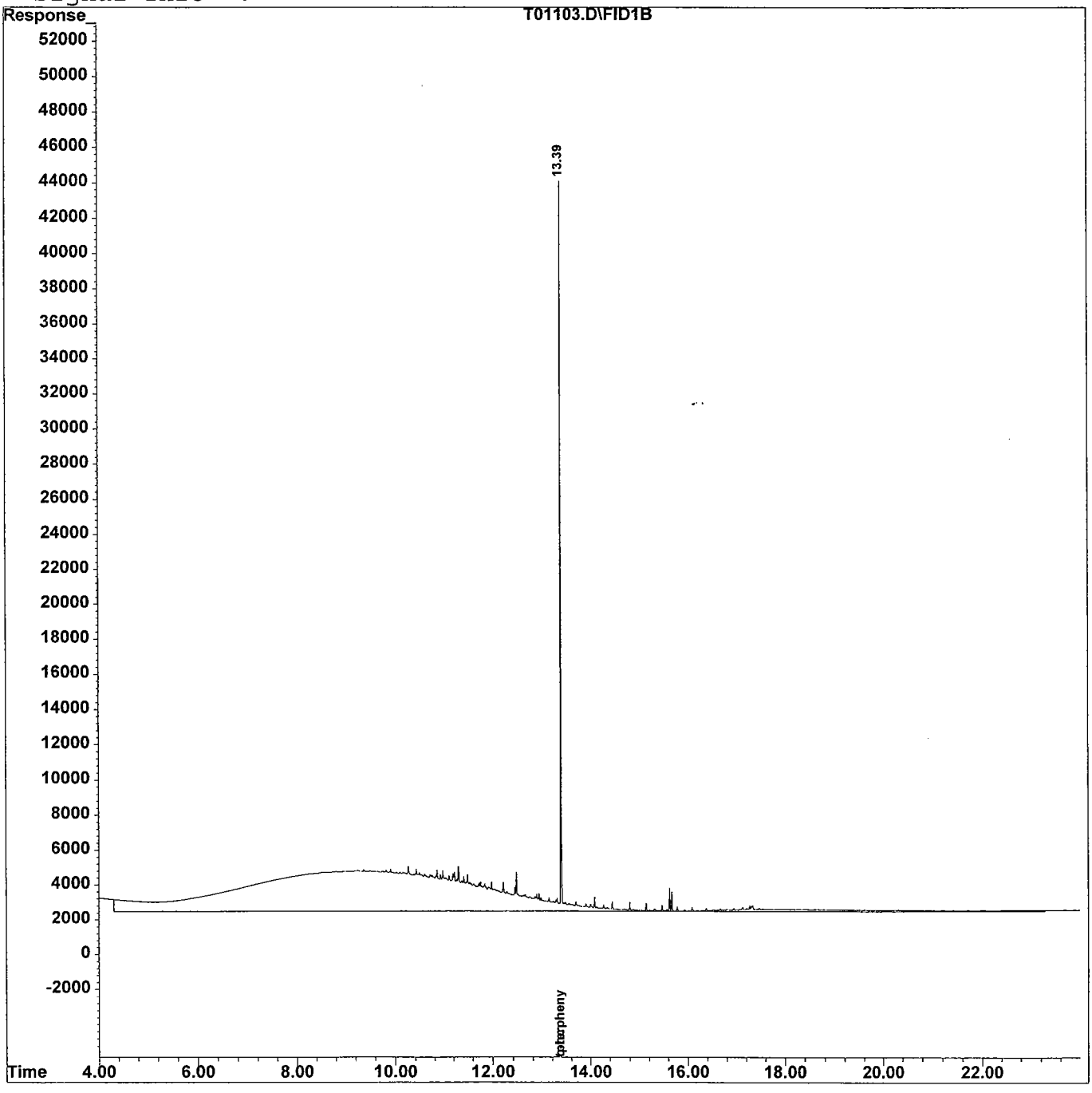
4/22/97

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970421\T01103.D Vial: 3
Acq On : 21 Apr 97 8:02 pm Operator:
Sample : 2465.01 Inst : FID/TCD
Misc : 2337-SP1 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:22 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970421\T01104.D Vial: 4
Acq On : 21 Apr 97 8:47 pm Operator:
Sample : 2465.02 Inst : FID/TCD
Misc : 2337-SP2 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:23 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) s o-terphenyl	13.39	362467	7.932 mg/L m
Target Compounds			
2) t tphc	0.00	0	N.D. mg/L

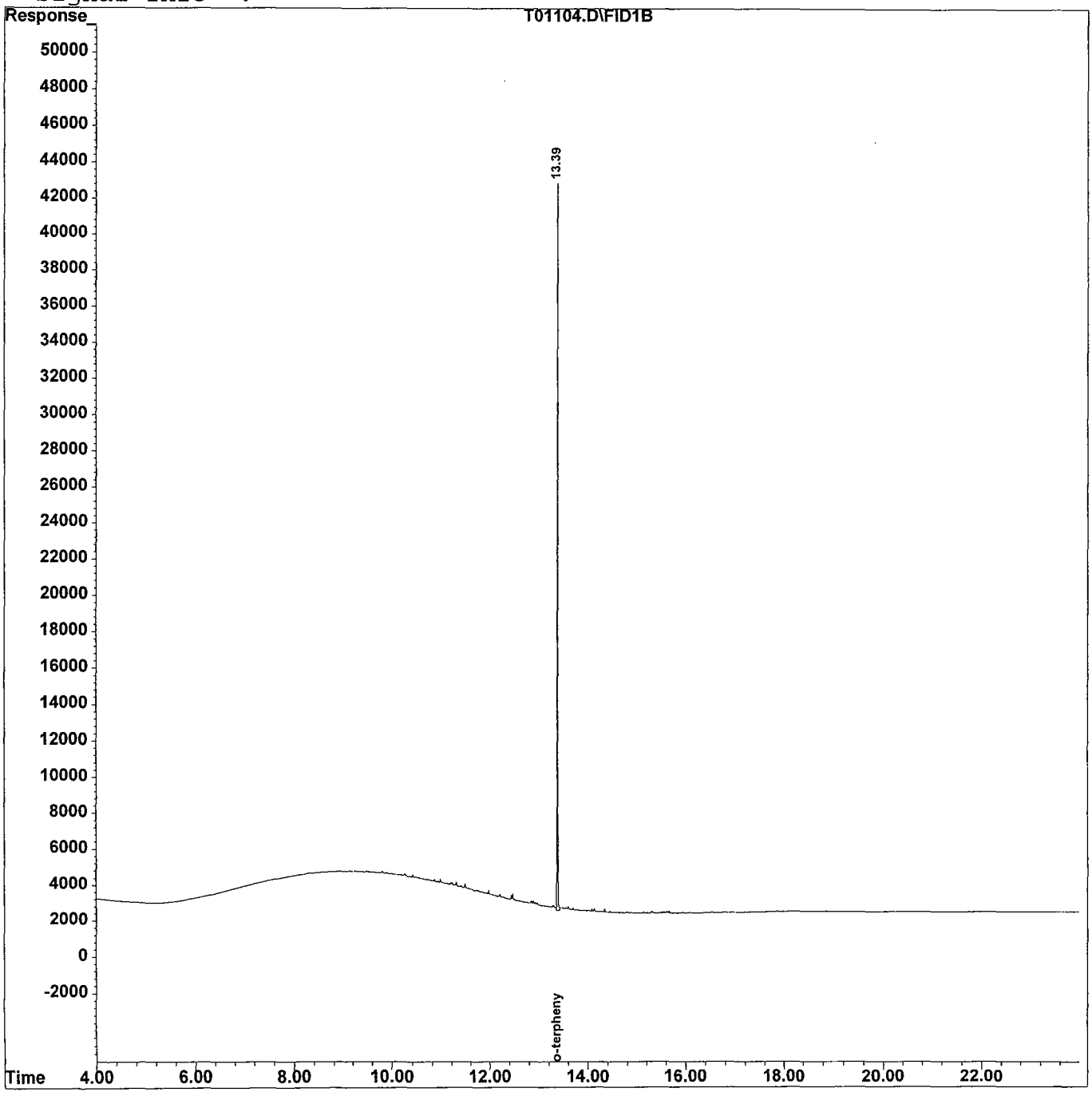
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970421\T01104.D Vial: 4
Acq On : 21 Apr 97 8:47 pm Operator:
Sample : 2465.02 Inst : FID/TCD
Misc : 2337-SP2 Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 22 8:23 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



17

PHC Conformance/Non-conformance Summary Report

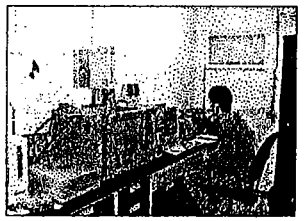
	No	Yes
1. Method Detection Limits provided.	__	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	✓	__
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	__	✓
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).		✓
5. IR Spectra submitted for standards, blanks, & samples	__ NA __	
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	__	✓
7. Analysis holding time met. (If not met, list number of days exceeded for each sample)	__	✓

Additional Comments:_____

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: SMC / Chuck Appleby
Phone #: (610)265-2700
( )DERA (X)OMA ( )Other:
Project No: 96-1226
Location: Area 2337
Samplers Name / Company : David H. Daniels / SMC

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	% Solids	TPH		VOA's					Comments: Remarks / Preservation Method
						Analysis Parameters								
2485-01	2337-T1	4-29-97	9:15	soil	2	X	X		X					√ High OVA/H-Nu

Comments: Do VOA's if sample has a TPHC above 1,000 ppm.

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	4-29-97 13:00				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified
Turnaround time: ( )Standard 4 wks, (X)Rush 5 Days, ( )ASAP Verbal ___ Hrs.

Remarks:

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

Client :	U.S. Army	**Lab. ID # :**	2485
	DPW. SELFM-PW-EV	**Date Rec'd:**	29-Apr-97
	Bldg. 173	**Analysis Start:**	29-Apr-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	30-Apr-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	P. Skelton	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	AREA 2337

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2485.01	2337-T1	**1.00**	15.06	85.07	183	**7342.14**
METHOD BLANK	29-Apr-97	**1.00**	15.00	100.00	157	**0.00**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Response Factor Report FID/TCD

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997

Calibration Files
1 =T01046.D 2 =T01045.D 3 =T01042.D
4 =T01041.D 5 =T01040.D

		Compound	1	2	3	4	5	Avg	%RSD
1)	s	o-terphenyl	4.421	3.506	3.685	3.771	3.467	3.770 E4	10.22
2)	t	tphc	7.383	5.401	5.059	5.716	4.569	5.626 E4	19.03

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970429\T01152.D Vial: 1
Acq On : 29 Apr 97 4:41 pm Operator:
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	37.699	26.952 E3	28.5#	73	0.00
2	t	tphc	56.257	42.889 E3	23.8	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

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

Surrogate Recovery Report

Lab. ID # : 2485

Location #: Area 2337

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2485.01		10.00	12.04	120.35
Extraction Blank	29-Apr-97	10.00	10.96	109.62

Surrogate Added : **o-Terphenyl**

6/3/97

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

Matrix Spike Recovery Report

Lab. ID # : 2485

Location #: Area 2337

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2483.08MS	630	0.00	742.31	117.83	75-125
2483.08MSD	630	0.00	752.97	119.52	75-125
			RPD	1.43	20.00

6/3/97

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

Blank Spike Recovery Report

Lab. ID # : 2485

Location #: Area 2337

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	29-Apr-97	630	784.99	124.60	75-125

6/3/97

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970429\T01171.D Vial: 20
Acq On : 30 Apr 97 6:17 am Operator:
Sample : 2485.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 30 11:09 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Initial Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
1) s	o-terphenyl	13.39	505029	12.035	mg/L	m
	Target Compounds					
2) t	tphc	12.48	92293560	1881.282	mg/L	m

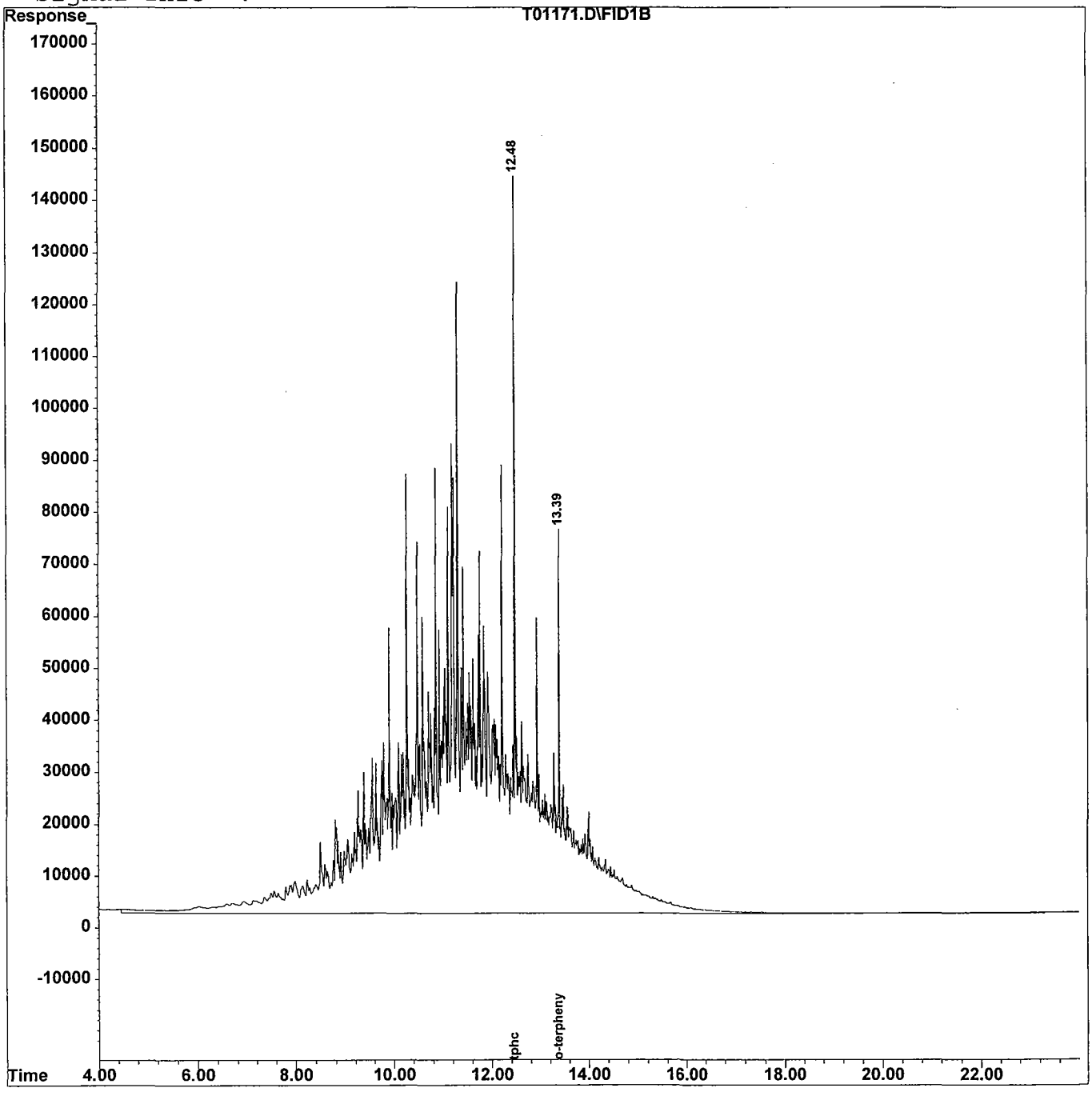
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970429\T01171.D Vial: 20
Acq On : 30 Apr 97 6:17 am Operator:
Sample : 2485.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Apr 30 11:09 1997 Quant Results File: TPH5.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH5.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Wed Apr 16 08:30:41 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH5.M

Volume Inj. :
Signal Phase :
Signal Info :



13

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

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

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
4. Document paginated and legible ✓
5. Chain of Custody submitted ✓
6. Samples submitted to lab within 48 hours of sample collection ✓
7. Methodology Summary submitted ✓
8. Laboratory Chronicle and Holding Time Check submitted ✓
9. Results submitted on a dry weight basis ✓
10. Method Detection Limits submitted ✓
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ✓

Laboratory Manager or Environmental Consultant's Signature _____

Date 12/3/97

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance

H

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
96-1226
AREA-2337

Project # 2648
Date Rec. 06/06/97
Date Comp. 06/06//97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Method Detection Limits provided.	__	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	✓	__
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	✓	__
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).		✓
5. IR Spectra submitted for standards, blanks, & samples	__ NA	__
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	__	✓
7. Analysis holding time met.	__	✓

2615.01 131%

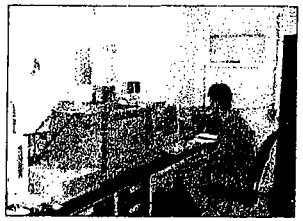
(If not met, list number of days exceeded for each sample)

Additional Comments:

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: SMC / Chuck Appleby
Phone #: (610) 265-2700
( )DERA (X)OMA ( )Other:_____
Project No: 96-1226
Location: 2337
Samplers Name / Company : David H. Daniels / SMC

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	%Solids		VOTLS					Remarks / Preservation Method
~~2648.01~~ 2648.01	2337-C1	6.5.97	10:30	soil	2	X	X							

Comments: Due VOTLS if sample is over 1,000 ppm

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	6.5.97				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (X)Reduced, (_)Standard, (_)Screen / non-certified
Turnaround time: (_)Standard 4 wks, (X)Rush 2 Days, (_)ASAP Verbal ___ Hrs.

Remarks: Need verbal Results on Monday

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

Client :	U.S. Army	**Lab. ID # :**	2648
	DPW. SELFM-PW-EV	**Date Rec'd:**	6-Jun-97
	Bldg. 173	**Analysis Start:**	6-Jun-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	6-Jun-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	P. Skelton	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	2337

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2648.01	2337-C1	**1.00**	15.00	82.10	191	**4650.80**
Extraction Blank	6-Jun-97	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

6

Response Factor Report FID/TCD

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997

Calibration Files
1 =T01476.D 2 =T01475.D 3 =T01474.D
4 =T01473.D 5 =T01472.D

		Compound	1	2	3	4	5	Avg		%RSD
1)	t	C8	1.474	1.450	1.396	1.394	1.354	1.414	E4	3.40
2)	t	C10	1.524	1.488	1.439	1.438	1.402	1.458	E4	3.30
3)	t	C12	1.623	1.588	1.542	1.535	1.499	1.557	E4	3.09
4)	t	C14	1.667	1.643	1.592	1.582	1.543	1.605	E4	3.09
5)	t	C16	1.733	1.692	1.641	1.631	1.587	1.657	E4	3.42
6)	t	C18	1.966	1.953	1.897	1.892	1.862	1.914	E4	2.30
7)	t	C20	1.917	1.871	1.814	1.805	1.757	1.833	E4	3.39
8)	t	C22	1.901	1.855	1.799	1.792	1.741	1.818	E4	3.40
9)	t	C24	1.942	1.905	1.846	1.840	1.785	1.864	E4	3.28
10)	t	C26	1.950	1.900	1.844	1.841	1.783	1.863	E4	3.42
11)	t	C28	1.928	1.898	1.844	1.845	1.776	1.858	E4	3.14
12)	t	C30	1.979	1.917	1.862	1.861	1.768	1.877	E4	4.15
13)	t	C32	1.960	1.827	1.764	1.756	1.623	1.786	E4	6.86
14)	t	C34	1.776	1.703	1.628	1.606	1.451	1.633	E4	7.43
15)	t	C36	1.506	1.407	1.319	1.306	1.146	1.337	E4	9.98
16)	t	C38	0.980	1.033	0.949	0.942	0.780	0.937	E4	10.12
17)	t	C40	5.522	6.078	5.632	5.585	4.193	5.402	E3	13.16
18)	t	c42	2.495	2.579	2.667	2.744	1.850	2.467	E3	14.48
19)	T	Pristane	1.835	1.781	1.723	1.712	1.643	1.739	E4	4.19
20)	T	Phytane	1.935	1.879	1.824	1.813	1.760	1.842	E4	3.63
21)	s	o-terphenyl	2.166	2.100	2.027	2.018	1.957	2.053	E4	3.94
22)	t	TPHC - total	3.056	2.530	1.916	1.884	1.790	2.235	E4	24.34

(#) = Out of Range

7

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970605\T01580.D Vial: 1
Acq On : 6 Jun 97 4:52 pm Operator: Skelton
Sample : 50 PPM STD Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	t	C8	14.139	16.294 E3	-15.2	117	0.00
2	t	C10	14.582	17.122 E3	-17.4	119	0.00
3	t	C12	15.575	18.407 E3	-18.2	119	0.00
4	t	C14	16.054	19.017 E3	-18.5	119	0.00
5	t	C16	16.566	19.554 E3	-18.0	119	0.00
6	t	C18	19.140	22.336 E3	-16.7	118	0.00
7	t	C20	18.328	21.549 E3	-17.6	119	0.00
8	t	C22	18.176	21.525 E3	-18.4	120	0.00
9	t	C24	18.637	22.067 E3	-18.4	120	0.00
10	t	C26	18.634	22.010 E3	-18.1	119	0.00
11	t	C28	18.583	21.975 E3	-18.3	119	0.00
12	t	C30	18.774	22.055 E3	-17.5	118	0.00
13	t	C32	17.862	20.765 E3	-16.3	118	0.00
14	t	C34	16.327	18.941 E3	-16.0	116	0.00
15	t	C36	13.368	15.133 E3	-13.2	115	0.00
16	t	C38	9.365	10.639 E3	-13.6	112	-0.01
17	t	C40	5.402	6.020 E3	-11.4	107	-0.01
18	t	c42	2.467	2.784 E3	-12.8	104	-0.02
19	T	Pristane	17.389	20.625 E3	-18.6	120	0.00
20	T	Phytane	18.421	21.643 E3	-17.5	119	0.00
21	s	o-terphenyl	20.532	24.008 E3	-16.9	118	0.00
22	t	TPHC - total	22.352	20.692 E3	7.4	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

8

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970605\T01594.D Vial: 1
Acq On : 7 Jun 97 3:00 am Operator: Skelton
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	t	C8	14.139	16.893 E3	-19.5	121	0.00
2	t	C10	14.582	17.964 E3	-23.2	125	0.00
3	t	C12	15.575	19.318 E3	-24.0	125	0.00
4	t	C14	16.054	19.964 E3	-24.4	125	0.00
5	t	C16	16.566	20.529 E3	-23.9	125	0.00
6	t	C18	19.140	22.472 E3	-17.4	118	0.00
7	t	C20	18.328	22.624 E3	-23.4	125	0.00
8	t	C22	18.176	22.618 E3	-24.4	126	0.00
9	t	C24	18.637	23.196 E3	-24.5	126	0.00
10	t	C26	18.634	23.160 E3	-24.3	126	0.00
11	t	C28	18.583	23.130 E3	-24.5	125	0.00
12	t	C30	18.774	23.228 E3	-23.7	125	0.00
13	t	C32	17.862	21.859 E3	-22.4	124	0.00
14	t	C34	16.327	19.940 E3	-22.1	123	0.00
15	t	C36	13.368	15.950 E3	-19.3	121	-0.01
16	t	C38	9.365	11.241 E3	-20.0	119	-0.02
17	t	C40	5.402	6.390 E3	-18.3	113	-0.02
18	t	c42	2.467	3.015 E3	-22.2	113	-0.03
19	T	Pristane	17.389	21.662 E3	-24.6	126	0.00
20	T	Phytane	18.421	22.731 E3	-23.4	125	0.00
21	s	o-terphenyl	20.532	25.229 E3	-22.9	124	0.00
22	t	TPHC - total	22.352	21.650 E3	3.1	113	0.00

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

Surrogate Recovery Report

Lab. ID # : 2648

Location #: 2337

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2648.01		10.00	11.74	**117.42**
Extraction Blank	06-Jun-97	10.00	11.99	**119.90**

Surrogate Added : **o-Terphenyl**

6/9/97

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

Matrix Spike Recovery Report

Lab. ID # : 2648

Location #: 2337

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2648.01MS	630	1145.49	1969.01	130.72	75-125
2648.01MSD	630	1145.49	2125.54	155.56	75-125

RPD	**17.36**	**20.00**

6/9/97

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

Blank Spike Recovery Report

Lab. ID # : 2648

Location #: 2337

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	6-Jun-97	630	811.22	128.77	75-125

6/9/97

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970605\T01591.D Vial: 44
Acq On : 7 Jun 97 12:54 am Operator: Skelton
Sample : 2648.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:45 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
21) s	o-terphenyl	13.68	241087	11.742	mg/L	
Spiked Amount	10.000	Recovery	=	117.42%		
	Target Compounds					
1) t	C8	0.00	0	N.D.	mg/L	
2) t	C10	8.80	33078	2.268	mg/L	
3) t	C12	10.08	11888	0.763	mg/L	
4) t	C14	11.26	10550	0.657	mg/L	
5) t	C16	12.22	135335	8.170	mg/L	m
6) t	C18	12.75	366794	19.163	mg/L	
7) t	C20	13.14	26734	1.459	mg/L	
8) t	C22	13.77	22523	1.239	mg/L	
9) t	C24	0.00	0	N.D.	mg/L	
10) t	C26	0.00	0	N.D.	mg/L	
11) t	C28	0.00	0	N.D.	mg/L	
12) t	C30	0.00	0	N.D.	mg/L	
13) t	C32	0.00	0	N.D.	mg/L	
14) t	C34	0.00	0	N.D.	mg/L	
15) t	C36	0.00	0	N.D.	mg/L	
16) t	C38	0.00	0	N.D.	mg/L	
17) t	C40	0.00	0	N.D.	mg/L	
18) t	c42	0.00	0	N.D.	mg/L	
19) T	Pristane	12.75	366794	21.094	mg/L	
20) T	Phytane	13.20	116240	6.310	mg/L	
22) t	TPHC - total	12.75	25604203	1145.491	mg/L	m

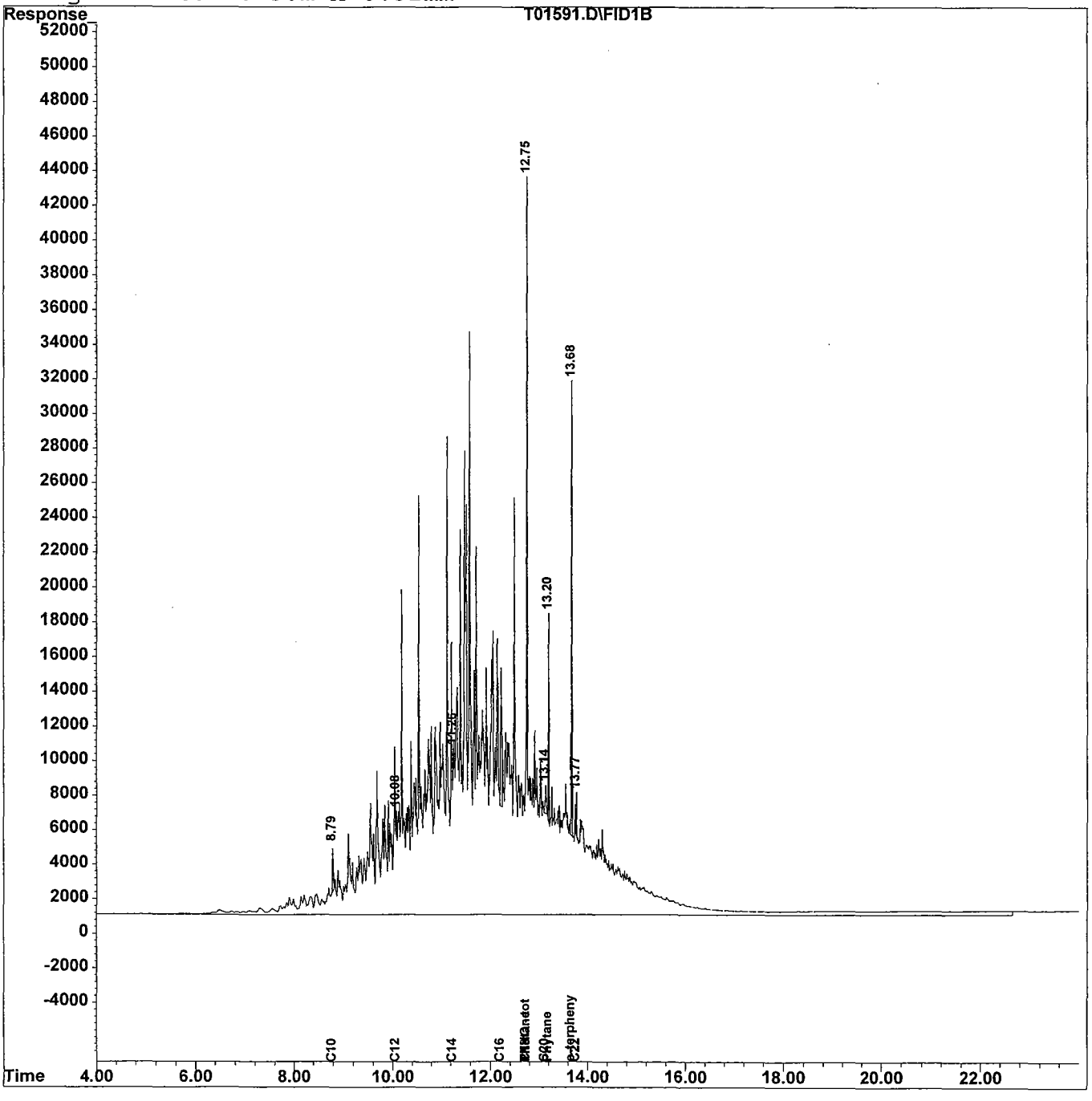
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970605\T01591.D Vial: 44
Acq On : 7 Jun 97 12:54 am Operator: Skelton
Sample : 2648.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:45 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



14

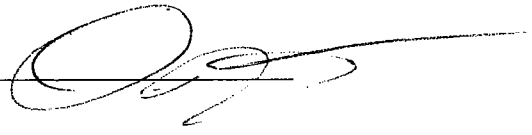
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

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

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
4. Document paginated and legible ✓
5. Chain of Custody submitted ✓
6. Samples submitted to lab within 48 hours of sample collection ✓
7. Methodology Summary submitted ✓
8. Laboratory Chronicle and Holding Time Check submitted ✓
9. Results submitted on a dry weight basis ✓
10. Method Detection Limits submitted ✓
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ✓

Laboratory Manager or Environmental Consultant's Signature 

Date 11/25/97

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
96-1226
AREA-2337

Project #2647
Date Rec.06/06/97
Date Comp. 06/06//97
Released by:

Daniel K. Wright
Laboratory Director

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970605\T01594.D Vial: 1
Acq On : 7 Jun 97 3:00 am Operator: Skelton
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	t	C8	14.139	16.893 E3	-19.5	121	0.00
2	t	C10	14.582	17.964 E3	-23.2	125	0.00
3	t	C12	15.575	19.318 E3	-24.0	125	0.00
4	t	C14	16.054	19.964 E3	-24.4	125	0.00
5	t	C16	16.566	20.529 E3	-23.9	125	0.00
6	t	C18	19.140	22.472 E3	-17.4	118	0.00
7	t	C20	18.328	22.624 E3	-23.4	125	0.00
8	t	C22	18.176	22.618 E3	-24.4	126	0.00
9	t	C24	18.637	23.196 E3	-24.5	126	0.00
10	t	C26	18.634	23.160 E3	-24.3	126	0.00
11	t	C28	18.583	23.130 E3	-24.5	125	0.00
12	t	C30	18.774	23.228 E3	-23.7	125	0.00
13	t	C32	17.862	21.859 E3	-22.4	124	0.00
14	t	C34	16.327	19.940 E3	-22.1	123	0.00
15	t	C36	13.368	15.950 E3	-19.3	121	-0.01
16	t	C38	9.365	11.241 E3	-20.0	119	-0.02
17	t	C40	5.402	6.390 E3	-18.3	113	-0.02
18	t	c42	2.467	3.015 E3	-22.2	113	-0.03
19	T	Pristane	17.389	21.662 E3	-24.6	126	0.00
20	T	Phytane	18.421	22.731 E3	-23.4	125	0.00
21	s	o-terphenyl	20.532	25.229 E3	-22.9	124	0.00
22	t	TPHC - total	22.352	21.650 E3	3.1	113	0.00

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

Surrogate Recovery Report

Lab. ID # : 2647

Location #: 2337

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2647.01		10.00	11.12	**111.21**
2647.02		10.00	11.33	**113.32**
2647.03		10.00	11.27	**112.66**
2647.04		10.00	11.35	**113.47**
2647.05		10.00	11.24	**112.43**
2647.06		10.00	11.43	**114.33**
2647.07		10.00	11.81	**118.14**
2647.08		10.00	11.91	**119.14**
Extraction Blank	06-Jun-97	10.00	11.99	**119.90**

Surrogate Added : **o-Terphenyl**

6/9/97

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

Matrix Spike Recovery Report

Lab. ID # : 2647

Location #: 2337

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2648.01MS	630	1145.49	1969.01	130.72	75-125
2648.01MSD	630	1145.49	2125.54	155.56	75-125

RPD	**17.36**	**20.00**

6/9/97

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

Blank Spike Recovery Report

Lab. ID # : 2647

Location #: 2337

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	6-Jun-97	630	811.22	128.77	75-125

6/9/97

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970605\T01583.D Vial: 36
Acq On : 6 Jun 97 7:09 pm Operator: Skelton
Sample : 2647.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:43 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
21) s	o-terphenyl	13.68	228332	11.121	mg/L
Spiked Amount	10.000	Recovery	=	111.21%	
	Target Compounds				
1) t	C8	0.00	0	N.D.	mg/L
2) t	C10	0.00	0	N.D.	mg/L
3) t	C12	0.00	0	N.D.	mg/L
4) t	C14	0.00	0	N.D.	mg/L
5) t	C16	0.00	0	N.D.	mg/L
6) t	C18	0.00	0	N.D.	mg/L
7) t	C20	0.00	0	N.D.	mg/L
8) t	C22	0.00	0	N.D.	mg/L
9) t	C24	0.00	0	N.D.	mg/L
10) t	C26	0.00	0	N.D.	mg/L
11) t	C28	0.00	0	N.D.	mg/L
12) t	C30	0.00	0	N.D.	mg/L
13) t	C32	0.00	0	N.D.	mg/L
14) t	C34	0.00	0	N.D.	mg/L
15) t	C36	0.00	0	N.D.	mg/L
16) t	C38	0.00	0	N.D.	mg/L
17) t	C40	0.00	0	N.D.	mg/L
18) t	c42	0.00	0	N.D.	mg/L
19) T	Pristane	0.00	0	N.D.	mg/L
20) T	Phytane	0.00	0	N.D.	mg/L
22) t	TPHC - total	0.00	0	N.D.	mg/L d

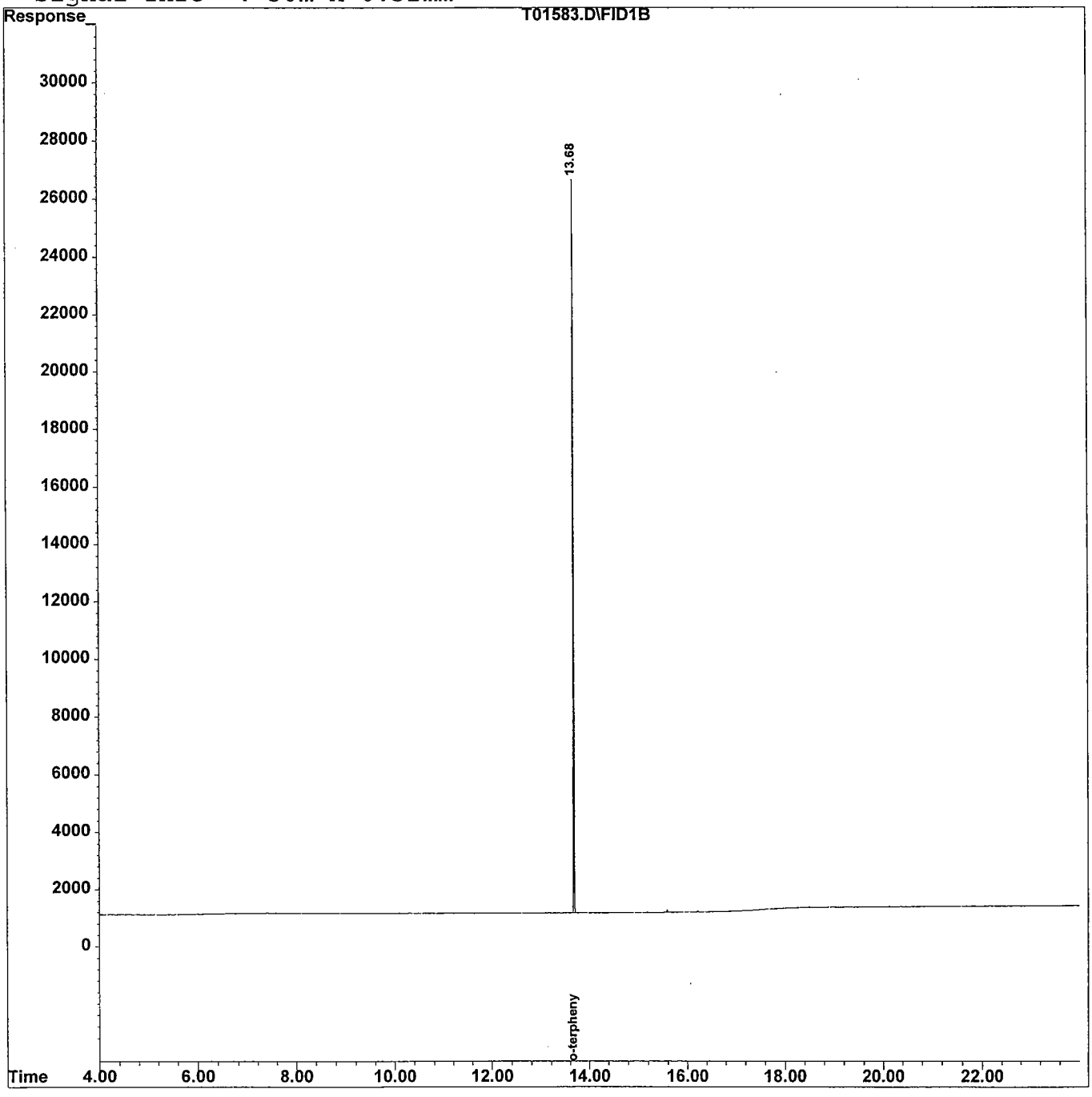
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970605\T01583.D Vial: 36
Acq On : 6 Jun 97 7:09 pm Operator: Skelton
Sample : 2647.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:43 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970605\T01584.D Vial: 37
Acq On : 6 Jun 97 7:53 pm Operator: Skelton
Sample : 2647.02 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:43 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
21) s	o-terphenyl	13.68	232664	11.332	mg/L
Spiked Amount	10.000	Recovery	=	113.32%	
	Target Compounds				
1) t	C8	0.00	0	N.D.	mg/L
2) t	C10	0.00	0	N.D.	mg/L
3) t	C12	0.00	0	N.D.	mg/L
4) t	C14	0.00	0	N.D.	mg/L
5) t	C16	0.00	0	N.D.	mg/L
6) t	C18	0.00	0	N.D.	mg/L
7) t	C20	0.00	0	N.D.	mg/L
8) t	C22	0.00	0	N.D.	mg/L
9) t	C24	0.00	0	N.D.	mg/L
10) t	C26	0.00	0	N.D.	mg/L
11) t	C28	0.00	0	N.D.	mg/L
12) t	C30	0.00	0	N.D.	mg/L
13) t	C32	0.00	0	N.D.	mg/L
14) t	C34	0.00	0	N.D.	mg/L
15) t	C36	0.00	0	N.D.	mg/L
16) t	C38	0.00	0	N.D.	mg/L
17) t	C40	0.00	0	N.D.	mg/L
18) t	c42	0.00	0	N.D.	mg/L
19) T	Pristane	0.00	0	N.D.	mg/L
20) T	Phytane	0.00	0	N.D.	mg/L
22) t	TPHC - total	0.00	0	N.D.	mg/L d

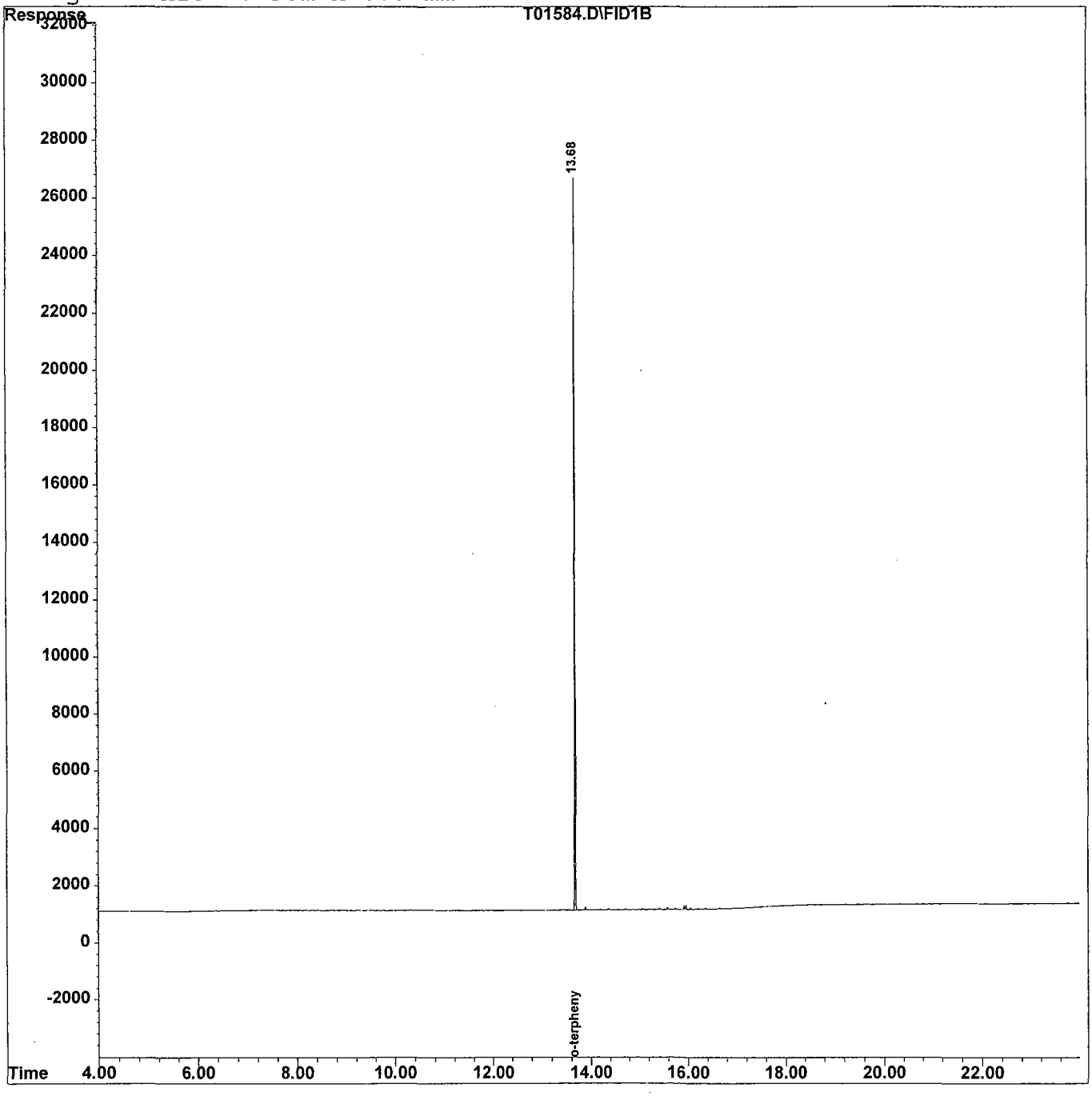
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970605\T01584.D Vial: 37
Acq On : 6 Jun 97 7:53 pm Operator: Skelton
Sample : 2647.02 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:43 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970605\T01585.D Vial: 38
Acq On : 6 Jun 97 8:37 pm Operator: Skelton
Sample : 2647.03 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:43 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
21) s	o-terphenyl	13.68	231320	11.266	mg/L
Spiked Amount	10.000	Recovery	=	112.66%	
	Target Compounds				
1) t	C8	0.00	0	N.D.	mg/L
2) t	C10	0.00	0	N.D.	mg/L
3) t	C12	0.00	0	N.D.	mg/L
4) t	C14	0.00	0	N.D.	mg/L
5) t	C16	0.00	0	N.D.	mg/L
6) t	C18	0.00	0	N.D.	mg/L
7) t	C20	0.00	0	N.D.	mg/L
8) t	C22	0.00	0	N.D.	mg/L
9) t	C24	0.00	0	N.D.	mg/L
10) t	C26	0.00	0	N.D.	mg/L
11) t	C28	0.00	0	N.D.	mg/L
12) t	C30	0.00	0	N.D.	mg/L
13) t	C32	0.00	0	N.D.	mg/L
14) t	C34	0.00	0	N.D.	mg/L
15) t	C36	0.00	0	N.D.	mg/L
16) t	C38	0.00	0	N.D.	mg/L
17) t	C40	0.00	0	N.D.	mg/L
18) t	c42	0.00	0	N.D.	mg/L
19) T	Pristane	0.00	0	N.D.	mg/L
20) T	Phytane	0.00	0	N.D.	mg/L
22) t	TPHC - total	0.00	0	N.D.	mg/L d

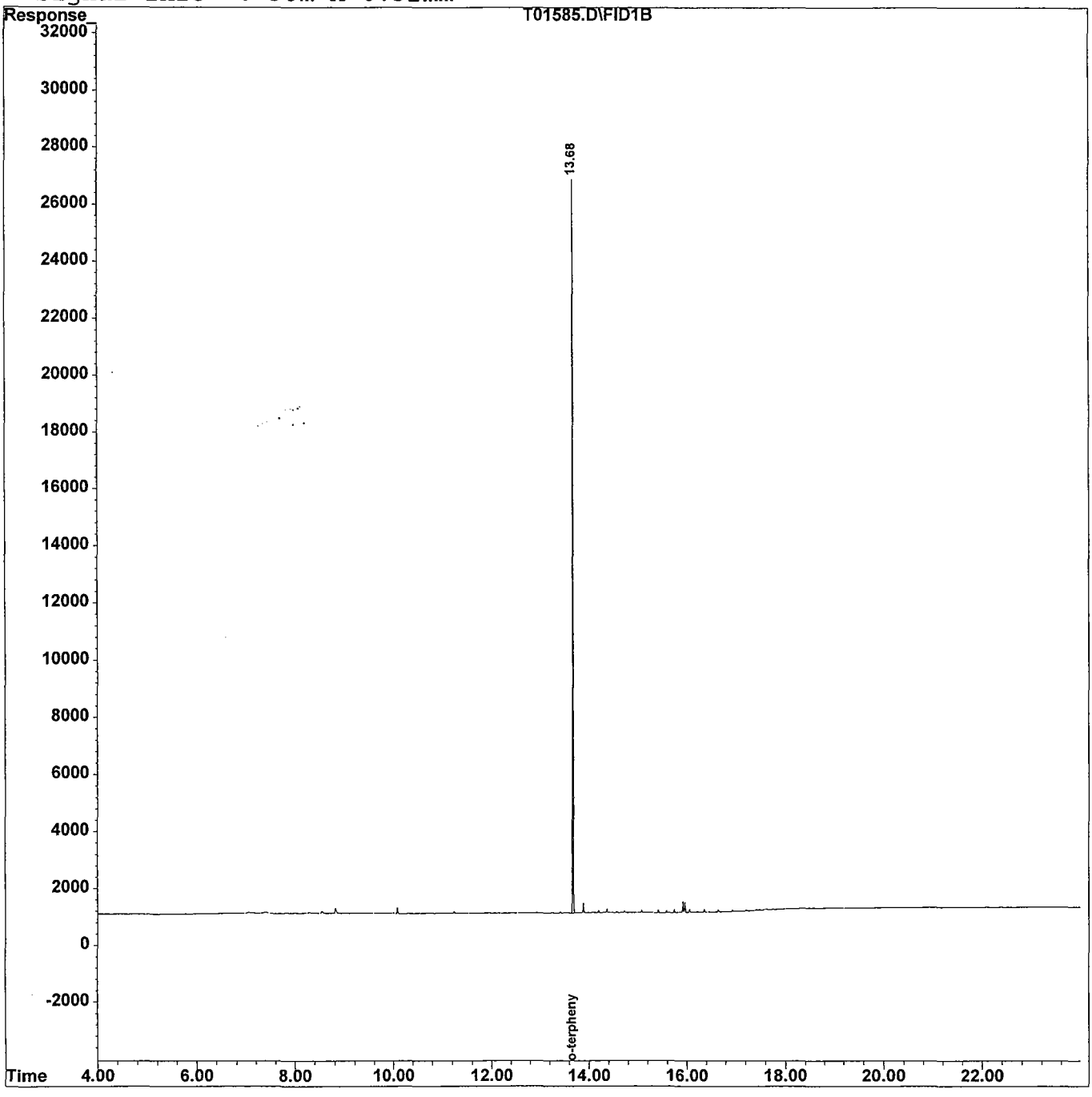
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970605\T01585.D Vial: 38
Acq On : 6 Jun 97 8:37 pm Operator: Skelton
Sample : 2647.03 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:43 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



18

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970605\T01586.D Vial: 39
Acq On : 6 Jun 97 9:20 pm Operator: Skelton
Sample : 2647.04 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:43 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
21) s	o-terphenyl	13.68	232974	11.347	mg/L
Spiked Amount	10.000	Recovery	=	113.47%	
	Target Compounds				
1) t	C8	0.00	0	N.D.	mg/L
2) t	C10	0.00	0	N.D.	mg/L
3) t	C12	0.00	0	N.D.	mg/L
4) t	C14	0.00	0	N.D.	mg/L
5) t	C16	0.00	0	N.D.	mg/L
6) t	C18	0.00	0	N.D.	mg/L
7) t	C20	0.00	0	N.D.	mg/L
8) t	C22	0.00	0	N.D.	mg/L
9) t	C24	0.00	0	N.D.	mg/L
10) t	C26	0.00	0	N.D.	mg/L
11) t	C28	0.00	0	N.D.	mg/L
12) t	C30	0.00	0	N.D.	mg/L
13) t	C32	0.00	0	N.D.	mg/L
14) t	C34	0.00	0	N.D.	mg/L
15) t	C36	0.00	0	N.D.	mg/L
16) t	C38	0.00	0	N.D.	mg/L
17) t	C40	0.00	0	N.D.	mg/L
18) t	c42	0.00	0	N.D.	mg/L
19) T	Pristane	0.00	0	N.D.	mg/L
20) T	Phytane	0.00	0	N.D.	mg/L
22) t	TPHC - total	0.00	0	N.D.	mg/L d

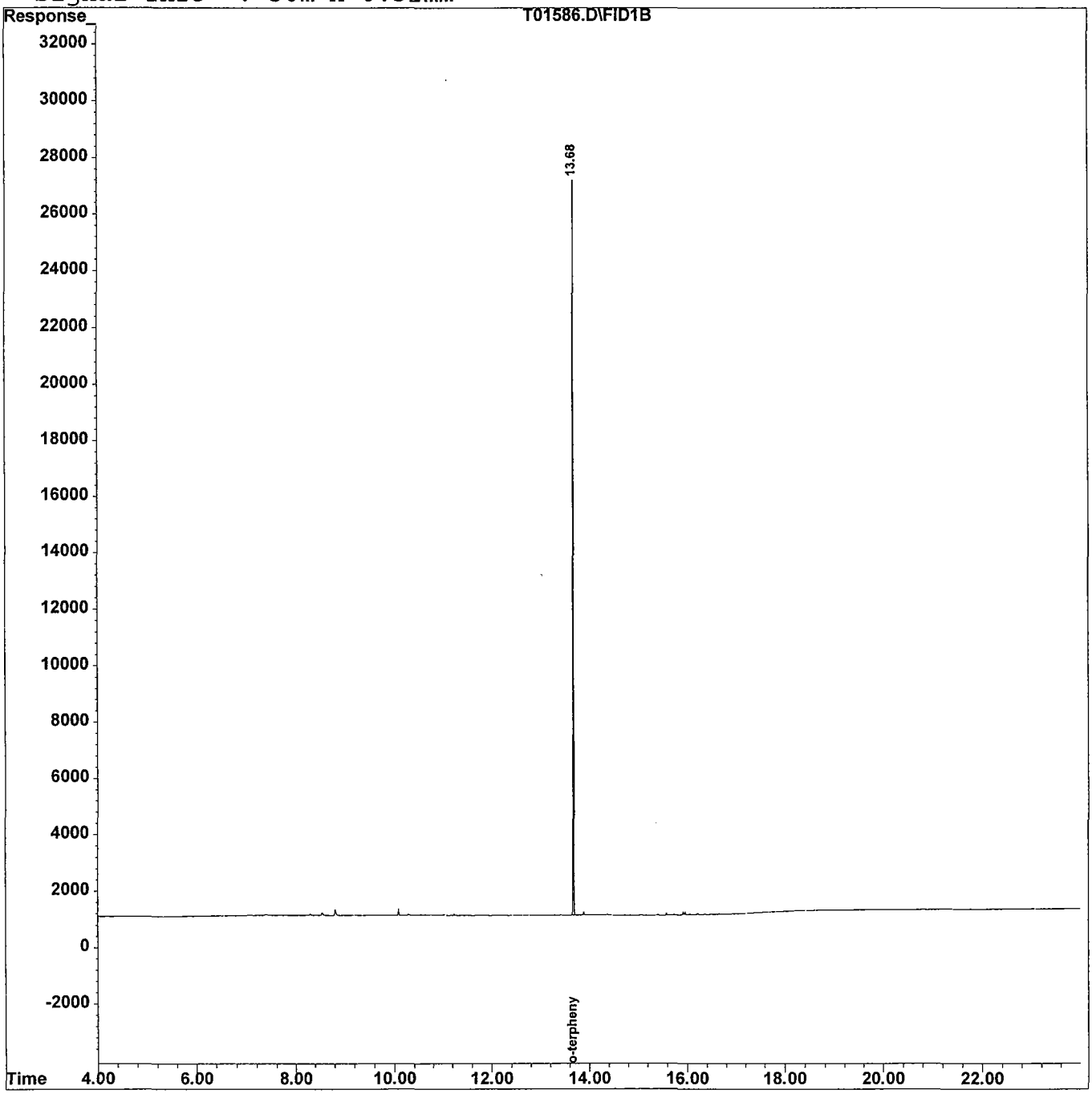
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970605\T01586.D Vial: 39
Acq On : 6 Jun 97 9:20 pm Operator: Skelton
Sample : 2647.04 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:43 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



90

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970605\T01587.D Vial: 40
Acq On : 6 Jun 97 10:03 pm Operator: Skelton
Sample : 2647.05 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:44 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
21) s	o-terphenyl	13.68	230841	11.243	mg/L
Spiked Amount	10.000	Recovery	=	112.43%	
	Target Compounds				
1) t	C8	0.00	0	N.D.	mg/L
2) t	C10	0.00	0	N.D.	mg/L
3) t	C12	0.00	0	N.D.	mg/L
4) t	C14	0.00	0	N.D.	mg/L
5) t	C16	0.00	0	N.D.	mg/L
6) t	C18	0.00	0	N.D.	mg/L
7) t	C20	0.00	0	N.D.	mg/L
8) t	C22	0.00	0	N.D.	mg/L
9) t	C24	0.00	0	N.D.	mg/L
10) t	C26	0.00	0	N.D.	mg/L
11) t	C28	0.00	0	N.D.	mg/L
12) t	C30	0.00	0	N.D.	mg/L
13) t	C32	0.00	0	N.D.	mg/L
14) t	C34	0.00	0	N.D.	mg/L
15) t	C36	0.00	0	N.D.	mg/L
16) t	C38	0.00	0	N.D.	mg/L
17) t	C40	0.00	0	N.D.	mg/L
18) t	c42	0.00	0	N.D.	mg/L
19) T	Pristane	0.00	0	N.D.	mg/L
20) T	Phytane	0.00	0	N.D.	mg/L
22) t	TPHC - total	0.00	0	N.D.	mg/L d

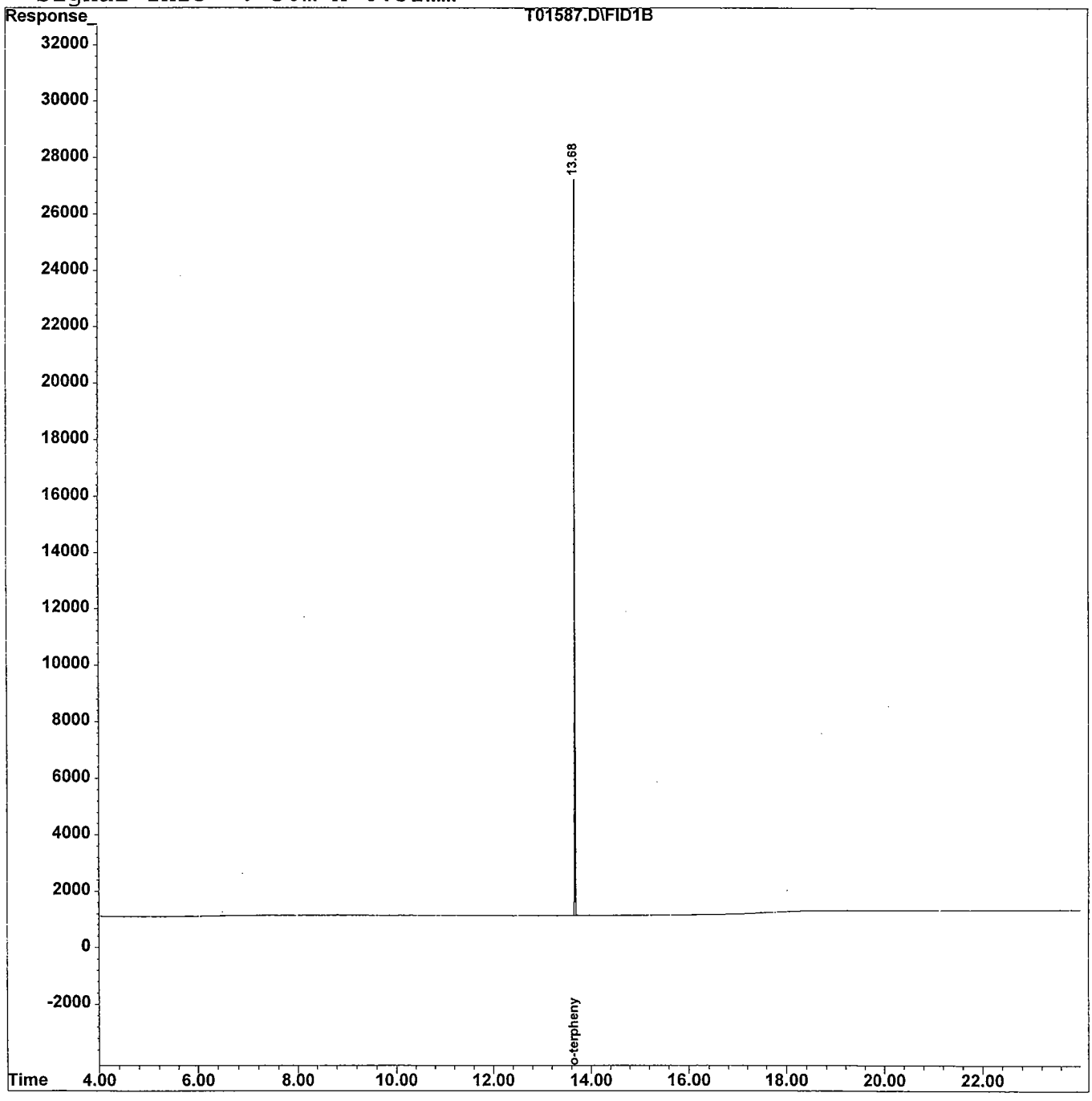
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970605\T01587.D Vial: 40
Acq On : 6 Jun 97 10:03 pm Operator: Skelton
Sample : 2647.05 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:44 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970605\T01588.D Vial: 41
Acq On : 6 Jun 97 10:46 pm Operator: Skelton
Sample : 2647.06 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:44 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
21) s	o-terphenyl	13.68	234752	11.433	mg/L
Spiked Amount	10.000	Recovery	=	114.33%	
	Target Compounds				
1) t	C8	0.00	0	N.D.	mg/L
2) t	C10	0.00	0	N.D.	mg/L
3) t	C12	0.00	0	N.D.	mg/L
4) t	C14	0.00	0	N.D.	mg/L
5) t	C16	0.00	0	N.D.	mg/L
6) t	C18	0.00	0	N.D.	mg/L
7) t	C20	0.00	0	N.D.	mg/L
8) t	C22	0.00	0	N.D.	mg/L
9) t	C24	0.00	0	N.D.	mg/L
10) t	C26	0.00	0	N.D.	mg/L
11) t	C28	0.00	0	N.D.	mg/L
12) t	C30	0.00	0	N.D.	mg/L
13) t	C32	0.00	0	N.D.	mg/L
14) t	C34	0.00	0	N.D.	mg/L
15) t	C36	0.00	0	N.D.	mg/L
16) t	C38	0.00	0	N.D.	mg/L
17) t	C40	0.00	0	N.D.	mg/L
18) t	c42	0.00	0	N.D.	mg/L
19) T	Pristane	0.00	0	N.D.	mg/L
20) T	Phytane	0.00	0	N.D.	mg/L
22) t	TPHC - total	0.00	0	N.D.	mg/L d

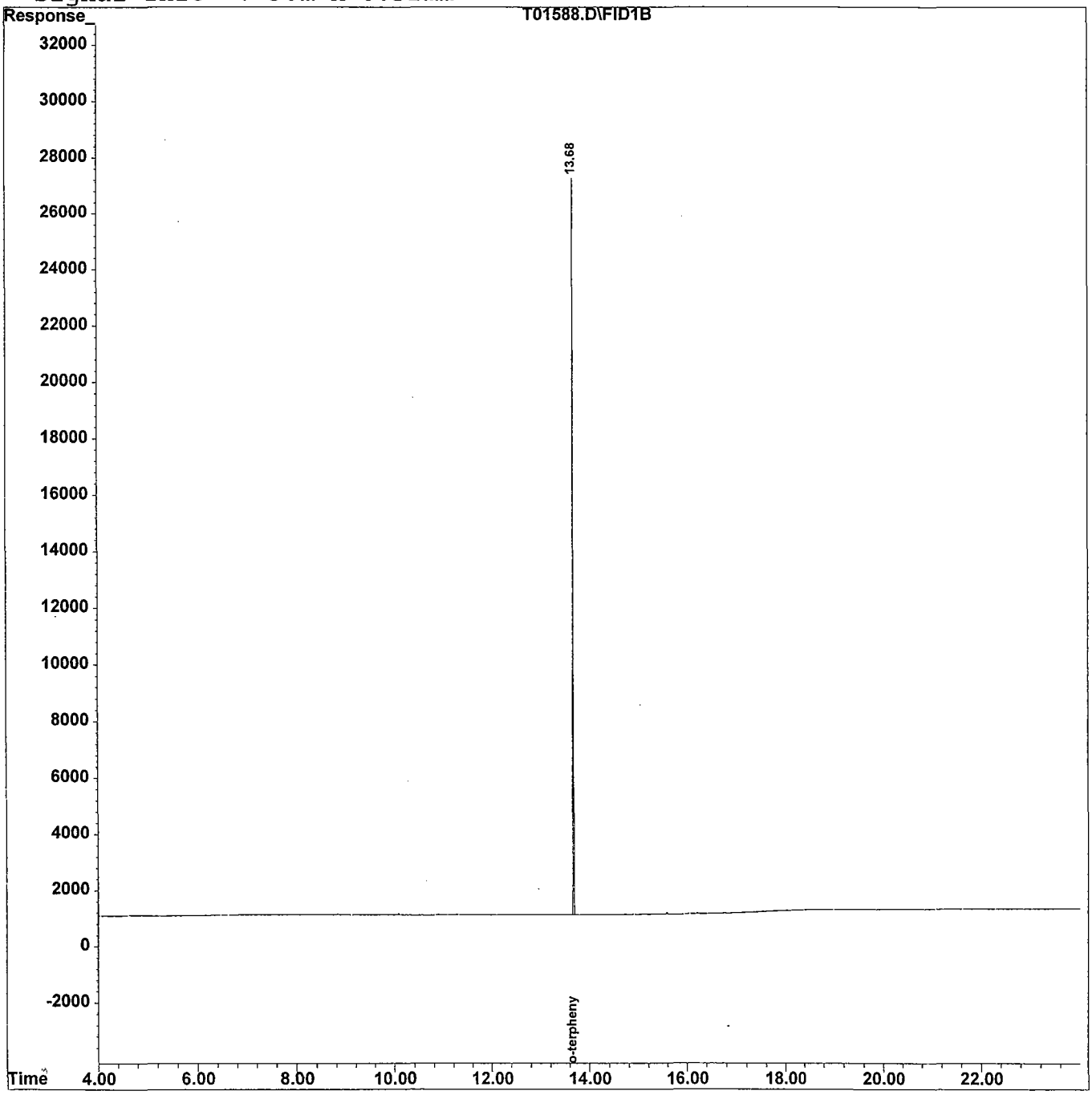
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970605\T01588.D Vial: 41
Acq On : 6 Jun 97 10:46 pm Operator: Skelton
Sample : 2647.06 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:44 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970605\T01589.D Vial: 42
Acq On : 6 Jun 97 11:29 pm Operator: Skelton
Sample : 2647.07 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:44 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
21) s	o-terphenyl	13.68	242568	11.814	mg/L
Spiked Amount	10.000	Recovery	=	118.14%	
	Target Compounds				
1) t	C8	0.00	0	N.D.	mg/L
2) t	C10	0.00	0	N.D.	mg/L
3) t	C12	0.00	0	N.D.	mg/L
4) t	C14	0.00	0	N.D.	mg/L
5) t	C16	0.00	0	N.D.	mg/L
6) t	C18	0.00	0	N.D.	mg/L
7) t	C20	0.00	0	N.D.	mg/L
8) t	C22	0.00	0	N.D.	mg/L
9) t	C24	0.00	0	N.D.	mg/L
10) t	C26	0.00	0	N.D.	mg/L
11) t	C28	0.00	0	N.D.	mg/L
12) t	C30	0.00	0	N.D.	mg/L
13) t	C32	0.00	0	N.D.	mg/L
14) t	C34	0.00	0	N.D.	mg/L
15) t	C36	0.00	0	N.D.	mg/L
16) t	C38	0.00	0	N.D.	mg/L
17) t	C40	0.00	0	N.D.	mg/L
18) t	c42	0.00	0	N.D.	mg/L
19) T	Pristane	0.00	0	N.D.	mg/L
20) T	Phytane	0.00	0	N.D.	mg/L
22) t	TPHC - total	0.00	0	N.D.	mg/L d

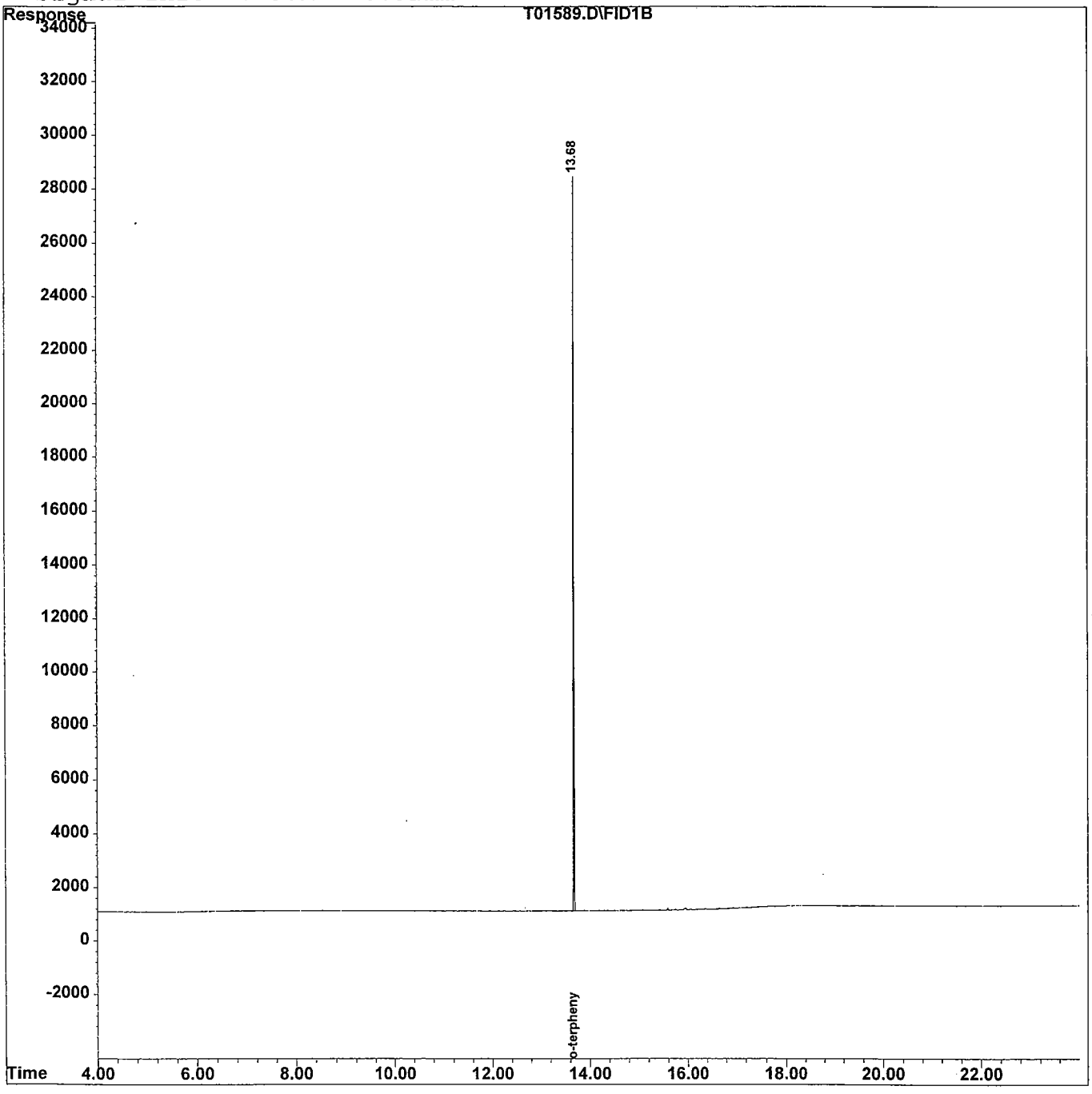
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970605\T01589.D Vial: 42
Acq On : 6 Jun 97 11:29 pm Operator: Skelton
Sample : 2647.07 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:44 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970605\T01590.D Vial: 43
Acq On : 7 Jun 97 12:11 am Operator: Skelton
Sample : 2647.08 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:44 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
21) s	o-terphenyl	13.68	244623	11.914	mg/L
Spiked Amount	10.000	Recovery	=	119.14%	
	Target Compounds				
1) t	C8	0.00	0	N.D.	mg/L
2) t	C10	0.00	0	N.D.	mg/L
3) t	C12	0.00	0	N.D.	mg/L
4) t	C14	0.00	0	N.D.	mg/L
5) t	C16	0.00	0	N.D.	mg/L
6) t	C18	0.00	0	N.D.	mg/L
7) t	C20	0.00	0	N.D.	mg/L
8) t	C22	0.00	0	N.D.	mg/L
9) t	C24	0.00	0	N.D.	mg/L
10) t	C26	0.00	0	N.D.	mg/L
11) t	C28	0.00	0	N.D.	mg/L
12) t	C30	0.00	0	N.D.	mg/L
13) t	C32	0.00	0	N.D.	mg/L
14) t	C34	0.00	0	N.D.	mg/L
15) t	C36	0.00	0	N.D.	mg/L
16) t	C38	0.00	0	N.D.	mg/L
17) t	C40	0.00	0	N.D.	mg/L
18) t	c42	0.00	0	N.D.	mg/L
19) T	Pristane	0.00	0	N.D.	mg/L
20) T	Phytane	0.00	0	N.D.	mg/L
22) t	TPHC - total	0.00	0	N.D.	mg/L d

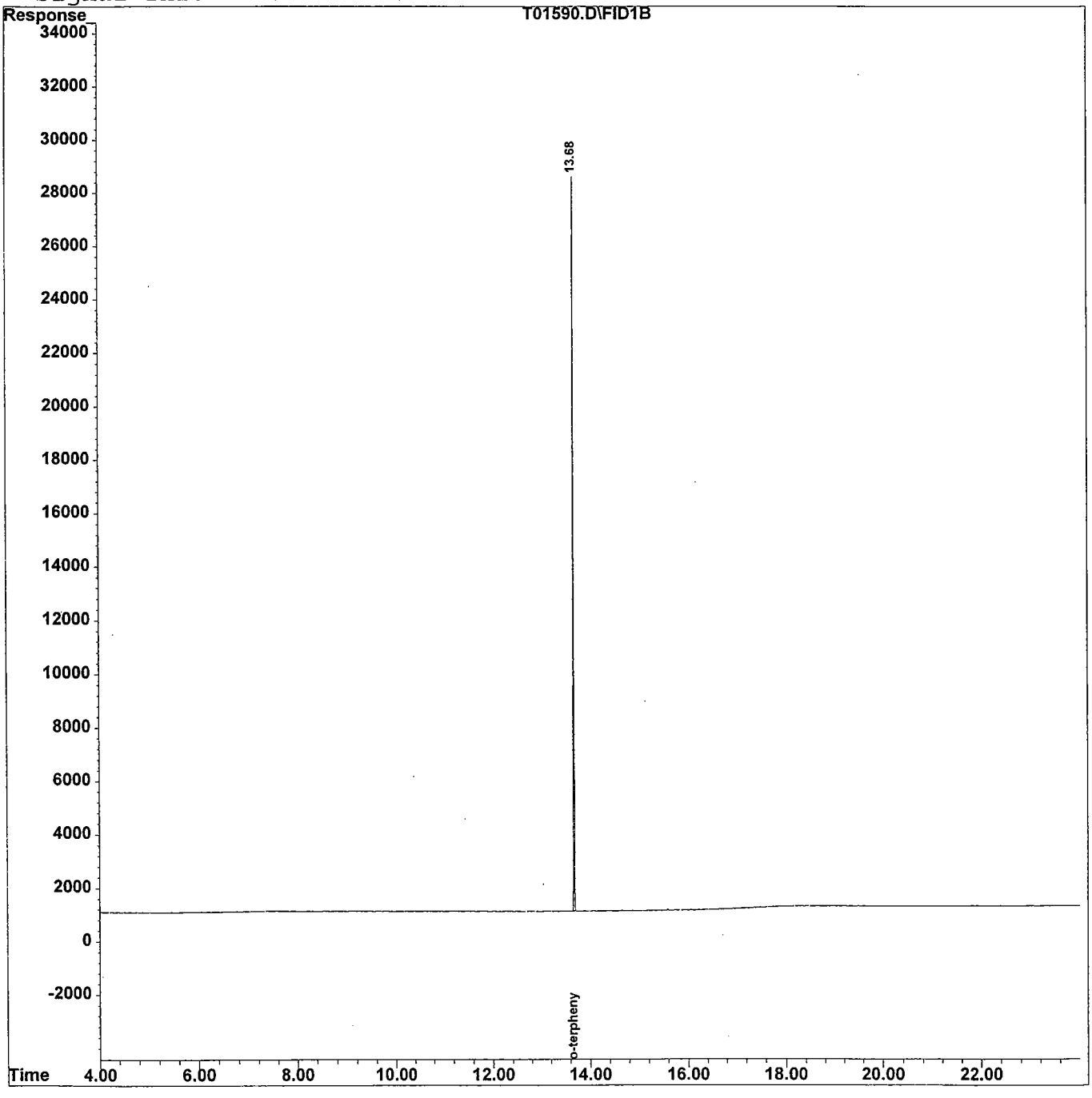
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970605\T01590.D Vial: 43
Acq On : 7 Jun 97 12:11 am Operator: Skelton
Sample : 2647.08 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 9 11:44 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package <u>and</u> in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
4. Document paginated and legible ✓
5. Chain of Custody submitted ✓
6. Samples submitted to lab within 48 hours of sample collection ✓
7. Methodology Summary submitted ✓
8. Laboratory Chronicle and Holding Time Check submitted ✓
9. Results submitted on a dry weight basis ✓
10. Method Detection Limits submitted ✓
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ✓

Laboratory Manager or Environmental Consultant's Signature _____

Date 11/5/97

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
96-1226
2337

Project # 2693
Date Rec. 06/13/97
Date Comp. 06/13/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Method Detection Limits provided.	__	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	✓	__
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range). 7665.06MS = 16.3%	✓	__
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	__	✓
5. IR Spectra submitted for standards, blanks, & samples	__ NA	__
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	__	✓
7. Analysis holding time met. (If not met, list number of days exceeded for each sample)	__	✓

Additional Comments: _____

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: SMC / Chuck Appleby
Phone #: (610) 265-2700
( )DERA (X)OMA ( )Other:_____

Project No: 96-1226
Location: 2337

Samplers Name / Company : David H. Daniels / SMC

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% Solids							Comments: Remarks / Preservation Method
2693.01	2337-S13	6/3/97	9:50	Soil	1	X	X							
.02	2337-S14		9:55											
.03	2337-S15		10:00											
.04	2337-S16		10:05											
.05	2337-S17		10:10											

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	6/3/97				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (X)Reduced, (_)Standard, (_)Screen / non-certified
Turnaround time: (_)Standard 4 wks, (X)Rush ____ Days; (_)ASAP Verbal ____ Hrs.

Remarks:

print legibly

Custody.xls4/30/97

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

Client :	U.S. Army	**Lab. ID # :**	2693
	DPW. SELFM-PW-EV	**Date Rec'd:**	13-Jun-97
	Bldg. 173	**Analysis Start:**	13-Jun-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	13-Jun-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	P. Skelton	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	2337

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2693.01	2337-S13	**1.00**	15.44	86.52	176	**ND**
2693.02	2337-S14	**1.00**	15.84	80.38	185	**ND**
2693.03	2337-S15	**1.00**	16.01	83.34	176	**ND**
2693.04	2337-S16	**1.00**	15.52	81.08	187	**ND**
2693.05	2337-S17	**1.00**	15.14	83.13	187	**ND**
METHOD BLANK	13-Jun-97	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Response Factor Report FID/TCD

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997

Calibration Files
1 =T01476.D 2 =T01475.D 3 =T01474.D
4 =T01473.D 5 =T01472.D

		Compound	1	2	3	4	5	Avg		%RSD
1)	t	C8	1.474	1.450	1.396	1.394	1.354	1.414	E4	3.40
2)	t	C10	1.524	1.488	1.439	1.438	1.402	1.458	E4	3.30
3)	t	C12	1.623	1.588	1.542	1.535	1.499	1.557	E4	3.09
4)	t	C14	1.667	1.643	1.592	1.582	1.543	1.605	E4	3.09
5)	t	C16	1.733	1.692	1.641	1.631	1.587	1.657	E4	3.42
6)	t	C18	1.966	1.953	1.897	1.892	1.862	1.914	E4	2.30
7)	t	C20	1.917	1.871	1.814	1.805	1.757	1.833	E4	3.39
8)	t	C22	1.901	1.855	1.799	1.792	1.741	1.818	E4	3.40
9)	t	C24	1.942	1.905	1.846	1.840	1.785	1.864	E4	3.28
10)	t	C26	1.950	1.900	1.844	1.841	1.783	1.863	E4	3.42
11)	t	C28	1.928	1.898	1.844	1.845	1.776	1.858	E4	3.14
12)	t	C30	1.979	1.917	1.862	1.861	1.768	1.877	E4	4.15
13)	t	C32	1.960	1.827	1.764	1.756	1.623	1.786	E4	6.86
14)	t	C34	1.776	1.703	1.628	1.606	1.451	1.633	E4	7.43
15)	t	C36	1.506	1.407	1.319	1.306	1.146	1.337	E4	9.98
16)	t	C38	0.980	1.033	0.949	0.942	0.780	0.937	E4	10.12
17)	t	C40	5.522	6.078	5.632	5.585	4.193	5.402	E3	13.16
18)	t	c42	2.495	2.579	2.667	2.744	1.850	2.467	E3	14.48
19)	T	Pristane	1.835	1.781	1.723	1.712	1.643	1.739	E4	4.19
20)	T	Phytane	1.935	1.879	1.824	1.813	1.760	1.842	E4	3.63
21)	s	o-terphenyl	2.166	2.100	2.027	2.018	1.957	2.053	E4	3.94
22)	t	TPHC - total	3.056	2.530	1.916	1.884	1.790	2.235	E4	24.34

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970613\T01626.D Vial: 1
Acq On : 13 Jun 97 2:01 pm Operator: Skelton
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	t	C8	14.139	12.750 E3	9.8	91	0.00
2	t	C10	14.582	14.102 E3	3.3	98	0.00
3	t	C12	15.575	15.238 E3	2.2	99	0.00
4	t	C14	16.054	15.759 E3	1.8	99	0.00
5	t	C16	16.566	16.167 E3	2.4	99	0.00
6	t	C18	19.140	18.419 E3	3.8	97	0.00
7	t	C20	18.328	17.755 E3	3.1	98	0.00
8	t	C22	18.176	17.599 E3	3.2	98	0.00
9	t	C24	18.637	17.851 E3	4.2	97	0.00
10	t	C26	18.634	17.608 E3	5.5	96	0.00
11	t	C28	18.583	17.424 E3	6.2	94	0.00
12	t	C30	18.774	17.298 E3	7.9	93	0.00
13	t	C32	17.862	15.950 E3	10.7	90	0.00
14	t	C34	16.327	13.946 E3	14.6	86	0.00
15	t	C36	13.368	10.440 E3	21.9	79	0.00
16	t	C38	9.365	6.772 E3	27.7#	71	0.00
17	t	C40	5.402	3.564 E3	34.0#	63	0.00
18	t	c42	2.467	1.622 E3	34.3#	61	-0.01
19	T	Pristane	17.389	16.934 E3	2.6	98	0.00
20	T	Phytane	18.421	17.829 E3	3.2	98	0.00
21	s	o-terphenyl	20.532	19.726 E3	3.9	97	0.00
22	t	TPHC - total	22.352	18.289 E3	18.2	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970618\T01635.D Vial: 1
Acq On : 18 Jun 97 8:06 am Operator: Skelton
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	t	C8	14.139	12.595 E3	10.9	90	0.00
2	t	C10	14.582	15.380 E3	-5.5	107	0.00
3	t	C12	15.575	16.660 E3	-7.0	108	0.00
4	t	C14	16.054	17.216 E3	-7.2	108	0.00
5	t	C16	16.566	17.726 E3	-7.0	108	0.00
6	t	C18	19.140	20.614 E3	-7.7	109	0.00
7	t	C20	18.328	19.475 E3	-6.3	107	0.00
8	t	C22	18.176	19.359 E3	-6.5	108	0.00
9	t	C24	18.637	19.688 E3	-5.6	107	-0.01
10	t	C26	18.634	19.411 E3	-4.2	105	-0.01
11	t	C28	18.583	19.197 E3	-3.3	104	-0.01
12	t	C30	18.774	18.963 E3	-1.0	102	-0.01
13	t	C32	17.862	17.176 E3	3.8	97	-0.01
14	t	C34	16.327	14.576 E3	10.7	90	-0.02
15	t	C36	13.368	10.441 E3	21.9	79	-0.02
16	t	C38	9.365	6.420 E3	31.4#	68	-0.03
17	t	C40	5.402	3.208 E3	40.6#	57	-0.03
18	t	c42	2.467	1.453 E3	41.1#	54	-0.05
19	T	Pristane	17.389	18.762 E3	-7.9	109	0.00
20	T	Phytane	18.421	19.572 E3	-6.2	107	0.00
21	s	o-terphenyl	20.532	21.639 E3	-5.4	107	0.00
22	t	TPHC - total	22.352	19.450 E3	13.0	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

a

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970613\T01634.D Vial: 1
Acq On : 13 Jun 97 8:57 pm Operator: Skelton
Sample : 50 ppm std Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	t	C8	14.139	12.756 E3	9.8	91	0.00
2	t	C10	14.582	14.166 E3	2.9	98	0.00
3	t	C12	15.575	15.296 E3	1.8	99	0.00
4	t	C14	16.054	15.807 E3	1.5	99	0.00
5	t	C16	16.566	16.277 E3	1.7	99	0.00
6	t	C18	19.140	18.915 E3	1.2	100	0.00
7	t	C20	18.328	17.852 E3	2.6	98	0.00
8	t	C22	18.176	17.734 E3	2.4	99	0.00
9	t	C24	18.637	18.028 E3	3.3	98	0.00
10	t	C26	18.634	17.779 E3	4.6	96	0.00
11	t	C28	18.583	17.598 E3	5.3	95	0.00
12	t	C30	18.774	17.480 E3	6.9	94	0.00
13	t	C32	17.862	16.134 E3	9.7	91	0.00
14	t	C34	16.327	14.164 E3	13.2	87	0.00
15	t	C36	13.368	10.643 E3	20.4	81	0.00
16	t	C38	9.365	6.943 E3	25.9#	73	-0.01
17	t	C40	5.402	3.690 E3	31.7#	66	-0.02
18	t	c42	2.467	1.696 E3	31.3#	64	-0.02
19	T	Pristane	17.389	16.846 E3	3.1	98	0.00
20	T	Phytane	18.421	17.935 E3	2.6	98	0.00
21	s	o-terphenyl	20.532	19.852 E3	3.3	98	0.00
22	t	TPHC - total	22.352	18.143 E3	18.8	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

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

Surrogate Recovery Report

Lab. ID # : 2693

Location #: 2337

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2693.01		10.00	13.54	**135.36**
2693.02		10.00	13.59	**135.89**
2693.03		10.00	13.46	**134.64**
2693.04		10.00	13.21	**132.14**
2693.05		10.00	14.19	**141.92**
METHOD BLANK	13-Jun-97	10.00	14.38	**143.76**

Surrogate Added : **o-Terphenyl**

6/18/97

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

Matrix Spike Recovery Report

Lab. ID # : 2693

Location #: 2337

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2665.06MS	630	0.00	1027.11	163.03	75-125
2665.03MSD	630	0.00	989.55	157.07	75-125

RPD	**3.72**	**20.00**

1/23/98

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

Blank Spike Recovery Report

Lab. ID # : 2665

Location #: 2337

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	12-Jun-97	630	871.99	138.41	75-125

1/23/98

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970613\T01629.D Vial: 4
Acq On : 13 Jun 97 4:53 pm Operator: Skelton
Sample : 2693.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 18 13:10 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
21) s	o-terphenyl	13.68	277927	13.536	mg/L	
Spiked Amount	10.000	Recovery	=	135.36%		
	Target Compounds					
1) t	C8	0.00	0	N.D.	mg/L	
2) t	C10	0.00	0	N.D.	mg/L	
3) t	C12	0.00	0	N.D.	mg/L	
4) t	C14	0.00	0	N.D.	mg/L	
5) t	C16	0.00	0	N.D.	mg/L	
6) t	C18	0.00	0	N.D.	mg/L	
7) t	C20	0.00	0	N.D.	mg/L	
8) t	C22	0.00	0	N.D.	mg/L	
9) t	C24	0.00	0	N.D.	mg/L	
10) t	C26	0.00	0	N.D.	mg/L	d
11) t	C28	0.00	0	N.D.	mg/L	d
12) t	C30	0.00	0	N.D.	mg/L	d
13) t	C32	0.00	0	N.D.	mg/L	
14) t	C34	0.00	0	N.D.	mg/L	
15) t	C36	0.00	0	N.D.	mg/L	
16) t	C38	0.00	0	N.D.	mg/L	
17) t	C40	0.00	0	N.D.	mg/L	
18) t	c42	0.00	0	N.D.	mg/L	
19) T	Pristane	0.00	0	N.D.	mg/L	
20) T	Phytane	0.00	0	N.D.	mg/L	
22) t	TPHC - total	0.00	0	N.D.	mg/L	d

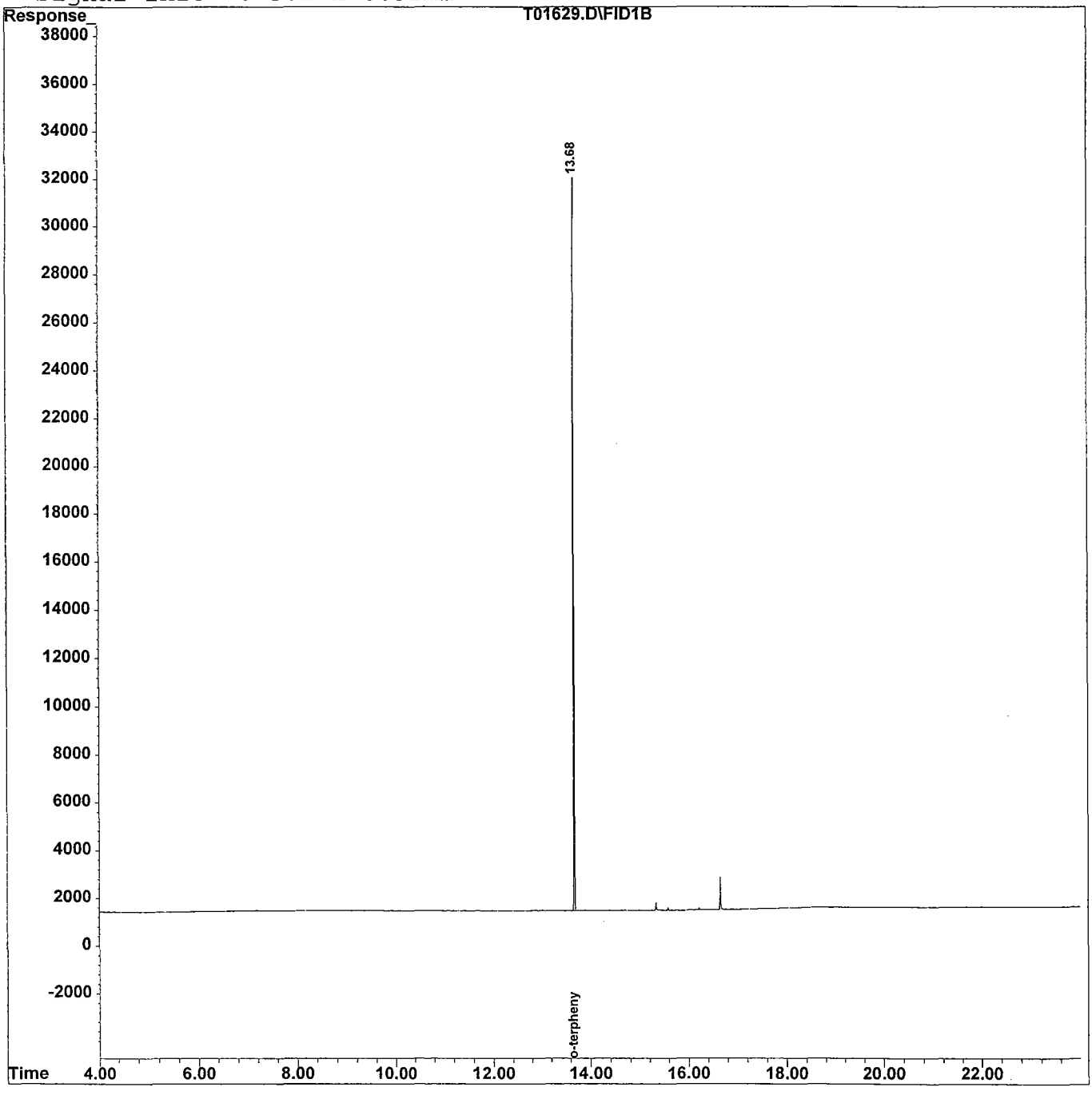
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970613\T01629.D Vial: 4
Acq On : 13 Jun 97 4:53 pm Operator: Skelton
Sample : 2693.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 18 13:10 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970613\T01630.D Vial: 5
Acq On : 13 Jun 97 5:42 pm Operator: Skelton
Sample : 2693.02 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 18 13:11 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
21) s o-terphenyl	13.68	279003	13.589	mg/L	
Spiked Amount 10.000		Recovery =	135.89%		
Target Compounds					
1) t C8	0.00	0	N.D.	mg/L	
2) t C10	0.00	0	N.D.	mg/L	
3) t C12	0.00	0	N.D.	mg/L	
4) t C14	0.00	0	N.D.	mg/L	
5) t C16	0.00	0	N.D.	mg/L	
6) t C18	0.00	0	N.D.	mg/L	
7) t C20	0.00	0	N.D.	mg/L	
8) t C22	0.00	0	N.D.	mg/L	
9) t C24	0.00	0	N.D.	mg/L	
10) t C26	0.00	0	N.D.	mg/L	d
11) t C28	0.00	0	N.D.	mg/L	d
12) t C30	0.00	0	N.D.	mg/L	d
13) t C32	0.00	0	N.D.	mg/L	d
14) t C34	0.00	0	N.D.	mg/L	d
15) t C36	0.00	0	N.D.	mg/L	d
16) t C38	0.00	0	N.D.	mg/L	d
17) t C40	0.00	0	N.D.	mg/L	d
18) t c42	0.00	0	N.D.	mg/L	d
19) T Pristane	0.00	0	N.D.	mg/L	d
20) T Phytane	0.00	0	N.D.	mg/L	d
22) t TPHC - total	0.00	0	N.D.	mg/L	d

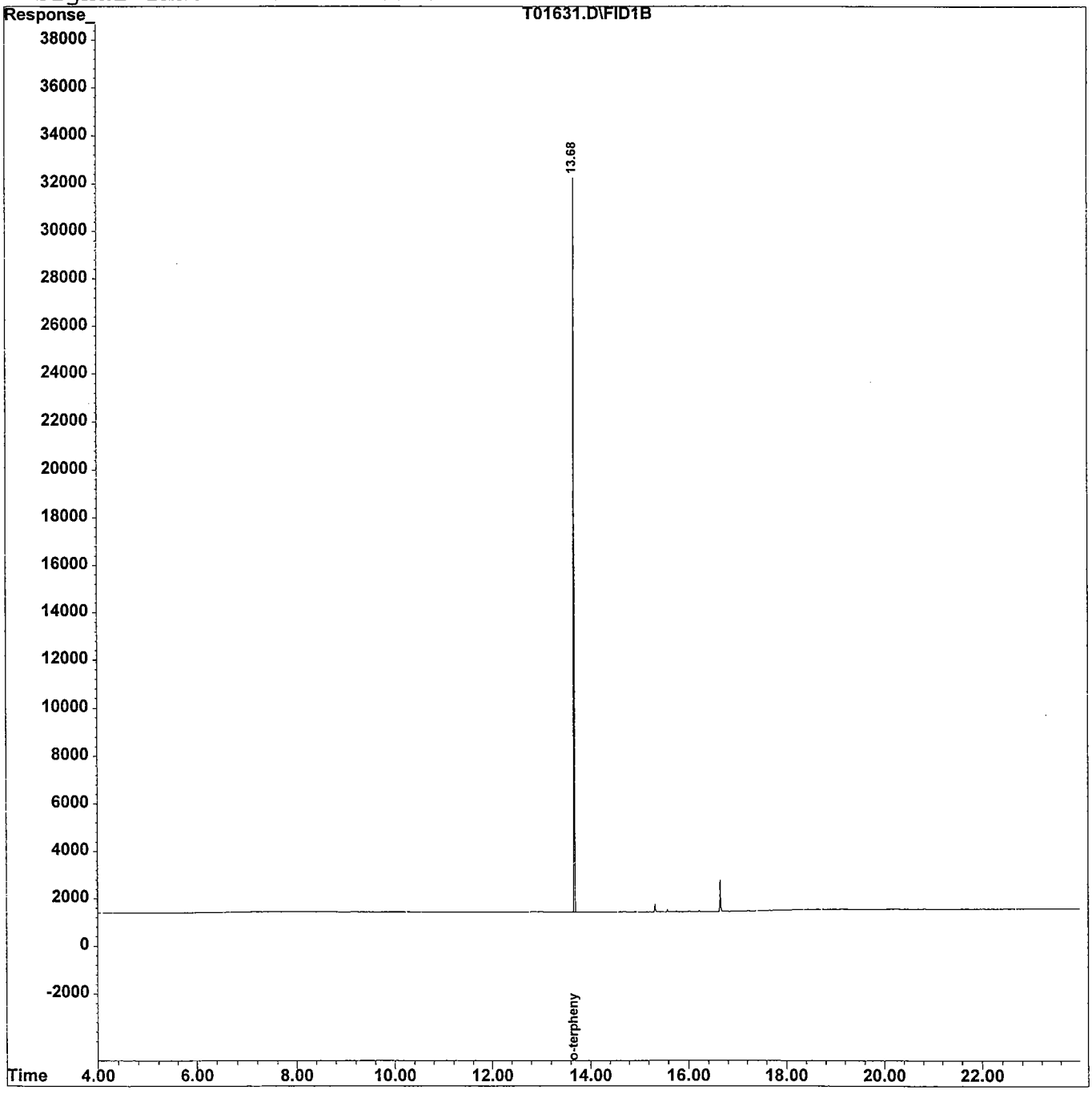
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970613\T01631.D Vial: 6
Acq On : 13 Jun 97 6:32 pm Operator: Skelton
Sample : 2693.03 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 18 13:11 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970613\T01632.D Vial: 7
Acq On : 13 Jun 97 7:20 pm Operator: Skelton
Sample : 2693.04 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 18 13:12 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
21) s	o-terphenyl	13.68	271313	13.214	mg/L	
Spiked Amount	10.000	Recovery	=	132.14%		
	Target Compounds					
1) t	C8	0.00	0	N.D.	mg/L	
2) t	C10	0.00	0	N.D.	mg/L	
3) t	C12	0.00	0	N.D.	mg/L	
4) t	C14	0.00	0	N.D.	mg/L	
5) t	C16	0.00	0	N.D.	mg/L	
6) t	C18	0.00	0	N.D.	mg/L	
7) t	C20	0.00	0	N.D.	mg/L	
8) t	C22	0.00	0	N.D.	mg/L	d
9) t	C24	0.00	0	N.D.	mg/L	d
10) t	C26	0.00	0	N.D.	mg/L	d
11) t	C28	0.00	0	N.D.	mg/L	d
12) t	C30	0.00	0	N.D.	mg/L	d
13) t	C32	0.00	0	N.D.	mg/L	
14) t	C34	0.00	0	N.D.	mg/L	
15) t	C36	0.00	0	N.D.	mg/L	
16) t	C38	0.00	0	N.D.	mg/L	
17) t	C40	0.00	0	N.D.	mg/L	
18) t	c42	0.00	0	N.D.	mg/L	
19) T	Pristane	0.00	0	N.D.	mg/L	
20) T	Phytane	0.00	0	N.D.	mg/L	
22) t	TPHC - total	0.00	0	N.D.	mg/L	d

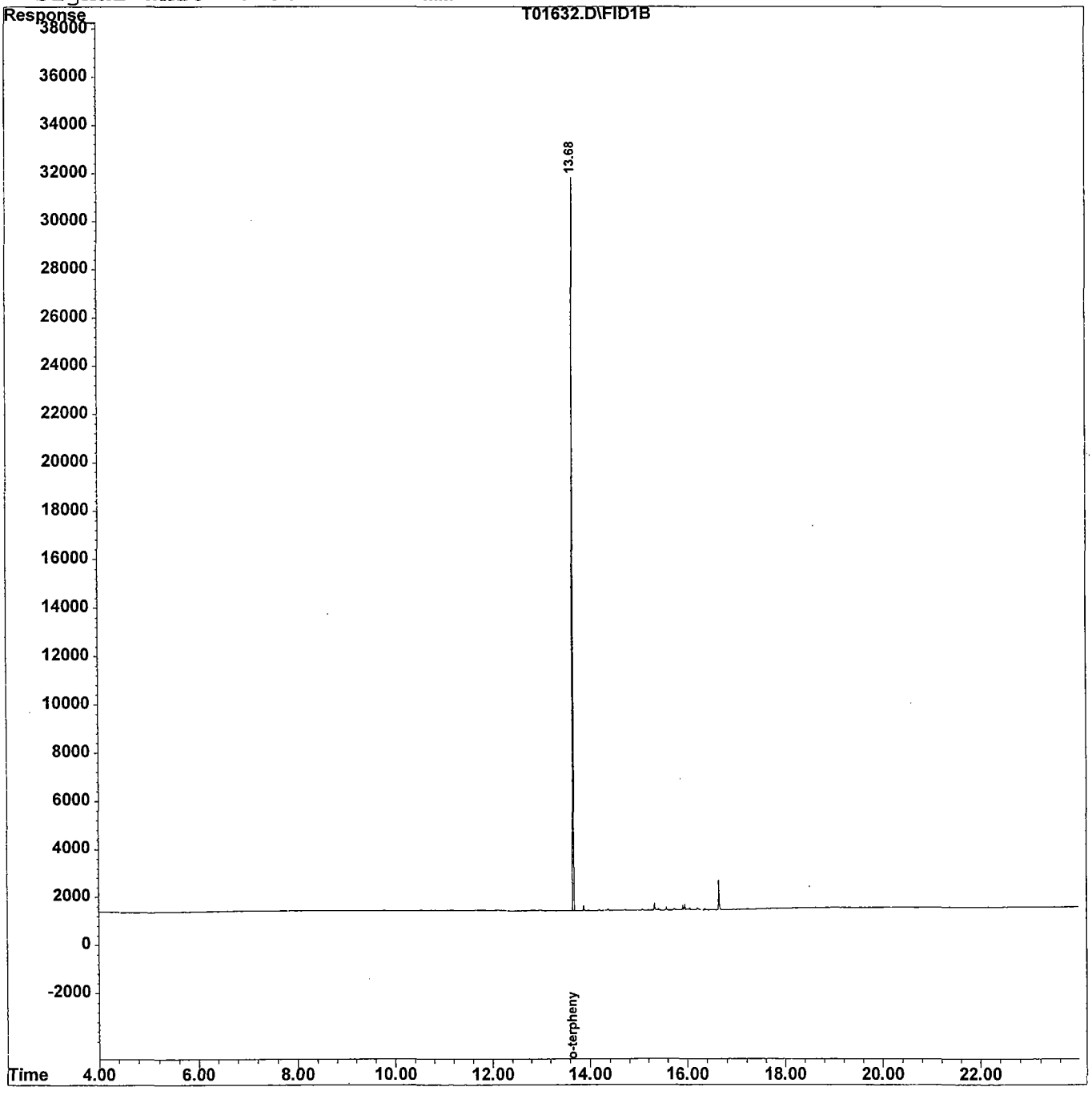
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970613\T01632.D Vial: 7
Acq On : 13 Jun 97 7:20 pm Operator: Skelton
Sample : 2693.04 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 18 13:12 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970613\T01633.D Vial: 8
Acq On : 13 Jun 97 8:09 pm Operator: Skelton
Sample : 2693.05 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 18 13:12 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
21)	s o-terphenyl	13.68	291383	14.192	mg/L	
Spiked Amount	10.000	Recovery	=	141.92%		
	Target Compounds					
1)	t C8	0.00	0	N.D.	mg/L	
2)	t C10	0.00	0	N.D.	mg/L	
3)	t C12	0.00	0	N.D.	mg/L	
4)	t C14	0.00	0	N.D.	mg/L	d
5)	t C16	0.00	0	N.D.	mg/L	d
6)	t C18	0.00	0	N.D.	mg/L	d
7)	t C20	0.00	0	N.D.	mg/L	d
8)	t C22	0.00	0	N.D.	mg/L	d
9)	t C24	0.00	0	N.D.	mg/L	d
10)	t C26	0.00	0	N.D.	mg/L	d
11)	t C28	0.00	0	N.D.	mg/L	d
12)	t C30	0.00	0	N.D.	mg/L	d
13)	t C32	0.00	0	N.D.	mg/L	
14)	t C34	0.00	0	N.D.	mg/L	
15)	t C36	0.00	0	N.D.	mg/L	
16)	t C38	0.00	0	N.D.	mg/L	
17)	t C40	0.00	0	N.D.	mg/L	
18)	t c42	0.00	0	N.D.	mg/L	
19)	T Pristane	0.00	0	N.D.	mg/L	d
20)	T Phytane	0.00	0	N.D.	mg/L	d
22)	t TPHC - total	0.00	0	N.D.	mg/L	d

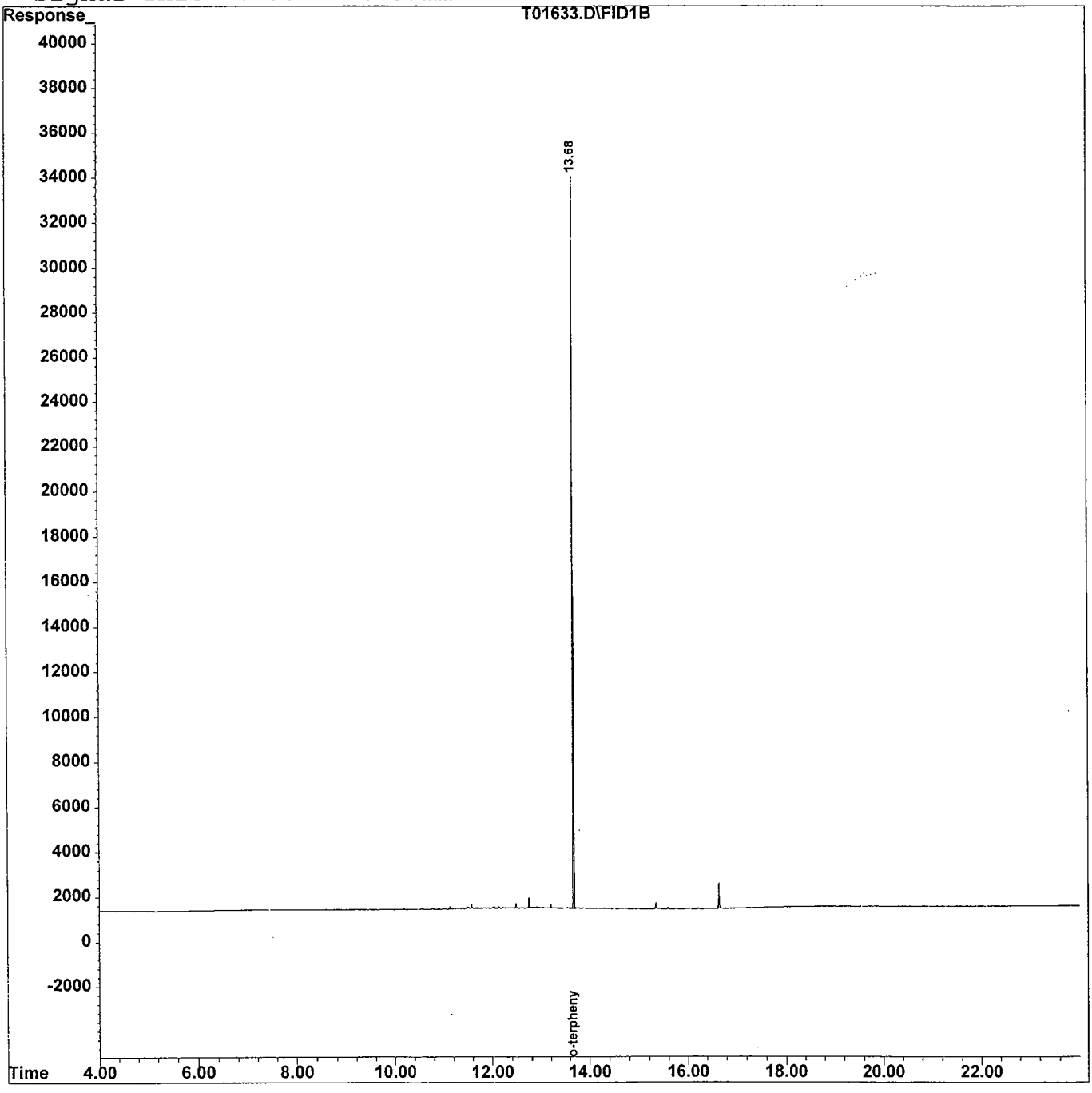
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970613\T01633.D Vial: 8
Acq On : 13 Jun 97 8:09 pm Operator: Skelton
Sample : 2693.05 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 18 13:12 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

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

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted _____
2. Table of Contents submitted _____
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted _____
4. Document paginated and legible _____
5. Chain of Custody submitted _____
6. Samples submitted to lab within 48 hours of sample collection _____
7. Methodology Summary submitted _____
8. Laboratory Chronicle and Holding Time Check submitted _____
9. Results submitted on a dry weight basis _____
10. Method Detection Limits submitted _____
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP _____

Laboratory Manager or Environmental Consultant's Signature _____
Date ___/___/___

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
96-1226
2337

Project # 2727
Date Rec. 06/23/97
Date Comp. 06/25/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Method Detection Limits provided.	__	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	✓	__
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range). 7692.06 = 133%	✓	__
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	__	✓
5. IR Spectra submitted for standards, blanks, & samples	__	NA __
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	__	✓
7. Analysis holding time met. (If not met, list number of days exceeded for each sample)	__	✓

Additional Comments:

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (908)532-4359 Fax (908)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: SMC / Chuck Appleby
Phone #: 610 265 2700
( )DERA (X)OMA ( )Other:_____

Project No: 96-026
Location: 2337

Samplers Name / Company : David H. Daniels / SMC

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: TPHC	Analysis Parameters: % solids	Comments: Remarks / Preservation Method
2727 1	2337-B12	6:23:97	8:40	soil	1	X	X	
2	2337-B13		8:45					
3	2337-B14		8:50					
4	2337-S18		8:55					
5	2337-S19		9:00					
6	2337-S20		9:05					
7	2337-S21		9:10					

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	6:23:97 1310				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified
Turnaround time: ( )Standard 4 wks, (X)Rush ____ Days, ( )ASAP Verbal ____ Hrs. ASAP

Remarks:

print legibly

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

Client :	U.S. Army	**Lab. ID # :**	2727
	DPW. SELFM-PW-EV	**Date Rec'd:**	23-Jun-97
	Bldg. 173	**Analysis Start:**	23-Jun-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	25-Jun-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	P. Skelton	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	2337

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2727.01	2337-B12	**1.00**	15.34	73.41	209	**ND**
2727.02	2337-B13	**1.00**	15.63	73.31	205	**ND**
2727.03	2337-B14	**1.00**	15.30	72.77	211	**ND**
2727.04	2337-S18	**1.00**	14.97	82.47	190	**404.93**
2727.05	2337-S19	**1.00**	15.28	81.38	189	**ND**
2727.06	2337-S20	**1.00**	15.11	82.43	189	**ND**
2727.07	2337-S21	**1.00**	16.12	80.35	181	**ND**
METHOD BLANK	23-Jun-97	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Response Factor Report FID/TCD

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997

Calibration Files
1 =T01476.D 2 =T01475.D 3 =T01474.D
4 =T01473.D 5 =T01472.D

		Compound	1	2	3	4	5	Avg		%RSD
1)	t	C8	1.474	1.450	1.396	1.394	1.354	1.414	E4	3.40
2)	t	C10	1.524	1.488	1.439	1.438	1.402	1.458	E4	3.30
3)	t	C12	1.623	1.588	1.542	1.535	1.499	1.557	E4	3.09
4)	t	C14	1.667	1.643	1.592	1.582	1.543	1.605	E4	3.09
5)	t	C16	1.733	1.692	1.641	1.631	1.587	1.657	E4	3.42
6)	t	C18	1.966	1.953	1.897	1.892	1.862	1.914	E4	2.30
7)	t	C20	1.917	1.871	1.814	1.805	1.757	1.833	E4	3.39
8)	t	C22	1.901	1.855	1.799	1.792	1.741	1.818	E4	3.40
9)	t	C24	1.942	1.905	1.846	1.840	1.785	1.864	E4	3.28
10)	t	C26	1.950	1.900	1.844	1.841	1.783	1.863	E4	3.42
11)	t	C28	1.928	1.898	1.844	1.845	1.776	1.858	E4	3.14
12)	t	C30	1.979	1.917	1.862	1.861	1.768	1.877	E4	4.15
13)	t	C32	1.960	1.827	1.764	1.756	1.623	1.786	E4	6.86
14)	t	C34	1.776	1.703	1.628	1.606	1.451	1.633	E4	7.43
15)	t	C36	1.506	1.407	1.319	1.306	1.146	1.337	E4	9.98
16)	t	C38	0.980	1.033	0.949	0.942	0.780	0.937	E4	10.12
17)	t	C40	5.522	6.078	5.632	5.585	4.193	5.402	E3	13.16
18)	t	c42	2.495	2.579	2.667	2.744	1.850	2.467	E3	14.48
19)	T	Pristane	1.835	1.781	1.723	1.712	1.643	1.739	E4	4.19
20)	T	Phytane	1.935	1.879	1.824	1.813	1.760	1.842	E4	3.63
21)	s	o-terphenyl	2.166	2.100	2.027	2.018	1.957	2.053	E4	3.94
22)	t	TPHC - total	3.056	2.530	1.916	1.884	1.790	2.235	E4	24.34

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\970625\T01675.D Vial: 1
Acq On : 25 Jun 97 10:28 am Operator: Skelton
Sample : 50 ppm std Inst : FID/TCD
Misc : 50 ppm std Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	t	C8	14.139	15.957 E3	-12.9	114	0.01
2	t	C10	14.582	16.477 E3	-13.0	114	0.00
3	t	C12	15.575	17.545 E3	-12.6	114	0.00
4	t	C14	16.054	18.055 E3	-12.5	113	0.00
5	t	C16	16.566	18.635 E3	-12.5	114	0.00
6	t	C18	19.140	21.547 E3	-12.6	114	0.00
7	t	C20	18.328	20.602 E3	-12.4	114	0.00
8	t	C22	18.176	20.566 E3	-13.1	114	0.00
9	t	C24	18.637	21.077 E3	-13.1	114	0.00
10	t	C26	18.634	20.954 E3	-12.5	114	0.00
11	t	C28	18.583	20.626 E3	-11.0	112	0.00
12	t	C30	18.774	19.952 E3	-6.3	107	0.00
13	t	C32	17.862	17.345 E3	2.9	98	0.03
14	t	C34	16.327	13.919 E3	14.7	86	0.06
15	t	C36	13.368	11.585 E3	13.3	88	0.07
16	t	C38	9.365	6.567 E3	29.9#	69	0.08
17	t	C40	5.402	3.442 E3	36.3#	61	0.08
18	t	c42	2.467	2.166 E3	12.2	81	0.08
19	T	Pristane	17.389	19.333 E3	-11.2	112	0.00
20	T	Phytane	18.421	20.675 E3	-12.2	113	0.00
21	s	o-terphenyl	20.532	22.707 E3	-10.6	112	0.00
22	t	TPHC - total	22.352	18.957 E3	15.2	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

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

Surrogate Recovery Report

Lab. ID # : 2727

Location #: 2337

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2727.01		10.00	11.14	**111.40**
2727.02		10.00	10.38	**103.76**
2727.03		10.00	11.21	**112.10**
2727.04		10.00	12.18	**121.80**
2727.05		10.00	12.11	**121.12**
2727.06		10.00	11.85	**118.52**
2727.07		10.00	11.30	**112.96**
METHOD BLANK	23-Jun-97	10.00	12.29	**122.85**

Surrogate Added : **o-Terphenyl**

7/9/97

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

Matrix Spike Recovery Report

Lab. ID # : 2727

Location #: 2337

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2723.04MS	630	153.61	883.53	115.86	75-125
2723.04MSD	630	153.61	2316.87	343.37	75-125
			RPD	**99.08**	**20.00**

1/22/98

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

Blank Spike Recovery Report

Lab. ID # : 2727

Location #: 2337

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	23-Jun-97	630	813.87	129.19	75-125

1/21/98

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970625\T01678.D Vial: 4
Acq On : 25 Jun 97 1:14 pm Operator: Skelton
Sample : 2727.01 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 26 11:07 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units
	System Monitoring Compounds				
21) s	o-terphenyl	13.68	228732	11.140	mg/L
Spiked Amount	10.000	Recovery	=	111.40%	
	Target Compounds				
1) t	C8	0.00	0	N.D.	mg/L
2) t	C10	0.00	0	N.D.	mg/L
3) t	C12	0.00	0	N.D.	mg/L
4) t	C14	0.00	0	N.D.	mg/L
5) t	C16	0.00	0	N.D.	mg/L
6) t	C18	0.00	0	N.D.	mg/L
7) t	C20	0.00	0	N.D.	mg/L
8) t	C22	0.00	0	N.D.	mg/L
9) t	C24	0.00	0	N.D.	mg/L
10) t	C26	0.00	0	N.D.	mg/L
11) t	C28	0.00	0	N.D.	mg/L
12) t	C30	0.00	0	N.D.	mg/L d
13) t	C32	0.00	0	N.D.	mg/L
14) t	C34	0.00	0	N.D.	mg/L
15) t	C36	0.00	0	N.D.	mg/L
16) t	C38	0.00	0	N.D.	mg/L
17) t	C40	0.00	0	N.D.	mg/L
18) t	c42	0.00	0	N.D.	mg/L
19) T	Pristane	0.00	0	N.D.	mg/L
20) T	Phytane	0.00	0	N.D.	mg/L
22) t	TPHC - total	0.00	0	N.D.	mg/L d

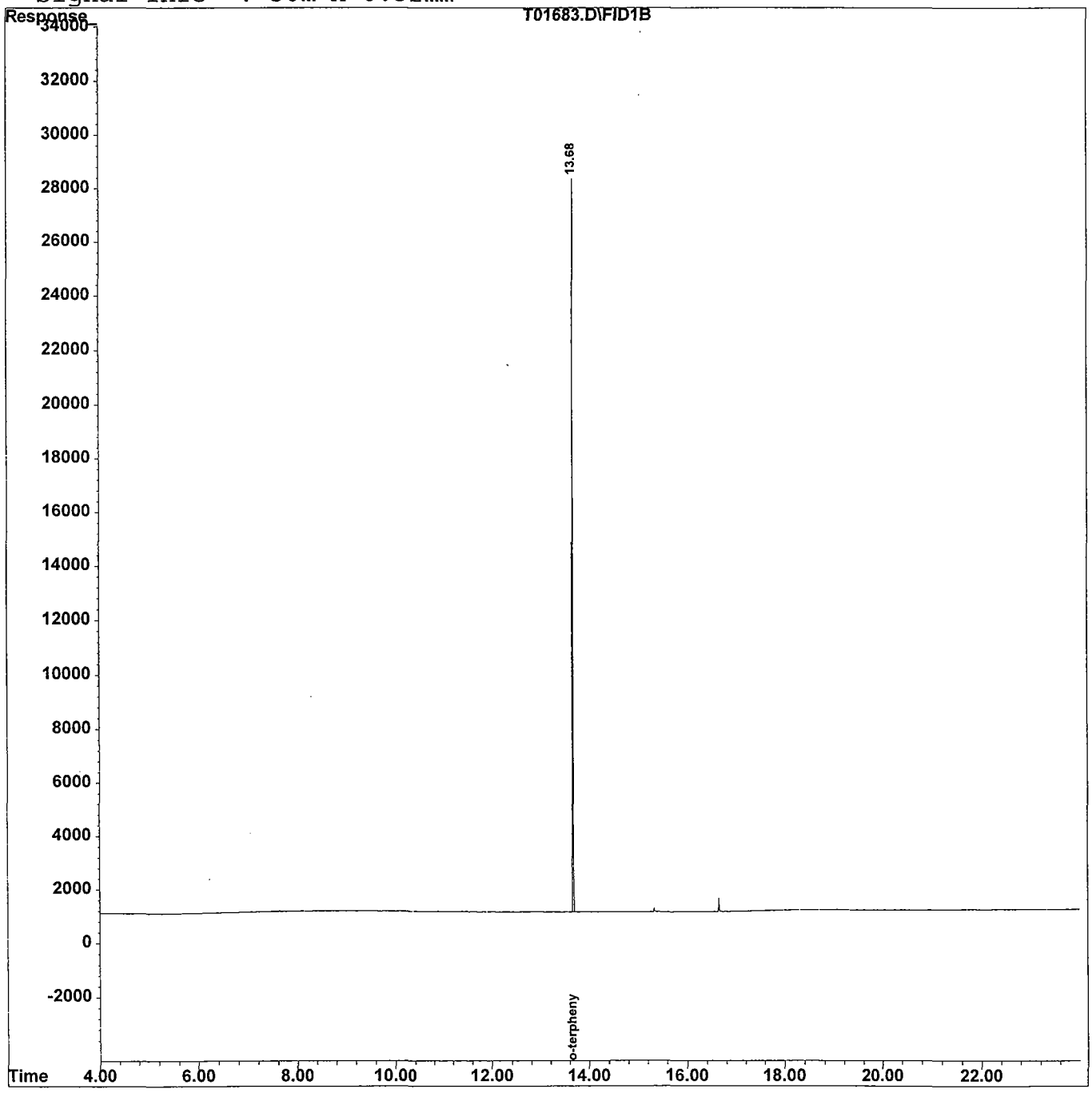
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970625\T01683.D Vial: 9
Acq On : 25 Jun 97 6:41 pm Operator: Skelton
Sample : 2727.06 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 26 11:10 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\970625\T01684.D Vial: 10
Acq On : 25 Jun 97 7:43 pm Operator: Skelton
Sample : 2727.07 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 26 11:10 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Initial Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc	Units	
	System Monitoring Compounds					
21) s	o-terphenyl	13.68	231930	11.296	mg/L	
Spiked Amount	10.000		Recovery =	112.96%		
	Target Compounds					
1) t	C8	0.00	0	N.D.	mg/L	
2) t	C10	0.00	0	N.D.	mg/L	
3) t	C12	0.00	0	N.D.	mg/L	
4) t	C14	0.00	0	N.D.	mg/L	
5) t	C16	0.00	0	N.D.	mg/L	
6) t	C18	0.00	0	N.D.	mg/L	
7) t	C20	0.00	0	N.D.	mg/L	
8) t	C22	0.00	0	N.D.	mg/L	
9) t	C24	0.00	0	N.D.	mg/L	
10) t	C26	0.00	0	N.D.	mg/L	d
11) t	C28	0.00	0	N.D.	mg/L	
12) t	C30	0.00	0	N.D.	mg/L	d
13) t	C32	0.00	0	N.D.	mg/L	
14) t	C34	0.00	0	N.D.	mg/L	
15) t	C36	0.00	0	N.D.	mg/L	
16) t	C38	0.00	0	N.D.	mg/L	
17) t	C40	0.00	0	N.D.	mg/L	
18) t	c42	0.00	0	N.D.	mg/L	
19) T	Pristane	0.00	0	N.D.	mg/L	
20) T	Phytane	0.00	0	N.D.	mg/L	
22) t	TPHC - total	0.00	0	N.D.	mg/L	d

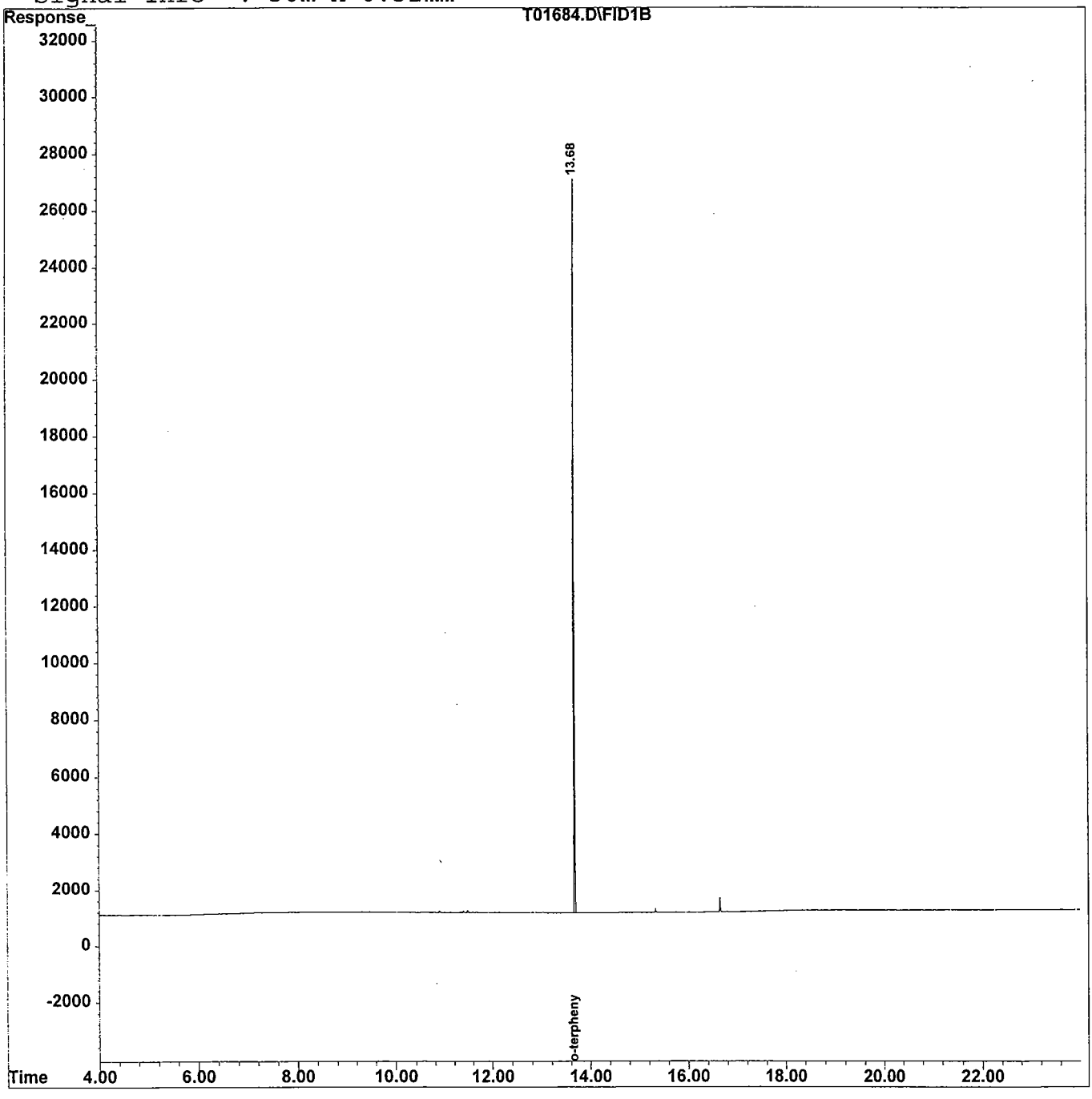
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970625\T01684.D Vial: 10
Acq On : 25 Jun 97 7:43 pm Operator: Skelton
Sample : 2727.07 Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 26 11:10 1997 Quant Results File: TPH8.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH8.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jun 05 14:02:46 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH8.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



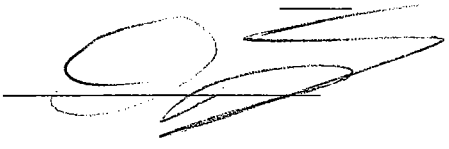
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package <u>and</u> in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
4. Document paginated and legible ✓
5. Chain of Custody submitted ✓
6. Samples submitted to lab within 48 hours of sample collection ✓
7. Methodology Summary submitted ✓
8. Laboratory Chronicle and Holding Time Check submitted ✓
9. Results submitted on a dry weight basis ✓
10. Method Detection Limits submitted ✓
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ✓

Laboratory Manager or Environmental Consultant's Signature 

Date 1/21/25

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance

APPENDIX E

GROUNDWATER ANALYTICAL DATA PACKAGE

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: IJO# 01-0001

Bldg. 2337

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
Trip Blank	16024.01	Aqueous	31-Mar-01	04/02/01
Field Blank	16024.02	Aqueous	31-Mar-01 10:00	04/02/01
DUP.	16024.03	Aqueous	31-Mar-01	04/02/01
Bldg. 2337 GW	16024.04	Aqueous	31-Mar-01 10:18	04/02/01

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, BN+15

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

4-19
Daniel Wright/Date
Laboratory Director

CHAIN OF CUSTODY

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: D. DEASI
Phone #: X21475
( )DERA ( )OMA ( )Other:_____

Project No:
Location: Bldg 2337 GW
1st Rnd

Samplers Name / Company: Corey McCormack, TVS

Lims Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	BN+15					Hno3 Lead	Remarks / Preservation Method
100124 .01	Trip	3/31/01	0645	AQ	2	✓						—	
.02	Field Blank		1000		3	✓	✓					—	
.03	Dupe		—		3	✓	✓					—	
.04	Bldg 2337 GW	↓	1018	↓	3	✓	✓					0.0	

Comments: HCL / 4°C

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	3/31/01 1430				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
	4/2/01 730				

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified, ( )EDD
Turnaround time: (X)Standard 3 wks, ( )Rush ___ Days, ( )ASAP Verbal ___ Hrs.

Remarks: Shws T/FO 10 w/ 441
1st Rnd

CCCCCC

METHOD SUMMARY

Methodology Summary

EPA Method 624
Gas Chromatographic Determination of Volatiles in Water

Surrogates and internal standards are added to a 5-ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

EPA Method 625
Gas Chromatographic Determination of Semi-volatiles in Water

Surrogates are added to a measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene Chloride using a separatory funnel. The extract is concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

CONFORMANCE/ NON-CONFORMANCE

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

	Indicate Yes, No, N/A
1. Chromatograms labeled/Compounds identified (Field samples and method blanks)	Yes
2. Retention times for chromatograms provided	yes
3. GC/MS Tune Specifications	
a. BFB Meet Criteria	Yes
b. DFTPP Meet Criteria	Yes
4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series	yes
5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	yes
6. GC/MS Calibration requirements	
a. Calibration Check Compounds Meet Criteria	yes
b. System Performance Check Compounds Meet Criteria	yes
7. Blank Contamination – If yes, List compounds and concentrations in each blank:	yes
a. VOA Fraction	
b. B/N Fraction Diethylphthalate @ 1.81 ug/L	
c. Acid Fraction NA	
8. Surrogate Recoveries Meet Criteria	yes
If not met, list those compounds and their recoveries, which fall outside the acceptable range:	
a. VOA Fraction	
b. B/N Fraction	
c. Acid Fraction NA	
If not met, were the calculations checked and the results qualified as "estimated"?	
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range)	yes
a. VOA Fraction	
b. B/N Fraction	
c. Acid Fraction NA	

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria — YES
(If not met, list those compounds, which fall outside the acceptable range)

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

11. Extraction Holding Time Met — YES

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

12. Analysis Holding Time Met — YES

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

Additional Comments:

Laboratory Manager: _____ Date: 4-19-01

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 16024 Site: Bldg. 2337

	Date	Hold Time
Date Sampled	03/31/01	NA
Receipt/Refrigeration	03/31/01*	NA
Extractions		
1. BN	04/06/01	7 days
Analyses		
1. Volatile Organics	04/03,04/01	14 days
2. BN	04/06/01	14 days

* Sampled and Refrigerated on 03/31/01. Received on 04/02/01.

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	**:**	**Method Detection Limit**
J	**:**	**Compound identified below detection limit**
B	**:**	**Compound found in blank**
D	**:**	**Results are from a dilution of the sample**
U	**:**	**Compound searched for but not detected**
E	**:**	**Compound exceeds calibration limit**
PQL	**:**	**Practical Quantitation Limit**
NLE	**:**	**No limit established**
RT	**:**	**Retention time**

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC005422.D	Sample Name	MB
Operator	Skelton	Field ID	MB 040301
Date Aquired	3-Apr-01	Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

4/4/01 4:0

D:\HPCHEM\Custrpt\Volatile\624fy00.crt

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **MB 1611**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16024 Location: B2337 SDG No.:

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

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005422.D

Level: (low/med) LOW Date Received: 4/2/01

% Moisture: not dec. Date Analyzed: 4/3/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC005446.D	Sample Name	16024.01
Operator	Skelton	Field ID	Trip Blank
Date Aquired	4-Apr-01	Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Trip Blank**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16024 Location: B2337 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 16024.01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005446.D

Level: (low/med) LOW Date Received: 4/2/01

% Moisture: not dec. Date Analyzed: 4/4/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC005447.D**	Sample Name	**16024.02**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**4-Apr-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Field Blank**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16024 Location: B2337 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 16024.02

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005447.D

Level: (low/med) LOW Date Received: 4/2/01

% Moisture: not dec. Date Analyzed: 4/4/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC005448.D	Sample Name	16024.03
Operator	Skelton	Field ID	Dupe
Date Aquired	4-Apr-01	Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone	8.87	419845	5.57 ug/L	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone	15.24	198443	3.29 ug/L	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Dupe**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16024 Location: B2337 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 16024.03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005448.D

Level: (low/med) LOW Date Received: 4/2/01

% Moisture: not dec. Date Analyzed: 4/4/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC005449.D**	Sample Name	**16024.04**
Operator	**Skelton**	Field ID	**Bldg2337GW**
Date Aquired	**4-Apr-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone	8.87	419238	5.66 ug/L	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone	15.25	203278	3.43 ug/L	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Bldg2337GW**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16024 Location: B2337 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 16024.04

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005449.D

Level: (low/med) LOW Date Received: 4/2/01

% Moisture: not dec. _____ Date Analyzed: 4/4/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16024 Location: B2337 SDG No.:

Lab File ID: VC005197.D BFB Injection Date: 3/12/01

Instrument ID: VoaInst#3 BFB Injection Time: 9:41

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	21.6
75	30.0 - 66.0% of mass 95	54.6
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.5 (0.7)1
174	50.0 - 120.0% of mass 95	71.2
175	4.0 - 9.0% of mass 174	4.8 (6.7)1
176	93.0 - 101.0% of mass 174	68.6 (96.4)1
177	5.0 - 9.0% of mass 176	4.6 (6.7)2

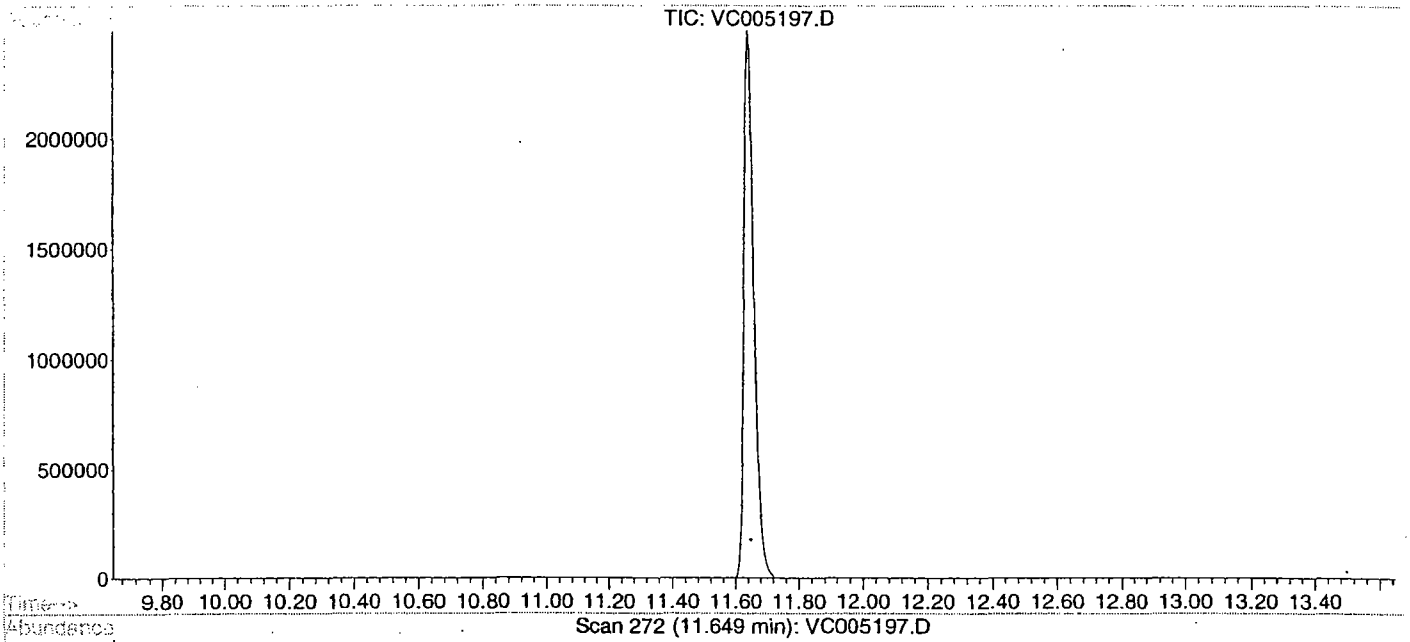
1-Value is % mass 174 2-Value is % mass 176

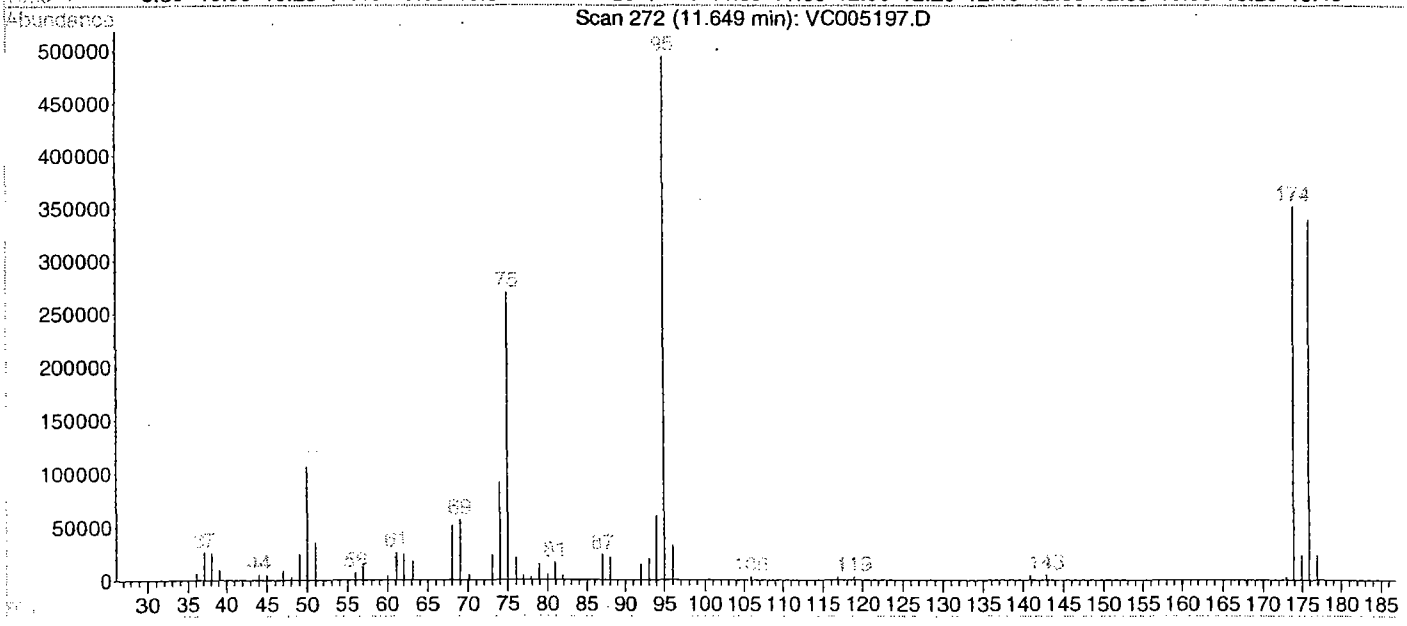
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	VSTD005	VC005198.D	3/12/01	10:17
02	VSTD010	VSTD010	VC005199.D	3/12/01	10:57
03	VSTD020	VSTD020	VC005200.D	3/12/01	11:38
04	VSTD050	VSTD050	VC005201.D	3/12/01	12:19
05	VSTD100	VSTD100	VC005202.D	3/12/01	13:00

BFB

Data File : D:\HPCHEM\1\DATA\2001DATA\MARCH2001\010312\VC005197.D Vial: 1
Acq On : 12 Mar 2001 9:41 am Operator: Skelton
Sample : BFB Tune Inst : GC/MS Ins
Misc : BFB Tune Multiplr: 1.00
MS Integration Params: ACETONE.P
Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP





Spectrum Information: Scan 272

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.6	106952	PASS
75	95	30	60	54.6	269888	PASS
95	95	100	100	100.0	494400	PASS
96	95	5	9	6.7	33240	PASS
173	174	0.00	2	0.7	2627	PASS
174	95	50	100	71.2	352128	PASS
175	174	5	9	6.7	23600	PASS
176	174	95	101	96.4	339392	PASS
177	176	5	9	6.7	22832	PASS

Response Factor Report GC/MS Ins

Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Apr 04 09:25:25 2001
Response via : Continuing Calibration

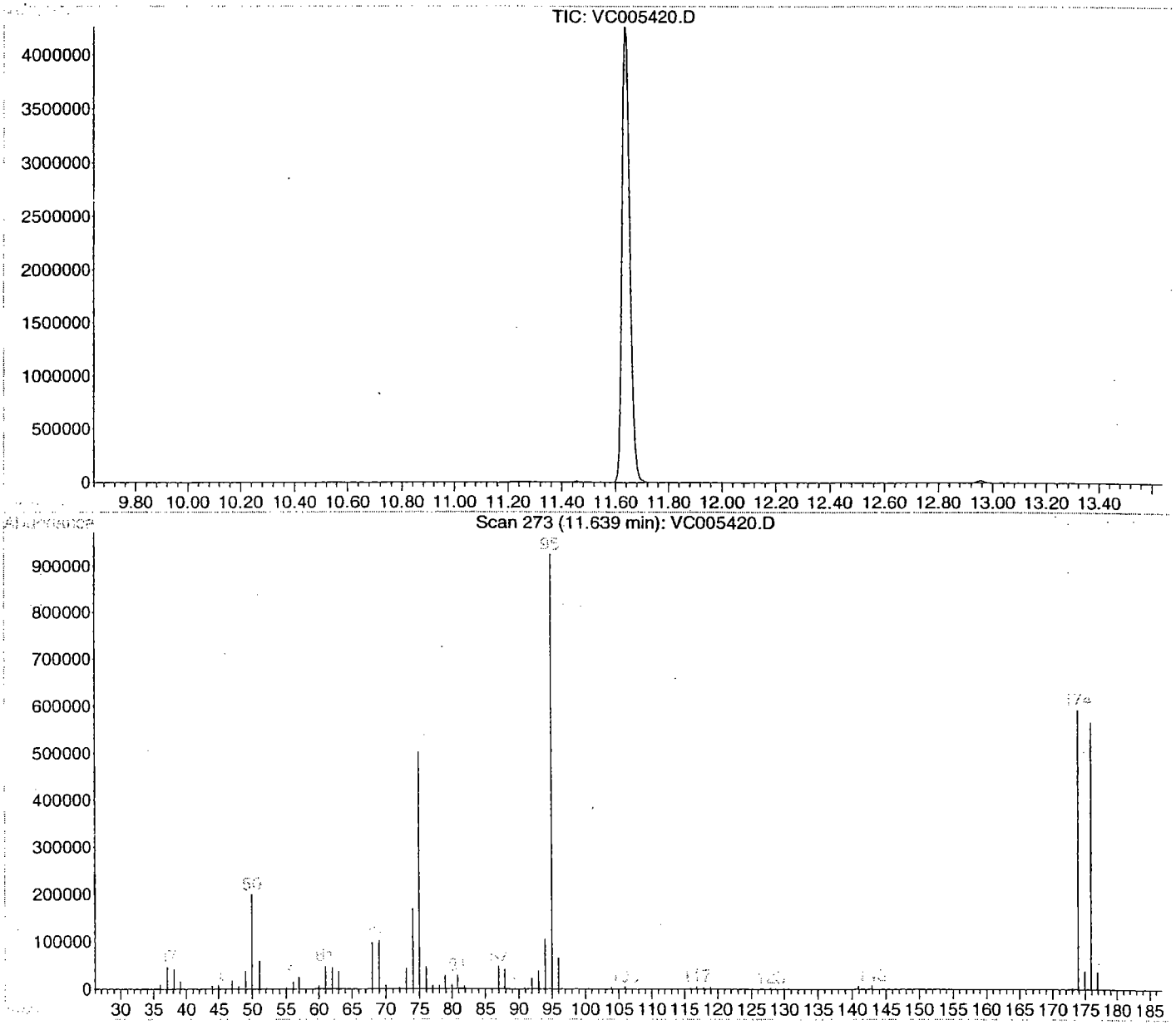
Calibration Files
50 =VC005201.D 5 =VC005198.D 10 =VC005199.D
20 =VC005200.D 100 =VC005202.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	ISTD						
2)	t	Acrolein	0.377	0.148	0.171	0.238	0.442	0.275	46.99
3)	t	Acrylonitrile	1.410	1.428	1.363	1.439	1.153	1.358	8.74
4)	t	tert-Butyl alcohol	0.188	0.144	0.142	0.165	0.206	0.169	16.66
5)	t	Methyl-tert-Butyl eth	5.958	5.069	4.803	5.259	6.219	5.462	11.01
6)	t	Di-isopropyl ether	1.675	1.317	1.290	1.479	1.783	1.509	14.38
7)	T	Dichlorodifluorometha	2.249	2.851	2.421	2.415	2.130	2.414	11.32
8)	TP	Chloromethane	3.853	5.111	4.210	4.033	3.567	4.155	14.08
9)	TC	Vinyl Chloride	3.004	3.775	3.247	3.144	2.689	3.172	12.52
10)	T	Bromomethane	1.279	1.525	1.264	1.245	1.259	1.314	8.99
11)	T	Chloroethane	1.926	2.177	1.904	1.923	1.895	1.965	6.06
12)	T	Trichlorofluoromethan	3.118	3.569	3.131	3.128	3.038	3.197	6.62
13)	MC	1,1-Dichloroethene	3.527	3.399	3.132	3.332	3.545	3.387	4.96
14)	T	Acetone	1.440	6.556	3.587	2.273	1.185	3.008	72.92
15)	T	Carbon Disulfide	6.616	6.539	6.069	6.319	6.421	6.393	3.34
16)	T	Methylene Chloride	2.267	2.487	2.175	2.216	2.253	2.280	5.31
17)	T	trans-1,2-Dichloroeth	3.481	3.377	3.121	3.300	3.484	3.353	4.49
18)	TP	1,1-Dichloroethane	4.424	4.530	4.113	4.274	4.409	4.350	3.69
19)	T	Vinyl Acetate	6.187	4.512	4.546	5.357	6.170	5.354	15.40
20)	T	2-Butanone	1.401	1.492	1.115	1.227	1.478	1.342	12.31
21)	T	cis-1,2-Dichloroethen	3.399	3.082	2.889	3.122	3.447	3.188	7.29
22)	TC	Chloroform	3.596	3.706	3.361	3.448	3.581	3.538	3.82
23)	T	1,1,1-Trichloroethane	2.776	2.654	2.439	2.597	2.873	2.668	6.25
24)	T	Carbon Tetrachloride	2.253	2.070	1.948	2.072	2.341	2.137	7.38
25)	S	1,2-Dichloroethane-d4	3.036	2.986	3.011	3.007	3.054	3.019	0.88
26)	I	1,4-Difluorobenzene	ISTD						
27)	TM	Benzene	1.412	1.495	1.371	1.411	1.242	1.386	6.68
28)	T	1,2-Dichloroethane	0.497	0.524	0.478	0.482	0.490	0.494	3.69
29)	TM	Trichloroethene	0.297	0.295	0.266	0.282	0.303	0.288	5.14
30)	TC	1,2-Dichloropropane	0.398	0.383	0.354	0.369	0.397	0.380	5.00
31)	T	Bromodichloromethane	0.397	0.367	0.335	0.368	0.409	0.375	7.76
32)	T	2-Chloroethyl vinyl e	0.144	0.143	0.133	0.138	0.147	0.141	3.83
33)	T	cis-1,3-Dichloroprope	0.532	0.412	0.405	0.470	0.540	0.472	13.51
34)	T	4-Methyl-2-Pentanone	0.161		0.110	0.134	0.165	0.142	18.15
35)	S	Toluene-d8	1.287	1.274	1.278	1.278	1.282	1.280	0.39
36)	TCM	Toluene	1.332	1.394	1.269	1.327	1.189	1.302	5.91
37)	I	Chlorobenzene-d5	ISTD						
38)	T	trans-1,3-Dichloropro	1.698	1.336	1.319	1.516	1.760	1.526	13.24
39)	T	1,1,2-Trichloroethane	1.017	1.068	0.959	1.007	1.027	1.016	3.84
40)	T	Tetrachloroethene	0.918	0.928	0.866	0.898	0.933	0.909	3.01
41)	T	2-Hexanone	0.916	0.734	0.587	0.758	0.972	0.794	19.39
42)	T	Dibromochloromethane	0.809	0.659	0.622	0.708	0.869	0.734	14.07
43)	TMP	Chlorobenzene	2.764	3.003	2.714	2.771	2.615	2.773	5.14
44)	TC	Ethylbenzene	4.968	5.039	4.760	5.077	4.207	4.810	7.46
45)	T	m+p-Xylenes	1.897	1.904	1.766	1.872	1.782	1.844	3.55
46)	T	o-Xylene	3.773	3.059	3.148	3.602	3.500	3.416	8.88
47)	T	Styrene	3.057	2.313	2.395	2.794	2.970	2.706	12.42
48)	TP	Bromoform	0.528	0.372	0.371	0.444	0.591	0.461	21.03
49)	S	Bromofluorobenzene	1.652	1.500	1.534	1.596	1.719	1.600	5.52
50)	TP	1,1,2,2-Tetrachloroet	1.452	1.423	1.308	1.418	1.433	1.407	4.03
51)	T	1,3-Dichlorobenzene	1.802	1.442	1.442	1.660	1.852	1.640	11.80
52)	T	1,4-Dichlorobenzene	1.811	1.433	1.457	1.682	1.848	1.646	11.77
53)	T	1,2-Dichlorobenzene	1.772	1.484	1.455	1.658	1.818	1.638	10.04

(#) = Out of Range

BFB

Data File : D:\HPCHEM\1\DATA\010403\VC005420.D Vial: 2
Acq On : 3 Apr 2001 9:37 am Operator: Skelton
Sample : BFB Tune Inst : GC/MS Ins
Misc : BFB Tune Multiplr: 1.00
MS Integration Params: ACETONE.P
Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP



Spectrum Information: Scan 273

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.6	200064	PASS
75	95	30	60	54.3	502784	PASS
95	95	100	100	100.0	926464	PASS
96	95	5	9	7.1	65968	PASS
173	174	0.00	2	0.6	3650	PASS
174	95	50	100	64.2	594624	PASS
175	174	5	9	6.8	40448	PASS
176	174	95	101	95.6	568192	PASS
177	176	5	9	6.7	37832	PASS

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\010403\VC005421.D Vial: 3
Acq On : 3 Apr 2001 10:04 am Operator: Skelton
Sample : Vstd020 Inst : GC/MS Ins
Misc : Vstd020 Multiplr: 1.00
MS Integration Params: ACETONE.P

Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Apr 04 09:25:25 2001
Response via : Single Level Calibration

Min. RRF : 0.025 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	132	0.00
2	t	Acrolein	0.275	0.475	-72.7#	264#	0.00
3	t	Acrylonitrile	1.358	1.450	-6.8	133	0.00
4	t	tert-Butyl alcohol	0.169	0.189	-11.8	151	0.00
5	t	Methyl-tert-Butyl ether	5.462	5.708	-4.5	143	0.01
6	t	Di-isopropyl ether	1.509	1.592	-5.5	142	0.00
7	T	Dichlorodifluoromethane	2.414	2.914	-20.7	159	0.00
8	TP	Chloromethane	4.155	4.406	-6.0	144	0.00
9	TC	Vinyl Chloride	3.172	3.296	-3.9	138	0.00
10	T	Bromomethane	1.314	1.347	-2.5	143	0.00
11	T	Chloroethane	1.965	1.991	-1.3	136	0.00
12	T	Trichlorofluoromethane	3.197	3.204	-0.2	135	0.00
13	MC	1,1-Dichloroethene	3.387	3.324	1.9	131	0.00
14	T	Acetone	3.008	2.741	8.9	159	0.00
15	T	Carbon Disulfide	6.393	6.517	-1.9	136	0.00
16	T	Methylene Chloride	2.280	2.314	-1.5	138	0.00
17	T	trans-1,2-Dichloroethene	3.353	3.328	0.7	133	0.01
18	TP	1,1-Dichloroethane	4.350	4.289	1.4	132	0.00
19	T	Vinyl Acetate	5.354	5.661	-5.7	139	0.00
20	T	2-Butanone	1.342	2.194	-63.5#	236#	0.00
21	T	cis-1,2-Dichloroethene	3.188	3.218	-0.9	136	0.00
22	TC	Chloroform	3.538	3.561	-0.7	136	0.00
23	T	1,1,1-Trichloroethane	2.668	2.721	-2.0	138	0.00
24	T	Carbon Tetrachloride	2.137	2.198	-2.9	140	0.00
25	S	1,2-Dichloroethane-d4	3.019	3.019	0.0	132	0.00
26	I	1,4-Difluorobenzene	1.000	1.000	0.0	133	0.00
27	TM	Benzene	1.386	1.403	-1.2	132	0.00
28	T	1,2-Dichloroethane	0.494	0.487	1.4	134	0.00
29	TM	Trichloroethene	0.288	0.271	5.9	128	0.00
30	TC	1,2-Dichloropropane	0.380	0.375	1.3	135	0.00
31	T	Bromodichloromethane	0.375	0.378	-0.8	136	0.00
32	T	2-Chloroethyl vinyl ether	0.141	0.139	1.4	134	0.01
33	T	cis-1,3-Dichloropropene	0.472	0.483	-2.3	136	0.00
34	T	4-Methyl-2-Pentanone	0.142	0.154	-8.5	152	0.00
35	S	Toluene-d8	1.280	1.243	2.9	129	0.00
36	TCM	Toluene	1.302	1.321	-1.5	132	0.00
37	I	Chlorobenzene-d5	1.000	1.000	0.0	133	0.01
38	T	trans-1,3-Dichloropropene	1.526	1.574	-3.1	138	0.00
39	T	1,1,2-Trichloroethane	1.016	1.027	-1.1	135	0.00
40	T	Tetrachloroethene	0.909	0.901	0.9	133	0.00
41	T	2-Hexanone	0.794	1.100	-38.5#	192	0.00
42	T	Dibromochloromethane	0.734	0.758	-3.3	142	0.01
43	TMP	Chlorobenzene	2.773	2.773	0.0	133	0.00
44	TC	Ethylbenzene	4.810	5.080	-5.6	133	0.00
45	T	m+p-Xylenes	1.844	1.912	-3.7	136	0.00
46	T	o-Xylene	3.416	3.719	-8.9	137	0.00
47	T	Styrene	2.706	2.887	-6.7	137	0.00
48	TP	Bromoform	0.461	0.470	-2.0	140	0.01
49	S	Bromofluorobenzene	1.600	1.628	-1.7	135	0.00
50	TP	1,1,2,2-Tetrachloroethane	1.407	1.608	-14.3	151	0.00
51	T	1,3-Dichlorobenzene	1.640	1.767	-7.7	141	0.01
52	T	1,4-Dichlorobenzene	1.646	1.823	-10.8	144	0.00
53	T	1,2-Dichlorobenzene	1.638	1.779	-8.6	142	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
VC005421.D M362438.M Thu Apr 05 08:53:04 2001

4A

FIELD ID:

VOLATILE METHOD BLANK SUMMARY

MB 1611

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16024 Location: B2337 SDG No.:

Lab File ID: VC005422.D Lab Sample ID: MB

Date Analyzed: 4/3/01 Time Analyzed: 11:06

GC Column: RTX502. ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VoaInst#3

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

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	1612 MS	16016.05 MS	VC005428.D	15:23
02	1613 MSD	16016.05 MSD	VC005429.D	16:04
03	TRIP BLANK	16024.01	VC005446.D	3:38
04	FIELD BLANK	16024.02	VC005447.D	4:20
05	DUPE	16024.03	VC005448.D	5:00
06	BLDG2337GW	16024.04	VC005449.D	5:41

COMMENTS:

000028

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16024 Location: B2337 SDG No.: _____

	FIELD ID:	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	MB 1611	104	99	90	0
02	1612 MS	107	103	101	0
03	1613 MSD	108	102	100	0
04	TRIP BLANK	117	103	92	0
05	FIELD BLANK	119	101	89	0
06	DUPE	119	102	87	0
07	BLDG2337GW	119	103	88	0

QC LIMITS

SMC1	DCE	=	1,2-Dichloroethane-d4	(76-121)
SMC2	TOL	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(74-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

Volatile Matrix Spike Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC005428.D	Sample Name	16016.05 MS
Date Aquired	3-Apr-01	Field ID	16016.05 MS

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	196.03 ug/L	98.01
Acrylonitrile	200	221.29 ug/L	110.65
tert-Butyl alcohol	200	191.46 ug/L	95.73
Methyl-tert-Butyl ether	20	18.88 ug/L	94.42
Di-isopropyl ether	20	18.92 ug/L	94.58
Dichlorodifluoromethane	20	18.97 ug/L	94.83
Chloromethane	20	21.20 ug/L	106.01
Vinyl Chloride	20	22.51 ug/L	112.55
Bromomethane	20	19.78 ug/L	98.90
Chloroethane	20	21.01 ug/L	105.06
Trichlorofluoromethane	20	20.90 ug/L	104.52
1,1-Dichloroethene	20	21.04 ug/L	105.21
Acetone	20	16.58 ug/L	82.90
Carbon Disulfide	20	20.76 ug/L	103.79
Methylene Chloride	20	20.80 ug/L	104.01
trans-1,2-Dichloroethene	20	21.33 ug/L	106.63
1,1-Dichloroethane	20	21.58 ug/L	107.92
Vinyl Acetate	20	22.36 ug/L	111.81
2-Butanone	20	15.70 ug/L	78.52
cis-1,2-Dichloroethene	20	20.97 ug/L	104.87
Chloroform	20	21.14 ug/L	105.71
1,1,1-Trichloroethane	20	20.17 ug/L	100.84
Carbon Tetrachloride	20	20.20 ug/L	101.01
Benzene	20	21.19 ug/L	105.96
1,2-Dichloroethane	20	22.08 ug/L	110.40
Trichloroethene	20	20.02 ug/L	100.11
1,2-Dichloropropane	20	21.17 ug/L	105.83
Bromodichloromethane	20	21.33 ug/L	106.64
2-Chloroethyl vinyl ether	20	21.91 ug/L	109.54
cis-1,3-Dichloropropene	20	19.99 ug/L	99.94
4-Methyl-2-Pentanone	20	20.56 ug/L	102.81
Toluene	20	21.32 ug/L	106.62
trans-1,3-Dichloropropene	20	20.54 ug/L	102.70
1,1,2-Trichloroethane	20	21.37 ug/L	106.86
Tetrachloroethene	20	20.67 ug/L	103.36
2-Hexanone	20	17.88 ug/L	89.42
Dibromochloromethane	20	20.52 ug/L	102.61
Chlorobenzene	20	21.05 ug/L	105.26
Ethylbenzene	20	21.31 ug/L	106.55
m+p-Xylenes	40	42.40 ug/L	106.01
o-Xylene	20	20.81 ug/L	104.04
Styrene	20	21.50 ug/L	107.50
Bromoform	20	20.96 ug/L	104.79
1,1,2,2-Tetrachloroethane	20	20.96 ug/L	104.78
1,3-Dichlorobenzene	20	20.22 ug/L	101.10
1,4-Dichlorobenzene	20	20.69 ug/L	103.46
1,2-Dichlorobenzene	20	20.56 ug/L	102.81

Volatile Matrix Spike Duplicate Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC005429.D**	Sample Name	**16016.05 MSD**
Date Aquired	**3-Apr-01**	Field ID	**16016.05 MSD**

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	191.89 ug/L	95.94
Acrylonitrile	200	215.83 ug/L	107.92
tert-Butyl alcohol	200	181.57 ug/L	90.79
Methyl-tert-Butyl ether	20	19.26 ug/L	96.29
Di-isopropyl ether	20	19.11 ug/L	95.57
Dichlorodifluoromethane	20	19.04 ug/L	95.20
Chloromethane	20	21.05 ug/L	105.26
Vinyl Chloride	20	22.06 ug/L	110.30
Bromomethane	20	20.16 ug/L	100.81
Chloroethane	20	20.37 ug/L	101.84
Trichlorofluoromethane	20	20.18 ug/L	100.89
1,1-Dichloroethene	20	20.54 ug/L	102.69
Acetone	20	15.95 ug/L	79.76
Carbon Disulfide	20	19.97 ug/L	99.84
Methylene Chloride	20	20.68 ug/L	103.42
trans-1,2-Dichloroethene	20	20.63 ug/L	103.17
1,1-Dichloroethane	20	20.91 ug/L	104.53
Vinyl Acetate	20	22.39 ug/L	111.96
2-Butanone	20	15.38 ug/L	76.88
cis-1,2-Dichloroethene	20	20.59 ug/L	102.93
Chloroform	20	20.66 ug/L	103.29
1,1,1-Trichloroethane	20	19.74 ug/L	98.68
Carbon Tetrachloride	20	19.71 ug/L	98.55
Benzene	20	20.54 ug/L	102.69
1,2-Dichloroethane	20	21.95 ug/L	109.76
Trichloroethene	20	19.14 ug/L	95.69
1,2-Dichloropropane	20	20.87 ug/L	104.34
Bromodichloromethane	20	20.56 ug/L	102.81
2-Chloroethyl vinyl ether	20	21.62 ug/L	108.12
cis-1,3-Dichloropropene	20	19.53 ug/L	97.65
4-Methyl-2-Pentanone	20	19.84 ug/L	99.22
Toluene	20	20.41 ug/L	102.07
trans-1,3-Dichloropropene	20	19.97 ug/L	99.86
1,1,2-Trichloroethane	20	20.57 ug/L	102.84
Tetrachloroethene	20	19.54 ug/L	97.71
2-Hexanone	20	16.69 ug/L	83.43
Dibromochloromethane	20	20.20 ug/L	100.99
Chlorobenzene	20	20.32 ug/L	101.58
Ethylbenzene	20	20.41 ug/L	102.06
m+p-Xylenes	40	40.59 ug/L	101.47
o-Xylene	20	19.98 ug/L	99.91
Styrene	20	20.46 ug/L	102.29
Bromoform	20	20.08 ug/L	100.41
1,1,2,2-Tetrachloroethane	20	20.22 ug/L	101.08
1,3-Dichlorobenzene	20	19.56 ug/L	97.80
1,4-Dichlorobenzene	20	20.04 ug/L	100.22
1,2-Dichlorobenzene	20	20.12 ug/L	100.61

4/5/01 9.53

D:\HPCHEM\CUSTRPT\VOLATILE\624MSD00.CRT

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16024 Location: B2337 SDG No.: _____

Lab File ID (Standard): VC005421.D Date Analyzed: 4/3/01

Instrument ID: VoaInst#3 Time Analyzed: 10:04

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1BCM AREA #	RT #	IS2DFB AREA #	RT #	IS3CBZ AREA #	RT #
	12 HOUR STD	1231950	16.69	8169202	19.41	2364226	27.25
	UPPER LIMIT	2463900	17.19	16338404	19.91	4728452	27.75
	LOWER LIMIT	615975	16.19	4084601	18.91	1182113	26.75
	FIELD ID:						
01	MB 1611	1106845	16.69	7353085	19.41	2105158	27.24
02	1612 MS	968331	16.69	6449950	19.41	1863426	27.25
03	1613 MSD	979500	16.69	6569113	19.41	1899539	27.25
04	TRIP BLANK	857325	16.69	5836359	19.41	1760496	27.25
05	FIELD BLANK	846512	16.69	5807271	19.41	1655823	27.24
06	DUPE	824803	16.69	5578327	19.42	1622278	27.25
07	BLDG2337GW	810878	16.69	5497138	19.42	1571879	27.25

IS1 BCM = Bromochloromethane
IS2 DFB = 1,4-Difluorobenzene
IS3 CBZ = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010403\VC005422.D Vial: 3
Acq On : 3 Apr 2001 11:06 am Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB 040301 Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Apr 3 11:44 2001 Quant Results File: M362438.RES

Quant Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Tue Apr 03 09:52:16 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010403\VC005421.D
DataAcq Meth : M362438

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	1106845	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.41	114	7353085	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	2105158	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	3459493	31.06	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 103.53%			
35) Toluene-d8	23.42	98	9067959	29.76	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 99.20%			
49) Bromofluorobenzene	30.25	95	3072898	26.90	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 89.67%			

Target Compounds Qvalue

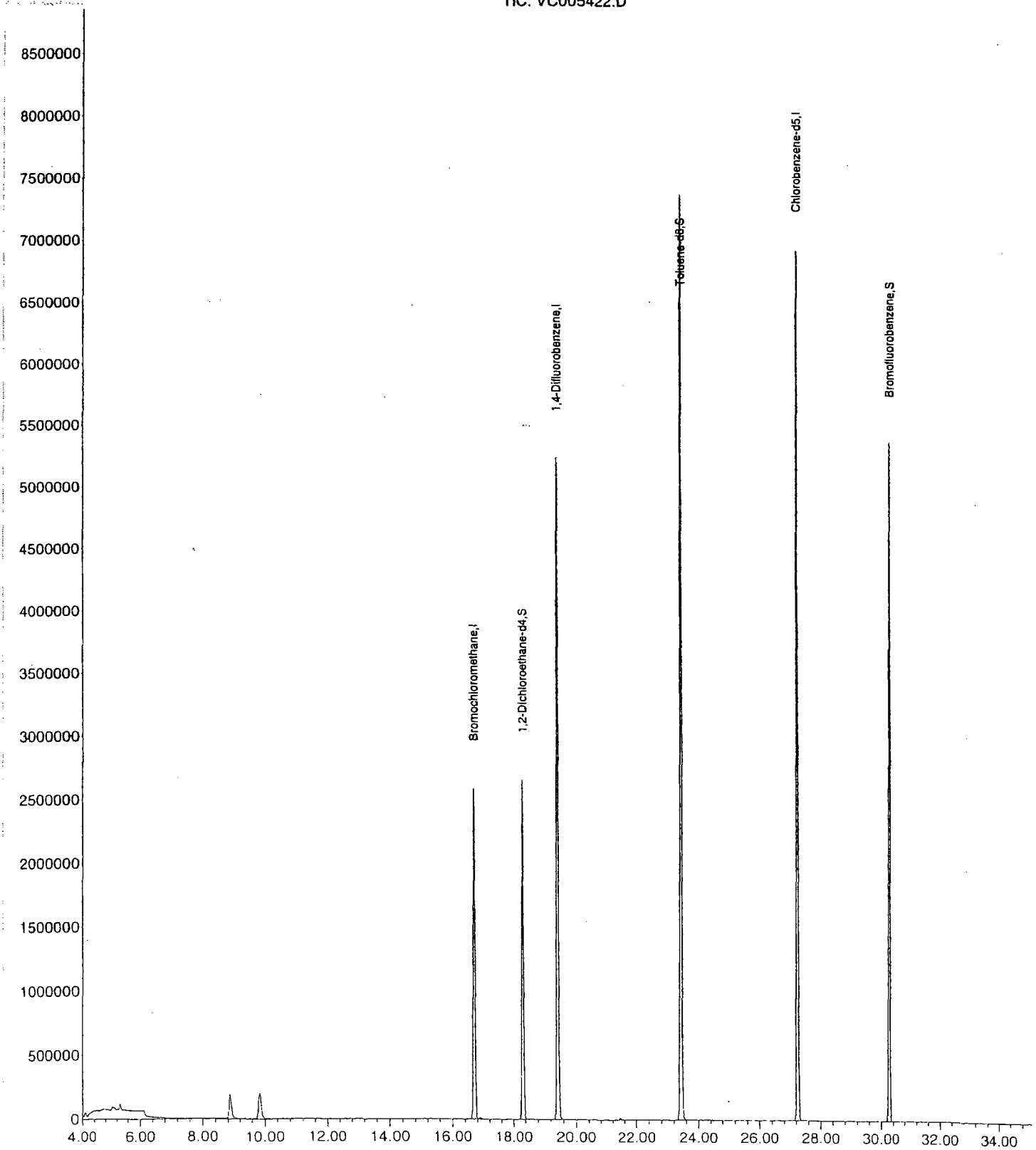
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010403\VC005422.D Vial: 3
Acq On : 3 Apr 2001 11:06 am Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB 040301 Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Apr 3 11:44 2001 Quant Results File: M362438.RES

Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Apr 04 09:25:25 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010403\VC005421.D

TIC: VC005422.D



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010403\VC005446.D Vial: 24
Acq On : 4 Apr 2001 3:38 am Operator: Skelton
Sample : 16024.01 Inst : GC/MS Ins
Misc : Trip Blank Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Apr 4 16:00 2001 Quant Results File: M362438.RES

Quant Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Tue Apr 03 09:52:16 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010403\VC005421.D
DataAcq Meth : M362438

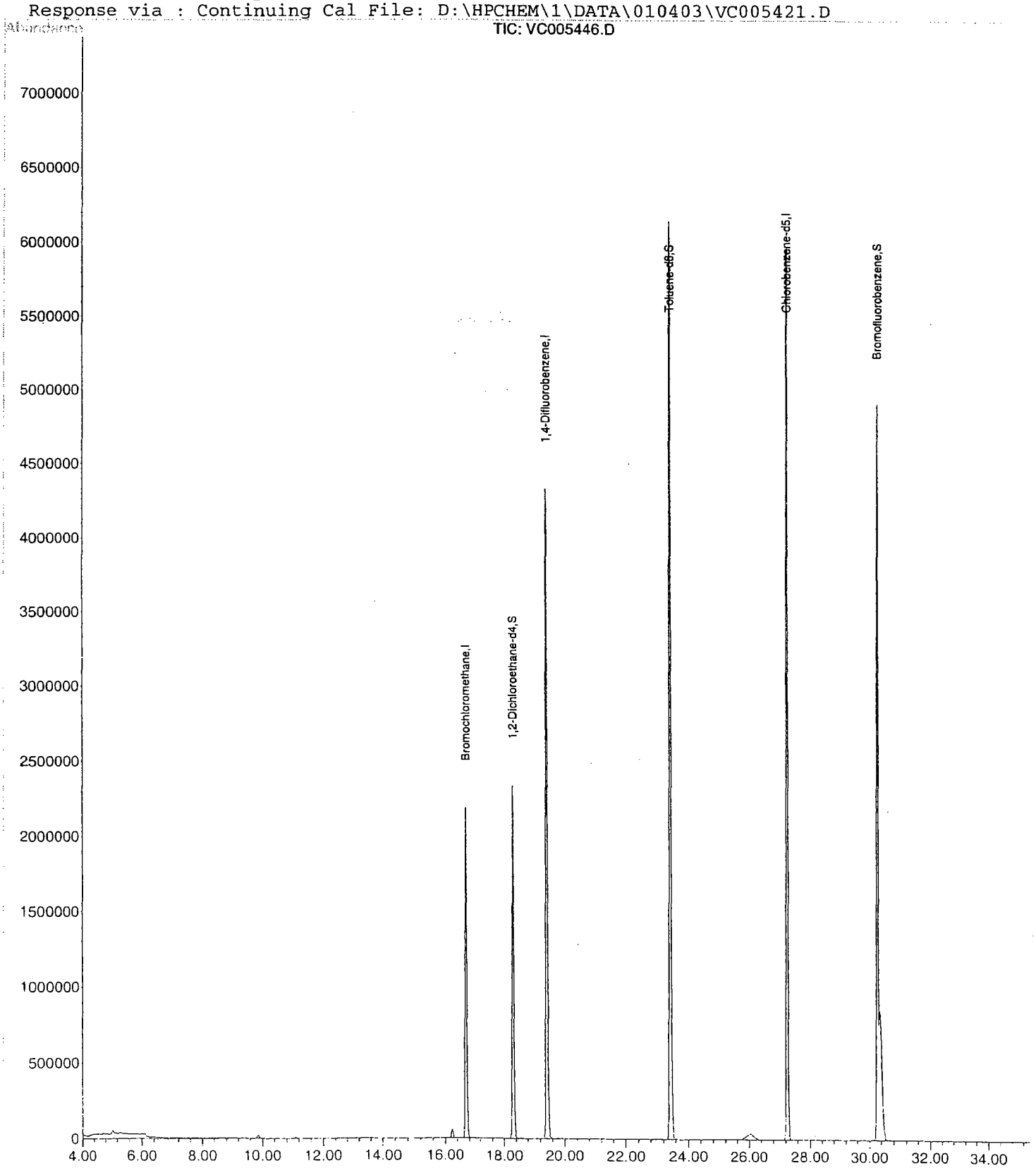
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	857325	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.41	114	5836359	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.25	119	1760496	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	3028097	35.10	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 117.00%			
35) Toluene-d8	23.42	98	7505700	31.03	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 103.43%			
49) Bromofluorobenzene	30.25	95	2637860	27.61	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 92.03%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
VC005446.D M362438.M Wed Apr 04 15:03:50 2001

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010403\VC005446.D Vial: 24
Acq On : 4 Apr 2001 3:38 am Operator: Skelton
Sample : 16024.01 Inst : GC/MS Ins
Misc : Trip Blank Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Apr 4 16:00 2001 Quant Results File: M362438.RES

Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Apr 04 09:25:25 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010403\VC005421.D



VC005446.D M362438.M Wed Apr 04 15:03:51 2001

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010403\VC005447.D Vial: 25
Acq On : 4 Apr 2001 4:20 am Operator: Skelton
Sample : 16024.02 Inst : GC/MS Ins
Misc : Field Blank Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Apr 4 16:00 2001 Quant Results File: M362438.RES

Quant Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Tue Apr 03 09:52:16 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010403\VC005421.D
DataAcq Meth : M362438

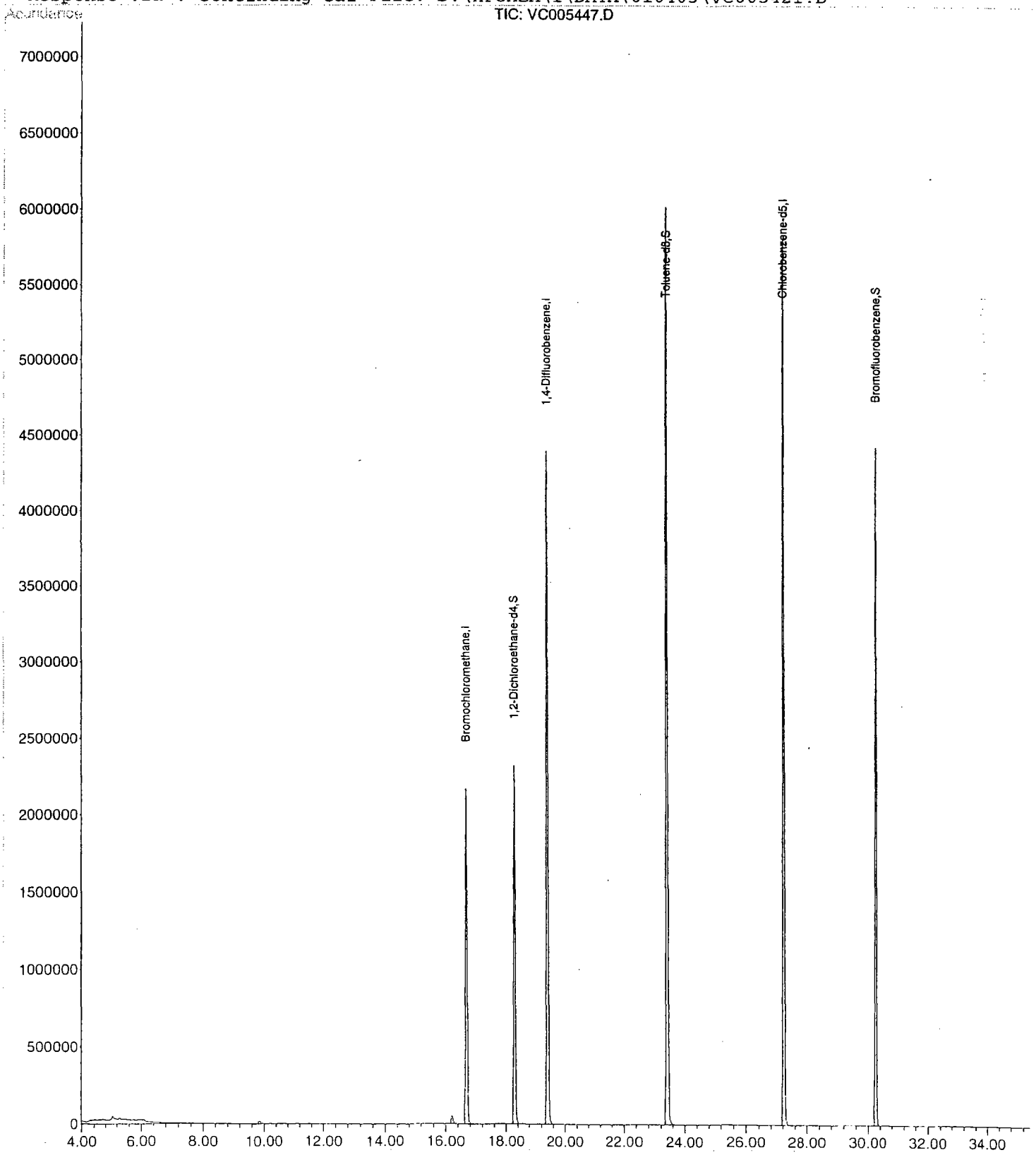
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	846512	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.41	114	5807271	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	1655823	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	3032040	35.59	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 118.63%			
35) Toluene-d8	23.42	98	7290152	30.29	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 100.97%			
49) Bromofluorobenzene	30.25	95	2388689	26.58	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 88.60%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
VC005447.D M362438.M Wed Apr 04 15:03:55 2001

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010403\VC005447.D Vial: 25
Acq On : 4 Apr 2001 4:20 am Operator: Skelton
Sample : 16024.02 Inst : GC/MS Ins
Misc : Field Blank Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Apr 4 16:00 2001 Quant Results File: M362438.RES

Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Apr 04 09:25:25 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010403\VC005421.D



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010403\VC005448.D Vial: 26
Acq On : 4 Apr 2001 5:00 am Operator: Skelton
Sample : 16024.03 Inst : GC/MS Ins
Misc : Dupe Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Apr 4 5:36 2001 Quant Results File: M362438.RES

Quant Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Tue Apr 03 09:52:16 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010403\VC005421.D
DataAcq Meth : M362438

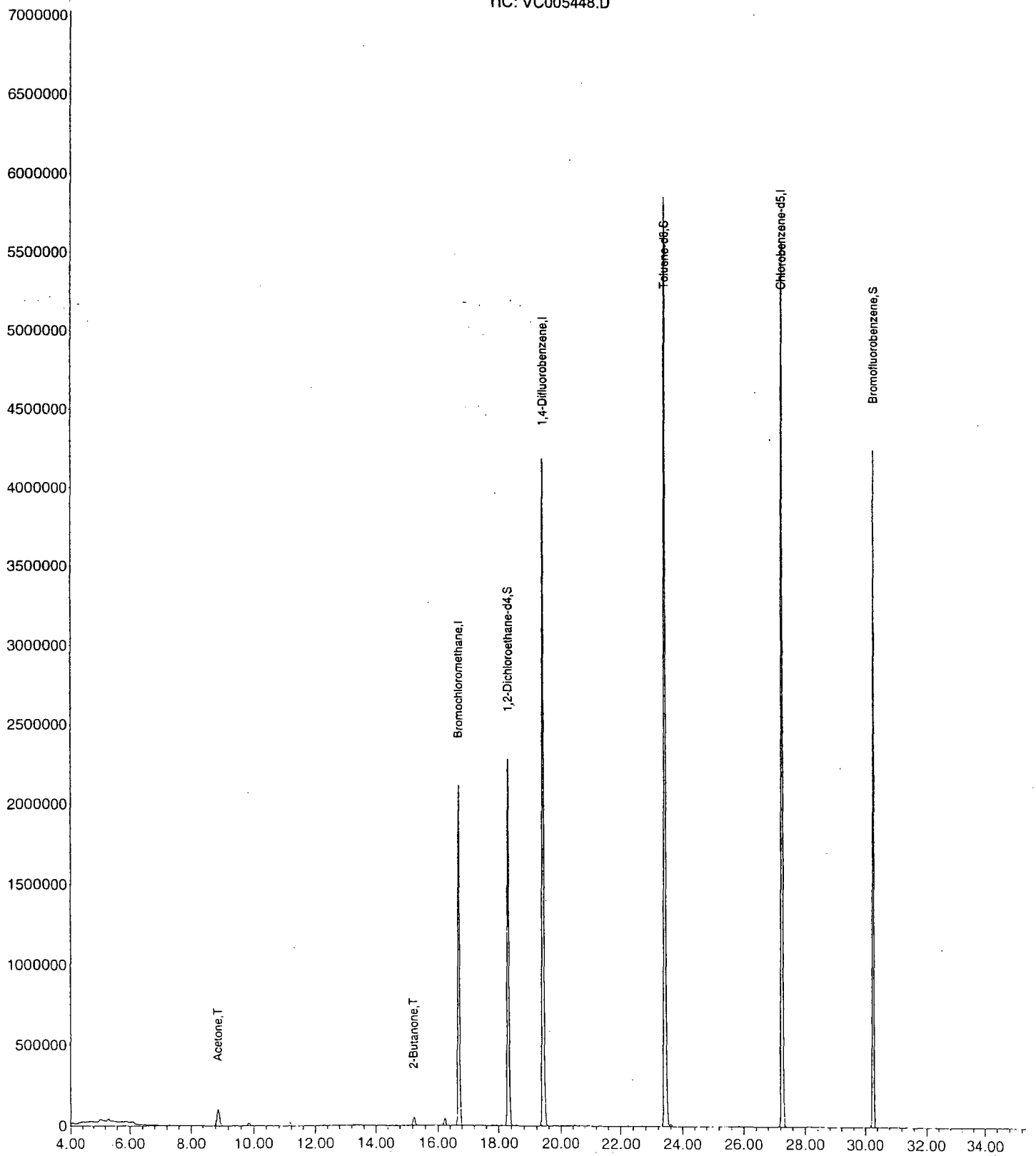
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	824803	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	5578327	30.00	ug/L	0.01
37) Chlorobenzene-d5	27.25	119	1622278	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	2963096	35.70	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 119.00%			
35) Toluene-d8	23.42	98	7041190	30.46	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 101.53%			
49) Bromofluorobenzene	30.25	95	2298504	26.11	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 87.03%			
Target Compounds						Qvalue
14) Acetone	8.87	43	419845	5.57	ug/L	92
20) 2-Butanone	15.24	43	198443	3.29	ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010403\VC005448.D Vial: 26
Acq On : 4 Apr 2001 5:00 am Operator: Skelton
Sample : 16024.03 Inst : GC/MS Ins
Misc : Dupe Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Apr 4 5:36 2001 Quant Results File: M362438.RES

Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Apr 04 09:25:25 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010403\VC005421.D



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010403\VC005449.D Vial: 27
Acq On : 4 Apr 2001 5:41 am Operator: Skelton
Sample : 16024.04 Inst : GC/MS Ins
Misc : Bldg2337GW Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Apr 4 6:16 2001 Quant Results File: M362438.RES

Quant Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Tue Apr 03 09:52:16 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010403\VC005421.D
DataAcq Meth : M362438

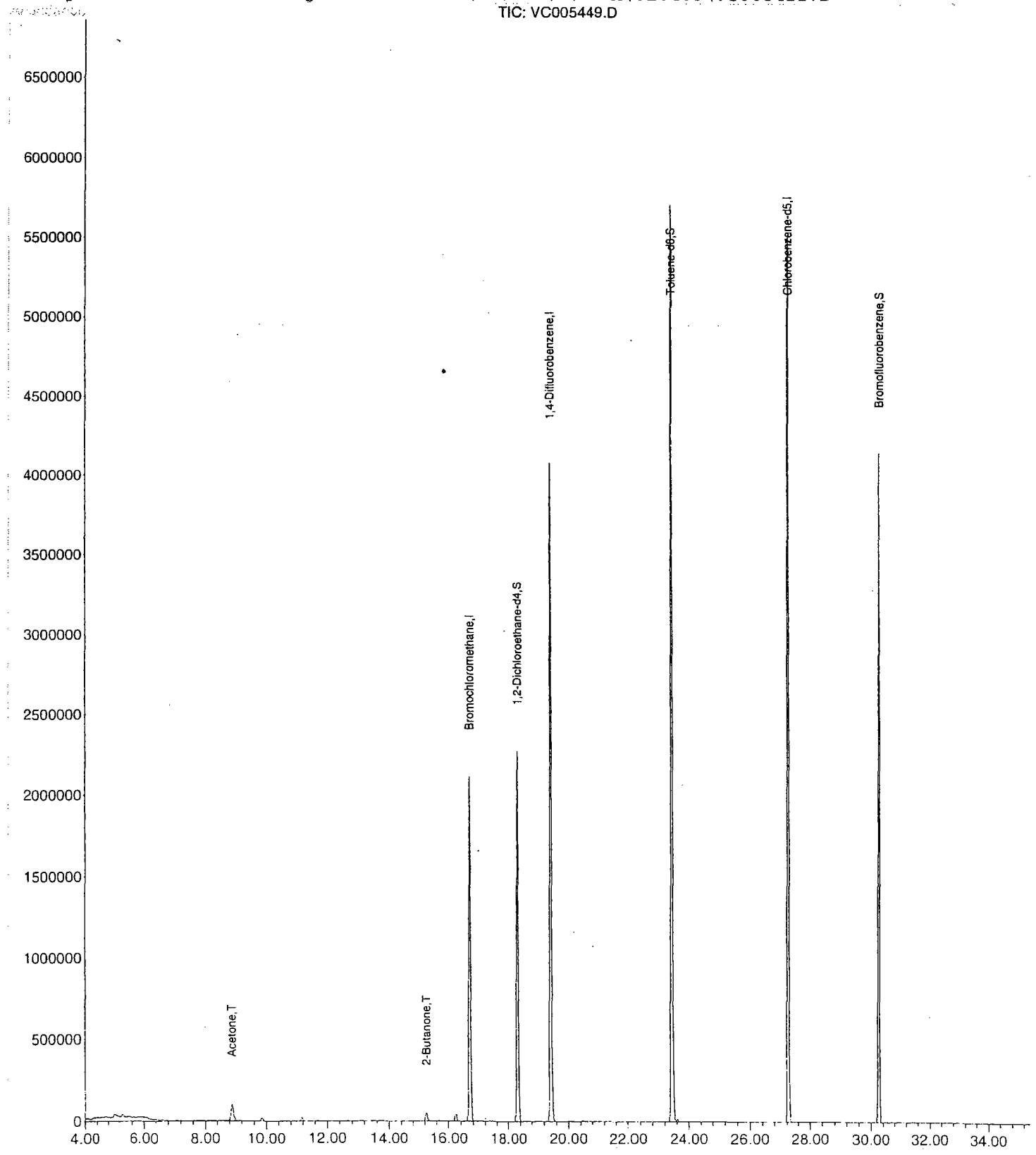
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	810878	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	5497138	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.25	119	1571879	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	2918186	35.76	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 119.20%			
35) Toluene-d8	23.42	98	7013354	30.78	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 102.60%			
49) Bromofluorobenzene	30.25	95	2251990	26.40	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 88.00%			
Target Compounds						Qvalue
14) Acetone	8.87	43	419238	5.66	ug/L	88
20) 2-Butanone	15.25	43	203278	3.43	ug/L	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010403\VC005449.D Vial: 27
Acq On : 4 Apr 2001 5:41 am Operator: Skelton
Sample : 16024.04 Inst : GC/MS Ins
Misc : Bldg2337GW Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Apr 4 6:16 2001 Quant Results File: M362438.RES

Method : D:\HPCHEM\1\METHODS\M362438.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Apr 04 09:25:25 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010403\VC005421.D



SEMI-VOLATILES

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05201.D**	Sample Name	**MB-1625**
Operator	**Bhaskar**	Misc Info	**MB-010406**
Date Acquired	**10-Apr-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate	18.48	56454	1.81 ug/L	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA05201.D**	Sample Name	**MB-1625**
Operator	**Bhaskar**	Misc Info	**MB-010406**
Date Acquired	**10-Apr-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	2.15	ug/L	
129-00-0	Pyrene			not detected	200	1.53	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.24	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	2.68	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.60	ug/L	
218-01-9	Chrysene			not detected	20	1.14	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.34	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.32	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.15	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	2.43	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.24	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.94	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	2.04	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **MB-1625**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MB-1625

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05201.D

Level: (low/med) LOW Date Received: 3/31/01

% Moisture: _____ decanted: (Y/N) N Date Extracted: 4/6/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/10/01

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05204.D**	Sample Name	**1602402**
Operator	**Bhaskar**	Misc Info	**Field Blank**
Date Acquired	**10-Apr-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA05204.D**	Sample Name	**1602402**
Operator	**Bhaskar**	Misc Info	**Field Blank**
Date Acquired	**10-Apr-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	2.15	ug/L	
129-00-0	Pyrene			not detected	200	1.53	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.24	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	2.68	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.60	ug/L	
218-01-9	Chrysene			not detected	20	1.14	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.34	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.32	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.15	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	2.43	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.24	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.94	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	2.04	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **Field Blank**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1602402

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05204.D

Level: (low/med) LOW Date Received: 3/31/01

% Moisture: decanted: (Y/N) N Date Extracted: 4/6/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/10/01

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA05205.D**	Sample Name	**1602403**
Operator	**Bhaskar**	Misc Info	**Dupe**
Date Acquired	**10-Apr-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	2.15	ug/L	
129-00-0	Pyrene			not detected	200	1.53	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.24	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	2.68	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.60	ug/L	
218-01-9	Chrysene			not detected	20	1.14	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.34	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.32	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.15	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	2.43	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.24	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.94	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	2.04	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **Dupe**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1602403

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05205.D

Level: (low/med) LOW Date Received: 3/31/01

% Moisture: decanted: (Y/N) N Date Extracted: 4/6/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/10/01

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05206.D**	Sample Name	**1602404**
Operator	**Bhaskar**	Misc Info	**Bldg.2337 GW**
Date Acquired	**10-Apr-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA05206.D**	Sample Name	**1602404**
Operator	**Bhaskar**	Misc Info	**Bldg.2337 GW**
Date Acquired	**10-Apr-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	2.15	ug/L	
129-00-0	Pyrene			not detected	200	1.53	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.24	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	2.68	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.60	ug/L	
218-01-9	Chrysene			not detected	20	1.14	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.34	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.32	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.15	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	2.43	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.24	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.94	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	2.04	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **Bldg.2337**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 1602404

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05206.D

Level: (low/med) LOW Date Received: 3/31/01

% Moisture: _____ decanted: (Y/N) N Date Extracted: 4/6/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/10/01

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.:

Lab File ID: BNA05123.D DFTPP Injection Date: 3/27/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 8:44

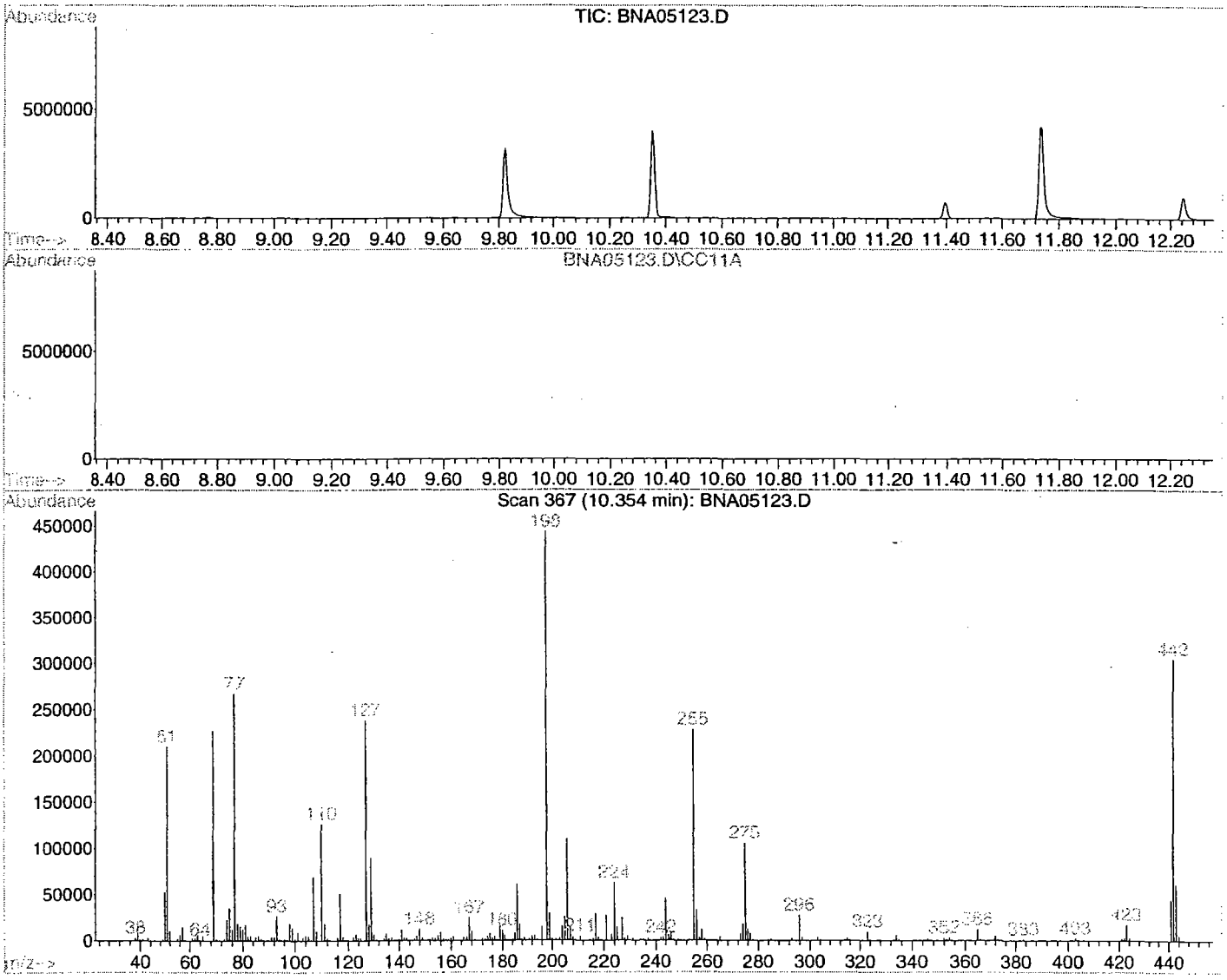
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	47.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	51.3
70	Less than 2.0% of mass 69	0.4 (0.8)1
127	25.0 - 75.0% of mass 198	53.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	23.7
365	Greater than 0.75% of mass 198	2.7
441	Present, but less than mass 443	10.0
442	40.0 - 110.0% of mass 198	68.7
443	15.0 - 24.0% of mass 442	13.7 (19.9)2

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

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

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD120	120 PPM CAL	BNA05124.D	3/27/01	9:08
02	SSTD010	10 PPM CAL	BNA05125.D	3/27/01	9:55
03	SSTD050	50 PPM CAL	BNA05126.D	3/27/01	10:42
04	SSTD080	80 PPM CAL	BNA05127.D	3/27/01	11:28
05	SSTD020	20 PPM CAL	BNA05128.D	3/27/01	12:13

Data File : D:\DATA\010327\BNA05123.D Vial: 99
Acq On : 27 Mar 2001 8:44 am Operator: Bhaskar
Sample : DFTPP TUNE Inst : GC/MS Ins
Misc : 50 NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Scan 367

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	47.4	210304	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	51.3	227520	PASS
70	69	0.00	2	0.8	1892	PASS
127	198	40	60	53.7	238528	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	443904	PASS
199	198	5	9	6.6	29456	PASS
275	198	10	30	23.7	105416	PASS
365	198	1	100	2.7	12022	PASS
441	443	1	99	73.0	44304	PASS
442	198	40	100	68.7	305152	PASS
443	442	17	23	19.9	60680	PASS

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration

Calibration Files
120 =BNA05124.D 80 =BNA05127.D 50 =BNA05126.D
20 =BNA05128.D 10 =BNA05125.D

		Compound	120	80	50	20	10	Avg	%RSD
1)	I	1,4-Dichlorobenzene-d	----------ISTD----------						
2)	T	Pyridine	1.463	1.406	1.422	1.443	1.442	1.435	1.51
3)	T	N-nitroso-dimethylami	0.781	0.744	0.751	0.733	0.740	0.750	2.47
4)	S	2-Fluorophenol	1.158	1.132	1.141	1.133	1.124	1.137	1.13
5)	T	Aniline	1.794	1.806	1.875	1.892	1.891	1.852	2.57
6)	S	Phenol-d6	1.412	1.409	1.440	1.456	1.453	1.434	1.56
7)	TCM	Phenol	1.590	1.610	1.683	1.694	1.713	1.658	3.28
8)	T	bis(2-Chloroethyl)eth	1.192	1.165	1.186	1.231	1.228	1.201	2.37
9)	TM	2-Chlorophenol	1.154	1.146	1.172	1.191	1.186	1.170	1.66
10)	T	1,3-Dichlorobenzene	1.223	1.237	1.278	1.304	1.339	1.276	3.75
11)	TCM	1,4-Dichlorobenzene	1.235	1.256	1.305	1.344	1.379	1.304	4.59
12)	T	Benzyl alcohol	0.775	0.763	0.777	0.748	0.747	0.762	1.87
13)	T	1,2-Dichlorobenzene	1.117	1.134	1.197	1.242	1.280	1.194	5.79
14)	T	2-Methylphenol	1.051	1.047	1.081	1.098	1.107	1.077	2.50
15)	T	bis(2-chloroisopropyl	1.215	1.194	1.233	1.244	1.288	1.235	2.83
16)	T	4-Methylphenol	1.085	1.101	1.143	1.156	1.147	1.126	2.78
17)	TPM	n-Nitroso-di-n-propyl	0.187	0.192	0.195	0.195	0.188	0.191	1.93
18)	T	Hexachloroethane	0.489	0.488	0.499	0.503	0.514	0.498	2.16
19)	I	Naphthalene-d8	----------ISTD----------						
20)	S	Nitrobenzene-d5	0.399	0.393	0.401	0.404	0.412	0.402	1.70
21)	T	Nitrobenzene	0.389	0.391	0.400	0.411	0.424	0.403	3.62
22)	T	Isophorone	0.668	0.657	0.669	0.684	0.701	0.676	2.54
23)	TC	2-Nitrophenol	0.185	0.185	0.185	0.185	0.178	0.184	1.82
24)	T	2,4-Dimethylphenol	0.330	0.328	0.337	0.345	0.353	0.339	3.12
25)	T	bis(2-Chloroethoxy)me	0.388	0.389	0.397	0.409	0.412	0.399	2.74
26)	TC	2,4-Dichlorophenol	0.242	0.245	0.249	0.234	0.208	0.235	6.97
27)	T	Benzoic Acid	0.259	0.240	0.219	0.216	0.198	0.226	10.40
28)	TM	1,2,4-Trichlorobenzen	0.271	0.276	0.286	0.297	0.306	0.287	5.12
29)	T	Naphthalene	0.813	0.882	0.948	1.011	1.054	0.942	10.28
30)	T	4-Chloroaniline	0.357	0.377	0.388	0.389	0.384	0.379	3.44
31)	TC	Hexachlorobutadiene	0.147	0.153	0.159	0.165	0.170	0.159	6.03
32)	TCM	4-Chloro-3-methylphen	0.287	0.289	0.294	0.290	0.288	0.289	0.93
33)	T	2-Methylnaphthalene	0.554	0.579	0.614	0.644	0.666	0.612	7.47
34)	I	Acenaphthene-d10	----------ISTD----------						
35)	TP	Hexachlorocyclopentad	0.255	0.261	0.251	0.214	0.167	0.230	17.16
36)	TC	2,4,6-Trichlorophenol	0.307	0.312	0.320	0.317	0.313	0.314	1.58
37)	T	2,4,5-Trichlorophenol	0.337	0.338	0.346	0.326	0.315	0.332	3.58
38)	S	2-Fluorobiphenyl	0.986	1.046	1.128	1.184	1.222	1.113	8.73
39)	T	2-Chloronaphthalene	0.884	0.917	0.965	1.011	1.029	0.961	6.37
40)	T	2-Nitroaniline	0.370	0.366	0.375	0.360	0.345	0.363	3.21
41)	T	Dimethylphthalate	1.010	1.049	1.104	1.148	1.172	1.097	6.17
42)	T	Acenaphthylene	1.345	1.438	1.568	1.680	1.734	1.553	10.46
43)	T	2,6-Dinitrotoluene	0.266	0.270	0.285	0.291	0.295	0.281	4.59
44)	T	3-Nitroaniline	0.263	0.279	0.289	0.289	0.280	0.280	3.86
45)	TCM	Acenaphthene	0.892	0.925	0.986	1.031	1.065	0.980	7.32
46)	TP	2,4-Dinitrophenol	0.186	0.177	0.164	0.124	0.096	0.149	25.46
47)	T	Dibenzofuran	1.169	1.233	1.341	1.417	1.470	1.326	9.43
48)	TMP	4-Nitrophenol	0.239	0.203	0.198	0.199	0.186	0.205	9.69
49)	TM	2,4-Dinitrotoluene	0.356	0.355	0.362	0.366	0.354	0.359	1.40
50)	T	Diethylphthalate	1.025	1.063	1.120	1.162	1.196	1.113	6.27
51)	T	Fluorene	0.998	1.040	1.117	1.173	1.206	1.107	7.92
52)	T	4-Chlorophenyl-phenyl	0.489	0.507	0.534	0.549	0.564	0.529	5.75
53)	T	4-Nitroaniline	0.296	0.288	0.291	0.283	0.292	0.290	1.74
54)	I	Phenanthrene-d10	----------ISTD----------						

(#) = Out of Range

00005

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration

Calibration Files
120 =BNA05124.D 80 =BNA05127.D 50 =BNA05126.D
20 =BNA05128.D 10 =BNA05125.D

		Compound	120	80	50	20	10	Avg	%RSD
55)	T	4,6-Dinitro-2-methylp	0.143	0.142	0.139	0.129	0.114	0.133	9.09
56)	TC	n-Nitrosodiphenylamin	0.435	0.452	0.471	0.496	0.510	0.473	6.47
57)	T	Azobenzene	0.729	0.777	0.819	0.855	0.879	0.812	7.39
58)	S	2,4,6-Tribromophenol	0.090	0.090	0.091	0.090	0.089	0.090	0.84
59)	T	4-Bromophenyl-phenyle	0.172	0.175	0.182	0.190	0.194	0.182	5.12
60)	T	Hexachlorobenzene	0.184	0.188	0.193	0.202	0.212	0.196	5.74
61)	TCM	Pentachlorophenol	0.124	0.123	0.122	0.109	0.103	0.116	8.31
62)	T	Phenanthrene	0.841	0.901	0.974	1.046	1.102	0.973	10.83
63)	T	Anthracene	0.863	0.922	0.991	1.063	1.107	0.989	10.08
64)	T	Di-n-butylphthalate	0.955	1.039	1.108	1.177	1.200	1.096	9.21
65)	TC	Fluoranthene	0.895	0.950	1.019	1.096	1.136	1.019	9.80
66)	I	Chrysene-d12	----------ISTD----------						
67)	T	Benzidine	0.361	0.366	0.394	0.424	0.434	0.396	8.29
68)	TM	Pyrene	1.050	1.100	1.153	1.229	1.263	1.159	7.59
69)	S	p-Terphenyl-d14	0.751	0.772	0.793	0.823	0.844	0.797	4.74
70)	T	Butylbenzylphthalate	0.562	0.570	0.574	0.574	0.565	0.569	0.96
71)	T	Benzo[a]anthracene	1.023	1.057	1.094	1.125	1.162	1.092	5.02
72)	T	3,3'-Dichlorobenzidin	0.334	0.346	0.353	0.368	0.366	0.354	4.06
73)	T	Chrysene	0.964	1.001	1.031	1.071	1.116	1.037	5.74
74)	T	bis(2-Ethylhexyl)phth	0.760	0.780	0.791	0.792	0.772	0.779	1.72
75)	I	Perylene-d12	----------ISTD----------						
76)	TC	Di-n-octylphthalate	1.214	1.325	1.400	1.410	1.374	1.345	5.98
77)	T	Benzo[b]fluoranthene	1.045	1.067	1.130	1.144	1.184	1.114	5.12
78)	T	Benzo[k]fluoranthene	1.001	1.043	1.117	1.192	1.220	1.115	8.40
79)	TC	Benzo[a]pyrene	0.993	1.031	1.084	1.117	1.139	1.073	5.65
80)	T	Indeno[1,2,3-cd]pyren	1.131	1.093	1.092	1.069	1.043	1.086	3.01
81)	T	Dibenz[a,h]anthracene	1.065	1.095	1.119	1.128	1.111	1.104	2.24
82)	T	Benzo[g,h,i]perylene	1.073	1.079	1.100	1.107	1.120	1.096	1.77

(#) = Out of Range

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.:

Lab File ID: BNA05179.D DFTPP Injection Date: 4/5/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 13:59

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	45.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	50.1
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	25.0 - 75.0% of mass 198	53.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	24.4
365	Greater than 0.75% of mass 198	2.7
441	Present, but less than mass 443	9.4
442	40.0 - 110.0% of mass 198	64.3
443	15.0 - 24.0% of mass 442	12.7 (19.8)2

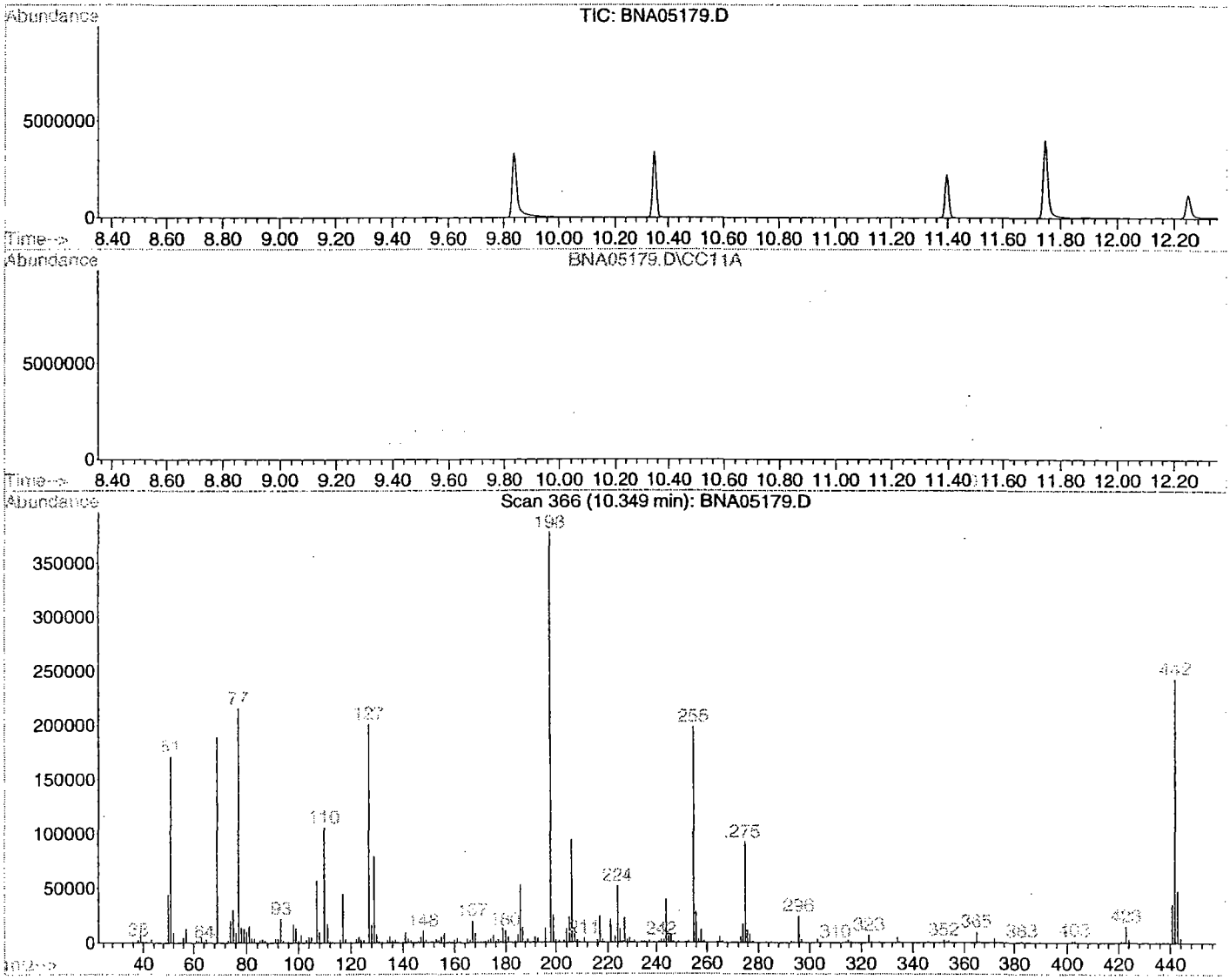
1-Value is % mass 69 2-Value is % mass 442

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

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	DAILY CAL	BNA05180.D	4/5/01	14:23
02	MS-1619	MS-1619	BNA05184.D	4/5/01	17:27
03	MSD-1620	MSD-1620	BNA05185.D	4/5/01	18:13

000060

Data File : D:\DATA\010405\BNA05179.D Vial: 99
Acq On : 5 Apr 2001 1:59 pm Operator: Bhaskar
Sample : DFTPP TUNE Inst : GC/MS Ins
Misc : 50 NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Scan 366

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	45.3	171264	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	50.1	189440	PASS
70	69	0.00	2	0.6	1144	PASS
127	198	40	60	53.2	201344	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	378304	PASS
199	198	5	9	6.7	25264	PASS
275	198	10	30	24.4	92256	PASS
365	198	1	100	2.7	10098	PASS
441	443	1	99	73.8	35472	PASS
442	198	40	100	64.3	243200	PASS
443	442	17	23	19.8	48064	PASS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.:

Lab File ID: BNA05199.D DFTPP Injection Date: 4/10/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 9:23

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	45.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	49.1
70	Less than 2.0% of mass 69	0.5 (1.1)1
127	25.0 - 75.0% of mass 198	55.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	25.0
365	Greater than 0.75% of mass 198	3.0
441	Present, but less than mass 443	10.7
442	40.0 - 110.0% of mass 198	70.3
443	15.0 - 24.0% of mass 442	13.6 (19.4)2

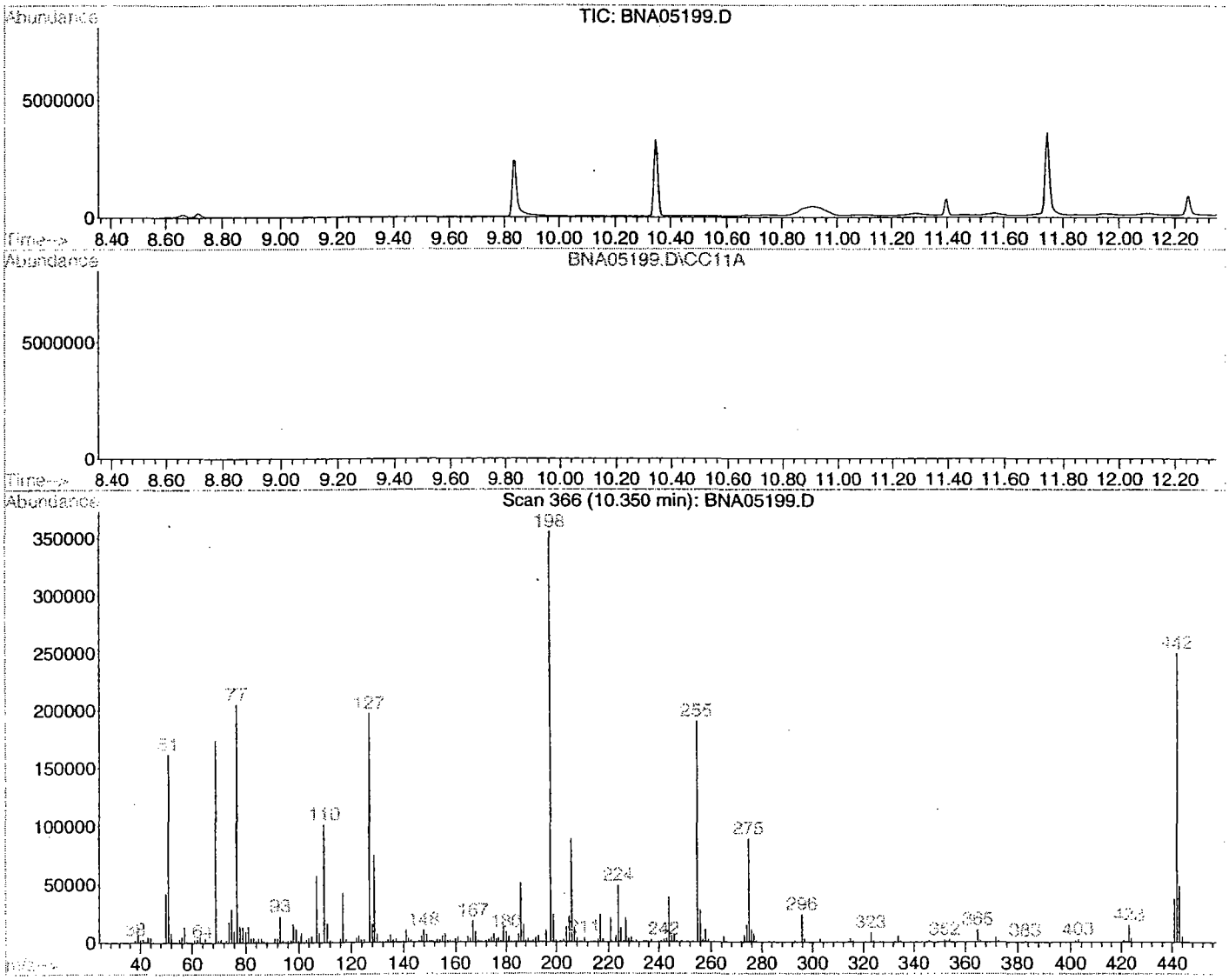
1-Value is % mass 69 2-Value is % mass 442

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

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	DAILY CAL	BNA05200.D	4/10/01	9:47
02	MB-1625	MB-1625	BNA05201.D	4/10/01	10:34
03	FIELD BLANK	1602402	BNA05204.D	4/10/01	13:39
04	DUPE	1602403	BNA05205.D	4/10/01	14:25
05	BLDG.2337	1602404	BNA05206.D	4/10/01	15:12

CLP

Data File : D:\DATA\010410\BNA05199.D Vial: 99
Acq On : 10 Apr 2001 9:23 am Operator: Bhaskar
Sample : DFTPP TUNE Inst : GC/MS Ins
Misc : 50 NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Scan 366

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	45.6	162240	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	49.1	174592	PASS
70	69	0.00	2	1.1	1878	PASS
127	198	40	60	55.6	197632	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	355648	PASS
199	198	5	9	6.7	23888	PASS
275	198	10	30	25.0	88736	PASS
365	198	1	100	3.0	10805	PASS
441	443	1	99	78.5	37984	PASS
442	198	40	100	70.3	250048	PASS
443	442	17	23	19.4	48416	PASS

Evaluate Continuing Calibration Report

Data File : D:\DATA\010410\BNA05200.D Vial: 100
Acq On : 10 Apr 2001 9:47 am Operator: Bhaskar
Sample : DAILY CAL Inst : GC/MS Ins
Misc : 50 PPM STD Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	74	0.00
2	T	Pyridine	1.435	1.259	12.3	65	0.00
3	T	N-nitroso-dimethylamine	0.750	0.692	7.7	68	0.01
4	S	2-Fluorophenol	1.137	1.097	3.5	71	0.14
5	T	Aniline	1.852	1.401	24.4	55	0.04
6	S	Phenol-d6	1.434	1.416	1.3	72	0.17
7	TCM	Phenol	1.658	1.551	6.5	68	0.17
8	T	bis(2-Chloroethyl)ether	1.201	1.226	-2.1	76	0.00
9	TM	2-Chlorophenol	1.170	1.151	1.6	72	0.07
10	T	1,3-Dichlorobenzene	1.276	1.268	0.6	73	0.00
11	TCM	1,4-Dichlorobenzene	1.304	1.299	0.4	73	0.00
12	T	Benzyl alcohol	0.762	0.720	5.5	68	0.05
13	T	1,2-Dichlorobenzene	1.194	1.208	-1.2	74	0.00
14	T	2-Methylphenol	1.077	1.067	0.9	73	0.12
15	T	bis(2-chloroisopropyl)ether	1.235	1.109	10.2	66	0.00
16	T	4-Methylphenol	1.126	1.114	1.1	72	0.13
17	TPM	n-Nitroso-di-n-propylamine	0.191	0.193	-1.0	73	0.00
18	T	Hexachloroethane	0.498	0.492	1.2	73	0.00
19	I	Naphthalene-d8	1.000	1.000	0.0	74	0.00
20	S	Nitrobenzene-d5	0.402	0.403	-0.2	74	0.01
21	T	Nitrobenzene	0.403	0.397	1.5	73	0.00
22	T	Isophorone	0.676	0.650	3.8	72	0.01
23	TC	2-Nitrophenol	0.184	0.183	0.5	73	0.00
24	T	2,4-Dimethylphenol	0.339	0.338	0.3	74	0.08
25	T	bis(2-Chloroethoxy)methane	0.399	0.378	5.3	70	0.00
26	TC	2,4-Dichlorophenol	0.235	0.262	-11.5	78	0.07
27	T	Benzoic Acid	0.226	0.182	19.5	61	0.09
28	TM	1,2,4-Trichlorobenzene	0.287	0.287	0.0	74	0.00
29	T	Naphthalene	0.942	0.952	-1.1	74	0.00
30	T	4-Chloroaniline	0.379	0.268	29.3#	51	0.04
31	TC	Hexachlorobutadiene	0.159	0.164	-3.1	76	0.00
32	TCM	4-Chloro-3-methylphenol	0.289	0.293	-1.4	73	0.12
33	T	2-Methylnaphthalene	0.612	0.620	-1.3	74	0.00
34	I	Acenaphthene-d10	1.000	1.000	0.0	75	0.00
35	TP	Hexachlorocyclopentadiene	0.230	0.270	-17.4	81	0.00
36	TC	2,4,6-Trichlorophenol	0.314	0.321	-2.2	75	0.04
37	T	2,4,5-Trichlorophenol	0.332	0.330	0.6	71	0.09
38	S	2-Fluorobiphenyl	1.113	1.131	-1.6	75	0.00
39	T	2-Chloronaphthalene	0.961	0.957	0.4	74	0.00
40	T	2-Nitroaniline	0.363	0.367	-1.1	73	0.04
41	T	Dimethylphthalate	1.097	1.090	0.6	74	0.00
42	T	Acenaphthylene	1.553	1.591	-2.4	76	0.00
43	T	2,6-Dinitrotoluene	0.281	0.291	-3.6	76	0.01
44	T	3-Nitroaniline	0.280	0.230	17.9	59	0.05
45	TCM	Acenaphthene	0.980	0.983	-0.3	74	0.00
46	TP	2,4-Dinitrophenol	0.149	0.155	-4.0	71	0.03
47	T	Dibenzofuran	1.326	1.341	-1.1	75	0.00
48	TMP	4-Nitrophenol	0.205	0.221	-7.8	83	0.18
49	TM	2,4-Dinitrotoluene	0.359	0.353	1.7	73	0.02
50	T	Diethylphthalate	1.113	1.150	-3.3	77	0.00
51	T	Fluorene	1.107	1.126	-1.7	75	0.00
52	T	4-Chlorophenyl-phenylether	0.529	0.532	-0.6	75	0.00
53	T	4-Nitroaniline	0.290	0.258	11.0	66	0.06

(#) = Out of Range

000084

Evaluate Continuing Calibration Report

Data File : D:\DATA\010410\BNA05200.D Vial: 100
Acq On : 10 Apr 2001 9:47 am Operator: Bhaskar
Sample : DAILY CAL Inst : GC/MS Ins
Misc : 50 PPM STD Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
54	I	Phenanthrene-d10	1.000	1.000	0.0	75	0.00
55	T	4,6-Dinitro-2-methylphenol	0.133	0.129	3.0	70	0.02
56	TC	n-Nitrosodiphenylamine	0.473	0.462	2.3	74	0.02
57	T	Azobenzene	0.812	0.797	1.8	73	0.00
58	S	2,4,6-Tribromophenol	0.090	0.090	0.0	74	0.03
59	T	4-Bromophenyl-phenylether	0.182	0.182	0.0	75	0.00
60	T	Hexachlorobenzene	0.196	0.192	2.0	75	0.00
61	TCM	Pentachlorophenol	0.116	0.104	10.3	64	0.04
62	T	Phenanthrene	0.973	0.982	-0.9	76	0.00
63	T	Anthracene	0.989	0.997	-0.8	76	0.00
64	T	Di-n-butylphthalate	1.096	1.097	-0.1	74	0.00
65	TC	Fluoranthene	1.019	1.025	-0.6	75	0.00
66	I	Chrysene-d12	1.000	1.000	0.0	77	0.00
67	T	Benzidine	0.396	0.231	41.7#	45#	0.03
68	TM	Pyrene	1.159	1.129	2.6	76	0.00
69	S	p-Terphenyl-d14	0.797	0.758	4.9	74	0.00
70	T	Butylbenzylphthalate	0.569	0.546	4.0	74	0.00
71	T	Benzo[a]anthracene	1.092	1.059	3.0	75	0.00
72	T	3,3'-Dichlorobenzidine	0.354	0.351	0.8	77	0.02
73	T	Chrysene	1.037	0.996	4.0	75	0.00
74	T	bis(2-Ethylhexyl)phthalate	0.779	0.746	4.2	73	0.00
75	I	Perylene-d12	1.000	1.000	0.0	74	0.00
76	TC	Di-n-octylphthalate	1.345	1.399	-4.0	74	0.00
77	T	Benzo[b]fluoranthene	1.114	1.131	-1.5	74	0.00
78	T	Benzo[k]fluoranthene	1.115	1.122	-0.6	74	0.00
79	TC	Benzo[a]pyrene	1.073	1.085	-1.1	74	0.00
80	T	Indeno[1,2,3-cd]pyrene	1.086	1.118	-2.9	76	0.01
81	T	Dibenz[a,h]anthracene	1.104	1.128	-2.2	74	0.01
82	T	Benzo[g,h,i]perylene	1.096	1.097	-0.1	74	0.02

4B

Field Id:

SEMIVOLATILE METHOD BLANK SUMMARY

MB-1625

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.:

Lab File ID: BNA05201.D Lab Sample ID: MB-1625

Instrument ID: GC/MS Ins Date Extracted: 4/6/01

Matrix: (soil/water) WATER Date Analyzed: 4/10/01

Level: (low/med) LOW Time Analyzed: 10:34

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

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	FIELD BLANK	1602402	BNA05204.D	4/10/01
02	DUPE	1602403	BNA05205.D	4/10/01
03	BLDG.2337	1602404	BNA05206.D	4/10/01

COMMENTS:

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.: _____

	Field Id:	S1 NBZ #	S2 2FP #	S3 TPL #	TOT OUT
01	MS-1619	71	81	67	0
02	MSD-1620	73	82	68	0
03	MB-1625	61	69	71	0
04	FIELD BLANK	77	87	58	0
05	DUPE	64	74	44	0
06	BLDG.2337	62	72	59	0

QC LIMITS

S1	NBZ	=	Nitrobenzene-d5	(35-114)
S2	2FP	=	2-Fluorobiphenyl	(43-116)
S3	TPL	=	p-Terphenyl-d14	(33-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name BNA05184.D Sample Name MS-1619

Date Acquired 5-Apr-01

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		8.20 ug/L	41.02
62-75-9	N-nitroso-dimethylamine		9.43 ug/L	47.16
62-53-3	Aniline		5.68 ug/L	28.39
111-44-4	bis(2-Chloroethyl)ether		14.39 ug/L	71.93
541-73-1	1,3-Dichlorobenzene		17.43 ug/L	87.15
106-46-7	1,4-Dichlorobenzene		22.84 ug/L	114.22
100-51-6	Benzyl alcohol		11.90 ug/L	59.51
95-50-1	1,2-Dichlorobenzene		15.79 ug/L	78.97
39638-32-9	bis(2-chloroisopropyl)ether		19.31 ug/L	96.54
621-64-7	n-Nitroso-di-n-propylamine		16.12 ug/L	80.59
67-72-1	Hexachloroethane		15.41 ug/L	77.06
98-95-3	Nitrobenzene		14.69 ug/L	73.43
78-59-1	Isophorone		15.66 ug/L	78.30
111-91-1	bis(2-Chloroethoxy)methane		14.46 ug/L	72.32
120-82-1	1,2,4-Trichlorobenzene		14.83 ug/L	74.15
91-20-3	Naphthalene		26.20 ug/L	131.02
106-47-8	4-Chloroaniline		4.80 ug/L	24.00
87-68-3	Hexachlorobutadiene		15.13 ug/L	75.67
91-57-6	2-Methylnaphthalene		16.00 ug/L	80.00
77-47-4	Hexachlorocyclopentadiene		10.68 ug/L	53.41
91-58-7	2-Chloronaphthalene		17.20 ug/L	85.98
88-74-4	2-Nitroaniline		15.88 ug/L	79.39
131-11-3	Dimethylphthalate		17.54 ug/L	87.72
208-96-8	Acenaphthylene		17.32 ug/L	86.60
606-20-2	2,6-Dinitrotoluene		18.06 ug/L	90.30
99-09-2	3-Nitroaniline		8.07 ug/L	40.35
83-32-9	Acenaphthene		18.32 ug/L	91.58
132-64-9	Dibenzofuran		17.52 ug/L	87.61
121-14-2	2,4-Dinitrotoluene		16.97 ug/L	84.87
84-66-2	Diethylphthalate		18.62 ug/L	93.08
86-73-7	Fluorene		18.27 ug/L	91.35
7005-72-3	4-Chlorophenyl-phenylether		17.19 ug/L	85.96
100-01-6	4-Nitroaniline		12.45 ug/L	62.25
86-30-6	n-Nitrosodiphenylamine		16.63 ug/L	83.15
103-33-3	Azobenzene		15.45 ug/L	77.25
101-55-3	4-Bromophenyl-phenylether		15.94 ug/L	79.69
118-74-1	Hexachlorobenzene		15.73 ug/L	78.65
85-01-8	Phenanthrene		17.03 ug/L	85.13
120-12-7	Anthracene		16.89 ug/L	84.47
84-74-2	Di-n-butylphthalate		16.86 ug/L	84.32
206-44-0	Fluoranthene		16.47 ug/L	82.36
129-00-0	Pyrene		16.73 ug/L	83.65
85-68-7	Butylbenzylphthalate		16.13 ug/L	80.64
56-55-3	Benzo[a]anthracene		16.16 ug/L	80.80
218-01-9	Chrysene		16.16 ug/L	80.78
117-81-7	bis(2-Ethylhexyl)phthalate		18.84 ug/L	94.20
117-84-0	Di-n-octylphthalate		18.99 ug/L	94.96
205-99-2	Benzo[b]fluoranthene		18.83 ug/L	94.17
207-08-9	Benzo[k]fluoranthene		18.31 ug/L	91.55
50-32-8	Benzo[a]pyrene		18.31 ug/L	91.53
193-39-5	Indeno[1,2,3-cd]pyrene		17.62 ug/L	88.12
53-70-3	Dibenz[a,h]anthracene		18.01 ug/L	90.05
191-24-2	Benzo[g,h,i]perylene		18.01 ug/L	90.06

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA05185.D** Sample Name **MSD-1620**

Date Acquired **5-Apr-01**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		6.38 ug/L	31.90
62-75-9	N-nitroso-dimethylamine		7.79 ug/L	38.93
62-53-3	Aniline		4.12 ug/L	20.62
111-44-4	bis(2-Chloroethyl)ether		14.00 ug/L	69.98
541-73-1	1,3-Dichlorobenzene		17.04 ug/L	85.20
106-46-7	1,4-Dichlorobenzene		22.59 ug/L	112.95
100-51-6	Benzyl alcohol		10.79 ug/L	53.96
95-50-1	1,2-Dichlorobenzene		15.33 ug/L	76.66
39638-32-9	bis(2-chloroisopropyl)ether		18.90 ug/L	94.51
621-64-7	n-Nitroso-di-n-propylamine		15.62 ug/L	78.12
67-72-1	Hexachloroethane		14.98 ug/L	74.88
98-95-3	Nitrobenzene		14.27 ug/L	71.34
78-59-1	Isophorone		15.25 ug/L	76.26
111-91-1	bis(2-Chloroethoxy)methane		13.72 ug/L	68.59
120-82-1	1,2,4-Trichlorobenzene		14.43 ug/L	72.13
91-20-3	Naphthalene		26.18 ug/L	130.88
106-47-8	4-Chloroaniline		3.94 ug/L	19.72
87-68-3	Hexachlorobutadiene		14.48 ug/L	72.38
91-57-6	2-Methylnaphthalene		15.48 ug/L	77.40
77-47-4	Hexachlorocyclopentadiene		9.65 ug/L	48.26
91-58-7	2-Chloronaphthalene		16.82 ug/L	84.10
88-74-4	2-Nitroaniline		15.91 ug/L	79.56
131-11-3	Dimethylphthalate		17.58 ug/L	87.90
208-96-8	Acenaphthylene		17.15 ug/L	85.76
606-20-2	2,6-Dinitrotoluene		18.21 ug/L	91.05
99-09-2	3-Nitroaniline		7.69 ug/L	38.44
83-32-9	Acenaphthene		18.14 ug/L	90.70
132-64-9	Dibenzofuran		17.27 ug/L	86.34
121-14-2	2,4-Dinitrotoluene		16.91 ug/L	84.56
84-66-2	Diethylphthalate		18.99 ug/L	94.95
86-73-7	Fluorene		18.37 ug/L	91.85
7005-72-3	4-Chlorophenyl-phenylether		17.30 ug/L	86.52
100-01-6	4-Nitroaniline		12.60 ug/L	62.98
86-30-6	n-Nitrosodiphenylamine		16.85 ug/L	84.25
103-33-3	Azobenzene		15.57 ug/L	77.86
101-55-3	4-Bromophenyl-phenylether		16.33 ug/L	81.65
118-74-1	Hexachlorobenzene		15.72 ug/L	78.58
85-01-8	Phenanthrene		17.38 ug/L	86.88
120-12-7	Anthracene		17.26 ug/L	86.28
84-74-2	Di-n-butylphthalate		17.22 ug/L	86.11
206-44-0	Fluoranthene		16.75 ug/L	83.74
129-00-0	Pyrene		16.96 ug/L	84.78
85-68-7	Butylbenzylphthalate		16.50 ug/L	82.52
56-55-3	Benzo[a]anthracene		16.37 ug/L	81.87
218-01-9	Chrysene		16.28 ug/L	81.38
117-81-7	bis(2-Ethylhexyl)phthalate		19.51 ug/L	97.54
117-84-0	Di-n-octylphthalate		19.62 ug/L	98.12
205-99-2	Benzo[b]fluoranthene		18.95 ug/L	94.73
207-08-9	Benzo[k]fluoranthene		19.14 ug/L	95.70
50-32-8	Benzo[a]pyrene		18.74 ug/L	93.69
193-39-5	Indeno[1,2,3-cd]pyrene		18.18 ug/L	90.91
53-70-3	Dibenz[a,h]anthracene		18.13 ug/L	90.64
191-24-2	Benzo[g,h,i]perylene		18.39 ug/L	91.94

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.:

Lab File ID (Standard): BNA05180.D Date Analyzed: 4/5/01

Instrument ID: GC_BNA_2 Time Analyzed: 14:23

		IS1DCB AREA	#	RT	#	IS2NAP AREA	#	RT	#	IS3ANE AREA	#	RT	#
	12 HOUR STD	1111989		10.12		3899184		13.06		2355299		17.29	
	UPPER LIMIT	2223978		10.62		7798368		13.56		4710598		17.79	
	LOWER LIMIT	555995		9.62		1949592		12.56		1177650		16.79	
	Field Id:												
01	MS-1619	801228		10.12		2962211		13.05		1588826		17.28	
02	MSD-1620	820865		10.12		3018364		13.05		1623594		17.29	

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.:

Lab File ID (Standard): BNA05180.D Date Analyzed: 04/05/01

Instrument ID: GC_BNA_2 Time Analyzed: 14:23

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	3862603	20.89	3563415	27.35	3227558	30.58
	UPPER LIMIT	7725206	20.39	7126830	26.85	6455116	30.08
	LOWER LIMIT	1931302	21.39	1781708	27.85	1613779	31.08
	EPA SAMPLE NO.						
01	MS-1619	2778648	20.89	2513507	27.34	1942796	30.57
02	MSD-1620	2837211	20.88	2573436	27.34	1973984	30.57

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.:

Lab File ID (Standard): BNA05200.D Date Analyzed: 4/10/01

Instrument ID: GC_BNA_2 Time Analyzed: 9:47

		IS1DCB AREA #	RT #	IS2NAP AREA #	RT #	IS3ANE AREA #	RT #
	12 HOUR STD	707596	10.12	2485653	13.05	1480418	17.28
	UPPER LIMIT	1415192	10.62	4971306	13.55	2960836	17.78
	LOWER LIMIT	353798	9.62	1242827	12.55	740209	16.78
	Field Id:						
01	MB-1625	561103	10.12	2081202	13.05	1119868	17.28
02	FIELD BLANK	572147	10.12	2119332	13.05	1129679	17.28
03	DUPE	505244	10.12	1890779	13.05	996513	17.28
04	BLDG.2337	583335	10.12	2170810	13.05	1149643	17.28

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16024 Location: 2337 SDG No.:

Lab File ID (Standard): BNA05200.D Date Analyzed: 04/10/01

Instrument ID: GC_BNA_2 Time Analyzed: 09:47

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	2456306	20.89	2241178	27.34	2006269	30.57
	UPPER LIMIT	4912612	20.39	4482356	26.84	4012538	30.07
	LOWER LIMIT	1228153	21.39	1120589	27.84	1003135	31.07
	EPA SAMPLE NO.						
01	MB-1625	1990702	20.88	1818116	27.33	1408508	30.56
02	FIELD BLANK	1984584	20.88	1825165	27.33	1401620	30.56
03	DUPE	1760523	20.88	1623297	27.33	1247202	30.56
04	BLDG.2337	2029515	20.88	1872803	27.33	1431889	30.56

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : D:\DATA\010410\BNA05201.D Vial: 1
Acq On : 10 Apr 2001 10:34 am Operator: Bhaskar
Sample : MB-1625 Inst : GC/MS Ins
Misc : MB-010406 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Apr 10 11:09 2001 Quant Results File: M262546.RES

Quant Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration
DataAcq Meth : M262546

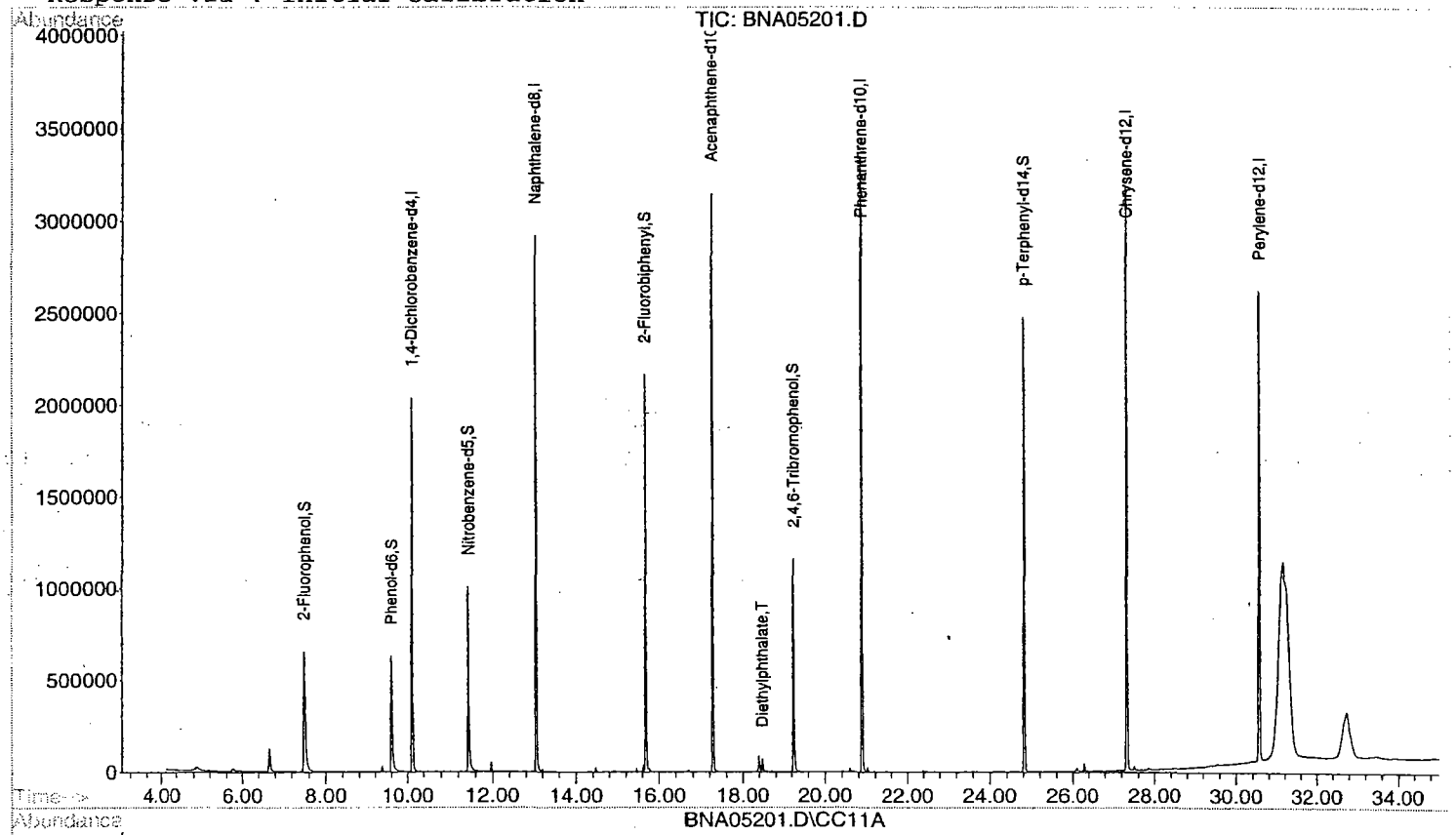
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.12	152	561103	40.00	ug/L	0.00
19) Naphthalene-d8	13.05	136	2081202	40.00	ug/L	0.00
34) Acenaphthene-d10	17.28	164	1119868	40.00	ug/L	0.00
54) Phenanthrene-d10	20.88	188	1990702	40.00	ug/L	0.00
66) Chrysene-d12	27.33	240	1818116	40.00	ug/L	0.00
75) Perylene-d12	30.56	264	1408508	40.00	ug/L	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	7.49	112	488503	30.62	ug/L	0.13
Spiked Amount 100.000	Range 21 - 100		Recovery = 30.62%			
6) Phenol-d6	9.59	99	480811	23.90	ug/L	0.17
Spiked Amount 100.000	Range 10 - 94		Recovery = 23.90%			
20) Nitrobenzene-d5	11.44	82	636829	30.47	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery = 60.94%			
38) 2-Fluorobiphenyl	15.69	172	1081845	34.72	ug/L	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery = 69.44%			
58) 2,4,6-Tribromophenol	19.25	330	211916	47.23	ug/L	0.02
Spiked Amount 100.000	Range 10 - 123		Recovery = 47.23%			
69) p-Terphenyl-d14	24.82	244	1291344	35.66	ug/L	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery = 71.32%			
Target Compounds						Qvalue
50) Diethylphthalate	18.48	149	56454	1.81	ug/L	98

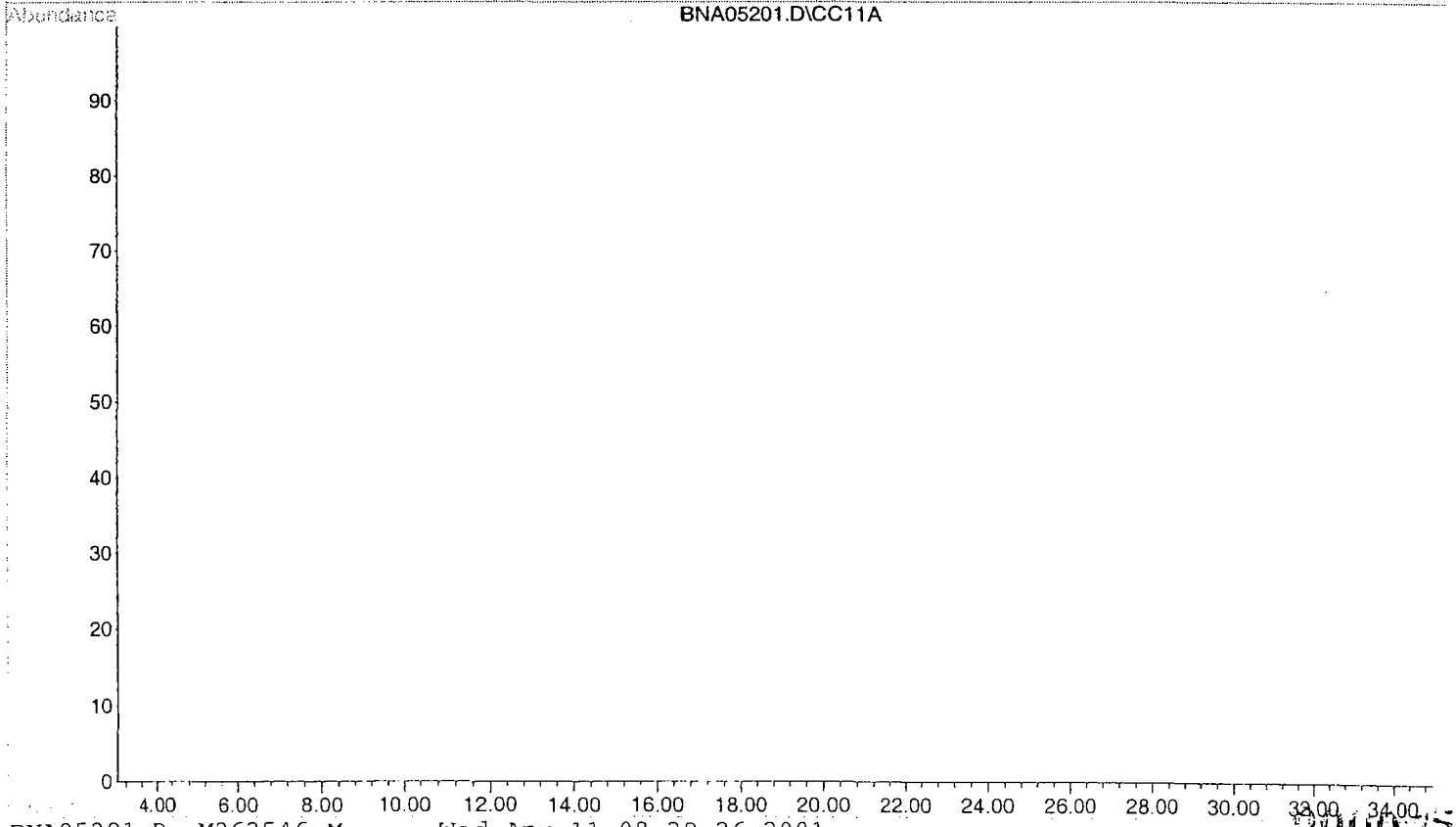
(#) = qualifier out of range (m) = manual integration
BNA05201.D M262546.M Wed Apr 11 08:29:24 2001

Quantitation Report

Data File : D:\DATA\010410\BNA05201.D Vial: 1
Acq On : 10 Apr 2001 10:34 am Operator: Bhaskar
Sample : MB-1625 Inst : GC/MS Ins
Misc : MB-010406 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Apr 10 11:09 2001 Quant Results File: M262546.RES

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : D:\DATA\010410\BNA05204.D Vial: 4
Acq On : 10 Apr 2001 1:39 pm Operator: Bhaskar
Sample : 1602402 Inst : GC/MS Ins
Misc : Field Blank Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Apr 11 8:09 2001 Quant Results File: M262546.RES

Quant Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration
DataAcq Meth : M262546

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.12	152	572147	40.00	ug/L	0.00
19) Naphthalene-d8	13.05	136	2119332	40.00	ug/L	0.00
34) Acenaphthene-d10	17.28	164	1129679	40.00	ug/L	0.00
54) Phenanthrene-d10	20.88	188	1984584	40.00	ug/L	0.00
66) Chrysene-d12	27.33	240	1825165	40.00	ug/L	0.00
75) Perylene-d12	30.56	264	1401620	40.00	ug/L	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d6	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.44	82	821842	38.61	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery =	77.22%		
38) 2-Fluorobiphenyl	15.69	172	1371228	43.62	ug/L	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery =	87.24%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.82	244	1050127	28.89	ug/L	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery =	57.78%		
Target Compounds						Qvalue

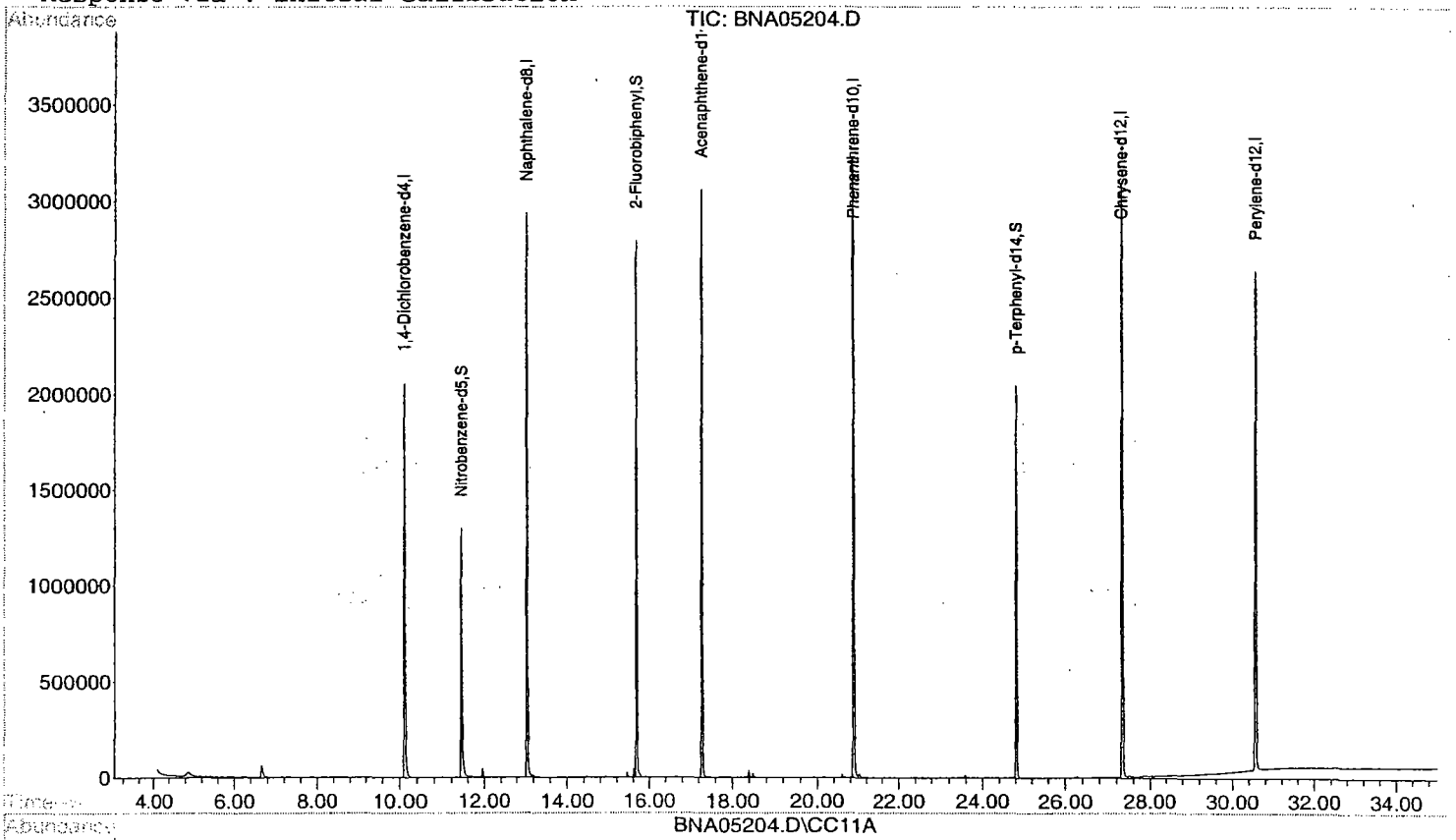
(#) = qualifier out of range (m) = manual integration

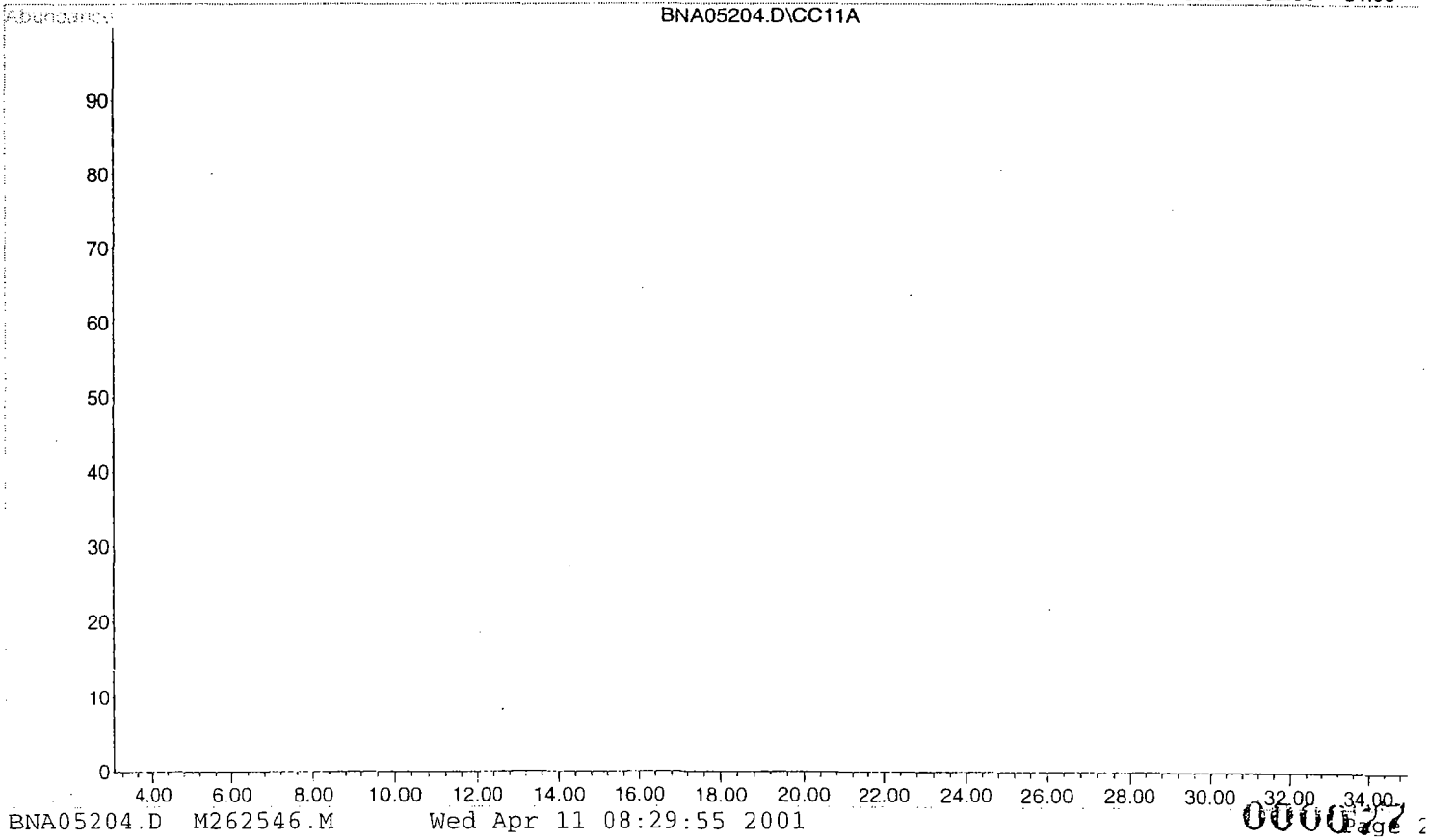
Quantitation Report

Data File : D:\DATA\010410\BNA05204.D
Acq On : 10 Apr 2001 1:39 pm
Sample : 1602402
Misc : Field Blank
MS Integration Params: RTEINT.P
Quant Time: Apr 11 8:09 2001

Vial: 4
Operator: Bhaskar
Inst : GC/MS Ins
Multiplr: 1.00
GC Integration Params: rteint2.p
Quant Results File: M262546.RES

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : D:\DATA\010410\BNA05205.D Vial: 5
Acq On : 10 Apr 2001 2:25 pm Operator: Bhaskar
Sample : 1602403 Inst : GC/MS Ins
Misc : Dupe Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Apr 10 15:01 2001 Quant Results File: M262546.RES

Quant Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration
DataAcq Meth : M262546

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.12	152	505244	40.00	ug/L	0.00
19) Naphthalene-d8	13.05	136	1890779	40.00	ug/L	0.00
34) Acenaphthene-d10	17.28	164	996513	40.00	ug/L	0.00
54) Phenanthrene-d10	20.88	188	1760523	40.00	ug/L	0.00
66) Chrysene-d12	27.33	240	1623297	40.00	ug/L	0.00
75) Perylene-d12	30.56	264	1247202	40.00	ug/L	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d6	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.44	82	607011	31.97	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery =	63.94%		
38) 2-Fluorobiphenyl	15.69	172	1031131	37.19	ug/L	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery =	74.38%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.83	244	716978	22.18	ug/L	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery =	44.36%		
Target Compounds						Qvalue

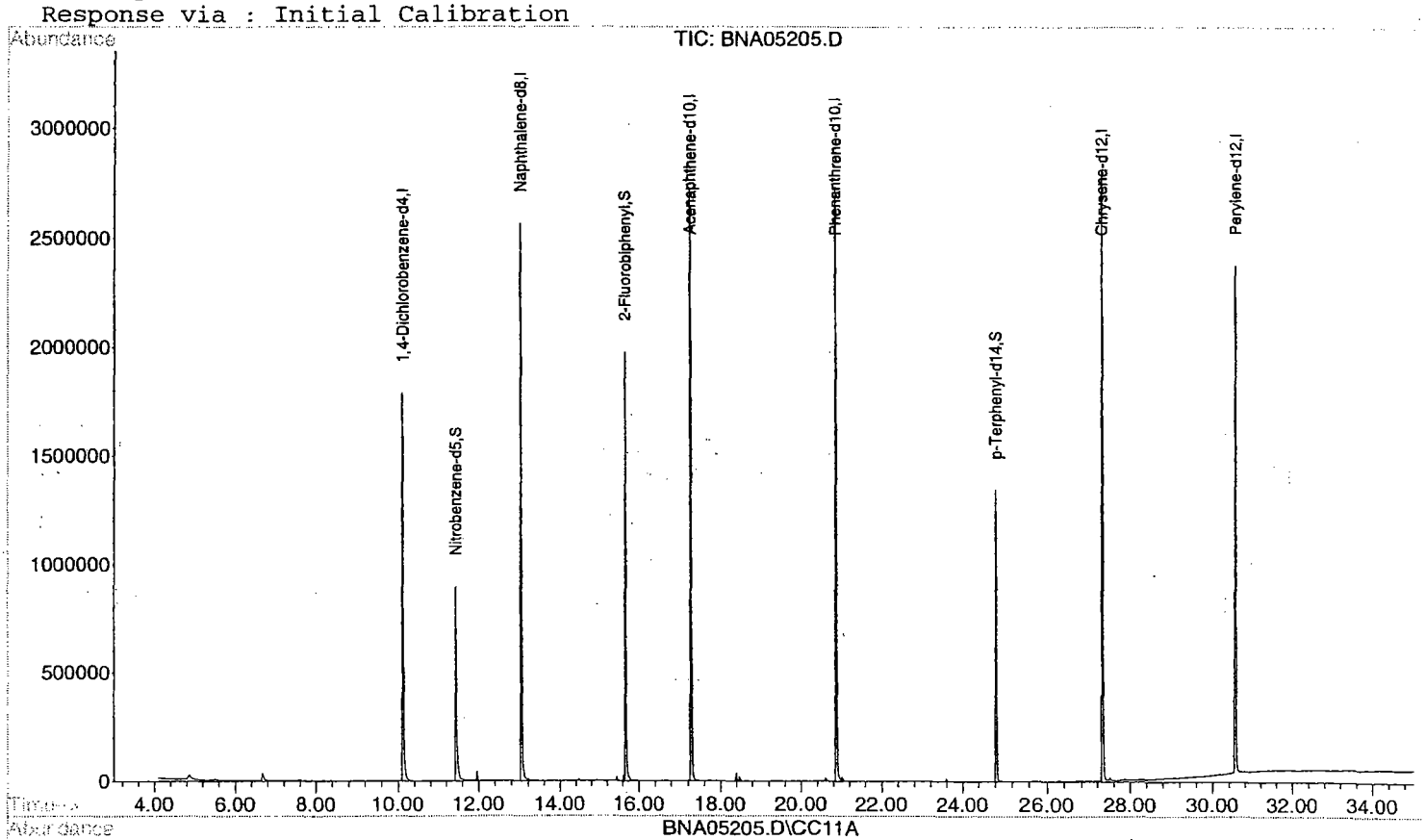
(#) = qualifier out of range (m) = manual integration

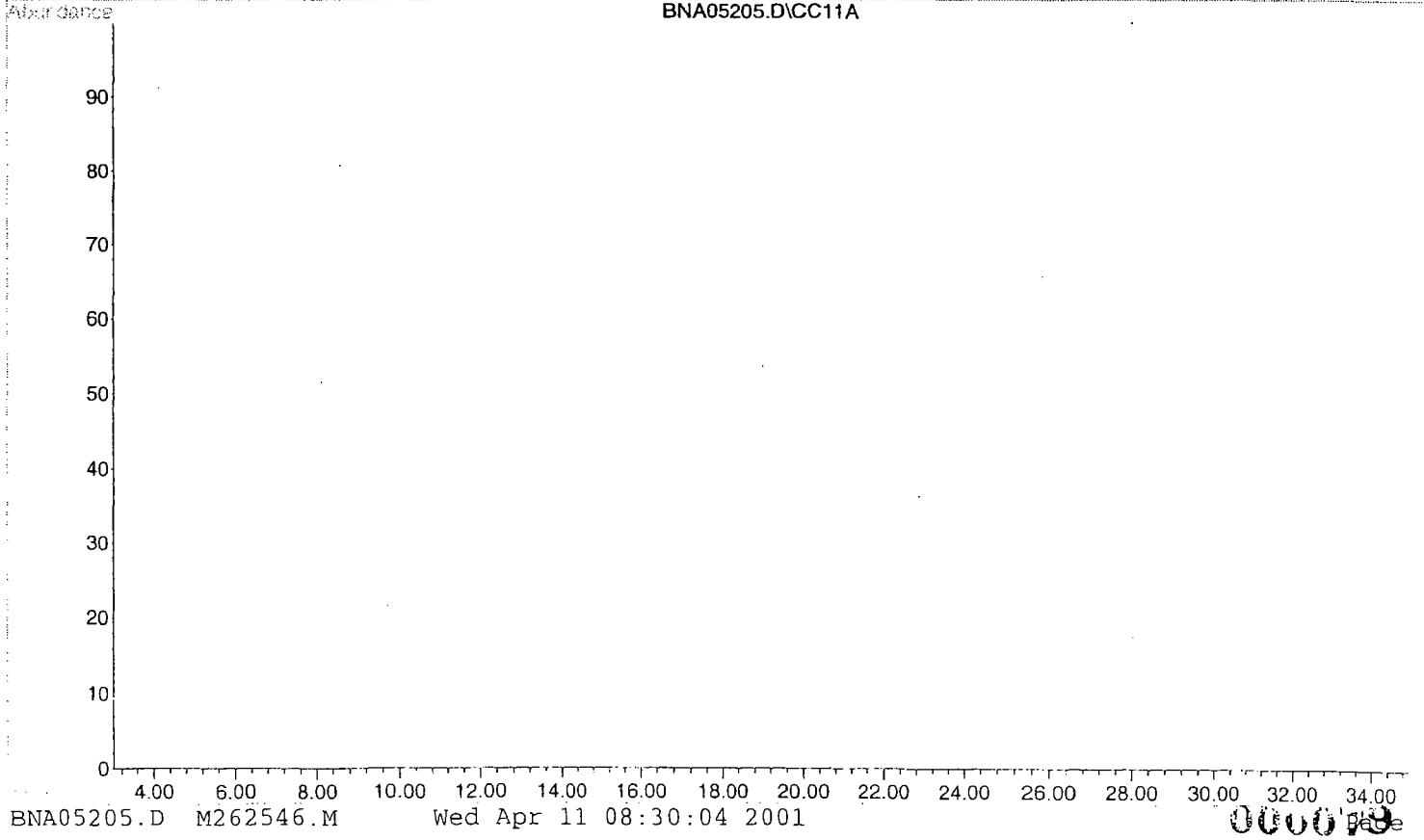
Quantitation Report

Data File : D:\DATA\010410\BNA05205.D
Acq On : 10 Apr 2001 2:25 pm
Sample : 1602403
Misc : Dupe
MS Integration Params: RTEINT.P
Quant Time: Apr 10 15:01 2001

Vial: 5
Operator: Bhaskar
Inst : GC/MS Ins
Multiplr: 1.00
GC Integration Params: rteint2.p
Quant Results File: M262546.RES

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : D:\DATA\010410\BNA05206.D Vial: 6
Acq On : 10 Apr 2001 3:12 pm Operator: Bhaskar
Sample : 1602404 Inst : GC/MS Ins
Misc : Bldg.2337 GW Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Apr 10 15:47 2001 Quant Results File: M262546.RES

Quant Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration
DataAcq Meth : M262546

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.12	152	583335	40.00	ug/L	0.00
19) Naphthalene-d8	13.05	136	2170810	40.00	ug/L	0.00
34) Acenaphthene-d10	17.28	164	1149643	40.00	ug/L	0.00
54) Phenanthrene-d10	20.88	188	2029515	40.00	ug/L	0.00
66) Chrysene-d12	27.33	240	1872803	40.00	ug/L	0.00
75) Perylene-d12	30.56	264	1431889	40.00	ug/L	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d6	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.44	82	674380	30.93	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery =	61.86%		
38) 2-Fluorobiphenyl	15.69	172	1156102	36.14	ug/L	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery =	72.28%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.82	244	1102582	29.56	ug/L	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery =	59.12%		

Target Compounds Qvalue

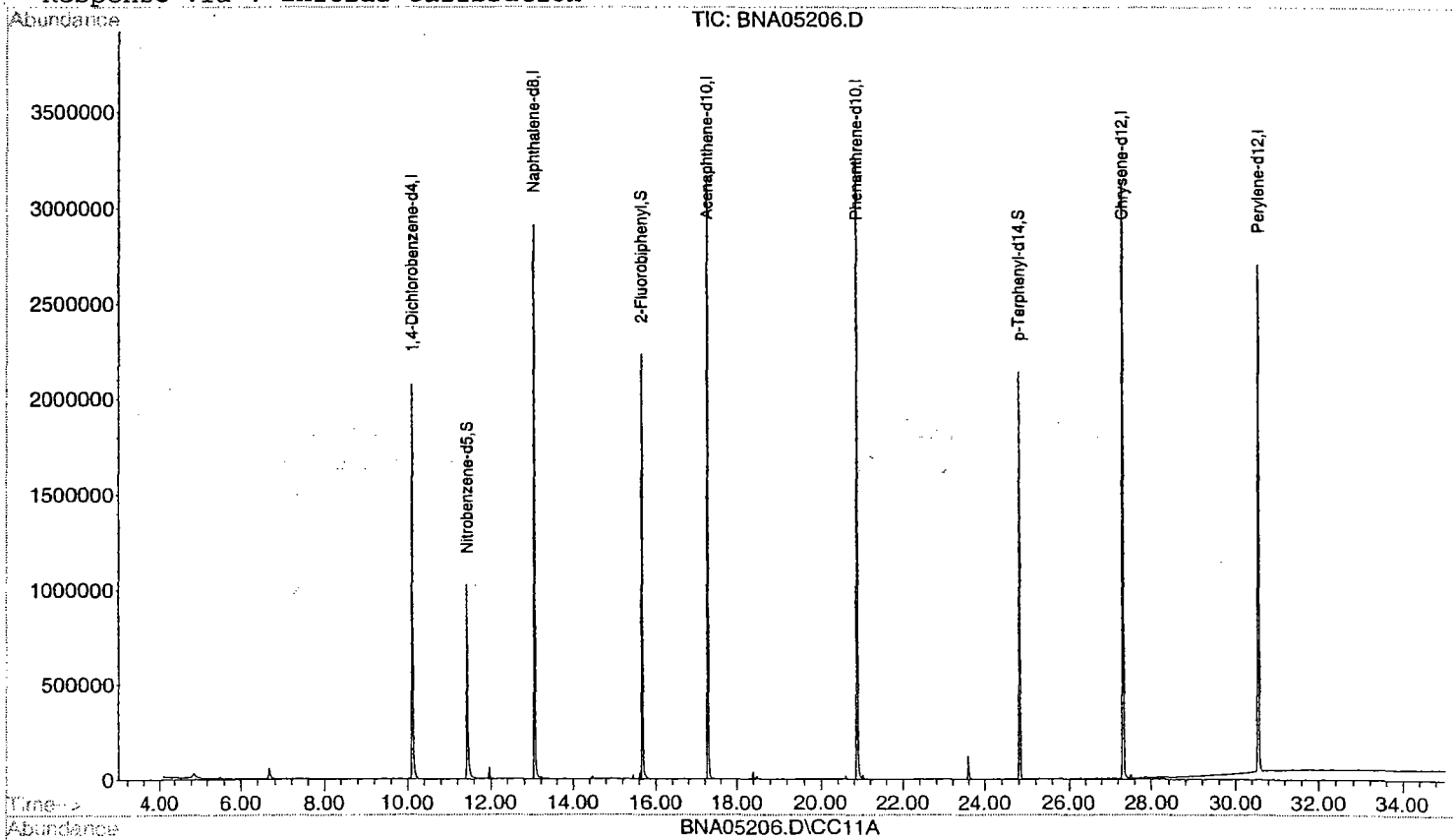
(#) = qualifier out of range (m) = manual integration
BNA05206.D M262546.M Wed Apr 11 08:45:57 2001

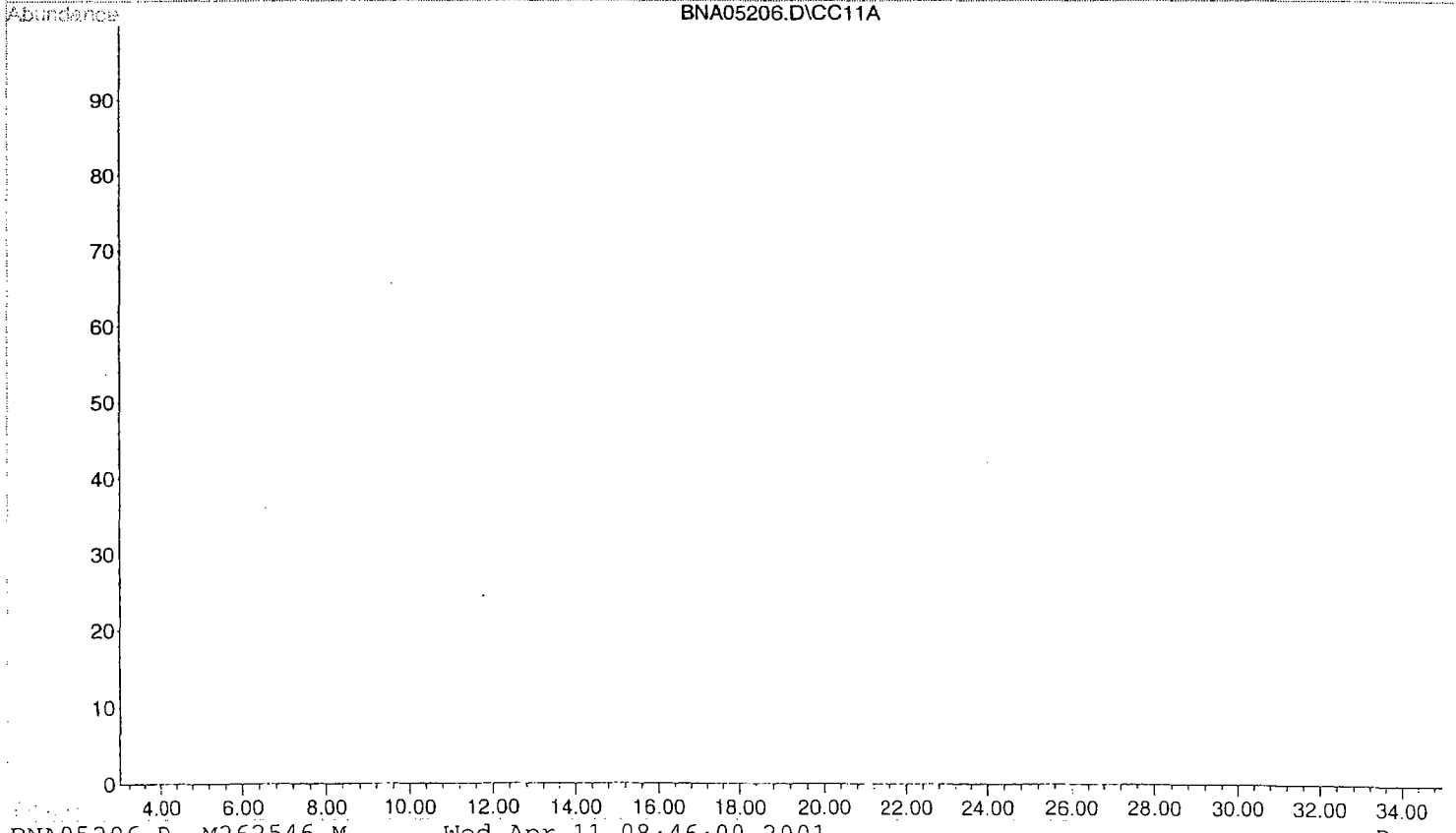
Quantitation Report

Data File : D:\DATA\010410\BNA05206.D
Acq On : 10 Apr 2001 3:12 pm
Sample : 1602404
Misc : Bldg.2337 GW
MS Integration Params: RTEINT.P
Quant Time: Apr 10 15:47 2001

Vial: 6
Operator: Bhaskar
Inst : GC/MS Ins
Multiplr: 1.00
GC Integration Params: rteint2.p
Quant Results File: M262546.RES

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration





LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package <u>and</u> in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
4. Document paginated and legible ✓
5. Chain of Custody submitted ✓
6. Samples submitted to lab within 48 hours of sample collection ✓
7. Methodology Summary submitted ✓
8. Laboratory Chronicle and Holding Time Check submitted ✓
9. Results submitted on a dry weight basis ✓
10. Method Detection Limits submitted ✓
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ✓

Laboratory Manager or Environmental Consultant's Signature _____

Date 4/19/01

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: IJO# 01-0001

Bldg. 2337

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
Bldg. 2337 GW	16091.01	Aqueous	28-Apr-01 08:45	04/30/01
Trip Blank	16091.02	Aqueous	28-Apr-01	04/30/01
Field Blank	16091.03	Aqueous	28-Apr-01 08:30	04/30/01
DUP.	16091.04	Aqueous	28-Apr-01	04/30/01

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, BN+15

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

5-17-0

Daniel Wright/Date
Laboratory Director

Table of Contents

CHAIN OF CUSTODY

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: DGAS/ | Project No: | Location: Bldg 2337 2nd GW

Phone #: X2175

( )DERA ( )OMA ( )Other:_____

Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	+ Xylene VOA+15	BN +15						Hnu Read	Comments: Remarks / Preservation Method
16091 .01	2337 GW *	4/28/01	0845	AQ	3	✓	✓						0.0	clear.
.02	Trip		0715		2	✓							—	
.03	Field Blank		0830		3	✓	✓						—	
.04	Dupe		—		3	✓	✓						—	

HCL/4°C

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/28/01 730				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified, ( )EDD

Turnaround time: (X)Standard 3 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks: Shows T/FB/D w/ 237 + 233 same date. cpm

20:030

print legibly

Coc.xls3/21/01

METHOD SUMMARY

Method Summary

EPA Method 624
Gas Chromatographic Determination of Volatiles in Water

Surrogates and internal standards are added to a 5-ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

EPA Method 3510/625
Gas Chromatographic Determination of Semi-volatiles in Water

Surrogates are added to measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene chloride using a separatory funnel. The extract concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

CONFORMANCE/NON CONFORMANCE SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

	Indicate Yes, No, N/A
1. Chromatograms labeled/Compounds identified (Field samples and method blanks)	Yes
2. Retention times for chromatograms provided	Yes
3. GC/MS Tune Specifications	
a. BFB Meet Criteria	Yes
b. DFTPP Meet Criteria	Yes
4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series	Yes
5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	Yes
6. GC/MS Calibration requirements	
a. Calibration Check Compounds Meet Criteria	Yes
b. System Performance Check Compounds Meet Criteria	Yes
7. Blank Contamination – If yes, List compounds and concentrations in each blank:	No
a. VOA Fraction	
b. B/N Fraction	
c. Acid Fraction N/A	
8. Surrogate Recoveries Meet Criteria	Yes
If not met, list those compounds and their recoveries, which fall outside the acceptable range:	
a. VOA Fraction	
b. B/N Fraction	
c. Acid Fraction N/A	
If not met, were the calculations checked and the results qualified as "estimated"?	
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range)	Yes
a. VOA Fraction	
b. B/N Fraction	
c. Acid Fraction N/A	

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria — Yes
(If not met, list those compounds, which fall outside the acceptable range)

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

11. Extraction Holding Time Met — Yes

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

12. Analysis Holding Time Met — Yes

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

Additional Comments:

Laboratory Manager: _____ Date: 5-17-01

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 161091 Site: Bldg. 2337

	Date	Hold Time
Date Sampled	04/28/01	NA
Receipt/Refrigeration	04/30/01*	NA
Extractions		
1. BN	05/02/01	7 days
Analyses		
1. VOA	05/05/01	14 days
2. BN	05/02,04/01	40 days

* Sampled and Refrigerated on 4/28/01. Received on 4/30/01.

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	**:**	**Method Detection Limit**
J	**:**	**Compound identified below detection limit**
B	**:**	**Compound found in blank**
D	**:**	**Results are from a dilution of the sample**
U	**:**	**Compound searched for but not detected**
E	**:**	**Compound exceeds calibration limit**
PQL	**:**	**Practical Quantitation Limit**
NLE	**:**	**No limit established**
RT	**:**	**Retention time**

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC005652.D**	Sample Name	**MB**
Operator	**Skelton**	Field ID	**MB**
Date Aquired	**4-May-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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000012

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **MB 1757**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16091 Location: Bldg23 SDG No.: _____

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

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005652.D

Level: (low/med) LOW Date Received: 4/30/01

% Moisture: not dec. _____ Date Analyzed: 5/4/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC005674.D**	Sample Name	**1609102**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Aquired	**5-May-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene	23.62	239569	1.13 ug/L	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

5/15/01 2:23 PM

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000014

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Trip Blank**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16091 Location: Bldg23 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1609102

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005674.D

Level: (low/med) LOW Date Received: 4/30/01

% Moisture: not dec. Date Analyzed: 5/5/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC005675.D**	Sample Name	**1609103**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**5-May-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Field Blank**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16091 Location: Bldg23 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1609103

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005675.D

Level: (low/med) LOW Date Received: 4/30/01

% Moisture: not dec. Date Analyzed: 5/5/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC005676.D**	Sample Name	**1609104**
Operator	**Skelton**	Field ID	**Dupe**
Date Aquired	**5-May-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Dupe**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16091 Location: Bldg23 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1609104

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005676.D

Level: (low/med) LOW Date Received: 4/30/01

% Moisture: not dec. Date Analyzed: 5/5/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC005673.D**	Sample Name	**1609101**
Operator	**Skelton**	Field ID	**2337GW**
Date Aquired	**5-May-01**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156594	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **2337GW**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16091 Location: Bldg23 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1609101

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005673.D

Level: (low/med) LOW Date Received: 4/30/01

% Moisture: not dec. Date Analyzed: 5/5/01

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16091 Location: Bldg23 SDG No.:

Lab File ID: VC005638.D BFB Injection Date: 5/3/01

Instrument ID: VoaInst#3 BFB Injection Time: 7:51

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	27.2
75	30.0 - 66.0% of mass 95	59.2
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	65.5
175	4.0 - 9.0% of mass 174	4.9 (7.5)1
176	93.0 - 101.0% of mass 174	63.6 (97.1)1
177	5.0 - 9.0% of mass 176	4.2 (6.5)2

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

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

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD100	VSTD100	VC005639.D	5/3/01	8:23
02	VSTD050	VSTD050	VC005640.D	5/3/01	9:04
03	VSTD020	VSTD020	VC005641.D	5/3/01	12:02
04	VSTD010	VSTD010	VC005642.D	5/3/01	12:43
05	VSTD005	VSTD005	VC005643.D	5/3/01	13:24

Response Factor Report GC/MS Ins

Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon May 07 11:28:11 2001
Response via : Initial Calibration

Calibration Files
50 =VC005640.D 5 =VC005643.D 10 =VC005642.D
20 =VC005641.D 100 =VC005639.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	0.736	0.632	0.684	0.654	0.702	0.682	5.94
3)	t	Acrylonitrile	1.656	1.705	1.756	1.666	1.344	1.625	9.98
4)	t	tert-Butyl alcohol	0.222	0.163	0.173	0.176	0.221	0.191	14.79
5)	t	Methyl-tert-Butyl eth	7.201	5.408	5.767	5.812	7.295	6.296	14.03
6)	t	Di-isopropyl ether	1.944	1.209	1.456	1.556	2.007	1.635	20.61
7)	T	Dichlorodifluorometha	4.577	3.933	4.050	3.656	3.818	4.007	8.75
8)	TP	Chloromethane	4.780	4.945	4.723	4.321	4.275	4.609	6.41
9)	TC	Vinyl Chloride	4.513	4.959	4.710	4.354	4.071	4.521	7.49
10)	T	Bromomethane	1.631	1.566	1.534	1.456	1.600	1.558	4.31
11)	T	Chloroethane	2.090	2.050	2.026	1.913	2.097	2.035	3.65
12)	T	Trichlorofluoromethan	3.177	3.196	3.144	2.919	3.118	3.111	3.58
13)	MC	1,1-Dichloroethene	4.094	3.406	3.544	3.503	4.143	3.738	9.40
14)	T	Acetone	1.546	3.769	2.663	2.054	1.619	2.330	39.44
15)	T	Carbon Disulfide	7.567	6.427	6.684	6.585	7.479	6.949	7.68
16)	T	Methylene Chloride	2.598	2.690	2.600	2.389	2.613	2.578	4.35
17)	T	trans-1,2-Dichloroeth	4.083	3.542	3.693	3.581	4.117	3.803	7.28
18)	TP	1,1-Dichloroethane	5.177	4.858	4.852	4.658	5.174	4.944	4.57
19)	T	Vinyl Acetate	7.974	5.333	6.228	6.673	7.796	6.801	16.22
20)	T	2-Butanone	2.084	1.857	1.856	1.899	2.238	1.987	8.49
21)	T	cis-1,2-Dichloroethen	3.987	3.179	3.357	3.442	4.065	3.606	10.99
22)	TC	Chloroform	4.312	4.162	4.071	3.917	4.305	4.153	4.01
23)	T	1,1,1-Trichloroethane	3.297	2.806	2.869	2.793	3.344	3.022	9.09
24)	T	Carbon Tetrachloride	2.644	2.194	2.285	2.248	2.736	2.422	10.29
25)	S	1,2-Dichloroethane-d4	3.390	3.575	3.550	3.435	3.420	3.474	2.38
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	1.573	1.518	1.522	1.494	1.399	1.501	4.25
28)	T	1,2-Dichloroethane	0.622	0.624	0.605	0.578	0.616	0.609	3.06
29)	TM	Trichloroethene	0.311	0.254	0.269	0.273	0.317	0.285	9.69
30)	TC	1,2-Dichloropropane	0.463	0.400	0.411	0.413	0.464	0.430	7.10
31)	T	Bromodichloromethane	0.433	0.358	0.367	0.368	0.444	0.394	10.44
32)	T	2-Chloroethyl vinyl e	0.178	0.175	0.168	0.162	0.181	0.173	4.56
33)	T	cis-1,3-Dichloroprope	0.585	0.384	0.438	0.469	0.598	0.495	18.88
34)	T	4-Methyl-2-Pentanone	0.179	0.099	0.127	0.144	0.185	0.147	24.60
35)	S	Toluene-d8	1.284	1.291	1.290	1.297	1.297	1.292	0.44
36)	TCM	Toluene	1.483	1.437	1.424	1.408	1.317	1.414	4.29
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.957	1.303	1.453	1.563	1.966	1.649	18.23
39)	T	1,1,2-Trichloroethane	1.147	1.111	1.068	1.041	1.131	1.100	4.04
40)	T	Tetrachloroethene	1.024	0.902	0.939	0.919	1.028	0.962	6.22
41)	T	2-Hexanone	1.112	0.670	0.792	0.945	1.243	0.952	24.37
42)	T	Dibromochloromethane	0.882	0.665	0.669	0.702	0.933	0.770	16.58
43)	TMP	Chlorobenzene	3.092	3.142	3.000	2.926	2.913	3.015	3.34
44)	TC	Ethylbenzene	5.601	5.216	5.364	5.353	4.647	5.236	6.82
45)	T	m+p-Xylenes	2.151	1.954	1.977	1.969	1.992	2.009	4.02
46)	T	o-Xylene	4.311	3.091	3.532	3.800	3.945	3.736	12.24
47)	T	Styrene	3.538	2.524	2.783	3.013	3.409	3.053	13.86
48)	TP	Bromoform	0.541	0.372	0.376	0.406	0.590	0.457	22.20
49)	S	Bromofluorobenzene	1.697	1.545	1.574	1.639	1.780	1.647	5.76
50)	TP	1,1,2,2-Tetrachloroet	1.704	1.573	1.551	1.527	1.670	1.605	4.82
51)	T	1,3-Dichlorobenzene	2.069	1.493	1.572	1.733	2.082	1.790	15.35
52)	T	1,4-Dichlorobenzene	2.054	1.405	1.571	1.765	2.045	1.768	16.22
53)	T	1,2-Dichlorobenzene	1.960	1.487	1.586	1.686	1.969	1.738	12.60

(#) = Out of Range

000124

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16091 Location: Bldg23 SDG No.:

Lab File ID: VC005650.D BFB Injection Date: 5/4/01

Instrument ID: VoaInst#3 BFB Injection Time: 8:18

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

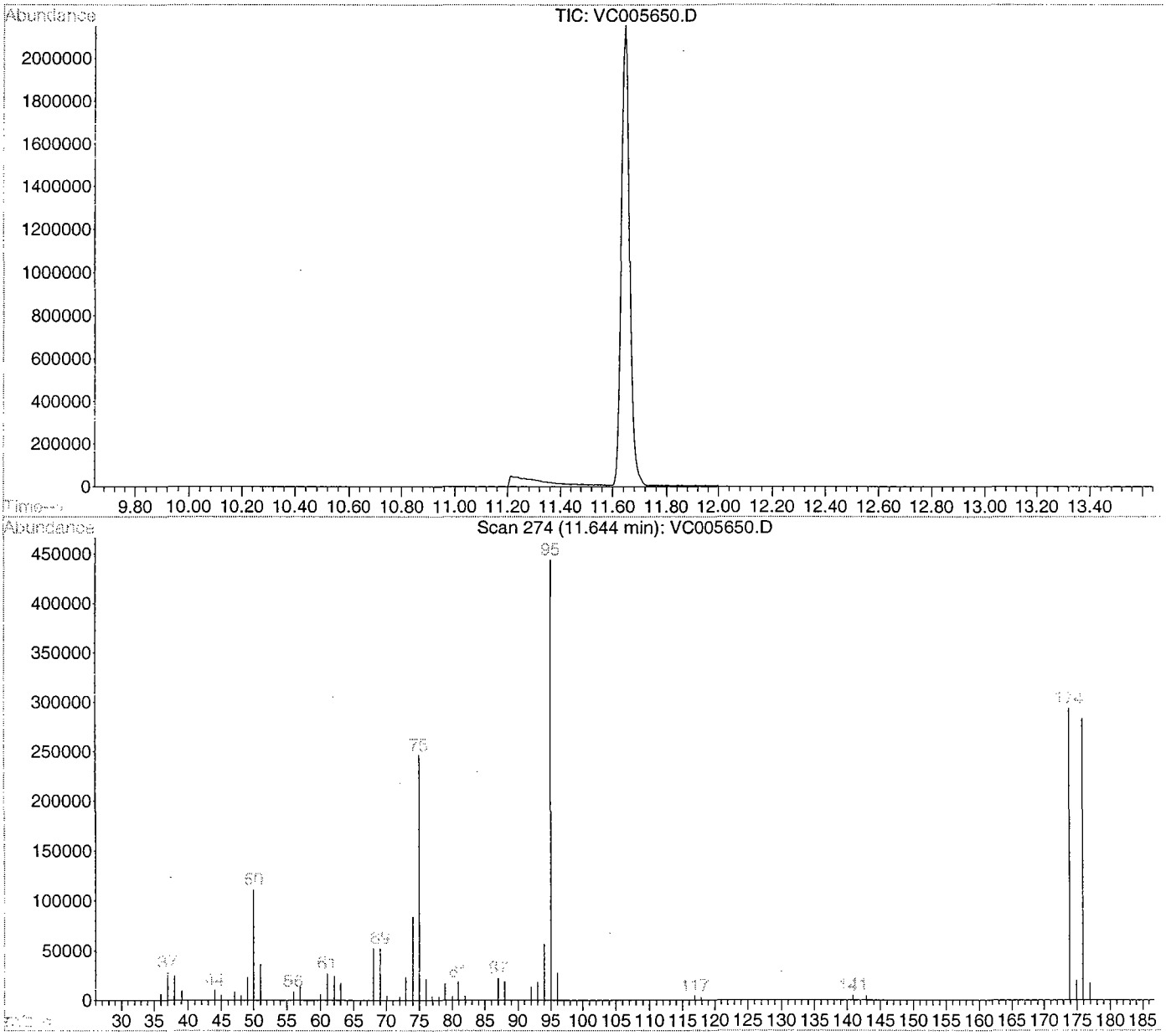
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	25.1
75	30.0 - 66.0% of mass 95	55.6
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	66.2
175	4.0 - 9.0% of mass 174	4.6 (7.0)1
176	93.0 - 101.0% of mass 174	64.0 (96.6)1
177	5.0 - 9.0% of mass 176	3.9 (6.1)2

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

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

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	VSTD020	VC005651.D	5/4/01	8:49
02	MB 1757	MB	VC005652.D	5/4/01	9:43
03	1610001 MS	1610001 MS	VC005660.D	5/4/01	15:33
04	1610001 MSD	1610001 MSD	VC005661.D	5/4/01	16:14
05	2337GW	1609101	VC005673.D	5/5/01	0:17
06	TRIP BLANK	1609102	VC005674.D	5/5/01	0:58
07	FIELD BLANK	1609103	VC005675.D	5/5/01	1:38
08	DUPE	1609104	VC005676.D	5/5/01	2:18

Data File : D:\HPCHEM\1\DATA\010504\VC005650.D Vial: 1
Acq On : 4 May 2001 8:18 am Operator: Skelton
Sample : BFB Tune Inst : GC/MS Ins
Misc : BFB Tune Multiplr: 1.00
MS Integration Params: ACETONE.P
Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP



Spectrum Information: Scan 274

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.1	111312	PASS
75	95	30	60	55.6	246976	PASS
95	95	100	100	100.0	444352	PASS
96	95	5	9	6.4	28368	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	66.2	294336	PASS
175	174	5	9	7.0	20488	PASS
176	174	95	101	96.6	284288	PASS
177	176	5	9	6.1	17312	PASS

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\010504\VC005651.D Vial: 1
Acq On : 4 May 2001 8:49 am Operator: Skelton
Sample : Vstd020 Inst : GC/MS Ins
Misc : Vstd020 Multiplr: 1.00
MS Integration Params: ACETONE.P

Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon May 07 11:28:11 2001
Response via : Multiple Level Calibration

Min. RRF : 0.025 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	96	0.00
2	t	Acrolein	0.682	0.666	2.3	98	0.00
3	t	Acrylonitrile	1.625	1.722	-6.0	100	-0.01
4	t	tert-Butyl alcohol	0.191	0.167	12.6	91	0.00
5	t	Methyl-tert-Butyl ether	6.296	6.107	3.0	101	0.00
6	t	Di-isopropyl ether	1.635	1.661	-1.6	103	-0.01
7	T	Dichlorodifluoromethane	4.007	3.335	16.8	88	0.00
8	TP	Chloromethane	4.609	4.035	12.5	90	0.00
9	TC	Vinyl Chloride	4.521	4.203	7.0	93	0.00
10	T	Bromomethane	1.558	1.479	5.1	98	0.00
11	T	Chloroethane	2.035	2.018	0.8	102	0.00
12	T	Trichlorofluoromethane	3.111	3.058	1.7	101	0.00
13	MC	1,1-Dichloroethene	3.738	3.615	3.3	100	0.00
14	T	Acetone	2.330	1.910	18.0	90	0.00
15	T	Carbon Disulfide	6.949	7.187	-3.4	105	0.00
16	T	Methylene Chloride	2.578	2.639	-2.4	107	0.00
17	T	trans-1,2-Dichloroethene	3.803	3.735	1.8	101	0.00
18	TP	1,1-Dichloroethane	4.944	4.862	1.7	101	0.00
19	T	Vinyl Acetate	6.801	6.521	4.1	94	0.00
20	T	2-Butanone	1.987	2.112	-6.3	107	-0.01
21	T	cis-1,2-Dichloroethene	3.606	3.575	0.9	100	0.00
22	TC	Chloroform	4.153	4.189	-0.9	103	0.00
23	T	1,1,1-Trichloroethane	3.022	3.008	0.5	104	0.00
24	T	Carbon Tetrachloride	2.422	2.479	-2.4	106	0.00
25	S	1,2-Dichloroethane-d4	3.474	3.293	5.2	93	0.00
26	I	1,4-Difluorobenzene	1.000	1.000	0.0	97	-0.01
27	TM	Benzene	1.501	1.582	-5.4	102	0.00
28	T	1,2-Dichloroethane	0.609	0.586	3.8	98	0.00
29	TM	Trichloroethene	0.285	0.296	-3.9	105	0.00
30	TC	1,2-Dichloropropane	0.430	0.430	0.0	101	0.00
31	T	Bromodichloromethane	0.394	0.406	-3.0	107	0.00
32	T	2-Chloroethyl vinyl ether	0.173	0.166	4.0	99	0.00
33	T	cis-1,3-Dichloropropene	0.495	0.505	-2.0	104	0.00
34	T	4-Methyl-2-Pentanone	0.147	0.145	1.4	97	0.00
35	S	Toluene-d8	1.292	1.300	-0.6	97	0.00
36	TCM	Toluene	1.414	1.508	-6.6	104	0.00
37	I	Chlorobenzene-d5	1.000	1.000	0.0	98	0.00
38	T	trans-1,3-Dichloropropene	1.649	1.660	-0.7	104	0.00
39	T	1,1,2-Trichloroethane	1.100	1.122	-2.0	105	0.00
40	T	Tetrachloroethene	0.962	0.974	-1.2	104	-0.01
41	T	2-Hexanone	0.952	0.882	7.4	91	0.00
42	T	Dibromochloromethane	0.770	0.798	-3.6	111	0.00
43	TMP	Chlorobenzene	3.015	3.093	-2.6	103	0.00
44	TC	Ethylbenzene	5.236	5.710	-9.1	104	0.00
45	T	m+p-Xylenes	2.009	2.125	-5.8	105	0.00
46	T	o-Xylene	3.736	4.045	-8.3	104	-0.01
47	T	Styrene	3.053	3.280	-7.4	106	0.00
48	TP	Bromoform	0.457	0.487	-6.6	117	0.00
49	S	Bromofluorobenzene	1.647	1.640	0.4	98	0.00
50	TP	1,1,2,2-Tetrachloroethane	1.605	1.627	-1.4	104	0.00
51	T	1,3-Dichlorobenzene	1.790	1.812	-1.2	102	0.00
52	T	1,4-Dichlorobenzene	1.768	1.832	-3.6	101	0.00
53	T	1,2-Dichlorobenzene	1.738	1.746	-0.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

4A

FIELD ID:

VOLATILE METHOD BLANK SUMMARY

MB 1757

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16091 Location: Bldg23 SDG No.: _____

Lab File ID: VC005652.D Lab Sample ID: MB

Date Analyzed: 5/4/01 Time Analyzed: 9:43

GC Column: RTX502. ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VoaInst#3

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

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	1610001 MS	1610001 MS	VC005660.D	15:33
02	1610001 MSD	1610001 MSD	VC005661.D	16:14
03	2337GW	1609101	VC005673.D	0:17
04	TRIP BLANK	1609102	VC005674.D	0:58
05	FIELD BLANK	1609103	VC005675.D	1:38
06	DUPE	1609104	VC005676.D	2:18

COMMENTS:

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16091 Location: Bldg23 SDG No.: _____

	FIELD ID:	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	MB 1757	99	97	84	0
02	1610001 MS	96	99	105	0
03	1610001 MSD	94	99	104	0
04	2337GW	104	98	84	0
05	TRIP BLANK	103	99	82	0
06	FIELD BLANK	106	99	81	0
07	DUPE	104	100	82	0

QC LIMITS

SMC1	DCE	=	1,2-Dichloroethane-d4	(76-121)
SMC2	TOL	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(74-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

Volatile Matrix Spike Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC005660.D	Sample Name	1610001 MS
Date Aquired	4-May-01	Field ID	1610001 MS

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	152.07 ug/L	76.03
Acrylonitrile	200	179.40 ug/L	89.70
tert-Butyl alcohol	200	230.50 ug/L	115.25
Methyl-tert-Butyl ether	20	18.24 ug/L	91.21
Di-isopropyl ether	20	17.71 ug/L	88.57
Dichlorodifluoromethane	20	16.04 ug/L	80.18
Chloromethane	20	14.23 ug/L	71.13
Vinyl Chloride	20	13.61 ug/L	68.04
Bromomethane	20	15.37 ug/L	76.83
Chloroethane	20	16.22 ug/L	81.08
Trichlorofluoromethane	20	16.38 ug/L	81.91
1,1-Dichloroethene	20	15.95 ug/L	79.74
Acetone	20	9.66 ug/L	48.29
Carbon Disulfide	20	16.22 ug/L	81.08
Methylene Chloride	20	17.67 ug/L	88.35
trans-1,2-Dichloroethene	20	16.17 ug/L	80.86
1,1-Dichloroethane	20	16.07 ug/L	80.36
Vinyl Acetate	20	15.91 ug/L	79.54
2-Butanone	20	17.07 ug/L	85.37
cis-1,2-Dichloroethene	20	16.31 ug/L	81.55
Chloroform	20	17.64 ug/L	88.21
1,1,1-Trichloroethane	20	16.79 ug/L	83.94
Carbon Tetrachloride	20	16.85 ug/L	84.27
Benzene	20	17.25 ug/L	86.23
1,2-Dichloroethane	20	15.81 ug/L	79.06
Trichloroethene	20	16.81 ug/L	84.04
1,2-Dichloropropane	20	16.25 ug/L	81.23
Bromodichloromethane	20	16.19 ug/L	80.93
2-Chloroethyl vinyl ether	20	15.54 ug/L	77.71
cis-1,3-Dichloropropene	20	16.89 ug/L	84.45
4-Methyl-2-Pentanone	20	21.88 ug/L	109.40
Toluene	20	18.66 ug/L	93.31
trans-1,3-Dichloropropene	20	16.74 ug/L	83.69
1,1,2-Trichloroethane	20	16.66 ug/L	83.31
Tetrachloroethene	20	17.87 ug/L	89.35
2-Hexanone	20	22.50 ug/L	112.52
Dibromochloromethane	20	16.97 ug/L	84.84
Chlorobenzene	20	16.79 ug/L	83.95
Ethylbenzene	20	19.09 ug/L	95.46
m+p-Xylenes	40	36.66 ug/L	91.65
o-Xylene	20	21.99 ug/L	109.95
Styrene	20	17.51 ug/L	87.57
Bromoform	20	17.23 ug/L	86.13
1,1,2,2-Tetrachloroethane	20	17.57 ug/L	87.86
1,3-Dichlorobenzene	20	19.82 ug/L	99.08
1,4-Dichlorobenzene	20	21.18 ug/L	105.92
1,2-Dichlorobenzene	20	21.58 ug/L	107.92

D:\HPCHEM\CUSTRPT\VOLATILE\624MS00.CRT

5/15/01 2:27 PM

000030

Volatile Matrix Spike Duplicate Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC005661.D	Sample Name	1610001 MSD
Date Aquired	4-May-01	Field ID	1610001 MSD

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	173.49 ug/L	86.74
Acrylonitrile	200	189.24 ug/L	94.62
tert-Butyl alcohol	200	253.18 ug/L	126.59
Methyl-tert-Butyl ether	20	20.09 ug/L	100.43
Di-isopropyl ether	20	19.39 ug/L	96.96
Dichlorodifluoromethane	20	16.81 ug/L	84.04
Chloromethane	20	14.73 ug/L	73.64
Vinyl Chloride	20	13.87 ug/L	69.37
Bromomethane	20	17.18 ug/L	85.90
Chloroethane	20	17.07 ug/L	85.34
Trichlorofluoromethane	20	17.68 ug/L	88.39
1,1-Dichloroethene	20	16.86 ug/L	84.32
Acetone	20	10.10 ug/L	50.50
Carbon Disulfide	20	17.18 ug/L	85.91
Methylene Chloride	20	18.72 ug/L	93.61
trans-1,2-Dichloroethene	20	17.02 ug/L	85.09
1,1-Dichloroethane	20	16.93 ug/L	84.65
Vinyl Acetate	20	16.89 ug/L	84.45
2-Butanone	20	18.39 ug/L	91.96
cis-1,2-Dichloroethene	20	17.43 ug/L	87.15
Chloroform	20	18.85 ug/L	94.23
1,1,1-Trichloroethane	20	17.98 ug/L	89.90
Carbon Tetrachloride	20	18.01 ug/L	90.03
Benzene	20	18.08 ug/L	90.41
1,2-Dichloroethane	20	16.73 ug/L	83.64
Trichloroethene	20	18.12 ug/L	90.58
1,2-Dichloropropane	20	17.04 ug/L	85.21
Bromodichloromethane	20	17.57 ug/L	87.84
2-Chloroethyl vinyl ether	20	16.29 ug/L	81.46
cis-1,3-Dichloropropene	20	18.21 ug/L	91.06
4-Methyl-2-Pentanone	20	24.12 ug/L	120.58
Toluene	20	19.70 ug/L	98.48
trans-1,3-Dichloropropene	20	17.63 ug/L	88.13
1,1,2-Trichloroethane	20	17.41 ug/L	87.06
Tetrachloroethene	20	18.33 ug/L	91.64
2-Hexanone	20	22.87 ug/L	114.37
Dibromochloromethane	20	17.61 ug/L	88.07
Chlorobenzene	20	17.58 ug/L	87.92
Ethylbenzene	20	19.86 ug/L	99.31
m+p-Xylenes	40	38.06 ug/L	95.16
o-Xylene	20	23.02 ug/L	115.10
Styrene	20	18.45 ug/L	92.26
Bromoform	20	18.47 ug/L	92.35
1,1,2,2-Tetrachloroethane	20	18.48 ug/L	92.40
1,3-Dichlorobenzene	20	21.20 ug/L	105.99
1,4-Dichlorobenzene	20	22.44 ug/L	112.19
1,2-Dichlorobenzene	20	22.64 ug/L	113.18

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16091 Location: Bldg23 SDG No.:

Lab File ID (Standard): VC005651.D Date Analyzed: 5/4/01

Instrument ID: VoaInst#3 Time Analyzed: 8:49

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1BCM AREA #	RT #	IS2DFB AREA #	RT #	IS3CBZ AREA #	RT #
	12 HOUR STD	814409	16.69	5393251	19.41	1587419	27.25
	UPPER LIMIT	1628818	17.19	10786502	19.91	3174838	27.75
	LOWER LIMIT	407205	16.19	2696626	18.91	793710	26.75
	FIELD ID:						
01	MB 1757	748738	16.69	5071969	19.42	1420710	27.25
02	1610001 MS	993594	16.69	6719481	19.42	2010265	27.25
03	1610001 MSD	1059380	16.69	7171126	19.42	2196096	27.24
04	2337GW	670557	16.70	4552718	19.42	1289410	27.24
05	TRIP BLANK	676722	16.70	4494284	19.42	1282858	27.25
06	FIELD BLANK	647920	16.70	4409721	19.42	1259512	27.25
07	DUPE	662706	16.69	4463368	19.42	1287461	27.25

IS1 BCM = Bromochloromethane
IS2 DFB = 1,4-Difluorobenzene
IS3 CBZ = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010504\VC005652.D Vial: 1
Acq On : 4 May 2001 9:43 am Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 4 13:15 2001 Quant Results File: M362441.RES

Quant Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Fri May 04 09:29:53 2001
Response via : Initial Calibration
DataAcq Meth : M362441

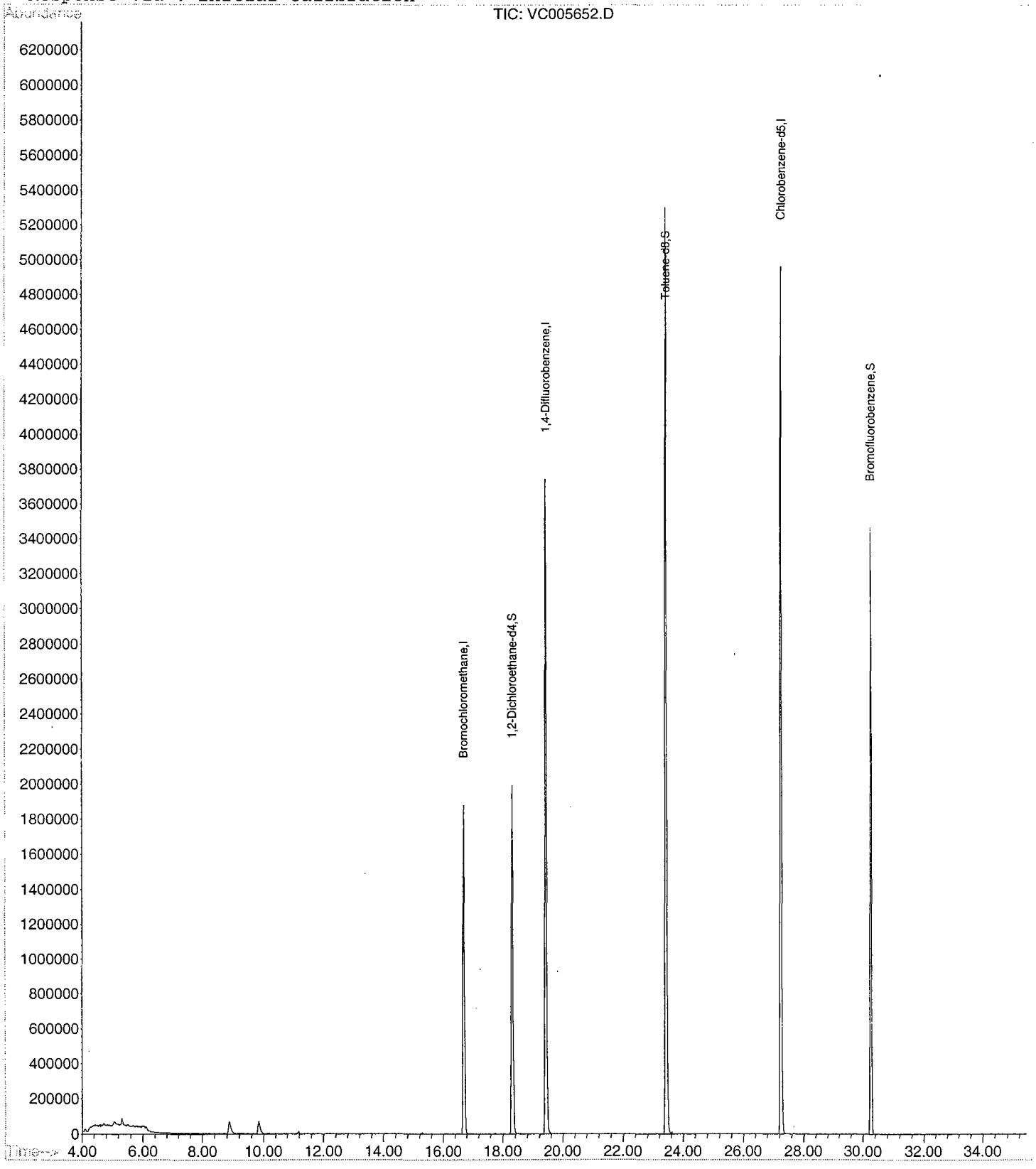
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	748738	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	5071969	30.00	ug/L	0.01
37) Chlorobenzene-d5	27.25	119	1420710	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	2581442	29.77	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 99.23%			
35) Toluene-d8	23.42	98	6351994	29.09	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 96.97%			
49) Bromofluorobenzene	30.25	95	1959769	25.13	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 83.77%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010504\VC005652.D Vial: 1
Acq On : 4 May 2001 9:43 am Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 4 13:15 2001 Quant Results File: M362441.RES

Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon May 07 11:28:11 2001
Response via : Initial Calibration



000134

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010504\VC005673.D Vial: 15
Acq On : 5 May 2001 12:17 am Operator: Skelton
Sample : 1609101 Inst : GC/MS Ins
Misc : 2337GW Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 5 0:53 2001 Quant Results File: M362441.RES

Quant Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Fri May 04 09:29:53 2001
Response via : Initial Calibration
DataAcq Meth : M362441

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	670557	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	4552718	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	1289410	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	2432212	31.32	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 104.40%			
35) Toluene-d8	23.43	98	5777255	29.47	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 98.23%			
49) Bromofluorobenzene	30.26	95	1778352	25.13	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 83.77%			

Target Compounds Qvalue

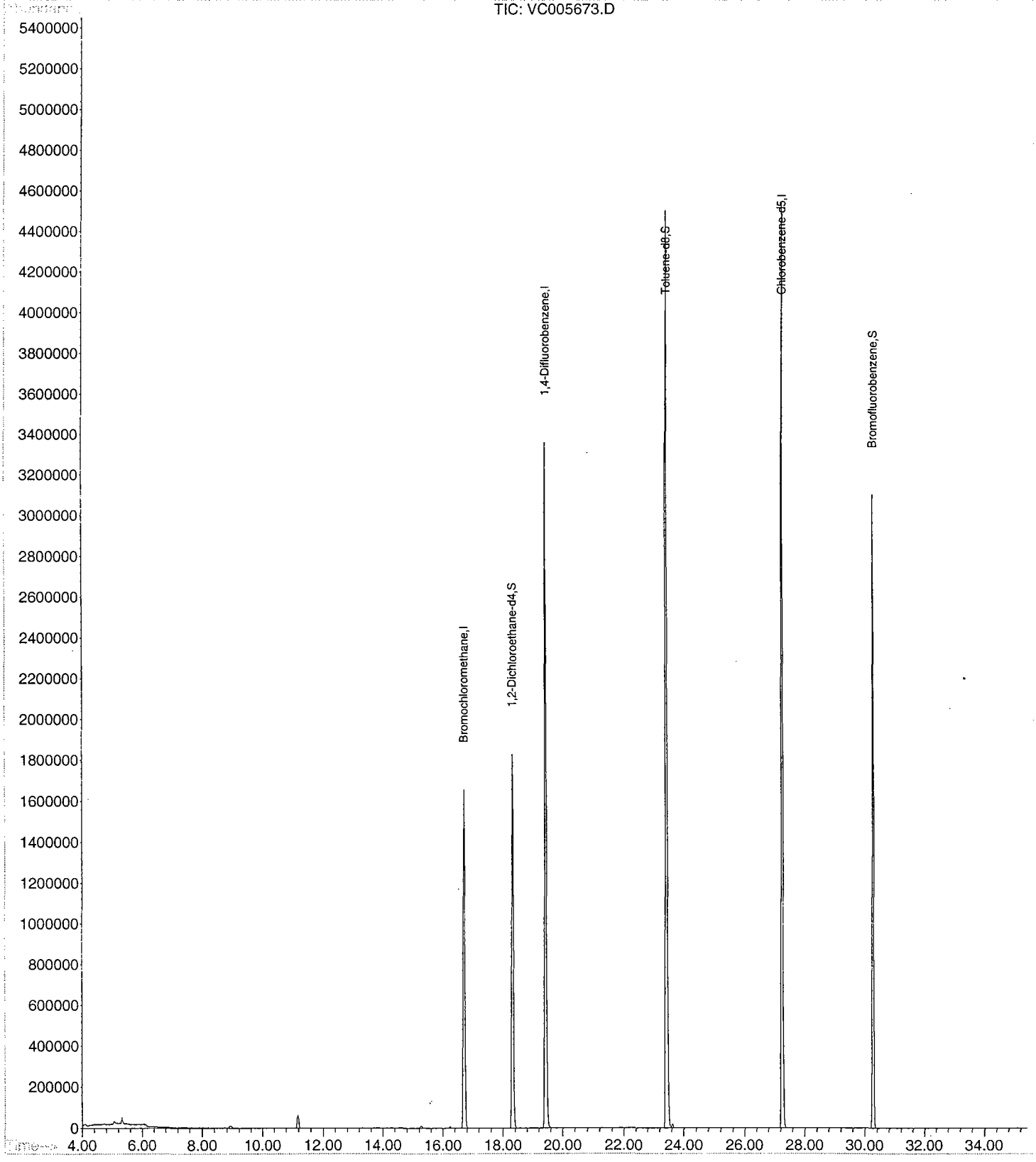
(#) = qualifier out of range (m) = manual integration
VC005673.D M362441.M Tue May 15 14:22:01 2001 Page 35

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010504\VC005673.D Vial: 15
Acq On : 5 May 2001 12:17 am Operator: Skelton
Sample : 1609101 Inst : GC/MS Ins
Misc : 2337GW Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 5 0:53 2001 Quant Results File: M362441.RES

Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon May 07 11:28:11 2001
Response via : Initial Calibration

TIC: VC005673.D



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010504\VC005674.D Vial: 16
Acq On : 5 May 2001 12:58 am Operator: Skelton
Sample : 1609102 Inst : GC/MS Ins
Misc : Trip Blank Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 5 1:33 2001 Quant Results File: M362441.RES

Quant Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Fri May 04 09:29:53 2001
Response via : Initial Calibration
DataAcq Meth : M362441

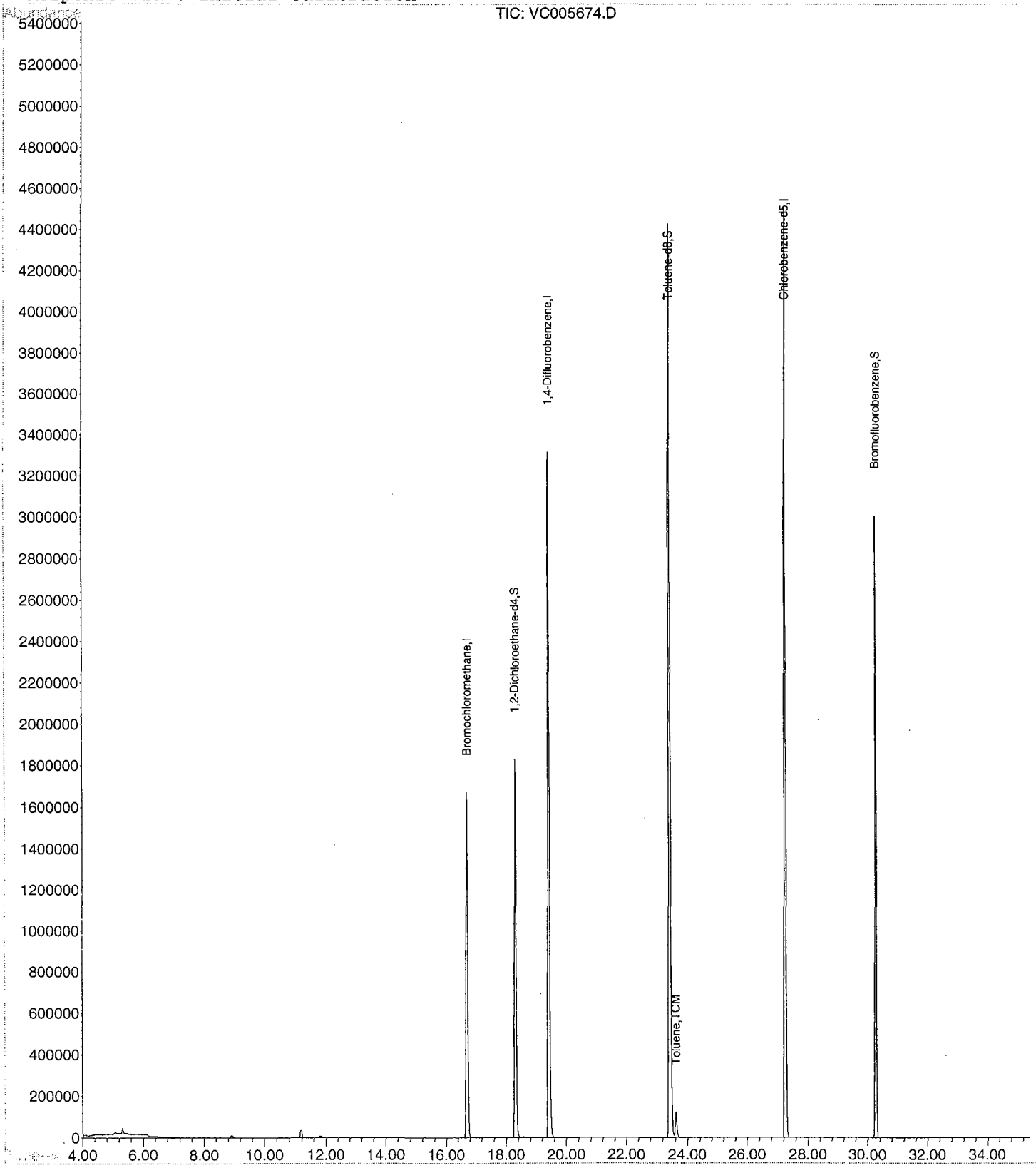
Internal Standards		R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane		16.70	128	676722	30.00	ug/L	0.01
26) 1,4-Difluorobenzene		19.42	114	4494284	30.00	ug/L	0.01
37) Chlorobenzene-d5		27.25	119	1282858	30.00	ug/L	0.00
System Monitoring Compounds							
25) 1,2-Dichloroethane-d4		18.30	65	2412915	30.79	ug/L	0.00
Spiked Amount	30.000	Range 70 - 121		Recovery =	102.63%		
35) Toluene-d8		23.42	98	5752169	29.73	ug/L	0.00
Spiked Amount	30.000	Range 81 - 117		Recovery =	99.10%		
49) Bromofluorobenzene		30.26	95	1721874	24.45	ug/L	0.01
Spiked Amount	30.000	Range 74 - 121		Recovery =	81.50%		
Target Compounds							Qvalue
36) Toluene		23.62	91	239569	1.13	ug/L	98

(#) = qualifier out of range (m) = manual integration
VC005674.D M362441.M Tue May 15 14:22:05 2001

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010504\VC005674.D Vial: 16
Acq On : 5 May 2001 12:58 am Operator: Skelton
Sample : 1609102 Inst : GC/MS Ins
Misc : Trip Blank Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 5 1:33 2001 Quant Results File: M362441.RES

Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon May 07 11:28:11 2001
Response via : Initial Calibration



000098

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010504\VC005675.D Vial: 17
Acq On : 5 May 2001 1:38 am Operator: Skelton
Sample : 1609103 Inst : GC/MS Ins
Misc : Field Blank Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 15 14:21 2001 Quant Results File: M362441.RES

Quant Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Fri May 04 09:29:53 2001
Response via : Initial Calibration
DataAcq Meth : M362441

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	647920	30.00	ug/L	0.01
26) 1,4-Difluorobenzene	19.42	114	4409721	30.00	ug/L	0.01
37) Chlorobenzene-d5	27.25	119	1259512	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	2377090	31.68	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 105.60%			
35) Toluene-d8	23.42	98	5664611	29.83	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 99.43%			
49) Bromofluorobenzene	30.26	95	1690069	24.44	ug/L	0.01
Spiked Amount 30.000	Range 74 - 121		Recovery = 81.47%			

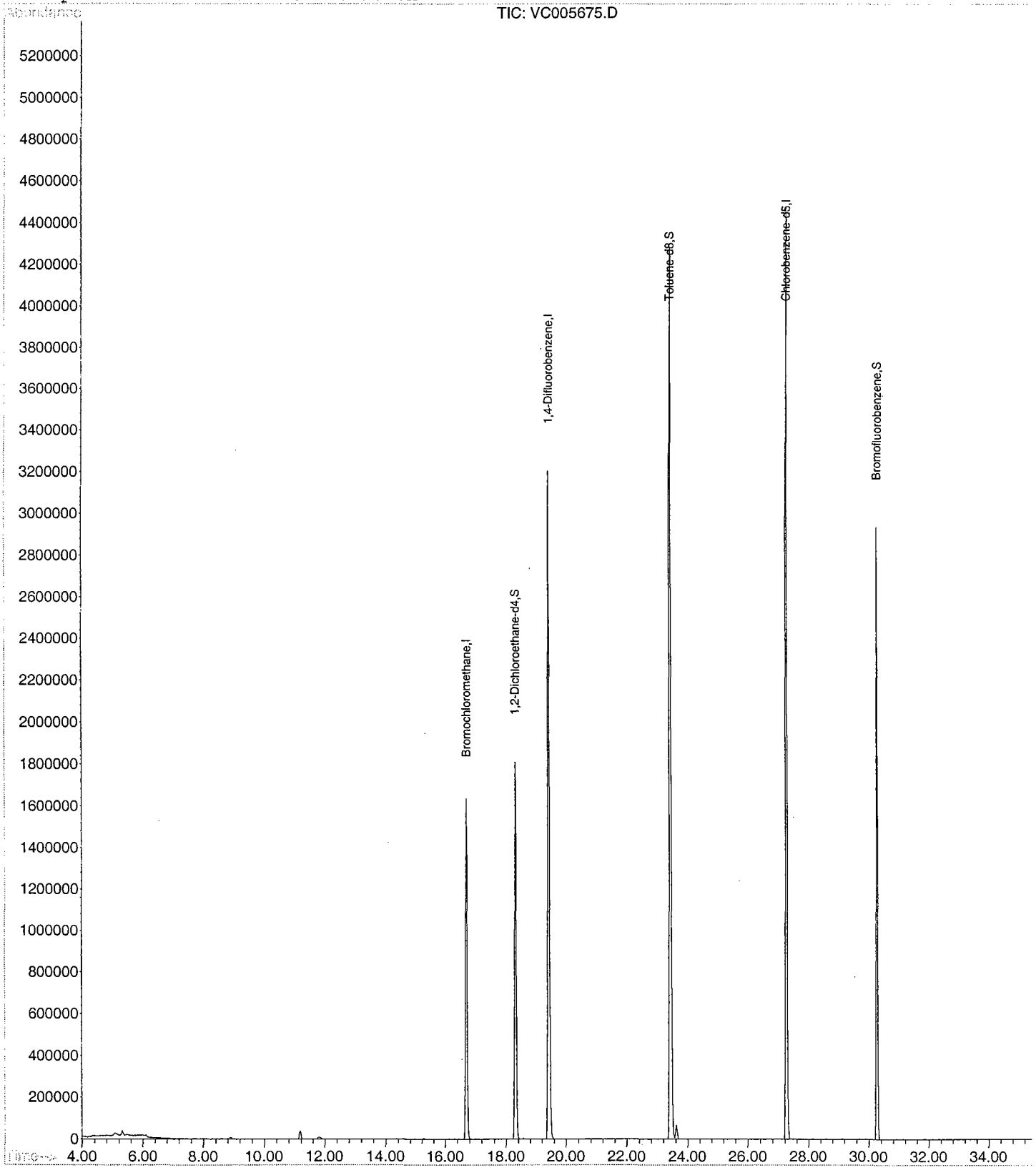
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
VC005675.D M362441.M Tue May 15 14:22:09 2001 Page 1

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010504\VC005675.D Vial: 17
Acq On : 5 May 2001 1:38 am Operator: Skelton
Sample : 1609103 Inst : GC/MS Ins
Misc : Field Blank Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 15 14:21 2001 Quant Results File: M362441.RES

Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon May 07 11:28:11 2001
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010504\VC005676.D Vial: 18
Acq On : 5 May 2001 2:18 am Operator: Skelton
Sample : 1609104 Inst : GC/MS Ins
Misc : Dupe Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 5 2:53 2001 Quant Results File: M362441.RES

Quant Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Fri May 04 09:29:53 2001
Response via : Initial Calibration
DataAcq Meth : M362441

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	662706	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	4463368	30.00	ug/L	0.01
37) Chlorobenzene-d5	27.25	119	1287461	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	2389977	31.14	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 103.80%			
35) Toluene-d8	23.43	98	5754294	29.94	ug/L	0.01
Spiked Amount 30.000	Range 81 - 117		Recovery = 99.80%			
49) Bromofluorobenzene	30.26	95	1737707	24.59	ug/L	0.01
Spiked Amount 30.000	Range 74 - 121		Recovery = 81.97%			

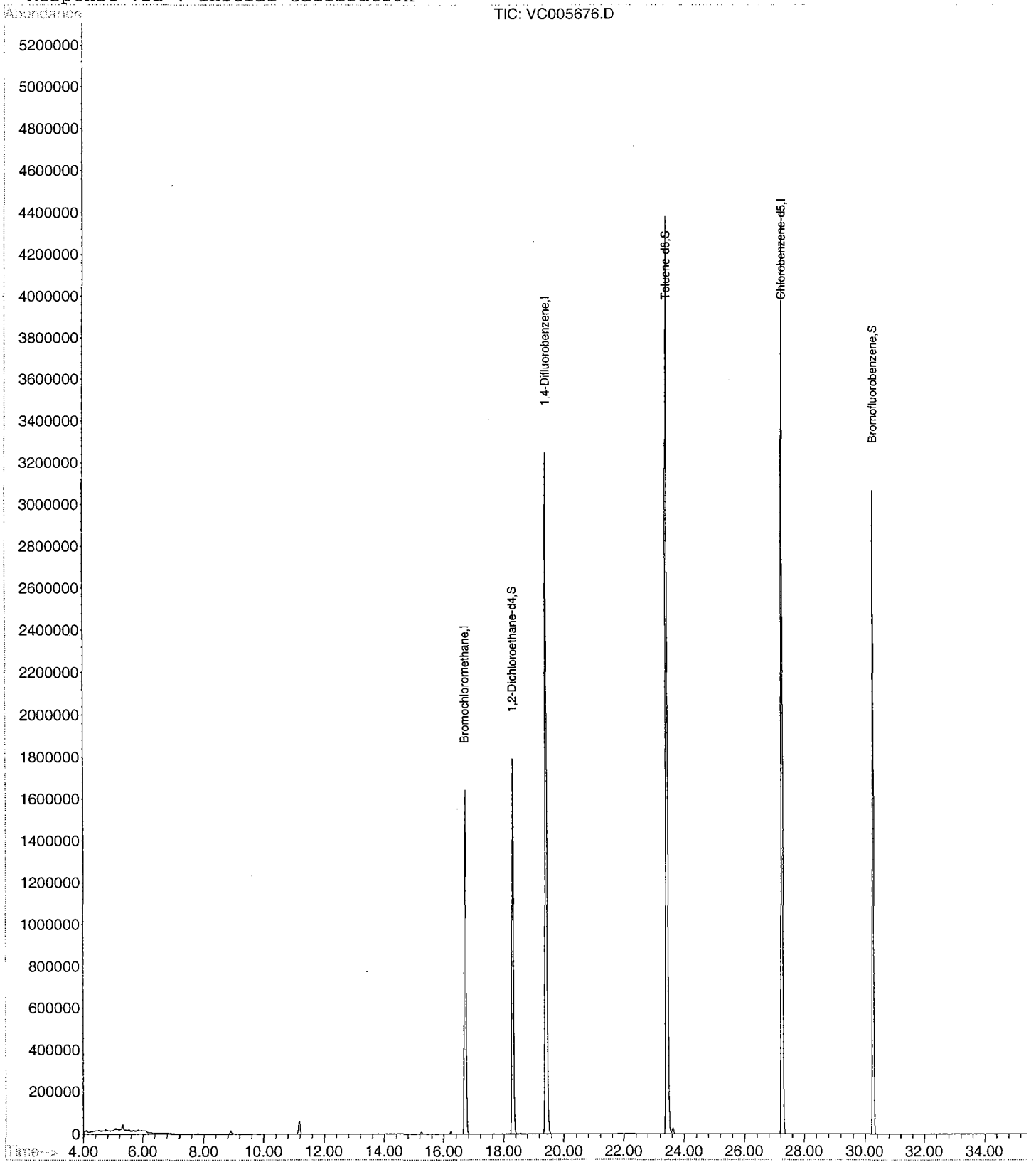
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010504\VC005676.D Vial: 18
Acq On : 5 May 2001 2:18 am Operator: Skelton
Sample : 1609104 Inst : GC/MS Ins
Misc : Dupe Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 5 2:53 2001 Quant Results File: M362441.RES

Method : D:\HPCHEM\1\METHODS\M362441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon May 07 11:28:11 2001
Response via : Initial Calibration



BASE NEUTRALS

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05323.D**	Sample Name	**MB-1729**
Operator	**Bhaskar**	Misc Info	**MB-010502**
Date Acquired	**3-May-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA05323.D**	Sample Name	**MB-1729**
Operator	**Bhaskar**	Misc Info	**MB-010502**
Date Acquired	**3-May-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	2.15	ug/L	
129-00-0	Pyrene			not detected	200	1.53	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.24	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	2.68	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.60	ug/L	
218-01-9	Chrysene			not detected	20	1.14	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.34	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.32	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.15	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	2.43	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.24	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.94	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	2.04	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05328.D**	Sample Name	**16091.03**
Operator	**Bhaskar**	Misc Info	**Field Blank**
Date Acquired	**4-May-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA05328.D**	Sample Name	**16091.03**
Operator	**Bhaskar**	Misc Info	**Field Blank**
Date Acquired	**4-May-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	2.15	ug/L	
129-00-0	Pyrene			not detected	200	1.53	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.24	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	2.68	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.60	ug/L	
218-01-9	Chrysene			not detected	20	1.14	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.34	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.32	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.15	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	2.43	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.24	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.94	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	2.04	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **Dupe**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: Bl.2337 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 16091.04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05329.D

Level: (low/med) LOW Date Received: 4/28/01

% Moisture: decanted: (Y/N) N Date Extracted: 5/2/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 5/4/01

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05327.D**	Sample Name	**16091.01**
Operator	**Bhaskar**	Misc Info	**Bldg.2337 GW**
Date Acquired	**3-May-01**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.54	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.69	ug/L	
62-53-3	Aniline			not detected	NLE	1.85	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.63	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.62	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.58	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.62	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.65	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.57	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.64	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.34	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.51	ug/L	
78-59-1	Isophorone			not detected	100	0.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.48	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.54	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.72	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.78	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.43	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.55	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.76	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.53	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.04	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.04	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.70	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.92	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.93	ug/L	
83-32-9	Acenaphthene			not detected	400	0.62	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.73	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.41	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.54	ug/L	
86-73-7	Fluorene			not detected	300	0.98	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.86	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.96	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.44	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.28	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.08	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.73	ug/L	
120-12-7	Anthracene			not detected	2000	1.85	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.49	ug/L	
206-44-0	Fluoranthene			not detected	300	1.48	ug/L	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **2337GW**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: Bl.2337 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 16091.01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05327.D

Level: (low/med) LOW Date Received: 4/28/01

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/2/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 5/3/01

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: Bl.2337 SDG No.:

Lab File ID: BNA05123.D DFTPP Injection Date: 3/27/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 8:44

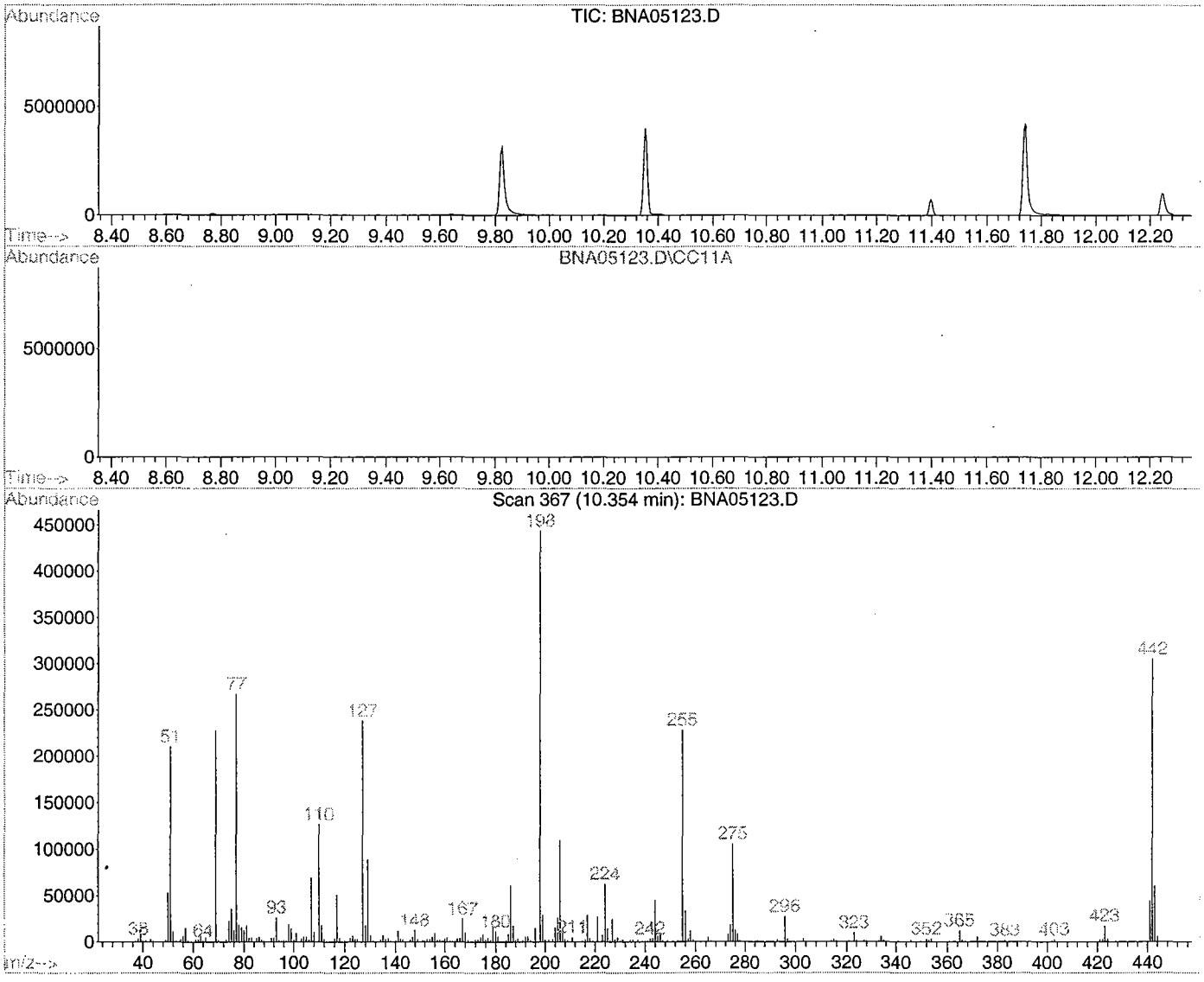
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	47.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	51.3
70	Less than 2.0% of mass 69	0.4 (0.8)1
127	25.0 - 75.0% of mass 198	53.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	23.7
365	Greater than 0.75% of mass 198	2.7
441	Present, but less than mass 443	10.0
442	40.0 - 110.0% of mass 198	68.7
443	15.0 - 24.0% of mass 442	13.7 (19.9)2

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

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

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD120	120 PPM CAL	BNA05124.D	3/27/01	9:08
02	SSTD010	10 PPM CAL	BNA05125.D	3/27/01	9:55
03	SSTD050	50 PPM CAL	BNA05126.D	3/27/01	10:42
04	SSTD080	80 PPM CAL	BNA05127.D	3/27/01	11:28
05	SSTD020	20 PPM CAL	BNA05128.D	3/27/01	12:13

Data File : D:\DATA\010327\BNA05123.D Vial: 99
Acq On : 27 Mar 2001 8:44 am Operator: Bhaskar
Sample : DFTPP TUNE Inst : GC/MS Ins
Misc : 50 NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Scan 367

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	47.4	210304	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	51.3	227520	PASS
70	69	0.00	2	0.8	1892	PASS
127	198	40	60	53.7	238528	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	443904	PASS
199	198	5	9	6.6	29456	PASS
275	198	10	30	23.7	105416	PASS
365	198	1	100	2.7	12022	PASS
441	443	1	99	73.0	44304	PASS
442	198	40	100	68.7	305152	PASS
443	442	17	23	19.9	60680	PASS

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration

Calibration Files
120 =BNA05124.D 80 =BNA05127.D 50 =BNA05126.D
20 =BNA05128.D 10 =BNA05125.D

		Compound	120	80	50	20	10	Avg	%RSD
55)	T	4,6-Dinitro-2-methylp	0.143	0.142	0.139	0.129	0.114	0.133	9.09
56)	TC	n-Nitrosodiphenylamin	0.435	0.452	0.471	0.496	0.510	0.473	6.47
57)	T	Azobenzene	0.729	0.777	0.819	0.855	0.879	0.812	7.39
58)	S	2,4,6-Tribromophenol	0.090	0.090	0.091	0.090	0.089	0.090	0.84
59)	T	4-Bromophenyl-phenyle	0.172	0.175	0.182	0.190	0.194	0.182	5.12
60)	T	Hexachlorobenzene	0.184	0.188	0.193	0.202	0.212	0.196	5.74
61)	TCM	Pentachlorophenol	0.124	0.123	0.122	0.109	0.103	0.116	8.31
62)	T	Phenanthrene	0.841	0.901	0.974	1.046	1.102	0.973	10.83
63)	T	Anthracene	0.863	0.922	0.991	1.063	1.107	0.989	10.08
64)	T	Di-n-butylphthalate	0.955	1.039	1.108	1.177	1.200	1.096	9.21
65)	TC	Fluoranthene	0.895	0.950	1.019	1.096	1.136	1.019	9.80
66)	I	Chrysene-d12	----------ISTD----------						
67)	T	Benzidine	0.361	0.366	0.394	0.424	0.434	0.396	8.29
68)	TM	Pyrene	1.050	1.100	1.153	1.229	1.263	1.159	7.59
69)	S	p-Terphenyl-d14	0.751	0.772	0.793	0.823	0.844	0.797	4.74
70)	T	Butylbenzylphthalate	0.562	0.570	0.574	0.574	0.565	0.569	0.96
71)	T	Benzo[a]anthracene	1.023	1.057	1.094	1.125	1.162	1.092	5.02
72)	T	3,3'-Dichlorobenzidin	0.334	0.346	0.353	0.368	0.366	0.354	4.06
73)	T	Chrysene	0.964	1.001	1.031	1.071	1.116	1.037	5.74
74)	T	bis(2-Ethylhexyl)phth	0.760	0.780	0.791	0.792	0.772	0.779	1.72
75)	I	Perylene-d12	----------ISTD----------						
76)	TC	Di-n-octylphthalate	1.214	1.325	1.400	1.410	1.374	1.345	5.98
77)	T	Benzo[b]fluoranthene	1.045	1.067	1.130	1.144	1.184	1.114	5.12
78)	T	Benzo[k]fluoranthene	1.001	1.043	1.117	1.192	1.220	1.115	8.40
79)	TC	Benzo[a]pyrene	0.993	1.031	1.084	1.117	1.139	1.073	5.65
80)	T	Indeno[1,2,3-cd]pyren	1.131	1.093	1.092	1.069	1.043	1.086	3.01
81)	T	Dibenz[a,h]anthracene	1.065	1.095	1.119	1.128	1.111	1.104	2.24
82)	T	Benzo[g,h,i]perylene	1.073	1.079	1.100	1.107	1.120	1.096	1.77

(#) = Out of Range

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration

Calibration Files
120 =BNA05124.D 80 =BNA05127.D 50 =BNA05126.D
20 =BNA05128.D 10 =BNA05125.D

		Compound	120	80	50	20	10	Avg	%RSD
1)	I	1,4-Dichlorobenzene-d	ISTD						
2)	T	Pyridine	1.463	1.406	1.422	1.443	1.442	1.435	1.51
3)	T	N-nitroso-dimethylami	0.781	0.744	0.751	0.733	0.740	0.750	2.47
4)	S	2-Fluorophenol	1.158	1.132	1.141	1.133	1.124	1.137	1.13
5)	T	Aniline	1.794	1.806	1.875	1.892	1.891	1.852	2.57
6)	S	Phenol-d6	1.412	1.409	1.440	1.456	1.453	1.434	1.56
7)	TCM	Phenol	1.590	1.610	1.683	1.694	1.713	1.658	3.28
8)	T	bis(2-Chloroethyl)eth	1.192	1.165	1.186	1.231	1.228	1.201	2.37
9)	TM	2-Chlorophenol	1.154	1.146	1.172	1.191	1.186	1.170	1.66
10)	T	1,3-Dichlorobenzene	1.223	1.237	1.278	1.304	1.339	1.276	3.75
11)	TCM	1,4-Dichlorobenzene	1.235	1.256	1.305	1.344	1.379	1.304	4.59
12)	T	Benzyl alcohol	0.775	0.763	0.777	0.748	0.747	0.762	1.87
13)	T	1,2-Dichlorobenzene	1.117	1.134	1.197	1.242	1.280	1.194	5.79
14)	T	2-Methylphenol	1.051	1.047	1.081	1.098	1.107	1.077	2.50
15)	T	bis(2-chloroisopropyl	1.215	1.194	1.233	1.244	1.288	1.235	2.83
16)	T	4-Methylphenol	1.085	1.101	1.143	1.156	1.147	1.126	2.78
17)	TPM	n-Nitroso-di-n-propyl	0.187	0.192	0.195	0.195	0.188	0.191	1.93
18)	T	Hexachloroethane	0.489	0.488	0.499	0.503	0.514	0.498	2.16
19)	I	Naphthalene-d8	ISTD						
20)	S	Nitrobenzene-d5	0.399	0.393	0.401	0.404	0.412	0.402	1.70
21)	T	Nitrobenzene	0.389	0.391	0.400	0.411	0.424	0.403	3.62
22)	T	Isophorone	0.668	0.657	0.669	0.684	0.701	0.676	2.54
23)	TC	2-Nitrophenol	0.185	0.185	0.185	0.185	0.178	0.184	1.82
24)	T	2,4-Dimethylphenol	0.330	0.328	0.337	0.345	0.353	0.339	3.12
25)	T	bis(2-Chloroethoxy)me	0.388	0.389	0.397	0.409	0.412	0.399	2.74
26)	TC	2,4-Dichlorophenol	0.242	0.245	0.249	0.234	0.208	0.235	6.97
27)	T	Benzoic Acid	0.259	0.240	0.219	0.216	0.198	0.226	10.40
28)	TM	1,2,4-Trichlorobenzen	0.271	0.276	0.286	0.297	0.306	0.287	5.12
29)	T	Naphthalene	0.813	0.882	0.948	1.011	1.054	0.942	10.28
30)	T	4-Chloroaniline	0.357	0.377	0.388	0.389	0.384	0.379	3.44
31)	TC	Hexachlorobutadiene	0.147	0.153	0.159	0.165	0.170	0.159	6.03
32)	TCM	4-Chloro-3-methylphen	0.287	0.289	0.294	0.290	0.288	0.289	0.93
33)	T	2-Methylnaphthalene	0.554	0.579	0.614	0.644	0.666	0.612	7.47
34)	I	Acenaphthene-d10	ISTD						
35)	TP	Hexachlorocyclopentad	0.255	0.261	0.251	0.214	0.167	0.230	17.16
36)	TC	2,4,6-Trichlorophenol	0.307	0.312	0.320	0.317	0.313	0.314	1.58
37)	T	2,4,5-Trichlorophenol	0.337	0.338	0.346	0.326	0.315	0.332	3.58
38)	S	2-Fluorobiphenyl	0.986	1.046	1.128	1.184	1.222	1.113	8.73
39)	T	2-Chloronaphthalene	0.884	0.917	0.965	1.011	1.029	0.961	6.37
40)	T	2-Nitroaniline	0.370	0.366	0.375	0.360	0.345	0.363	3.21
41)	T	Dimethylphthalate	1.010	1.049	1.104	1.148	1.172	1.097	6.17
42)	T	Acenaphthylene	1.345	1.438	1.568	1.680	1.734	1.553	10.46
43)	T	2,6-Dinitrotoluene	0.266	0.270	0.285	0.291	0.295	0.281	4.59
44)	T	3-Nitroaniline	0.263	0.279	0.289	0.289	0.280	0.280	3.86
45)	TCM	Acenaphthene	0.892	0.925	0.986	1.031	1.065	0.980	7.32
46)	TP	2,4-Dinitrophenol	0.186	0.177	0.164	0.124	0.096	0.149	25.46
47)	T	Dibenzofuran	1.169	1.233	1.341	1.417	1.470	1.326	9.43
48)	TMP	4-Nitrophenol	0.239	0.203	0.198	0.199	0.186	0.205	9.69
49)	TM	2,4-Dinitrotoluene	0.356	0.355	0.362	0.366	0.354	0.359	1.40
50)	T	Diethylphthalate	1.025	1.063	1.120	1.162	1.196	1.113	6.27
51)	T	Fluorene	0.998	1.040	1.117	1.173	1.206	1.107	7.92
52)	T	4-Chlorophenyl-phenyl	0.489	0.507	0.534	0.549	0.564	0.529	5.75
53)	T	4-Nitroaniline	0.296	0.288	0.291	0.283	0.292	0.290	1.74
54)	I	Phenanthrene-d10	ISTD						

(#) = Out of Range

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: Bl.2337 SDG No.:

Lab File ID: BNA05319.D DFTPP Injection Date: 5/3/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 10:54

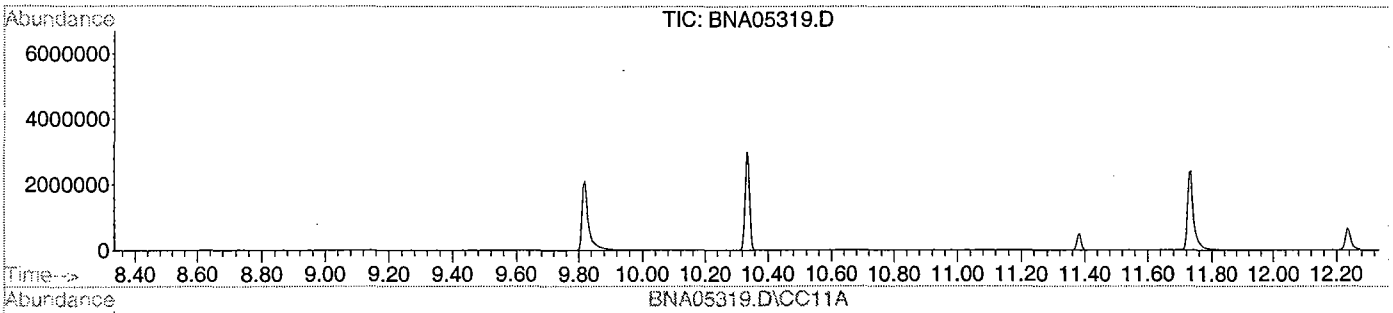
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	48.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	51.4
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	25.0 - 75.0% of mass 198	55.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	24.3
365	Greater than 0.75% of mass 198	2.9
441	Present, but less than mass 443	9.5
442	40.0 - 110.0% of mass 198	63.4
443	15.0 - 24.0% of mass 442	12.9 (20.4)2

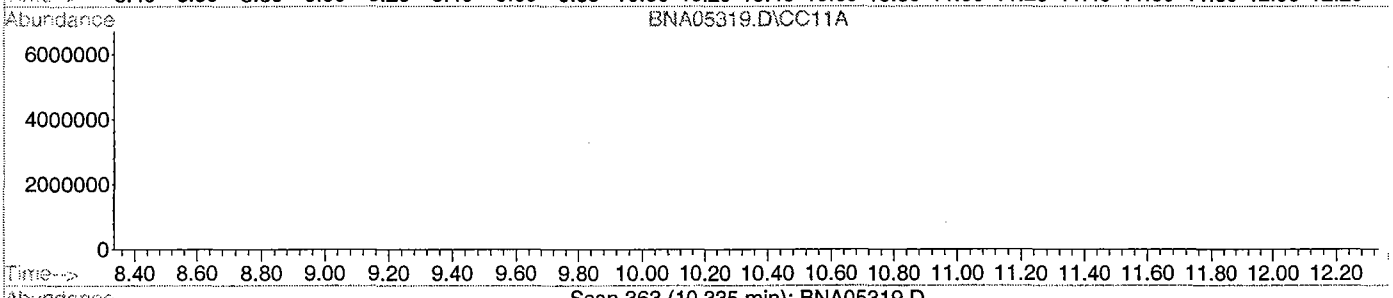
1-Value is % mass 69 2-Value is % mass 442

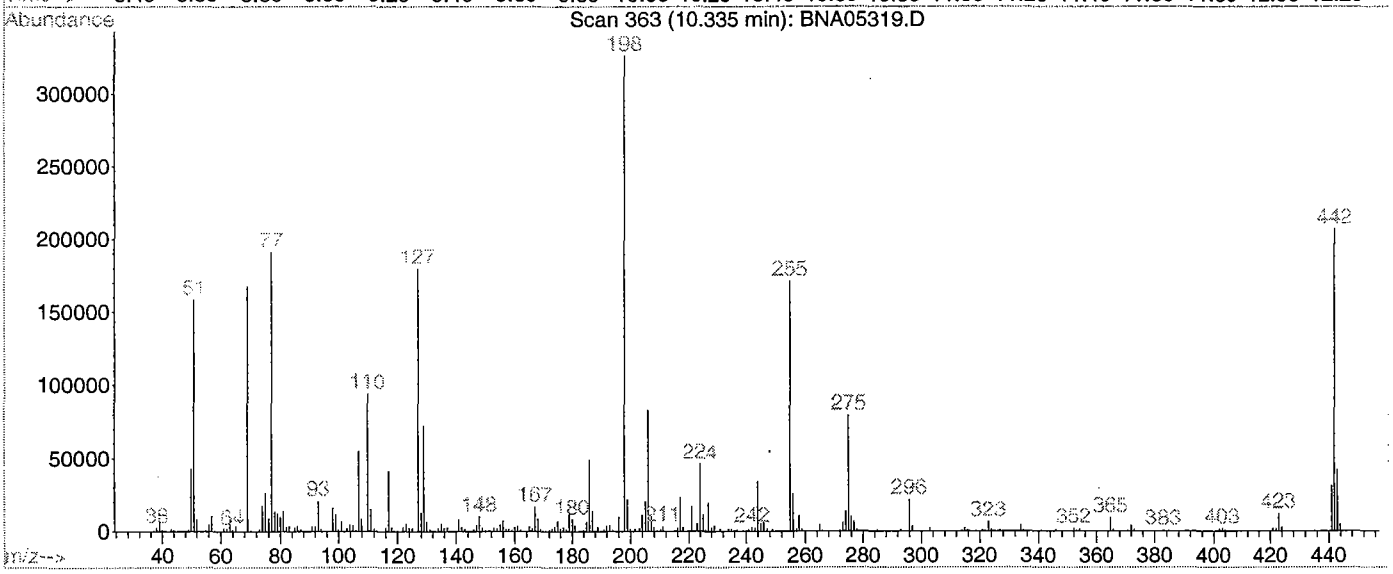
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	DAILY CAL	BNA05320.D	5/3/01	11:20
02	MB-1729	MB-1729	BNA05323.D	5/3/01	13:39
03	2337GW	16091.01	BNA05327.D	5/3/01	16:46
04	FIELD BLANK	16091.03	BNA05328.D	5/4/01	7:57
05	DUPE	16091.04	BNA05329.D	5/4/01	8:44

Data File : D:\DATA\010503\BNA05319.D Vial: 99
Acq On : 3 May 2001 10:54 am Operator: Bhaskar
Sample : DFTPP TUNE Inst : GC/MS Ins
Misc : 50 NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration







Spectrum Information: Scan 363

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	48.5	158336	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	51.4	167680	PASS
70	69	0.00	2	0.6	1045	PASS
127	198	40	60	55.0	179520	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	326528	PASS
199	198	5	9	6.8	22168	PASS
275	198	10	30	24.3	79424	PASS
365	198	1	100	2.9	9486	PASS
441	443	1	99	73.5	31064	PASS
442	198	40	100	63.4	206976	PASS
443	442	17	23	20.4	42256	PASS

Evaluate Continuing Calibration Report

Data File : D:\DATA\010503\BNA05320.D Vial: 100
Acq On : 3 May 2001 11:20 am Operator: Bhaskar
Sample : DAILY CAL Inst : GC/MS Ins
Misc : 50 PPM STD Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	-0.02
2	T	Pyridine	1.435	1.210	15.7	79	-0.02
3	T	N-nitroso-dimethylamine	0.750	0.635	15.3	79	0.00
4	S	2-Fluorophenol	1.137	1.028	9.6	84	0.07
5	T	Aniline	1.852	1.530	17.4	76	0.00
6	S	Phenol-d6	1.434	1.349	5.9	87	0.09
7	TCM	Phenol	1.658	1.387	16.3	77	0.09
8	T	bis(2-Chloroethyl)ether	1.201	1.070	10.9	84	-0.01
9	TM	2-Chlorophenol	1.170	1.108	5.3	88	0.02
10	T	1,3-Dichlorobenzene	1.276	1.230	3.6	90	-0.02
11	TCM	1,4-Dichlorobenzene	1.304	1.264	3.1	90	-0.02
12	T	Benzyl alcohol	0.762	0.731	4.1	88	0.01
13	T	1,2-Dichlorobenzene	1.194	1.171	1.9	91	-0.02
14	T	2-Methylphenol	1.077	1.066	1.0	92	0.06
15	T	bis(2-chloroisopropyl)ether	1.235	1.031	16.5	78	-0.02
16	T	4-Methylphenol	1.126	1.119	0.6	91	0.05
17	TPM	n-Nitroso-di-n-propylamine	0.191	0.184	3.7	88	0.00
18	T	Hexachloroethane	0.498	0.503	-1.0	94	-0.02
19	I	Naphthalene-d8	1.000	1.000	0.0	93	-0.02
20	S	Nitrobenzene-d5	0.402	0.399	0.7	92	0.00
21	T	Nitrobenzene	0.403	0.391	3.0	91	-0.01
22	T	Isophorone	0.676	0.641	5.2	89	-0.01
23	TC	2-Nitrophenol	0.184	0.174	5.4	87	-0.01
24	T	2,4-Dimethylphenol	0.339	0.347	-2.4	95	0.03
25	T	bis(2-Chloroethoxy)methane	0.399	0.366	8.3	86	-0.01
26	TC	2,4-Dichlorophenol	0.235	0.240	-2.1	90	0.02
27	T	Benzoic Acid	0.226	0.213	5.8	90	0.07
28	TM	1,2,4-Trichlorobenzene	0.287	0.289	-0.7	94	-0.02
29	T	Naphthalene	0.942	0.944	-0.2	92	-0.02
30	T	4-Chloroaniline	0.379	0.298	21.4	71	0.00
31	TC	Hexachlorobutadiene	0.159	0.170	-6.9	100	-0.02
32	TCM	4-Chloro-3-methylphenol	0.289	0.297	-2.8	94	0.05
33	T	2-Methylnaphthalene	0.612	0.626	-2.3	95	-0.02
34	I	Acenaphthene-d10	1.000	1.000	0.0	98	-0.02
35	TP	Hexachlorocyclopentadiene	0.230	0.254	-10.4	100	-0.03
36	TC	2,4,6-Trichlorophenol	0.314	0.314	0.0	96	0.00
37	T	2,4,5-Trichlorophenol	0.332	0.332	0.0	94	0.03
38	S	2-Fluorobiphenyl	1.113	1.111	0.2	97	-0.02
39	T	2-Chloronaphthalene	0.961	0.932	3.0	95	-0.02
40	T	2-Nitroaniline	0.363	0.335	7.7	88	0.00
41	T	Dimethylphthalate	1.097	1.075	2.0	96	-0.01
42	T	Acenaphthylene	1.553	1.557	-0.3	97	-0.02
43	T	2,6-Dinitrotoluene	0.281	0.297	-5.7	102	-0.01
44	T	3-Nitroaniline	0.280	0.236	15.7	80	0.01
45	TCM	Acenaphthene	0.980	0.970	1.0	97	-0.02
46	TP	2,4-Dinitrophenol	0.149	0.152	-2.0	91	0.00
47	T	Dibenzofuran	1.326	1.299	2.0	95	-0.02
48	TMP	4-Nitrophenol	0.205	0.166	19.0	82	0.10
49	TM	2,4-Dinitrotoluene	0.359	0.345	3.9	94	0.00
50	T	Diethylphthalate	1.113	1.117	-0.4	98	-0.02
51	T	Fluorene	1.107	1.110	-0.3	98	-0.02
52	T	4-Chlorophenyl-phenylether	0.529	0.531	-0.4	98	-0.02
53	T	4-Nitroaniline	0.290	0.258	11.0	87	0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\DATA\010503\BNA05320.D Vial: 100
Acq On : 3 May 2001 11:20 am Operator: Bhaskar
Sample : DAILY CAL Inst : GC/MS Ins
Misc : 50 PPM STD Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
54	I	Phenanthrene-d10	1.000	1.000	0.0	98	-0.02
55	T	4,6-Dinitro-2-methylphenol	0.133	0.128	3.8	91	0.00
56	TC	n-Nitrosodiphenylamine	0.473	0.457	3.4	96	-0.01
57	T	Azobenzene	0.812	0.789	2.8	95	-0.02
58	S	2,4,6-Tribromophenol	0.090	0.091	-1.1	98	0.00
59	T	4-Bromophenyl-phenylether	0.182	0.181	0.5	98	-0.02
60	T	Hexachlorobenzene	0.196	0.194	1.0	99	-0.02
61	TCM	Pentachlorophenol	0.116	0.108	6.9	87	0.00
62	T	Phenanthrene	0.973	0.966	0.7	98	-0.02
63	T	Anthracene	0.989	0.986	0.3	98	-0.02
64	T	Di-n-butylphthalate	1.096	1.091	0.5	97	-0.02
65	TC	Fluoranthene	1.019	1.029	-1.0	99	-0.02
66	I	Chrysene-d12	1.000	1.000	0.0	108	-0.02
67	T	Benzidine	0.396	0.313	21.0	86	0.00
68	TM	Pyrene	1.159	1.054	9.1	99	-0.02
69	S	p-Terphenyl-d14	0.797	0.734	7.9	100	-0.02
70	T	Butylbenzylphthalate	0.569	0.499	12.3	94	-0.02
71	T	Benzo[a]anthracene	1.092	1.013	7.2	100	-0.02
72	T	3,3'-Dichlorobenzidine	0.354	0.327	7.6	100	-0.01
73	T	Chrysene	1.037	0.947	8.7	99	-0.02
74	T	bis(2-Ethylhexyl)phthalate	0.779	0.700	10.1	95	-0.03
75	I	Perylene-d12	1.000	1.000	0.0	98	-0.02
76	TC	Di-n-octylphthalate	1.345	1.381	-2.7	97	-0.03
77	T	Benzo[b]fluoranthene	1.114	1.112	0.2	97	-0.02
78	T	Benzo[k]fluoranthene	1.115	1.119	-0.4	99	-0.02
79	TC	Benzo[a]pyrene	1.073	1.071	0.2	97	-0.02
80	T	Indeno[1,2,3-cd]pyrene	1.086	1.078	0.7	97	-0.02
81	T	Dibenz[a,h]anthracene	1.104	1.094	0.9	96	-0.03
82	T	Benzo[g,h,i]perylene	1.096	1.046	4.6	94	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
BNA05320.D M262546.M Fri May 04 08:38:07 2001

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: Bl.2337 SDG No.:

Lab File ID: BNA05230.D DFTPP Injection Date: 4/13/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 11:29

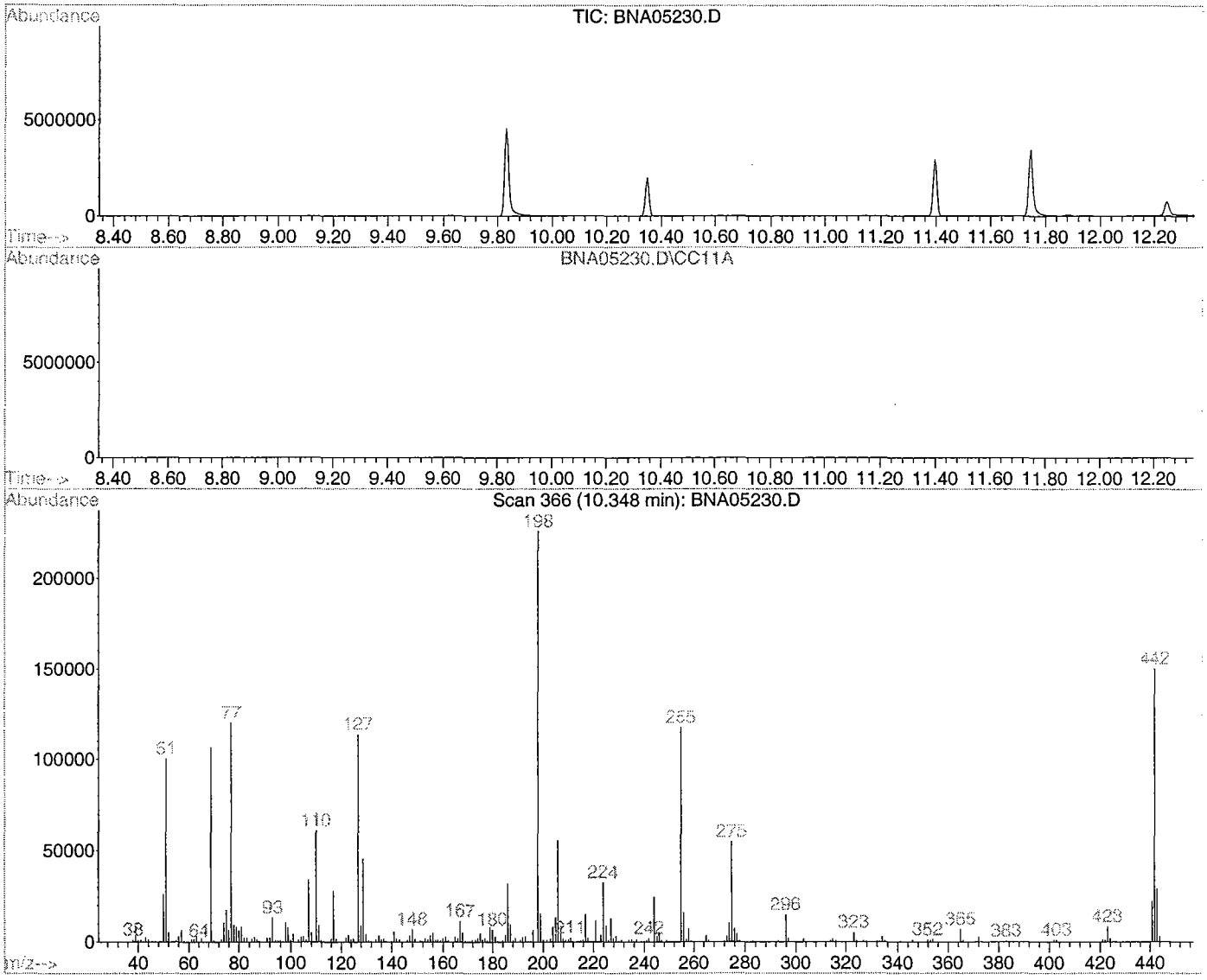
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	44.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	47.2
70	Less than 2.0% of mass 69	0.4 (0.8)1
127	25.0 - 75.0% of mass 198	50.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	24.3
365	Greater than 0.75% of mass 198	3.1
441	Present, but less than mass 443	9.9
442	40.0 - 110.0% of mass 198	66.4
443	15.0 - 24.0% of mass 442	12.9 (19.4)2

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

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

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	DAILY CAL	BNA05231.D	4/13/01	11:55
02	MS-1662	MS-1662	BNA05245.D	4/13/01	23:44
03	MSD-1663	MSD-1663	BNA05246.D	4/14/01	0:29

Data File : D:\DATA\010413\BNA05230.D Vial: 99
Acq On : 13 Apr 2001 11:29 am Operator: Bhaskar
Sample : DFTPP TUNE Inst : GC/MS Ins
Misc : 50 NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Scan 366

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	44.3	100232	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	47.2	106744	PASS
70	69	0.00	2	0.8	819	PASS
127	198	40	60	50.4	114040	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	226304	PASS
199	198	5	9	6.9	15561	PASS
275	198	10	30	24.3	54904	PASS
365	198	1	100	3.1	6969	PASS
441	443	1	99	76.6	22320	PASS
442	198	40	100	66.4	150336	PASS
443	442	17	23	19.4	29120	PASS

4B

Field Id: **MB-1729**

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: Bl.2337 SDG No.:

Lab File ID: BNA05323.D Lab Sample ID: MB-1729

Instrument ID: GC/MS Ins Date Extracted: 5/2/01

Matrix: (soil/water) WATER Date Analyzed: 5/3/01

Level: (low/med) LOW Time Analyzed: 13:39

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

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	2337GW	16091.01	BNA05327.D	5/3/01
02	FIELD BLANK	16091.03	BNA05328.D	5/4/01
03	DUPE	16091.04	BNA05329.D	5/4/01

COMMENTS:

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: Bl.2337 SDG No.: _____

	Field Id:	S1 NBZ #	S2 2FP #	S3 TPL #	TOT OUT
01	MS-1662	74	85	81	0
02	MSD-1663	78	88	73	0
03	MB-1729	54	62	59	0
04	2337GW	60	70	55	0
05	FIELD BLANK	56	68	51	0
06	DUPE	50	64	59	0

QC LIMITS

S1	NBZ	=	Nitrobenzene-d5	(35-114)
S2	2FP	=	2-Fluorobiphenyl	(43-116)
S3	TPL	=	p-Terphenyl-d14	(33-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA05245.D** Sample Name **MS-1662**

Date Acquired **13-Apr-01**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		7.88 ug/L	39.41
62-75-9	N-nitroso-dimethylamine		9.69 ug/L	48.47
62-53-3	Aniline		7.83 ug/L	39.16
111-44-4	bis(2-Chloroethyl)ether		14.77 ug/L	73.85
541-73-1	1,3-Dichlorobenzene		14.26 ug/L	71.28
106-46-7	1,4-Dichlorobenzene		14.39 ug/L	71.96
100-51-6	Benzyl alcohol		13.56 ug/L	67.80
95-50-1	1,2-Dichlorobenzene		15.15 ug/L	75.74
39638-32-9	bis(2-chloroisopropyl)ether		20.43 ug/L	102.16
621-64-7	n-Nitroso-di-n-propylamine		17.01 ug/L	85.04
67-72-1	Hexachloroethane		13.83 ug/L	69.13
98-95-3	Nitrobenzene		15.94 ug/L	79.72
78-59-1	Isophorone		16.69 ug/L	83.43
111-91-1	bis(2-Chloroethoxy)methane		14.98 ug/L	74.89
120-82-1	1,2,4-Trichlorobenzene		15.02 ug/L	75.11
91-20-3	Naphthalene		15.66 ug/L	78.30
106-47-8	4-Chloroaniline		9.93 ug/L	49.64
87-68-3	Hexachlorobutadiene		14.78 ug/L	73.91
91-57-6	2-Methylnaphthalene		16.18 ug/L	80.88
77-47-4	Hexachlorocyclopentadiene		17.53 ug/L	87.67
91-58-7	2-Chloronaphthalene		18.42 ug/L	92.11
88-74-4	2-Nitroaniline		16.59 ug/L	82.93
131-11-3	Dimethylphthalate		18.68 ug/L	93.39
208-96-8	Acenaphthylene		18.56 ug/L	92.80
606-20-2	2,6-Dinitrotoluene		19.14 ug/L	95.69
99-09-2	3-Nitroaniline		12.75 ug/L	63.75
83-32-9	Acenaphthene		18.60 ug/L	92.99
132-64-9	Dibenzofuran		18.48 ug/L	92.42
121-14-2	2,4-Dinitrotoluene		18.16 ug/L	90.80
84-66-2	Diethylphthalate		19.32 ug/L	96.58
86-73-7	Fluorene		19.11 ug/L	95.53
7005-72-3	4-Chlorophenyl-phenylether		18.66 ug/L	93.29
100-01-6	4-Nitroaniline		12.97 ug/L	64.83
86-30-6	n-Nitrosodiphenylamine		17.75 ug/L	88.75
103-33-3	Azobenzene		17.16 ug/L	85.79
101-55-3	4-Bromophenyl-phenylether		17.30 ug/L	86.51
118-74-1	Hexachlorobenzene		17.08 ug/L	85.42
85-01-8	Phenanthrene		18.03 ug/L	90.15
120-12-7	Anthracene		17.86 ug/L	89.29
84-74-2	Di-n-butylphthalate		18.28 ug/L	91.42
206-44-0	Fluoranthene		17.60 ug/L	88.01
129-00-0	Pyrene		18.27 ug/L	91.37
85-68-7	Butylbenzylphthalate		17.83 ug/L	89.14
56-55-3	Benzo[a]anthracene		17.70 ug/L	88.50
218-01-9	Chrysene		17.74 ug/L	88.71
117-81-7	bis(2-Ethylhexyl)phthalate		17.31 ug/L	86.55
117-84-0	Di-n-octylphthalate		21.43 ug/L	107.13
205-99-2	Benzo[b]fluoranthene		20.62 ug/L	103.10
207-08-9	Benzo[k]fluoranthene		21.13 ug/L	105.65
50-32-8	Benzo[a]pyrene		20.32 ug/L	101.60
193-39-5	Indeno[1,2,3-cd]pyrene		19.24 ug/L	96.22
53-70-3	Dibenz[a,h]anthracene		19.88 ug/L	99.42
191-24-2	Benzo[g,h,i]perylene		19.87 ug/L	99.36

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA05246.D** Sample Name **MSD-1663**

Date Acquired **14-Apr-01**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		8.42 ug/L	42.10
62-75-9	N-nitroso-dimethylamine		9.86 ug/L	49.32
62-53-3	Aniline		8.37 ug/L	41.83
111-44-4	bis(2-Chloroethyl)ether		14.99 ug/L	74.94
541-73-1	1,3-Dichlorobenzene		14.83 ug/L	74.15
106-46-7	1,4-Dichlorobenzene		15.11 ug/L	75.55
100-51-6	Benzyl alcohol		13.93 ug/L	69.63
95-50-1	1,2-Dichlorobenzene		15.75 ug/L	78.75
39638-32-9	bis(2-chloroisopropyl)ether		20.95 ug/L	104.75
621-64-7	n-Nitroso-di-n-propylamine		17.46 ug/L	87.30
67-72-1	Hexachloroethane		14.76 ug/L	73.82
98-95-3	Nitrobenzene		16.44 ug/L	82.22
78-59-1	Isophorone		17.25 ug/L	86.23
111-91-1	bis(2-Chloroethoxy)methane		15.37 ug/L	76.87
120-82-1	1,2,4-Trichlorobenzene		15.53 ug/L	77.65
91-20-3	Naphthalene		16.17 ug/L	80.85
106-47-8	4-Chloroaniline		10.44 ug/L	52.18
87-68-3	Hexachlorobutadiene		15.56 ug/L	77.78
91-57-6	2-Methylnaphthalene		16.70 ug/L	83.49
77-47-4	Hexachlorocyclopentadiene		16.88 ug/L	84.39
91-58-7	2-Chloronaphthalene		18.89 ug/L	94.43
88-74-4	2-Nitroaniline		17.08 ug/L	85.40
131-11-3	Dimethylphthalate		19.49 ug/L	97.43
208-96-8	Acenaphthylene		19.08 ug/L	95.38
606-20-2	2,6-Dinitrotoluene		20.09 ug/L	100.46
99-09-2	3-Nitroaniline		13.10 ug/L	65.50
83-32-9	Acenaphthene		19.21 ug/L	96.03
132-64-9	Dibenzofuran		19.16 ug/L	95.81
121-14-2	2,4-Dinitrotoluene		18.71 ug/L	93.54
84-66-2	Diethylphthalate		19.83 ug/L	99.16
86-73-7	Fluorene		19.71 ug/L	98.55
7005-72-3	4-Chlorophenyl-phenylether		19.45 ug/L	97.26
100-01-6	4-Nitroaniline		14.34 ug/L	71.71
86-30-6	n-Nitrosodiphenylamine		18.25 ug/L	91.24
103-33-3	Azobenzene		17.44 ug/L	87.19
101-55-3	4-Bromophenyl-phenylether		17.67 ug/L	88.35
118-74-1	Hexachlorobenzene		17.68 ug/L	88.38
85-01-8	Phenanthrene		18.67 ug/L	93.35
120-12-7	Anthracene		18.55 ug/L	92.76
84-74-2	Di-n-butylphthalate		19.11 ug/L	95.57
206-44-0	Fluoranthene		18.21 ug/L	91.05
129-00-0	Pyrene		18.94 ug/L	94.70
85-68-7	Butylbenzylphthalate		18.34 ug/L	91.69
56-55-3	Benzo[a]anthracene		18.18 ug/L	90.88
218-01-9	Chrysene		18.22 ug/L	91.12
117-81-7	bis(2-Ethylhexyl)phthalate		17.84 ug/L	89.21
117-84-0	Di-n-octylphthalate		22.29 ug/L	111.44
205-99-2	Benzo[b]fluoranthene		20.97 ug/L	104.85
207-08-9	Benzo[k]fluoranthene		21.55 ug/L	107.73
50-32-8	Benzo[a]pyrene		20.65 ug/L	103.27
193-39-5	Indeno[1,2,3-cd]pyrene		19.62 ug/L	98.11
53-70-3	Dibenz[a,h]anthracene		20.00 ug/L	99.98
191-24-2	Benzo[g,h,i]perylene		20.13 ug/L	100.66

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: Bl.2337 SDG No.:

Lab File ID (Standard): BNA05231.D Date Analyzed: 4/13/01

Instrument ID: GC_BNA_2 Time Analyzed: 11:55

		IS1DCB AREA #	RT #	IS2NAP AREA #	RT #	IS3ANE AREA #	RT #
	12 HOUR STD	771161	10.11	2671232	13.05	1611571	17.28
	UPPER LIMIT	1542322	10.61	5342464	13.55	3223142	17.78
	LOWER LIMIT	385581	9.61	1335616	12.55	805786	16.78
	Field Id:						
01	MS-1662	619886	10.11	2320969	13.04	1235984	17.27
02	MSD-1663	604455	10.11	2252217	13.04	1203470	17.27

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: Bl.2337 SDG No.:

Lab File ID (Standard): BNA05231.D Date Analyzed: 04/13/01

Instrument ID: GC_BNA_2 Time Analyzed: 11:55

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	2654324	20.88	2453116	27.34	2146378	30.57
	UPPER LIMIT	5308648	20.38	4906232	26.84	4292756	30.07
	LOWER LIMIT	1327162	21.38	1226558	27.84	1073189	31.07
	EPA SAMPLE NO.						
01	MS-1662	2179007	20.87	1941124	27.32	1475200	30.56
02	MSD-1663	2113371	20.87	1878383	27.32	1438658	30.56

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: BI.2337 SDG No.:

Lab File ID (Standard): BNA05320.D Date Analyzed: 5/3/01

Instrument ID: GC_BNA_2 Time Analyzed: 11:20

		IS1DCB AREA #	RT #	IS2NAP AREA #	RT #	IS3ANE AREA #	RT #
	12 HOUR STD	895266	10.10	3133159	13.03	1944781	17.26
	UPPER LIMIT	1790532	10.60	6266318	13.53	3889562	17.76
	LOWER LIMIT	447633	9.60	1566580	12.53	972391	16.76
	Field Id:						
01	MB-1729	677078	10.10	2504614	13.03	1379534	17.26
02	2337GW	705806	10.10	2636959	13.03	1441582	17.26
03	FIELD BLANK	740961	10.10	2675473	13.03	1457813	17.26
04	DUPE	670797	10.10	2472762	13.03	1326206	17.26

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16091 Location: BI.2337 SDG No.:

Lab File ID (Standard): BNA05320.D Date Analyzed: 05/03/01

Instrument ID: GC_BNA_2 Time Analyzed: 11:20

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	3221953	20.86	3123288	27.32	2675891	30.55
	UPPER LIMIT	6443906	20.36	6246576	26.82	5351782	30.05
	LOWER LIMIT	1610977	21.36	1561644	27.82	1337946	31.05
	EPA SAMPLE NO.						
01	MB-1729	2451955	20.85	2274922	27.30	1703004	30.54
02	2337GW	2563587	20.85	2393010	27.31	1812418	30.53
03	FIELD BLANK	2586712	20.85	2457393	27.31	1895028	30.53
04	DUPE	2365197	20.86	2241267	27.30	1735048	30.54

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : D:\DATA\010503\BNA05323.D Vial: 3
Acq On : 3 May 2001 1:39 pm Operator: Bhaskar
Sample : MB-1729 Inst : GC/MS Ins
Misc : MB-010502 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: May 3 14:14 2001 Quant Results File: M262546.RES

Quant Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration
DataAcq Meth : M262546

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.10	152	677078	40.00	ug/L	-0.02
19) Naphthalene-d8	13.03	136	2504614	40.00	ug/L	-0.02
34) Acenaphthene-d10	17.26	164	1379534	40.00	ug/L	-0.03
54) Phenanthrene-d10	20.85	188	2451955	40.00	ug/L	-0.03
66) Chrysene-d12	27.30	240	2274922	40.00	ug/L	-0.04
75) Perylene-d12	30.54	264	1703004	40.00	ug/L	-0.03
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d6	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.43	82	677923	26.95	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery =	53.90%		
38) 2-Fluorobiphenyl	15.66	172	1190545	31.02	ug/L	-0.03
Spiked Amount 50.000	Range 43 - 116		Recovery =	62.04%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.80	244	1336735	29.50	ug/L	-0.03
Spiked Amount 50.000	Range 33 - 141		Recovery =	59.00%		

Target Compounds Qvalue

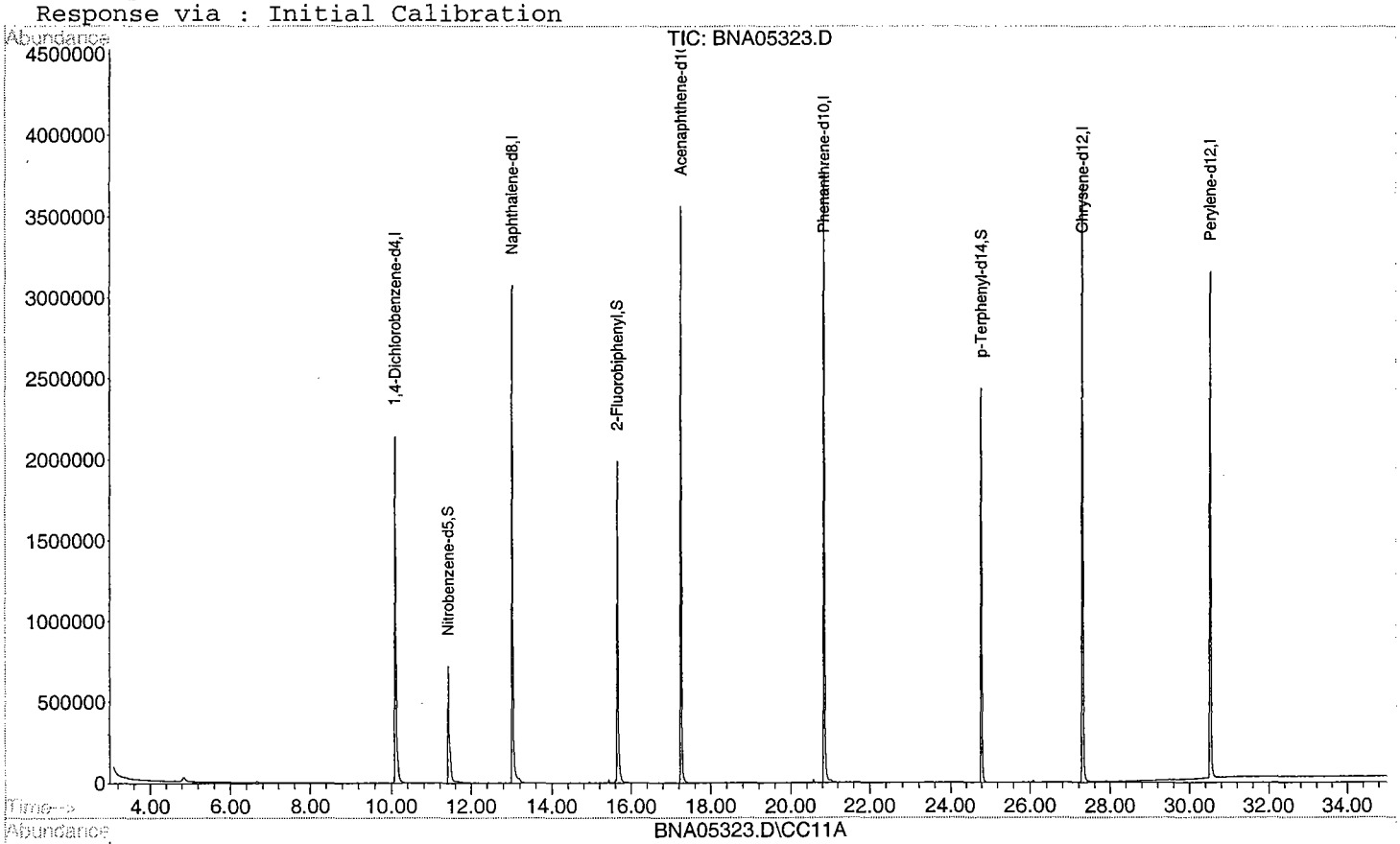
(#) = qualifier out of range (m) = manual integration

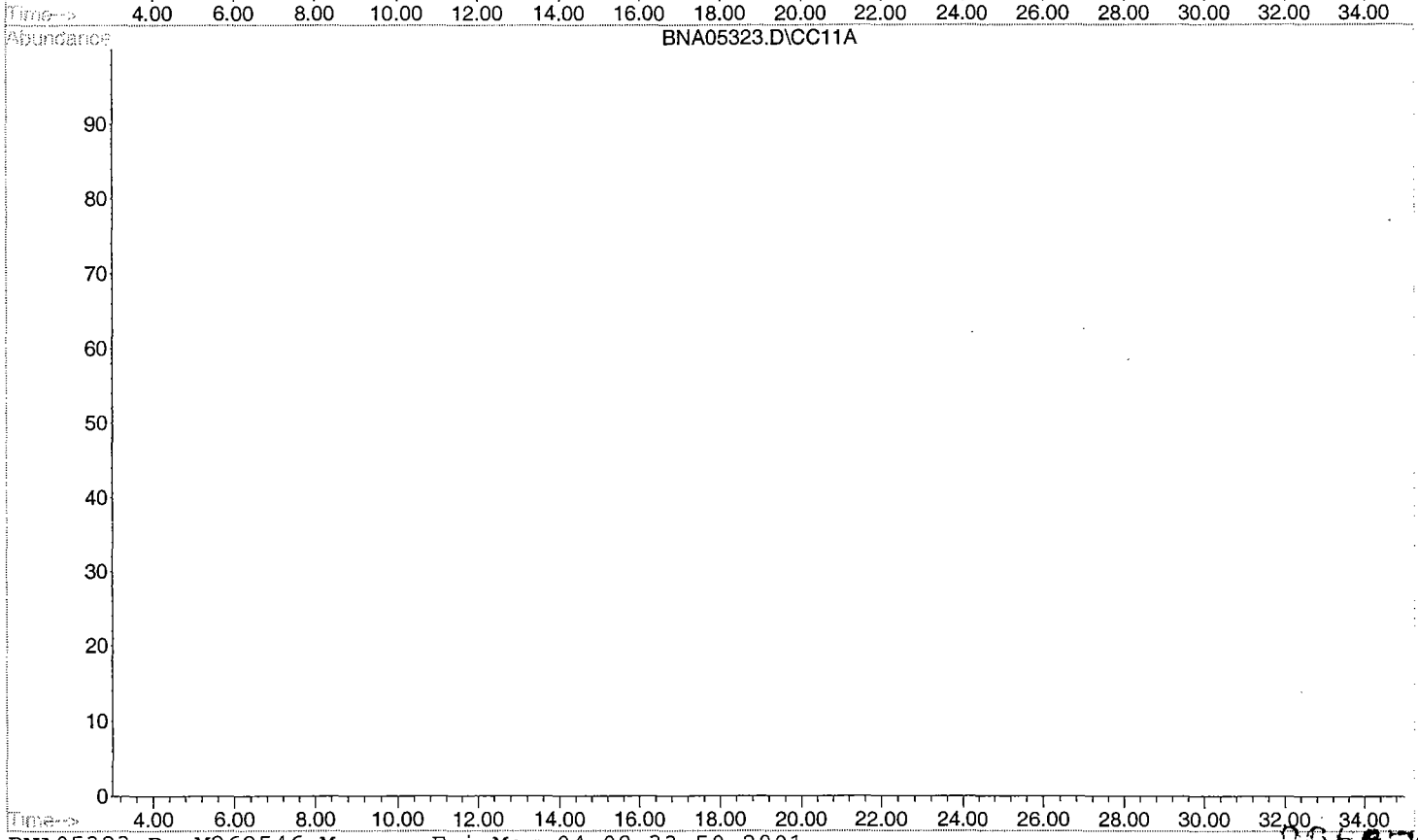
Quantitation Report

Data File : D:\DATA\010503\BNA05323.D
Acq On : 3 May 2001 1:39 pm
Sample : MB-1729
Misc : MB-010502
MS Integration Params: RTEINT.P
Quant Time: May 3 14:14 2001

Vial: 3
Operator: Bhaskar
Inst : GC/MS Ins
Multiplr: 1.00
GC Integration Params: rteint2.p
Quant Results File: M262546.RES

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : D:\DATA\010503\BNA05327.D Vial: 7
Acq On : 3 May 2001 4:46 pm Operator: Bhaskar
Sample : 16091.01 Inst : GC/MS Ins
Misc : Bldg.2337 GW Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: May 3 17:21 2001 Quant Results File: M262546.RES

Quant Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration
DataAcq Meth : M262546

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.10	152	705806	40.00	ug/L	-0.02
19) Naphthalene-d8	13.03	136	2636959	40.00	ug/L	-0.02
34) Acenaphthene-d10	17.26	164	1441582	40.00	ug/L	-0.02
54) Phenanthrene-d10	20.85	188	2563587	40.00	ug/L	-0.03
66) Chrysene-d12	27.31	240	2393010	40.00	ug/L	-0.03
75) Perylene-d12	30.53	264	1812418	40.00	ug/L	-0.03
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d6	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.43	82	795757	30.05	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery =	60.10%		
38) 2-Fluorobiphenyl	15.66	172	1406997	35.08	ug/L	-0.03
Spiked Amount 50.000	Range 43 - 116		Recovery =	70.16%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.80	244	1304758	27.38	ug/L	-0.03
Spiked Amount 50.000	Range 33 - 141		Recovery =	54.76%		

Target Compounds Qvalue

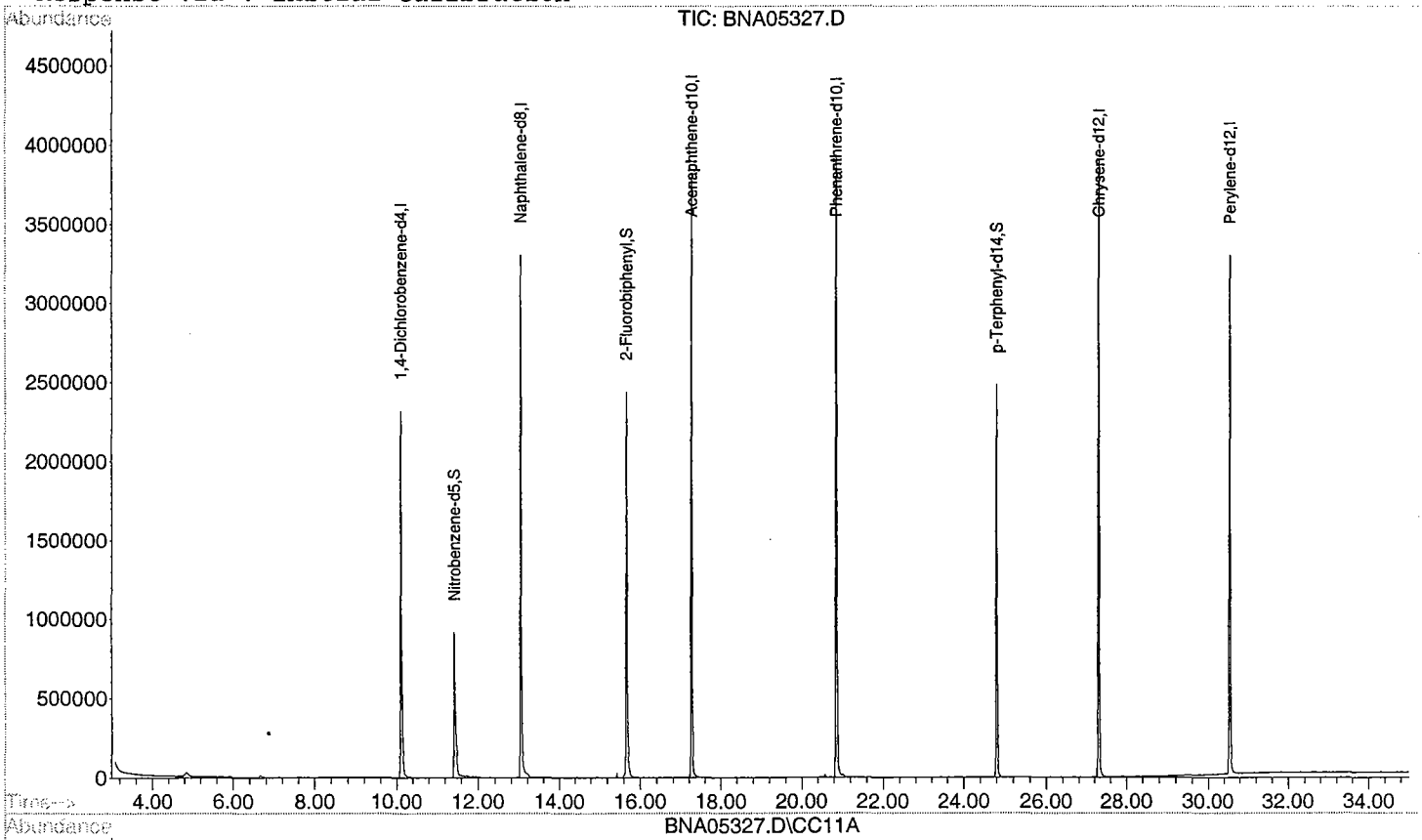
(#) = qualifier out of range (m) = manual integration
BNA05327.D M262546.M Fri May 04 08:22:57 2001

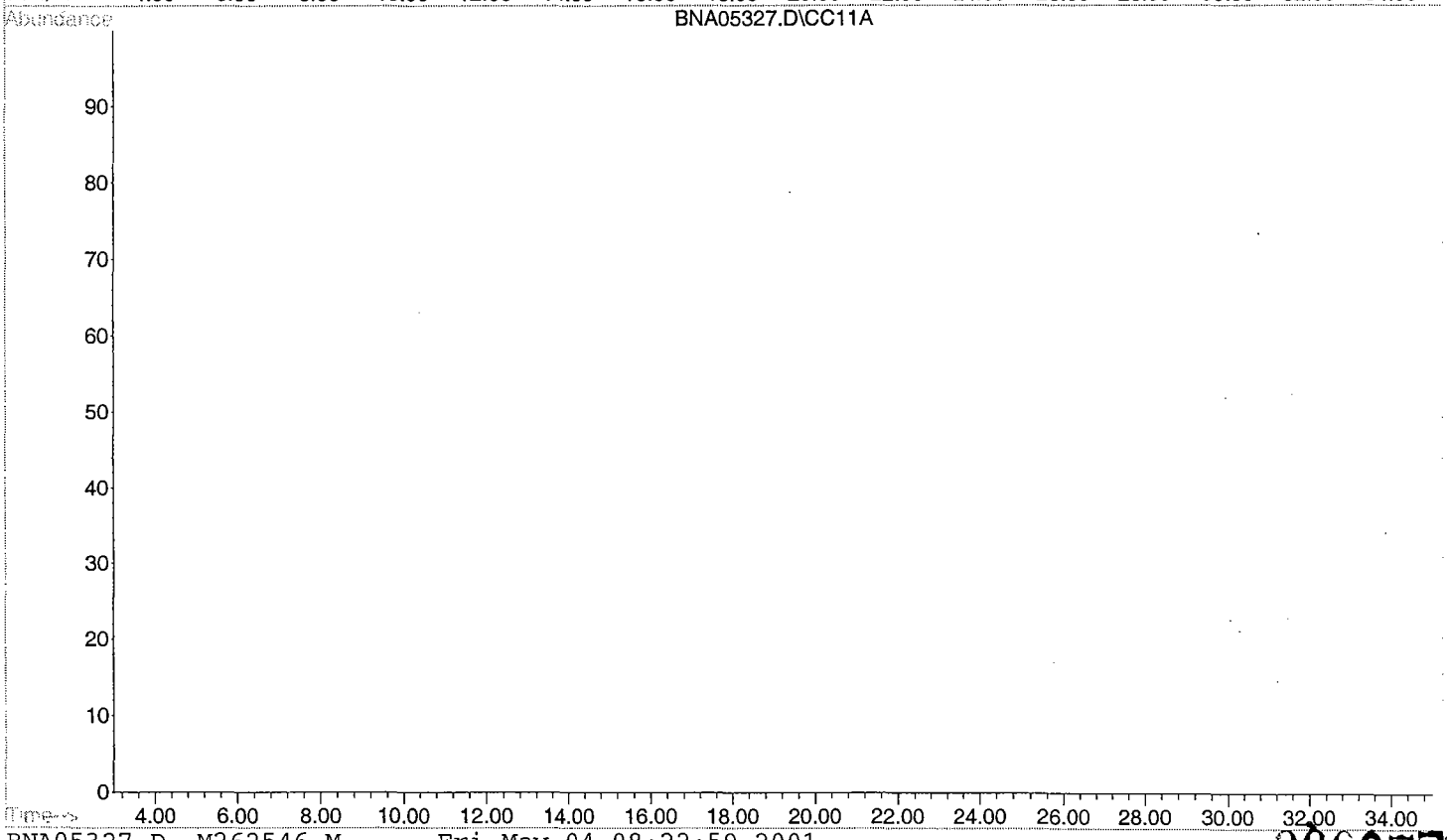
Quantitation Report

Data File : D:\DATA\010503\BNA05327.D
Acq On : 3 May 2001 4:46 pm
Sample : 16091.01
Misc : Bldg.2337 GW
MS Integration Params: RTEINT.P
Quant Time: May 3 17:21 2001

Vial: 7
Operator: Bhaskar
Inst : GC/MS Ins
Multiplr: 1.00
GC Integration Params: rteint2.p
Quant Results File: M262546.RES

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : D:\DATA\010503\BNA05328.D Vial: 8
Acq On : 4 May 2001 7:57 am Operator: Bhaskar
Sample : 16091.03 Inst : GC/MS Ins
Misc : Field Blank Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: May 4 8:32 2001 Quant Results File: M262546.RES

Quant Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration
DataAcq Meth : M262546

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.10	152	740961	40.00	ug/L	-0.02
19) Naphthalene-d8	13.03	136	2675473	40.00	ug/L	-0.02
34) Acenaphthene-d10	17.26	164	1457813	40.00	ug/L	-0.02
54) Phenanthrene-d10	20.85	188	2586712	40.00	ug/L	-0.03
66) Chrysene-d12	27.31	240	2457393	40.00	ug/L	-0.03
75) Perylene-d12	30.53	264	1895028	40.00	ug/L	-0.03
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d6	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.43	82	747601	27.82	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery =	55.64%		
38) 2-Fluorobiphenyl	15.66	172	1374764	33.89	ug/L	-0.03
Spiked Amount 50.000	Range 43 - 116		Recovery =	67.78%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.80	244	1238278	25.30	ug/L	-0.03
Spiked Amount 50.000	Range 33 - 141		Recovery =	50.60%		

Target Compounds Qvalue

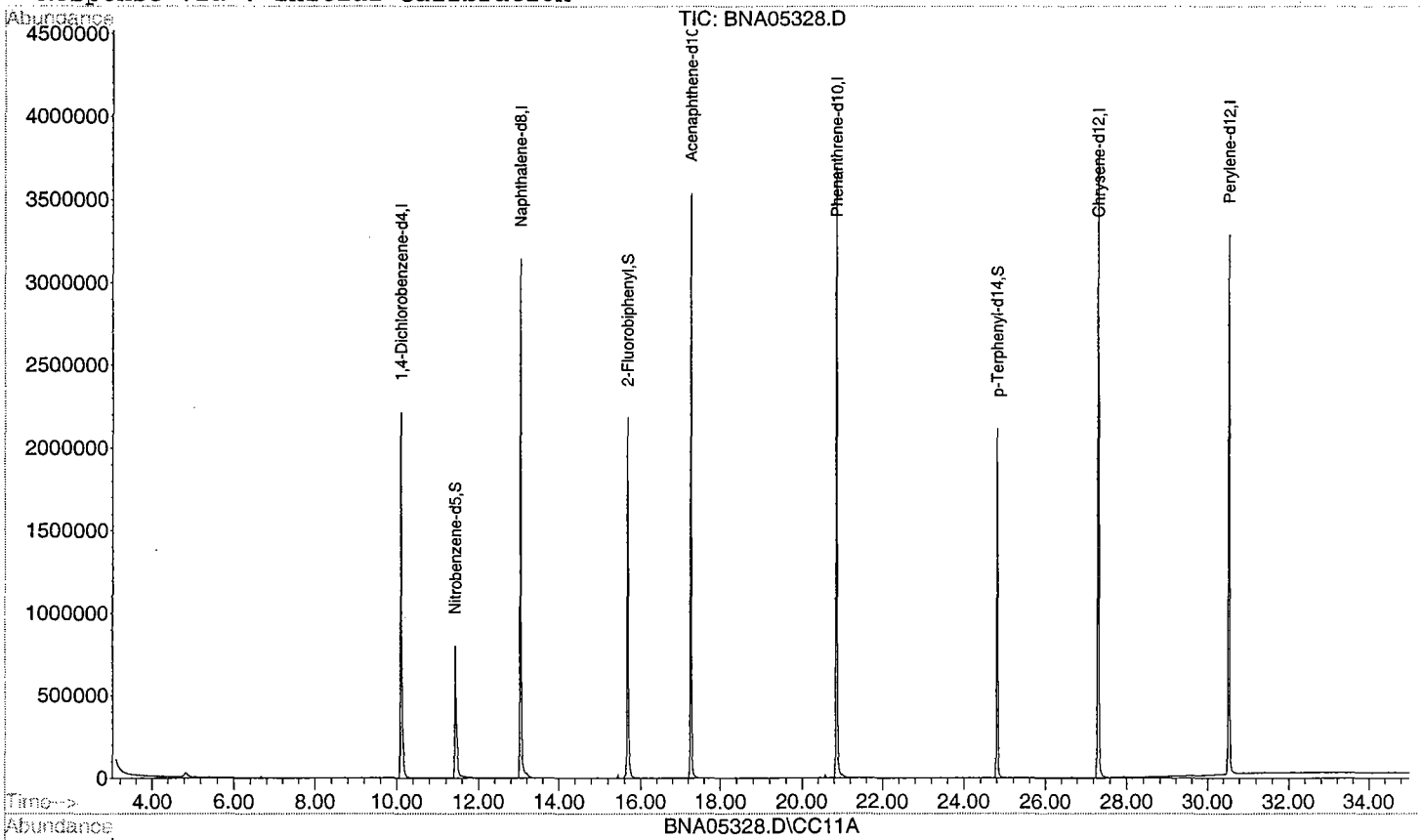
(#) = qualifier out of range (m) = manual integration

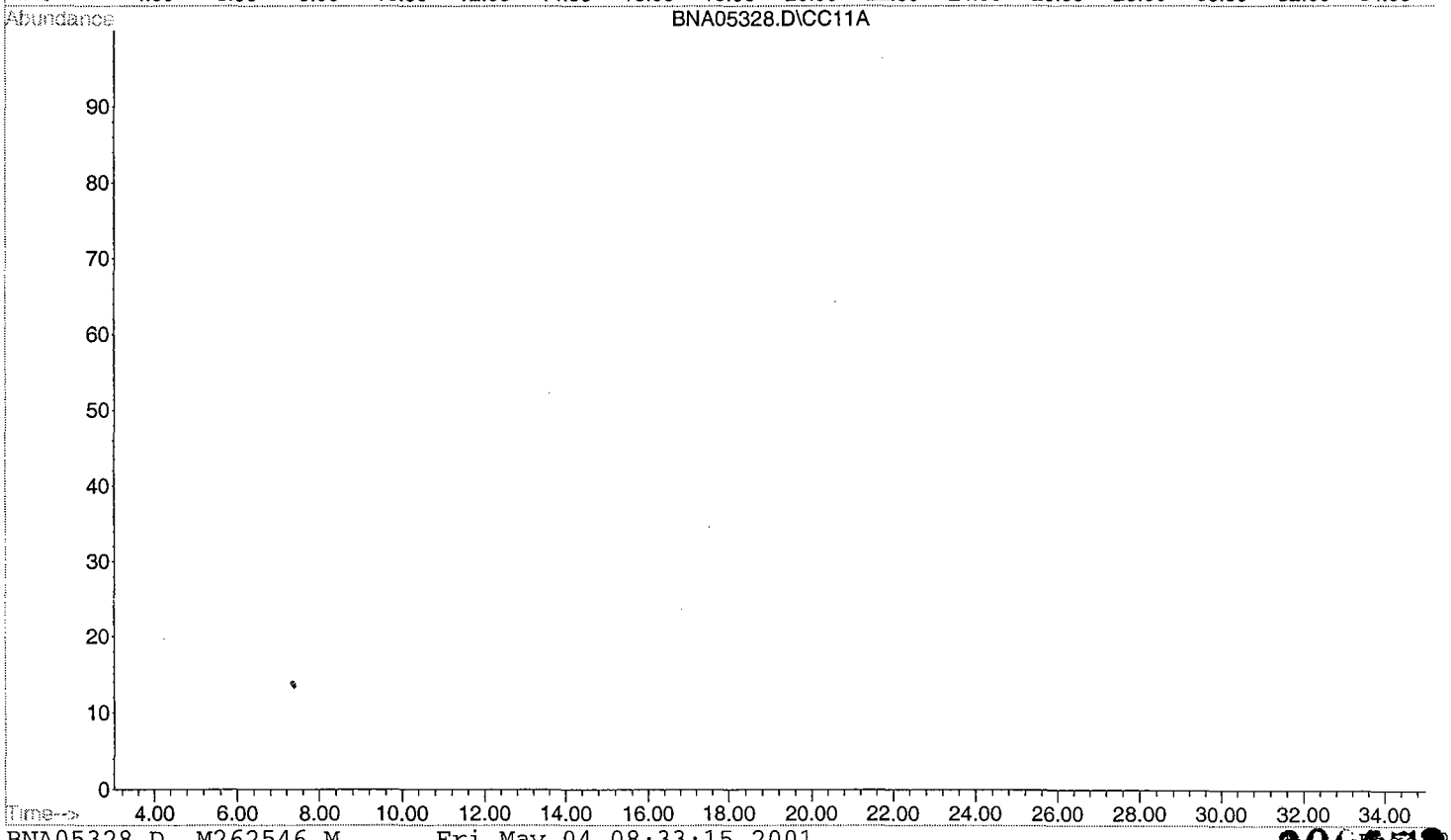
Quantitation Report

Data File : D:\DATA\010503\BNA05328.D
Acq On : 4 May 2001 7:57 am
Sample : 16091.03
Misc : Field Blank
MS Integration Params: RTEINT.P
Quant Time: May 4 8:32 2001

Vial: 8
Operator: Bhaskar
Inst : GC/MS Ins
Multiplr: 1.00
GC Integration Params: rteint2.p
Quant Results File: M262546.RES

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration





Quantitation Report (QT Reviewed)

Data File : D:\DATA\010503\BNA05329.D Vial: 9
Acq On : 4 May 2001 8:44 am Operator: Bhaskar
Sample : 16091.04 Inst : GC/MS Ins
Misc : Dupe Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: May 4 9:19 2001 Quant Results File: M262546.RES

Quant Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration
DataAcq Meth : M262546

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.10	152	670797	40.00	ug/L	-0.01
19) Naphthalene-d8	13.03	136	2472762	40.00	ug/L	-0.02
34) Acenaphthene-d10	17.26	164	1326206	40.00	ug/L	-0.02
54) Phenanthrene-d10	20.86	188	2365197	40.00	ug/L	-0.02
66) Chrysene-d12	27.30	240	2241267	40.00	ug/L	-0.03
75) Perylene-d12	30.54	264	1735048	40.00	ug/L	-0.03
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d6	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.43	82	622931	25.08	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery =	50.16%		
38) 2-Fluorobiphenyl	15.67	172	1171876	31.76	ug/L	-0.02
Spiked Amount 50.000	Range 43 - 116		Recovery =	63.52%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.80	244	1315326	29.47	ug/L	-0.03
Spiked Amount 50.000	Range 33 - 141		Recovery =	58.94%		

Target Compounds Qvalue

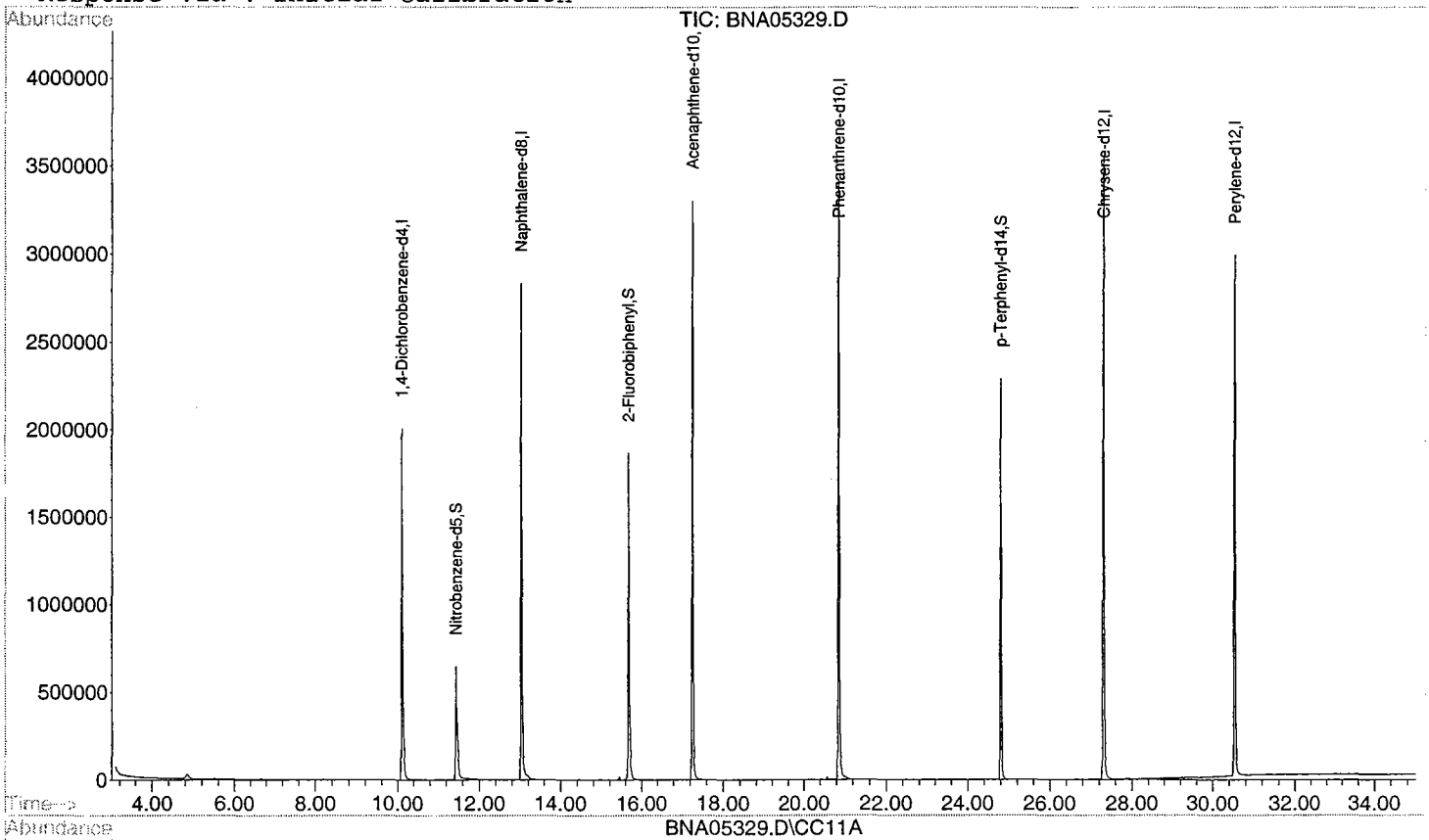
(#) = qualifier out of range (m) = manual integration
BNA05329.D M262546.M Fri May 04 09:22:43 2001

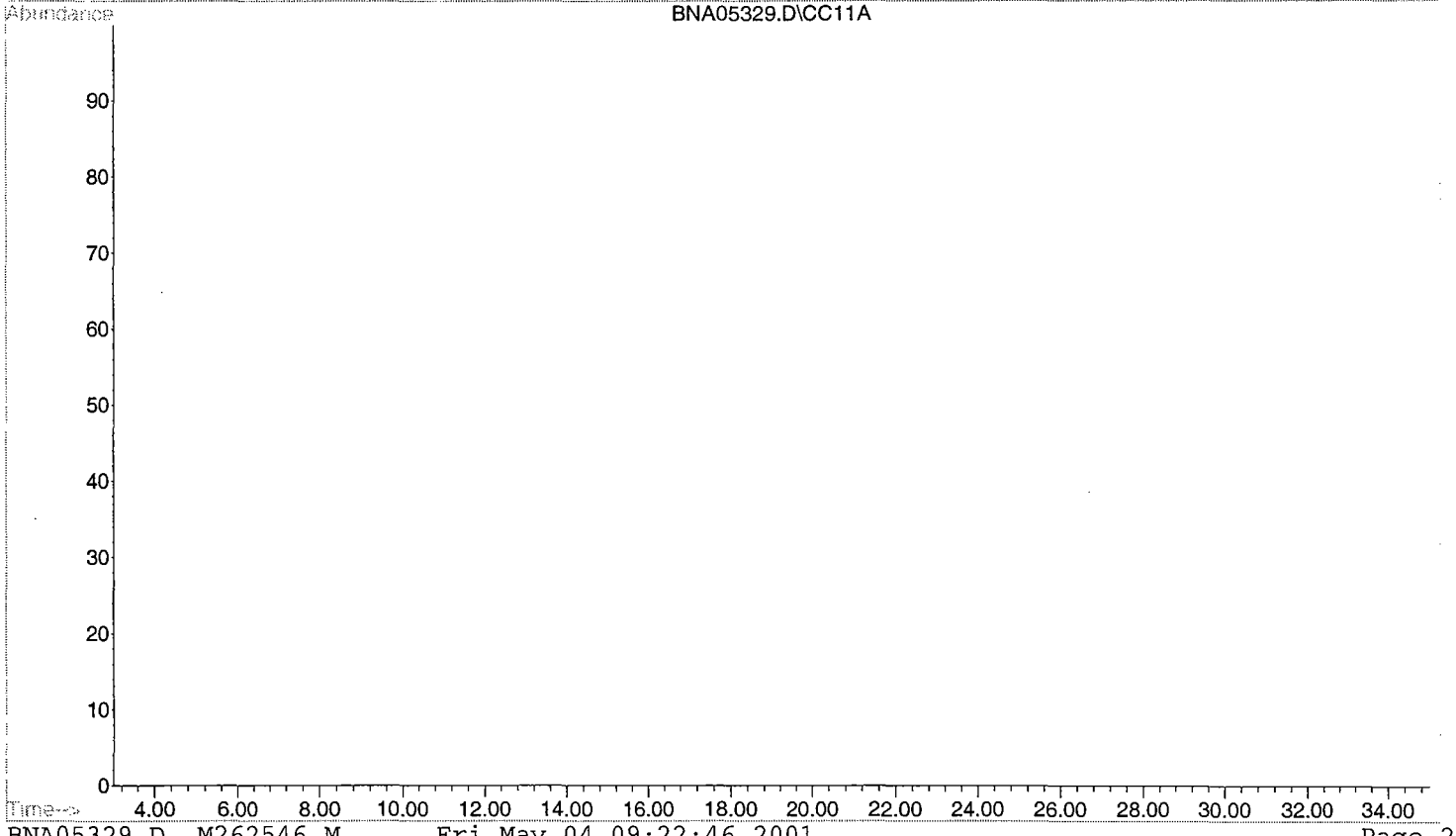
000480

Quantitation Report

Data File : D:\DATA\010503\BNA05329.D Vial: 9
Acq On : 4 May 2001 8:44 am Operator: Bhaskar
Sample : 16091.04 Inst : GC/MS Ins
Misc : Dupe Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: May 4 9:19 2001 Quant Results File: M262546.RES

Method : C:\HPCHEM\1\METHODS\M262546.M (RTE Integrator)
Title : BNA Calibration
Last Update : Tue Mar 27 12:58:41 2001
Response via : Initial Calibration





LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

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

1.	Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted	✓
2.	Table of Contents submitted	✓
3.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	✓
4.	Document paginated and legible	✓
5.	Chain of Custody submitted	✓
6.	Samples submitted to lab within 48 hours of sample collection	✓
7.	Methodology Summary submitted	✓
8.	Laboratory Chronicle and Holding Time Check submitted	✓
9.	Results submitted on a dry weight basis	NA
10.	Method Detection Limits submitted	✓
11.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	✓

Laboratory Manager or Environmental Consultant's Signature _____

Date 5/17/01

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager

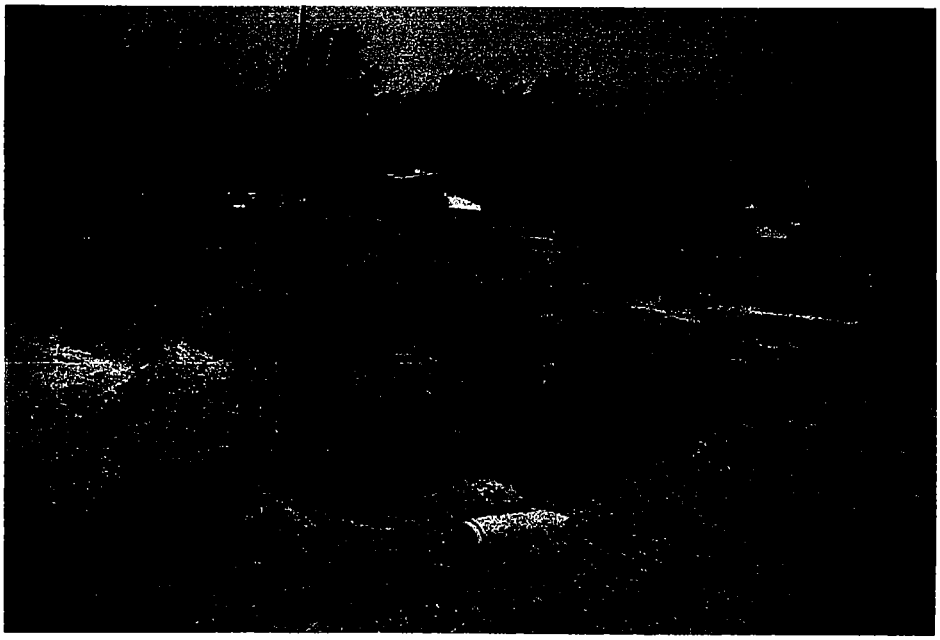
APPENDIX F

PHOTOGRAPHS

REMEDIATION AROUND THE GROUNDWATER MONITORING WELL LOCATED IN THE NORTHWESTERN SECTION OF THE EXCAVATION

REMEDIATION WITHIN THE SOUTHWESTERN SECTION OF THE EXCAVATION

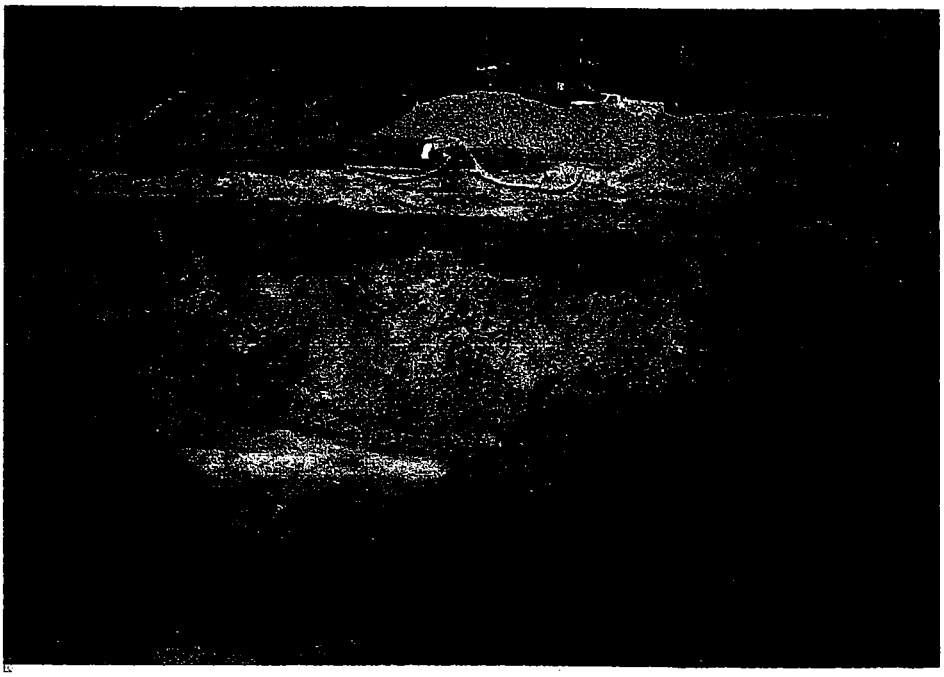
SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.



REMEDIATION WITHIN THE NORTHEASTERN SECTION OF THE EXCAVATION

REMEDIATION WITIN THE SOUTHEASTERN SECTION OF THE EXCAVATION

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.



REMEDIATION WITHIN THE NORTHCENTRAL SECTION OF THE EXCAVATION

REMEDIATION WITHIN THE SOUTHCENTRAL SECTION OF THE EXCAVATION

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.