United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 237
Main Post-West Area

NJDEP UST Registration No. 0081533-25

August 2001

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 237

MAIN POST-WEST AREA
NJDEP UST REGISTRATION NO. 0081533-25

AUGUST 2001

PREPARED FOR:

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

PREPARED BY:

VERSAR
1900 FROST ROAD
SUITE 110
BRISTOL, PA 19007

PROJECT NO. 2491-308

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EXECUTIVE SUMMARY

UST Closure

On January 4, 1999, an underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) underground storage tank procedures at the Main Post-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081533-25 (Fort Monmouth ID No. 237), was located northeast of Building 237. UST No. 0081533-25 was a 1,000-gallon No. 2 fuel oil UST.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination.

There were visual signs of impact to the soil surrounding the UST upon removal. There were VOCs detected by the PID in the soil along the sidewalls of the excavation at concentrations ranging from 30 to 70 PPM during the first phase of soil removal. Soil removed during the second phase of excavation contained VOC concentrations between one (1) and 60 PPM according to the PID. Excavation activities continued until the PID detected no VOCs in the soil. To confirm PID readings seven post-excavation soil samples were collected on January 5, 1999 and 5 post-excavation samples were collected July 2, 1999. All samples were analyzed for TPH and total solids. There were no TPH compounds detected in the post-excavation soil samples collected on either day.

There were no TPH compounds detected in the soil samples. Subsequent groundwater samples collected in the area of the former USTs contained no TPH compounds.

Site Restoration

All soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW. Contaminated soils (containing PID readings greater than 5 PPM) were disposed of and clean soils (containing PID reading less than 5 PPM) were used as backfill.

Conclusions and Recommendations

All soil samples collected from the UST excavation at Building 237 contained no TPH. Groundwater samples collected at Building 237 were below the detection limit. No further action is proposed in regard to the closure and site assessment at Building 237.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

New Jersey Department of Environmental Protection (NJDEP) Registration No. 0081533-25, was closed at Building 237 at the Main Post-West area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey (Figure 1) on January 4, 1999. The UST was a fiberglass, 1,000-gallon tank containing No. 2 fuel oil. This report presents the results of the Department of Public Works (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP.

Decommissioning activities for UST No. 0081533-25 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted onsite for inspection. The decommissioning activities were conducted by DPW personnel who are registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 0081533-25 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The Standard Reporting Form and signed Site Assessment Summary form for UST No. 0081533-25 are included in Appendices A and B, respectively.

This UST Closure and Site Investigation Report has been prepared by Versar, to assist the United States Army Directorate of Public Works (DPW) in complying with the NJDEP-BUST regulations. The applicable NJDEP-BUST regulations at the date of closure were the *Interim Closure Requirements for Underground Storage Tank Systems* (N.J.A.C. 7:14B-1 et seq. October 1990 and revisions dated November 1, 1991).

This report was prepared using information collected at the time of closure. Section 1 of this UST Closure and Site Investigation Report provides a summary of the UST decommissioning activities. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling investigation, are presented in the final section of this report.

1.2 SITE DESCRIPTION

Building 237 is located in the Main Post-West area of the Fort Monmouth Army Base. UST No. 0081533-25 was located between Buildings 237 and 239 and appurtenant copper piping ran from the excavation to Building 237. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 237. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

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. Over 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thickness of these units varies greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-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).

Hydrogeology

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

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore, the direction of shallow groundwater should be determined on a case-by-case basis.

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

- tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
- topography
- nature of the fill material within the Main Post area
- presence of clay and silt lenses in the natural overburden deposits
- 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. This is consistent with lithologies observed in borings installed within the Main Post area, which primarily consisted of fine-to-medium grained sands, with occasional lenses or laminations of gravel silt and/or clay.

Building 237 located approximately 300 feet north of Oceanport Creek, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 237 is anticipated to be to the southeast.

1.3 HEALTH AND SAFETY

Before, during, and after all decommissioning activities, hazards at the work site, which may have posed a threat to the Health and Safety of all 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 properly vented to render the area safe, as defined by OSHA.

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

- All underground obstructions (utilities, etc.) were identified by the contractor performing the closure prior to excavation activities.
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all site assessment activities.

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, an opening was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes.

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 that 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.

1.5 MANAGEMENT OF EXCAVATED SOILS

Three truckloads of contaminated soils were removed from the site for disposal. Clean soil (containing PID response less than 5 PPM) was used to as backfill to restore the site to its original condition.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, 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* (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (October 1990 and revisions dated November 1, 1991) which was the applicable regulation at the date of the closure. All records of the Site Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Closure and Site Investigation Activities:

- Subsurface Evaluator: Dinker DeSai
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (732) 532-6224
  NJDEP Certification No.: 0010173

- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Daniel K. Wright
  Phone Number: (908) 532-4359
  NJDEP Company Certification No.: 13461

- Hazardous Waste Hauler: Casie Protank Environmental Services
  Contact Person: Bob Corsiglia
  Phone Number: (609) 696-4401
  NJDEP Company Certification No.: 16931

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using a PID and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom, did not exhibit any evidence of potential contamination.

2.3 SOIL SAMPLING

The PID detected VOC concentrations ranging from 30 to 60 PPM in the soil encountered along three sidewalls of the excavation. On January 5, 1999 seven soil samples were collected between 6.5 and 9 feet bgs in the open excavation and were submitted for TPH analysis. None of the

samples contained detectable concentrations of TPH.

On July 2, 1999, stockpiled soil was removed from the site and additional soil samples were collected from the excavation. The soil samples were screened using a PID and contained VOC concentrations ranging from 1 to 60 PPM. None of the samples submitted to the laboratory contained detectable levels of TPH.

TVS personnel, in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual, performed the post-excavation soil sampling activities. 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 (TPH) and total solids. The TPH 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). The analytical data packages are provided in Appendix A.

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.

2.4 Groundwater Sampling

On April 28, 2001 and May 25, 2001, groundwater at the location of the former UST at Building 237 was sampled and submitted for analysis of volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOCs), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOCs). There were no compounds detected above the method detection limits in the groundwater. Sampling and analysis were performed in accordance with the NJDEP Field Sampling Procedures Manual and the Technical Requirements For Site Remediation. Refer to Appendix B for the field sampling documentation.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

TVS was retained by the U.S. Army DPW to implement a site/remedial investigation at two former No. 2 fuel oil USTs associated with former Buildings 237 and 239 at the Main Post 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 USTs.

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs were excavated. A series of excavation activities continued until potentially impacted soil had been removed. Three truckloads of contaminated soil were removed. 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, 12 post-excavation soil samples were collected from within the excavation on January 5, 1999 and July 2, 1999. All samples were analyzed for TPH and total solids. The final post-excavation samples contained no concentrations of TPH above the method detection limits.

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 groundwater sample collected from the location of the former UST at Building 237 on April 28, 2001 and May 25, 2001, contained no detectable concentrations of VOCs or SVOCs. 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 237 were below the NJDEP soil cleanup criteria for TPH.

The groundwater samples collected at Building 237 contained no VOCs or SVOCs and therefore are 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 237.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 237, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
A	1/5/99	1/5/99	Soil	Post-Excavation	TPH	OQA-QAM-025
B	1/5/99	1/5/99	Soil	Post-Excavation	TPH	OQA-QAM-025
C	1/5/99	1/5/99	Soil	Post-Excavation	TPH	OQA-QAM-025
D	1/5/99	1/5/99	Soil	Post-Excavation	TPH	OQA-QAM-025
E	1/5/99	1/5/99	Soil	Post-Excavation	TPH	OQA-QAM-025
F	1/5/99	1/5/99	Soil	Post-Excavation	TPH	OQA-QAM-025
G	1/5/99	1/5/99	Soil	Post-Excavation	TPH	OQA-QAM-025
H	1/5/99	1/5/99	Soil	Post-Excavation	TPH	OQA-QAM-025
A-north	7/2/99	7/9/99	Soil	Post-Excavation	TPH	OQA-QAM-025
B-west	7/2/99	7/9/99	Soil	Post-Excavation	TPH	OQA-QAM-025
C-south	7/2/99	7/9/99	Soil	Post-Excavation	TPH	OQA-QAM-025
C-dup	7/2/99	7/9/99	Soil	Post-Excavation	TPH	OQA-QAM-025
D-bottom	7/2/99	7/9/99	Soil	Post-Excavation	TPH	OQA-QAM-025
E-east	7/2/99	7/9/99	Soil	Post-Excavation	TPH	OQA-QAM-025

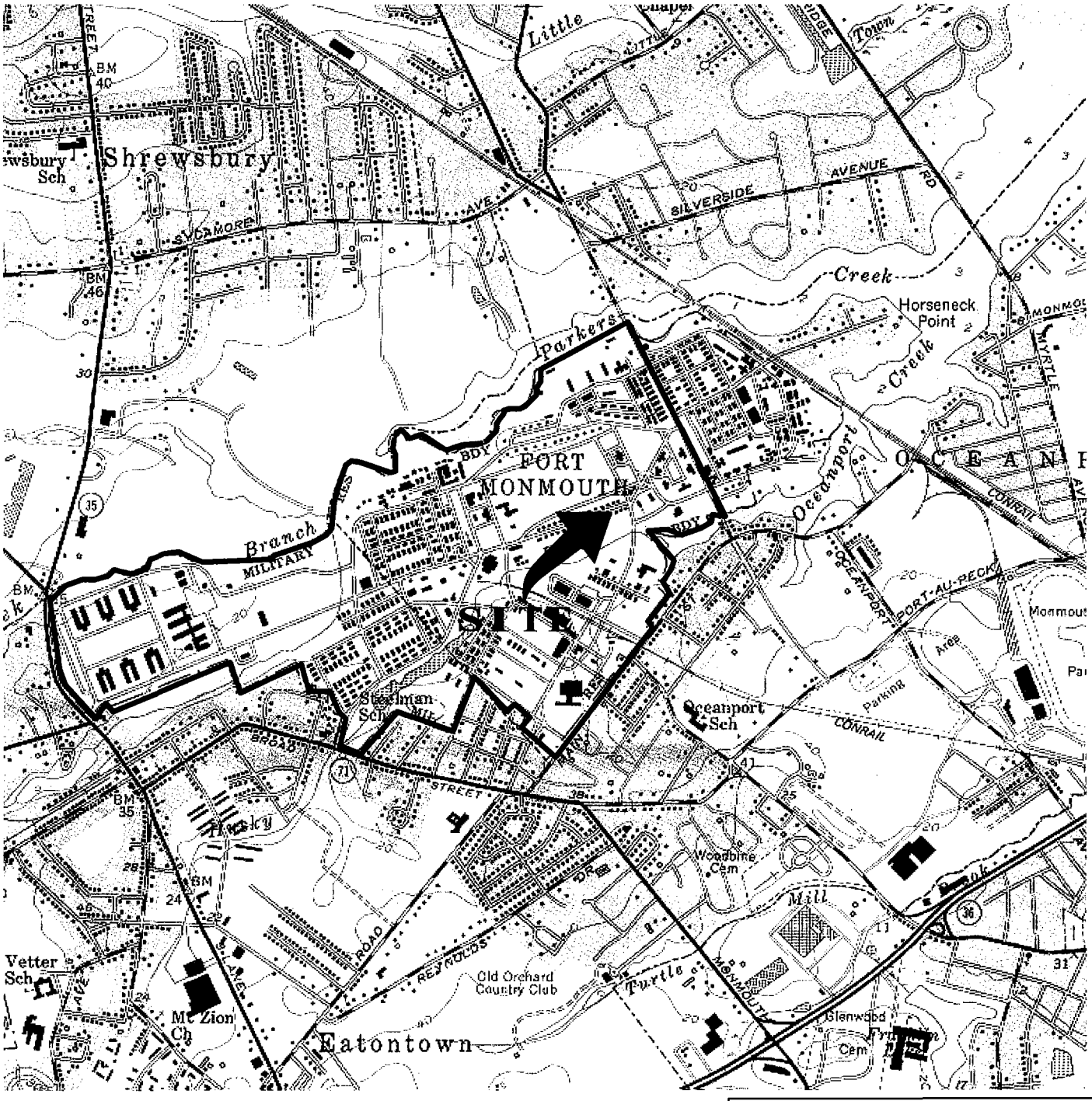
Note:
* TPH Total Petroleum Hydrocarbons

TABLE 2
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 237, 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
A (6.5')=	4165.01	1/5/99	1/5/99	Total Solid	--	--	80.24	--	--
				TPH	193	Yes	ND	10,000	No
B (6.5')=	4165.02	1/5/99	1/5/99	Total Solid	--	--	79.82	--	--
				TPH	194	Yes	ND	10,000	No
C (6.5')=	4165.03	1/5/99	1/5/99	Total Solid	--	--	84.54	--	--
				TPH	182	Yes	ND	10,000	No
D (6.5')=	4165.04	1/5/99	1/5/99	Total Solid	--	--	84.92	--	--
				TPH	183	Yes	ND	10,000	No
E (9.0')=	4165.05	1/5/99	1/5/99	Total Solid	--	--	84.51	--	--
				TPH	184	Yes	ND	10,000	No
F (9.0')=	4165.06	1/5/99	1/5/99	Total Solid	--	--	77.79	--	--
				TPH	195	Yes	ND	10,000	No
G (2.0')=	4165.07	1/5/99	1/5/99	Total Solid	--	--	81.68	--	--
				TPH	192	Yes	ND	10,000	No
H (2.0')=	4165.08	1/5/99	1/5/99	Total Solid	--	--	78.44	--	--
				TPH	196	Yes	ND	10,000	No
A-north =	1971.9	7/2/99	7/9/99	Total Solid	--	--	83.75	--	--
				TPH	185	Yes	ND	10,000	No
B-west =	1971.10	7/2/99	7/9/99	Total Solid	--	--	82.21	--	--
				TPH	189	Yes	ND	10,000	No
C-south =	1984.1	7/2/99	7/9/99	Total Solid	--	--	81.80	--	--
				TPH	190	Yes	ND	10,000	No
C south dup =	1984.3	7/2/99	7/9/99	Total Solid	--	--	81.78	--	--
				TPH	190	Yes	ND	10,000	No
D-bottom =	1984.3	7/2/99	7/9/99	Total Solid	--	--	83.28	--	--
				TPH	187	Yes	ND	10,000	No
E-east =	1984.3	7/2/99	7/9/99	Total Solid	--	--	80.57	--	--
				TPH	193	Yes	ND	10,000	No

Notes: * NJDEP Residential Direct Contact soil cleanup criteria for total organics
-- Not detected above stated sample quantitation limit
TPH Total Petroleum Hydrocarbons

FIGURES



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

FIGURE 1

LOCATION MAP
Building 237
Main-Post West
Fort Monmouth Army Base
Monmouth County, NJ

VERSAR
Engineers, Managers, Scientists, & Planners
Bristol, PA

Scale: 1" = 2000'	Date: Jan. 1999

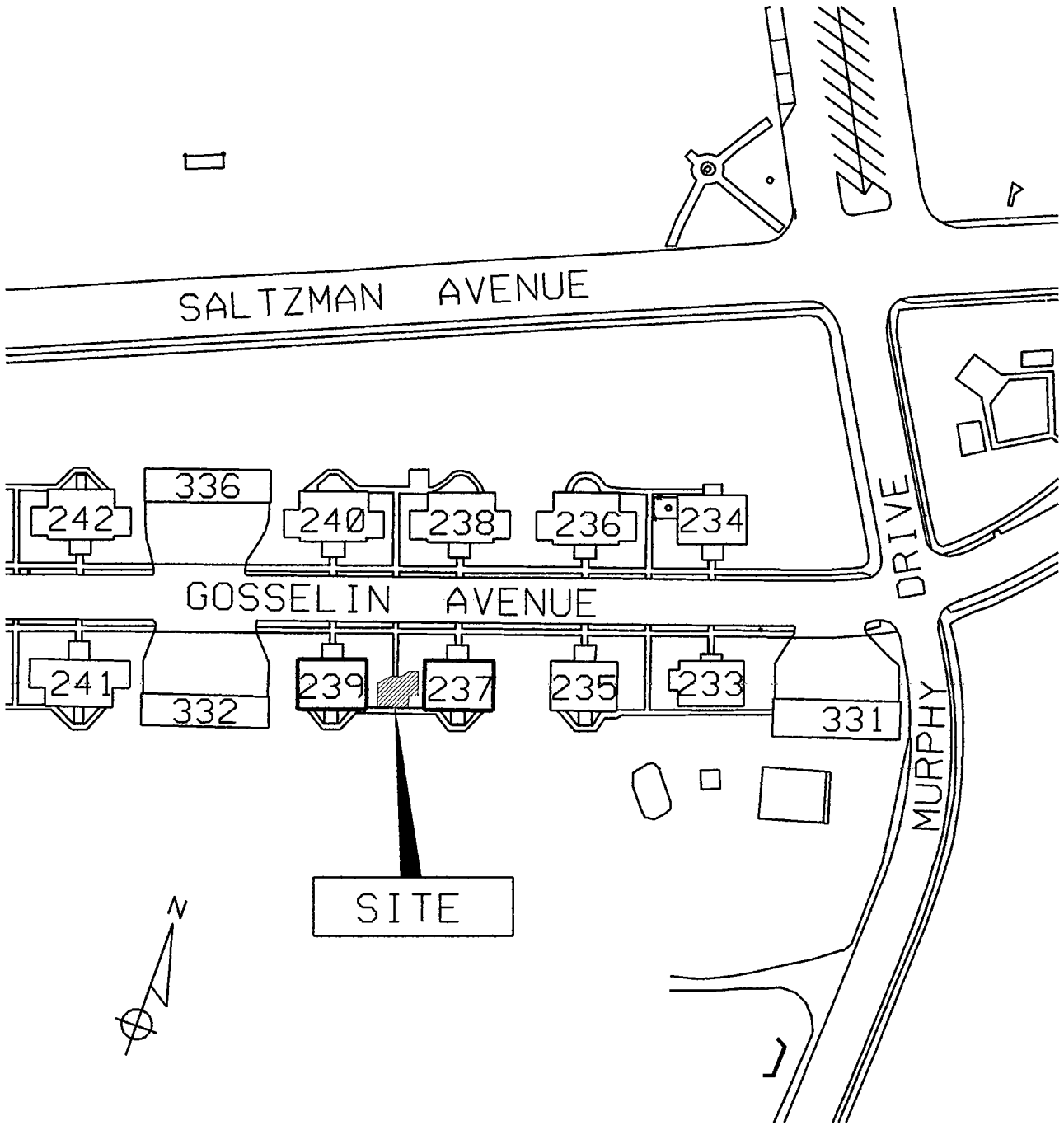


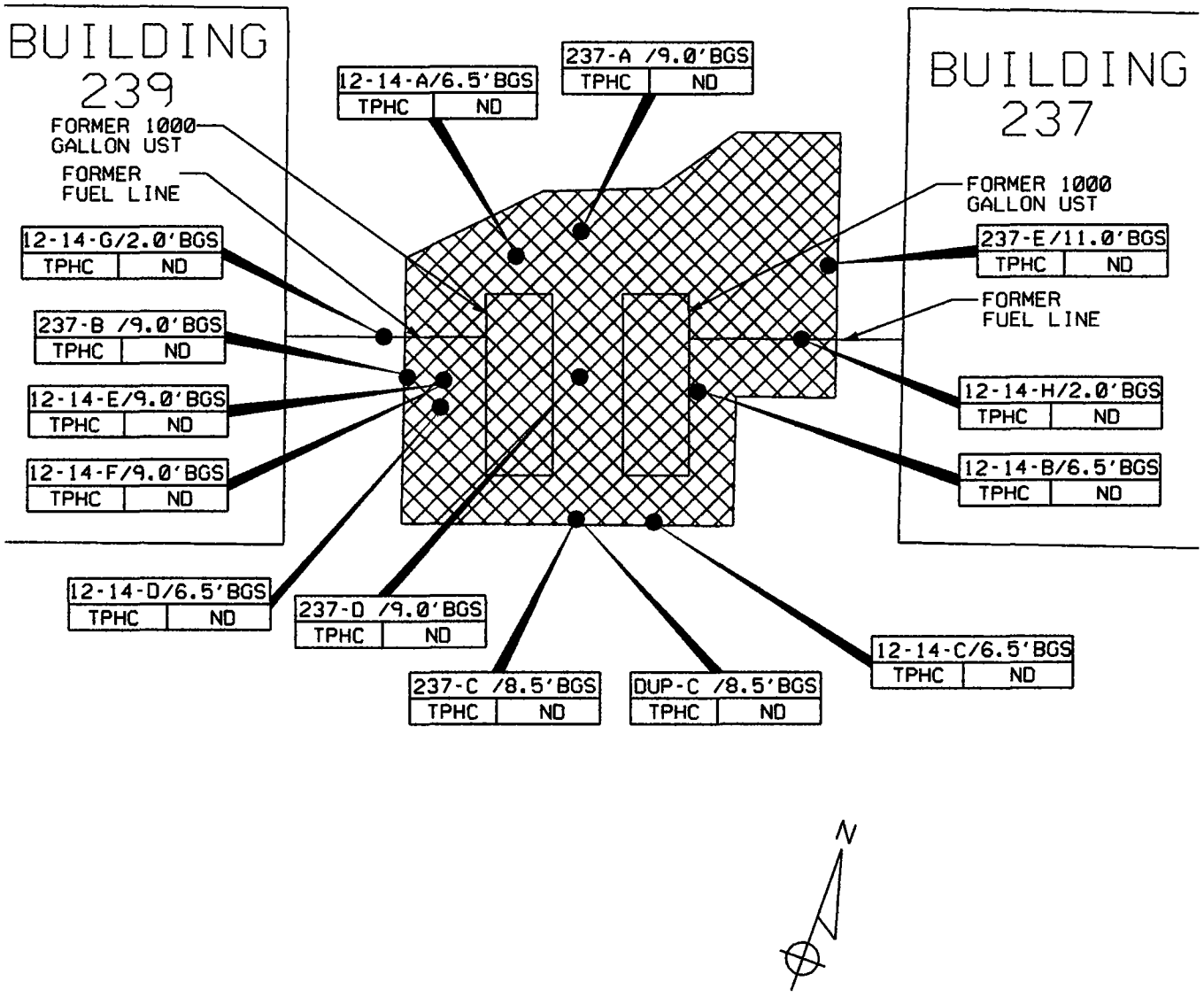
FIGURE 2
SITE MAP
BUILDING 237 AND 239
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1" = 100'

DATE: JAN 1999

237 AND 239 FIG2



LEGEND

- SOIL SAMPLE LOCATION (JANUARY 5, 1999)
- SOIL SAMPLE LOCATION (JULY 2, 1999)
- LIMIT OF EXCAVATION (JULY 2, 1999)

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 237 AND 239
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1" = 10'

DATE: JAN 1999

237 AND 239 FIG4

APPENDIX A

UST REPORT CERTIFICATION FORM

(12/97) **New Jersey Department of Environmental Protection**

Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name : U.S. Army Fort Monmouth New Jersey
Facility Street Address : Directorate of Public Works Building 173
Municipality: Oceanport County: Monmouth

Block: _____ Lot(s): _____ Telephone Number : 732-532-6224

B. Owner (RP)'s Name: _____

Street Address: _____ City : _____

State: _____ Zip: _____ Telephone Number : _____

C. (Check as appropriate)

- ☐ Site Investigation Report (SIR) $500 Fee
- ☐ Remedial Investigation Report (RIR) $1000 Fee

D. (Complete all that apply)

- Assigned Case Manager: Ian Curtis, Federal Case Manager
- UST Registration Number : 0081533-25
- Incident Report Number : _____
- Tank Closure Number: _____

E. Certification by the Subsurface Evaluator:

The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E .....Yes No

Name: Dinker Desai Signature: _____ UST Cert. No.:

Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: N/A – U.S. Army

Firm Address: Directorate of Public Works Buildings 173 City: Fort Monmouth

State:NJ Zip:07703 Telephone Number : 732-532-6224

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 et seq.)

F. Certification by the Responsible Party(ies) of the Facility:

The following certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:

1. For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Name (Print or Type): James Ott Title: Directorate of Public Works

Signature: James Ott

Company Name: U.S. Army Fort Monmouth Date: 5/18/02

APPENDIX B

WASTE MANIFEST

APPENDIX NOT AVAILABLE

AS OF THE DATE OF THIS REPORT

APPENDIX C

UST DISPOSAL CERTIFICATE

DEPARTMENT OF THE ARMY
Headquarters, U.S. Army Garrison Fort Monmouth
Fort Monmouth, New Jersey 07703 - 5101

REPLY TO
ATTENTION OF

Directorate of Public Works

Date: 24 February 1999

Marpal Disposal Company, Inc.
P.O. Box 188
Lincroft, New Jersey 07738

Re: Non-Hazardous waste disposal
Dumpster number: 15188
Contract number: DAAB07-96-C-8252
Size: 30 cubic yards

Dear Sirs:

I certify that the above referenced dumpster provided by Marpal Disposal Company, Inc. contains only fiberglass underground storage tanks that previously stored No. 2 heating oil. The tanks were cleaned in accordance with acceptable industry standards and NJDEP protocol. No free liquids are present in the dumpster.

If you should require any additional information or help at this time, please contact Mr. Charles Appleby, Environmental Protection Specialist. He can be reached at the following telephone number: (732) 532-6224.

Sincerely,

James Ott, P.E.
Director, Public Works

Attachments: None

APPENDIX D

SOIL ANALYTICAL DATA PACKAGE

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-6224 FAX: (732)532-3484
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #99-0008

12&14 Gosselin

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
12-14-A (6.5')	4165.01	Soil	05-Jan-99 15:00	01/05/98
12-14-B (6.5')	4165.02	Soil	05-Jan-99 15:03	01/05/98
12-14-C (6.5')	4165.03	Soil	05-Jan-99 15:05	01/05/98
12-14-D (6.5')	4165.04	Soil	05-Jan-99 15:10	01/05/98
12-14-E (9.0')	4165.05	Soil	05-Jan-99 15:13	01/05/98
12-14-F (9.0')	4165.06	Soil	05-Jan-99 15:15	01/05/98
12-14-G (2.0')	4165.07	Soil	05-Jan-99 15:20	01/05/98
12-14-H (2.0')	4165.08	Soil	05-Jan-99 15:25	01/05/98

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
TPHC, %SOLIDS

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

1-12-99
Daniel Wright/Date
Laboratory Director

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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.

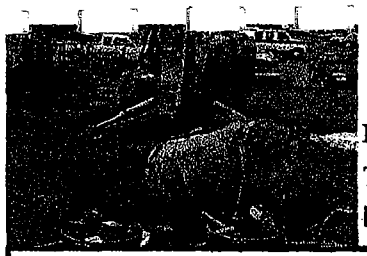
The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

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

Additional comments: _____
_____
_____

_____ 1-13-99
Laboratory Manager Date



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA UST Assessment

Project No: 99-0008
Location: Between Buildings 12 and 14 Gosselin
UST#

Samplers Name / Company : David Daniels TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS	VOA+15	Analysis Parameters: H-Nu calibrated at 9.44 setting / ~~VOA ID Number~~	OVA-HNu	Comments: * = Samples Kept <4 Celsius / Remarks / Preservation Method
4165 01	12-14-A (6.5')	1.4.99	15:00	50:1	1	X	X			0	ice
02	12-14-B (6.5')		15:03								
03	12-14-C (6.5')		15:05								
04	12-14-D (6.5')		15:10								
05	12-14-E (9.0')		15:13								
06	12-14-F (9.0')		15:15								
07	12-14-G (2.0')		15:20								
08	12-14-H (2.0')		15:25								

Note: OVA(#A51903) Calibrated With 95 ppm Methane & Zero Air @_____on _____ by [redacted]

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David Daniels	1.5.99 911	J. Wesselius			
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 5-10 Days, (_)ASAP Verbal ___ Hrs.

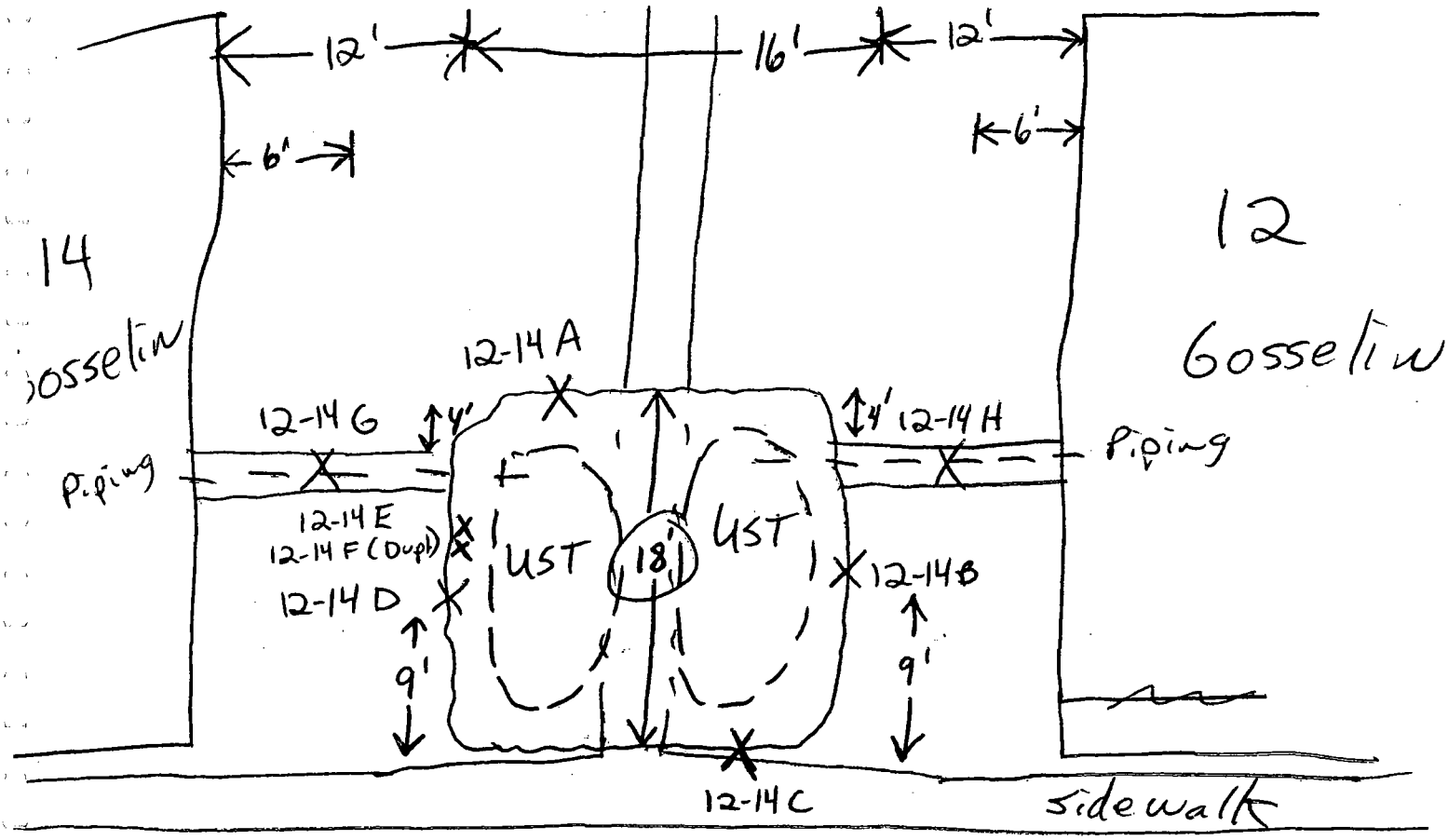
Remarks: Dedicated Sampling Tools Used
Between Buildings 12 and 14 Gosselin

003

print legibly

USTcoc.xls12/23/98

12-14 Gosselin



2 USTs in samp excavation → sampling done as per a single excavation.

1/4/99 Sunny, 20°F

No H-Nu Readings.

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

Client :	U.S. Army	**Lab. ID # :**	4165
	DPW. SELFM-PW-EV	**Date Rec'd:**	04-Jan-99
	Bldg. 173	**Analysis Start:**	05-Jan-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	06-Jan-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	12/14 Gosselin

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4165.01	12-14-A(6.5')	**1.00**	15.16	80.24	193	**ND**
4165.02	12-14-B(6.5')	**1.00**	15.15	79.82	194	**ND**
4165.03	12-14-C(6.5')	**1.00**	15.24	84.54	182	**ND**
4165.04	12-14-D(6.5')	**1.00**	15.14	84.92	183	**ND**
4165.05	12-14-E(9.0')	**1.00**	15.11	84.51	184	**ND**
4165.06	12-14-F(9.0')	**1.00**	15.52	77.79	195	**ND**
4165.07	12-14-G(2.0')	**1.00**	15.01	81.68	192	**ND**
4165.08	12-14-H(2.0')	**1.00**	15.31	78.44	196	**ND**
METHOD BLANK	TBLK 203	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998

Calibration Files
100 =T07463.D 50 =T07464.D 20 =T07465.D
10 =T07466.D 5 =T07467.D

	Compound	100	50	20	10	5	Avg		%RSD
1) tC	C8	2.173	2.172	2.280	2.366	2.336	2.265	E4	3.99
2) tC	C10	2.438	2.374	2.421	2.364	2.536	2.426	E4	2.82
3) TC	C12	2.726	2.648	2.675	2.578	2.623	2.650	E4	2.09
4) tC	C14	2.849	2.773	2.794	2.681	2.733	2.766	E4	2.29
5) tC	C16	2.931	2.864	2.879	2.748	2.817	2.848	E4	2.43
6) tC	C18	3.420	3.239	3.205	3.104	3.376	3.269	E4	3.94
7) tC	C20	3.253	3.170	3.182	3.013	3.084	3.140	E4	2.97
8) tC	C22	3.249	3.186	3.176	3.045	3.125	3.156	E4	2.42
9) tC	C24	3.328	3.259	3.243	3.117	3.179	3.225	E4	2.48
10) tC	C26	3.344	3.258	3.247	3.126	3.192	3.233	E4	2.50
11) tC	C28	3.377	3.295	3.264	3.146	3.195	3.255	E4	2.75
12) tC	C30	3.478	3.392	3.355	3.216	3.250	3.338	E4	3.20
13) tC	C32	3.436	3.332	3.305	3.156	3.195	3.285	E4	3.41
14) tC	C34	3.353	3.230	3.262	3.113	3.212	3.234	E4	2.68
15) tC	C36	2.700	2.569	2.791	2.622	2.832	2.702	E4	4.10
16) tC	C38	1.808	1.685	2.126	1.914	2.190	1.944	E4	10.91
17) tC	C40	1.096	0.994	1.479	1.242	1.480	1.258	E4	17.51
18) tC	c42	0.790	0.701	1.166	0.921	1.115	0.939	E4	21.44
19) TC	Pristane	3.124	2.984	3.060	2.878	2.935	2.996	E4	3.27
20) TC	Phytane	3.276	3.191	3.201	3.028	3.158	3.171	E4	2.86
21) sC	o-terphenyl	3.261	3.207	3.210	3.086	3.152	3.183	E4	2.10
22) tC	TPHC - total	3.103	3.053	3.205	3.180	3.606	3.229	E4	6.79

(#) = Out of Range mean rsd = 4.94%

TPH52.M Mon Jan 04 15:01:52 1999

006

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990104\T07463.D Vial: 2
Acq On : 4 Jan 99 11:37 am Operator: Deinhardt
Sample : 100 ppm standard Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 4 14:40 1999 Quant Results File: TPH51.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH51.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH51.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) sC o-terphenyl	12.97	3261057	105.134 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery	= 1051.34%#
Target Compounds			
1) tC C8	4.66	2172888	87.153 mg/L m
2) tC C10	7.68	2437641	97.987 mg/L
3) TC C12	9.32	2725903	102.330 mg/L
4) tC C14	10.50	2849330	104.803 mg/L
5) tC C16	11.51	2931160	106.253 mg/L
6) tC C18	11.97	3419631	108.354 mg/L m
7) tC C20	12.41	3253476	107.317 mg/L m
8) tC C22	13.23	3249051	107.150 mg/L
9) tC C24	13.98	3327564	106.953 mg/L
10) tC C26	14.67	3343769	106.994 mg/L
11) tC C28	15.30	3376768	106.780 mg/L
12) tC C30	15.90	3478405	106.480 mg/L
13) tC C32	16.46	3435771	106.239 mg/L
14) tC C34	17.06	3352636	103.631 mg/L
15) tC C36	17.76	2699659	96.871 mg/L
16) tC C38	18.63	1808101	86.421 mg/L
17) tC C40	19.77	1096355	79.454 mg/L
18) tC c42	21.31	789615	75.094 mg/L
19) TC Pristane	12.01	3124377	107.356 mg/L m
20) TC Phytane	12.46	3276360	107.765 mg/L m
22) tC TPHC - total	12.01	62061882	1960.157 mg/L m

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

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\990104\T07464.D Vial: 3
Acq On : 4 Jan 99 12:14 pm Operator: Deinhardt
Sample : 50 ppm standard Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 4 14:44 1999 Quant Results File: TPH51.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH51.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH51.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) sC o-terphenyl	12.96	1603691	51.702 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 517.02%#	
Target Compounds			
1) tC C8	4.67	1085752	43.549 mg/L m
2) tC C10	7.68	1186827	47.707 mg/L
3) TC C12	9.31	1323861	49.697 mg/L
4) tC C14	10.50	1386640	51.003 mg/L
5) tC C16	11.51	1432250	51.919 mg/L
6) tC C18	11.97	1619606	51.319 mg/L m
7) tC C20	12.41	1585037	52.283 mg/L m
8) tC C22	13.22	1592878	52.531 mg/L
9) tC C24	13.97	1629444	52.373 mg/L
10) tC C26	14.66	1629117	52.129 mg/L
11) tC C28	15.30	1647322	52.092 mg/L
12) tC C30	15.89	1696056	51.919 mg/L
13) tC C32	16.45	1665931	51.513 mg/L
14) tC C34	17.05	1614867	49.916 mg/L
15) tC C36	17.75	1284271	46.083 mg/L
16) tC C38	18.62	842401	40.264 mg/L
17) tC C40	19.77	496864	36.008 mg/L
18) tC c42	21.30	350650	33.348 mg/L
19) TC Pristane	12.00	1491924	51.263 mg/L m
20) TC Phytane	12.45	1595537	52.480 mg/L m
22) tC TPHC - total	12.00	30529334	964.236 mg/L m

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

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Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\990104\T07465.D Vial: 4
Acq On : 4 Jan 99 12:51 pm Operator: Deinhardt
Sample : 20 ppm standard Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 4 14:48 1999 Quant Results File: TPH51.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH51.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH51.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) sC o-terphenyl	12.95	641957	20.696 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 206.96%#	
Target Compounds			
1) tC C8	4.67	455925	18.287 mg/L m
2) tC C10	7.68	484222	19.464 mg/L
3) TC C12	9.31	534941	20.082 mg/L
4) tC C14	10.50	558802	20.554 mg/L
5) tC C16	11.50	575761	20.871 mg/L
6) tC C18	11.96	640967	20.310 mg/L m
7) tC C20	12.40	636382	20.991 mg/L m
8) tC C22	13.22	635171	20.947 mg/L
9) tC C24	13.97	648556	20.846 mg/L
10) tC C26	14.65	649321	20.777 mg/L
11) tC C28	15.29	652761	20.642 mg/L
12) tC C30	15.88	670980	20.540 mg/L
13) tC C32	16.44	661045	20.441 mg/L
14) tC C34	17.04	652459	20.168 mg/L
15) tC C36	17.74	558136	20.027 mg/L
16) tC C38	18.61	425121	20.319 mg/L
17) tC C40	19.76	295715	21.431 mg/L
18) tC c42	21.29	233287	22.186 mg/L
19) TC Pristane	11.99	612029	21.030 mg/L m
20) TC Phytane	12.45	640217	21.058 mg/L m
22) tC TPHC - total	11.96	12819036	404.875 mg/L m

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

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\990104\T07466.D Vial: 5
Acq On : 4 Jan 99 1:28 pm Operator: Deinhardt
Sample : 10 ppm standard Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 4 14:51 1999 Quant Results File: TPH51.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH51.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH51.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) sC o-terphenyl	12.95	308564	9.948 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	99.48%#
Target Compounds			
1) tC C8	4.67	236556	9.488 mg/L m
2) tC C10	7.68	236390	9.502 mg/L
3) TC C12	9.31	257803	9.678 mg/L
4) tC C14	10.49	268128	9.862 mg/L
5) tC C16	11.50	274750	9.960 mg/L
6) tC C18	11.96	310364	9.834 mg/L m
7) tC C20	12.40	301317	9.939 mg/L
8) tC C22	13.22	304484	10.042 mg/L
9) tC C24	13.96	311735	10.020 mg/L
10) tC C26	14.65	312610	10.003 mg/L
11) tC C28	15.29	314574	9.947 mg/L
12) tC C30	15.88	321578	9.844 mg/L
13) tC C32	16.44	315577	9.758 mg/L
14) tC C34	17.04	311252	9.621 mg/L
15) tC C36	17.74	262154	9.407 mg/L
16) tC C38	18.61	191398	9.148 mg/L
17) tC C40	19.76	124223	9.002 mg/L
18) tC c42	21.29	92116	8.760 mg/L
19) TC Pristane	11.99	287768	9.888 mg/L m
20) TC Phytane	12.45	302824	9.960 mg/L
22) tC TPHC - total	11.96	6360605	200.893 mg/L m

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

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\990104\T07467.D Vial: 6
Acq On : 4 Jan 99 2:05 pm Operator: Deinhardt
Sample : 5 ppm standard Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 4 14:55 1999 Quant Results File: TPH51.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH51.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH51.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) sC o-terphenyl	12.95	157597	5.081 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 50.81%#			
Target Compounds			
1) tC C8	4.65	116805	4.685 mg/L m
2) tC C10	7.68	126776	5.096 mg/L m
3) TC C12	9.31	131140	4.923 mg/L
4) tC C14	10.49	136660	5.027 mg/L
5) tC C16	11.50	140851	5.106 mg/L
6) tC C18	11.96	168799	5.349 mg/L m
7) tC C20	12.40	154176	5.086 mg/L
8) tC C22	13.22	156244	5.153 mg/L
9) tC C24	13.96	158957	5.109 mg/L
10) tC C26	14.65	159620	5.108 mg/L
11) tC C28	15.29	159729	5.051 mg/L
12) tC C30	15.88	162490	4.974 mg/L
13) tC C32	16.44	159758	4.940 mg/L
14) tC C34	17.04	160625	4.965 mg/L
15) tC C36	17.74	141593	5.081 mg/L
16) tC C38	18.61	109492	5.233 mg/L
17) tC C40	19.76	73994	5.362 mg/L
18) tC c42	21.30	55773	5.304 mg/L
19) TC Pristane	11.99	146765	5.043 mg/L m
20) TC Phytane	12.44	157884	5.193 mg/L m
22) tC TPHC - total	11.96	3606351	113.903 mg/L m

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

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\990105\T07470.D Vial: 2
Acq On : 5 Jan 99 10:50 am Operator: Deinhardt
Sample : 50 ppm standard Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	22.651	21.161 E3	6.6	98	0.00
2	tC	C10	24.264	23.718 E3	2.3	99	0.00
3	TC	C12	26.498	26.421 E3	0.3	100	0.00
4	tC	C14	27.662	27.401 E3	0.9	101	0.00
5	tC	C16	28.478	28.085 E3	1.4	101	0.00
6	tC	C18	32.687	31.446 E3	3.8	101	0.00
7	tC	C20	31.404	30.712 E3	2.2	101	0.00
8	tC	C22	31.561	30.637 E3	2.9	101	0.00
9	tC	C24	32.251	31.374 E3	2.7	102	0.00
10	tC	C26	32.334	31.462 E3	2.7	102	0.00
11	tC	C28	32.551	31.689 E3	2.6	102	0.00
12	tC	C30	33.382	32.618 E3	2.3	102	0.00
13	tC	C32	32.848	32.236 E3	1.9	102	0.00
14	tC	C34	32.339	31.657 E3	2.1	102	0.00
15	tC	C36	27.025	26.305 E3	2.7	99	0.00
16	tC	C38	19.445	19.209 E3	1.2	95	0.00
17	tC	C40	12.582	13.145 E3	-4.5	94	0.00
18	tC	c42	9.388	10.404 E3	-10.8	94	0.00
19	TC	Pristane	29.963	30.351 E3	-1.3	103	0.00
20	TC	Phytane	31.709	30.929 E3	2.5	101	0.00
21	sC	o-terphenyl	31.832	31.234 E3	1.9	103	0.00
22	tC	TPHC - total	32.295	29.885 E3	7.5	98	0.04

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990105\T07470.D Vial: 2
Acq On : 5 Jan 99 10:50 am Operator: Deinhardt
Sample : 50 ppm standard Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 11:32 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH52.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) sC o-terphenyl	12.96	1561678	49.061 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 490.61%#	
Target Compounds			
1) tC C8	4.66	1058065	46.711 mg/L m
2) tC C10	7.68	1185890	48.875 mg/L
3) TC C12	9.31	1321074	49.855 mg/L
4) tC C14	10.50	1370046	49.528 mg/L
5) tC C16	11.50	1404228	49.309 mg/L
6) tC C18	11.97	1572294	48.102 mg/L m
7) tC C20	12.40	1535580	48.897 mg/L m
8) tC C22	13.22	1531833	48.536 mg/L
9) tC C24	13.97	1568692	48.639 mg/L
10) tC C26	14.66	1573122	48.652 mg/L
11) tC C28	15.29	1584471	48.676 mg/L
12) tC C30	15.89	1630904	48.856 mg/L
13) tC C32	16.44	1611786	49.069 mg/L
14) tC C34	17.04	1582864	48.945 mg/L
15) tC C36	17.74	1315248	48.669 mg/L
16) tC C38	18.61	960441	49.394 mg/L
17) tC C40	19.75	657273	52.241 mg/L
18) tC c42	21.29	520206	55.412 mg/L
19) TC Pristane	12.00	1517535	50.647 mg/L m
20) TC Phytane	12.45	1546469	48.771 mg/L m
22) tC TPHC - total	12.00	29884673	925.369 mg/L m

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

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\990105\T07481.D Vial: 12
Acq On : 5 Jan 99 7:12 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound		AvgRF	CCRF		%Dev	Area%	Dev(min)
1	tC	C8	22.651	20.818	E3	8.1	96	0.00
2	tC	C10	24.264	23.328	E3	3.9	97	0.00
3	TC	C12	26.498	26.092	E3	1.5	99	0.00
4	tC	C14	27.662	27.072	E3	2.1	99	0.00
5	tC	C16	28.478	27.752	E3	2.5	100	0.00
6	tC	C18	32.687	31.732	E3	2.9	102	0.00
7	tC	C20	31.404	30.355	E3	3.3	100	0.00
8	tC	C22	31.561	30.087	E3	4.7	99	0.00
9	tC	C24	32.251	30.607	E3	5.1	99	0.00
10	tC	C26	32.334	30.379	E3	6.0	99	0.00
11	tC	C28	32.551	30.609	E3	6.0	99	0.00
12	tC	C30	33.382	31.524	E3	5.6	99	0.00
13	tC	C32	32.848	30.939	E3	5.8	98	0.00
14	tC	C34	32.339	30.400	E3	6.0	98	0.00
15	tC	C36	27.025	25.298	E3	6.4	95	0.00
16	tC	C38	19.445	18.571	E3	4.5	92	0.00
17	tC	C40	12.582	12.800	E3	-1.7	91	0.00
18	tC	c42	9.388	10.203	E3	-8.7	92	-0.01
19	TC	Pristane	29.963	30.055	E3	-0.3	102	0.00
20	TC	Phytane	31.709	30.467	E3	3.9	100	0.00
21	sC	o-terphenyl	31.832	30.707	E3	3.5	102	0.00
22	tC	TPHC - total	32.295	29.483	E3	8.7	96	0.03

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990105\T07481.D Vial: 12
Acq On : 5 Jan 99 7:12 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 6 7:51 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH52.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) sC o-terphenyl	12.96	1535329	48.233 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 482.33%#	
Target Compounds			
1) tC C8	4.65	1040909	45.954 mg/L m
2) tC C10	7.67	1166424	48.073 mg/L
3) TC C12	9.31	1304599	49.233 mg/L
4) tC C14	10.49	1353578	48.932 mg/L
5) tC C16	11.50	1387585	48.725 mg/L
6) tC C18	11.96	1586621	48.540 mg/L m
7) tC C20	12.40	1517769	48.330 mg/L m
8) tC C22	13.22	1504345	47.665 mg/L
9) tC C24	13.97	1530337	47.450 mg/L
10) tC C26	14.65	1518968	46.977 mg/L
11) tC C28	15.29	1530450	47.017 mg/L
12) tC C30	15.88	1576209	47.217 mg/L
13) tC C32	16.44	1546952	47.095 mg/L
14) tC C34	17.04	1519999	47.002 mg/L
15) tC C36	17.74	1264904	46.806 mg/L
16) tC C38	18.61	928567	47.754 mg/L
17) tC C40	19.75	639986	50.867 mg/L
18) tC c42	21.28	510136	54.339 mg/L
19) TC Pristane	11.99	1502757	50.154 mg/L m
20) TC Phytane	12.45	1523336	48.041 mg/L m
22) tC TPHC - total	11.99	29483284	912.940 mg/L m

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

Surrogate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4165
	DPW. SELFM-PW-EV	**Date Rec'd:**	04-Jan-99
	Bldg. 173	**Analysis Start:**	05-Jan-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	06-Jan-99
		UST Reg. #:	
Analysis:	OQA-QAM-025	**Closure #:**	
Matrix:	Soil	**DICAR #:**	
Analyst:	D.DEINHARDT	**Injection Volume**	1 ul
Inst. ID.	GC TPHC INST. #1	**Column ID**	0.32 um
Column Type	RTX 5	**Location #:**	12/14 Gosselin
Ext. Meth:	Shake		

Sample			Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
4165.01			20.00	19.14	**95.69**
4165.02			20.00	16.94	**84.69**
4165.03			20.00	20.69	**103.43**
4165.04			20.00	17.98	**89.91**
4165.05			20.00	18.53	**92.67**
4165.06			20.00	18.15	**90.75**
4165.07			20.00	19.30	**96.52**
4165.08			20.00	16.80	**84.00**
METHOD BLANK	TBLK 203		20.00	18.49	**92.44**

Surrogate Added : **o-Terphenyl**

Matrix Spike / Duplicate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4165
	DPW. SELFM-PW-EV	**Date Rec'd:**	04-Jan-99
	Bldg. 173	**Analysis Start:**	05-Jan-99
	Ft. Monmouth NJ, 07703	**Analysis Complete:**	06-Jan-99

Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	12/14 Gosselin

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
4165.01MS	1654	0.00	1706.62	103.18	75-125
4165.01MSD	1654	0.00	1613.56	97.56	75-125
			RPD	**5.61**	**20.00**

Quality Control Check Standard Summary
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4165
	DPW. SELFM-PW-EV	**Date Rec'd:**	04-Jan-99
	Bldg. 173	**Analysis Start:**	05-Jan-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	06-Jan-99

Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	12/14 Gosselin

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	5-Jan-99	1654	1652.47	99.91	75-125

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990105\T07471.D Vial: 2
Acq On : 5 Jan 99 1:15 pm Operator: Deinhardt
Sample : TBLK 203 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 6 10:17 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH52.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) sC o-terphenyl	12.95	588508	18.488 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 184.88%#	
Target Compounds			

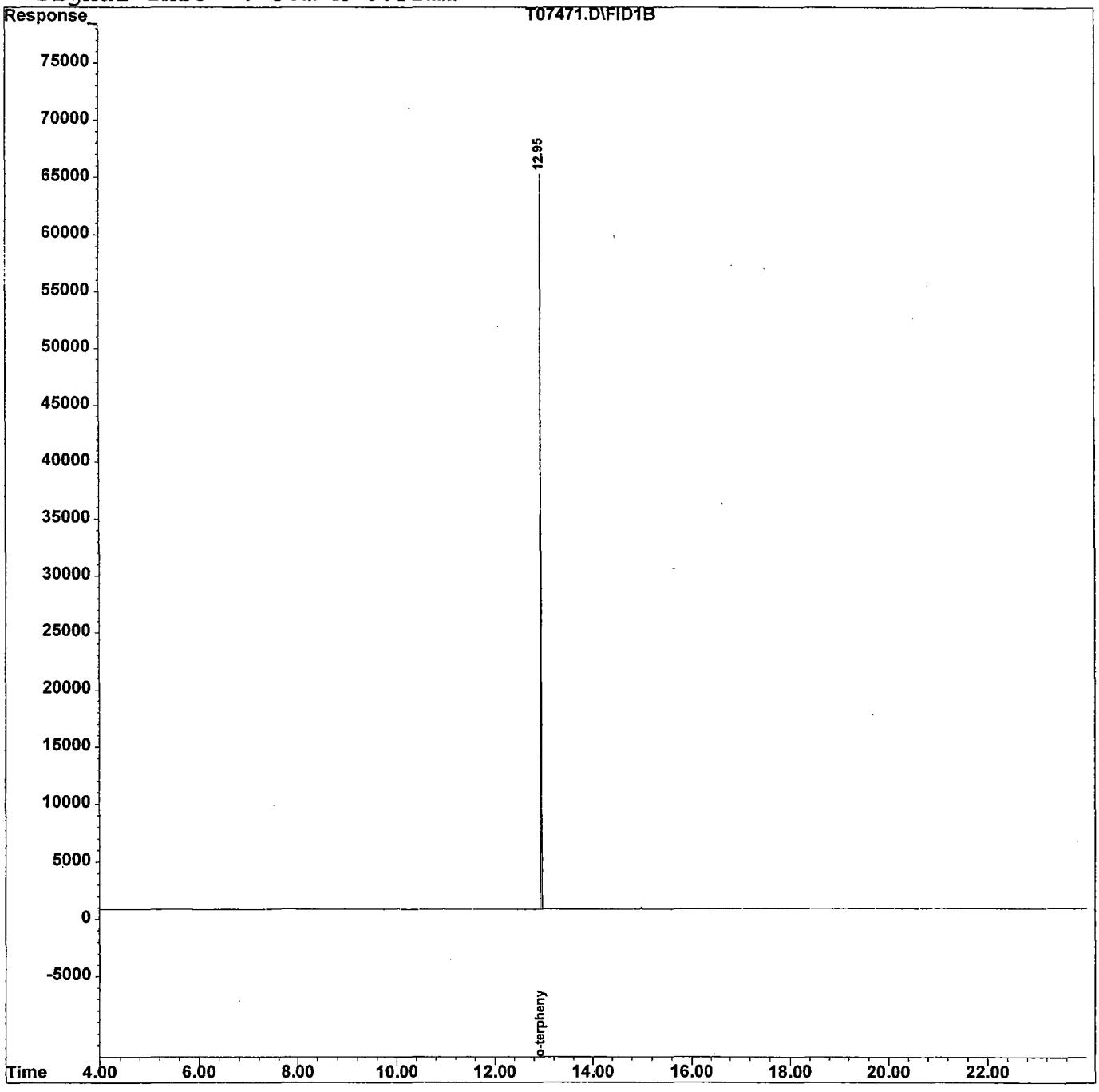
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990105\T07471.D Vial: 2
Acq On : 5 Jan 99 1:15 pm Operator: Deinhardt
Sample : TBLK 203 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 6 10:17 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH52.M

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



020

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990105\T07473.D Vial: 4
Acq On : 5 Jan 99 2:27 pm Operator: Deinhardt
Sample : 4165.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 14:53 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH52.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) sC o-terphenyl	12.95	609154	19.137 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 191.37%#	
Target Compounds			

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

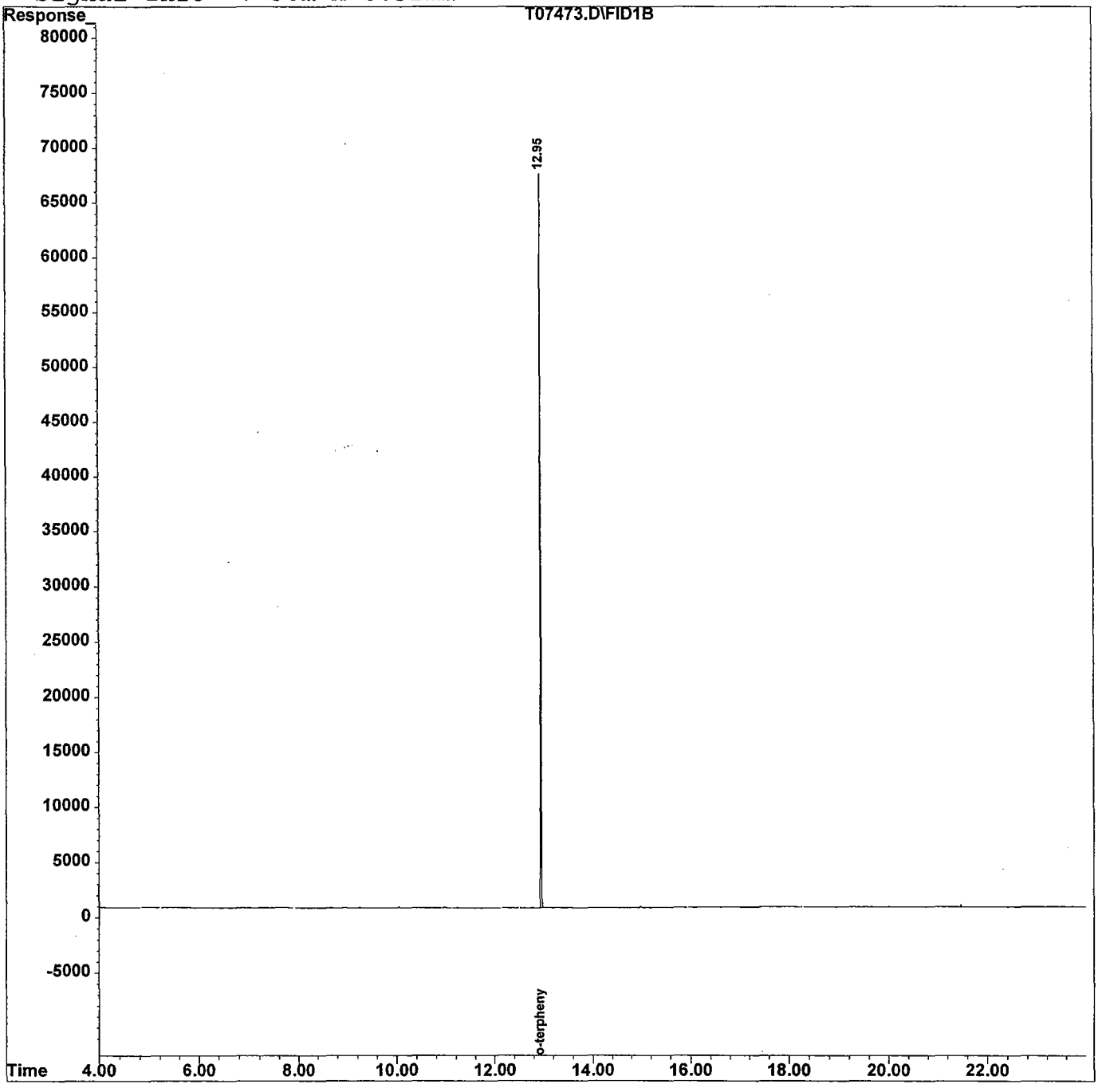
021

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990105\T07473.D Vial: 4
Acq On : 5 Jan 99 2:27 pm Operator: Deinhardt
Sample : 4165.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 14:53 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH52.M

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



022

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990105\T07476.D Vial: 7
Acq On : 5 Jan 99 4:14 pm Operator: Deinhardt
Sample : 4165.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 16:41 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH52.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) sC o-terphenyl	12.95	539135	16.937 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 169.37%#	
Target Compounds			

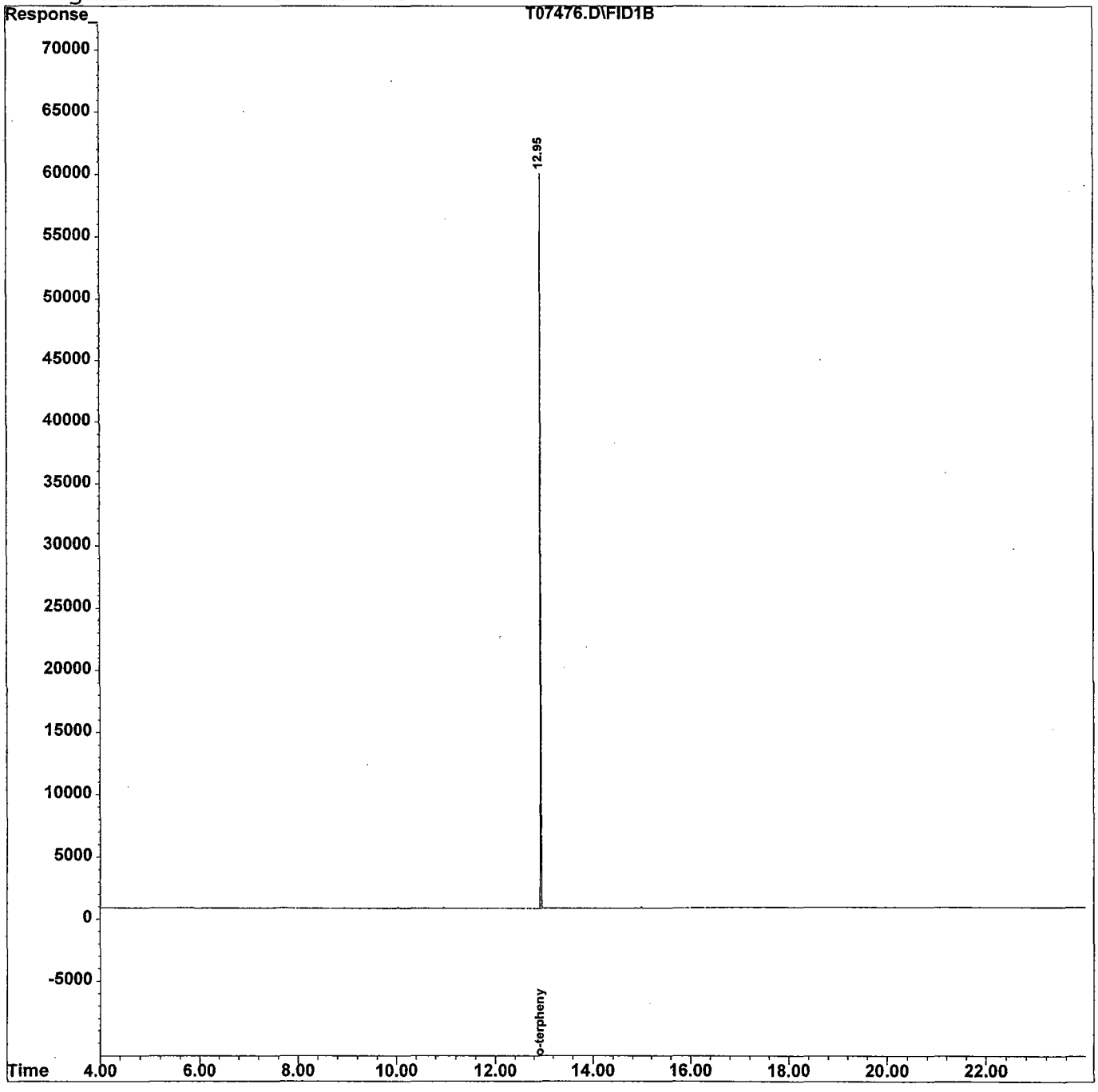
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990105\T07476.D Vial: 7
Acq On : 5 Jan 99 4:14 pm Operator: Deinhardt
Sample : 4165.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 16:41 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH52.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\990105\T07477.D Vial: 8
Acq On : 5 Jan 99 4:50 pm Operator: Deinhardt
Sample : 4165.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 17:16 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH52.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) sC o-terphenyl	12.95	658468	20.686 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 206.86%#	
Target Compounds			

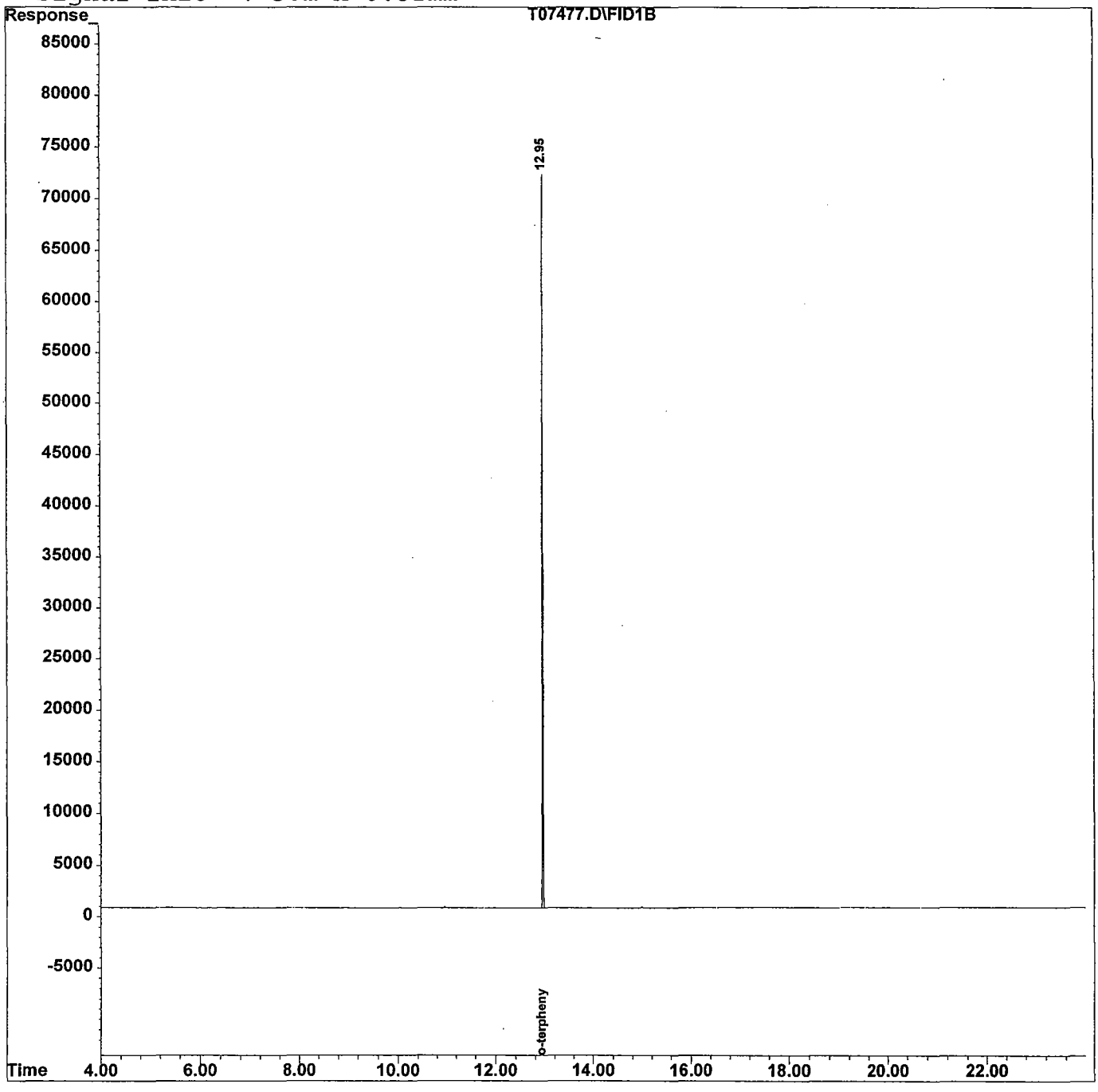
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990105\T07477.D Vial: 8
Acq On : 5 Jan 99 4:50 pm Operator: Deinhardt
Sample : 4165.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 17:16 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH52.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\990105\T07478.D Vial: 9
Acq On : 5 Jan 99 5:25 pm Operator: Deinhardt
Sample : 4165.04 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 17:52 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH52.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) sC o-terphenyl	12.95	572381	17.982 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 179.82%#	
Target Compounds			

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

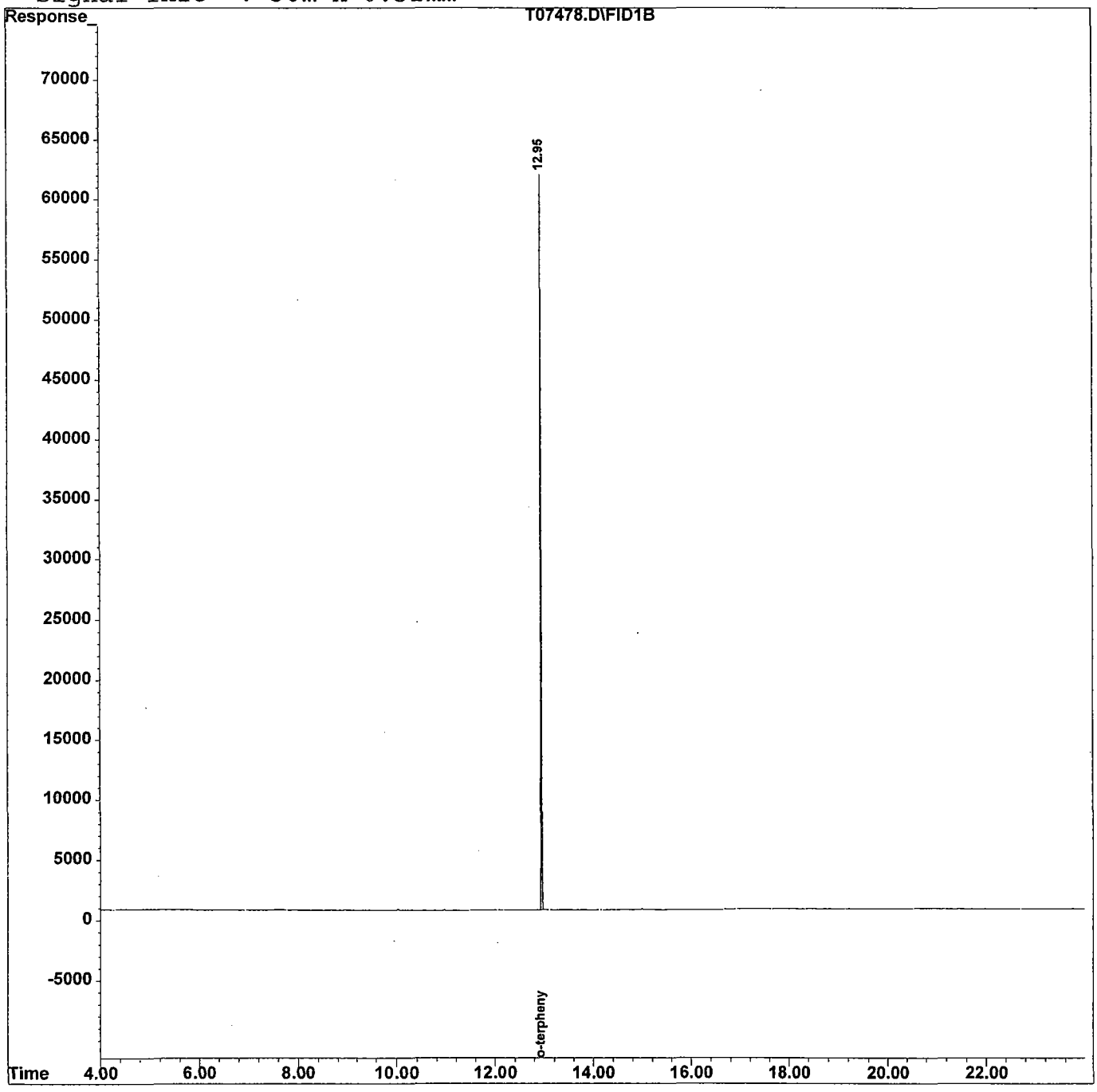
027

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990105\T07478.D Vial: 9
Acq On : 5 Jan 99 5:25 pm Operator: Deinhardt
Sample : 4165.04 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 17:52 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH52.M

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

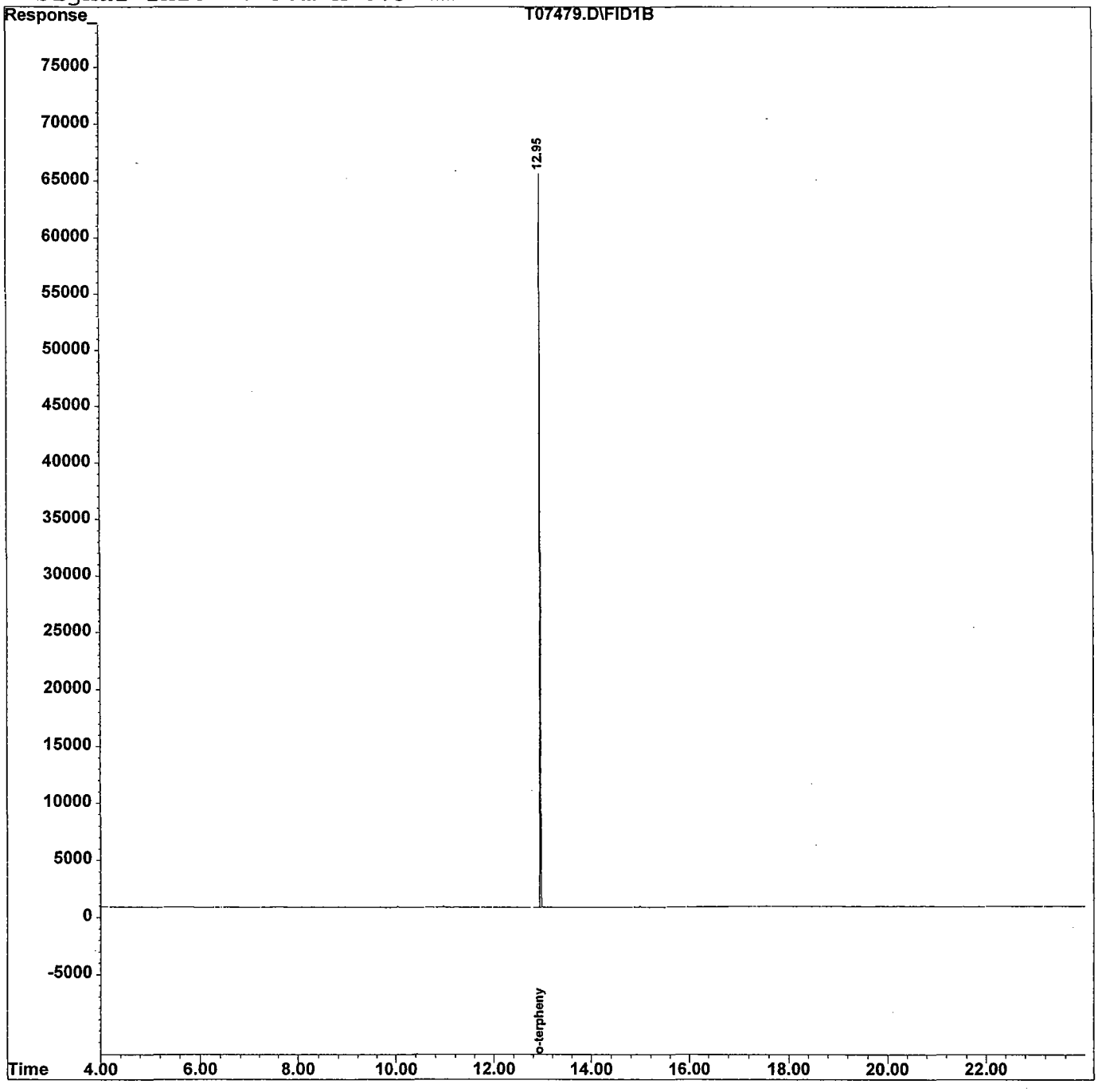


Quantitation Report

Data File : C:\HPCHEM\1\DATA\990105\T07479.D Vial: 10
Acq On : 5 Jan 99 6:01 pm Operator: Deinhardt
Sample : 4165.05 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 18:27 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH52.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\990105\T07480.D Vial: 11
Acq On : 5 Jan 99 6:37 pm Operator: Deinhardt
Sample : 4165.06 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 19:03 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH52.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) sC o-terphenyl	12.95	577728	18.150 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 181.50%#	
Target Compounds			

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

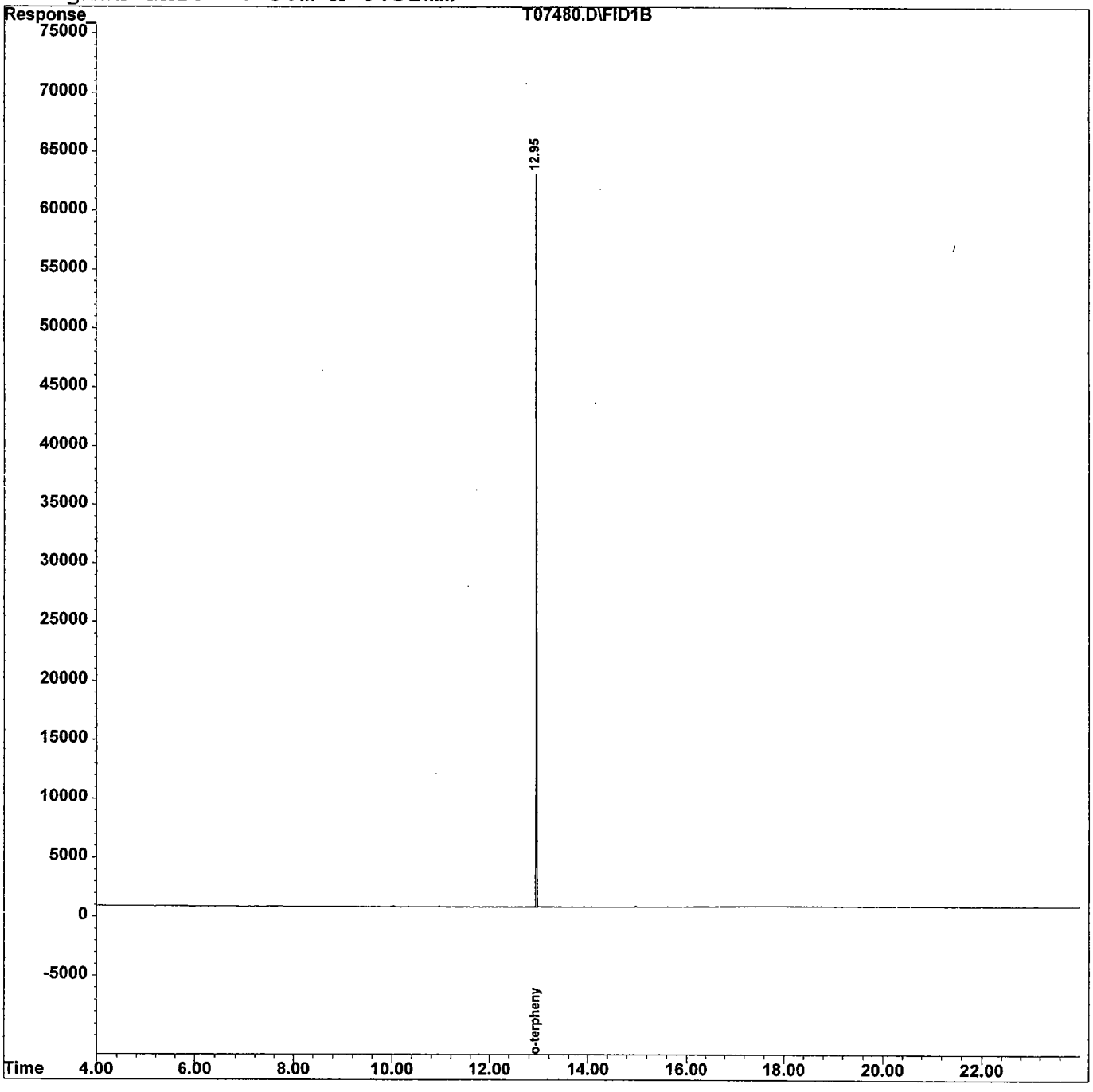
031

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990105\T07480.D Vial: 11
Acq On : 5 Jan 99 6:37 pm Operator: Deinhardt
Sample : 4165.06 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 19:03 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH52.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\990105\T07482.D Vial: 13
Acq On : 5 Jan 99 7:48 pm Operator: Deinhardt
Sample : 4165.07 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 20:14 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH52.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) sC o-terphenyl	12.95	614481	19.304 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 193.04%#	
Target Compounds			

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

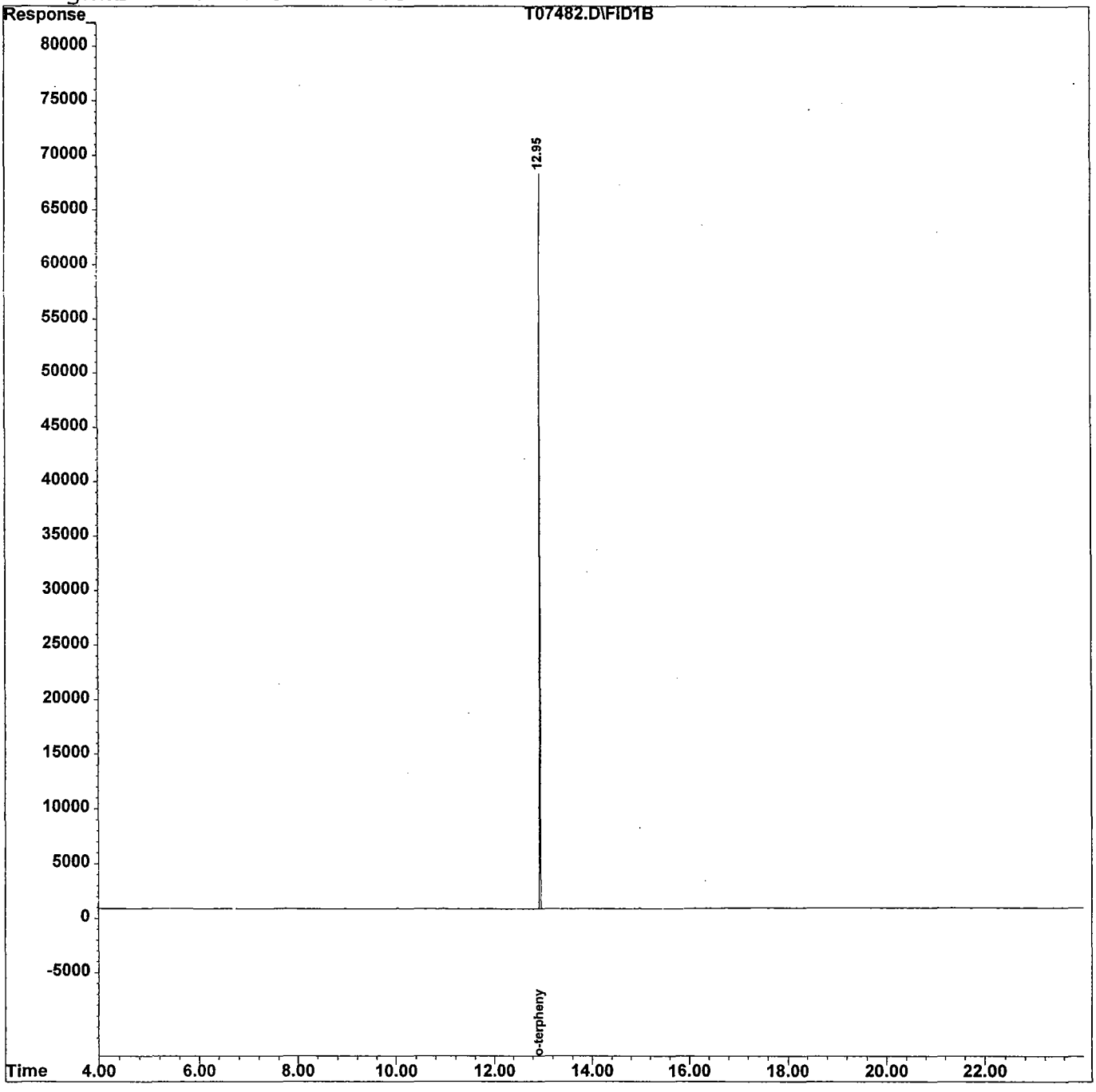
033

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990105\T07482.D Vial: 13
Acq On : 5 Jan 99 7:48 pm Operator: Deinhardt
Sample : 4165.07 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 20:14 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH52.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\990105\T07483.D Vial: 14
Acq On : 5 Jan 99 8:23 pm Operator: Deinhardt
Sample : 4165.08 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 20:50 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Initial Calibration
DataAcq Meth : TPH52.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) sC o-terphenyl	12.95	534738	16.799 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 167.99%#	
Target Compounds			

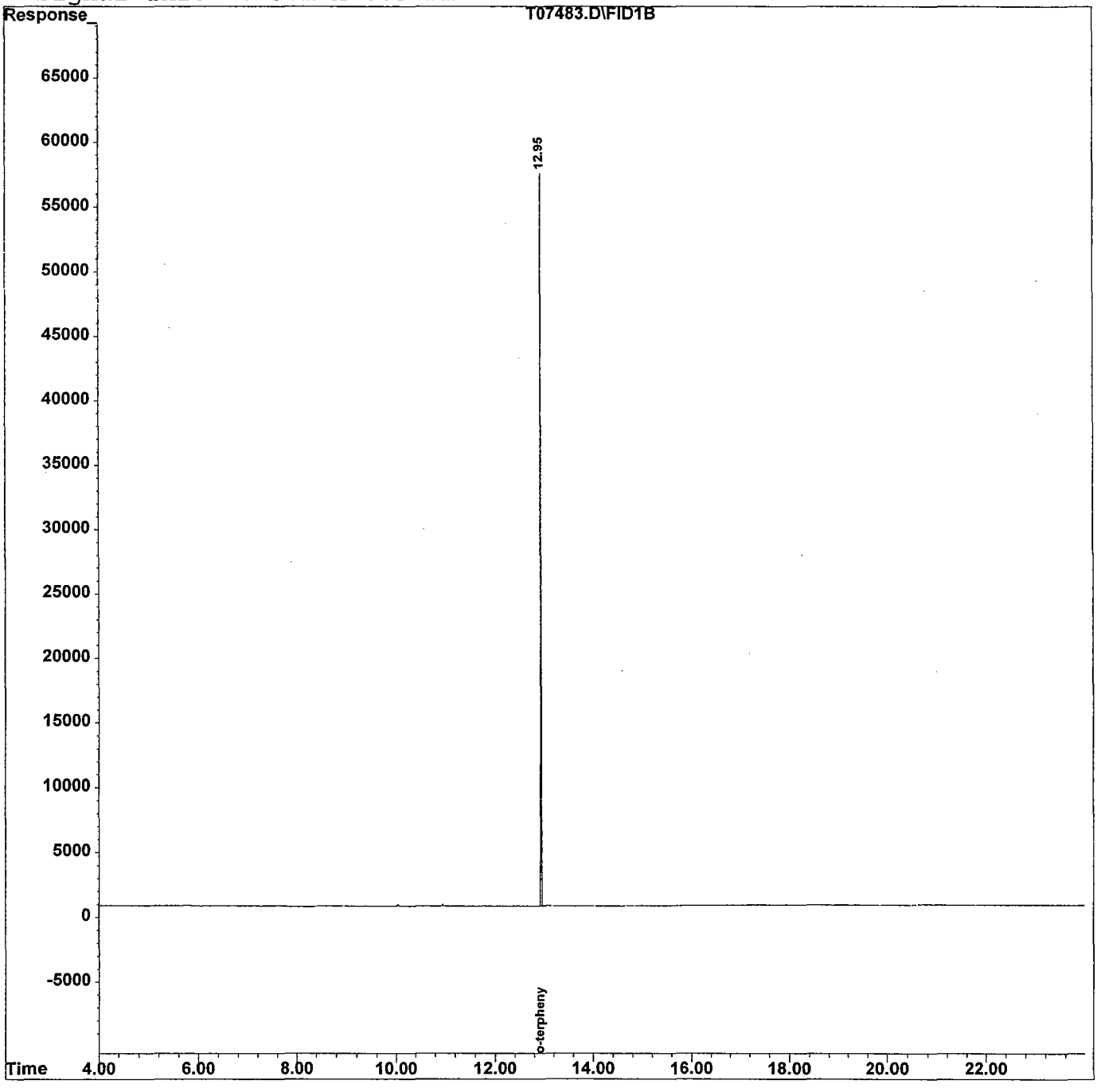
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990105\T07483.D Vial: 14
Acq On : 5 Jan 99 8:23 pm Operator: Deinhardt
Sample : 4165.08 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jan 5 20:50 1999 Quant Results File: TPH52.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH52.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Oct 06 08:13:32 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH52.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 _____

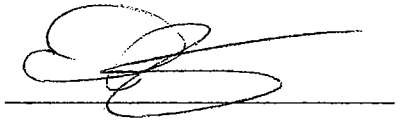
Date 1 /12/99

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

NJDEP LABORATORY CERTIFICATION # 13461

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #99-0008

Bldg. 237

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Bldg. 237-A-North	4588.01	Soil	02-Jul-99 10:15	07/02/99
Bldg. 237-B-West	4588.02	Soil	02-Jul-99 10:20	07/02/99
Bldg. 237-C-South	4588.03	Soil	02-Jul-99 10:25	07/02/99
Bldg. 237-C-South Dup.	4588.04	Soil	02-Jul-99 10:25	07/02/99
Bldg. 237-D-Bottom	4588.05	Soil	02-Jul-99 10:30	07/02/99
Bldg. 237-E-East	4588.06	Soil	02-Jul-99 13:30	07/02/99

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
TPHC, %SOLIDS

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

7-19-99

Daniel Wright/Date
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

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

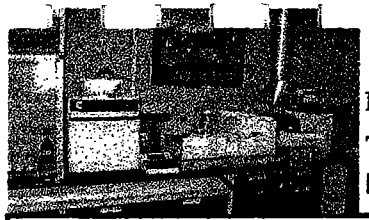
Additional comments: _____

_____

_____

_____ 7-19-99

Laboratory Manager Date



Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer: CHARLES APPLEBY
Phone #: X 26224
( )DERA (X)OMA ( )Other:_____

Project No: 99-0008
Location: BLDG. 237 GOSSELIN AVE
UST # 81533

Samplers Name / Company : FRANK ACCORSI, TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS							Remarks / Preservation Method
4588.01	BLDG 237-A-NORTH	7-2-99	1015	SOIL	1	X	X							
.02	BLDG 237-B-WEST	↓	1020	↓	↓	X	X							
.03	BLDG 237-C-SOUTH		1025			X	X							
.04	" " " (DUPL.)		1025			X	X							
.05	BLDG 237-D-BOTTOM		1030			X	X							
.06	BLDG 237-E-EAST		1330			X	X							

Comments:

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Frank Accorsi	7-2-99 1428	[signature]			
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: (X)Standard ~~4 wks~~, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:

print legibly

Coc.xls7/1/99

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

Client :	U.S. Army	**Lab. ID # :**	4592
	DPW. SELFM-PW-EV	**Date Rec'd:**	07-Jul-99
	Bldg. 173	**Analysis Start:**	09-Jul-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	13-Jul-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	81533
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	975 Area

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4588.01	Bldg.237A-North	1.00	15.13	83.75	185	ND
4588.02	Bldg.237B-West	1.00	15.11	82.21	189	ND
4588.03	Bldg.237C-South	1.00	15.10	81.80	190	ND
4588.04	Bldg.237C-South Du	1.00	15.10	81.78	190	ND
4588.05	Bldg.237D-Bottom	1.00	15.10	83.28	187	ND
4588.06	Bldg.237E-East	1.00	15.10	80.57	193	ND
METHOD BLANK	TBLK249	1.00	15.00	100.00	157	ND

ND = Not Detected
MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

00004

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999

Calibration Files
100 =T008475.D 50 =T008476.D 20 =T008477.D
10 =T008478.D 5 =T008479.D

	Compound	100	50	20	10	5	Avg		%RSD
1) tC	C8	1.899	2.001	1.835	2.069	2.043	1.969	E4	5.04
2) tC	C10	2.199	2.269	2.100	2.210	2.224	2.200	E4	2.82
3) TC	C12	2.416	2.497	2.293	2.385	2.362	2.391	E4	3.12
4) tC	C14	2.586	2.702	2.489	2.592	2.596	2.593	E4	2.91
5) tC	C16	2.726	2.868	2.654	2.769	2.792	2.762	E4	2.87
6) tC	C18	2.886	3.092	2.717	2.965	3.067	2.945	E4	5.16
7) tC	C20	2.963	3.131	2.906	3.029	3.066	3.019	E4	2.90
8) tC	C22	3.065	3.238	3.009	3.148	3.176	3.127	E4	2.91
9) tC	C24	3.140	3.320	3.088	3.223	3.239	3.202	E4	2.82
10) tC	C26	3.119	3.307	3.085	3.194	3.195	3.180	E4	2.70
11) tC	C28	3.127	3.315	3.090	3.201	3.179	3.182	E4	2.70
12) tC	C30	3.236	3.396	3.172	3.290	3.201	3.259	E4	2.71
13) tC	C32	3.194	3.364	3.121	3.201	3.194	3.215	E4	2.79
14) tC	C34	3.299	3.481	3.232	3.293	3.286	3.318	E4	2.85
15) tC	C36	3.033	3.185	2.953	3.016	2.974	3.032	E4	3.01
16) tC	C38	3.158	3.316	3.076	3.094	3.077	3.144	E4	3.24
17) tC	C40	2.776	2.895	2.686	2.698	2.584	2.728	E4	4.24
18) tC	c42	2.811	2.945	2.676	2.622	2.573	2.726	E4	5.56
19) TC	Pristane	3.056	3.159	2.967	3.082	3.135	3.080	E4	2.44
20) TC	Phytane	2.983	3.158	2.930	3.067	3.112	3.050	E4	3.06
21) sC	o-terphenyl	3.152	3.335	3.093	3.239	3.289	3.221	E4	3.07
22) tC	TPHC - total	3.234	3.509	3.571	3.602	4.083	3.600	E4	8.53

#) = Out of Range

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990702\T008475.D Vial: 2
Acq On : 2 Jul 1999 5:20 pm Operator: Deinhardt
Sample : 100 ppm standard Inst : GC/MS Ins
Misc : 100 ppm standard Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 6 8:09 1999 Quant Results File: TPH59.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH59.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jun 22 14:18:32 1999
Response via : Initial Calibration
DataAcq Meth : TPH59.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) sC o-terphenyl	12.88	3151511	140.038 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 1400.38%#	
Target Compounds			
1) tC C8	4.47	1898948	131.286 mg/L
2) tC C10	7.59	2198748	139.729 mg/L
3) TC C12	9.23	2415948	143.674 mg/L
4) tC C14	10.42	2585670	144.702 mg/L
5) tC C16	11.43	2726083	145.792 mg/L
6) tC C18	11.89	2885738	149.408 mg/L m
7) tC C20	12.33	2963436	145.956 mg/L m
8) tC C22	13.15	3065094	146.829 mg/L
9) tC C24	13.90	3139606	147.093 mg/L
10) tC C26	14.58	3119477	146.868 mg/L
11) tC C28	15.22	3127158	146.573 mg/L
12) tC C30	15.81	3236178	146.664 mg/L
13) tC C32	16.37	3194293	147.414 mg/L
14) tC C34	16.96	3299209	148.416 mg/L
15) tC C36	17.64	3032685	149.374 mg/L
16) tC C38	18.50	3157803	149.821 mg/L
17) tC C40	19.61	2775756	150.221 mg/L
18) tC c42	21.11	2811239	150.678 mg/L
19) TC Pristane	11.92	3055703	149.618 mg/L m
20) TC Phytane	12.38	2982884	145.884 mg/L m
22) tC TPHC - total	11.92	64678513	2768.317 mg/L m

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

000006

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990702\T008476.D Vial: 3
Acq On : 2 Jul 1999 6:00 pm Operator: Deinhardt
Sample : 50 ppm standard Inst : GC/MS Ins
Misc : 50 ppm standard Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 6 8:09 1999 Quant Results File: TPH59.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH59.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jun 22 14:18:32 1999
Response via : Initial Calibration
DataAcq Meth : TPH59.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) sC o-terphenyl	12.88	1667619	74.101 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 741.01%#	
Target Compounds			
1) tC C8	4.47	1000429	69.166 mg/L m
2) tC C10	7.59	1134455	72.094 mg/L
3) TC C12	9.23	1248505	74.247 mg/L
4) tC C14	10.42	1351246	75.620 mg/L
5) tC C16	11.43	1434050	76.694 mg/L
6) tC C18	11.89	1546073	80.047 mg/L m
7) tC C20	12.33	1565397	77.099 mg/L m
8) tC C22	13.14	1619121	77.562 mg/L
9) tC C24	13.89	1660188	77.781 mg/L
10) tC C26	14.58	1653696	77.858 mg/L
11) tC C28	15.21	1657318	77.680 mg/L
12) tC C30	15.81	1698160	76.961 mg/L
13) tC C32	16.36	1682052	77.625 mg/L
14) tC C34	16.95	1740310	78.289 mg/L
15) tC C36	17.63	1592582	78.442 mg/L
16) tC C38	18.48	1658206	78.673 mg/L
17) tC C40	19.59	1447690	78.347 mg/L
18) tC c42	21.08	1472437	78.920 mg/L
19) TC Pristane	11.92	1579305	77.328 mg/L m
20) TC Phytane	12.37	1579199	77.234 mg/L m
22) tC TPHC - total	11.92	35086432	1501.741 mg/L m

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990702\T008477.D Vial: 4
Acq On : 2 Jul 1999 6:39 pm Operator: Deinhardt
Sample : 20 ppm standard Inst : GC/MS Ins
Misc : 20 ppm standard Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 6 8:12 1999 Quant Results File: TPH59.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH59.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jun 22 14:18:32 1999
Response via : Initial Calibration
DataAcq Meth : TPH59.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) sC o-terphenyl	12.87	618565	27.486 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 274.86%#	
Target Compounds			
1) tC C8	4.47	366915	25.367 mg/L m
2) tC C10	7.59	420077	26.696 mg/L
3) TC C12	9.23	458661	27.276 mg/L
4) tC C14	10.41	497889	27.863 mg/L
5) tC C16	11.42	530822	28.389 mg/L
6) tC C18	11.88	543422	28.135 mg/L m
7) tC C20	12.32	581156	28.623 mg/L m
8) tC C22	13.14	601741	28.826 mg/L
9) tC C24	13.88	617693	28.939 mg/L
10) tC C26	14.57	616935	29.046 mg/L
11) tC C28	15.21	617977	28.965 mg/L
12) tC C30	15.80	634405	28.751 mg/L
13) tC C32	16.35	624211	28.807 mg/L
14) tC C34	16.94	646383	29.078 mg/L
15) tC C36	17.62	590507	29.085 mg/L
16) tC C38	18.47	615223	29.189 mg/L
17) tC C40	19.57	537188	29.072 mg/L
18) tC c42	21.06	535300	28.691 mg/L
19) TC Pristane	11.91	593471	29.058 mg/L m
20) TC Phytane	12.36	585972	28.658 mg/L m
22) tC TPHC - total	13.88	14283071	611.332 mg/L m

000008

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990702\T008478.D Vial: 5
Acq On : 2 Jul 1999 7:18 pm Operator: Deinhardt
Sample : 10 ppm standard Inst : GC/MS Ins
Misc : 10 ppm standard Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 6 8:22 1999 Quant Results File: TPH59.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH59.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jun 22 14:18:32 1999
Response via : Initial Calibration
DataAcq Meth : TPH59.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) sC o-terphenyl	12.87	323881	14.392 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 143.92%#	
Target Compounds			
1) tC C8	4.47	206912	14.305 mg/L m
2) tC C10	7.59	221025	14.046 mg/L
3) TC C12	9.23	238510	14.184 mg/L
4) tC C14	10.41	259236	14.508 mg/L
5) tC C16	11.42	276869	14.807 mg/L
6) tC C18	11.88	296515	15.352 mg/L m
7) tC C20	12.32	302901	14.919 mg/L m
8) tC C22	13.14	314804	15.080 mg/L
9) tC C24	13.88	322300	15.100 mg/L
10) tC C26	14.57	319381	15.037 mg/L
11) tC C28	15.21	320120	15.004 mg/L
12) tC C30	15.80	328983	14.910 mg/L
13) tC C32	16.35	320128	14.774 mg/L
14) tC C34	16.94	329258	14.812 mg/L
15) tC C36	17.62	301576	14.854 mg/L
16) tC C38	18.46	309405	14.680 mg/L
17) tC C40	19.57	269794	14.601 mg/L
18) tC c42	21.05	262229	14.055 mg/L
19) TC Pristane	11.91	308188	15.090 mg/L m
20) TC Phytane	12.36	306652	14.997 mg/L m
22) tC TPHC - total	12.87	7203552	308.321 mg/L m

000009

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990702\T008479.D Vial: 6
Acq On : 2 Jul 1999 7:57 pm Operator: Deinhardt
Sample : 5 ppm standard Inst : GC/MS Ins
Misc : 5 ppm standard Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 6 8:23 1999 Quant Results File: TPH59.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH59.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jun 22 14:18:32 1999
Response via : Initial Calibration
DataAcq Meth : TPH59.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) sC o-terphenyl	12.87	164439	7.307 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	73.07%#
Target Compounds			
1) tC C8	4.46	102135	7.061 mg/L m
2) tC C10	7.59	111199	7.067 mg/L
3) TC C12	9.23	118080	7.022 mg/L
4) tC C14	10.41	129819	7.265 mg/L
5) tC C16	11.42	139587	7.465 mg/L
6) tC C18	11.88	153356	7.940 mg/L m
7) tC C20	12.32	153311	7.551 mg/L m
8) tC C22	13.13	158790	7.607 mg/L
9) tC C24	13.88	161952	7.588 mg/L
10) tC C26	14.57	159746	7.521 mg/L
11) tC C28	15.20	158957	7.450 mg/L
12) tC C30	15.80	160050	7.254 mg/L
13) tC C32	16.35	159713	7.371 mg/L
14) tC C34	16.93	164291	7.391 mg/L
15) tC C36	17.61	148720	7.325 mg/L
16) tC C38	18.46	153855	7.300 mg/L
17) tC C40	19.56	129217	6.993 mg/L
18) tC c42	21.04	128661	6.896 mg/L
19) TC Pristane	11.91	156762	7.676 mg/L m
20) TC Phytane	12.36	155599	7.610 mg/L m
22) tC TPHC - total	12.86	4083291	174.770 mg/L m

000010

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

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\990706\T008491.D Vial: 2
Acq On : 6 Jul 1999 11:03 am Operator: Deinhardt
Sample : 50 ppm standard Inst : GC/MS Ins
Misc : 50 ppm standard Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

	Compound		AvgRF	CCRF		%Dev	Area%	Dev(min)
1	tC	C8	19.692	19.956	E3	-1.3	110	0.00
2	tC	C10	22.005	23.660	E3	-7.5	117	0.00
3	TC	C12	23.906	26.316	E3	-10.1	121	0.00
4	tC	C14	25.933	28.301	E3	-9.1	123	0.00
5	tC	C16	27.617	29.935	E3	-8.4	124	0.00
6	tC	C18	29.455	30.608	E3	-3.9	117	0.00
7	tC	C20	30.190	32.587	E3	-7.9	125	0.00
8	tC	C22	31.272	33.643	E3	-7.6	125	0.00
9	tC	C24	32.021	34.496	E3	-7.7	125	0.01
10	tC	C26	31.801	34.274	E3	-7.8	125	0.01
11	tC	C28	31.824	34.529	E3	-8.5	126	0.01
12	tC	C30	32.591	35.680	E3	-9.5	126	0.01
13	tC	C32	32.150	35.352	E3	-10.0	127	0.01
14	tC	C34	33.180	36.516	E3	-10.1	128	0.02
15	tC	C36	30.321	33.466	E3	-10.4	130	0.02
16	tC	C38	31.443	34.633	E3	-10.1	134	0.03
17	tC	C40	27.279	30.050	E3	-10.2	138	0.03
18	tC	c42	27.256	30.229	E3	-10.9	139	0.05
19	TC	Pristane	30.798	33.025	E3	-7.2	127	0.01
20	TC	Phytane	30.499	32.788	E3	-7.5	125	0.01
21	sC	o-terphenyl	32.214	34.861	E3	-8.2	124	0.01
22	tC	TPHC - total	35.997	35.443	E3	1.5	124	-0.95#

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990706\T008491.D Vial: 2
Acq On : 6 Jul 1999 11:03 am Operator: Deinhardt
Sample : 50 ppm standard Inst : GC/MS Ins
Misc : 50 ppm standard Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 6 11:31 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Initial Calibration
DataAcq Meth : TPH60.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) sC o-terphenyl	12.88	1743030	54.107 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery = 541.07%#		
Target Compounds			
1) tC C8	4.46	997803	50.669 mg/L m
2) tC C10	7.59	1183011	53.762 mg/L
3) TC C12	9.23	1315800	55.041 mg/L
4) tC C14	10.42	1415064	54.567 mg/L
5) tC C16	11.43	1496764	54.196 mg/L
6) tC C18	11.89	1530386	51.958 mg/L m
7) tC C20	12.33	1629347	53.969 mg/L m
8) tC C22	13.14	1682127	53.791 mg/L
9) tC C24	13.89	1724803	53.865 mg/L
10) tC C26	14.58	1713710	53.889 mg/L
11) tC C28	15.21	1726446	54.250 mg/L
12) tC C30	15.81	1784009	54.740 mg/L
13) tC C32	16.36	1767605	54.980 mg/L
14) tC C34	16.95	1825801	55.027 mg/L
15) tC C36	17.63	1673285	55.185 mg/L
16) tC C38	18.49	1731661	55.073 mg/L
17) tC C40	19.60	1502514	55.080 mg/L
18) tC c42	21.09	1511449	55.453 mg/L
19) TC Pristane	11.92	1651234	53.616 mg/L m
20) TC Phytane	12.37	1639412	53.752 mg/L m
22) tC TPHC - total	11.92	35442633	984.605 mg/L m

000052

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

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\990707\T008495.D Vial: 1
Acq On : 7 Jul 1999 9:08 am Operator: Deinhardt
Sample : 50 PPM CAL Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	19.692	20.418 E3	-3.7	113	0.02
2	tC	C10	22.005	23.217 E3	-5.5	115	0.00
3	TC	C12	23.906	25.363 E3	-6.1	117	0.00
4	tC	C14	25.933	27.357 E3	-5.5	119	0.00
5	tC	C16	27.617	29.214 E3	-5.8	121	0.00
6	tC	C18	29.455	30.083 E3	-2.1	115	0.00
7	tC	C20	30.190	31.750 E3	-5.2	122	0.01
8	tC	C22	31.272	33.145 E3	-6.0	123	0.00
9	tC	C24	32.021	33.944 E3	-6.0	123	0.01
10	tC	C26	31.801	33.777 E3	-6.2	123	0.01
11	tC	C28	31.824	33.731 E3	-6.0	123	0.01
12	tC	C30	32.591	34.800 E3	-6.8	123	0.01
13	tC	C32	32.150	34.604 E3	-7.6	124	0.01
14	tC	C34	33.180	35.527 E3	-7.1	124	0.02
15	tC	C36	30.321	31.740 E3	-4.7	123	0.02
16	tC	C38	31.443	31.504 E3	-0.2	122	0.02
17	tC	C40	27.279	25.303 E3	7.2	116	0.03
18	tC	c42	27.256	23.477 E3	13.9	108	0.04
19	TC	Pristane	30.798	32.912 E3	-6.9	126	0.01
20	TC	Phytane	30.499	32.214 E3	-5.6	123	0.01
21	sC	o-terphenyl	32.214	34.540 E3	-7.2	123	0.01
22	tC	TPHC - total	35.997	34.607 E3	3.9	121	-0.95#

000063

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

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990707\T008495.D Vial: 1
Acq On : 7 Jul 1999 9:08 am Operator: Deinhardt
Sample : 50 PPM CAL Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 9:37 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Initial Calibration
DataAcq Meth : TPH60.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) sC o-terphenyl	12.88	1726986	53.609 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery = 536.09%#		
Target Compounds			
1) tC C8	4.48	1020924	51.844 mg/L m
2) tC C10	7.59	1160856	52.755 mg/L
3) TC C12	9.23	1268126	53.047 mg/L
4) tC C14	10.42	1367871	52.747 mg/L
5) tC C16	11.43	1460699	52.890 mg/L
6) tC C18	11.89	1504161	51.067 mg/L m
7) tC C20	12.33	1587495	52.583 mg/L
8) tC C22	13.14	1657262	52.995 mg/L
9) tC C24	13.89	1697210	53.003 mg/L
10) tC C26	14.58	1688827	53.107 mg/L
11) tC C28	15.22	1686554	52.996 mg/L
12) tC C30	15.81	1739987	53.389 mg/L
13) tC C32	16.36	1730187	53.816 mg/L
14) tC C34	16.95	1776332	53.536 mg/L
15) tC C36	17.63	1587021	52.340 mg/L
16) tC C38	18.48	1575218	50.098 mg/L
17) tC C40	19.59	1265129	46.378 mg/L
18) tC c42	21.08	1173861	43.068 mg/L m
19) TC Pristane	11.92	1645607	53.433 mg/L m
20) TC Phytane	12.37	1610709	52.811 mg/L
22) tC TPHC - total	11.92	34607135	961.395 mg/L m

000054

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

Surrogate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4595
	DPW. SELFM-PW-EV	**Date Rec'd:**	07-Jul-99
	Bldg. 173	**Analysis Start:**	12-Jul-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	13-Jul-99
		UST Reg. #:	
Analysis:	OQA-QAM-025	**Closure #:**	
Matrix:	Soil	**DICAR #:**	
Analyst:	D.DEINHARDT	**Injection Volume**	1 ul
Inst. ID.	GC TPHC INST. #1	**Column ID**	0.32 um
Column Type	RTX 5	**Location #:**	975 Area
Ext. Meth:	Shake		

Sample			Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
4588.01			10.00	9.94	**99.41**
4588.02			10.00	9.79	**97.93**
4588.03			10.00	8.65	**86.51**
4588.04			10.00	8.49	**84.86**
4588.05			10.00	9.73	**97.25**
4588.06			10.00	9.86	**98.60**
METHOD BLANK	TBLK 249		10.00	11.43	**114.30**

Surrogate Added : **o-Terphenyl**

Matrix Spike / Duplicate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4588
	DPW. SELFM-PW-EV	**Date Rec'd:**	02-Jul-99
	Bldg. 173	**Analysis Start:**	06-Jul-99
	Ft. Monmouth NJ, 07703	**Analysis Complete:**	13-Jul-99

Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	Bldg. 237

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
4588.01MS	834.4	38.05	808.67	92.36	75-125
4588.01MSD	834.4	38.05	788.93	89.99	75-125
			RPD	**2.59**	**20.00**

Quality Control Check Standard Summary
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4588
	DPW. SELFM-PW-EV	**Date Rec'd:**	02-Jul-99
	Bldg. 173	**Analysis Start:**	06-Jul-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	13-Jul-99

Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	Bldg. 237

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	6-Jul-99	834.4	906.21	108.61	75-125

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990706\T008492.D Vial: 2
Acq On : 6 Jul 1999 11:44 am Operator: Deinhardt
Sample : Tblk 249 Inst : GC/MS Ins
Misc : Underslab 3ft. Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 6 16:05 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Initial Calibration
DataAcq Meth : TPH60.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) sC o-terphenyl	12.87	368198	11.430 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 114.30%#	
Target Compounds			

000018

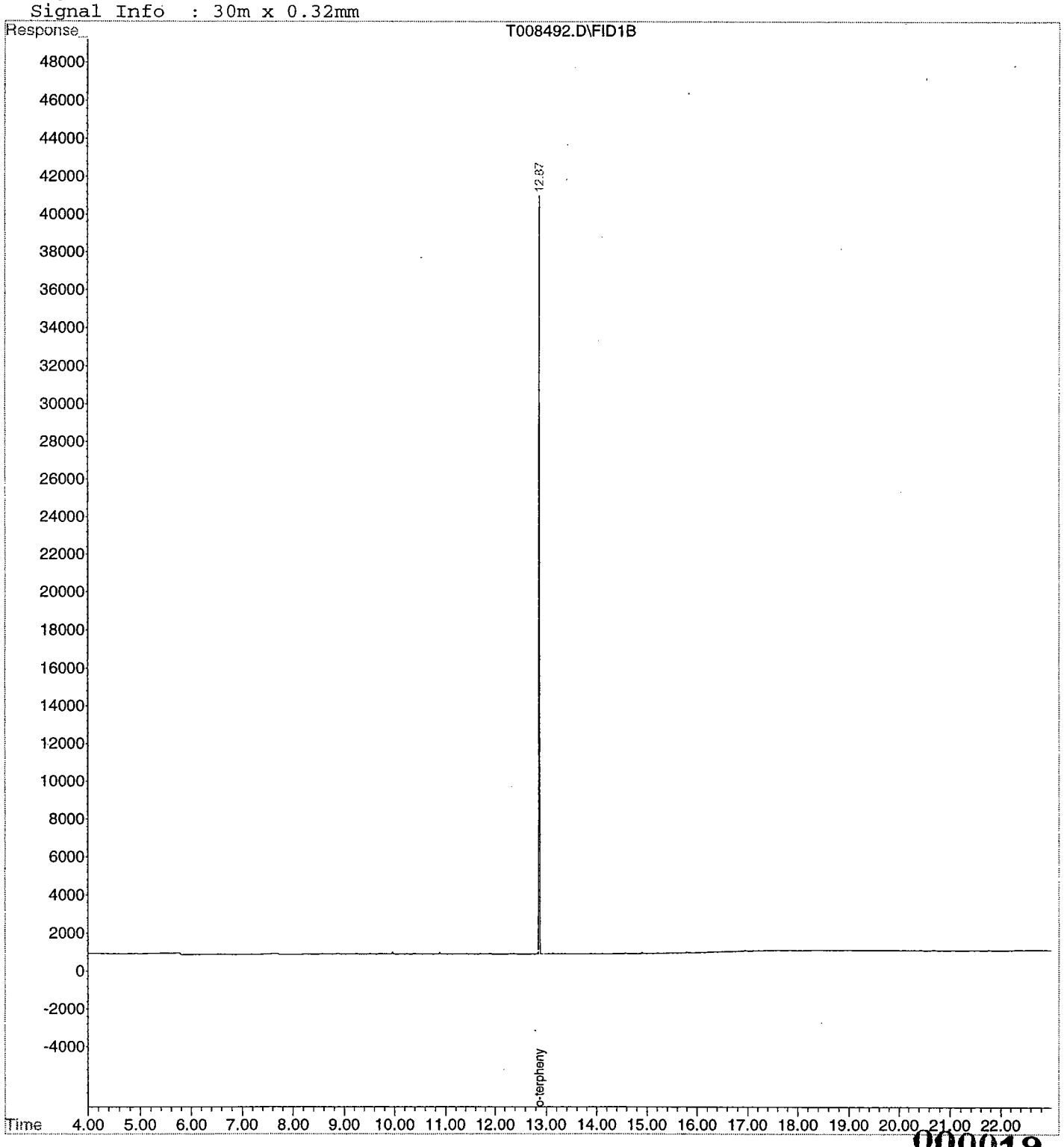
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990706\T008492.D Vial: 2
Acq On : 6 Jul 1999 11:44 am Operator: Deinhardt
Sample : Tblk 249 Inst : GC/MS Ins
Misc : Underslab 3ft. Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 6 16:05 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH60.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\990707\T008497.D Vial: 6
Acq On : 7 Jul 1999 10:29 am Operator: Deinhardt
Sample : 4588.01s Inst : GC/MS Ins
Misc : Bldg.237A-North Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 13:14 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Initial Calibration
DataAcq Meth : TPH60.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) sC o-terphenyl	12.87	320231	9.941 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery =	99.41%#	
Target Compounds			
22) tC TPHC - total	12.87	1369486	38.045 mg/L m

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

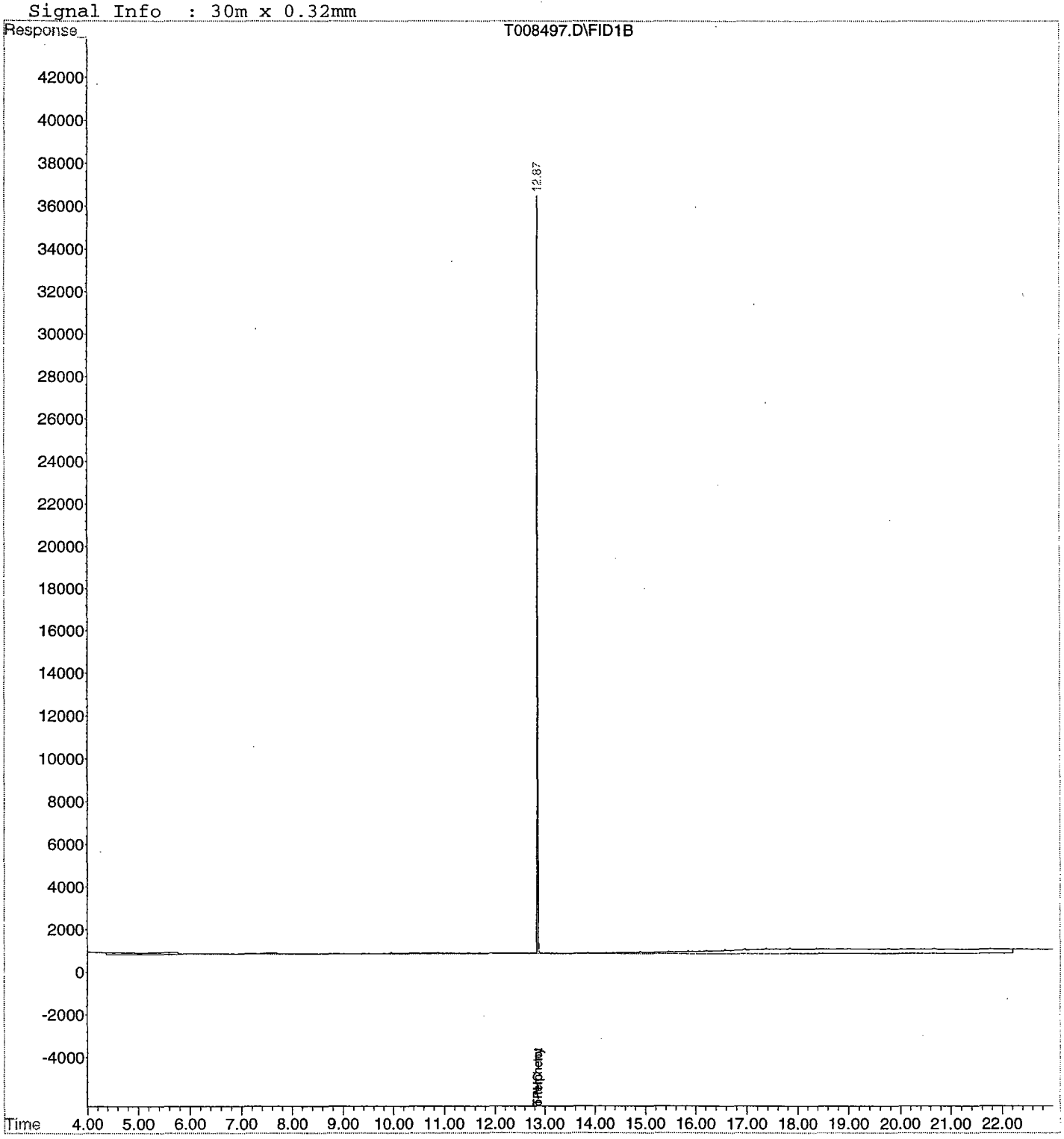
000020

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990707\T008497.D Vial: 6
Acq On : 7 Jul 1999 10:29 am Operator: Deinhardt
Sample : 4588.01s Inst : GC/MS Ins
Misc : Bldg.237A-North Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 13:14 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH60.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\990707\T008500.D Vial: 9
Acq On : 7 Jul 1999 12:30 pm Operator: Deinhardt
Sample : 4588.02s Inst : GC/MS Ins
Misc : Bldg.237B-West Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 13:16 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Initial Calibration
DataAcq Meth : TPH60.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) sC o-terphenyl	12.87	315485	9.793 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery = 97.93%#		
Target Compounds			
22) tC TPHC - total	12.87	1436421	39.904 mg/L m

000022

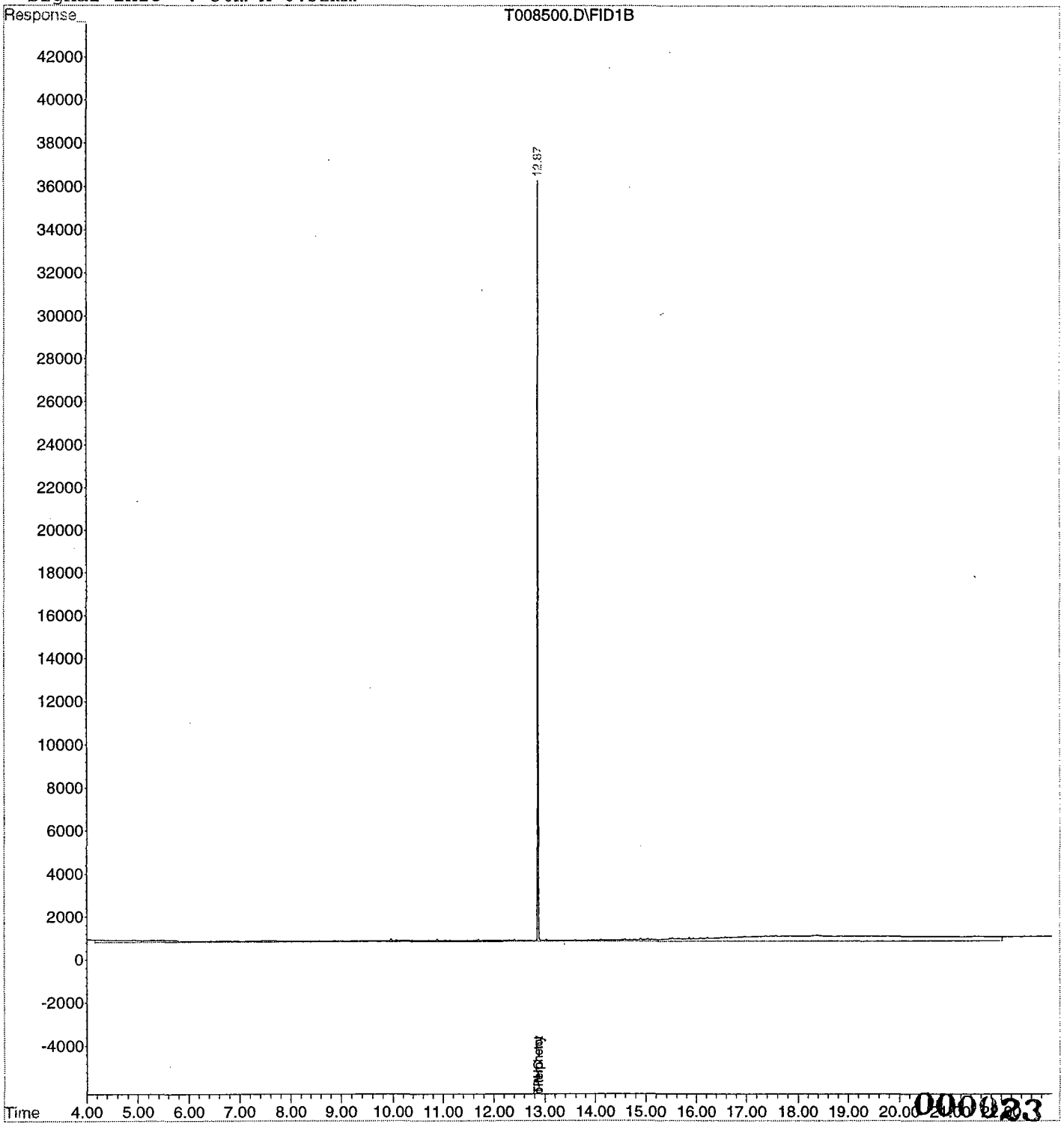
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990707\T008500.D Vial: 9
Acq On : 7 Jul 1999 12:30 pm Operator: Deinhardt
Sample : 4588.02s Inst : GC/MS Ins
Misc : Bldg.237B-West Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 13:16 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH60.M

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



000023

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990707\T008501.D Vial: 10
Acq On : 7 Jul 1999 1:10 pm Operator: Deinhardt
Sample : 4588.03s Inst : GC/MS Ins
Misc : Bldg.237C-South Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 15:26 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Initial Calibration
DataAcq Meth : TPH60.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) sC o-terphenyl	12.87	278685	8.651 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	86.51%#
Target Compounds			
22) tC TPHC - total	12.87	1310739	36.413 mg/L m

000024

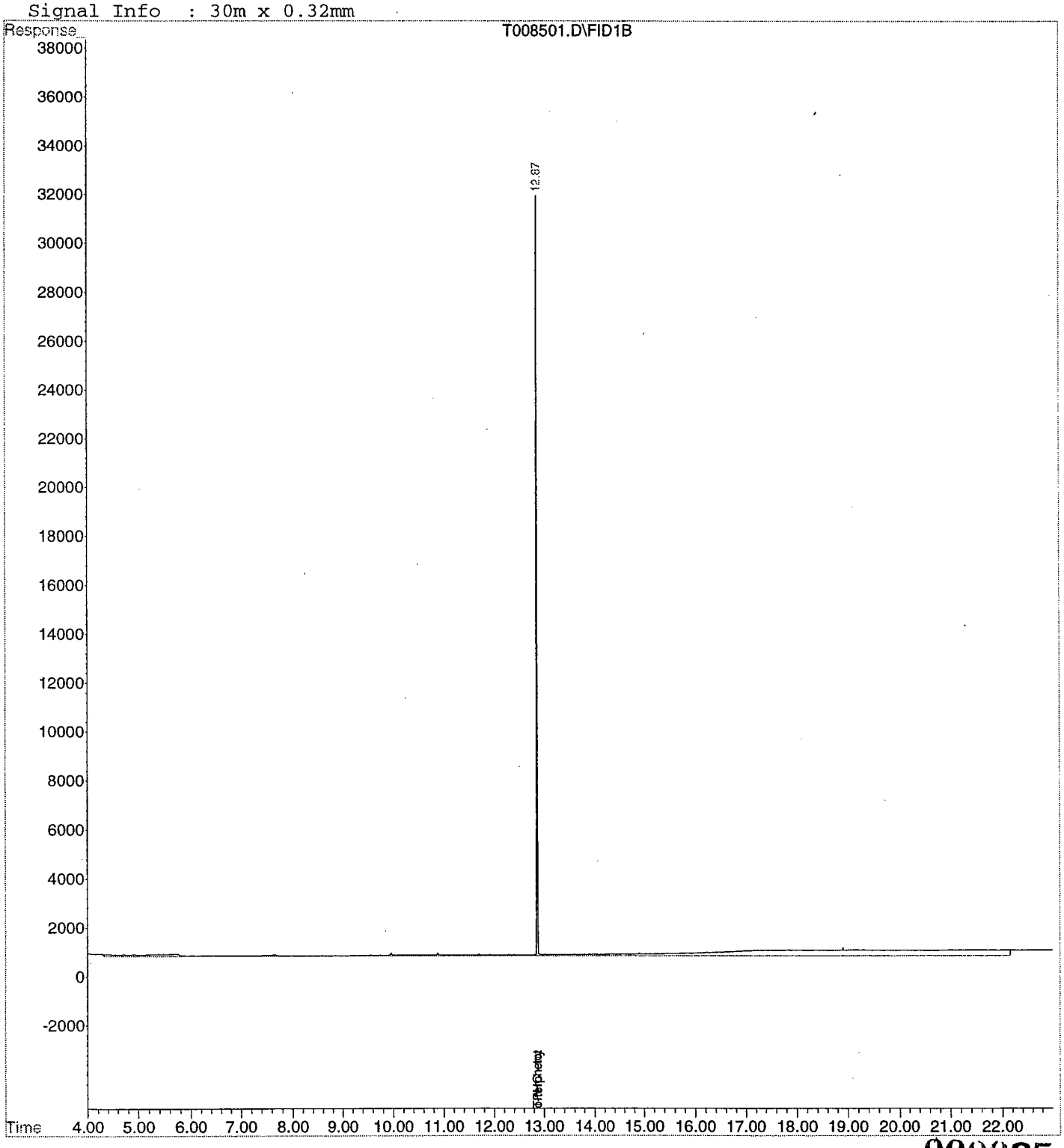
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990707\T008501.D Vial: 10
Acq On : 7 Jul 1999 1:10 pm Operator: Deinhardt
Sample : 4588.03s Inst : GC/MS Ins
Misc : Bldg.237C-South Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 15:26 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH60.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\990707\T008502.D Vial: 11
Acq On : 7 Jul 1999 1:51 pm Operator: Deinhardt
Sample : 4588.04s Inst : GC/MS Ins
Misc : Bldg.237C-Duplicate Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 15:13 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Initial Calibration
DataAcq Meth : TPH60.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) sC o-terphenyl	12.87	273384	8.486 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	84.86%#
Target Compounds			
22) tC TPHC - total	12.87	1467060	40.755 mg/L m

000026

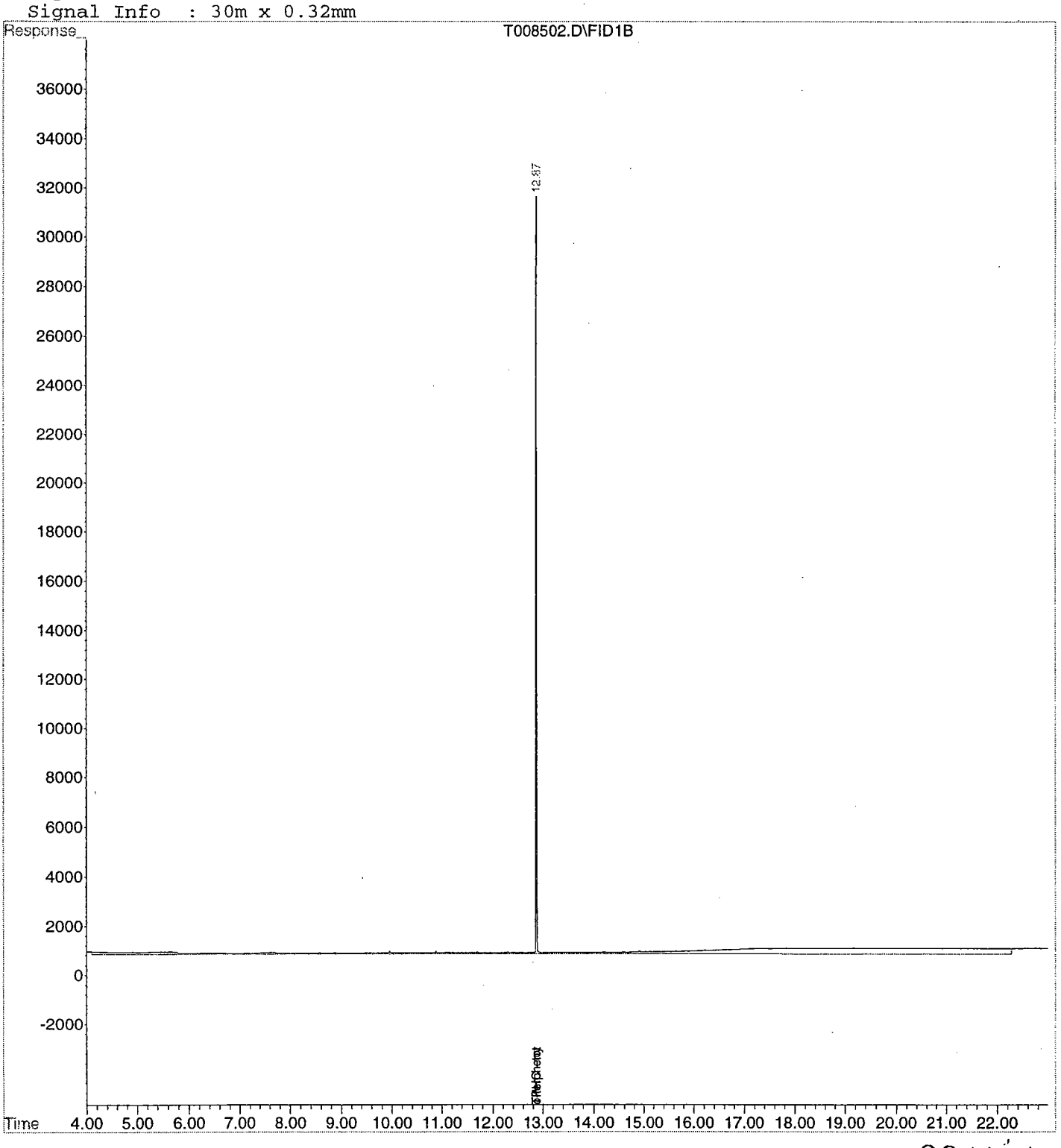
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990707\T008502.D Vial: 11
Acq On : 7 Jul 1999 1:51 pm Operator: Deinhardt
Sample : 4588.04s Inst : GC/MS Ins
Misc : Bldg.237C-Duplicate Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 15:13 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH60.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\990707\T008503.D Vial: 12
Acq On : 7 Jul 1999 2:32 pm Operator: Deinhardt
Sample : 4588.05s Inst : GC/MS Ins
Misc : Bldg.237D-Bottom Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 15:14 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Initial Calibration
DataAcq Meth : TPH60.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) sC o-terphenyl	12.87	313292	9.725 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	97.25%#
Target Compounds			
22) tC TPHC - total	12.87	1442416	40.071 mg/L m

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

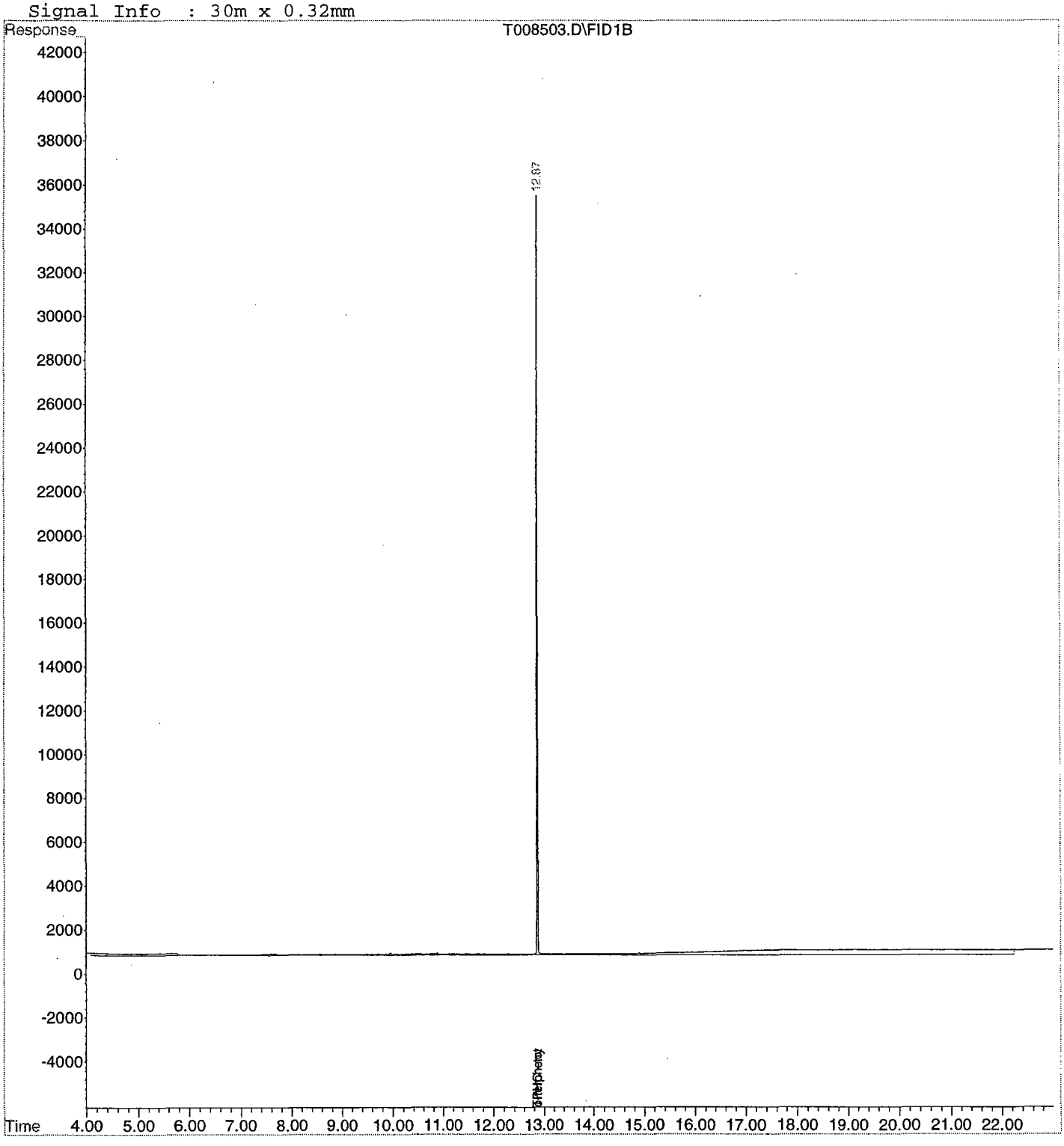
000028

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990707\T008503.D Vial: 12
Acq On : 7 Jul 1999 2:32 pm Operator: Deinhardt
Sample : 4588.05s Inst : GC/MS Ins
Misc : Bldg.237D-Bottom Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 15:14 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH60.M

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



000029

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\990707\T008504.D Vial: 13
Acq On : 7 Jul 1999 3:14 pm Operator: Deinhardt
Sample : 4588.06s Inst : GC/MS Ins
Misc : Bldg.237E-East Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 15:42 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Initial Calibration
DataAcq Meth : TPH60.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) sC o-terphenyl	12.87	317639	9.860 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	98.60%#
Target Compounds			
22) tC TPHC - total	12.87	1245466	34.599 mg/L m

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

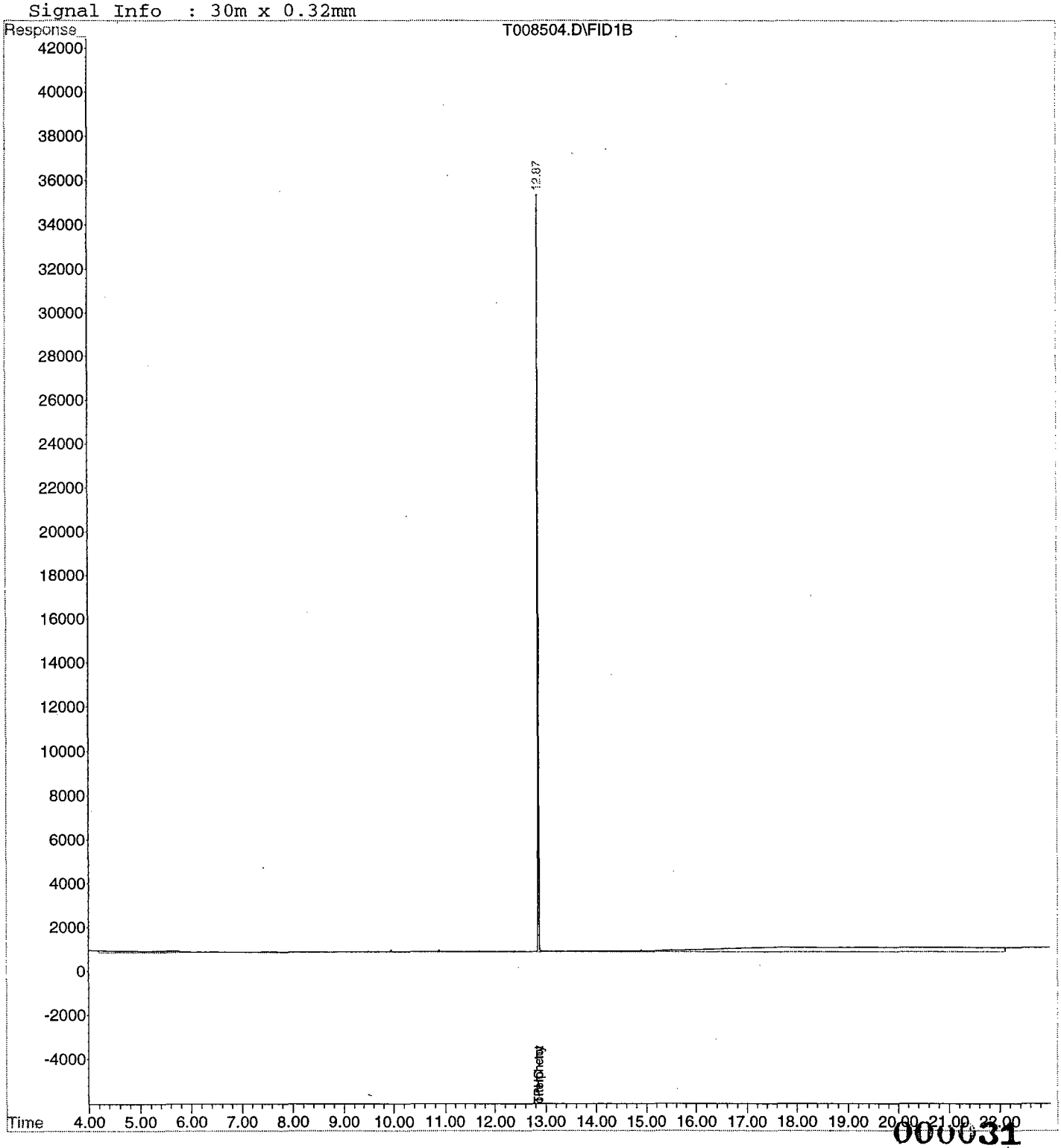
000030

Quantitation Report

Data File : C:\HPCHEM\1\DATA\990707\T008504.D Vial: 13
Acq On : 7 Jul 1999 3:14 pm Operator: Deinhardt
Sample : 4588.06s Inst : GC/MS Ins
Misc : Bldg.237E-East Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 7 15:42 1999 Quant Results File: TPH60.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH60.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Tue Jul 06 08:24:23 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH60.M

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



000031

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 7/19/99

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.

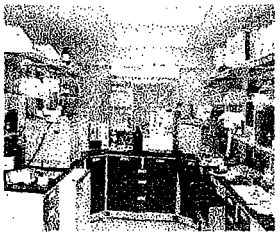
Daniel K. Wright
Laboratory Manager

APPENDIX 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. 237

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
Bldg. 237 GW	16090.01	Aqueous	28-Apr-01 10:15	04/30/01

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

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

5-17-01
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: D. Wenzel
Phone #: X21475
( )DERA ( )OMA ( )Other:_____

Project No:
Location: Bldg 237
(Btwn 12-14 Gosselin) 1st GW

Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: +8260 VOA +15	Analysis Parameters: BN +15	Analysis Parameters:	Analysis Parameters:	Analysis Parameters:	Analysis Parameters:	Analysis Parameters:	Analysis Parameters: Hnu Read	Comments: Remarks / Preservation Method
16090.01	Bldg 237 GW	4/28/01	1015	AQ	3	✓	✓						0.0	cloudy

Comments: 4°C/HCl

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/28/01 730	J. Wright			
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 from 2337 Some date. cpm

20000

print legibly

Coc.xls4/18/01

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.

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 161090

Site: Bldg. 237

	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	05/01,02/01	14 days
2. BN	05/03/01	40 days

* Sampled and Refrigerated on 4/28/01. Received on 4/30/01.

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 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 — 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

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

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	**VC005607.D**	Sample Name	**MB**
Operator	**Skelton**	Field ID	**MB**
Date Aquired	**1-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

5/15/01 1:32 PM

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

000512

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **MB 1731**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16090 Location: Bldg23 SDG No.: _____

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

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005607.D

Level: (low/med) LOW Date Received: 4/30/01

% Moisture: not dec. _____ Date Analyzed: 5/1/01

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	**VC005635.D**	Sample Name	**1609001**
Operator	**Skelton**	Field ID	**Bldg237GW**
Date Aquired	**2-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

5/15/01 1:32 PM

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

000014

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Bldg237GW**

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16090 Location: Bldg23 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 1609001

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005635.D

Level: (low/med) LOW Date Received: 4/30/01

% Moisture: not dec. Date Analyzed: 5/2/01

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.: 16090 Location: Bldg23 SDG No.:

Lab File ID: VC005588.D BFB Injection Date: 4/26/01

Instrument ID: VoaInst#3 BFB Injection Time: 15:34

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

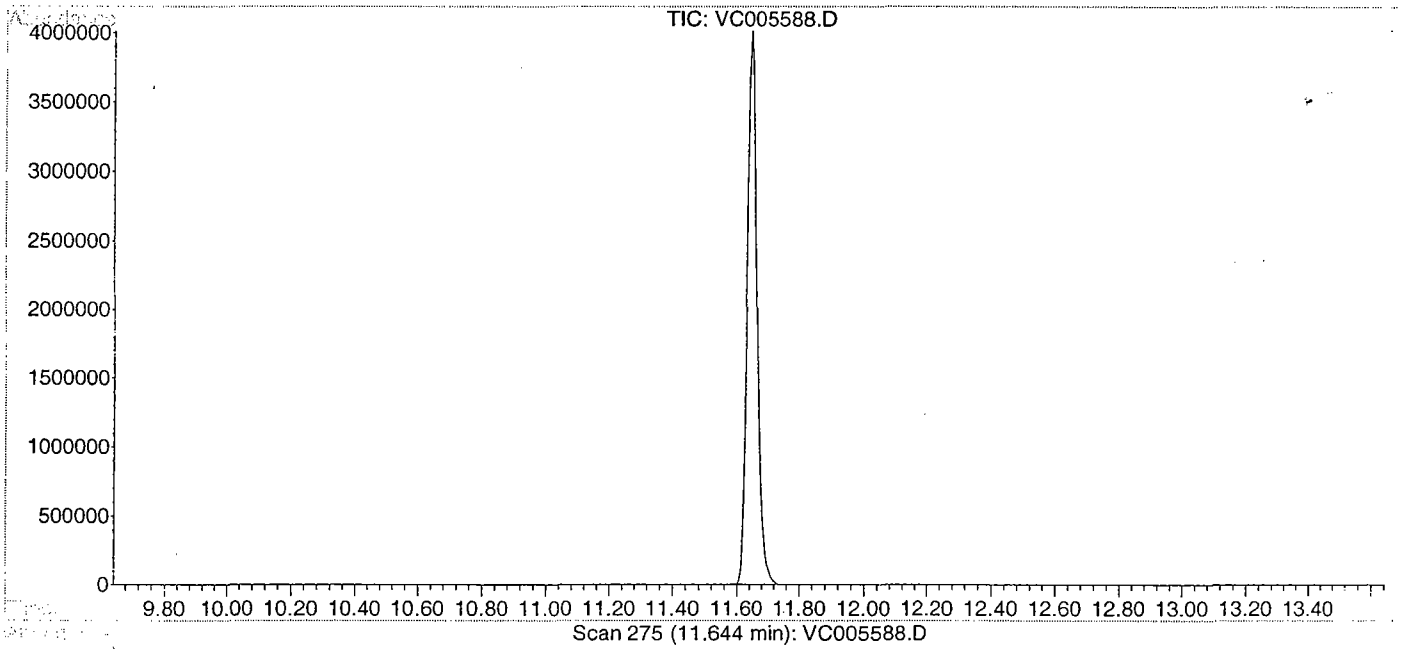
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	19.3
75	30.0 - 66.0% of mass 95	52.3
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.4 (0.6)1
174	50.0 - 120.0% of mass 95	63.0
175	4.0 - 9.0% of mass 174	4.5 (7.1)1
176	93.0 - 101.0% of mass 174	61.9 (98.2)1
177	5.0 - 9.0% of mass 176	4.1 (6.7)2

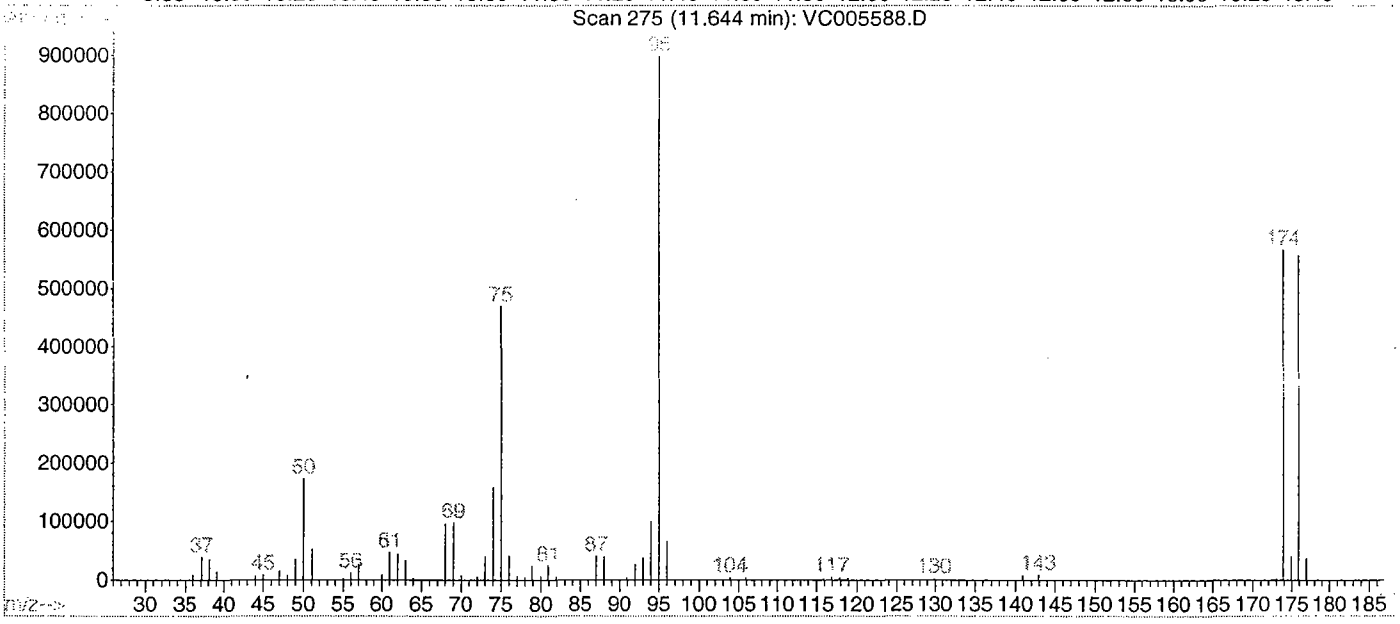
1-Value is % mass 174 2-Value is % mass 176

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	VSTD100	VSTD100	VC005589.D	4/26/01	16:14
02	VSTD050	VSTD050	VC005590.D	4/26/01	16:55
03	VSTD020	VSTD020	VC005591.D	4/26/01	17:37
04	VSTD010	VSTD010	VC005592.D	4/26/01	18:17
05	VSTD005	VSTD005	VC005593.D	4/26/01	18:58

Data File : D:\HPCHEM\1\DATA\2001DATA\APRIL2001\010426\VC005588.D Vial: 41
Acq On : 26 Apr 2001 3:34 pm 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\M362440.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP





Spectrum Information: Scan 275

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.3	172992	PASS
75	95	30	60	52.3	470208	PASS
95	95	100	100	100.0	898560	PASS
96	95	5	9	7.3	65320	PASS
173	174	0.00	2	0.6	3547	PASS
174	95	50	100	63.0	565952	PASS
175	174	5	9	7.1	40032	PASS
176	174	95	101	98.2	555904	PASS
177	176	5	9	6.7	37032	PASS

Response Factor Report GC/MS Ins

Method : D:\HPCHEM\1\METHODS\M362440.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed May 02 07:43:51 2001
Response via : Initial Calibration

Calibration Files
50 =VC005590.D 5 =VC005593.D 10 =VC005592.D
20 =VC005591.D 100 =VC005589.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	0.640	0.644	0.604	0.631	0.579	0.620	4.50
3)	t	Acrylonitrile	1.252	1.575	1.452	1.439	0.890	1.321	20.24
4)	t	tert-Butyl alcohol	0.269	0.204	0.197	0.226	0.272	0.234	15.19
5)	t	Methyl-tert-Butyl eth	7.112	6.103	6.060	6.505	6.773	6.511	6.87
6)	t	Di-isopropyl ether	1.947	1.491	1.608	1.786	1.964	1.759	11.80
7)	T	Dichlorodifluorometha	3.765	3.817	3.756	3.683	3.231	3.651	6.55
8)	TP	Chloromethane	2.881	3.382	3.058	2.884	2.642	2.970	9.22
9)	TC	Vinyl Chloride	2.571	3.243	2.908	2.710	2.215	2.730	14.01
10)	T	Bromomethane	1.670	1.867	1.740	1.670	1.489	1.687	8.11
11)	T	Chloroethane	1.952	2.076	1.916	1.915	1.891	1.950	3.79
12)	T	Trichlorofluoromethan	3.315	3.434	3.280	3.263	3.167	3.292	2.94
13)	MC	1,1-Dichloroethene	3.731	3.556	3.496	3.552	3.589	3.585	2.47
14)	T	Acetone	1.158	3.061	1.851	1.377	1.175	1.725	46.25
15)	T	Carbon Disulfide	6.944	6.586	6.497	6.658	6.074	6.552	4.81
16)	T	Methylene Chloride	2.537	2.752	2.482	2.480	2.463	2.543	4.74
17)	T	trans-1,2-Dichloroeth	3.626	3.665	3.479	3.507	3.440	3.543	2.75
18)	TP	1,1-Dichloroethane	4.564	4.817	4.503	4.500	4.272	4.531	4.30
19)	T	Vinyl Acetate	6.013	4.901	5.088	5.381	5.244	5.325	7.97
20)	T	2-Butanone	1.738	1.718	1.504	1.602	1.746	1.662	6.36
21)	T	cis-1,2-Dichloroethen	3.515	3.301	3.238	3.379	3.327	3.352	3.11
22)	TC	Chloroform	4.104	4.297	4.057	4.018	3.800	4.055	4.40
23)	T	1,1,1-Trichloroethane	3.373	3.146	3.087	3.164	3.257	3.205	3.49
24)	T	Carbon Tetrachloride	2.780	2.493	2.461	2.559	2.728	2.604	5.47
25)	S	1,2-Dichloroethane-d4	2.985	3.188	3.094	3.014	3.059	3.068	2.57
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	1.392	1.600	1.523	1.524	1.055	1.419	15.29
28)	T	1,2-Dichloroethane	0.548	0.629	0.569	0.558	0.503	0.561	8.06
29)	TM	Trichloroethene	0.330	0.304	0.298	0.312	0.323	0.313	4.20
30)	TC	1,2-Dichloropropane	0.417	0.409	0.391	0.407	0.396	0.404	2.60
31)	T	Bromodichloromethane	0.420	0.373	0.369	0.390	0.408	0.392	5.67
32)	T	2-Chloroethyl vinyl e	0.153	0.159	0.152	0.151	0.150	0.153	2.46
33)	T	cis-1,3-Dichloroprope	0.562	0.425	0.458	0.514	0.510	0.494	10.75
34)	T	4-Methyl-2-Pentanone	0.186	0.124	0.138	0.161	0.181	0.158	17.00
35)	S	Toluene-d8	1.235	1.229	1.226	1.221	1.267	1.236	1.45
36)	TCM	Toluene	1.337	1.524	1.441	1.450	1.030	1.357	14.31
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.863	1.427	1.503	1.707	1.681	1.636	10.58
39)	T	1,1,2-Trichloroethane	1.156	1.173	1.101	1.140	1.086	1.131	3.25
40)	T	Tetrachloroethene	1.073	1.022	0.999	1.054	1.030	1.036	2.79
41)	T	2-Hexanone	0.969	0.649	0.702	0.849	0.953	0.824	17.55
42)	T	Dibromochloromethane	0.928	0.720	0.735	0.818	0.936	0.828	12.37
43)	TMP	Chlorobenzene	3.015	3.337	3.158	3.187	2.493	3.038	10.71
44)	TC	Ethylbenzene	4.828	5.672	5.533	5.645	3.520	5.040	18.19
45)	T	m+p-Xylenes	1.986	2.055	2.038	2.096	1.603	1.956	10.28
46)	T	o-Xylene	3.898	3.556	3.802	4.101	3.081	3.688	10.63
47)	T	Styrene	3.295	2.675	2.879	3.222	2.748	2.964	9.45
48)	TP	Bromoform	0.575	0.397	0.411	0.484	0.608	0.495	19.17
49)	S	Bromofluorobenzene	1.681	1.606	1.631	1.675	1.782	1.675	4.03
50)	TP	1,1,2,2-Tetrachloroet	1.675	1.616	1.538	1.647	1.521	1.599	4.21
51)	T	1,3-Dichlorobenzene	2.074	1.744	1.837	1.976	1.779	1.882	7.38
52)	T	1,4-Dichlorobenzene	2.057	1.692	1.839	1.988	1.735	1.862	8.47
53)	T	1,2-Dichlorobenzene	1.958	1.674	1.789	1.905	1.687	1.803	7.06

#) = Out of Range

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16090 Location: Bldg23 SDG No.:

Lab File ID: VC005605.D BFB Injection Date: 5/1/01

Instrument ID: VoaInst#3 BFB Injection Time: 10:28

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	22.5
75	30.0 - 66.0% of mass 95	56.1
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	62.0
175	4.0 - 9.0% of mass 174	4.3 (6.9)1
176	93.0 - 101.0% of mass 174	62.0 (99.9)1
177	5.0 - 9.0% of mass 176	4.1 (6.6)2

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

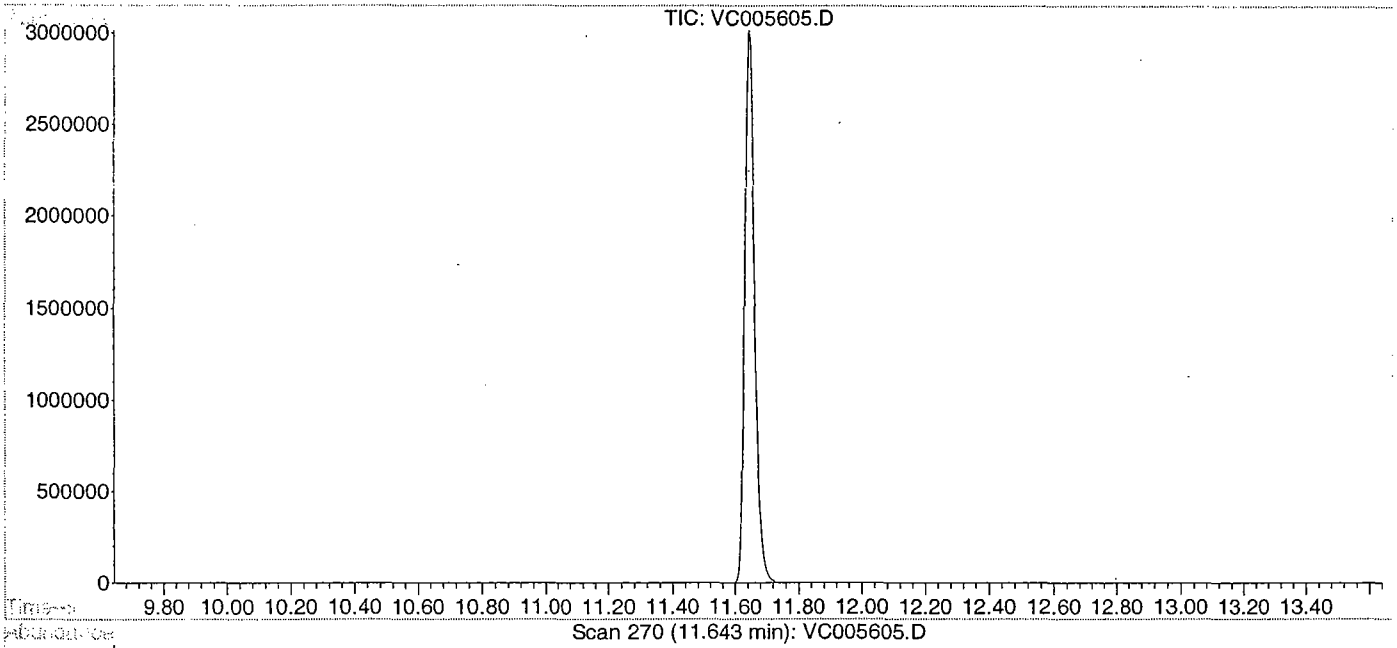
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

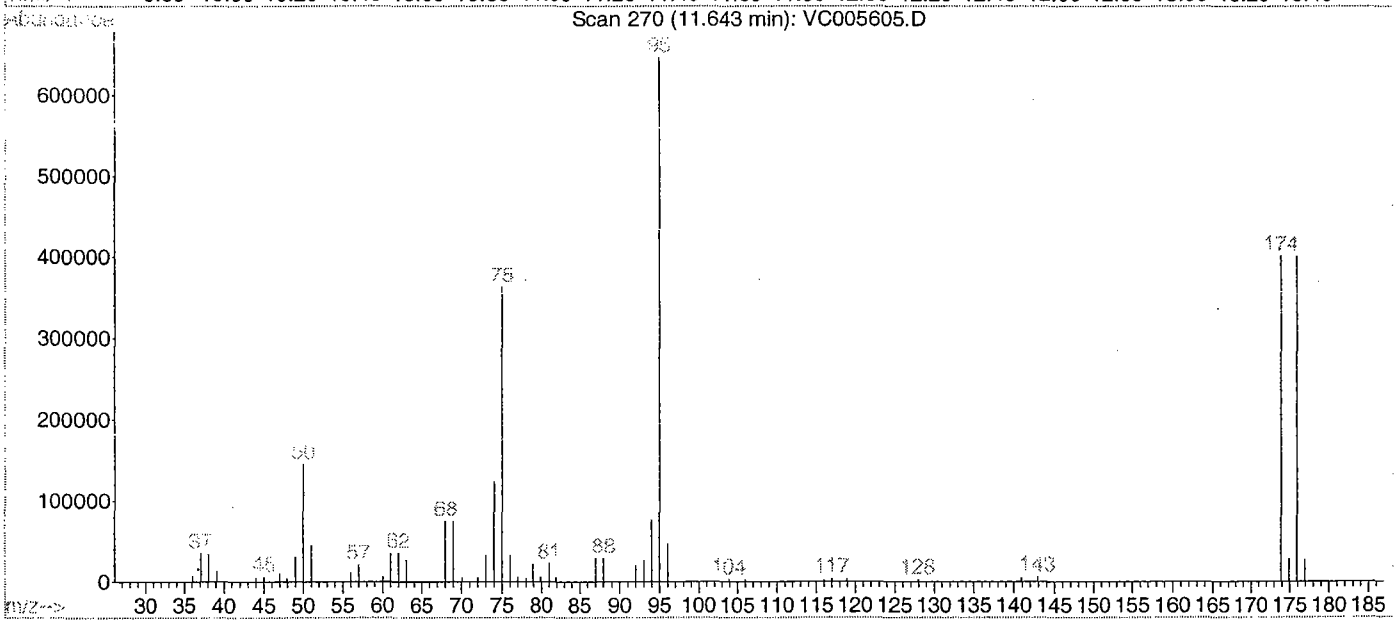
	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	VSTD020	VC005606.D	5/1/01	10:57
02	MB 1731	MB	VC005607.D	5/1/01	11:50
03	BLDG237GW	1609001	VC005635.D	5/2/01	7:34
04	1738 MS	1609001 MS	VC005636.D	5/2/01	8:50
05	1739 MSD	1609001 MSD	VC005637.D	5/2/01	9:30

BFB

Data File : D:\HPCHEM\1\DATA\010501\VC005605.D
Acq On : 1 May 2001 10:28 am
Sample : BFB Tune
Misc : BFB Tune
MS Integration Params: ACETONE.P
Method : D:\HPCHEM\1\METHODS\M362440.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP

Vial: 12
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00





Spectrum Information: Scan 270

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	145472	PASS
75	95	30	60	56.1	363008	PASS
95	95	100	100	100.0	646720	PASS
96	95	5	9	7.2	46480	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	62.0	401216	PASS
175	174	5	9	6.9	27808	PASS
176	174	95	101	99.9	400704	PASS
177	176	5	9	6.6	26336	PASS

VC005605.D M362440.M Tue May 15 13:30:13 2001

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\010501\VC005606.D Vial: 12
Acq On : 1 May 2001 10:57 am Operator: Skelton
Sample : Vstd020 Inst : GC/MS Ins
Misc : Vstd020 Multiplr: 1.00
MS Integration Params: ACETONE.P

Method : D:\HPCHEM\1\METHODS\M362440.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed May 02 07:43:51 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	70	0.00
2	t	Acrolein	0.620	0.700	-12.9	78	0.00
3	t	Acrylonitrile	1.321	1.711	-29.5#	84	0.00
4	t	tert-Butyl alcohol	0.234	0.222	5.1	69	0.00
5	t	Methyl-tert-Butyl ether	6.511	6.812	-4.6	74	0.00
6	t	Di-isopropyl ether	1.759	1.821	-3.5	72	0.00
7	T	Dichlorodifluoromethane	3.651	2.975	18.5	57	0.00
8	TP	Chloromethane	2.970	3.490	-17.5	85	0.00
9	TC	Vinyl Chloride	2.730	3.230	-18.3	84	0.00
10	T	Bromomethane	1.687	1.532	9.2	64	0.00
11	T	Chloroethane	1.950	1.899	2.6	70	0.00
12	T	Trichlorofluoromethane	3.292	2.811	14.6	60	0.00
13	MC	1,1-Dichloroethene	3.585	3.428	4.4	68	0.00
14	T	Acetone	1.725	1.628	5.6	83	0.00
15	T	Carbon Disulfide	6.552	6.462	1.4	68	0.00
16	T	Methylene Chloride	2.543	2.605	-2.4	74	0.00
17	T	trans-1,2-Dichloroethene	3.543	3.608	-1.8	72	0.00
18	TP	1,1-Dichloroethane	4.531	4.761	-5.1	74	0.00
19	T	Vinyl Acetate	5.325	6.545	-22.9	85	0.00
20	T	2-Butanone	1.662	1.818	-9.4	80	0.00
21	T	cis-1,2-Dichloroethene	3.352	3.598	-7.3	75	0.00
22	TC	Chloroform	4.055	4.191	-3.4	73	0.00
23	T	1,1,1-Trichloroethane	3.205	2.956	7.8	66	0.00
24	T	Carbon Tetrachloride	2.604	2.341	10.1	64	0.00
25	S	1,2-Dichloroethane-d4	3.068	3.164	-3.1	74	0.00
26	I	1,4-Difluorobenzene	1.000	1.000	0.0	72	0.00
27	TM	Benzene	1.419	1.558	-9.8	74	0.00
28	T	1,2-Dichloroethane	0.561	0.592	-5.5	77	0.00
29	TM	Trichloroethene	0.313	0.294	6.1	68	0.00
30	TC	1,2-Dichloropropane	0.404	0.437	-8.2	78	0.00
31	T	Bromodichloromethane	0.392	0.406	-3.6	75	0.00
32	T	2-Chloroethyl vinyl ether	0.153	0.163	-6.5	78	0.00
33	T	cis-1,3-Dichloropropene	0.494	0.530	-7.3	75	0.00
34	T	4-Methyl-2-Pentanone	0.158	0.166	-5.1	74	0.00
35	S	Toluene-d8	1.236	1.260	-1.9	75	0.00
36	TCM	Toluene	1.357	1.473	-8.5	73	0.00
37	I	Chlorobenzene-d5	1.000	1.000	0.0	73	0.00
38	T	trans-1,3-Dichloropropene	1.636	1.775	-8.5	76	0.00
39	T	1,1,2-Trichloroethane	1.131	1.200	-6.1	77	0.00
40	T	Tetrachloroethene	1.036	0.967	6.7	67	0.00
41	T	2-Hexanone	0.824	0.927	-12.5	80	0.00
42	T	Dibromochloromethane	0.828	0.830	-0.2	74	0.00
43	TMP	Chlorobenzene	3.038	3.175	-4.5	73	0.00
44	TC	Ethylbenzene	5.040	5.631	-11.7	73	0.00
45	T	m+p-Xylenes	1.956	2.059	-5.3	72	0.00
46	T	o-Xylene	3.688	4.067	-10.3	72	0.00
47	T	Styrene	2.964	3.228	-8.9	73	0.00
48	TP	Bromoform	0.495	0.497	-0.4	75	0.00
49	S	Bromofluorobenzene	1.675	1.651	1.4	72	0.00
50	TP	1,1,2,2-Tetrachloroethane	1.599	1.773	-10.9	78	0.00
51	T	1,3-Dichlorobenzene	1.882	1.921	-2.1	71	0.00
52	T	1,4-Dichlorobenzene	1.862	1.918	-3.0	70	0.00
53	T	1,2-Dichlorobenzene	1.803	1.876	-4.0	72	0.00

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

000121

4A

FIELD ID:

VOLATILE METHOD BLANK SUMMARY

MB 1731

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16090 Location: Bldg23 SDG No.:

Lab File ID: VC005607.D Lab Sample ID: MB

Date Analyzed: 5/1/01 Time Analyzed: 11:50

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	BLDG237GW	1609001	VC005635.D	7:34
02	1738 MS	1609001 MS	VC005636.D	8:50
03	1739 MSD	1609001 MSD	VC005637.D	9:30

COMMENTS:

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16090 Location: Bldg23 SDG No.: _____

	FIELD ID:	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	MB 1731	106	98	87	0
02	BLDG237GW	118	103	86	0
03	1738 MS	116	108	101	0
04	1739 MSD	114	107	100	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

000023

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

Data File	**VC005636.D**	Sample Name	**1609001 MS**
Date Aquired	**2-May-01**	Field ID	**1609001 MS**

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	156.85 ug/L	78.43
Acrylonitrile	200	268.14 ug/L	134.07
tert-Butyl alcohol	200	126.82 ug/L	63.41
Methyl-tert-Butyl ether	20	17.43 ug/L	87.14
Di-isopropyl ether	20	18.65 ug/L	93.23
Dichlorodifluoromethane	20	17.11 ug/L	85.54
Chloromethane	20	27.59 ug/L	137.96
Vinyl Chloride	20	34.66 ug/L	173.28
Bromomethane	20	16.94 ug/L	84.68
Chloroethane	20	21.04 ug/L	105.18
Trichlorofluoromethane	20	19.03 ug/L	95.14
1,1-Dichloroethene	20	21.54 ug/L	107.69
Acetone	20	14.17 ug/L	70.85
Carbon Disulfide	20	21.33 ug/L	106.63
Methylene Chloride	20	20.62 ug/L	103.09
trans-1,2-Dichloroethene	20	22.93 ug/L	114.67
1,1-Dichloroethane	20	23.18 ug/L	115.91
Vinyl Acetate	20	26.33 ug/L	131.63
2-Butanone	20	20.99 ug/L	104.96
cis-1,2-Dichloroethene	20	22.76 ug/L	113.80
Chloroform	20	21.95 ug/L	109.74
1,1,1-Trichloroethane	20	19.33 ug/L	96.64
Carbon Tetrachloride	20	19.37 ug/L	96.85
Benzene	20	24.00 ug/L	120.01
1,2-Dichloroethane	20	23.77 ug/L	118.83
Trichloroethene	20	19.20 ug/L	96.00
1,2-Dichloropropane	20	23.08 ug/L	115.42
Bromodichloromethane	20	21.57 ug/L	107.87
2-Chloroethyl vinyl ether	20	24.71 ug/L	123.53
cis-1,3-Dichloropropene	20	21.14 ug/L	105.71
4-Methyl-2-Pentanone	20	17.95 ug/L	89.77
Toluene	20	23.76 ug/L	118.82
trans-1,3-Dichloropropene	20	21.19 ug/L	105.94
1,1,2-Trichloroethane	20	21.16 ug/L	105.82
Tetrachloroethene	20	20.05 ug/L	100.23
2-Hexanone	20	23.83 ug/L	119.13
Dibromochloromethane	20	19.90 ug/L	99.48
Chlorobenzene	20	21.91 ug/L	109.57
Ethylbenzene	20	24.64 ug/L	123.22
m+p-Xylenes	40	45.91 ug/L	114.77
o-Xylene	20	23.24 ug/L	116.20
Styrene	20	23.55 ug/L	117.73
Bromoform	20	18.77 ug/L	93.84
1,1,2,2-Tetrachloroethane	20	21.41 ug/L	107.04
1,3-Dichlorobenzene	20	20.33 ug/L	101.67
1,4-Dichlorobenzene	20	21.29 ug/L	106.43
1,2-Dichlorobenzene	20	21.10 ug/L	105.49

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000024

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

Data File	VC005637.D	Sample Name	1609001 MSD
Date Aquired	2-May-01	Field ID	1609001 MSD

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	186.39 ug/L	93.19
Acrylonitrile	200	270.25 ug/L	135.13
tert-Butyl alcohol	200	136.31 ug/L	68.16
Methyl-tert-Butyl ether	20	18.22 ug/L	91.11
Di-isopropyl ether	20	18.73 ug/L	93.65
Dichlorodifluoromethane	20	17.52 ug/L	87.62
Chloromethane	20	28.11 ug/L	140.56
Vinyl Chloride	20	33.40 ug/L	166.98
Bromomethane	20	17.82 ug/L	89.09
Chloroethane	20	20.76 ug/L	103.82
Trichlorofluoromethane	20	18.88 ug/L	94.39
1,1-Dichloroethene	20	21.56 ug/L	107.81
Acetone	20	14.93 ug/L	74.64
Carbon Disulfide	20	21.20 ug/L	106.01
Methylene Chloride	20	20.96 ug/L	104.78
trans-1,2-Dichloroethene	20	22.66 ug/L	113.30
1,1-Dichloroethane	20	22.99 ug/L	114.94
Vinyl Acetate	20	26.90 ug/L	134.50
2-Butanone	20	21.96 ug/L	109.81
cis-1,2-Dichloroethene	20	22.77 ug/L	113.84
Chloroform	20	21.65 ug/L	108.25
1,1,1-Trichloroethane	20	19.47 ug/L	97.34
Carbon Tetrachloride	20	19.16 ug/L	95.78
Benzene	20	23.85 ug/L	119.23
1,2-Dichloroethane	20	23.90 ug/L	119.52
Trichloroethene	20	19.37 ug/L	96.87
1,2-Dichloropropane	20	23.03 ug/L	115.16
Bromodichloromethane	20	21.65 ug/L	108.23
2-Chloroethyl vinyl ether	20	24.44 ug/L	122.20
cis-1,3-Dichloropropene	20	21.60 ug/L	108.02
4-Methyl-2-Pentanone	20	16.91 ug/L	84.55
Toluene	20	23.99 ug/L	119.95
trans-1,3-Dichloropropene	20	21.90 ug/L	109.48
1,1,2-Trichloroethane	20	21.64 ug/L	108.19
Tetrachloroethene	20	19.80 ug/L	99.01
2-Hexanone	20	24.64 ug/L	123.18
Dibromochloromethane	20	20.22 ug/L	101.08
Chlorobenzene	20	22.00 ug/L	110.02
Ethylbenzene	20	24.77 ug/L	123.84
m+p-Xylenes	40	45.97 ug/L	114.91
o-Xylene	20	23.27 ug/L	116.34
Styrene	20	23.50 ug/L	117.49
Bromoform	20	19.92 ug/L	99.60
1,1,2,2-Tetrachloroethane	20	22.03 ug/L	110.13
1,3-Dichlorobenzene	20	20.79 ug/L	103.96
1,4-Dichlorobenzene	20	21.32 ug/L	106.59
1,2-Dichlorobenzene	20	21.57 ug/L	107.86

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000025

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP#: 13461

Project: UST Case No.: 16090 Location: Bldg23 SDG No.:

Lab File ID (Standard): VC005606.D Date Analyzed: 5/1/01

Instrument ID: VoaInst#3 Time Analyzed: 10:57

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	1131189		16.69		7477938		19.42		2139877		27.24	
	UPPER LIMIT	2262378		17.19		14955876		19.92		4279754		27.74	
	LOWER LIMIT	565595		16.19		3738969		18.92		1069939		26.74	
	FIELD ID:												
01	MB 1731	1023153		16.70		6801867		19.42		1890352		27.24	
02	BLDG237GW	644204		16.69		4270153		19.42		1210363		27.25	
03	1738 MS	727807		16.69		4787446		19.41		1387235		27.25	
04	1739 MSD	762153		16.69		4973533		19.42		1433677		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\010501\VC005607.D Vial: 12
Acq On : 1 May 2001 11:50 am Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 2 11:30 2001 Quant Results File: M362440.RES

Quant Method : D:\HPCHEM\1\METHODS\M362440.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed May 02 07:43:51 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010501\VC005606.D
DataAcq Meth : M362440

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	1023153	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	6801867	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	1890352	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	3418748	31.68	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 105.60%			
35) Toluene-d8	23.42	98	8361120	29.27	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 97.57%			
49) Bromofluorobenzene	30.25	95	2709560	26.05	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 86.83%			

Target Compounds Qvalue

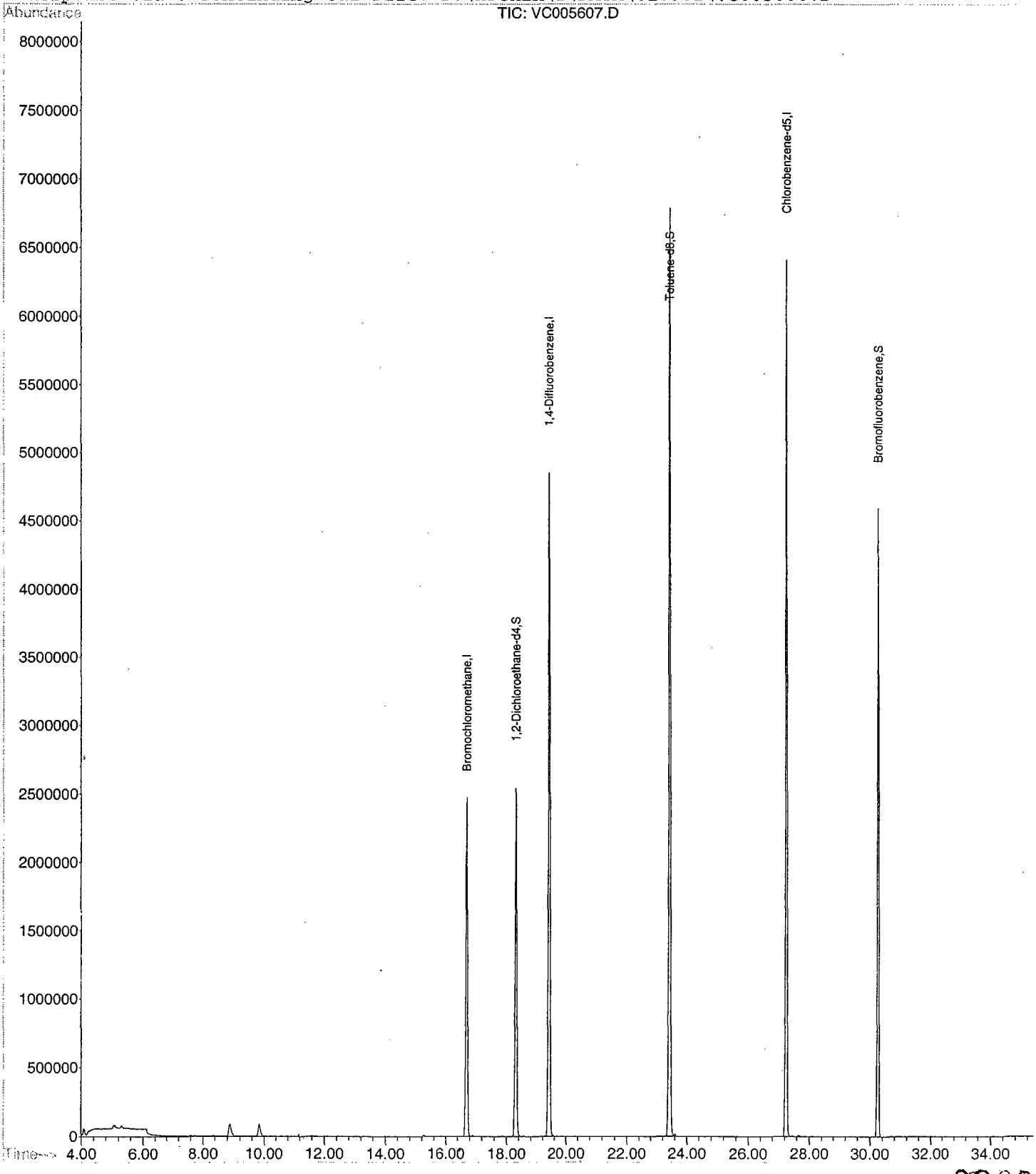
(#) = qualifier out of range (m) = manual integration

000027

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010501\VC005607.D Vial: 12
Acq On : 1 May 2001 11:50 am Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 2 11:30 2001 Quant Results File: M362440.RES

Method : D:\HPCHEM\1\METHODS\M362440.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed May 02 07:43:51 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010501\VC005606.D



000028

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010501\VC005635.D Vial: 28
Acq On : 2 May 2001 7:34 am Operator: Skelton
Sample : 1609001 Inst : GC/MS Ins
Misc : Bldg237GW Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 2 8:11 2001 Quant Results File: M362440.RES

Quant Method : D:\HPCHEM\1\METHODS\M362440.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed May 02 07:43:51 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010501\VC005606.D
DataAcq Meth : M362440

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	644204	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	4270153	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.25	119	1210363	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	2403480	35.38	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 117.93%			
35) Toluene-d8	23.42	98	5523578	30.80	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 102.67%			
49) Bromofluorobenzene	30.25	95	1708375	25.65	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 85.50%			

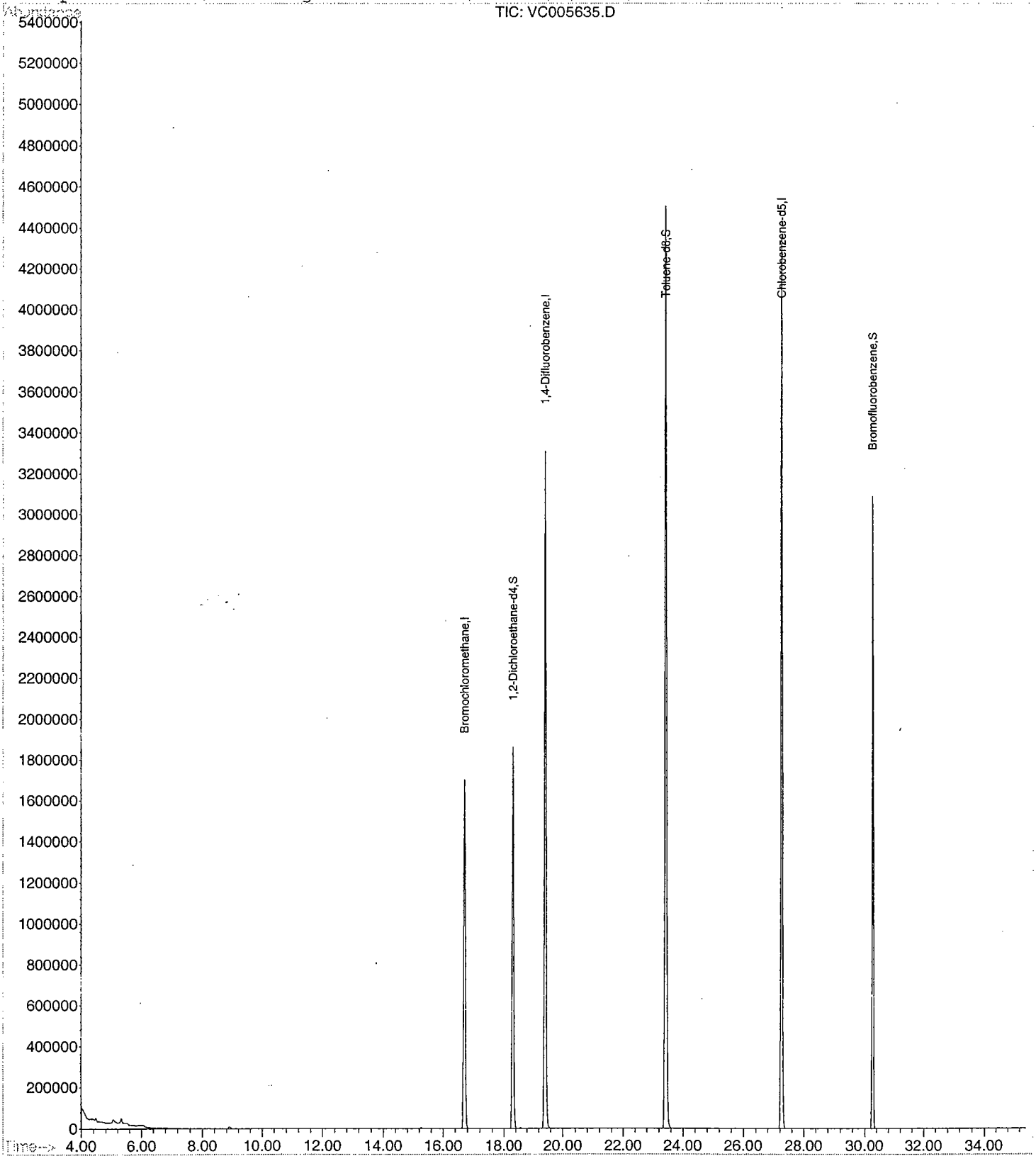
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
VC005635.D M362440.M Tue May 15 13:31:22 2001

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010501\VC005635.D Vial: 28
Acq On : 2 May 2001 7:34 am Operator: Skelton
Sample : 1609001 Inst : GC/MS Ins
Misc : Bldg237GW .. Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 2 8:11 2001 Quant Results File: M362440.RES

Method : D:\HPCHEM\1\METHODS\M362440.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed May 02 07:43:51 2001
Response via : Continuing Cal File: D:\HPCHEM\1\DATA\010501\VC005606.D



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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **MB-1729**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16090 Location: BI.237 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB-1729

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05323.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

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05326.D**	Sample Name	**16090.01**
Operator	**Bhaskar**	Misc Info	**Bldg.237 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	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA05326.D**	Sample Name	**16090.01**
Operator	**Bhaskar**	Misc Info	**Bldg.237 GW**
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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **Bldg.237GW**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16090 Location: Bl.237 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 16090.01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05326.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.: 16090 Location: Bl.237 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

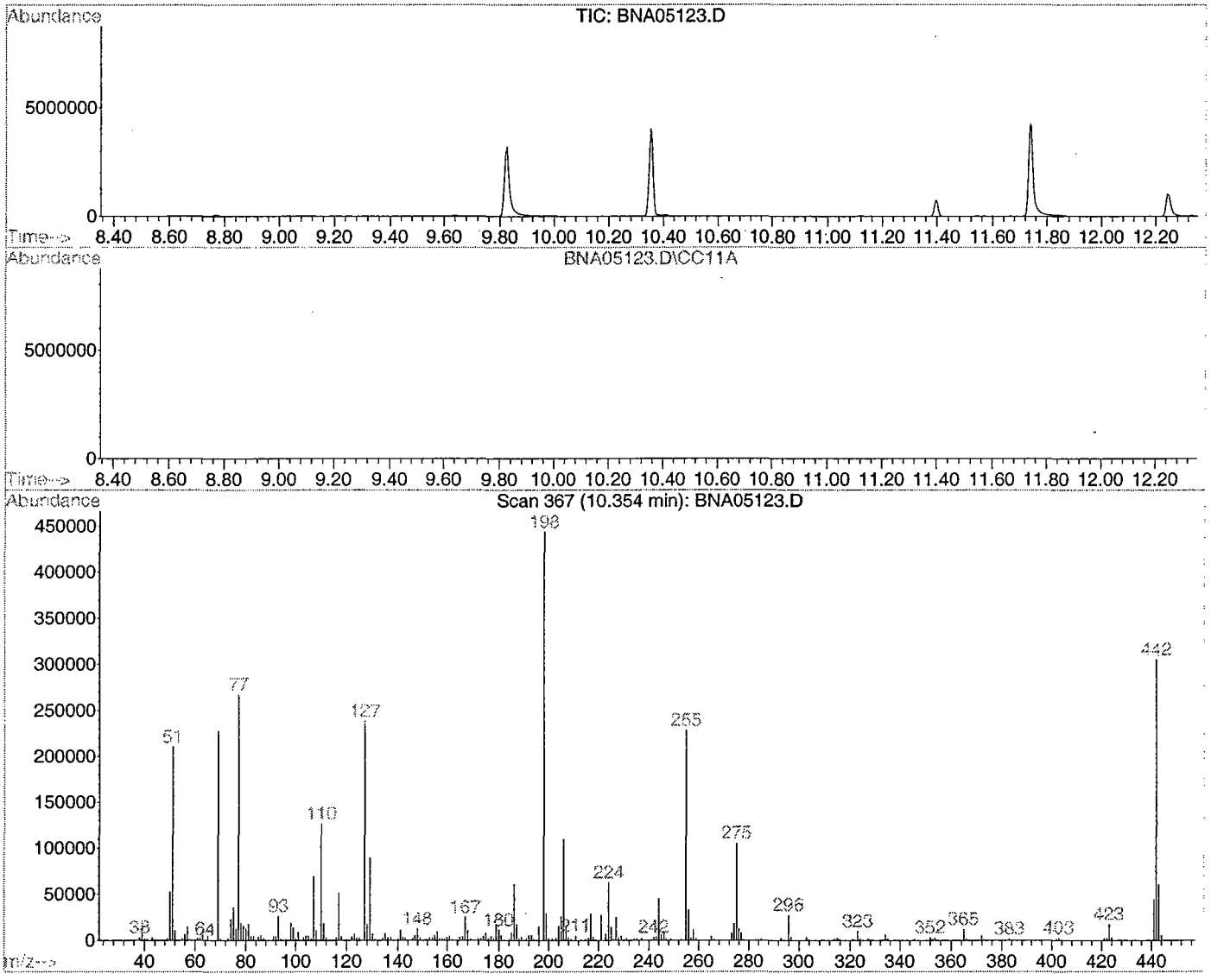
1-Value is % mass 69 2-Value is % mass 442

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

CLP

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

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
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

000011

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16090 Location: Bl.237 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

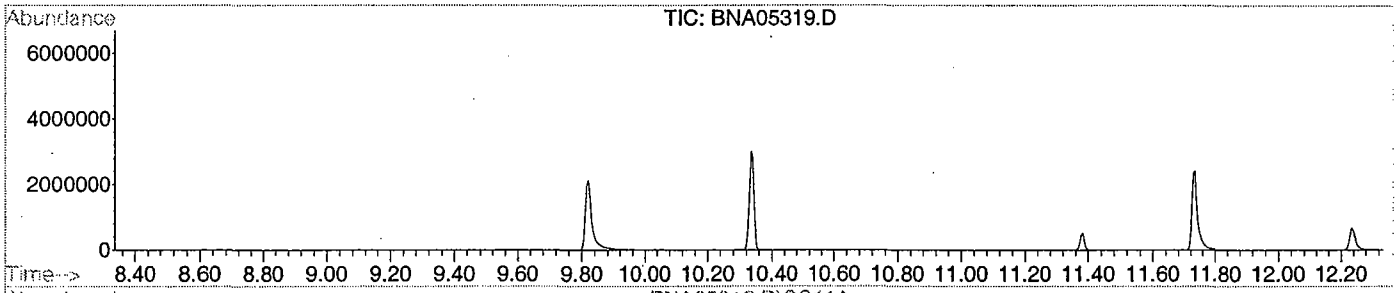
1-Value is % mass 69 2-Value is % mass 442

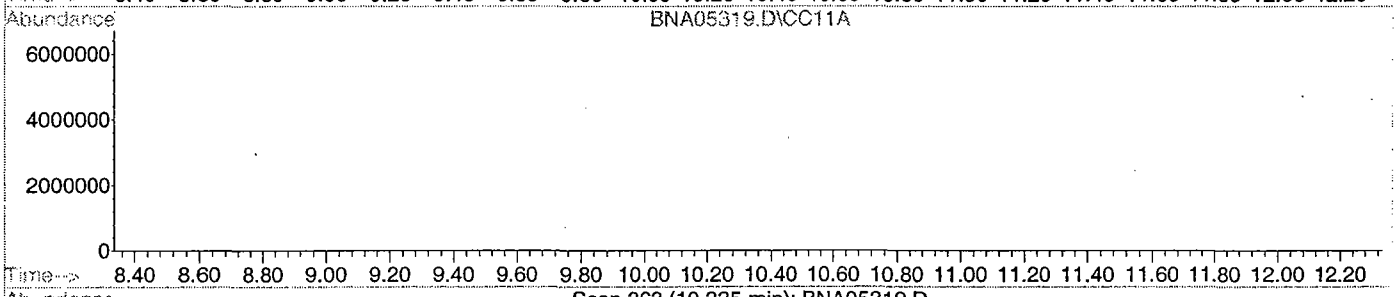
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

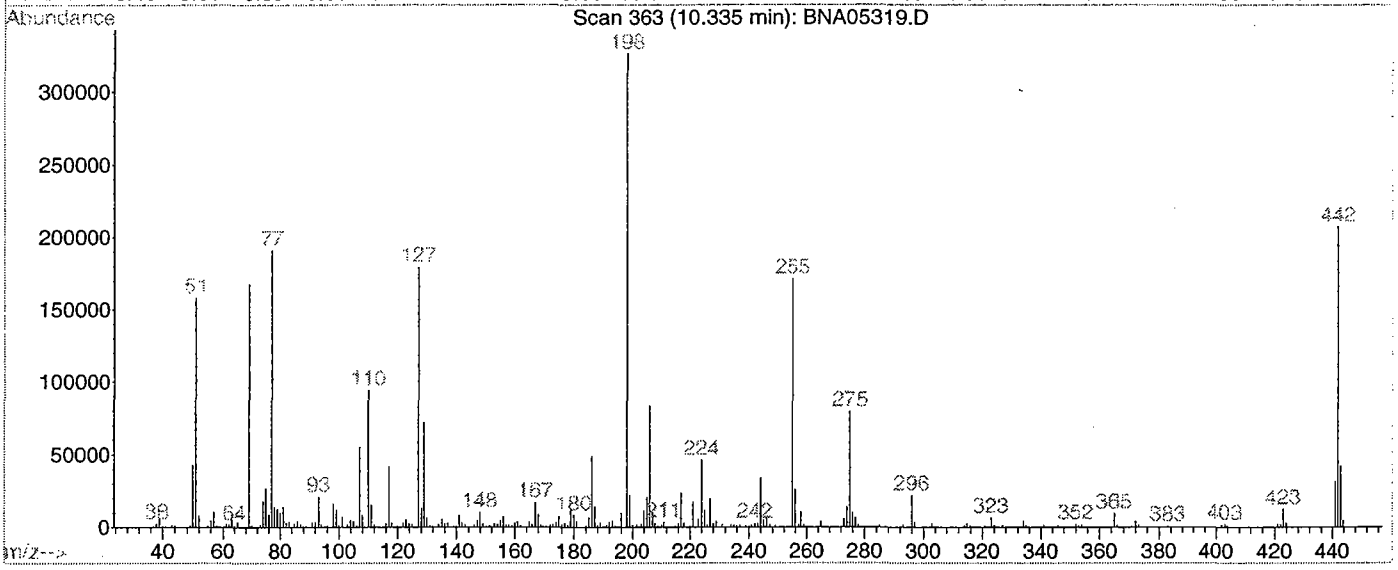
	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	DAILY CAL	BNA05320.D	5/3/01	11:20
02	MB-1729	MB-1729	BNA05323.D	5/3/01	13:39
03	BLDG.237GW	16090.01	BNA05326.D	5/3/01	16:00

000042

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
2	T	Benzyl alcohol	0.762	0.731	4.1	88	0.01
3	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
6	T	4-Methylphenol	1.126	1.119	0.6	91	0.05
7	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
9	I	Naphthalene-d8	1.000	1.000	0.0	93	-0.02
0	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
3	TC	2-Nitrophenol	0.184	0.174	5.4	87	-0.01
4	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
7	T	Benzoic Acid	0.226	0.213	5.8	90	0.07
8	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
1	TC	Hexachlorobutadiene	0.159	0.170	-6.9	100	-0.02
2	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
5	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
9	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
3	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
7	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
1	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

000414

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

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16090 Location: Bl.237 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

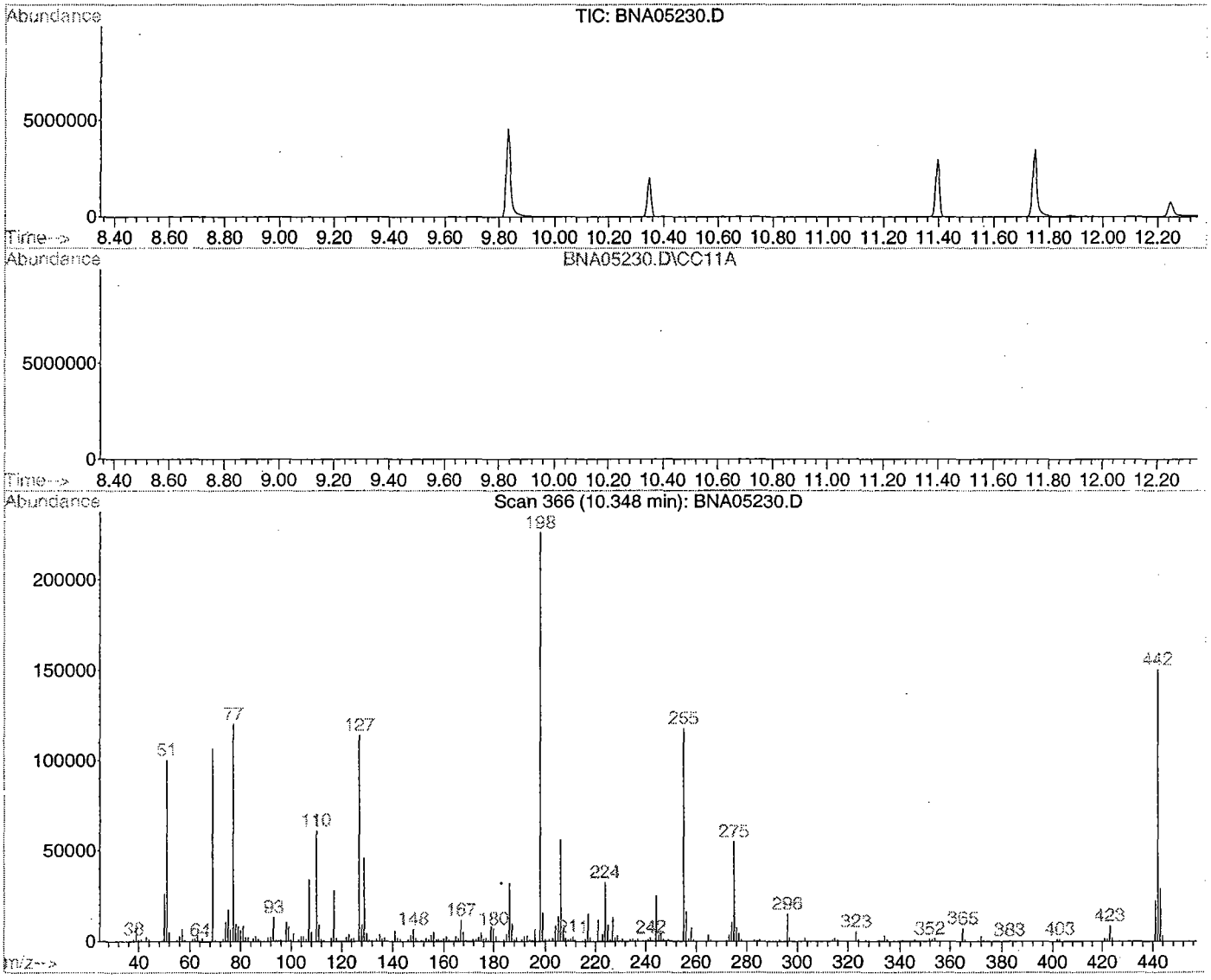
1-Value is % mass 69 2-Value is % mass 442

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

bbcm46

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

000047

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Field Id: **MB-1729**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16090 Location: Bl.237 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	BLDG.237GW	16090.01	BNA05326.D	5/3/01

COMMENTS:

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 16090 Location: Bl.237 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	BLDG.237GW	48	56	41	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.: 16090 Location: Bl.237 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.: 16090 Location: BI.237 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.: 16090 Location: Bl.237 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	BLDG.237GW	707692		10.10		2650108		13.03		1453029		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.: 16090 Location: Bl.237 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	BLDG.237GW	2588599	20.86	2422512	27.30	1835876	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

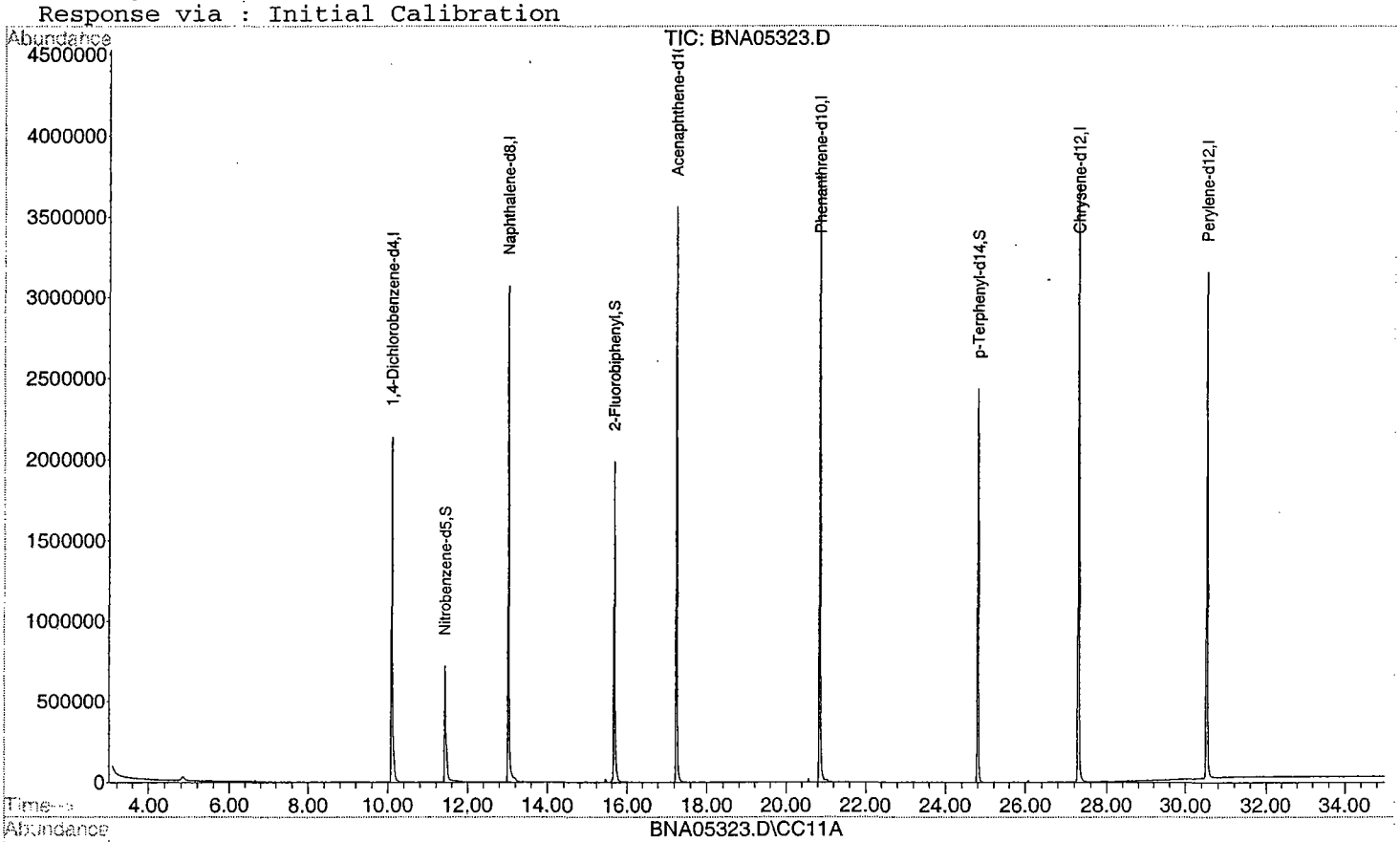
(#) = qualifier out of range (m) = manual integration

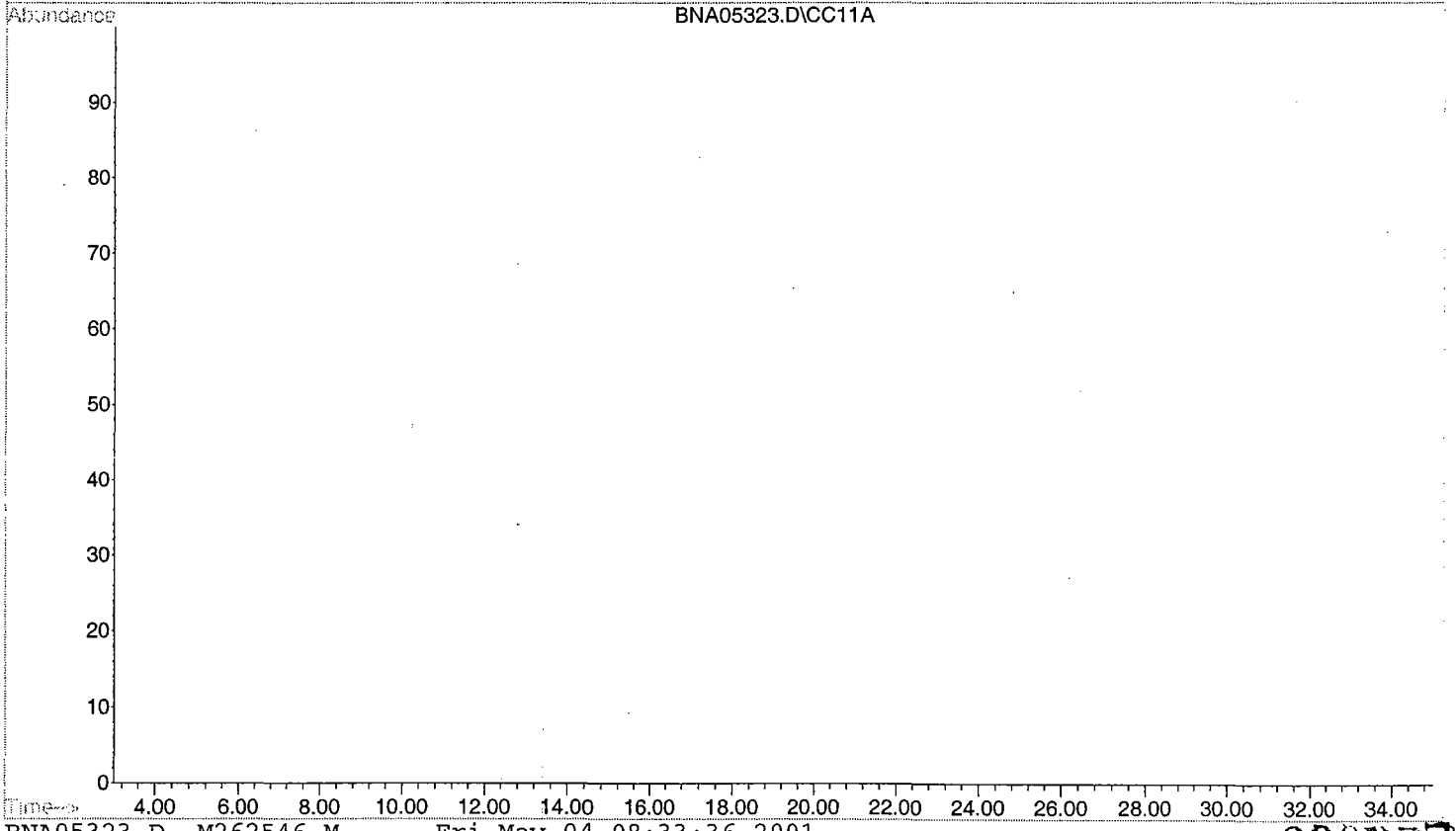
Quantitation Report

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





000957

Quantitation Report (QT Reviewed)

Data File : D:\DATA\010503\BNA05326.D Vial: 6
Acq On : 3 May 2001 4:00 pm Operator: Bhaskar
Sample : 16090.01 Inst : GC/MS Ins
Misc : Bldg.237 GW Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: May 3 16:35 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	707692	40.00	ug/L	-0.02
19) Naphthalene-d8	13.03	136	2650108	40.00	ug/L	-0.02
34) Acenaphthene-d10	17.26	164	1453029	40.00	ug/L	-0.02
54) Phenanthrene-d10	20.86	188	2588599	40.00	ug/L	-0.02
66) Chrysene-d12	27.30	240	2422512	40.00	ug/L	-0.03
75) Perylene-d12	30.54	264	1835876	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	640337	24.06	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery =	48.12%		
38) 2-Fluorobiphenyl	15.66	172	1122988	27.78	ug/L	-0.03
Spiked Amount 50.000	Range 43 - 116		Recovery =	55.56%		
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	999244	20.71	ug/L	-0.03
Spiked Amount 50.000	Range 33 - 141		Recovery =	41.42%		

Target Compounds Qvalue

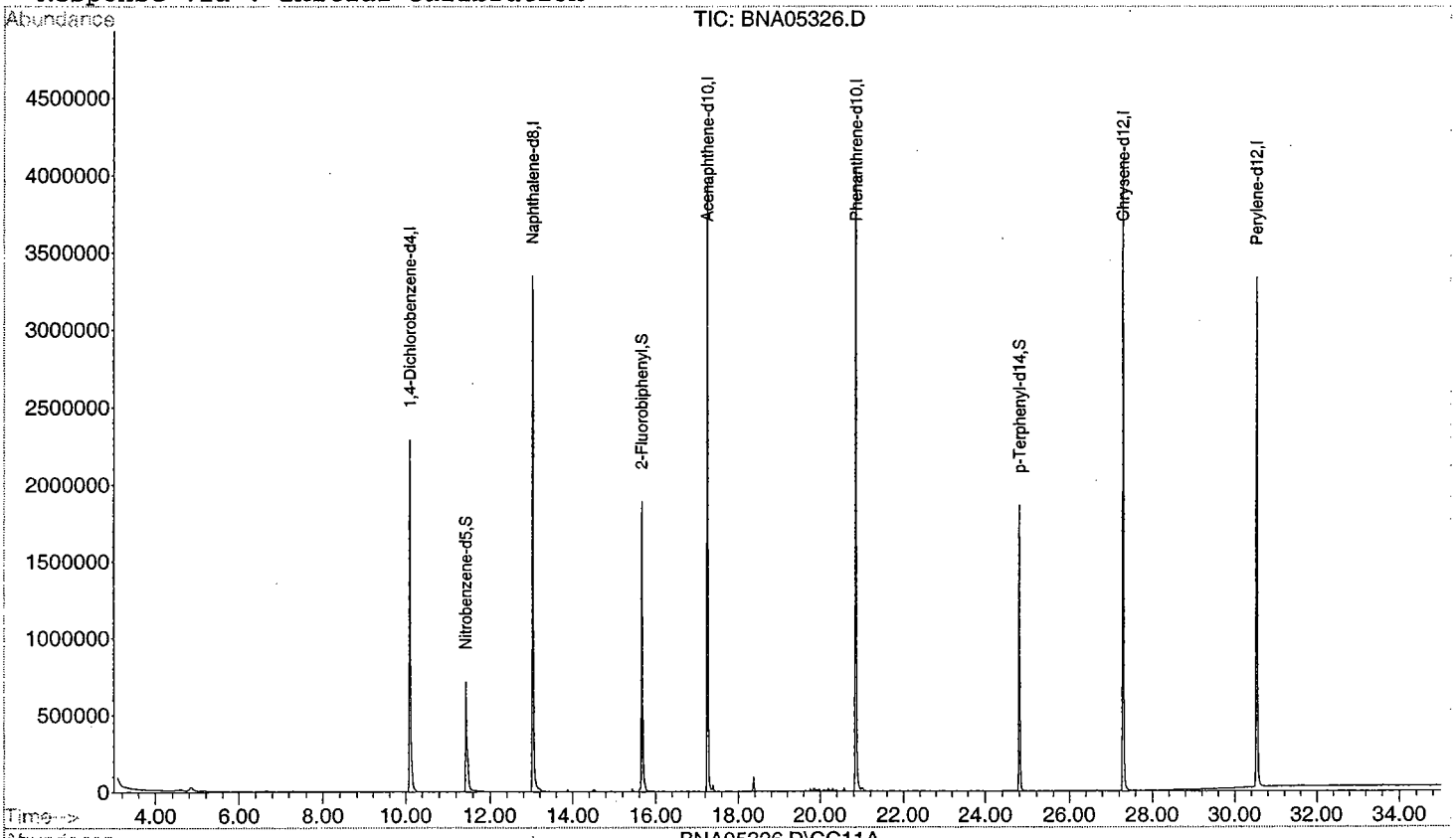
(#) = qualifier out of range (m) = manual integration

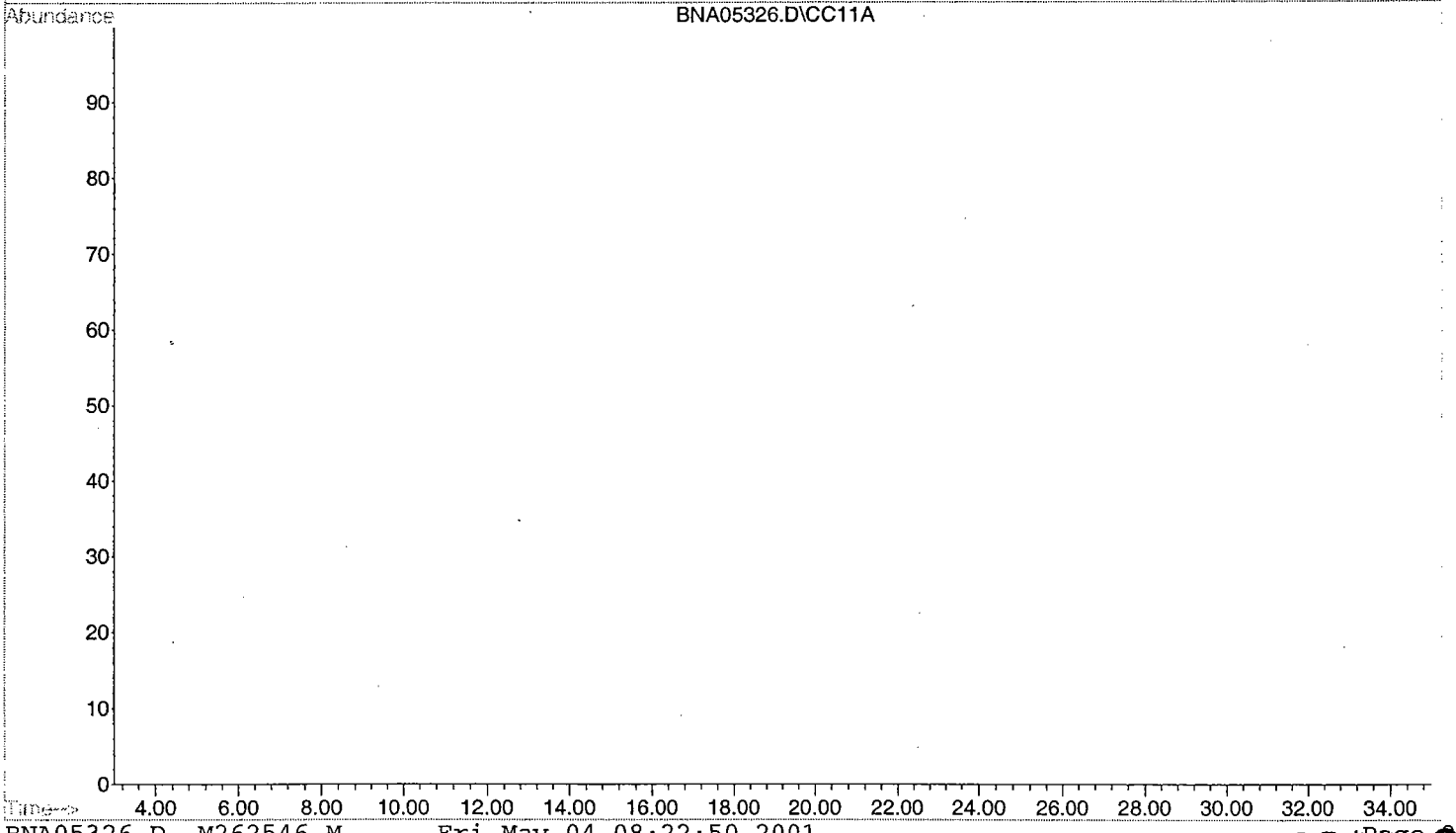
Quantitation Report

Data File : D:\DATA\010503\BNA05326.D
Acq On : 3 May 2001 4:00 pm
Sample : 16090.01
Misc : Bldg.237 GW
MS Integration Params: RTEINT.P
Quant Time: May 3 16:35 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 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 _____

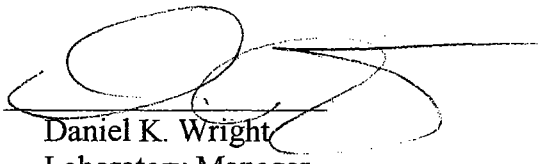
Date 5/17/01

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

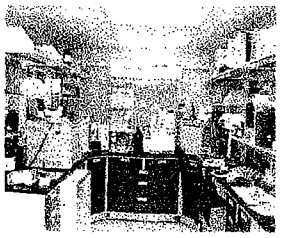
I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information 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

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. 237

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
237 GW	16146.01	Aqueous	25-May-01 08:45	05/25/01

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

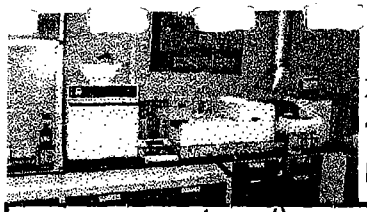
ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

6-26-01

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

Project No:
Location: Bldg 237 (12-14 Gosselin) 2nd Rnd

Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	+ Xylene 10+15	BN+15					Hnu Read	Remarks / Preservation Method
11046.01	237 GW	5/25/01	0845	AQ	3	✓	✓					0.0	

Comments: HCL / 4°C

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McConnack	5/25/01 0855				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

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

Remarks: Shows T/FB/D from 233 same date. cpm

print legibly

Coc5/1/01

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.

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 16146

Site: Bldg. 237

	Date	Hold Time
Date Sampled	05/25/01	NA
Receipt/Refrigeration	05/25/01	NA
Extractions		
1. BN	05/31/01	7 days
Analyses		
1. Volatile Organics	05/25,26/01	14 days
2. BN	06/05/01	40 days

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 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: 6-26-01

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	**VC005907.D**	Sample Name	**MB**
Operator	**Skelton**	Field ID	**MB**
Date Aquired	**25-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

6/21/01 9:35 AM

D:\HPCHEM\CUSTRPT\VOLATILE\624FY00.CRT

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **MB**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16146 Location: B237 SDG No.:

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

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005907.D

Level: (low/med) LOW Date Received: 5/25/01

% Moisture: not dec. Date Analyzed: 5/25/01

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	**VC005924.D**	Sample Name	**1614601**
Operator	**Skelton**	Field ID	**237 GW**
Date Aquired	**26-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

6/21/01 9:35 AM

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **237 GW**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16146 Location: B237 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 1614601

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC005924.D

Level: (low/med) LOW Date Received: 5/25/01

% Moisture: not dec. _____ Date Analyzed: 5/26/01

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: LTM Case No.: 16146 Location: B237 SDG No.:

Lab File ID: VC005900.D BFB Injection Date: 5/25/01

Instrument ID: VoaInst#3 BFB Injection Time: 13:59

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	15.3
75	30.0 - 66.0% of mass 95	47.2
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	61.8
175	4.0 - 9.0% of mass 174	4.7 (7.6)1
176	93.0 - 101.0% of mass 174	60.7 (98.3)1
177	5.0 - 9.0% of mass 176	3.8 (6.3)2

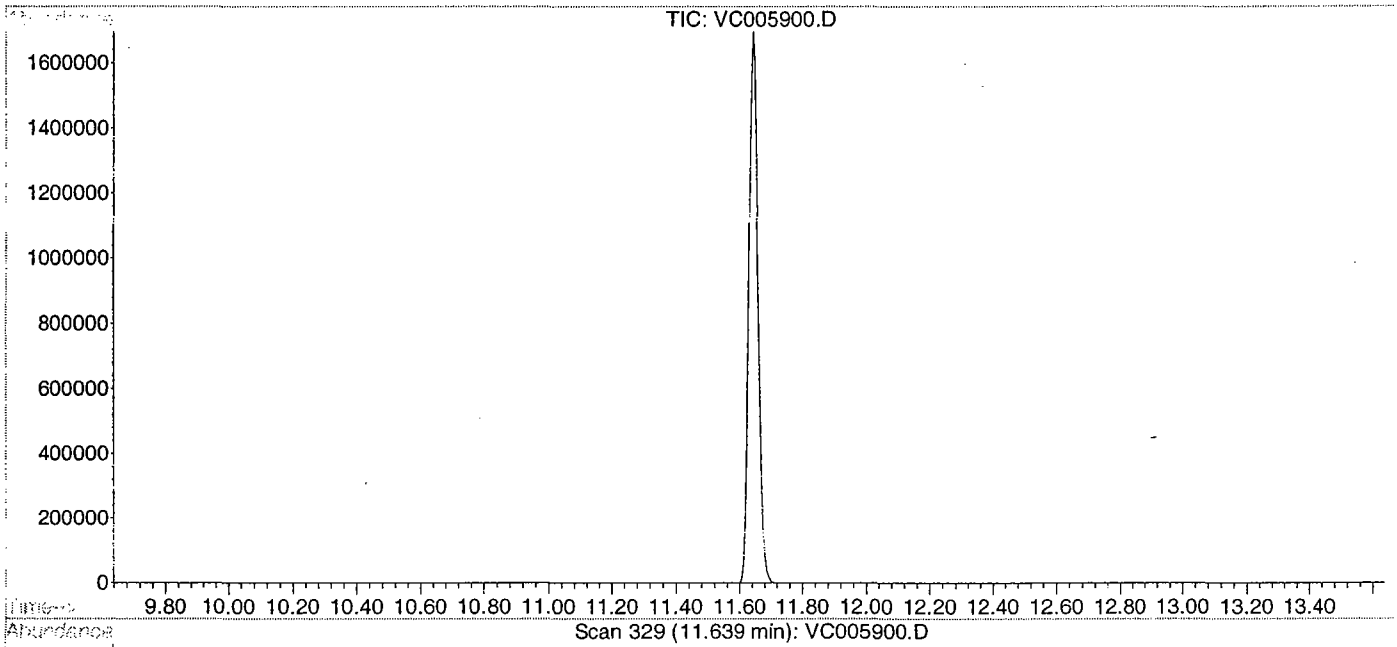
1-Value is % mass 174 2-Value is % mass 176

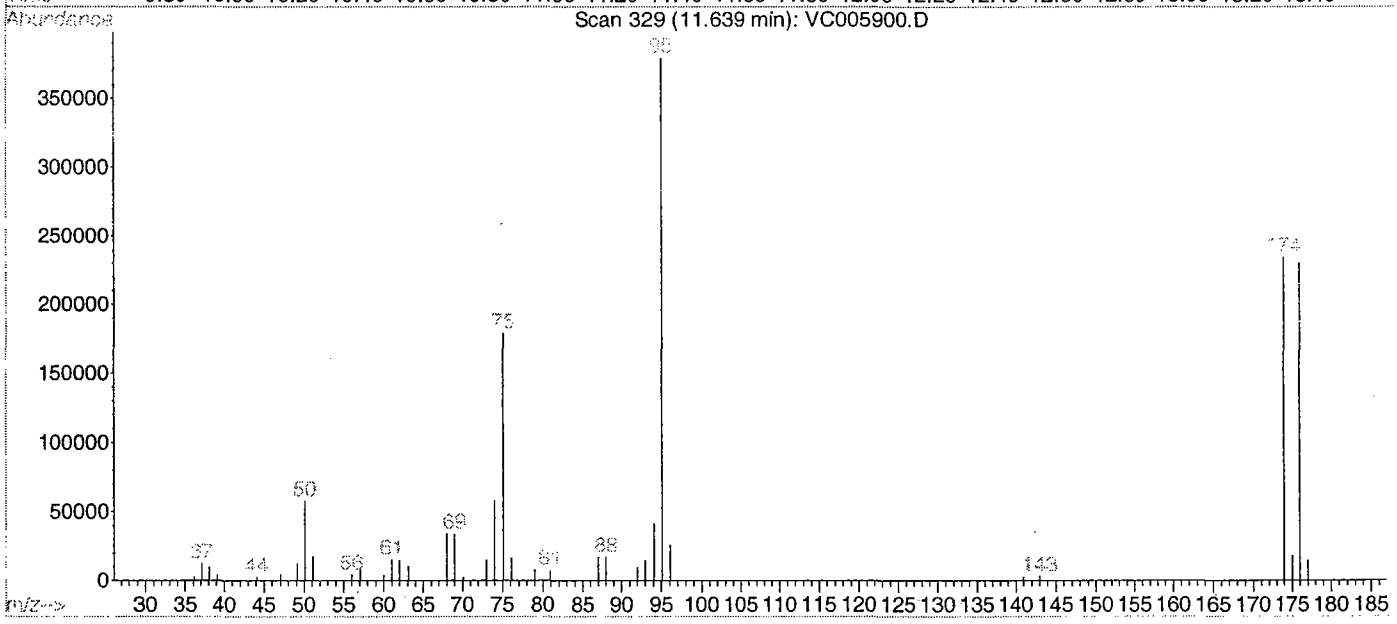
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD100	VSTD100	VC005901.D	5/25/01	14:34
02	VSTD050	VSTD050	VC005902.D	5/25/01	15:15
03	VSTD020	VSTD020	VC005903.D	5/25/01	15:56
04	VSTD010	VSTD010	VC005904.D	5/25/01	16:37
05	VSTD005	VSTD005	VC005905.D	5/25/01	17:18
06	MB	MB	VC005907.D	5/25/01	18:39
07	237 GW	1614601	VC005924.D	5/26/01	6:05
08	1614601 MS	1614601 MS	VC005925.D	5/26/01	6:45
09	1614601 MSD	1614601 MSD	VC005926.D	5/26/01	7:25

BFB

Data File : D:\HPCHEM\1\DATA\010525\VC005900.D Vial: 1
Acq On : 25 May 2001 1:59 pm 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\M362443.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP





Spectrum Information: Scan 329

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.3	57928	PASS
75	95	30	60	47.2	179136	PASS
95	95	100	100	100.0	379584	PASS
96	95	5	9	6.9	26248	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	61.8	234496	PASS
175	174	5	9	7.6	17856	PASS
176	174	95	101	98.3	230464	PASS
177	176	5	9	6.3	14586	PASS

Response Factor Report GC/MS Ins

Method : D:\HPCHEM\1\METHODS\M362443.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Tue May 29 08:20:11 2001
Response via : Initial Calibration

Calibration Files
50 =VC005902.D 5 =VC005905.D 10 =VC005904.D
20 =VC005903.D 100 =VC005901.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	0.446	0.460	0.495	0.482	0.474	0.471	4.04
3)	t	Acrylonitrile	0.891	0.974	1.036	0.988	0.877	0.953	7.06
4)	t	tert-Butyl alcohol	0.199	0.156	0.198	0.196	0.219	0.194	11.90
5)	t	Methyl-tert-Butyl eth	6.167	6.194	6.559	6.615	6.640	6.435	3.64
6)	t	Di-isopropyl ether	1.866	1.823	1.950	1.979	2.012	1.926	4.09
7)	T	Dichlorodifluorometha	2.296	2.323	2.355	2.396	2.448	2.364	2.54
8)	TP	Chloromethane	1.320	1.500	1.442	1.417	1.412	1.418	4.58
9)	TC	Vinyl Chloride	1.301	1.660	1.564	1.459	1.299	1.457	10.96
10)	T	Bromomethane	1.348	1.500	1.493	1.483	1.394	1.444	4.74
11)	T	Chloroethane	1.367	1.451	1.451	1.470	1.448	1.437	2.82
12)	T	Trichlorofluoromethan	2.622	2.808	2.838	2.849	2.762	2.776	3.33
13)	MC	1,1-Dichloroethene	2.618	2.785	2.841	2.843	2.799	2.777	3.33
14)	T	Acetone	0.546	0.784	0.714	0.629	0.599	0.654	14.43
15)	T	Carbon Disulfide	5.886	6.098	6.185	6.303	6.142	6.123	2.49
16)	T	Methylene Chloride	2.014	2.175	2.156	2.195	2.152	2.138	3.35
17)	T	trans-1,2-Dichloroeth	2.559	2.782	2.814	2.810	2.721	2.737	3.89
18)	TP	1,1-Dichloroethane	3.248	3.550	3.600	3.591	3.448	3.487	4.21
19)	T	Vinyl Acetate	3.522	3.301	3.670	3.741	3.796	3.606	5.52
20)	T	2-Butanone	0.795	0.753	0.846	0.822	0.864	0.816	5.36
21)	T	cis-1,2-Dichloroethen	2.509	2.737	2.757	2.758	2.657	2.684	3.95
22)	TC	Chloroform	3.290	3.599	3.645	3.610	3.486	3.526	4.11
23)	T	1,1,1-Trichloroethane	2.862	3.019	3.084	3.101	3.068	3.027	3.22
24)	T	Carbon Tetrachloride	2.440	2.470	2.545	2.625	2.623	2.541	3.36
25)	S	1,2-Dichloroethane-d4	2.371	2.397	2.400	2.358	2.318	2.369	1.41
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	1.157	1.323	1.328	1.312	1.153	1.255	7.25
28)	T	1,2-Dichloroethane	0.357	0.423	0.416	0.405	0.376	0.395	7.05
29)	TM	Trichloroethene	0.287	0.315	0.315	0.318	0.305	0.308	4.07
30)	TC	1,2-Dichloropropane	0.280	0.314	0.318	0.312	0.296	0.304	5.21
31)	T	Bromodichloromethane	0.339	0.343	0.360	0.367	0.364	0.355	3.58
32)	T	2-Chloroethyl vinyl e	0.099	0.108	0.111	0.111	0.105	0.107	4.79
33)	T	cis-1,3-Dichloroprope	0.453	0.445	0.474	0.492	0.485	0.470	4.30
34)	T	4-Methyl-2-Pentanone	0.115	0.103	0.120	0.121	0.124	0.116	7.15
35)	S	Toluene-d8	1.220	1.226	1.227	1.225	1.213	1.222	0.46
36)	TCM	Toluene	1.201	1.385	1.386	1.368	1.170	1.302	8.24
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.488	1.418	1.509	1.588	1.575	1.515	4.55
39)	T	1,1,2-Trichloroethane	0.913	1.004	1.018	1.013	0.959	0.982	4.55
40)	T	Tetrachloroethene	0.892	0.989	0.993	0.995	0.921	0.958	5.01
41)	T	2-Hexanone	0.505	0.414	0.513	0.526	0.530	0.498	9.63
42)	T	Dibromochloromethane	0.829	0.755	0.820	0.873	0.904	0.836	6.79
43)	TMP	Chlorobenzene	2.720	3.123	3.084	3.086	2.728	2.948	6.96
44)	TC	Ethylbenzene	4.603	5.244	5.289	5.295	4.246	4.936	9.80
45)	T	m+p-Xylenes	1.806	2.035	2.043	2.062	1.753	1.940	7.62
46)	T	o-Xylene	3.582	3.889	3.962	4.046	3.507	3.797	6.29
47)	T	Styrene	3.150	3.192	3.333	3.471	3.160	3.261	4.25
48)	TP	Bromoform	0.513	0.409	0.480	0.521	0.570	0.499	11.92
49)	S	Bromofluorobenzene	1.703	1.684	1.673	1.706	1.682	1.689	0.84
50)	TP	1,1,2,2-Tetrachloroet	1.248	1.335	1.391	1.389	1.293	1.331	4.64
51)	T	1,3-Dichlorobenzene	1.938	2.078	2.110	2.152	1.967	2.049	4.52
52)	T	1,4-Dichlorobenzene	1.941	2.046	2.103	2.166	1.956	2.042	4.69
53)	T	1,2-Dichlorobenzene	1.837	1.940	2.004	2.050	1.865	1.939	4.63

(#) = Out of Range

4A

FIELD ID:

VOLATILE METHOD BLANK SUMMARY

MB

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16146 Location: B237 SDG No.:

Lab File ID: VC005907.D Lab Sample ID: MB

Date Analyzed: 5/25/01 Time Analyzed: 18:39

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	237 GW	1614601	VC005924.D	6:05
02	1614601 MS	1614601 MS	VC005925.D	6:45
03	1614601 MSD	1614601 MSD	VC005926.D	7:25

COMMENTS:

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16146 Location: B237 SDG No.: _____

	FIELD ID:	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	MB	105	100	98	0
02	237 GW	117	101	100	0
03	1614601 MS	115	101	101	0
04	1614601 MSD	117	101	103	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	VC005925.D	Sample Name	1614601 MS
Date Aquired	26-May-01	Field ID	1614601 MS

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	202.76 ug/L	101.38
Acrylonitrile	200	234.11 ug/L	117.05
tert-Butyl alcohol	200	172.06 ug/L	86.03
Methyl-tert-Butyl ether	20	21.31 ug/L	106.54
Di-isopropyl ether	20	20.79 ug/L	103.97
Dichlorodifluoromethane	20	21.36 ug/L	106.82
Chloromethane	20	27.92 ug/L	139.59
Vinyl Chloride	20	26.51 ug/L	132.57
Bromomethane	20	20.76 ug/L	103.82
Chloroethane	20	23.65 ug/L	118.24
Trichlorofluoromethane	20	21.72 ug/L	108.60
1,1-Dichloroethene	20	23.97 ug/L	119.85
Acetone	20	48.04 ug/L	240.21
Carbon Disulfide	20	21.28 ug/L	106.38
Methylene Chloride	20	21.27 ug/L	106.36
trans-1,2-Dichloroethene	20	23.79 ug/L	118.97
1,1-Dichloroethane	20	23.75 ug/L	118.75
Vinyl Acetate	20	23.46 ug/L	117.28
2-Butanone	20	22.84 ug/L	114.19
cis-1,2-Dichloroethene	20	23.95 ug/L	119.75
Chloroform	20	22.12 ug/L	110.58
1,1,1-Trichloroethane	20	21.42 ug/L	107.09
Carbon Tetrachloride	20	20.84 ug/L	104.20
Benzene	20	22.26 ug/L	111.31
1,2-Dichloroethane	20	24.28 ug/L	121.39
Trichloroethene	20	21.03 ug/L	105.15
1,2-Dichloropropane	20	23.54 ug/L	117.69
Bromodichloromethane	20	21.74 ug/L	108.69
2-Chloroethyl vinyl ether	20	24.27 ug/L	121.35
cis-1,3-Dichloropropene	20	20.82 ug/L	104.09
4-Methyl-2-Pentanone	20	21.26 ug/L	106.29
Toluene	20	21.38 ug/L	106.88
trans-1,3-Dichloropropene	20	20.38 ug/L	101.90
1,1,2-Trichloroethane	20	20.19 ug/L	100.93
Tetrachloroethene	20	20.61 ug/L	103.03
2-Hexanone	20	22.41 ug/L	112.06
Dibromochloromethane	20	20.16 ug/L	100.80
Chlorobenzene	20	20.29 ug/L	101.46
Ethylbenzene	20	21.53 ug/L	107.63
m+p-Xylenes	40	41.00 ug/L	102.49
o-Xylene	20	21.36 ug/L	106.78
Styrene	20	20.60 ug/L	103.00
Bromoform	20	18.91 ug/L	94.57
1,1,2,2-Tetrachloroethane	20	18.92 ug/L	94.62
1,3-Dichlorobenzene	20	20.09 ug/L	100.44
1,4-Dichlorobenzene	20	20.01 ug/L	100.05
1,2-Dichlorobenzene	20	20.20 ug/L	101.01

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000021

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

Data File	VC005926.D	Sample Name	1614601 MSD
Date Aquired	26-May-01	Field ID	1614601 MSD

CAS#	Amount Added ug/L	Result ug/L	Percent Recovery
Acrolein	200	219.48 ug/L	109.74
Acrylonitrile	200	235.45 ug/L	117.73
tert-Butyl alcohol	200	177.30 ug/L	88.65
Methyl-tert-Butyl ether	20	21.23 ug/L	106.14
Di-isopropyl ether	20	20.50 ug/L	102.52
Dichlorodifluoromethane	20	19.70 ug/L	98.49
Chloromethane	20	27.69 ug/L	138.47
Vinyl Chloride	20	25.80 ug/L	129.02
Bromomethane	20	20.56 ug/L	102.78
Chloroethane	20	23.20 ug/L	116.01
Trichlorofluoromethane	20	21.00 ug/L	105.00
1,1-Dichloroethene	20	23.63 ug/L	118.14
Acetone	20	47.88 ug/L	239.41
Carbon Disulfide	20	20.92 ug/L	104.62
Methylene Chloride	20	21.00 ug/L	105.00
trans-1,2-Dichloroethene	20	23.60 ug/L	118.01
1,1-Dichloroethane	20	23.46 ug/L	117.32
Vinyl Acetate	20	23.99 ug/L	119.95
2-Butanone	20	23.18 ug/L	115.92
cis-1,2-Dichloroethene	20	23.76 ug/L	118.79
Chloroform	20	21.71 ug/L	108.57
1,1,1-Trichloroethane	20	21.03 ug/L	105.16
Carbon Tetrachloride	20	20.51 ug/L	102.57
Benzene	20	21.86 ug/L	109.28
1,2-Dichloroethane	20	23.83 ug/L	119.15
Trichloroethene	20	20.69 ug/L	103.43
1,2-Dichloropropane	20	23.19 ug/L	115.96
Bromodichloromethane	20	21.42 ug/L	107.12
2-Chloroethyl vinyl ether	20	23.83 ug/L	119.16
cis-1,3-Dichloropropene	20	20.53 ug/L	102.65
4-Methyl-2-Pentanone	20	21.18 ug/L	105.89
Toluene	20	21.00 ug/L	104.99
trans-1,3-Dichloropropene	20	20.34 ug/L	101.68
1,1,2-Trichloroethane	20	20.32 ug/L	101.58
Tetrachloroethene	20	20.73 ug/L	103.67
2-Hexanone	20	22.68 ug/L	113.40
Dibromochloromethane	20	19.98 ug/L	99.92
Chlorobenzene	20	20.29 ug/L	101.44
Ethylbenzene	20	21.33 ug/L	106.67
m+p-Xylenes	40	40.84 ug/L	102.11
o-Xylene	20	21.29 ug/L	106.47
Styrene	20	20.45 ug/L	102.23
Bromoform	20	19.31 ug/L	96.56
1,1,2,2-Tetrachloroethane	20	19.10 ug/L	95.48
1,3-Dichlorobenzene	20	20.13 ug/L	100.64
1,4-Dichlorobenzene	20	20.01 ug/L	100.03
1,2-Dichlorobenzene	20	20.07 ug/L	100.33

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 16146 Location: B237 SDG No.:

Lab File ID (Standard): VC005903.D Date Analyzed: 5/25/01

Instrument ID: VoaInst#3 Time Analyzed: 15:56

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	834026	16.70	5714345	19.42	1667920	27.24
	UPPER LIMIT	1668052	17.20	11428690	19.92	3335840	27.74
	LOWER LIMIT	417013	16.20	2857173	18.92	833960	26.74
	FIELD ID:						
01	MB	838315	16.70	5725126	19.42	1681802	27.24
02	237 GW	813474	16.69	5566331	19.42	1633330	27.25
03	1614601 MS	846769	16.70	5777405	19.42	1713772	27.24
04	1614601 MSD	850395	16.69	5822120	19.42	1701541	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\010525\VC005907.D Vial: 7
Acq On : 25 May 2001 6:39 pm Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 29 8:22 2001 Quant Results File: M362443.RES

Quant Method : D:\HPCHEM\1\METHODS\M362443.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Tue May 29 08:20:11 2001
Response via : Initial Calibration
DataAcq Meth : M362442

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	838315	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	5725126	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	1681802	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	2082552	31.47	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 104.90%			
35) Toluene-d8	23.42	98	7024266	30.12	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 100.40%			
49) Bromofluorobenzene	30.25	95	2770886	29.26	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 97.53%			

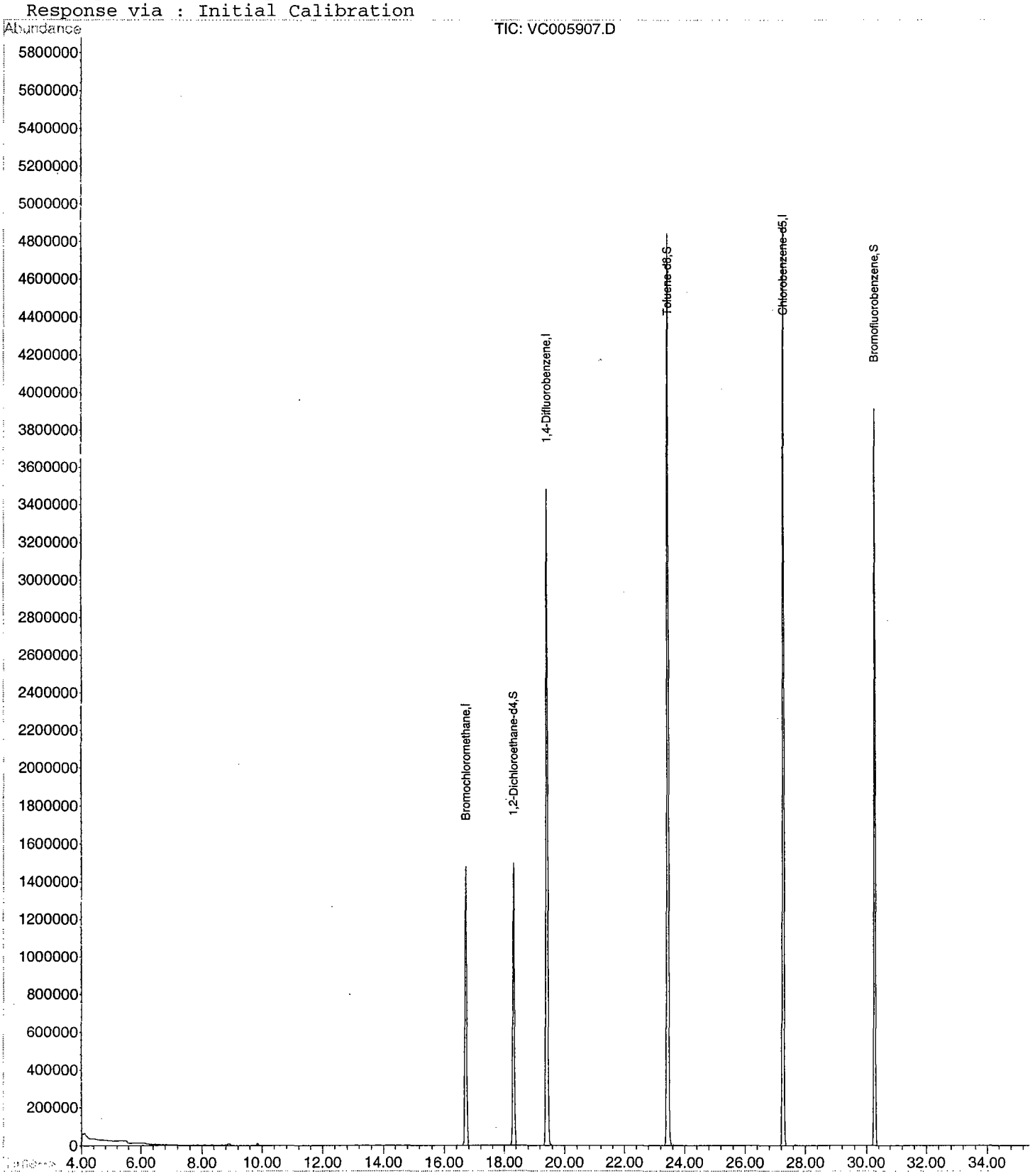
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010525\VC005907.D Vial: 7
Acq On : 25 May 2001 6:39 pm Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 29 8:22 2001 Quant Results File: M362443.RES

Method : D:\HPCHEM\1\METHODS\M362443.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Tue May 29 08:20:11 2001
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010525\VC005924.D Vial: 24
Acq On : 26 May 2001 6:05 am Operator: Skelton
Sample : 1614601 Inst : GC/MS Ins
Misc : 237 GW Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 29 8:24 2001 Quant Results File: M362443.RES

Quant Method : D:\HPCHEM\1\METHODS\M362443.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Tue May 29 08:20:11 2001
Response via : Initial Calibration
DataAcq Meth : M362442

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	813474	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	5566331	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.25	119	1633330	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	2244804	34.95	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 116.50%			
35) Toluene-d8	23.42	98	6854171	30.23	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 100.77%			
49) Bromofluorobenzene	30.25	95	2755653	29.96	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 99.87%			
Target Compounds						Qvalue

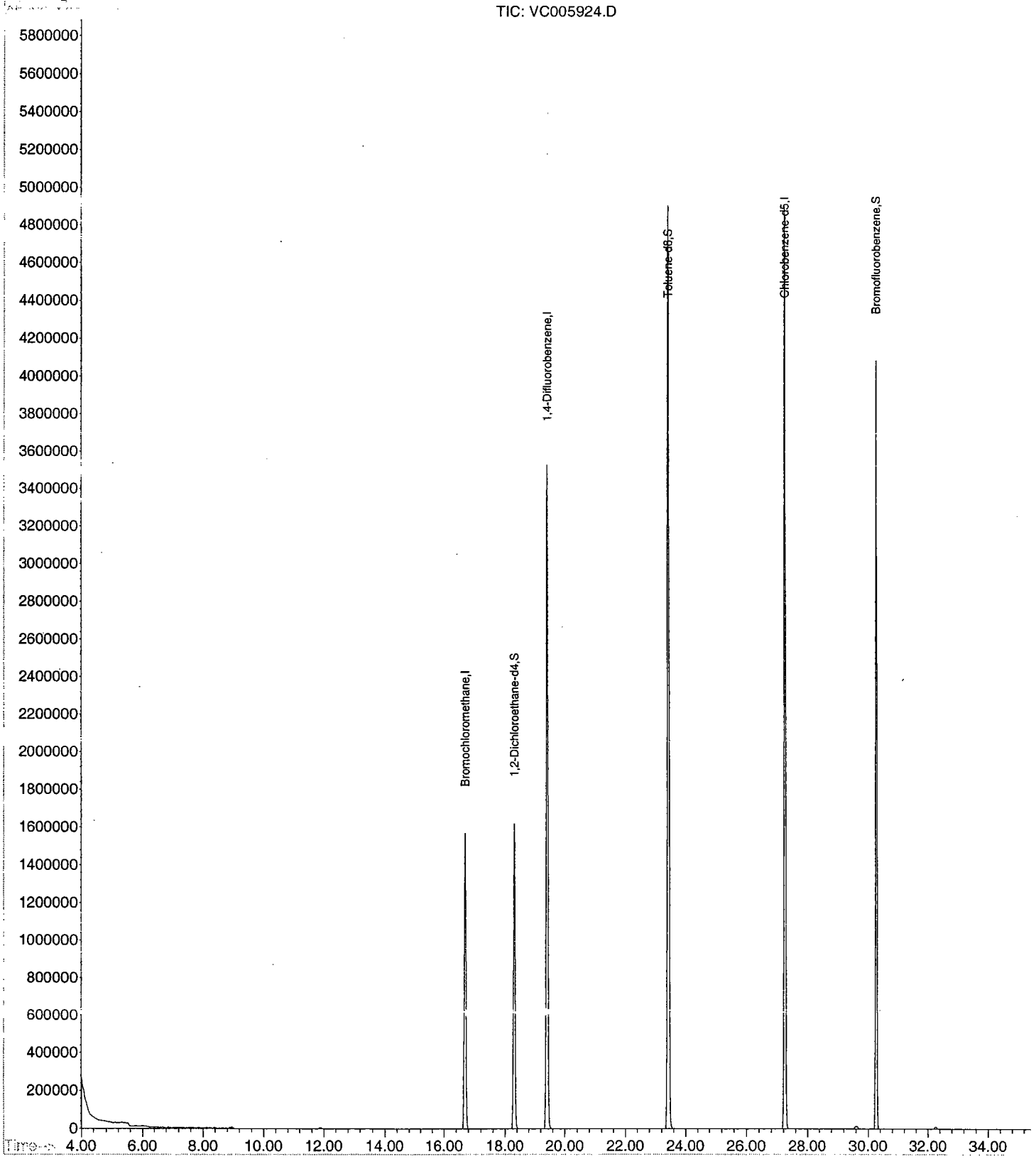
(#) = qualifier out of range (m) = manual integration
VC005924.D M362443.M Thu Jun 21 09:32:48 2001

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010525\VC005924.D Vial: 24
Acq On : 26 May 2001 6:05 am Operator: Skelton
Sample : 1614601 Inst : GC/MS Ins
Misc : 237 GW Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: May 29 8:24 2001 Quant Results File: M362443.RES

Method : D:\HPCHEM\1\METHODS\M362443.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Tue May 29 08:20:11 2001
Response via : Initial Calibration

TIC: VC005924.D



BASE NEUTRALS

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA05407.D**	Sample Name	**MB 1864**
Operator	**Skelton**	Misc Info	**31May01**
Date Acquired	**5-Jun-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	**BNA05407.D**	Sample Name	**MB 1864**
Operator	**Skelton**	Misc Info	**31May01**
Date Acquired	**5-Jun-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 1864**

Lab Name: FMETL Lab Code 13461

Project: UST Case No.: 16145 Location: B 233 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MB 1864

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05407.D

Level: (low/med) LOW Date Received: 5/25/01

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/31/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/5/01

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	**BNA05452.D**	Sample Name	**1614601**
Operator	**Skelton**	Misc Info	**237GW**
Date Acquired	**7-Jun-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	**BNA05452.D**	Sample Name	**1614601**
Operator	**Skelton**	Misc Info	**237GW**
Date Acquired	**7-Jun-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: **237GW**

Lab Name: FMETL Lab Code 13461

Project: UST Case No.: 16145 Location: B 233 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 1614601

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA05452.D

Level: (low/med) LOW Date Received: 5/25/01

% Moisture: _____ decanted: (Y/N) N Date Extracted: 5/31/01

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 6/7/01

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.: 16123 Location: M3 SDG No.:

Lab File ID: BNA05123.D DFTPP Injection Date: 3/27/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 8:44

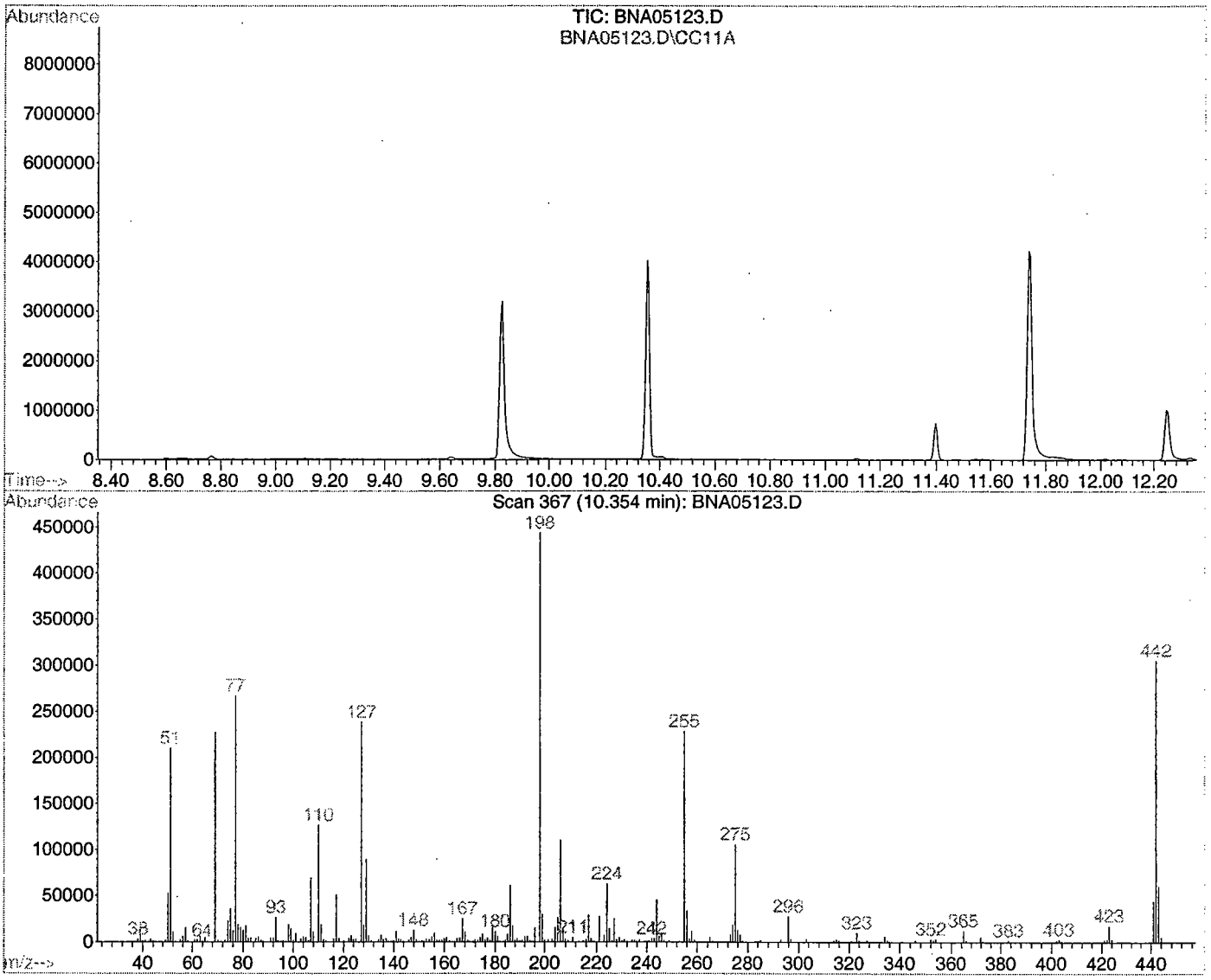
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	47.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	51.3
70	Less than 2.0% of mass 69	0.4 (0.8)1
127	25.0 - 75.0% of mass 198	53.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	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

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: UST Case No.: 16145 Location: B 233 SDG No.:

Lab File ID: BNA05400.D DFTPP Injection Date: 6/5/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 12:07

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	43.1
68	Less than 2.0% of mass 69	0.8 (1.8)1
69	Mass 69 Relative abundance	46.5
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	6.7
275	10.0 - 30.0% of mass 198	25.4
365	Greater than 0.75% of mass 198	3.5
441	Present, but less than mass 443	11.9
442	40.0 - 110.0% of mass 198	76.0
443	15.0 - 24.0% of mass 442	14.6 (19.3)2

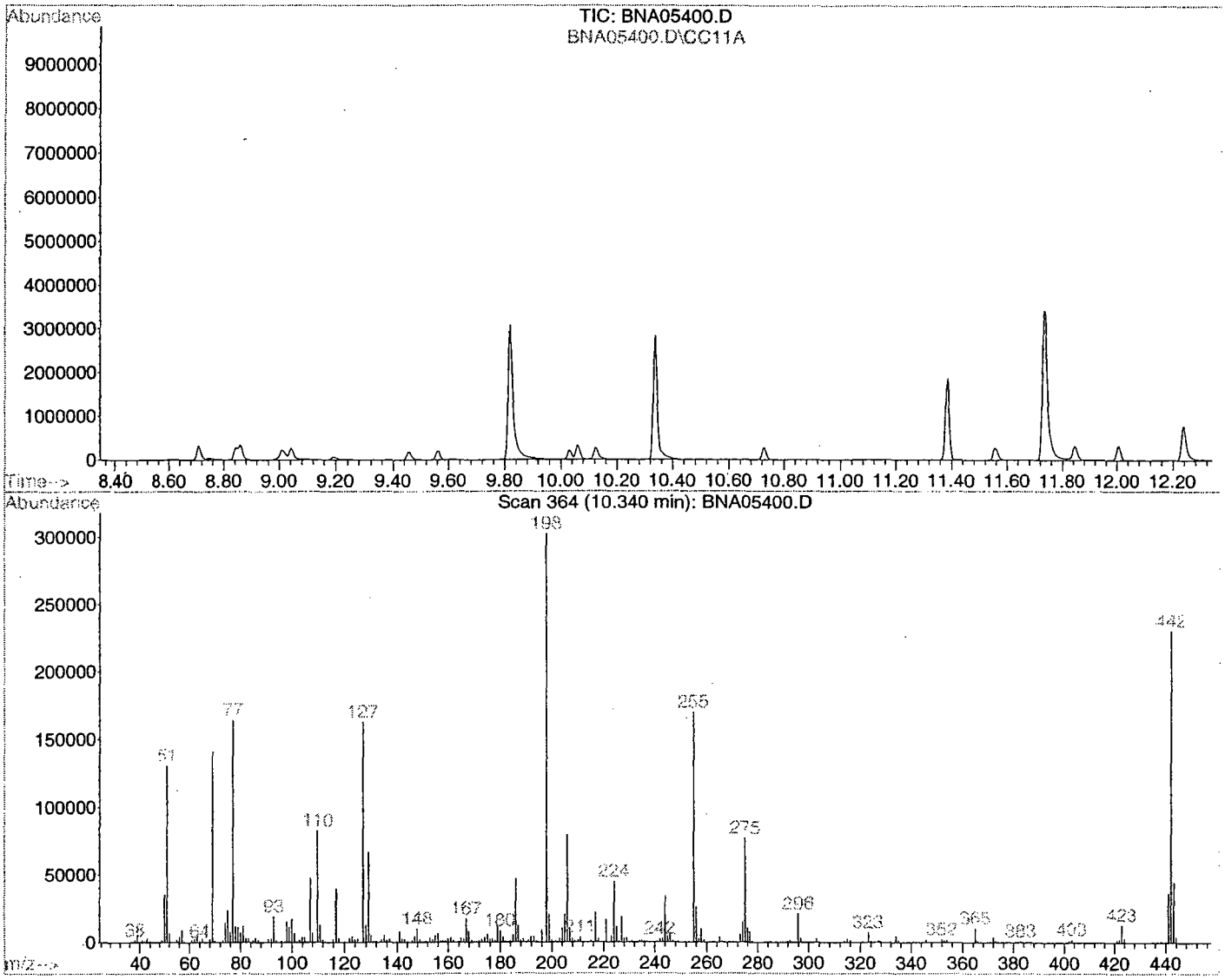
1-Value is % mass 69 2-Value is % mass 442

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	SSTD050	BNA05401.D	6/5/01	12:34
02	MB 1864	MB 1864	BNA05407.D	6/5/01	17:13
03	LCS 1865	LCS 1865	BNA05413.D	6/5/01	21:46

CLP

Data File : D:\DATA\010605\BNA05400.D Vial: 99
Acq On : 5 Jun 2001 12:07 pm Operator: Bhaskar
Sample : DFTPP Tune Inst : GC/MS Ins
Misc : DFTPP Tune 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 364

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	43.1	130552	PASS
68	69	0.00	2	1.8	2476	PASS
69	198	0.00	100	46.5	140992	PASS
70	69	0.00	2	0.8	1161	PASS
127	198	40	60	53.7	162624	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	302912	PASS
199	198	5	9	6.7	20416	PASS
275	198	10	30	25.4	76800	PASS
365	198	1	100	3.5	10490	PASS
441	443	1	99	81.2	35992	PASS
442	198	40	100	76.0	230208	PASS
443	442	17	23	19.3	44336	PASS

Evaluate Continuing Calibration Report

Data File : D:\DATA\010605\BNA05401.D Vial: 100
Acq On : 5 Jun 2001 12:34 pm Operator: Bhaskar
Sample : Sstd050 Inst : GC/MS Ins
Misc : Sstd050 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	69	-0.02
2	T	Pyridine	1.435	1.171	18.4	57	-0.02
3	T	N-nitroso-dimethylamine	0.750	0.618	17.6	57	0.00
4	S	2-Fluorophenol	1.137	1.024	9.9	62	0.06
5	T	Aniline	1.852	1.702	8.1	63	0.00
6	S	Phenol-d6	1.434	1.339	6.6	64	0.07
7	TCM	Phenol	1.658	1.372	17.2	56	0.07
8	T	bis(2-Chloroethyl)ether	1.201	1.068	11.1	62	-0.01
9	TM	2-Chlorophenol	1.170	1.107	5.4	65	0.02
10	T	1,3-Dichlorobenzene	1.276	1.245	2.4	67	-0.02
11	TCM	1,4-Dichlorobenzene	1.304	1.280	1.8	68	-0.02
12	T	Benzyl alcohol	0.762	0.702	7.9	63	0.01
13	T	1,2-Dichlorobenzene	1.194	1.186	0.7	69	-0.02
14	T	2-Methylphenol	1.077	1.035	3.9	66	0.04
15	T	bis(2-chloroisopropyl)ether	1.235	1.016	17.7	57	-0.02
16	T	4-Methylphenol	1.126	1.074	4.6	65	0.04
17	TPM	n-Nitroso-di-n-propylamine	0.191	0.187	2.1	66	-0.01
18	T	Hexachloroethane	0.498	0.503	-1.0	70	-0.02
19	I	Naphthalene-d8	1.000	1.000	0.0	75	-0.02
20	S	Nitrobenzene-d5	0.402	0.363	9.7	68	0.00
21	T	Nitrobenzene	0.403	0.358	11.2	67	-0.01
22	T	Isophorone	0.676	0.598	11.5	67	-0.01
23	TC	2-Nitrophenol	0.184	0.162	12.0	66	-0.01
24	T	2,4-Dimethylphenol	0.339	0.319	5.9	71	0.02
25	T	bis(2-Chloroethoxy)methane	0.399	0.332	16.8	63	-0.01
26	TC	2,4-Dichlorophenol	0.235	0.222	5.5	67	0.03
27	T	Benzoic Acid	0.226	0.127	43.8#	44#	0.02
28	TM	1,2,4-Trichlorobenzene	0.287	0.269	6.3	71	-0.02
29	T	Naphthalene	0.942	0.873	7.3	69	-0.02
30	T	4-Chloroaniline	0.379	0.328	13.5	64	0.00
31	TC	Hexachlorobutadiene	0.159	0.160	-0.6	76	-0.02
32	TCM	4-Chloro-3-methylphenol	0.289	0.271	6.2	69	0.04
33	T	2-Methylnaphthalene	0.612	0.573	6.4	70	-0.02
34	I	Acenaphthene-d10	1.000	1.000	0.0	81	-0.02
35	TP	Hexachlorocyclopentadiene	0.230	0.247	-7.4	80	-0.02
36	TC	2,4,6-Trichlorophenol	0.314	0.285	9.2	72	0.00
37	T	2,4,5-Trichlorophenol	0.332	0.300	9.6	70	0.04
38	S	2-Fluorobiphenyl	1.113	1.020	8.4	73	-0.02
39	T	2-Chloronaphthalene	0.961	0.852	11.3	71	-0.02
40	T	2-Nitroaniline	0.363	0.307	15.4	66	0.00
41	T	Dimethylphthalate	1.097	0.985	10.2	72	-0.01
42	T	Acenaphthylene	1.553	1.423	8.4	73	-0.02
43	T	2,6-Dinitrotoluene	0.281	0.262	6.8	74	-0.01
44	T	3-Nitroaniline	0.280	0.250	10.7	70	0.01
45	TCM	Acenaphthene	0.980	0.881	10.1	72	-0.02
46	TP	2,4-Dinitrophenol	0.149	0.135	9.4	67	0.00
47	T	Dibenzofuran	1.326	1.203	9.3	72	-0.02
48	TMP	4-Nitrophenol	0.205	0.214	-4.4	87	0.09
49	TM	2,4-Dinitrotoluene	0.359	0.315	12.3	70	0.00
50	T	Diethylphthalate	1.113	1.022	8.2	74	-0.02
51	T	Fluorene	1.107	1.009	8.9	73	-0.02
52	T	4-Chlorophenyl-phenylether	0.529	0.482	8.9	73	-0.02
53	T	4-Nitroaniline	0.290	0.237	18.3	66	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\DATA\010605\BNA05401.D Vial: 100
Acq On : 5 Jun 2001 12:34 pm Operator: Bhaskar
Sample : Sstd050 Inst : GC/MS Ins
Misc : Sstd050 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	90	-0.01
55	T	4,6-Dinitro-2-methylphenol	0.133	0.103	22.6	67	0.00
56	TC	n-Nitrosodiphenylamine	0.473	0.376	20.5	72	-0.01
57	T	Azobenzene	0.812	0.641	21.1	71	-0.02
58	S	2,4,6-Tribromophenol	0.090	0.076	15.6	75	0.00
59	T	4-Bromophenyl-phenylether	0.182	0.149	18.1	74	-0.02
60	T	Hexachlorobenzene	0.196	0.160	18.4	75	-0.02
61	TCM	Pentachlorophenol	0.116	0.092	20.7	68	0.00
62	T	Phenanthrene	0.973	0.796	18.2	74	-0.02
63	T	Anthracene	0.989	0.811	18.0	74	-0.02
64	T	Di-n-butylphthalate	1.096	0.904	17.5	74	-0.02
65	TC	Fluoranthene	1.019	0.848	16.8	75	-0.01
66	I	Chrysene-d12	1.000	1.000	0.0	93	-0.02
67	T	Benzidine	0.396	0.404	-2.0	95	0.00
68	TM	Pyrene	1.159	0.933	19.5	75	-0.02
69	S	p-Terphenyl-d14	0.797	0.641	19.6	75	-0.02
70	T	Butylbenzylphthalate	0.569	0.456	19.9	73	-0.02
71	T	Benzo[a]anthracene	1.092	0.891	18.4	75	-0.02
72	T	3,3'-Dichlorobenzidine	0.354	0.354	0.0	93	0.00
73	T	Chrysene	1.037	0.833	19.7	75	-0.02
74	T	bis(2-Ethylhexyl)phthalate	0.779	0.617	20.8	72	-0.03
75	I	Perylene-d12	1.000	1.000	0.0	90	-0.02
76	TC	Di-n-octylphthalate	1.345	1.138	15.4	73	-0.03
77	T	Benzo[b]fluoranthene	1.114	0.906	18.7	72	-0.02
78	T	Benzo[k]fluoranthene	1.115	0.921	17.4	74	-0.02
79	TC	Benzo[a]pyrene	1.073	0.885	17.5	73	-0.02
80	T	Indeno[1,2,3-cd]pyrene	1.086	0.873	19.6	72	-0.03
81	T	Dibenz[a,h]anthracene	1.104	0.901	18.4	72	-0.03
82	T	Benzo[g,h,i]perylene	1.096	0.860	21.5	70	-0.02

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project: UST Case No.: 16145 Location: B 233 SDG No.:

Lab File ID: BNA05435.D DFTPP Injection Date: 6/6/01

Instrument ID: GC_BNA_2 DFTPP Injection Time: 14:07

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	40.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	44.6
70	Less than 2.0% of mass 69	0.4 (0.8)1
127	25.0 - 75.0% of mass 198	51.3
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	7.0
275	10.0 - 30.0% of mass 198	26.0
365	Greater than 0.75% of mass 198	3.8
441	Present, but less than mass 443	12.1
442	40.0 - 110.0% of mass 198	82.0
443	15.0 - 24.0% of mass 442	15.7 (19.1)2

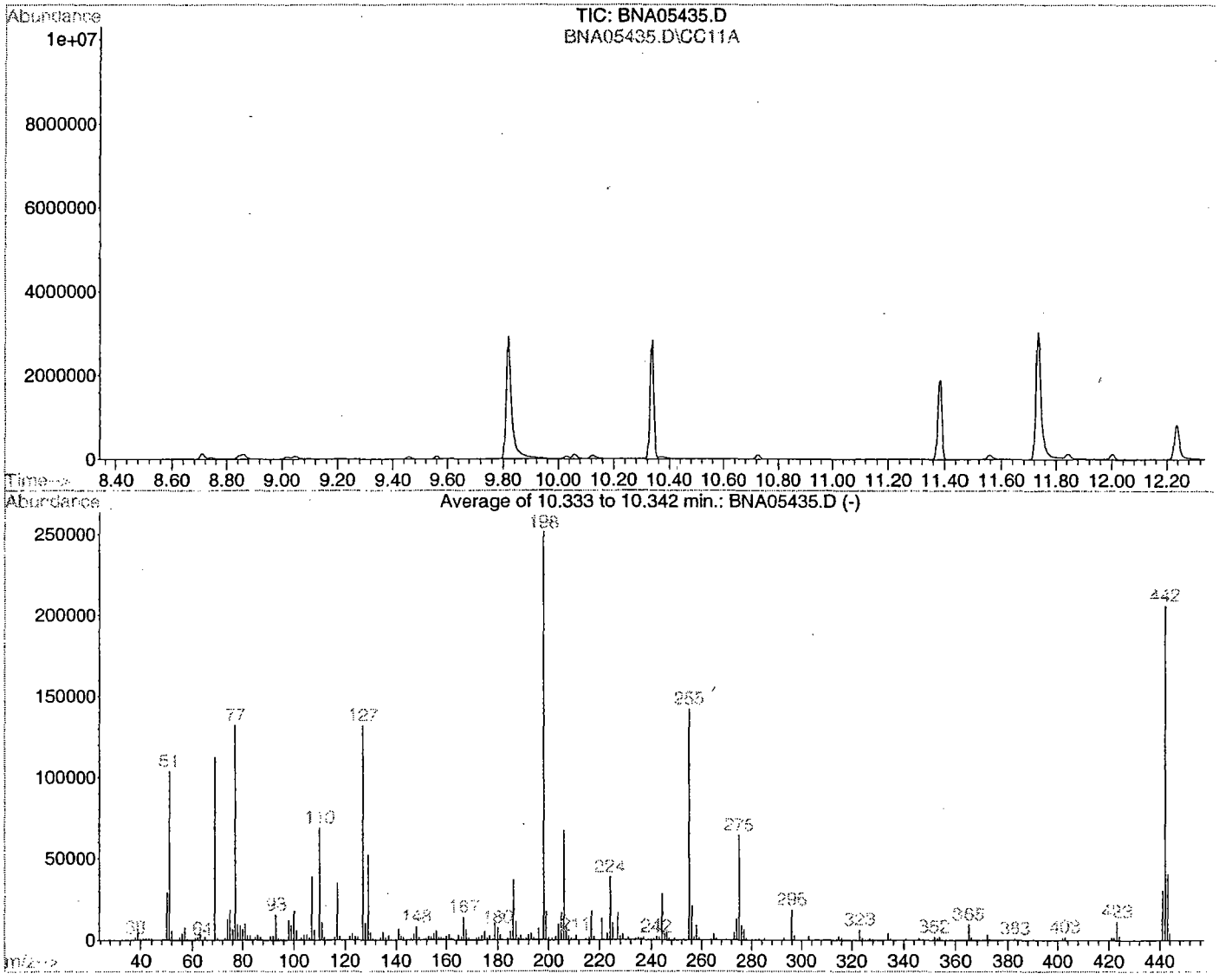
1-Value is % mass 69 2-Value is % mass 442

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	SSTD050	BNA05436.D	6/6/01	15:23
02	1612306 MS	1612306 MS	BNA05437.D	6/6/01	16:17
03	1612306 MSD	1612306 MSD	BNA05438.D	6/6/01	17:01
04	FIELD BLANK	1614502	BNA05449.D	6/7/01	0:54
05	DUPE	1614503	BNA05450.D	6/7/01	1:37
06	233GW	1614504	BNA05451.D	6/7/01	2:20
07	237GW	1614601	BNA05452.D	6/7/01	3:03

DFTPP Tune Report

Data File : D:\DATA\010606\BNA05435.D Vial: 99
Acq On : 6 Jun 2001 2:07 pm Operator: Skelton
Sample : DFTPP Tune Inst : GC/MS Ins
Misc : DFTPP Tune Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Method : C:\HPCHEM\1\METHODS\DFTPP.M (RTE Integrator)
Title : BNA Calibration



AutoFind: Scans 362, 363, 364; Background Corrected with Scan 355

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	41.3	103717	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	44.8	112571	PASS
70	69	0.00	2	1.0	1137	PASS
127	198	40	60	52.6	132128	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	251392	PASS
199	198	5	9	6.9	17466	PASS
275	198	10	30	25.6	64395	PASS
365	198	1	100	3.8	9507	PASS
441	443	1	99	75.4	30757	PASS
442	198	40	100	82.0	206187	PASS
443	442	17	23	19.8	40789	PASS

Evaluate Continuing Calibration Report

Data File : D:\DATA\010606\BNA05436.D Vial: 100
Acq On : 6 Jun 2001 3:23 pm Operator: Skelton
Sample : Sstd050 Inst : GC/MS Ins
Misc : Sstd050 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	68	-0.02
2	T	Pyridine	1.435	1.220	15.0	58	-0.01
3	T	N-nitroso-dimethylamine	0.750	0.649	13.5	59	-0.01
4	S	2-Fluorophenol	1.137	1.079	5.1	64	0.05
5	T	Aniline	1.852	1.798	2.9	65	0.00
6	S	Phenol-d6	1.434	1.419	1.0	67	0.06
7	TCM	Phenol	1.658	1.437	13.3	58	0.06
8	T	bis(2-Chloroethyl)ether	1.201	1.138	5.2	65	-0.01
9	TM	2-Chlorophenol	1.170	1.173	-0.3	68	0.02
10	T	1,3-Dichlorobenzene	1.276	1.334	-4.5	71	-0.02
11	TCM	1,4-Dichlorobenzene	1.304	1.368	-4.9	71	-0.02
12	T	Benzyl alcohol	0.762	0.754	1.0	66	0.00
13	T	1,2-Dichlorobenzene	1.194	1.267	-6.1	72	-0.02
14	T	2-Methylphenol	1.077	1.099	-2.0	69	0.04
15	T	bis(2-chloroisopropyl)ether	1.235	1.070	13.4	59	-0.02
16	T	4-Methylphenol	1.126	1.147	-1.9	68	0.04
17	TPM	n-Nitroso-di-n-propylamine	0.191	0.199	-4.2	69	-0.02
18	T	Hexachloroethane	0.498	0.541	-8.6	73	-0.03
19	I	Naphthalene-d8	1.000	1.000	0.0	74	-0.02
20	S	Nitrobenzene-d5	0.402	0.388	3.5	71	-0.01
21	T	Nitrobenzene	0.403	0.378	6.2	70	-0.02
22	T	Isophorone	0.676	0.630	6.8	69	-0.02
23	TC	2-Nitrophenol	0.184	0.172	6.5	68	-0.02
24	T	2,4-Dimethylphenol	0.339	0.338	0.3	74	0.02
25	T	bis(2-Chloroethoxy)methane	0.399	0.354	11.3	66	-0.02
26	TC	2,4-Dichlorophenol	0.235	0.252	-7.2	75	0.02
27	T	Benzoic Acid	0.226	0.146	35.4#	49#	0.02
28	TM	1,2,4-Trichlorobenzene	0.287	0.287	0.0	74	-0.02
29	T	Naphthalene	0.942	0.925	1.8	72	-0.02
30	T	4-Chloroaniline	0.379	0.343	9.5	65	0.00
31	TC	Hexachlorobutadiene	0.159	0.172	-8.2	80	-0.03
32	TCM	4-Chloro-3-methylphenol	0.289	0.284	1.7	71	0.04
33	T	2-Methylnaphthalene	0.612	0.611	0.2	73	-0.02
34	I	Acenaphthene-d10	1.000	1.000	0.0	78	-0.02
35	TP	Hexachlorocyclopentadiene	0.230	0.257	-11.7	80	-0.03
36	TC	2,4,6-Trichlorophenol	0.314	0.305	2.9	75	0.00
37	T	2,4,5-Trichlorophenol	0.332	0.316	4.8	71	0.03
38	S	2-Fluorobiphenyl	1.113	1.093	1.8	76	-0.02
39	T	2-Chloronaphthalene	0.961	0.920	4.3	75	-0.02
40	T	2-Nitroaniline	0.363	0.331	8.8	69	0.00
41	T	Dimethylphthalate	1.097	1.065	2.9	76	-0.02
42	T	Acenaphthylene	1.553	1.529	1.5	76	-0.02
43	T	2,6-Dinitrotoluene	0.281	0.280	0.4	77	-0.01
44	T	3-Nitroaniline	0.280	0.274	2.1	74	0.01
45	TCM	Acenaphthene	0.980	0.942	3.9	75	-0.02
46	TP	2,4-Dinitrophenol	0.149	0.120	19.5	58	0.00
47	T	Dibenzofuran	1.326	1.289	2.8	75	-0.02
48	TMP	4-Nitrophenol	0.205	0.231	-12.7	91	0.09
49	TM	2,4-Dinitrotoluene	0.359	0.342	4.7	74	0.00
50	T	Diethylphthalate	1.113	1.108	0.4	78	-0.02
51	T	Fluorene	1.107	1.086	1.9	76	-0.02
52	T	4-Chlorophenyl-phenylether	0.529	0.524	0.9	77	-0.02
53	T	4-Nitroaniline	0.290	0.253	12.8	68	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\DATA\010606\BNA05436.D Vial: 100
Acq On : 6 Jun 2001 3:23 pm Operator: Skelton
Sample : Sstd050 Inst : GC/MS Ins
Misc : Sstd050 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	88	-0.02
55	T	4,6-Dinitro-2-methylphenol	0.133	0.104	21.8	66	0.00
56	TC	n-Nitrosodiphenylamine	0.473	0.404	14.6	75	-0.02
57	T	Azobenzene	0.812	0.682	16.0	73	-0.02
58	S	2,4,6-Tribromophenol	0.090	0.080	11.1	77	0.00
59	T	4-Bromophenyl-phenylether	0.182	0.162	11.0	78	-0.02
60	T	Hexachlorobenzene	0.196	0.172	12.2	78	-0.03
61	TCM	Pentachlorophenol	0.116	0.097	16.4	70	0.00
62	T	Phenanthrene	0.973	0.850	12.6	77	-0.02
63	T	Anthracene	0.989	0.868	12.2	77	-0.02
64	T	Di-n-butylphthalate	1.096	0.973	11.2	77	-0.02
65	TC	Fluoranthene	1.019	0.905	11.2	78	-0.02
66	I	Chrysene-d12	1.000	1.000	0.0	90	-0.02
67	T	Benzidine	0.396	0.398	-0.5	91	0.00
68	TM	Pyrene	1.159	0.991	14.5	77	-0.02
69	S	p-Terphenyl-d14	0.797	0.705	11.5	80	-0.02
70	T	Butylbenzylphthalate	0.569	0.496	12.8	78	-0.02
71	T	Benzo[a]anthracene	1.092	0.961	12.0	79	-0.02
72	T	3,3'-Dichlorobenzidine	0.354	0.357	-0.8	91	-0.01
73	T	Chrysene	1.037	0.907	12.5	79	-0.02
74	T	bis(2-Ethylhexyl)phthalate	0.779	0.673	13.6	76	-0.03
75	I	Perylene-d12	1.000	1.000	0.0	87	-0.02
76	TC	Di-n-octylphthalate	1.345	1.249	7.1	77	-0.03
77	T	Benzo[b]fluoranthene	1.114	1.005	9.8	77	-0.02
78	T	Benzo[k]fluoranthene	1.115	0.991	11.1	77	-0.02
79	TC	Benzo[a]pyrene	1.073	0.964	10.2	77	-0.02
80	T	Indeno[1,2,3-cd]pyrene	1.086	0.955	12.1	76	-0.02
81	T	Dibenz[a,h]anthracene	1.104	0.979	11.3	76	-0.04
82	T	Benzo[g,h,i]perylene	1.096	0.923	15.8	73	-0.03

4B

Field Id:

SEMIVOLATILE METHOD BLANK SUMMARY

MB 1864

Lab Name: FMETL Lab Code 13461

Project: UST Case No.: 16145 Location: B 233 SDG No.:

Lab File ID: BNA05407.D Lab Sample ID: MB 1864

Instrument ID: GC/MS Ins Date Extracted: 5/31/01

Matrix: (soil/water) WATER Date Analyzed: 6/5/01

Level: (low/med) LOW Time Analyzed: 17:13

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

	Field Id:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	LCS 1865	LCS 1865	BNA05413.D	6/5/01
02	1612306 MS	1612306 MS	BNA05437.D	6/6/01
03	1612306 MSD	1612306 MSD	BNA05438.D	6/6/01
04	FIELD BLANK	1614502	BNA05449.D	6/7/01
05	DUPE	1614503	BNA05450.D	6/7/01
06	233GW	1614504	BNA05451.D	6/7/01
07	237GW	1614601	BNA05452.D	6/7/01

COMMENTS:

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: FMETL Lab Code 13461

Project: UST Case No.: 16145 Location: B 233 SDG No.: _____

	Field Id:	S1 NBZ #	S2 2FP #	S3 TPL #	TOT OUT
01	MB 1864	60	67	68	0
02	LCS 1865	56	64	70	0
03	1612306 MS	84	95	81	0
04	1612306 MSD	69	79	69	0
05	FIELD BLANK	58	71	28 *	1
06	DUPE	52	62	39	0
07	233GW	54	67	44	0
08	237GW	57	68	43	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 **BNA05413.D** Sample Name **LCS 1865**

Date Acquired **5-Jun-01**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		3.80 ug/L	18.98
62-75-9	N-nitroso-dimethylamine		6.14 ug/L	30.69
62-53-3	Aniline		9.01 ug/L	45.05
111-44-4	bis(2-Chloroethyl)ether		9.18 ug/L	45.89
541-73-1	1,3-Dichlorobenzene		10.72 ug/L	53.61
106-46-7	1,4-Dichlorobenzene		10.68 ug/L	53.39
100-51-6	Benzyl alcohol		8.19 ug/L	40.95
95-50-1	1,2-Dichlorobenzene		11.23 ug/L	56.14
39638-32-9	bis(2-chloroisopropyl)ether		13.43 ug/L	67.14
621-64-7	n-Nitroso-di-n-propylamine		11.78 ug/L	58.89
67-72-1	Hexachloroethane		10.56 ug/L	52.82
98-95-3	Nitrobenzene		11.00 ug/L	54.98
78-59-1	Isophorone		11.75 ug/L	58.74
111-91-1	bis(2-Chloroethoxy)methane		9.87 ug/L	49.33
120-82-1	1,2,4-Trichlorobenzene		11.07 ug/L	55.35
91-20-3	Naphthalene		11.31 ug/L	56.53
106-47-8	4-Chloroaniline		10.17 ug/L	50.84
87-68-3	Hexachlorobutadiene		11.73 ug/L	58.64
91-57-6	2-Methylnaphthalene		12.27 ug/L	61.37
77-47-4	Hexachlorocyclopentadiene		9.48 ug/L	47.40
91-58-7	2-Chloronaphthalene		12.84 ug/L	64.20
88-74-4	2-Nitroaniline		12.15 ug/L	60.76
131-11-3	Dimethylphthalate		14.91 ug/L	74.56
208-96-8	Acenaphthylene		13.33 ug/L	66.67
606-20-2	2,6-Dinitrotoluene		14.84 ug/L	74.19
99-09-2	3-Nitroaniline		13.40 ug/L	66.99
83-32-9	Acenaphthene		13.51 ug/L	67.57
132-64-9	Dibenzofuran		14.28 ug/L	71.39
121-14-2	2,4-Dinitrotoluene		14.58 ug/L	72.89
84-66-2	Diethylphthalate		15.65 ug/L	78.26
86-73-7	Fluorene		14.75 ug/L	73.73
7005-72-3	4-Chlorophenyl-phenylether		14.62 ug/L	73.09
100-01-6	4-Nitroaniline		12.90 ug/L	64.51
86-30-6	n-Nitrosodiphenylamine		13.89 ug/L	69.43
103-33-3	Azobenzene		13.02 ug/L	65.10
101-55-3	4-Bromophenyl-phenylether		13.60 ug/L	68.01
118-74-1	Hexachlorobenzene		14.07 ug/L	70.35
85-01-8	Phenanthrene		14.39 ug/L	71.97
120-12-7	Anthracene		14.14 ug/L	70.72
84-74-2	Di-n-butylphthalate		14.36 ug/L	71.82
206-44-0	Fluoranthene		14.45 ug/L	72.23
129-00-0	Pyrene		14.41 ug/L	72.06
85-68-7	Butylbenzylphthalate		13.32 ug/L	66.59
56-55-3	Benzo[a]anthracene		13.96 ug/L	69.81
218-01-9	Chrysene		12.51 ug/L	62.56
117-81-7	bis(2-Ethylhexyl)phthalate		12.84 ug/L	64.21
117-84-0	Di-n-octylphthalate		15.71 ug/L	78.55
205-99-2	Benzo[b]fluoranthene		16.81 ug/L	84.06
207-08-9	Benzo[k]fluoranthene		17.28 ug/L	86.40
50-32-8	Benzo[a]pyrene		16.23 ug/L	81.13
193-39-5	Indeno[1,2,3-cd]pyrene		18.60 ug/L	93.02
53-70-3	Dibenz[a,h]anthracene		15.24 ug/L	76.19
191-24-2	Benzo[g,h,i]perylene		15.10 ug/L	75.50

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA05437.D** Sample Name **1612306 MS**

Date Acquired **6-Jun-01**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		not detected	#VALUE!
62-75-9	N-nitroso-dimethylamine		7.22 ug/L	36.11
62-53-3	Aniline		2.70 ug/L	13.50
111-44-4	bis(2-Chloroethyl)ether		14.79 ug/L	73.95
541-73-1	1,3-Dichlorobenzene		15.31 ug/L	76.53
106-46-7	1,4-Dichlorobenzene		15.93 ug/L	79.67
100-51-6	Benzyl alcohol		7.15 ug/L	35.77
95-50-1	1,2-Dichlorobenzene		16.46 ug/L	82.28
39638-32-9	bis(2-chloroisopropyl)ether		19.70 ug/L	98.51
621-64-7	n-Nitroso-di-n-propylamine		17.92 ug/L	89.59
67-72-1	Hexachloroethane		14.93 ug/L	74.67
98-95-3	Nitrobenzene		16.07 ug/L	80.35
78-59-1	Isophorone		17.69 ug/L	88.43
111-91-1	bis(2-Chloroethoxy)methane		14.48 ug/L	72.40
120-82-1	1,2,4-Trichlorobenzene		15.77 ug/L	78.87
91-20-3	Naphthalene		16.15 ug/L	80.76
106-47-8	4-Chloroaniline		8.24 ug/L	41.19
87-68-3	Hexachlorobutadiene		15.89 ug/L	79.43
91-57-6	2-Methylnaphthalene		18.29 ug/L	91.47
77-47-4	Hexachlorocyclopentadiene		12.31 ug/L	61.54
91-58-7	2-Chloronaphthalene		18.81 ug/L	94.07
88-74-4	2-Nitroaniline		19.12 ug/L	95.59
131-11-3	Dimethylphthalate		20.64 ug/L	103.19
208-96-8	Acenaphthylene		18.57 ug/L	92.84
606-20-2	2,6-Dinitrotoluene		19.74 ug/L	98.70
99-09-2	3-Nitroaniline		13.46 ug/L	67.29
83-32-9	Acenaphthene		19.56 ug/L	97.79
132-64-9	Dibenzofuran		21.17 ug/L	105.83
121-14-2	2,4-Dinitrotoluene		19.59 ug/L	97.95
84-66-2	Diethylphthalate		21.28 ug/L	106.40
86-73-7	Fluorene		20.21 ug/L	101.06
7005-72-3	4-Chlorophenyl-phenylether		20.35 ug/L	101.76
100-01-6	4-Nitroaniline		11.97 ug/L	59.84
86-30-6	n-Nitrosodiphenylamine		16.78 ug/L	83.92
103-33-3	Azobenzene		16.40 ug/L	82.01
101-55-3	4-Bromophenyl-phenylether		18.34 ug/L	91.68
118-74-1	Hexachlorobenzene		18.31 ug/L	91.55
85-01-8	Phenanthrene		18.80 ug/L	94.02
120-12-7	Anthracene		18.53 ug/L	92.63
84-74-2	Di-n-butylphthalate		19.57 ug/L	97.85
206-44-0	Fluoranthene		18.96 ug/L	94.81
129-00-0	Pyrene		18.46 ug/L	92.30
85-68-7	Butylbenzylphthalate		18.17 ug/L	90.83
56-55-3	Benzo[a]anthracene		18.34 ug/L	91.68
218-01-9	Chrysene		19.33 ug/L	96.66
117-81-7	bis(2-Ethylhexyl)phthalate		18.59 ug/L	92.93
117-84-0	Di-n-octylphthalate		22.26 ug/L	111.31
205-99-2	Benzo[b]fluoranthene		21.39 ug/L	106.94
207-08-9	Benzo[k]fluoranthene		22.55 ug/L	112.74
50-32-8	Benzo[a]pyrene		20.52 ug/L	102.62
193-39-5	Indeno[1,2,3-cd]pyrene		20.71 ug/L	103.54
53-70-3	Dibenz[a,h]anthracene		21.55 ug/L	107.76
191-24-2	Benzo[g,h,i]perylene		20.62 ug/L	103.10

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA05438.D** Sample Name **1612306 MSD**

Date Acquired **6-Jun-01**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		4.06 ug/L	20.29
62-75-9	N-nitroso-dimethylamine		6.48 ug/L	32.41
62-53-3	Aniline		8.42 ug/L	42.09
111-44-4	bis(2-Chloroethyl)ether		12.33 ug/L	61.64
541-73-1	1,3-Dichlorobenzene		13.93 ug/L	69.66
106-46-7	1,4-Dichlorobenzene		14.54 ug/L	72.68
100-51-6	Benzyl alcohol		9.99 ug/L	49.93
95-50-1	1,2-Dichlorobenzene		14.87 ug/L	74.35
39638-32-9	bis(2-chloroisopropyl)ether		16.93 ug/L	84.65
621-64-7	n-Nitroso-di-n-propylamine		14.87 ug/L	74.33
67-72-1	Hexachloroethane		13.69 ug/L	68.44
98-95-3	Nitrobenzene		13.56 ug/L	67.81
78-59-1	Isophorone		14.64 ug/L	73.20
111-91-1	bis(2-Chloroethoxy)methane		12.89 ug/L	64.45
120-82-1	1,2,4-Trichlorobenzene		14.05 ug/L	70.26
91-20-3	Naphthalene		13.90 ug/L	69.48
106-47-8	4-Chloroaniline		10.45 ug/L	52.23
87-68-3	Hexachlorobutadiene		14.66 ug/L	73.30
91-57-6	2-Methylnaphthalene		14.89 ug/L	74.44
77-47-4	Hexachlorocyclopentadiene		10.94 ug/L	54.71
91-58-7	2-Chloronaphthalene		16.38 ug/L	81.92
88-74-4	2-Nitroaniline		16.03 ug/L	80.13
131-11-3	Dimethylphthalate		17.44 ug/L	87.21
208-96-8	Acenaphthylene		16.66 ug/L	83.31
606-20-2	2,6-Dinitrotoluene		17.04 ug/L	85.20
99-09-2	3-Nitroaniline		11.60 ug/L	58.01
83-32-9	Acenaphthene		17.19 ug/L	85.96
132-64-9	Dibenzofuran		17.38 ug/L	86.91
121-14-2	2,4-Dinitrotoluene		16.50 ug/L	82.51
84-66-2	Diethylphthalate		17.81 ug/L	89.05
86-73-7	Fluorene		17.56 ug/L	87.79
7005-72-3	4-Chlorophenyl-phenylether		17.64 ug/L	88.19
100-01-6	4-Nitroaniline		10.68 ug/L	53.39
86-30-6	n-Nitrosodiphenylamine		15.79 ug/L	78.96
103-33-3	Azobenzene		15.06 ug/L	75.30
101-55-3	4-Bromophenyl-phenylether		15.80 ug/L	79.02
118-74-1	Hexachlorobenzene		16.05 ug/L	80.25
85-01-8	Phenanthrene		16.15 ug/L	80.73
120-12-7	Anthracene		15.76 ug/L	78.81
84-74-2	Di-n-butylphthalate		16.54 ug/L	82.69
206-44-0	Fluoranthene		15.99 ug/L	79.96
129-00-0	Pyrene		16.03 ug/L	80.16
85-68-7	Butylbenzylphthalate		15.45 ug/L	77.26
56-55-3	Benzo[a]anthracene		15.38 ug/L	76.91
218-01-9	Chrysene		13.80 ug/L	68.99
117-81-7	bis(2-Ethylhexyl)phthalate		15.23 ug/L	76.16
117-84-0	Di-n-octylphthalate		18.42 ug/L	92.11
205-99-2	Benzo[b]fluoranthene		18.43 ug/L	92.17
207-08-9	Benzo[k]fluoranthene		18.57 ug/L	92.83
50-32-8	Benzo[a]pyrene		17.51 ug/L	87.57
193-39-5	Indeno[1,2,3-cd]pyrene		17.70 ug/L	88.51
53-70-3	Dibenz[a,h]anthracene		17.56 ug/L	87.80
191-24-2	Benzo[g,h,i]perylene		17.15 ug/L	85.75

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: UST Case No.: 16145 Location: B 233 SDG No.:

Lab File ID (Standard): BNA05401.D Date Analyzed: 6/5/01

Instrument ID: GC_BNA_2 Time Analyzed: 12:34

		IS1DCB AREA #	RT #	IS2NAP AREA #	RT #	IS3ANE AREA #	RT #
	12 HOUR STD	665814	10.10	2536589	13.03	1600182	17.26
	UPPER LIMIT	1331628	10.60	5073178	13.53	3200364	17.76
	LOWER LIMIT	332907	9.60	1268295	12.53	800091	16.76
	Field Id:						
01	MB 1864	704839	10.10	2590824	13.03	1465206	17.26
02	LCS 1865	641092	10.10	2432878	13.03	1342984	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: UST Case No.: 16145 Location: B 233 SDG No.:

Lab File ID (Standard): BNA05401.D Date Analyzed: 06/05/01

Instrument ID: GC_BNA_2 Time Analyzed: 12:34

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	2951574	20.87	2681247	27.32	2441712	30.55
	UPPER LIMIT	5903148	20.37	5362494	26.82	4883424	30.05
	LOWER LIMIT	1475787	21.37	1340624	27.82	1220856	31.05
	EPA SAMPLE NO.						
01	MB 1864	2638152	20.86	2484642	27.31	1862593	30.54
02	LCS 1865	2440466	20.86	2276414	27.31	1685391	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

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project: UST Case No.: 16145 Location: B 233 SDG No.:

Lab File ID (Standard): BNA05436.D Date Analyzed: 6/6/01

Instrument ID: GC_BNA_2 Time Analyzed: 15:23

		IS1DCB AREA #	RT #	IS2NAP AREA #	RT #	IS3ANE AREA #	RT #
	12 HOUR STD	651196	10.09	2483925	13.03	1550884	17.26
	UPPER LIMIT	1302392	10.59	4967850	13.53	3101768	17.76
	LOWER LIMIT	325598	9.59	1241963	12.53	775442	16.76
	Field Id:						
01	1612306 MS	663542	10.10	2499834	13.03	1348530	17.26
02	1612306 MSD	637000	10.10	2401089	13.03	1289695	17.26
03	FIELD BLANK	628261	10.10	2433989	13.03	1315023	17.26
04	DUPE	667050	10.10	2538529	13.03	1380759	17.26
05	233GW	614346	10.10	2344970	13.03	1271220	17.26
06	237GW	663264	10.10	2544777	13.03	1380635	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: UST Case No.: 16145 Location: B 233 SDG No.:

Lab File ID (Standard): BNA05436.D Date Analyzed: 06/06/01

Instrument ID: GC_BNA_2 Time Analyzed: 15:23

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	2878471	20.86	2606503	27.31	2359653	30.54
	UPPER LIMIT	5756942	20.36	5213006	26.81	4719306	30.04
	LOWER LIMIT	1439236	21.36	1303252	27.81	1179827	31.04
	EPA SAMPLE NO.						
01	1612306 MS	2444495	20.86	2270787	27.31	1719284	30.54
02	1612306 MSD	2341886	20.85	2180285	27.31	1639472	30.54
03	FIELD BLANK	2372899	20.85	2238792	27.30	1678309	30.54
04	DUPE	2506917	20.85	2371763	27.31	1811442	30.54
05	233GW	2300210	20.85	2187963	27.30	1644845	30.54
06	237GW	2476080	20.85	2375993	27.31	1786438	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\010605\BNA05407.D Vial: 5
Acq On : 5 Jun 2001 5:13 pm Operator: Skelton
Sample : MB 1864 Inst : GC/MS Ins
Misc : 31May01 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Jun 5 17:48 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	704839	40.00	ug/L	-0.01
19) Naphthalene-d8	13.03	136	2590824	40.00	ug/L	-0.02
34) Acenaphthene-d10	17.26	164	1465206	40.00	ug/L	-0.02
54) Phenanthrene-d10	20.86	188	2638152	40.00	ug/L	-0.02
66) Chrysene-d12	27.31	240	2484642	40.00	ug/L	-0.03
75) Perylene-d12	30.54	264	1862593	40.00	ug/L	-0.02
System Monitoring Compounds						
4) 2-Fluorophenol	7.42	112	841800	42.00	ug/L	0.06
Spiked Amount 100.000	Range 21 - 100		Recovery = 42.00%			
6) Phenol-d6	9.51	99	606238	23.99	ug/L	0.08
Spiked Amount 100.000	Range 10 - 94		Recovery = 23.99%			
20) Nitrobenzene-d5	11.43	82	777483	29.88	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery = 59.76%			
38) 2-Fluorobiphenyl	15.67	172	1374583	33.72	ug/L	-0.02
Spiked Amount 50.000	Range 43 - 116		Recovery = 67.44%			
58) 2,4,6-Tribromophenol	19.22	330	365126	61.41	ug/L	0.00
Spiked Amount 100.000	Range 10 - 123		Recovery = 61.41%			
69) p-Terphenyl-d14	24.80	244	1678725	33.92	ug/L	-0.02
Spiked Amount 50.000	Range 33 - 141		Recovery = 67.84%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

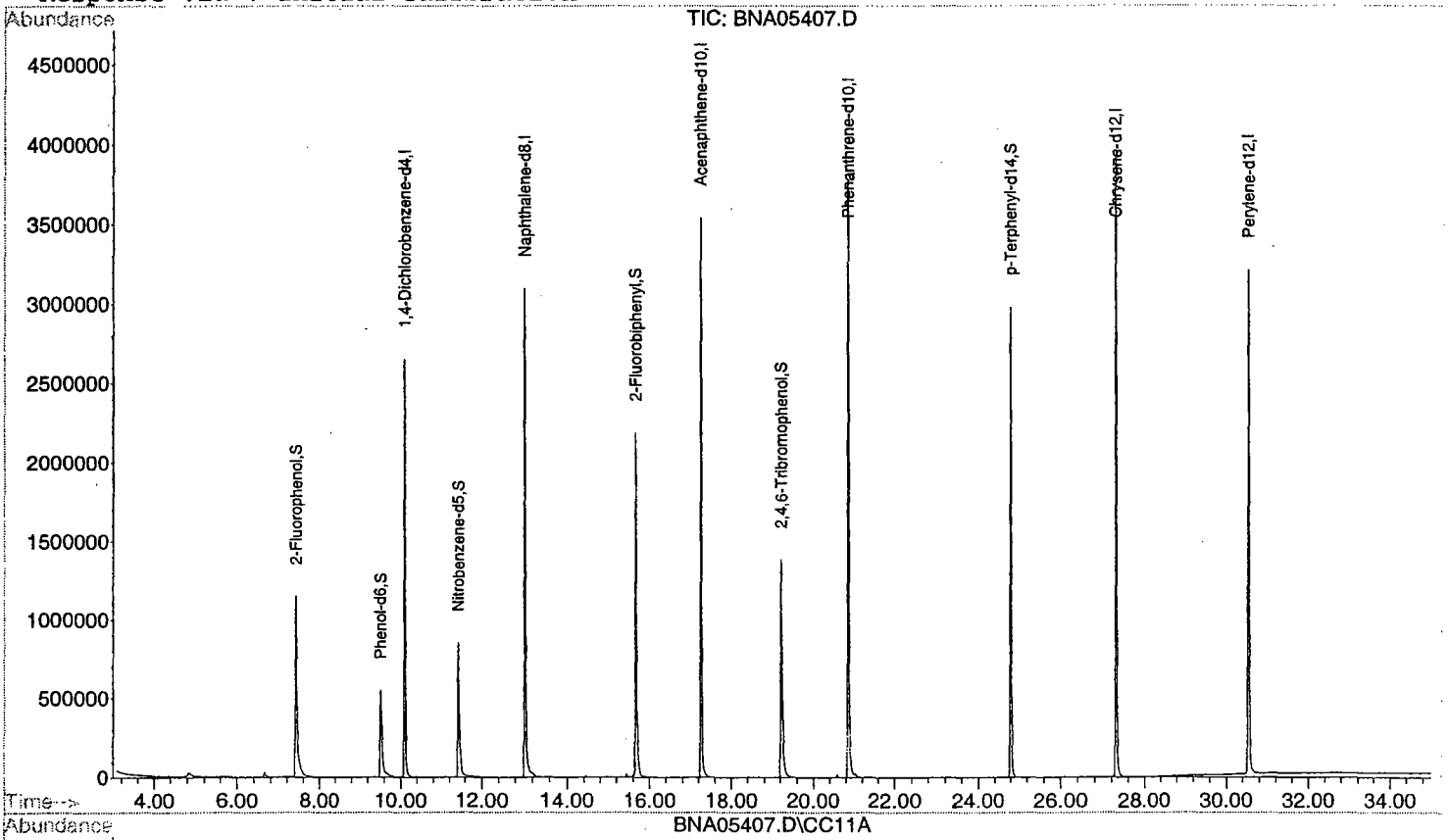
000056

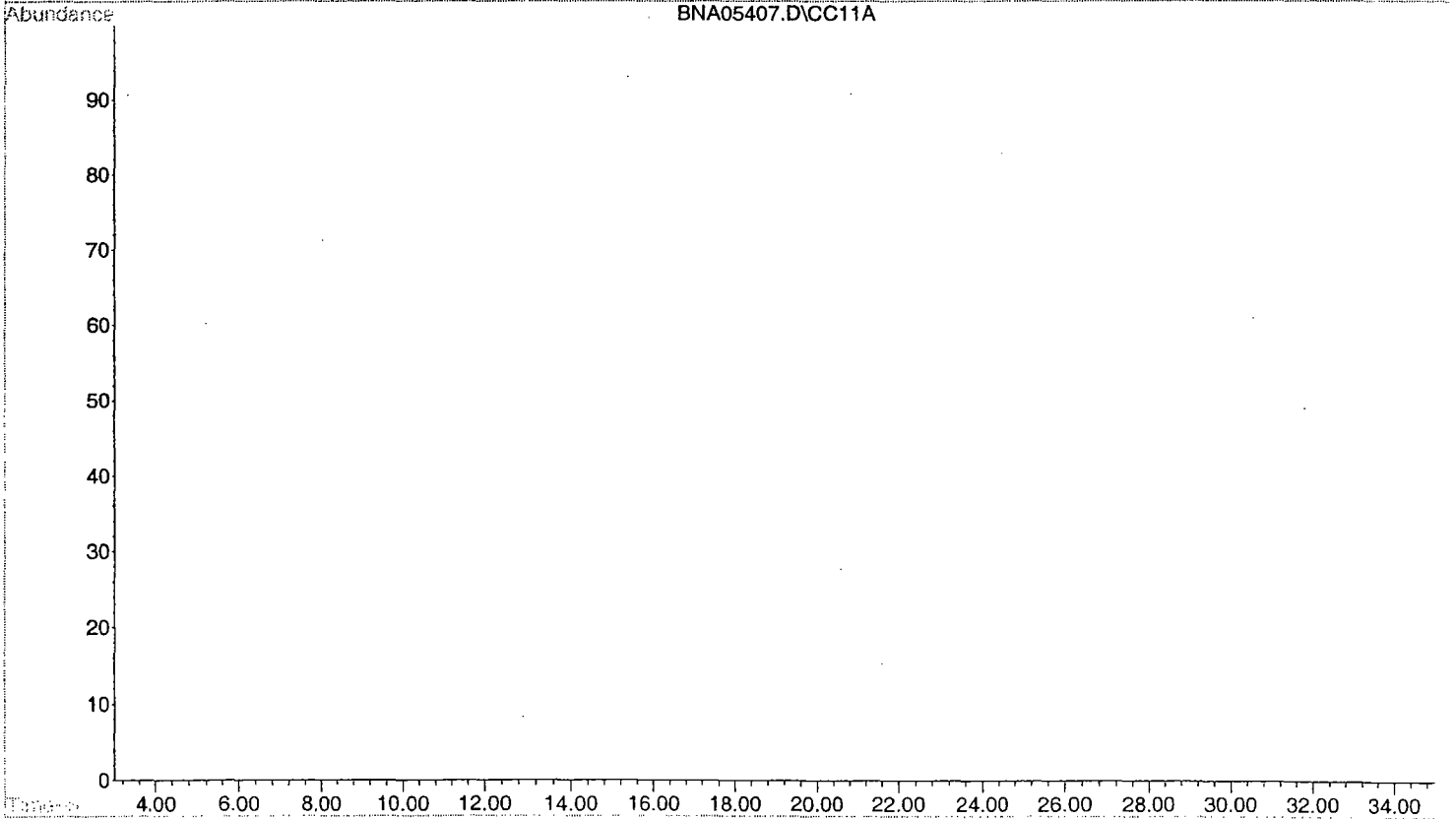
Quantitation Report

Data File : D:\DATA\010605\BNA05407.D
Acq On : 5 Jun 2001 5:13 pm
Sample : MB 1864
Misc : 31May01
MS Integration Params: RTEINT.P
Quant Time: Jun 5 17:48 2001

Vial: 5
Operator: Skelton
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\010606\BNA05452.D Vial: 16
Acq On : 7 Jun 2001 3:03 am Operator: Skelton
Sample : 1614601 Inst : GC/MS Ins
Misc : 237GW Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Jun 7 3:39 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	663264	40.00	ug/L	-0.02
19) Naphthalene-d8	13.03	136	2544777	40.00	ug/L	-0.02
34) Acenaphthene-d10	17.26	164	1380635	40.00	ug/L	-0.02
54) Phenanthrene-d10	20.85	188	2476080	40.00	ug/L	-0.02
66) Chrysene-d12	27.31	240	2375993	40.00	ug/L	-0.03
75) Perylene-d12	30.54	264	1786438	40.00	ug/L	-0.02
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	11.42	82	725651	28.39	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery = 56.78%			
38) 2-Fluorobiphenyl	15.66	172	1311993	34.15	ug/L	-0.03
Spiked Amount 50.000	Range 43 - 116		Recovery = 68.30%			
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	1014304	21.43	ug/L	-0.03
Spiked Amount 50.000	Range 33 - 141		Recovery = 42.86%			
Target Compounds						Qvalue
32) 4-Chloro-3-methylphenol	14.61	107	26571	1.44	ug/L	# 33

(#) = qualifier out of range (m) = manual integration
BNA05452.D M262546.M Thu Jun 21 15:01:07 2001

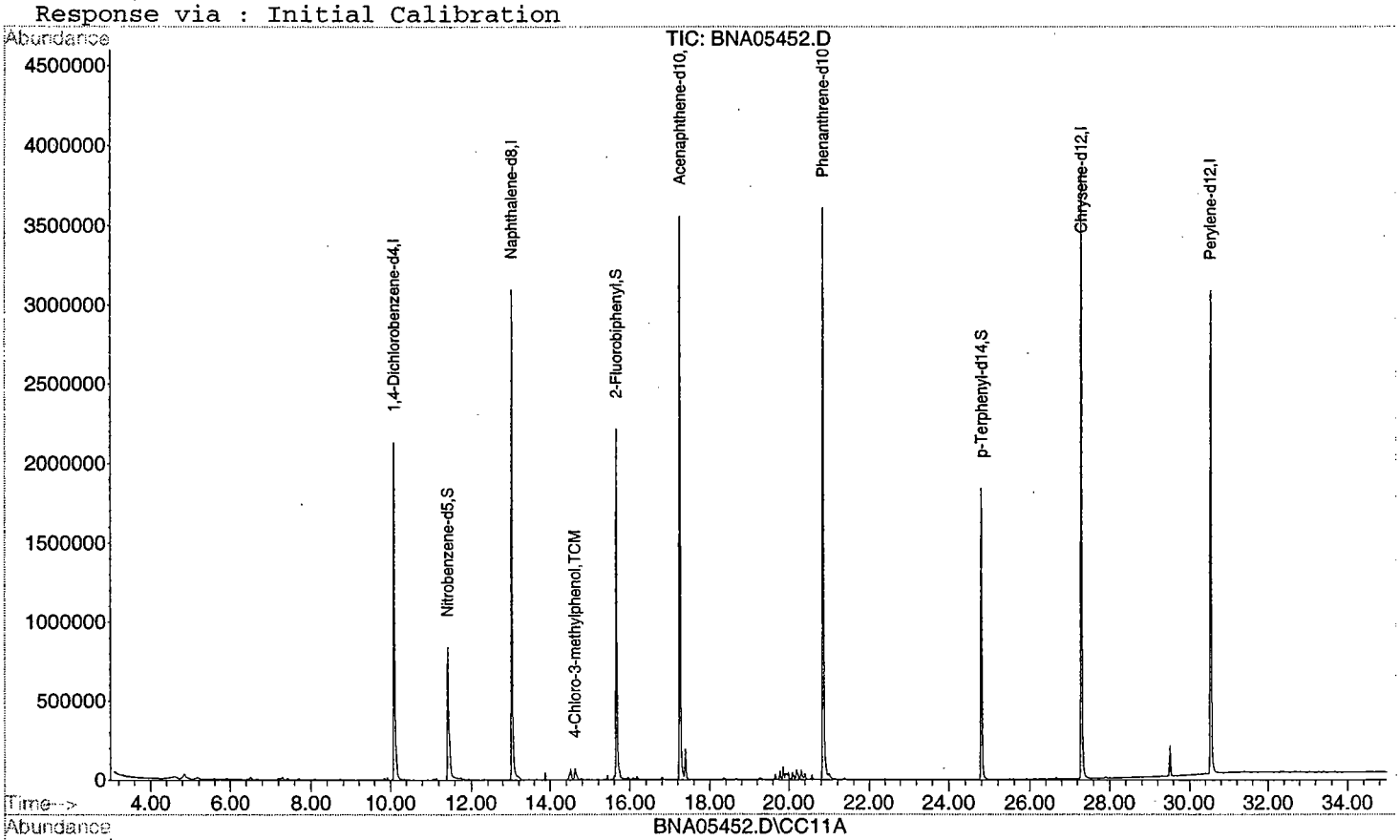
000058

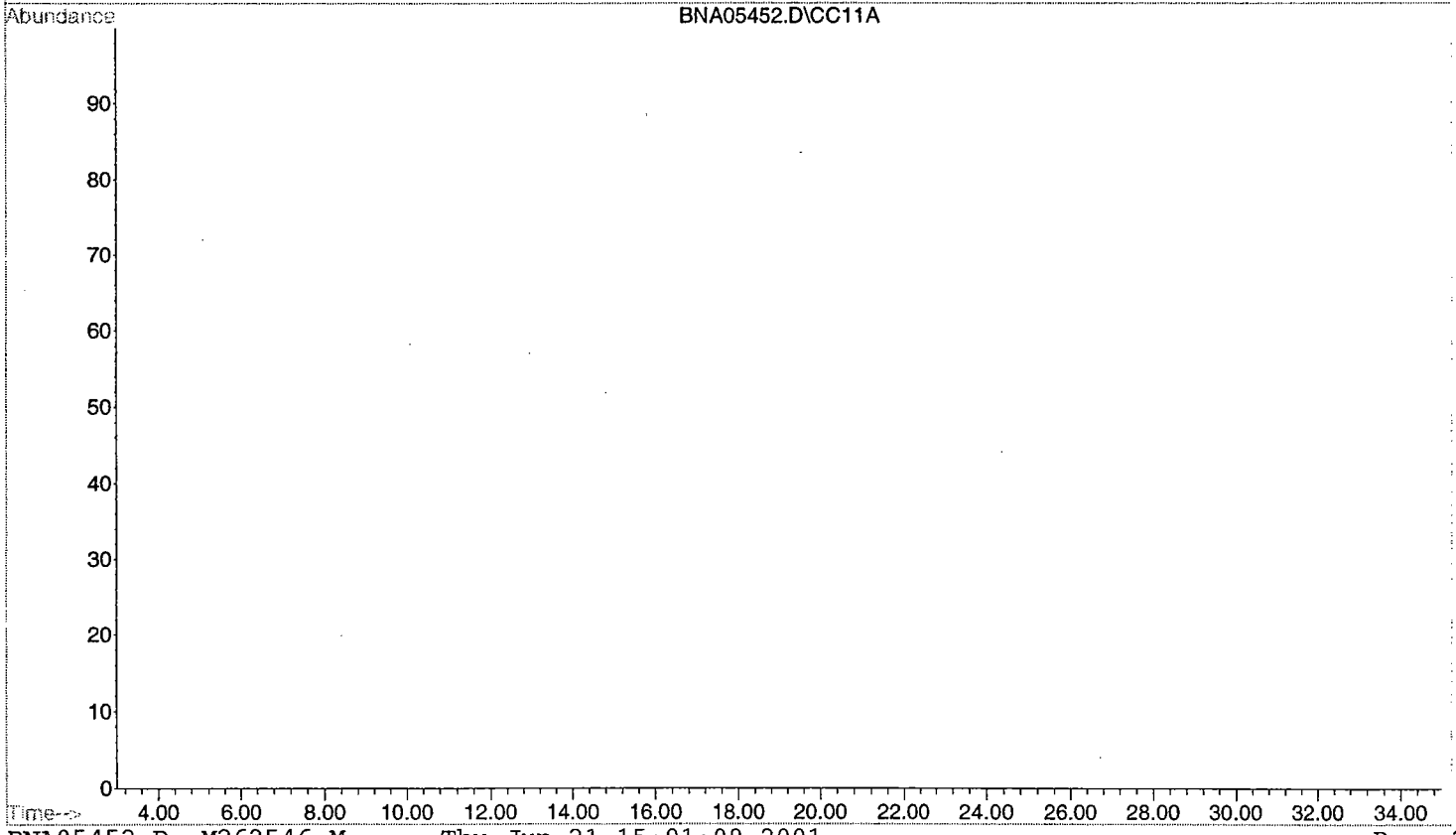
Quantitation Report

Data File : D:\DATA\010606\BNA05452.D
Acq On : 7 Jun 2001 3:03 am
Sample : 1614601
Misc : 237GW
MS Integration Params: RTEINT.P
Quant Time: Jun 7 3:39 2001

Vial: 16
Operator: Skelton
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





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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	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 6/26/03

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