

COPY

United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 2543
Charles Wood West

[Kirtland AFB](#)

NJDEP UST Registration No. 81515-30

January 1999

**UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT**

BUILDING 2543

**CHARLES WOOD-WEST
NJDEP UST REGISTRATION NO. 81515-30**

JANUARY 1998

PREPARED FOR:

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

PREPARED BY:

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PROJECT NO. 2491-308

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EXECUTIVE SUMMARY

UST Closure

On July 29, 1998, a fiberglass 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 Charles Wood-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 81515-30 (Fort Monmouth ID No. 2543), was located southwest of Building 2543. UST No. 81515-30 was a 15,000-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. Following removal, the UST was inspected for corrosion holes or punctures. No holes or punctures were noted in the UST. Groundwater was encountered at a depth of 5.0 feet bgs. No evidence of potentially contaminated soil or groundwater was observed surrounding the tank. Soil samples contained TPHC concentrations ranging from non-detect to 292.95 mg/kg. In response to a site map showing additional tanks in the vicinity of Building 2543, three test pits were dug north and west of Building 2543 at a depth of 6.0 feet bgs. No tanks were found in the area.

Site Restoration

Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with crushed stone, sand, and native backfill and restored to its original condition.

Conclusions and Recommendations

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

No further action is proposed in regard to the closure and site assessment of UST No. 81515-30 at Building 2543.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 81515-30, was closed at Building 2543 at the Charles Wood-West area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on July 29, 1998. Refer to site location map on Figure 1. This report presents the results of the Department of Public Works= (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP. The UST was a fiberglass 15,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 81515-30 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. 81515-30 proceeded under the approval of the NJDEP Bureau of Federal Case Management (NJDEP-BFCM). The Standard Reporting Form and signed Site Assessment Summary form for UST No. 81515-30 are included in Appendices A and B, respectively.

Based on inspecting the UST, field screening of subsurface soils and groundwater, and reviewing analytical results of collected soil samples, the DPW has concluded that no significant historical discharges are associated with the UST or associated piping.

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 2543 is located in the Charles Wood-West area of the Fort Monmouth Army Base. UST No. 81515-30 was located southwest of Building 2543 and appurtenant copper piping ran approximately sixteen (16) feet northeast from the excavation to Building 2543. 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 2543. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Charles Wood area.

Regional Geology

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

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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. Over 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapeczka, 1990).

Local Geology

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

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities by the military. Topographic elevations for the Charles Wood area range from 20 feet above mean seal level (MSL) to 71 feet above MSL.

Hydrogeology

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

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

The lithologic descriptions for these borings described deposits that were primarily fine to coarse, glauconitic sands, with traces of gravel, silt, and clay. These sediments are part of the Hornerstown Marl, from the Tertiary Period (Paleocene Series, approximately 58 to 66 Ma). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce from 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

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

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

Due to the fluvial nature of the overburden deposits (i.e., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. Building 2543 is located approximately 200 feet southeast of an unnamed stream which runs from east to west through the Charles Wood area. Based on the Charles Wood area topography, the groundwater flow in the area of Building 2543 is anticipated to be to the northwest.

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 who were involved with, or were affected by, the decommissioning of the UST system were minimized. All areas, which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing 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

The tank was cleaned one year prior to the UST removal. After the removal of all liquids, the tank was entered through a manway to allow for proper cleaning. Approximately 1000 gallons of liquid from the UST and its associated piping were transported by Lionetti Oil Recovery Co. Inc to the Lionetti Oil Recovery Co. Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest.

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. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. No evidence of contamination was observed. Soil screening was also performed along the piping run associated with the UST closure. No contamination was noted anywhere along the piping length. Groundwater was encountered at a depth of 5.0 feet bgs and no sheen was observed. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported to Mazza and Sons, Inc., Metal Recyclers. See Appendix D for a copy of the UST disposal certificate and Appendix F for photographs of the UST. The transportation of the UST was in compliance with all applicable regulations and laws.

The UST was labeled prior to transport with the following information:

- Site of origin
- Contact person
- NJDEP UST Facility ID number
- Former contents

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on OVA air monitoring and TPHC analysis results from the post-excavation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.

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, a 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: Charles Appleby
Employer: U.S. Army, Fort Monmouth
Phone Number: (732) 532-6224
NJDEP Certification No.: 2056
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
Contact Person: Daniel K. Wright
Phone Number: (908) 532-4359
NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Lionetti Oil Recovery Co. Inc
Contact Person: Charles Clayton
Phone Number: (908) 721-0900
NJDEP Hazardous Waste Hauler No.: S6247

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA 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. Groundwater was encountered at a depth of 5.0 feet bgs and no sheen was observed.

2.3 SOIL SAMPLING

On July 30, 1998, following the removal of the UST, post-excavation soil samples A, B, C, D, E, F, G, H, I, J, and DUP D were collected from a total of ten (10) locations of the UST excavation. Excavation floor samples A and B were collected at a depth of 8.0 feet bgs. Sidewall samples C, D, E, F, G, H, and DUP D were collected at a depth of 4.5 feet bgs. Piping samples I and J were collected at a depth of 2.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids.

U.S. Army personnel in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual performed the site assessment. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using NJDEP *Field Sampling Procedures Manual* (1992) standard sampling procedures. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST, post-excavation soil samples were collected on July 30, 1998, from a total of ten (10) locations. All samples were analyzed for TPHC and total solids. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling locations are shown on Figure 4. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected on July 30, 1998, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Samples contained levels of TPHC ranging in concentration from non-detect to 292.95 mg/kg.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 2543 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

No further action is proposed in regard to the closure and site assessment of UST No. 81515-30 at Building 2543.

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TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 2543, CHARLES WOOD-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 1 of 1

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
A	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
B	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
C	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
D	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
E	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
F	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
G	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
H	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
I	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
J	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
DUP D	7/30/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 2543, CHARLES WOOD-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 1 of 1

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/8.0=	3770.01	7/30/98	7/30/98	Total Solid	--	--	81.04	--	--
				TPHC	190	yes	292.95	10,000	No
B/8.0=	3770.02	7/30/98	7/30/98	Total Solid	--	--	75.84	--	--
				TPHC	204	yes	ND	10,000	No
C/4.5=	3770.03	7/30/98	7/30/98	Total Solid	--	--	77.19	--	--
				TPHC	201	yes	224.27	10,000	No
D/4.5=	3770.04	7/30/98	7/30/98	Total Solid	--	--	82.71	--	--
				TPHC	187	yes	ND	10,000	No
E/4.5=	3770.05	7/30/98	7/30/98	Total Solid	--	--	80.83	--	--
				TPHC	188	yes	ND	10,000	No
F/4.5=	3770.06	7/30/98	7/30/98	Total Solid	--	--	76.57	--	--
				TPHC	200	yes	ND	10,000	No
G/4.5=	3770.07	7/30/98	7/30/98	Total Solid	--	--	81.81	--	--
				TPHC	185	yes	ND	10,000	No
H/4.5=	3770.08	7/30/98	7/30/98	Total Solid	--	--	74.80	--	--
				TPHC	203	yes	284.69	10,000	No
I/2.0=	3770.09	7/30/98	7/30/98	Total Solid	--	--	83.16	--	--
				TPHC	187	yes	ND	10,000	No
J/2.0=	3770.10	7/30/98	7/30/98	Total Solid	--	--	83.68	--	--
				TPHC	185	yes	ND	10,000	No
DUP D/4.5=	3770.11	7/30/98	7/30/98	Total Solid	--	--	84.25	--	--
				TPHC	176	yes	ND	10,000	No

Note:

* Total Solid results are expressed as a percentage.

** NJDEP Residential Direct Contact soil cleanup criteria for total organics

-- Not detected above stated sample quantitation limit

TPHC Total Petroleum Hydrocarbons

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

Fig. 13

Fig. 14

Fig. 15

Fig. 16

Fig. 17

Fig. 18

Fig. 19

FIGURES

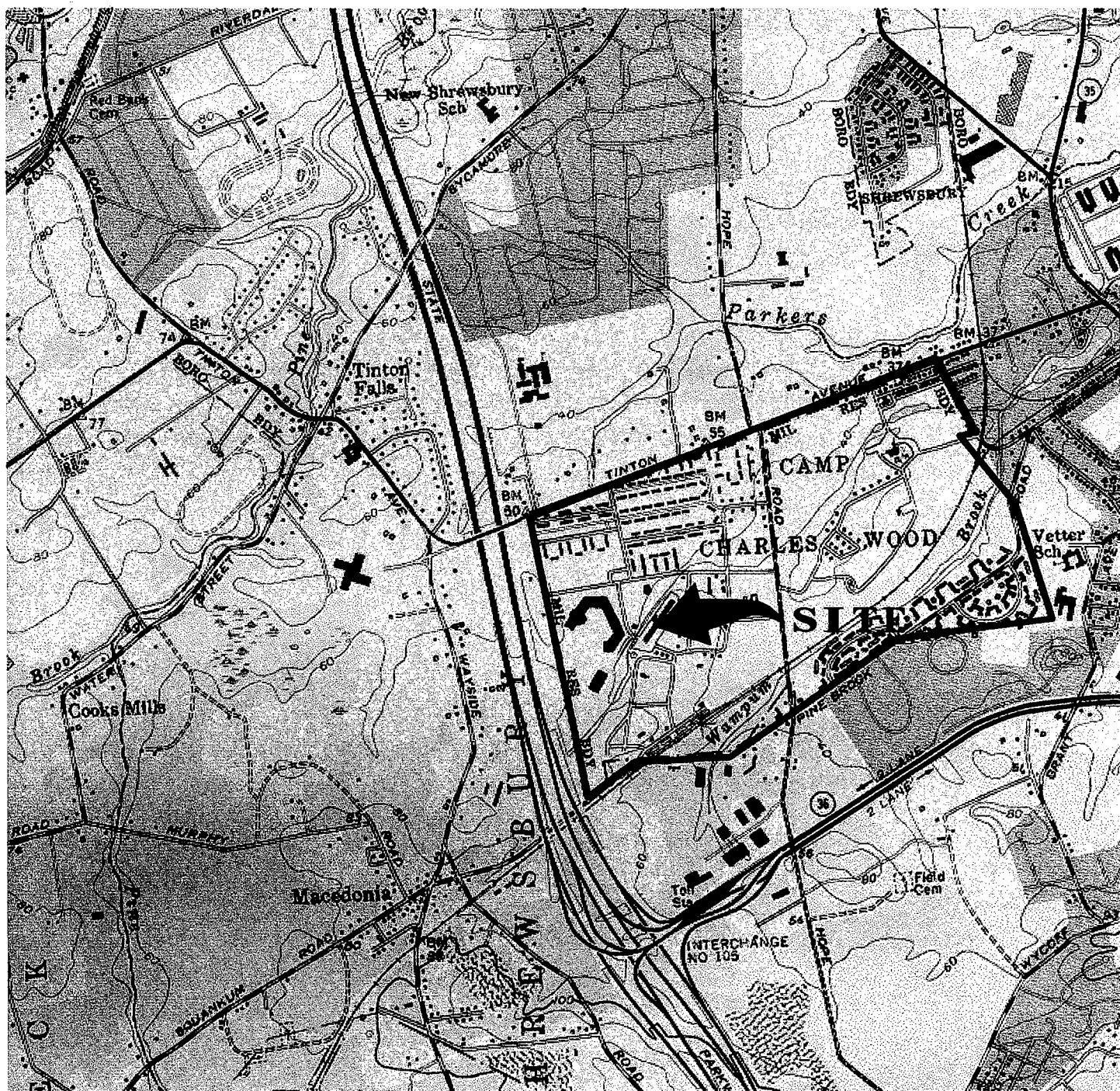


FIGURE 1

LOCATION MAP

Building 2543
Charles Wood
Fort Monmouth Army Base
Monmouth County, NJ

VERSAR

Engineers, Managers, Scientists, & Planners
Bristol, PA

Scale: 1" = 2000'

Date: JULY 1998

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

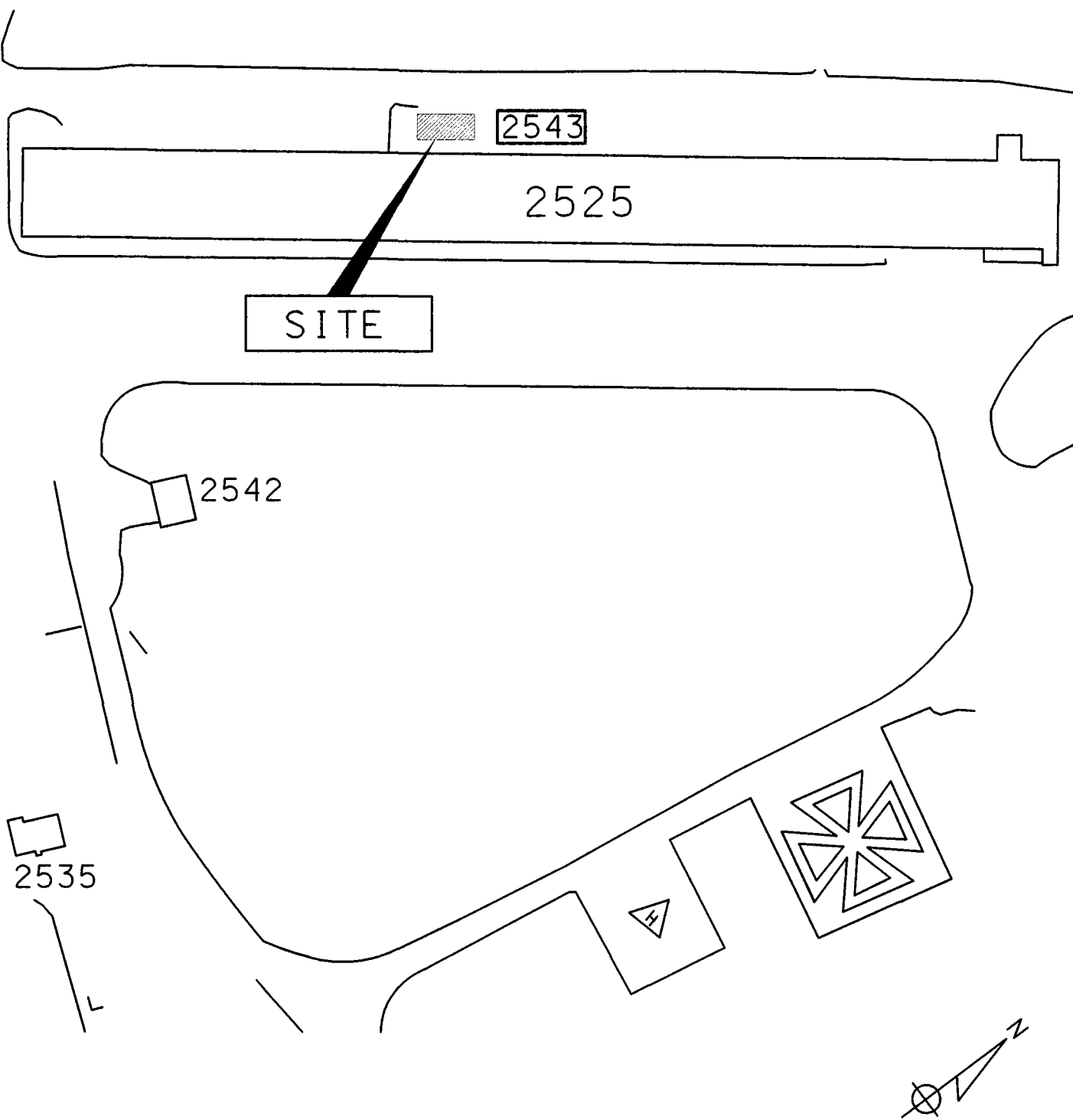
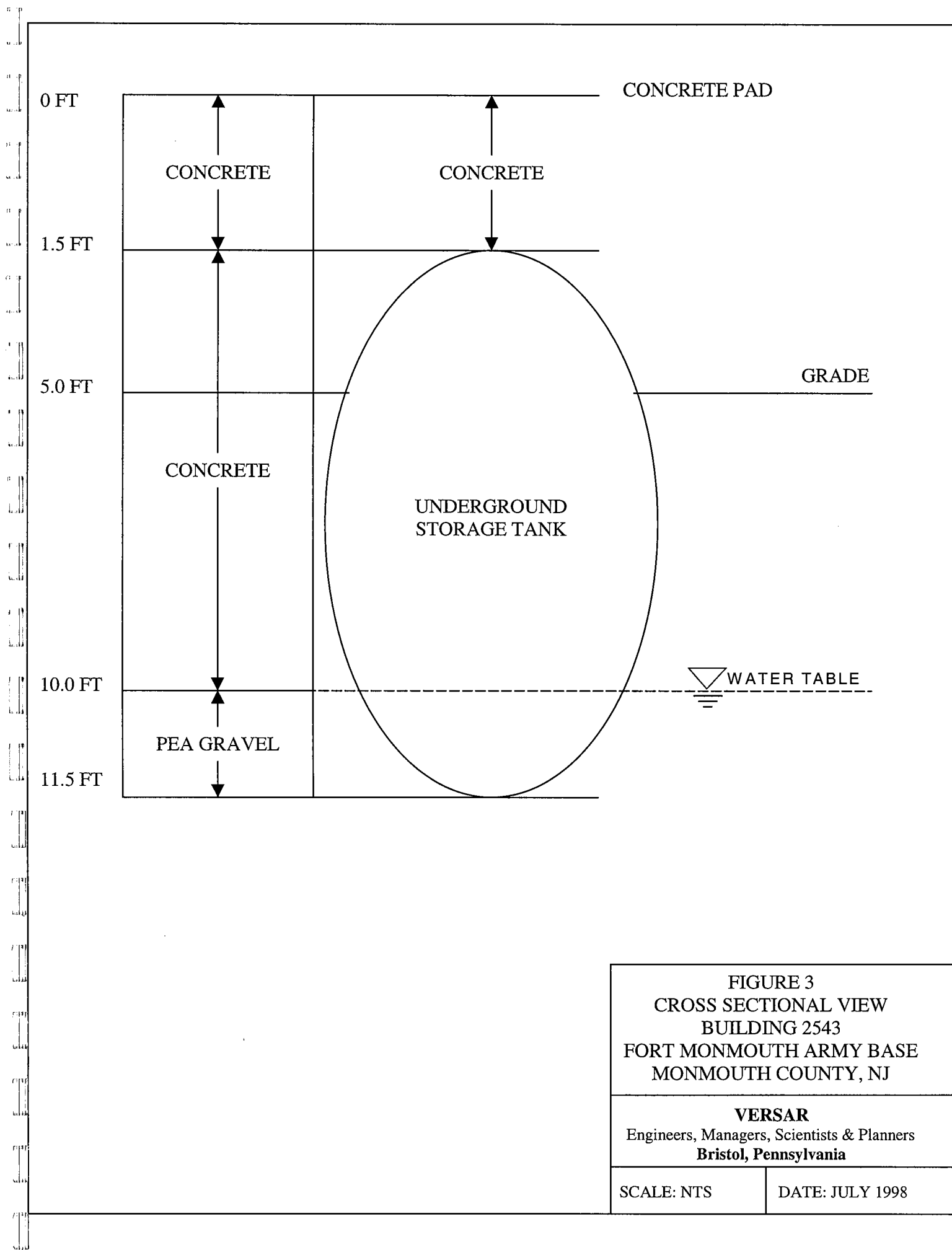


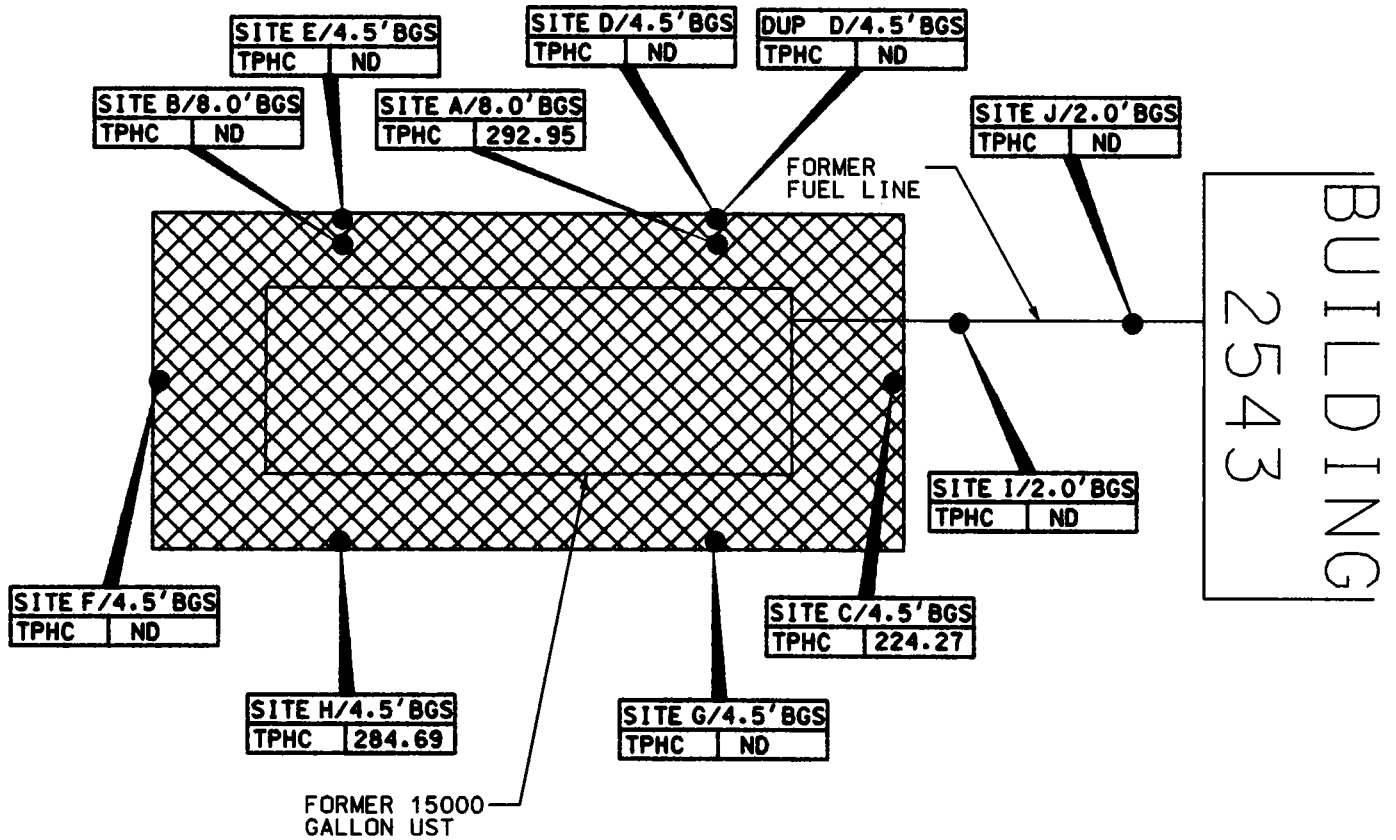
FIGURE 2
SITE MAP
BUILDING 2543
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=100'	DATE: JULY 1998
----------------	-----------------

2543 2429 FIG2





LEGEND

- SOIL SAMPLE LOCATION
(JULY 30, 1998)
- ▨ LIMIT OF EXCAVATION
(JULY 30, 1998)

NOTES:

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

FIGURE 4
SOIL SAMPLING LOCATION MAP
BUILDING 2543
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=10'

DATE: JULY 1998

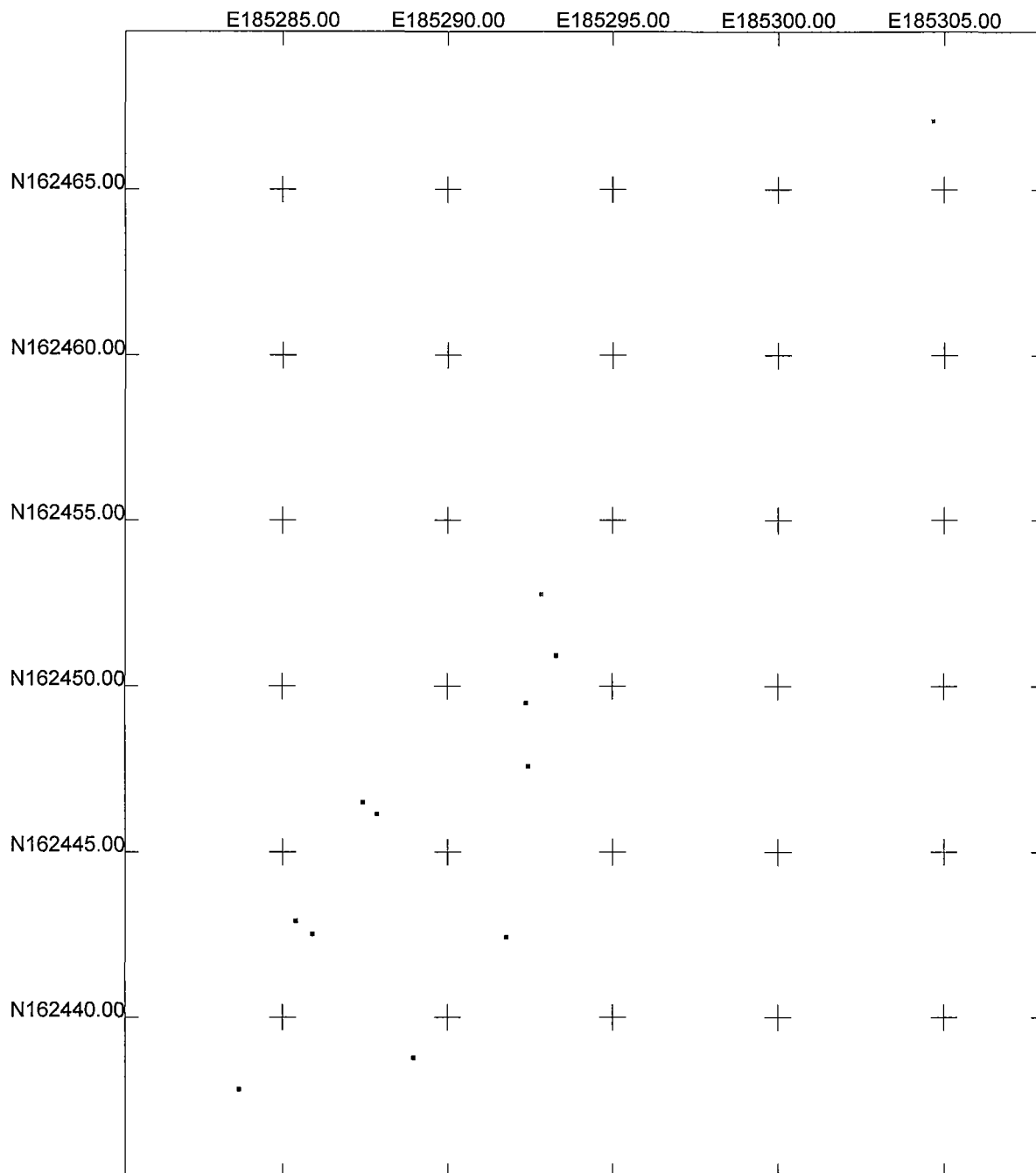


Figure 4 GPS Sample Location Map

US State Plane 1983
New Jersey (NY East) 2900
NAD 1983 (Conus)



Scale 1:200
0 6.000
Meters

r012517a2543.cor
1/28/1999
Pathfinder Office
 **Trimble**

Figure 4 GPS Sample Location Point Data

US State Plane 1983 NJ (NY East) 2900 NAD 1983 (CONUS)

(In Meters)

Sample Points

<u>Location/Desc.</u>	<u>Y Coord. (Northing)</u>	<u>X Coord. (Easting)</u>
2543 I	162449.516	185292.356
2543 J	162450.953	185293.255
2543 C	162447.602	185292.416
2543 G	162442.455	185291.747
2543 H	162438.804	185288.93
2543 F	162437.846	185283.662
2543 A	162446.162	185287.831
2543 D	162446.507	185287.403
2543 B	162442.545	185285.864
2543 E	162442.946	185285.373

Reference Points

<u>Location/Desc.</u>	<u>Y Coord. (Northing)</u>	<u>X Coord. (Easting)</u>
2543 CORN	162452.806	185292.803
2543 CORN	162467.112	185304.639

APPENDIX A

NJDEP-STANDARD REPORTING FORM

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF APPLICABILITY AND COMPLIANCE
Registration and Billing Unit
CN 028, Trenton, N.J. 08625-0028
1-609-984-3156

COPY

FOR STATE USE ONLY

Check In ☐ Yes ☐

STATUS COMCODE
Active Inactive

☐ ☐ ☐ ☐ ☐

UNDERGROUND STORAGE TANK
FACILITY QUESTIONNAIRE

FACILITY UST # 0081515

Bldg 2543

Completion of this Registration Questionnaire will satisfy the registration requirements of the Underground Storage of Hazardous Substances Act, N.J.S.A. 58:10A-21, and the Registration and Billing Regulations N.J.A.C. 7:14B-2.

[Check appropriate box(es)]

- A. ☐ Is this a registration of a proposed or newly installed underground storage tank? (This form must be filed at least 30 days prior to operation)
B. ☐ Is this a registration of an existing underground storage tank not presently registered?
C. ☒ Is this a correction or amendment to an existing facility registration? UST # 0081515
D. ☐ There have been no changes to the facility registration since last submittal. UST # _____ (Go to certification page for signatures)

If "C" is checked above, please check the appropriate type of change(s) below

- | | | |
|--|---|--|
| ☐ Facility Name and/or Address Change | ☐ Type of Product(s) Stored | ☐ Financial Responsibility Change |
| ☐ Owner Name and/or Address Change | ☐ Spills, Leaks, Releases | ☐ Substantial Modification(s) |
| ☐ Facility Operator and/or Address Change | ☐ Tank(s) and/or Piping Changes | ☐ Sale or Transfer (Complete Questions 4,5,6 & 13D) |
| ☐ Owner Contact Person Change | ☒ Closure (Complete Question #13) | ☐ Other (please specify) |

SECTION A - GENERAL FACILITY INFORMATION

1. Facility Name Charles Wood West

2. Facility Location Ft. Monmouth

NUMBER AND STREET

CITY OR MUNICIPALITY

COUNTY

N.J.
STATE

ZIP CODE

BLOCK

LOT

3. Facility Operator _____

PERSON OR TITLE

Contact
Tele. No. _____
(Area Code) (Extension)

Operator Address (if different than #2) _____

NUMBER AND STREET

CITY OR MUNICIPALITY

STATE

ZIP CODE

4. Tank Owner _____

5. Tank Owner Address _____

NUMBER AND STREET

CITY OR MUNICIPALITY

STATE

ZIP CODE

Contact Person Charles Appleby

(Tank Owner)

Contact 732 532 6224
Tele. No. (Area Code) (Extension)

7. EPA ID # ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Total number of regulated underground storage tanks at facility ☐ ☐ ☐ (Complete Section B for each tank)

Aug. 1873
Mass.

- SECTION B - SPECIFIC TANK INFORMATION**

1. Tank Identification Number	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
2. CAS Number (hazardous substances only)					
3. Date Tank Installed (Month/Day/Year)	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
4. Tank Size (gallons)					
5. Tank Contents (Mark one "X" for each tank)					
A. Lead gasoline					
B. Unleaded gasoline					
C. Alcohol endriched gasoline					
D. Light diesel fuel (No. 1-D)					
E. Medium diesel fuel (No. 2-D)					
F. Waste Oil					
G. Kerosene (No. 1)					
H. Home heating oil (No. 2)					
J. Heating oil (No. 4)					
K. Heavy heating oil (No. 6)					
L. Aviation fuel					
M. Motor oil					
N. Lubricating oil					
P. Sewage					
Q. Sewage sludge					
R. Other hazardous substances (specify)					
S. Hazardous waste (specify ID number)					
T. Mixtures (please specify)					
U. Emergency spill tank (specify substance)					
V. Other petroleum products (please specify)					
W. Other (please specify)					
6. Tank & Piping Construction (Mark one each for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Bare Steel					
B. Cathodically protected steel					
C. Fiberglass-coated steel					
D. Fiberglass-reinforced plastic					
E. Internally lined					
F. Other (please specify)					
7. Tank & Piping Structure (Mark one each for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Single wall					
B. Double wall					
C. Other (please specify)					
8. Type of Monitoring/Detection System (Mark all that apply for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Statistical Inventory Reconciliation					
B. Manual Tank Gauging					
C. Inventory Control					
D. Interstitial					
E. Precision Test					
F. Ground water observation wells					
G. Vapor observation wells					
H. In-tank (automatic) monitoring gauge					
J. Periodic Tank Test					

Bldg. 2543

Tank Identification Number	TANK NO. [][][][]	TANK NO. [][][][]	TANK NO. [][][][]	TANK NO. [][][][]	TANK NO. [][][][]
8. Type of Monitoring/Detection System	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
K. None	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
L. Other (please specify)					
9. Overfill Protection (tank only) (Mark one X for each tank)					
A. Yes	☐	☐	☐	☐	☐
B. No	☐	☐	☐	☐	☐
10. Spill Containment Around Fill Pipe (Mark one X for each tank)					
A. Yes	☐	☐	☐	☐	☐
B. No	☐	☐	☐	☐	☐
11. Tank Status (Mark one X for each tank)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. In-use	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Empty less than 12 months	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Empty 12 months or more	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Emergency spill tank (sump)	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Emergency backuo generator tank	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Abandoned in Place	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. Removed	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
H. Other (please specify)					
12. If box 11B, C, or D above has been marked, indicate the estimated date last used (month/day/year)	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]
13. Closure Information - Tank ID No. <i>0081515 - Bldg. 2543</i>	TANK NO. [][][][]	TANK NO. [][][][]	TANK NO. [][][][]	TANK NO. [][][][]	TANK NO. [][][][]
	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
A. Date abandoned in place	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]
B. Date taken temporarily out of service	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]
C. Date removed	<i>07/29/1998</i>	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]
D. Date of Sale or Transfer	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]
E. TMS # (if applicable)	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]
F. ISRA # (if applicable)	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]	[][][][][][][]

SECTION C - FINANCIAL RESPONSIBILITY

Does this facility have a Financial Responsibility Assurance Mechanism as required in 40 CFR 280? ☐ YES ☐ NO
Please list the appropriate financial information below:

Type	Carrier / Issuing Agency
<u> </u>	<u> </u>
Effective Date <u> </u> / <u> </u> / <u> </u>	Policy Number <u> </u>
Expiration Date <u> </u> / <u> </u> / <u> </u>	\$ Amount <u> </u>

SECTION D - MONITORING SYSTEMS

Does this facility have a release detection monitoring system which is in compliance with N.J.A.C. 7:14B-6? ☐ YES ☐ NO
If "No", please be aware that the facility must meet the appropriate deadline. (See "Dates to Know" on Page 4)

SECTION E - RECORDKEEPING/COMPLIANCE

Please answer all the questions in this section on a facility basis. Any one tank not in compliance requires a "NO" answer for the entire facility.

- | | |
|---|--|
| 1. Does this facility have cathodic protection systems for all steel tanks and piping? | ☐ YES ☐ NO |
| If "Yes", are the systems properly operated and maintained pursuant to N.J.A.C. 7:14B-6? | ☐ YES ☐ NO |
| 2. Are the performance claims and documentation of monitoring systems maintained by the owner or operator pursuant to N.J.A.C. 7:14B-5? | ☐ YES ☐ NO |
| 3. Are the proper monitoring, testing, sampling, repair and inventory records kept on-site pursuant to N.J.A.C. 7:14B-5 and 6? | ☐ YES ☐ NO |
| 4. Is the proper Release Response Plan kept on-site pursuant to N.J.A.C. 7:14B-5? | ☐ YES ☐ NO |
| 5. Does the facility have spill and over fill protection systems pursuant to N.J.A.C. 7:14B-4? | ☐ YES ☐ NO |
| 6. Have all Fill Ports been permanently marked as per API #1637 pursuant to N.J.A.C. 7:14B-5? | ☐ YES ☐ NO |

IMPORTANT INFORMATION

FEE: Please make checks payable to: "Treasurer, State of New Jersey". Use of the enclosed return envelope will expedite processing. Registration and Billing Schedule can be found in N.J.A.C. 7:14B.
All Initial Registration fees are \$100 per facility.

PENALTY: Failure by owner or operator of a regulated underground storage tank to comply with any requirement of the State UST Act or regulations may result in the penalties set forth in N.J.S.A. 58:10A-10.

EMERGENCY: If a discharge or spill occurs, the NJDEP Hotline at (609) 292-7172 must be called IMMEDIATELY - 24 hours a day.

UPGRADE EXEMPTION: Residential heating oil underground storage tanks are exempt from all upgrade requirements.

DATES TO KNOW (critical deadlines)

December 22, 1988 — All new federally regulated tank systems must have cathodic protection and spill/overfill protection.
September 4, 1990 — All new State-only regulated tank systems must have cathodic protection and spill/overfill protection.
December 22, 1990 — All federally regulated piping must have begun leak detection.
February 19, 1993 — All federally regulated tank systems must maintain financial responsibility assurance.
December 22, 1993 — All federally regulated tank systems must have begun leak detection.
December 22, 1998 — All regulated tanks shall install cathodic protection and spill/overfill protection.

CERTIFICATIONS

NOTE: IF THE PERSON SIGNING CERTIFICATION NO. 2 IS THE SAME AS THE PERSON SIGNING CERTIFICATION NO. 1, THEN CERTIFICATION NO. 2 NEED NOT BE SIGNED. (If different persons are required to sign No. 1 and No. 2, then they must do so.)

CERTIFICATION NO. 1:

Must be signed by the highest ranking individual at the facility with overall responsibility

"I certify under penalty of law that the information provided in this document is true, accurate and complete to the best of my knowledge, information and belief. I am aware that there are significant civil and criminal 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."

Mr. James C. T.
(Typed / Printed Name)
Director of Public Works
(Title)

[Signature]
(Signature)
7/31/98
(Date)

CERTIFICATION NO. 2:

Must be signed as follows:

- For a corporation, by a principal executive officer of at least the level of vice president
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively
- For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official
- For persons other than indicated above, by the person with legal responsibility for the site

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information. I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil and criminal 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."

NA
(Typed / Printed Name)

(Title)

(Signature)

(Date)

CERTIFICATION NO. 3:

If applicable, must be signed by the individual who is certified to perform services.

"I certify under penalty of law that the information provided in this document is true, accurate and complete to the best of my knowledge, information and belief. I am aware that there are significant civil and criminal 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."

Charles Appleby Enviro. Prot. Spec.
(Typed / Printed Name) (Title)
U.S. Army
(Name of Firm, if applicable)

[Signature] 7/31/98
(Signature) (Date)
2056
(N.J. Certification Number)

USE SIGN & DATE

APPENDIX B

SITE ASSESSMENT SUMMARY

Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name : U.S. Army Fort Monmouth New JerseyFacility Street Address : Directorate of Public Works Building 173Municipality: Tinton Falls County : MonmouthBlock: _____ 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

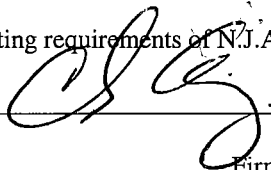
Report (SIR) \$500 Fee

☐ Remedial Investigation

Report (RIR) \$1000 Fee

☒ NA – Federal Agreement**D.** (Complete all that apply)• Assigned Case Manager : Ian Curtis, Federal Case Manager• UST Registration Number : 81515-30 (7 digits)• Incident Report Number • • • (10 or 12 digits) • • • • Tank Closure Number : Federal Case Manager**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: Charles Appleby Signature:  UST Cert. No.: 2056Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: NA - U.S. ArmyFirm Address: Directorate of Public Works Building 173 City: Fort MonmouthState: New Jersey Zip: 07703 Telephone Number : 732-532-6224

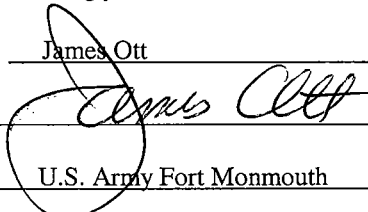
(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 et seq.)

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 WorksSignature: Company Name: U.S. Army Fort Monmouth Date: 3/25/99

APPENDIX C

WASTE MANIFEST



RD. 1, BOX 5A - OLD BRIDGE, NJ 08857

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	NHZ 005417	
3. Generator's Name and Mailing Address U.S. Army Communications Electronics Command Main Post c/o Joseph Fallon Bldg. 173 ATTN: SELF-M-PW-EV Fort Monmouth, N.J. 07703						
4. Generator's Phone (908) 532-0989						
5. Transporter 1 Company Name LIONETTI OIL RECOVERY CO INC		6. US EPA ID Number NJ D 0 8 4 0 4 4 0 6 4		A. Transporter's Phone 908 721-0900		
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter's Phone		
9. Designated Facility Name and Site Address LIONETTI OIL RECOVERY CO INC DBA LORCO PETROLEUM SVCS RUNYON&CHEESEQUAKE RDS OLD BRIDGE, NJ 08857		10. US EPA ID Number NJ D 0 8 4 0 4 4 0 6 4		C. Facility's Phone 908 721-0900		
11. Waste Shipping Name and Description				12. Containers	13. Total Quantity	14. Unit Wt/Vol
				No.	Type	
a. PETROLEUM OIL (PETROLEUM OIL) COMBUSTIBLE LIQUID UN1270 PGIII				0 0 1	T T	X 1.125 G
b.						
c.						
d.						
D. Additional Descriptions for Materials Listed Above T, L PETROLEUM OIL 80% WATER 20%				E. Handling Codes for Wastes Listed Above T04 FILTRATION		
15. Special Handling Instructions and Additional Information 24 HR EMERGENCY RESPONSE#(908) 721-0900 DECAL# 2672 ERG#128 DEXSIL TEST KIT RESULTS 4,000 PPM MANIFEST USED FOR TRACKING PURPOSES ONLY						
16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.						
Printed/Typed Name EUGENE W LESINSKI		Signature 		Month Day Year 06 12 97		
17. Transporter 1 Acknowledgement of Receipt of Materials						
Printed/Typed Name Richard Dirienzo		Signature 		Month Day Year 06 12 97		
18. Transporter 2 Acknowledgement of Receipt of Materials						
Printed/Typed Name		Signature		Month Day Year		
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.						
Printed/Typed Name R. L. Bell		Signature 		Month Day Year 06 12 97		

GENERATOR

TRANSPORTER

FACILITY

ORIGINAL - RETURN TO GENERATOR

APPENDIX D

UST DISPOSAL CERTIFICATE

MARPAL DISPOSAL

(908) 542-2348

P.O. BOX 188
LINCROFT, NEW JERSEY 07738

REFER TO ACCOUNT #

WHEN INQUIRING ABOUT BILLING.

TVS
P.O. Box 60
Fort Monmouth, NJ 07703

Bldg. 2525

(2543)

INVOICE NO. 2750	NOTICE: Please be advised that the customer will be held responsible for repairs to containers which have been damaged by fire or negligence.					PREVIOUS BALANCE
TYPE OF SERVICE	MONTHLY SERVICE CHARGE	SERVICE UNITS	PER UNIT SERVICE	ADDITIONAL HANDLING CHARGE	MAINTENANCE CHARGE	SERVICE SUB-TOTAL
OTHER						
IN BOX	7/30/98-8/28/98	20 yard roll-off 3.19 ton @ \$8.15/ton		FIBERGLASS TANK		240.00 281.20
COMPACTION BOX						
OTHER	THIS IS AN ENVIRONMENTAL TIPPING TAX AND NOT 6% SALES TAX.					
ALL BILLS MUST BE PAID WITHIN 15 DAYS UPON RECEIPT OF THIS BILL OR SERVICE WILL BE DISCONTINUED UNTIL ACCOUNT IS PAID.					TAX	
YELLOW COPY MUST BE RETURNED WITH CHECK TO CREDIT YOUR ACCOUNT!					TOTAL CHARGES FOR ALL SERVICES RENDERED	521.20

APPENDIX E

SOIL ANALYTICAL DATA PACKAGE

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
98-0001
Bldg. 2543

Project # 3770
Date Rec. 07/30/98
Date Compl. 07/31/98
Released by:


Daniel K. Wright **Date:** 8/13/98
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

No Yes

1. Method Detection Limits provided.

— ✓

2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank

✓ —

3. Matrix Spike Results Summary Meet Criteria.

(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

— ✓

4. Duplicate Results Summary Meet Criteria.

(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

— ✓

5. IR Spectra submitted for standards, blanks, & samples

— NA —

6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.

— ✓

7. Analysis holding time met.

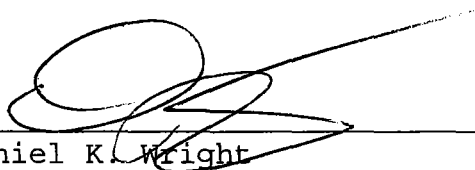
(If not met, list number of days exceeded for each sample)

— ✓

Additional Comments: _____

Laboratory Authentication Statement

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


Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby				Project No: 98-0001		Analysis Parameters				Comments:	
Phone #: X26224				Location: B. 2543		TPHC	% SOLIDS	VOA+15	VOA ID Number	OVA	* = Samples Kept <4 Celsius
() DERA (X) OMA UST Assessment				UST# 81515-30							
Samplers Name / Company : Gary DiMartinis TVS				Sample #							
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles						Remarks / Preservation Method
3770 01	2543-A	7-30-98	0859	SOIL	1	X	X			2	EXC. FLOOR @ 8.0' *
02	B		0855							ND	↓
03	C		0833							ND	SIDEWALL @ 4.5'
04	D		0839							ND	
05	E		0847							ND	
06	F		0843							ND	
07	G		0917							ND	
08	H		0911							ND	↓
09	I		0923							ND	Piping Run @ 2.0'
10	J		0920							ND	↓
11	DUP		—							—	FIELD DUPLICATE ↓
Note: OVA(#A51903) Calibrated With 95 ppm Methane & Zero Air @ 0825 on 7/30/98 by Gary DiMartinis											
Relinquished by (signature):		Date/Time:		Received by (signature):		Relinquished by (signature):		Date/Time:		Received by (signature):	
		7-30-98 1355									
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						Remarks: Dedicated Sampling Tools Used					
Turnaround time: (X) Standard 4 wks, () Rush Days, () ASAP Verbal Hrs.											

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Thu Jul 23 07:39:45 1998

Calibration Files

100 =T06269.D 50 =T06270.D 20 =T06271.D
 10 =T06272.D 5 =T06273.D

Compound			100	50	20	10	5	Avg	%RSD
1) tC	C8		2.584	2.663	2.492	2.657	2.541	2.587 E4	2.85
2) tC	C10		2.920	2.983	2.750	2.915	2.996	2.913 E4	3.36
3) TC	C12		3.330	3.397	3.101	3.278	3.334	3.288 E4	3.43
4) tC	C14		3.529	3.623	3.333	3.589	3.646	3.544 E4	3.56
5) tC	C16		3.639	3.756	3.472	3.804	3.883	3.711 E4	4.32
6) tC	C18		4.164	4.262	3.983	4.364	4.528	4.260 E4	4.82
7) tC	C20		3.973	4.170	3.857	4.251	4.350	4.120 E4	4.91
8) tC	C22		3.960	4.110	3.804	4.190	4.292	4.071 E4	4.73
9) tC	C24		4.029	4.190	3.876	4.250	4.350	4.139 E4	4.53
10) tC	C26		4.023	4.193	3.876	4.219	4.305	4.123 E4	4.17
11) tC	C28		4.070	4.249	3.916	4.221	4.316	4.154 E4	3.87
12) tC	C30		4.195	4.413	4.061	4.352	4.444	4.293 E4	3.76
13) tC	C32		4.242	4.459	4.091	4.352	4.441	4.317 E4	3.54
14) tC	C34		4.444	4.798	4.316	4.542	4.643	4.549 E4	4.05
15) tC	C36		4.411	5.309	4.362	4.496	4.748	4.665 E4	8.34
16) tC	C38		4.227	5.901	4.238	4.351	4.970	4.737 E4	15.18
17) tC	C40		3.916	6.048	3.961	4.009	4.824	4.552 E4	20.14
18) tC	c42		3.723	6.024	3.656	3.458	4.021	4.176 E4	25.20
19) TC	Pristane		3.834	3.959	3.656	4.082	4.126	3.932 E4	4.87
20) TC	Phytane		3.953	4.181	3.881	4.280	4.385	4.136 E4	5.18
21) sC	o-terphenyl		4.889	5.065	4.692	5.175	5.300	5.024 E4	4.76
22) tC	TPHC - total		4.367	4.945	4.420	4.887	5.519	4.827 E4	9.68

(#) = Out of Range

MEAN RSD % = 6.78

TPH44.M

Thu Jul 23 08:06:24 1998

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980730\T06336.D
 Acq On : 30 Jul 98 3:18 pm
 Sample : 50 PPM STANDARD
 Misc :
 IntFile : TPHCINT.E

Vial: 2
 Operator: Deinhardt
 Inst : GC/MS Ins
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
 Title : TPHC Calibration 06/05/97 21 peaks
 Last Update : Wed Jul 22 16:02:30 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	24.186	24.204 E3	-0.1	106	-0.07
2	tC C10	26.836	28.567 E3	-6.5	109	-0.02
3	TC C12	29.584	32.193 E3	-8.8	111	0.00
4	tC C14	31.125	33.432 E3	-7.4	111	0.00
5	tC C16	32.180	34.118 E3	-6.0	111	0.00
6	tC C18	36.591	38.060 E3	-4.0	108	0.00
7	tC C20	35.352	37.237 E3	-5.3	110	0.00
8	tC C22	34.694	36.948 E3	-6.5	111	0.00
9	tC C24	35.318	37.617 E3	-6.5	111	0.00
10	tC C26	35.130	37.505 E3	-6.8	111	0.00
11	tC C28	35.380	37.744 E3	-6.7	111	0.00
12	tC C30	36.331	38.903 E3	-7.1	111	0.00
13	tC C32	36.742	38.436 E3	-4.6	109	0.00
14	tC C34	38.289	39.288 E3	-2.6	107	0.00
15	tC C36	38.627	37.327 E3	3.4	104	0.00
16	tC C38	39.462	36.389 E3	7.8	106	0.00
17	tC C40	38.666	33.182 E3	14.2	106	0.01
18	tC c42	38.058	30.824 E3	19.0	105	0.02
19	TC Pristane	34.283	35.343 E3	-3.1	107	0.00
20	TC Phytane	35.586	37.514 E3	-5.4	110	0.00
21	sC o-terphenyl	42.449	37.923 E3	10.7	93	0.00
22	tC TPHC - total	40.611	39.844 E3	1.9	108	-0.96#

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

T06336.D TPH44.M

Mon Aug 03 08:21:39 1998

Page 1

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980730\T06347.D
 Acq On : 31 Jul 98 3:42 am
 Sample : 50 PPM STANDARD
 Misc :
 IntFile : TPHCINT.E

Vial: 13
 Operator: Deinhardt
 Inst : GC/MS Ins
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
 Title : TPHC Calibration 06/05/97 21 peaks
 Last Update : Wed Jul 22 16:02:30 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	24.186	26.559 E3	-9.8	116	-0.03
2	tC	C10	26.836	30.605 E3	-14.0	117	0.00
3	TC	C12	29.584	34.333 E3	-16.1	119	0.00
4	tC	C14	31.125	35.675 E3	-14.6	119	0.00
5	tC	C16	32.180	36.425 E3	-13.2	118	0.00
6	tC	C18	36.591	38.704 E3	-5.8	110	0.00
7	tC	C20	35.352	39.830 E3	-12.7	118	0.00
8	tC	C22	34.694	39.487 E3	-13.8	119	0.00
9	tC	C24	35.318	40.176 E3	-13.8	119	0.00
10	tC	C26	35.130	39.988 E3	-13.8	119	0.00
11	tC	C28	35.380	40.136 E3	-13.4	118	0.00
12	tC	C30	36.331	41.285 E3	-13.6	118	0.00
13	tC	C32	36.742	40.567 E3	-10.4	115	0.00
14	tC	C34	38.289	41.306 E3	-7.9	113	0.00
15	tC	C36	38.627	39.007 E3	-1.0	108	0.00
16	tC	C38	39.462	37.648 E3	4.6	110	0.00
17	tC	C40	38.666	34.385 E3	11.1	110	0.01
18	tC	c42	38.058	31.751 E3	16.6	108	0.02
19	TC	Pristane	34.283	38.502 E3	-12.3	117	0.00
20	TC	Phytane	35.586	39.948 E3	-12.3	118	0.00
21	sC	o-terphenyl	42.449	40.447 E3	4.7	100	0.00
22	tC	TPHC - total	40.611	42.150 E3	-3.8	114	-0.96#

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

Surrogate Recovery Report

Lab. ID #: 3770

Location #: B. 2543

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
3770.01		10.00	8.39	83.91
3770.02		10.00	8.99	89.93
3770.03		10.00	8.99	89.92
3770.04		10.00	9.95	99.48
3770.05		10.00	8.79	87.91
3770.06		10.00	9.01	90.14
3770.07		10.00	9.24	92.39
3770.08		10.00	8.89	88.91
3770.09		10.00	8.90	89.02
3770.10		10.00	8.45	84.50
3770.11		10.00	9.14	91.35
METHOD BLANK	TBLK 144	10.00	10.21	102.05

Surrogate Added : o-Terphenyl

8/3/98

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

Matrix Spike Recovery Report

Lab. ID # : 3770

Location #: B. 2543

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
3769.01MS	1000	0.00	784.89	78.49	75-125
3769.01MSD	1000	0.00	750.73	75.07	75-125

RPD	4.45	20.00
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8/3/98

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

Blank Spike Recovery Report

Lab. ID # : 3770

Location #: B. 2543

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	30-Jul-98	1000	822.40	82.24	75-125

8/3/98

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980730\T06345.D

Vial: 11

Acq On : 31 Jul 98 1:45 am

Operator: Deinhardt

Sample : 3770.01

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:45 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

Response via : Initial Calibration

DataAcq Meth : TPH44.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	13.91	356185	8.391 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	83.91%#

Target Compounds

4) tC C14	11.47	1135	0.036 mg/L
6) tC C18	12.94	1090	0.030 mg/L
7) tC C20	13.40	1151	0.033 mg/L
8) tC C22	14.17	1072	0.031 mg/L
14) tC C34	18.22	1045	0.027 mg/L
19) TC Pristane	12.94	1090	0.032 mg/L
20) TC Phytane	13.40	1151	0.032 mg/L
22) tC TPHC - total	13.91	2948399	72.600 mg/L m

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06345.D

Vial: 11

Acq On : 31 Jul 98 1:45 am

Operator: Deinhardt

Sample : 3770.01

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:45 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

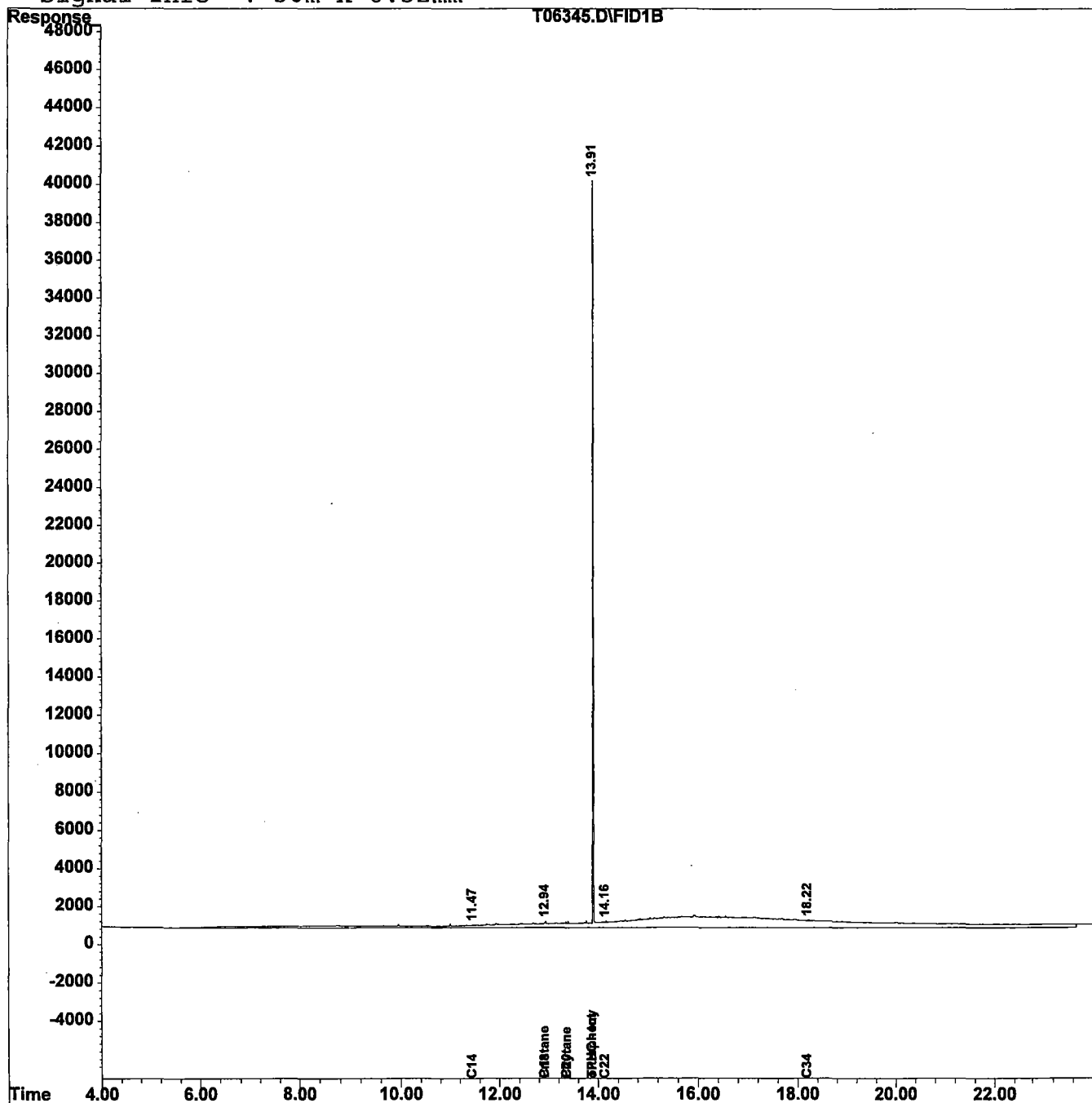
Response via : Multiple Level Calibration

DataAcq Meth : TPH44.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



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Data File : C:\HPCHEM\1\DATA\980730\T06346.D

Vial: 12

Acq On : 31 Jul 98 2:44 am

Operator: Deinhardt

Sample : 3770.02

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:45 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

Response via : Initial Calibration

DataAcq Meth : TPH44.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	13.91	381731	8.993 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	89.93%#

Target Compounds

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06346.D

Vial: 12

Acq On : 31 Jul 98 2:44 am

Operator: Deinhardt

Sample : 3770.02

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:45 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

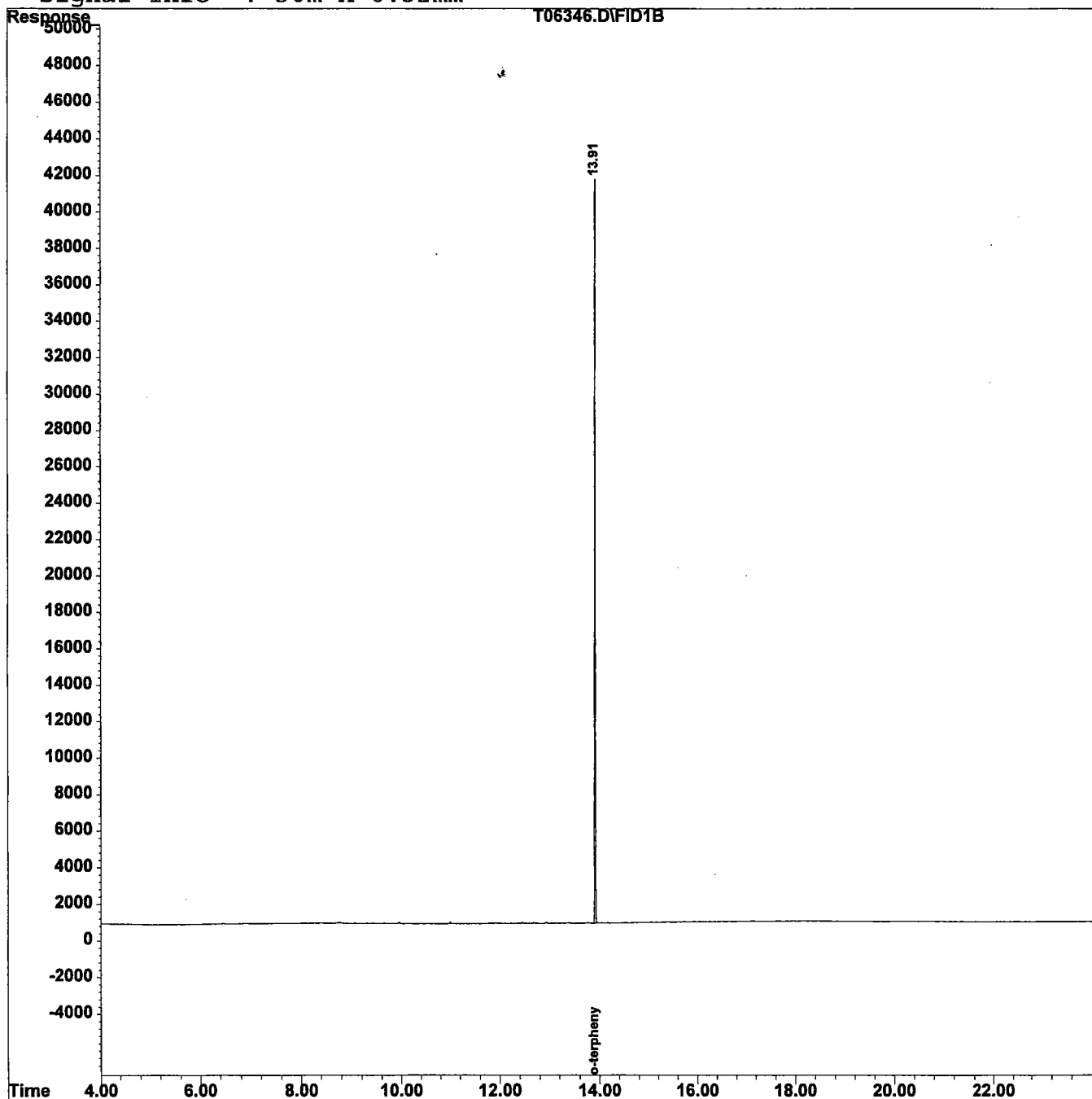
Response via : Multiple Level Calibration

DataAcq Meth : TPH44.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\980730\T06348.D

Vial: 14

Acq On : 31 Jul 98 4:39 am

Operator: Deinhardt

Sample : 3770.03

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:46 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

Response via : Initial Calibration

DataAcq Meth : TPH44.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	13.91	381699	8.992 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	89.92%#

Target Compounds

22) tC TPHC - total	13.91	2127374	52.384 mg/L m
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Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06348.D

Vial: 14

Acq On : 31 Jul 98 4:39 am

Operator: Deinhardt

Sample : 3770.03

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:46 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

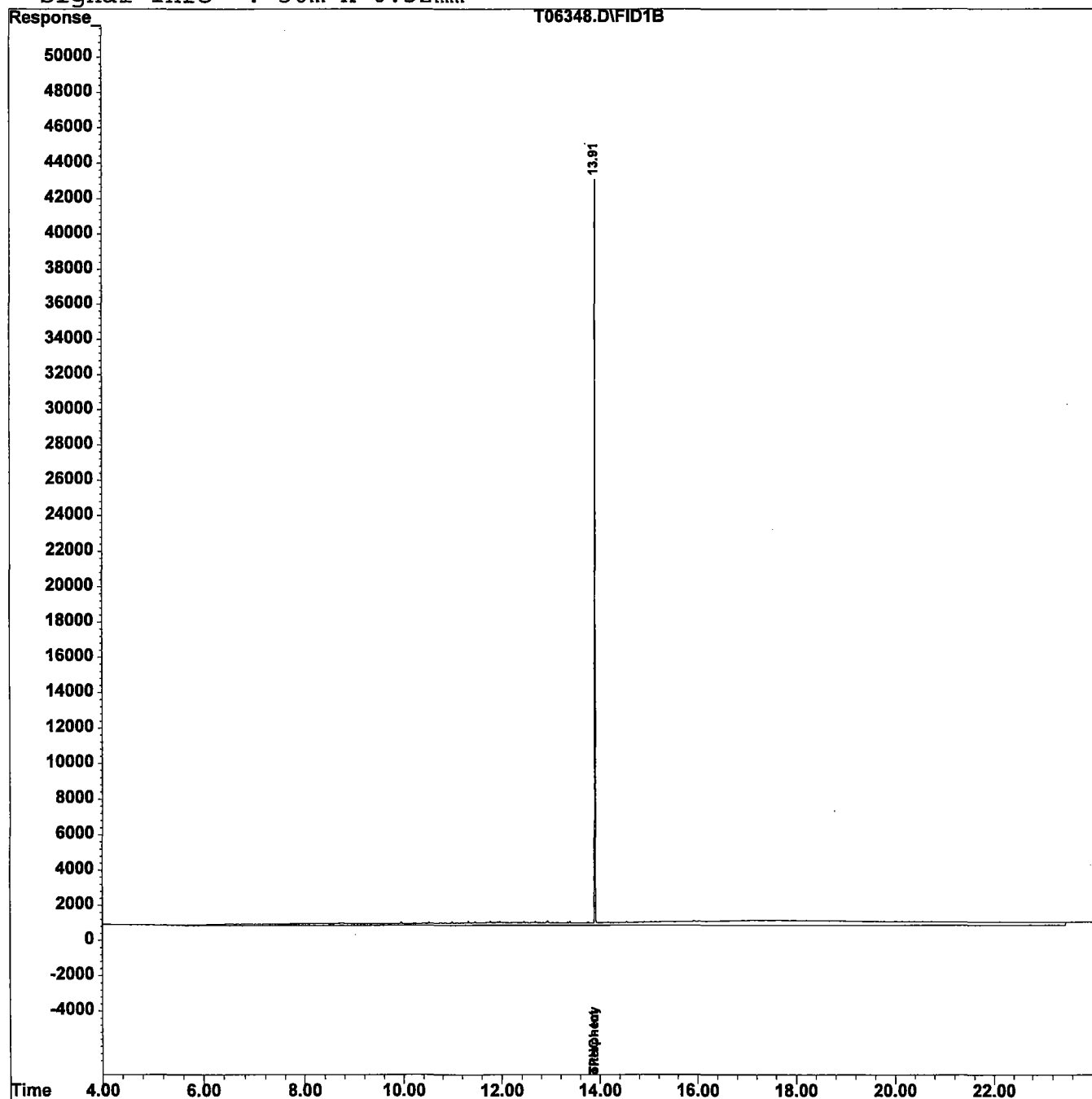
Response via : Multiple Level Calibration

DataAcq Meth : TPH44.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



19

Quantitation Report

(QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980730\T06349.D

Vial: 15

Acq On : 31 Jul 98 5:34 am

Operator: Deinhardt

Sample : 3770.04

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:46 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

Response via : Initial Calibration

DataAcq Meth : TPH44.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	13.91	422262	9.948 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	99.48%#

Target Compounds

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06349.D

Vial: 15

Acq On : 31 Jul 98 5:34 am

Operator: Deinhardt

Sample : 3770.04

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:46 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

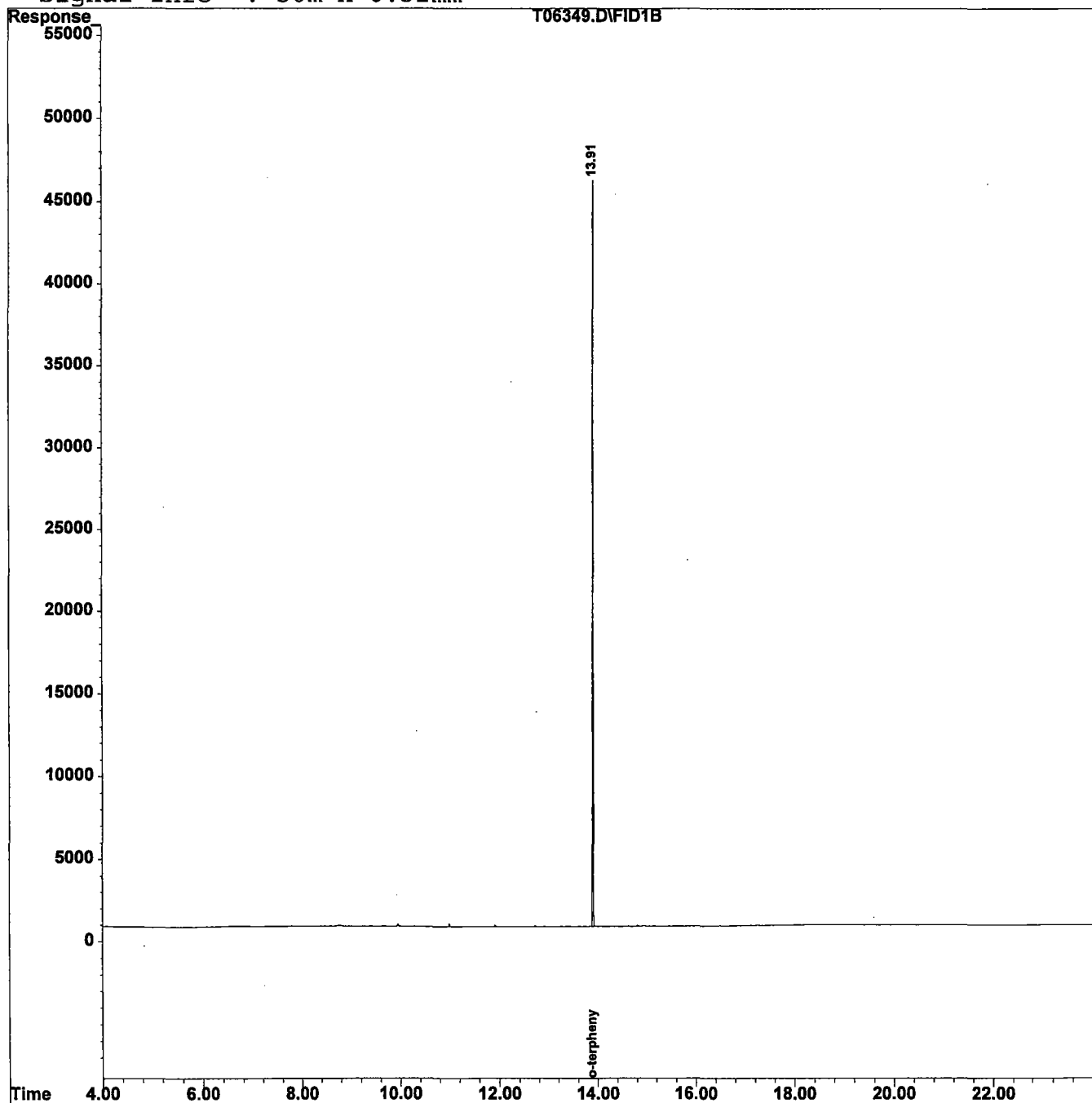
Response via : Multiple Level Calibration

DataAcq Meth : TPH44.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\980730\T06350.D

Vial: 16

Acq On : 31 Jul 98 6:28 am

Operator: Deinhardt

Sample : 3770.05

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:46 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

Response via : Initial Calibration

DataAcq Meth : TPH44.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	13.91	373156	8.791 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	87.91%#

Target Compounds

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06350.D

Vial: 16

Acq On : 31 Jul 98 6:28 am

Operator: Deinhardt

Sample : 3770.05

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:46 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

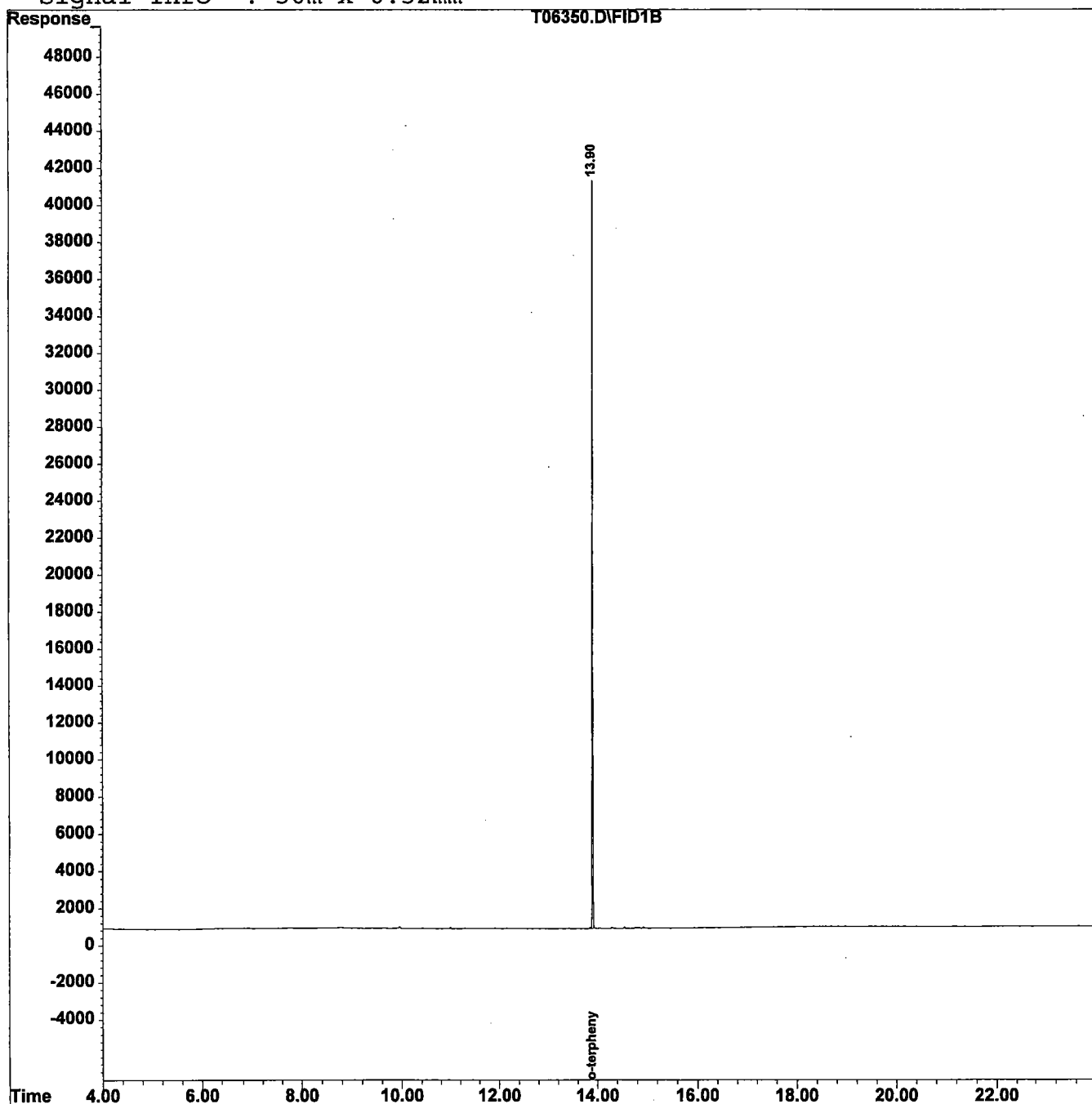
Response via : Multiple Level Calibration

DataAcq Meth : TPH44.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



03

Data File : C:\HPCHEM\1\DATA\980730\T06351.D

Vial: 17

Acq On : 31 Jul 98 7:21 am

Operator: Deinhardt

Sample : 3770.06

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 7:50 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

Response via : Initial Calibration

DataAcq Meth : TPH44.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	13.91	382621	9.014 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	90.14%#

Target Compounds

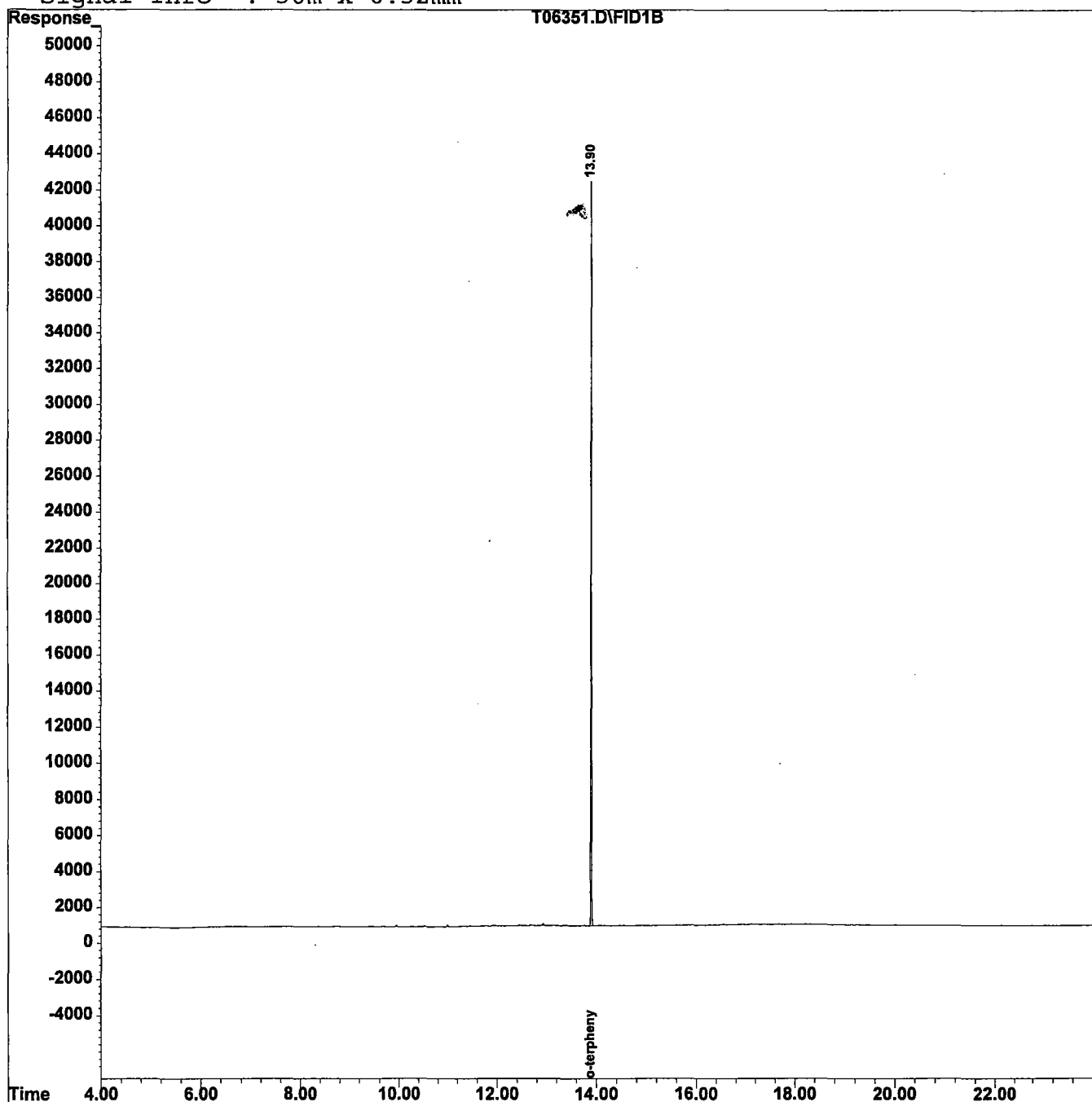
Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06351.D
 Acq On : 31 Jul 98 7:21 am
 Sample : 3770.06
 Misc :
 IntFile : TPHCINT.E
 Quant Time: Jul 31 7:50 1998 Quant Results File: TPH44.RES

Vial: 17
 Operator: Deinhardt
 Inst : GC/MS Ins
 Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
 Title : TPHC Calibration 06/05/97 21 peaks
 Last Update : Wed Jul 22 16:02:30 1998
 Response via : Multiple Level Calibration
 DataAcq Meth : TPH44.M

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



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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980730\T06352.D Vial: 18
 Acq On : 31 Jul 98 8:15 am Operator: Deinhardt
 Sample : 3770.07 Inst : GC/MS Ins
 Misc : Multiplr: 1.00
 IntFile : TPHCINT.E
 Quant Time: Jul 31 8:46 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
 Title : TPHC Calibration 06/05/97 21 peaks
 Last Update : Wed Jul 22 16:02:30 1998
 Response via : Initial Calibration
 DataAcq Meth : TPH44.M

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

Compound	R.T.	Response	Conc Units
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System Monitoring Compounds

21) sC o-terphenyl	13.91	392188	9.239 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	92.39%#

Target Compounds

24

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06352.D

Vial: 18

Acq On : 31 Jul 98 8:15 am

Operator: Deinhardt

Sample : 3770.07

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 8:46 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

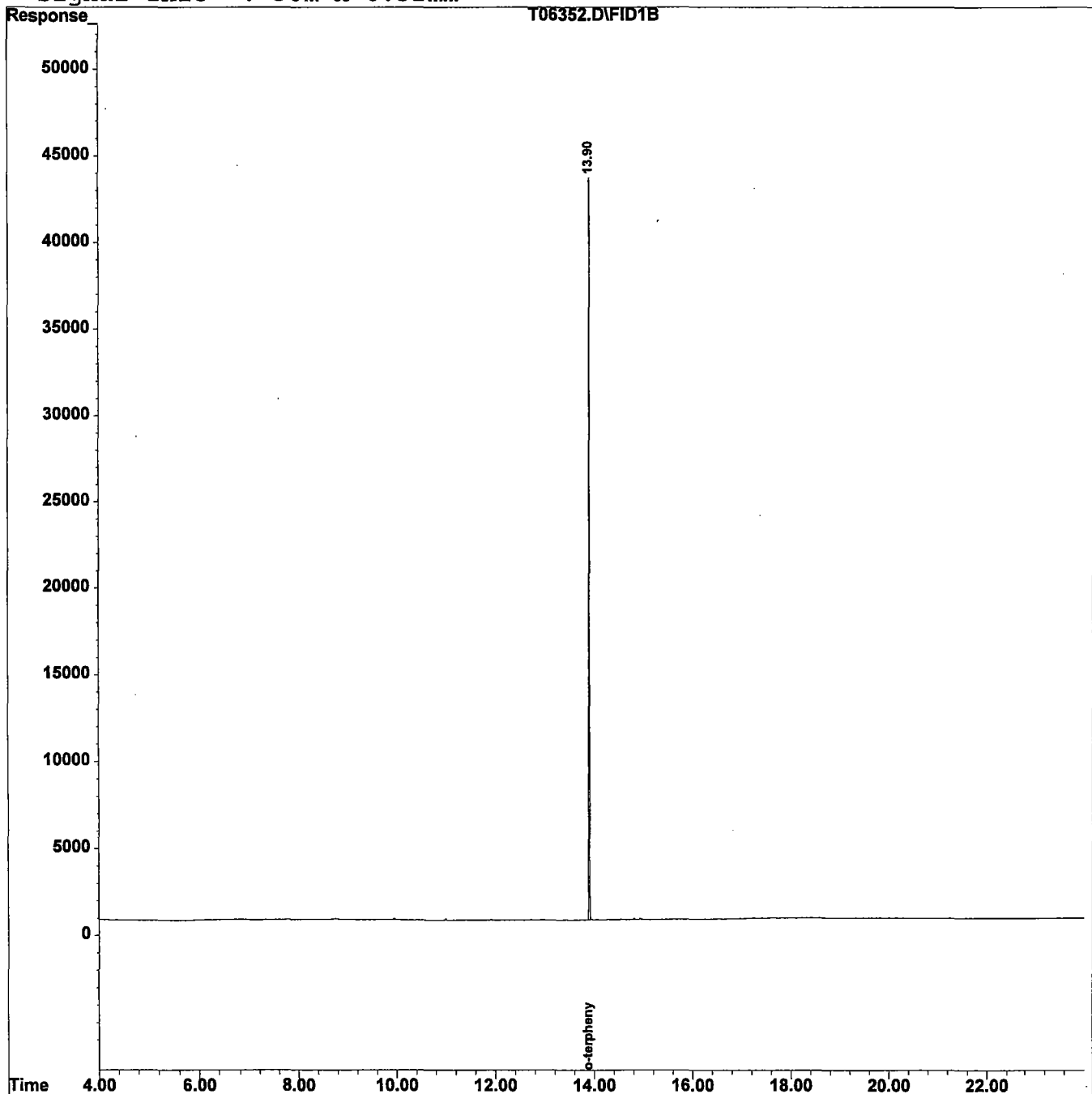
Response via : Multiple Level Calibration

DataAcq Meth : TPH44.M

Volume Inj. : 1 ul

Signal Phase : HP-5

Signal Info : 30m x 0.32mm



Quantitation Report

(Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980730\T06353.D

Vial: 19

Acq On : 31 Jul 98 9:09 am

Operator: Deinhardt

Sample : 3770.08

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 13:27 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

Response via : Initial Calibration

DataAcq Meth : TPH44.M

Volume Inj. :

Signal Phase :

Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
21) sC o-terphenyl	13.91	377397	8.891 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	88.91%#
Target Compounds			
1) tC C8	0.00	0	N.D. mg/L
2) tC C10	8.76	4081	0.152 mg/L
3) TC C12	0.00	0	N.D. mg/L
4) tC C14	0.00	0	N.D. mg/L
5) tC C16	0.00	0	N.D. mg/L
6) tC C18	0.00	0	N.D. mg/L
7) tC C20	0.00	0	N.D. mg/L
8) tC C22	0.00	0	N.D. mg/L
9) tC C24	0.00	0	N.D. mg/L
10) tC C26	0.00	0	N.D. mg/L
11) tC C28	0.00	0	N.D. mg/L
12) tC C30	0.00	0	N.D. mg/L
13) tC C32	17.62	1233	0.034 mg/L
14) tC C34	18.22	1560	0.041 mg/L
15) tC C36	18.58	1117	0.029 mg/L
16) tC C38	0.00	0	N.D. mg/L
17) tC C40	0.00	0	N.D. mg/L
18) tC c42	0.00	0	N.D. mg/L
19) TC Pristane	0.00	0	N.D. mg/L
20) TC Phytane	0.00	0	N.D. mg/L
22) tC TPHC - total	13.90	2677425	65.928 mg/L m

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06353.D

Vial: 19

Acq On : 31 Jul 98 9:09 am

Operator: Deinhardt

Sample : 3770.08

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : events.e

Quant Time: Jul 31 13:27 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

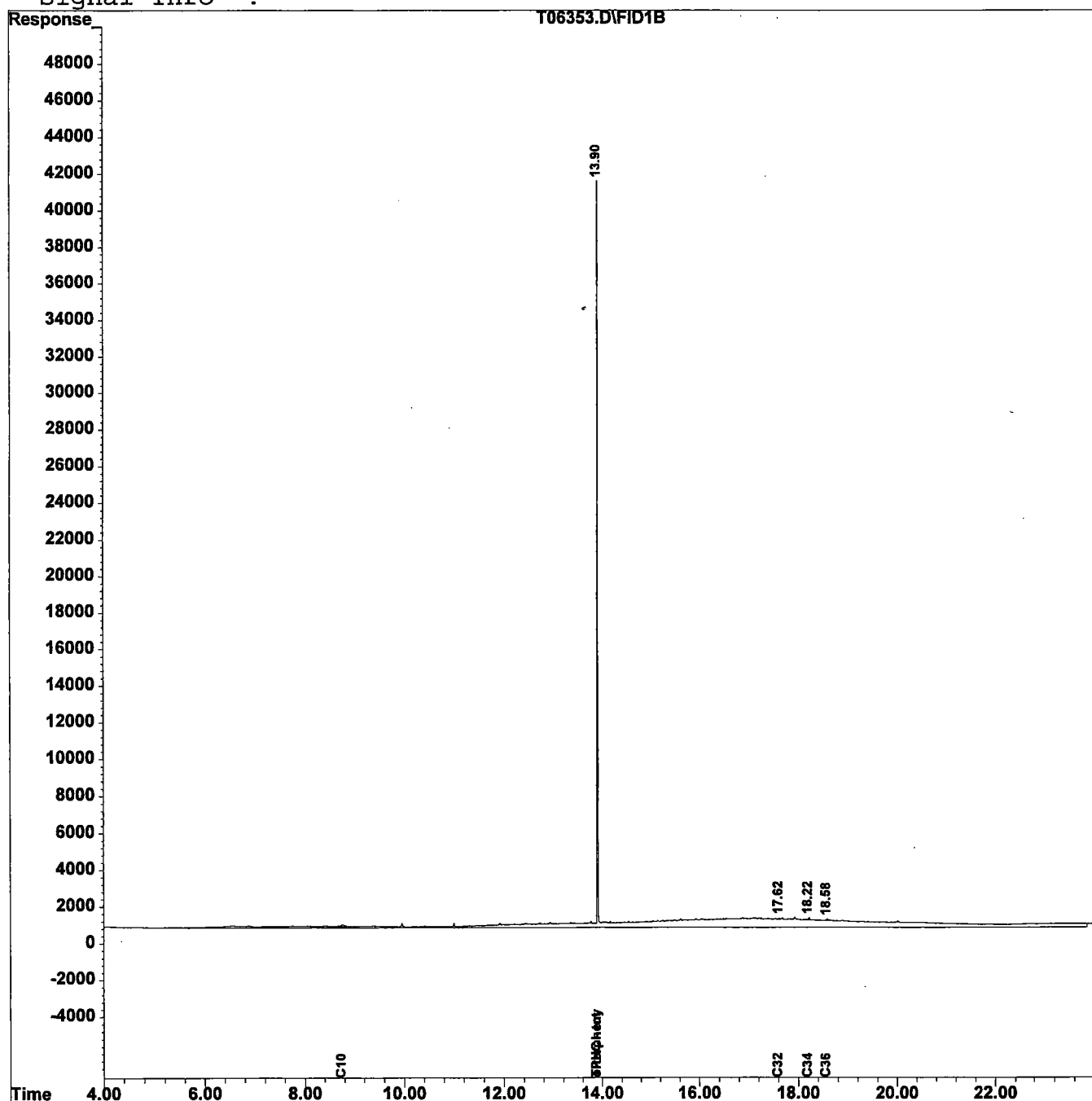
Response via : Multiple Level Calibration

DataAcq Meth : TPH44.M

Volume Inj. :

Signal Phase :

Signal Info :



Data File : C:\HPCHEM\1\DATA\980730\T06354.D

Vial: 20

Acq On : 31 Jul 98 10:04 am

Operator: Deinhardt

Sample : 3770.09

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 13:27 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

Response via : Initial Calibration

DataAcq Meth : TPH44.M

Volume Inj. :

Signal Phase :

Signal Info :

Compound		R.T.	Response	Conc Units

System Monitoring Compounds				
21) sC	o-terphenyl	13.91	377890	8.902 mg/L
Spiked Amount	10.000	Range 8 - 13	Recovery =	89.02%#
Target Compounds				
1) tC	C8	0.00	0	N.D. mg/L
2) tC	C10	0.00	0	N.D. mg/L d
3) TC	C12	0.00	0	N.D. mg/L
4) tC	C14	0.00	0	N.D. mg/L
5) tC	C16	0.00	0	N.D. mg/L
6) tC	C18	0.00	0	N.D. mg/L
7) tC	C20	0.00	0	N.D. mg/L
8) tC	C22	0.00	0	N.D. mg/L
9) tC	C24	0.00	0	N.D. mg/L
10) tC	C26	0.00	0	N.D. mg/L
11) tC	C28	0.00	0	N.D. mg/L
12) tC	C30	0.00	0	N.D. mg/L
13) tC	C32	0.00	0	N.D. mg/L
14) tC	C34	0.00	0	N.D. mg/L
15) tC	C36	0.00	0	N.D. mg/L
16) tC	C38	0.00	0	N.D. mg/L
17) tC	C40	0.00	0	N.D. mg/L
18) tC	c42	0.00	0	N.D. mg/L
19) TC	Pristane	0.00	0	N.D. mg/L
20) TC	Phytane	0.00	0	N.D. mg/L
22) tC	TPHC - total	0.00	0	N.D. mg/L d

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06354.D

Vial: 20

Acq On : 31 Jul 98 10:04 am

Operator: Deinhardt

Sample : 3770.09

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : events.e

Quant Time: Jul 31 13:27 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

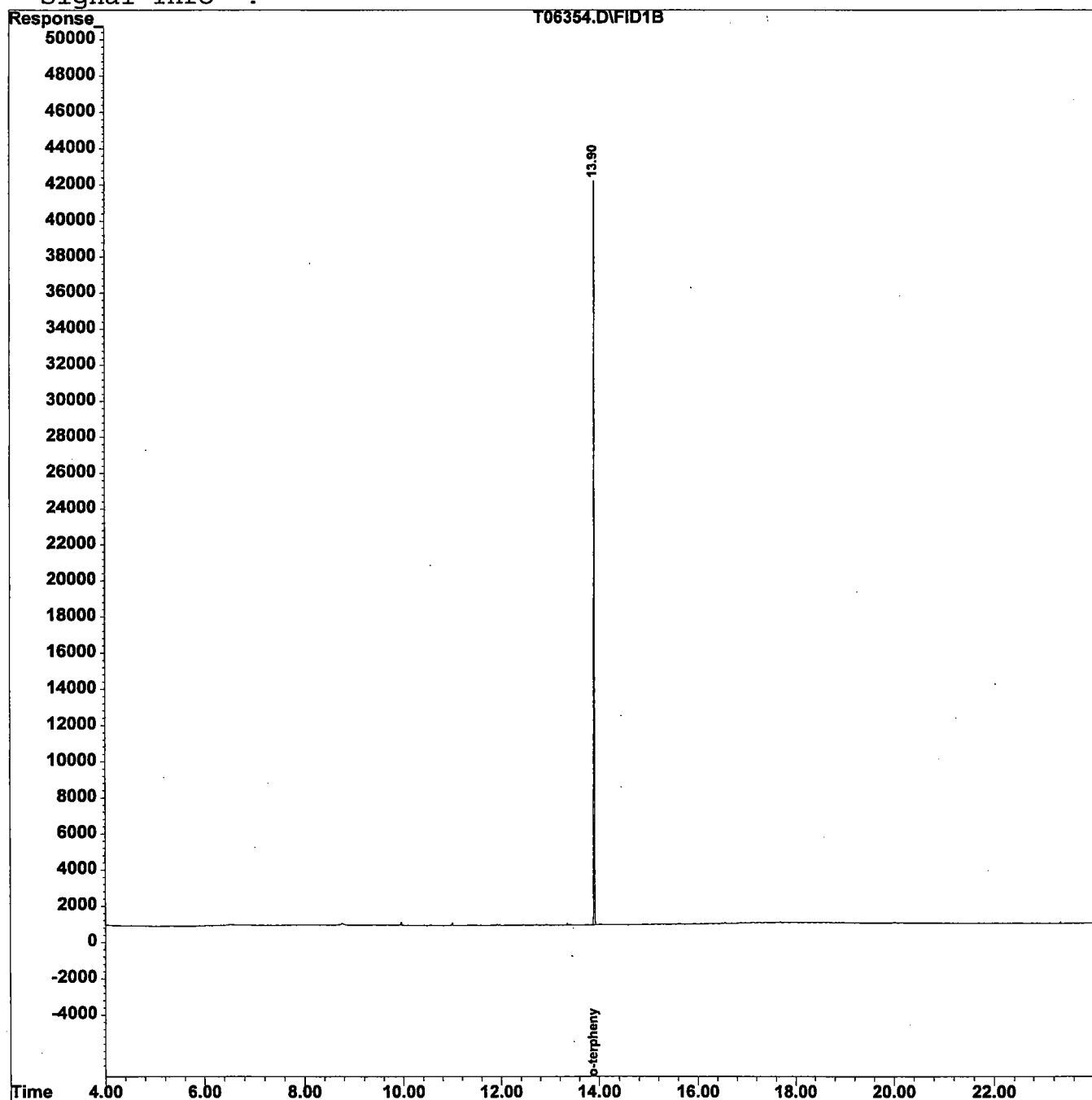
Response via : Multiple Level Calibration

DataAcq Meth : TPH44.M

Volume Inj. :

Signal Phase :

Signal Info :



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980730\T06355.D

Vial: 21

Acq On : 31 Jul 98 10:59 am

Operator: Deinhardt

Sample : 3770.10

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 13:28 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

Response via : Initial Calibration

DataAcq Meth : TPH44.M

Volume Inj. :

Signal Phase :

Signal Info :

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
21) sC o-terphenyl	13.91	358669	8.450 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	84.50%#
Target Compounds			
1) tC C8	0.00	0	N.D. mg/L
2) tC C10	0.00	0	N.D. mg/L d
3) TC C12	0.00	0	N.D. mg/L
4) tC C14	0.00	0	N.D. mg/L
5) tC C16	0.00	0	N.D. mg/L
6) tC C18	0.00	0	N.D. mg/L
7) tC C20	0.00	0	N.D. mg/L
8) tC C22	0.00	0	N.D. mg/L
9) tC C24	0.00	0	N.D. mg/L
10) tC C26	0.00	0	N.D. mg/L
11) tC C28	0.00	0	N.D. mg/L
12) tC C30	0.00	0	N.D. mg/L
13) tC C32	0.00	0	N.D. mg/L
14) tC C34	0.00	0	N.D. mg/L
15) tC C36	0.00	0	N.D. mg/L
16) tC C38	0.00	0	N.D. mg/L
17) tC C40	0.00	0	N.D. mg/L
18) tC c42	0.00	0	N.D. mg/L
19) TC Pristane	0.00	0	N.D. mg/L
20) TC Phytane	0.00	0	N.D. mg/L
22) tC TPHC - total	13.90	1401966	34.521 mg/L m

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06355.D

Vial: 21

Acq On : 31 Jul 98 10:59 am

Operator: Deinhardt

Sample : 3770.10

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : events.e

Quant Time: Jul 31 13:28 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

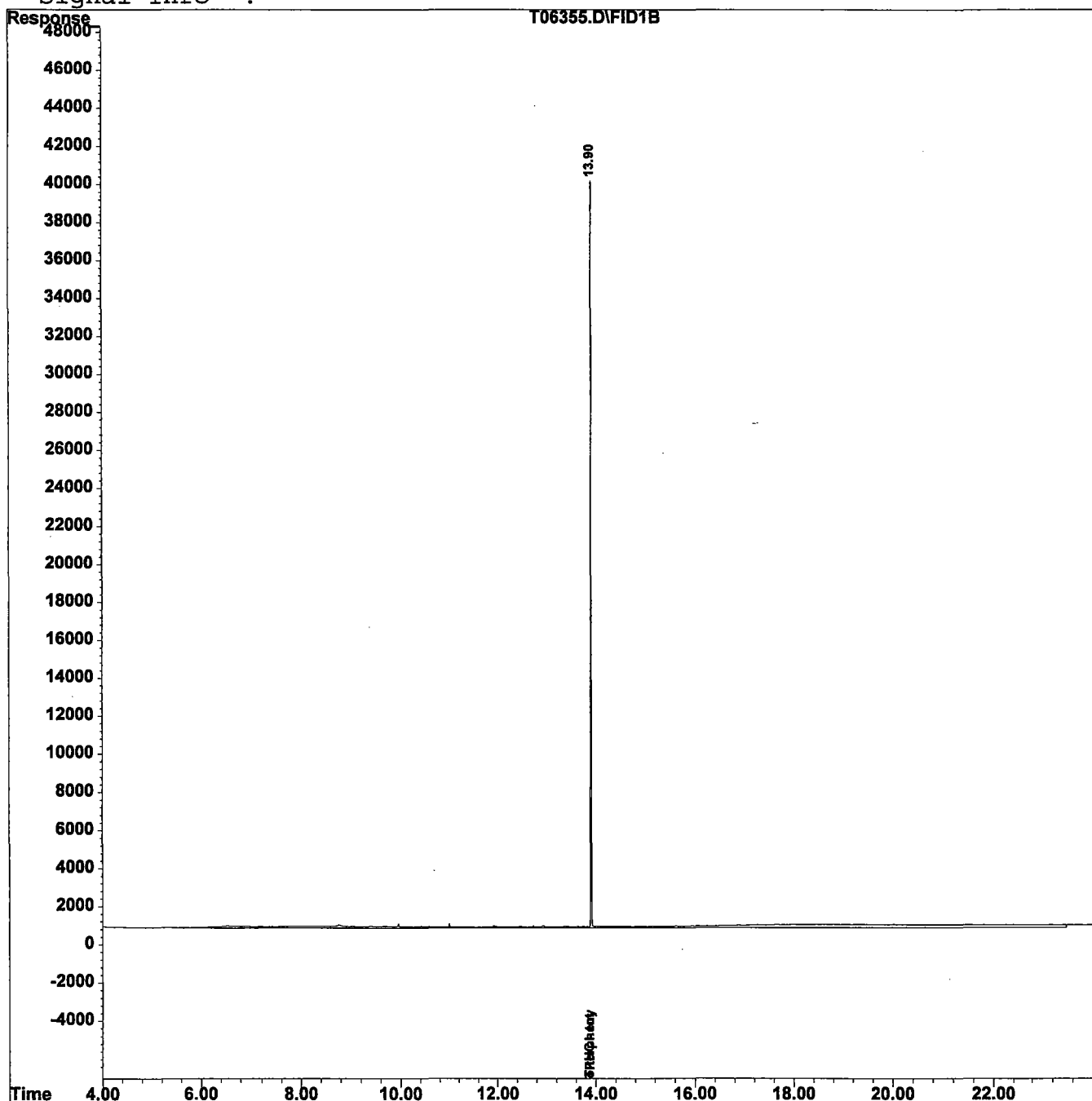
Response via : Multiple Level Calibration

DataAcq Meth : TPH44.M

Volume Inj. :

Signal Phase :

Signal Info :



Data File : C:\HPCHEM\1\DATA\980730\T06356.D

Vial: 22

Acq On : 31 Jul 98 11:56 am

Operator: Deinhardt

Sample : 3770.11

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : TPHCINT.E

Quant Time: Jul 31 13:28 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

Response via : Initial Calibration

DataAcq Meth : TPH44.M

Volume Inj. :

Signal Phase :

Signal Info :

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
21) sC o-terphenyl	13.91	387767	9.135	mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	91.35%#	
Target Compounds				
1) tC C8	0.00	0	N.D.	mg/L
2) tC C10	0.00	0	N.D.	mg/L d
3) TC C12	0.00	0	N.D.	mg/L
4) tC C14	0.00	0	N.D.	mg/L
5) tC C16	0.00	0	N.D.	mg/L
6) tC C18	0.00	0	N.D.	mg/L
7) tC C20	0.00	0	N.D.	mg/L
8) tC C22	0.00	0	N.D.	mg/L
9) tC C24	0.00	0	N.D.	mg/L
10) tC C26	0.00	0	N.D.	mg/L
11) tC C28	0.00	0	N.D.	mg/L
12) tC C30	0.00	0	N.D.	mg/L
13) tC C32	0.00	0	N.D.	mg/L
14) tC C34	0.00	0	N.D.	mg/L
15) tC C36	0.00	0	N.D.	mg/L
16) tC C38	0.00	0	N.D.	mg/L
17) tC C40	0.00	0	N.D.	mg/L
18) tC c42	0.00	0	N.D.	mg/L
19) TC Pristane	0.00	0	N.D.	mg/L
20) TC Phytane	0.00	0	N.D.	mg/L
22) tC TPHC - total	0.00	0	N.D.	mg/L d

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980730\T06356.D

Vial: 22

Acq On : 31 Jul 98 11:56 am

Operator: Deinhardt

Sample : 3770.11

Inst : GC/MS Ins

Misc :

Multiplr: 1.00

IntFile : events.e

Quant Time: Jul 31 13:28 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)

Title : TPHC Calibration 06/05/97 21 peaks

Last Update : Wed Jul 22 16:02:30 1998

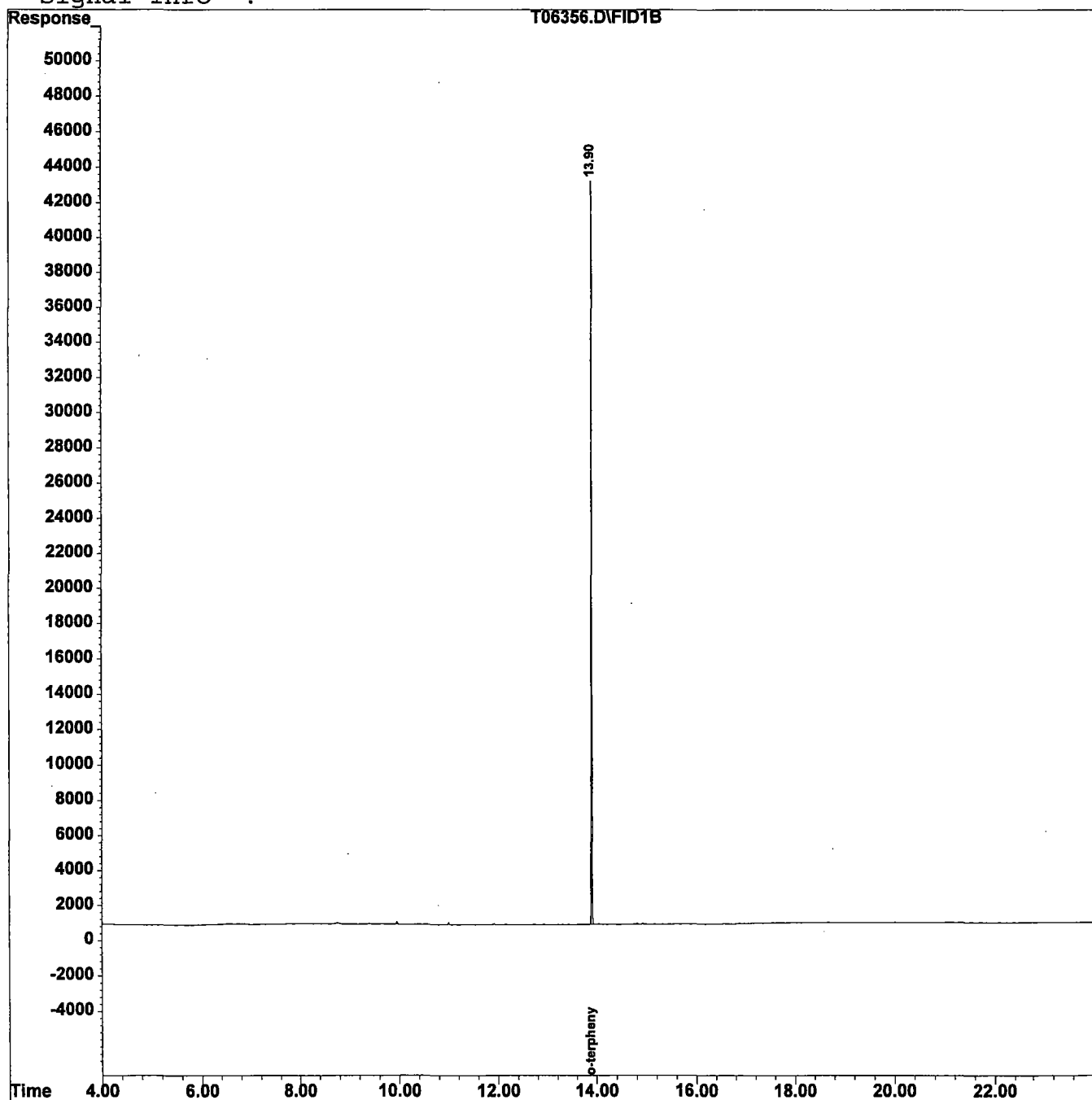
Response via : Multiple Level Calibration

DataAcq Meth : TPH44.M

Volume Inj. :

Signal Phase :

Signal Info :



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

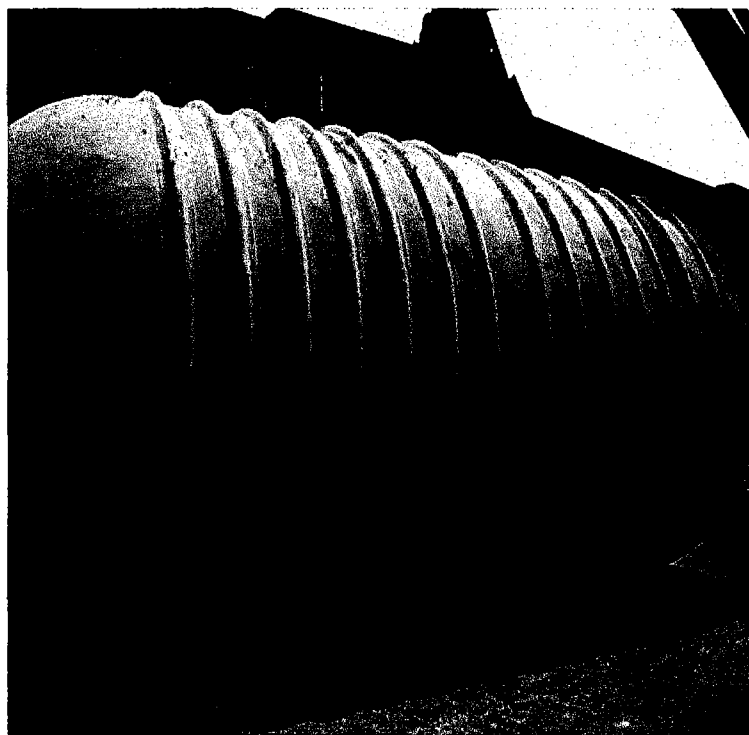
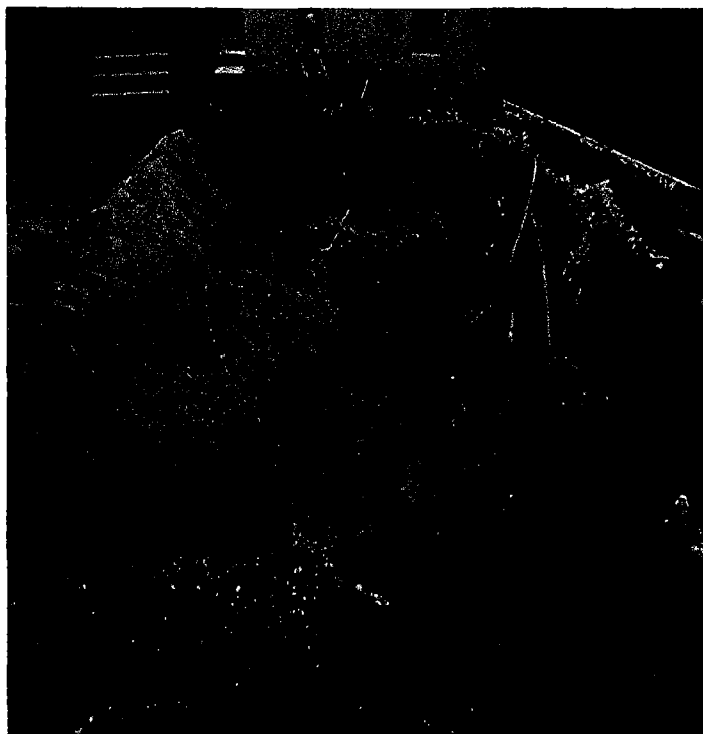
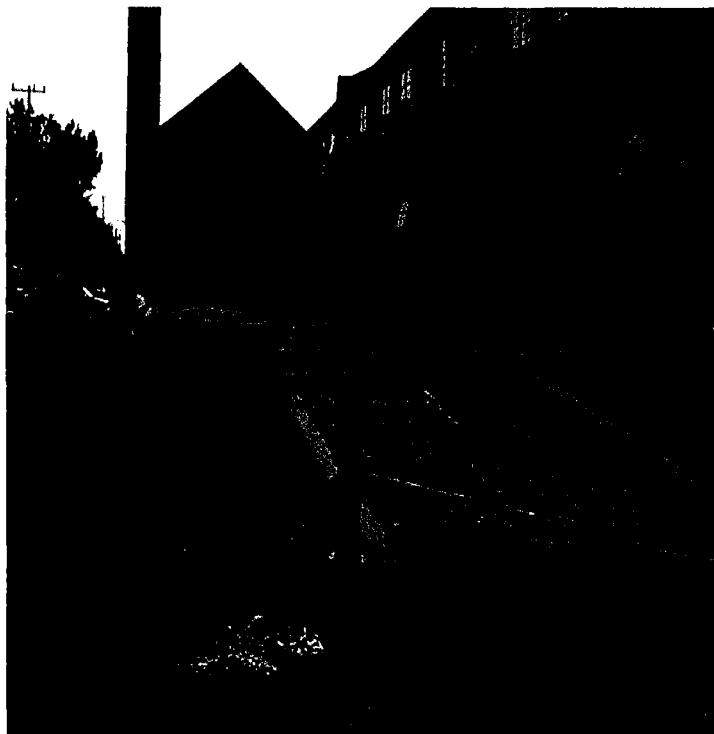
Date 6/18/94

Laboratory Certification #13461

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

APPENDIX F

PHOTOGRAPHS



JULY 29, 1998
PHOTOGRAPHIC LOG
UST NO. 81515-30

Building 2543
Main Post-West
Fort Monmouth

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, PA