United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 2536
Charles Wood Area

NJDEP UST Registration No. 0081515-26

December 1997

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 2536

CHARLES WOOD AREA
NJDEP UST REGISTRATION NO. 0081515-26

DECEMBER 1997

PREPARED FOR:

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

PREPARED BY:

SMC ENVIRONMENTAL SERVICES GROUP
501 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406

PROJECT NO. 2429-3080

2536.DOC

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EXECUTIVE SUMMARY

UST Closure

On May 21, 1997, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated July 18, 1995 at the Charles Wood area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081515-26 (Fort Monmouth ID No. 2536), was located west of Building 2536 (Charles Wood Fire House) in the Charles Wood area of U.S. Army, Fort Monmouth. UST No. 0081515-26 was a 1,000-gallon No. 2 fuel oil UST. The UST fill port was located directly above the tank.

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. No holes were noted in the UST and no evidence of potentially contaminated soils was observed surrounding the tank. Post-excavation samples were collected on May 21, 1997 and contained non-detectable levels of TPHC.

Site Restoration

Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with native topsoil 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. 0081515-26 at Building 2536.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 0081515-26, was closed at Building 2536 at the Charles Wood area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on May 21, 1997. 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 on July 18, 1995. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 0081515-26 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. 0081515-26 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST Closure Approval Letter and signed Site Assessment Summary form for UST No. 0081515-26 are included in Appendices A and B, respectively.

Based on inspecting the UST, field screening of subsurface soils, 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 SMC Environmental Services Group, to assist the U.S. Army 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 2536 is located in the Charles Wood area of the Fort Monmouth Army Base, as shown on Figure 1. UST No. 0081515-26 was located west of Building 2536 and appurtenant copper piping ran approximately twenty-three (23) feet east from the excavation to the mechanical room south of Building 2536. The fill port area was located directly above the tank. 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 2536. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Charles Wood area.

Regional Geology

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

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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapecza, 1990).

Local Geology

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

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and 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 2536 is located approximately 200 feet south 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 2536 is anticipated to be to the northeast.

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

Prior to UST decommissioning activities, asphalt, road base, and surficial soil were removed to expose the UST and associated piping. All free 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, a hole was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Please refer to Appendix C for a copy of 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 associated with the UST. No contamination was noted anywhere along the piping length. 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 the Mazza & Sons, Inc. for disposal in compliance with all applicable regulations and laws. See Appendix D for the UST Disposal certificate and Appendix F for photographs of the tank.

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: Eugene W. Lesinski
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (908) 532-0989
  NJDEP Certification No.: 0014537

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

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 did not exhibit any evidence of potential contamination.

2.3 SOIL SAMPLING

On May 21, 1997, post-excavation soil samples A, B, C, D, E, F, G, and DUP C were collected from a total of seven (7) locations of the UST excavation. Excavation centerline samples A, B, C, and DUP C were collected at a depth of 6.0 feet below ground surface (bgs). Excavation sidewall samples, D and E were collected at a depth of 5.5 feet bgs. Samples E and F were collected along the former piping length of the excavation, which was approximately twenty-three (23) feet in length. The piping sample were collected at a depth of 1.0 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 and associated piping, post-excavation soil samples were collected from a total of seven (7) locations on May 21, 1997. 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 May 21, 1997, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Samples contained non-detectable levels of TPHC.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 2536 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. 0081515-26 at Building 2536.

TABLES

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 2536, CHARLES WOOD AREA
FORT MONMOUTH, NEW JERSEY

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/6.0'	2576.1	5/21/97	6/03/97	Total Solid	--	--	93.92%	--	--
				TPHC	158	yes	ND	10,000	No
B/6.0'	2576.2	5/21/97	6/03/97	Total Solid	--	--	93.46%	--	--
				TPHC	151	yes	ND	10,000	No
C/6.0'	2576.3	5/21/97	6/03/97	Total Solid	--	--	91.23%	--	--
				TPHC	163	yes	ND	10,000	No
D/5.5'	2576.4	5/21/97	6/03/97	Total Solid	--	--	94.13%	--	--
				TPHC	149	yes	ND	10,000	No
E/5.5'	2576.5	5/21/97	6/03/97	Total Solid	--	--	92.99%	--	--
				TPHC	149	yes	ND	10,000	No
F/1.0'	2576.6	5/21/97	6/03/97	Total Solid	--	--	88.93%	--	--
				TPHC	159	yes	ND	10,000	No
G/1.0'	2576.7	5/21/97	6/03/97	Total Solid	--	--	90.07%	--	--
				TPHC	158	yes	ND	10,000	No
DUP C/6.0'	2576.8	5/21/97	6/03/97	Total Solid	--	--	92 .61	--	--
				TPHC	168	yes	ND	10,000	No

Note:

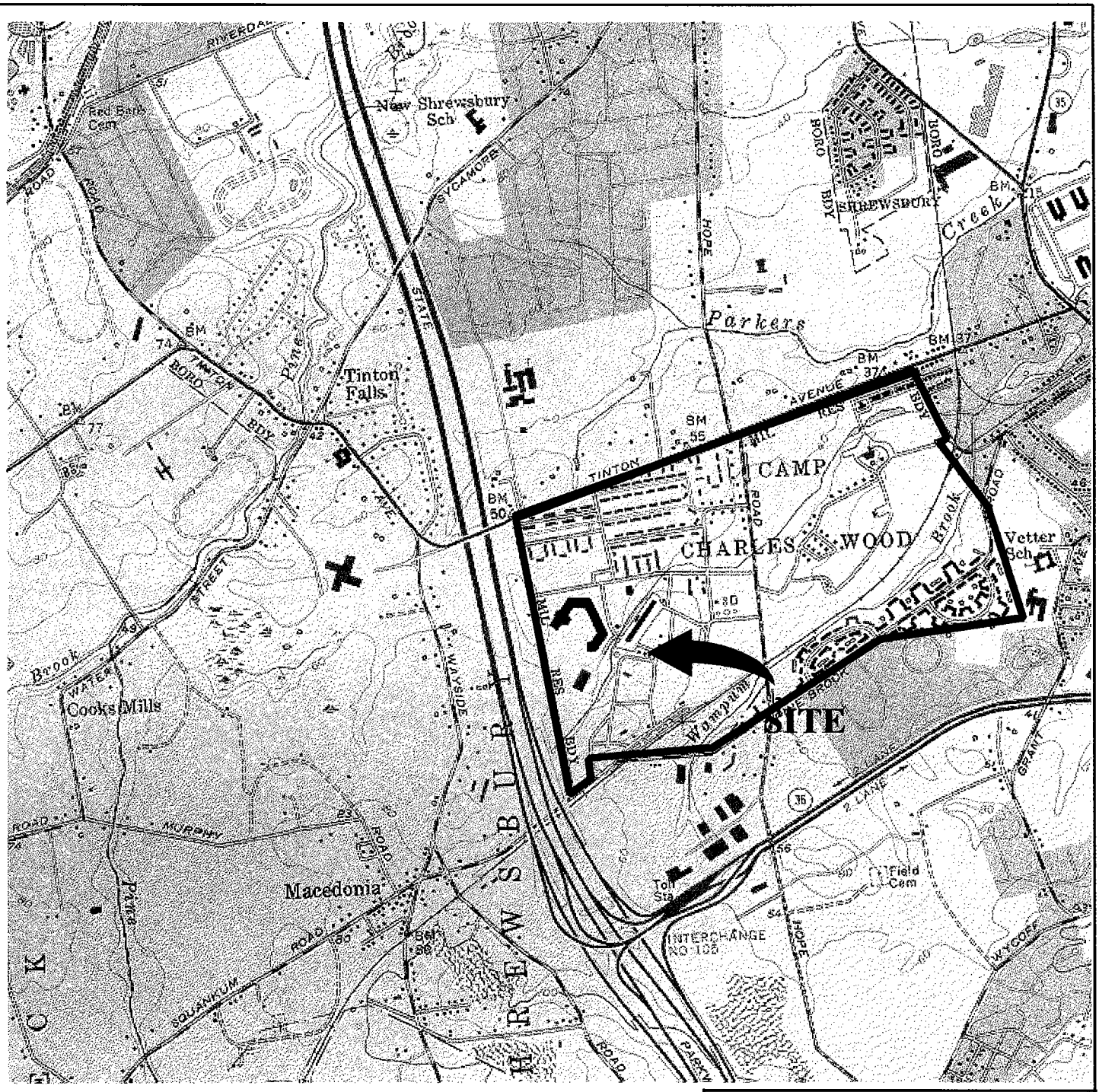
* Total Solid results are expressed as a percentage.

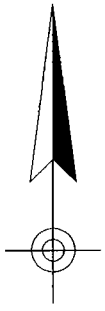
** NJDEP Residential Direct Contact soil cleanup criteria for total organics

ND Not detected above stated method detection limit

-- Not applicable

FIGURES





LONG BRANCH, NJ

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE -SERIES V822

Quadrangle Location

Mapped, edited and published by the Geological Survey

FIGURE 1

SITE LOCATION MAP

Building 2536

Charles Wood Area

Fort Monmouth Army Base

Monmouth County, NJ

SMC Environmental Services Group

Engineers, Managers, Scientists, & Planners

Valley Forge, Pennsylvania

Scale:	**1"=2,000'**	Date:	**DEC 1997**

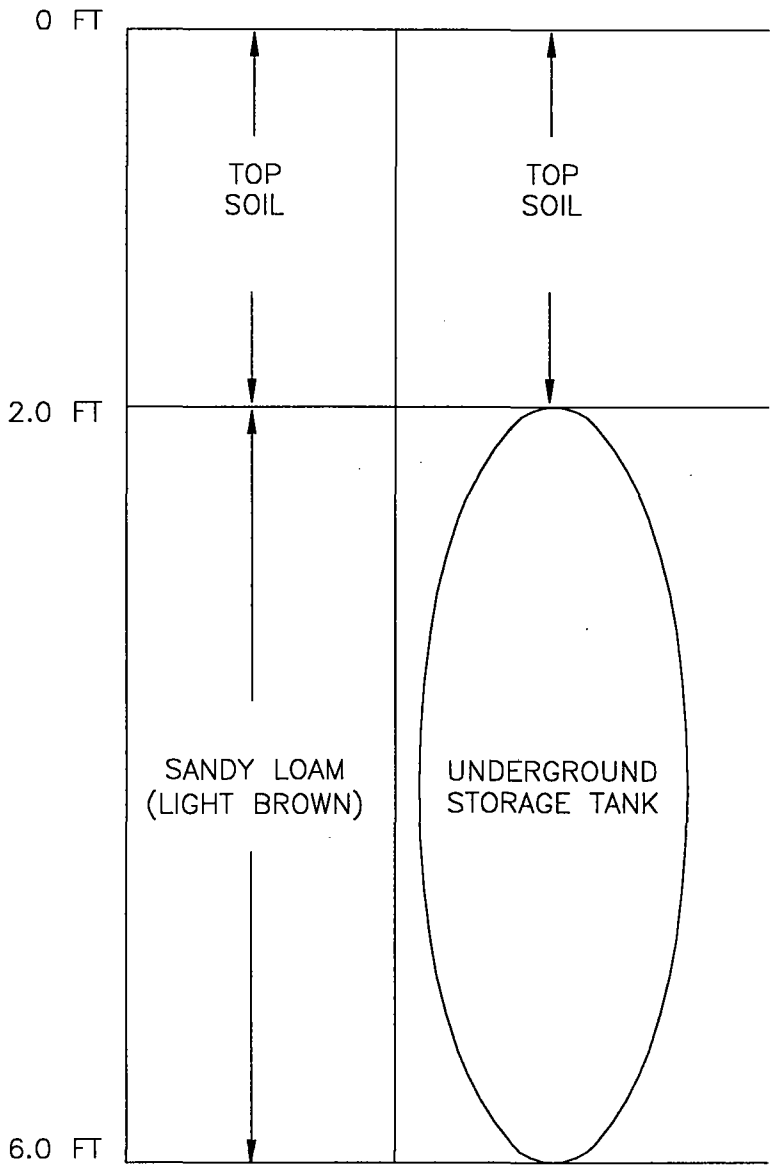
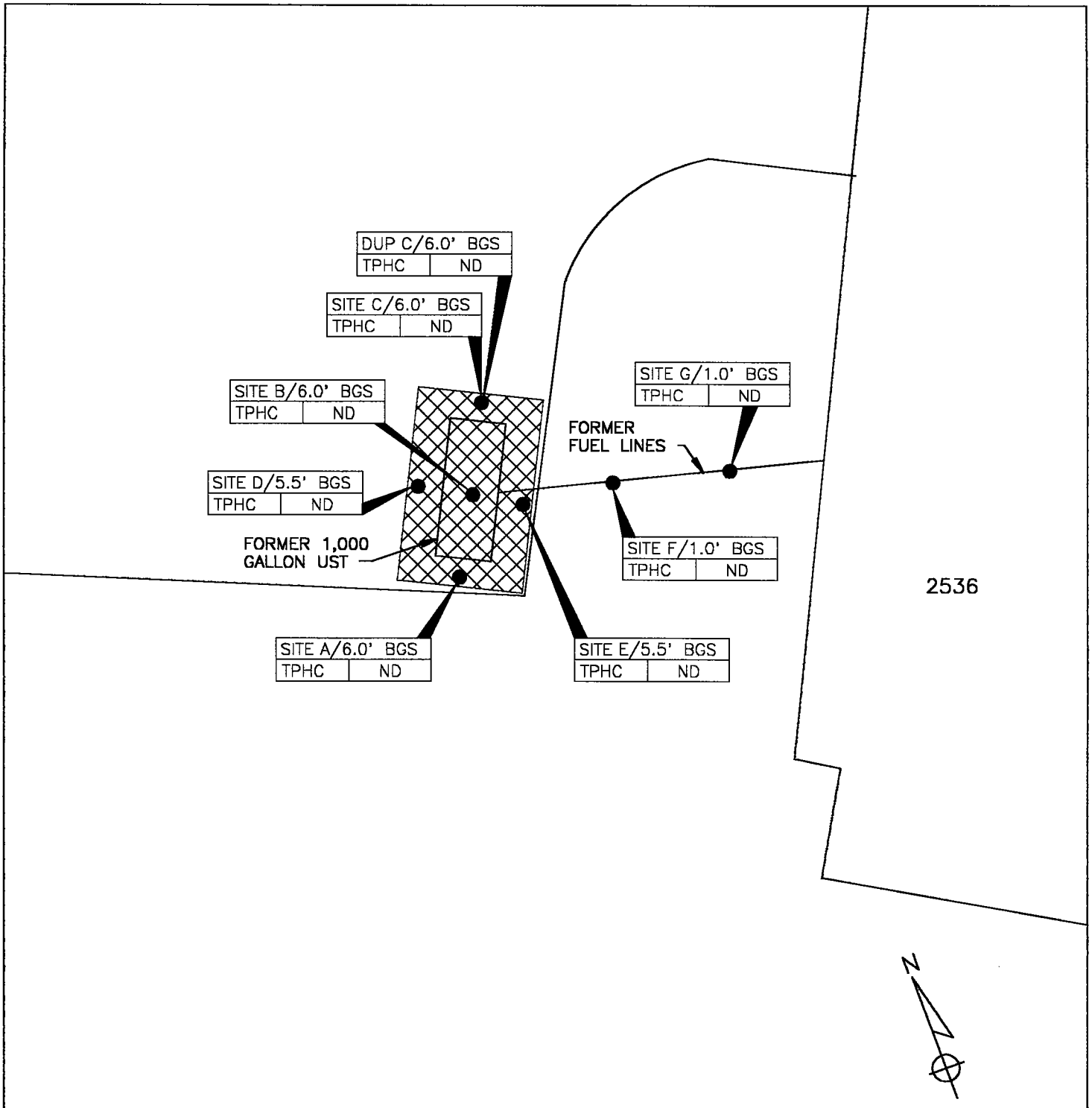


FIGURE 3
CROSS SECTIONAL VIEW
BUILDING 2536
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: NTS | DATE: OCT. 1997

2536 2429 FIG3



LEGEND

- SOIL SAMPLE LOCATION (MAY 21, 1997)
- LIMIT OF EXCAVATION (MAY 21, 1997)

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 2536
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=10' | DATE: DEC. 1997

2536 2429 FIG4

APPENDIX A

NJDEP-BUST CLOSURE APPROVAL

State of New Jersey

Department of Environmental Protection

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

JUL 18 1995

Mr. Dinker Desai
SELFM-EH-EV
Department of the Army
Headquarters CECOM Fort Monmouth
Fort Monmouth, NJ 077703-5000

Dear Mr. Desai:

Re: UST Closure Plan Approvals
Fort Monmouth Army Base
Fort Monmouth, Monmouth County

The NJDEP has reviewed the Underground Storage Tank Closure Plans for eight Number 2 Fuel Oil underground storage tanks located on the Fort Monmouth Army Base. Based on this review, the NJDEP hereby approves the closure plans as submitted on June 21, 1995 for the following tanks:

AREA	REGISTRATION NO.	BLDG NO.	UST NO.	TANK SAMP	LINE SAMP	REMOVAL DATE	REPORT DATE
CW - West	0081515	2504	16	4/1	1	7/24/95	11/24/95
CW - West	0081515	2529	20	4/1	1	7/25/95	11/29/95
CW - West	0081515	2535	25	4/1	1	7/26/95	11/28/95
CW - West	0081515	2536	26	4/1	2	7/28/95	11/30/95
CW - West	0081515	2537	27	4/1	1	8/1/95	12/4/95
CW - West	0081515	2561	31	4/1	2	8/2/95	12/4/95
CW - West	0081515	2532	22	4/1	1	6/5/95	10/6/95
CW - West	0081515	2533	23	4/1	2	6/7/95	10/9/95

Please advise me regarding the progress of tanks 22 and 23.

If you should have any questions or require any additional information, please feel free to contact me at (609) 633-1455.

Sincerely,

Ian R. Curtis, Case Manager
Bureau of Federal Case Management

cc. Kevin Kratina, BUST

RPCE\BFCM\FTMMTH27.IRC

SEN. 0167

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

ATTN: UST Program
(609) 984-3156

For State Use Only

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

STANDARD REPORTING FORM
for reporting activities at an UST facility:

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

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

(More than one tank can be listed per activity)

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

Answer questions 1 through 5 and others as applicable.

1. Company name and address (as it appears on registration questionnaire):
U.S. ARMY - FORT MONMOUTH
DPW - BUILDING 173
FORT MONMOUTH, NJ 07703
ATTN: EUGENE W. LESINSKI

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

3. Contact person for this activity:
GENE LESINSKI
Telephone Number: (908) 532-0985

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire:
BLDG 2536 — 26

5. Registration Number (if known): UST - 0081515

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

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

(OVER)

7. For CLOSURE (abandonment or [illegible]al – check all that apply):

a. ☐ Abandonment Date: ____/____/____ Case No: ____ _____

Attach the necessary implementation schedule (3 copies) and all documentation needed for abandonment per N.J.A.C. 7:14B-9.1 (d).

b. ☒ Removal Date: 5/21/97 Case No. _____

Attach the necessary implementation schedule (3 copies).

8. For CHANGES IN HAZARDOUS SUBSTANCES STORED (check all that apply):

a. ☐ Temporary Closure (12 month maximum time – see N.J.A.C. 7:14B-9.1(b)). Remove all hazardous substances; leave tank in place.

b. ☐ Change in service from a regulated substance to a non-regulated substance. Tank must be cleaned and site assessment performed per N.J.A.C. 7:14B-9.1(e).

c. ☐ Changes in service from one regulated hazardous substance to another regulated hazardous substance.

Tank No. _____ Old _____ New _____

Tank No. _____ Old _____ New _____

Tank No. _____ Old _____ New _____

(Attach additional sheets if more space is needed)

9. For TRANSFER OF OWNERSHIP: Effective Date: ____/____/____

a. New Owner (operator) _____

b. New Facility Name _____

_____

_____ NJ _____

_____

County

c. Closing Attorney _____ Tele: (____) _____ – _____

10. For SUBSTANTIAL MODIFICATIONS (to include any retrofitted activity – e.g. the addition of spill/overfill protection, monitoring systems, cathodic protection, etc.):

a. Type of Modification _____ Date: ____/____/____

b. * NOTE * Substantial modifications require a permit under N.J.A.C. 7:14B-10.

11. For changes in FINANCIAL RESPONSIBILITY to (check appropriate changes and attach copies of new information):

a. Policy Type: ☐ d. Company/Carrier: ☐

b. Policy Number: ☐ e. Expiration Date: ☐

c. Other: ☐

_____

_____

_____

(Specify)

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

CERTIFICATION

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

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

Signature: James Ott

Name (print or type): JAMES OTT

Title: DIRECTOR – DEPT OF PUBLIC WORKS Date: 5/21/97

SRF-UST

(IND/MOD-2/92)

APPENDIX B

SITE ASSESSMENT SUMMARY

UST-014
2/91

FOR STATE USE ONLY
UST#
Date Rec'd
TMS #
Staff

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Responsible Party Site Remediation
CN 029
TRENTON, N.J. 08625-0028

Scott A. Weiner
Commisioner

Tel. # 609-984-3156
Fax.# 609-292-5604

Karl J. Delaney
Director

UNDERGROUND STORAGE TANK SITE ASSESSMENT SUMMARY

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

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

INSTRUCTIONS:

- *Please print legibly or type.*
- *Fill in all applicable blanks. This form will require various attachments in order to complete the Summary. The technical guidance document, Interim Closure Requirements for UST's, explains the regulatory (and technical) requirements for closure and the Scope of Work, Investigation and Corrective Action Requirements for Discharges from Underground Storage Tanks and Piping Systems explains the regulatory (and technical) requirements for corrective action.*
- *Return one original of the form and all required attachments to the above address.*
- *Attach a scaled site diagram of the subject facility which shows the information specified in Item IV B of this form.*
- *Explain any "No" or "N/A" response on a separate sheet.*

Date of Submission: _____

Building No. 2536 UST No. 81515-26

0192477-1
Facility Registration #

1. FACILITY NAME AND ADDRESS:

U.S. Army Fort Monmouth New Jersey
Directorate of Engineering and Housing Building 167
Fort Monmouth New Jersey 07703 County Monmouth
Telephone No. 908-532-6224

OWNER'S NAME AND ADDRESS, if different from above.

_____

_____

Telephone No. _____

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found ? _____Yes __X__ No If Yes, Case No._____
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was (were) _____N/A_____

C. Have any vapor hazards been mitigated?_____Yes _____ No ___X___ N/A

III. DECOMMISSIONING OF TANK SYSTEMS Closure approval No. July 18, 1995 letter

The site assessment requirements associated with tank decommissioning are explained in the Technical Guidance Document, Interim Closure Requirements for UST's, Section V. A.-D. Attach complete documentation of the methods used and the results obtained for each of the steps of tank decommissioning used. Please include a site map which shows the locations of all samples and borings, the location of all tanks and piping runs at the facility at the beginning of the tank closure operation and annotated to differentiate the status of all tanks and piping (e.g., removed, abandoned, temporarily closed, etc.). The same site map can be used to document other parts of the site assessment requirements, if it is properly and legibly annotated.

IV. SITE ASSESSMENT REQUIREMENTS

A. Excavated Soil

Any evidence of contamination in excavated soil will require that the soil be classified as either Hazardous Waste or Non-Hazardous Waste. Please include all required documentation of compliance with the requirements for handling contaminated excavated soil (if any was present) as explained in the technical guidance documents for closure and corrective action. Describe amount of soil removed, its classification and disposal location.

B. Scaled Site Diagrams

1. Scaled site diagrams must be attached which include the following information:

a. North arrow and scale
b. The locations of the ground water monitoring wells
c. Location and depth of each soil sample and boring
d. All major surface and subsurface structures and utilities
e. Approximate property boundaries
f. All existing or closed underground storage tank systems, including appurtenant piping
g. A cross-sectional view indicating depth of tank, stratigraphy and location of water table
h. Locations of surface water bodies

C. Soil samples and borings (check appropriate answer)

1. Were soil samples taken from the excavation as prescribed? __X__Yes _____ No _____ N/A

2. Were soil borings taken at the tank system closure site as prescribed? _____Yes ____ No __X__ N/A

3. Attach the analytical results in tabular form and include the following information about each sample

a. Customer sample number (keyed to the site map)
b. The depth of the soil sample
c. Soil boring logs
d. Method detection limit of the method used
e. QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed _____0_____

2. Attach the analytical results of the ground water samples in tabular form. Include the following information for each sample from each well:

   a. Site diagram number for each well installed
   b. Depth of ground water surface
   c. Depth of screened interval
   d. Method detection limit of the method used
   e. Well logs
   f. Well permit numbers
   g. QA/QC Information as required

V. SOIL CONTAMINATION

A. Was soil contamination found? _____Yes __X__ No
If "Yes", please answer Question B-E
If "No", please answer Question B

B. The highest soil contamination still remaining in the ground has been determined to be:
1. ____N/A_____ppb total BTEX, ____N/A_____ppb total non-targeted VOC
2. ____N/A_____ppb total B/N, ____N/A_____ppb total non-targeted B/N
3. ____ND_____ppm TPHC
4. ____N/A_____ ppb _____N/A____(for non-petroleum substance)

C. Remediation of free product contaminated soils

1. All free product contaminated soil on the property boundaries and above the water table are believed to have been removed from the subsurface. _____ Yes _____ No
2. Free product contaminated soils are suspected to exist below the water table. _____ Yes _____ No
3. Free product contaminated soils are suspected to exist off the property boundaries. ____Yes ____No

D. Was the vertical and horizontal extent of contamination determined? _____Yes _____ No _____ N/A

E. Does soil contamination intersect ground water? _____Yes _____ No _____ N/A

VI. GROUND WATER CONTAMINATION

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

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

1._____ppb total BTEX._____ppb total non-targeted VOC
2._____ppb total B/N._____ppb total non-targeted B/N
3._____ppb total MTBE._____ppb total TBA
4._____ppb_____(for non-petroleum substance)
5. greatest thickness of separate phase product found _____
6. separate phase product has been delineated _____Yes _____ No _____ N/A

C. Results (s) of well search

1. A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. _____Yes _____No _____ N/A

2. The number of these wells identified is _____.

D. Proximity of wells and contaminant plume

1. The shallowest depth of any well noted in the well search which may be in the horizontal or vertical potential path(s) of the contaminant plume(s) is _____ feet below grade (consideration has been given for the effects of pumping, subsurface structures, etc. on the direction(s) of contaminant migration). This well is _____ feet from the source and its screening begins at a depth of _____ feet.

2. The shallowest depth to the top of the well screen for any well in the potential path of the plume(s) (as described in D1 above above) is _____ feet below grade. This well is located _____ feet from the source.

3. The closest horizontal distance of a private, commerical, or municipal well in the potential path of the plume (as determined in D1) is _____ feet from the source. This well is_____ feet deep and screening begins at a depth of _____ feet.

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

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

G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. _____Yes _____ No

2. The plume is suspected to continue off the properly at concentrations greater than MCLs. _____Yes _____ No

3. Off property access (circle one): is being sought has been approved has been denied

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

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

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

NAME (Print or Type) Eugene Lesinski
SIGNATURE SEE ATTACHED SUB-SURFACE EVALUATOR LOG
COMPANY NAME U.S. Army Fort Monmouth DATE _____
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION NJDEP
CERTIFYING NUMBER 0014537

~~U.S~~ ARMY, SELFM-PW-E.

DAILY UST SUBSURFACE REMOVAL LOG

BLDG.#: 2536 REG.#: 0081515 - 24 CLOSURE#: NJDEP LTR 18 JUL 95

DATE: 5-21-97 TOA: 1030 TOD: 1130/1300/1500

GOV. SSE: LESINSKI NJDEP CERT.#: 0014537

REMOVAL CONTRACTOR: ~~SAI Inc~~. TVS

CLOSURE SUPERVISOR: DeMartinis NJDEP CERT.#: _____

WEATHER: SUNNY - 60°F

ACTIVITY	YES / NO
THE SUPERVISOR (CLOSURE CERT.) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES	Y
THE SSE WAS ON-SITE DURING UST REMOVAL AND SITE SCREENING AND SAMPLING ACTIVITIES	Y
ALL ON-SITE PERSONNEL HAD TRAINING IAW ALL SAFETY REQUIREMENTS (E.G. 29CFR)	Y
A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR	N/A
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	Y
A DISCHARGE WAS REPORTED TO THE NJDEP (609-292-7172), CASE# N/A	N
PHOTOS HAVE UST#, BLDG. #, DATE, TIME, NAME OF SSE AND DESCR. WRITTEN ON BACK	Y
GROUNDWATER WAS ENCOUNTERED AT — FEET BG, A SHEEN (WAS/WAS NOT) OBSERVED ON GW	N
IF OVA/Hnu WAS USED: WAS IT CAL. AND FOUND TO BE OPERATIONAL (cal. data on COC)	Y
IF SAMPLES WERE TAKEN: COC, SCALED SITE MAP (VERT. SOIL HORIZONS AND PLOT PLAN)	Y
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	Y
ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA/FID RECORDED SITES IAW 7:26E-3.6 et seq.	Y
ALL PETROL. CONT. SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	N/A
THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE GROUNDWATER)	Y
ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM	N
THE FOLLOWING DOCUMENTS WERE ADDED TO THE PROJECT FOLDER TODAY: (CIRCLE EACH) SCRAP TICKET, CSE PERMIT, ACCIDENT REPORT, HAZ. WASTE MANIFEST, DAILY UST CLOSURE LOG, SCALED SITE MAP (SAMPLING), SRP CLOSURE, CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN FILL TICKETS (IN YDS^3), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	N

CHECK ALL BOXES, LEAVE NO BLANKS

I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3 and 7:26 et seq.. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment.

SIGNATURE: _____ DATE: 5-21-97

ca\ms\ust\removal\sitessls.doc

APPENDIX C

WASTE MANIFEST

2536

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ5221.00.207.78 | Manifest Document No. 07852 | 2. Page 1 of 1 | NHZ 004852

3. Generator's Name and Mailing Address
U.S. ARMY Communications Electronics Command
Charles Wood Area, C/O J. Fallon Bldg. 173
ATT: SELFM-FW-EV Fort Monmouth N.J. 07703

4. Generator's Phone (908) 532-6223

5. Transporter 1 Company Name: LIONETTI OIL RECOVERY CO INC | 6. US EPA ID Number: N J 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: N J 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 No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
a. PETROLEUM OIL(PETROLEUM OIL) COMBUSTIBLEL LIQUID UN1270 PGIII	001	TT	XX375	G
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
T,L PETROLEUM OIL 50 %
WATER 50 %

E. Handling Codes for Wastes Listed Above
T04 FILTRATION

15. Special Handling Instructions and Additional Information
24 HR EMERGENCY RESPONSE#(908) 721-0900
DECAL#7732 ERG#128 DEXSIL TEST KIT RESULTS NA PPM
MANIFEST USED FOR TRACKING PURPOSES ONLY

GENERATOR

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: [signature] | Month 06 Day 03 Year 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Richard Dirienzo | Signature: [signature] | Month 06 Day 03 Year 97

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

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: PAUL T. AMADIO | Signature: [signature] | Month 06 Day 03 Year 97

ORIGINAL - RETURN TO GENERATOR

APPENDIX D

UST DISPOSAL CERTIFICATE

THIS CHECK IS DELIVERED FOR PAYMENT ON THE FOLLOWING ACCOUNTS.

DATE		AMOUNT	
TOTAL OF INVOICES			
LESS ___ % DISCOUNT			
LESS FREIGHT			
LESS			
TOTAL DEDUCTIONS			
AMOUNT OF CHECK			

MAZZA & SONS, INC.
RECYCLING DIVISION
3230 SHAFPO RD.
TINTON FALLS, NJ 07753

1196

55-7233/2212

DATE 5/30/97.

PAY TO THE ORDER OF Tecom Vinnell $ 212.80

Two Hundred Twelve + 80/100. DOLLARS

Sovereign Bank

Security features included. Details on back.

⑈001196⑈ ⑆221272332⑆000 10910992⑈6⑈

#26

B. 2536

MAZZA & SONS, INC.

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

NO. 259

DATE 30 May 97

Customer's Name Tecom Vinnell

Address

	Weight	Price
Cast Iron		
Steel Turk	43.40	
Lt. Iron		
Copper #1		
Copper #2		

14100 LB

12860 LB

1240

30

C# 1196

	Weight	Price
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Battery		
	43.40	

TOTAL AMOUNT:

Weigher _____ Customer _____

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
96-1262
B.2536

Project # 2576
Date Rec. 05/21/97
Date Compl. 06/03/97
Released by:

Daniel K. Wright
Laboratory Director

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

PHC Conformance/Non-conformance Summary Report

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

Additional Comments:_____

Laboratory Authentication Statement

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

Daniel K. Wright
Laboratory Manager

Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer: GENE LESINSKI - DPW
Phone #: 20989
( )DERA (X)OMA ( )Other:_____
Project No: 96-1262
Location: B.2536
Samplers Name / Company : GARY DiMARTINIS - TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS	MUNSELL	OVA	Remarks / Preservation Method
2576 1	2536-A	5-21-97	1119	SOIL	1	X	X	X	ND	CENTER LINE @6.0' *
2	2536-B		1122						ND	
3	2536-C		1125						ND	
4	2536-D		1128						ND	SIDEWALL @5.5'
5	2536-E		1131						ND	
6	2536-F		1137						ND	Piping Run @1.0'
7	2536-G		1145						ND	
8	2536-DUP		—						—	FIELD DUPLICATE

Comments: * = SAMPLES KEPT BELOW 4°C.

NOTE: OVA (AS1903) CALIBRATED W/95 PPM CH4 & ZERO (0) AIR @ 1110 HRS. ON 5-21-97 by G. DiMARTINIS.

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	5-21-97 1422	[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: DEDICATED SAMPLING TOOLS USED.

print legibly

Custody.xls4/3/97

Response Factor Report TCL/FID

Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997

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

		Compound	1	2	3	4	5	Avg		%RSD
1)	s	o-terphenyl	2.139	2.095	2.016	2.018	1.952	2.044	E4	3.60
2)	t	tphc	3.165	2.484	2.078	1.919	1.820	2.293	E4	23.94

(#) = Out of Range

Evaluat Continuing Calibration Re rt

Data File : C:\HPCHEM\1\DATA\970602\T01499.D Vial: 3
Acq On : 3 Jun 97 10:26 am Operator: Skelton
Sample : 50 PPM STD Inst : FID/TCD
Misc : 490D #6B 2FT Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Multiple Level Calibration

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

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	20.439	23.220 E3	-13.6	109	0.00
2	t	tphc	22.932	20.214 E3	11.9	98	0.00

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

6

Evalua' Continuing Calibration Re rt

Data File : C:\HPCHEM\1\DATA\970602\T01510.D Vial: 3
Acq On : 3 Jun 97 6:56 pm Operator: Skelton
Sample : 50 PPM STD Inst : FID/TCD
Misc : Multiplr: 1.00
IntFile : autoint1.e

Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Multiple Level Calibration

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

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	s	o-terphenyl	20.439	23.147 E3	-13.2	108	0.00
2	t	tphc	22.932	19.649 E3	14.3	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
T01510.D TPH7.M Wed Jun 04 14:11:37 1997 Page 1

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

Surrogate Recovery Report

Lab. ID # : 2576

Location #: B2536

Sample		Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
2576.01		10.00	10.44	104.36
2576.02		10.00	10.75	107.47
2576.03		10.00	9.83	98.25
2576.04		10.00	10.30	102.97
2576.05		10.00	9.75	97.51
2576.06		10.00	10.34	103.42
2576.07		10.00	10.28	102.80
2576.08		10.00	10.52	105.16
METHOD BLANK	23-May-97	10.00	10.62	106.17

Surrogate Added : o-Terphenyl

6/4/97

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

Matrix Spike Recovery Report

Lab. ID # : 2576

Location #: B2536

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
2576.08MS	630	0.00	702.40	111.49	75-125
2576.08MSD	630	0.00	722.62	114.70	75-125

RPD	2.84	20.00

6/4/97

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

Blank Spike Recovery Report

Lab. ID # : 2576

Location #: B2536

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	23-May-97	630	758.12	120.34	75-125

6/4/97

Quantitation Report (NOT Reviewed)

Data File : C:\HPCHEM\1\DATA\970602\T01506.D Vial: 35
Acq On : 3 Jun 97 3:40 pm Operator: Skelton
Sample : 2576.01 Inst : FID/TCD
Misc : 2536-A Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 3 16:21 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Initial Calibration
DataAcq Meth : TPH7.M

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

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) s o-terphenyl	13.68	213301	10.436	mg/L	m
Spiked Amount 10.000		Recovery =	104.36%		
Target Compounds					
2) t tphc	0.00	0	N.D.	mg/L	

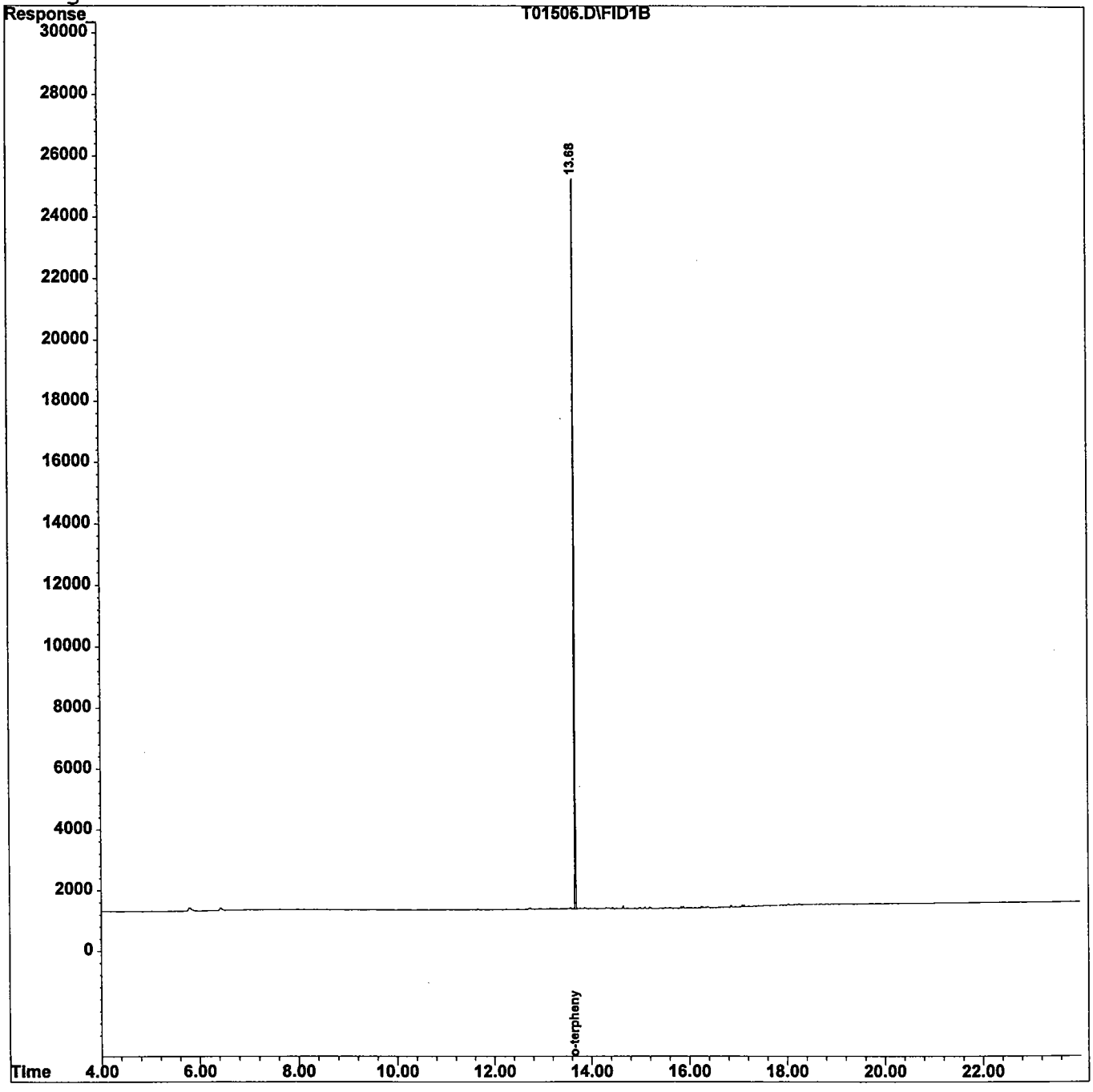
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970602\T01506.D Vial: 35
Acq On : 3 Jun 97 3:40 pm Operator: Skelton
Sample : 2576.01 Inst : FID/TCD
Misc : 2536-A Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 3 16:21 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH7.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\970602\T01507.D Vial: 36
Acq On : 3 Jun 97 4:27 pm Operator: Skelton
Sample : 2576.02 Inst : FID/TCD
Misc : 2536-B Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:16 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Initial Calibration
DataAcq Meth : TPH7.M

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

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) s o-terphenyl	13.68	219646	10.747	mg/L m
Spiked Amount 10.000		Recovery =	107.47%	
Target Compounds				
2) t tphc	0.00	0	N.D.	mg/L

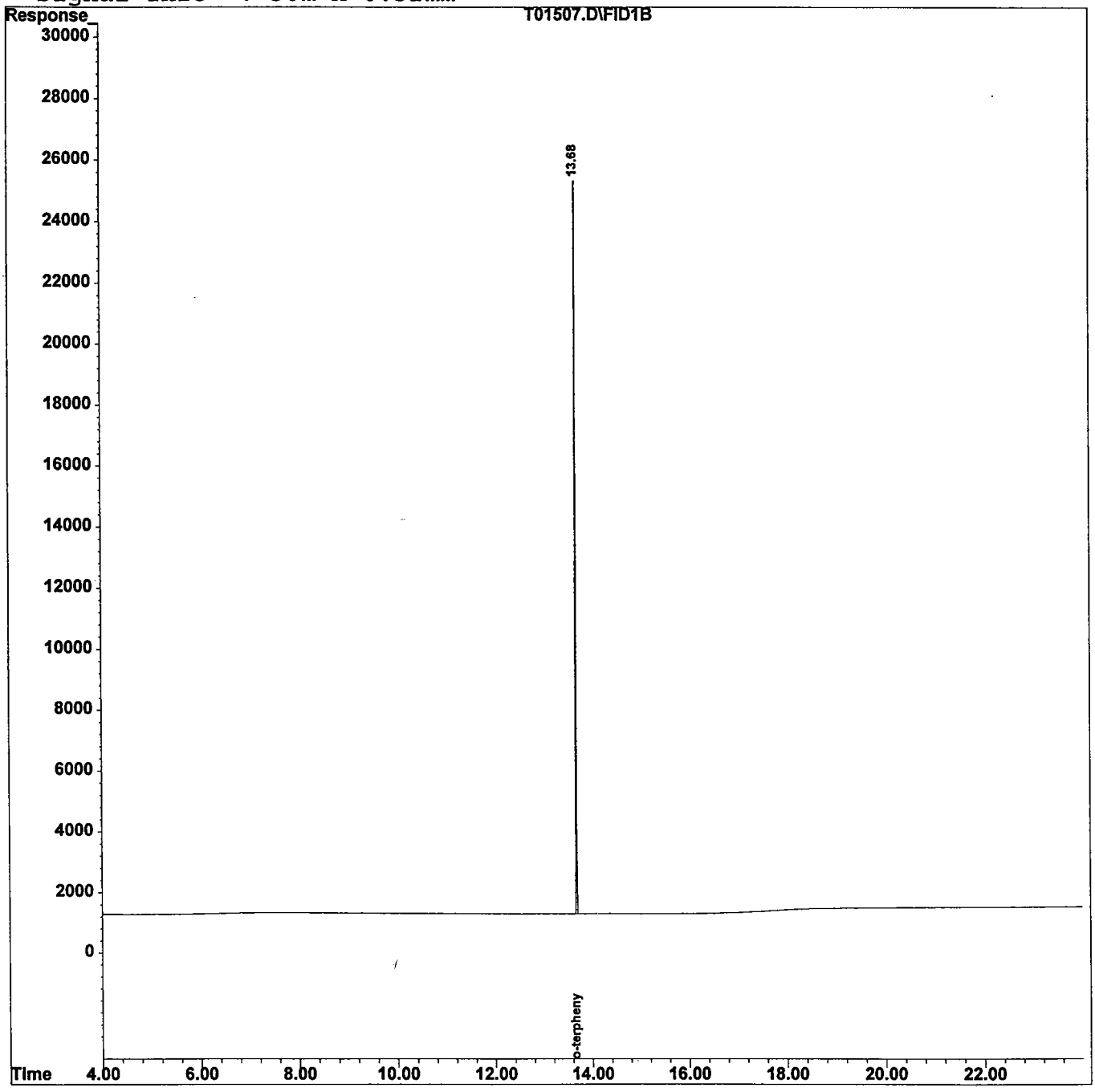
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970602\T01507.D Vial: 36
Acq On : 3 Jun 97 4:27 pm Operator: Skelton
Sample : 2576.02 Inst : FID/TCD
Misc : 2536-B Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:16 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH7.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\970602\T01508.D Vial: 37
Acq On : 3 Jun 97 5:10 pm Operator: Skelton
Sample : 2576.03 Inst : FID/TCD
Misc : 2536-C Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:17 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Initial Calibration
DataAcq Meth : TPH7.M

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

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) s o-terphenyl	13.68	200806	9.825	mg/L m
Spiked Amount 10.000		Recovery =	98.25%	
Target Compounds				
2) t tphc	0.00	0	N.D.	mg/L

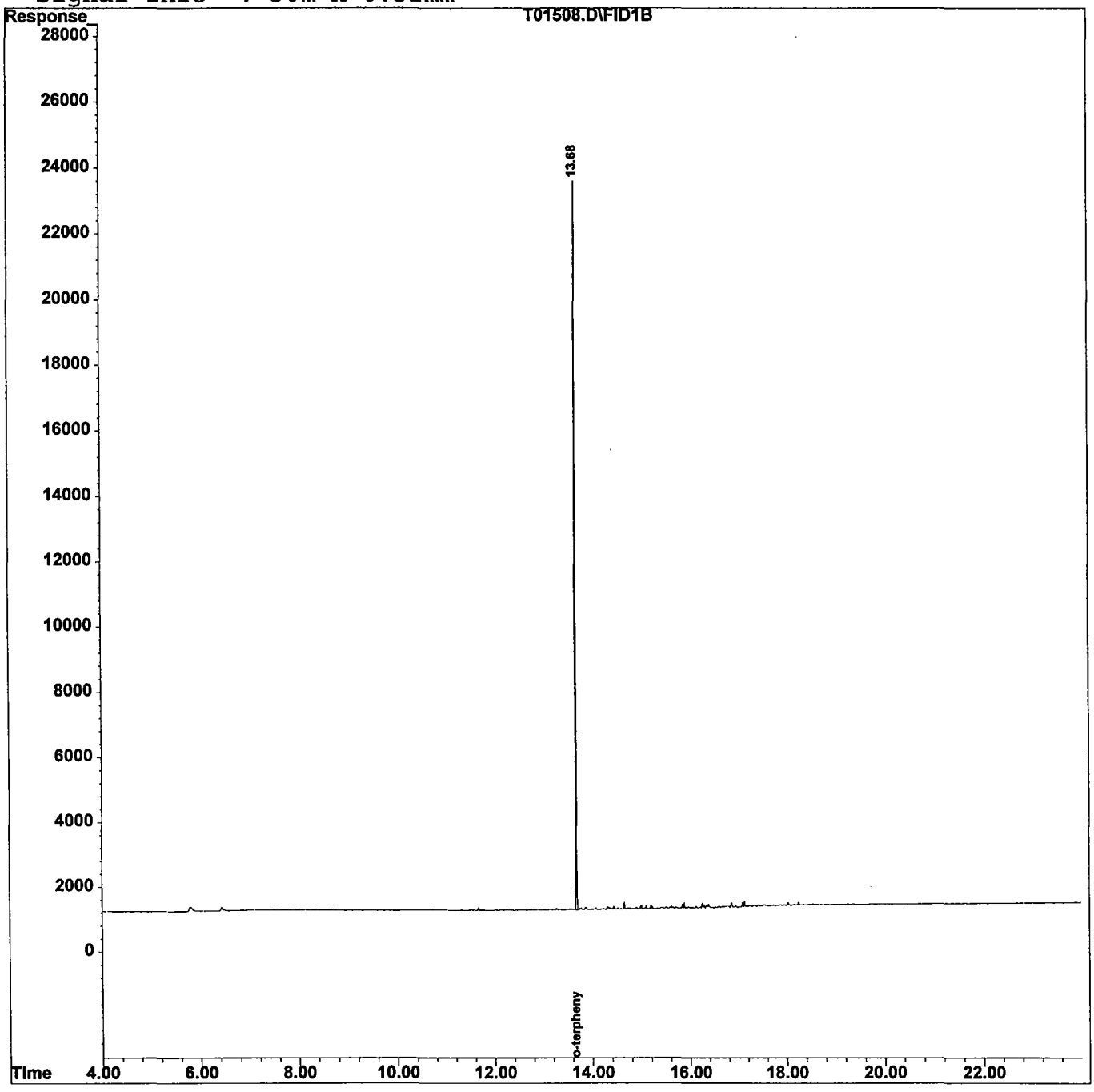
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970602\T01508.D Vial: 37
Acq On : 3 Jun 97 5:10 pm Operator: Skelton
Sample : 2576.03 Inst : FID/TCD
Misc : 2536-C Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:17 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH7.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\970602\T01509.D Vial: 38
Acq On : 3 Jun 97 6:03 pm Operator: Skelton
Sample : 2576.04 Inst : FID/TCD
Misc : 2536-D Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:17 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Initial Calibration
DataAcq Meth : TPH7.M

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

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) s o-terphenyl	13.68	210455	10.297	mg/L m
Spiked Amount 10.000		Recovery =	102.97%	
Target Compounds				
2) t tphc	0.00	0	N.D.	mg/L

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

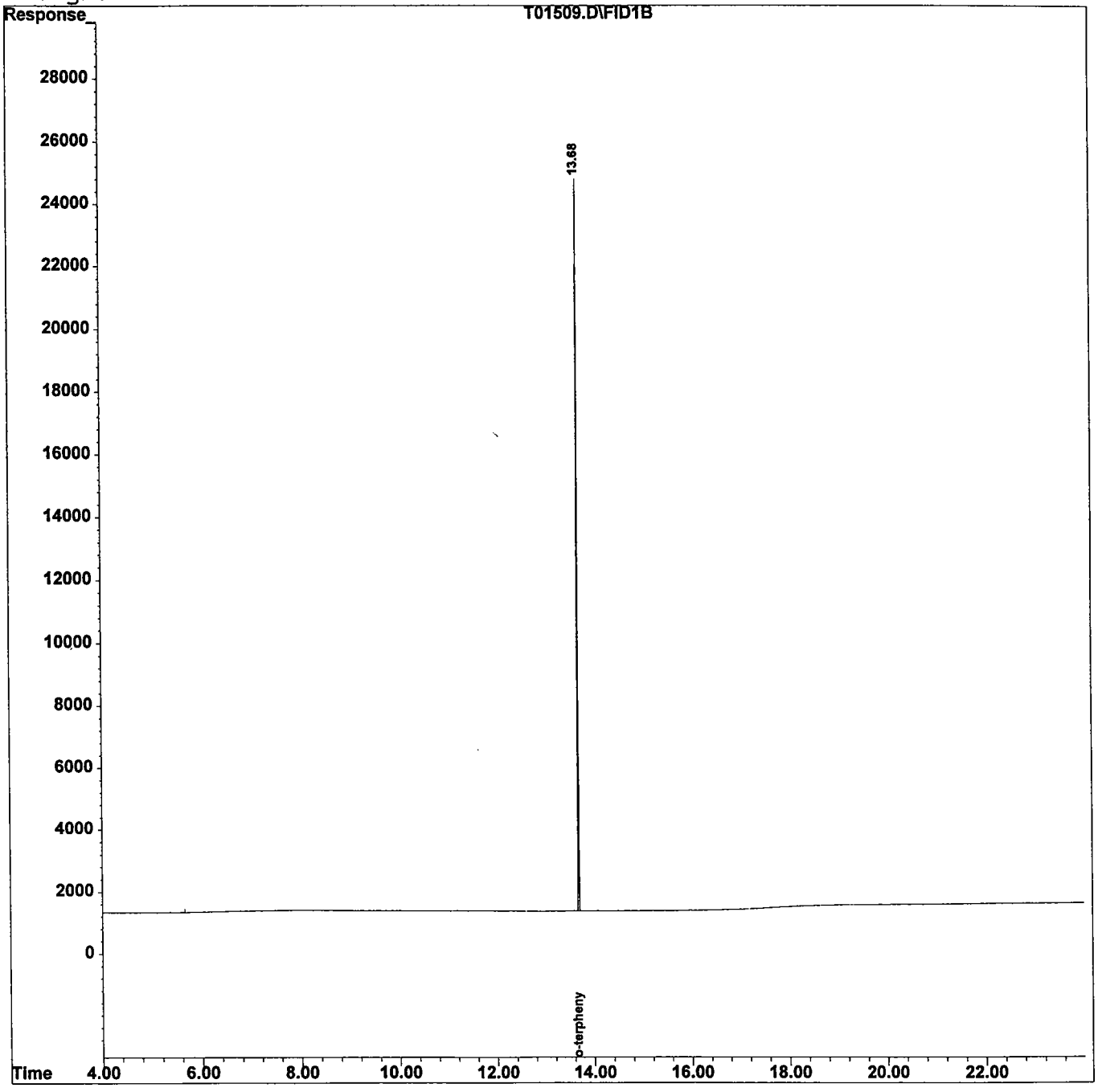
10

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970602\T01509.D Vial: 38
Acq On : 3 Jun 97 6:03 pm Operator: Skelton
Sample : 2576.04 Inst : FID/TCD
Misc : 2536-D Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:17 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH7.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\970602\T01511.D Vial: 40
Acq On : 3 Jun 97 7:40 pm Operator: Skelton
Sample : 2576.05 Inst : FID/TCD
Misc : 2536-E Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:18 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Initial Calibration
DataAcq Meth : TPH7.M

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

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) s o-terphenyl	13.68	199291	9.751 mg/L m
Spiked Amount 10.000		Recovery =	97.51%
Target Compounds			
2) t tphc	0.00	0	N.D. mg/L

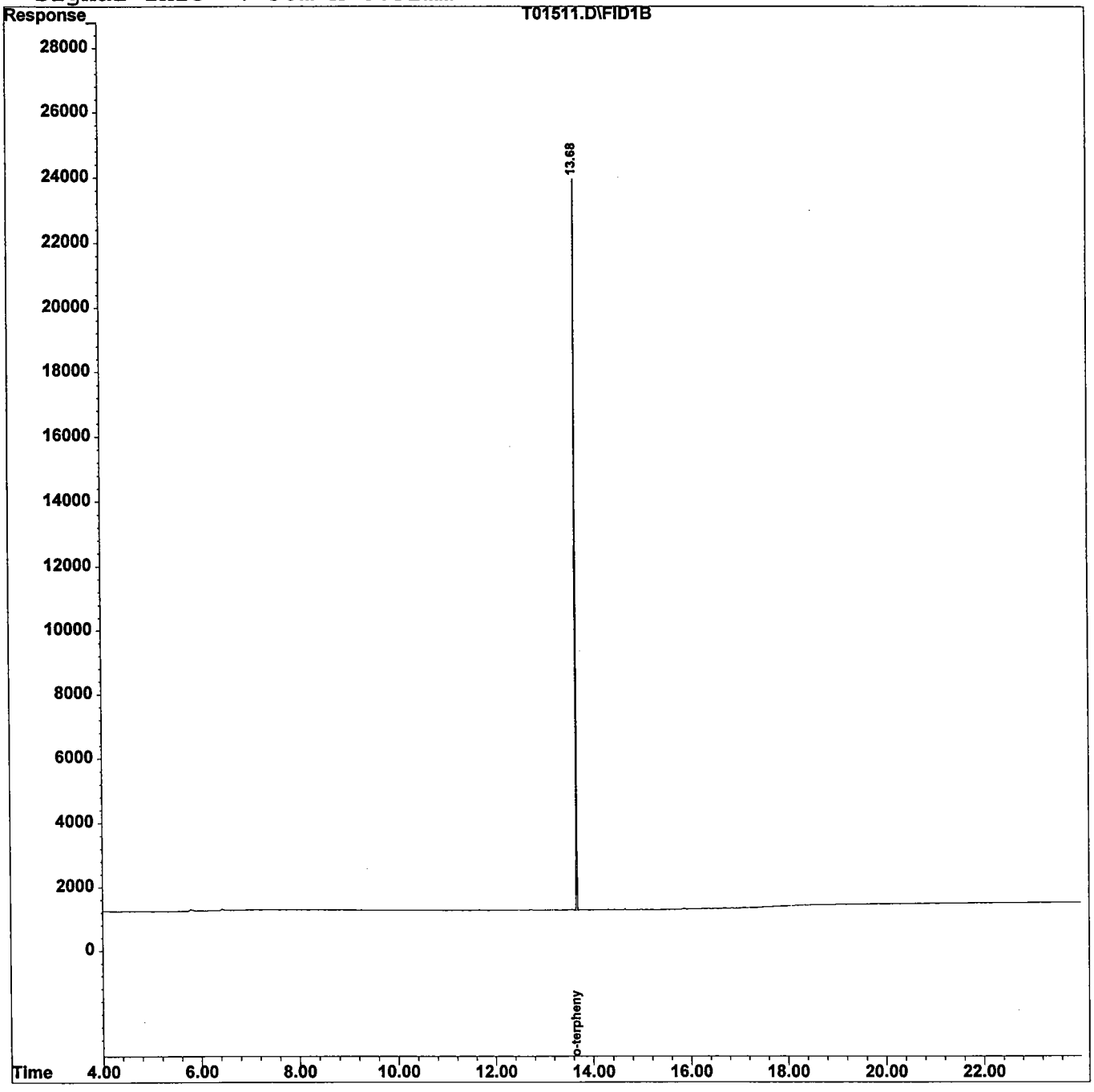
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970602\T01511.D Vial: 40
Acq On : 3 Jun 97 7:40 pm Operator: Skelton
Sample : 2576.05 Inst : FID/TCD
Misc : 2536-E Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:18 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH7.M

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



Quantitation Report (NT Reviewed)

Data File : C:\HPCHEM\1\DATA\970602\T01512.D Vial: 41
Acq On : 3 Jun 97 8:33 pm Operator: Skelton
Sample : 2576.06 Inst : FID/TCD
Misc : 2536-F Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:18 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Initial Calibration
DataAcq Meth : TPH7.M

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

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) s o-terphenyl	13.68	211372	10.342	mg/L	m
Spiked Amount 10.000		Recovery =	103.42%		
Target Compounds					
2) t tphc	0.00	0	N.D.	mg/L	

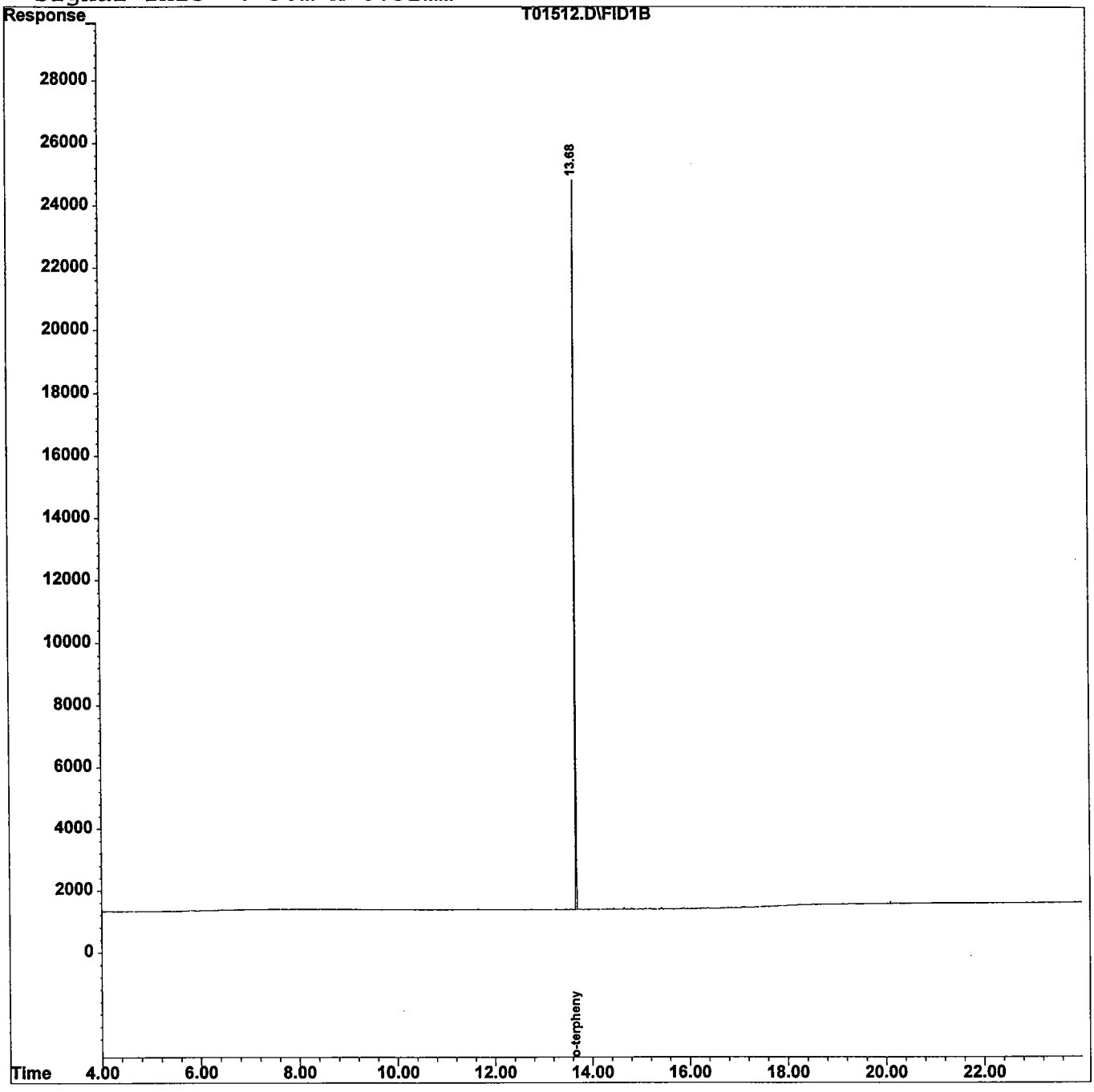
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970602\T01512.D Vial: 41
Acq On : 3 Jun 97 8:33 pm Operator: Skelton
Sample : 2576.06 Inst : FID/TCD
Misc : 2536-F Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:18 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH7.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\970602\T01513.D Vial: 42
Acq On : 3 Jun 97 9:20 pm Operator: Skelton
Sample : 2576.07 Inst : FID/TCD
Misc : 2536-G Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:19 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Initial Calibration
DataAcq Meth : TPH7.M

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

Compound	R.T.	Response	Conc	Units	
System Monitoring Compounds					
1) s o-terphenyl	13.68	210101	10.280	mg/L	m
Spiked Amount 10.000		Recovery =	102.80%		
Target Compounds					
2) t tphc	13.68	1317485	57.452	mg/L	m

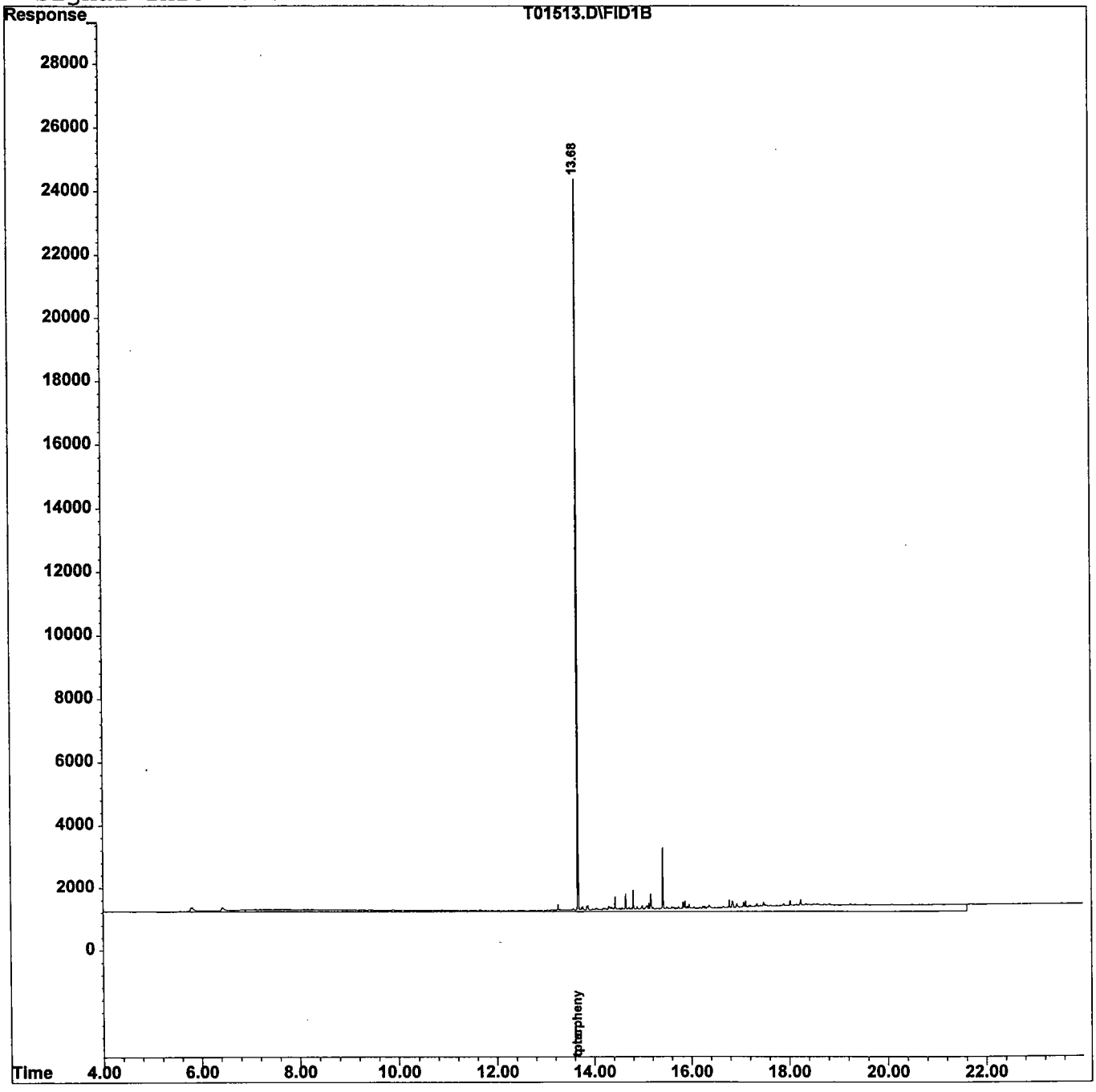
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970602\T01513.D Vial: 42
Acq On : 3 Jun 97 9:20 pm Operator: Skelton
Sample : 2576.07 Inst : FID/TCD
Misc : 2536-G Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:19 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH7.M

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



Quantitation Report (NT Reviewed)

Data File : C:\HPCHEM\1\DATA\970602\T01514.D Vial: 43
Acq On : 3 Jun 97 10:10 pm Operator: Skelton
Sample : 2576.08 Inst : FID/TCD
Misc : 2536-DUP Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:19 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Initial Calibration
DataAcq Meth : TPH7.M

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

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) s o-terphenyl	13.68	214924	10.516	mg/L m
Spiked Amount 10.000		Recovery =	105.16%	
Target Compounds				
2) t tphc	0.00	0	N.D.	mg/L

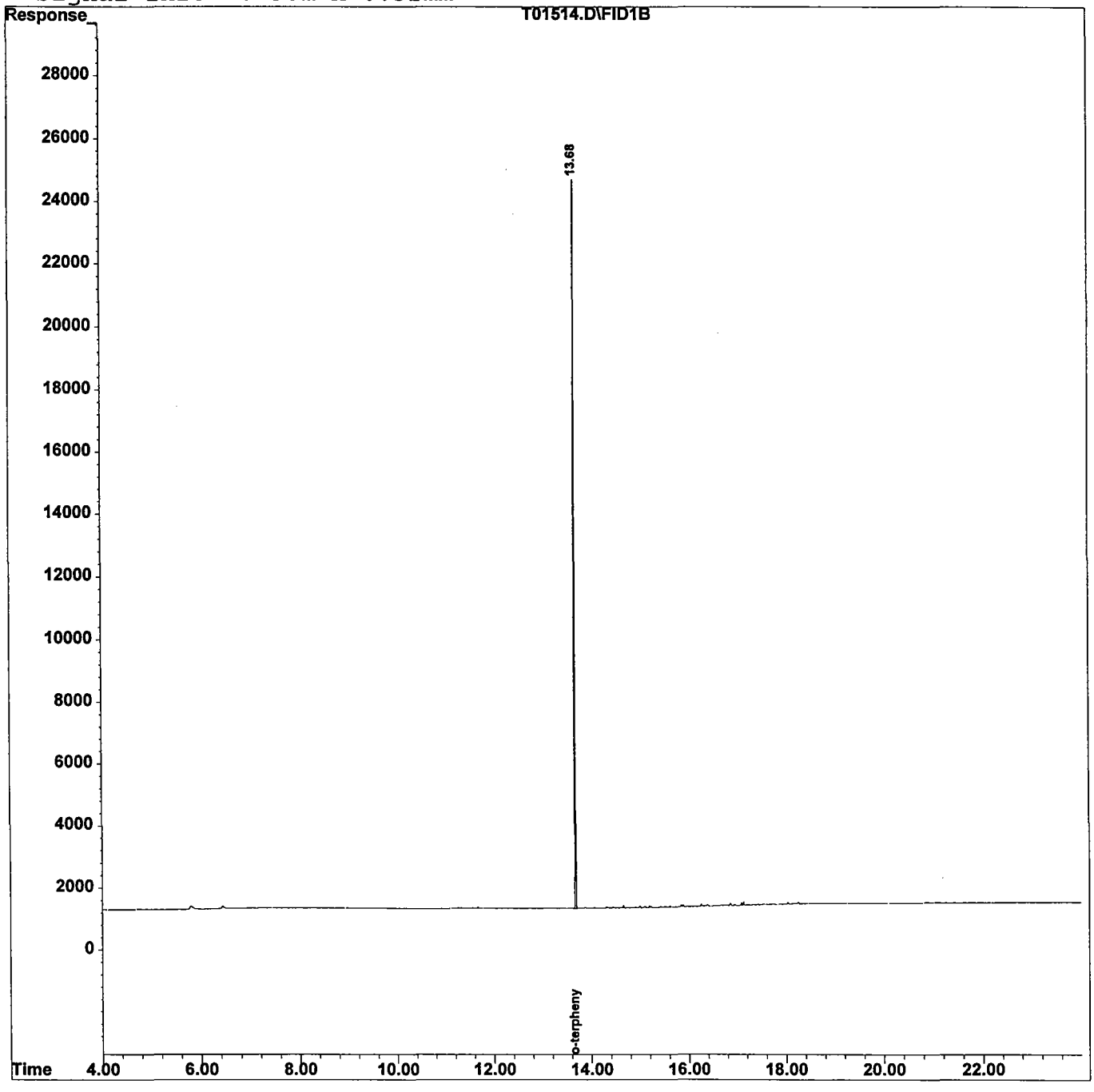
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\970602\T01514.D Vial: 43
Acq On : 3 Jun 97 10:10 pm Operator: Skelton
Sample : 2576.08 Inst : FID/TCD
Misc : 2536-DUP Multiplr: 1.00
IntFile : autoint1.e
Quant Time: Jun 4 9:19 1997 Quant Results File: TPH7.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH7.M (Chemstation Integrator)
Title : TPHC Calibration 01/17/97
Last Update : Tue Jun 03 09:01:30 1997
Response via : Multiple Level Calibration
DataAcq Meth : TPH7.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 11/16/97

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

December 1997

PHOTOGRAPHIC LOG

UST No. 81515-26

Building 2536

Charles Wood Area

Fort Monmouth

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