DEPARTMENT OF THE ARMY

HEADQUARTERS, U.S. ARMY GARRISON FORT MONMOUTH

FORT MONMOUTH, NEW JERSEY 07703-5101

August 26, 2009

From: Howard M. Syvarth, TVS Hydrogeologist
To: UST file
Subject: UST Closure Reports for Building 2237/Tank Registration #: 81515-7

Enclosed are the file review sheets for the closure of the Underground Storage Tank(s) (USTs) located at the above referenced location. After performing a file review to include submittals to NJDEP, I have determined that the tank closure and the subsequent report meet the minimum requirements established by NJDEP and as such are considered to be closed by both NJDEP and the Directorate of Public Works, US Army Garrison Fort Monmouth.

This document serves as the official site closure. All supporting documentation for the closure of this site can be found in the UST folder located in the library archive in Bldg. 173, Fort Monmouth, New Jersey.

Any questions regarding the information found in this or any other UST folder should be directed to:

Howard M. Syvarth
TECOM-Vinnell Services (TVS)
Staff Hydrogeologist, UST program
Directorate of Public Works, Ft. Monmouth, NJ
Email: Howard.M.Syvarth@us.army.mil

Sincerely,

Howard M. Syvarth
TVS Staff Hydrogeologist

Mr. Charles Appleby
Subsurface Evaluator NJDEP #9974
Environmental Protection Specialist
Directorate of Public Works

Fort Monmouth UST Status Summary Report

UST REGISTRATION INFORMATION SUMMARY

LOCATION:	2237	***NJDEP REG ID:***	81515 - 7
RESIDENTIAL?	YES		

UST CONSTRUCTION INFORMATION SUMMARY

SIZE (GALLONS):	550	***CONSTRUCTION:***	FRP
PRODUCT:	#2 FUEL OIL	***YEAR INSTALLED:***	1985

UST REMOVAL/INVESTIGATION SUMMARY

REMOVAL DATE:	11/23/1999	***REMOVAL CONTRACTOR:***	TVS
SRF SEND DATE:		***TMS:***	
DICAR NO.		***LEAK DETECT:***	N/A

REMEDIATION COMMENTS: 11/09/94 SAI removed 0 gallons of oil; left 54 gallons of waste in tank. Residential UST with no contamination and no DICAR; no Closure Report required.

REGISTRATION COMMENTS:

SAS DONE:		***CONSULTANT:***	TVS
MWs NEEDED:	0	***MONITORING WELLS:***	0

SUB-SURFACE EVALUATOR: D. Desai

CURRENT UST STATUS

UST STATUS:	Removed; Report Submitted/Not Nec.	***CASE STATUS:***	Case Closed
SUBMITTAL DATE:		***APPROVAL DATE:***	

Fort Monmouth Underground Storage Tank Assessment Questionnaire

CASE STATUS: *Case Closed*
NFA ISSUED:
File Review Date: 10/27/08
By: Howard Syvarth

Site Name: *2237 -*

Is the UST Residential: *YES*

There is / are 1 **UST(s) located at this site.**

This NJDEP UST Registration # is: *81515 - 7* **to** _____

This UST was *550* **Gallons in size, was made of** *FRP* **and contained** *#2 FUEL OIL.*

The UST was installed in *1985* _____ **and removed by** *TVS* _____ **on** *11/23/1999* _____. **A Standard Reporting Form was sent to the NJDEP on** _____. **NJDEP Closure #** _____

Subsurface Evaluator: *D. Desai* _____ **NJDEP #** _____

A Site Investigation Report was completed by *TVS* _____ **and submitted to the NJDEP on** _____.

The Current Status is: *Removed: Report Submitted/Not Nec.*

The Revised Status as of _____ **completed by** _____ **is:**

_____

_____

The Current UST Database Comments are: *11/09/94 SAI removed 0 gallons of oil; left 54 gallons of waste in tank. Residential UST with no contamination and no DICAR; no Closure Report required.*

The Revised Comments as of 10/27/08 **completed by** Howard Syvarth **is:**

NO NFA issued, non leaking non regulated

_____

_____

Database updated on _____ **by** _____.

Remedial Phases: [ ] PA [ ] SI [ ] RI [ ] RAW [ ] CEA [ ] NFA

[ ] Project transferred to the Fort Monmouth Restoration Program

Project # FTMM- _____

Fort Monmouth Underground Storage Tank Assessment Questionnaire

1. Has the property been or is the property currently the subject of any remediation with NJDEP oversight? [ ]Yes [X]No

   If Yes, provide the following:

   Case Number

   Case Lead (US Army) _____

   Case Manager (NJDEP) _____

   Case Status Data base " *Case Closed* , As of this date: _____

2. Was a Preliminary Assessment (PA) performed in accordance with N.J.A.C. 7: 26E-3.1? [ ]Yes [X]No

3. Were any Areas of Concern (AOCs) identified? [X]Yes [ ]No
   If yes proceed to question 4. If no, proceed to Check List (page 8).

4. Were any potentially contaminated AOCs identified? [X]Yes [ ]No

   List and describe all **potentially contaminated** AOCs.

   UST Area [X] Underground Piping Area [X] Dispenser Area [ ] UST Fill Area [X]

   _____

   _____

5. List and describe all AOCs subject to the 7:26E Regulations.

   UST Area [X] Underground Piping Area [X] Dispenser Area [ ] UST Fill Area [X]

   _____

   _____

6. Was a discharge of a hazardous substance, contaminant or pollutant identified? [ ]Yes [X]No

   If so, was the discharge to: (check all that apply)

   Soil [X] Ground Water [ ] Surface Water [ ] Ecologically Sensitive Area [ ]

   Other [ ] (specify) _____

Fort Monmouth Underground Storage Tank Assessment Questionnaire

7. How was the discharge identified? (check all that apply)

Sample Analysis [ ] Olfactory [ ] Visual [ ] Record/ Loss of Product [ ] Field Analysis [ ]

Other [ ] (specify) _____

8. What was the source of the discharge?

UST Area [ ] Underground Piping Area [ ] Dispenser Area [ ] UST Fill Area [ ]

_____

9. Were any of the following conditions present? (Check all that apply.)

Soil Staining [ ] Distressed or Dead Vegetation [ ] Product Entering Storm Sewer [ ]

Product Entering Basement [ ] Off-site Migration [ ] Product Observed on Surface Water [ ]

Other [ ] (specify) _____

10. Were samples collected in accordance with the provisions of N.J.A.C. 7:26E and the Department's applicable Field Sampling Procedures Manual? [X] Yes [ ] No

TPHC [X] VOA+10 [ ] BN+15 [ ] lead [ ] PP+40 [ ]

Other: _____

11. Were soil samples collected at the appropriate depth as per N.J.A.C. 7:26E [X] Yes [ ] No

12. Were samples biased toward the most contaminated areas using field Instruments and/or visual and olfactory observations? [X] Yes [ ] No

How was this accomplished? _____

13. If only TPHC samples taken, were samples >1000mg/kg run for VOA+10? [ ] Yes [X] No

all samples were <1,000 ppm

14. Was the vertical and horizontal extent of soil contamination delineated prior to remediation?

[ ] Yes [X] No

Explain: _____

_____

Fort Monmouth Underground Storage Tank Assessment Questionnaire

15. Fully describe the method of remediation?

Source Removal and Disposal [ ] Free Product removal by Vacuum Truck [ ]

Other: _____

_____

16. If excavation was performed, what was the depth of the bottom of the excavation? ~7 feet.

17. What is the approximate depth to saturated zone (seasonally high water table)? _____ feet.

How was this determined? Observed Measurement [ ] Monitoring Well [ ]

Other: _____

18. Is the Site Tidally Impacted? [ ]Yes [ ]No

19. What is the percentage of silt/clay in the soil between the contaminant and the saturated zone?

_____. How was this determined? _____

_____ [X] Not Available

20. Was ground water present in the excavation? [ ]Yes [X]No

If yes, was there a sheen observed on ground water? [ ]Yes [ ]No

21. Are there any Public Supply Wells within 2,000 feet of confirmed soil contamination? [ ]Yes [ ]No

How was this determined? Well Search : [ ] _____

22. Was contaminated soil removed from the site? [ ]Yes [X]No

How much soil was removed? _____ tons/cubic yards (circle one)

To what facility was the soil taken? _____

Date taken: _____

23. Were the analytical results for all soil post excavation/remediation samples below the Department's ~~June~~ Sept. 2008 residential soil cleanup criteria? [X]Yes [ ]No

Fort Monmouth Underground Storage Tank Assessment Questionnaire

If No, describe in detail in Comments Page 6

22. Was this an investigation pertaining to a non-regulated heating oil tank? [X]Yes [ ]No
Fort Monmouth Database : : *YES*
If yes, complete the following, If no go to 23

Do on-site structures have a basement/crawl space?		[ ]Yes	[X]No
Was staining observed on the basement/crawl space walls or floor?	[ ]Yes	[ ]No	[X]NA
Were petroleum odors observed in the basement/crawl space?	[ ]Yes	[ ]No	[X]NA
Is a sump present in the basement/crawl space? **If yes, please indicate location on site map.**	[ ]Yes	[ ]No	[X]NA
Was water observed in the sump?	[ ]Yes	[ ]No	[X]NA
Was a sheen observed on the water in sump?	[ ]Yes	[ ]No	[X]NA
If there was no water in the sump was the base of the sump investigated for a petroleum discharge?	[ ]Yes	[ ]No	[X]NA
If the sump was investigated, was a discharge observed?	[ ]Yes	[ ]No	[X]NA

23. Is a regulated underground storage tank the subject of the remediation? [ ]Yes [X]No

If yes, complete the following, If no, go to 24

Was a closure approval or 14 day notification obtained prior to the closure of the tank? [ ]Yes [ ]No
List Closure Approval/Notification Numbers **NJDEP Closure #** _____

Was the closure or any remediation performed by an individual and firm certified in closure and subsurface evaluation? [ ]Yes [ ]No

Subsurface Evaluator: *D. Desai* _____

Individual certification number: _____

Firm certification number: _____

Was an Underground Storage Tank Facility Certification Questionnaire completed and submitted "delisting" the subject tanks? [ ]Yes [ ]No

24. Was a Baseline Ecological Evaluation conducted pursuant to N.J.A.C 7:26E? [ ]Yes [X]No

If No, was the BEE a regulatory requirement at the time? [ ]Yes [X]NA
(UST removed prior to 1997 or the UST is Residential?)

If Yes, is the a contaminant of concern present? [ ]Yes [X]No

	Are there environmentally sensitive natural resources within or surrounding the property?	[ ]Yes	[ ]No
	Are there potential contaminant migration pathways present?	[ ]Yes	[ ]No
	Were potential ecological impacts identified?	[ ]Yes	[ ]No
	Is a BEE planned to be completed for this site?	[ ]Yes	[ ]No
25.	Was the site restored in accordance to N. J.A.C. 7:26E-6.4(b)?	[X]Yes	[ ]No
26.	Was the remedial investigation/action report prepared in accordance with N.J.A.C. 7:26E?	[ ]Yes	[X]No

27. Remediation completed date: 11/23/99

28. Are there currently, or have there ever been, any Deed Notices or Declarations of Environmental Restriction pursuant to N.J.S.A. 58:10B-1 et seq. and N.J.A.C. 7:26E-1 et seq. for the Site? [ ]Yes [X]No

If yes, Attach a copy of the Deed Notice or Declaration of Environmental Restriction.

29. Has NJDEP ever issued a no further action letter ("NFA") for any portion of the Site? [ ]Yes [X]No

NFA ISSUED:

If Yes, in accordance with N.J.S.A. 58:10B-13(e), is there an order of magnitude difference between the currently applicable remediation standard or criterion and the contaminant level approved under such previously issued NFA? [ ]Yes [ ]No

31. Subcontractors employed during the investigation/remediation (list all):

Name/Address:TVS

Name/Address: TVS

Name/Address: _____

Name/Address: _____

Name/Address: _____

COMMENTS:

_____

PRINT LEGIBLE.

Fort Monmouth Underground Storage Tank Assessment Questionnaire

Site Investigation - Remedial Investigation/Action Report Checklist: DATE: _____

• Soil Contamination currently exists on site	[ ]Yes	[X]No	[ ]NA
• GW Contamination currently exists on site	[ ]Yes	[X]No	[ ]NA
• Contaminated Soil Disposal Receipt (fully executed manifest)	[ ]Yes	[ ]No	[X]NA
• Tank Disposal Certificate	[X]Yes	[ ]No	[ ]NA
• Tank Contents Disposal Receipt (fully executed manifest)	[ ]Yes	[X]No	[ ]NA
• Fill was "certified clean" in accordance with N.J.A.C.7:26E-6.4	[ ]Yes	[X]No	[X]NA
• Scaled site map with AOCs and north arrow	[ ]Yes	[X]No	[ ]NA
• Sample Results Summary Tables (N.J.A.C.7:26E-4.8)	[X]Yes	[ ]No	[ ]NA
• Laboratory was certified to perform the required tests	[X]Yes	[ ]No	[ ]NA
• *Chain of Custody forms submitted*	[X]Yes	[ ]No	[ ]NA
• Signed laboratory deliverables checklist and Non-Conformance Summaries submitted	[X]Yes	[ ]No	[ ]NA
• Problems identified in the laboratory deliverables checklist and Non-Conformance summaries	[X]Yes	[ ]No	[ ]NA
• Holding times were met for all analyses	[X]Yes	[ ]No	[ ]NA
• MDLs below most stringent soil cleanup criteria	[X]Yes	[ ]No	[ ]NA
• Laboratory sample summary submitted	[X]Yes	[ ]No	[ ]NA
• QA/QC package (reduced deliverables) submitted	[ ]Yes	[X]No	[X]NA
• VOC soil samples methanol preserved (sample weights included)	[X]Yes	[ ]No	[ ]NA
• Electronic data package (home heating oil tanks exempt)	[ ]Yes	[X]No	[X]NA
• Well search submitted	[ ]Yes	[X]No	[X]NA
• Baseline Environmental Evaluation (home heating oil tanks exempt)	[ ]Yes	[X]No	[X]NA
• Closure approval notification enclosed	[ ]Yes	[X]No	[X]NA
• No Further Action letter(s) enclosed	[ ]Yes	[X]No	[X]NA

TVS

UTILITY MARKING REQUEST

Request marking of circled utility lines in the area indicated below.

NJ Nat. Gas Co.
NJ Bell
NJ American Water Co.
JCP&L
Cable TV Co.

Post Telephone
Post water/sewer
Post Electric
Co. Sewage Auth.

COUNTY: Monmouth

TOWNSHIP: TINTON FALLS (See municipality list)

TOWN: Fort Monmouth

BUILDING NUMBER: 2237

STREET ADDRESS: 23 + 25 HEMPHILL RD.

NEAREST CROSS STREET: HOPE RD, GUAM LANE

LOCATION OF EXCAVATION: BUILDING FRONT
(e.g. street, sidewalk, etc.)

DATE OF EXCAVATION: 11-2-99 0800

DEPTH OF EXCAVATION: 10 FT. MAX

COMPANY NAME: TVS

COMPANY ADDRESS: P.O. Box 60
Ft. Monmouth, NJ 07703

S.O./I.J.O. NUMBER: 100004

NAME OF REQUESTOR: FRANK ACCORSI

DATE OF REQUEST: 10-26-99

NAME OF CALLER:

DATE OF CALL:

MARKING NUMBER: ~~993000433~~

Approval for emergency digging without marking:

UNDERGROUND STORAGE TANK REMOVAL
(550 G.)

Newest # 11/5 0800
993021081

~~New # 11/5 0800~~
~~99302098~~

11/5 0800
99302007?
CX1 #

New Jersey One Call System SEQUENCE NUMBER 0004 CDC = FOM

Transmit: Date: 10/27/99 At: 0953

*** R O U T I N E *** Request No.: 993000423

Operators Notified:
CC4=/COMCAS-MNMOUTH / NJN=/NJNG-UTILIQUEST/ NJA=/NJ AMER WTR /
GP9=/GPU ENERGY-CLS / BAN=/BELL ATL NJ-CLS/ FOM=/FORT MONMOUTH /

Location Information:
County: MONMOUTH Municipality: TINTON FALLS
Subdivision/Community: FORT MONMOUTH
Street: 18 HEMPHILL RD
Nearest Intersection: HOPE RD
Other Intersection: GUAM LN
Type of Work : REMOVE UST
Extent of Work: ENTIRE FRONT DEPTH: 10FT
Location Reference:
FRONT-
Start Date/Time: 11/02/99 At 0800
Remarks:
EXPIRATION DATE 12/13/99
1 BLDG 2 UNITS BLG 2237

Working For: TVS
Address: PO BOX 60
City: FORT MONMOUTH 07703
Phone: 732-532-6955
Contact: EILEEN MAIAR Title:

Excavator Information:
Caller: EILEEN MAIAR Title: WORK CNTRL
Phone: 732-532-6955

Excavator: TVS
Address: PO BOX 60
City: FORT MONMOUTH, NJ 07703
Phone: 732-532-6955 Fax: 732-542-1107
Contact: EILEEN MAIER Title: WORK CNTRL
Phone: 732-532-6955 Best Time: 0800-1600
Cellular:

Alternate Field Contact:
Name: FRANK ACCORSCK Title: SUBSRFC EV
Phone: 732-532-2577 Fax:
Cellular: Best Time: 0800-1600
End Request

U.S. ARMY FORT MONMOUTH
UST DATABASE INPUT FORM

SELFM-EH-EV

DATE: 11/9/94 BUILDING #: 2237

NJDEPE REG.#: 81515 UST #: 7

PRODUCT: (#2), #6, DIESEL, GASOLINE, OTHER: _____

STATUS: IN USE , NOT IN USE AS OF 11/9/94

REASON NOT IN USE: (GASIFICATION), LEAKER, DEMO

GENERAL COMMENTS:

_____

_____

UST PRODUCT REMOVED: DATE: 11/9/94

CONTRACTOR: SERVAIR P.O.L. T. Smythe

MANIFEST #: NONE

COMMENTS: 54 GALS WASTE IN TANK
Ø GALS TO BLDG Ø

NJDEPE DISCHARGE TO ENVIRONMENT NOTIFICATION
(609) 292-7172:

CALLER NAME: _____

DATE: _____ TIME: _____

NJDEPE CASE NUMBER: _____

COMMENTS: _____

_____

ATTACHMENTS (COPIES): __HAZ-MAT MANIFEST,
__LAND BAN __SERVICE ORDER __PURCHASE REQ
__SPILL REPORT

SUBMITTED BY: _____

SIGNATURE: _____ DATE: _____

New Jersey One Call System SEQUENCE NUMBER 0012 CDC = FOM

Transmit: Date: 10/29/99 At: 1448

*** R O U T I N E *** Request No.: 993021081

Operators Notified:
CC4=/COMCAS-MNMOUTH / NJN=/NJNG-UTILIQUEST/ NJA=/NJ AMER WTR /
GP9=/GPU ENERGY-CLS / BAN=/BELL ATL NJ-CLS/ FOM=/FORT MONMOUTH /

Location Information:
County: MONMOUTH Municipality: TINTON FALLS
Subdivision/Community: FORT MONMOUTH
Street: 23 - 25 HEMPHILL RD
Nearest Intersection: HOPE RD
Other Intersection: GUAM LN
Type of Work : REMOVE UST
Extent of Work: ENTIRE FRONT DEPTH: 10FT
Location Reference:
FRONT-
Start Date/Time: 11/05/99 At 0800
Remarks:
EXPIRATION DATE 12/15/99
23 & 25 ARE SIDE BY SIDE

Working For: TVS
Address: PO BOX 60
City: FORT MONMOUTH 07703
Phone: 732-532-6955
Contact: EILEEN MAIAR Title:

Excavator Information:
Caller: EILEEN MAIAR Title: WORK CNTRL
Phone: 732-532-6955

Excavator: TVS
Address: PO BOX 60
City: FORT MONMOUTH, NJ 07703
Phone: 732-532-6955 Fax: 732-542-1107
Contact: EILEEN MAIER Title: WORK CNTRL
Phone: 732-532-6955 Best Time: 0800-1600
Cellular:

Alternate Field Contact:
Name: FRANK ACCORSCK Title: SUBSRFC EV
Phone: 732-532-2577 Fax:
Cellular: Best Time: 0800-1600
End Request

DIRECTORATE OF PUBLIC WORKS
FORT MONMOUTH, NEW JERSEY 07703

Contract Management Division

SUBJECT: PWS-007, Residential UST Removal
Contractor: TVS Inc.

RE: Backfilling of excavation,

BUILDING #: 2237 (2325 HEMPHILL RD)

TVS Inc.
Field Supervisor, PWS-007
ATTN: Brian Finch
Building 166
Fort Monmouth, New Jersey 07703-5000

Dear Mr. Finch:

The above referenced area has been sampled and analyzed as described in the NJDEP Regulations. The results indicate levels of petroleum contamination below the NJDEP allowable limits ~~or that the site requires further investigation outside the scope of this contract.~~ The contractor may proceed with the backfilling of the excavation with stone to groundwater and clean fill to grade as required in the above referenced contract specification.

Regards,

Mr. Dinker Desai
Environmental Engineer
Directorate of Public Works

CC: UST file copy

Report of Analysis
Army, Fort Monmouth Environmental Lab
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4964
	DPW. SELFM-PW-EV	**Date Rec'd:**	24-Nov-99
	Bldg. 173	**Analysis Start:**	26-Nov-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	26-Nov-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	81515-7
Matrix:	Soil	**Closure #:**	
Analyst:	B.Patel	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 mm
Ext. Meth:	Shake	**Location #:**	Bldg. 2237

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4964.01	2237-A	1.00	15.61	88.83	169	ND
4964.02	2237-B	1.00	15.38	89.42	171	ND
4964.03	2237-C	1.00	15.57	81.33	186	ND
4964.04	2237-D	1.00	15.82	86.14	172	ND
4964.05	2237-E Duplicate	1.00	15.52	86.82	174	ND
METHOD BLANK	TBLK285	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer: Dinker Desai | Project No: 100004
Phone #: X21475 | Location: BLDG. 2237
( )DERA (X)OMA UST Assessment | UST# 81515-7
Samplers Name / Company : Frank Accorsi/TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS*	VOA+10*	VOA ID #	PID Reading	Comments: * = Samples Kept <4°C / Remarks / Preservation Method
19[illegible]01	2237-A, SOUTH END, 6-6.5 FT	11-24-99	0850	SOIL	2	X	X	X	993	0	ICE
02	2237-B, NORTH END, 6-6.5 FT		0900		2	X	X	X	994	0	
03	2237-C, PIPING, 1.5-2 FT		0910		2	X	X	X	995	4.0	
04	2237-D, PIPING, 1.5-2 FT		0950		2	X	X	X	996	0	
05	2237-E, DUPLICATE		0900		2	X	X	X	997	0	
06	TRIP BLANK		—	AQ	1			X	9[illegible]	—	

OVM sn#580U-64455.343 was calibrated with zero air & w/ 245 ppm Isobutylene read 245 ppm. 0830 11-24-99 FA (time/date & initial)

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:
Frank Accorsi	11-24-99 1025	[signature]		
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:

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

*Remarks: CONTING. VOA+10 ON 2590 > 1,000 PPM TPH, ON HIGHEST, ANY ONE.
Dedicated Sampling Tools Used
All sample points have been GPS? (X)YES ( )NO ( )NA

print legibly

USTcoc.xls11/5/99

SAMPLE RECEIPT FORM

Date Received: 11-24-99 Lab Project ID#: 4964

Site/Project Name: Bldg 2237 Cooler Temp (°C): 1.0c

Received By: J. Delgado Sign: J. Delgado
(print name)

Check the appropriate answer

1. Did the samples come in a cooler?	☑ yes	☐ no	☐ NA
2. Were the chain of custody papers filled out correctly and legibly?	☑ yes	☐ no	
3. Did you sign the chain of custody in the appropriate place?	☑ yes	☐ no	
4. Did all the labels agree with the chain of custody and in good condition?	☑ yes	☐ no	
5. Were the correct containers and/or preservatives used for the tests indicated?	☑ yes	☐ no	
6. Was a sufficient amount of sample sent for the tests indicated?	☑ yes	☐ no	
7. Were bubbles absent from aqueous VOC sample containers?	☐ yes	☐ no	☑ NA
8. Were samples received on ice?	☑ yes	☐ no	

Fill out the following table for each sample bottle

Sample ID	pH	Preservative	Sample ID	pH	Preservative

Comments:

F0201.d0c

SAMPLE RECEIPT FORM

Date Received: 11-24-99 Lab Project ID#: 4964

Site/Project Name: Bldg 2237 Cooler Temp (°C): 1.0C

Received By: J. Delgina Sign: J. Delgina
(print name)

Check the appropriate answer

1. Did the samples come in a cooler?	☑ yes	☐ no	☐ NA
2. Were the chain of custody papers filled out correctly and legibly?	☑ yes	☐ no	
3. Did you sign the chain of custody in the appropriate place?	☑ yes	☐ no	
4. Did all the labels agree with the chain of custody and in good condition?	☑ yes	☐ no	
5. Were the correct containers and/or preservatives used for the tests indicated?	☑ yes	☐ no	
6. Was a sufficient amount of sample sent for the tests indicated?	☑ yes	☐ no	
7. Were bubbles absent from aqueous VOC sample containers?	☐ yes	☐ no	☑ NA
8. Were samples received on ice?	☑ yes	☐ no	

Fill out the following table for each sample bottle

Sample ID	pH	Preservative	Sample ID	pH	Preservative

Comments: _____

FORT MONMOUTH ENVIRONMENTAL
TESTING LABORATORY
DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-3224 FAX: (732) 532-3533
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP 012451, NYSDOH #11809

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #IJO#100004

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
2237-A South End	4964.01	Soil	24-Nov-99 08:50	11/24/99
2237-B North End	4964.02	Soil	24-Nov-99 09:00	11/24/99
2237-C Piping	4964.03	Soil	24-Nov-99 09:20	11/24/99
2237-D Piping	4964.04	Soil	24-Nov-99 09:50	11/24/99
2237-E Duplicate	4964.05	Soil	24-Nov-99 09:00	11/24/99
Trip Blank	4964.06	Methanol	24-Nov-99	11/24/99

FORT MONMOUTH ENVIRONMENTAL LAB
TPHC, %SOLIDS

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

12-3-99
Daniel Wright/Date
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a orbital 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.

TPHC Conformance/Non-conformance Summary Report

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

Additional comments: _____

Laboratory Manager _____ Date 12-3-99

Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer: Dinker Desai
Phone #: X21475
( )DERA (X)OMA UST Assessment

Project No: 100004
Location: BLDG. 2237
UST# 81515-7

Samplers Name / Company : Frank Accorsi/TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS *	VOA+10 *	VOA ID #	PID Reading	Remarks / Preservation Method
49(04.01	2237-A, SOUTH END,	11-24-99	0850	SOIL	2	X	X	X	993	0	ICE
02	2237-B, NORTH END,		0900		2	X	X	X	994	0	
03	2237-C, PIPING,		0910		2	X	X	X	995	4.0	
04	2237-D, PIPING,		0950		2	X	X	X	996	0	
05	2237-E, DUPLICATE		0900		2	X	X	X	997	0	
06	TRIP BLANK		—	AQ	1			X	998	—	

Comments:
* = Samples Kept <4°C

OVM sn#580U-64455.343 was calibrated with zero air & w/ 245 ppm Isobutylene read 245 ppm. 0830 11-24-99 FF (time/date & initial)

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	
Frank Accorsi	11-24-99 1025	J. Applegate			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	

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

Remarks: * CONTINUE. NO H2O ON 25% > 1,000 ppm TPH, ON HIGHEST, RUN ONE.
Dedicated Sampling Tools Used
All sample points have been GPS? (X)YES ( )NO ( )NA

000003

SAMPLE RECEIPT FORM

Date Received: 11-24-99 Lab Project ID#: 4964

Site/Project Name: Bldg 2237 Cooler Temp (°C): 1.0c

Received By: J. Delgado Sign: J. Delgado
(print name)

Check the appropriate answer

1. Did the samples come in a cooler? ☑ yes ☐ no ☐ NA
2. Were the chain of custody papers filled out correctly and legibly? ☑ yes ☐ no
3. Did you sign the chain of custody in the appropriate place? ☑ yes ☐ no
4. Did all the labels agree with the chain of custody and in good condition? ☑ yes ☐ no
5. Were the correct containers and/or preservatives used for the tests indicated? ☑ yes ☐ no
6. Was a sufficient amount of sample sent for the tests indicated? ☑ yes ☐ no
7. Were bubbles absent from aqueous VOC sample containers? ☐ yes ☐ no ☑ NA
8. Were samples received on ice? ☑ yes ☐ no

Fill out the following table for each sample bottle

Sample ID	pH	Preservative	Sample ID	pH	Preservative

Comments:

F0201.d0c

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

Client :	U.S. Army	**Lab. ID # :**	4964
	DPW. SELFM-PW-EV	**Date Rec'd:**	24-Nov-99
	Bldg. 173	**Analysis Start:**	26-Nov-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	26-Nov-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	81515-7
Matrix:	Soil	**Closure #:**	
Analyst:	B.Patel	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 mm
Ext. Meth:	Shake	**Location #:**	Bldg. 2237

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4964.01	2237-A	1.00	15.61	88.83	169	ND
4964.02	2237-B	1.00	15.38	89.42	171	ND
4964.03	2237-C	1.00	15.57	81.33	186	ND
4964.04	2237-D	1.00	15.82	86.14	172	ND
4964.05	2237-E Duplicate	1.00	15.52	86.82	174	ND
METHOD BLANK	TBLK285	1.00	15.00	100.00	157	ND

ND = Not Detected
MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Response Factor Report GC/ [illegible]

Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999

Calibration Files
100 =T009137.D 50 =T009138.D 20 =T009139.D
10 =T009140.D 5 =T009141.D

		Compound	100	50	20	10	5	Avg		%RSD
1)	tC	C8	2.564	2.455	2.647	2.599	2.646	2.582	E4	3.07
2)	tC	C10	2.605	2.600	2.721	2.834	2.715	2.695	E4	3.60
3)	TC	C12	2.594	2.590	2.710	2.817	2.833	2.709	E4	4.30
4)	tC	C14	2.574	2.561	2.696	2.793	2.875	2.700	E4	5.06
5)	tC	C16	2.583	2.576	2.713	2.829	2.971	2.734	E4	6.16
6)	tC	C18	2.699	2.599	2.963	2.817	3.006	2.817	E4	6.11
7)	tC	C20	2.712	2.706	2.838	2.973	3.094	2.865	E4	5.88
8)	tC	C22	2.754	2.748	2.898	3.040	3.183	2.925	E4	6.42
9)	tC	C24	2.787	2.778	2.932	3.069	3.207	2.955	E4	6.26
10)	tC	C26	2.752	2.741	2.899	3.051	3.259	2.940	E4	7.43
11)	tC	C28	2.742	2.727	2.865	2.982	3.103	2.884	E4	5.55
12)	tC	C30	2.826	2.804	2.913	3.050	3.153	2.949	E4	5.07
13)	tC	C32	2.730	2.698	2.755	2.833	2.881	2.779	E4	2.73
14)	tC	C34	2.709	2.724	2.786	2.839	3.016	2.815	E4	4.39
15)	tC	C36	2.288	2.331	2.386	2.407	2.550	2.392	E4	4.17
16)	tC	C38	2.040	2.295	2.361	2.436	2.660	2.358	E4	9.53
17)	tC	C40	1.509	1.830	1.857	1.896	2.378	1.894	E4	16.43
18)	tC	c42	1.390	1.737	1.749	1.808	2.407	1.818	E4	20.23
19)	TC	Pristane	2.788	2.686	2.832	2.995	3.198	2.900	E4	6.91
20)	TC	Phytane	2.764	2.647	2.881	3.053	3.274	2.924	E4	8.43
21)	sC	o-terphenyl	3.025	3.001	3.183	3.348	3.491	3.209	E4	6.54
22)	tC	TPHC - total	2.999	3.013	3.157	3.729	4.416	3.463	E4	17.63

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\991126\T009170.D
Acq On : 26 Nov 1999 11:48 am
Sample : Tstd050
Misc :
IntFile : TPHCINT.E

Via :
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Multiple Level Calibration

Min. RF : 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	25.823	26.099 E3	-1.1	106	-0.03
2	tC C10	26.950	27.561 E3	-2.3	106	0.00
3	TC C12	27.089	26.903 E3	0.7	104	0.00
4	tC C14	26.999	25.291 E3	6.3	99	0.00
5	tC C16	27.344	26.093 E3	4.6	101	0.00
6	tC C18	28.171	25.733 E3	8.7	99	0.00
7	tC C20	28.647	27.034 E3	5.6	100	0.00
8	tC C22	29.246	27.286 E3	6.7	99	0.00
9	tC C24	29.548	27.218 E3	7.9	98	0.00
10	tC C26	29.402	26.401 E3	10.2	96	0.00
11	tC C28	28.837	25.522 E3	11.5	94	0.00
12	tC C30	29.493	25.140 E3	14.8	90	0.00
13	tC C32	27.794	23.613 E3	15.0	88	0.00
14	tC C34	28.148	23.507 E3	16.5	86	0.00
15	tC C36	23.924	21.149 E3	11.6	91	0.00
16	tC C38	23.584	21.612 E3	8.4	94	0.00
17	tC C40	18.939	17.937 E3	5.3	98	0.00
18	tC c42	18.180	17.611 E3	3.1	101	0.00
19	TC Pristane	28.998	27.728 E3	4.4	103	0.00
20	TC Phytane	29.238	27.792 E3	4.9	105	0.00
21	sC o-terphenyl	32.093	30.766 E3	4.1	103	0.00
22	tC TPHC - total	34.629	31.902 E3	7.9	106	0.62#

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

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\991126\T009180.D Via. 25
Acq On : 26 Nov 1999 5:27 pm Operator: Skelton
Sample : Tstd050s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Multiple Level Calibration

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

		Compound	AvgRF	CCRF		%Dev	Area%	Dev(min)
1	tC	C8	25.823	26.443	E3	-2.4	108	-0.03
2	tC	C10	26.950	28.172	E3	-4.5	108	0.00
3	TC	C12	27.089	27.562	E3	-1.7	106	0.00
4	tC	C14	26.999	25.905	E3	4.1	101	0.00
5	tC	C16	27.344	26.832	E3	1.9	104	0.00
6	tC	C18	28.171	27.852	E3	1.1	107	0.00
7	tC	C20	28.647	27.386	E3	4.4	101	0.00
8	tC	C22	29.246	27.940	E3	4.5	102	0.00
9	tC	C24	29.548	28.375	E3	4.0	102	0.00
10	tC	C26	29.402	28.144	E3	4.3	103	0.00
11	tC	C28	28.837	27.860	E3	3.4	102	0.00
12	tC	C30	29.493	28.548	E3	3.2	102	0.00
13	tC	C32	27.794	27.574	E3	0.8	102	0.00
14	tC	C34	28.148	27.845	E3	1.1	102	0.00
15	tC	C36	23.924	25.013	E3	-4.6	107	0.00
16	tC	C38	23.584	25.483	E3	-8.1	111	0.00
17	tC	C40	18.939	21.764	E3	-14.9	119	0.00
18	tC	c42	18.180	21.074	E3	-15.9	121	0.00
19	TC	Pristane	28.998	28.967	E3	0.1	108	0.00
20	TC	Phytane	29.238	27.426	E3	6.2	104	0.00
21	sC	o-terphenyl	32.093	31.744	E3	1.1	106	0.00
22	tC	TPHC - total	34.629	30.729	E3	11.3	102	0.62#

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

000007

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

Client :	U.S. Army	**Lab. ID # :**	4964
	DPW. SELFM-PW-EV	**Date Rec'd:**	24-Nov-99
	Bldg. 173	**Analysis Start:**	26-Nov-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	26-Nov-99
		UST Reg. #:	
Analysis:	OQA-QAM-025	**Closure #:**	
Matrix:	Soil	**DICAR #:**	
Analyst:	B.Patel	**Injection Volume**	1 ul
Inst. ID.	GC TPHC INST. #1	**Column ID**	0.32 mm
Column Type	RTX 5	**Location #:**	Bldg. 2237
Ext. Meth:	Shake		

Sample			Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
4964.01			10.00	10.08	**100.79**
4964.02			10.00	11.31	**113.14**
4964.03			10.00	11.26	**112.57**
4964.04			10.00	10.79	**107.89**
4964.05			10.00	11.33	**113.25**
METHOD BLANK	TBLK285		10.00	10.94	**109.39**

Surrogate Added : **o-Terphenyl**

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

Client :	U.S. Army	**Lab. ID # :**	4964
	DPW. SELFM-PW-EV	**Date Rec'd:**	24-Nov-99
	Bldg. 173	**Analysis Start:**	26-Nov-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	26-Nov-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	B.Patel	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 mm
Ext. Meth:	Shake	**Location #:**	Bldg. 2237

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
4964.05MS	1000	0.00	780.53	78.05	75-125
4964.05MSD	1000.	0.00	797.18	79.72	75-125
			RPD	2.11	20.00

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

Client :	U.S. Army	**Lab. ID # :**	4964
	DPW. SELFM-PW-EV	**Date Rec'd:**	24-Nov-99
	Bldg. 173	**Analysis Start:**	26-Nov-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	26-Nov-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	B.Patel	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 mm
Ext. Meth:	Shake	**Location #:**	Bldg. 2237

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
TBLK285BS	26-Jan-99	1000	770.28	77.03	75-125

Data File : C:\HPCHEM\1\DATA\991126\T009171.D \ : 1
Acq On : 26 Nov 1999 12:22 pm Operator: Skelton
Sample : Tblk285s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Initial Calibration
DataAcq Meth : TPH66.M

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

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sc o-terphenyl	12.61	351083	10.939 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 109.39%#	
Target Compounds			

000011

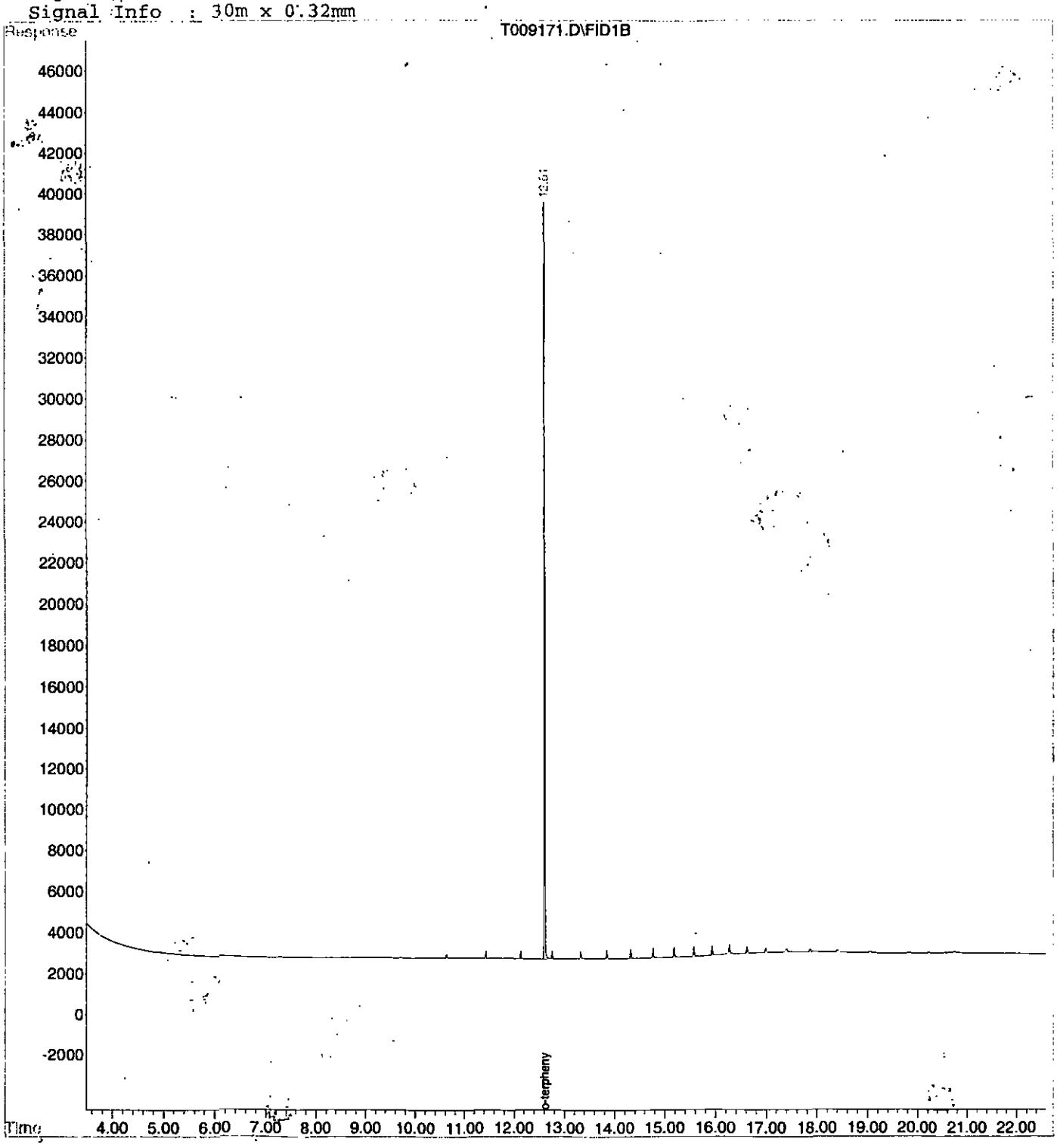
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991126\T009171.D Vial: 1
Acq On : 26 Nov 1999 12:22 pm Operator: Skelton
Sample : Tblk285s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH66.M

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



ntitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\991126\T009173.D V. .1: 3
Acq On : 26 Nov 1999 1:30 pm Operator: Skelton
Sample : 4964.01s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Initial Calibration
DataAcq Meth : TPH66.M

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

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.61	323466	10.079 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 100.79%#	
Target Compounds			

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

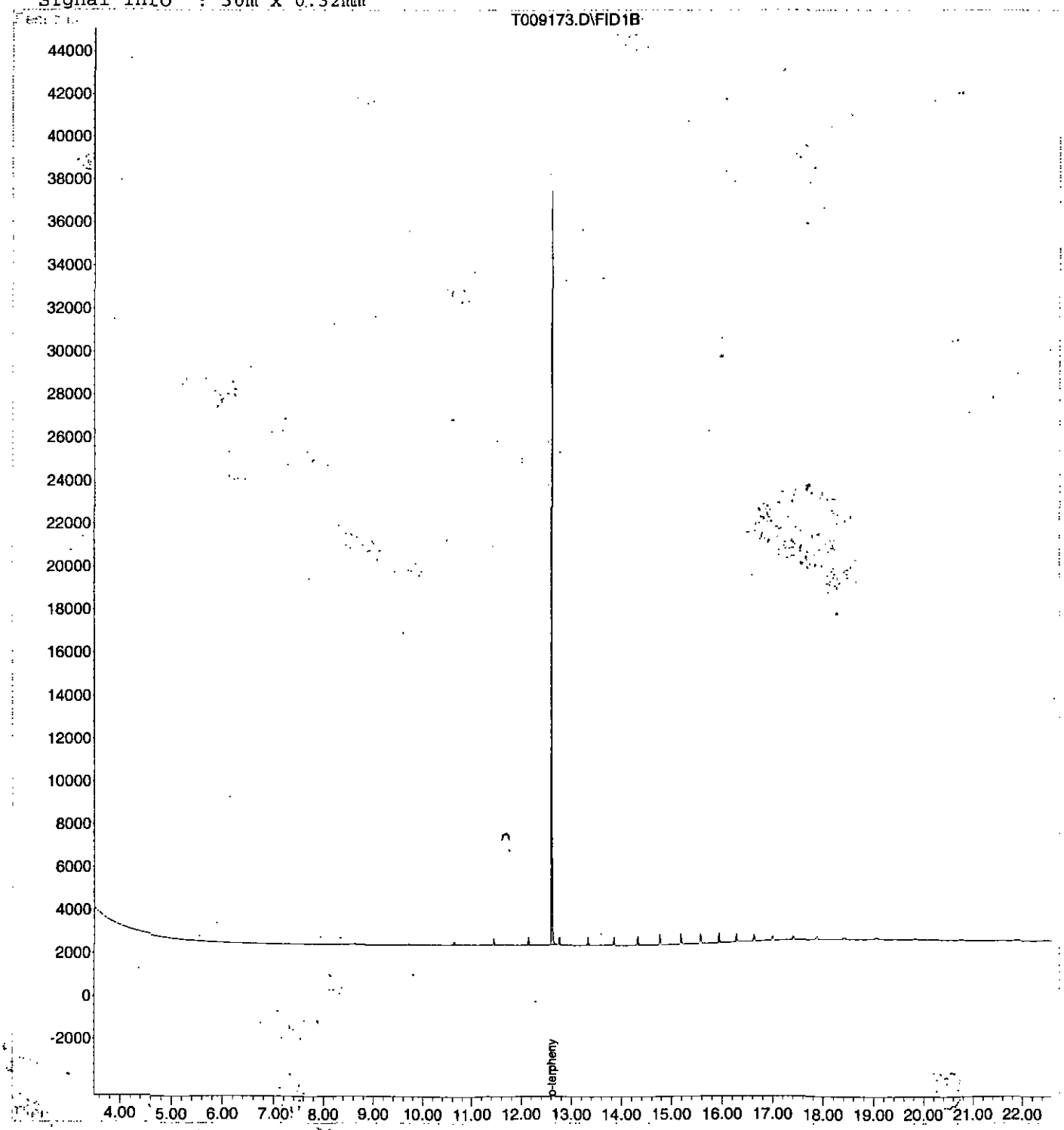
000013

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991126\T009173.D Vial: 3
Acq On : 26 Nov 1999 1:30 pm Operator: Skelton
Sample : 4964.01s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH66.M

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



Data File : C:\HPCHEM\1\DATA\991126\T009174.D
Acq On : 26 Nov 1999 2:04 pm
Sample : 4964.02s
Misc :
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Initial Calibration
DataAcq Meth : TPH66.M

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

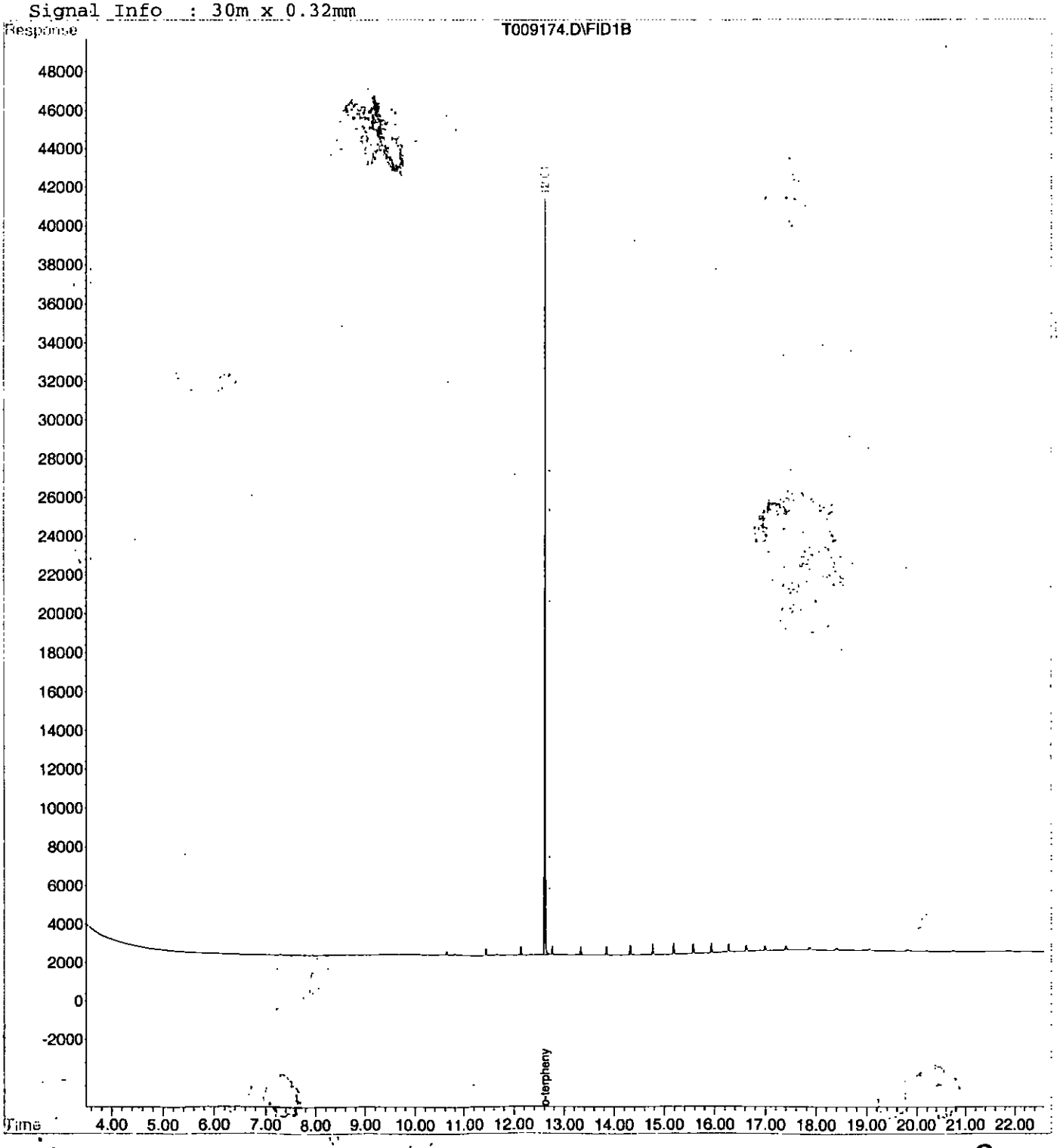
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.61	363116	11.314 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 113.14%#	
Target Compounds			

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991126\T009174.D Vial: 4
Acq On : 26 Nov 1999 2:04 pm Operator: Skelton
Sample : 4964.02s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH66.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\991126\T009175.D Vial: 5
Acq On : 26 Nov 1999 2:38 pm Operator: Skelton
Sample : 4964.03s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Initial Calibration
DataAcq Meth : TPH66.M

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

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.61	361265	11.257 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 112.57%#	
Target Compounds			

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

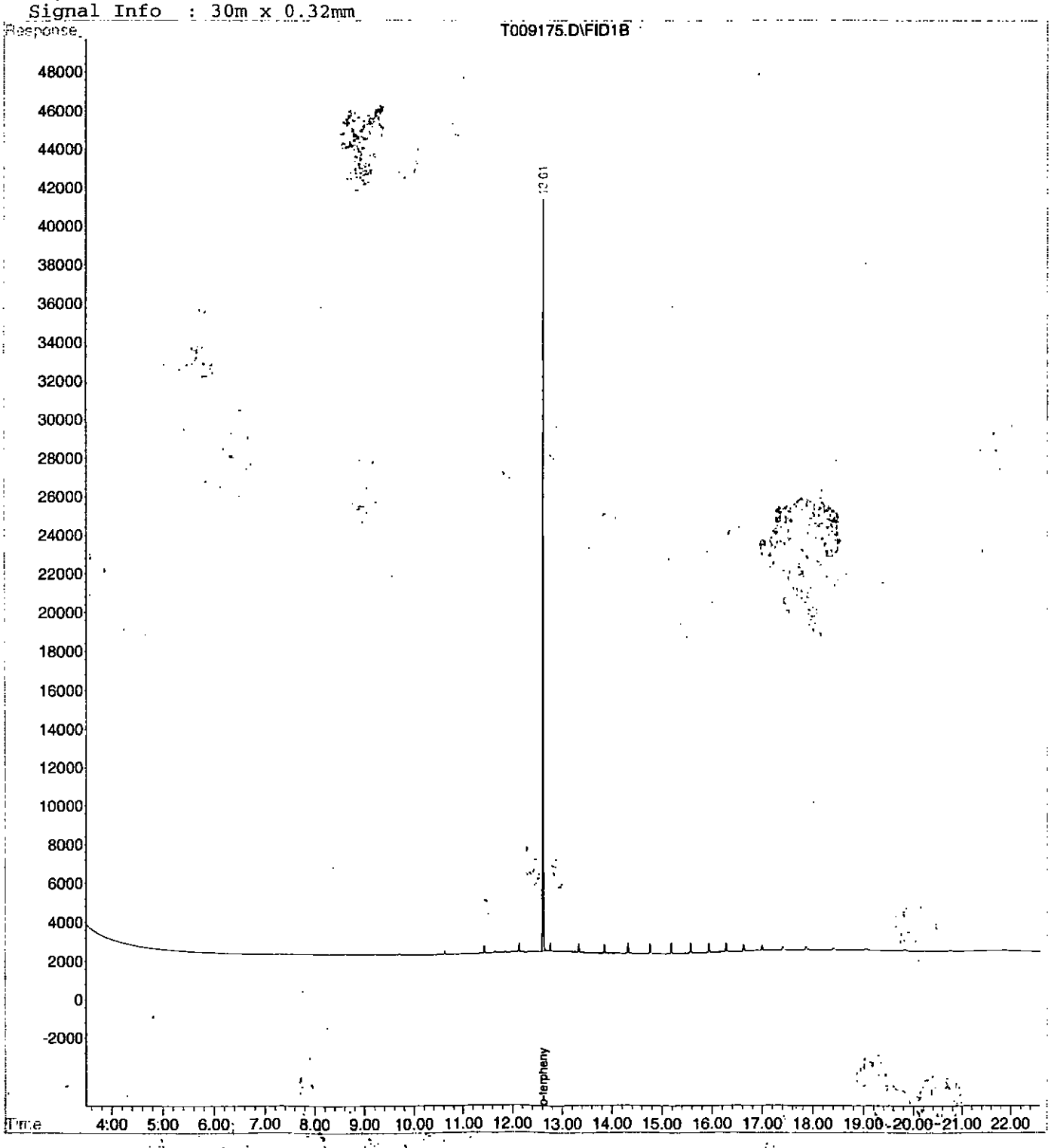
Quantitation Report

Data File : C:\HPCHEM\1\DATA\991126\T009175.D
Acq On : 26 Nov 1999 2:38 pm
Sample : 4964.03s
Misc :
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Vial: 5
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH66.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\991126\T009176.D Vial: 6
Acq On : 26 Nov 1999 3:12 pm Operator: Skelton
Sample : 4964.04s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Initial Calibration
DataAcq Meth : TPH66.M

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

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.61	346268	10.789 mg/L
Spiked Amount 10.000	Range : 8 - 13	Recovery = 107.89%#	
Target Compounds			

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

000019

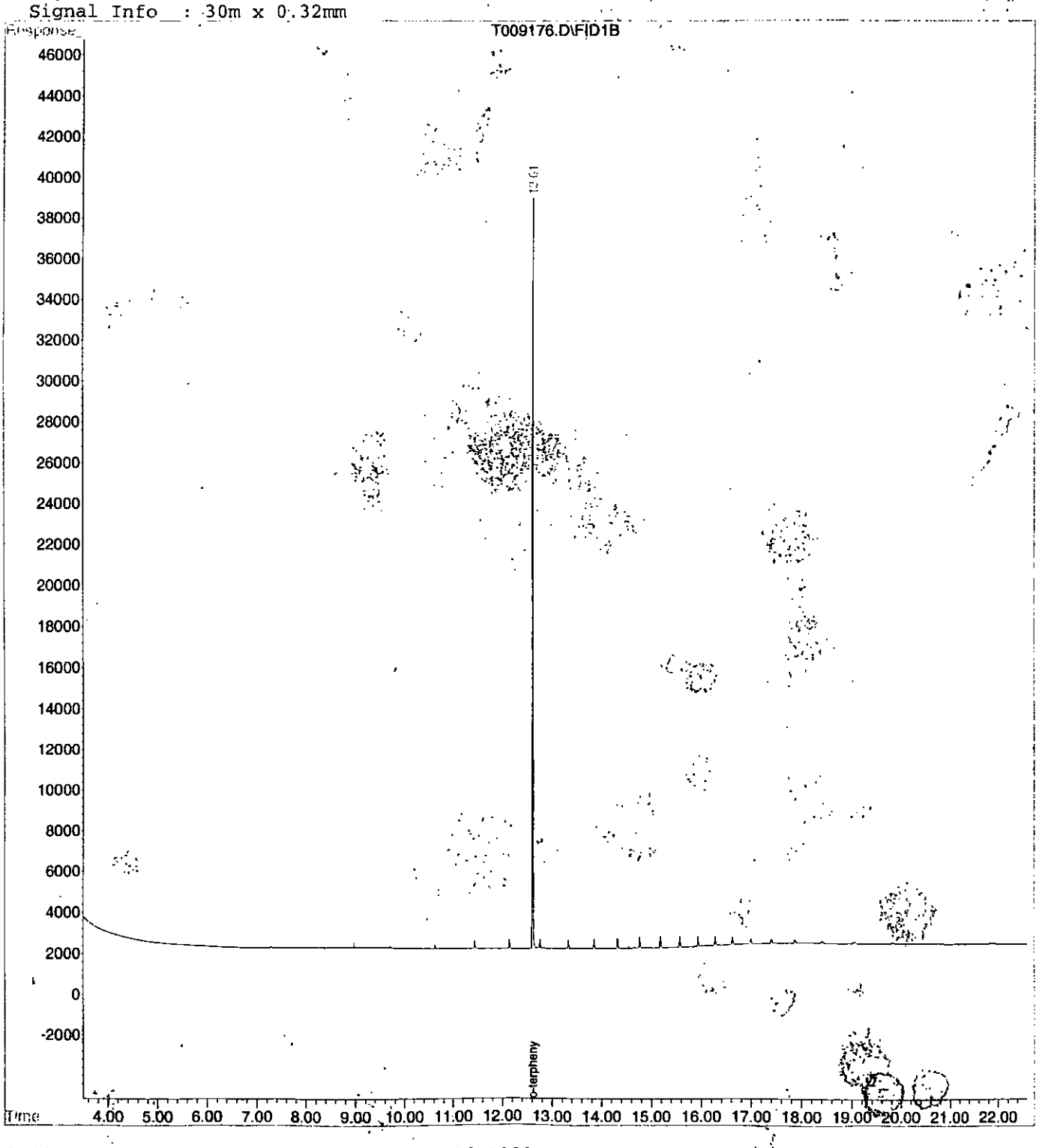
Quantitation Report

Data File : C:\HPCHEM\1\DATA\991126\T009176.D
Acq On : 26 Nov 1999 3:12 pm
Sample : 4964.04s
Misc :
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Vial : 6
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH66.M

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



000020

Data File : C:\HPCHEM\1\DATA\991126\T009177.D Vial: 7
Acq On : 26 Nov 1999 3:46 pm Operator: Skelton
Sample : 4964.05s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Initial Calibration
DataAcq Meth : TPH66.M

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

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.61	363455	11.325 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 113.25%#	
Target Compounds			

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

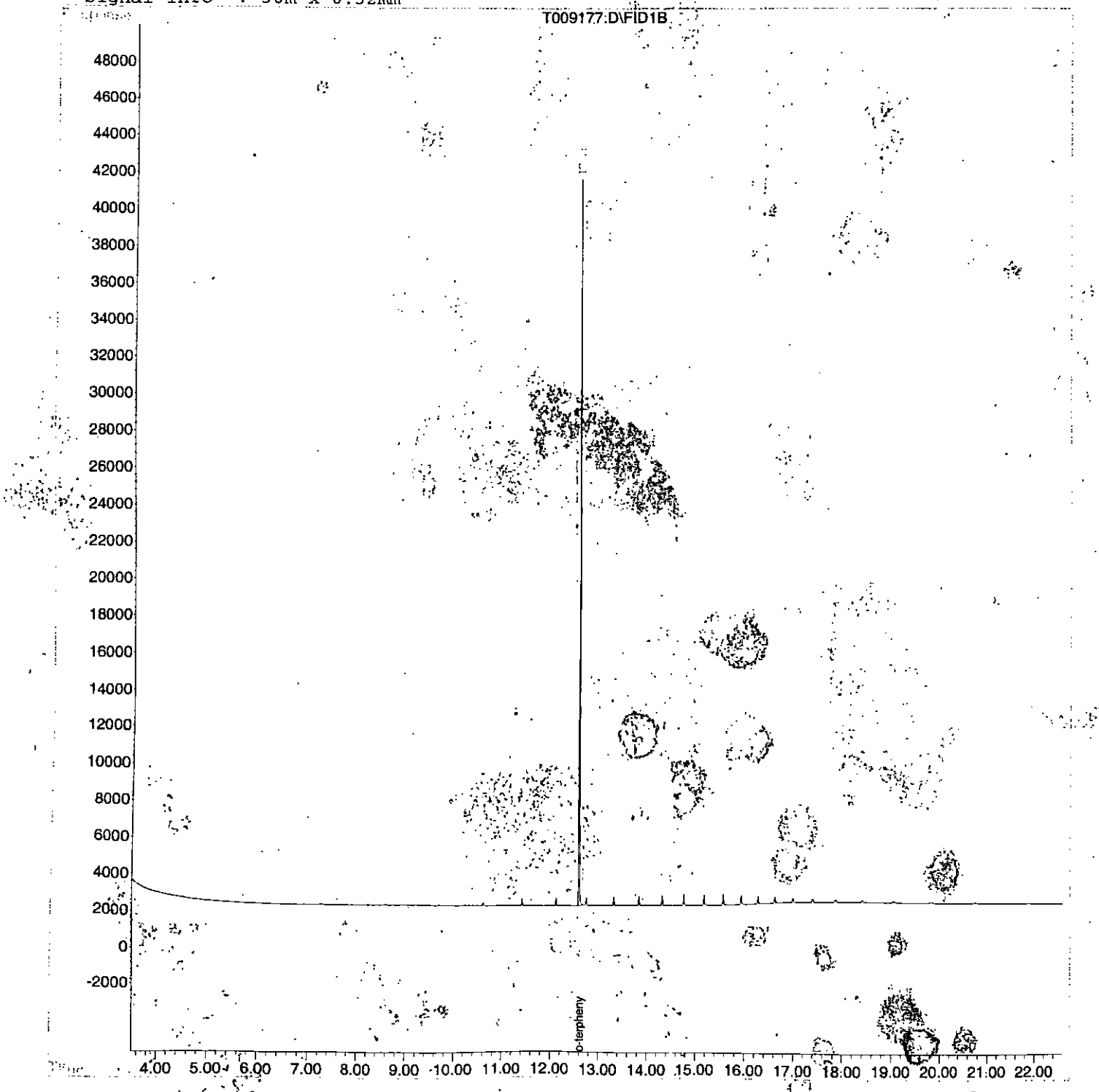
Quantitation Report

Data File : C:\HPCHEM\1\DATA\991126\T009177.D
Acq On : 26 Nov 1999 3:46 pm
Sample : 4964.05s
Misc :
IntFile : TPHCINT.E
Quant Time: Nov 29 7:48 1999 Quant Results File: TPH66.RES

Vial: 7
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH66.M

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



Chemstation Report (QT Review)

Data File : C:\HPCHEM\1\DATA\991126\T009172.D
Acq On : 26 Nov 1999 12:56 pm
Sample : Tblk285MS
Misc :
IntFile : TPHCINT.E
Quant Time: Nov 29 9:02 1999 Quant Results File: TPH66.RES

V. #: 2
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Nov 17 14:48:28 1999
Response via : Initial Calibration
DataAcq Meth : TPH66.M

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

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.61	318114	9.912 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	99.12%#
Target Compounds			
2) tC C10	7.32	38530	1.430 mg/L
3) TC C12	8.98	324804	11.990 mg/L
4) tC C14	10.17	441726	16.361 mg/L
5) tC C16	11.17	476697	17.433 mg/L
6) tC C18	11.63	302806	10.749 mg/L
7) tC C20	12.07	307809	10.745 mg/L
8) tC C22	12.88	143759	4.916 mg/L
9) tC C24	13.62	40807	1.381 mg/L
19) TC Pristane	11.66	139453	4.809 mg/L
20) TC Phytane	12.11	93086	3.184 mg/L
22) tC TPHC - total	10.68	26673684	770.276 mg/L m

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

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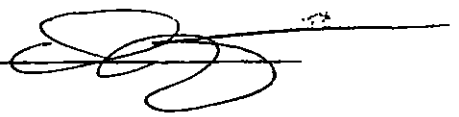
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature 

Date 12/31/99

Laboratory Certification #13461

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

Laboratory Authentication Statement

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

Daniel K. Wright
Laboratory Manager