Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number: 4 - 17786

A. SITE LOCATION:

1. Site Name: B NO 120
2. Street Address: BUZZARDS BAY OIL SPILL
3. City/Town: BUZZARDS BAY 4. ZIP Code:
5. UTM Coordinates: a. UTM N: 4592618 b. UTM E: 330744
6. ☑ Check here if a Tier Classification Submittal has been provided to DEP for this disposal site.
   ☑ a. Tier IA ☐ b. Tier IB ☐ c. Tier IC ☐ d. Tier II
7. If applicable, provide the Permit Number: W050019

B. THIS FORM IS BEING USED TO: (check all that apply)

☐ 1. Submit a **Phase I Completion Statement**, pursuant to 310 CMR 40.0484.

☐ 2. Submit a **Revised Phase I Completion Statement**, pursuant to 310 CMR 40.0484.

☐ 3. Submit a **Phase II Scope of Work**, pursuant to 310 CMR 40.0834.

☐ 4. Submit an **interim Phase II Report**. This report does not satisfy the response action deadline requirements in 310 CMR 40.0500.

☐ 5. Submit a **final Phase II Report and Completion Statement**, pursuant to 310 CMR 40.0836.

☐ 6. Submit a **Revised Phase II Report and Completion Statement**, pursuant to 310 CMR 40.0836.

☐ 7. Submit a **Phase III Remedial Action Plan and Completion Statement**, pursuant to 310 CMR 40.0862.

☐ 8. Submit a **Revised Phase III Remedial Action Plan and Completion Statement**, pursuant to 310 CMR 40.0862.

☐ 9. Submit a **Phase IV Remedy Implementation Plan**, pursuant to 310 CMR 40.0874.

☑ 10. Submit a **Modified Phase IV Remedy Implementation Plan**, pursuant to 310 CMR 40.0874.

☐ 11. Submit an **As-Built Construction Report**, pursuant to 310 CMR 40.0875.

☑ 12. Submit a **Phase IV Status Report**, pursuant to 310 CMR 40.0877.

☐ 13. Submit a **Phase IV Completion Statement**, pursuant to 310 CMR 40.0878 and 40.0879.

Specify the outcome of Phase IV activities: (check one)

☐ a. Phase V Operation, Maintenance or Monitoring of the Comprehensive Remedial Action is necessary to achieve a Response Action Outcome.

☐ b. The requirements of a Class A Response Action Outcome have been met. No additional Operation, Maintenance or Monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement and Report (BWSC104) will be submitted to DEP.

☐ c. The requirements of a Class C Response Action Outcome have been met. No additional Operation, Maintenance or Monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement and Report (BWSC104) will be submitted to DEP.

☐ d. The requirements of a Class C Response Action Outcome have been met. Further Operation, Maintenance or Monitoring of the remedial action is necessary to ensure that conditions are maintained and that further progress is made toward a Permanent Solution. A completed Response Action Outcome Statement and Report (BWSC104) will be submitted to DEP.

(All sections of this transmittal form must be filled out unless otherwise noted above)

B. THIS FORM IS BEING USED TO (cont.): (check all that apply)

☐ 14. Submit a **Revised Phase IV Completion Statement**, pursuant to 310 CMR 40.0878 and 40.0879.

☐ 15. Submit a **Phase V Status Report**, pursuant to 310 CMR 40.0892.

☐ 16. Submit a **Remedial Monitoring Report.** (This report can only be submitted through eDEP.)

a. Type of Report: (check one) ☐ i. Initial Report ☐ ii. Interim Report ☐ iii. Final Report

b. Frequency of Submittal: (check all that apply)

☐ i. A Remedial Monitoring Report(s) submitted monthly to address an Imminent Hazard.

☐ ii. A Remedial Monitoring Report(s) submitted monthly to address a Condition of Substantial Release Migration.

☐ iii. A Remedial Monitoring Report(s) submitted concurrent with a Status Report.

c. Status of Site: (check one) ☐ i. Phase V ☐ ii. Remedy Operation Status ☐ iii. Class C RAO

d. Number of Remedial Systems and/or Monitoring Programs: ☐

A separate BWSC108A, CRA Remedial Monitoring Report, must be filled out for each Remedial System and/or Monitoring Program addressed by this transmittal form.

☐ 17. Submit a **Remedy Operation Status**, pursuant to 310 CMR 40.0893.

☐ 18. Submit a **Status Report to maintain a Remedy Operation Status**, pursuant to 310 CMR 40.0893(2).

☐ 19. Submit a **Modification of a Remedy Operation Status**, pursuant to 310 CMR 40.0893(5).

☐ 20. Submit a **Termination of a Remedy Operation Status**, pursuant to 310 CMR 40.0893(6).

☐ 21. Submit a **Phase V Completion Statement**, pursuant to 310 CMR 40.0894.

Specify the outcome of Phase V activities: (check one)

☐ a. The requirements of a Class A Response Action Outcome have been met. No additional Operation, Maintenance or Monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement (BWSC104) will be submitted to DEP.

☐ b. The requirements of a Class C Response Action Outcome have been met. No additional Operation, Maintenance or Monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement and Report (BWSC104) will be submitted to DEP.

☐ c. The requirements of a Class C Response Action Outcome have been met. Further Operation, Maintenance or Monitoring of the remedial action is necessary to ensure that conditions are maintained and/or that further progress is made toward a Permanent Solution. A completed Response Action Outcome Statement and Report (BWSC104) will be submitted to DEP.

☐ 22. Submit a **Revised Phase V Completion Statement**, pursuant to 310 CMR 40.0894.

☐ 23. Submit a **Post-Class C Response Action Outcome Status Report**, pursuant to 310 CMR 40.0898.

(All sections of this transmittal form must be filled out unless otherwise noted above)

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number: 4 - 17786

C. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this transmittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief,

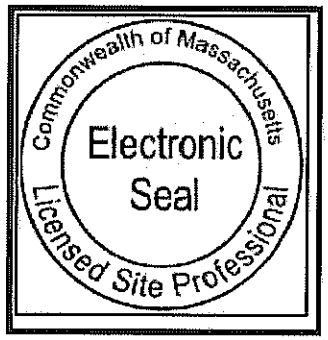
> *if Section B indicates that a* ***Phase I, Phase II, Phase III, Phase IV or Phase V Completion Statement*** *is being submitted*, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed and implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B indicates that a* ***Phase II Scope of Work*** *or a* ***Phase IV Remedy Implementation Plan*** *is being submitted*, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal;

> *if Section B indicates that an* ***As-Built Construction Report, a Remedy Operation Status, a Phase IV, Phase V or Post-Class C RAO Status Report, a Status Report to Maintain a Remedy Operation Status*** *and/or a* ***Remedial Monitoring Report*** *is being submitted*, the response action(s) that is (are) the subject of this submittal (i) is (are) being implemented in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) comply(ies) with the identified provisions of all orders, permits, and approvals identified in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #: 5463
2. First Name: RICHARD J
3. Last Name: WOZMAK
4. Telephone: (603) 421-2777
5. Ext.:
6. FAX:
7. Signature: RICHARD J WOZMAK
8. Date: 02/08/2008 (mm/dd/yyyy)
9. LSP Stamp:



Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number: 4 - 17786

D. PERSON UNDERTAKING RESPONSE ACTIONS:

1. Check all that apply: ☐ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions
2. Name of Organization: BOUCHARD TRANSPORTATION
3. Contact First Name: W LAWRENCE 4. Last Name: LOPEZ
5. Street: 58 SOUTH SERVICE RD NO 150 6. Title:
7. City/Town: MELVILLE 8. State: NY 9. ZIP Code: 11747-0000
10. Telephone: (631) 390-4980 11. Ext.: 12. FAX:

E. RELATIONSHIP TO SITE OF PERSON UNDERTAKING RESPONSE ACTIONS:

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☑ d. Transporter

☐ e. Other RP or PRP Specify:

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions Specify Relationship:

F. REQUIRED ATTACHMENT AND SUBMITTALS:

☑ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

☐ 2. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the submittal of any Phase Reports to DEP.

☐ 3. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the availability of a Phase III Remedial Action Plan.

☐ 4. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of the availability of a Phase IV Remedy Implementation Plan.

☐ 5. Check here to certify that the Chief Municipal Officer and the Local Board of Health have been notified of any field work involving the implementation of a Phase IV Remedial Action.

☐ 6. If submitting a Modification of a Remedy Operation Status, check here to certify that a statement detailing the compliance history, as per 310 CMR 40.0893(5), for the person making this submittal is attached.

☐ 7. If submitting a Modification of a Remedy Operation Status, check here to certify that written consent of the person who submitted the Remedy Operation Status submittal, as per 310 CMR 40.0893(5), is attached.

☐ 8. Check here if any non-updatable information provided on this form is incorrect, e.g. Site Name. Send corrections to the DEP Regional Office.

☑ 9. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Release Tracking Number: 4 - 17786

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

G. CERTIFICATION OF PERSON UNDERTAKING RESPONSE ACTIONS:

1. I, **RICHARD J WOZMAK**, attest under the pains and penalties of perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: **RICHARD J WOZMAK** (Signature) 3. Title:

4. For: **BOUCHARD TRANSPORTATION** (Name of person or entity recorded in Section D) 5. Date: **02/08/2008** (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section D.

7. Street:

8. City/Town: 9. State: 10. ZIP Code:

11. Telephone: 12. Ext.: 13. FAX:

YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.

Date Stamp (DEP USE ONLY:)

Received by DEP on

2/8/2008 2:23:13 PM

Submittal Summary & Receipt

Your submission is complete. Thank you for using DEP's online reporting system. You can select "My Homepage" to review your status.

DEP Transaction ID: 166556
Date and Time Submitted: 2/8/2008 2:23:13 PM
Other Email :

Form Name: BWSC 108 CRA Transmittal Form & Phase I CS

RTN: 4-17786
Location: B NO 120
Address: BUZZARDS BAY OIL SPILL, BUZZARDS BAY,

Person Making Submittal
BOUCHARD TRANSPORTATION
W LAWRENCE LOPEZ
58 SOUTH SERVICE RD NO 150
MELVILLE, NY 117470000

LSP
LSP #: 5463
LSP Name: RICHARD J WOZMAK

Person Making Certification
BOUCHARD TRANSPORTATION
RICHARD J WOZMAK
BOUCHARD TRANSPORTATION
RICHARD J WOZMAK

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Ancillary Document Uploaded/Mailed
BWSC-108 Ques.B10 - Modified Phase IV Remedy Implementation Plan - By Mail
BWSC-108 Ques.B12 - Phase IV Status Report - By Mail
BWSC-108 Ques.F1 - Statement of Provisions - By Mail

print receipt cancel

Supplement to BWSC108, Section F
Barge B120 Release
Buzzards Bay, Massachusetts
4-17786

Section F – Required Attachments and Submittals

1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approval(s) issued by DEP or EPA. If the box is checked, you MUST attach a statement identifying the applicable provisions thereof.

Massachusetts Department of Environmental Protection Orders, Permits, and/or Approvals:

- September 8, 2003 Request for IRA with Interim Deadlines;
- July 27, 2004 Decision to Grant Permit;
- January 18, 2006 Phase II Scope of Work Conditional Approval/Interim Deadline;
- June 27, 2006 Phase II SOW Addendum Approval; and
- October 19, 2006 Phase II - Comprehensive Site Assessment Report and Phase III - Remedial Action Plan Approval.

Bouchard Transportation Co., Inc.
58 South Service Road, Suite 150
Melville, New York 11747
Tel.: (631) 390-4900
Fax: (631) 390-4905

ATLANTIC COAST • LONG ISLAND SOUND
GREAT LAKES • GULF COAST

January 29, 2004

Richard J. Wozmak
GeoInsight, Inc.
319 Littleton Road, Suite 105
Westford, MA 01886

RE: B120 Oil Release
RTN 4-17786
Buzzards Bay, Massachusetts

Dear Mr. Wozmak:

In accordance with 310 CMR 40.0009 (2), this letter is to serve as written authorization for you to act as an agent for Bouchard Transportation Company, Inc. for the purposes of making written declarations required under 301 CMR 40.0000. This authorization applies to written declarations for the release of oil from Bouchard Barge B120 on April 27, 2003 (release tracking number 4-17786).

Sincerely,

Victor P. Corso

Victor P. Corso, Esq.
Risk Manager

March 2007 Leisure Shore Oiled Rock Sample
September 18, 2007

Comparison of Leisure Shores Oiled Rock Sample with B120 Oil

This report summarizes the evaluation of an oil-splattered rock sample identified as W1F-02-32707. The sample was collected on March 27, 2007 from the Leisure Shores portion of shoreline segment W1F-02 (Brandt Island West) by a local resident and given to GeoInsight, Inc. (GeoInsight) for analysis. The purpose of the evaluation was to determine if the chemical signature was consistent with Number 6 fuel oil released from Bouchard Barge B120 on April 27, 2003. Detailed discussions of the chemical composition of the original (fresh) B120 product and environmental samples of the B120 oil are provided in the August 3, 2006 Phase II Comprehensive Site Assessment Report.

Chemical Composition of B120 Oil

The composition of polycyclic aromatic hydrocarbon (PAH) compounds is regularly used to identify the presence/absence and source of oils as well as assess the degree of environmental weathering. The original B120 product was dominated by the following PAH compounds, which together comprised over 80% of the total PAH content:

- Naphthalenes (2-ringed PAH compounds) with carbon side-chains comprise almost one-third of the total PAH content. Naphthalenes with two carbon side-chains (C2-naphthalenes) are the most abundant, present at concentrations over 0.7%.
- Phenanthrenes (3-ringed PAH compounds) with carbon side-chains comprise 25% of the total PAH content. C2-Phenanthrenes are the most abundant of these PAHs, with concentrations exceeding 0.5%.
- Fluoranthenes/Pyrenes (4-ringed PAH compounds) with carbon side-chains comprise 13% of the total PAH content. Again, compounds with two carbon side-chains are the most abundant.
- Chrysenes (also 4-ringed PAH compounds) with carbon side-chains are the fourth dominant PAH. Chrysenes with either one or two carbon side-chains are similar in concentration.

Absent or relatively insignificant concentrations of the following PAHs also characterize the fresh B120 product:

- Acenaphthylene (not detected);
- PAHs without side-chains (often referred to as ‘parent’ PAHs);
- PAHs with five or six rings (e.g., benzo[a]pyrene or benzo[g,h,i]perylene); and
- Dibenzothiophenes (sulfur-containing PAH).

Sample Collection

Field sampling methods by GeoInsight are described in the August 2, 2007 Phase IV Remedy Implementation Plan. Sample W1F02-32702 was collected by GeoInsight in middle to upper portion of the intertidal zone on the Leisure Shores shoreline. The sample

was partially buried beneath the ground surface in the vicinity of the groin and the collected rock was approximately 50 percent covered in weathered oil. The sample was shipped to B&B Laboratories in College Station, Texas for analyses.

Forensics Evaluation

Sample W1F02-32707 was compared to a representative source oil sample to determine if B120 oil was present. Figure 1 illustrates the PAH distribution in the sample relative to that in B120 oil. The lightest PAH compounds appear on the far left side of the graph and the heaviest PAH compounds are on the far right side. The bar height is proportional to concentration, which in Figure 1 is displayed as a percentage of the total PAH concentration. The total PAH concentration was 44,700 nanograms (ng) of total PAH/g dry sediment.

The dominant pattern in the oiled rock sample is similar in some respects to B120 oil, after accounting for the effects of environmental weathering (i.e., loss of 2-ring and some 3-ring PAH compounds). The assessment of biomarker compounds depicted in Figures 2 and 3, which show the similarities of the pentacyclic triterpane and sterane biomarker distributions of the B120 oil and the oiled rock sample confirmed its similarity to the B120 oil.

The following findings compare and contrast the hydrocarbon distribution in the oiled rock sample from Leisure Shore with that of the B120 source oil:

1. The rock sample and B120 contain a distribution of PAH compounds similar to that in a heavy diesel fuel.
2. The rock sample contains 18α-oleanane, a triterpane biomarker that is not present in B120 oil.
3. The distribution of pentacyclic triterpane and sterane biomarkers is substantially the same in Figures 2 and 3 between the rock sample and B120 oil.
4. The rock sample contains biomarkers found in B120 oil as well as some biomarkers that are not found in B120 oil.

Summary

The PAH and biomarker distribution of oiled rock sample WIF02-32707 collected from Leisure Shores on March 27, 2007 is consistent with that of weathered B120 oil. An unknown quantity of another (unknown) fossil fuel is also present as evidenced by the presence of oleanane, a terpane biomarker found in some fossil fuels but not B120.

Figure 1. Comparison of PAH Distribution in Bouchard B120 Tank 2-P and Sample WIF-02-32707

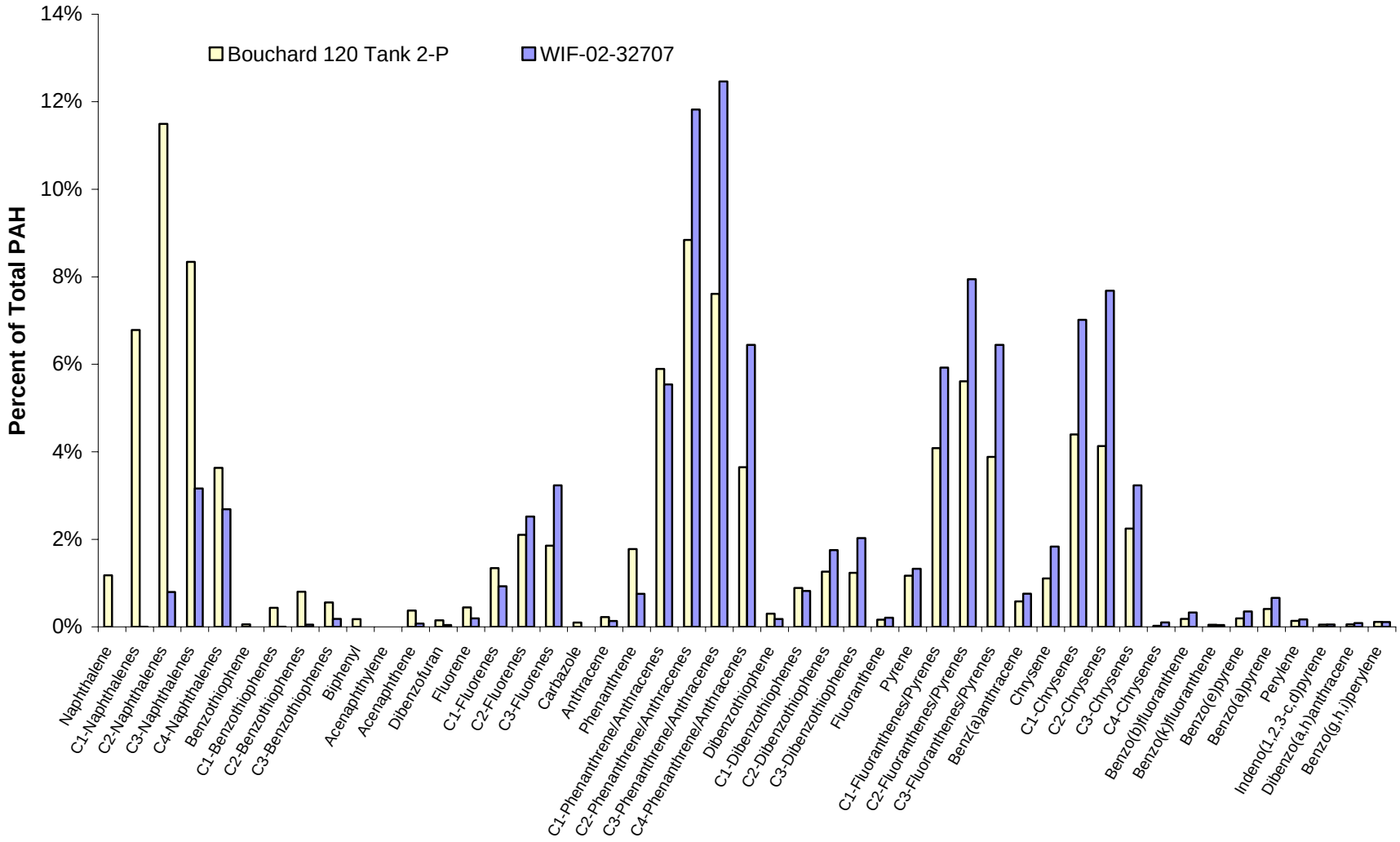
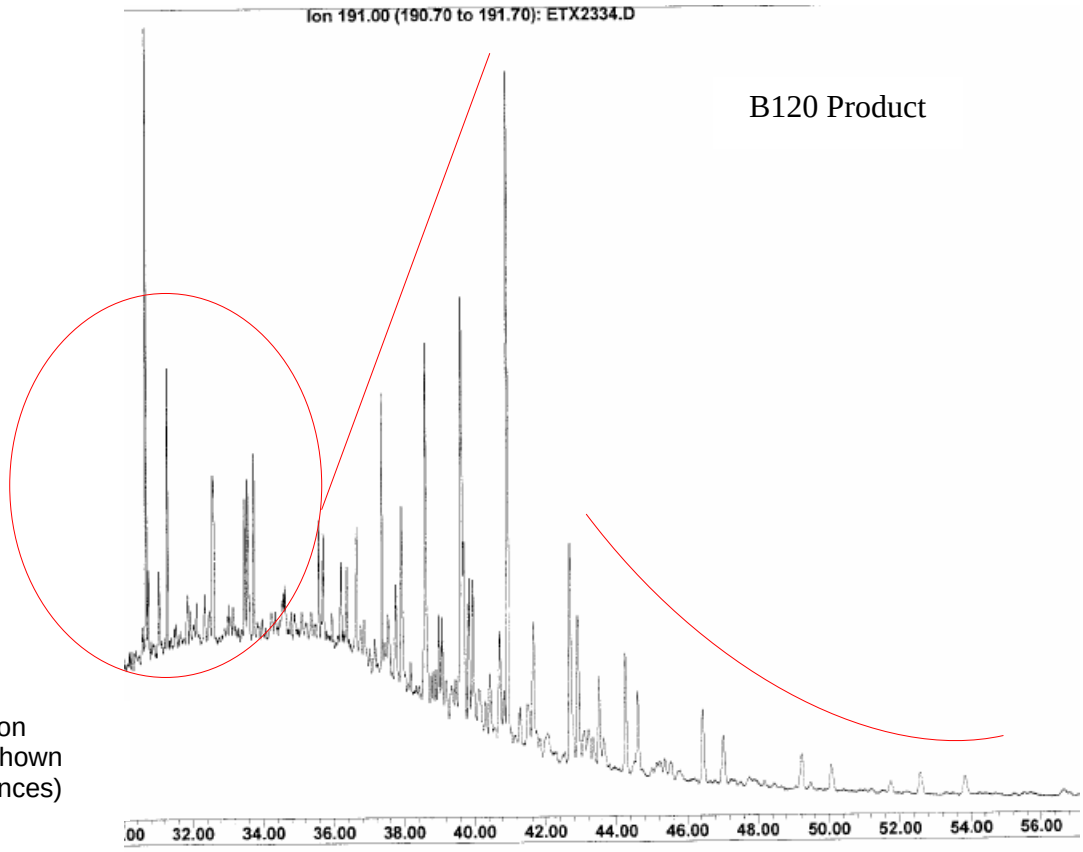


Figure 2. Comparison of m/z 191 Ion Chromatograms (Pentacyclic Triterpanes) for B120 Product and Leisure Shore WIF-02-32707 Sample



(early portion of ion chromatogram not shown because of interferences)

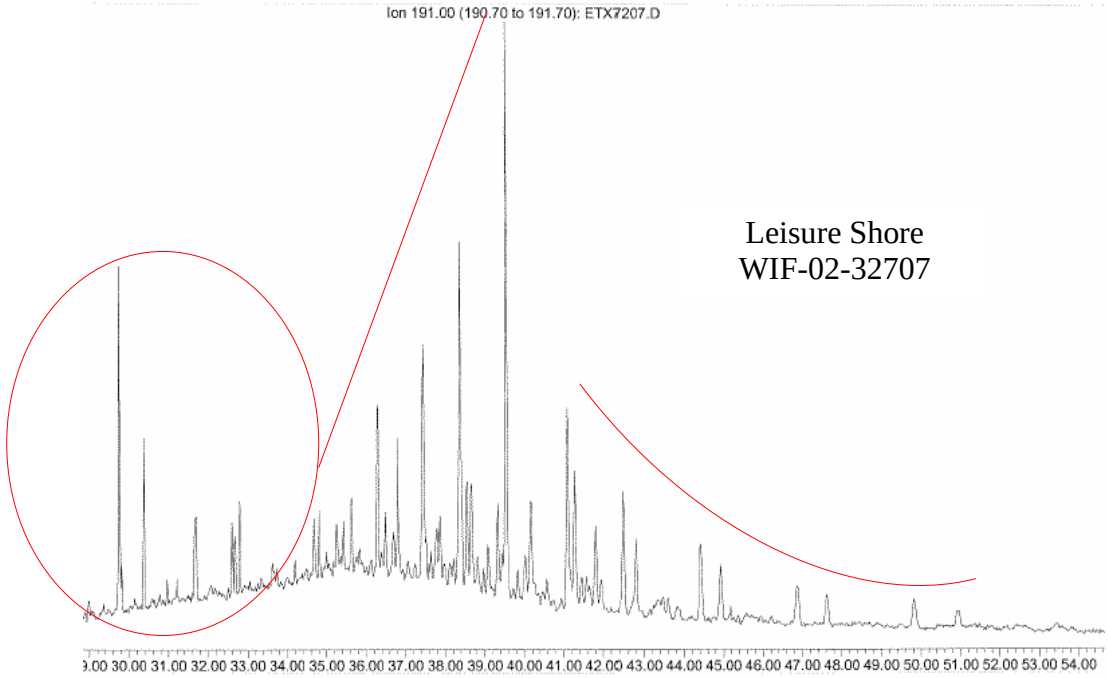
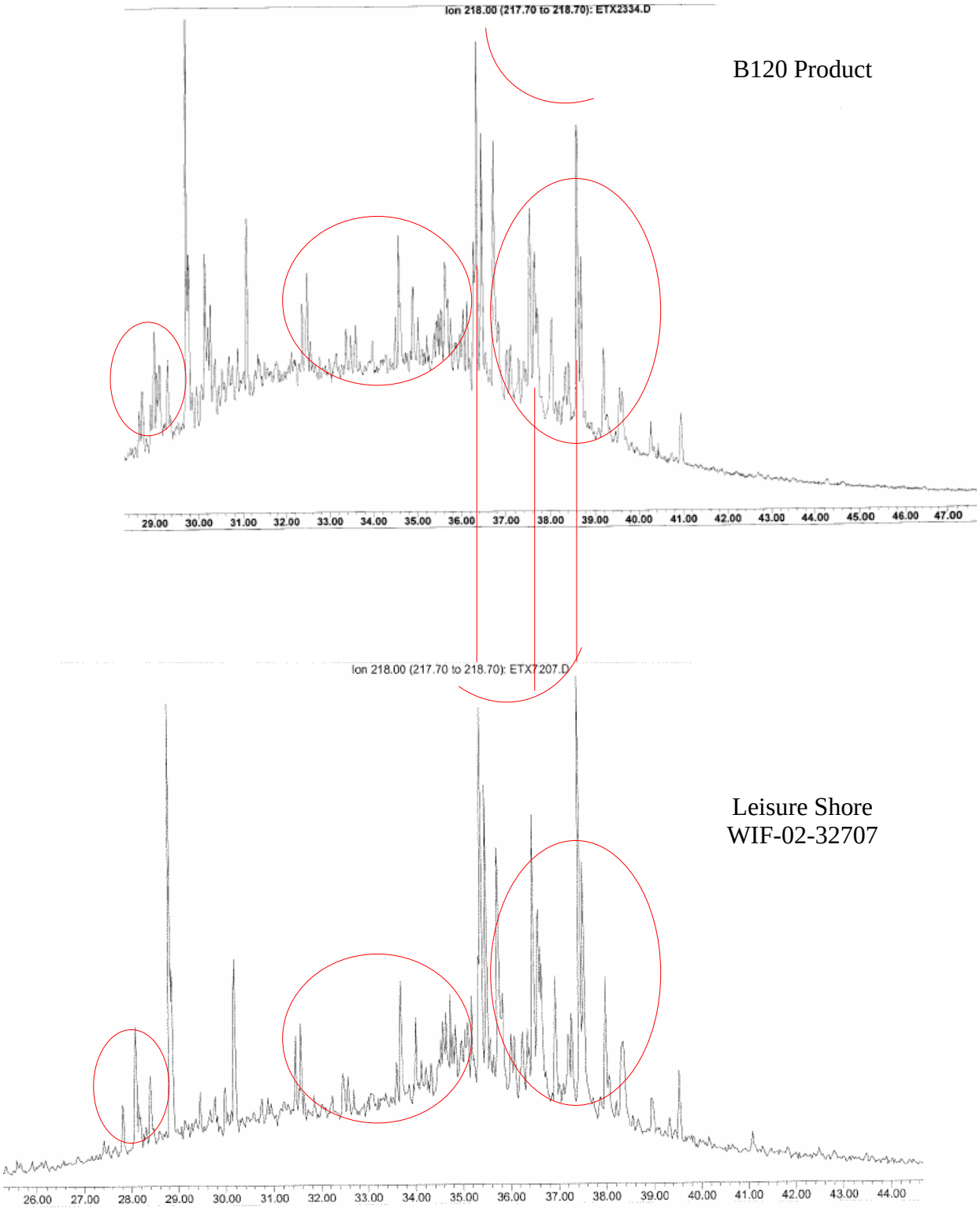


Figure 3. Comparison of m/z 218 Ion Chromatograms (ß,ß-Steranes) B120 Product and Leisure Shore WIF-02-32707 Sample



Technical Report 07-1887
GeoInsight, Inc.
Buzzards Bay Spill Project
Oil Rock (Product) and Tar Ball (Product) Sample

May 28, 2007

Introduction

B&B Laboratories received one (1) ice chest that contained one (1) bag that contained an oiled rock sample that was sent on April 11, 2007 and arrived on April 12, 2007 at B&B Laboratories in College Station, Texas sealed and in good condition. The oiled rock sample was collected in support of the Buzzards Bay Spill Project (GeoInsight Project 3871-002). The oiled rock sample was stored in an access-controlled refrigerator (4.0°C) until processing.

B&B Laboratories received one (1) ice chest that contained one (1) bag that contained a tar ball sample that was sent on May 2, 2007 and arrived on May 3, 2007 at B&B Laboratories in College Station, Texas sealed and in good condition. The tar ball sample was collected in support of the Buzzards Bay Spill Project (GeoInsight Project 3871-002). The tar ball sample was stored in an access-controlled refrigerator (4.0°C) until processing.

The oiled rock and tar ball sample were analyzed for saturate biological marker analysis by GC/MS-SIM.

The results for saturate biological markers included in this report.

We appreciate the opportunity to serve your analytical needs and please do not hesitate to contact us should you have any questions.

Thomas J. McDonald
Project Manager

Donell Frank
Project Quality Officer

GeoInsight, Inc.
Buzzards Bay Spill Project
WIF-02-32707, Collection Date 3/27/07
Mishaum Point S-1, Collection Date 4/27/07
Table of Contents
B&B Laboratories
28-May-2007

Heading Page Number

B&B Laboratories
Project J03318
Report 07-1887

GeoInsight, Inc.
Buzzards Bay Spill Project
Sample Inventory

Client Project #3871-002

Laboratory File Number	Client Identification	Collection Date	Receive Date	Analysis	Matrix	Comments	B&B SDG	Entrix Project #
ETX7207	WIF-02-32707	03/27/07	04/12/07	PAH, TPH	Other	Oiled rock	07041201	3871-002
ETX7236	Mishaum Point S-1	04/27/07	05/03/07	PAH, TPH	Other	Tar Ball	07050301	3871-002

GeoInsight, Inc.
Buzzards Bay Oil Spill Project
Polycyclic Aromatic Hydrocarbon Data
Client Submitted Samples

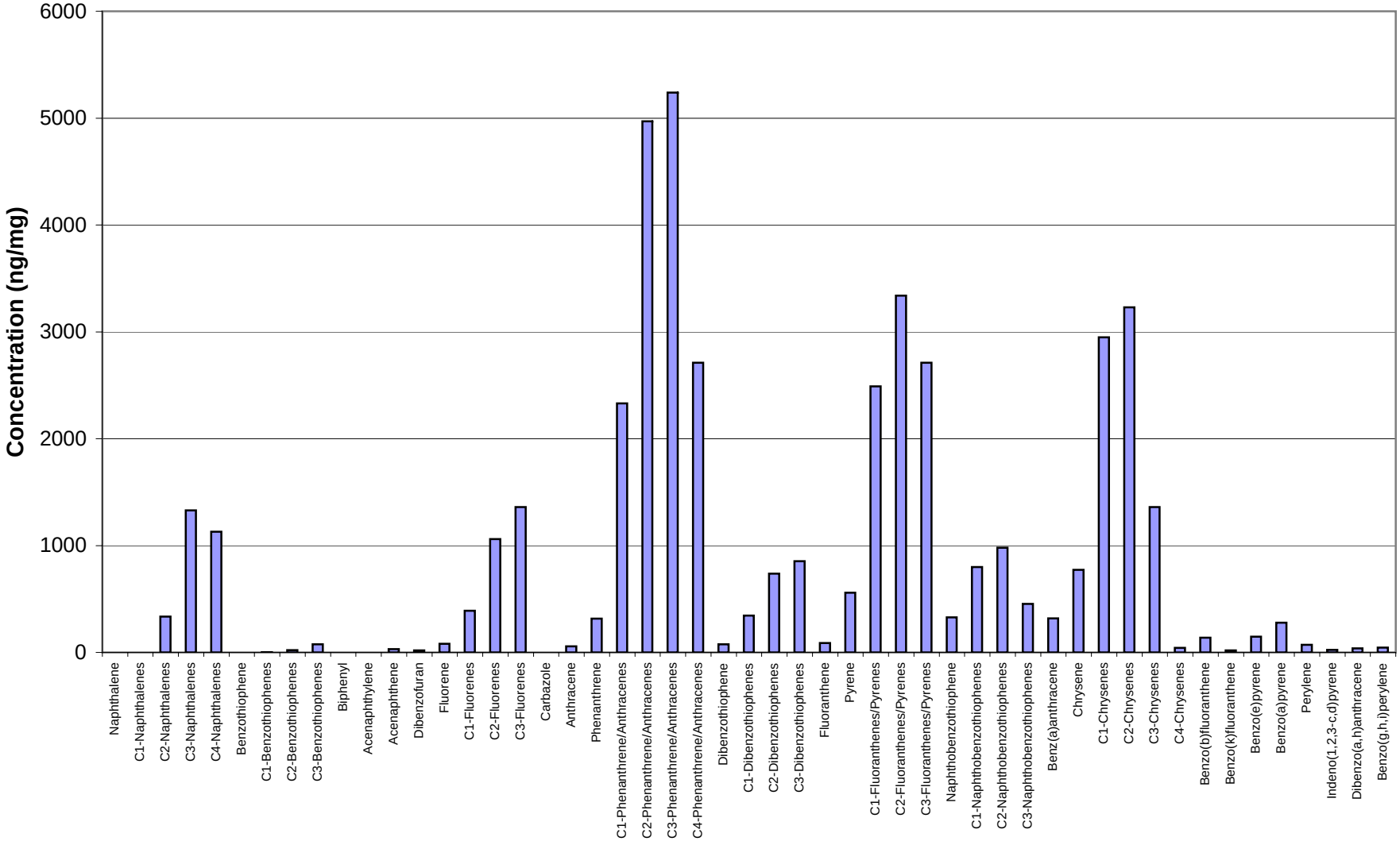
Sample Name	ETX7207.D
Client Name	WIF-02-32707
Matrix	Oiled Rock
Collection Date	03/27/07
Received Date	04/12/07
Extraction Date	04/12/07
Extraction Batch	ENV 1635
Date Acquired	04/13/07
Method	PAH-2002
Sample Weight (mg)	17.7
Dilution	NA

Target Compounds	Su Corrected Conc. (ng/mg)	Q
Naphthalene	0.1	J
C1-Naphthalenes	0.8	J
C2-Naphthalenes	335	
C3-Naphthalenes	1330	
C4-Naphthalenes	1130	
Benzothiophene	<10	U
C1-Benzothiophenes	1.6	J
C2-Benzothiophenes	21.6	
C3-Benzothiophenes	75.8	
Biphenyl	0.1	J
Acenaphthylene	<10	U
Acenaphthene	30.9	
Dibenzofuran	18.2	
Fluorene	81.3	
C1-Fluorenes	390	
C2-Fluorenes	1060	
C3-Fluorenes	1360	
Carbazole	<10	U
Anthracene	57.2	
Phenanthrene	317	
C1-Phenanthrene/Anthracenes	2330	
C2-Phenanthrene/Anthracenes	4970	
C3-Phenanthrene/Anthracenes	5240	
C4-Phenanthrene/Anthracenes	2710	
Dibenzothiophene	75.5	
C1-Dibenzothiophenes	345	
C2-Dibenzothiophenes	737	
C3-Dibenzothiophenes	853	
Fluoranthene	88.9	
Pyrene	558	
C1-Fluoranthenes/Pyrenes	2490	
C2-Fluoranthenes/Pyrenes	3340	
C3-Fluoranthenes/Pyrenes	2710	
Naphthobenzothiophene	329	
C1-Naphthobenzothiophenes	799	
C2-Naphthobenzothiophenes	979	
C3-Naphthobenzothiophenes	455	
Benz(a)anthracene	318	
Chrysene	772	
C1-Chrysenes	2950	
C2-Chrysenes	3230	
C3-Chrysenes	1360	
C4-Chrysenes	42.8	
Benzo(b)fluoranthene	138	
Benzo(k)fluoranthene	18.4	
Benzo(e)pyrene	148	
Benzo(a)pyrene	278	
Perylene	71.2	
Indeno(1,2,3-c,d)pyrene	23.5	
Dibenzo(a,h)anthracene	36.9	
Benzo(g,h,i)perylene	45.8	
Total PAHs	44652	
Individual Alkyl Isomers and Hopanes		
2-Methylnaphthalene	0.3	J
1-Methylnaphthalene	1.0	J
2,6-Dimethylnaphthalene	63.3	
1,6,7-Trimethylnaphthalene	206	
1-Methylphenanthrene	326	
C29-Hopane	71.2	
18a-Oleanane	13.4	
C30-Hopane	85.0	

Surrogate (Su)	Su Recovery (%)
Naphthalene-d8	84
Acenaphthene-d10	90
Phenanthrene-d10	91
Chrysene-d12	91
Perylene-d12	96

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not Applicable, *=Outside QA limits, refer to narrative

WIF-02-32707 (Oiled Rock)
ETX7207



B&B Laboratories
Project J03318
Report 07-1857

GeoInsight, Inc.
Buzzards Bay Oil Spill Project
Polycyclic Aromatic Hydrocarbon Data
Standard Reference Material Report

Client Project #3871-002

Sample Name	MS30377B.D
Client Name	SRM 1582
Matrix	Petroleum
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 1635
Date Acquired	04/13/07
Method	PAH-2002
Sample Weight (g)	1.7

Target Compounds	Su Corrected Conc. (ug/g)	Q	RPD (%)	SRM 1582 Certified Conc. (ug/ g)	B&B Average	-15% Conc. (ug/g)	+15% Conc. (ug/g)
Naphthalene	148		2.0		145	123	167
C1-Naphthalenes	579		7.2		622	529	715
C2-Naphthalenes	1070		10.5		1189	1011	1367
C3-Naphthalenes	1020		1.7		1037	881	1193
C4-Naphthalenes	726		3.8		754	641	867
Benzothiophene	8.3	J					
C1-Benzothiophenes	17.5						
C2-Benzothiophenes	75.2						
C3-Benzothiophenes	147						
Biphenyl	34.0		1.5		34.5	29.3	39.7
Acenaphthylene	<10	U					
Acenaphthene	21.7		13.8		18.9	16.1	21.7
Dibenzofuran	12.4						
Fluorene	36.0		0.6		35.8	30.4	41.2
C1-Fluorenes	129		2.3		132	112	152
C2-Fluorenes	271		5.7		256	218	294
C3-Fluorenes	247		2.0		242	206	278
Carbazole	2.2	J					
Anthracene	3.8	J					
Phenanthrene	100		9.3	100 ± 7.0	110	93.3	126
C1-Phenanthrene/Anthracenes	343		5.1		326	277	375
C2-Phenanthrene/Anthracenes	516		5.1		543	462	624
C3-Phenanthrene/Anthracenes	543		3.9		522	444	600
C4-Phenanthrene/Anthracenes	280		1.8		275	234	316
Dibenzothiophene	30.7		14.5	32.9 ± 1.7	35.5	30.2	40.8
C1-Dibenzothiophene	131		4.7		125	106	144
C2-Dibenzothiophene	249		3.2		257	218	296
C3-Dibenzothiophene	252		0.8		250	213	288
Fluoranthene	5.2	J					
Pyrene	6.2	J					
C1-Fluoranthenes/Pyrenes	60.7		12.5		68.8	58.5	79.1
C2-Fluoranthenes/Pyrenes	103		1.9		105	89.3	121
C3-Fluoranthenes/Pyrenes	77.2		10.1		85.4	72.6	98.2
Naphthobenzothiophene	34.8		13.4		39.8	33.8	45.8
C1-Naphthobenzothiophenes	60.5		2.7		58.9	50.1	67.7
C2-Naphthobenzothiophenes	77.2		1.2		78.1	66.4	89.8
C3-Naphthobenzothiophenes	55.2		0.0		55.2	46.9	63.5
Benz(a)anthracene	4.4	J					
Chrysene	23.7		9.3		21.6	18.4	24.8
C1-Chrysenes	68.7		0.4		68.4	58.1	78.7
C2-Chrysenes	124		0.8		125	106	144
C3-Chrysenes	86.2		2.6		88.5	75.2	102
C4-Chrysenes	<10	U					
Benzo(b)fluoranthene	1.7	J					
Benzo(k)fluoranthene	0.5	J					
Benzo(e)pyrene	2.9	J					
Benzo(a)pyrene	2.0	J					
Perylene	37.6		11.6	30.2± 1.7	33.5	28.4	38.5
Indeno(1,2,3-c,d)pyrene	2.0	J					
Dibenzo(a,h)anthracene	0.6	J					
Benzo(g,h,i)perylene	1.6	J					
Total PAHs	7829						
Selected Ratios							
D2/P2	0.483		1.9		0.473	0.402	0.544
D3/P3	0.464		3.1		0.479	0.407	0.551
D2/C2	2.008		2.4		2.056	1.748	2.364
D3/C3	2.923		3.4		2.825	2.401	3.249
Fl-Py2/C2	0.831		1.1		0.840	0.714	0.966
Fl-Py3/C3	0.896		7.5		0.965	0.820	1.110
Individual Alkyl Isomers and Hopane							
2-Methylnaphthalene	527		13.3		602	512	692
1-Methylnaphthalene	386		7.2		415	353	477
2,6-Dimethylnaphthalene	545		9.9		602	512	692
1,6,7-Trimethylnaphthalene	168		10.0		152	129	175
1-Methylphenanthrene	88.0		12.8		100	85.0	115
C29-Hopane	198						
18a-Oleanane	64.5						
C30-Hopane	295		1.4		291	239	323

Surrogate (Su)	Su Recovery (%)
Naphthalene-d8	94
Acenaphthene-d10	99
Phenanthrene-d10	97
Chrysene-d12	90
Perylene-d12	91

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not Applicable, *=Outside QA limits, refer to narrative

GeoInsight, Inc.
Buzzards Bay Oil Spill Project
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Standard Report

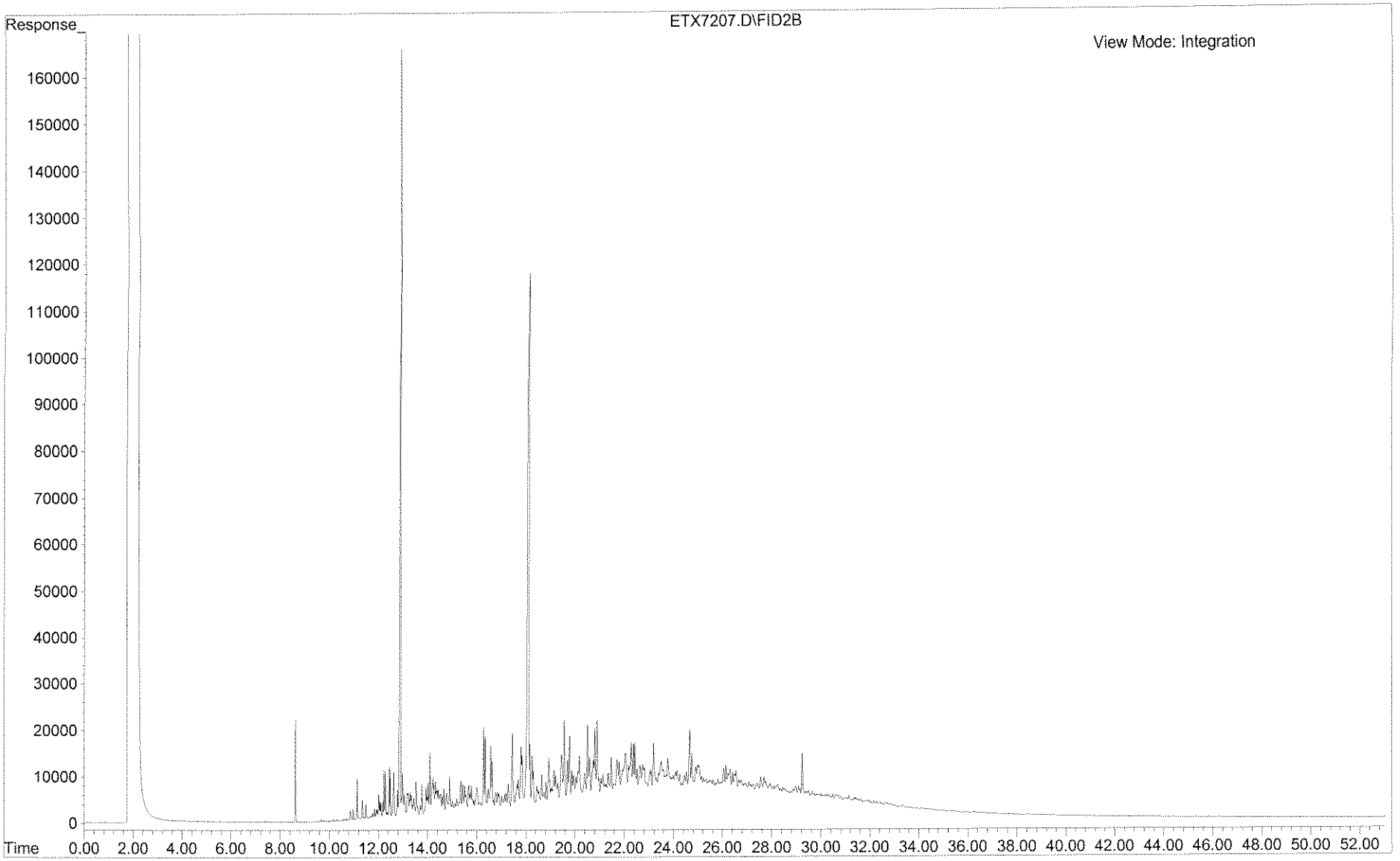
Sample Name	MS30377J.D
Client Name	AR-WKCC-250-022
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 1635
Date Acquired	04/13/07
Method	PAH-2002
Sample Volume (mL)	1

Target Compounds	Conc. (ng/ml)	Q	RPD (%)	LCS Certified Conc. Conc. (ng/ml)	-15% Conc. Conc. (ng/ml)	+15% Conc. Conc. (ng/ml)
Naphthalene		247	-2.2	253	215	290
C1-Naphthalenes		NA				
C2-Naphthalenes		NA				
C3-Naphthalenes		NA				
C4-Naphthalenes		NA				
Benzothiophene		241	-3.9	251	213	288
C1-Benzothiophenes		NA				
C2-Benzothiophenes		NA				
C3-Benzothiophenes		NA				
Biphenyl		256	2.2	250	213	288
Acenaphthylene		255	1.9	250	213	288
Acenaphthene		247	-1.4	251	213	288
Dibenzofuran		247				
Fluorene		253	1.0	251	213	288
C1-Fluorenes		NA				
C2-Fluorenes		NA				
C3-Fluorenes		NA				
Carbazole		259	3.4	250	213	288
Anthracene		258	3.0	250	213	288
Phenanthrene		253	1.0	251	213	288
C1-Phenanthrene/Anthracenes		NA				
C2-Phenanthrene/Anthracenes		NA				
C3-Phenanthrene/Anthracenes		NA				
C4-Phenanthrene/Anthracenes		NA				
Dibenzothiophene		257	2.6	250	213	288
C1-Dibenzothiophenes		NA				
C2-Dibenzothiophenes		NA				
C3-Dibenzothiophenes		NA				
Fluoranthene		239	-4.7	251	213	288
Pyrene		251	0.2	251	213	288
C1-Fluoranthenes/Pyrenes		NA				
C2-Fluoranthenes/Pyrenes		NA				
C3-Fluoranthenes/Pyrenes		NA				
Naphthobenzothiophene		260	4.0	250	212	287
C1-Naphthobenzothiophenes		NA				
C2-Naphthobenzothiophenes		NA				
C3-Naphthobenzothiophenes		NA				
Benz(a)anthracene		269	7.1	251	213	288
Chrysene		260	3.7	251	213	288
C1-Chrysenes		NA				
C2-Chrysenes		NA				
C3-Chrysenes		NA				
C4-Chrysenes		NA				
Benzo(b)fluoranthene		237	-5.5	250	213	288
Benzo(k)fluoranthene		239	-4.7	251	213	288
Benzo(e)pyrene		220	-13.0	251	213	288
Benzo(a)pyrene		242	-3.4	250	213	288
Perylene		235	-6.4	250	213	288
Indeno(1,2,3-c,d)pyrene		265	5.6	251	213	288
Dibenzo(a,h)anthracene		269	7.2	250	213	288
Benzo(g,h,i)perylene		241	-3.9	250	213	288
Individual Alkyl Isomers and Hopanes						
2-Methylnaphthalene		253	0.9	251	213	288
1-Methylnaphthalene		242	-3.5	251	213	288
2,6-Dimethylnaphthalene		252	0.6	251	213	288
1,6,7-Trimethylnaphthalene		258	3.0	250	213	288
1-Methylphenanthrene		261	4.1	251	213	288
C29-Hopane		NA				
18a-Oleanane		NA				
C30-Hopane		234	-6.6	250	213	288

Surrogate (Su)	Su Recovery (%)
Naphthalene-d8	97
Acenaphthene-d10	100
Phenanthrene-d10	94
Chrysene-d12	108
Perylene-d12	92

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not Applicable, *=Outside QA limits, refer to narrative

File : U:\2\DATA\GC10846\ETX7207.D
Operator : TJM
Acquired : 13 Apr 2007 19:40 using AcqMethod ALI_COMP.M
Instrument : GC#1
Sample Name: WIF-02-32707
Misc Info :
Vial Number: 56



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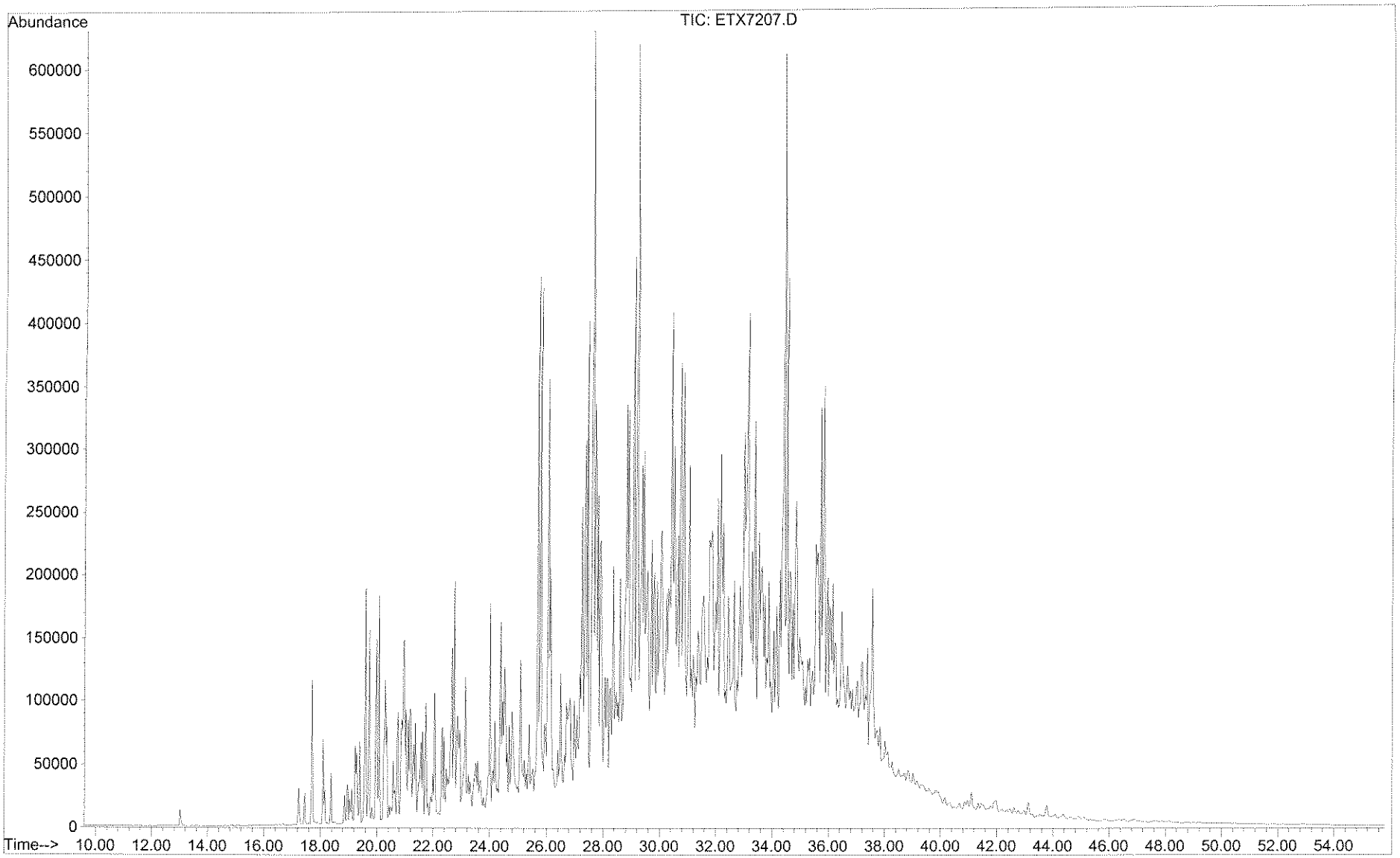
Operator : TJM
Acquired : 13 Apr 2007 6:43 pm using AcqMethod PAH-2002
Instrument : GC/MS Ins
Sample Name: WIF-02-32707
Misc Info :
Vial Number: 5



GeoInsight, Inc.
Buzzards Bay Oil Spill Project
Total Petroleum Hydrocarbon Data
Client Submitted Samples

Sample Name	ETX7207.D
Client Name	WIF-02-32707
Matrix	Oiled Rock
Collection Date	03/27/07
Received Date	04/12/07
Extraction Date	04/12/07
Extraction Batch	ENV 1635
Date Acquired	04/13/07
Method	ALI_COMP.M
Sample Weight (mg)	17.7
Dilution	NA

Target Compounds	Su Corrected Conc (µg/mg)	Q
Total Petroleum Hydrocarbons	266	
Total Resolved Hydrocarbons	69	
Unresolved Complex Mixture	197	

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	102
n-eicosane-d42	92
n-triacontane-d62	91

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedur
If n-eicosane-d42 (surrogate) recovery is above 100%, TPH and a

GeoInsight, Inc.
Buzzards Bay Oil Spill Project
Total Petroleum Hydrocarbon Data
Client Submitted Samples

al blank > 3x MDL, I=Interference, D=Diluted value, NA=Not applicable, *=Outside QA limits, refer to narrative
liphatic values are surrogate corrected to 100%.

GeoInsight, Inc.
Buzzards Bay Oil Spill Project
Total Petroleum Hydrocarbon Data
Lab Control Standard Report

Sample Name	GC10846B.D
Client Name	AL-WKDIESEL-1000-005
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	EOM 1635
Date Acquired	04/13/07
Method	ALI_COMP.M
Sample Volume (mL)	1.0
Dilution	NA

Target Compounds	Su Corrected Conc (µg/mL)	Q	RPD (%)	B&B Average Conc (µg/mL)	-15% Conc (µg/mL)	+15% Conc (µg/mL)
Total Petroleum Hydrocarbons	101		0.5	100	85	115

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	94
n-eicosane-d42	99
n-triacontane-d62	98

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not applicable, *=Outside QA limits, refer to narrative
If n-eicosane-d42 (surrogate) recovery is above 100%, TPH values are surrogate corrected to 100%.

TDI - BROOKS INTERNATIONAL, INC.
B&B Laboratories, Inc.
College Station, TX

GeoInsight, Inc.
Buzzards Bay Spill Project

WIF-02-32707, Collection Date 3/27/07
Mishaum Point S-1, Collection Date 4/27/07

Determination of:
Saturate Biological Marker Analysis in an Oiled Rock and a Tar Ball Sample

(QC Batches ENV 1635 and ENV 1646)

May 28, 2007

Technical Report 07-1887

GeoInsight, Inc.
Buzzards Bay Spill Project
WIF-02-32707, Collection Date 3/27/07
Mishaum Point S-1, Collection Date 4/27/07
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Technical Report 07-1887
GeoInsight, Inc.
Buzzards Bay Spill Project
Oil Rock (Product) and Tar Ball (Product) Sample

May 28, 2007

Introduction

B&B Laboratories received one (1) ice chest that contained one (1) bag that contained an oiled rock sample that was sent on April 11, 2007 and arrived on April 12, 2007 at B&B Laboratories in College Station, Texas sealed and in good condition. The oiled rock sample was collected in support of the Buzzards Bay Spill Project (GeoInsight Project 3871-002). The oiled rock sample was stored in an access-controlled refrigerator (4.0°C) until processing.

B&B Laboratories received one (1) ice chest that contained one (1) bag that contained a tar ball sample that was sent on May 2, 2007 and arrived on May 3, 2007 at B&B Laboratories in College Station, Texas sealed and in good condition. The tar ball sample was collected in support of the Buzzards Bay Spill Project (GeoInsight Project 3871-002). The tar ball sample was stored in an access-controlled refrigerator (4.0°C) until processing.

The oiled rock and tar ball sample were analyzed for saturate biological marker analysis by GC/MS-SIM.

The results for saturate biological markers included in this report.

We appreciate the opportunity to serve your analytical needs and please do not hesitate to contact us should you have any questions.

Thomas J. McDonald
Project Manager

Donell Frank
Project Quality Officer

Sample/Analyses Description

B&B Laboratories
Project J03318
Report 07-1887

GeoInsight, Inc.
Buzzards Bay Spill Project
Sample Inventory

Client Project #3871-002

Laboratory File Number	Client Identification	Collection Date	Receive Date	Analysis	Matrix	Comments	B&B SDG	Entrix Project #
ETX7207	WIF-02-32707	03/27/07	04/12/07	PAH, TPH	Other	Oiled rock	07041201	3871-002
ETX7236	Mishaum Point S-1	04/27/07	05/03/07	PAH, TPH	Other	Tar Ball	07050301	3871-002

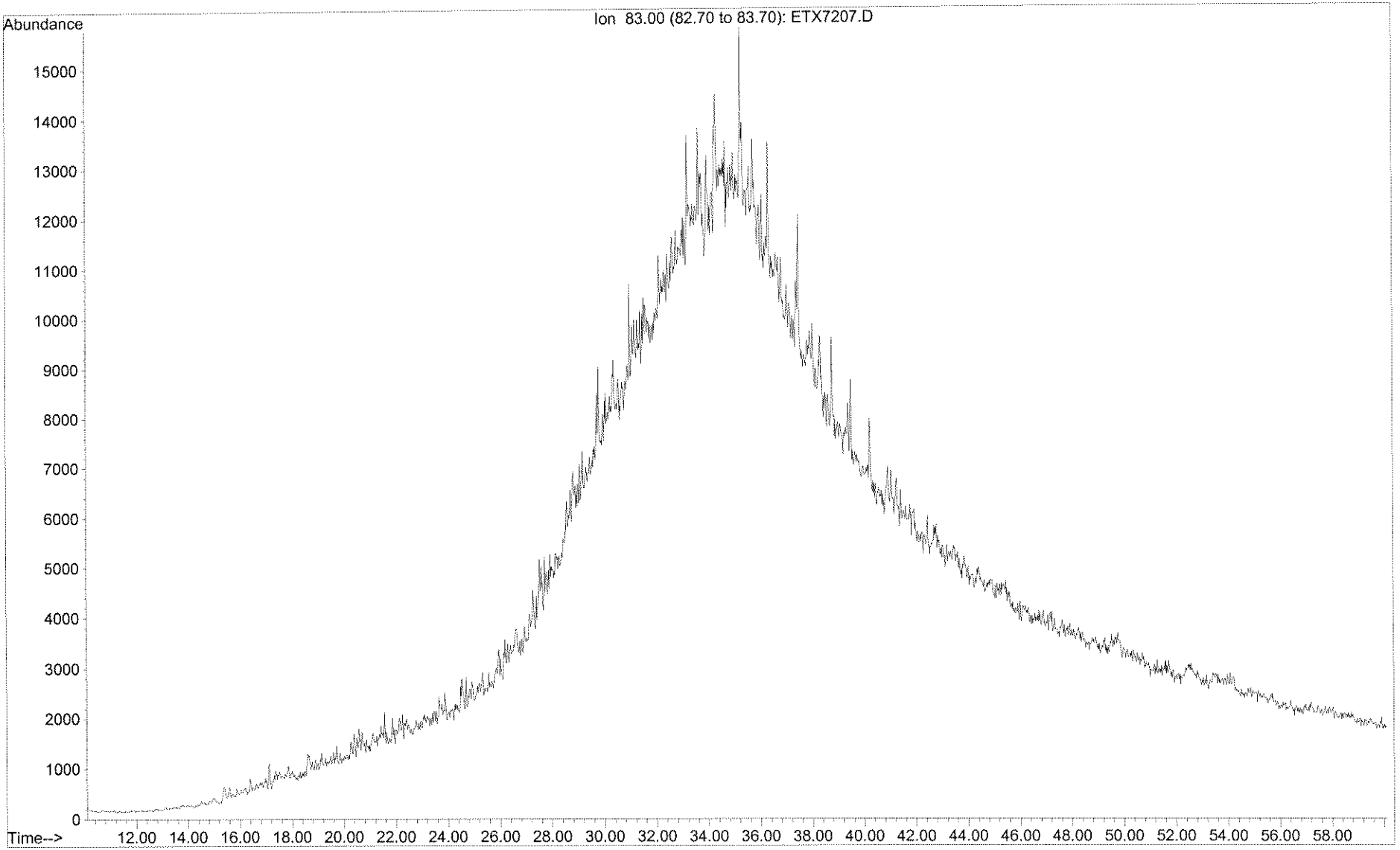
200000

5/28/07

Product Samples

Saturate Biological Marker Chromatograms (m/z = 83, 191, 217, 218, and 259)

File : X:\1\DATA\MS30388\ETX7207.D
Operator : TJM
Acquired : 22 May 2007 7:38 pm using AcqMethod SATBIO
Instrument : GC/MS Ins
Sample Name: WIF-02-32707
Misc Info :
Vial Number: 4



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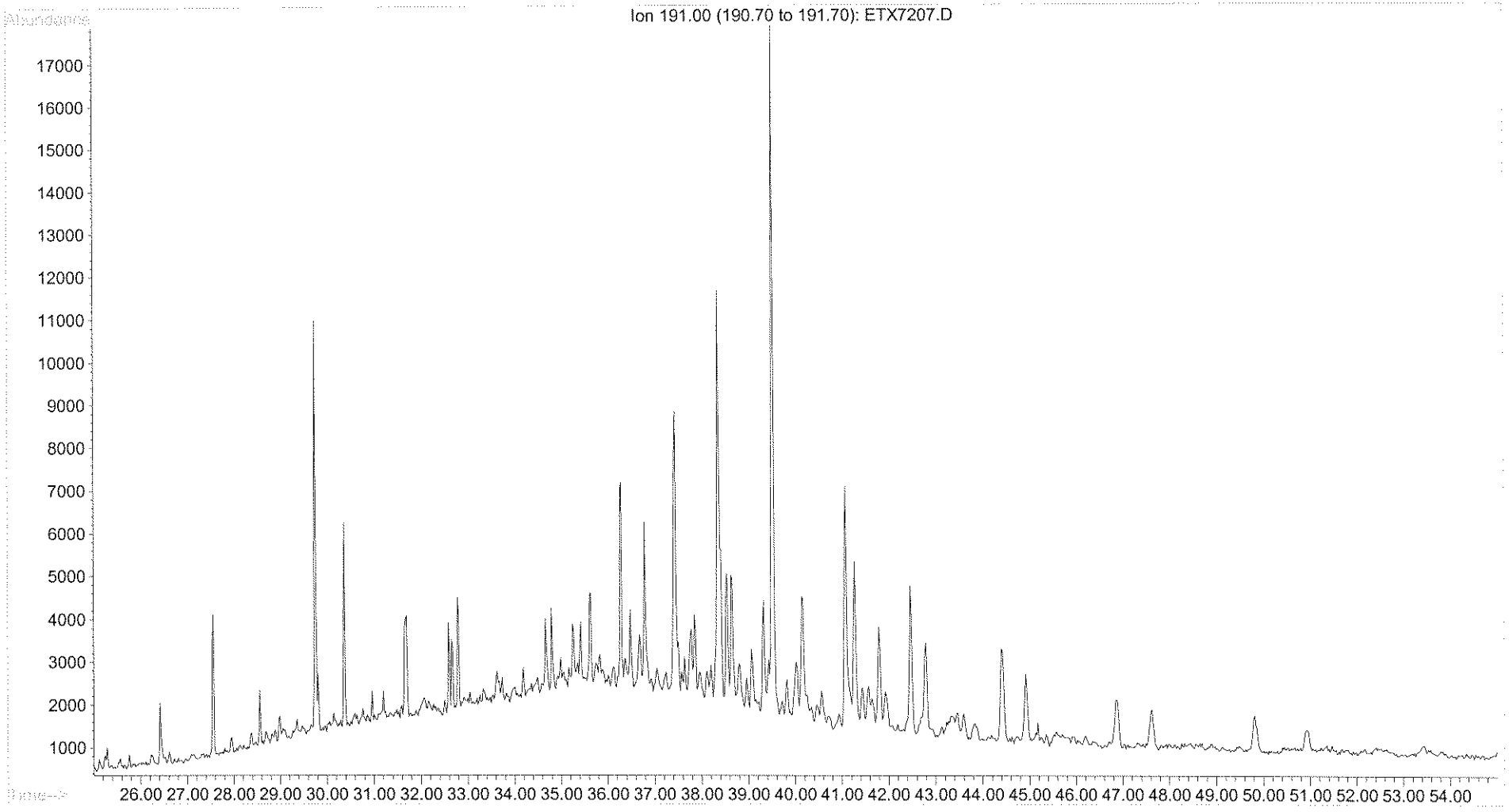
Operator : TJM
Acquired : 22 May 2007 7:38 pm using AcqMethod SATBIO
Instrument : GC/MS Ins
Sample Name: WIF-02-32707
Misc Info :
Vial Number: 4



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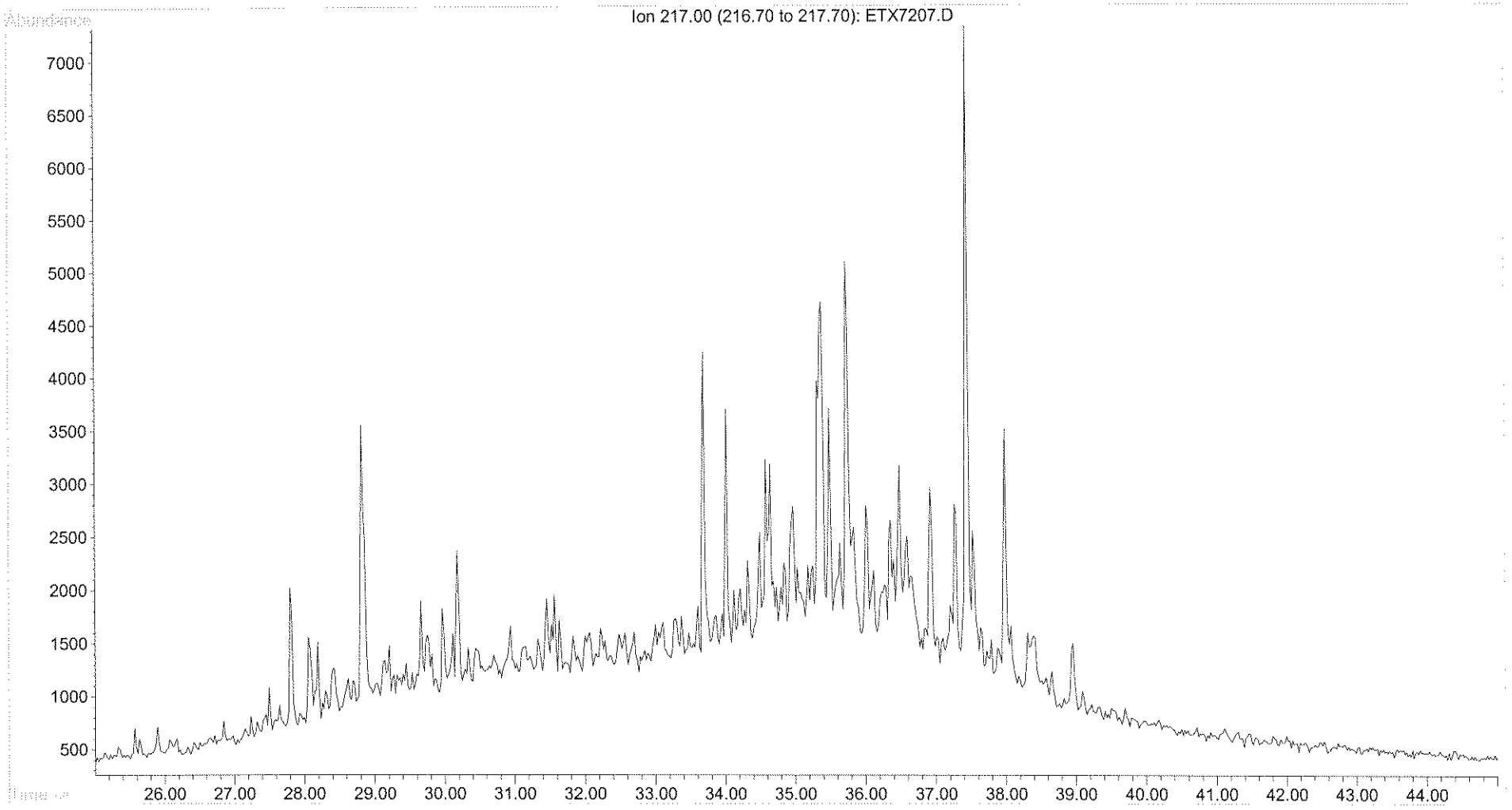
File : C:\HPCHEM\1\DATA\MS30388\ETX7207.D
Operator : TJM
Acquired : 22 May 2007 7:38 pm using AcqMethod SATBIO
Instrument : GC/MS Ins
Sample Name: WIF-02-32707
Misc Info :
Vial Number: 4



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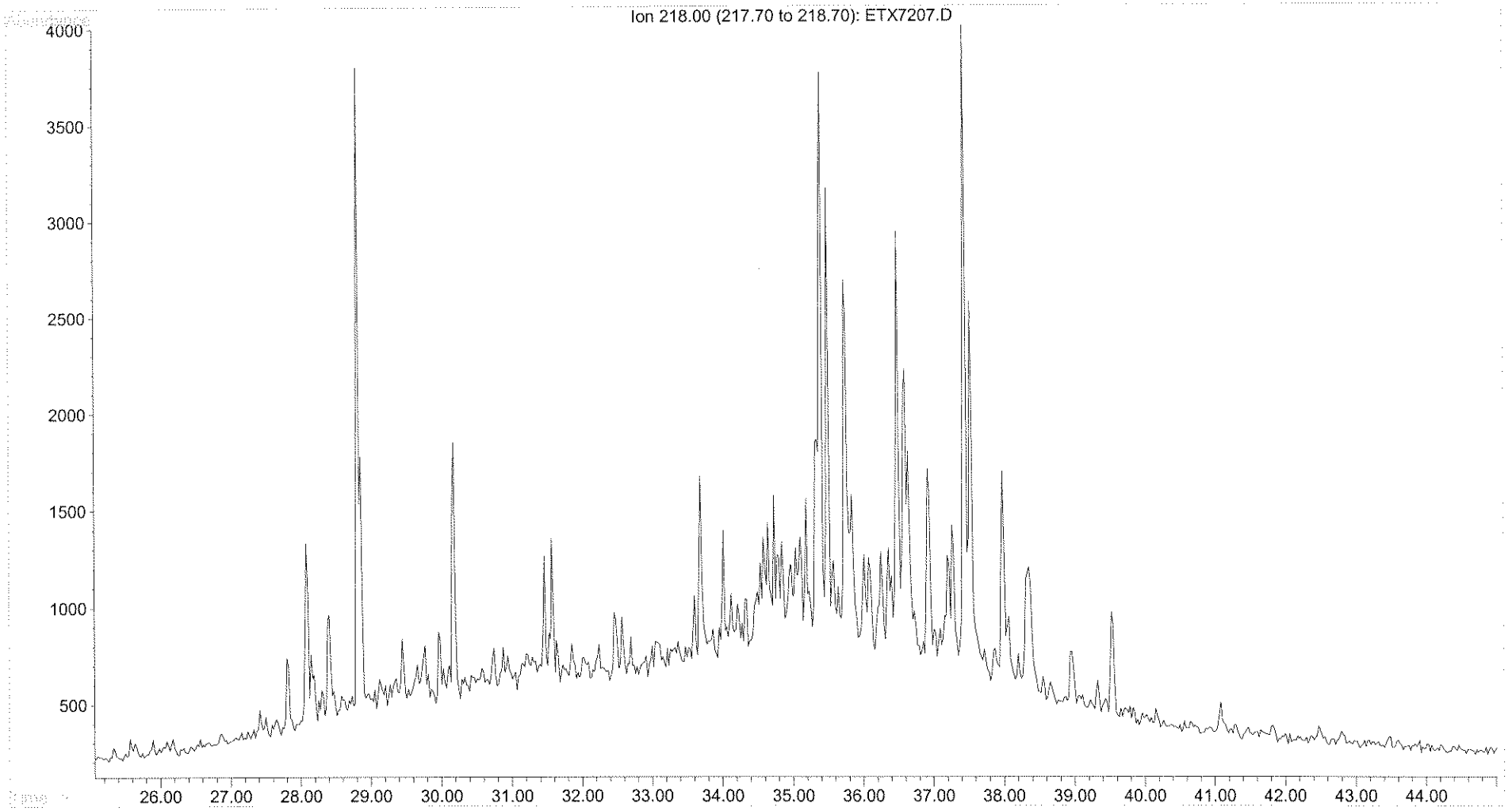
Acquired : 22 May 2007 7:38 pm using AcqMethod SATBIO
Instrument : GC/MS Ins
Sample Name: WIF-02-32707
Misc Info :
Vial Number: 4



800008

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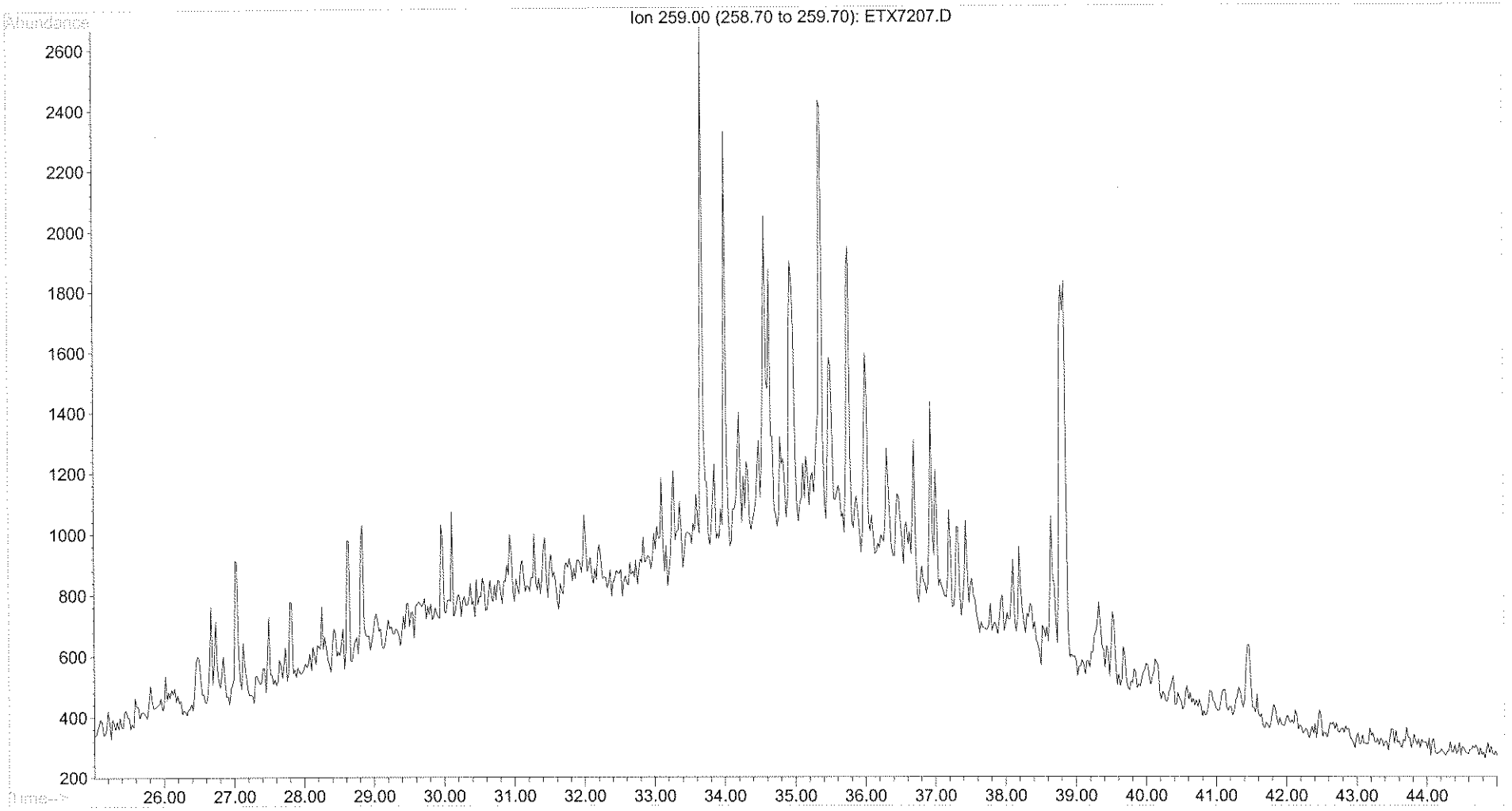
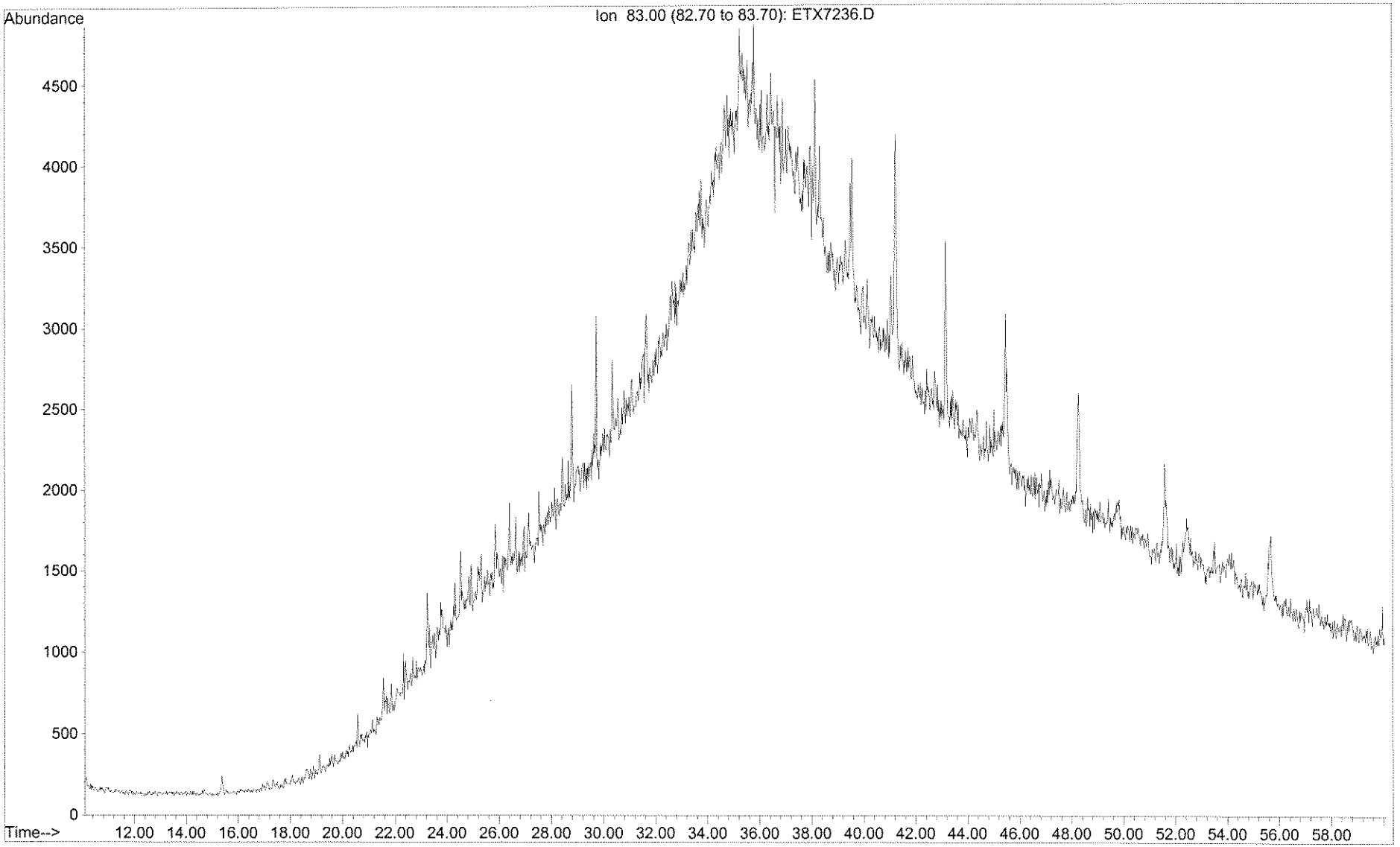
Operator : TJM
Acquired : 22 May 2007 7:38 pm using AcqMethod SATBIO
Instrument : GC/MS Ins
Sample Name: WIF-02-32707
Misc Info :
Vial Number: 4



600000

File : X:\1\DATA\MS30388\ETX7236.D
Operator : TJM
Acquired : 22 May 2007 8:42 pm using AcqMethod SATBIO
Instrument : GC/MS Ins
Sample Name: Mishaum Point S-1
Misc Info :
Vial Number: 5



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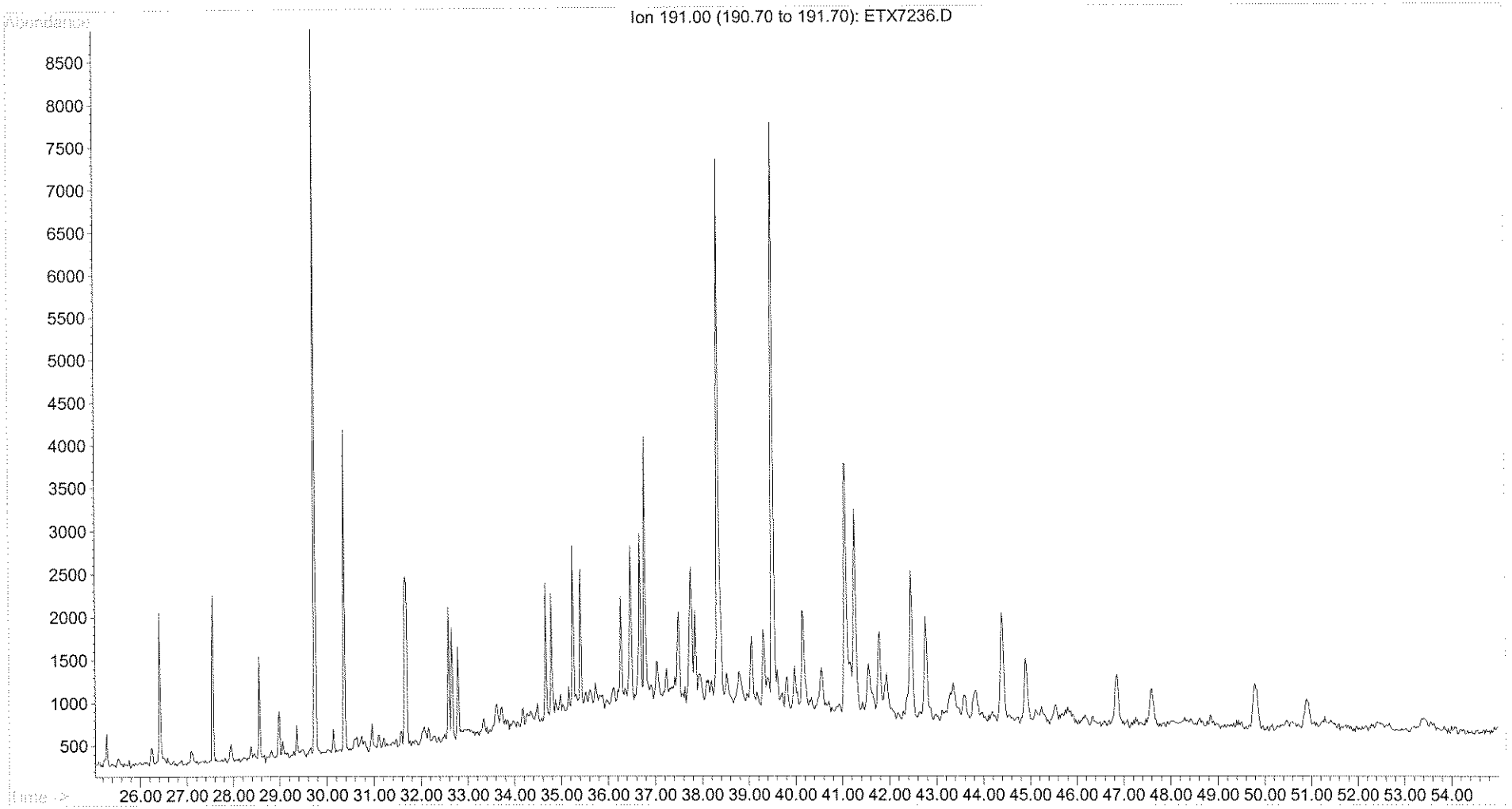
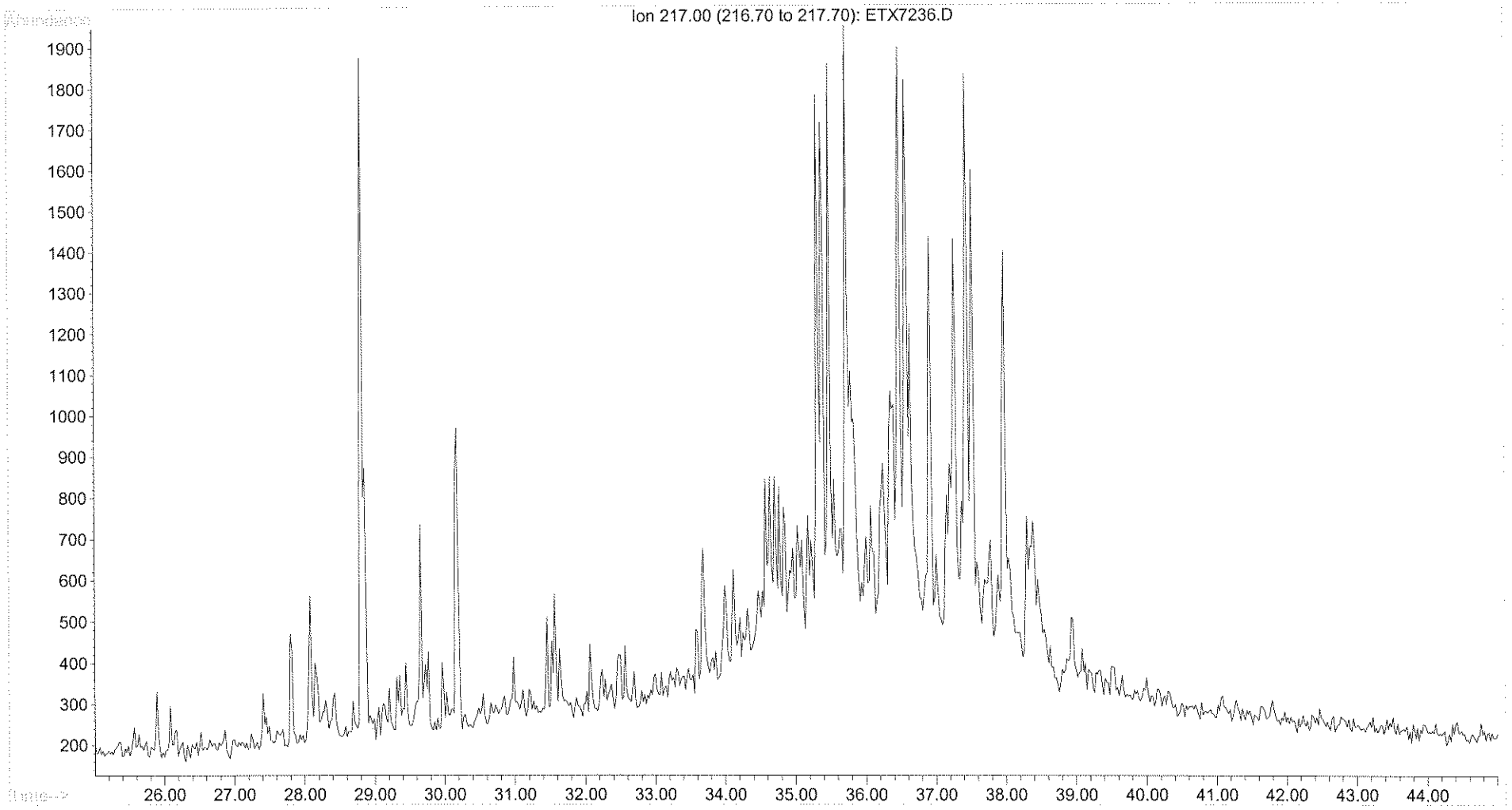
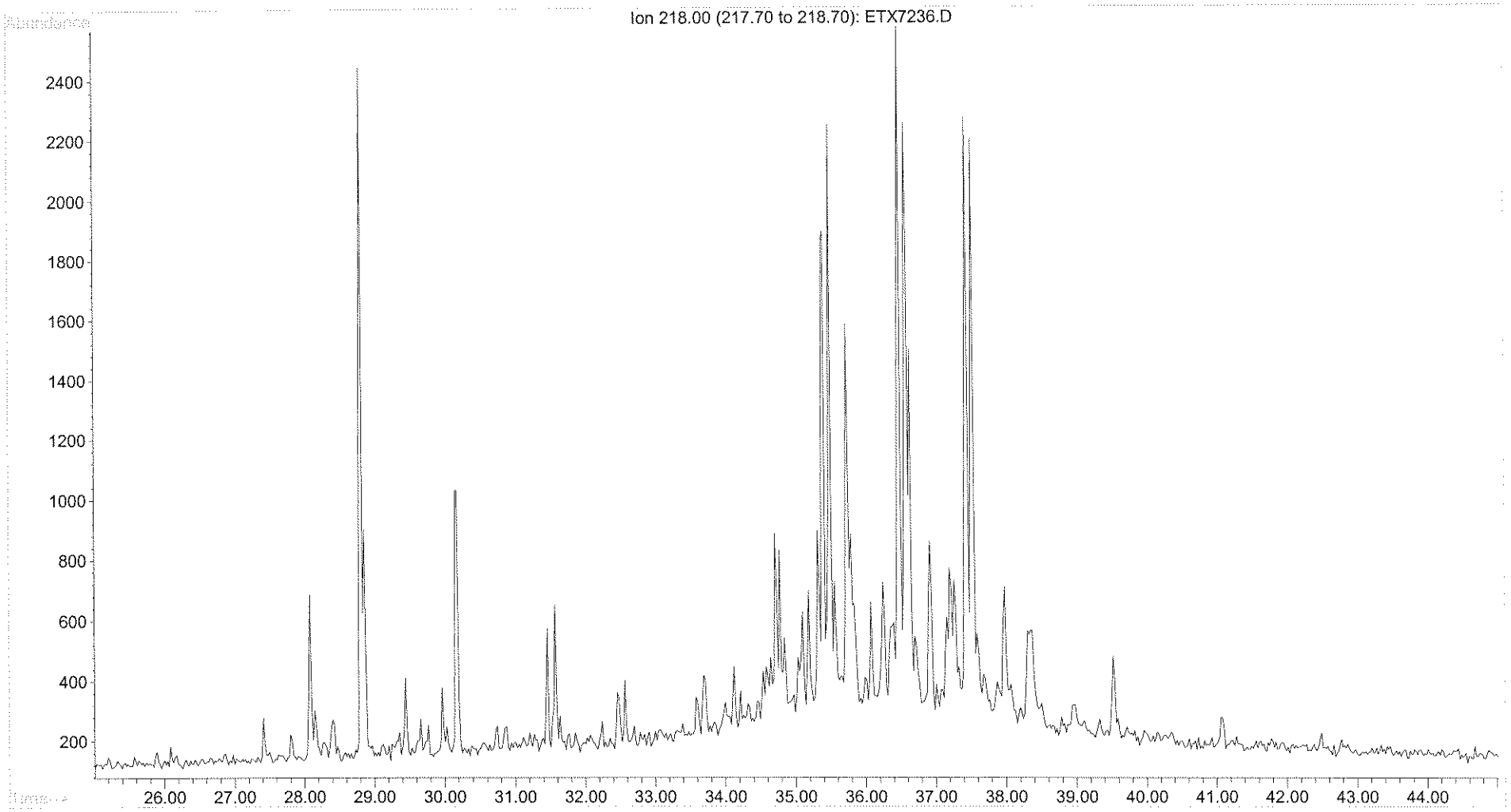
Operator : TJM
Acquired : 22 May 2007 8:42 pm using AcqMethod SATBIO
Instrument : GC/MS Ins
Sample Name: Mishaum Point S-1
Misc Info :
Vial Number: 5



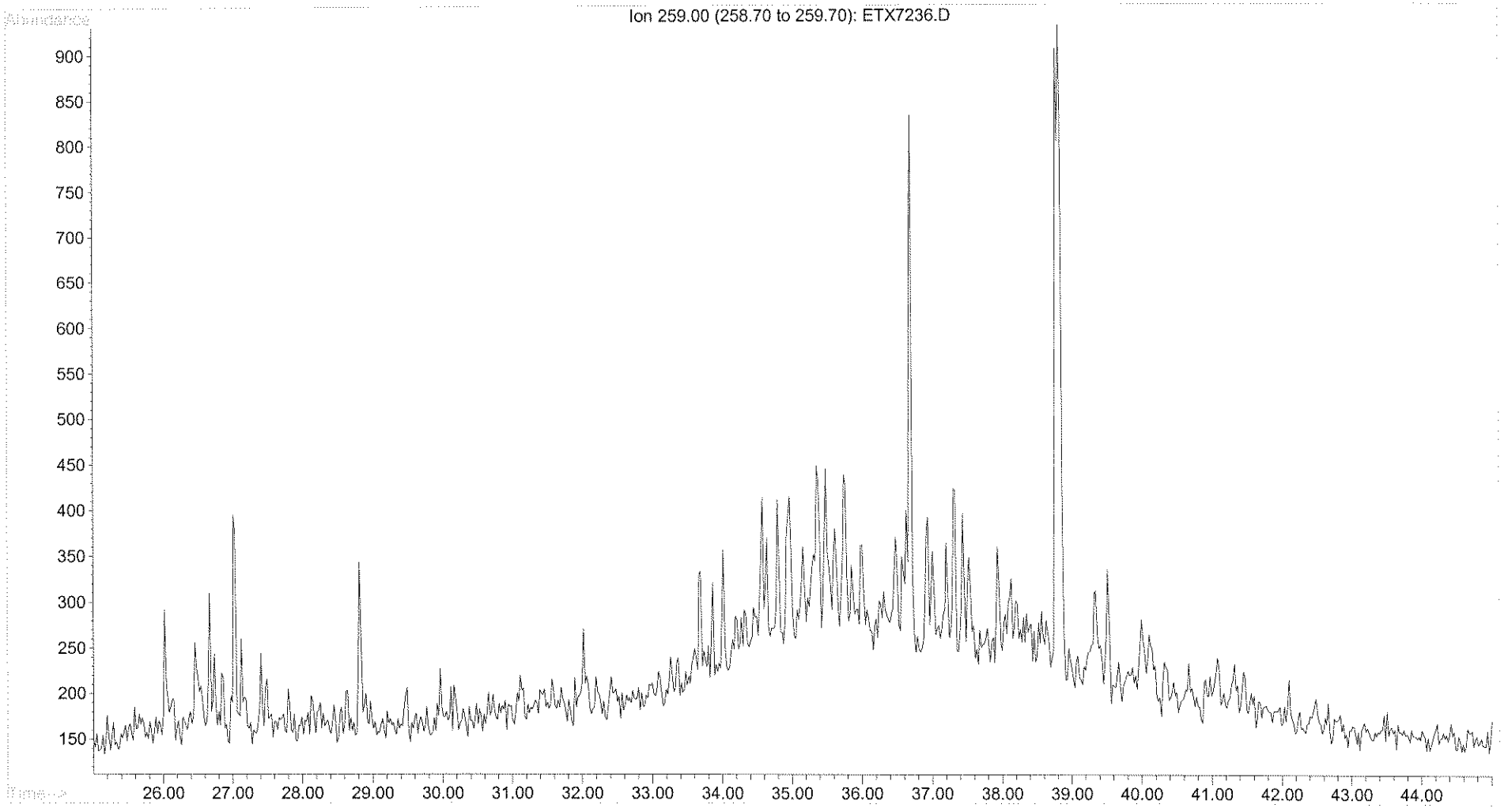
File : C:\HPCHEM\1\DATA\MS30388\ETX7236.D
Operator : TJM
Acquired : 22 May 2007 8:42 pm using AcqMethod SATBIO
Instrument : GC/MS Ins
Sample Name: Mishaum Point S-1
Misc Info :
Vial Number: 5



File : C:\HPCHEM\1\DATA\MS30388\ETX7236.D
Operator : TJM
Acquired : 22 May 2007 8:42 pm using AcqMethod SATBIO
Instrument : GC/MS Ins
Sample Name: Mishaum Point S-1
Misc Info :
Vial Number: 5



File : C:\HPCHEM\1\DATA\MS30388\ETX7236.D
Operator : TJM
Acquired : 22 May 2007 8:42 pm using AcqMethod SATBIO
Instrument : GC/MS Ins
Sample Name: Mishaum Point S-1
Misc Info :
Vial Number: 5



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TDI - BROOKS INTERNATIONAL, INC.
B&B Laboratories, Inc.
College Station, TX

GeoInsight, Inc.
Buzzards Bay Spill Project

July 10, 2007 Collection Event

Determination of:
Total Petroleum Hydrocarbons and Polycyclic Aromatic Hydrocarbons in an Oiled Sediment Samples

(QC Batch ENV 1677)

August 19, 2007

Technical Report 07-1927

GeoInsight, Inc.
Buzzards Bay Spill Project
July 10, 2007 Collection Event
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Narrative

Technical Report 07-1927
GeoInsight, Inc.
Buzzards Bay Spill Project
July 10, 2007 Sample Collection Event

August 19, 2007

Introduction

B&B Laboratories received one (1) ice chest that contained four (4) jars of sediment that was sent on July 12, 2007 and arrived on July 13, 2007 at B&B Laboratories in College Station, Texas sealed and in good condition. The internal temperature of the cooler was 6.4°C. The sediment samples were collected on July 10, 2007 in support of the Buzzards Bay Spill Project (GeoInsight Project 3871-002). The sediment samples were stored in an access-controlled freezer (-20°C) until processing. The sediment samples were analyzed for Total Petroleum Hydrocarbons (TPH) by GC/FID and Polycyclic Aromatic Hydrocarbons (PAHs) by GC/MS-SIM.

The results for TPH, PAH and hopanes are included in this report.

Analytical Methods

The analytical methods employed for TPH and PAH are listed in Table 1.

Table 1. Standard Operating Procedures for each analytical test.

Matrix	Extraction	TPH	PAH
Product	B&B 1003	B&B 1013	B&B 1006

Data Reporting

The reporting units for each analyte are listed in Table 2. The method detection limits (MDL) for each analyte are listed in Table 3. Analytes that are detected below the method detection limit are qualified as "J". Analytes that are detected in the procedural blanks greater than 3X MDL are qualified with a "B". Analytical interference's that are detected in the sample are qualified with an "I". Analytes not detected in the samples are qualified with a "U". RPD for analytes in duplicate samples that are <2X MDL are qualified with a "X". Spiked levels of analytes in matrix spikes that are <50% of the native levels are considered invalid spikes and are qualified with a "Y". Any QC result reported to be outside the corresponding QC criteria is discussed in the QA/QC variance section of this report.

Table 2. Analytical reporting units.

Matrix	TPH	EOM	PAH
Sediments	µg/g	µg/g	ng/g

Table 3. Method Detection Limits.

TPH	Sediment MDLs
Sample size	15.0 g, 1.0 ml final volume
Unit of measure	µg/dry g
Total Petroleum	1.4
Total Resolved	1.4
Unresolved	1.4
EOM	100

Table 3. Method Detection Limits.

PAH	Sediment MDL
Sample size	15 g, 1.0 ml final volume
Unit of measure	ng/g dry wt.
Naphthalene	0.17
C1-Naphthalenes	0.33
C2-Naphthalenes	0.35
C3-Naphthalenes	0.35
C4-Naphthalenes	0.35
Benzothiophene	0.17
C1-Benzothiophenes	0.35
C2-Benzothiophenes	0.35
C3-Benzothiophenes	0.35
Biphenyl	0.14
Acenaphthylene	0.19
Acenaphthene	0.13
Dibenzofuran	0.20
Fluorene	0.19
C1-Fluorenes	0.39
C2-Fluorenes	0.39
C3-Fluorenes	0.39
Carbazole	0.19
Anthracene	0.14
Phenanthrene	0.29
C1-Phenanthrenes/Anthracenes	0.29
C2-Phenanthrenes/Anthracenes	0.29
C3-Phenanthrenes/Anthracenes	0.29
C4-Phenanthrenes/Anthracenes	0.15
Dibenzothiophene	0.31
C1-Dibenzothiophenes	0.31
C2-Dibenzothiophenes	0.31
C3-Dibenzothiophenes	0.21
Fluoranthene	0.19
Pyrene	0.39
C1-Fluoranthenes/Pyrenes	0.39
C2-Fluoranthenes/Pyrenes	0.39
C3-Fluoranthenes/Pyrenes	0.20

PAH (Continued)	Sediment MDL
Sample size	15 g, 1.0 ml final volume
Unit of measure	ng/g dry wt.
Benz(a)anthracene	0.17
Chrysene	0.35
C1-Chrysenes	0.35
C2-Chrysenes	0.35
C3-Chrysenes	0.35
C4-Chrysenes	0.35
Benzo(b)fluoranthene	0.29
Benzo(k)fluoranthene	0.23
Benzo(e)pyrene	0.31
Benzo(a)pyrene	0.22
Perylene	1.38
Indeno(1,2,3-c,d)pyrene	0.28
Dibenzo(a,h)anthracene	0.15
Benzo(g,h,i)perylene	0.14
Individual Alkyl Isomers and Hopanes	
2-Methylnaphthalene	0.20
1-Methylnaphthalene	0.13
2,6-Dimethylnaphthalene	0.20
1,6,7-Trimethylnaphthalene	0.10
1-Methylphenanthrene	0.20
C29-Hopane	1.11
18a-Oleanane	1.11
C30-Hopane	1.11

Quality Assurance/Quality Control

TPH

The quality assurance/quality control procedure for this program included the analyses of a procedural blank, per analytical batch of no more than 20 samples. Additionally, a laboratory control sample (LCS) was analyzed with each data set. The LCS is a diesel sample that is analyzed with each TPH run and for which controls are established based on performance. Procedural blanks are used to determine that sample preparation and analyses are free of contaminants. The QC criteria for the LCS is between 85 – 115% of the laboratory determined mean

Surrogate solutions equivalent to 5-10X the MDL are prepared for various hydrocarbon analyses. The appropriate surrogate solution is added to every sample including quality control samples. The data are corrected based on surrogate recovery up to 100%. The QC criteria for surrogate recoveries are between 40-120%.

PAH

The quality assurance/quality control procedure for this program included the analyses of a procedural blank per analytical batch of no more than 20 samples. A standard reference oil (NIST 1582) was analyzed with this data set. Procedural blanks are used to determine that sample preparation and

analyses are free of contaminants. The QC criterion for the reference oil SRM is ± 15% the laboratory derived mean.
Surrogate solutions equivalent to 5-10X the MDL are prepared for various hydrocarbon analyses. The appropriate surrogate solution is added to every sample including quality control samples. The data are corrected based on surrogate recovery up to 100%. The QC criteria for surrogate recoveries are between 40-120%, except d12-perylene.

Quality Assurance/Quality Control Variances – Sediments

Total Petroleum Hydrocarbons (TPH)

Surrogate Recoveries

Observation

- ETX7285 (WIF-02-07-1007-A) and ETX7288 (Dup (WIF-02-07-1007-D) required dilution prior to instrumental analysis due to high native TPH levels. The surrogate recoveries are annotated with a "D".

Comment

- Surrogates were re-added to the diluted samples prior to instrument analysis.

Procedural Blank

Observation

- No variances were observed.

Laboratory Control Standard

Observation

- No variances were observed.

PAH

Surrogate Recoveries

Observation

- ETX7285 (WIF-02-07-1007-A) and ETX7288 (Dup (WIF-02-07-1007-D) required dilution prior to instrumental analysis due to high native TPH levels. The surrogate recoveries are annotated with a "D".

Comment

- Surrogates were re-added to the diluted samples prior to instrument analysis.

Procedural Blank

Observation

- No variances were observed.

Standard Reference Materials

Observation

- No variances were observed.

It is our judgment that these QA/QC variances do not impact the overall quality of the data submitted in this report.

We appreciate the opportunity to serve your analytical needs and please do not hesitate to contact us should you have any questions.

Thomas J. McDonald
Project Manager

Donell Fank
Project Quality Manager

Sample/Analyses Description

B&B Laboratories
Project J03318
Report 07-1927

GeoInsight, Inc.
Buzzards Bay Spill Project
Sample Inventory

Client Project #3871-002

Laboratory File Number	Client Identification	Collection Date	Receive Date	Analysis	Matrix	Comments	B&B SDG	Entrix Project #
ETX7285	WIF-02-071007-A	07/10/07	07/13/07	PAH, TPH	Sediment	Oiled	07071301	3871-002
ETX7286	WIF-02-071007-B	07/10/07	07/13/07	PAH, TPH	Sediment	Oiled	07071301	3871-002
ETX7287	WIF-02-071007-C	07/10/07	07/13/07	PAH, TPH	Sediment	Oiled	07071301	3871-002
ETX7288	WIF-02-071007-D	07/10/07	07/13/07	PAH, TPH	Sediment	Oiled	07071301	3871-002

000002

7/19/07

Sediment Samples

Total Petroleum Hydrocarbons
Extractable Organic Matter
Concentrations

Geolnsight Inc.
Buzzard Bay Oil Spill Project
Total Petroleum Hydrocarbon Data
Client Submitted Samples

Sample Name	ETX7285.D	ETX7286.D	ETX7287.D	ETX7288.D
Client Name	WIF-02-071007-A	WIF-02-071007-B	WIF-02-071007-C	WIF-02-071007-D
Matrix	Sediment	Sediment	Sediment	Sediment
Collection Date	07/10/07	07/10/07	07/10/07	07/10/07
Received Date	07/13/07	07/13/07	07/13/07	07/13/07
Extraction Date	07/19/07	07/19/07	07/19/07	07/19/07
Extraction Batch	EVN 1677	EVN 1677	EVN 1677	EVN 1677
Date Acquired	07/27/07	07/27/07	07/27/07	07/27/07
Method	ALI_COMP.M	ALI_COMP.M	ALI_COMP.M	ALI_COMP.M
Sample Dry Weight (g)	5.1	15.0	5.1	1.2
% Moisture	19	23	22	3
% Dry	81	77	78	97
Dilution	5x	NA	NA	5x

Target Compounds	Su Corrected Conc (µg/dry g)	Q	Su Corrected Conc (µg/dry g)	Q	Su Corrected Conc (µg/dry g)	Q	Su Corrected Conc (µg/dry g)	Q
Total Petroleum Hydrocarbons	4754		214		332		24669	
Total Resolved Hydrocarbons	1291		29		58		6238	
Unresolved Complex Mixture	3463		185		274		18431	
EOM (µg/g dry)	15806		692		893		89468	

Surrogate (Su)	Su Recovery (%)		Su Recovery (%)		Su Recovery (%)		Su Recovery (%)	
n-dodecane-d26	98	D	86		84		98	D
n-eicosane-d42	97	D	99		98		96	D
n-triacontane-d62	97	D	104		105		97	D

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not applicable, *=Outside QA limits, refer to narrative
If n-eicosane-d42 (surrogate) recovery is above 100%, TPH values are surrogate corrected to 100%.

Geoinsight Inc.
Buzzard Bay Oil Spill Project
Total Petroleum Hydrocarbon Data
Procedural Blank Report

Sample Name	ENV1677A.D
Client Name	Procedural Blank
Matrix	Sediment
Collection Date	NA
Received Date	NA
Extraction Date	07/19/07
Extraction Batch	EVN 1677
Date Acquired	07/27/07
Method	ALI_COMP.M
Sample Dry Weight (g)	15.0
% Moisture	NA
% Dry	NA
Dilution	NA

Target Compounds	Su Corrected Conc (µg/dry g)	Q	3X MDL (µg/dry g)	Actual MDL (µg/dry g)
Total Petroleum Hydrocarbons	<1.4	U	4.2	1.4
Total Resolved Hydrocarbons	<1.4	U	4.2	1.4
Unresolved Complex Mixture	<1.4	U	4.2	1.4
EOM (µg/g dry)	<100	U	300	100

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	79
n-eicosane-d42	106
n-triacontane-d62	115

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not applicable, *=Outside QA limits, refer to narrative
If n-eicosane-d42 (surrogate) recovery is above 100%, TPH values are surrogate corrected to 100%.

Geolnsight Inc.
Buzzard Bay Oil Spill Project
Total Petroleum Hydrocarbon Data
Lab Control Standard Report

Sample Name	GC10863B.D
Client Name	AL-WKDIESEL-1000-003
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	EVN 1677
Date Acquired	07/26/07
Method	ALI_COMP.M
Sample Volume (mL)	1.0
Dilution	NA

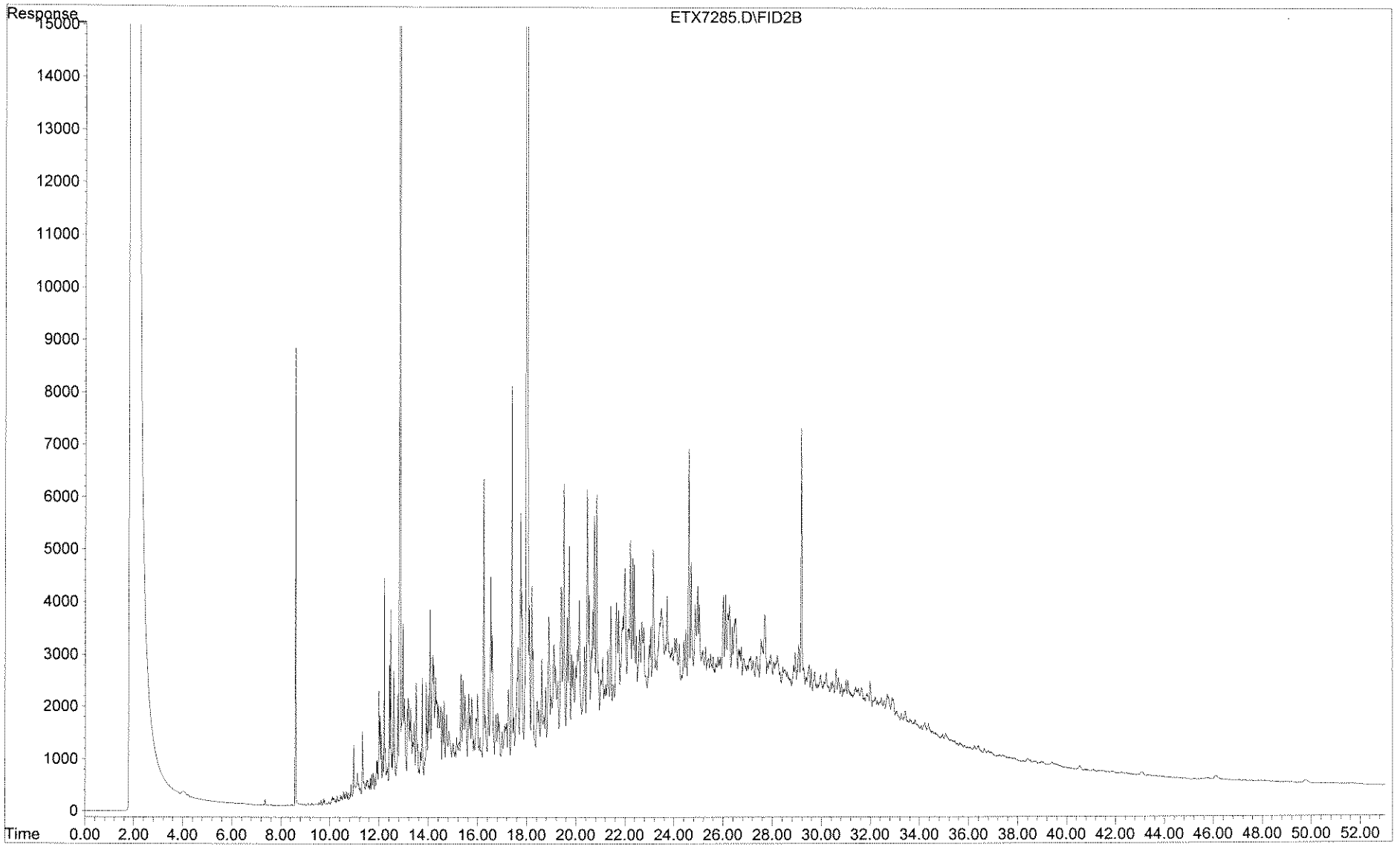
Target Compounds	Su Corrected Conc (ug/mL)	Q	RPD (%)	B&B Average Conc (ug/mL)	-15% Conc (ug/mL)	+15% Conc (ug/mL)
Total Petroleum Hydrocarbons	96		4.3	100	85	115

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	83
n-eicosane-d42	94
n-triacontane-d62	93

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not applicable, *=Outside QA limits, refer to narrative
If n-eicosane-d42 (surrogate) recovery is above 100%, TPH values are surrogate corrected to 100%.

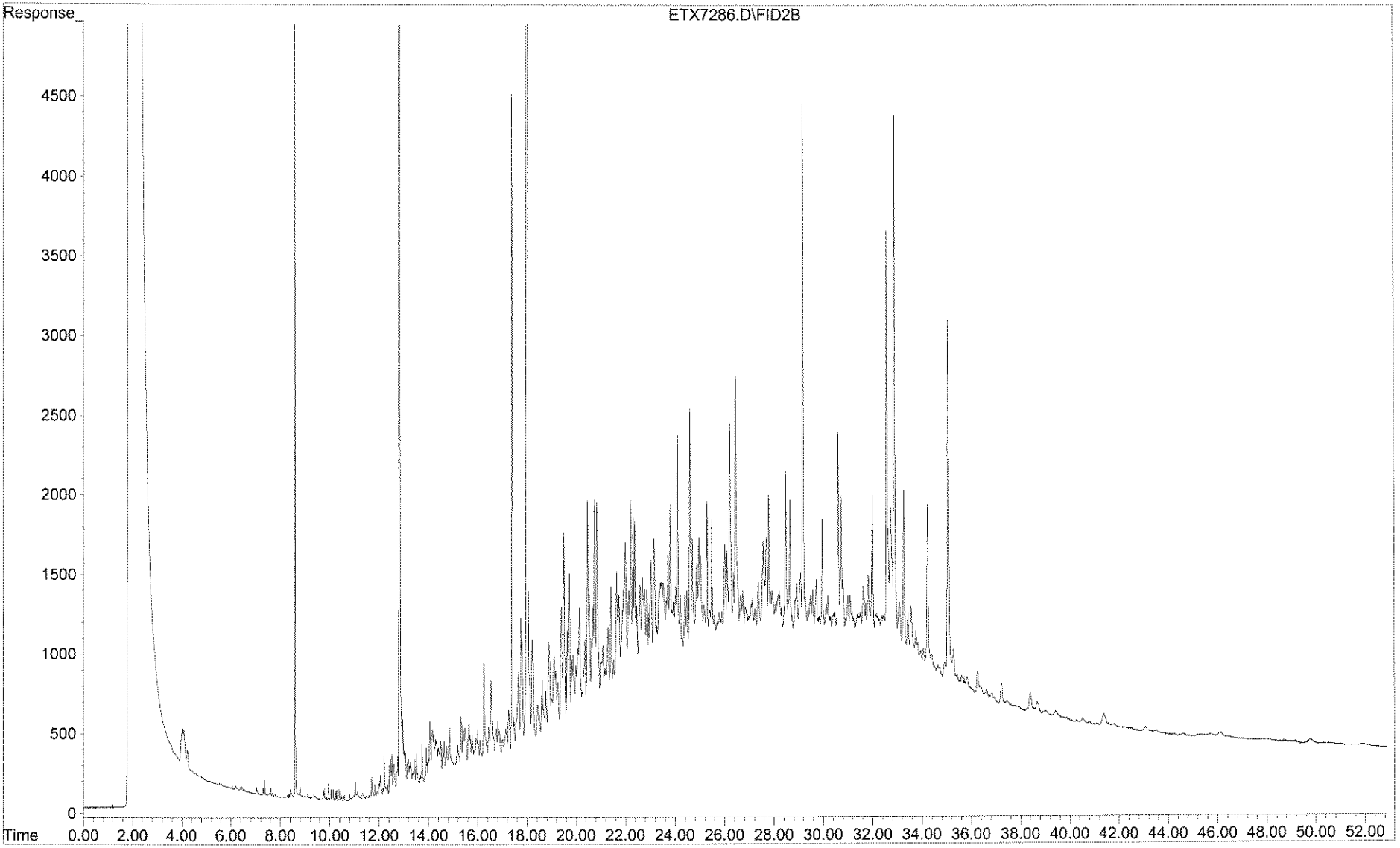
Total Petroleum Hydrocarbons Chromatograms

File : D:\GC-MSD~1\GC10863\ETX7285.D
Operator : CSB
Acquired : 27 Jul 2007 15:29 using AcqMethod ALI_COMP.M
Instrument : GC#1
Sample Name: WIF-02-071007-A
Misc Info :
Vial Number: 61

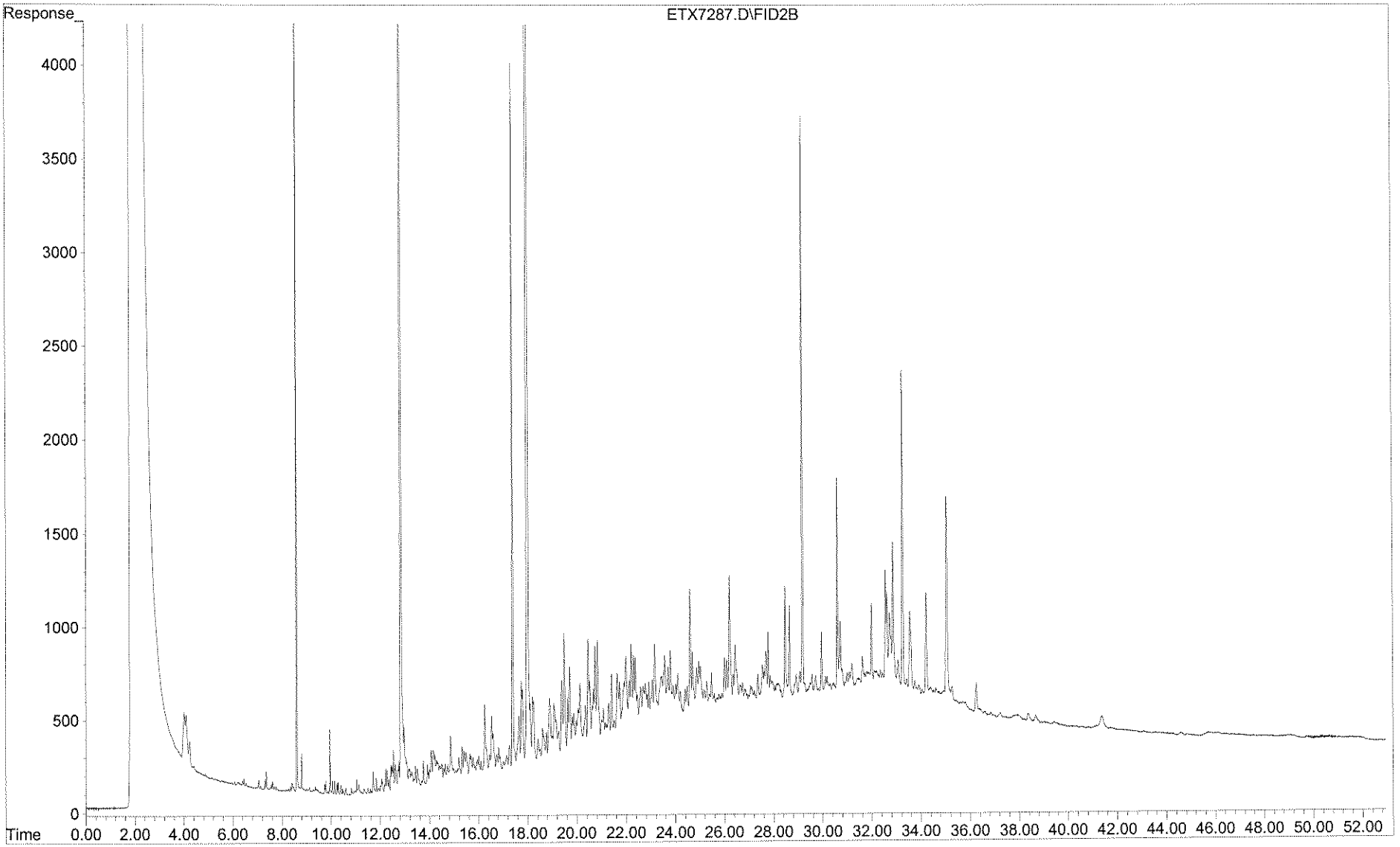


600009

File : D:\GC-MSD~1\GC10863\ETX7286.D
Operator : CSB
Acquired : 27 Jul 2007 17:30 using AcqMethod ALI_COMP.M
Instrument : GC#1
Sample Name: WIF-02-071007-B
Misc Info :
Vial Number: 62

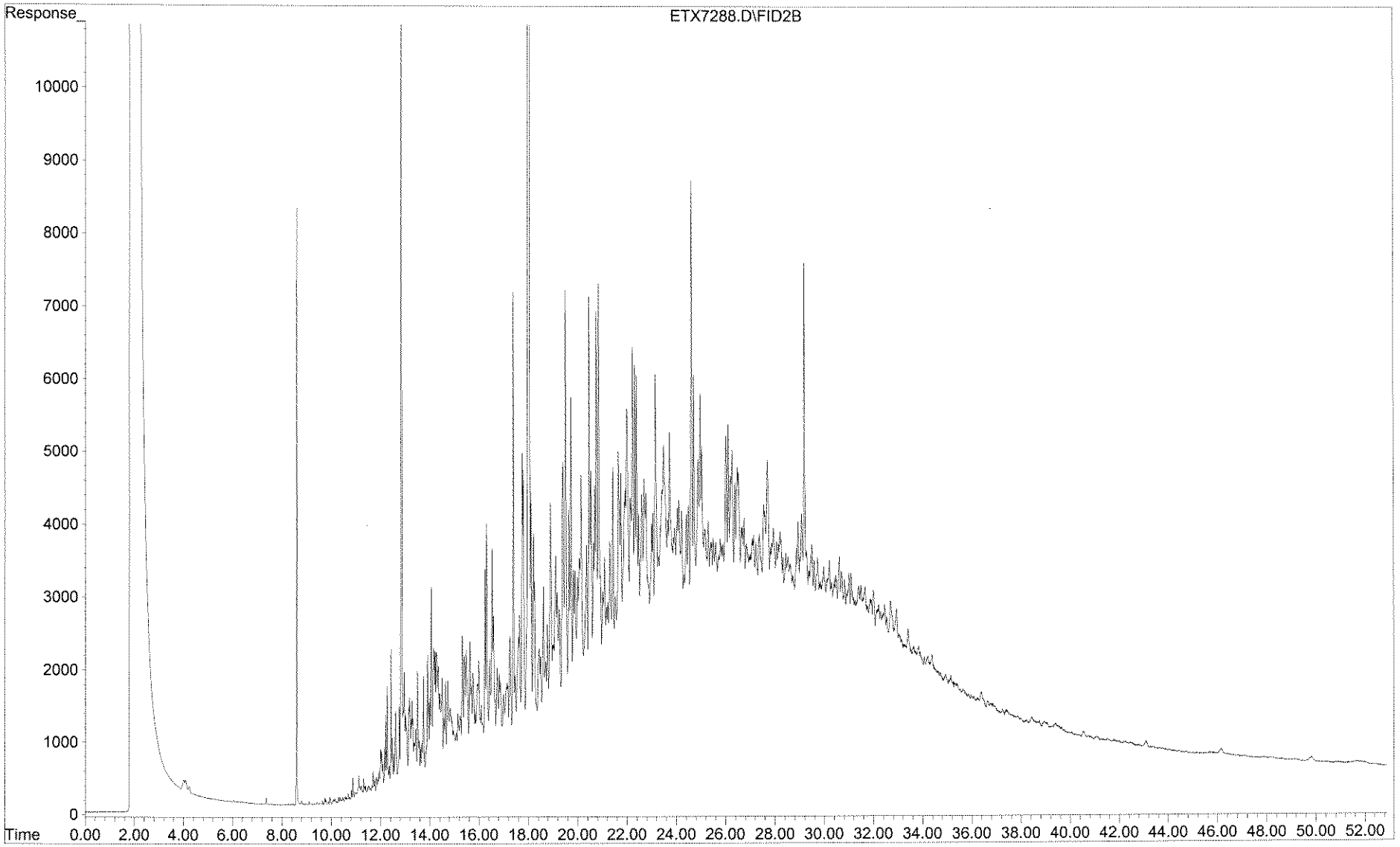


File : D:\GC-MSD~1\GC10863\ETX7287.D
Operator : CSB
Acquired : 27 Jul 2007 18:30 using AcqMethod ALI_COMP.M
Instrument : GC#1
Sample Name: WIF-02-071007-C
Misc Info :
Vial Number: 63



000011

File : D:\GC-MSD~1\GC10863\ETX7288.D
Operator : CSB
Acquired : 27 Jul 2007 19:31 using AcqMethod ALI_COMP.M
Instrument : GC#1
Sample Name: WIF-02-071007-D
Misc Info :
Vial Number: 64



Polycyclic Aromatic Hydrocarbon Concentration

Geoinsight, Inc.
Buzzards Bay Oil Spill Project
Polycyclic Aromatic Hydrocarbon Data
Client Submitted Samples

Sample Name	ETX7285.D	ETX7286.D	ETX7287.D	ETX7288.D
Client Name	WIF-02-071007-A	WIF-02-071007-B	WIF-02-071007-C	WIF-02-071007-D
Matrix	Sediment	Sediment	Sediment	Sediment
Collection Date	07/10/07	07/10/07	07/10/07	07/10/07
Received Date	07/13/07	07/13/07	07/13/07	07/13/07
Extraction Date	07/19/07	07/19/07	07/19/07	07/19/07
Extraction Batch	ENV 1677	ENV 1677	ENV 1677	ENV 1677
Date Acquired	07/22/07	07/22/07	07/22/07	07/22/07
Method	PAH-2002	PAH-2002	PAH-2002	PAH-2002
Sample Dry Weight (g)	5.1	15.0	5.1	1.2
% Moisture	19	23	22	3
% Dry	81	77	78	97
Dilution	10x	NA	NA	10x

Target Compounds	Su Corrected Conc. (ng/dry g)	Q	Su Corrected Conc. (ng/dry g)	Q	Su Corrected Conc. (ng/dry g)	Q	Su Corrected Conc. (ng/dry g)	Q
Naphthalene	1.3	J	1.1		1.3		5.6	J
C1-Naphthalenes	4.9	J	7.5		2.3		27.5	J
C2-Naphthalenes	4320		32.5		70.7		3960	
C3-Naphthalenes	21500		156		344		39400	
C4-Naphthalenes	19000		225		343		60700	
Benzothiophene	113		2.9		8.8		388	
C1-Benzothiophenes	32.7		<0.3	U	<1	U	<43.5	U
C2-Benzothiophenes	256		<0.3	U	<1	U	<43.5	U
C3-Benzothiophenes	1460		<0.3	U	<1	U	<43.5	U
Biphenyl	<4.3	U	0.9		0.6		<18.1	U
Acenaphthylene	<5.7	U	1.4		1.4		77.1	
Acenaphthene	409		3.4		8.1		742	
Dibenzofuran	203		2.4		3.0		149	
Fluorene	1060		11.6		6.1		731	
C1-Fluorenes	5760		72.7		123		13500	
C2-Fluorenes	13100		234		392		48500	
C3-Fluorenes	15200		329		528		67700	
Carbazole	86.2		4.7		4.8		<40.9	U
Anthracene	1140		19.2		45.9		2740	
Phenanthrene	845		8.2		57.6		4700	
C1-Phenanthrene/Anthracenes	24800		373		789		91100	
C2-Phenanthrene/Anthracenes	60500		1340		2320		275600	
C3-Phenanthrene/Anthracenes	60200		1660		2820		315200	
C4-Phenanthrene/Anthracenes	24700		884		1310		146600	
Dibenzothiophene	1490		30.2		10.0		534	
C1-Dibenzothiophene	4140		69.0		133		15300	
C2-Dibenzothiophene	9600		214		354		43200	
C3-Dibenzothiophene	9200		246		426		49500	
Fluoranthene	1160		41.2		115		5290	
Pyrene	6010		167		321		34500	
C1-Fluoranthenes/Pyrenes	27400		878		1230		154800	
C2-Fluoranthenes/Pyrenes	35300		1450		1950		221000	
C3-Fluoranthenes/Pyrenes	29200		1050		1330		146500	
Naphthobenzothiophene	2730		83.9		141		14800	
C1-Naphthobenzothiophenes	6360		199		308		37700	
C2-Naphthobenzothiophenes	7110		264		388		43700	
C3-Naphthobenzothiophenes	3660		145		174		19600	
Benz(a)anthracene	4490		153		223		25800	
Chrysene	6990		219		362		37100	
C1-Chrysenes	30500		1040		1550		177000	
C2-Chrysenes	32100		1210		1790		194100	
C3-Chrysenes	13800		558		792		81400	
C4-Chrysenes	449		17.2		22.2		2110	
Benzo(b)fluoranthene	1150		56.3		87.6		7070	
Benzo(k)fluoranthene	180		9.7		17.8		1050	
Benzo(e)pyrene	1250		61.8		78.9		7560	
Benzo(a)pyrene	2270		104		155		13800	
Perylene	787		35.8		48.1		4490	
Indeno(1,2,3-c,d)pyrene	214		18.6		27.4		1740	
Dibenzo(a,h)anthracene	301		14.7		19.1		1720	
Benzo(g,h,i)perylene	450		24.8		32.5		2380	
Total PAHs	492982		13730		21265		2415564	
Individual Alkyl Isomers and Hopanes								
2-Methylnaphthalene	2.1	J	7.7		1.8		12.3	J
1-Methylnaphthalene	5.0		3.0		1.6		27.7	
2,6-Dimethylnaphthalene	2500		13.8		14.7		822	
1,6,7-Trimethylnaphthalene	1490		18.9		42.2		4930	
1-Methylphenanthrene	4580		205		173		16900	
C29-Hopane	463		26.9		36.4		3120	
18a-Oleanane	107		7.1		8.4		940	
C30-Hopane	688		39.0		41.1		4260	

Surrogate (Su)	Su Recovery (%)		Su Recovery (%)		Su Recovery (%)		Su Recovery (%)	
Naphthalene-d8	93	D	72		72		87	D
Acenaphthene-d10	99	D	85		81		94	D
Phenanthrene-d10	97	D	94		95		98	D
Chrysene-d12	76	D	78		83		82	D
Perylene-d12	84	D	82		74		77	D

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not Applicable, *=Outside QA limits, refer to narrative

Geoinsight, Inc.
Buzzards Bay Oil Spill Project
Polycyclic Aromatic Hydrocarbon Data
Procedural Blank Report

Sample Name	ENV1677A.D
Client Name	Procedural Blank
Matrix	Sediment
Collection Date	NA
Received Date	NA
Extraction Date	07/19/07
Extraction Batch	ENV 1677
Date Acquired	07/21/07
Method	PAH-2002
Sample Dry Weight (g)	15.0
% Moisture	NA
% Dry	NA
Dilution	NA

Target Compounds	Su Corrected Conc. (ng/dry g)	Q	3X MDL	Actual MDL
Naphthalene	<0.2	U	0.5	0.2
C1-Naphthalenes	<0.3	U	1.0	0.3
C2-Naphthalenes	<0.4	U	1.1	0.4
C3-Naphthalenes	<0.4	U	1.1	0.4
C4-Naphthalenes	<0.4	U	1.1	0.4
Benzothiophene	<0.2	U	0.5	0.2
C1-Benzothiophenes	<0.3	U	1.0	0.3
C2-Benzothiophenes	<0.3	U	1.0	0.3
C3-Benzothiophenes	<0.3	U	1.0	0.3
Biphenyl	<0.1	U	0.4	0.1
Acenaphthylene	<0.2	U	0.6	0.2
Acenaphthene	<0.1	U	0.4	0.1
Dibenzofuran	<0.2	U	0.6	0.2
Fluorene	<0.2	U	0.6	0.2
C1-Fluorenes	<0.4	U	1.2	0.4
C2-Fluorenes	<0.4	U	1.2	0.4
C3-Fluorenes	<0.4	U	1.2	0.4
Carbazole	<0.3	U	1.0	0.3
Anthracene	<0.2	U	0.6	0.2
Phenanthrene	<0.1	U	0.4	0.1
C1-Phenanthrene/Anthracenes	<0.3	U	0.9	0.3
C2-Phenanthrene/Anthracenes	<0.3	U	0.9	0.3
C3-Phenanthrene/Anthracenes	<0.3	U	0.9	0.3
C4-Phenanthrene/Anthracenes	<0.3	U	0.9	0.3
Dibenzothiophene	<0.2	U	0.5	0.2
C1-Dibenzothiophene	<0.3	U	0.9	0.3
C2-Dibenzothiophene	<0.3	U	0.9	0.3
C3-Dibenzothiophene	<0.3	U	0.9	0.3
Fluoranthene	<0.2	U	0.6	0.2
Pyrene	<0.2	U	0.6	0.2
C1-Fluoranthenes/Pyrenes	<0.4	U	1.2	0.4
C2-Fluoranthenes/Pyrenes	<0.4	U	1.2	0.4
C3-Fluoranthenes/Pyrenes	<0.4	U	1.2	0.4
Naphthobenzothiophene	<0.2	U	0.6	0.2
C1-Naphthobenzothiophenes	<0.4	U	1.2	0.4
C2-Naphthobenzothiophenes	<0.4	U	1.2	0.4
C3-Naphthobenzothiophenes	<0.4	U	1.2	0.4
Benz(a)anthracene	<0.1	U	0.4	0.1
Chrysene	<0.2	U	0.5	0.2
C1-Chrysenes	<0.3	U	1.0	0.3
C2-Chrysenes	<0.3	U	1.0	0.3
C3-Chrysenes	<0.3	U	1.0	0.3
C4-Chrysenes	<0.3	U	1.0	0.3
Benzo(b)fluoranthene	<0.3	U	0.9	0.3
Benzo(k)fluoranthene	<0.2	U	0.7	0.2
Benzo(e)pyrene	<0.3	U	0.9	0.3
Benzo(a)pyrene	<0.2	U	0.7	0.2
Perylene	<1.4	J	4.1	1.4
Indeno(1,2,3-c,d)pyrene	<0.3	U	0.8	0.3
Dibenzo(a,h)anthracene	<0.2	U	0.5	0.2
Benzo(g,h,i)perylene	<0.1	U	0.4	0.1
Total PAHs		U		
Individual Alkyl Isomers and Hopane				
2-Methylnaphthalene	<0.2	U	0.6	0.2
1-Methylnaphthalene	<0.1	U	0.4	0.1
2,6-Dimethylnaphthalene	<0.2	U	0.6	0.2
1,6,7-Trimethylnaphthalene	<0.1	U	0.3	0.1
1-Methylphenanthrene	<0.2	U	0.6	0.2
C29-Hopane	<1.1	U	3.3	1.1
18a-Oleanane	<1.1	U	3.3	1.1
C30-Hopane	<1.1	U	3.3	1.1

Surrogate (Su)	Su Recovery (%)
Naphthalene-d8	85
Acenaphthene-d10	87
Phenanthrene-d10	79
Chrysene-d12	84
Perylene-d12	95

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not Applicable, *=Outside QA limits, refer to narrative

GeoInsight, Inc.
Buzzards Bay Oil Spill Project
Polycyclic Aromatic Hydrocarbon Data
Standard Reference Material Report

Sample Name	MS30401B.D
Client Name	SRM 1582
Matrix	Petroleum
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 1677
Date Acquired	07/21/07
Method	PAH-2002
Sample Weight (g)	1.7

Target Compounds	Su Corrected Conc. (ug/g)	Q	RPD (%)	SRM 1582 Certified Conc. (ug/ g)	B&B Average	-15% Conc. (ug/g)	+15% Conc. (ug/g)
Naphthalene	125		14.8		145	123	167
C1-Naphthalenes	641		3.0		622	529	715
C2-Naphthalenes	1250		5.0		1189	1011	1367
C3-Naphthalenes	1190		13.7		1037	881	1193
C4-Naphthalenes	802		6.2		754	641	867
Benzothiophene	10.3						
C1-Benzothiophenes	49.7						
C2-Benzothiophenes	91.6						
C3-Benzothiophenes	176						
Biphenyl	34.2		0.9		34.5	29.3	39.7
Acenaphthylene	<10	U					
Acenaphthene	19.1		1.1		18.9	16.1	21.7
Dibenzofuran	11.2						
Fluorene	31.6		12.5		35.8	30.4	41.2
C1-Fluorenes	135		2.2		132	112	152
C2-Fluorenes	281		9.3		256	218	294
C3-Fluorenes	271		11.3		242	206	278
Carbazole	23.8						
Anthracene	22.3						
Phenanthrene	116		5.5	100 ± 7.0	110	93.3	126
C1-Phenanthrene/Anthracenes	368		12.1		326	277	375
C2-Phenanthrene/Anthracenes	561		3.3		543	462	624
C3-Phenanthrene/Anthracenes	578		10.2		522	444	600
C4-Phenanthrene/Anthracenes	247		10.7		275	234	316
Dibenzothiophene	31.4		12.3	32.9 ± 1.7	35.5	30.2	40.8
C1-Dibenzothiophene	141		12.0		125	106	144
C2-Dibenzothiophene	270		4.9		257	218	296
C3-Dibenzothiophene	278		10.6		250	213	288
Fluoranthene	8.3	J					
Pyrene	18.8						
C1-Fluoranthenes/Pyrenes	71.3		3.6		68.8	58.5	79.1
C2-Fluoranthenes/Pyrenes	112		6.5		105	89.3	121
C3-Fluoranthenes/Pyrenes	92.6		8.1		85.4	72.6	98.2
Naphthobenzothiophene	44.8		11.8		39.8	33.8	45.8
C1-Naphthobenzothiophenes	55.5		5.9		58.9	50.1	67.7
C2-Naphthobenzothiophenes	79.8		2.2		78.1	66.4	89.8
C3-Naphthobenzothiophenes	56.6		2.5		55.2	46.9	63.5
Benz(a)anthracene	3.3	J					
Chrysene	20.7		4.3		21.6	18.4	24.8
C1-Chrysenes	78.2		13.4		68.4	58.1	78.7
C2-Chrysenes	134		6.9		125	106	144
C3-Chrysenes	97.4		9.6		88.5	75.2	102
C4-Chrysenes	<10	U					
Benzo(b)fluoranthene	2.1	J					
Benzo(k)fluoranthene	1.2	J					
Benzo(e)pyrene	3.4	J					
Benzo(a)pyrene	3.6	J					
Perylene	35.9		7.0	30.2± 1.7	33.5	28.4	38.5
Indeno(1,2,3-c,d)pyrene	1.9	J					
Dibenzo(a,h)anthracene	0.4	J					
Benzo(g,h,i)perylene	1.9	J					
Total PAHs	8679						
Selected Ratios							
D2/P2	0.481		1.7		0.473	0.402	0.544
D3/P3	0.481		0.4		0.479	0.407	0.551
D2/C2	2.015		2.0		2.056	1.748	2.364
D3/C3	2.854		1.0		2.825	2.401	3.249
FI-Py2/C2	0.836		0.5		0.840	0.714	0.966
FI-Py3/C3	0.951		1.5		0.965	0.820	1.110
Individual Alkyl Isomers and Hopane							
2-Methylnaphthalene	563		6.7		602	512	692
1-Methylnaphthalene	359		14.5		415	353	477
2,6-Dimethylnaphthalene	549		9.2		602	512	692
1,6,7-Trimethylnaphthalene	152		0.0		152	129	175
1-Methylphenanthrene	92.5		7.8		100	85.0	115
C29-Hopane	222						
18a-Oleanane	66.3						
C30-Hopane	303		7.5		281	239	323

Surrogate (Su)	Su Recovery (%)
Naphthalene-d8	92
Acenaphthene-d10	95
Phenanthrene-d10	90
Chrysene-d12	91
Perylene-d12	91

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not Applicable, *=Outside QA limits, refer to narrative

Geolnsight, Inc.
Buzzards Bay Oil Spill Project
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Material Report

Sample Name	MS30401l.D
Client Name	AR-WKCC-250-022
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 1677
Date Acquired	07/21/07
Method	PAH-2000
Sample Volume (mL)	1.0

Target Compounds	Conc. (ng/ml)	Q	RPD (%)	LCM Certified Conc. Conc. (ng/ml)	-15% Conc. Conc. (ng/ml)	+15% Conc. Conc. (ng/ml)
Naphthalene	258		2.1	253	215	290
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	268		6.8	251	213	288
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
Biphenyl	258		3.0	250	213	288
Acenaphthylene	261		4.2	250	213	288
Acenaphthene	253		1.0	251	213	288
Dibenzofuran	255		1.8	250	213	288
Fluorene	253		1.0	251	213	288
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	217		-14.3	250	213	288
Anthracene	243		-3.0	250	213	288
Phenanthrene	239		-4.7	251	213	288
C1-Phenanthrene/Anthracenes	NA					
C2-Phenanthrene/Anthracenes	NA					
C3-Phenanthrene/Anthracenes	NA					
C4-Phenanthrene/Anthracenes	NA					
Dibenzothiophene	254		1.4	250	213	288
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
Fluoranthene	245		-2.3	251	213	288
Pyrene	243		-3.0	251	213	288
C1-Fluoranthenes/Pyrenes	NA					
C2-Fluoranthenes/Pyrenes	NA					
C3-Fluoranthenes/Pyrenes	NA					
Naphthobenzothiophene	248		-0.7	250	212	287
C1-Naphthobenzothiophenes	NA					
C2-Naphthobenzothiophenes	NA					
C3-Naphthobenzothiophenes	NA					
Benz(a)anthracene	243		-3.1	251	213	288
Chrysene	271		7.8	251	213	288
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	268		6.8	250	213	288
Benzo(k)fluoranthene	250		-0.2	251	213	288
Benzo(e)pyrene	260		3.7	251	213	288
Benzo(a)pyrene	257		2.6	250	213	288
Perylene	256		2.2	250	213	288
Indeno(1,2,3-c,d)pyrene	231		-8.1	251	213	288
Dibenzo(a,h)anthracene	239		-4.6	250	213	288
Benzo(g,h,i)perylene	245		-2.2	250	213	288
Individual Alkyl Isomers and Hopanes						
2-Methylnaphthalene	254		1.3	251	213	288
1-Methylnaphthalene	238		-5.1	251	213	288
2,6-Dimethylnaphthalene	260		3.7	251	213	288
1,6,7-Trimethylnaphthalene	258		3.0	250	213	288
1-Methylphenanthrene	240		-4.3	251	213	288
C29-Hopane	NA					
18a-Oleanane	NA					
C30-Hopane	246		-1.6	250	213	288

Surrogate (Su)	Su Recovery (%)
Naphthalene-d8	104
Acenaphthene-d10	104
Phenanthrene-d10	93
Chrysene-d12	93
Perylene-d12	100

Qualifiers (Q): J=Below the MDL, U=Not detected, B=In procedural blank > 3x MDL, I=Interference, D=Diluted value, NA=Not Applicable, *=Outside QA limits, refer to narrative

Polycyclic Aromatic Hydrocarbon Histograms

WIF-02-071007-A (Sediment)
ETX 7285
Concentration (ng/g dry)
70000
60000
50000
40000
30000
20000
10000
0
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
Biphenyl
Acenaphthylene
Acenaphthene
Dibenzofuran
Fluorene
C1-Fluorenes
C2-Fluorenes
C3-Fluorenes
Carbazole
Anthracene
Phenanthrene
C1-Phenanthrene/Anthracenes
C2-Phenanthrene/Anthracenes
C3-Phenanthrene/Anthracenes
C4-Phenanthrene/Anthracenes
Dibenzothiophene
C1-Dibenzothiophene
C2-Dibenzothiophene
C3-Dibenzothiophene
Fluoranthene
Pyrene
C1-Fluoranthenes/Pyrenes
C2-Fluoranthenes/Pyrenes
C3-Fluoranthenes/Pyrenes
Naphthobenzothiophene
C1-Naphthobenzothiophenes
C2-Naphthobenzothiophenes
C3-Naphthobenzothiophenes
Benz(a)anthracene
Chrysene
C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(e)pyrene
Benzo(a)pyrene
Perylene
Indeno(1,2,3-c,d)pyrene
Dibenzo(a,h)anthracene
Benzo(g,h,i)perylene

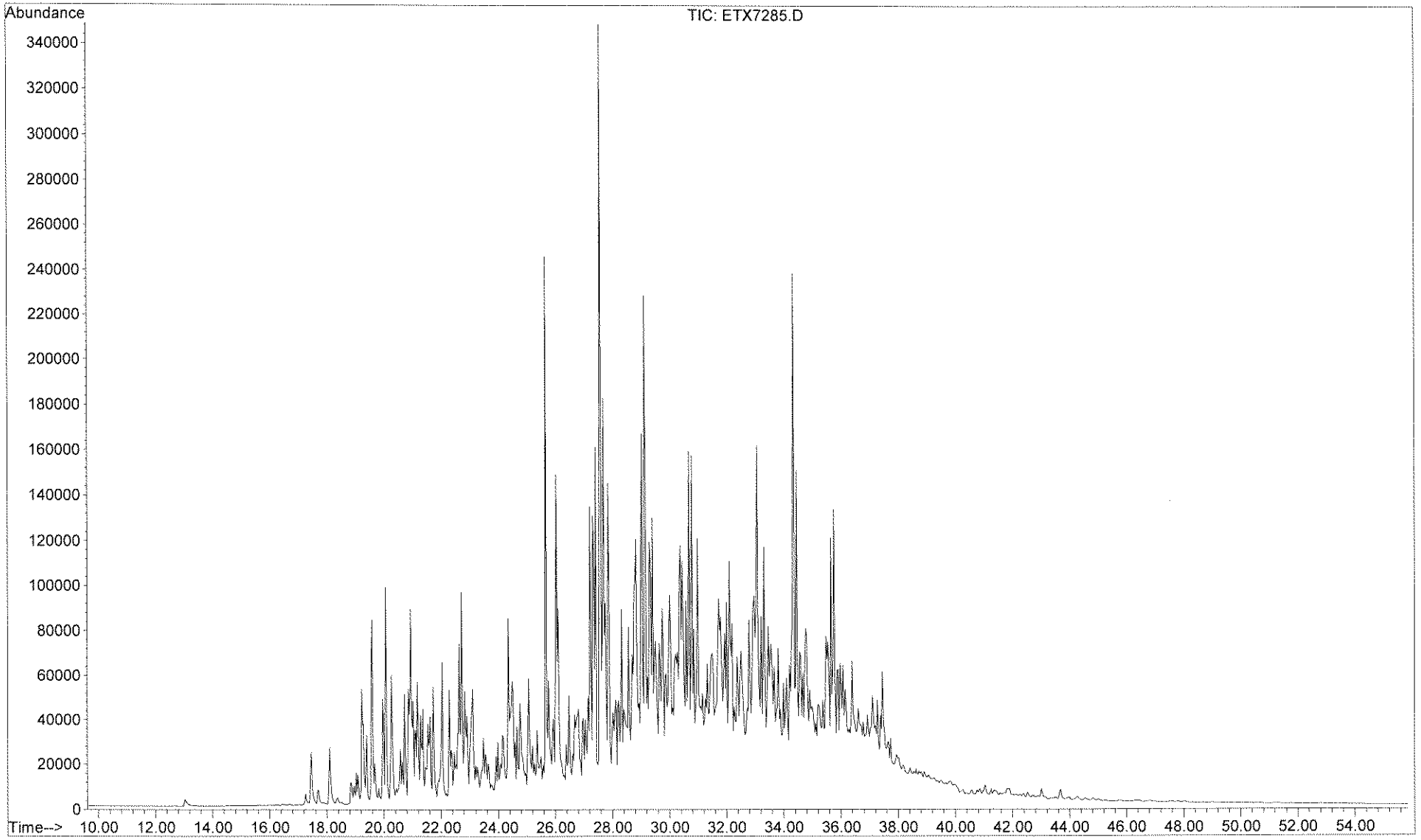
WIF-02-071007-B (Sediment)
ETX 7286
Concentration (ng/g dry)
0
200
400
600
800
1000
1200
1400
1600
1800
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
Biphenyl
Acenaphthylene
Acenaphthene
Dibenzofuran
Fluorene
C1-Fluorenes
C2-Fluorenes
C3-Fluorenes
Carbazole
Anthracene
Phenanthrene
C1-Phenanthrene/Anthracenes
C2-Phenanthrene/Anthracenes
C3-Phenanthrene/Anthracenes
C4-Phenanthrene/Anthracenes
Dibenzothiophene
C1-Dibenzothiophene
C2-Dibenzothiophene
C3-Dibenzothiophene
Fluoranthene
Pyrene
C1-Fluoranthenes/Pyrenes
C2-Fluoranthenes/Pyrenes
C3-Fluoranthenes/Pyrenes
Naphthobenzothiophene
C1-Naphthobenzothiophenes
C2-Naphthobenzothiophenes
C3-Naphthobenzothiophenes
Benz(a)anthracene
Chrysene
C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(e)pyrene
Benzo(a)pyrene
Perylene
Indeno(1,2,3-c,d)pyrene
Dibenzo(a,h)anthracene
Benzo(g,h,i)perylene

WIF-02-071007-C (Sediment)
ETX 7287
Concentration (ng/g dry)
0
500
1000
1500
2000
2500
3000
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
Biphenyl
Acenaphthylene
Acenaphthene
Dibenzofuran
Fluorene
C1-Fluorenes
C2-Fluorenes
C3-Fluorenes
Carbazole
Anthracene
Phenanthrene
C1-Phenanthrene/Anthracenes
C2-Phenanthrene/Anthracenes
C3-Phenanthrene/Anthracenes
C4-Phenanthrene/Anthracenes
Dibenzothiophene
C1-Dibenzothiophene
C2-Dibenzothiophene
C3-Dibenzothiophene
Fluoranthene
Pyrene
C1-Fluoranthenes/Pyrenes
C2-Fluoranthenes/Pyrenes
C3-Fluoranthenes/Pyrenes
Naphthobenzothiophene
C1-Naphthobenzothiophenes
C2-Naphthobenzothiophenes
C3-Naphthobenzothiophenes
Benz(a)anthracene
Chrysene
C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(e)pyrene
Benzo(a)pyrene
Perylene
Indeno(1,2,3-c,d)pyrene
Dibenzo(a,h)anthracene
Benzo(g,h,i)perylene

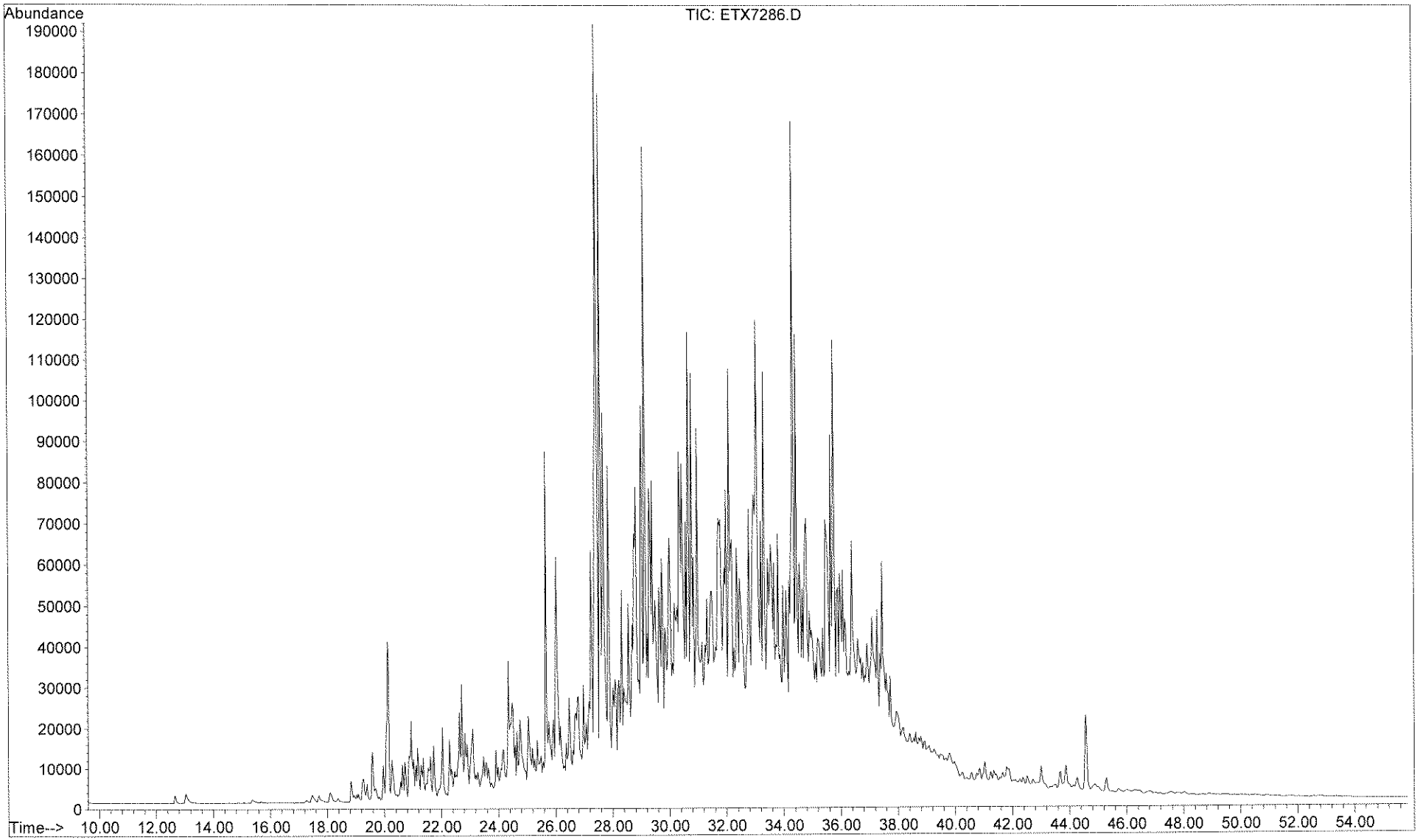
WIF-02-071007-D (Sediment)
ETX 7288
Concentration (ng/g dry)
0
50000
100000
150000
200000
250000
300000
350000
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
Biphenyl
Acenaphthylene
Acenaphthene
Dibenzofuran
Fluorene
C1-Fluorenes
C2-Fluorenes
C3-Fluorenes
Carbazole
Anthracene
Phenanthrene
C1-Phenanthrene/Anthracenes
C2-Phenanthrene/Anthracenes
C3-Phenanthrene/Anthracenes
C4-Phenanthrene/Anthracenes
Dibenzothiophene
C1-Dibenzothiophene
C2-Dibenzothiophene
C3-Dibenzothiophene
Fluoranthene
Pyrene
C1-Fluoranthenes/Pyrenes
C2-Fluoranthenes/Pyrenes
C3-Fluoranthenes/Pyrenes
Naphthobenzothiophene
C1-Naphthobenzothiophenes
C2-Naphthobenzothiophenes
C3-Naphthobenzothiophenes
Benz(a)anthracene
Chrysene
C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(e)pyrene
Benzo(a)pyrene
Perylene
Indeno(1,2,3-c,d)pyrene
Dibenzo(a,h)anthracene
Benzo(g,h,i)perylene

Polycyclic Aromatic Hydrocarbon Total Ion Chromatograms

File : D:\GC-MSD~1\MS30401\ETX7285.D
Operator : TJM
Acquired : 22 Jul 2007 4:13 am using AcqMethod PAH-2002
Instrument : GC/MS Ins
Sample Name: WIF-02-071007-A
Misc Info :
Vial Number: 10

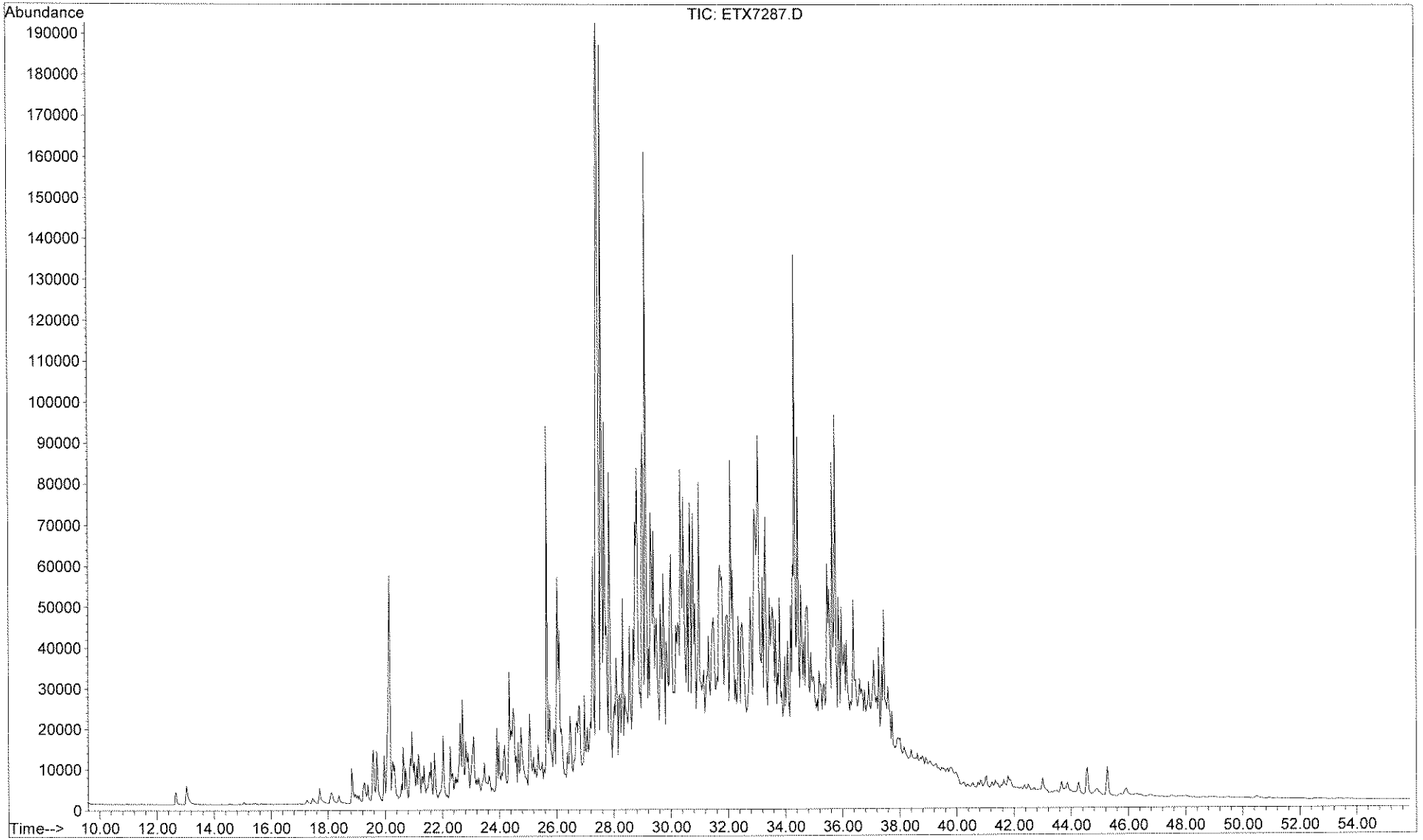


File : D:\GC-MSD~1\MS30401\ETX7286.D
Operator : TJM
Acquired : 22 Jul 2007 6:19 am using AcqMethod PAH-2002
Instrument : GC/MS Ins
Sample Name: WIF-02-071007-B
Misc Info :
Vial Number: 12



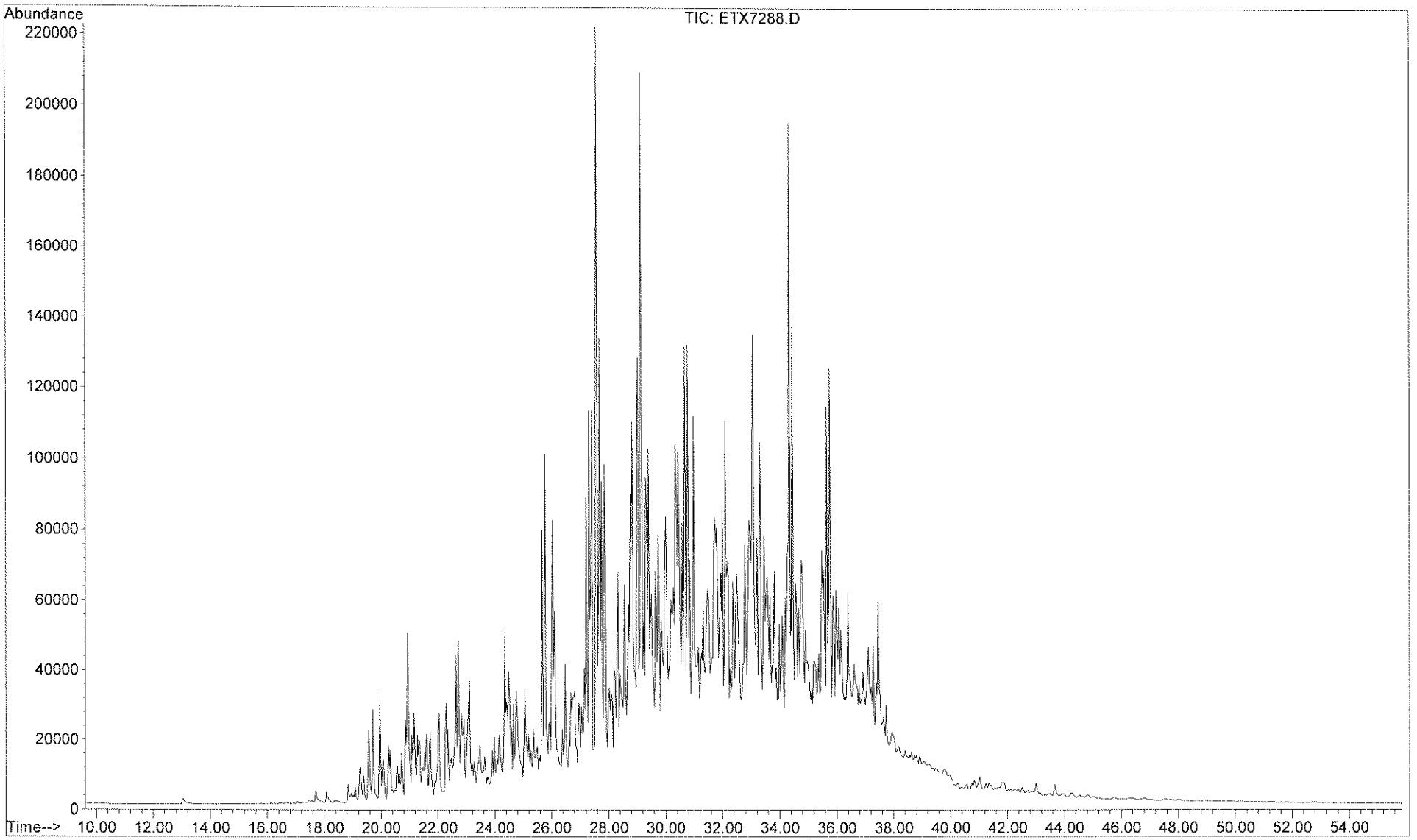
000025

File : D:\GC-MSD~1\MS30401\ETX7287.D
Operator : TJM
Acquired : 22 Jul 2007 7:22 am using AcqMethod PAH-2002
Instrument : GC/MS Ins
Sample Name: WIF-02-071007-C
Misc Info :
Vial Number: 13



920000

File : D:\GC-MSD~1\MS30401\ETX7288.D
Operator : TJM
Acquired : 22 Jul 2007 8:25 am using AcqMethod PAH-2002
Instrument : GC/MS Ins
Sample Name: WIF-02-071007-D
Misc Info :
Vial Number: 14



Total Petroleum Hydrocarbons/ Aliphatic Hydrocarbons Raw Data

B&B LABORATORIES TPH QA FORM

Extraction Page: ENV-1677	Analyst: M Migo / T. McDonald
Client: GeoInsight	Date: 7/9-07
Job: #: JO3318	QA Manager: Durell Grant
SDG #: 07071301	Date: 08/20/07

Calibration: No failures
Surrogate Recoveries: ETX 7255 + ETX 7288 required dilution prior to analysis
Procedural Blank: No failures
Blank Spike: NA
Blank Spike Duplicate: NA
Laboratory Duplicate: NA
Matrix Spike: NA
Matirx Spike Duplicate: NA
LCS-Diesel Std. No failures
Comments: None

Sequence Name: U:\2\SEQUENCE\GC10863.S
Comment: Entrix-Buzzard Bay-Sed; GeoInsight
Operator: CSB
Data Path: C:\HPCHEM\2\DATA\gc10863\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	51	GC10863A	ALI_COMP	Solvent Blank
2	Sample	52	GC10863B	ALI_COMP	Diesel Std.
3	Sample	53	GC10863C	ALI_COMP	PEM (Low)
4	Sample	54	GC10863D	ALI_COMP	PEM (High)
5	Sample	96	GC10863E	ALI_COMP	CS1
6	Sample	97	GC10863F	ALI_COMP	CS2
7	Sample	98	GC10863G	ALI_COMP	CS3
8	Sample	99	GC10863H	ALI_COMP	CS4
9	Sample	100	GC10863I	ALI_COMP	CS5
10	Sample	55	GC10863J	ALI_COMP	AL-WKCC-25-006 (CCC)
11	Sample	56	ENV1677A	ALI_COMP	
12	Sample	61	ETX7285	ALI_COMP	5x
13	Sample	62	ETX7286	ALI_COMP	
14	Sample	63	ETX7287	ALI_COMP	
15	Sample	64	ETX7288	ALI_COMP	5x
16	Sample	65	ARI0001	ALI_COMP	
17	Sample	66	GC10863K	ALI_COMP	AL-WKCC-25-006 (CCC)

Data File Name **GC10863J.D**
Sample Name **AL-WKC3-025-003**
Misc Info
Date Acquired 07/27/20 -1:5:
Method File ALI_COMP.M
Sample Multiplier 1
Operator: CSB
Instrument Name: GC#1

Name	Ret Time (min)	Response (Area)	Concentrations (ug/L or ug/g)	Su Recovery	RPD	Q
Internal Standards						
n-hexadecane-d34	12.82	159386	20.00			
5a-androstane	17.98	203023	20.00			
Surrogates						
n-dodecane-d26	8.59	183906	25.86	**103**		
n-eicosane-d42	17.39	200795	22.86	**91**		
n-triacontane-d62	29.18	166819	22.40	**90**		
Target Compounds						
n-C10	6.24	222926	22.76		9	
n-C11	7.56	227698	26.47		6	
n-C12	8.80	234110	25.94		4	
n-C13	9.95	239782	25.79		3	
n-C14	11.04	241584	25.48		2	
n-C15	12.06	240611	25.22		1	
n-C16	13.07	236478	24.84		1	
n-C17	14.15	231444	23.20		7	
Pristane	14.27	242717	22.91		9	
n-C18	15.31	231325	23.16		8	
Phytane	15.47	234880	22.44		11	
n-C19	16.53	227302	22.98		8	
n-C20	17.79	224512	22.82		9	
n-C21	19.07	225712	22.63		10	
n-C22	20.35	213193	22.08		12	
n-C23	21.63	215222	22.16		12	
n-C24	22.88	211863	22.11		12	
n-C25	24.10	208623	22.05		13	
n-C26	25.29	207246	21.92		13	
n-C27	26.45	199015	21.79		14	
n-C28	27.57	197768	22.16		12	
n-C29	28.65	200061	22.45		11	
n-C30	29.71	193283	22.88		9	
n-C31	30.73	190844	23.39		7	
n-C32	31.72	183393	23.91		4	
n-C33	32.71	184903	25.51		2	
n-C34	33.83	185133	27.41		9	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\GC10863J.D
Acq On : 27 Jul 2007 5:11
Sample : AL-WKCC-25-006 (CCC)
Misc :

Vial: 55
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 31 16:14 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:32 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
		Internal Standards			
1)		n-hexadecane-d34	12.82	159386	20.001 ug/mlm
10)		5a-androstane	17.98	203024	20.003 ug/mlm
		System Monitoring Compounds			
4)	S	n-dodecane-d26	8.59	183906	25.865 ug/mlm
16)	S	n-eicosane-d42	17.39	200795	22.862 ug/mlm
27)	S	n-triacontane-d62	29.18	166819	22.397 ug/mlm
		Target Compounds			
2)		n-C10	6.24	222926	22.757 ug/mlm
3)		n-C11	7.56	227698	26.474 ug/mlm
5)		n-C12	8.80	234110	25.936 ug/mlm
6)		n-C13	9.95	239782	25.795 ug/mlm
7)		n-C14	11.04	241585	25.476 ug/mlm
8)		n-C15	12.06	240612	25.223 ug/mlm
9)		n-C16	13.07	236479	24.844 ug/mlm
11)		n-C17	14.15	231444	23.197 ug/mlm
12)		Pristane	14.27	242717	22.908 ug/mlm
13)		n-C18	15.31	231326	23.165 ug/mlm
14)		Phytane	15.47	234880	22.440 ug/mlm
15)		n-C19	16.53	227302	22.978 ug/mlm
17)		n-C20	17.79	224512	22.822 ug/mlm
18)		n-C21	19.07	225713	22.629 ug/mlm
19)		n-C22	20.35	213194	22.084 ug/mlm
20)		n-C23	21.63	215223	22.164 ug/mlm
21)		n-C24	22.88	211864	22.109 ug/mlm
22)		n-C25	24.10	208624	22.053 ug/mlm
23)		n-C26	25.29	207247	21.917 ug/mlm
24)		n-C27	26.45	199016	21.791 ug/mlm
25)		n-C28	27.57	197768	22.159 ug/mlm
26)		n-C29	28.65	200061	22.455 ug/mlm
28)		n-C30	29.71	193284	22.876 ug/mlm
29)		n-C31	30.73	190844	23.391 ug/mlm
30)		n-C32	31.72	183394	23.911 ug/mlm
31)		n-C33	32.71	184903	25.507 ug/mlm
32)		n-C34	33.83	185133	27.413 ug/mlm

(f)=RT Delta > 1/2 Window (m)=manual [illegible]

000032

Data File : D:\GC-MSD~1\GC10863\GC10863J.D
Acq On : 27 Jul 2007 5:11
Sample : AL-WKCC-25-006 (CCC)
Misc :

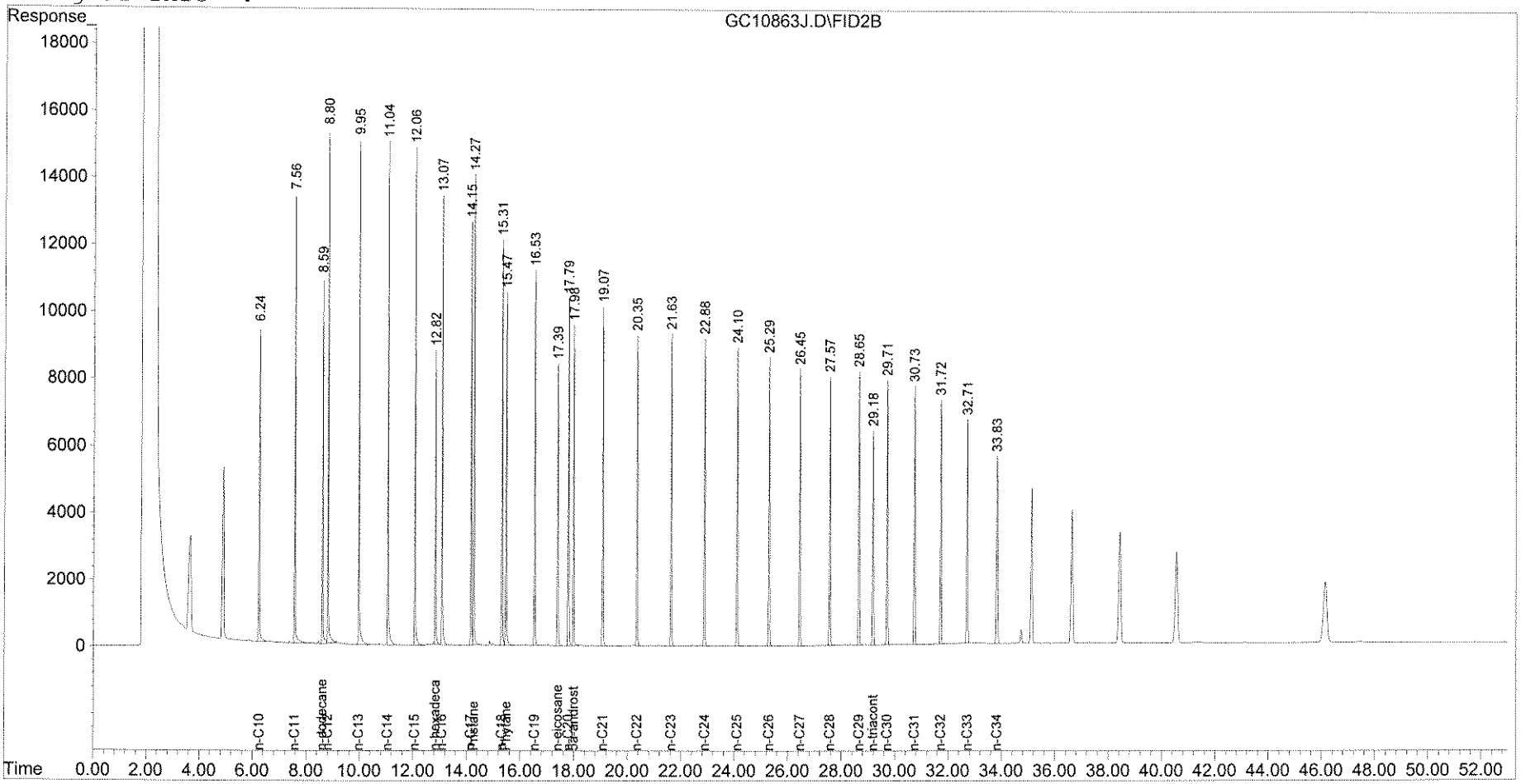
Vial: 55
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 31 16:14 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:32 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



000033

Data File Name **GC10863K.D**
Sample Name **AL-WKC3-025-003**
Misc Info
Date Acquired 07/27/20 -1:1:
Method File ALI_COMP.M
Sample Multiplier 1
Operator: CSB
Instrument Name: GC#1

Name	Ret Time (min)	Response (Area)	Concentrations (ug/L or ug/g)	Su Recovery	RPD	Q
Internal Standards						
n-hexadecane-d34	12.82	128253	20.00			
5a-androstane	17.98	154278	20.00			
Surrogates						
n-dodecane-d26	8.59	159827	26.88	**108**		
n-eicosane-d42	17.39	157579	25.62	**102**		
n-triacontane-d62	29.18	144671	28.16	**113**		
Target Compounds						
n-C10	6.24	202863	28.03		11	
n-C11	7.56	198922	27.39		9	
n-C12	8.80	201245	27.51		10	
n-C13	9.95	198347	25.92		4	
n-C14	11.03	195850	24.11		4	
n-C15	12.05	191341	24.28		3	
n-C16	13.07	190252	23.32		7	
n-C17	14.15	183428	25.27		1	
Pristane	14.27	196354	25.87		3	
n-C18	15.31	183195	26.24		5	
Phytane	15.47	184241	25.95		4	
n-C19	16.53	178980	25.60		2	
n-C20	17.78	175755	25.75		3	
n-C21	19.07	178579	25.57		2	
n-C22	20.36	169597	25.09		0	
n-C23	21.63	172810	26.16		5	
n-C24	22.88	171704	26.49		6	
n-C25	24.10	169728	26.55		6	
n-C26	25.29	170832	26.68		7	
n-C27	26.45	165661	26.81		7	
n-C28	27.57	167322	27.42		9	
n-C29	28.66	171424	27.64		10	
n-C30	29.71	168909	28.39		13	
n-C31	30.73	168266	28.26		12	
n-C32	31.72	163044	28.61		13	
n-C33	32.72	166320	29.54		17	
n-C34	33.84	167485	29.53		17	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\GC10863K.D
Acq On : 27 Jul 2007 21:32
Sample : AL-WKCC-25-006 (CCC)
Misc :

Vial: 66
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 31 16:11 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Tue Jul 31 15:49:53 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
		Internal Standards			
1)		n-hexadecane-d34	12.82	128254	20.001 ug/mlm
10)		5a-androstane	17.98	154279	20.003 ug/mlm
		System Monitoring Compounds			
4)	S	n-dodecane-d26	8.59	159827	26.882 ug/mlm
16)	S	n-eicosane-d42	17.39	157579	25.617 ug/mlm
27)	S	n-triacontane-d62	29.18	144671	28.163 ug/mlm
		Target Compounds			
2)		n-C10	6.24	202863	28.028 ug/mlm
3)		n-C11	7.56	198922	27.390 ug/mlm
5)		n-C12	8.80	201245	27.515 ug/mlm
6)		n-C13	9.95	198348	25.916 ug/mlm
7)		n-C14	11.03	195850	24.107 ug/mlm
8)		n-C15	12.05	191342	24.282 ug/mlm
9)		n-C16	13.07	190253	23.325 ug/mlm
11)		n-C17	14.15	183429	25.271 ug/mlm
12)		Pristane	14.27	196355	25.865 ug/mlm
13)		n-C18	15.31	183196	26.243 ug/mlm
14)		Phytane	15.47	184242	25.946 ug/mlm
15)		n-C19	16.53	178981	25.601 ug/mlm
17)		n-C20	17.78	175755	25.748 ug/mlm
18)		n-C21	19.07	178579	25.572 ug/ml
19)		n-C22	20.36	169597	25.094 ug/ml
20)		n-C23	21.63	172810	26.163 ug/ml
21)		n-C24	22.88	171705	26.486 ug/ml
22)		n-C25	24.10	169729	26.548 ug/mlm
23)		n-C26	25.29	170832	26.684 ug/mlm
24)		n-C27	26.45	165661	26.811 ug/mlm
25)		n-C28	27.57	167322	27.424 ug/mlm
26)		n-C29	28.66	171425	27.644 ug/mlm
28)		n-C30	29.71	168909	28.393 ug/mlm
29)		n-C31	30.73	168266	28.258 ug/mlm
30)		n-C32	31.72	163045	28.605 ug/mlm
31)		n-C33	32.72	166320	29.544 ug/mlm
32)		n-C34	33.84	167485	29.532 ug/mlm

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

000035

Quantitation Report

Data File : D:\GC-MSD~1\GC10863\GC10863K.D
Acq On : 27 Jul 2007 21:32
Sample : AL-WKCC-25-006 (CCC)
Misc :

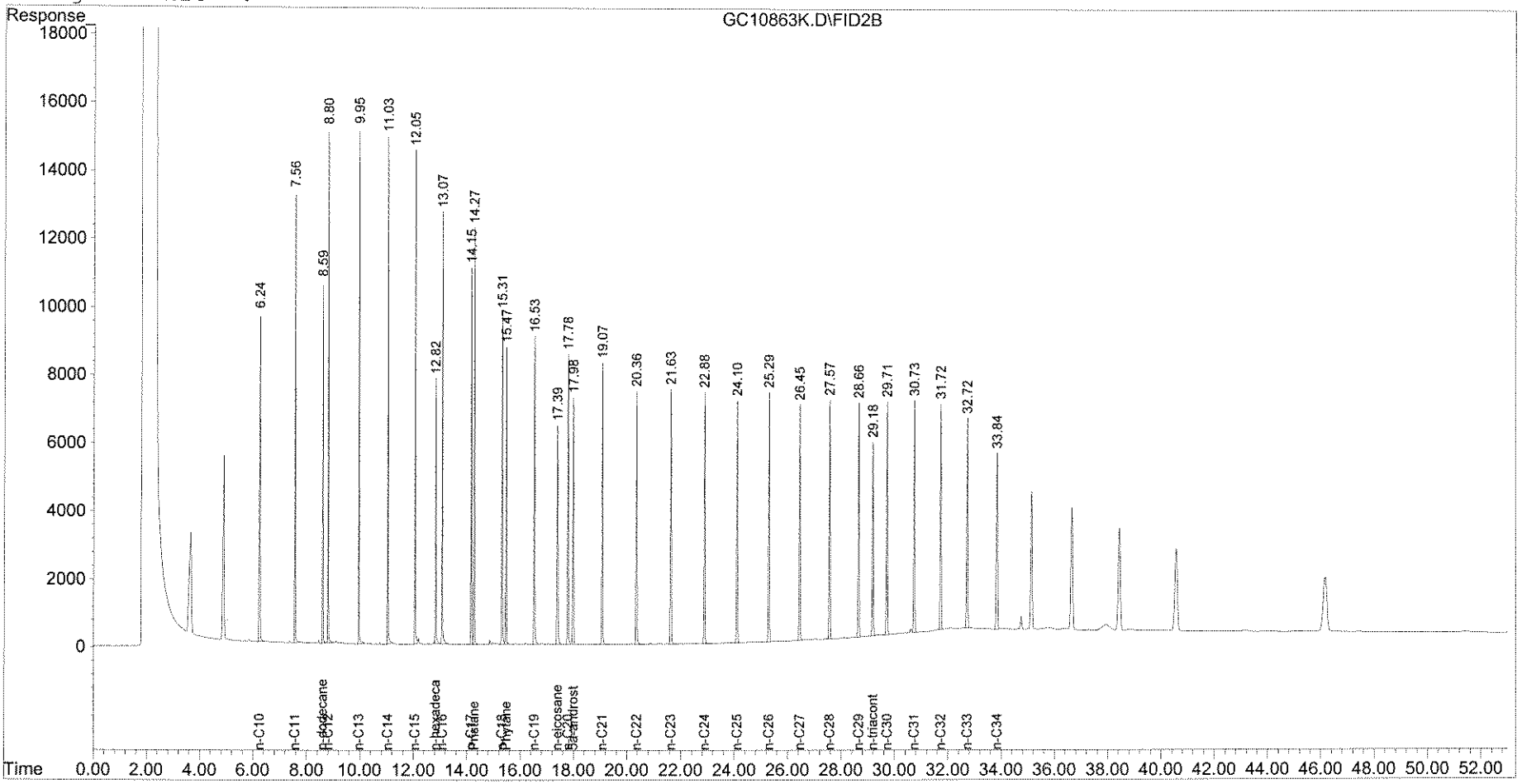
Vial: 66
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 31 16:11 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Tue Jul 31 15:49:53 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



930000

Data File Name	**GC10863B.D**	GC10863B.D
Data File Path	**D:\GC-MSD~1\GC10863**	Diesel Std.
Date Acquired	**07/26/20 -1:1:**	07/26/20 -1:1:
Sample Name	**Diesel Std.**	ALI_COMP.M
Sample Multiplier	**1**	

Name	**Amount**		1
			20.001
n-hexadecane-d34	20.00		20.003
5a-androstane	20.00		1.664748714
		Surrogate recovery	1.883594925
n-dodecane-d26	1.66	83	1.858970949
n-eicosane-d42	1.88	94	383.5913858
n-triacontane-d62	1.86	93	1.152310187
			26.92171144
		Surrogate Corrected	41.5771263
			1.13762136
TPH	383.59	407.30	4.669076169
TRH1	1.15	1.22	5.638824439
TRH2	26.92	28.59	83.2374357
TRH3	41.58	44.15	94.17974623
TRH4	1.14	1.21	92.94854747
TRH5	4.67	4.96	
TRH6	5.64	5.99	

000037

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD-1\GC10863\GC10863B.D
Acq On : 26 Jul 2007 21:08
Sample : Diesel Std.
Misc :

Vial: 52
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 14 9:13 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 10:55:01 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
		Internal Standards				
1)		n-hexadecane-d34	12.82	131751	20.001	ug/mlm
10)		5a-androstane	17.98	187241	20.003	ug/mlm
		System Monitoring Compounds				
4)	S	n-dodecane-d26	8.59f	10168	1.665	ug/mlm
16)	S	n-eicosane-d42	17.39	14062	1.884	ug/mlm
27)	S	n-triacontane-d62	29.18	11590	1.859	ug/mlm
		Target Compounds				
33)		TPH	17.98	3033785	383.591	ug/mlm
34)		TRH1	8.59	9114	1.152	ug/ml
35)		TRH2	12.82	212921	26.922	ug/ml
36)		TRH3	17.98	328829	41.577	ug/ml
37)		TRH4	20.36f	8997	1.138	ug/ml
38)		TRH5	29.18	36927	4.669	ug/ml
39)		TRH6	52.45f	44597	5.639	ug/ml

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

000038

Quantitation Report

Data File : D:\GC-MSD~1\GC10863\GC10863B.D
Acq On : 26 Jul 2007 21:08
Sample : Diesel Std.
Misc :

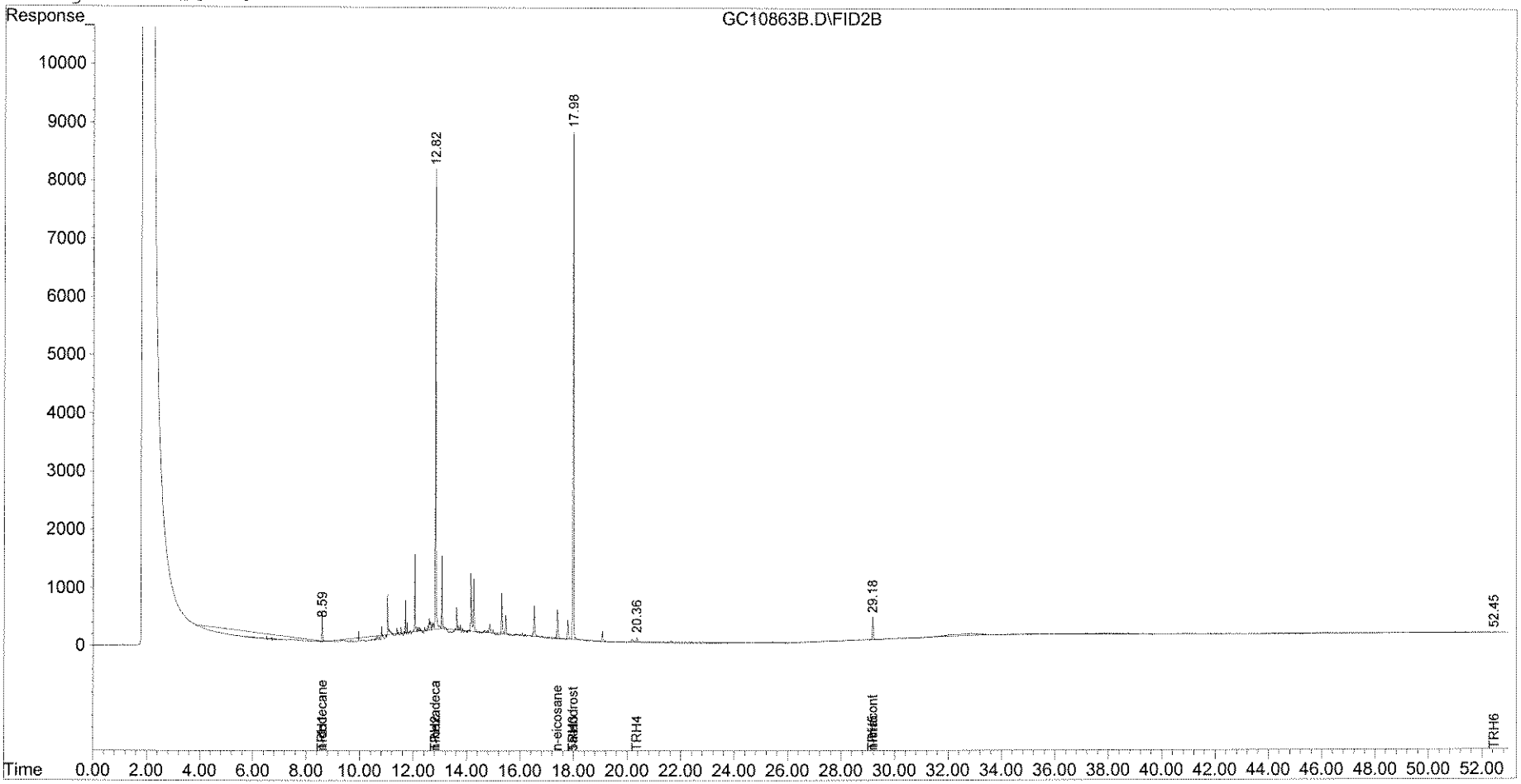
IntFile : autoint1.e

Vial: 52
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

Quant Time: Aug 14 9:13 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 10:55:01 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



000039

Data File Name	**GC10863C.D**	GC10863C.D
Data File Path	**D:\GC-MSD~1\GC10863**	PEM (Low)
Date Acquired	**07/26/20 -1:2:**	07/26/20 -1:2:
Sample Name	**PEM (Low)**	ALI_COMP.M
Sample Multiplier	**1**	

Name	**Amount**		
n-hexadecane-d34	20.00		
5a-androstane	20.00		
		Surrogate recovery	
n-dodecane-d26	1.41	70	
n-eicosane-d42	1.76	88	
n-triacontane-d62	1.85	93	
		Surrogate Corrected	
TPH	293.37	333.68	
TRH1	1.22	1.39	
TRH2	44.69	50.83	
TRH3	1.94	2.21	
TRH4	3.72	4.23	
TRH5	5.22	5.93	
TRH6	3.78	4.30	

1
20.001
20.003
1.407645151
1.758369068
1.853722936
293.369482
1.220545487
44.68975959
1.940323456
3.715050745
5.215533512
3.776230522
70.38225756
87.91845341
92.68614678

000040

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\GC10863C.D
Acq On : 26 Jul 2007 22:08
Sample : PEM (Low)
Misc :

Vial: 53
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 30 9:59 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 10:55:01 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
		Internal Standards				
1)		n-hexadecane-d34	12.82	133168	20.001	ug/mlm
10)		5a-androstane	17.98	180666	20.003	ug/mlm
		System Monitoring Compounds				
4)	S	n-dodecane-d26	8.59f	8690	1.408	ug/ml
16)	S	n-eicosane-d42	17.40	12667	1.758	ug/ml
27)	S	n-triacontane-d62	29.18	11151	1.854	ug/ml
		Target Compounds				
33)		TPH	17.98	2238763	293.369	ug/ml
34)		TRH1	8.59	9314	1.221	ug/ml
35)		TRH2	17.98f	341037	44.690	ug/ml
36)		TRH3	25.40f	14807	1.940	ug/ml
37)		TRH4	29.18	28350	3.715	ug/ml
38)		TRH5	34.42	39801	5.216	ug/ml
39)		TRH6	52.54f	28817	3.776	ug/ml

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

000041

Quantitation Report

Data File : D:\GC-MSD~1\GC10863\GC10863C.D
Acq On : 26 Jul 2007 22:08
Sample : PEM (Low)
Misc :

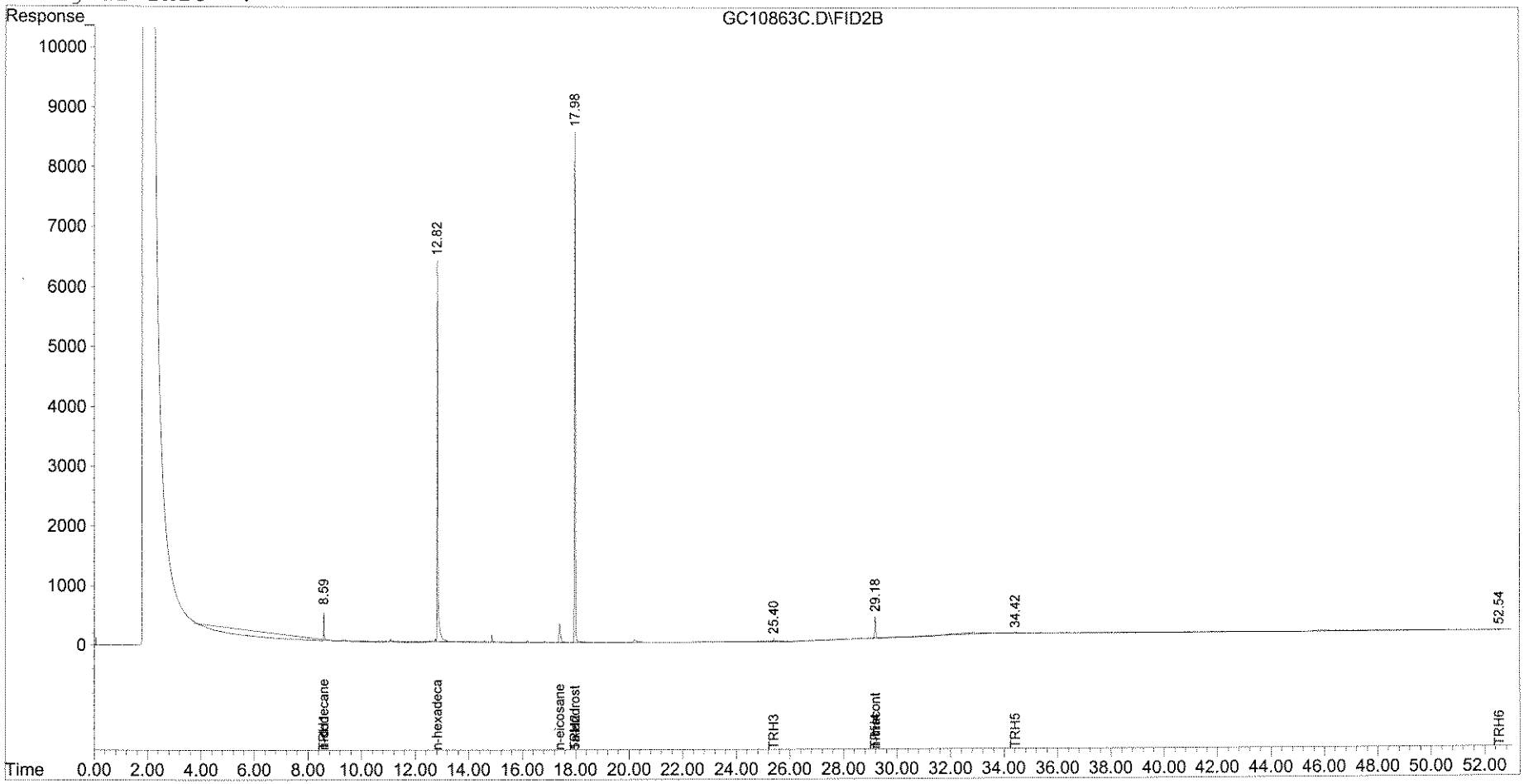
Vial: 53
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 30 9:59 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 10:55:01 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



000042

Data File Name	**GC10863D.D**		GC10863D.D
Data File Path	**D:\GC-MSD~1\GC10863**		PEM (High)
Date Acquired	**07/26/20 -1:3:**		07/26/20 -1:3:
Sample Name	**PEM (High)**		ALI_COMP.M
Sample Multiplier	**0.667**		
			0.667
Name	**Amount**		13.340667
n-hexadecane-d34	13.34		13.342001
5a-androstane	13.34		1.225488921
	Surrogate recovery		1.385250617
n-dodecane-d26	1.23	92	1.431201108
n-eicosane-d42	1.39	104	48.65116731
n-triacontane-d62	1.43	107	1.279467505
			30.60221033
	Surrogate Corrected		0.2851340642
			1.772869745
TPH	48.65	46.85	0.3684299419
TRH1	1.28	1.23	0.2969439393
TRH2	30.60	29.47	91.86573618
TRH3	0.29	0.27	103.8418753
TRH4	1.77	1.71	107.2864398
TRH5	0.37	0.35	
TRH6	0.30	0.29	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\GC10863D.D
Acq On : 26 Jul 2007 23:09
Sample : PEM (High)
Misc :

Vial: 54
Operator: CSB
Inst : GC#1
Multiplr: 0.67
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 17 10:02 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 10:55:01 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
		Internal Standards			
1)		n-hexadecane-d34	12.84	1315633	13.341 ug/mlm
10)		5a-androstane	18.02	1756984	13.342 ug/mlm
		System Monitoring Compounds			
4)	S	n-dodecane-d26	8.59f	112056	1.225 ug/ml
16)	S	n-eicosane-d42	17.39	145493	1.385 ug/mlm
27)	S	n-triacontane-d62	29.18	125528	1.431 ug/mlm
		Target Compounds			
33)		TPH	12.84	5413160	48.651 ug/mlm
34)		TRH1	8.59	142360	1.279 ug/mlm
35)		TRH2	12.84	3404947	30.602 ug/mlm
36)		TRH3	23.95	31725	0.285 ug/mlm
37)		TRH4	29.18	197258	1.773 ug/mlm
38)		TRH5	42.81f	40993	0.368 ug/mlm
39)		TRH6	49.78f	33039	0.297 ug/mlm

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

Quantitation Report

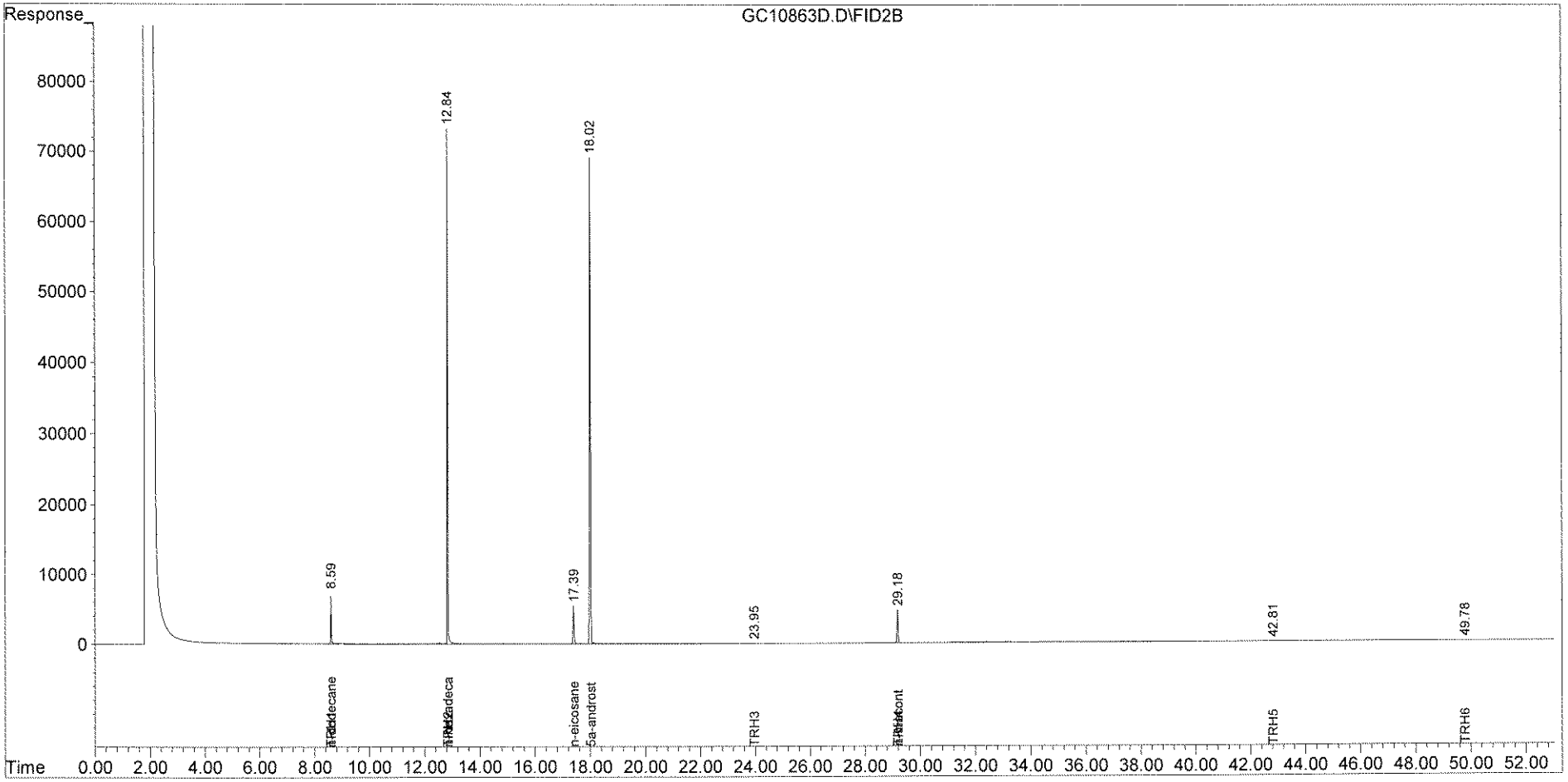
Data File : D:\GC-MSD~1\GC10863\GC10863D.D Vial: 54
Acq On : 26 Jul 2007 23:09 Operator: CSB
Sample : PEM (High) Inst : GC#1
Misc : Multiplr: 0.67
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 17 10:02 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 10:55:01 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



000045

Data File Name	**GC10863D.D**		GC10863D.D
Data File Path	**D:\GC-MSD~1\GC10863**		PEM (High)
Date Acquired	**07/26/20 -1:3:**		07/26/20 -1:3:
Sample Name	**PEM (High)**		ALI_COMP.M
Sample Multiplier	**2**		
			2
Name	**Amount**		40.002
n-hexadecane-d34	40.00		40.006
5a-androstane	40.01		3.674629447
	Surrogate recovery		4.153675013
n-dodecane-d26	3.67	92	4.291457594
n-eicosane-d42	4.15	104	145.8805616
n-triacontane-d62	4.29	107	3.836484272
			91.76075062
	Surrogate Corrected		0.8549747054
			5.31595126
TPH	145.88	140.48	1.104737457
TRH1	3.84	3.69	0.8903866247
TRH2	91.76	88.37	91.86573618
TRH3	0.85	0.82	103.8418753
TRH4	5.32	5.12	107.2864398
TRH5	1.10	1.06	
TRH6	0.89	0.86	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\GC10863D.D
Acq On : 26 Jul 2007 23:09
Sample : PEM (High)
Misc :

Vial: 54
Operator: CSB
Inst : GC#1
Multiplr: 2.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 17 10:02 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 10:55:01 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
		Internal Standards			
1)		n-hexadecane-d34	12.84	1315633	40.002 ug/mlm
10)		5a-androstane	18.02	1756984	40.006 ug/mlm
		System Monitoring Compounds			
4)	S	n-dodecane-d26	8.59f	112056	3.675 ug/ml
16)	S	n-eicosane-d42	17.39	145493	4.154 ug/mlm
27)	S	n-triacontane-d62	29.18	125528	4.291 ug/mlm
		Target Compounds			
33)		TPH	12.84	5413160	145.881 ug/mlm
34)		TRH1	8.59	142360	3.836 ug/mlm
35)		TRH2	12.84	3404947	91.761 ug/mlm
36)		TRH3	23.95	31725	0.855 ug/mlm
37)		TRH4	29.18	197258	5.316 ug/mlm
38)		TRH5	42.81f	40993	1.105 ug/mlm
39)		TRH6	49.78f	33039	0.890 ug/mlm

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

000047

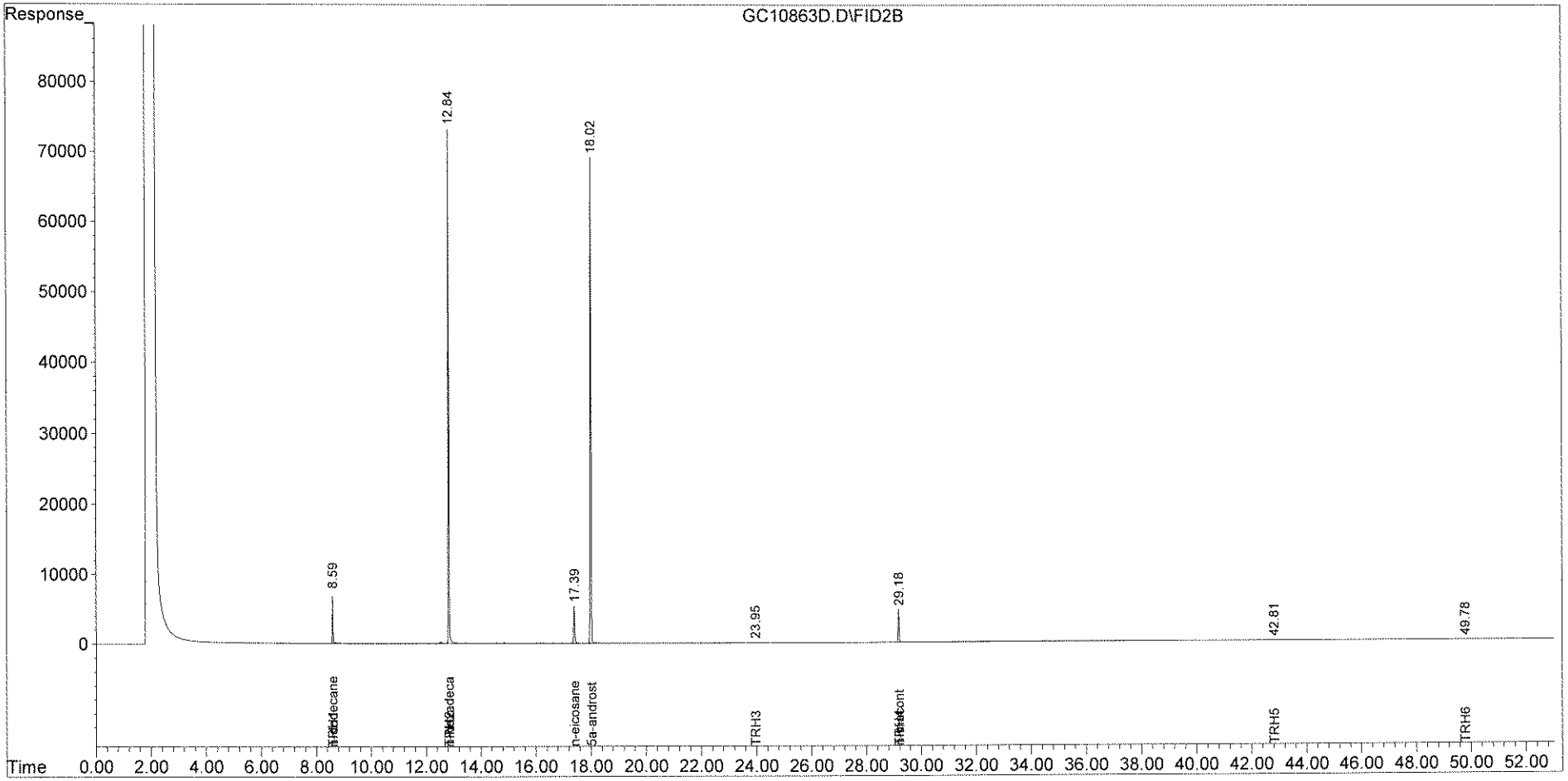
Data File : D:\GC-MSD~1\GC10863\GC10863D.D Vial: 54
Acq On : 26 Jul 2007 23:09 Operator: CSB
Sample : PEM (High) Inst : GC#1
Misc : Multiplr: 2.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 17 10:02 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 10:55:01 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



000048

	Data File Name	**ENV1677A.D**	ENV1677A.D
	Data File Path	**J:\2\DATA\GC10863**	
	Date Acquired	**07/27/20 -1:0:**	07/27/20 -1:0:
	Sample Name		ALI_COMP.M
	Sample Multiplier	**0.667**	
			0.667

Name	**Amount**		
n-hexadecane-d34	13.34		13.340667
5a-androstane	13.34		13.342001
		Surrogate recovery	1.055118828
n-dodecane-d26	1.06	79	1.415767376
n-eicosane-d42	1.42	106	1.532018236
n-triacontane-d62	1.53	115	43.73386666
			1.112411357
			30.15087917
		Surrogate Corrected	0.241401768
			2.460654433
TPH	43.73	41.21	0.254860736
TRH1	1.11	1.05	0.2498324675
TRH2	30.15	28.41	79.0943649
TRH3	0.24	0.23	106.1294885
TRH4	2.46	2.32	114.8439457
TRH5	0.25	0.24	
TRH6	0.25	0.24	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\ENV1677A.D
Acq On : 27 Jul 2007 10:26
Sample : Procedural Blank
Misc :

Vial: 56
Operator: CSB
Inst : GC#1
Multiplr: 0.67
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 30 10:49 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Mon Jul 30 09:12:18 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
		Internal Standards			
1)		n-hexadecane-d34	12.84	1469900	13.341 ug/mlm
10)		5a-androstane	18.02	1951757	13.342 ug/mlm
		System Monitoring Compounds			
4)	S	n-dodecane-d26	8.59	107791	1.055 ug/ml
16)	S	n-eicosane-d42	17.39	165183	1.416 ug/ml
27)	S	n-triacontane-d62	29.18	149266	1.532 ug/mlm
		Target Compounds			
33)		TPH	12.84	5405469	43.734 ug/ml
34)		TRH1	8.59	137493	1.112 ug/ml
35)		TRH2	12.84	3726623	30.151 ug/ml
36)		TRH3	20.20	29837	0.241 ug/ml
37)		TRH4	29.18	304135	2.461 ug/ml
38)		TRH5	37.52	31501	0.255 ug/ml
39)		TRH6	45.70	30879	0.250 ug/ml

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

000050

Quantitation Report

Data File : D:\GC-MSD~1\GC10863\ENV1677A.D
Acq On : 27 Jul 2007 10:26
Sample : Procedural Blank
Misc :

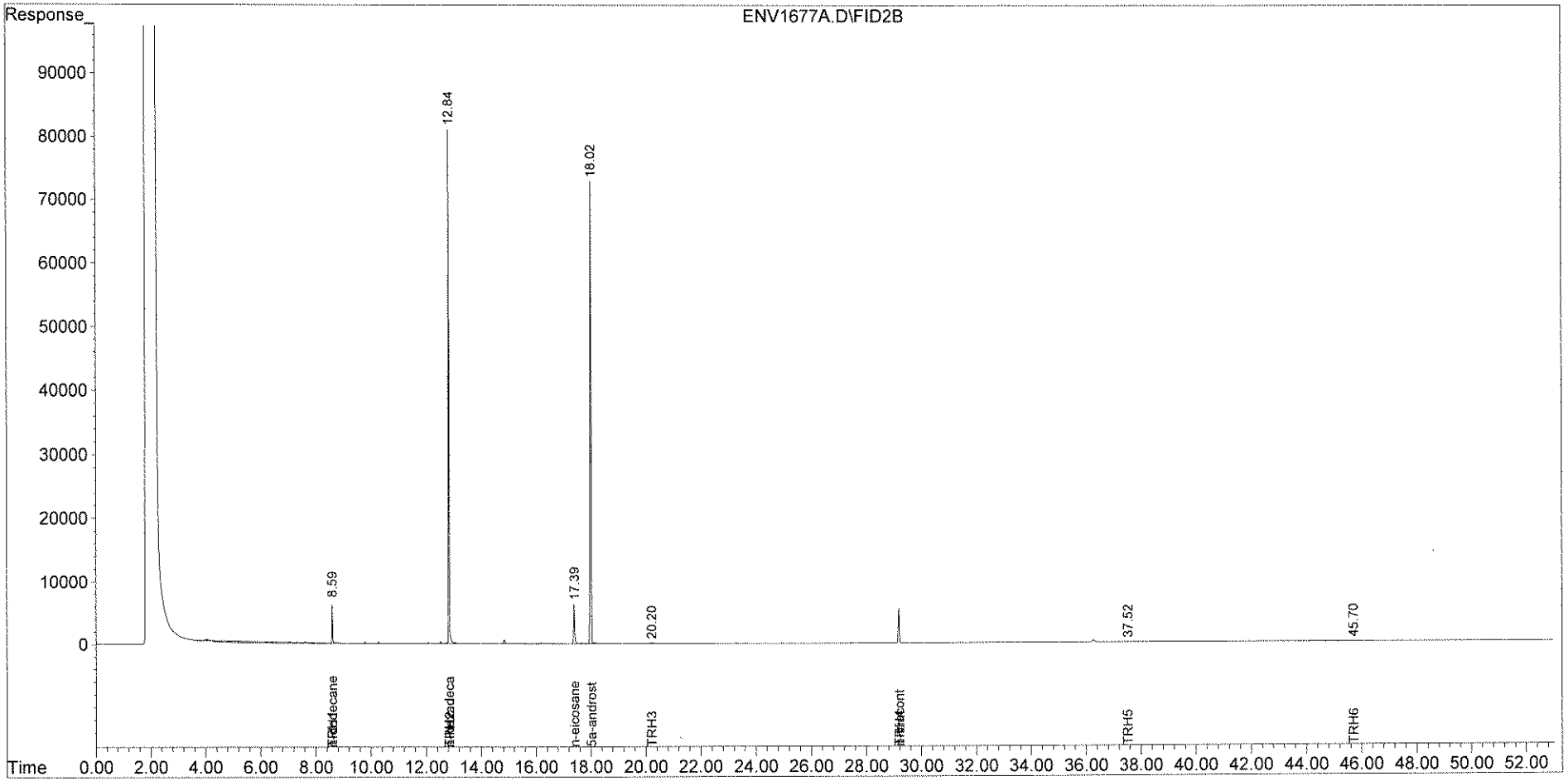
Vial: 56
Operator: CSB
Inst : GC#1
Multiplr: 0.67
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 30 10:49 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Mon Jul 30 09:12:18 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



000051

Data File Name	**ETX7285.D**	ETX7285.D
Data File Path	**D:\GC-MSD~1\GC10863**	/IF-02-071007-A
Date Acquired	**07/27/20 -1:5:**	07/27/20 -1:5:
Sample Name	**WIF-02-071007-A**	ALL_COMP.M
Sample Multiplier	**9.88**	

Name	**Amount**		
			9.88
n-hexadecane-d34	197.61		197.60988
5a-androstane	197.63		197.62964
		Surrogate recovery	19.45938202
n-dodecane-d26	19.46	98	19.15990879
n-eicosane-d42	19.16	97	19.23682802
n-triacontane-d62	19.24	97	4755.649045
			18.19795324
			845.0688394
		Surrogate Corrected	377.2402356
			96.81619221
TPH	4755.65	4904.60	18.1292631
TRH1	18.20	18.77	0
TRH2	845.07	871.54	98.47865396
TRH3	377.24	389.06	96.96310119
TRH4	96.82	99.85	97.35236853
TRH5	18.13	18.70	
TRH6	0.00	0.00	

000052

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\ETX7285.D
Acq On : 27 Jul 2007 15:29
Sample : WIF-02-071007-A
Misc :

Vial: 61
Operator: CSB
Inst : GC#1
Multiplr: 9.88
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 17 10:07 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 10:47:22 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
		Internal Standards				
1)		n-hexadecane-d34	12.84	1488360	197.610	ug/mlm
10)		5a-androstane	18.02	2033169	197.630	ug/mlm
		System Monitoring Compounds				
4)	S	n-dodecane-d26	8.59f	135893	19.459	ug/mlm
16)	S	n-eicosane-d42	17.39	157211	19.160	ug/mlm
27)	S	n-triacontane-d62	29.18	131810	19.237	ug/mlm
		Target Compounds				
33)		TPH	12.84	41337280	4755.649	ug/mlm
34)		TRH1	8.59	158181	18.198	ug/mlm
35)		TRH2	12.84	7345548	845.069	ug/mlm
36)		TRH3	24.60	3279066	377.240	ug/mlm
37)		TRH4	29.18	841550	96.816	ug/mlm
38)		TRH5	32.69	157584	18.129	ug/mlm

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

000053

Quantitation Report

Data File : D:\GC-MSD~1\GC10863\ETX7285.D
Acq On : 27 Jul 2007 15:29
Sample : WIF-02-071007-A
Misc :

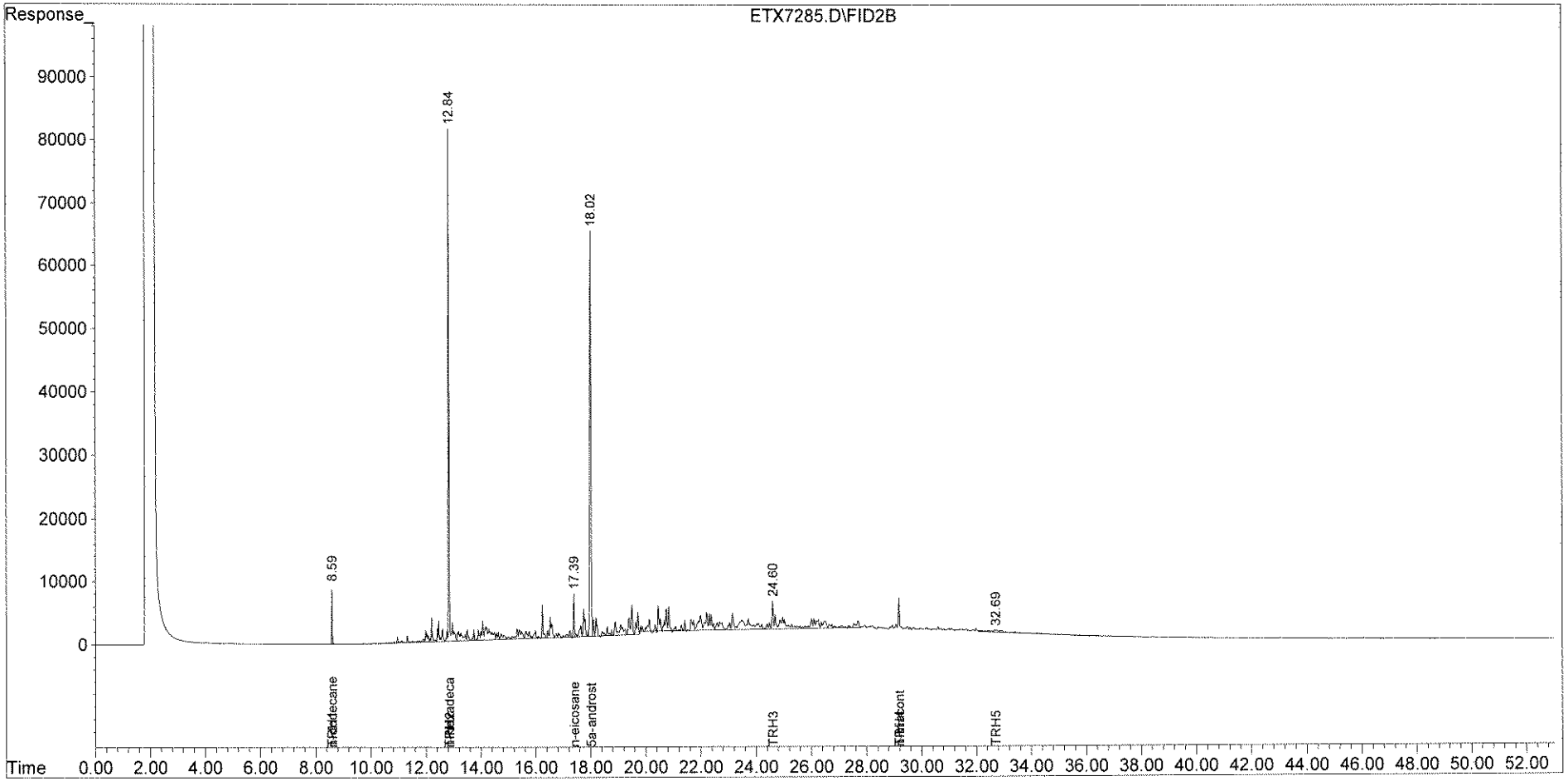
Vial: 61
Operator: CSB
Inst : GC#1
Multiplr: 9.88
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 17 10:07 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 10:47:22 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



000054

	Data File Name	**ETX7286.D**	ETX7286.D
	Data File Path	**D:\GC-MSD~1\GC10863**	/IF-02-071007-B
	Date Acquired	**07/27/20 -1:7:**	07/27/20 -1:7:
	Sample Name	**WIF-02-071007-B**	ALI_COMP.M
	Sample Multiplier	**0.667**	
			0.667
Name	**Amount**		13.340667
n-hexadecane-d34	13.34		13.342001
5a-androstane	13.34		1.14119033
		Surrogate recovery	1.322917521
n-dodecane-d26	1.14	86	1.380729165
n-eicosane-d42	1.32	99	260.5099515
n-triacontane-d62	1.38	104	1.235652181
			42.9852535
		Surrogate Corrected	8.670729209
			9.713617261
TPH	260.51	262.69	0.5144735123
TRH1	1.24	1.25	0.1621570977
TRH2	42.99	43.35	85.54650153
TRH3	8.67	8.74	99.16922948
TRH4	9.71	9.79	103.5029359
TRH5	0.51	0.52	
TRH6	0.16	0.16	

000055

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\ETX7286.D
Acq On : 27 Jul 2007 17:30
Sample : WIF-02-071007-B
Misc :

Vial: 62
Operator: CSB
Inst : GC#1
Multiplr: 0.67
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 17 10:13 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Mon Jul 30 09:12:18 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
		Internal Standards			
1)		n-hexadecane-d34	12.83	952806	13.341 ug/mlm
10)		5a-androstane	18.00	1181999	13.342 ug/mlm
		System Monitoring Compounds			
4)	S	n-dodecane-d26	8.59	75571	1.141 ug/mlm
16)	S	n-eicosane-d42	17.39	93475	1.323 ug/ml
27)	S	n-triacontane-d62	29.17	81470	1.381 ug/ml
		Target Compounds			
33)		TPH	12.83	19499843	260.510 ug/ml
34)		TRH1	8.59	92492	1.236 ug/mlm
35)		TRH2	18.00f	3217557	42.985 ug/mlm
36)		TRH3	29.17f	649026	8.671 ug/mlm
37)		TRH4	32.87f	727089	9.714 ug/mlm
38)		TRH5	38.40	38510	0.514 ug/mlm
39)		TRH6	46.11	12138	0.162 ug/ml

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

000056

Data File : D:\GC-MSD~1\GC10863\ETX7286.D
Acq On : 27 Jul 2007 17:30
Sample : WIF-02-071007-B
Misc :

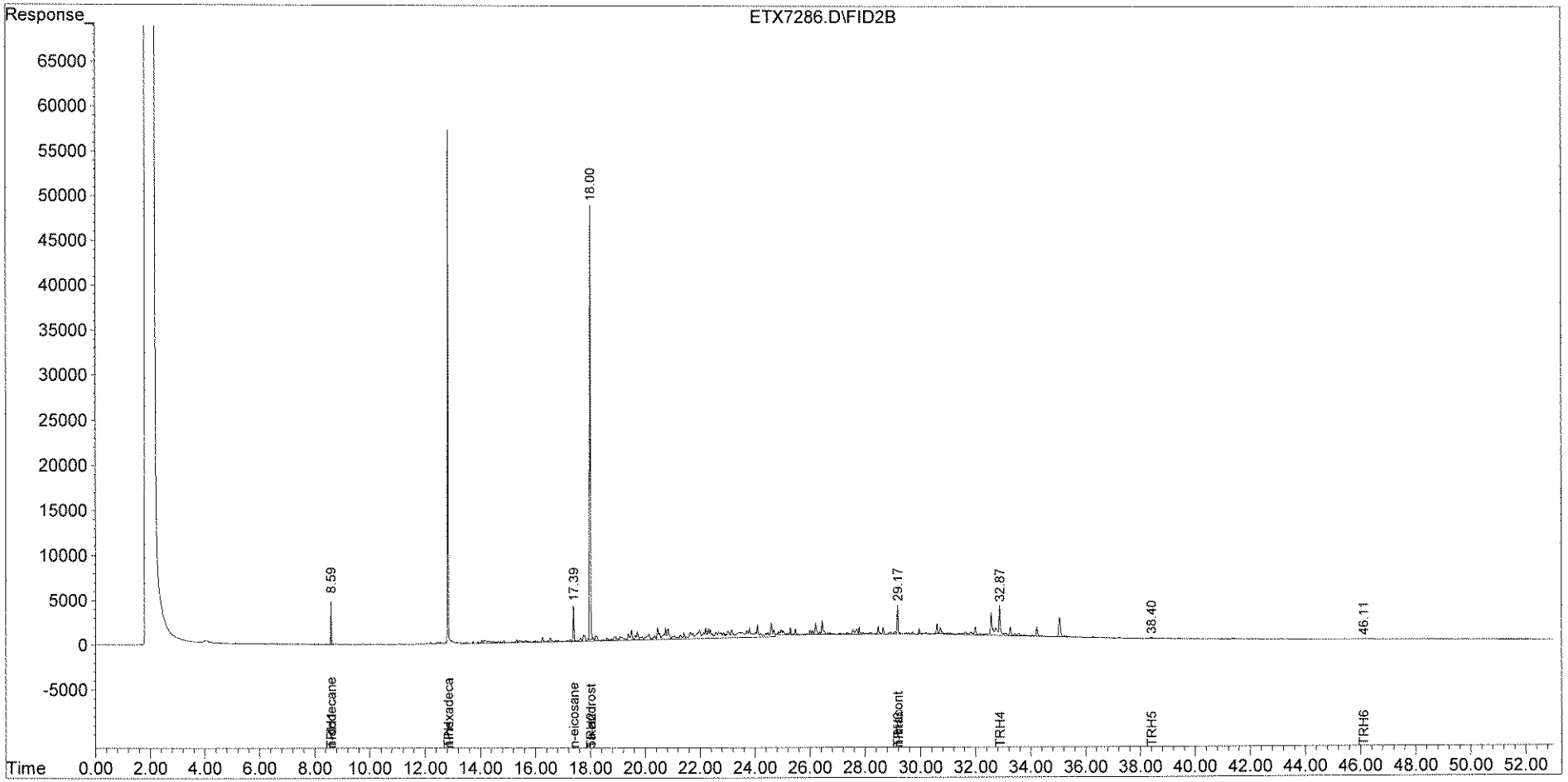
Vial: 62
Operator: CSB
Inst : GC#1
Multiplr: 0.67
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 17 10:13 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Mon Jul 30 09:12:18 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



000057

Data File Name	**ETX7287.D**	ETX7287.D
Data File Path	**D:\GC-MSD~1\GC10863**	IF-02-071007-C
Date Acquired	**07/27/20 -1:8:**	07/27/20 -1:8:
Sample Name	**WIF-02-071007-C**	ALI_COMP.M
Sample Multiplier	**1.97**	
		1.97

Name	Amount		
n-hexadecane-d34	39.40		39.40197
5a-androstane	39.41		39.40591
		Surrogate recovery	3.308949272
			3.879789812
n-dodecane-d26	3.31	84	4.12880822
n-eicosane-d42	3.88	98	472.5726427
n-triacontane-d62	4.13	105	3.555167924
			43.0255154
		Surrogate Corrected	89.91152101
			20.54371302
TPH	472.57	479.91	3.511674599
TRH1	3.56	3.61	1.382081376
TRH2	43.03	43.69	83.98348406
TRH3	89.91	91.31	98.47182264
TRH4	20.54	20.86	104.7920868
TRH5	3.51	3.57	
TRH6	1.38	1.40	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\ETX7287.D
Acq On : 27 Jul 2007 18:30
Sample : WIF-02-071007-C
Misc :

Vial: 63
Operator: CSB
Inst : GC#1
Multiplr: 1.97
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 17 10:16 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Mon Jul 30 09:12:18 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
		Internal Standards				
1)		n-hexadecane-d34	12.83	923511	39.402	ug/mlm
10)		5a-androstane	18.00	1140022	39.406	ug/mlm
		System Monitoring Compounds				
4)	S	n-dodecane-d26	8.59	71909	3.309	ug/mlm
16)	S	n-eicosane-d42	17.39	89522	3.880	ug/ml
27)	S	n-triacontane-d62	29.17	79555	4.129	ug/ml
		Target Compounds				
33)		TPH	12.83	11551307	472.573	ug/ml
34)		TRH1	8.59	86901	3.555	ug/mlm
35)		TRH2	12.83	1051692	43.026	ug/ml
36)		TRH3	18.00	2197748	89.912	ug/ml
37)		TRH4	29.17	502159	20.544	ug/ml
38)		TRH5	35.05	85837	3.512	ug/mlm
39)		TRH6	51.58f	33783	1.382	ug/mlm

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

Data File : D:\GC-MSD~1\GC10863\ETX7287.D
Acq On : 27 Jul 2007 18:30
Sample : WIF-02-071007-C
Misc :

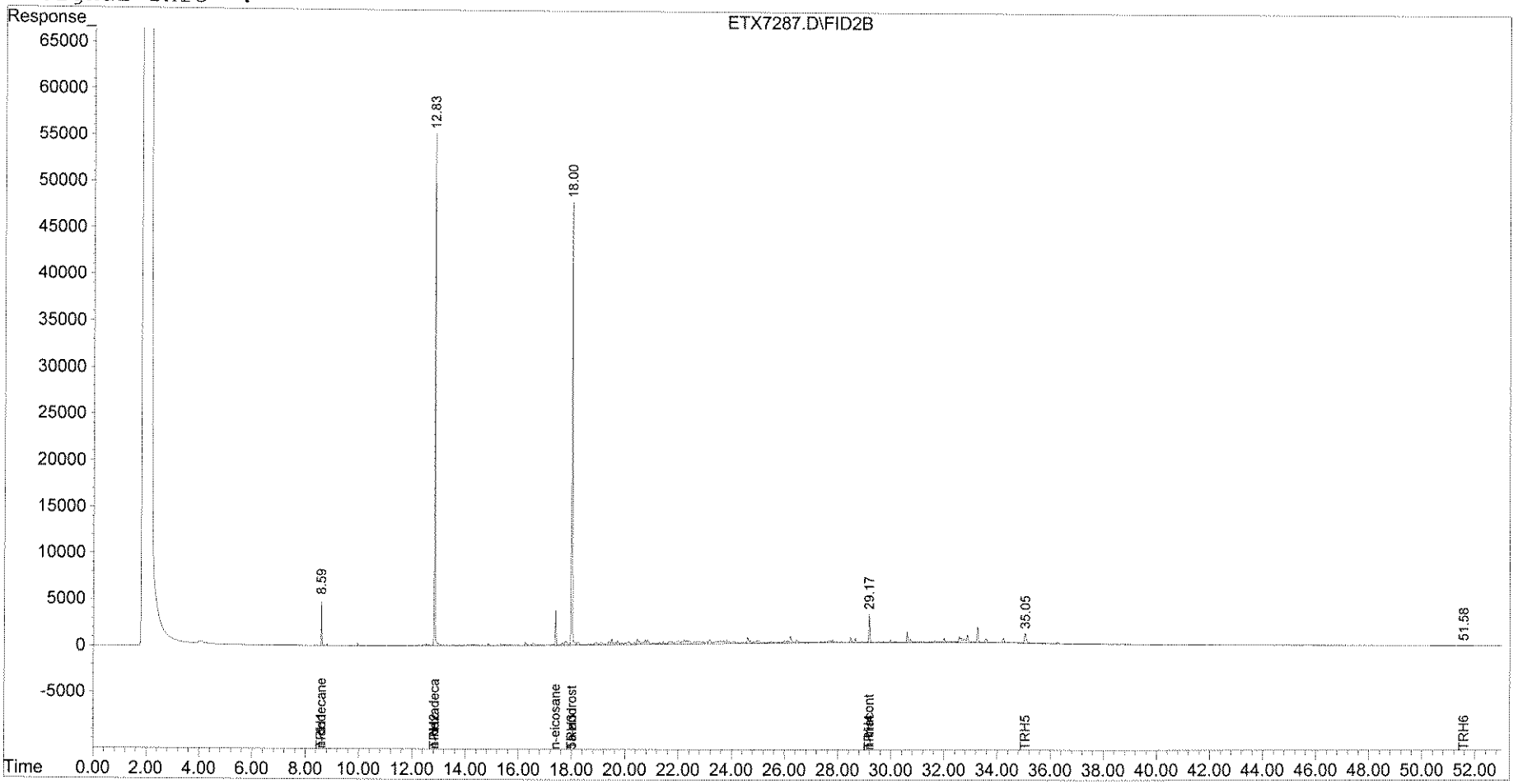
IntFile : autoint1.e

Vial: 63
Operator: CSB
Inst : GC#1
Multiplr: 1.97
Sample Amount: 0.00

Quant Time: Aug 17 10:16 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Mon Jul 30 09:12:18 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



090000

Data File Name	**ETX7288.D**	ETX7288.D
Data File Path	**D:\GC-MSD~1\GC10863**	/IF-02-071007-D
Date Acquired	**07/27/20 -1:9:**	07/27/20 -1:9:
Sample Name	**WIF-02-071007-D**	ALL_COMP.M
Sample Multiplier	**40.32**	

Name	**Amount**		
			40.32
n-hexadecane-d34	806.44		806.44032
5a-androstane	806.52		806.52096
		Surrogate recovery	78.95212444
n-dodecane-d26	78.95	98	77.15123062
n-eicosane-d42	77.15	96	78.02631203
n-triacontane-d62	78.03	97	24331.23883
			64.05626672
			2859.632155
		Surrogate Corrected	2730.131349
			791.7967049
TPH	24331.24	25431.49	41.76849558
TRH1	64.06	66.95	0
TRH2	2859.63	2988.94	97.90690035
TRH3	2730.13	2853.59	95.67364909
TRH4	791.80	827.60	96.75881948
TRH5	41.77	43.66	
TRH6	0.00	0.00	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\ETX7288.D
Acq On : 27 Jul 2007 19:31
Sample : WIF-02-071007-D
Misc :

Vial: 64
Operator: CSB
Inst : GC#1
Multiplr: 40.32
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Aug 17 10:19 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Mon Jul 30 09:12:18 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
		Internal Standards			
1)		n-hexadecane-d34	12.84	1371820	806.440 ug/mlm
10)		5a-androstane	18.02	1912848	806.521 ug/mlm
		System Monitoring Compounds			
4)	S	n-dodecane-d26	8.59	124526	78.952 ug/mlm
16)	S	n-eicosane-d42	17.40	145940	77.151 ug/mlm
27)	S	n-triacontane-d62	29.18	123253	78.026 ug/mlm
		Target Compounds			
33)		TPH	12.84	48757291	24331.239 ug/mlm
34)		TRH1	8.59	128362	64.056 ug/mlm
35)		TRH2	12.84	5730408	2859.632 ug/mlm
36)		TRH3	24.61	5470901	2730.131 ug/mlm
37)		TRH4	29.18	1586679	791.797 ug/mlm
38)		TRH5	32.69	83700	41.768 ug/mlm

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

000062

Data File : D:\GC-MSD~1\GC10863\ETX7288.D
Acq On : 27 Jul 2007 19:31
Sample : WIF-02-071007-D
Misc :

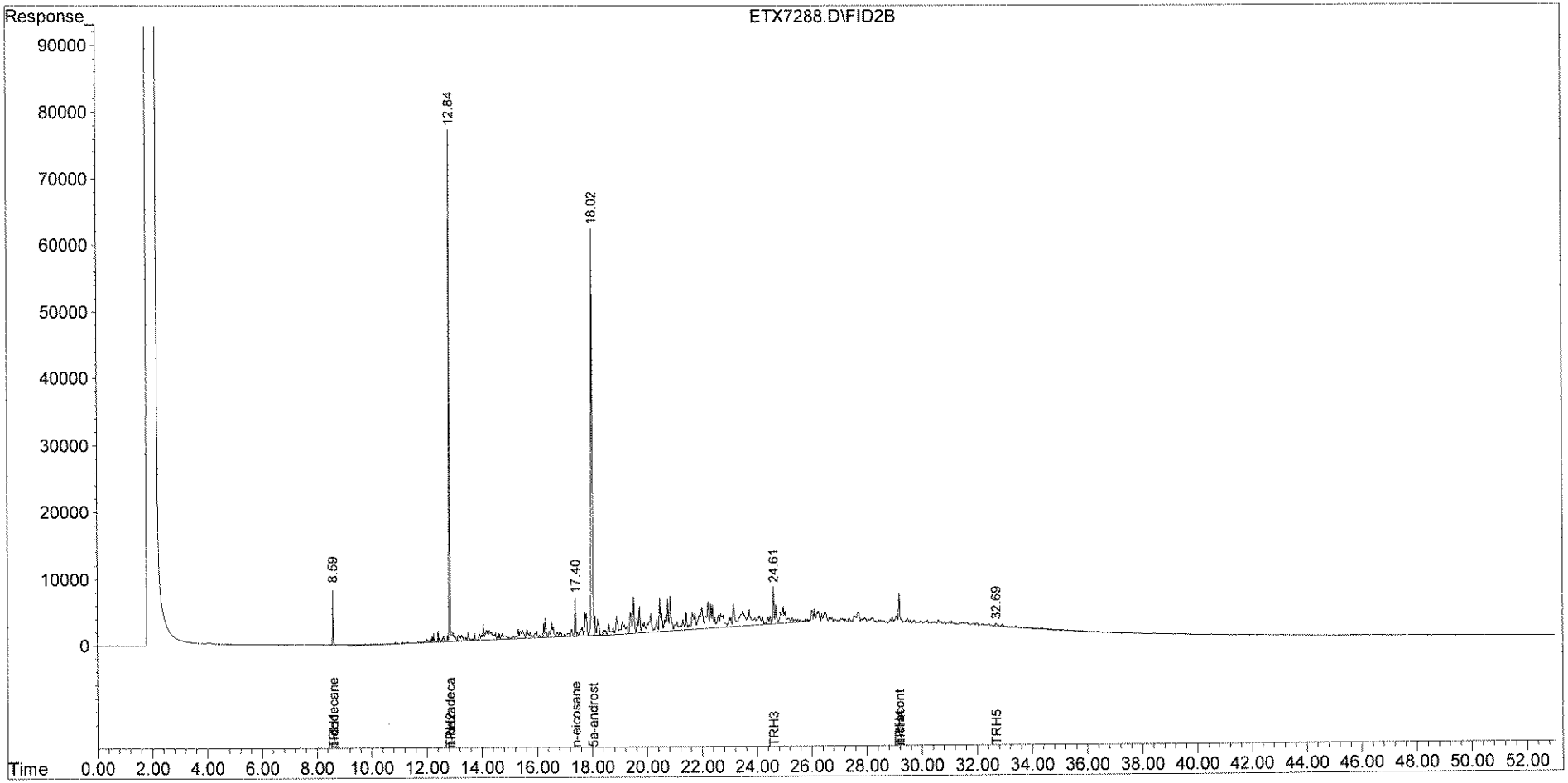
IntFile : autoint1.e

Vial: 64
Operator: CSB
Inst : GC#1
Multiplr: 40.32
Sample Amount: 0.00

Quant Time: Aug 17 10:19 2007 Quant Results File: C10B0727.RES

Quant Method : J:\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Mon Jul 30 09:12:18 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



C90003

Polycyclic Aromatic Hydrocarbon
Raw Data

B&B LABORATORIES PAHs QA FORM

Extraction Page: ENV-1677	Analyst: Y. Miao / T. McDonald
Client: GeoInsight	Date: 7-19-07
Job: #: JO 3318	QA Manager: Darrell Ward
SDG #: 07071301	Date: 08/20/07

Initial Calibration:	No failures
Surrogate Recoveries:	ETX 7285 + ETX 7288 required dilution prior to analysis
Procedural Blank:	No failures
Blank Spike:	NA
Blank Spike Duplicate:	NA
Laboratory Duplicate:	NA
Matrix Spike:	NA
Matirx Spike Duplicate:	NA
SRM/LCS:	No failures
CCC:	No failures
Comments:	None

Sequence Name: X:\1\SEQUENCE\MS30401.S
Comment: GeoInsight and ARI
Operator: TJM
Data Path: C:\HPCHEM\1\data\ms30401\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	MS30401A	PAH-2002	Solvent Rinse
2	Sample	2	MS30401B	PAH-2002	SRM 1582
3	Sample	3	MS30401C	PAH-2002	IS/SU Mixture
4	Sample	41	MS30401D	PAH-2002	Cal Level 1
5	Sample	42	MS30401E	PAH-2002	Cal Level 2
6	Sample	43	MS30401F	PAH-2002	Cal Level 3
7	Sample	44	MS30401G	PAH-2002	Cal Level 4
8	Sample	45	MS30401H	PAH-2002	Cal Level 5
9	Sample	4	MS30401I	PAH-2002	AR-WKCC-250-022
10	Sample	5	ENV1667A	PAH-2002	
11	Sample	10	ETX7285	PAH-2002	10x
12	Sample	11	MS30401J	PAH-2002	AR-WKCC-250-022
13	Sample	12	ETX7286	PAH-2002	
14	Sample	13	ETX7287	PAH-2002	
15	Sample	14	ETX7288	PAH-2002	10x
16	Sample	16	MS30401K	PAH-2002	AR-WKCC-250-022

Evaluate Continuing Calibration Report

Data File : D:\GC-MSD~1\MS30401\MS30401I.D Vial: 4
Acq On : 21 Jul 2007 9:55 pm Operator: TJM
Sample : AR-WKCC-250-022 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:22 2007
Response via : Multiple Level Calibration

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

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorene-d10	1.000	1.000	0.0	80	0.03
2	S	Naphthalene-d8	1.773	1.848	-4.2	81	0.00
3	T	Decalin	0.362	0.390	-7.7	91	0.00
4	un	C1-Decalin	0.362	0.000	100.0#	0#	-12.87#
5	un	C2-Decalin	0.362	0.000	100.0#	0#	-14.39#
6	un	C3-Decalin	0.362	0.000	100.0#	0#	-15.99#
7	un	C4-Decalin	0.362	0.000	100.0#	0#	-19.85#
8	T	Naphthalene	1.800	1.853	-2.9	83	0.00
9	T	2-Methylnaphthalene	1.269	1.287	-1.4	83	0.03
10	T	1-Methylnaphthalene	1.224	1.164	4.9	81	0.00
11	T	2,6-Dimethylnaphthalene	1.099	1.142	-3.9	82	0.00
12	T	1,6,7-Trimethylnaphthalene	1.023	1.053	-2.9	83	0.00
13	un	C2-Naphthalenes	1.800	0.000	100.0#	0#	0.00
14	un	C3-Naphthalenes	1.800	0.000	100.0#	0#	0.00
15	un	C4-Naphthalenes	1.800	0.000	100.0#	0#	-22.42#
16	T	Benzothiophene	1.403	1.503	-7.1	84	0.00
17	un	C1-Benzothiophene	1.403	0.000	100.0#	0#	-15.71#
18	un	C2-Benzothiophene	1.403	0.000	100.0#	0#	0.00
19	un	C3-Benzothiophene	1.403	0.000	100.0#	0#	-19.77#
20	S	Acenaphthene-d10	0.977	1.016	-4.0	87	0.00
21	T	Biphenyl	1.583	1.629	-2.9	84	0.03
22	T	Acenaphthylene	1.940	2.017	-4.0	84	0.00
23	T	Acenaphthene	1.168	1.181	-1.1	82	0.00
24	T	Dibenzofuran	1.817	1.852	-1.9	82	0.03
25	T	Fluorene	1.413	1.428	-1.1	82	0.03
26	un	C1-Fluorenes	1.413	0.000	100.0#	0#	-22.85#
27	un	C2-Fluorenes	1.413	0.000	100.0#	0#	-24.53#
28	un	C3-Fluorenes	1.413	0.000	100.0#	0#	-26.42#
29	I	Pyrene-d10	1.000	1.000	0.0	81	0.00
30	S	Phenanthrene-d10	0.999	0.925	7.4	85	0.00
31	T	Pentachlorophenol	0.062	0.000	100.0#	0#	-23.30#
32	T	Carbazole	1.003	0.870	13.3	79	0.03
33	T	Dibenzothiophene	1.039	1.056	-1.6	86	0.00
34	un	C1-Dibenzothiophene	1.039	0.000	100.0#	0#	-25.17#
35	un	C2-Dibenzothiophene	1.039	0.000	100.0#	0#	-26.53#
36	un	C3-Dibenzothiophene	1.039	0.000	100.0#	0#	-28.64#
37	T	Phenanthrene	1.095	1.044	4.7	84	0.03
38	T	Anthracene	1.082	1.049	3.0	86	0.00
39	T	1-Methylphenanthrene	0.848	0.813	4.1	83	0.00
40	un	C1-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	0.00
41	un	C2-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	-27.57#
42	un	C3-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	-30.14#
43	un	C4-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	-30.85#
44	T	Naphthobenzothiophene	1.350	1.342	0.6	83	0.00
45	un	C1-Naphthobenzothiophene	1.350	0.000	100.0#	0#	-33.11#
46	un	C2-Naphthobenzothiophene	1.350	0.000	100.0#	0#	-34.78#
47	un	C3-Naphthobenzothiophene	1.350	0.000	100.0#	0#	-36.14#
48	T	Fluoranthene	1.297	1.265	2.5	83	0.00
49	T	Pyrene	1.276	1.237	3.1	86	0.03
50	un	C1-Fluoranthenes/Pyrenes	1.297	0.000	100.0#	0#	-30.59#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : D:\GC-MSD~1\MS30401\MS30401I.D Vial: 4
Acq On : 21 Jul 2007 9:55 pm Operator: TJM
Sample : AR-WKCC-250-022 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:22 2007
Response via : Multiple Level Calibration

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

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
51	un	C2-Fluoranthenes/Pyrenes	1.297	0.000	100.0#	0#	-31.95#
52	un	C3-Fluoranthenes/Pyrenes	1.297	0.000	100.0#	0#	-33.01#
53	S	Chrysene-d12	1.149	1.065	7.3	81	0.00
54	T	Benz(a)anthracene	1.195	1.161	2.8	89	0.00
55	T	Chrysene	1.183	1.279	-8.1	98	0.00
56	un	C1-Chrysenes	1.183	0.000	100.0#	0#	-34.33#
57	un	C2-Chrysenes	1.183	0.000	100.0#	0#	-35.53#
58	un	C3-Chrysenes	1.183	0.000	100.0#	0#	-36.96#
59	un	C4-Chrysenes	1.183	0.000	100.0#	0#	-42.49#
60	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	74	0.00
61	un	C29-Hopane	0.643	0.000	100.0#	0#	-40.50#
62	un	18a-Oleanane	0.643	0.000	100.0#	0#	0.00
63	T	C30-Hopane	0.643	0.633	1.6	75	0.00
64	T	Benzo(b)fluoranthene	1.773	1.899	-7.1	82	0.00
65	T	Benzo(k)fluoranthene	1.772	1.766	0.3	82	0.00
66	T	Benzo(e)pyrene	1.579	1.635	-3.5	78	0.00
67	T	Benzo(a)pyrene	1.428	1.466	-2.7	79	0.00
68	T	Indeno(1,2,3-c,d)pyrene	1.189	1.097	7.7	72	0.00
69	T	Dibenzo(a,h)anthracene	1.168	1.115	4.5	74	0.03
70	un	C1-Dibenzo(a,h)anthracene	1.168	0.000	100.0#	0#	-42.64#
71	un	C2-Dibenzo(a,h)anthracene	1.168	0.000	100.0#	0#	-44.55#
72	un	C3-Dibenzo(a,h)anthracene	1.168	0.000	100.0#	0#	-45.03#
73	T	Benzo(g,h,i)perylene	1.276	1.247	2.3	77	0.03
74	S	Perylene-d12	0.869	0.867	0.2	79	0.04
75	T	Perylene	1.495	1.526	-2.1	79	0.00

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

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\MS30401I.D Vial: 4
Acq On : 21 Jul 2007 9:55 pm Operator: TJM
Sample : AR-WKCC-250-022 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:57 2007 Quant Results File: 072107.RES

Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorene-d10	20.66	176	1522	51.08	ng/ml	0.03
29) Pyrene-d10	28.80	212	3105	49.98		0.00
60) Benzo(a)pyrene-d12	37.38	264	1922	45.61		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.04	136	13769	260.62		0.00
20) Acenaphthene-d10	18.83	164	7571	260.09		0.00
30) Phenanthrene-d10	23.91	188	14365	231.35		0.00
53) Chrysene-d12	32.96	240	16547	231.88		0.00
74) Perylene-d12	37.66	264	9133	249.38		0.04
Target Compounds						Qvalue
3) Decalin	11.35	138	2909m	269.95	ng/ml	
4) C1-Decalin	0.00	152	0	N.D.	d	
5) C2-Decalin	0.00	166	0	N.D.	d	
6) C3-Decalin	0.00	180	0	N.D.	d	
7) C4-Decalin	0.00	194	0	N.D.	d	
8) Naphthalene	13.09	128	13830	257.80		89
9) 2-Methylnaphthalene	15.37	142	9611m	254.09		
10) 1-Methylnaphthalene	15.65	142	8683m	238.00		
11) 2,6-Dimethylnaphthalene	17.45	156	8524	260.42		79
12) 1,6,7-Trimethylnaphthalene	20.29	170	7860	257.92	#	45
13) C2-Naphthalenes	18.10	156	0	N.D.		
14) C3-Naphthalenes	20.29	170	0	N.D.		
15) C4-Naphthalenes	0.00	184	0	N.D.	d	
16) Benzothiophene	13.26	134	11219	268.45	ng/ml	100
17) C1-Benzothiophene	0.00	148	0	N.D.	d	
18) C2-Benzothiophene	18.12	162	0	N.D.		
19) C3-Benzothiophene	0.00	176	0	N.D.	d	
21) Biphenyl	16.95	154	12156	257.73		98
22) Acenaphthylene	18.35	152	15058	260.56		88
23) Acenaphthene	18.94	154	8808	253.12		94
24) Dibenzofuran	19.59	168	13814	255.11	ng/ml	100
25) Fluorene	20.74	166	10664	253.29		99
26) C1-Fluorenes	0.00	180	0	N.D.	d	
27) C2-Fluorenes	0.00	194	0	N.D.	d	
28) C3-Fluorenes	0.00	208	0	N.D.	d	
31) Pentachlorophenol	0.00	266	0	N.D.	d	
32) Carbazole	24.79	167	13532	217.16	ng/ml	100
33) Dibenzothiophene	23.57	184	16418	254.34	#	85
34) C1-Dibenzothiophene	0.00	198	0	N.D.	d	
35) C2-Dibenzothiophene	0.00	212	0	N.D.	d	
36) C3-Dibenzothiophene	0.00	226	0	N.D.	d	
37) Phenanthrene	24.01	178	16246	238.81		92
38) Anthracene	24.18	178	16321	242.79		86
39) 1-Methylphenanthrene	26.13	192	12647	240.03		90
40) C1-Phenanthrene/Anthracene	26.26	192	0	N.D.		
41) C2-Phenanthrene/Anthracene	0.00	206	0	N.D.	d	
42) C3-Phenanthrene/Anthracene	0.00	220	0	N.D.	d	
43) C4-Phenanthrene/Anthracene	0.00	234	0	N.D.	d	
44) Naphthobenzothiophene	32.13	234	20817	248.15		100

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

Data File : D:\GC-MSD~1\MS30401\MS30401I.D Vial: 4
Acq On : 21 Jul 2007 9:55 pm Operator: TJM
Sample : AR-WKCC-250-022 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:57 2007 Quant Results File: 072107.RES

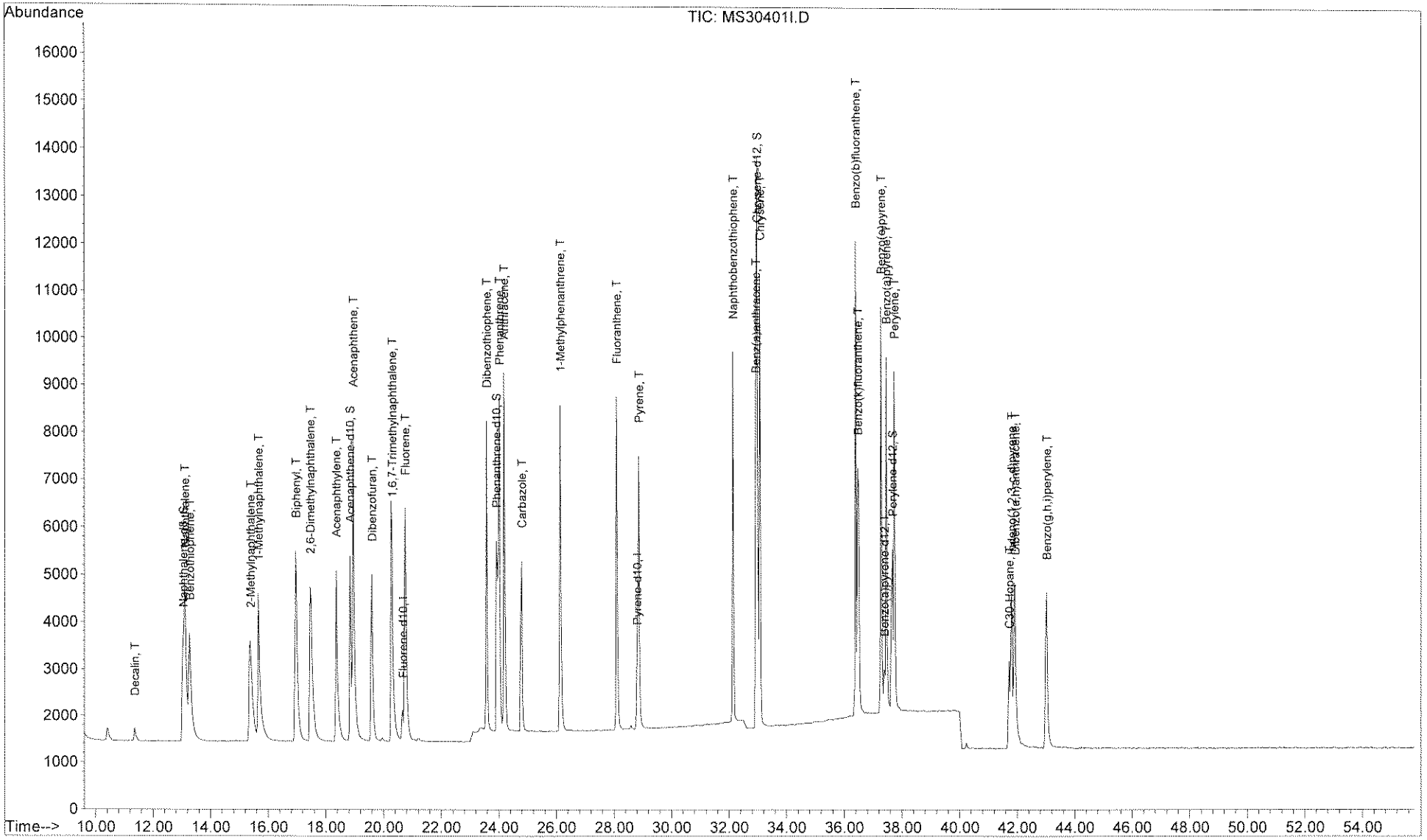
Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	C1-Naphthobenzothiophene	0.00	248	0	N.D.	d		
46)	C2-Naphthobenzothiophene	0.00	262	0	N.D.	d		
47)	C3-Naphthobenzothiophene	0.00	276	0	N.D.	d		
48)	Fluoranthene	28.09	202	19703	244.57			100
49)	Pyrene	28.86	202	19259	242.92			100
50)	C1-Fluoranthenes/Pyrenes	0.00	216	0	N.D.	d		
51)	C2-Fluoranthenes/Pyrenes	0.00	230	0	N.D.	d		
52)	C3-Fluoranthenes/Pyrenes	0.00	244	0	N.D.	d		
54)	Benz(a)anthracene	32.93	228	18071m	243.46			
55)	Chrysene	33.07	228	19917m	270.99			
56)	C1-Chrysenes	0.00	242	0	N.D.	d		
57)	C2-Chrysenes	0.00	256	0	N.D.	d		
58)	C3-Chrysenes	0.00	270	0	N.D.	d		
59)	C4-Chrysenes	0.00	284	0	N.D.	d		
61)	C29-Hopane	0.00	191	0	N.D.	d		
62)	18a-Oleanane	42.36	191	0	N.D.			
63)	C30-Hopane	41.71	191	6665	245.95	ng/ml		100
64)	Benzo(b)fluoranthene	36.39	252	20025m	267.95			
65)	Benzo(k)fluoranthene	36.46	252	18649m	249.78			
66)	Benzo(e)pyrene	37.28	252	17270	259.54		#	79
67)	Benzo(a)pyrene	37.45	252	15471	257.01		#	73
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	11576m	231.11			
69)	Dibenzo(a,h)anthracene	41.92	278	11765m	239.07			
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d		
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d		
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d		
73)	Benzo(g,h,i)perylene	43.01	276	13161	244.80		#	67
75)	Perylene	37.74	252	16112	255.74		#	83

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

Data File : D:\GC-MSD~1\MS30401\MS30401I.D Vial: 4
Acq On : 21 Jul 2007 9:55 pm Operator: TJM
Sample : AR-WKCC-250-022 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:57 2007 Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : D:\GC-MSD~1\MS30401\MS30401J.D
Acq On : 22 Jul 2007 5:16 am
Sample : AR-WKCC-250-022
Misc :
MS Integration Params: rteint.p

Vial: 11
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.00

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:22 2007
Response via : Multiple Level Calibration

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

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorene-d10	1.000	1.000	0.0	106	0.03
2	S	Naphthalene-d8	1.773	1.752	1.2	103	0.00
3	T	Decalin	0.362	0.364	-0.6	112	0.00
4	un	C1-Decalin	0.362	0.000	100.0#	0#	-12.87#
5	un	C2-Decalin	0.362	0.000	100.0#	0#	-14.39#
6	un	C3-Decalin	0.362	0.000	100.0#	0#	-15.99#
7	un	C4-Decalin	0.362	0.000	100.0#	0#	-19.85#
8	T	Naphthalene	1.800	1.739	3.4	103	0.00
9	T	2-Methylnaphthalene	1.269	1.261	0.6	108	0.03
10	T	1-Methylnaphthalene	1.224	1.205	1.6	111	0.00
11	T	2,6-Dimethylnaphthalene	1.099	1.103	-0.4	106	0.00
12	T	1,6,7-Trimethylnaphthalene	1.023	1.019	0.4	107	0.00
13	un	C2-Naphthalenes	1.800	0.000	100.0#	0#	0.00
14	un	C3-Naphthalenes	1.800	0.000	100.0#	0#	0.00
15	un	C4-Naphthalenes	1.800	0.000	100.0#	0#	-22.42#
16	T	Benzothiophene	1.403	1.398	0.4	104	0.00
17	un	C1-Benzothiophene	1.403	0.000	100.0#	0#	-15.71#
18	un	C2-Benzothiophene	1.403	0.000	100.0#	0#	0.00
19	un	C3-Benzothiophene	1.403	0.000	100.0#	0#	-19.77#
20	S	Acenaphthene-d10	0.977	0.947	3.1	108	0.00
21	T	Biphenyl	1.583	1.543	2.5	105	0.03
22	T	Acenaphthylene	1.940	1.922	0.9	106	0.00
23	T	Acenaphthene	1.168	1.168	0.0	107	0.00
24	T	Dibenzofuran	1.817	1.797	1.1	105	0.03
25	T	Fluorene	1.413	1.388	1.8	106	0.03
26	un	C1-Fluorenes	1.413	0.000	100.0#	0#	-22.85#
27	un	C2-Fluorenes	1.413	0.000	100.0#	0#	-24.53#
28	un	C3-Fluorenes	1.413	0.000	100.0#	0#	-26.42#
29	I	Pyrene-d10	1.000	1.000	0.0	97	0.00
30	S	Phenanthrene-d10	0.999	0.935	6.4	102	0.00
31	T	Pentachlorophenol	0.062	0.000	100.0#	0#	-23.30#
32	T	Carbazole	1.003	0.976	2.7	105	0.03
33	T	Dibenzothiophene	1.039	1.064	-2.4	103	0.00
34	un	C1-Dibenzothiophene	1.039	0.000	100.0#	0#	-25.17#
35	un	C2-Dibenzothiophene	1.039	0.000	100.0#	0#	-26.53#
36	un	C3-Dibenzothiophene	1.039	0.000	100.0#	0#	-28.64#
37	T	Phenanthrene	1.095	1.050	4.1	101	0.03
38	T	Anthracene	1.082	1.083	-0.1	105	0.00
39	T	1-Methylphenanthrene	0.848	0.818	3.5	100	0.00
40	un	C1-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	0.00
41	un	C2-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	-27.57#
42	un	C3-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	-30.14#
43	un	C4-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	-30.85#
44	T	Naphthobenzothiophene	1.350	1.354	-0.3	100	0.00
45	un	C1-Naphthobenzothiophene	1.350	0.000	100.0#	0#	-33.11#
46	un	C2-Naphthobenzothiophene	1.350	0.000	100.0#	0#	-34.78#
47	un	C3-Naphthobenzothiophene	1.350	0.000	100.0#	0#	-36.14#
48	T	Fluoranthene	1.297	1.262	2.7	98	0.00
49	T	Pyrene	1.276	1.241	2.7	102	0.03
50	un	C1-Fluoranthenes/Pyrenes	1.297	0.000	100.0#	0#	-30.59#
51	un	C2-Fluoranthenes/Pyrenes	1.297	0.000	100.0#	0#	-31.95#
52	un	C3-Fluoranthenes/Pyrenes	1.297	0.000	100.0#	0#	-33.01#
53	S	Chrysene-d12	1.149	1.085	5.6	98	0.00
54	T	Benz(a)anthracene	1.195	1.198	-0.3	110	0.00
55	T	Chrysene	1.183	1.080	8.7	98	0.00
56	un	C1-Chrysenes	1.183	0.000	100.0#	0#	-34.33#

57	un	C2-Chrysenes	1.183	0.000	100.0#	0#	-35.53#
58	un	C3-Chrysenes	1.183	0.000	100.0#	0#	-36.96#
59	un	C4-Chrysenes	1.183	0.000	100.0#	0#	-42.49#
60	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	92	0.00
61	un	C29-Hopane	0.643	0.000	100.0#	0#	-40.50#
62	un	18a-Oleanane	0.643	0.000	100.0#	0#	0.00
63	T	C30-Hopane	0.643	0.626	2.6	94	0.00
64	T	Benzo(b)fluoranthene	1.773	1.644	7.3	89	0.00
65	T	Benzo(k)fluoranthene	1.772	1.679	5.2	97	0.00
66	T	Benzo(e)pyrene	1.579	1.482	6.1	89	0.00
67	T	Benzo(a)pyrene	1.428	1.402	1.8	95	0.00
68	T	Indeno(1,2,3-c,d)pyrene	1.189	1.054	11.4	87	0.00
69	T	Dibenzo(a,h)anthracene	1.168	1.028	12.0	86	0.00
70	un	C1-Dibenzo(a,h)anthracene	1.168	0.000	100.0#	0#	-42.64#
71	un	C2-Dibenzo(a,h)anthracene	1.168	0.000	100.0#	0#	-44.55#
72	un	C3-Dibenzo(a,h)anthracene	1.168	0.000	100.0#	0#	-45.03#
73	T	Benzo(g,h,i)perylene	1.276	0.975	23.6	76	0.03
74	S	Perylene-d12	0.869	0.808	7.0	92	0.00
75	T	Perylene	1.495	1.347	9.9	88	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
MS30401F.D 072107.M Wed Aug 08 21:00:41 2007

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\MS30401J.D Vial: 11
Acq On : 22 Jul 2007 5:16 am Operator: TJM
Sample : AR-WKCC-250-022 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 21:00 2007 Quant Results File: 072107.RES

Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorene-d10	20.66	176	2025	51.08	ng/ml		0.03
29) Pyrene-d10	28.80	212	3701	49.98			0.00
60) Benzo(a)pyrene-d12	37.38	264	2414	45.61			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.04	136	17364	247.03			0.00
20) Acenaphthene-d10	18.83	164	9388	242.40			0.00
30) Phenanthrene-d10	23.91	188	17316	233.97			0.00
53) Chrysene-d12	32.96	240	20079	236.06			0.00
74) Perylene-d12	37.63	264	10696	232.53			0.00
Target Compounds							Qvalue
3) Decalin	11.35	138	3613m	252.00	ng/ml		
4) C1-Decalin	0.00	152	0	N.D.	d		
5) C2-Decalin	0.00	166	0	N.D.	d		
6) C3-Decalin	0.00	180	0	N.D.	d		
7) C4-Decalin	0.00	194	0	N.D.	d		
8) Naphthalene	13.09	128	17269	241.95			89
9) 2-Methylnaphthalene	15.37	142	12533m	249.03			
10) 1-Methylnaphthalene	15.65	142	11960m	246.39			
11) 2,6-Dimethylnaphthalene	17.45	156	10953	251.51		#	70
12) 1,6,7-Trimethylnaphthalene	20.29	170	10122	249.64		#	43
13) C2-Naphthalenes	18.10	156	0	N.D.			
14) C3-Naphthalenes	20.29	170	0	N.D.			
15) C4-Naphthalenes	0.00	184	0	N.D.	d		
16) Benzothiophene	13.26	134	13882	249.66	ng/ml		100
17) C1-Benzothiophene	0.00	148	0	N.D.	d		
18) C2-Benzothiophene	18.12	162	0	N.D.			
19) C3-Benzothiophene	0.00	176	0	N.D.	d		
21) Biphenyl	16.95	154	15321	244.15			98
22) Acenaphthylene	18.35	152	19087	248.24			88
23) Acenaphthene	18.94	154	11584	250.20			96
24) Dibenzofuran	19.59	168	17838	247.59	ng/ml		100
25) Fluorene	20.74	166	13783	246.06			98
26) C1-Fluorenes	0.00	180	0	N.D.	d		
27) C2-Fluorenes	0.00	194	0	N.D.	d		
28) C3-Fluorenes	0.00	208	0	N.D.	d		
31) Pentachlorophenol	0.00	266	0	N.D.	d		
32) Carbazole	24.79	167	18098	243.66	ng/ml		100
33) Dibenzothiophene	23.57	184	19735	256.49		#	85
34) C1-Dibenzothiophene	0.00	198	0	N.D.	d		
35) C2-Dibenzothiophene	0.00	212	0	N.D.	d		
36) C3-Dibenzothiophene	0.00	226	0	N.D.	d		
37) Phenanthrene	24.01	178	19474	240.16			91
38) Anthracene	24.18	178	20077	250.57		#	84
39) 1-Methylphenanthrene	26.13	192	15182	241.74			89
40) C1-Phenanthrene/Anthracene	26.26	192	0	N.D.			
41) C2-Phenanthrene/Anthracene	0.00	206	0	N.D.	d		
42) C3-Phenanthrene/Anthracene	0.00	220	0	N.D.	d		
43) C4-Phenanthrene/Anthracene	0.00	234	0	N.D.	d		
44) Naphthobenzothiophene	32.13	234	25044	250.46			100

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

Data File : D:\GC-MSD~1\MS30401\MS30401J.D
Acq On : 22 Jul 2007 5:16 am
Sample : AR-WKCC-250-022
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 8 21:00 2007

Vial: 11
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 072107.RES

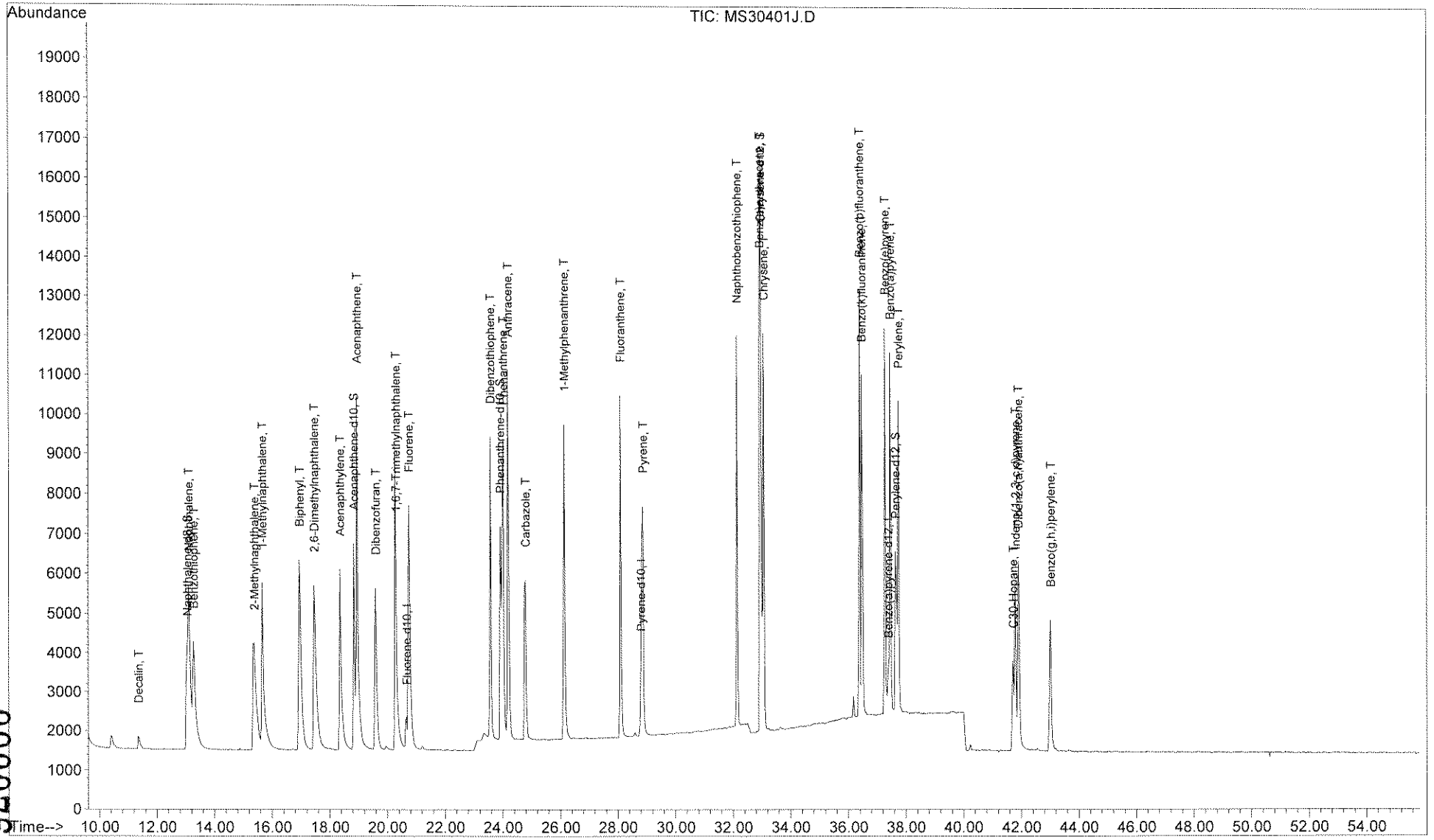
Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	C1-Naphthobenzothiophene	0.00	248	0	N.D.	d		
46)	C2-Naphthobenzothiophene	0.00	262	0	N.D.	d		
47)	C3-Naphthobenzothiophene	0.00	276	0	N.D.	d		
48)	Fluoranthene	28.09	202	23414	243.83			100
49)	Pyrene	28.86	202	23026	243.66			100
50)	C1-Fluoranthenes/Pyrenes	0.00	216	0	N.D.	d		
51)	C2-Fluoranthenes/Pyrenes	0.00	230	0	N.D.	d		
52)	C3-Fluoranthenes/Pyrenes	0.00	244	0	N.D.	d		
54)	Benz(a)anthracene	32.93	228	22221	251.16			97
55)	Chrysene	33.07	228	20049	228.86			92
56)	C1-Chrysenes	0.00	242	0	N.D.	d		
57)	C2-Chrysenes	0.00	256	0	N.D.	d		
58)	C3-Chrysenes	0.00	270	0	N.D.	d		
59)	C4-Chrysenes	0.00	284	0	N.D.	d		
61)	C29-Hopane	0.00	191	0	N.D.	d		
62)	18a-Oleanane	42.36	191	0	N.D.			
63)	C30-Hopane	41.71	191	8284	243.39	ng/ml		100
64)	Benzo(b)fluoranthene	36.39	252	21782m	232.06			
65)	Benzo(k)fluoranthene	36.46	252	22266m	237.45			
66)	Benzo(e)pyrene	37.28	252	19657	235.21		#	79
67)	Benzo(a)pyrene	37.45	252	18577	245.71		#	72
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	13971m	222.08			
69)	Dibenzo(a,h)anthracene	41.89	278	13629	220.50		#	64
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d		
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d		
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d		
73)	Benzo(g,h,i)perylene	43.01	276	12928	191.46		#	67
75)	Perylene	37.74	252	17862	225.73		#	83

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

Data File : D:\GC-MSD~1\MS30401\MS30401J.D Vial: 11
Acq On : 22 Jul 2007 5:16 am Operator: TJM
Sample : AR-WKCC-250-022 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 21:00 2007 Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data File : D:\GC-MSD~1\MS30401\MS30401K.D Vial: 16
Acq On : 22 Jul 2007 10:31 am Operator: TJM
Sample : AR-WKCC-250-022 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:22 2007
Response via : Multiple Level Calibration

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

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorene-d10	1.000	1.000	0.0	94	0.03
2	S	Naphthalene-d8	1.773	1.743	1.7	91	0.00
3	T	Decalin	0.362	0.354	2.2	98	0.00
4	un	C1-Decalin	0.362	0.000	100.0#	0#	-12.87#
5	un	C2-Decalin	0.362	0.000	100.0#	0#	-14.39#
6	un	C3-Decalin	0.362	0.000	100.0#	0#	-15.99#
7	un	C4-Decalin	0.362	0.000	100.0#	0#	-19.85#
8	T	Naphthalene	1.800	1.734	3.7	92	0.00
9	T	2-Methylnaphthalene	1.269	1.190	6.2	91	0.00
10	T	1-Methylnaphthalene	1.224	1.236	-1.0	102	0.00
11	T	2,6-Dimethylnaphthalene	1.099	1.094	0.5	93	0.00
12	T	1,6,7-Trimethylnaphthalene	1.023	1.020	0.3	95	-0.03
13	un	C2-Naphthalenes	1.800	0.000	100.0#	0#	0.00
14	un	C3-Naphthalenes	1.800	0.000	100.0#	0#	0.00
15	un	C4-Naphthalenes	1.800	0.000	100.0#	0#	-22.42#
16	T	Benzothiophene	1.403	1.385	1.3	92	0.00
17	un	C1-Benzothiophene	1.403	0.000	100.0#	0#	-15.71#
18	un	C2-Benzothiophene	1.403	0.000	100.0#	0#	0.00
19	un	C3-Benzothiophene	1.403	0.000	100.0#	0#	-19.77#
20	S	Acenaphthene-d10	0.977	0.940	3.8	96	0.00
21	T	Biphenyl	1.583	1.480	6.5	90	0.03
22	T	Acenaphthylene	1.940	1.882	3.0	92	0.00
23	T	Acenaphthene	1.168	1.133	3.0	93	0.00
24	T	Dibenzofuran	1.817	1.747	3.9	91	0.03
25	T	Fluorene	1.413	1.384	2.1	94	0.03
26	un	C1-Fluorenes	1.413	0.000	100.0#	0#	-22.85#
27	un	C2-Fluorenes	1.413	0.000	100.0#	0#	-24.53#
28	un	C3-Fluorenes	1.413	0.000	100.0#	0#	-26.42#
29	I	Pyrene-d10	1.000	1.000	0.0	81	0.00
30	S	Phenanthrene-d10	0.999	0.989	1.0	90	0.00
31	T	Pentachlorophenol	0.062	0.000	100.0#	0#	-23.30#
32	T	Carbazole	1.003	1.093	-9.0	99	0.00
33	T	Dibenzothiophene	1.039	1.089	-4.8	88	0.00
34	un	C1-Dibenzothiophene	1.039	0.000	100.0#	0#	-25.17#
35	un	C2-Dibenzothiophene	1.039	0.000	100.0#	0#	-26.53#
36	un	C3-Dibenzothiophene	1.039	0.000	100.0#	0#	-28.64#
37	T	Phenanthrene	1.095	1.104	-0.8	89	0.03
38	T	Anthracene	1.082	1.213	-12.1	99	0.00
39	T	1-Methylphenanthrene	0.848	0.854	-0.7	88	0.00
40	un	C1-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	0.00
41	un	C2-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	-27.57#
42	un	C3-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	-30.14#
43	un	C4-Phenanthrene/Anthracene	1.095	0.000	100.0#	0#	-30.85#
44	T	Naphthobenzothiophene	1.350	1.173	13.1	73	0.00
45	un	C1-Naphthobenzothiophene	1.350	0.000	100.0#	0#	-33.11#
46	un	C2-Naphthobenzothiophene	1.350	0.000	100.0#	0#	-34.78#
47	un	C3-Naphthobenzothiophene	1.350	0.000	100.0#	0#	-36.14#
48	T	Fluoranthene	1.297	1.301	-0.3	85	0.00
49	T	Pyrene	1.276	1.314	-3.0	91	0.00
50	un	C1-Fluoranthenes/Pyrenes	1.297	0.000	100.0#	0#	-30.59#
51	un	C2-Fluoranthenes/Pyrenes	1.297	0.000	100.0#	0#	-31.95#
52	un	C3-Fluoranthenes/Pyrenes	1.297	0.000	100.0#	0#	-33.01#
53	S	Chrysene-d12	1.149	1.151	-0.2	87	0.00
54	T	Benz(a)anthracene	1.195	1.302	-9.0	100	0.00
55	T	Chrysene	1.183	1.071	9.5	82	0.00
56	un	C1-Chrysenes	1.183	0.000	100.0#	0#	-34.33#

57	un	C2-Chrysenes	1.183	0.000	100.0#	0#	-35.53#
58	un	C3-Chrysenes	1.183	0.000	100.0#	0#	-36.96#
59	un	C4-Chrysenes	1.183	0.000	100.0#	0#	-42.49#
60	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	73	0.00
61	un	C29-Hopane	0.643	0.000	100.0#	0#	-40.50#
62	un	18a-Oleanane	0.643	0.000	100.0#	0#	0.00
63	T	C30-Hopane	0.643	0.602	6.4	71	-0.03
64	T	Benzo(b)fluoranthene	1.773	1.725	2.7	74	0.00
65	T	Benzo(k)fluoranthene	1.772	1.813	-2.3	84	0.00
66	T	Benzo(e)pyrene	1.579	1.433	9.2	69	0.00
67	T	Benzo(a)pyrene	1.428	1.317	7.8	71	0.00
68	T	Indeno(1,2,3-c,d)pyrene	1.189	1.089	8.4	72	0.00
69	T	Dibenzo(a,h)anthracene	1.168	1.034	11.5	69	0.00
70	un	C1-Dibenzo(a,h)anthracene	1.168	0.000	100.0#	0#	-42.64#
71	un	C2-Dibenzo(a,h)anthracene	1.168	0.000	100.0#	0#	-44.55#
72	un	C3-Dibenzo(a,h)anthracene	1.168	0.000	100.0#	0#	-45.03#
73	T	Benzo(g,h,i)perylene	1.276	0.983	23.0	61	0.00
74	S	Perylene-d12	0.869	0.807	7.1	73	0.00
75	T	Perylene	1.495	1.344	10.1	69	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
MS30401F.D 072107.M Wed Aug 08 21:04:26 2007

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\MS30401K.D Vial: 16
Acq On : 22 Jul 2007 10:31 am Operator: TJM
Sample : AR-WKCC-250-022 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 21:04 2007 Quant Results File: 072107.RES

Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorene-d10	20.66	176	1804	51.08	ng/ml		0.03
29) Pyrene-d10	28.79	212	3105	49.98			0.00
60) Benzo(a)pyrene-d12	37.38	264	1918	45.61			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.04	136	15391	245.79			0.00
20) Acenaphthene-d10	18.83	164	8298	240.51			0.00
30) Phenanthrene-d10	23.91	188	15360	247.38			0.00
53) Chrysene-d12	32.96	240	17870	250.42			0.00
74) Perylene-d12	37.63	264	8481	232.06			0.00
Target Compounds							Qvalue
3) Decalin	11.35	138	3134m	245.37	ng/ml		
4) C1-Decalin	0.00	152	0	N.D.	d		
5) C2-Decalin	0.00	166	0	N.D.	d		
6) C3-Decalin	0.00	180	0	N.D.	d		
7) C4-Decalin	0.00	194	0	N.D.	d		
8) Naphthalene	13.09	128	15345	241.33			88
9) 2-Methylnaphthalene	15.34	142	10534m	234.96			
10) 1-Methylnaphthalene	15.65	142	10931m	252.78			
11) 2,6-Dimethylnaphthalene	17.45	156	9678	249.45		#	68
12) 1,6,7-Trimethylnaphthalene	20.26	170	9020	249.72			82
13) C2-Naphthalenes	18.10	156	0	N.D.			
14) C3-Naphthalenes	20.29	170	0	N.D.			
15) C4-Naphthalenes	0.00	184	0	N.D.	d		
16) Benzothiophene	13.26	134	12252	247.34	ng/ml		100
17) C1-Benzothiophene	0.00	148	0	N.D.	d		
18) C2-Benzothiophene	18.12	162	0	N.D.			
19) C3-Benzothiophene	0.00	176	0	N.D.	d		
21) Biphenyl	16.95	154	13092	234.18			97
22) Acenaphthylene	18.35	152	16655	243.14			89
23) Acenaphthene	18.94	154	10016	242.84			97
24) Dibenzofuran	19.59	168	15445	240.64	ng/ml		100
25) Fluorene	20.74	166	12244	245.36			99
26) C1-Fluorenes	0.00	180	0	N.D.	d		
27) C2-Fluorenes	0.00	194	0	N.D.	d		
28) C3-Fluorenes	0.00	208	0	N.D.	d		
31) Pentachlorophenol	0.00	266	0	N.D.	d		
32) Carbazole	24.75	167	16998	272.78	ng/ml		100
33) Dibenzothiophene	23.57	184	16944	262.49		#	84
34) C1-Dibenzothiophene	0.00	198	0	N.D.	d		
35) C2-Dibenzothiophene	0.00	212	0	N.D.	d		
36) C3-Dibenzothiophene	0.00	226	0	N.D.	d		
37) Phenanthrene	24.01	178	17185	252.61			92
38) Anthracene	24.18	178	18870	280.71			85
39) 1-Methylphenanthrene	26.13	192	13286	252.16			88
40) C1-Phenanthrene/Anthracene	26.26	192	0	N.D.			
41) C2-Phenanthrene/Anthracene	0.00	206	0	N.D.	d		
42) C3-Phenanthrene/Anthracene	0.00	220	0	N.D.	d		
43) C4-Phenanthrene/Anthracene	0.00	234	0	N.D.	d		
44) Naphthobenzothiophene	32.13	234	18191	216.85			100

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

000079

Data File : D:\GC-MSD~1\MS30401\MS30401K.D
Acq On : 22 Jul 2007 10:31 am
Sample : AR-WKCC-250-022
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 8 21:04 2007

Vial: 16
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 072107.RES

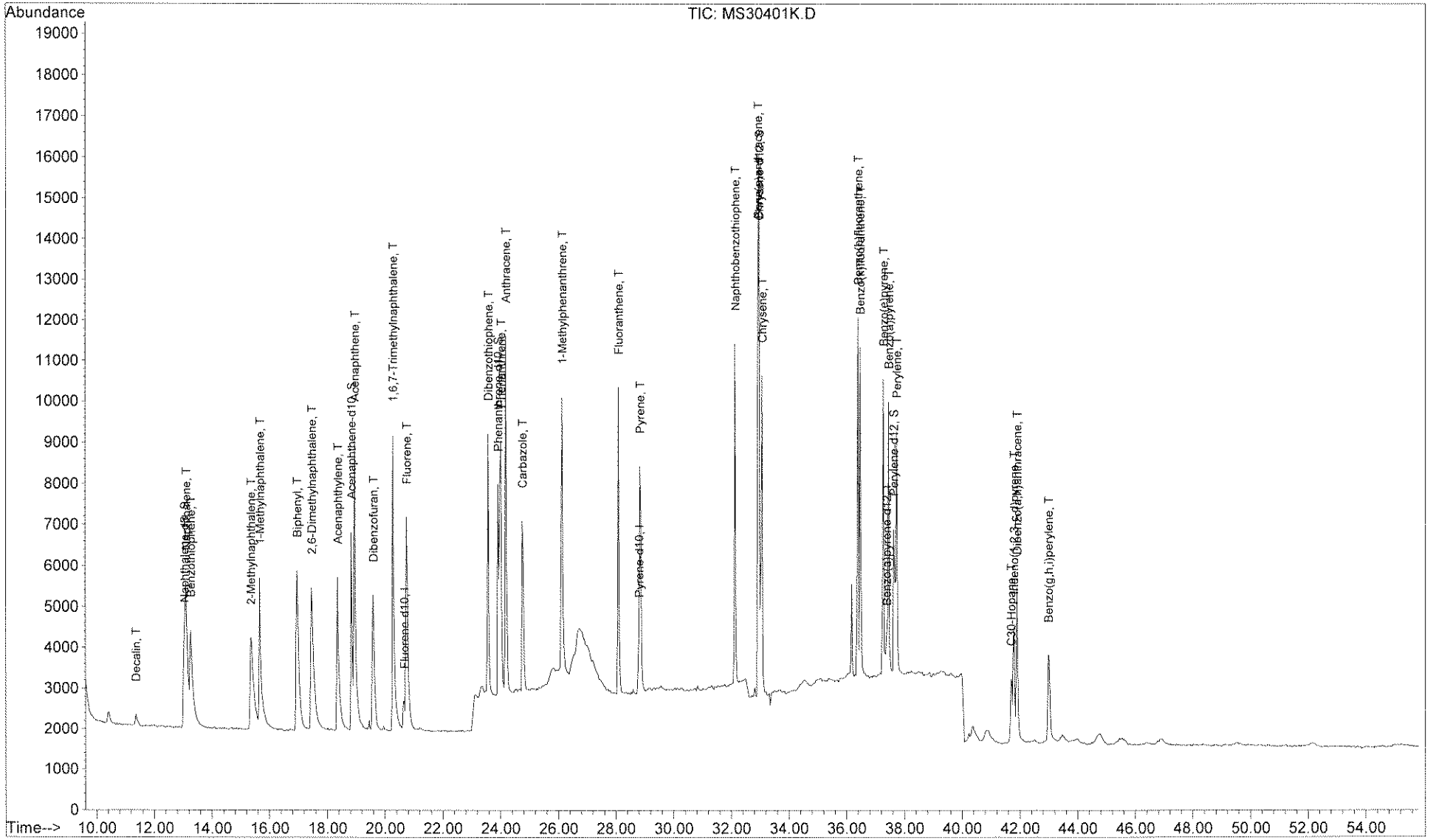
Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	C1-Naphthobenzothiophene	0.00	248	0	N.D.	d		
46)	C2-Naphthobenzothiophene	0.00	262	0	N.D.	d		
47)	C3-Naphthobenzothiophene	0.00	276	0	N.D.	d		
48)	Fluoranthene	28.09	202	20264	251.54			100
49)	Pyrene	28.83	202	20451	257.95			100
50)	C1-Fluoranthenes/Pyrenes	0.00	216	0	N.D.	d		
51)	C2-Fluoranthenes/Pyrenes	0.00	230	0	N.D.	d		
52)	C3-Fluoranthenes/Pyrenes	0.00	244	0	N.D.	d		
54)	Benz(a)anthracene	32.93	228	20271	273.10			95
55)	Chrysene	33.07	228	16674	226.87			91
56)	C1-Chrysenes	0.00	242	0	N.D.	d		
57)	C2-Chrysenes	0.00	256	0	N.D.	d		
58)	C3-Chrysenes	0.00	270	0	N.D.	d		
59)	C4-Chrysenes	0.00	284	0	N.D.	d		
61)	C29-Hopane	0.00	191	0	N.D.	d		
62)	18a-Oleanane	42.36	191	0	N.D.			
63)	C30-Hopane	41.69	191	6325	233.89	ng/ml		100
64)	Benzo(b)fluoranthene	36.39	252	18156m	243.45			
65)	Benzo(k)fluoranthene	36.46	252	19105m	256.43			
66)	Benzo(e)pyrene	37.27	252	15109	227.54		#	79
67)	Benzo(a)pyrene	37.45	252	13868	230.86		#	73
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	11477m	229.61			
69)	Dibenzo(a,h)anthracene	41.89	278	10883m	221.60			
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d		
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d		
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d		
73)	Benzo(g,h,i)perylene	42.98	276	10349m	192.90			
75)	Perylene	37.73	252	14160	225.22		#	82

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

Data File : D:\GC-MSD~1\MS30401\MS30401K.D Vial: 16
Acq On : 22 Jul 2007 10:31 am Operator: TJM
Sample : AR-WKCC-250-022 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 21:04 2007 Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



000081

Tissue, Sediment, and Water Sample Report (Use d-10 Phenanthrene only for Surrogate Corrections)

Data File Name	**MS30401B.D**	**Su Amt = 50**	MS30401B.D
Data File Path	**X:\1\DATA\MS30401**		SRM 1582
Operator	**TJM**		
Date Acquired	**07/21/20 -1:2:**		
Method File	**PAH-2002**		
Sample Name	**SRM 1582**		
Misc Info			
Instrument Name	**GC/MS Ins**		07/21/20 -1:2:
Vial Number	**2**		PAH-2002
Sample Multiplier	**0.588**		1.70
Sample Amount	**0**		

Peak #	Compound	Ret Time (min)	Target Response (Area)	Conc. (ng/g or ng/L)	Su. Corrected Conc. (ng/g or ng/L)
3)	Decalin	0.00	0	0.00	0.00
4)	C1-Decalin	0.00	0	0.00	0.00
5)	C2-Decalin	0.00	0	0.00	0.00
6)	C3-Decalin	0.00	0	0.00	0.00
7)	C4-Decalin	0.00	0	0.00	0.00
8)	Naphthalene	13.09	13643	112.95	125.28
9+10)	C1-Naphthalenes	15.50	69805	577.92	641.00
13)	C2-Naphthalenes	17.79	136260	1128.11	1251.24
14)	C3-Naphthalenes	20.07	129719	1073.95	1191.17
15)	C4-Naphthalenes	22.29	87355	723.22	802.16
16)	Benzothiophene	13.32	872	9.27	10.28
17)	C1-Benzothiophene	14.87	4216	44.81	49.70
18)	C2-Benzothiophene	17.82	7773	82.61	91.62
19)	C3-Benzothiophene	19.82	14915	158.51	175.81
21)	Biphenyl	16.92	3271	30.80	34.16
22)	Acenaphthylene	0.00	0	0.00	0.00
23)	Acenaphthene	18.94	1349	17.22	19.10
24)	Dibenzofuran	19.56	1232	10.10	11.21
25)	Fluorene	20.72	2702	28.50	31.61
26)	C1-Fluorenes	22.71	11526	121.59	134.86
27)	C2-Fluorenes	24.45	24021	253.40	281.06
28)	C3-Fluorenes	26.03	23145	244.16	270.81
31)	Pentachlorophenol	0.00	0	0.00	0.00
32)	Carbazole	24.72	2854	21.46	23.80
38)	Anthracene	24.35	2884	20.10	22.29
37)	Phenanthrene	23.98	15214	104.77	116.21
40)	C1-Phenanthrene/Anthracene	25.76	48172	331.75	367.96
41)	C2-Phenanthrene/Anthracene	27.58	73409	505.55	560.73
42)	C3-Phenanthrene/Anthracene	30.21	75714	521.42	578.33
43)	C4-Phenanthrene/Anthracene	30.99	32395	223.10	247.45
33)	Dibenzothiophene	23.57	3901	28.31	31.40
34)	C1-Dibenzothiophene	25.06	17510	127.08	140.95
35)	C2-Dibenzothiophene	26.81	33575	243.68	270.27
36)	C3-Dibenzothiophene	28.66	34501	250.40	277.73
48)	Fluoranthene	28.09	1283	7.46	8.28
49)	Pyrene	28.83	2872	16.97	18.82
50)	C1-Fluoranthenes/Pyrenes	31.09	11054	64.28	71.30
51)	C2-Fluoranthenes/Pyrenes	31.52	17426	101.34	112.40
52)	C3-Fluoranthenes/Pyrenes	33.21	14360	83.51	92.62
44)	Naphthobenzothiophene	32.13	7227	40.36	44.77
45)	C1-Naphthobenzothiophene	33.88	8963	50.06	55.52
46)	C2-Naphthobenzothiophene	34.98	12881	71.94	79.79
47)	C3-Naphthobenzothiophene	36.32	9131	50.99	56.56
54)	Benz(a)anthracene	32.96	467	2.95	3.27
55)	Chrysene	33.07	2923	18.63	20.67
56)	C1-Chrysenes	34.45	11061	70.51	78.20
57)	C2-Chrysenes	36.60	18974	120.95	134.15
58)	C3-Chrysenes	37.10	13770	87.78	97.36
59)	C4-Chrysenes	0.00	0	0.00	0.00
64)	Benzo(b)fluoranthene	36.39	363	1.86	2.06
65)	Benzo(k)fluoranthene	36.53	210	1.08	1.20
66)	Benzo(e)pyrene	37.28	539	3.10	3.44
67)	Benzo(a)pyrene	37.38	513	3.27	3.62
75)	Perylene	37.74	5316	32.34	35.87
68)	Indeno(1,2,3-c,d)pyrene	41.76	226	1.73	1.92
69)	Dibenzo(a,h)anthracene	41.87	44	0.34	0.38
70)	C1-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
71)	C2-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
72)	C3-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
73)	Benzo(g,h,i)perylene	43.01	236	1.68	1.87
	Total PAH				8682
	Individual Isomers				
9)	2-Methylnaphthalene	15.34	43218	507.45	562.84
10)	1-Methylnaphthalene	15.65	26587	323.66	358.99
11)	2,6-Dimethylnaphthalene	17.48	36487	495.09	549.13
12)	1,6,7-Trimethylnaphthalene	20.27	9431	137.45	152.45
39)	1-Methylphenanthrene	26.13	9377	83.38	92.48
61)	C29-Hopane	39.79	14157	200.20	222.06
62)	18a-Oleanane	40.83	4229	59.81	66.33
63)	C30-Hopane	41.04	19322	273.25	303.07
	Surrogates				**Su Recovery (%)**
	(AR-STSU-040-005)				
2)	Naphthalene-d8	13.04	3212	27.00	92
20)	Acenaphthene-d10	18.83	1823	27.82	95
30)	Phenanthrene-d10	23.91	3513	26.51	90
53)	Chrysene-d12	32.96	4075	26.75	91
74)	Perylene-d12	37.66	2556	26.75	91
	Internal Stds				
	(AR-WKIS-0500-007)				
1)	Fluorene-d10	20.63	2015	51.08	
29)	Pyrene-d10	28.80	3897	49.98	
60)	Benzo(a)pyrene-d12	37.38	2949	45.61	

Quantitation Report (QT Reviewed)

Data File : X:\1\DATA\MS30401\MS30401B.D
Acq On : 21 Jul 2007 2:34 pm
Sample : SRM 1582
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 12 15:23 2007

Vial: 2
Operator: TJM
Inst : GC/MS Ins
Multiplr: 0.59
Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorene-d10	20.63	176	2015m	51.08	ng/ml	0.00
29) Pyrene-d10	28.80	212	3897m	49.98		0.00
60) Benzo(a)pyrene-d12	37.38	264	2949m	45.61		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.04	136	3212m	27.00		0.00
20) Acenaphthene-d10	18.83	164	1823m	27.82		0.00
30) Phenanthrene-d10	23.91	188	3513m	26.51		0.00
53) Chrysene-d12	32.96	240	4075m	26.75		0.00
74) Perylene-d12	37.66	264	2556m	26.75		0.04
Target Compounds						Qvalue
3) Decalin	0.00	138	0	N.D.	d	
4) C1-Decalin	0.00	152	0	N.D.	d	
5) C2-Decalin	0.00	166	0	N.D.	d	
6) C3-Decalin	0.00	180	0	N.D.	d	
7) C4-Decalin	0.00	194	0	N.D.	d	
8) Naphthalene	13.09	128	13643	112.95		
9) 2-Methylnaphthalene	15.34	142	43218	507.45		
10) 1-Methylnaphthalene	15.65	142	26587	323.66		
11) 2,6-Dimethylnaphthalene	17.48	156	36487	495.09		
12) 1,6,7-Trimethylnaphthalene	20.27	170	9431m	137.45		
13) C2-Naphthalenes	17.79	156	136260	1128.11		
14) C3-Naphthalenes	20.07	170	129719m	1073.95		
15) C4-Naphthalenes	22.29	184	87355m	723.22		
16) Benzothiophene	13.32	134	872	9.27	ng/ml	
17) C1-Benzothiophene	14.87	148	4216	44.81	ng/ml	
18) C2-Benzothiophene	17.82	162	7773	82.61	ng/ml	
19) C3-Benzothiophene	19.82	176	14915	158.51	ng/ml	
21) Biphenyl	16.92	154	3271	30.80		
22) Acenaphthylene	0.00	152	0	N.D.	d	
23) Acenaphthene	18.94	154	1349	17.22		
24) Dibenzofuran	19.56	168	1232	10.10	ng/ml	
25) Fluorene	20.72	166	2702	28.50		
26) C1-Fluorenes	22.71	180	11526m	121.59		
27) C2-Fluorenes	24.45	194	24021m	253.40		
28) C3-Fluorenes	26.03	208	23145m	244.16		
31) Pentachlorophenol	0.00	266	0	N.D.	d	
32) Carbazole	24.72	167	2854m	21.46	ng/ml	
33) Dibenzothiophene	23.57	184	3901m	28.31		
34) C1-Dibenzothiophene	25.06	198	17510m	127.08		
35) C2-Dibenzothiophene	26.81	212	33575m	243.68		
36) C3-Dibenzothiophene	28.66	226	34501m	250.40		
37) Phenanthrene	23.98	178	15214m	104.77		
38) Anthracene	24.35	178	2884m	20.10		
39) 1-Methylphenanthrene	26.13	192	9377m	83.38		
40) C1-Phenanthrene/Anthracene	25.76	192	48172m	331.75		
41) C2-Phenanthrene/Anthracene	27.58	206	73409m	505.55		
42) C3-Phenanthrene/Anthracene	30.21	220	75714m	521.42		
43) C4-Phenanthrene/Anthracene	30.99	234	32395m	223.10		
44) Naphthobenzothiophene	32.13	234	7227m	40.36		
45) C1-Naphthobenzothiophene	33.88	248	8963m	50.06		
46) C2-Naphthobenzothiophene	34.98	262	12881m	71.94		

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

Data File : X:\1\DATA\MS30401\MS30401B.D
Acq On : 21 Jul 2007 2:34 pm
Sample : SRM 1582
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 12 15:23 2007

Vial: 2
Operator: TJM
Inst : GC/MS Ins
Multiplr: 0.59
Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
47)	C3-Naphthobenzothiophene	36.32	276	9131m	50.99		
48)	Fluoranthene	28.09	202	1283m	7.46		
49)	Pyrene	28.83	202	2872m	16.97		
50)	C1-Fluoranthenes/Pyrenes	31.09	216	11054m	64.28	ng/mL	
51)	C2-Fluoranthenes/Pyrenes	31.52	230	17426m	101.34	ng/mL	
52)	C3-Fluoranthenes/Pyrenes	33.21	244	14360m	83.51	ng/mL	
54)	Benz(a)anthracene	32.96	228	467m	2.95		
55)	Chrysene	33.07	228	2923m	18.63		
56)	C1-Chrysenes	34.45	242	11061m	70.51	ng/mL	
57)	C2-Chrysenes	36.60	256	18974m	120.95	ng/mL	
58)	C3-Chrysenes	37.10	270	13770m	87.78	ng/mL	
59)	C4-Chrysenes	0.00	284	0	N.D.	d	
61)	C29-Hopane	39.79	191	14157m	200.20	ng/ml	
62)	18a-Oleanane	40.83	191	4229m	59.81	ng/ml	
63)	C30-Hopane	41.04	191	19322m	273.25	ng/ml	
64)	Benzo(b)fluoranthene	36.39	252	363m	1.86		
65)	Benzo(k)fluoranthene	36.53	252	210m	1.08		
66)	Benzo(e)pyrene	37.28	252	539m	3.10		
67)	Benzo(a)pyrene	37.38	252	513m	3.27		
68)	Indeno(1,2,3-c,d)pyrene	41.76	276	226m	1.73		
69)	Dibenzo(a,h)anthracene	41.87	278	44m	0.34		
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d	
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d	
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d	
73)	Benzo(g,h,i)perylene	43.01	276	236m	1.68		
75)	Perylene	37.74	252	5316m	32.34		

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

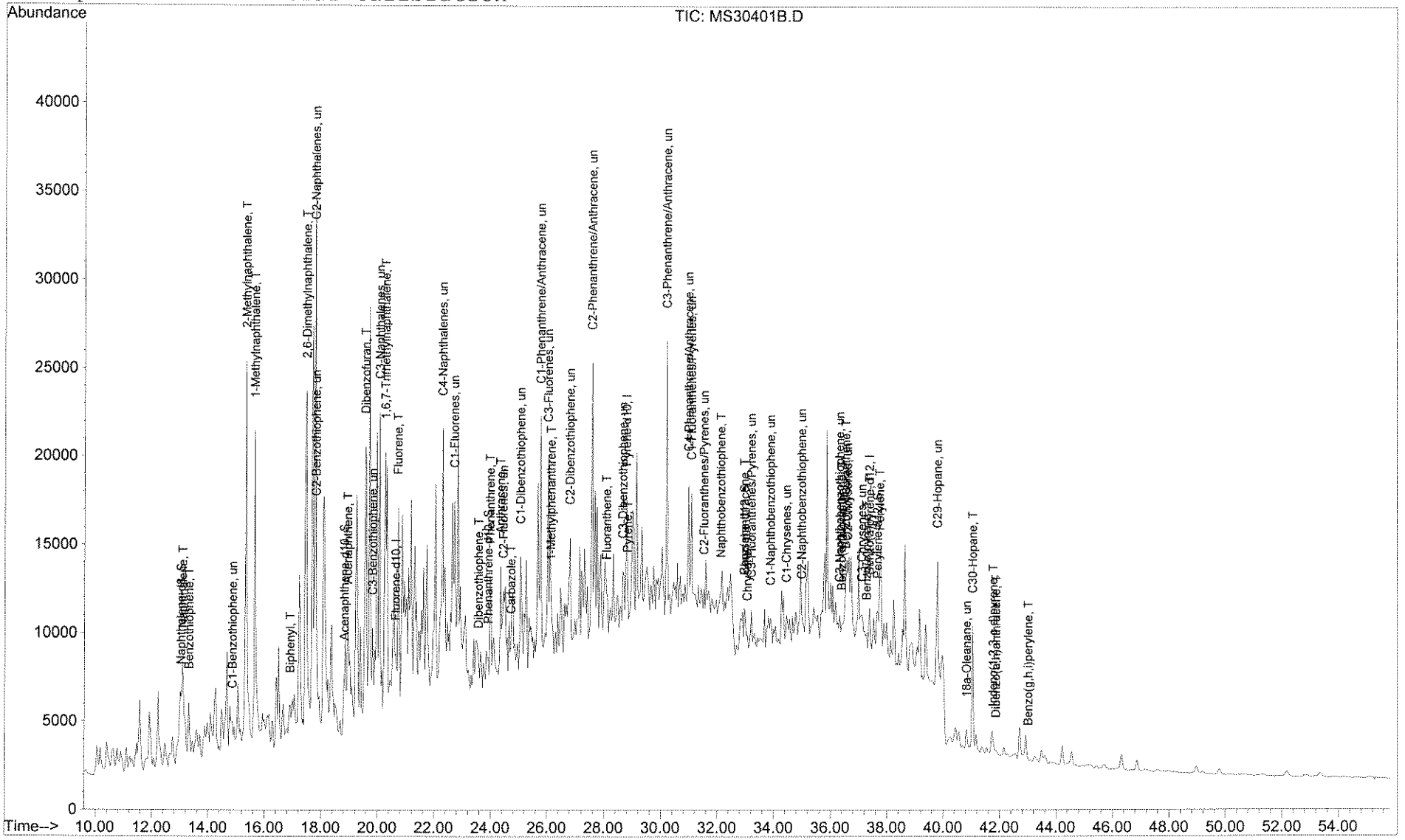
Quantitation Report

Data File : X:\1\DATA\MS30401\MS30401B.D
Acq On : 21 Jul 2007 2:34 pm
Sample : SRM 1582
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 12 15:23 2007

Vial: 2
Operator: TJM
Inst : GC/MS Ins
Multiplr: 0.59

Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



Tissue, Sediment, and Water Sample Report (Use d-10 Phenanthrene only for Surrogate Corrections)

Data File Name	**MS30401C.D**	**Su Amt = 50**	MS30401C.D
Data File Path	**X:\1\DATA\MS30401**		IS/SU Mixture
Operator	**TJM**		
Date Acquired	**07/21/20 -1:3:**		
Method File	**PAH-2002**		
Sample Name	**IS/SU Mixture**		
Misc Info			
Instrument Name	**GC/MS ins**		07/21/20 -1:3:
Vial Number	**3**		PAH-2002
Sample Multiplier	**1**		1.00
Sample Amount	**0**		

Peak #	Compound	Ret Time (min)	Target Response (Area)	Conc. (ng/g or ng/L)	Su. Corrected Conc. (ng/g or ng/L)
3)	Decalin	0.00	0	0.00	0.00
4)	C1-Decalin	0.00	0	0.00	0.00
5)	C2-Decalin	0.00	0	0.00	0.00
6)	C3-Decalin	0.00	0	0.00	0.00
7)	C4-Decalin	0.00	0	0.00	0.00
8)	Naphthalene	0.00	0	0.00	0.00
9+10)	C1-Naphthalenes	0.00	0	#DIV/0!	#DIV/0!
13)	C2-Naphthalenes	0.00	0	0.00	0.00
14)	C3-Naphthalenes	0.00	0	0.00	0.00
15)	C4-Naphthalenes	0.00	0	0.00	0.00
16)	Benzothiophene	0.00	0	0.00	0.00
17)	C1-Benzothiophene	0.00	0	0.00	0.00
18)	C2-Benzothiophene	18.12	0	0.00	0.00
19)	C3-Benzothiophene	0.00	0	0.00	0.00
21)	Biphenyl	0.00	0	0.00	0.00
22)	Acenaphthylene	0.00	0	0.00	0.00
23)	Acenaphthene	0.00	0	0.00	0.00
24)	Dibenzofuran	0.00	0	0.00	0.00
25)	Fluorene	0.00	0	0.00	0.00
26)	C1-Fluorenes	0.00	0	0.00	0.00
27)	C2-Fluorenes	0.00	0	0.00	0.00
28)	C3-Fluorenes	0.00	0	0.00	0.00
31)	Pentachlorophenol	0.00	0	0.00	0.00
32)	Carbazole	0.00	0	0.00	0.00
38)	Anthracene	0.00	0	0.00	0.00
37)	Phenanthrene	0.00	0	0.00	0.00
40)	C1-Phenanthrene/Anthracene	0.00	0	0.00	0.00
41)	C2-Phenanthrene/Anthracene	0.00	0	0.00	0.00
42)	C3-Phenanthrene/Anthracene	0.00	0	0.00	0.00
43)	C4-Phenanthrene/Anthracene	0.00	0	0.00	0.00
33)	Dibenzothiophene	0.00	0	0.00	0.00
34)	C1-Dibenzothiophene	0.00	0	0.00	0.00
35)	C2-Dibenzothiophene	0.00	0	0.00	0.00
36)	C3-Dibenzothiophene	0.00	0	0.00	0.00
48)	Fluoranthene	0.00	0	0.00	0.00
49)	Pyrene	0.00	0	0.00	0.00
50)	C1-Fluoranthenes/Pyrenes	0.00	0	0.00	0.00
51)	C2-Fluoranthenes/Pyrenes	0.00	0	0.00	0.00
52)	C3-Fluoranthenes/Pyrenes	0.00	0	0.00	0.00
44)	Naphthobenzothiophene	0.00	0	0.00	0.00
45)	C1-Naphthobenzothiophene	0.00	0	0.00	0.00
46)	C2-Naphthobenzothiophene	0.00	0	0.00	0.00
47)	C3-Naphthobenzothiophene	0.00	0	0.00	0.00
54)	Benz(a)anthracene	0.00	0	0.00	0.00
55)	Chrysene	0.00	0	0.00	0.00
56)	C1-Chrysenes	0.00	0	0.00	0.00
57)	C2-Chrysenes	0.00	0	0.00	0.00
58)	C3-Chrysenes	0.00	0	0.00	0.00
59)	C4-Chrysenes	0.00	0	0.00	0.00
64)	Benzo(b)fluoranthene	0.00	0	0.00	0.00
65)	Benzo(k)fluoranthene	0.00	0	0.00	0.00
66)	Benzo(e)pyrene	0.00	0	0.00	0.00
67)	Benzo(a)pyrene	0.00	0	0.00	0.00
75)	Perylene	0.00	0	0.00	0.00
68)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.00	0.00
69)	Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
70)	C1-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
71)	C2-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
72)	C3-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
73)	Benzo(g,h,i)perylene	0.00	0	0.00	0.00
	Total PAH				#DIV/0!
	Individual Isomers				
9)	2-Methylnaphthalene	0.00	0	0.00	0.00
10)	1-Methylnaphthalene	0.00	0	0.00	0.00
11)	2,6-Dimethylnaphthalene	0.00	0	0.00	0.00
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.00	0.00
39)	1-Methylphenanthrene	0.00	0	0.00	0.00
61)	C29-Hopane	0.00	0	0.00	0.00
62)	18a-Oleanane	0.00	0	0.00	0.00
63)	C30-Hopane	0.00	0	0.00	0.00
	Surrogates *(AR-STSU-040-005)*				**Su Recovery (%)**
2)	Naphthalene-d8	13.04	2977	46.21	92
20)	Acenaphthene-d10	18.83	1635	46.06	92
30)	Phenanthrene-d10	23.95	3163	45.08	90
53)	Chrysene-d12	33.00	3592	44.54	89
74)	Perylene-d12	37.66	2213	46.16	92
	Internal Stds *(AR-WKIS-0500-007)*				
1)	Fluorene-d10	20.66	1856	51.08	
29)	Pyrene-d10	28.80	3509	49.98	
60)	Benzo(a)pyrene-d12	37.38	2516	45.61	

Quantitation Report (QT Reviewed)

Data File : X:\1\DATA\MS30401\MS30401C.D Vial: 3
Acq On : 21 Jul 2007 3:37 pm Operator: TJM
Sample : IS/SU Mixture Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 10 8:07 2007 Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorene-d10	20.66	176	1856m	51.08	ng/ml	0.03
29) Pyrene-d10	28.80	212	3509m	49.98		0.00
60) Benzo(a)pyrene-d12	37.38	264	2516m	45.61		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.04	136	2977m	46.21		0.00
20) Acenaphthene-d10	18.83	164	1635m	46.06		0.00
30) Phenanthrene-d10	23.95	188	3163m	45.08		0.03
53) Chrysene-d12	33.00	240	3592m	44.54		0.03
74) Perylene-d12	37.66	264	2213	46.16		0.04
Target Compounds						Qvalue
3) Decalin	0.00	138	0	N.D.	d	
4) C1-Decalin	0.00	152	0	N.D.	d	
5) C2-Decalin	0.00	166	0	N.D.	d	
6) C3-Decalin	0.00	180	0	N.D.	d	
7) C4-Decalin	0.00	194	0	N.D.	d	
8) Naphthalene	0.00	128	0	N.D.	d	
9) 2-Methylnaphthalene	0.00	142	0	N.D.	d	
10) 1-Methylnaphthalene	0.00	142	0	N.D.	d	
11) 2,6-Dimethylnaphthalene	0.00	156	0	N.D.	d	
12) 1,6,7-Trimethylnaphthalene	0.00	170	0	N.D.	d	
13) C2-Naphthalenes	0.00	156	0	N.D.	d	
14) C3-Naphthalenes	0.00	170	0	N.D.	d	
15) C4-Naphthalenes	0.00	184	0	N.D.	d	
16) Benzothiophene	0.00	134	0	N.D.	d	
17) C1-Benzothiophene	0.00	148	0	N.D.	d	
18) C2-Benzothiophene	18.12	162	0	N.D.		
19) C3-Benzothiophene	0.00	176	0	N.D.	d	
21) Biphenyl	0.00	154	0	N.D.	d	
22) Acenaphthylene	0.00	152	0	N.D.	d	
23) Acenaphthene	0.00	154	0	N.D.	d	
24) Dibenzofuran	0.00	168	0	N.D.	d	
25) Fluorene	0.00	166	0	N.D.	d	
26) C1-Fluorenes	0.00	180	0	N.D.	d	
27) C2-Fluorenes	0.00	194	0	N.D.	d	
28) C3-Fluorenes	0.00	208	0	N.D.	d	
31) Pentachlorophenol	0.00	266	0	N.D.	d	
32) Carbazole	0.00	167	0	N.D.	d	
33) Dibenzothiophene	0.00	184	0	N.D.	d	
34) C1-Dibenzothiophene	0.00	198	0	N.D.	d	
35) C2-Dibenzothiophene	0.00	212	0	N.D.	d	
36) C3-Dibenzothiophene	0.00	226	0	N.D.	d	
37) Phenanthrene	0.00	178	0	N.D.	d	
38) Anthracene	0.00	178	0	N.D.	d	
39) 1-Methylphenanthrene	0.00	192	0	N.D.	d	
40) C1-Phenanthrene/Anthracene	0.00	192	0	N.D.	d	
41) C2-Phenanthrene/Anthracene	0.00	206	0	N.D.	d	
42) C3-Phenanthrene/Anthracene	0.00	220	0	N.D.	d	
43) C4-Phenanthrene/Anthracene	0.00	234	0	N.D.	d	
44) Naphthobenzothiophene	0.00	234	0	N.D.	d	
45) C1-Naphthobenzothiophene	0.00	248	0	N.D.	d	
46) C2-Naphthobenzothiophene	0.00	262	0	N.D.	d	

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

000087

Data File : X:\1\DATA\MS30401\MS30401C.D
Acq On : 21 Jul 2007 3:37 pm
Sample : IS/SU Mixture
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 10 8:07 2007

Vial: 3
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

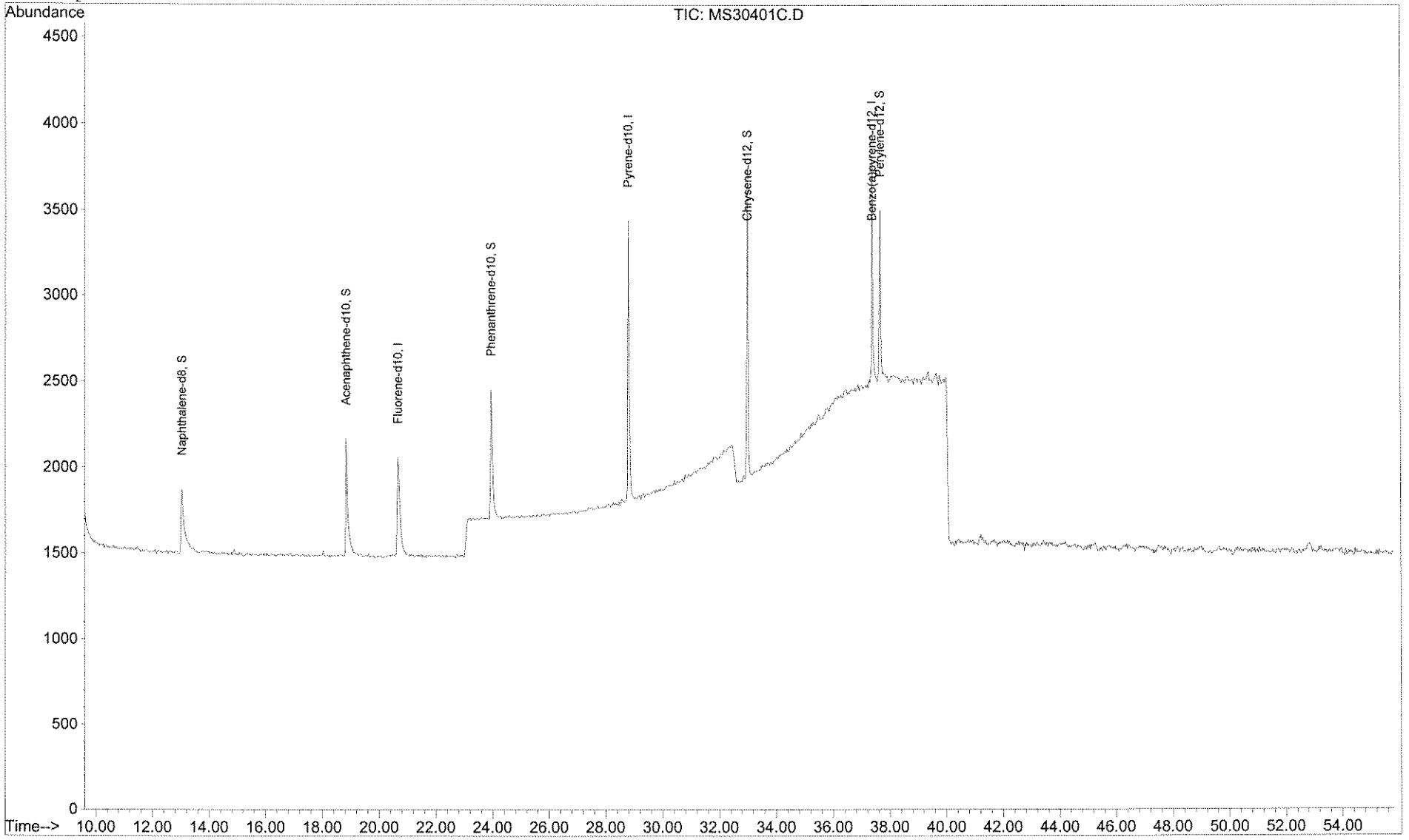
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
47)	C3-Naphthobenzothiophene	0.00	276	0	N.D. d	
48)	Fluoranthene	0.00	202	0	N.D. d	
49)	Pyrene	0.00	202	0	N.D. d	
50)	C1-Fluoranthenes/Pyrenes	0.00	216	0	N.D. d	
51)	C2-Fluoranthenes/Pyrenes	0.00	230	0	N.D. d	
52)	C3-Fluoranthenes/Pyrenes	0.00	244	0	N.D. d	
54)	Benz(a)anthracene	0.00	228	0	N.D. d	
55)	Chrysene	0.00	228	0	N.D. d	
56)	C1-Chrysenes	0.00	242	0	N.D. d	
57)	C2-Chrysenes	0.00	256	0	N.D. d	
58)	C3-Chrysenes	0.00	270	0	N.D. d	
59)	C4-Chrysenes	0.00	284	0	N.D. d	
61)	C29-Hopane	0.00	191	0	N.D. d	
62)	18a-Oleanane	0.00	191	0	N.D. d	
63)	C30-Hopane	0.00	191	0	N.D. d	
64)	Benzo(b)fluoranthene	0.00	252	0	N.D. d	
65)	Benzo(k)fluoranthene	0.00	252	0	N.D. d	
66)	Benzo(e)pyrene	0.00	252	0	N.D. d	
67)	Benzo(a)pyrene	0.00	252	0	N.D. d	
68)	Indeno(1,2,3-c,d)pyrene	0.00	276	0	N.D. d	
69)	Dibenzo(a,h)anthracene	0.00	278	0	N.D. d	
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D. d	
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D. d	
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D. d	
73)	Benzo(g,h,i)perylene	0.00	276	0	N.D. d	
75)	Perylene	0.00	252	0	N.D. d	

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

Data File : X:\1\DATA\MS30401\MS30401C.D
Acq On : 21 Jul 2007 3:37 pm
Sample : IS/SU Mixture
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 10 8:07 2007

Vial: 3
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



680000

Tissue, Sediment, and Water Sample Report (Use d-10 Phenanthrene only for Surrogate Corrections)

Data File Name **ENV1667A.D** Su Amt = **50** ENV1667A.D
Data File Path **D:\GC-MSD~1\MS30401** Procedural Blank
Operator **TJM**
Date Acquired **07/21/20 -1:0:** 07/21/20 -1:0:
Method File **PAH-2002** PAH-2002
Sample Name **Procedural Blank**
Misc Info
Instrument Name **GC/MS Ins**
Vial Number **5**
Sample Multiplier **0.6667** 1.50
Sample Amount **0**

Peak #	Compound	Ret Time (min)	Target Response (Area)	Conc. (ng/g or ng/L)	Su. Corrected Conc. (ng/g or ng/L)
3)	Decalin	0.00	0	0.00	0.00
4)	C1-Decalin	0.00	0	0.00	0.00
5)	C2-Decalin	0.00	0	0.00	0.00
6)	C3-Decalin	0.00	0	0.00	0.00
7)	C4-Decalin	0.00	0	0.00	0.00
8)	Naphthalene	0.00	0	0.00	0.00
9+10)	C1-Naphthalenes	0.00	0	#DIV/0!	#DIV/0!
13)	C2-Naphthalenes	0.00	0	0.00	0.00
14)	C3-Naphthalenes	0.00	0	0.00	0.00
15)	C4-Naphthalenes	0.00	0	0.00	0.00
16)	Benzothiophene	0.00	0	0.00	0.00
17)	C1-Benzothiophene	0.00	0	0.00	0.00
18)	C2-Benzothiophene	0.00	0	0.00	0.00
19)	C3-Benzothiophene	0.00	0	0.00	0.00
21)	Biphenyl	0.00	0	0.00	0.00
22)	Acenaphthylene	0.00	0	0.00	0.00
23)	Acenaphthene	0.00	0	0.00	0.00
24)	Dibenzofuran	0.00	0	0.00	0.00
25)	Fluorene	0.00	0	0.00	0.00
26)	C1-Fluorenes	0.00	0	0.00	0.00
27)	C2-Fluorenes	0.00	0	0.00	0.00
28)	C3-Fluorenes	0.00	0	0.00	0.00
31)	Pentachlorophenol	0.00	0	0.00	0.00
32)	Carbazole	0.00	0	0.00	0.00
38)	Anthracene	0.00	0	0.00	0.00
37)	Phenanthrene	0.00	0	0.00	0.00
40)	C1-Phenanthrene/Anthracene	0.00	0	0.00	0.00
41)	C2-Phenanthrene/Anthracene	0.00	0	0.00	0.00
42)	C3-Phenanthrene/Anthracene	0.00	0	0.00	0.00
43)	C4-Phenanthrene/Anthracene	0.00	0	0.00	0.00
33)	Dibenzothiophene	0.00	0	0.00	0.00
34)	C1-Dibenzothiophene	0.00	0	0.00	0.00
35)	C2-Dibenzothiophene	0.00	0	0.00	0.00
36)	C3-Dibenzothiophene	0.00	0	0.00	0.00
48)	Fluoranthene	0.00	0	0.00	0.00
49)	Pyrene	0.00	0	0.00	0.00
50)	C1-Fluoranthenes/Pyrenes	0.00	0	0.00	0.00
51)	C2-Fluoranthenes/Pyrenes	0.00	0	0.00	0.00
52)	C3-Fluoranthenes/Pyrenes	0.00	0	0.00	0.00
44)	Naphthobenzothiophene	0.00	0	0.00	0.00
45)	C1-Naphthobenzothiophene	0.00	0	0.00	0.00
46)	C2-Naphthobenzothiophene	0.00	0	0.00	0.00
47)	C3-Naphthobenzothiophene	0.00	0	0.00	0.00
54)	Benz(a)anthracene	0.00	0	0.00	0.00
55)	Chrysene	0.00	0	0.00	0.00
56)	C1-Chrysenes	0.00	0	0.00	0.00
57)	C2-Chrysenes	0.00	0	0.00	0.00
58)	C3-Chrysenes	0.00	0	0.00	0.00
59)	C4-Chrysenes	0.00	0	0.00	0.00
64)	Benzo(b)fluoranthene	0.00	0	0.00	0.00
65)	Benzo(k)fluoranthene	0.00	0	0.00	0.00
66)	Benzo(e)pyrene	0.00	0	0.00	0.00
67)	Benzo(a)pyrene	0.00	0	0.00	0.00
75)	Perylene	0.00	0	0.00	0.00
68)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.00	0.00
69)	Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
70)	C1-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
71)	C2-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
72)	C3-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
73)	Benzo(g,h,i)perylene	0.00	0	0.00	0.00
	Total PAH				#DIV/0!
	Individual Isomers				
9)	2-Methylnaphthalene	0.00	0	0.00	0.00
10)	1-Methylnaphthalene	0.00	0	0.00	0.00
11)	2,6-Dimethylnaphthalene	0.00	0	0.00	0.00
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.00	0.00
39)	1-Methylphenanthrene	0.00	0	0.00	0.00
61)	C29-Hopane	0.00	0	0.00	0.00
62)	18a-Oleanane	0.00	0	0.00	0.00
63)	C30-Hopane	0.00	0	0.00	0.00
	Surrogates				Su Recovery (%)
	(AR-STSU-040-005)				
2)	Naphthalene-d8	13.04	21887	28.17	85
20)	Acenaphthene-d10	18.83	12397	28.96	87
30)	Phenanthrene-d10	23.94	24888	26.19	79
53)	Chrysene-d12	32.96	30572	27.99	84
74)	Perylene-d12	37.66	18937	31.66	95
	Internal Stds				
	(AR-WKIS-0500-007)				
1)	Fluorene-d10	20.63	14922	51.08	
29)	Pyrene-d10	28.79	31687	49.98	
60)	Benzo(a)pyrene-d12	37.38	20930	45.61	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\ENV1677A.D Vial: 5
Acq On : 21 Jul 2007 10:58 pm Operator: TJM
Sample : Procedural Blank Inst : GC/MS Ins
Misc : Multiplr: 0.67
MS Integration Params: rteint.p
Quant Time: Aug 19 7:55 2007 Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorene-d10	20.63	176	14922m	51.08 ng/ml	0.00
29) Pyrene-d10	28.79	212	31687m	49.98	0.00
60) Benzo(a)pyrene-d12	37.38	264	20930m	45.61	0.00
System Monitoring Compounds					
2) Naphthalene-d8	13.04	136	21887m	28.17	0.00
20) Acenaphthene-d10	18.83	164	12397m	28.96	0.00
30) Phenanthrene-d10	23.94	188	24888m	26.19	0.03
53) Chrysene-d12	32.96	240	30572m	27.99	0.00
74) Perylene-d12	37.66	264	18937m	31.66	0.03
Target Compounds					Qvalue
3) Decalin	0.00	138	0	N.D. d	
4) C1-Decalin	0.00	152	0	N.D. d	
5) C2-Decalin	0.00	166	0	N.D. d	
6) C3-Decalin	0.00	180	0	N.D. d	
7) C4-Decalin	0.00	194	0	N.D. d	
8) Naphthalene	0.00	128	0	N.D. d	
9) 2-Methylnaphthalene	0.00	142	0	N.D. d	
10) 1-Methylnaphthalene	0.00	142	0	N.D. d	
11) 2,6-Dimethylnaphthalene	0.00	156	0	N.D. d	
12) 1,6,7-Trimethylnaphthalene	0.00	170	0	N.D.	
13) C2-Naphthalenes	0.00	156	0	N.D. d	
14) C3-Naphthalenes	0.00	170	0	N.D. d	
15) C4-Naphthalenes	0.00	184	0	N.D. d	
16) Benzothiophene	0.00	134	0	N.D. d	
17) C1-Benzothiophene	0.00	148	0	N.D. d	
18) C2-Benzothiophene	0.00	162	0	N.D. d	
19) C3-Benzothiophene	0.00	176	0	N.D. d	
21) Biphenyl	0.00	154	0	N.D. d	
22) Acenaphthylene	0.00	152	0	N.D. d	
23) Acenaphthene	0.00	154	0	N.D. d	
24) Dibenzofuran	0.00	168	0	N.D. d	
25) Fluorene	0.00	166	0	N.D. d	
26) C1-Fluorenes	0.00	180	0	N.D. d	
27) C2-Fluorenes	0.00	194	0	N.D. d	
28) C3-Fluorenes	0.00	208	0	N.D. d	
31) Pentachlorophenol	0.00	266	0	N.D. d	
32) Carbazole	0.00	167	0	N.D. d	
33) Dibenzothiophene	0.00	184	0	N.D.	
34) C1-Dibenzothiophene	0.00	198	0	N.D. d	
35) C2-Dibenzothiophene	0.00	212	0	N.D. d	
36) C3-Dibenzothiophene	0.00	226	0	N.D. d	
37) Phenanthrene	0.00	178	0	N.D. d	
38) Anthracene	0.00	178	0	N.D. d	
39) 1-Methylphenanthrene	0.00	192	0	N.D. d	
40) C1-Phenanthrene/Anthracene	0.00	192	0	N.D. d	
41) C2-Phenanthrene/Anthracene	0.00	206	0	N.D. d	
42) C3-Phenanthrene/Anthracene	0.00	220	0	N.D. d	
43) C4-Phenanthrene/Anthracene	0.00	234	0	N.D. d	
44) Naphthobenzothiophene	0.00	234	0	N.D. d	
45) C1-Naphthobenzothiophene	0.00	248	0	N.D. d	
46) C2-Naphthobenzothiophene	0.00	262	0	N.D. d	

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

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\ENV1677A.D Vial: 5
Acq On : 21 Jul 2007 10:58 pm Operator: TJM
Sample : Procedural Blank Inst : GC/MS Ins
Misc : Multiplr: 0.67
MS Integration Params: rteint.p
Quant Time: Aug 19 7:55 2007 Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
47)	C3-Naphthobenzothiophene	0.00	276	0	N.D. d	
48)	Fluoranthene	0.00	202	0	N.D. d	
49)	Pyrene	0.00	202	0	N.D. d	
50)	C1-Fluoranthenes/Pyrenes	0.00	216	0	N.D. d	
51)	C2-Fluoranthenes/Pyrenes	0.00	230	0	N.D. d	
52)	C3-Fluoranthenes/Pyrenes	0.00	244	0	N.D. d	
54)	Benz(a)anthracene	0.00	228	0	N.D. d	
55)	Chrysene	0.00	228	0	N.D. d	
56)	C1-Chrysenes	0.00	242	0	N.D. d	
57)	C2-Chrysenes	0.00	256	0	N.D. d	
58)	C3-Chrysenes	0.00	270	0	N.D. d	
59)	C4-Chrysenes	0.00	284	0	N.D. d	
61)	C29-Hopane	0.00	191	0	N.D. d	
62)	18a-Oleanane	0.00	191	0	N.D. d	
63)	C30-Hopane	0.00	191	0	N.D. d	
64)	Benzo(b)fluoranthene	0.00	252	0	N.D. d	
65)	Benzo(k)fluoranthene	0.00	252	0	N.D. d	
66)	Benzo(e)pyrene	0.00	252	0	N.D. d	
67)	Benzo(a)pyrene	0.00	252	0	N.D. d	
68)	Indeno(1,2,3-c,d)pyrene	0.00	276	0	N.D. d	
69)	Dibenzo(a,h)anthracene	0.00	278	0	N.D. d	
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D. d	
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D. d	
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D. d	
73)	Benzo(g,h,i)perylene	0.00	276	0	N.D. d	
75)	Perylene	0.00	252	0	N.D. d	

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

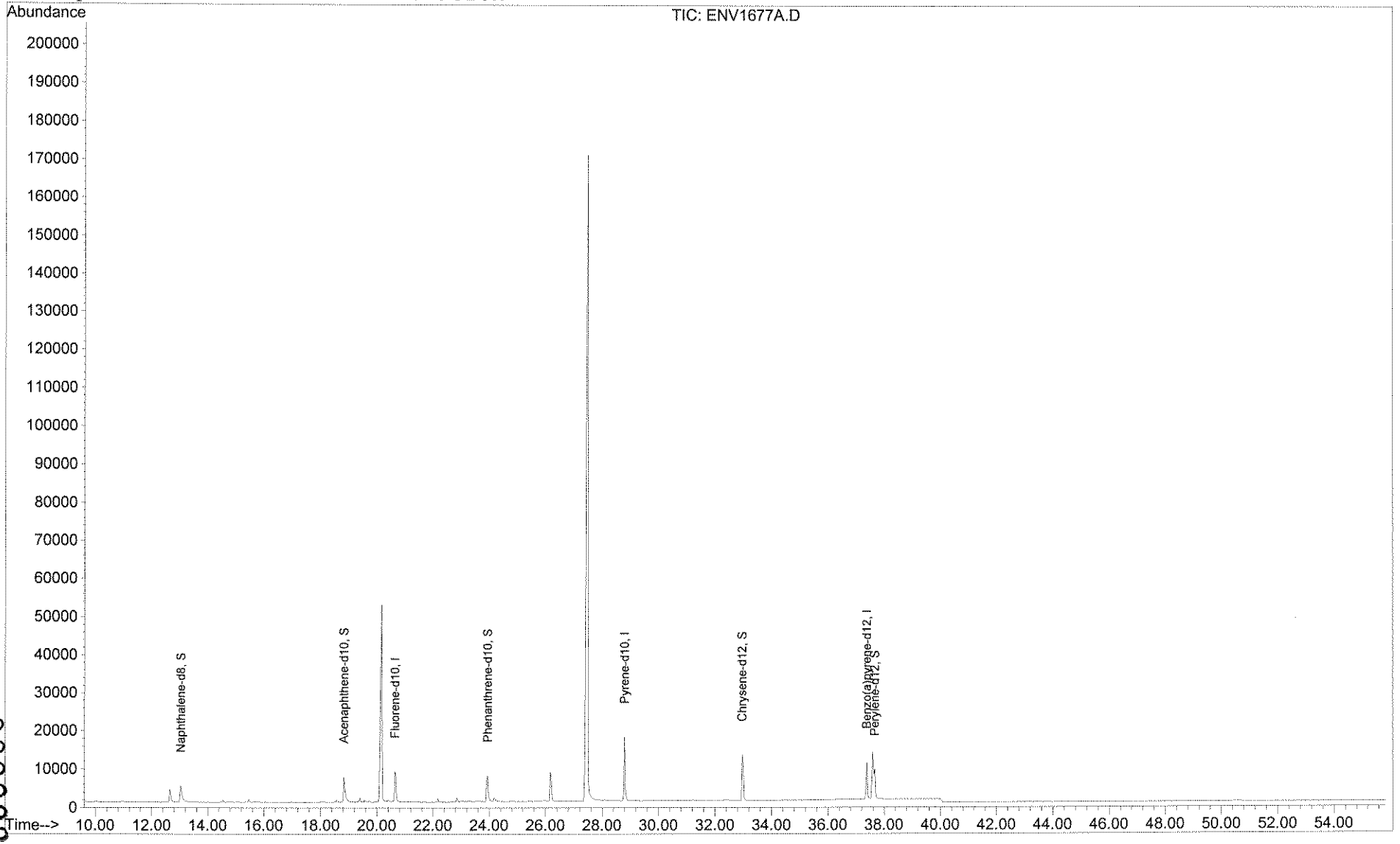
Quantitation Report

Data File : D:\GC-MSD~1\MS30401\ENV1677A.D
Acq On : 21 Jul 2007 10:58 pm
Sample : Procedural Blank
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 19 7:55 2007

Vial: 5
Operator: TJM
Inst : GC/MS Ins
Multiplr: 0.67

Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



000093

Tissue, Sediment, and Water Sample Report (Use d-10 Phenanthrene only for Surrogate Corrections)

Data File Name **ETX7285.D** **Su Amt = 50** ETX7285.D
Data File Path **D:\GC-MSD~1\MS30401** WIF-02-071007-A
Operator **TJM**
Date Acquired **07/22/20 -1:4:**
Method File **PAH-2002**
Sample Name **WIF-02-071007-A**
Misc Info
Instrument Name **GC/MS ins** 07/22/20 -1:4:
Vial Number **10** PAH-2002
Sample Multiplier **19.7628** 0.05
Sample Amount **0**

Peak #	Compound	Ret Time (min)	Target Response (Area)	Conc. (ng/g or ng/L)	Su. Corrected Conc. (ng/g or ng/L)
3)	Decalin	0.00	0	0.00	0.00
4)	C1-Decalin	0.00	0	0.00	0.00
5)	C2-Decalin	0.00	0	0.00	0.00
6)	C3-Decalin	0.00	0	0.00	0.00
7)	C4-Decalin	0.00	0	0.00	0.00
8)	Naphthalene	13.01	30	1.25	1.29
9+10)	C1-Naphthalenes	15.51	114	4.76	4.89
13)	C2-Naphthalenes	18.10	100686	4206.41	4321.55
14)	C3-Naphthalenes	20.07	501365	20945.79	21519.12
15)	C4-Naphthalenes	22.04	441639	18450.59	18955.62
16)	Benzothiophene	13.04	2047	109.78	112.78
17)	C1-Benzothiophene	15.62	594	31.85	32.73
18)	C2-Benzothiophene	17.45	4649	249.32	256.14
19)	C3-Benzothiophene	19.25	26502	1421.24	1460.15
21)	Biphenyl	0.00	0	0.00	0.00
22)	Acenaphthylene	0.00	0	0.00	0.00
23)	Acenaphthene	18.94	6181	398.09	408.98
24)	Dibenzofuran	19.56	4771	197.47	202.87
25)	Fluorene	20.71	19473	1036.60	1064.97
26)	C1-Fluorenes	22.71	105370	5609.13	5762.66
27)	C2-Fluorenes	24.35	238904	12717.50	13065.60
28)	C3-Fluorenes	26.03	278728	14837.44	15243.57
31)	Pentachlorophenol	0.00	0	0.00	0.00
32)	Carbazole	24.75	2123	83.94	86.24
38)	Anthracene	24.18	30155	1105.27	1135.53
37)	Phenanthrene	23.98	22702	822.23	844.73
40)	C1-Phenanthrene/Anthracene	25.66	665814	24114.61	24774.68
41)	C2-Phenanthrene/Anthracene	27.58	1626749	58917.99	60530.70
42)	C3-Phenanthrene/Anthracene	29.13	1617639	58588.04	60191.72
43)	C4-Phenanthrene/Anthracene	30.99	663959	24047.43	24705.66
33)	Dibenzothiophene	23.54	38072	1453.18	1492.95
34)	C1-Dibenzothiophene	25.06	105471	4025.74	4135.93
35)	C2-Dibenzothiophene	26.81	244784	9343.19	9598.94
36)	C3-Dibenzothiophene	28.02	234630	8955.62	9200.76
48)	Fluoranthene	28.09	37016	1132.11	1163.10
49)	Pyrene	28.83	188228	5849.70	6009.82
50)	C1-Fluoranthenes/Pyrenes	30.78	872827	26694.78	27425.47
51)	C2-Fluoranthenes/Pyrenes	32.10	1123879	34373.02	35313.89
52)	C3-Fluoranthenes/Pyrenes	33.32	930673	28463.96	29243.08
44)	Naphthobenzothiophene	32.13	90476	2657.38	2730.12
45)	C1-Naphthobenzothiophene	33.56	210815	6191.87	6361.36
46)	C2-Naphthobenzothiophene	34.59	235523	6917.57	7106.92
47)	C3-Naphthobenzothiophene	36.32	121342	3563.95	3661.50
54)	Benz(a)anthracene	32.93	131547	4366.72	4486.25
55)	Chrysene	33.07	202948	6803.69	6989.92
56)	C1-Chrysenes	34.34	886575	29721.80	30535.35
57)	C2-Chrysenes	35.76	932389	31257.01	32112.58
58)	C3-Chrysenes	37.10	400730	13434.19	13801.91
59)	C4-Chrysenes	40.23	13026	436.69	448.64
64)	Benzo(b)fluoranthene	36.39	42431	1119.57	1150.21
65)	Benzo(k)fluoranthene	36.43	6640	175.37	180.17
66)	Benzo(e)pyrene	37.28	40914	1212.45	1245.64
67)	Benzo(a)pyrene	37.45	67559	2213.07	2273.64
75)	Perylene	37.74	24485	766.35	787.32
68)	Indeno(1,2,3-c,d)pyrene	41.79	5281	207.90	213.59
69)	Dibenzo(a,h)anthracene	41.87	7322	293.38	301.41
70)	C1-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
71)	C2-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
72)	C3-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
73)	Benzo(g,h,i)perylene	43.01	11955	438.48	450.48
	Total PAH				493103
	Individual Isomers				
9)	2-Methylnaphthalene	15.37	35	2.07	2.13
10)	1-Methylnaphthalene	15.65	79	4.85	4.99
11)	2,6-Dimethylnaphthalene	17.45	35523	2432.29	2498.86
12)	1,6,7-Trimethylnaphthalene	20.26	19704	1449.08	1488.75
39)	1-Methylphenanthrene	26.10	95409	4461.59	4583.71
61)	C29-Hopane	39.79	6192	450.56	462.90
62)	18a-Oleanane	40.83	1434	104.35	107.20
63)	C30-Hopane	41.04	9197	669.22	687.54
	Surrogates				Su Recovery (%)
	(AR-STSU-040-005)				
2)	Naphthalene-d8	13.04	21566	914.87	93
20)	Acenaphthene-d10	18.83	12644	973.51	99
30)	Phenanthrene-d10	23.91	24238	961.81	97
53)	Chrysene-d12	32.96	21803	752.81	76
74)	Perylene-d12	37.66	15345	826.21	84
	Internal Stds				
	(AR-WKIS-0500-007)				
1)	Fluorene-d10	20.63	13421	51.08	
29)	Pyrene-d10	28.80	24905	49.98	
60)	Benzo(a)pyrene-d12	37.38	19263	45.61	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\ETX7285.D Vial: 10
Acq On : 22 Jul 2007 4:13 am Operator: TJM
Sample : WIF-02-071007-A Inst : GC/MS Ins
Misc : Multiplr: 19.76
MS Integration Params: rteint.p
Quant Time: Aug 18 17:44 2007 Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorene-d10	20.63	176	13421m	51.08	ng/ml	0.00
29) Pyrene-d10	28.80	212	24905m	49.98		0.00
60) Benzo(a)pyrene-d12	37.38	264	19263m	45.61		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.04	136	21566m	914.87		0.00
20) Acenaphthene-d10	18.83	164	12644m	973.51		0.00
30) Phenanthrene-d10	23.91	188	24238m	961.81		0.00
53) Chrysene-d12	32.96	240	21803m	752.81		0.00
74) Perylene-d12	37.66	264	15345m	826.21		0.04
Target Compounds						Qvalue
3) Decalin	0.00	138	0	N.D.	d	
4) C1-Decalin	0.00	152	0	N.D.	d	
5) C2-Decalin	0.00	166	0	N.D.	d	
6) C3-Decalin	0.00	180	0	N.D.	d	
7) C4-Decalin	0.00	194	0	N.D.	d	
8) Naphthalene	13.01	128	30m	1.25		
9) 2-Methylnaphthalene	15.37	142	35m	2.07		
10) 1-Methylnaphthalene	15.65	142	79m	4.85		
11) 2,6-Dimethylnaphthalene	17.45	156	35523m	2432.29		
12) 1,6,7-Trimethylnaphthalene	20.26	170	19704m	1449.08		
13) C2-Naphthalenes	18.10	156	100686m	4206.41		
14) C3-Naphthalenes	20.07	170	501365m	20945.79		
15) C4-Naphthalenes	22.04	184	441639m	18450.59		
16) Benzothiophene	13.04	134	2047m	109.78	ng/ml	
17) C1-Benzothiophene	15.62	148	594m	31.85	ng/ml	
18) C2-Benzothiophene	17.45	162	4649m	249.32	ng/ml	
19) C3-Benzothiophene	19.25	176	26502m	1421.24	ng/ml	
21) Biphenyl	0.00	154	0	N.D.		
22) Acenaphthylene	0.00	152	0	N.D.	d	
23) Acenaphthene	18.94	154	6181m	398.09		
24) Dibenzofuran	19.56	168	4771m	197.47	ng/ml	
25) Fluorene	20.71	166	19473m	1036.60		
26) C1-Fluorenes	22.71	180	105370m	5609.13		
27) C2-Fluorenes	24.35	194	238904m	12717.50		
28) C3-Fluorenes	26.03	208	278728m	14837.44		
31) Pentachlorophenol	0.00	266	0	N.D.	d	
32) Carbazole	24.75	167	2123m	83.94	ng/ml	
33) Dibenzothiophene	23.54	184	38072m	1453.18		
34) C1-Dibenzothiophene	25.06	198	105471m	4025.74		
35) C2-Dibenzothiophene	26.81	212	244784m	9343.19		
36) C3-Dibenzothiophene	28.02	226	234630m	8955.62		
37) Phenanthrene	23.98	178	22702m	822.23		
38) Anthracene	24.18	178	30155m	1105.27		
39) 1-Methylphenanthrene	26.10	192	95409m	4461.59		
40) C1-Phenanthrene/Anthracene	25.66	192	665814m	24114.61		
41) C2-Phenanthrene/Anthracene	27.58	206	1626749m	58917.99		
42) C3-Phenanthrene/Anthracene	29.13	220	1617639m	58588.04		
43) C4-Phenanthrene/Anthracene	30.99	234	663959m	24047.43		
44) Naphthobenzothiophene	32.13	234	90476m	2657.38		

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

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\ETX7285.D Vial: 10
Acq On : 22 Jul 2007 4:13 am Operator: TJM
Sample : WIF-02-071007-A Inst : GC/MS Ins
Misc : Multiplr: 19.76
MS Integration Params: rteint.p
Quant Time: Aug 18 17:44 2007 Quant Results File: 072107.RES

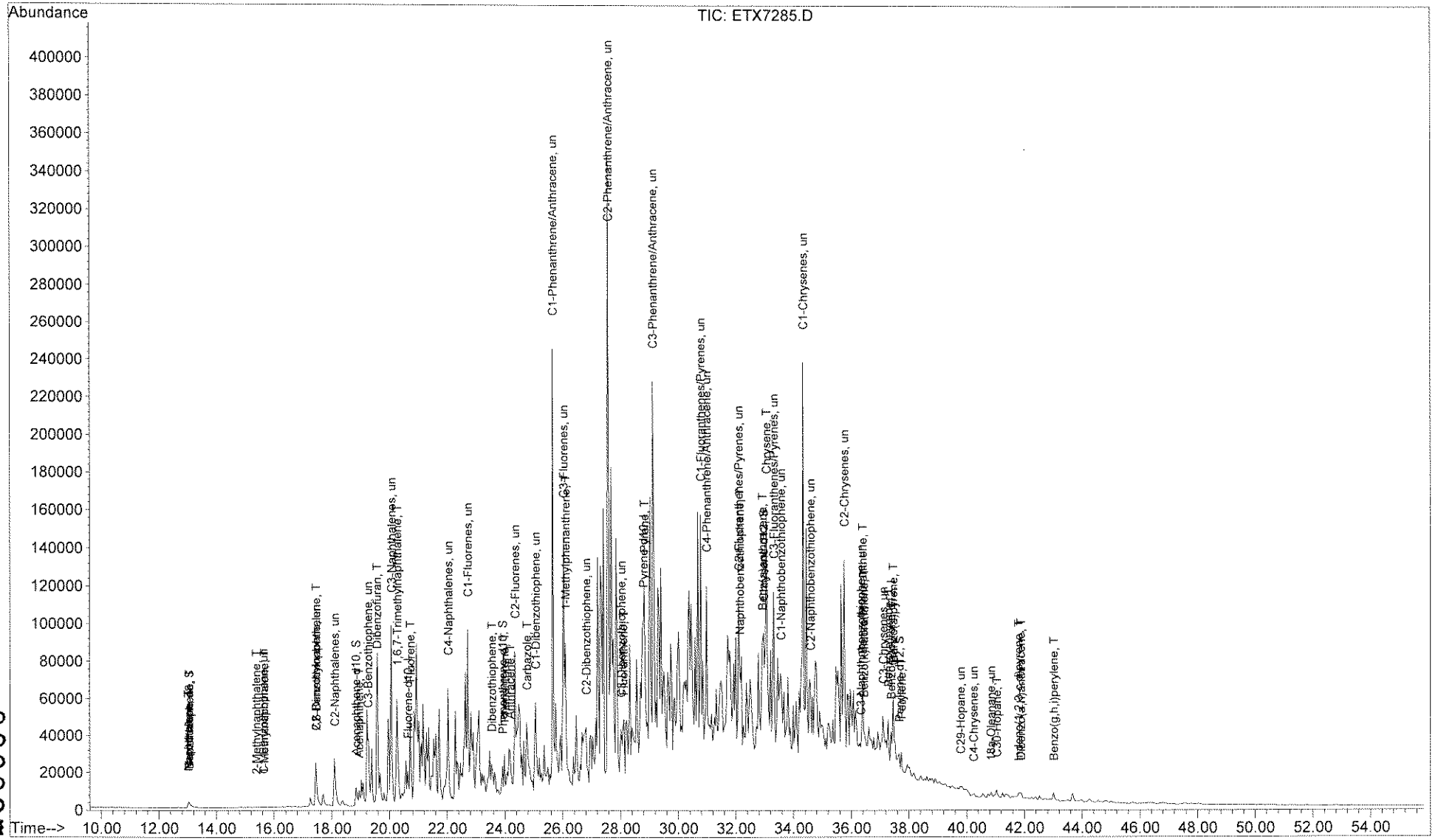
Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	C1-Naphthobenzothiophene	33.56	248	210815m	6191.87		
46)	C2-Naphthobenzothiophene	34.59	262	235523m	6917.57		
47)	C3-Naphthobenzothiophene	36.32	276	121342m	3563.95		
48)	Fluoranthene	28.09	202	37016m	1132.11		
49)	Pyrene	28.83	202	188228m	5849.70		
50)	C1-Fluoranthenes/Pyrenes	30.78	216	872827m	26694.78	ng/mL	
51)	C2-Fluoranthenes/Pyrenes	32.10	230	1123879m	34373.02	ng/mL	
52)	C3-Fluoranthenes/Pyrenes	33.32	244	930673m	28463.96	ng/mL	
54)	Benz(a)anthracene	32.93	228	131547m	4366.72		
55)	Chrysene	33.07	228	202948m	6803.69		
56)	C1-Chrysenes	34.34	242	886575m	29721.80	ng/mL	
57)	C2-Chrysenes	35.76	256	932369m	31257.01	ng/mL	
58)	C3-Chrysenes	37.10	270	400730m	13434.19	ng/mL	
59)	C4-Chrysenes	40.23	284	13026m	436.69	ng/mL	
61)	C29-Hopane	39.79	191	6192m	450.56	ng/ml	
62)	18a-Oleanane	40.83	191	1434m	104.35	ng/ml	
63)	C30-Hopane	41.04	191	9197m	669.22	ng/ml	
64)	Benzo(b)fluoranthene	36.39	252	42431m	1119.57		
65)	Benzo(k)fluoranthene	36.43	252	6640m	175.37		
66)	Benzo(e)pyrene	37.28	252	40914m	1212.45		
67)	Benzo(a)pyrene	37.45	252	67559m	2213.07		
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	5281m	207.90		
69)	Dibenzo(a,h)anthracene	41.87	278	7322m	293.38		
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d	
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d	
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d	
73)	Benzo(g,h,i)perylene	43.01	276	11955m	438.48		
75)	Perylene	37.74	252	24485m	766.35		

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

Data File : D:\GC-MSD~1\MS30401\ETX7285.D Vial: 10
Acq On : 22 Jul 2007 4:13 am Operator: TJM
Sample : WIF-02-071007-A Inst : GC/MS Ins
Misc : Multiplr: 19.76
MS Integration Params: rteint.p
Quant Time: Aug 18 17:44 2007 Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



Tissue, Sediment, and Water Sample Report (Use d-10 Phenanthrene only for Surrogate Corrections)

Data File Name **ETX7286.D** Su Amt = 50 ETX7286.D
Data File Path **D:\GC-MSD~1\MS30401** WIF-02-071007-B
Operator **TJM**
Date Acquired **07/22/20 -1:6:**
Method File **PAH-2002**
Sample Name **WIF-02-071007-B**
Misc Info
Instrument Name **GC/MS Ins** 07/22/20 -1:6:
Vial Number **12** PAH-2002
Sample Multiplier **0.6667** 1.50
Sample Amount **0**

Peak #	Compound	Ret Time (min)	Target Response (Area)	Conc. (ng/g or ng/L)	Su. Corrected Conc. (ng/g or ng/L)
3)	Decalin	0.00	0	0.00	0.00
4)	C1-Decalin	0.00	0	0.00	0.00
5)	C2-Decalin	0.00	0	0.00	0.00
6)	C3-Decalin	0.00	0	0.00	0.00
7)	C4-Decalin	0.00	0	0.00	0.00
8)	Naphthalene	13.09	618	1.04	1.11
9+10)	C1-Naphthalenes	15.51	4155	7.02	7.46
13)	C2-Naphthalenes	18.10	18112	30.61	32.51
14)	C3-Naphthalenes	20.07	87115	147.24	156.38
15)	C4-Naphthalenes	22.04	125454	212.04	225.21
16)	Benzothiophene	13.04	1237	2.68	2.85
17)	C1-Benzothiophene	0.00	0	0.00	0.00
18)	C2-Benzothiophene	0.00	0	0.00	0.00
19)	C3-Benzothiophene	0.00	0	0.00	0.00
21)	Biphenyl	16.97	434	0.83	0.89
22)	Acenaphthylene	18.35	832	1.31	1.39
23)	Acenaphthene	18.94	1222	3.18	3.38
24)	Dibenzofuran	19.59	1343	2.25	2.39
25)	Fluorene	20.74	5080	10.94	11.62
26)	C1-Fluorenes	22.71	31789	68.46	72.71
27)	C2-Fluorenes	24.35	102082	219.85	233.50
28)	C3-Fluorenes	26.03	143805	309.71	328.94
31)	Pentachlorophenol	0.00	0	0.00	0.00
32)	Carbazole	24.38	2599	4.46	4.73
38)	Anthracene	24.18	11361	18.06	19.18
37)	Phenanthrene	23.98	4894	7.69	8.17
40)	C1-Phenanthrene/Anthracene	25.66	223825	351.60	373.43
41)	C2-Phenanthrene/Anthracene	27.58	800425	1257.37	1335.44
42)	C3-Phenanthrene/Anthracene	29.13	997048	1566.25	1663.49
43)	C4-Phenanthrene/Anthracene	30.98	530131	832.77	884.48
33)	Dibenzothiophene	23.57	17176	26.43	30.20
34)	C1-Dibenzothiophene	25.36	39260	64.99	69.03
35)	C2-Dibenzothiophene	26.81	121637	201.37	213.87
36)	C3-Dibenzothiophene	28.02	139827	231.48	245.86
48)	Fluoranthene	28.09	29261	38.82	41.23
49)	Pyrene	28.83	116613	157.19	166.95
50)	C1-Fluoranthenes/Pyrenes	30.78	622883	826.27	877.57
51)	C2-Fluoranthenes/Pyrenes	32.10	1025938	1360.93	1445.43
52)	C3-Fluoranthenes/Pyrenes	33.31	745101	988.39	1049.76
44)	Naphthobenzothiophene	32.13	61997	78.98	83.88
45)	C1-Naphthobenzothiophene	33.56	147412	187.79	199.45
46)	C2-Naphthobenzothiophene	34.59	195097	248.53	263.97
47)	C3-Naphthobenzothiophene	36.32	106899	136.18	144.63
54)	Benz(a)anthracene	32.96	100118	144.15	153.10
55)	Chrysene	33.07	141589	205.88	218.66
56)	C1-Chrysenes	34.34	673158	978.80	1039.57
57)	C2-Chrysenes	35.75	783627	1139.42	1210.17
58)	C3-Chrysenes	37.10	361621	525.81	558.46
59)	C4-Chrysenes	40.24	11130	16.18	17.19
64)	Benzo(b)fluoranthene	36.39	46249	53.05	56.34
65)	Benzo(k)fluoranthene	36.43	7977	9.16	9.73
66)	Benzo(e)pyrene	37.27	45165	58.19	61.80
67)	Benzo(a)pyrene	37.45	68692	97.82	103.90
75)	Perylene	37.73	24763	33.69	35.79
68)	Indeno(1,2,3-c,d)pyrene	41.79	10219	17.49	18.58
69)	Dibenzo(a,h)anthracene	41.87	7931	13.82	14.67
70)	C1-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
71)	C2-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
72)	C3-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
73)	Benzo(g,h,i)perylene	43.01	14623	23.32	24.76
	Total PAH				13724
	Individual Isomers				
9)	2-Methylnaphthalene	15.37	3024	7.25	7.70
10)	1-Methylnaphthalene	15.65	1131	2.81	2.99
11)	2,6-Dimethylnaphthalene	17.48	4700	13.02	13.83
12)	1,6,7-Trimethylnaphthalene	20.26	5969	17.76	18.86
39)	1-Methylphenanthrene	26.03	95089	192.86	204.84
61)	C29-Hopane	39.78	8006	25.33	26.90
62)	18a-Oleanane	40.83	2126	6.73	7.14
63)	C30-Hopane	41.04	11595	36.68	38.96
	Surrogates				Su Recovery (%)
	(AR-STSU-040-005)				
2)	Naphthalene-d8	13.04	14052	24.12	72
20)	Acenaphthene-d10	18.83	9091	28.32	85
30)	Phenanthrene-d10	23.91	18236	31.39	94
53)	Chrysene-d12	32.96	17263	25.85	78
74)	Perylene-d12	37.66	11618	27.19	82
	Internal Stds				
	(AR-WKIS-0500-007)				
1)	Fluorene-d10	20.63	11191	51.08	
29)	Pyrene-d10	28.80	19371	49.98	
60)	Benzo(a)pyrene-d12	37.38	14948	45.61	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\ETX7286.D
Acq On : 22 Jul 2007 6:19 am
Sample : WIF-02-071007-B
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 18 17:55 2007

Vial: 12
Operator: TJM
Inst : GC/MS Ins
Multiplr: 0.67
Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorene-d10	20.63	176	11191m	51.08	ng/ml	0.00
29) Pyrene-d10	28.80	212	19371m	49.98		0.00
60) Benzo(a)pyrene-d12	37.38	264	14948m	45.61		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.04	136	14052m	24.12		0.00
20) Acenaphthene-d10	18.83	164	9091m	28.32		0.00
30) Phenanthrene-d10	23.91	188	18236m	31.39		0.00
53) Chrysene-d12	32.96	240	17263m	25.85		0.00
74) Perylene-d12	37.66	264	11618m	27.19		0.03
Target Compounds						Qvalue
3) Decalin	0.00	138	0	N.D.	d	
4) C1-Decalin	0.00	152	0	N.D.	d	
5) C2-Decalin	0.00	166	0	N.D.	d	
6) C3-Decalin	0.00	180	0	N.D.	d	
7) C4-Decalin	0.00	194	0	N.D.	d	
8) Naphthalene	13.09	128	618m	1.04		
9) 2-Methylnaphthalene	15.37	142	3024m	7.25		
10) 1-Methylnaphthalene	15.65	142	1131m	2.81		
11) 2,6-Dimethylnaphthalene	17.48	156	4700m	13.02		
12) 1,6,7-Trimethylnaphthalene	20.26	170	5969m	17.76		
13) C2-Naphthalenes	18.10	156	18112m	30.61		
14) C3-Naphthalenes	20.07	170	87115m	147.24		
15) C4-Naphthalenes	22.04	184	125454m	212.04		
16) Benzothiophene	13.04	134	1237m	2.68	ng/ml	
17) C1-Benzothiophene	0.00	148	0	N.D.	d	
18) C2-Benzothiophene	0.00	162	0	N.D.	d	
19) C3-Benzothiophene	0.00	176	0	N.D.	d	
21) Biphenyl	16.97	154	434m	0.83		
22) Acenaphthylene	18.35	152	832m	1.31		
23) Acenaphthene	18.94	154	1222m	3.18		
24) Dibenzofuran	19.59	168	1343m	2.25	ng/ml	
25) Fluorene	20.74	166	5080m	10.94		
26) C1-Fluorenes	22.71	180	31789m	68.46		
27) C2-Fluorenes	24.35	194	102082m	219.85		
28) C3-Fluorenes	26.03	208	143805m	309.71		
31) Pentachlorophenol	0.00	266	0	N.D.	d	
32) Carbazole	24.38	167	2599m	4.46	ng/ml	
33) Dibenzothiophene	23.57	184	17176m	28.43		
34) C1-Dibenzothiophene	25.36	198	39260m	64.99		
35) C2-Dibenzothiophene	26.81	212	121637m	201.37		
36) C3-Dibenzothiophene	28.02	226	139827m	231.48		
37) Phenanthrene	23.98	178	4894m	7.69		
38) Anthracene	24.18	178	11361m	18.06		
39) 1-Methylphenanthrene	26.03	192	95089m	192.86		
40) C1-Phenanthrene/Anthracene	25.66	192	223825m	351.60		
41) C2-Phenanthrene/Anthracene	27.58	206	800425m	1257.37		
42) C3-Phenanthrene/Anthracene	29.13	220	997048m	1566.25		
43) C4-Phenanthrene/Anthracene	30.98	234	530131m	832.77		
44) Naphthobenzothiophene	32.13	234	61997m	78.98		

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

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\ETX7286.D Vial: 12
Acq On : 22 Jul 2007 6:19 am Operator: TJM
Sample : WIF-02-071007-B Inst : GC/MS Ins
Misc : Multiplr: 0.67
MS Integration Params: rteint.p
Quant Time: Aug 18 17:55 2007 Quant Results File: 072107.RES

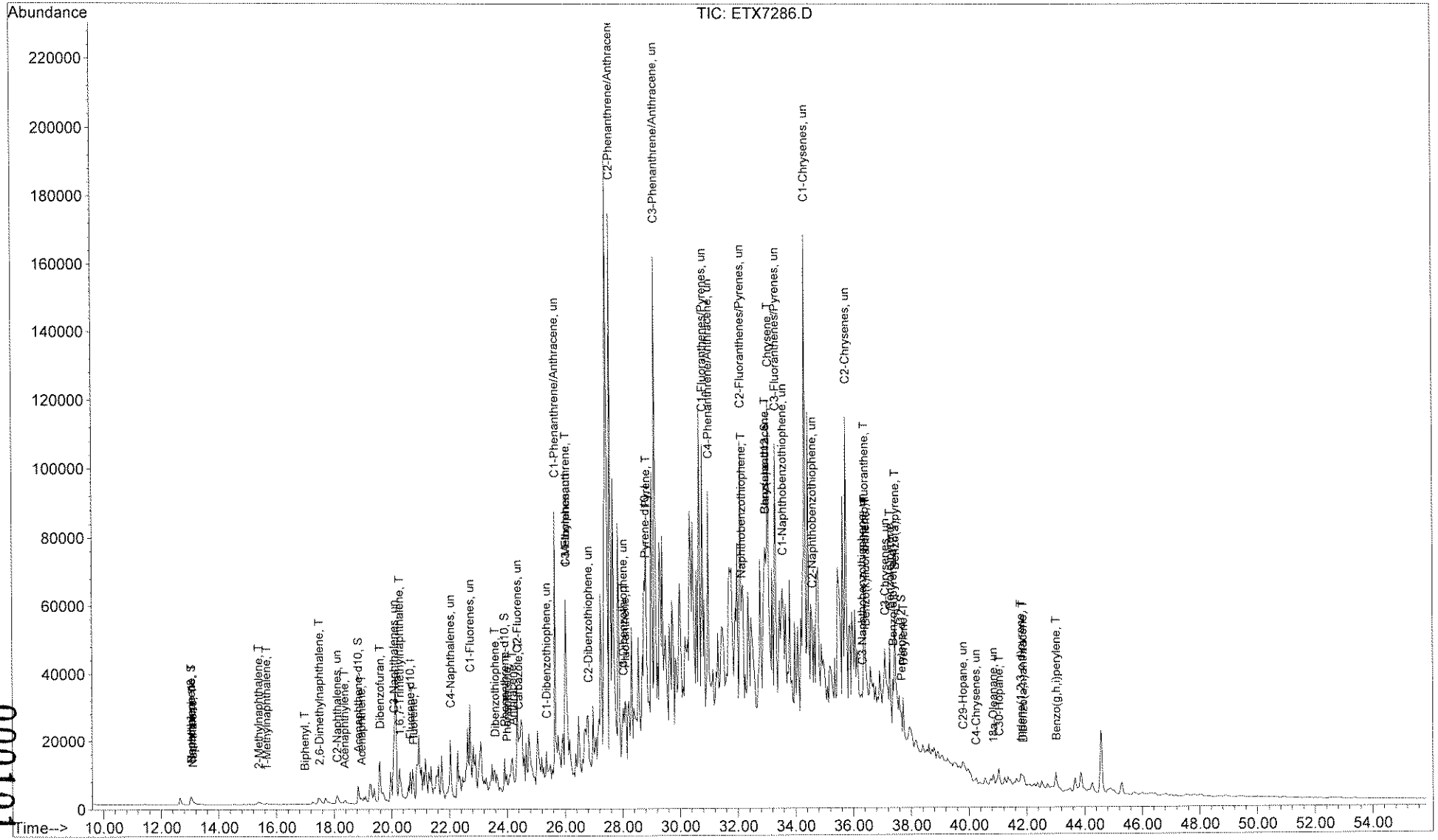
Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	C1-Naphthobenzothiophene	33.56	248	147412m	187.79		
46)	C2-Naphthobenzothiophene	34.59	262	195097m	248.53		
47)	C3-Naphthobenzothiophene	36.32	276	106899m	136.18		
48)	Fluoranthene	28.09	202	29261m	38.82		
49)	Pyrene	28.83	202	116613m	157.19		
50)	C1-Fluoranthenes/Pyrenes	30.78	216	622883m	826.27	ng/mL	
51)	C2-Fluoranthenes/Pyrenes	32.10	230	1025938m	1360.93	ng/mL	
52)	C3-Fluoranthenes/Pyrenes	33.31	244	745101m	988.39	ng/mL	
54)	Benz(a)anthracene	32.96	228	100118m	144.15		
55)	Chrysene	33.07	228	141589m	205.88		
56)	C1-Chrysenes	34.34	242	673158m	978.80	ng/mL	
57)	C2-Chrysenes	35.75	256	783627m	1139.42	ng/mL	
58)	C3-Chrysenes	37.10	270	361621m	525.81	ng/mL	
59)	C4-Chrysenes	40.24	284	11130m	16.18	ng/mL	
61)	C29-Hopane	39.78	191	8006m	25.33	ng/ml	
62)	18a-Oleanane	40.83	191	2126m	6.73	ng/ml	
63)	C30-Hopane	41.04	191	11595m	36.68	ng/ml	
64)	Benzo(b)fluoranthene	36.39	252	46249m	53.05		
65)	Benzo(k)fluoranthene	36.43	252	7977m	9.16		
66)	Benzo(e)pyrene	37.27	252	45165m	58.19		
67)	Benzo(a)pyrene	37.45	252	68692m	97.82		
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	10219m	17.49		
69)	Dibenzo(a,h)anthracene	41.87	278	7931m	13.82		
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.		d
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.		d
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.		d
73)	Benzo(g,h,i)perylene	43.01	276	14623m	23.32		
75)	Perylene	37.73	252	24763m	33.69		

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

Data File : D:\GC-MSD~1\MS30401\ETX7286.D Vial: 12
Acq On : 22 Jul 2007 6:19 am Operator: TJM
Sample : WIF-02-071007-B Inst : GC/MS Ins
Misc : Multiplr: 0.67
MS Integration Params: rteint.p
Quant Time: Aug 18 17:55 2007 Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



Tissue, Sediment, and Water Sample Report (Use d-10 Phenanthrene only for Surrogate Corrections)

Data File Name	**ETX7287.D**	**Su Amt = 50**	ETX7287.D
Data File Path	**D:\GC-MSD~1\MS30401**		WIF-02-071007-C
Operator	**TJM**		
Date Acquired	**07/22/20 -1:7:**		
Method File	**PAH-2002**		
Sample Name	**WIF-02-071007-C**		
Misc Info			
Instrument Name	**GC/MS ins**		07/22/20 -1:7:
Vial Number	**13**		PAH-2002
Sample Multiplier	**1.9724**		0.51
Sample Amount	**0**		

Peak #	Compound	Ret Time (min)	Target Response (Area)	Conc. (ng/g or ng/L)	Su. Corrected Conc. (ng/g or ng/L)
3)	Decalin	0.00	0	0.00	0.00
4)	C1-Decalin	0.00	0	0.00	0.00
5)	C2-Decalin	0.00	0	0.00	0.00
6)	C3-Decalin	0.00	0	0.00	0.00
7)	C4-Decalin	0.00	0	0.00	0.00
8)	Naphthalene	13.09	410	1.22	1.29
9+10)	C1-Naphthalenes	15.51	739	2.21	2.32
13)	C2-Naphthalenes	17.70	22486	67.12	70.73
14)	C3-Naphthalenes	20.06	109435	326.66	344.22
15)	C4-Naphthalenes	22.03	108934	325.17	342.65
16)	Benzothiophene	13.03	2182	8.36	8.81
17)	C1-Benzothiophene	0.00	0	0.00	0.00
18)	C2-Benzothiophene	0.00	0	0.00	0.00
19)	C3-Benzothiophene	0.00	0	0.00	0.00
21)	Biphenyl	16.97	157	0.53	0.56
22)	Acenaphthylene	18.38	493	1.37	1.44
23)	Acenaphthene	18.94	1676	7.71	8.13
24)	Dibenzofuran	19.59	977	2.89	3.04
25)	Fluorene	20.74	1521	5.79	6.10
26)	C1-Fluorenes	22.71	30725	116.86	123.14
27)	C2-Fluorenes	24.35	97826	372.08	392.08
28)	C3-Fluorenes	26.03	131656	500.75	527.67
31)	Pentachlorophenol	0.00	0	0.00	0.00
32)	Carbazole	24.75	1514	4.57	4.81
38)	Anthracene	24.18	15581	43.56	45.90
37)	Phenanthrene	23.98	19792	54.68	57.62
40)	C1-Phenanthrene/Anthracene	25.66	270945	748.51	788.75
41)	C2-Phenanthrene/Anthracene	27.58	795863	2198.64	2316.85
42)	C3-Phenanthrene/Anthracene	29.13	967190	2671.95	2815.60
43)	C4-Phenanthrene/Anthracene	30.98	450483	1244.50	1311.41
33)	Dibenzothiophene	23.57	3264	9.50	10.01
34)	C1-Dibenzothiophene	25.06	43216	125.82	132.58
35)	C2-Dibenzothiophene	26.81	115410	336.00	354.07
36)	C3-Dibenzothiophene	28.02	139000	404.68	426.44
48)	Fluoranthene	28.09	46841	109.27	115.15
49)	Pyrene	28.83	128386	304.34	320.70
50)	C1-Fluoranthenes/Pyrenes	30.34	500105	1166.67	1229.39
51)	C2-Fluoranthenes/Pyrenes	32.10	794988	1854.59	1954.30
52)	C3-Fluoranthenes/Pyrenes	33.32	539639	1258.90	1326.58
44)	Naphthobenzothiophene	32.13	59699	133.74	140.94
45)	C1-Naphthobenzothiophene	33.56	130375	292.08	307.78
46)	C2-Naphthobenzothiophene	34.66	164536	368.61	388.43
47)	C3-Naphthobenzothiophene	36.32	73680	165.07	173.94
54)	Benz(a)anthracene	32.93	83568	211.59	222.97
55)	Chrysene	33.07	134196	343.15	361.60
56)	C1-Chrysenes	34.34	576410	1473.94	1553.18
57)	C2-Chrysenes	35.75	665581	1701.96	1793.46
58)	C3-Chrysenes	37.10	293965	751.70	792.11
59)	C4-Chrysenes	40.23	8239	21.07	22.20
64)	Benzo(b)fluoranthene	36.39	40770	83.17	87.64
65)	Benzo(k)fluoranthene	36.43	8281	16.91	17.82
66)	Benzo(e)pyrene	37.26	32673	74.86	78.88
67)	Benzo(a)pyrene	37.45	58198	147.39	155.31
75)	Perylene	37.73	18863	45.64	48.10
68)	Indeno(1,2,3-c,d)pyrene	41.79	8542	26.00	27.40
69)	Dibenzo(a,h)anthracene	41.87	5844	18.10	19.08
70)	C1-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
71)	C2-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
72)	C3-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
73)	Benzo(g,h,i)perylene	43.01	10889	30.88	32.54
	Total PAH				21266
	Individual Isomers				
9)	2-Methylnaphthalene	15.37	400	1.89	1.78
10)	1-Methylnaphthalene	15.65	339	1.49	1.57
11)	2,6-Dimethylnaphthalene	17.45	2854	13.96	14.71
12)	1,6,7-Trimethylnaphthalene	20.29	7616	40.02	42.17
39)	1-Methylphenanthrene	26.10	46105	164.45	173.29
61)	C29-Hopane	39.79	6136	34.52	36.37
62)	18a-Oleanane	40.80	1420	7.99	8.42
63)	C30-Hopane	41.04	6925	38.96	41.05
	Surrogates				**Su Recovery (%)**
	(AR-STSU-040-005)				
2)	Naphthalene-d8	13.03	23410	70.96	72
20)	Acenaphthene-d10	18.83	14591	80.27	81
30)	Phenanthrene-d10	23.91	30920	93.59	95
53)	Chrysene-d12	32.96	30940	81.48	83
74)	Perylene-d12	37.66	17502	72.85	74
	Internal Stds				
	(AR-WKIS-0500-007)				
1)	Fluorene-d10	20.63	18747	51.08	
29)	Pyrene-d10	28.80	32587	49.98	
60)	Benzo(a)pyrene-d12	37.38	24867	45.61	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\ETX7287.D
Acq On : 22 Jul 2007 7:22 am
Sample : WIF-02-071007-C
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 18 18:00 2007

Vial: 13
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.97
Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorene-d10	20.63	176	18747m	51.08	ng/ml	0.00
29) Pyrene-d10	28.80	212	32587m	49.98		0.00
60) Benzo(a)pyrene-d12	37.38	264	24867m	45.61		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.03	136	23410m	70.96		0.00
20) Acenaphthene-d10	18.83	164	14591	80.27		0.00
30) Phenanthrene-d10	23.91	188	30920m	93.59		0.00
53) Chrysene-d12	32.96	240	30940m	81.48		0.00
74) Perylene-d12	37.66	264	17502m	72.85		0.03
Target Compounds						Qvalue
3) Decalin	0.00	138	0	N.D.	d	
4) C1-Decalin	0.00	152	0	N.D.	d	
5) C2-Decalin	0.00	166	0	N.D.	d	
6) C3-Decalin	0.00	180	0	N.D.	d	
7) C4-Decalin	0.00	194	0	N.D.	d	
8) Naphthalene	13.09	128	410m	1.22		
9) 2-Methylnaphthalene	15.37	142	400m	1.69		
10) 1-Methylnaphthalene	15.65	142	339m	1.49		
11) 2,6-Dimethylnaphthalene	17.45	156	2854m	13.96		
12) 1,6,7-Trimethylnaphthalene	20.29	170	7616m	40.02		
13) C2-Naphthalenes	17.70	156	22486m	67.12		
14) C3-Naphthalenes	20.06	170	109435m	326.66		
15) C4-Naphthalenes	22.03	184	108934m	325.17		
16) Benzothiophene	13.03	134	2182m	8.36	ng/ml	
17) C1-Benzothiophene	0.00	148	0	N.D.	d	
18) C2-Benzothiophene	0.00	162	0	N.D.	d	
19) C3-Benzothiophene	0.00	176	0	N.D.	d	
21) Biphenyl	16.97	154	157m	0.53		
22) Acenaphthylene	18.38	152	493m	1.37		
23) Acenaphthene	18.94	154	1676m	7.71		
24) Dibenzofuran	19.59	168	977m	2.89	ng/ml	
25) Fluorene	20.74	166	1521m	5.79		
26) C1-Fluorenes	22.71	180	30725m	116.86		
27) C2-Fluorenes	24.35	194	97826m	372.08		
28) C3-Fluorenes	26.03	208	131656m	500.75		
31) Pentachlorophenol	0.00	266	0	N.D.	d	
32) Carbazole	24.75	167	1514m	4.57	ng/ml	
33) Dibenzothiophene	23.57	184	3264m	9.50		
34) C1-Dibenzothiophene	25.06	198	43216m	125.82		
35) C2-Dibenzothiophene	26.81	212	115410m	336.00		
36) C3-Dibenzothiophene	28.02	226	139000m	404.68		
37) Phenanthrene	23.98	178	19792m	54.68		
38) Anthracene	24.18	178	15581m	43.56		
39) 1-Methylphenanthrene	26.10	192	46105m	164.45		
40) C1-Phenanthrene/Anthracene	25.66	192	270945m	748.51		
41) C2-Phenanthrene/Anthracene	27.58	206	795863m	2198.64		
42) C3-Phenanthrene/Anthracene	29.13	220	967190m	2671.95		
43) C4-Phenanthrene/Anthracene	30.98	234	450483m	1244.50		
44) Naphthobenzothiophene	32.13	234	59699m	133.74		
45) C1-Naphthobenzothiophene	33.56	248	130375m	292.08		
46) C2-Naphthobenzothiophene	34.66	262	164536m	368.61		

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

Data File : D:\GC-MSD~1\MS30401\ETX7287.D Vial: 13
Acq On : 22 Jul 2007 7:22 am Operator: TJM
Sample : WIF-02-071007-C Inst : GC/MS Ins
Misc : Multiplr: 1.97
MS Integration Params: rteint.p
Quant Time: Aug 18 18:00 2007 Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
47)	C3-Naphthobenzothiophene	36.32	276	73680m	165.07		
48)	Fluoranthene	28.09	202	46841m	109.27		
49)	Pyrene	28.83	202	128386m	304.34		
50)	C1-Fluoranthenes/Pyrenes	30.34	216	500105m	1166.67	ng/mL	
51)	C2-Fluoranthenes/Pyrenes	32.10	230	794988m	1854.59	ng/mL	
52)	C3-Fluoranthenes/Pyrenes	33.32	244	539639m	1258.90	ng/mL	
54)	Benz(a)anthracene	32.93	228	83568m	211.59		
55)	Chrysene	33.07	228	134196m	343.15		
56)	C1-Chrysenes	34.34	242	576410m	1473.94	ng/mL	
57)	C2-Chrysenes	35.75	256	665581m	1701.96	ng/mL	
58)	C3-Chrysenes	37.10	270	293965m	751.70	ng/mL	
59)	C4-Chrysenes	40.23	284	8239m	21.07	ng/mL	
61)	C29-Hopane	39.79	191	6136m	34.52	ng/ml	
62)	18a-Oleanane	40.80	191	1420m	7.99	ng/ml	
63)	C30-Hopane	41.04	191	6925m	38.96	ng/ml	
64)	Benzo(b)fluoranthene	36.39	252	40770m	83.17		
65)	Benzo(k)fluoranthene	36.43	252	8281m	16.91		
66)	Benzo(e)pyrene	37.28	252	32673m	74.86		
67)	Benzo(a)pyrene	37.45	252	58198m	147.39		
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	8542m	26.00		
69)	Dibenzo(a,h)anthracene	41.87	278	5844m	18.10		
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d	
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d	
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d	
73)	Benzo(g,h,i)perylene	43.01	276	10889m	30.88		
75)	Perylene	37.73	252	18863m	45.64		

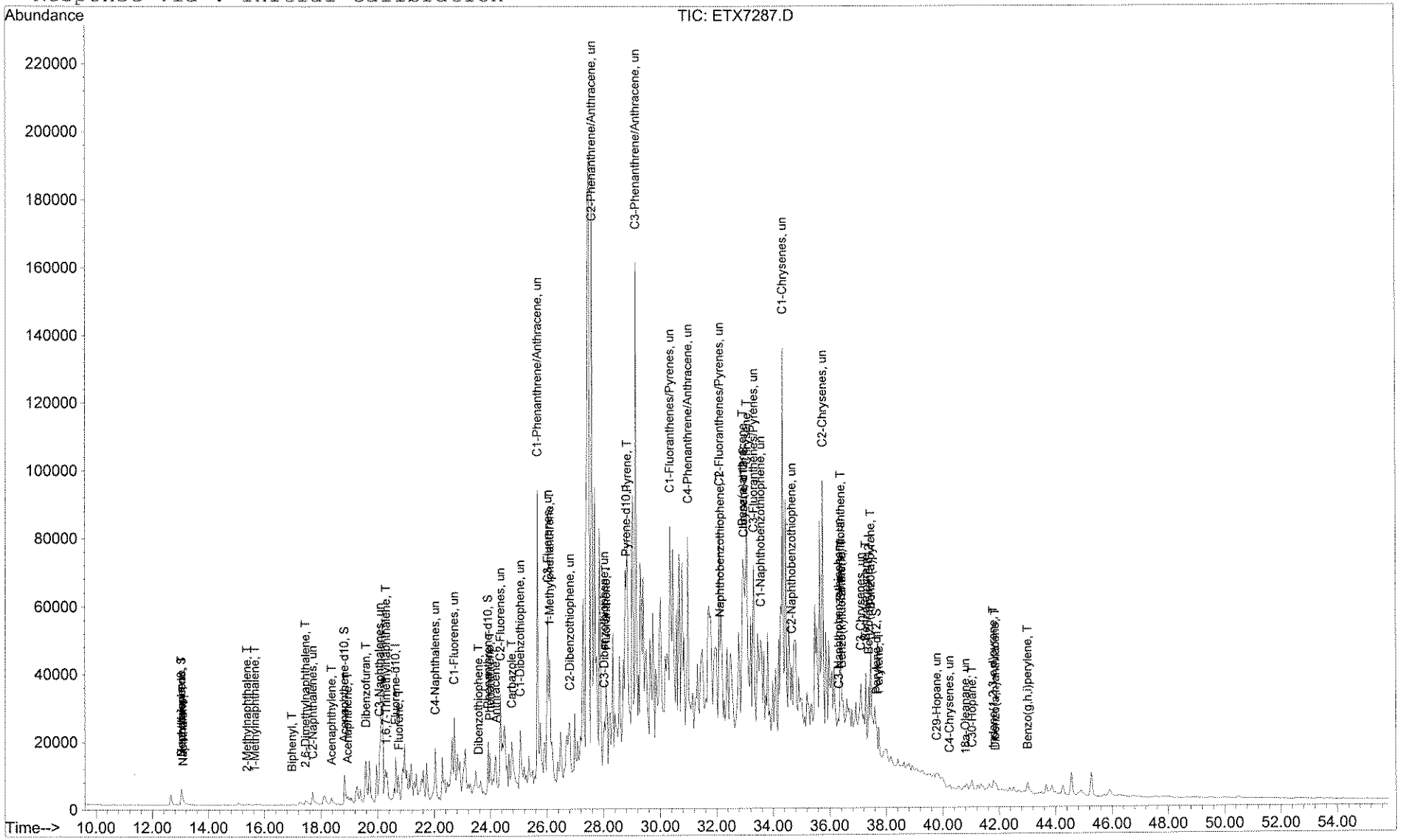
(#) = qualifier out of range (m) = manual integration

Data File : D:\GC-MSD~1\MS30401\ETX7287.D
Acq On : 22 Jul 2007 7:22 am
Sample : WIF-02-071007-C
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 18 18:00 2007

Vial: 13
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.97

Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



Tissue, Sediment, and Water Sample Report (Use d-10 Phenanthrene only for Surrogate Corrections)

Data File Name	**ETX7288.D**	**Su Amt = 50**	ETX7288.D
Data File Path	**D:\GC-MSD-1\MS30401**		WIF-02-071007-D
Operator	**TJM**		
Date Acquired	**07/22/20 -1:8:**		
Method File	**PAH-2002**		
Sample Name	**WIF-02-071007-D**		
Misc Info			
Instrument Name	**GC/MS Ins**		07/22/20 -1:8:
Vial Number	**14**		PAH-2002
Sample Multiplier	**80.6452**		0.01
Sample Amount	**0**		

Peak #	Compound	Ret Time (min)	Target Response (Area)	Conc. (ng/g or ng/L)	Su. Corrected Conc. (ng/g or ng/L)
3)	Decalin	0.00	0	0.00	0.00
4)	C1-Decalin	0.00	0	0.00	0.00
5)	C2-Decalin	0.00	0	0.00	0.00
6)	C3-Decalin	0.00	0	0.00	0.00
7)	C4-Decalin	0.00	0	0.00	0.00
8)	Naphthalene	13.09	22	5.51	5.61
9+10)	C1-Naphthalenes	15.40	108	27.06	27.52
13)	C2-Naphthalenes	17.71	15545	3894.78	3961.17
14)	C3-Naphthalenes	19.96	154709	38762.10	39422.86
15)	C4-Naphthalenes	22.04	238017	59634.79	60651.35
16)	Benzothiophene	13.04	1185	381.12	387.61
17)	C1-Benzothiophene	0.00	0	0.00	0.00
18)	C2-Benzothiophene	0.00	0	0.00	0.00
19)	C3-Benzothiophene	0.00	0	0.00	0.00
21)	Biphenyl	0.00	0	0.00	0.00
22)	Acenaphthylene	18.35	326	75.82	77.11
23)	Acenaphthene	18.94	1888	729.24	741.67
24)	Dibenzofuran	19.56	591	146.70	149.20
25)	Fluorene	20.72	2250	718.31	730.55
26)	C1-Fluorenes	22.71	41528	13257.70	13483.70
27)	C2-Fluorenes	24.35	149431	47705.45	48518.65
28)	C3-Fluorenes	26.03	208491	66560.20	67694.81
31)	Pentachlorophenol	0.00	0	0.00	0.00
32)	Carbazole	0.00	0	0.00	0.00
38)	Anthracene	24.18	11218	2695.60	2741.55
37)	Phenanthrene	23.98	19442	4616.33	4695.03
40)	C1-Phenanthrene/Anthracene	25.76	377073	89532.69	91058.90
41)	C2-Phenanthrene/Anthracene	27.58	1141054	270933.31	275551.75
42)	C3-Phenanthrene/Anthracene	29.13	1305427	309962.25	315245.99
43)	C4-Phenanthrene/Anthracene	30.98	607243	144184.55	146642.38
33)	Dibenzothiophene	23.57	2100	525.49	534.44
34)	C1-Dibenzothiophene	25.06	60037	15023.12	15279.21
35)	C2-Dibenzothiophene	26.81	169708	42466.21	43190.11
36)	C3-Dibenzothiophene	28.66	194658	48709.48	49539.80
48)	Fluoranthene	28.09	25944	5201.92	5290.60
49)	Pyrene	28.83	166491	33921.05	34499.28
50)	C1-Fluoranthenes/Pyrenes	30.78	759017	152187.35	154781.59
51)	C2-Fluoranthenes/Pyrenes	32.10	1083962	217340.72	221045.59
52)	C3-Fluoranthenes/Pyrenes	33.31	718427	144048.81	146504.33
44)	Naphthobenzothiophene	32.13	75381	14514.80	14762.23
45)	C1-Naphthobenzothiophene	33.56	192700	37104.88	37737.38
46)	C2-Naphthobenzothiophene	35.01	222991	42937.48	43669.41
47)	C3-Naphthobenzothiophene	36.32	100233	19300.12	19629.12
54)	Benz(a)anthracene	32.93	116582	25370.86	25803.35
55)	Chrysene	33.07	165863	36453.39	37074.79
56)	C1-Chrysenes	34.34	792023	174070.93	177038.21
57)	C2-Chrysenes	35.65	868473	190873.12	194126.82
58)	C3-Chrysenes	37.10	364035	80007.67	81371.51
59)	C4-Chrysenes	40.23	9421	2070.55	2105.84
64)	Benzo(b)fluoranthene	36.39	41347	6951.12	7069.62
65)	Benzo(k)fluoranthene	36.43	6116	1029.20	1046.74
66)	Benzo(e)pyrene	37.27	39349	7429.70	7556.35
67)	Benzo(a)pyrene	37.45	65059	13578.86	13810.33
75)	Perylene	37.73	22160	4419.16	4494.49
68)	Indeno(1,2,3-c,d)pyrene	41.79	6824	1711.69	1740.87
69)	Dibenzo(a,h)anthracene	41.87	6628	1692.12	1720.96
70)	C1-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
71)	C2-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
72)	C3-Dibenzo(a,h)anthracene	0.00	0	0.00	0.00
73)	Benzo(g,h,i)perylene	43.01	10026	2342.99	2382.93
	Total PAH				2415593
	Individual Isomers				
9)	2-Methylnaphthalene	15.15	34	12.08	12.29
10)	1-Methylnaphthalene	15.65	74	27.26	27.73
11)	2,6-Dimethylnaphthalene	17.48	1969	808.54	822.32
12)	1,6,7-Trimethylnaphthalene	20.27	10982	4843.61	4926.18
39)	1-Methylphenanthrene	26.10	54269	16637.23	16920.84
61)	C29-Hopane	39.78	6612	3065.50	3117.76
62)	18a-Oleanane	40.80	1994	924.47	940.23
63)	C30-Hopane	41.04	9040	4191.19	4262.64
	Surrogates				**Su Recovery (%)**
	(AR-STSU-040-005)				
2)	Naphthalene-d8	13.04	13714	3489.03	87
20)	Acenaphthene-d10	18.83	8200	3786.34	94
30)	Phenanthrene-d10	23.91	15240	3964.68	98
53)	Chrysene-d12	32.96	14665	3319.54	82
74)	Perylene-d12	37.66	9034	3099.20	77
	Internal Stds				
	(AR-WKIS-0500-007)				
1)	Fluorene-d10	20.63	9132	51.08	
29)	Pyrene-d10	28.79	15502	49.98	
60)	Benzo(a)pyrene-d12	37.38	12337	45.61	

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\ETX7288.D
Acq On : 22 Jul 2007 8:25 am
Sample : WIF-02-071007-D
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 18 18:06 2007

Vial: 14
Operator: TJM
Inst : GC/MS Ins
Multiplr: 80.65
Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorene-d10	20.63	176	9132m	51.08	ng/ml	0.00
29) Pyrene-d10	28.79	212	15502m	49.98		0.00
60) Benzo(a)pyrene-d12	37.38	264	12337m	45.61		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.04	136	13714	3489.03		0.00
20) Acenaphthene-d10	18.83	164	8200	3786.34		0.00
30) Phenanthrene-d10	23.91	188	15240m	3964.68		0.00
53) Chrysene-d12	32.96	240	14665m	3319.54		0.00
74) Perylene-d12	37.66	264	9034m	3099.20		0.03
Target Compounds						Qvalue
3) Decalin	0.00	138	0	N.D.	d	
4) C1-Decalin	0.00	152	0	N.D.	d	
5) C2-Decalin	0.00	166	0	N.D.	d	
6) C3-Decalin	0.00	180	0	N.D.	d	
7) C4-Decalin	0.00	194	0	N.D.	d	
8) Naphthalene	13.09	128	22	5.51		
9) 2-Methylnaphthalene	15.15	142	34	12.08		
10) 1-Methylnaphthalene	15.65	142	74	27.26		
11) 2,6-Dimethylnaphthalene	17.48	156	1969	808.54		
12) 1,6,7-Trimethylnaphthalene	20.27	170	10982	4843.61		
13) C2-Naphthalenes	17.71	156	15545m	3894.78		
14) C3-Naphthalenes	19.96	170	154709	38762.10		
15) C4-Naphthalenes	22.04	184	238017	59634.79		
16) Benzothiophene	13.04	134	1185	381.12	ng/ml	
17) C1-Benzothiophene	0.00	148	0	N.D.	d	
18) C2-Benzothiophene	0.00	162	0	N.D.	d	
19) C3-Benzothiophene	0.00	176	0	N.D.	d	
21) Biphenyl	0.00	154	0	N.D.	d	
22) Acenaphthylene	18.35	152	326	75.82		
23) Acenaphthene	18.94	154	1888	729.24		
24) Dibenzofuran	19.56	168	591	146.70	ng/ml	
25) Fluorene	20.72	166	2250	718.31		
26) C1-Fluorenes	22.71	180	41528	13257.70		
27) C2-Fluorenes	24.35	194	149431	47705.45		
28) C3-Fluorenes	26.03	208	208491	66560.20		
31) Pentachlorophenol	0.00	266	0	N.D.	d	
32) Carbazole	0.00	167	0	N.D.	d	
33) Dibenzothiophene	23.57	184	2100m	525.49		
34) C1-Dibenzothiophene	25.06	198	60037m	15023.12		
35) C2-Dibenzothiophene	26.81	212	169708m	42466.21		
36) C3-Dibenzothiophene	28.66	226	194658m	48709.48		
37) Phenanthrene	23.98	178	19442m	4616.33		
38) Anthracene	24.18	178	11218m	2695.60		
39) 1-Methylphenanthrene	26.10	192	54269m	16637.23		
40) C1-Phenanthrene/Anthracene	25.76	192	377073m	89532.69		
41) C2-Phenanthrene/Anthracene	27.58	206	1141054m	270933.31		
42) C3-Phenanthrene/Anthracene	29.13	220	1305427m	309962.25		
43) C4-Phenanthrene/Anthracene	30.98	234	607243m	144184.55		
44) Naphthobenzothiophene	32.13	234	75381m	14514.80		
45) C1-Naphthobenzothiophene	33.56	248	192700m	37104.88		
46) C2-Naphthobenzothiophene	35.01	262	222991m	42937.48		

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

000107

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\ETX7288.D Vial: 14
Acq On : 22 Jul 2007 8:25 am Operator: TJM
Sample : WIF-02-071007-D Inst : GC/MS Ins
Misc : Multiplr: 80.65
MS Integration Params: rteint.p
Quant Time: Aug 18 18:06 2007 Quant Results File: 072107.RES

Quant Method : C:\MS30401\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
47)	C3-Naphthobenzothiophene	36.32	276	100233m	19300.12		
48)	Fluoranthene	28.09	202	25944m	5201.92		
49)	Pyrene	28.83	202	166491m	33921.05		
50)	C1-Fluoranthenes/Pyrenes	30.78	216	759017m	152187.35	ng/mL	
51)	C2-Fluoranthenes/Pyrenes	32.10	230	1083962m	217340.72	ng/mL	
52)	C3-Fluoranthenes/Pyrenes	33.31	244	718427m	144048.81	ng/mL	
54)	Benz(a)anthracene	32.93	228	116582m	25370.86		
55)	Chrysene	33.07	228	165863m	36453.39		
56)	C1-Chrysenes	34.34	242	792023m	174070.93	ng/mL	
57)	C2-Chrysenes	35.65	256	868473m	190873.12	ng/mL	
58)	C3-Chrysenes	37.10	270	364035m	80007.67	ng/mL	
59)	C4-Chrysenes	40.23	284	9421m	2070.55	ng/mL	
61)	C29-Hopane	39.78	191	6612m	3065.50	ng/ml	
62)	18a-Oleanane	40.80	191	1994m	924.47	ng/ml	
63)	C30-Hopane	41.04	191	9040m	4191.19	ng/ml	
64)	Benzo(b)fluoranthene	36.39	252	41347m	6951.12		
65)	Benzo(k)fluoranthene	36.43	252	6116m	1029.20		
66)	Benzo(e)pyrene	37.27	252	39349m	7429.70		
67)	Benzo(a)pyrene	37.45	252	65059m	13578.86		
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	6824m	1711.69		
69)	Dibenzo(a,h)anthracene	41.87	278	6628m	1692.12		
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d	
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d	
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d	
73)	Benzo(g,h,i)perylene	43.01	276	10026m	2342.99		
75)	Perylene	37.73	252	22160m	4419.16		

(#) = qualifier out of range (m) = manual integration
ETX7288.D 072107.M Tue Aug 21 14:58:51 2007 Page 2

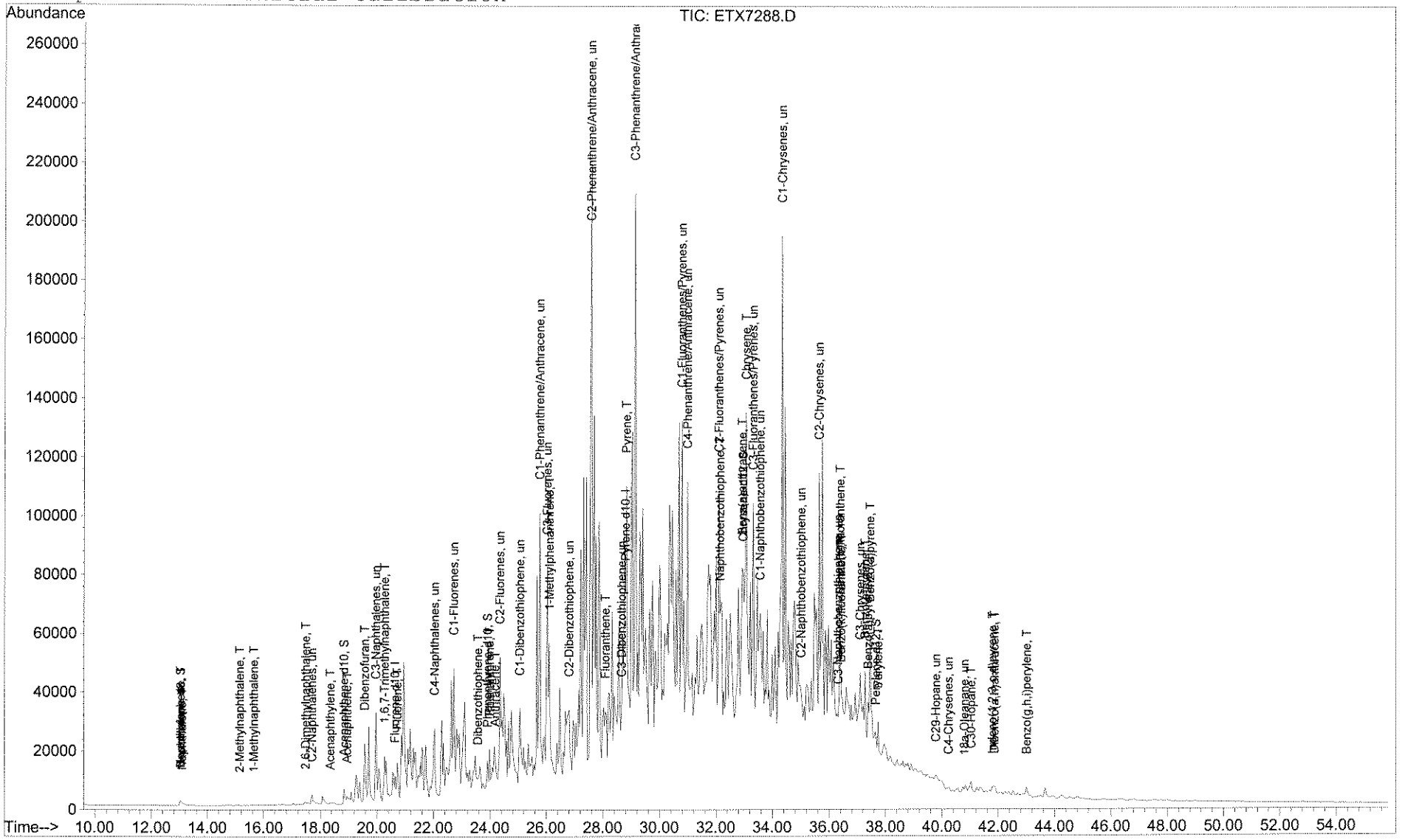
Quantitation Report

Data File : D:\GC-MSD~1\MS30401\ETX7288.D
Acq On : 22 Jul 2007 8:25 am
Sample : WIF-02-071007-D
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 18 18:06 2007

Vial: 14
Operator: TJM
Inst : GC/MS Ins
Multiplr: 80.65

Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



60T000

Total Petroleum Hydrocarbons/ Aliphatic Hydrocarbons Initial Calibration Data

Aliphatic/TPH
ICAL
C10B0727.M

GC/FID-1 Back

Response Factor Report GC#1

Method : D:\GC-MSD~1\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Tue Jul 31 15:49:57 2007
Response via : Initial Calibration

Calibration Files
1 =GC10863E.D 2 =GC10863F.D 3 =GC10863G.D
4 =GC10863H.D 5 =GC10863I.D

		Compound	1	2	3	4	5	Avg	%RSD
1)		n-hexadecane-d34	ISTD						
2)		n-C10	1.092	1.083	1.169	1.165	1.132	1.128	3.54
3)		n-C11	1.075	1.091	1.180	1.174	1.140	1.132	4.20
4)	S	n-dodecane-d26	0.978	0.868	0.943	0.939	0.905	0.927	4.51
5)		n-C12	0.981	1.121	1.223	1.211	1.164	1.140	8.57
6)		n-C13	1.132	1.178	1.246	1.230	1.178	1.193	3.85
7)		n-C14	1.431	1.214	1.260	1.232	1.194	1.266	7.52
8)		n-C15	1.256	1.211	1.254	1.230	1.190	1.228	2.29
9)		n-C16	1.524	1.208	1.238	1.214	1.172	1.271	11.26
10)		5a-androstane	ISTD						
11)		n-C17	1.039	0.882	0.933	0.939	0.906	0.940	6.41
12)		Pristane	1.039	0.966	0.986	0.977	0.946	0.983	3.51
13)		n-C18	0.866	0.890	0.933	0.931	0.900	0.904	3.12
14)		Phytane	0.881	0.906	0.949	0.947	0.915	0.919	3.13
15)		n-C19	0.927	0.885	0.917	0.913	0.884	0.905	2.16
16)	S	n-eicosane-d42	0.819	0.780	0.805	0.802	0.776	0.796	2.27
17)		n-C20	0.864	0.875	0.907	0.900	0.873	0.884	2.12
18)		n-C21	0.943	0.883	0.912	0.904	0.878	0.904	2.90
19)		n-C22	0.937	0.851	0.878	0.868	0.842	0.875	4.24
20)		n-C23	0.859	0.841	0.873	0.862	0.842	0.855	1.60
21)		n-C24	0.842	0.826	0.856	0.845	0.827	0.839	1.52
22)		n-C25	0.837	0.814	0.841	0.832	0.815	0.828	1.52
23)		n-C26	0.838	0.818	0.840	0.832	0.818	0.829	1.29
24)		n-C27	0.806	0.788	0.812	0.802	0.792	0.800	1.23
25)		n-C28	0.803	0.773	0.799	0.792	0.783	0.790	1.55
26)		n-C29	0.833	0.783	0.807	0.799	0.792	0.803	2.41
27)	S	n-triacontane-d62	0.674	0.646	0.676	0.671	0.658	0.665	1.91
28)		n-C30	0.779	0.752	0.782	0.771	0.767	0.770	1.54
29)		n-C31	0.780	0.753	0.783	0.772	0.768	0.771	1.53
30)		n-C32	0.731	0.726	0.749	0.742	0.742	0.738	1.29
31)		n-C33	0.721	0.717	0.740	0.733	0.733	0.729	1.30
32)		n-C34	0.724	0.718	0.744	0.739	0.746	0.734	1.70
33)		TPH	0.851	0.821	0.856	0.855	0.836	0.844	1.80
34)		TRH1	0.851	0.821	0.856	0.855	0.836	0.844	1.80
35)		TRH2	0.851	0.821	0.856	0.855	0.836	0.844	1.80
36)		TRH3	0.851	0.821	0.856	0.855	0.836	0.844	1.80
37)		TRH4	0.851	0.821	0.856	0.855	0.836	0.844	1.80
38)		TRH5	0.851	0.821	0.856	0.855	0.836	0.844	1.80
39)		TRH6	0.851	0.821	0.856	0.855	0.836	0.844	1.80

(#) = Out of Range

C10B0727.M Fri Aug 17 09:58:01 2007

Area for TPH Calculations

C10B0727M

	Level 1 GC10863E.D	Level 2 GC10863F.D	Level 3 GC10863G.D	Level 4 GC10863H.D	Level 5 GC10863I.D
n-undecane (n-C11)	8910	76413	200436	3344891	393464
n-hexadecane (n-C16)	12656	84717	210662	346731	405190
n-eicosane (n-C20)	9821	80133	200598	326023	385056
n-pentadecane (n-C25)	9537	74618	186388	301539	360193
n-triacontane (n-C30)	8861	68899	173120	279173	338408
n-tetratriacontane (n-C34)	9191	65502	163991	266515	327537
Average Area For Response Factor	9829	75047	189199	810812	368308

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\GC10863E.D
Acq On : 27 Jul 2007 00:09
Sample : CS1
Misc :

Vial: 96
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 27 9:49 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:24 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
		Internal Standards				
1)		n-hexadecane-d34	12.82	132983	20.001	ug/ml
10)		5a-androstane	17.98	181709	20.003	ug/ml
		System Monitoring Compounds				
4)	S	n-dodecane-d26	8.80	8134	1.334	ug/ml
16)	S	n-eicosane-d42	17.40	9297	1.283	ug/ml
27)	S	n-triacontane-d62	29.18	7668	1.267	ug/ml
		Target Compounds				
2)		n-C10	6.24	9050	1.206	ug/ml
3)		n-C11	7.56	8910	1.183	ug/ml
5)		n-C12	8.80	8134	1.073	ug/ml
6)		n-C13	9.96	9371	1.181	ug/ml
7)		n-C14	11.04	11902	1.413	ug/ml
8)		n-C15	12.06	10394	1.272	ug/ml
9)		n-C16	13.07	12656	1.496	ug/ml
11)		n-C17	14.26	11803	1.386	ug/ml
12)		Pristane	14.26	11803	1.320	ug/ml
13)		n-C18	15.32	9856	1.199	ug/ml
14)		Phytane	15.46	11298	1.300	ug/ml
15)		n-C19	16.53	10539	1.280	ug/ml
17)		n-C20	17.79	9821	1.222	ug/ml
18)		n-C21	19.07	10712	1.302	ug/ml
19)		n-C22	20.36	10448	1.313	ug/ml
20)		n-C23	21.63	9761	1.255	ug/ml
21)		n-C24	22.88	9579	1.255	ug/ml
22)		n-C25	24.11	9537	1.266	ug/ml
23)		n-C26	25.30	9459	1.254	ug/ml
24)		n-C27	26.45	9067	1.246	ug/ml
25)		n-C28	27.57	9109	1.268	ug/ml
26)		n-C29	28.65	9471	1.297	ug/ml
28)		n-C30	29.71	8861	1.265	ug/ml
29)		n-C31	30.73	8561	1.246	ug/ml
30)		n-C32	31.72	8186	1.219	ug/ml
31)		n-C33	32.71	8255	1.237	ug/ml
32)		n-C34	33.83	8191	1.226	ug/ml
33)		TPH	22.52	259	0.037	ug/ml
34)		TRH1	6.24	9050	0.465	ug/ml
35)		TRH2	12.62	1613	0.226	ug/ml
36)		TRH3	19.80	114	0.017	ug/ml
37)		TRH4	27.10	1712	0.240	ug/ml
38)		TRH5	34.42	7798	0.961	ug/ml
39)		TRH6	42.11	5130	0.667	ug/ml

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

000114

Data File : D:\GC-MSD~1\GC10863\GC10863E.D
Acq On : 27 Jul 2007 00:09
Sample : CS1
Misc :

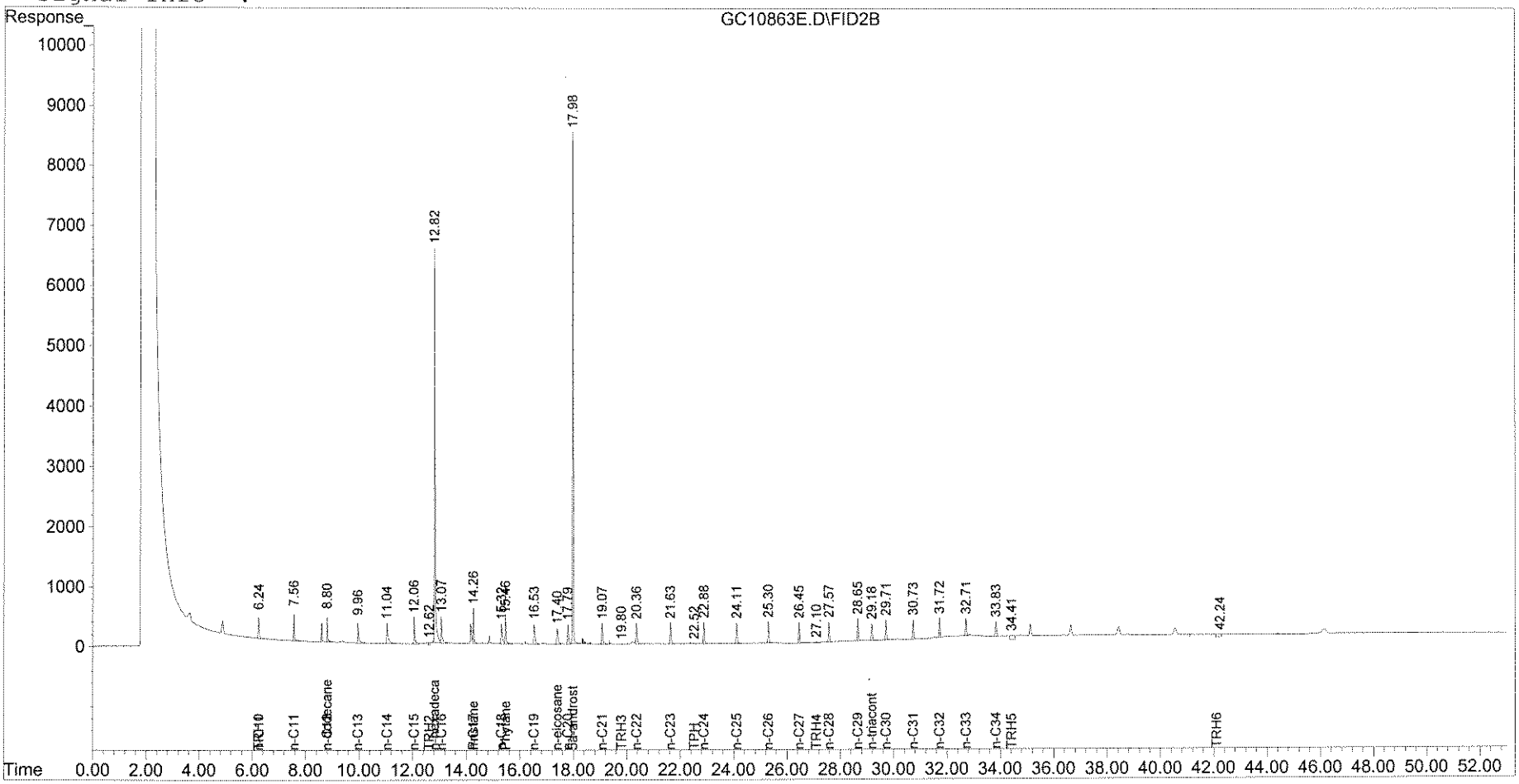
IntFile : autoint1.e

Vial: 96
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

Quant Time: Jul 27 9:49 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:24 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



0001115

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\GC10863F.D
Acq On : 27 Jul 2007 1:10
Sample : CS2
Misc :

Vial: 97
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 27 9:24 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:32 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
		Internal Standards				
1)		n-hexadecane-d34	12.82	140337	20.001	ug/mlm
10)		5a-androstane	17.98	182931	20.003	ug/mlm
		System Monitoring Compounds				
4)	S	n-dodecane-d26	8.59	60951	9.736	ug/mlm
16)	S	n-eicosane-d42	17.39	71386	9.020	ug/mlm
27)	S	n-triacontane-d62	29.17	59202	8.821	ug/mlm
		Target Compounds				
2)		n-C10	6.24	75696	8.776	ug/mlm
3)		n-C11	7.56	76413	10.090	ug/mlm
5)		n-C12	8.80	78432	9.869	ug/mlm
6)		n-C13	9.95	82293	10.054	ug/mlm
7)		n-C14	11.03	85300	10.216	ug/mlm
8)		n-C15	12.05	84573	10.069	ug/mlm
9)		n-C16	13.07	84717	10.108	ug/mlm
11)		n-C17	14.15	80604	8.966	ug/mlm
12)		Pristane	14.26	88424	9.262	ug/mlm
13)		n-C18	15.31	81625	9.072	ug/mlm
14)		Phytane	15.46	84092	8.917	ug/mlm
15)		n-C19	16.52	81047	9.093	ug/mlm
17)		n-C20	17.78	80133	9.040	ug/mlm
18)		n-C21	19.07	80766	8.987	ug/mlm
19)		n-C22	20.35	76414	8.785	ug/mlm
20)		n-C23	21.63	76972	8.797	ug/mlm
21)		n-C24	22.88	75700	8.767	ug/mlm
22)		n-C25	24.10	74618	8.754	ug/mlm
23)		n-C26	25.29	74384	8.730	ug/mlm
24)		n-C27	26.45	71351	8.671	ug/mlm
25)		n-C28	27.57	70610	8.781	ug/mlm
26)		n-C29	28.65	71638	8.924	ug/mlm
28)		n-C30	29.70	68899	9.050	ug/mlm
29)		n-C31	30.73	67820	9.226	ug/mlm
30)		n-C32	31.72	65471	9.474	ug/mlm
31)		n-C33	32.71	65551	10.036	ug/mlm
32)		n-C34	33.83	65502	10.764	ug/mlm

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

Data File : D:\GC-MSD~1\GC10863\GC10863F.D
Acq On : 27 Jul 2007 1:10
Sample : CS2
Misc :

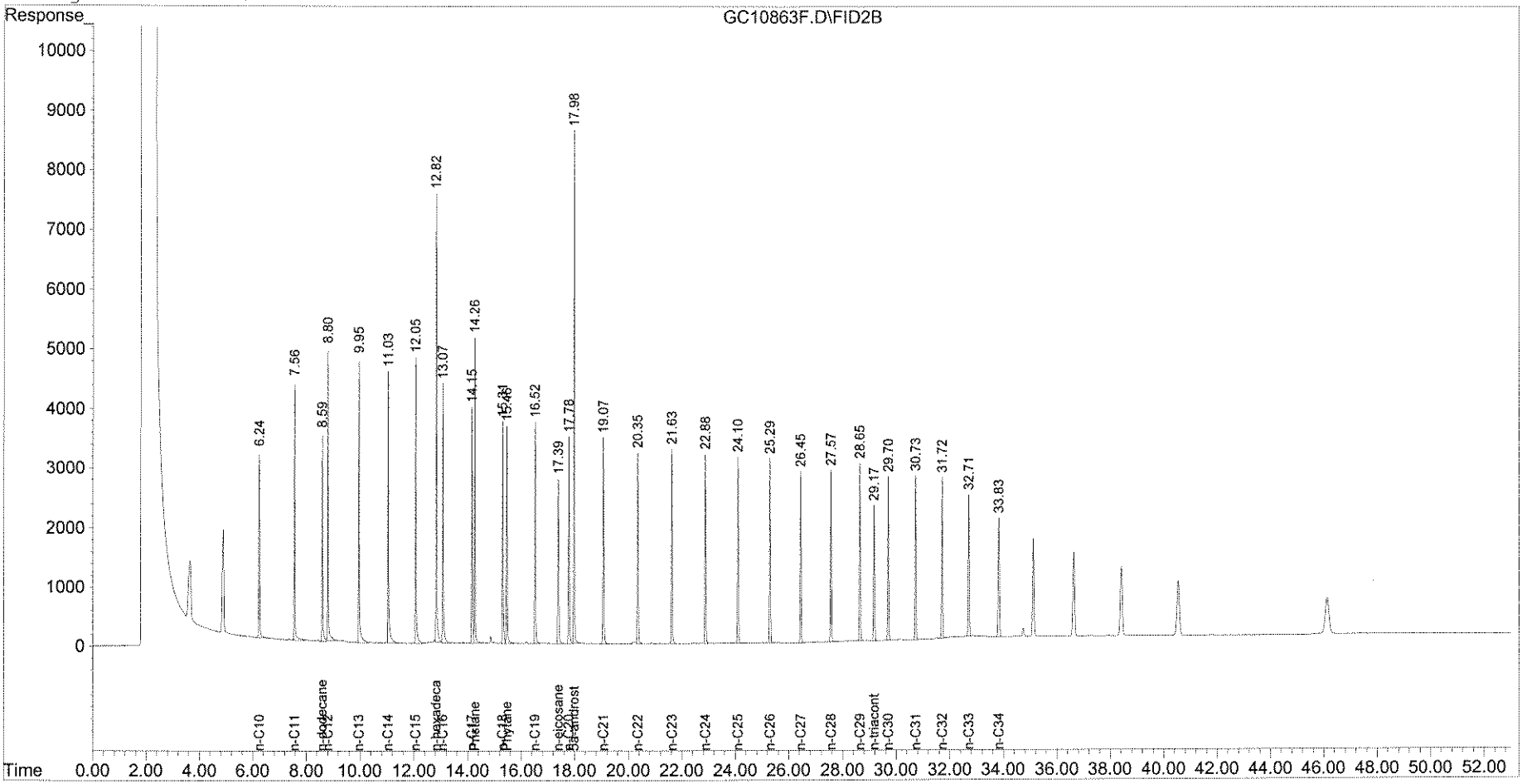
IntFile : autoint1.e

Vial: 97
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

Quant Time: Jul 27 9:24 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:32 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



000117

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\GC10863G.D
Acq On : 27 Jul 2007 2:10
Sample : CS3
Misc :

Vial: 98
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 27 9:29 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:32 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
		Internal Standards			
1)		n-hexadecane-d34	12.82	136244	20.001 ug/mlm
10)		5a-androstane	17.98	176786	20.003 ug/mlm
		System Monitoring Compounds			
4)	S	n-dodecane-d26	8.59	160823	26.460 ug/mlm
16)	S	n-eicosane-d42	17.39	178026	23.278 ug/mlm
27)	S	n-triacontane-d62	29.18	149661	23.075 ug/mlm
		Target Compounds			
2)		n-C10	6.24	198436	23.698 ug/mlm
3)		n-C11	7.56	200436	27.262 ug/mlm
5)		n-C12	8.80	207714	26.921 ug/mlm
6)		n-C13	9.95	211412	26.606 ug/mlm
7)		n-C14	11.04	214808	26.500 ug/mlm
8)		n-C15	12.06	212657	26.079 ug/mlm
9)		n-C16	13.07	210662	25.891 ug/mlm
11)		n-C17	14.15	206224	23.737 ug/mlm
12)		Pristane	14.27	218184	23.649 ug/mlm
13)		n-C18	15.31	206561	23.755 ug/mlm
14)		Phytane	15.47	208736	22.902 ug/mlm
15)		n-C19	16.53	203031	23.570 ug/mlm
17)		n-C20	17.79	200598	23.417 ug/mlm
18)		n-C21	19.07	201613	23.213 ug/mlm
19)		n-C22	20.36	190492	22.661 ug/mlm
20)		n-C23	21.63	192949	22.820 ug/mlm
21)		n-C24	22.88	189557	22.717 ug/mlm
22)		n-C25	24.10	186388	22.626 ug/mlm
23)		n-C26	25.29	184588	22.418 ug/mlm
24)		n-C27	26.45	177611	22.333 ug/mlm
25)		n-C28	27.57	176425	22.702 ug/mlm
26)		n-C29	28.66	178575	23.018 ug/mlm
28)		n-C30	29.71	173120	23.530 ug/mlm
29)		n-C31	30.73	169757	23.895 ug/mlm
30)		n-C32	31.72	163278	24.448 ug/mlm
31)		n-C33	32.71	164271	26.024 ug/mlm
32)		n-C34	33.83	163991	27.886 ug/mlm

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

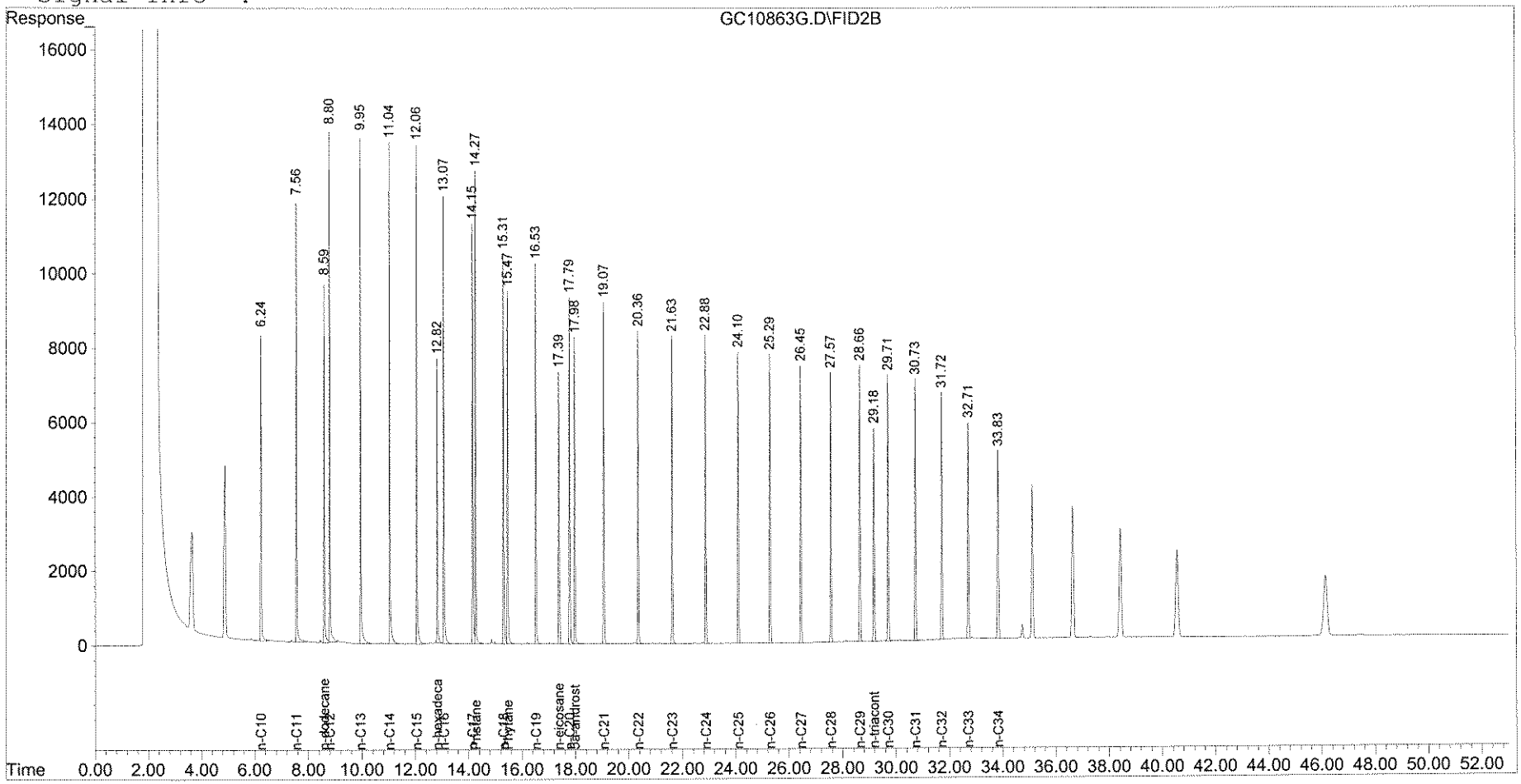
Data File : D:\GC-MSD~1\GC10863\GC10863G.D Vial: 98
Acq On : 27 Jul 2007 2:10 Operator: CSB
Sample : CS3 Inst : GC#1
Misc : Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 27 9:29 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:32 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



000119

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\GC10863H.D
Acq On : 27 Jul 2007 3:10
Sample : CS4
Misc :

IntFile : autoint1.e

Vial: 99
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

Quant Time: Jul 27 9:37 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:32 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
		Internal Standards			
1)		n-hexadecane-d34	12.82	142902	20.001 ug/mlm
10)		5a-androstane	17.98	180837	20.003 ug/mlm
		System Monitoring Compounds			
4)	S	n-dodecane-d26	8.60	268669	42.145 ug/mlm
16)	S	n-eicosane-d42	17.39	290251	37.101 ug/mlm
27)	S	n-triacontane-d62	29.18	243055	36.636 ug/mlm
		Target Compounds			
2)		n-C10	6.24	331726	37.770 ug/mlm
3)		n-C11	7.56	334891	43.428 ug/mlm
5)		n-C12	8.80	345123	42.645 ug/mlm
6)		n-C13	9.96	350184	42.017 ug/mlm
7)		n-C14	11.04	352474	41.457 ug/mlm
8)		n-C15	12.06	349970	40.919 ug/mlm
9)		n-C16	13.07	346731	40.628 ug/mlm
11)		n-C17	14.16	339388	38.189 ug/mlm
12)		Pristane	14.27	353802	37.490 ug/mlm
13)		n-C18	15.31	337354	37.927 ug/mlm
14)		Phytane	15.47	339885	36.457 ug/mlm
15)		n-C19	16.53	330705	37.532 ug/mlm
17)		n-C20	17.79	326023	37.206 ug/mlm
18)		n-C21	19.07	327058	36.813 ug/mlm
19)		n-C22	20.36	308114	35.833 ug/mlm
20)		n-C23	21.63	312012	36.074 ug/mlm
21)		n-C24	22.88	306119	35.864 ug/mlm
22)		n-C25	24.11	301539	35.785 ug/mlm
23)		n-C26	25.30	299118	35.513 ug/mlm
24)		n-C27	26.45	287324	35.320 ug/mlm
25)		n-C28	27.57	286029	35.981 ug/mlm
26)		n-C29	28.66	289145	36.435 ug/mlm
28)		n-C30	29.71	279173	37.095 ug/mlm
29)		n-C31	30.73	274453	37.766 ug/mlm
30)		n-C32	31.72	264793	38.759 ug/mlm
31)		n-C33	32.72	266519	41.276 ug/mlm
32)		n-C34	33.84	266515	44.305 ug/mlm

Data File : D:\GC-MSD~1\GC10863\GC10863H.D
Acq On : 27 Jul 2007 3:10
Sample : CS4
Misc :

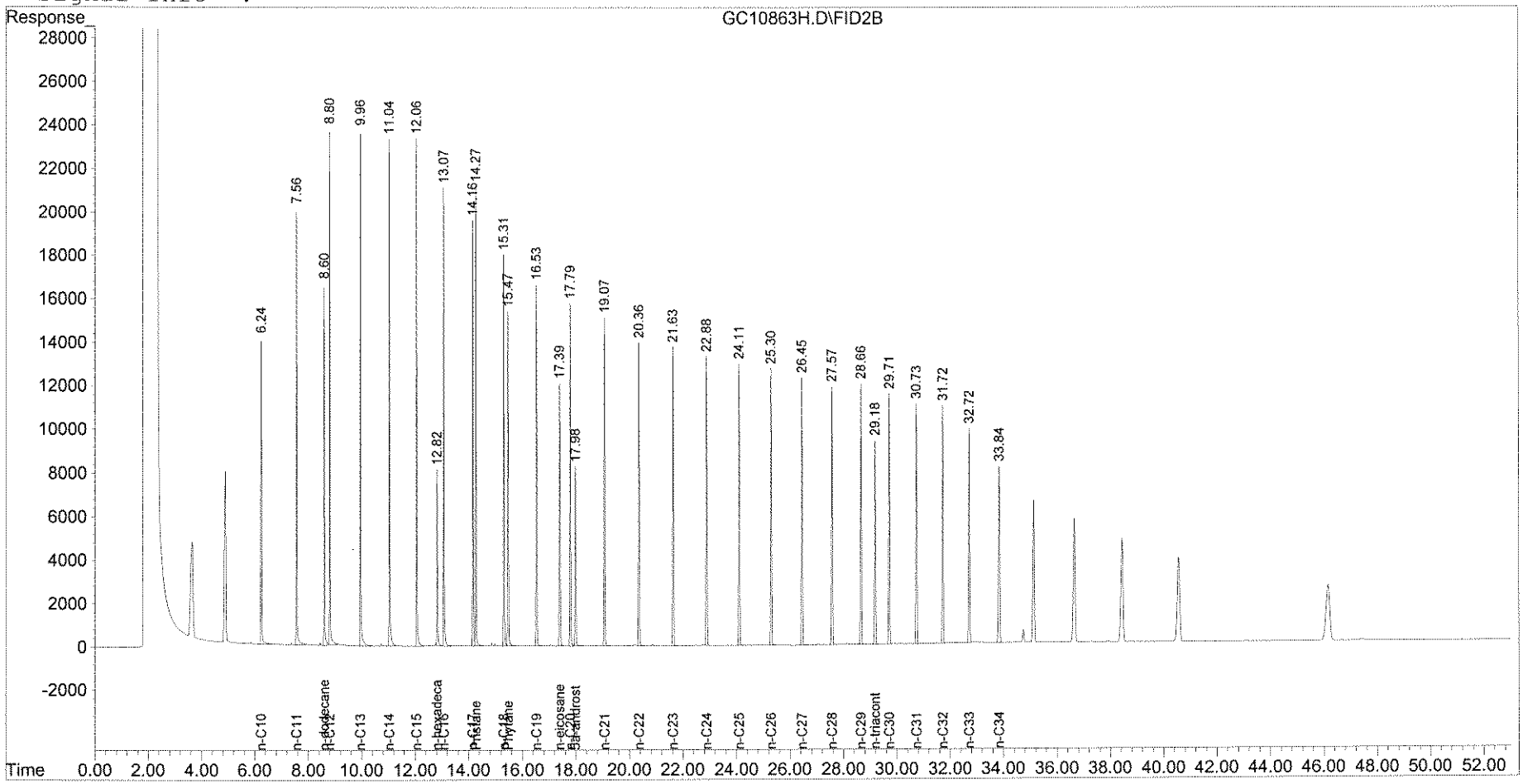
Vial: 99
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 27 9:37 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:32 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



0001121

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\GC10863\GC10863I.D
Acq On : 27 Jul 2007 4:11
Sample : CS5
Misc :

Vial: 100
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

IntFile : autoint1.e

Quant Time: Jul 27 9:43 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:32 2007
Response via : Initial Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
		Internal Standards			
1)		n-hexadecane-d34	12.82	138392	20.001 ug/mlm
10)		5a-androstane	17.98	176214	20.003 ug/mlm
		System Monitoring Compounds			
4)	S	n-dodecane-d26	8.59	313555	50.789 ug/mlm
16)	S	n-eicosane-d42	17.40	341785	44.835 ug/mlm
27)	S	n-triacontane-d62	29.18	290514	44.938 ug/mlm
		Target Compounds			
2)		n-C10	6.24	390194	45.875 ug/mlm
3)		n-C11	7.56	393464	52.687 ug/mlm
5)		n-C12	8.80	401510	51.230 ug/mlm
6)		n-C13	9.96	405954	50.296 ug/mlm
7)		n-C14	11.04	413407	50.208 ug/mlm
8)		n-C15	12.06	410003	49.501 ug/mlm
9)		n-C16	13.07	405190	49.025 ug/mlm
11)		n-C17	14.16	398999	46.074 ug/mlm
12)		Pristane	14.27	417221	45.370 ug/mlm
13)		n-C18	15.31	397251	45.833 ug/mlm
14)		Phytane	15.47	399920	44.021 ug/mlm
15)		n-C19	16.53	390024	45.426 ug/mlm
17)		n-C20	17.79	385056	45.096 ug/mlm
18)		n-C21	19.07	386980	44.700 ug/mlm
19)		n-C22	20.36	364366	43.487 ug/mlm
20)		n-C23	21.63	370960	44.015 ug/mlm
21)		n-C24	22.88	364955	43.879 ug/mlm
22)		n-C25	24.11	360193	43.867 ug/mlm
23)		n-C26	25.30	358213	43.645 ug/mlm
24)		n-C27	26.45	345640	43.603 ug/mlm
25)		n-C28	27.57	344387	44.458 ug/mlm
26)		n-C29	28.66	349410	45.184 ug/mlm
28)		n-C30	29.71	338408	46.145 ug/mlm
29)		n-C31	30.73	333822	47.141 ug/mlm
30)		n-C32	31.72	322612	48.462 ug/mlm
31)		n-C33	32.72	325921	51.800 ug/mlm
32)		n-C34	33.84	327537	55.878 ug/mlm

Data File : D:\GC-MSD~1\GC10863\GC10863I.D
Acq On : 27 Jul 2007 4:11
Sample : CS5
Misc :

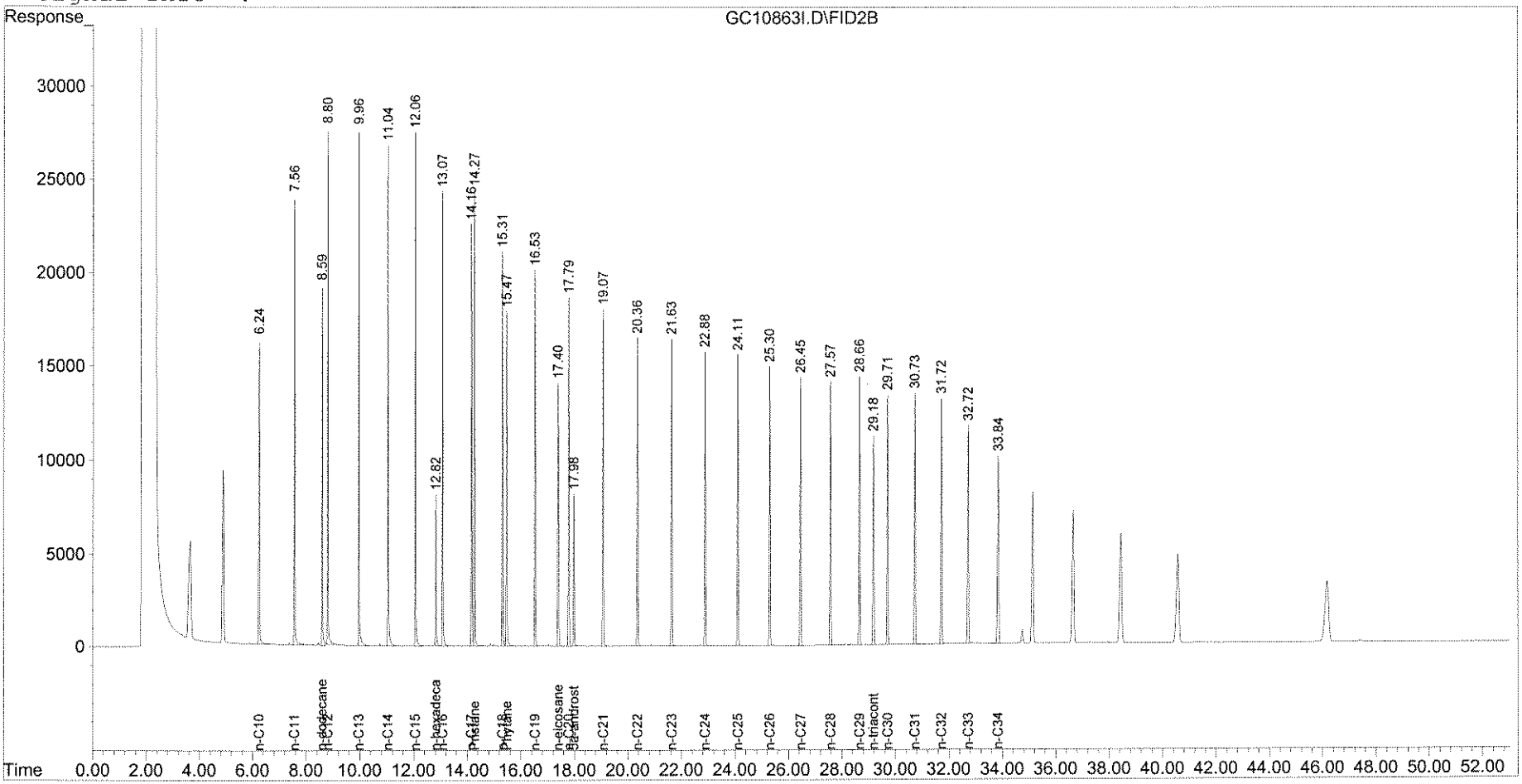
IntFile : autoint1.e

Vial: 100
Operator: CSB
Inst : GC#1
Multiplr: 1.00
Sample Amount: 0.00

Quant Time: Jul 27 9:43 2007 Quant Results File: C10B0727.RES

Quant Method : C:\HPCHEM\2\METHODS\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Fri Jul 27 09:12:32 2007
Response via : Multiple Level Calibration
DataAcq Meth : ALI_COMP.M

Volume Inj. :
Signal Phase :
Signal Info :



0001123

Calibration Status Report GC#1

Method : D:\GC-MSD~1\C10B0727.M (Chemstation Integrator)
Title : C10 - C35 aliphatic
Last Update : Tue Jul 31 15:49:53 2007
Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	1.25	20.01	J:\2\DATA\GC10863\GC10863E.D
2	2	9.97	20.01	J:\2\DATA\GC10863\GC10863F.D
3	3	24.92	20.01	J:\2\DATA\GC10863\GC10863G.D
4	4	39.86	20.01	J:\2\DATA\GC10863\GC10863H.D
5	5	49.83	20.01	J:\2\DATA\GC10863\GC10863I.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Jul 27 10:47 2007	Jul 27 09:49 2007	27 Jul 2007 12:09 am
2	2	Jul 27 10:47 2007	Jul 27 09:24 2007	27 Jul 2007 1:10 am
3	3	Jul 27 10:47 2007	Jul 27 09:29 2007	27 Jul 2007 2:10 am
4	4	Jul 27 10:47 2007	Jul 27 09:37 2007	27 Jul 2007 3:10 am
5	5	Jul 27 10:47 2007	Jul 27 09:43 2007	27 Jul 2007 4:11 am

C10B0727.M Tue Aug 14 08:54:51 2007

Polycyclic Aromatic Hydrocarbon
Initial Calibration Data

PAH ICAL
072107.M

GC/MS3
(PAH-2002)

Response Factor Report GC/MS Ins

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:22 2007
Response via : Initial Calibration

Calibration Files
1 =MS30401D.D 2 =MS30401E.D 3 =MS30401F.D
4 =MS30401G.D 5 =MS30401H.D

		Compound	1	2	3	4	5	Avg	%RSD
1)	I	Fluorene-d10	ISTD						
2)	S	Naphthalene-d8	1.733	2.030	1.806	1.762	1.535	1.773	9.99
3)	T	Decalin	0.369	0.417	0.343	0.347	0.333	0.362	9.29
4)	un	C1-Decalin	0.369	0.417	0.343	0.347	0.333	0.362	9.29
5)	un	C2-Decalin	0.369	0.417	0.343	0.347	0.333	0.362	9.29
6)	un	C3-Decalin	0.369	0.417	0.343	0.347	0.333	0.362	9.29
7)	un	C4-Decalin	0.369	0.417	0.343	0.347	0.333	0.362	9.29
8)	T	Naphthalene	1.660	2.034	1.787	1.780	1.741	1.800	7.77
9)	T	2-Methylnaphthalene	1.285	1.372	1.234	1.252	1.203	1.269	5.10
10)	T	1-Methylnaphthalene	1.225	1.421	1.147	1.142	1.187	1.224	9.38
11)	T	2,6-Dimethylnaphthale	0.946	1.242	1.105	1.109	1.091	1.099	9.57
12)	T	1,6,7-Trimethylnaphth	0.919	1.100	1.008	1.037	1.050	1.023	6.51
13)	un	C2-Naphthalenes	1.660	2.034	1.787	1.780	1.741	1.800	7.77
14)	un	C3-Naphthalenes	1.660	2.034	1.787	1.780	1.741	1.800	7.77
15)	un	C4-Naphthalenes	1.660	2.034	1.787	1.780	1.741	1.800	7.77
16)	T	Benzothiophene	1.185	1.555	1.419	1.424	1.430	1.403	9.55
17)	un	C1-Benzothiophene	1.185	1.555	1.419	1.424	1.430	1.403	9.55
18)	un	C2-Benzothiophene	1.185	1.555	1.419	1.424	1.430	1.403	9.55
19)	un	C3-Benzothiophene	1.185	1.555	1.419	1.424	1.430	1.403	9.55
20)	S	Acenaphthene-d10	0.934	1.076	0.926	0.959	0.990	0.977	6.21
21)	T	Biphenyl	1.407	1.783	1.551	1.573	1.600	1.583	8.51
22)	T	Acenaphthylene	1.722	2.126	1.921	1.989	1.939	1.940	7.52
23)	T	Acenaphthene	1.032	1.277	1.154	1.186	1.190	1.168	7.58
24)	T	Dibenzofuran	1.594	2.046	1.807	1.833	1.806	1.817	8.81
25)	T	Fluorene	1.286	1.553	1.384	1.404	1.438	1.413	6.83
26)	un	C1-Fluorenes	1.286	1.553	1.384	1.404	1.438	1.413	6.83
27)	un	C2-Fluorenes	1.286	1.553	1.384	1.404	1.438	1.413	6.83
28)	un	C3-Fluorenes	1.286	1.553	1.384	1.404	1.438	1.413	6.83
29)	I	Pyrene-d10	ISTD						
30)	S	Phenanthrene-d10	0.964	1.012	0.892	1.013	1.117	0.999	8.24
31)	T	Pentachlorophenol	0.068	0.058	0.056	0.064	0.065	0.062	8.04
32)	T	Carbazole	0.962	1.013	0.902	1.065	1.073	1.003	7.19
33)	T	Dibenzothiophene	0.976	1.187	1.006	1.000	1.026	1.039	8.16
34)	un	C1-Dibenzothiophene	0.976	1.187	1.006	1.000	1.026	1.039	8.16
35)	un	C2-Dibenzothiophene	0.976	1.187	1.006	1.000	1.026	1.039	8.16
36)	un	C3-Dibenzothiophene	0.976	1.187	1.006	1.000	1.026	1.039	8.16
37)	T	Phenanthrene	1.022	1.185	1.014	1.086	1.169	1.095	7.30
38)	T	Anthracene	0.994	1.179	1.000	1.090	1.148	1.082	7.79
39)	T	1-Methylphenanthrene	0.817	0.913	0.795	0.843	0.873	0.848	5.50
40)	un	C1-Phenanthrene/Anthr	1.022	1.185	1.014	1.086	1.169	1.095	7.30
41)	un	C2-Phenanthrene/Anthr	1.022	1.185	1.014	1.086	1.169	1.095	7.30
42)	un	C3-Phenanthrene/Anthr	1.022	1.185	1.014	1.086	1.169	1.095	7.30
43)	un	C4-Phenanthrene/Anthr	1.022	1.185	1.014	1.086	1.169	1.095	7.30
44)	T	Naphthobenzothiophene	1.245	1.227	1.313	1.427	1.539	1.350	9.74
45)	un	C1-Naphthobenzothioph	1.245	1.227	1.313	1.427	1.539	1.350	9.74
46)	un	C2-Naphthobenzothioph	1.245	1.227	1.313	1.427	1.539	1.350	9.74
47)	un	C3-Naphthobenzothioph	1.245	1.227	1.313	1.427	1.539	1.350	9.74
48)	T	Fluoranthene	1.198	1.363	1.246	1.319	1.359	1.297	5.61
49)	T	Pyrene	1.204	1.375	1.177	1.232	1.392	1.276	7.86
50)	un	C1-Fluoranthenes/Pyre	1.198	1.363	1.246	1.319	1.359	1.297	5.61
51)	un	C2-Fluoranthenes/Pyre	1.198	1.363	1.246	1.319	1.359	1.297	5.61
52)	un	C3-Fluoranthenes/Pyre	1.198	1.363	1.246	1.319	1.359	1.297	5.61
53)	S	Chrysene-d12	1.081	1.091	1.076	1.173	1.322	1.149	9.12
54)	T	Benz(a)anthracene	1.199	1.185	1.062	1.164	1.364	1.195	9.12
55)	T	Chrysene	1.175	1.366	1.066	1.139	1.168	1.183	9.41
56)	un	C1-Chrysenes	1.175	1.366	1.066	1.139	1.168	1.183	9.41
57)	un	C2-Chrysenes	1.175	1.366	1.066	1.139	1.168	1.183	9.41
58)	un	C3-Chrysenes	1.175	1.366	1.066	1.139	1.168	1.183	9.41
59)	un	C4-Chrysenes	1.175	1.366	1.066	1.139	1.168	1.183	9.41

60)	I	Benzo(a)pyrene-d12	----------ISTD----------						
61)	un	C29-Hopane	0.587	0.722	0.618	0.637	0.651	0.643	7.86
62)	un	18a-Oleanane	0.587	0.722	0.618	0.637	0.651	0.643	7.86
63)	T	C30-Hopane	0.587	0.722	0.618	0.637	0.651	0.643	7.86
64)	T	Benzo(b)fluoranthene	1.875	1.754	1.700	1.802	1.736	1.773	3.80
65)	T	Benzo(k)fluoranthene	1.844	1.792	1.592	1.724	1.907	1.772	6.81
66)	T	Benzo(e)pyrene	1.457	1.717	1.534	1.621	1.566	1.579	6.16
67)	T	Benzo(a)pyrene	1.270	1.512	1.365	1.516	1.480	1.428	7.54
68)	T	Indeno(1,2,3-c,d)pyre	1.073	1.216	1.115	1.281	1.258	1.189	7.64
69)	T	Dibenzo(a,h)anthracen	1.072	1.255	1.103	1.174	1.235	1.168	6.84
70)	un	C1-Dibenzo(a,h)anthra	1.072	1.255	1.103	1.174	1.235	1.168	6.84
71)	un	C2-Dibenzo(a,h)anthra	1.072	1.255	1.103	1.174	1.235	1.168	6.84
72)	un	C3-Dibenzo(a,h)anthra	1.072	1.255	1.103	1.174	1.235	1.168	6.84
73)	T	Benzo(g,h,i)perylene	1.244	1.343	1.185	1.278	1.328	1.276	5.03
74)	S	Perylene-d12	0.844	0.898	0.807	0.853	0.943	0.869	6.02
75)	T	Perylene	1.434	1.596	1.420	1.468	1.557	1.495	5.21

(#) = Out of Range

072107.M Wed Aug 08 20:30:38 2007

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\MS30401D.D
Acq On : 21 Jul 2007 4:40 pm
Sample : Cal Level 1
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 8 20:27 2007

Vial: 41
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 072107.RES

Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Thu Jul 19 21:52:14 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorene-d10	20.66	176	1819m	51.08	ng/ml	0.00
29) Pyrene-d10	28.80	212	3270m	49.98		-0.03
60) Benzo(a)pyrene-d12	37.38	264	2126m	45.61		-0.03
System Monitoring Compounds						
2) Naphthalene-d8	13.04	136	1234m	19.28		-0.02
20) Acenaphthene-d10	18.83	164	665	18.58		-0.02
30) Phenanthrene-d10	23.94	188	1261	18.04		0.00
53) Chrysene-d12	33.00	240	1415	17.52		0.00
74) Perylene-d12	37.66	264	787	20.19		-0.03
Target Compounds						Qvalue
3) Decalin	11.35	138	263	19.99	ng/ml	
4) C1-Decalin	0.00	152	0	N.D.	d	
5) C2-Decalin	0.00	166	0	N.D.	d	
6) C3-Decalin	0.00	180	0	N.D.	d	
7) C4-Decalin	0.00	194	0	N.D.	d	
8) Naphthalene	13.09	128	1185	17.76		
9) 2-Methylnaphthalene	15.37	142	918m	19.65		
10) 1-Methylnaphthalene	15.65	142	874m	19.50		
11) 2,6-Dimethylnaphthalene	17.48	156	675	16.24		#
12) 1,6,7-Trimethylnaphthalene	20.29	170	656	16.84		#
13) C2-Naphthalenes	18.10	156	0	N.D.		
14) C3-Naphthalenes	20.29	170	0	N.D.		
15) C4-Naphthalenes	0.00	184	0	N.D.	d	
16) Benzothiophene	13.26	134	846	15.09	ng/ml	
17) C1-Benzothiophene	0.00	148	0	N.D.	d	
18) C2-Benzothiophene	18.12	162	0	N.D.		
19) C3-Benzothiophene	0.00	176	0	N.D.	d	
21) Biphenyl	17.00	154	1004	17.24		
22) Acenaphthylene	18.35	152	1229	17.16		
23) Acenaphthene	18.94	154	736	17.08		
24) Dibenzofuran	19.62	168	1137	17.14	ng/ml	
25) Fluorene	20.74	166	918	18.11		
26) C1-Fluorenes	0.00	180	0	N.D.	d	
27) C2-Fluorenes	0.00	194	0	N.D.	d	
28) C3-Fluorenes	0.00	208	0	N.D.	d	
31) Pentachlorophenol	23.17	266	89m	89.73	ng/ml	
32) Carbazole	24.82	167	1261m	18.84	ng/ml	
33) Dibenzothiophene	23.61	184	1279	16.48		#
34) C1-Dibenzothiophene	0.00	198	0	N.D.	d	
35) C2-Dibenzothiophene	0.00	212	0	N.D.	d	
36) C3-Dibenzothiophene	0.00	226	0	N.D.	d	
37) Phenanthrene	24.01	178	1340	15.57		
38) Anthracene	24.21	178	1302	16.62		
39) 1-Methylphenanthrene	26.13	192	1071	17.46		
40) C1-Phenanthrene/Anthracene	26.26	192	0	N.D.		
41) C2-Phenanthrene/Anthracene	0.00	206	0	N.D.	d	
42) C3-Phenanthrene/Anthracene	0.00	220	0	N.D.	d	
43) C4-Phenanthrene/Anthracene	0.00	234	0	N.D.	d	
44) Naphthobenzothiophene	32.16	234	1631	20.86		

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

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\MS30401D.D Vial: 41
Acq On : 21 Jul 2007 4:40 pm Operator: TJM
Sample : Cal Level 1 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:27 2007 Quant Results File: 072107.RES

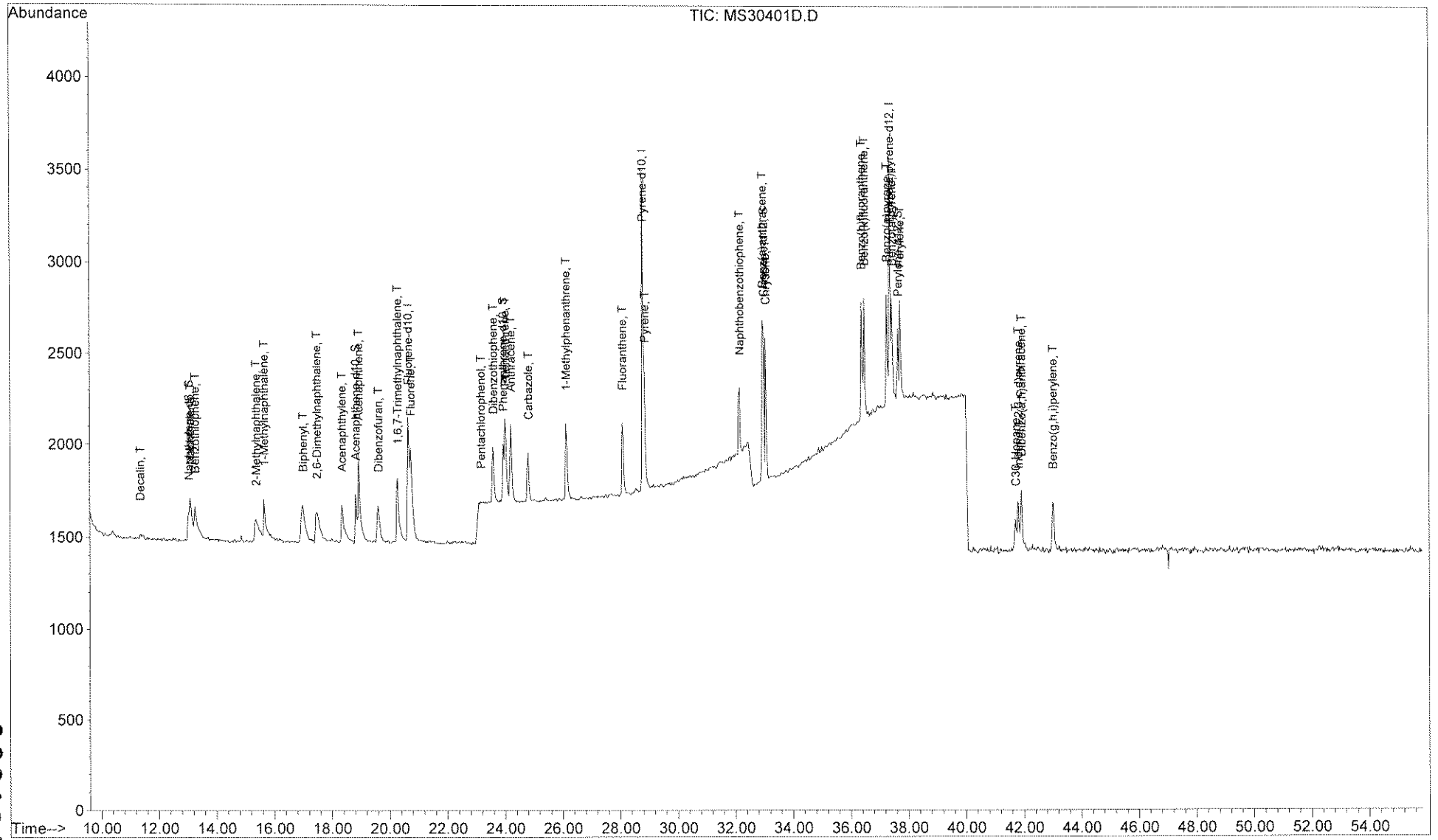
Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Thu Jul 19 21:52:14 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	C1-Naphthobenzothiophene	0.00	248	0	N.D.	d	
46)	C2-Naphthobenzothiophene	0.00	262	0	N.D.	d	
47)	C3-Naphthobenzothiophene	0.00	276	0	N.D.	d	
48)	Fluoranthene	28.09	202	1571	17.55		
49)	Pyrene	28.86	202	1579	16.33		
50)	C1-Fluoranthenes/Pyrenes	0.00	216	0	N.D.	d	
51)	C2-Fluoranthenes/Pyrenes	0.00	230	0	N.D.	d	
52)	C3-Fluoranthenes/Pyrenes	0.00	244	0	N.D.	d	
54)	Benz(a)anthracene	32.96	228	1572m	17.94		
55)	Chrysene	33.07	228	1542m	20.18		
56)	C1-Chrysenes	0.00	242	0	N.D.	d	
57)	C2-Chrysenes	0.00	256	0	N.D.	d	
58)	C3-Chrysenes	0.00	270	0	N.D.	d	
59)	C4-Chrysenes	0.00	284	0	N.D.	d	
61)	C29-Hopane	0.00	191	0	N.D.	d	
62)	18a-Oleanane	0.00	191	0	N.D.	d	
63)	C30-Hopane	41.71	191	547	16.13	ng/ml	
64)	Benzo(b)fluoranthene	36.39	252	1750	23.21		
65)	Benzo(k)fluoranthene	36.50	252	1723m	21.61		
66)	Benzo(e)pyrene	37.27	252	1362	17.94		#
67)	Benzo(a)pyrene	37.45	252	1186	17.74		#
68)	Indeno(1,2,3-c,d)pyrene	41.82	276	1002	19.86		
69)	Dibenzo(a,h)anthracene	41.92	278	1001	21.51		#
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d	
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d	
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d	
73)	Benzo(g,h,i)perylene	43.01	276	1162	20.55		#
75)	Perylene	37.73	252	1339	19.07		

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

Data File : D:\GC-MSD~1\MS30401\MS30401D.D Vial: 41
Acq On : 21 Jul 2007 4:40 pm Operator: TJM
Sample : Cal Level 1 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:27 2007 Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\MS30401E.D
Acq On : 21 Jul 2007 5:43 pm
Sample : Cal Level 2
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 8 20:28 2007

Vial: 42
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 072107.RES

Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 19:50:01 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorene-d10	20.66	176	1814m	51.08	ng/ml	0.00
29) Pyrene-d10	28.79	212	3489m	49.98		0.00
60) Benzo(a)pyrene-d12	37.38	264	2308m	45.61		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.03	136	7209	120.06		0.00
20) Acenaphthene-d10	18.83	164	3821	112.30		0.00
30) Phenanthrene-d10	23.94	188	7062	102.91		0.00
53) Chrysene-d12	32.96	240	7614	92.08		-0.04
74) Perylene-d12	37.66	264	4544	111.84		0.00
Target Compounds						Qvalue
3) Decalin	10.42	138	1483	115.14	ng/ml	
4) C1-Decalin	0.00	152	0	N.D.	d	
5) C2-Decalin	0.00	166	0	N.D.	d	
6) C3-Decalin	0.00	180	0	N.D.	d	
7) C4-Decalin	0.00	194	0	N.D.	d	
8) Naphthalene	13.09	128	7238	111.31		
9) 2-Methylnaphthalene	15.37	142	4887	114.07		
10) 1-Methylnaphthalene	15.65	142	5053	123.01		
11) 2,6-Dimethylnaphthalene	17.48	156	4421	116.01		#
12) 1,6,7-Trimethylnaphthalene	20.29	170	3912	105.20		#
13) C2-Naphthalenes	18.10	156	0	N.D.		
14) C3-Naphthalenes	20.29	170	0	N.D.		
15) C4-Naphthalenes	0.00	184	0	N.D.	d	
16) Benzothiophene	13.26	134	5532	106.18	ng/ml	
17) C1-Benzothiophene	0.00	148	0	N.D.	d	
18) C2-Benzothiophene	18.12	162	0	N.D.		
19) C3-Benzothiophene	0.00	176	0	N.D.	d	
21) Biphenyl	16.94	154	6345	115.49		
22) Acenaphthylene	18.35	152	7567	111.12		
23) Acenaphthene	18.94	154	4541	110.99		
24) Dibenzofuran	19.59	168	7277	115.15	ng/ml	
25) Fluorene	20.74	166	5527	113.10		
26) C1-Fluorenes	0.00	180	0	N.D.	d	
27) C2-Fluorenes	0.00	194	0	N.D.	d	
28) C3-Fluorenes	0.00	208	0	N.D.	d	
31) Pentachlorophenol	23.44	266	404m	413.51	ng/ml	
32) Carbazole	24.79	167	7083	106.09	ng/ml	
33) Dibenzothiophene	23.57	184	8301	108.16		#
34) C1-Dibenzothiophene	0.00	198	0	N.D.	d	
35) C2-Dibenzothiophene	0.00	212	0	N.D.	d	
36) C3-Dibenzothiophene	0.00	226	0	N.D.	d	
37) Phenanthrene	24.01	178	8291	99.11		
38) Anthracene	24.18	178	8241	105.48		
39) 1-Methylphenanthrene	26.13	192	6387	104.37		
40) C1-Phenanthrene/Anthracene	26.26	192	0	N.D.		
41) C2-Phenanthrene/Anthracene	0.00	206	0	N.D.	d	
42) C3-Phenanthrene/Anthracene	0.00	220	0	N.D.	d	
43) C4-Phenanthrene/Anthracene	0.00	234	0	N.D.	d	
44) Naphthobenzothiophene	32.13	234	8576	104.91		

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

Data File : D:\GC-MSD~1\MS30401\MS30401E.D Vial: 42
Acq On : 21 Jul 2007 5:43 pm Operator: TJM
Sample : Cal Level 2 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:28 2007 Quant Results File: 072107.RES

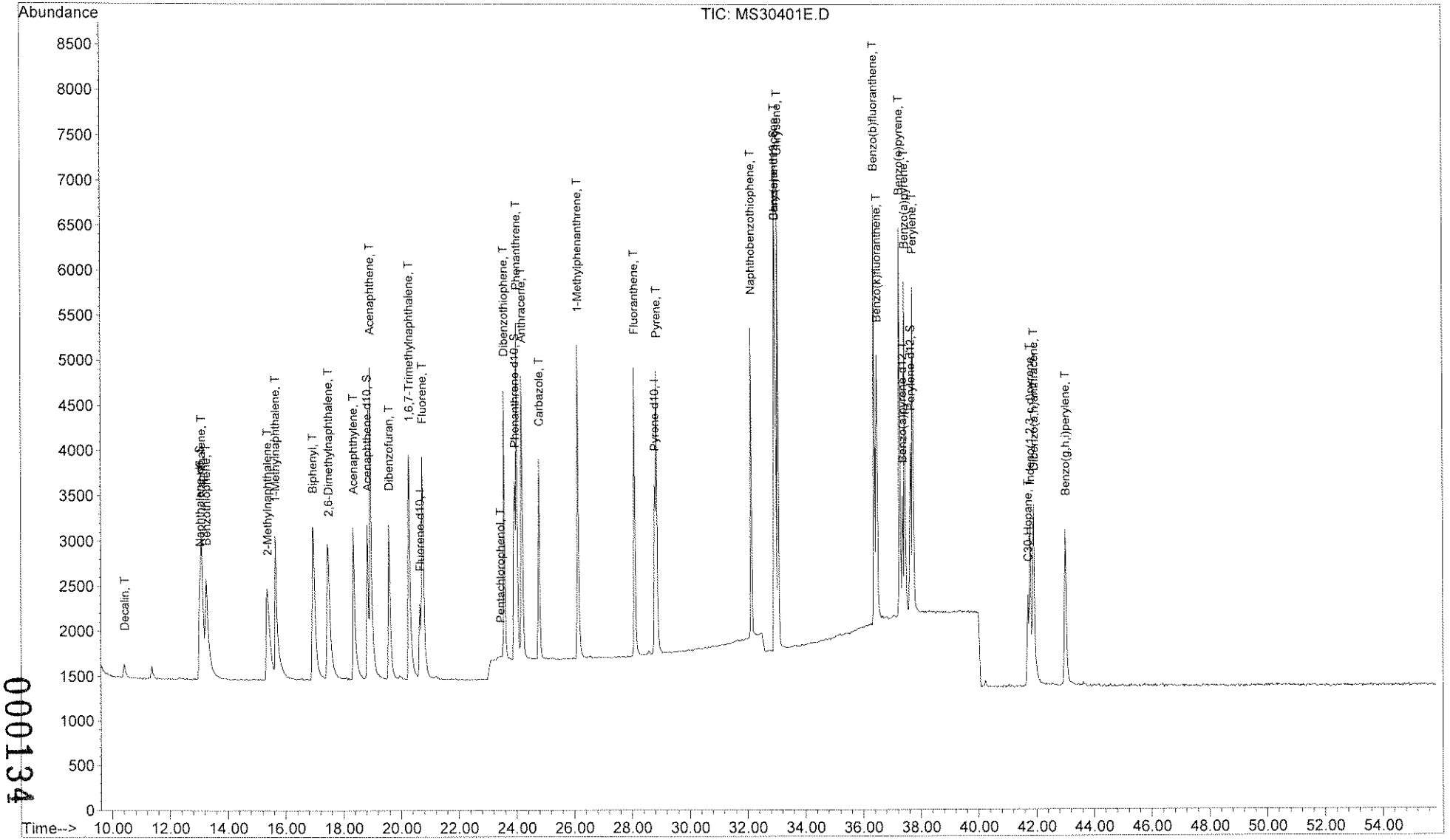
Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 19:50:01 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	C1-Naphthobenzothiophene	0.00	248	0	N.D.	d	
46)	C2-Naphthobenzothiophene	0.00	262	0	N.D.	d	
47)	C3-Naphthobenzothiophene	0.00	276	0	N.D.	d	
48)	Fluoranthene	28.09	202	9540	108.30		
49)	Pyrene	28.86	202	9621	102.14		
50)	C1-Fluoranthenes/Pyrenes	0.00	216	0	N.D.	d	
51)	C2-Fluoranthenes/Pyrenes	0.00	230	0	N.D.	d	
52)	C3-Fluoranthenes/Pyrenes	0.00	244	0	N.D.	d	
54)	Benz(a)anthracene	32.96	228	8290	93.93		
55)	Chrysene	33.07	228	9563	124.06		
56)	C1-Chrysenes	0.00	242	0	N.D.	d	
57)	C2-Chrysenes	0.00	256	0	N.D.	d	
58)	C3-Chrysenes	0.00	270	0	N.D.	d	
59)	C4-Chrysenes	0.00	284	0	N.D.	d	
61)	C29-Hopane	0.00	191	0	N.D.	d	
62)	18a-Oleanane	42.36	191	0	N.D.		
63)	C30-Hopane	41.71	191	3656	107.91	ng/ml	
64)	Benzo(b)fluoranthene	36.39	252	8887	110.05		
65)	Benzo(k)fluoranthene	36.50	252	9088	111.48		
66)	Benzo(e)pyrene	37.27	252	8710	111.23		#
67)	Benzo(a)pyrene	37.45	252	7665	110.65		#
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	6167	118.24		
69)	Dibenzo(a,h)anthracene	41.92	278	6362	131.09		#
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d	
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d	
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d	
73)	Benzo(g,h,i)perylene	43.01	276	6811	115.08		#
75)	Perylene	37.73	252	8093	109.58		#

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

Data File : D:\GC-MSD~1\MS30401\MS30401E.D Vial: 42
Acq On : 21 Jul 2007 5:43 pm Operator: TJM
Sample : Cal Level 2 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:28 2007 Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



000134

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\MS30401F.D Vial: 43
Acq On : 21 Jul 2007 6:46 pm Operator: TJM
Sample : Cal Level 3 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:23 2007 Quant Results File: 072107.RES

Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 19:54:25 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorene-d10	20.66	176	1912	51.08	ng/ml		0.00
29) Pyrene-d10	28.80	212	3810	49.98			0.00
60) Benzo(a)pyrene-d12	37.38	264	2614	45.61			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.03	136	16900	266.91			0.00
20) Acenaphthene-d10	18.83	164	8667	238.34			0.00
30) Phenanthrene-d10	23.91	188	16991	235.52			-0.03
53) Chrysene-d12	32.96	240	20506	234.73			0.00
74) Perylene-d12	37.66	264	11568	259.14			0.00
Target Compounds							Qvalue
3) Decalin	10.42	138	3212m	237.67	ng/ml		
4) C1-Decalin	0.00	152	0	N.D.	d		
5) C2-Decalin	0.00	166	0	N.D.	d		
6) C3-Decalin	0.00	180	0	N.D.	d		
7) C4-Decalin	0.00	194	0	N.D.	d		
8) Naphthalene	13.09	128	16760	246.04			87
9) 2-Methylnaphthalene	15.37	142	11584m	256.35			
10) 1-Methylnaphthalene	15.65	142	10745m	246.09			
11) 2,6-Dimethylnaphthalene	17.45	156	10365	257.05			73
12) 1,6,7-Trimethylnaphthalene	20.29	170	9452	245.33		#	43
13) C2-Naphthalenes	18.10	156	0	N.D.			
14) C3-Naphthalenes	20.29	170	0	N.D.			
15) C4-Naphthalenes	0.00	184	0	N.D.	d		
16) Benzothiophene	13.26	134	13309	246.77	ng/ml		100
17) C1-Benzothiophene	0.00	148	0	N.D.	d		
18) C2-Benzothiophene	18.12	162	0	N.D.			
19) C3-Benzothiophene	19.77	176	0	N.D.			
21) Biphenyl	16.94	154	14539	251.00			98
22) Acenaphthylene	18.35	152	18010	250.37			89
23) Acenaphthene	18.94	154	10806	251.70			92
24) Dibenzofuran	19.59	168	16935	254.09	ng/ml		100
25) Fluorene	20.74	166	12983	251.21			99
26) C1-Fluorenes	0.00	180	0	N.D.	d		
27) C2-Fluorenes	0.00	194	0	N.D.	d		
28) C3-Fluorenes	0.00	208	0	N.D.	d		
31) Pentachlorophenol	23.34	266	1069m	1236.27	ng/ml		
32) Carbazole	24.75	167	17203	242.22	ng/ml		100
33) Dibenzothiophene	23.57	184	19200	239.12		#	84
34) C1-Dibenzothiophene	0.00	198	0	N.D.	d		
35) C2-Dibenzothiophene	0.00	212	0	N.D.	d		
36) C3-Dibenzothiophene	0.00	226	0	N.D.	d		
37) Phenanthrene	24.01	178	19371	222.65			92
38) Anthracene	24.18	178	19077	234.02			85
39) 1-Methylphenanthrene	26.13	192	15178	236.72			87
40) C1-Phenanthrene/Anthracene	26.26	192	0	N.D.			
41) C2-Phenanthrene/Anthracene	0.00	206	0	N.D.	d		
42) C3-Phenanthrene/Anthracene	0.00	220	0	N.D.	d		
43) C4-Phenanthrene/Anthracene	0.00	234	0	N.D.	d		
44) Naphthobenzothiophene	32.13	234	24984	289.73			100

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

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\MS30401F.D Vial: 43
Acq On : 21 Jul 2007 6:46 pm Operator: TJM
Sample : Cal Level 3 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:23 2007 Quant Results File: 072107.RES

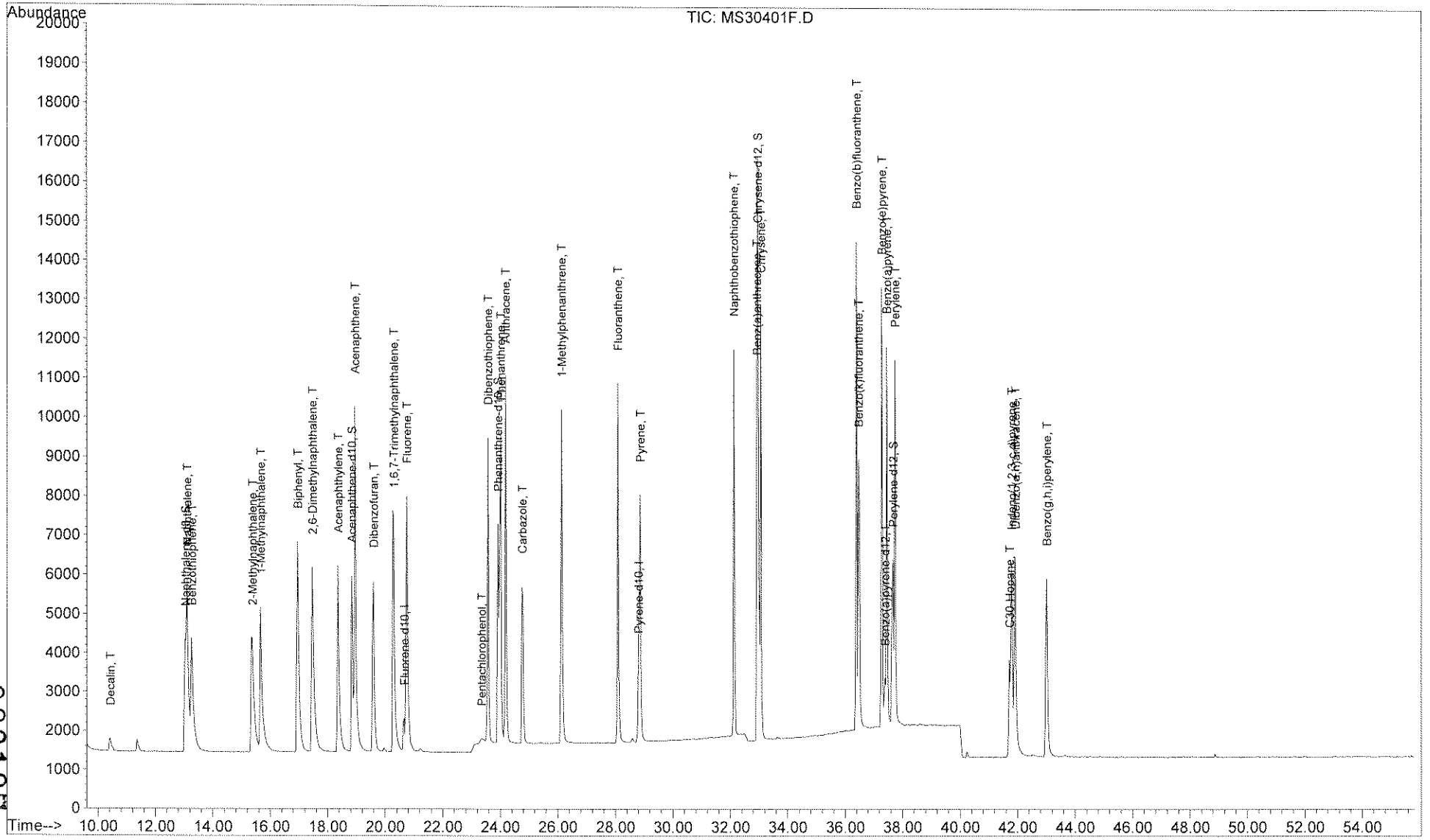
Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 19:54:25 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	C1-Naphthobenzothiophene	0.00	248	0	N.D.	d		
46)	C2-Naphthobenzothiophene	0.00	262	0	N.D.	d		
47)	C3-Naphthobenzothiophene	0.00	276	0	N.D.	d		
48)	Fluoranthene	28.09	202	23801	257.69			100
49)	Pyrene	28.86	202	22476	226.14			100
50)	C1-Fluoranthenes/Pyrenes	0.00	216	0	N.D.	d		
51)	C2-Fluoranthenes/Pyrenes	0.00	230	0	N.D.	d		
52)	C3-Fluoranthenes/Pyrenes	0.00	244	0	N.D.	d		
54)	Benz(a)anthracene	32.93	228	20284	217.28			97
55)	Chrysene	33.07	228	20361	240.30			94
56)	C1-Chrysenes	0.00	242	0	N.D.	d		
57)	C2-Chrysenes	0.00	256	0	N.D.	d		
58)	C3-Chrysenes	0.00	270	0	N.D.	d		
59)	C4-Chrysenes	0.00	284	0	N.D.	d		
61)	C29-Hopane	0.00	191	0	N.D.	d		
62)	18a-Oleanane	42.36	191	0	N.D.			
63)	C30-Hopane	41.71	191	8855	240.73	ng/ml		100
64)	Benzo(b)fluoranthene	36.39	252	24389m	277.72			
65)	Benzo(k)fluoranthene	36.46	252	22869m	252.99			
66)	Benzo(e)pyrene	37.28	252	22033	262.74		#	79
67)	Benzo(a)pyrene	37.45	252	19584	260.08		#	73
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	16013m	273.54			
69)	Dibenzo(a,h)anthracene	41.92	278	15830m	282.67			
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d		
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d		
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d		
73)	Benzo(g,h,i)perylene	43.01	276	17018m	259.58			
75)	Perylene	37.73	252	20387	252.19			83

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

Data File : D:\GC-MSD~1\MS30401\MS30401F.D Vial: 43
Acq On : 21 Jul 2007 6:46 pm Operator: TJM
Sample : Cal Level 3 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:23 2007 Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



00013?

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\MS30401G.D Vial: 44
Acq On : 21 Jul 2007 7:49 pm Operator: TJM
Sample : Cal Level 4 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:02 2007 Quant Results File: 072107.RES

Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 19:58:50 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorene-d10	20.65	176	1978	51.08	ng/ml		0.00
29) Pyrene-d10	28.79	212	3778	49.98			0.00
60) Benzo(a)pyrene-d12	37.38	264	2559	45.61			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.03	136	34107	513.07			0.00
20) Acenaphthene-d10	18.83	164	18570	499.18			0.00
30) Phenanthrene-d10	23.91	188	38289	550.12			0.00
53) Chrysene-d12	32.96	240	44334	519.71			0.00
74) Perylene-d12	37.63	264	23933	545.50			-0.04
Target Compounds							Qvalue
3) Decalin	10.42	138	6720m	484.73	ng/ml		
4) C1-Decalin	0.00	152	0	N.D.	d		
5) C2-Decalin	0.00	166	0	N.D.	d		
6) C3-Decalin	0.00	180	0	N.D.	d		
7) C4-Decalin	0.00	194	0	N.D.	d		
8) Naphthalene	13.09	128	34538	495.32			89
9) 2-Methylnaphthalene	15.34	142	24309m	521.72			
10) 1-Methylnaphthalene	15.65	142	22145m	494.87			
11) 2,6-Dimethylnaphthalene	17.45	156	21512	512.92			74
12) 1,6,7-Trimethylnaphthalene	20.29	170	20106	509.31		#	42
13) C2-Naphthalenes	18.10	156	0	N.D.			
14) C3-Naphthalenes	20.29	170	0	N.D.			
15) C4-Naphthalenes	0.00	184	0	N.D.	d		
16) Benzothiophene	13.26	134	27621	502.23	ng/ml		100
17) C1-Benzothiophene	0.00	148	0	N.D.	d		
18) C2-Benzothiophene	18.12	162	0	N.D.			
19) C3-Benzothiophene	0.00	176	0	N.D.	d		
21) Biphenyl	16.94	154	30517	509.52			97
22) Acenaphthylene	18.35	152	38598	519.27			89
23) Acenaphthene	18.94	154	22985	518.17			92
24) Dibenzofuran	19.56	168	35547	517.11	ng/ml		100
25) Fluorene	20.74	166	27235	507.19			96
26) C1-Fluorenes	0.00	180	0	N.D.	d		
27) C2-Fluorenes	0.00	194	0	N.D.	d		
28) C3-Fluorenes	0.00	208	0	N.D.	d		
31) Pentachlorophenol	23.34	266	2423m	1259.35	ng/ml		
32) Carbazole	24.75	167	40298	584.35	ng/ml		100
33) Dibenzothiophene	23.57	184	37839	481.78		#	80
34) C1-Dibenzothiophene	0.00	198	0	N.D.	d		
35) C2-Dibenzothiophene	0.00	212	0	N.D.	d		
36) C3-Dibenzothiophene	0.00	226	0	N.D.	d		
37) Phenanthrene	23.98	178	41127	489.14			97
38) Anthracene	24.18	178	41273	521.24			85
39) 1-Methylphenanthrene	26.13	192	31907	510.03			86
40) C1-Phenanthrene/Anthracene	26.26	192	0	N.D.			
41) C2-Phenanthrene/Anthracene	0.00	206	0	N.D.	d		
42) C3-Phenanthrene/Anthracene	0.00	220	0	N.D.	d		
43) C4-Phenanthrene/Anthracene	0.00	234	0	N.D.	d		
44) Naphthobenzothiophene	32.13	234	53983	611.27			100

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

000138

Data File : D:\GC-MSD~1\MS30401\MS30401G.D
Acq On : 21 Jul 2007 7:49 pm
Sample : Cal Level 4
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 8 20:02 2007

Vial: 44
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 072107.RES

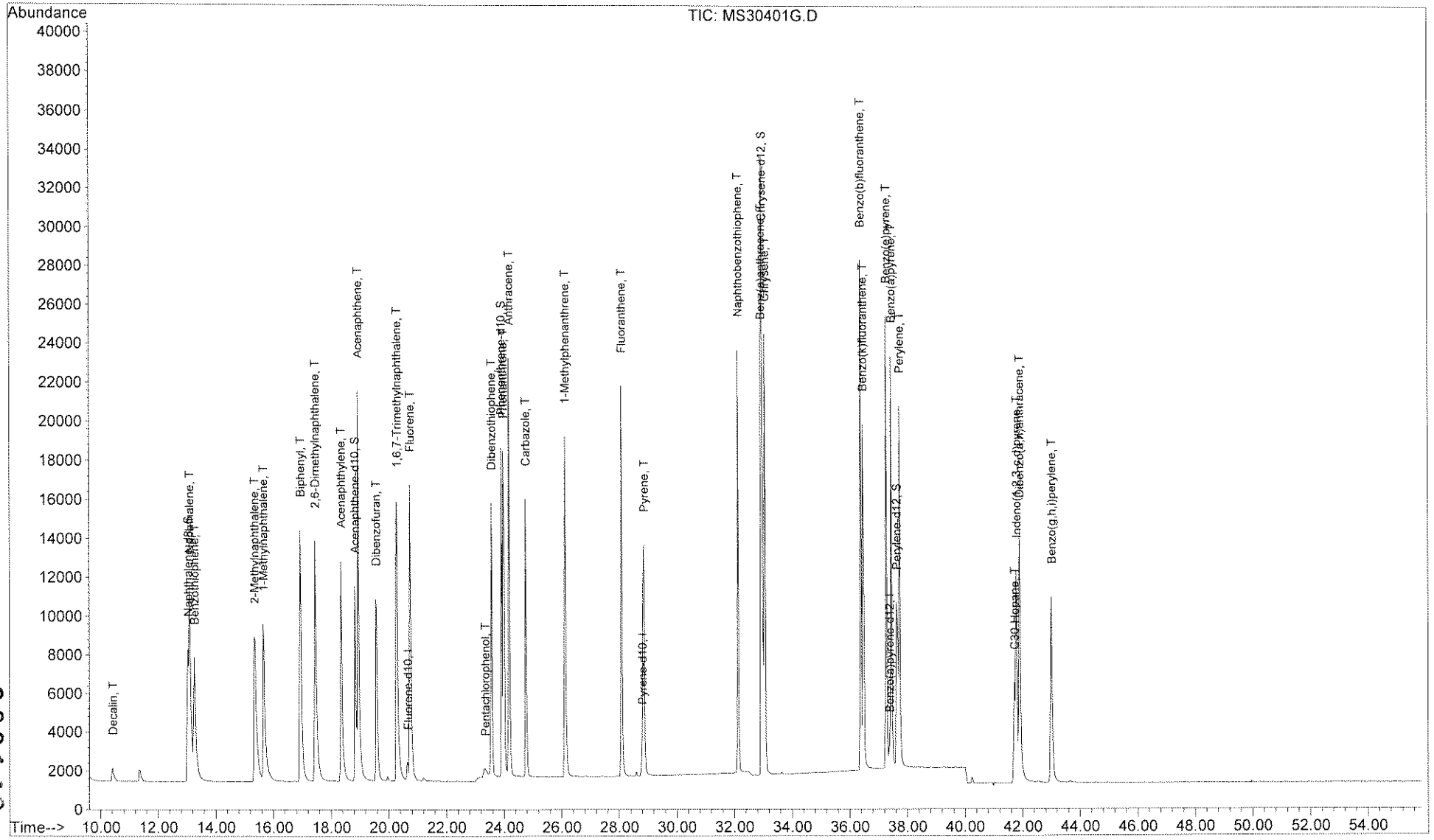
Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 19:58:50 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	C1-Naphthobenzothiophene	0.00	248	0	N.D.	d		
46)	C2-Naphthobenzothiophene	0.00	262	0	N.D.	d		
47)	C3-Naphthobenzothiophene	0.00	276	0	N.D.	d		
48)	Fluoranthene	28.09	202	49965m	551.75			
49)	Pyrene	28.86	202	46673m	488.17			
50)	C1-Fluoranthenes/Pyrenes	0.00	216	0	N.D.	d		
51)	C2-Fluoranthenes/Pyrenes	0.00	230	0	N.D.	d		
52)	C3-Fluoranthenes/Pyrenes	0.00	244	0	N.D.	d		
54)	Benz(a)anthracene	32.93	228	44078	488.66			97
55)	Chrysene	33.07	228	43162	513.66			92
56)	C1-Chrysenes	0.00	242	0	N.D.	d		
57)	C2-Chrysenes	0.00	256	0	N.D.	d		
58)	C3-Chrysenes	0.00	270	0	N.D.	d		
59)	C4-Chrysenes	0.00	284	0	N.D.	d		
61)	C29-Hopane	0.00	191	0	N.D.	d		
62)	18a-Oleanane	42.36	191	0	N.D.			
63)	C30-Hopane	41.71	191	17864	510.50	ng/ml		100
64)	Benzo(b)fluoranthene	36.39	252	50602m	486.96			
65)	Benzo(k)fluoranthene	36.46	252	48489m	555.73			
66)	Benzo(e)pyrene	37.27	252	45604	562.77		#	79
67)	Benzo(a)pyrene	37.45	252	42589	580.07		#	73
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	36005m	621.61			
69)	Dibenzo(a,h)anthracene	41.89	278	32974m	568.76			
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d		
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d		
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d		
73)	Benzo(g,h,i)perylene	43.01	276	35919	545.72		#	68
75)	Perylene	37.73	252	41254	530.27			83

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

Data File : D:\GC-MSD~1\MS30401\MS30401G.D Vial: 44
Acq On : 21 Jul 2007 7:49 pm Operator: TJM
Sample : Cal Level 4 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:02 2007 Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



000140

Quantitation Report (QT Reviewed)

Data File : D:\GC-MSD~1\MS30401\MS30401H.D Vial: 45
Acq On : 21 Jul 2007 8:52 pm Operator: TJM
Sample : Cal Level 5 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:30 2007 Quant Results File: 072107.RES

Quant Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:02:43 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorene-d10	20.63	176	1924	51.08	ng/ml		-0.02
29) Pyrene-d10	28.80	212	3420	49.98			0.00
60) Benzo(a)pyrene-d12	37.38	264	2493	45.61			0.00
System Monitoring Compounds							
2) Naphthalene-d8	13.04	136	57825	893.66			0.00
20) Acenaphthene-d10	18.83	164	37277	1040.65			0.00
30) Phenanthrene-d10	23.91	188	76457	1207.61			0.00
53) Chrysene-d12	32.96	240	90475m	1211.43			0.00
74) Perylene-d12	37.63	264	51529	1203.91			0.00
Target Compounds							Qvalue
3) Decalin	11.35	138	12566m	935.23	ng/ml		
4) C1-Decalin	0.00	152	0	N.D.	d		
5) C2-Decalin	0.00	166	0	N.D.	d		
6) C3-Decalin	0.00	180	0	N.D.	d		
7) C4-Decalin	0.00	194	0	N.D.	d		
8) Naphthalene	13.09	128	65697	981.81			87
9) 2-Methylnaphthalene	15.34	142	45450	1016.92			96
10) 1-Methylnaphthalene	15.65	142	44777m	1045.91			
11) 2,6-Dimethylnaphthalene	17.45	156	41163	1017.18		#	64
12) 1,6,7-Trimethylnaphthalene	20.29	170	39621	1050.80		#	36
13) C2-Naphthalenes	18.10	156	0	N.D.			
14) C3-Naphthalenes	20.29	170	0	N.D.			
15) C4-Naphthalenes	0.00	184	0	N.D.	d		
16) Benzothiophene	13.26	134	53957	1031.86	ng/ml		100
17) C1-Benzothiophene	0.00	148	0	N.D.	d		
18) C2-Benzothiophene	18.12	162	0	N.D.			
19) C3-Benzothiophene	19.77	176	0	N.D.			
21) Biphenyl	16.92	154	60370	1043.51			99
22) Acenaphthylene	18.35	152	73202	1019.29			90
23) Acenaphthene	18.94	154	44869	1045.76			95
24) Dibenzofuran	19.56	168	68142	1021.63	ng/ml		100
25) Fluorene	20.72	166	54283	1052.30			96
26) C1-Fluorenes	0.00	180	0	N.D.	d		
27) C2-Fluorenes	0.00	194	0	N.D.	d		
28) C3-Fluorenes	0.00	208	0	N.D.	d		
31) Pentachlorophenol	23.30	266	4430m	1831.84	ng/ml		
32) Carbazole	24.75	167	73527m	1155.74	ng/ml		
33) Dibenzothiophene	23.57	184	70341	1033.27		#	78
34) C1-Dibenzothiophene	0.00	198	0	N.D.	d		
35) C2-Dibenzothiophene	0.00	212	0	N.D.	d		
36) C3-Dibenzothiophene	0.00	226	0	N.D.	d		
37) Phenanthrene	23.98	178	80160	1102.58			97
38) Anthracene	24.18	178	78677m	1121.53			
39) 1-Methylphenanthrene	26.13	192	59876	1085.97			85
40) C1-Phenanthrene/Anthracene	26.26	192	0	N.D.			
41) C2-Phenanthrene/Anthracene	0.00	206	0	N.D.	d		
42) C3-Phenanthrene/Anthracene	0.00	220	0	N.D.	d		
43) C4-Phenanthrene/Anthracene	0.00	234	0	N.D.	d		
44) Naphthobenzothiophene	32.13	234	105322	1267.82			100

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

000141

Data File : D:\GC-MSD-1\MS30401\MS30401H.D
Acq On : 21 Jul 2007 8:52 pm
Sample : Cal Level 5
Misc :
MS Integration Params: rteint.p
Quant Time: Aug 8 20:30 2007

Vial: 45
Operator: TJM
Inst : GC/MS Ins
Multiplr: 1.00
Quant Results File: 072107.RES

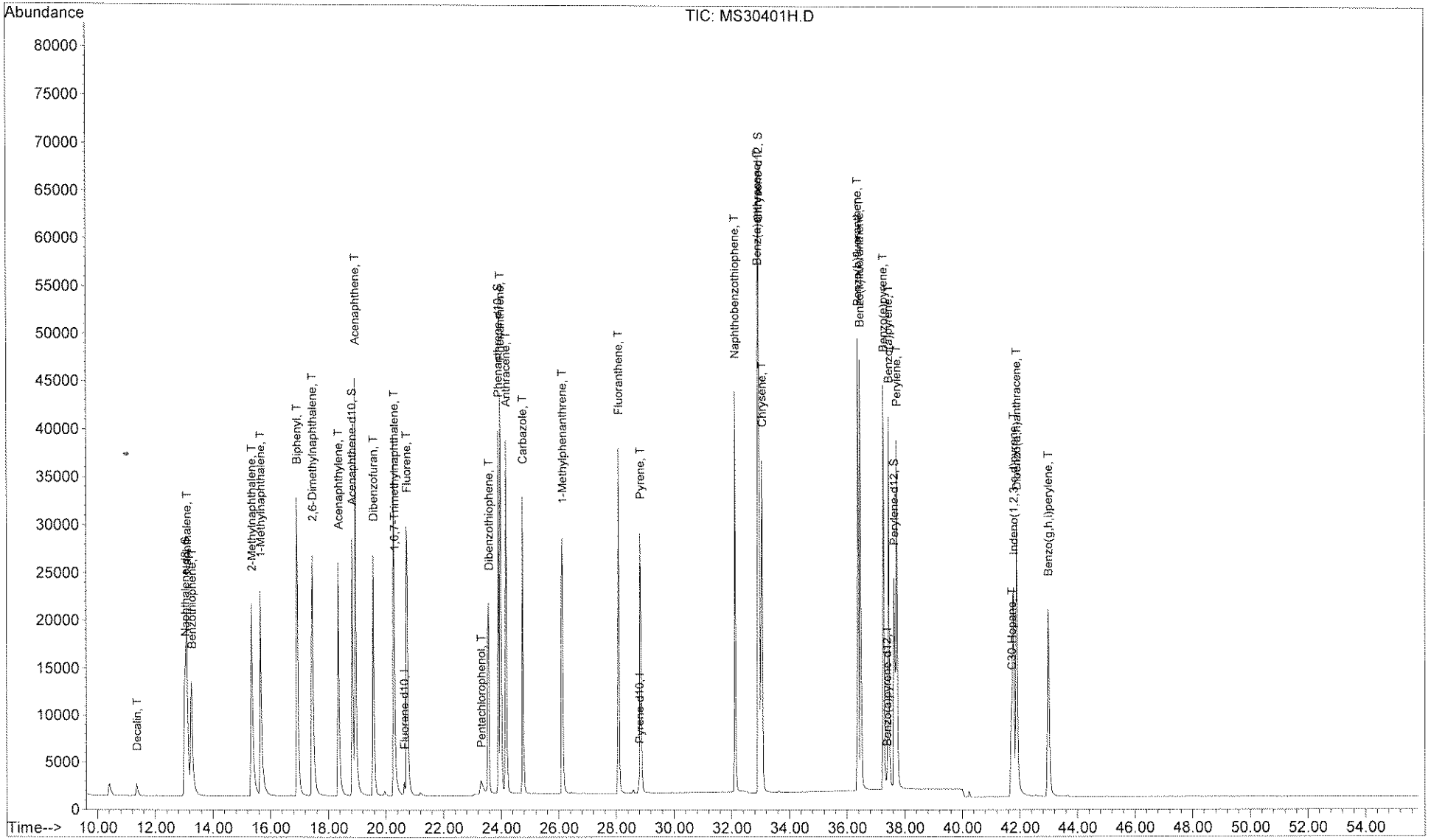
Quant Method : D:\GC-MSD-1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:02:43 2007
Response via : Initial Calibration
DataAcq Meth : PAH-2002

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	C1-Naphthobenzothiophene	0.00	248	0	N.D.	d		
46)	C2-Naphthobenzothiophene	0.00	262	0	N.D.	d		
47)	C3-Naphthobenzothiophene	0.00	276	0	N.D.	d		
48)	Fluoranthene	28.09	202	93193m	1132.17			
49)	Pyrene	28.83	202	95461m	1152.30			
50)	C1-Fluoranthenes/Pyrenes	0.00	216	0	N.D.	d		
51)	C2-Fluoranthenes/Pyrenes	0.00	230	0	N.D.	d		
52)	C3-Fluoranthenes/Pyrenes	0.00	244	0	N.D.	d		
54)	Benz(a)anthracene	32.93	228	93574	1219.28			96
55)	Chrysene	33.07	228	80146	1064.31			91
56)	C1-Chrysenes	0.00	242	0	N.D.	d		
57)	C2-Chrysenes	0.00	256	0	N.D.	d		
58)	C3-Chrysenes	0.00	270	0	N.D.	d		
59)	C4-Chrysenes	0.00	284	0	N.D.	d		
61)	C29-Hopane	0.00	191	0	N.D.	d		
62)	18a-Oleanane	42.36	191	0	N.D.			
63)	C30-Hopane	41.71	191	35600	1054.27	ng/ml		100
64)	Benzo(b)fluoranthene	36.39	252	95024m	908.43			
65)	Benzo(k)fluoranthene	36.46	252	104463m	1236.52			
66)	Benzo(e)pyrene	37.28	252	85819	1073.99		#	80
67)	Benzo(a)pyrene	37.45	252	80999	1115.07		#	74
68)	Indeno(1,2,3-c,d)pyrene	41.79	276	68925m	1184.70			
69)	Dibenzo(a,h)anthracene	41.89	278	67597m	1176.84			
70)	C1-Dibenzo(a,h)anthracene	0.00	292	0	N.D.	d		
71)	C2-Dibenzo(a,h)anthracene	0.00	306	0	N.D.	d		
72)	C3-Dibenzo(a,h)anthracene	0.00	320	0	N.D.	d		
73)	Benzo(g,h,i)perylene	42.98	276	72730	1137.07		#	66
75)	Perylene	37.74	252	85292	1125.68			83

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

Data File : D:\GC-MSD~1\MS30401\MS30401H.D Vial: 45
Acq On : 21 Jul 2007 8:52 pm Operator: TJM
Sample : Cal Level 5 Inst : GC/MS Ins
Misc : Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 8 20:30 2007 Quant Results File: 072107.RES

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:23 2007
Response via : Initial Calibration



Calibration Status Report GC/MS Ins

Method : D:\GC-MSD~1\072107.M (RTE Integrator)
Title : PAH Calibration Table (2002)
Last Update : Wed Aug 08 20:30:22 2007
Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	20	51	D:\GC-MSD~1\MS30401\MS30401D.D
2	2	100	51	D:\GC-MSD~1\MS30401\MS30401E.D
3	3	250	51	D:\GC-MSD~1\MS30401\MS30401F.D
4	4	500	51	D:\GC-MSD~1\MS30401\MS30401G.D
5	5	1000	51	D:\GC-MSD~1\MS30401\MS30401H.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Aug 08 20:27 2007	Aug 08 20:27 2007	21 Jul 2007 16:40
2	2	Aug 08 20:28 2007	Aug 08 20:28 2007	21 Jul 2007 17:43
3	3	Aug 08 20:23 2007	Aug 08 20:23 2007	21 Jul 2007 18:46
4	4	Aug 08 20:02 2007	Aug 08 20:02 2007	21 Jul 2007 19:49
5	5	Aug 08 20:30 2007	Aug 08 20:30 2007	21 Jul 2007 20:52

072107.M Wed Aug 08 20:30:50 2007

Supporting Documents

Shipping, Sample Receiving, and Project Initiation Documents

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J03318 Date Received: 7/13/07 SDG#: 0707131

Sender: geo Insight - Irena Hristov

1. Number of Shipping Containers: 1

Comments:
small cooler

2. Airbill Present? Yes/No Shipping Company: FedEx

Airbill Number:
7991 7421 4950

Comments:

3. Custody Seals on Container?
No Yes Intact Not Intact

Comments:

4. Chain of Custody Records?
No Yes

Comments
Contact Kevin Trainer if there are any questions: (978) 692-1114

5. General Sample Conditions:
Frozen Cool Unrefrigerated
Dry Ice Blue Ice Ice

Temperature/Comments:
6.4° C

6. List of Broken Containers:

7. Number of Samples Expected: 0 Number of Samples Received: 4 seds

8. Problems/Discrepancies:

N.A.

9. Resolutions:

N.A.

10. Checked in by: Amanda Tyler Date: 7/13/07

From: Origin ID: AYEA (978)692-1114
Irena Hristov
GEOINSIGHT
5 LAN DRIVE
SUITE 200
WESTFORD, MA 01886

FedEx Express

CLS052907/21/23

Ship Date: 12JUL07
ActWgt: 3 LB
System#: 3590926/INET2600
Account#: S *********

Delivery Address Bar Code

SHIP TO: (979)693-3446 **BILL SENDER**

TDI Brooks International
B&B LABS
1902 PINON STREET

COLLEGE STATION, TX 77845

Ref # 3871-002-02 KDT
Invoice #
PO #
Dept #

FRI - 13JUL **AA**

TRK# 0201 7991 7421 4950

PRIORITY OVERNIGHT

XH-CLLA

IAH
TX-US
77845

Shipping Label: Your shipment is complete

1. Use the 'Print' feature from your browser to send this page to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

[redacted]

CHAIN OF CUSTODY RECORD

[redacted]

Company Name: GEOINSIGHT, INC
Address: 5 LAN DRIVE
SUITE 200, WESTFORD, MA 01886
Attention: KEVIN TRAINER
Project Location: BUZZARD'S BAY, MA
Sampled By: KRISTIN ZEMAN

Telephone: (978) 692-1114
Project # 3871-002
Client PO # 3871-002

DATA DELIVERY (check one):
☐FAX ☐EMAIL ☐WEBSITE CLIENT
Fax # :
Email:
Format: ☐ EXCEL ☐ PDF ☐ GIS KEY

Proposal Provided? (For Billing purposes)
☐ yes ____ proposal date

Field ID	Sample Description	Lab #	Date Sampled: Start Date/Time	Stop Date/Time	Comp-osite	Grab	*Matrix Code	TPH	DAH	# of containers	**Preservation	~Cont.Code
✓	WIF-02-071007-A		7/10/07			X	OILED SEDIMENT	X	X			
✓	WIF-02-071007-B		↓			X	↓	↓	↓			
✓	WIF-02-071007-C					X						
✓	WIF-02-071007-D					X						

ANALYSIS REQUESTED

~Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa can
T=tedlar bag
O=Other

Comments:
CONTACT KEVIN TRAINER IF THERE ARE ANY QUESTIONS 978-692-1114.

Relinquished by: (signature) [signature] Date/Time: 7-12-07/14:30
Received by: (signature) Date/Time:
Relinquished by: (signature) Date/Time:
Received by: (signature) [signature] Date/Time: 7/13/07

Turnaround
☐ 24 Hour*
☐ 48 Hour*
☐ 72 Hour*
☒ Std.
☐ Other**
____ Date needed**
*Require lab approval.

Detection Limit Requirements
Regulations? ____
Data Enhancement Project? ☐ Y ☐ N
(MA MCP sites only)
Special Requirements or DL's: ____

***Matrix Code:**
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other ____

****Preservation Codes:**
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium bisulfate
O = Other ____
X = Na hydroxide
T = Na thiosulfate

6000

Con-Test Laboratory is the ONLY independent laboratory in all of New England with both prestigious AIHA and NELAC Certifications!

Environmental Sample Inventory

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	ANALYSIS	MATRIX	COMMENTS	B&B SDG	Client Project #
44428	J03318	GeoInsight-Buzzards Bay Spill	ETX7285	WIF-02-071007-A	07/10/07	07/13/07	PAH, TPH	OILED SED		07071301	3871-002
44429	J03318	GeoInsight-Buzzards Bay Spill	EXT7286	WIF-02-071007-B	07/10/07	07/13/07	PAH, TPH	OILED SED		07071301	3871-002
44430	J03318	GeoInsight-Buzzards Bay Spill	EXT7287	WIF-02-071007-C	07/10/07	07/13/07	PAH, TPH	OILED SED		07071301	3871-002
44431	J03318	GeoInsight-Buzzards Bay Spill	EXT7288	WIF-02-071007-D	07/10/07	07/13/07	PAH, TPH	OILED SED		07071301	3871-002

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J03318
SDG: 0707131
Client: geo-Insight
Initiation Date: 07/13/07

Number of Samples: 4
Matrix: Oiled Sediment
Due Date: _____
Comments: _____

Analyses

☑	PAHs	☐	OCs/PCBs	☑	Aliphatics/TPH	☑	EOM
☑	Dry Wt.	☐	%Lipid	☐	TOC/TIC	☐	_____
☑	Short Columns	☐	Long Columns	☐	_____	☐	_____

Requested QA/QC (per batch of _____ Client Samples)

☑	Blank	☐ Blank Spike	☐ Blank Spike Duplicate
☑	Duplicate _____		☑ Matrix Spike _____
☐	Matrix Spike Duplicate _____		☐ SRM _____

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, TPH — Volume(s): 100µl
Spike Standard(s): PAH, TPH — Volume(s): 100ml
Internal Standard(s): PAH, TPH — Volume(s): 100µl
Final Extract Volume (ml): 1ml — Final Solvent: DCM

Comments:

Sample Custodian Signature: Amanda Tyu — Date: 7/13/07
Project Administrator Signature: _____ — Date: _____

cc: COC Book
Extraction Lab

Extraction Standard Inventory

Organophosphates (OPs)

- ☐ OP-WKSU-0050-006 (Surrogate)
- ☐ OP-WKSK-TPT-006 (Surrogate)
- ☐ OP-WKIS-0100-006 (Int STD)

Aliphatic Hydrocarbons (ALI/TPH)

- ☐ AL-WKSU-20-009 (Surrogate)
- ☐ AL-WKSK-100-010 (Spike)
- ☐ AL-WKIS-200-007 (Int STD)
- ☐ AL-STSU-200-007 **(High Surrogate)**
- ☐ AL-STIS-2000-008 **(High Int STD)**

Polycyclic Aromatic Hydrocarbons (PAHs)

- ☐ AR-WKSU-0500-018 (Surrogate)
- ☐ AR-WKSK-1000-013 (Spike)
- ☐ AR-WKIS-0500-011 (Int STD)
- ☐ AR-STSU-5000-009 **(High Surrogate)**
- ☐ AR-STIS-5000-008 **(High Int STD)**

Organochlorine Pesticides/PCBs (OCs/PCBs)

- ☐ OC-WKSU-1000-010 (Surrogate)
- ☐ OC-WKSK-0400-008 (Spike)
- ☐ PEST-WKSU-1000-003 (Surrogate)*(Epsilon-HCH)*
- ☐ OC-WKIS-1000-008 (Int STD)

Polychlorinated Biphenyls (PCBs by GC/MS)

- ☐ PCB-WKSU-008-008 (Surrogate)
- ☐ PCB-WKSK-300-003 (Spike)
- ☐ PCB-WKIS-010-007 (Int STD)

Polybrominated Diphenyl Ether (PBDEs) and Polybrominated Biphenyls (PBBs)

- ☐ PBDE-WKSU-1.0-005 (Surrogate)
- ☐ PBDE-WKSK-1-006 (Spike)
- ☐ PBDE-WKIS-0.5-005 (Int STD)
- ☐ PBB-WKSU-5.0-004 (Surrogate)
- ☐ PBB-WKSK-2500-001 (Spike)
- ☐ PBB-WKIS-5.0-004 (Int STD)

Linear Alkylbenzenes (LABs)

- ☐ LAB-WKSK-2500-002 (Spike)

Laboratory Bench Sheet Logs

B&B LABORATORIES ENVIRONMENTAL EXTRACTION LOG

MATRIX
- ☐ OTHER
- ☐ WATER
- ☒ SEDIMENT
- ☐ TISSUE

Job #: J03318 SDG #: 07071301

Client: GeoInsight - Buzzards Bay Spill

Analysis: ☒ PAH ☐ PESTS ☐ PCB ☒ ALI

Other:

Extraction Solvent: DCM Lot #: 46202

Final Solvent: DCM Lot #: 46202 Final Vol: 1.0 ml

Lipids Y / N
Dry Wt. Y / N
Copper Y / N
EOM Y / N

Surrogate: 100 µL
PAH: AR-STSV-5000-003
Pest/PCB: —
Aliphatic: AL-STSV-2000-003
Other: —

Spike: 100 µL
PAH: AR-WKSK-1000-013
Pest/PCB: —
Aliphatic: AL-WKSK-100-013
Other: —

GC Int Std: 100 µL
PAH: AR-STS-5000-003
Pest/PCB: —
Aliphatic: AL-STS-2000-003
Other: —

Turbo Vap II
Bath T (C):
Pressure (>20psi):
Check Water Level:
Turbo Vap Date:

General Comments:

	Added	Witness
Surrogate:	7/19/07 JK	7-19-07 EC
Spike:	7/19/07 JM	7-19-07 EC
Internal:	7/20/07 JM	7-20-07 EC

	Sample Name	Client ID	Wet Wt. (g or L)	Dry Wt. %	Dry Wt. (g)	Hydromatrix (g)	Extraction Comments
1	ENV1677A	Procedural Blank			15.0		
2	ENV1677B	SRM 1944	4.14	97.61	4.04		
3	ENV1677C	Matrix Spike (ETX 7286)	19.46	77.27	15.04	gravel	Reject AR
4	ENV1677D	Matrix Spike Dup (ETX 7286)	19.48	77.27	15.05	gravel	
5	ENV1677E	Duplicate (ETX 7287)	6.46	77.86	5.03	gravel	
6	ETX7285	WIF-02-071007-A	6.22	81.37	5.06	gravel	
7	ETX7286	WIF-02-071007-B	19.41	77.27	15.00	gravel	
8	ETX7287	WIF-02-071007-C	6.51	77.86	5.07	gravel	
9	ETX7288	WIF-02-071007-D	1.27	97.37	1.24	"tar" gravel	
10							
11							
12							

Internal Chain of Custody

	Date:	From:	To:
Extraction Prep	7-19-07	EC	EC
Extraction	7-19-07	EC	EC
Concentration	7-20-07	EC	EC
Columns SA2			

ETX7285 - 500ml For SA1
ETX7288

ETX7286 - usual entire sample
ETX7287

8/2/07 SM

ENV 1677
Page 1 of 2

00015

B&B LABORATORIES ENVIRONMENTAL EXTRACTION LOG

	Sample Name	Client ID	Wet Wt. (g or L)	Dry Wt. %	Dry Wt. (g)	Hydromatrix (g)	Extraction Comments
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							

7/20/07

DATE	INITIALS
Columns SA1	
Date: 7/20/07	Date: 7/20/07
From:	To:
Concentration SA2	
Date:	Date:
From:	To:
Concentration SA1	
Date:	Date:
From:	To:
Transfer	
Date: 7/20/07	Date: 7/20/07
From:	To:
HPLC	
Date:	Date:
From:	To:
Concentration	
Date: 7-20-07	Date: 7-20-07
From:	To:
Pest/PCB Int Std Added	
—	—
PAH Int Std Added	
7/20/07	
Aliphatic Int Std Added	
7/20/07	
Transfer	
7-20-07	
Internal Chain of Custody Information	

Dry Weight Page

Dry 800

Lipid/EOM Page

EOM284

Clean-up/Separation/Other Columns

7-20-07
RE

Sample Storage
Box #

239

HPLC Storage
Box #

—

QC Review

Date	Initials
7/20/07	

Copied to Folders

7/20/07

0001515

B&B LABORATORIES % DRY WEIGHT LOGBOOK

MATRIX

- ☐ OTHER
- ☒ SEDIMENT
- ☐ TISSUE

Type: _____

Job #: J03318 SDG #: 0707130 1

Client: ~~Coolinssilf~~ -Buzzards Bay Spill

General comments:

Lab Mananger		Date/Init: ☒ Bal. Cal.	Beaker + Dry Smpl (g)		Date/Init:
Date:	Init:		Date/Init: ☒ Bal. Cal.	Date/Init: ☐ Bal. Cal.	
7/19/07		7-17-07	7-18-07	7-19-07	7/19/07

	Sample Name	Client ID	Beaker Wt (g)	Beaker + Wet Smpl (g)	1	2	(%) Dry Weight	Comments
1	ETX7285	WIF-02-071007-A	1.27	2.88	2.57	2.58	81.37	
2	ETX7286	WIF-02-071007-B	1.26	2.50	2.28	2.28	77.27	
3	ETX7287	WIF-02-071007-C	1.27	2.67	2.36	2.36	77.86	
4	ETX7288	WIF-02-071007-D	1.26	2.40	2.37	2.37	97.37	
5	ETX7286DUP	WIF-02-071007-B	1.26	2.98	2.53	2.53	73.84	
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

000156

DRY 800

DRYWT LOG

B&B LABORATORIES % DRY WEIGHT LOGBOOK

				Beaker + Dry Smpl (g) Date/Init: ☐Bal. Cal.	Beaker + Dry Smpl (g) Date/Init: ☐Bal. Cal.		
	Sample Name	Client ID	Beaker Wt (g)	Beaker + Wet Smpl (g)	1	2	(%) Dry Weight	Comments
17								
18								
19								
20								
21								
22								
23								
24								

$$\%\ \text{Dry Weight} = \frac{[\text{Beaker + Dry SMPL (g)}] - [\text{Beaker Weight (g)}]}{[\text{Beaker + Wet SMPL (g)}] - [\text{Beaker Weight (g)}]} \times 100$$

$$\text{RPD} = \frac{[\text{Original \% Dry Weight Value} - \text{Duplicate \% Dry Weight Value}]}{[\text{Original \% Dry Weight Value} + \text{Duplicate \% Dry Weight Value}] \times 0.5} \times 100$$

The Relative Percent Difference (RPD) between duplicates must be ≤ 25%.

Date / Init.	RPD
7/19/07 jm	4.5%
Sample #	L7X7286
Duplicate #	L7X7286-Dup.

DRY 800

B&B LABORATORIES EOM LOGBOOK

MATRIX: OTHER / SEDIMENT / WATER

Job #: 503.3.12 SDG #: 0707.320.1

Client: Geologist - Bunker Bay Spill

General comments: Solvent Blank 0.000

Lab Manager Date/Int: 7/20/07	Transferred by Date/Int: From ENV Pg: ENV1677 From DRY Pg: Dry 882	Date/Int: 7-20-07	Bal. Cal.	Date/Int: 07/20/07	

Sample Name	Client ID	Smpl Wt./Vol (g/L) Wet Wt. Dry Wt.	Dry Wt. (%)	Final Extract Vol (mL)	Wt. of 100 µl EOM Wt. (mg)	EOM (Wet Wt. Basis)	EOM (Dry Wt. Basis)	Comments
NV1677A	Procedural Blank	0.50		3	0.000	0	0	0
NV1677B	SRM 1941b	4.04	97.61	3	0.102	6.76	7.57	7.39
NV1677C	MS (EPA 7286)	15.04	72.27	3	0.318	6.35	7.54	5.83
NV1677D	MSD (EPA 7286)	15.05	72.27	3	0.320	6.64	6.38	4.93
NV1677E	Duplicate (EPA 7287)	5.03	72.86	3	0.125	7.56	7.45 7.45	5.80
DX7285	WF-07 07/07-A	5.66	81.37	3	2.666	15.81	15.06	12.62
DX7286	WF-02-02/07-B	15.01	72.27	3	0.346	6.69	6.92	5.35
DX7287	WF-02-07/07-C	5.07	72.86	3	0.151	6.29	8.93	6.96
DX7288	WF-02-07/07-D	1.24	97.37	3	3.648	39.47	39468	38415

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EOM Logs

Important

0001538

B&B LABORATORIES EOM LOGBOOK

MATRIX: OTHER / SEDIMENT / WATER

Job #: J03318 SDG #: 07071301

Client: Geosight – Buzzards Bay Spill

General comments:

Solven Blank 0.000

Lab Manager Date/Int: 7/20/07 [illegible]

Transferred by Date/Int: From ENV Pg: ENV1677 From DRY Pg: Dry 880 — 7-20-07

Date/Int: Bal. Cal. — Date/Int: QA 7/20/07 [illegible]

	Sample Name	Client ID	Smpl Wt./Vol (g/L) Wet Wt. ~~Dry Wt.~~	Dry Wt. (%)	Final Extract Vol (mL)	Wt. of 100 µl EOM Wt. (mg)	EOM (~~Wet Wt.~~ Dry Basis)	EOM (Dry Wt. Basis)	EOM Lot#	Comments
			15.02		3	0.000	0	0	0	
			4.04	97.61	3	0.102	0.76	757	739	
			15.04	77.27	3	0.378	0.75	754	583	
			15.05	77.27	3	0.320	0.64	638	493	
			5.03	77.86	3	0.125	~~7.50~~	~~7465~~ 746	~~2865~~	580
			5.06	81.37	3	2.666	15.81	15806	12862	
			15.02	77.27	3	0.346	0.69	692	535	
			5.07	77.86	3	0.151	0.89	893	696	
			1.24	92.37	3	3.698	89.47	89468	87115	
16										

No QA required on reference std

QA not required

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Last Page

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

August 9, 2007

Mr. Kevin Trainer
GeoInsight, Inc.
5 Lan Drive
Second Floor
Westford, MA 01886

LABORATORY REPORT

Project: **Buzzards Bay/3871-002**
Lab ID: **109511**
Received: **07-19-07**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Priority turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/jad
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project:	**Buzzards Bay/3871-002**	Delivery:	**GWA Courier**	Temperature:	**3.9'C**
Client:	**GeoInsight, Inc.**	Airbill:	**n/a**	Chain of Custody:	**Present**
Lab ID:	**109511**	Lab Receipt:	**07-19-07**	Custody Seal(s):	**n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
109511-1	WIF-02-071807-S1		Soil	7/18/07 14:00	EPA 8270C PAHs Low Level SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
109511-2	WIF-02-071807-S2		Soil	7/18/07 14:45	EPA 8270C PAHs Low Level SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C948894	120 mL Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

Data Certification

Project: **Buzzards Bay/3871-002** Lab ID: **109511**
Client: **GeoInsight, Inc.** Received: **07-19-07 19:15**

MA DEP Compendium of Analytical Methods					
Project Location: **n/a**			MA DEP RTN: **n/a**		
This Form provides certifications for the following data set: EPA 8270C: 109511-1,-2					
Sample Matrices:	Groundwater ( )	Soil/Sediment (X)	Drinking Water ( )	Other ( )	
MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )
	8270C (X)	8081A ( )	VPH ( )	6020A ( )	9012A[2] ( )
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 ( )	8021B ( )	EPH ( )	7000 S[3] ( )	Other ( )
	1. List Release Tracking Number (RTN), if known.				
	2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method				
	3. S - SW-846 Methods 7000 Series. List individual method and analyte.				

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.

A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	Yes

A response to questions E and F below is required for "Presumptive Certainty" status.

E.	Were all QC performance standards and recommendations for the specified methods achieved?	Yes
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?	No

All No answers are addressed in the attached Project Narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Operations Manager

Printed Name: Eric H. Jensen Date: 08-09-07

GROUNDWATER ANALYTICAL

EPA Method 8270C
Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**WIF-02-071807-S1**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**Plastic Bag**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**109511-01**	QC Batch ID:	**SV-2011-P**
Sampled:	**07-18-07 14:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**07-19-07 19:15**	Sample Weight:	**15 g**
Extracted:	**08-05-07 15:00**	Final Volume:	**1 mL**
Cleaned Up:	**08-06-07 09:00**	Percent Solids:	**79**
Analyzed:	**08-07-07 17:18**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	13
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	13
208-96-8	Acenaphthylene	BRL		ug/Kg	13
83-32-9	Acenaphthene	BRL		ug/Kg	13
86-73-7	Fluorene	BRL		ug/Kg	13
85-01-8	Phenanthrene	BRL		ug/Kg	13
120-12-7	Anthracene	BRL		ug/Kg	13
206-44-0	Fluoranthene	BRL		ug/Kg	13
129-00-0	Pyrene	**29**		ug/Kg	13
56-55-3	Benzo[a]anthracene	**33**		ug/Kg	13
218-01-9	Chrysene	**42**		ug/Kg	13
205-99-2	Benzo[b]fluoranthene	**24**		ug/Kg	13
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	13
50-32-8	Benzo[a]pyrene	**39**		ug/Kg	13
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	13
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	13
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	13

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Nitrobenzene-d5	840	560	**67** %	30 - 130 %
2-Fluorobiphenyl	840	510	**61** %	30 - 130 %
Terphenyl-d14	840	580	**70** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method. Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3630C. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

EPA Method 8270C
Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**WIF-02-071807-S2**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**109511-02**	QC Batch ID:	**SV-2011-P**
Sampled:	**07-18-07 14:45**	Instrument ID:	**MS-6 HP 6890**
Received:	**07-19-07 19:15**	Sample Weight:	**15 g**
Extracted:	**08-05-07 15:00**	Final Volume:	**1 mL**
Cleaned Up:	**08-06-07 09:00**	Percent Solids:	**63**
Analyzed:	**08-07-07 18:39**	Dilution Factor:	**1**
Analyst:	**MJB**		

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	16
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	16
208-96-8	Acenaphthylene	BRL		ug/Kg	16
83-32-9	Acenaphthene	BRL		ug/Kg	16
86-73-7	Fluorene	BRL		ug/Kg	16
85-01-8	Phenanthrene	BRL		ug/Kg	16
120-12-7	Anthracene	**18**		ug/Kg	16
206-44-0	Fluoranthene	**33**		ug/Kg	16
129-00-0	Pyrene	**99**		ug/Kg	16
56-55-3	Benzo[a]anthracene	**61**		ug/Kg	16
218-01-9	Chrysene	**74**		ug/Kg	16
205-99-2	Benzo[b]fluoranthene	**36**		ug/Kg	16
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	16
50-32-8	Benzo[a]pyrene	**52**		ug/Kg	16
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	16
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	16
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	16

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Nitrobenzene-d5	1,000	620	**60** %	30 - 130 %
2-Fluorobiphenyl	1,000	550	**53** %	30 - 130 %
Terphenyl-d14	1,000	720	**69** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method. Sample extraction performed by EPA Method 3545. Cleanup performed by EPA Method 3630C. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Buzzards Bay/3871-002**	Lab ID:	**109511**
Client:	**GeoInsight, Inc.**	Received:	**07-19-07 19:15**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1. Project 109511 was processed for a 5 day turnaround due 08-09-07.
2. Samples 109099-01 and -02 were reassigned laboratory numbers 109511-01 and -02 respectively for EPA Method 8270 PAH Low Level Analysis.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1. EPA 8270C Note: Samples 109511-1,-2. Samples were analyzed for only selected polynuclear aromatic hydrocarbons (PAH) target analytes, as requested by client.

GROUNDWATER ANALYTICAL

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CHAIN-OF-CUSTODY RECORD AND WORK ORDER

Project Name: Buzzards Bay	Firm: GeoInsight
Project Number: 3871-002	Address: 5 Lan Drive Suite 200
Sampler Name: Kevin Trainer	City / State / Zip: Westford, MA 01886
Project Manager: Kevin Trainer	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- ☑ STANDARD (10 Business Days)
- ☐ PRIORITY (5 Business Days)
- ☐ RUSH (RAN-________) (Rush requires Rush Authorization Number)
- ☐ Please Email to:
- ☐ Please FAX to:

BILLING

- ☐ Purchase Order No.:
- ☐ Third Party Billing:
- ☐ GWA Quote:

Date	Time	Sample Identification	Matrix	Type	Container(s)	Preservation	Filtered	Laboratory Number (Lab Use Only)	Analysis Request
7/18/07	2:00	WIF-02-071807-S1	X	X	1 1	✓	✓		✓
7/18/07	2:45	WIF-02-071807-S2	X	X	1 1	✓	✓		✓

ANALYSIS REQUEST: Volatiles; Semivolatiles; Pest/Herb/PCBs (Extractable, Vol); Metals; Petroleum Hydrocarbons (Ext. TPH, Vol TPH); Haz. Waste; General Chemistry; Other

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

☑ YES ☐ NO MCP Data Certification required.

☐ YES ☐ NO MCP Drinking Water Sample included. (Require collection of contingent duplicate sample. Trip blanks are also required, if VOA sample collected).

Signature:

Need SIM for low-level detection limits

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☑ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-2	☐ MWRA
☑ MA	☐ NY STARS	☐
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐	☐	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required
- ☑ Sample Duplicate
- ☑ Matrix Spike
- ☑ Matrix Spike Duplicate

Selection of QC Sample
- ☐ Please use sample:

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by	Date	Time	Received by	
Relinquished by Sampler: [signature]	7/18/07	9:30	Received by: 7/19/07 1:52 Alan Maddigan	Receipt Temperature: 3.9°C
Relinquished by: Alan Maddigan	7/19/07	7:15	Received by: [signature]	Container Count: 2
Relinquished by:			Received by Laboratory:	Shipping/Airbill Number:
Method of Shipment: ☑ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐				Custody Seal Number:

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA Method 8270C PAHs**	Instrument ID:	**MS-6 HP 6890**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**SV-2011-P**	Extracted:	**08-05-07 15:00**	Extracted:	**08-05-07 15:00**
Matrix:	**Soil**	Analyzed:	**08-07-07 15:18**	Analyzed:	**08-07-07 15:58**
Units:	**ug/Kg**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	330	180	**53** %	330	200	**60** %	**13** %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	330	190	**58** %	330	210	**63** %	**10** %	40 - 140 %	25%
208-96-8	Acenaphthylene	330	200	**61** %	330	230	**68** %	**11** %	40 - 140 %	25%
83-32-9	Acenaphthene	330	200	**59** %	330	220	**66** %	**10** %	40 - 140 %	25%
86-73-7	Fluorene	330	210	**63** %	330	230	**70** %	**11** %	40 - 140 %	25%
85-01-8	Phenanthrene	330	190	**58** %	330	220	**65** %	**12** %	40 - 140 %	25%
120-12-7	Anthracene	330	210	**64** %	330	230	**70** %	**9** %	40 - 140 %	25%
206-44-0	Fluoranthene	330	210	**62** %	330	240	**71** %	**13** %	40 - 140 %	25%
129-00-0	Pyrene	330	210	**62** %	330	240	**71** %	**14** %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	330	220	**66** %	330	260	**77** %	**15** %	40 - 140 %	25%
218-01-9	Chrysene	330	220	**65** %	330	250	**75** %	**14** %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	330	250	**75** %	330	290	**88** %	**16** %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	330	250	**74** %	330	290	**87** %	**16** %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	330	250	**74** %	330	290	**88** %	**17** %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	330	240	**72** %	330	280	**84** %	**15** %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	330	240	**72** %	330	280	**85** %	**17** %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	330	230	**69** %	330	270	**81** %	**16** %	40 - 140 %	25%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Nitrobenzene-d5	670	440	**66** %	670	500	**75** %		30 - 130 %
2-Fluorobiphenyl	670	360	**54** %	670	410	**61** %		30 - 130 %
Terphenyl-d14	670	420	**63** %	670	490	**74** %		30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996). Sample extraction performed by EPA Method 3545.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C-SIM PAHs**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**SV-2011-P**	Extracted:	**08-05-07 15:00**
Matrix:	**Soil**	Analyzed:	**08-07-07 16:38**
		Analyst:	**MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	10
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	10
208-96-8	Acenaphthylene	BRL		ug/Kg	10
83-32-9	Acenaphthene	BRL		ug/Kg	10
86-73-7	Fluorene	BRL		ug/Kg	10
85-01-8	Phenanthrene	BRL		ug/Kg	10
120-12-7	Anthracene	BRL		ug/Kg	10
206-44-0	Fluoranthene	BRL		ug/Kg	10
129-00-0	Pyrene	BRL		ug/Kg	10
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	10
218-01-9	Chrysene	BRL		ug/Kg	10
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	10
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	10
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	10
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	10
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	10
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	10

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
Nitrobenzene-d5	670	200	**30** %	30 - 130 %
2-Fluorobiphenyl	670	270	**41** %	30 - 130 %
Terphenyl-d14	670	470	**70** %	30 - 130 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Sample extraction performed by EPA Method 3545.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.
Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT

Department of Health Services, PH-0586 — Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental Lab/out state.pdf

FLORIDA

Department of Health, Bureau of Laboratories, E87643 — SDWA, CWA, RCRA/CERCLA
http://www.floridadep.org/labs/qa/dohforms.htm

MAINE

Department of Health and Human Services, MA0103 — Drinking Water and Wastewater
http://www.maine.gov/dhhs/eng/water/Templates/LabCertification/LabCertification.htm

Department of Environmental Protection, LB-0072 — Asbestos Analytical Laboratory (Bulk)

MASSACHUSETTS

Department of Environmental Protection, M-MA-103 — Potable Water and Non-Potable Water
http://public.dep.state.ma.us/labcert/labcert.aspx

Department of Labor,
Division of Occupational Safety, AA000195 — Asbestos Analytical Services, Class A
http://www.mass.gov/dos/forms/la-rpt_list_aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 2027 — Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NIST NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

NVLAP Lab Code 200751-1 — Bulk Asbestos Fiber Analysis (PLM)
http://ts.nist.gov/Standards/scopes/plmtm.htm

NEW YORK

Department of Health, 11754 — Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

RHODE ISLAND

Department of Health,
Division of Laboratories, LAO00054 — Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry
http://www.health.ri.gov/labs/outofstatelabs.pdf

Department of Health,
Office of Occupational and Radiological Health, AAL-110B3 — Asbestos Analytical Service, Polarized Light Microscopy (PLM)
http://www.health.ri.gov/environment/occupational/asbestos/licensees/AsbestosAnalyticalLabs.pdf

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921 — Foreign soil import permit

VERMONT

Department of Health, VT87643 — Drinking Water Microbiological, Inorganic and Organic Analyses
http://healthvermont.gov/enviro/ph lab/documents/certified labs.pdf

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

August 2, 2007

Mr. Kevin Trainer
GeoInsight, Inc.
5 Lan Drive
Second Floor
Westford, MA 01886

LABORATORY REPORT

Project: **Buzzards Bay/3871-002**
Lab ID: **109099**
Received: **07-19-07**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Standard turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC standards, except as may be specifically noted, or described in the project narrative. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/jad
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project:	**Buzzards Bay/3871-002**	Delivery:	**GWA Courier**	Temperature:	**3.9'C**
Client:	**GeoInsight, Inc.**	Airbill:	**n/a**	Chain of Custody:	**Present**
Lab ID:	**109099**	Lab Receipt:	**07-19-07**	Custody Seal(s):	**n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
109099-1	WIF-02-071807-S1		Soil	7/18/07 14:00	MA DEP EPH with PAHs				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C948087	120 mL Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
109099-2	WIF-02-071807-S2		Soil	7/18/07 14:45	MA DEP EPH with PAHs				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C482504	120 mL Amber Glass	Proline	BX11342	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

Data Certification

Project: **Buzzards Bay/3871-002** Lab ID: **109099**
Client: **GeoInsight, Inc.** Received: **07-19-07 19:15**

MA DEP Compendium of Analytical Methods						
Project Location: **n/a**				MA DEP RTN: **n/a**		
This Form provides certifications for the following data set: MA DEP EPH: 109099-1,-2						
Sample Matrices:	Groundwater ( )	Soil/Sediment (X)	Drinking Water ( )	Other ( )		
MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )	
	8270C ( )	8081A ( )	VPH ( )	6020A ( )	9012A[2] ( )	
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 ( )	8021B ( )	EPH (X)	7000 S[3] ( )	Other ( )	
	1. List Release Tracking Number (RTN), if known.					
	2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method					
	3. S - SW-846 Methods 7000 Series. List individual method and analyte.					

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.

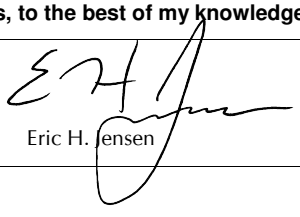
A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	Yes

A response to questions E and F below is required for "Presumptive Certainty" status.

E.	Were all QC performance standards and recommendations for the specified methods achieved?	Yes
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?	Yes

All No answers are addressed in the attached Project Narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:  Position: Operations Manager

Printed Name: Eric H. Jensen Date: 08-02-07

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**WIF-02-071807-S1**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**109099-1**	QC Batch ID:	**EP-2618-M**
Sampled:	**07-18-07 14:00**	Instrument ID:	**GC-7 HP 5890**
Received:	**07-19-07 19:15**	Sample Weight:	**15 g**
Extracted:	**07-20-07 01:00**	Final Volume:	**1 mL**
Analyzed (AL):	**07-21-07 15:47**	% Solids:	**79**
Analyzed (AR):	**07-21-07 16:30**	Aliphatic Dilution Factor:	**1**
Analyst:	**CMM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	38
n-C19 to n-C36 Aliphatic Hydrocarbons †	**46**		mg/Kg	38
n-C11 to n-C22 Aromatic Hydrocarbons †◊	**93**		mg/Kg	38
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	94		mg/Kg	38

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		mg/Kg	0.63
91-57-6	2-Methylnaphthalene	BRL		mg/Kg	0.63
85-01-8	Phenanthrene	BRL		mg/Kg	0.63
83-32-9	Acenaphthene	BRL		mg/Kg	0.63
208-96-8	Acenaphthylene	BRL		mg/Kg	0.63
86-73-7	Fluorene	BRL		mg/Kg	0.63
120-12-7	Anthracene	BRL		mg/Kg	0.63
206-44-0	Fluoranthene	BRL		mg/Kg	0.63
129-00-0	Pyrene	BRL		mg/Kg	0.63
56-55-3	Benzo[a]anthracene	BRL		mg/Kg	0.63
218-01-9	Chrysene	BRL		mg/Kg	0.63
205-99-2	Benzo[b]fluoranthene	BRL		mg/Kg	0.63
207-08-9	Benzo[k]fluoranthene	BRL		mg/Kg	0.63
50-32-8	Benzo[a]pyrene	BRL		mg/Kg	0.63
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		mg/Kg	0.63
53-70-3	Dibenzo[a,h]anthracene	BRL		mg/Kg	0.63
191-24-2	Benzo[g,h,i]perylene	BRL		mg/Kg	0.63

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.4	3.0	**89** %	40 - 140 %
	2-Bromonaphthalene	3.4	3.0	**91** %	40 - 140 %
Extraction:	Chloro-octadecane	3.4	2.7	**82** %	40 - 140 %
	ortho-Terphenyl	3.4	3.5	**105** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**WIF-02-071807-S2**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**109099-2**	QC Batch ID:	**EP-2618-M**
Sampled:	**07-18-07 14:45**	Instrument ID:	**GC-7 HP 5890**
Received:	**07-19-07 19:15**	Sample Weight:	**15 g**
Extracted:	**07-20-07 01:00**	Final Volume:	**1 mL**
Analyzed (AL):	**07-21-07 17:13**	% Solids:	**63**
Analyzed (AR):	**07-21-07 17:56**	Aliphatic Dilution Factor:	**1**
Analyst:	**CMM**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	47
n-C19 to n-C36 Aliphatic Hydrocarbons †	**110**		mg/Kg	47
n-C11 to n-C22 Aromatic Hydrocarbons †◊	**200**		mg/Kg	47
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	200		mg/Kg	47

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		mg/Kg	0.70
91-57-6	2-Methylnaphthalene	BRL		mg/Kg	0.70
85-01-8	Phenanthrene	BRL		mg/Kg	0.70
83-32-9	Acenaphthene	BRL		mg/Kg	0.70
208-96-8	Acenaphthylene	BRL		mg/Kg	0.70
86-73-7	Fluorene	BRL		mg/Kg	0.70
120-12-7	Anthracene	BRL		mg/Kg	0.70
206-44-0	Fluoranthene	BRL		mg/Kg	0.70
129-00-0	Pyrene	BRL		mg/Kg	0.70
56-55-3	Benzo[a]anthracene	**0.79**		mg/Kg	0.70
218-01-9	Chrysene	BRL		mg/Kg	0.70
205-99-2	Benzo[b]fluoranthene	BRL		mg/Kg	0.70
207-08-9	Benzo[k]fluoranthene	BRL		mg/Kg	0.70
50-32-8	Benzo[a]pyrene	BRL		mg/Kg	0.70
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		mg/Kg	0.70
53-70-3	Dibenzo[a,h]anthracene	BRL		mg/Kg	0.70
191-24-2	Benzo[g,h,i]perylene	BRL		mg/Kg	0.70

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	4.2	3.5	**85** %	40 - 140 %
	2-Bromonaphthalene	4.2	3.7	**88** %	40 - 140 %
Extraction:	Chloro-octadecane	4.2	2.9	**71** %	40 - 140 %
	ortho-Terphenyl	4.2	3.9	**93** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Buzzards Bay/3871-002**	Lab ID:	**109099**
Client:	**GeoInsight, Inc.**	Received:	**07-19-07 19:15**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1 . No documentation discrepancies, changes, or amendments were noted.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1 . No method modifications, non-conformances or analytical issues were noted.

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

Project Name:	Firm:
Buzzards Bay	GeoInsight
Project Number:	**Address:**
3871-002	5 Lan Drive Suite 200
Sampler Name:	**City / State / Zip:**
Kevin Trainer	Westford, MA 01886
Project Manager:	**Telephone:**
Kevin Trainer	978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- [x] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)
  - [ ] Please Email to: _____
  - [ ] Please FAX to: _____

BILLING

- [ ] Purchase Order No.: _____
- [ ] Third Party Billing: _____
- [ ] GWA Quote: _____

ANALYSIS REQUEST

OPTIONS
- Volatiles: [ ] TIC Search
- Semivolatiles: [ ] Acid Only [ ] B/N Only [ ] TIC Search
- Pest/Herb/PCBs: Extractable / Vol.
- Metals: Specify For Water Samples [ ] Total [ ] Dissolved
- Petroleum Hydrocarbon: Ext. TPH / Vol. TPH
- Haz. Waste
- General Chemistry
- Other

SDWA
- Volatiles: [ ] 524.2-MTBE
- Semivolatiles: [ ] 525.2
- Pest/Herb/PCBs: [ ] 505 [ ] 508 / [ ] 531.1 / [ ] 515.1 / [ ] 504.1 EDB/DBCP
- Metals: [ ] Lead and Copper

NPDES
- Volatiles: [ ] 624 / [ ] 602-MTBE / [ ] 601 / [ ] 601/602-MTBE
- Semivolatiles: [ ] 625 / [ ] 625 PAHs only
- Pest/Herb/PCBs: [ ] 608 Pesticides / [ ] 608 PCBs / [ ] 615
- Metals: [ ] 13 Priority Pollutant

RCRA/21E
- Volatiles: [ ] 8260B TCL-MTBE / [ ] 8260B NH PETROLEUM / [ ] 8260B / [ ] 8021B Aromatics / [ ] 8021B Halocarbons / [ ] 8021B
- Semivolatiles: [ ] 8270C / [ ] 8270C PAHs only
- Pest/Herb/PCBs: [ ] 8081A Pesticides / [ ] 8082 PCBs / [ ] 8151A Herbicides / [ ] 8011 EDB/DBCP
- Metals: [ ] 8 RCRA / [ ] 5 RCRA / [ ] MA List Metals / [ ] 23 TAL / [ ] Specify:
- Petroleum Hydrocarbon: [ ] TPH-IR / [ ] Diesel Range Organics (DRO) / [ ] ME DRO / [ ] CT ETPH / [x] MA-EPH with targets / [ ] EPH Carbon Ranges only / [ ] EPH w/4 PAHs / [ ] Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00-Mod.) / [ ] TPH by GC/FID (8015B Mod) Quantitative Only / [ ] Gasoline Range Organics (GRO) / [ ] ME GRO / [ ] MA DEP VPH with targets / [ ] VPH Carbon ranges only
- Haz. Waste: [ ] TCLP [ ] SPLP [ ] 8 Metals / [ ] Pb only / [ ] VOA / [ ] Semi VOA / [ ] Pesticides / [ ] Herbicides / [ ] Corrosivity (as pH) / [ ] Reactivity / [ ] Ignitability (as Flashpoint) / [ ] Paint Filter / [ ] MA Basic Disposal Criteria 9060B, TPH by GC, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity
- General Chemistry: [ ] Nitrate / [ ] Nitrite / [ ] Chloride / [ ] Fluoride / [ ] Sulfate / [ ] Dissolved Phosphorus / [ ] Ammonia / [ ] TKN / [ ] Total Phosphorus / [ ] Total N (as N02/N03/TKN) / [ ] Oil & Grease / [ ] COD / [ ] TOC / [ ] BOD / [ ] TDS / [ ] TSS / [ ] TS / [ ] Alkalinity / [ ] Cyanide, Total / [ ] Cyanide, Physiologically Available / [ ] pH / [ ] Dissolved Oxygen / [ ] Turbidity / [ ] Total Coliform / [ ] Fecal Coliform / [ ] HPC

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix: GROUNDWATER	DRINKING WATER	WASTEWATER	SOIL	OTHER SOLID	OIL/ORGANIC LIQUID	Type: COMPOSITE	GRAB	Container(s): NUMBER	40mL VOA Vial	60mL/2 oz Glass	120mL/4 oz Amber Glass	250mL/8 oz Glass	500mL/16 oz Glass	1L/32 oz Amber Glass	250mL/8 oz Plastic	500mL/16 oz Plastic	1L/32 oz Plastic	120mL Sterile	Preservation: HCl	HNO3	H2SO4	NaOH	Methanol	Sodium Bisulfate	ICE	Filtered: YES	NO	LABORATORY NUMBER (Lab Use Only)
7/18/07	2:00	WIF-02-071807-S1				X				X	1			1														✓		✓	
7/18/07	2:45	WIF-02-071807-S2				X				X	1			1														✓		✓	

REMARKS / SPECIAL INSTRUCTIONS

MA DEP MCP Data Enhancement Affirmation

- [x] YES [ ] NO MCP Data Certification required.
- [ ] YES [ ] NO MCP Drinking Water Sample included.
  (Require collection of contingent duplicate sample. Trip blanks are also required, if VOA sample collected).

Signature: _____

Need SIM for low-level detection limits

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
[ ] CT	[x] MCP GW-1/S-1	[ ] PWS Form
[ ] ME	[ ] MCP GW-2/S-2	[ ] MWRA
[x] MA	[ ] NY STARS	[ ] _____
[ ] NH	[ ] Drinking Water	
[ ] NY	[ ] Wastewater	
[ ] RI	[ ] Waste Disposal	
[ ] VT	[ ] Dredge Material	
[ ] ___	[ ] _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required	Selection of QC Sample
[x] Sample Duplicate	[ ] Please use sample:
[x] Matrix Spike	_____
[x] Matrix Spike Duplicate	

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by Sampler:	Date / Time	Received by:	Receipt Temperature:
	7/19/07 9:30	Alan Maddigan 7/19/07 1:52	[ ] Ice [ ] Refrigerated 3.9°C (4°C Recommended)
Relinquished by:	**Date / Time**	**Received by:**	**Container Count:**
Alan Maddigan	7/19/07 7:15	Kimberly Crowley	2
Relinquished by:	**Date / Time**	**Received by Laboratory:**	**Shipping/Airbill Number:**

Method of Shipment: [x] GWA Courier [ ] Express Mail [ ] Federal Express [ ] UPS [ ] Hand [ ] _____ — Custody Seal Number:

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**MA DEP EPH Method**	Instrument ID:	**GC-7 HP 5890**	Instrument ID:	**GC-7 HP 5890**
QC Batch ID:	**EP-2618-M**	Extracted:	**07-20-07 01:00**	Extracted:	**07-20-07 01:00**
Matrix:	**Soil**	Analyzed (AL):	**07-20-07 12:28**	Analyzed (AL):	**07-20-07 13:54**
Units:	**mg/Kg**	Analyzed (AR):	**07-20-07 13:11**	Analyzed (AR):	**07-20-07 14:37**
		Analyst:	**CMM**	Analyst:	**CMM**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
111-84-2	*n*-Nonane (C_9)	3.3	2.2	**65** %	3.3	2.1	**63** %	**3** %	30 - 140 %	25%
124-18-5	*n*-Decane (C_{10})	3.3	2.4	**73** %	3.3	2.4	**72** %	**2** %	40 - 140 %	25%
112-40-3	*n*-Dodecane (C_{12})	3.3	2.6	**79** %	3.3	2.5	**76** %	**3** %	40 - 140 %	25%
629-59-4	*n*-Tetradecane (C_{14})	3.3	2.8	**84** %	3.3	2.6	**80** %	**5** %	40 - 140 %	25%
544-76-3	*n*-Hexadecane (C_{16})	3.3	3.0	**91** %	3.3	2.8	**85** %	**7** %	40 - 140 %	25%
593-45-3	*n*-Octadecane (C_{18})	3.3	3.2	**97** %	3.3	3.0	**90** %	**7** %	40 - 140 %	25%
n/a	*n*-C9 to *n*-C18 Group	20	16	**82** %	20	15	**78** %	**5** %	40 - 140 %	25%
629-92-5	*n*-Nonadecane (C_{19})	3.3	3.1	**95** %	3.3	2.9	**89** %	**7** %	40 - 140 %	25%
112-95-8	*n*-Eicosane (C_{20})	3.3	3.3	**99** %	3.3	3.0	**91** %	**8** %	40 - 140 %	25%
629-97-0	*n*-Docosane (C_{22})	3.3	3.3	**99** %	3.3	3.0	**92** %	**8** %	40 - 140 %	25%
646-31-1	*n*-Tetracosane (C_{24})	3.3	3.3	**100** %	3.3	3.1	**93** %	**8** %	40 - 140 %	25%
630-01-3	*n*-Hexacosane (C_{26})	3.3	3.2	**97** %	3.3	3.0	**90** %	**8** %	40 - 140 %	25%
630-02-4	*n*-Octacosane (C_{28})	3.3	3.2	**96** %	3.3	2.9	**89** %	**8** %	40 - 140 %	25%
638-68-6	*n*-Triacontane (C_{30})	3.3	3.1	**95** %	3.3	2.9	**88** %	**8** %	40 - 140 %	25%
630-06-8	*n*-Hexatriacontane (C_{36})	3.3	3.1	**94** %	3.3	2.8	**84** %	**11** %	40 - 140 %	25%
n/a	*n*-C19 to *n*-C36 Group	26	26	**97** %	26	24	**89** %	**8** %	40 - 140 %	25%
91-20-3	Naphthalene	3.3	2.5	**77** %	3.3	2.6	**78** %	**1** %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	3.3	2.7	**83** %	3.3	2.7	**83** %	**0** %	40 - 140 %	25%
208-96-8	Acenaphthylene	3.3	2.7	**83** %	3.3	2.7	**81** %	**3** %	40 - 140 %	25%
83-32-9	Acenaphthene	3.3	2.8	**85** %	3.3	2.8	**84** %	**1** %	40 - 140 %	25%
86-73-7	Fluorene	3.3	3.0	**91** %	3.3	2.9	**88** %	**4** %	40 - 140 %	25%
85-01-8	Phenanthrene	3.3	3.3	**99** %	3.3	3.1	**95** %	**4** %	40 - 140 %	25%
120-12-7	Anthracene	3.3	3.3	**100** %	3.3	3.1	**95** %	**5** %	40 - 140 %	25%
206-44-0	Fluoranthene	3.3	3.3	**101** %	3.3	3.2	**97** %	**4** %	40 - 140 %	25%
129-00-0	Pyrene	3.3	3.3	**99** %	3.3	3.2	**96** %	**4** %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	3.3	3.3	**99** %	3.3	3.2	**96** %	**4** %	40 - 140 %	25%
218-01-9	Chrysene	3.3	3.2	**98** %	3.3	3.1	**94** %	**4** %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	3.3	3.0	**91** %	3.3	2.9	**87** %	**4** %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	3.3	3.3	**99** %	3.3	3.2	**95** %	**4** %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	3.3	3.2	**96** %	3.3	3.1	**93** %	**3** %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	3.3	2.8	**85** %	3.3	2.7	**82** %	**4** %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	3.3	3.1	**95** %	3.3	3.0	**91** %	**5** %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	3.3	2.8	**85** %	3.3	2.7	**82** %	**4** %	40 - 140 %	25%
n/a	PAH Group	56	52	**92** %	56	50	**89** %	**3** %	40 - 140 %	25%

QC Surrogate Compound		Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.3	**85** %	2.7	2.2	**81** %		40 - 140 %
	2-Bromonaphthalene	2.7	2.2	**81** %	2.7	2.3	**85** %		40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.5	**93** %	2.7	2.3	**85** %		40 - 140 %
	ortho-Terphenyl	2.7	2.7	**100** %	2.7	2.6	**96** %		40 - 140 %

Fractionation Breakthrough Evaluation						QC Limits
91-20-3	Naphthalene	LCS	**1** %	LCSD	**1** %	5%
91-57-6	2-Methylnaphthalene	LCS	**0** %	LCSD	**0** %	5%

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Method modified by use of microwave accelerated solvent extraction technique.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**MA DEP EPH**	Instrument ID:	**GC-7 HP 5890**
QC Batch ID:	**EP-2618-M**	Extracted:	**07-20-07 01:00**
Matrix:	**Soil**	Analyzed (AL):	**07-20-07 15:20**
		Analyzed (AR):	**07-20-07 16:03**
		Analyst:	**CMM**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	30

Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	30

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		mg/Kg	0.50
91-57-6	2-Methylnaphthalene	BRL		mg/Kg	0.50
85-01-8	Phenanthrene	BRL		mg/Kg	0.50
83-32-9	Acenaphthene	BRL		mg/Kg	0.50
208-96-8	Acenaphthylene	BRL		mg/Kg	0.50
86-73-7	Fluorene	BRL		mg/Kg	0.50
120-12-7	Anthracene	BRL		mg/Kg	0.50
206-44-0	Fluoranthene	BRL		mg/Kg	0.50
129-00-0	Pyrene	BRL		mg/Kg	0.50
56-55-3	Benzo[a]anthracene	BRL		mg/Kg	0.50
218-01-9	Chrysene	BRL		mg/Kg	0.50
205-99-2	Benzo[b]fluoranthene	BRL		mg/Kg	0.50
207-08-9	Benzo[k]fluoranthene	BRL		mg/Kg	0.50
50-32-8	Benzo[a]pyrene	BRL		mg/Kg	0.50
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		mg/Kg	0.50
53-70-3	Dibenzo[a,h]anthracene	BRL		mg/Kg	0.50
191-24-2	Benzo[g,h,i]perylene	BRL		mg/Kg	0.50

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.2	**84** %	40 - 140 %
	2-Bromonaphthalene	2.7	2.2	**83** %	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.4	**91** %	40 - 140 %
	ortho -Terphenyl	2.7	2.5	**94** %	40 - 140 %

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.
Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT

Department of Health Services, PH-0586 — Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental Lab/out state.pdf

FLORIDA

Department of Health, Bureau of Laboratories, E87643 — SDWA, CWA, RCRA/CERCLA
http://www.floridadep.org/labs/qa/dohforms.htm

MAINE

Department of Health and Human Services, MA0103 — Drinking Water and Wastewater
http://www.maine.gov/dhhs/eng/water/Templates/LabCertification/LabCertification.htm

Department of Environmental Protection, LB-0072 — Asbestos Analytical Laboratory (Bulk)

MASSACHUSETTS

Department of Environmental Protection, M-MA-103 — Potable Water and Non-Potable Water
http://public.dep.state.ma.us/labcert/labcert.aspx

Department of Labor,
Division of Occupational Safety, AA000195 — Asbestos Analytical Services, Class A
http://www.mass.gov/dos/forms/la-rpt_list_aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 2027 — Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NIST NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

NVLAP Lab Code 200751-1 — Bulk Asbestos Fiber Analysis (PLM)
http://ts.nist.gov/Standards/scopes/plmtm.htm

NEW YORK

Department of Health, 11754 — Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

RHODE ISLAND

Department of Health,
Division of Laboratories, LAO00054 — Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry
http://www.health.ri.gov/labs/outofstatelabs.pdf

Department of Health,
Office of Occupational and Radiological Health, AAL-110B3 — Asbestos Analytical Service, Polarized Light Microscopy (PLM)
http://www.health.ri.gov/environment/occupational/asbestos/licensees/AsbestosAnalyticalLabs.pdf

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921 — Foreign soil import permit

VERMONT

Department of Health, VT87643 — Drinking Water Microbiological, Inorganic and Organic Analyses
http://healthvermont.gov/enviro/ph lab/documents/certified labs.pdf

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

August 28, 2007

Mr. Kevin Trainer
GeoInsight, Inc.
5 Lan Drive
Second Floor
Westford, MA 01886

LABORATORY REPORT

Project: **Buzzards Bay/3871-002-06**
Lab ID: **109907**
Received: **08-14-07**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Standard turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC or NVLAP standards, except as may be specifically noted, or described in the project narrative. The analytical results relate only to the samples received. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/elm
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project:	**Buzzards Bay/3871-002-06**	Delivery:	**GWA Courier**	Temperature:	**3.4'C**
Client:	**GeoInsight, Inc.**	Airbill:	**n/a**	Chain of Custody:	**Present**
Lab ID:	**109907**	Lab Receipt:	**08-14-07**	Custody Seal(s):	**n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
109907-2	W1FO2-081307-S1		Soil	8/13/07 14:35	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C991647	120 mL Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

Data Certification

Project: **Buzzards Bay/3871-002-06** Lab ID: **109907**
Client: **GeoInsight, Inc.** Received: **08-14-07 17:53**

MA DEP Compendium of Analytical Methods						
Project Location: **n/a**				MA DEP RTN: **n/a**		
This Form provides certifications for the following data set: MA DEP EPH: 109907-2						
Sample Matrices:	Groundwater ( )	Soil/Sediment (X)	Drinking Water ( )	Other ( )		
MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )	
	8270C ( )	8081A ( )	VPH ( )	6020A ( )	9012A[2] ( )	
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 ( )	8021B ( )	EPH (X)	7000 S[3] ( )	Other ( )	
	1. List Release Tracking Number (RTN), if known.					
	2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method					
	3. S - SW-846 Methods 7000 Series. List individual method and analyte.					

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.

A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	Yes

A response to questions E and F below is required for "Presumptive Certainty" status.

E.	Were all QC performance standards and recommendations for the specified methods achieved?	Yes
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?	Yes

All No answers are addressed in the attached Project Narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Position: Operations Manager

Printed Name: Eric H. Jensen Date: 08-28-07

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**W1FO2-081307-S1**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002-06**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**109907-2**	QC Batch ID:	**EP-2640-M**
Sampled:	**08-13-07 14:35**	Instrument ID:	**GC-7 HP 5890**
Received:	**08-14-07 17:53**	Sample Weight:	**15 g**
Extracted:	**08-21-07 09:00**	Final Volume:	**1 mL**
Analyzed (AL):	**08-23-07 11:15**	% Solids:	**71**
Analyzed (AR):	**08-23-07 11:59**	Aliphatic Dilution Factor:	**1**
Analyst:	**NS**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	41
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	41
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	41
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	41

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.7	3.3	**90** %	40 - 140 %
	2-Bromonaphthalene	3.7	3.3	**90** %	40 - 140 %
Extraction:	Chloro-octadecane	3.7	2.5	**69** %	40 - 140 %
	ortho-Terphenyl	3.7	3.3	**91** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**W1FO2-081307-S1**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002-06**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**109907-02**	QC Batch ID:	**EP-2640-M**
Sampled:	**08-13-07 14:35**	Instrument ID:	**MS-6 HP 6890**
Received:	**08-14-07 17:53**	Sample Volume:	**15 g**
Extracted:	**08-21-07 09:00**	Final Volume:	**1 mL**
Analyzed:	**08-23-07 09:51**	Percent Solids:	**71.139**
Analyst:	**MJB**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	14
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	14
208-96-8	Acenaphthylene	BRL		ug/Kg	14
83-32-9	Acenaphthene	BRL		ug/Kg	14
86-73-7	Fluorene	BRL		ug/Kg	14
85-01-8	Phenanthrene	BRL		ug/Kg	14
120-12-7	Anthracene	BRL		ug/Kg	14
206-44-0	Fluoranthene	**22**		ug/Kg	14
129-00-0	Pyrene	**73**		ug/Kg	14
56-55-3	Benzo[a]anthracene	**45**		ug/Kg	14
218-01-9	Chrysene	**56**		ug/Kg	14
205-99-2	Benzo[b]fluoranthene	**27**		ug/Kg	14
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	14
50-32-8	Benzo[a]pyrene	**43**		ug/Kg	14
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	14
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	14
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	14

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,700	2,900	**78** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Buzzards Bay/3871-002-06**	Lab ID:	**109907**
Client:	**GeoInsight, Inc.**	Received:	**08-14-07 17:53**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1 . No documentation discrepancies, changes, or amendments were noted.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1 . MA DEP EPH Note: Sample 109907-2. Polynuclear aromatic hydrocarbon (PAH) target analytes were identified and quantified by GC/MS-SIM, in accordance with the method provision for alternate determinative methodologies. GC/MS-SIM was used to achieve low quantification limits necessary for regulatory compliance. Target analytes were determined utilizing the same sample extract used for carbon range determination by GC/FID.

GROUNDWATER ANALYTICAL

228 Main Street, P.O. Box 1200
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

№ 065218

Project Name: Buzzards Bay	Firm: GeoInsight, Inc.
Project Number: 3871-002-06	Address: 5 Lan Drive, Suite 200
Sampler Name: K. Trainer	City / State / Zip: Westford, MA 01886
Project Manager: K. Trainer	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- [x] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN- _____)
  (Rush requires Rush Authorization Number)

Please FAX ☐ YES ☒ NO -e-mail
FAX Number: _____

BILLING

Purchase Order No.: 3871-002-06
GWA Reference No.:

ANALYSIS REQUEST

	Volatiles		Semivolatiles	Pest/Herb/PCBs Extractable	Pest/Herb/PCBs Vol.	Metals	Petroleum Hydrocarbon Ext. TPH	Petroleum Hydrocarbon Vol. TPH	Haz. Waste	General Chemistry	Other
OPTIONS	☐ TIC Search		☐ Acid Only ☐ B/N Only ☐ TIC Search			Specify For Water Samples ☐ Total ☐ Dissolved					
SDWA	☐ 524.2 ☐ Add MTBE		☐ 525.2	☐ 505	☐ 531.1 ☐ 515.1 ☐ 504.1 EDB/DBCP	☐ Lead and Copper					
NPDES	☐ 624/NPDES ☐ 624/Extended ☐ Add MTBE	☐ 602 ☐ Add MTBE	☐ 625 ☐ 625/PAHs only	☐ 608 Pesticides ☐ 608/PCB only	☐ 615 ☐ 8151 Herbicides	☐ 13 Priority Pollutant					
RCRA/21E	☐ 8260B/TCL ☐ 8260B/Extended ☐ Add MTBE	☐ 8021 Aromatics ☐ Add MTBE ☐ 8021 Halocarbons	☐ 8270C/TCL ☐ 8270C/PAHs Only	☐ 8081A Pesticides ☐ 8082 PCBs	☐ 8011 ☐ 8 RCRA ☐ 23 TAL ☐ Specify:		☐ 418.1 (TPH-IR) ☐ Diesel Range Organics (DRO) ☒ MA DEP EPH w/4 PAHs ☐ EPH w/8 PAHs ☐ EPH Carbon ranges only ☐ Hydrocarbon Fingerprint (GC/FID by ASTM D3328-90 Mod.) ☐ TPH by GC/FID (8100 Mod) Quantitative Only ☐ Gasoline Range Organics (GRO) ☐ MA DEP VPH w/all targets ☐ VPH Carbon ranges only		☐ TCLP ☐ Metals ☐ VOA ☐ Semi VOA ☐ Pesticides ☐ Herbicides ☐ Corrosivity (as pH) ☐ Reactivity ☐ Ignitability (as Flashpoint) ☐ Paint Filter ☐ MA Basic Disposal Criteria/VOA, GC/FID, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity		

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix WATER	Matrix SOIL	Type COMPOSITE	Type GRAB	Container(s) NUMBER	40mL VOA Vial	60mL/2 oz Glass	120mL/4 oz VOA Jar	120mL/4 oz Amber Glass	250mL/8 oz Glass	500mL/16 oz Glass	1L/32 oz Amber Glass	250mL/8 oz Plastic	500mL/16 oz Plastic	1L/32 oz Plastic	120mL STERILE	Preservation HCl	HNO3	H2SO4	NaOH	Methanol	Sodium Bisulfate	ICE	Filtered YES	Filtered NO	LABORATORY NUMBER (Lab Use Only)
8/12/07	2:35	WIF02-081307-S1		✓		✓	1					✓												✓			

REMARKS / SPECIAL INSTRUCTIONS

Note: Run targets with SIM for low-level detection limits.

DATA QUALITY OBJECTIVES

Regulatory Program

- ☐ Safe Drinking Water Act ☐ MA DEP Form
- ☐ NPDES/Clean Water Act Specify State: _____
- ☐ RCRA/Haz. Waste Char.
- ☒ MA MCP (310 CMR 40) Reportable Concentrations
  - ☐ RCGW - 1 ☒ RCS - 1
  - ☐ RCGW - 2 ☐ RCS - 2
- ☐ MA Dredge Disposal
- ☐ NH ☐ RI ☐ CT ☐ ME Specify Category: _____

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. For water samples, each MS, MSD and Sample Duplicate requires an additional sample aliquot.

Project Specific QC Required

- ☐ Sample Duplicate
- ☐ Matrix Spike
- ☐ Matrix Spike Duplicate

Selection of QC Sample

- ☐ Selected by laboratory
- ☐ Please use sample: _____

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

	Date	Time		
Relinquished by Sampler:	8/14/07	7:30	Received by:	Receipt Temperature: 3.4
Relinquished by:	8/14/07	1753	Received by: Penny Almeida	~~Shipping/Airbill~~ Number: 1
Relinquished by:			Received by Laboratory:	Custody Seal/ Cooler Serial Number:

Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**MA DEP EPH Method**	Instrument ID:	**GC-7 HP 5890**	Instrument ID:	**GC-7 HP 5890**
QC Batch ID:	**EP-2640-M**	Extracted:	**08-21-07 09:00**	Extracted:	**08-21-07 09:00**
Matrix:	**Soil**	Analyzed (AL):	**08-22-07 11:52**	Analyzed (AL):	**08-22-07 13:20**
Units:	**mg/Kg**	Analyzed (AR):	**08-22-07 12:36**	Analyzed (AR):	**08-22-07 14:04**
		Analyst:	**NS**	Analyst:	**NS**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
111-84-2	*n*-Nonane (C_9)	3.3	2.0	**60** %	3.3	2.0	**60** %	**1** %	30 - 140 %	25%
124-18-5	*n*-Decane (C_{10})	3.3	2.2	**68** %	3.3	2.3	**68** %	**0** %	40 - 140 %	25%
112-40-3	*n*-Dodecane (C_{12})	3.3	2.4	**71** %	3.3	2.4	**72** %	**1** %	40 - 140 %	25%
629-59-4	*n*-Tetradecane (C_{14})	3.3	2.6	**78** %	3.3	2.6	**80** %	**2** %	40 - 140 %	25%
544-76-3	*n*-Hexadecane (C_{16})	3.3	2.8	**85** %	3.3	2.8	**86** %	**1** %	40 - 140 %	25%
593-45-3	*n*-Octadecane (C_{18})	3.3	2.9	**89** %	3.3	2.9	**89** %	**1** %	40 - 140 %	25%
n/a	*n*-C9 to *n*-C18 Group	20	15	**75** %	20	15	**76** %	**1** %	40 - 140 %	25%
629-92-5	*n*-Nonadecane (C_{19})	3.3	2.9	**89** %	3.3	2.9	**88** %	**1** %	40 - 140 %	25%
112-95-8	*n*-Eicosane (C_{20})	3.3	3.0	**90** %	3.3	3.0	**90** %	**1** %	40 - 140 %	25%
629-97-0	*n*-Docosane (C_{22})	3.3	3.0	**91** %	3.3	2.9	**89** %	**2** %	40 - 140 %	25%
646-31-1	*n*-Tetracosane (C_{24})	3.3	3.1	**94** %	3.3	2.9	**88** %	**7** %	40 - 140 %	25%
630-01-3	*n*-Hexacosane (C_{26})	3.3	3.0	**90** %	3.3	2.9	**89** %	**2** %	40 - 140 %	25%
630-02-4	*n*-Octacosane (C_{28})	3.3	3.0	**90** %	3.3	2.9	**88** %	**2** %	40 - 140 %	25%
638-68-6	*n*-Triacontane (C_{30})	3.3	2.9	**89** %	3.3	2.9	**87** %	**2** %	40 - 140 %	25%
630-06-8	*n*-Hexatriacontane (C_{36})	3.3	2.5	**75** %	3.3	2.3	**71** %	**6** %	40 - 140 %	25%
n/a	*n*-C19 to *n*-C36 Group	26	23	**88** %	26	23	**86** %	**3** %	40 - 140 %	25%
91-20-3	Naphthalene	3.3	2.5	**75** %	3.3	2.3	**70** %	**7** %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	3.3	2.6	**80** %	3.3	2.5	**76** %	**6** %	40 - 140 %	25%
208-96-8	Acenaphthylene	3.3	2.6	**79** %	3.3	2.5	**76** %	**5** %	40 - 140 %	25%
83-32-9	Acenaphthene	3.3	2.7	**80** %	3.3	2.6	**77** %	**4** %	40 - 140 %	25%
86-73-7	Fluorene	3.3	2.8	**84** %	3.3	2.7	**82** %	**3** %	40 - 140 %	25%
85-01-8	Phenanthrene	3.3	2.9	**89** %	3.3	2.8	**85** %	**4** %	40 - 140 %	25%
120-12-7	Anthracene	3.3	3.0	**92** %	3.3	2.9	**87** %	**5** %	40 - 140 %	25%
206-44-0	Fluoranthene	3.3	3.0	**91** %	3.3	2.9	**87** %	**5** %	40 - 140 %	25%
129-00-0	Pyrene	3.3	3.0	**90** %	3.3	2.8	**86** %	**5** %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	3.3	3.2	**96** %	3.3	3.0	**91** %	**5** %	40 - 140 %	25%
218-01-9	Chrysene	3.3	3.0	**92** %	3.3	2.9	**88** %	**5** %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	3.3	3.2	**96** %	3.3	3.0	**92** %	**4** %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	3.3	2.9	**89** %	3.3	2.8	**84** %	**6** %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	3.3	3.1	**93** %	3.3	2.9	**89** %	**5** %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	3.3	3.1	**94** %	3.3	3.0	**90** %	**4** %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	3.3	3.2	**98** %	3.3	3.1	**94** %	**4** %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	3.3	3.1	**93** %	3.3	2.9	**88** %	**6** %	40 - 140 %	25%
n/a	PAH Group	56	50	**89** %	56	48	**85** %	**5** %	40 - 140 %	25%

QC Surrogate Compound		Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.3	**85** %	2.7	2.1	**78** %		40 - 140 %
	2-Bromonaphthalene	2.7	2.3	**85** %	2.7	2.2	**81** %		40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.3	**85** %	2.7	2.1	**78** %		40 - 140 %
	ortho-Terphenyl	2.7	2.3	**85** %	2.7	2.2	**81** %		40 - 140 %

Fractionation Breakthrough Evaluation						QC Limits
91-20-3	Naphthalene	LCS	**0** %	LCSD	**0** %	5%
91-57-6	2-Methylnaphthalene	LCS	**0** %	LCSD	**0** %	5%

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Method modified by use of microwave accelerated solvent extraction technique.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**MA DEP EPH**	Instrument ID:	**GC-7 HP 5890**
QC Batch ID:	**EP-2640-M**	Extracted:	**08-21-07 09:00**
Matrix:	**Soil**	Analyzed (AL):	**08-22-07 14:47**
		Analyzed (AR):	**08-22-07 15:31**
		Analyst:	**NS**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	30
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	30

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.4	**90** %	40 - 140 %
	2-Bromonaphthalene	2.7	2.4	**90** %	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.1	**79** %	40 - 140 %
	ortho-Terphenyl	2.7	2.4	**90** %	40 - 140 %

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C Modified**	Instrument ID:	**MS-6 HP 6890**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**EP-2640-M**	Extracted:	**08-21-07 09:00**	Extracted:	**08-21-07 09:00**
Matrix:	**Soil**	Analyzed:	**08-23-07 07:51**	Analyzed:	**08-23-07 08:31**
Units:	**ug/Kg**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	330	200	**61** %	330	210	**64** %	**5** %	40 - 140 %	20%
91-57-6	2-Methylnaphthalene	330	230	**70** %	330	250	**76** %	**8** %	40 - 140 %	20%
85-01-8	Phenanthrene	330	250	**76** %	330	250	**76** %	**0** %	40 - 140 %	20%
83-32-9	Acenaphthene	330	250	**76** %	330	270	**82** %	**8** %	40 - 140 %	20%
208-96-8	Acenaphthylene	330	250	**76** %	330	270	**82** %	**8** %	40 - 140 %	20%
86-73-7	Fluorene	330	260	**79** %	330	280	**85** %	**7** %	40 - 140 %	20%
120-12-7	Anthracene	330	250	**76** %	330	250	**76** %	**0** %	40 - 140 %	20%
206-44-0	Fluoranthene	330	280	**85** %	330	280	**85** %	**0** %	40 - 140 %	20%
129-00-0	Pyrene	330	270	**82** %	330	260	**79** %	**4** %	40 - 140 %	20%
56-55-3	Benzo[a]anthracene	330	280	**85** %	330	270	**82** %	**4** %	40 - 140 %	20%
218-01-9	Chrysene	330	270	**82** %	330	270	**82** %	**0** %	40 - 140 %	20%
205-99-2	Benzo[b]fluoranthene	330	320	**97** %	330	310	**94** %	**3** %	40 - 140 %	20%
207-08-9	Benzo[k]fluoranthene	330	310	**94** %	330	290	**88** %	**7** %	40 - 140 %	20%
50-32-8	Benzo[a]pyrene	330	310	**94** %	330	310	**94** %	**0** %	40 - 140 %	20%
193-39-5	Indeno[1,2,3-c,d]pyrene	330	320	**97** %	330	320	**97** %	**0** %	40 - 140 %	20%
53-70-3	Dibenzo[a,h]anthracene	330	320	**97** %	330	310	**94** %	**3** %	40 - 140 %	20%
191-24-2	Benzo[g,h,i]perylene	330	300	**91** %	330	300	**91** %	**0** %	40 - 140 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
ortho -Terphenyl	2,700	2,100	**78** %	2,700	2,100	**78** %		40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3510C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Mod.) - EPH PAHs by GC/MS-SIM**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**EP-2640-M**	Extracted:	**08-21-07 09:00**
Matrix:	**Soil**	Analyzed:	**08-23-07 09:11**
		Analyst:	**MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	10
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	10
208-96-8	Acenaphthylene	BRL		ug/Kg	10
83-32-9	Acenaphthene	BRL		ug/Kg	10
86-73-7	Fluorene	BRL		ug/Kg	10
85-01-8	Phenanthrene	BRL		ug/Kg	10
120-12-7	Anthracene	BRL		ug/Kg	10
206-44-0	Fluoranthene	BRL		ug/Kg	10
129-00-0	Pyrene	BRL		ug/Kg	10
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	10
218-01-9	Chrysene	BRL		ug/Kg	10
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	10
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	10
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	10
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	10
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	10
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	10

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,700	2,100	**80** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.
Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT

Department of Health Services, PH-0586 — Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental Lab/out state.pdf

MAINE

Department of Health and Human Services, MA0103 — Drinking Water and Wastewater
http://www.maine.gov/dhhs/eng/water/Templates/LabCertification/LabCertification.htm

Department of Environmental Protection, LB-0072 — Asbestos Analytical Laboratory (Bulk)

MASSACHUSETTS

Department of Environmental Protection, M-MA-103 — Potable Water and Non-Potable Water
http://public.dep.state.ma.us/labcert/labcert.aspx

Department of Labor,
Division of Occupational Safety, AA000195 — Asbestos Analytical Services, Class A
http://www.mass.gov/dos/forms/la-rpt_list_aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 2027 — Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NIST NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

NVLAP Lab Code 200751-1 — Bulk Asbestos Fiber Analysis (PLM)
http://ts.nist.gov/Standards/scopes/plmtm.htm

NEW YORK

Department of Health, 11754 — Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

RHODE ISLAND

Department of Health,
Division of Laboratories, LAO00054 — Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry
http://www.health.ri.gov/labs/outofstatelabs.pdf

Department of Health,
Office of Occupational and Radiological Health, AAL-110B3 — Asbestos Analytical Service, Polarized Light Microscopy (PLM)
http://www.health.ri.gov/environment/occupational/asbestos/licensees/AsbestosAnalyticalLabs.pdf

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921 — Foreign soil import permit

VERMONT

Department of Health, VT87643 — Drinking Water Microbiological, Inorganic and Organic Analyses
http://healthvermont.gov/enviro/ph_lab/documents/certified_labs.pdf

Groundwater Analytical, Inc., P.O. Box 1200, 228 Main Street, Buzzards Bay, MA 02532

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FAX (508) 759-4475
www.groundwateranalytical.com

November 15, 2007

Mr. Kevin Trainer
GeoInsight, Inc.
5 Lan Drive
Second Floor
Westford, MA 01886

LABORATORY REPORT

Project: **Buzzards Bay/3871-002**
Lab ID: **112302**
Received: **11-01-07**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Standard turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC or NVLAP standards, except as may be specifically noted, or described in the project narrative. The analytical results relate only to the samples received. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/elm
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project: **Buzzards Bay/3871-002**
Client: **GeoInsight, Inc.**
Lab ID: **112302**

Delivery: **GWA Courier**
Airbill: **n/a**
Lab Receipt: **11-01-07**

Temperature: **2.8'C**
Chain of Custody: **Present**
Custody Seal(s): **n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
112302-1	WIF02-102507-S1		Soil	10/25/07 13:25	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1071405	120 mL Amber Glass	n/a	n/a	NaOH	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
112302-2	WIF02-102507-S2		Soil	10/25/07 13:50	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1071406	120 mL Amber Glass	n/a	n/a	NaOH	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
112302-3	Brandt Island Road 1		Soil	10/26/07 14:55	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C721461	120 mL Amber Glass	Proline	BX21346	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
112302-4	Brandt Island Road 2		Soil	10/26/07 15:00	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C721456	120 mL Amber Glass	Proline	BX21346	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

Data Certification

Project:	**Buzzards Bay/3871-002**	Lab ID:	**112302**
Client:	**GeoInsight, Inc.**	Received:	**11-01-07 18:45**

MA DEP Compendium of Analytical Methods						
Project Location:	**n/a**			MA DEP RTN:	**n/a**	
This Form provides certifications for the following data set: MA DEP EPH: 112302-1,-2,-3,-4						
Sample Matrices:	Groundwater ( )	Soil/Sediment (X)	Drinking Water ( )	Other ( )		
MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )	
	8270C ( )	8081A ( )	VPH ( )	6020A ( )	9012A[2] ( )	
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 ( )	8021B ( )	EPH (X)	7000 S[3] ( )	Other ( )	
	1. List Release Tracking Number (RTN), if known.					
	2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method					
	3. S - SW-846 Methods 7000 Series. List individual method and analyte.					

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.

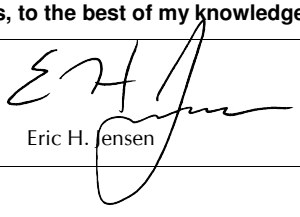
A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	Yes

A response to questions E and F below is required for "Presumptive Certainty" status.

E.	Were all QC performance standards and recommendations for the specified methods achieved?	No
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?	Yes

All No answers are addressed in the attached Project Narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:		Position:	Operations Manager
Printed Name:	Eric H. Jensen	Date:	11-15-07

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**WIF02-102507-S1**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**112302-1**	QC Batch ID:	**EP-2684-M**
Sampled:	**10-25-07 13:25**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**11-01-07 18:45**	Sample Weight:	**15 g**
Extracted:	**11-08-07 23:00**	Final Volume:	**1 mL**
Analyzed (AL):	**11-10-07 05:28**	% Solids:	**55**
Analyzed (AR):	**11-10-07 06:12**	Aliphatic Dilution Factor:	**10**
Analyst:	**KMC**	Aromatic Dilution Factor:	**10**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	**1,200**		mg/Kg	540
n-C19 to n-C36 Aliphatic Hydrocarbons †	**8,400**		mg/Kg	540
n-C11 to n-C22 Aromatic Hydrocarbons † ◊	**15,000**		mg/Kg	540
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	16,000		mg/Kg	540

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	4.8	3.3	**68** %	40 - 140 %
	2-Bromonaphthalene	4.8	3.4	**70** %	40 - 140 %
Extraction:	Chloro-octadecane	4.8	n/a	**d**	40 - 140 %
	ortho -Terphenyl	4.8	n/a	**d**	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed? Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved? No
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1? No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

d Surrogate recovery not measurable due to required sample dilution.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**WIF02-102507-S1**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**112302-01**	QC Batch ID:	**EP-2684-M**
Sampled:	**10-25-07 13:25**	Instrument ID:	**MS-6 HP 6890**
Received:	**11-01-07 18:45**	Sample Volume:	**15 g**
Extracted:	**11-08-07 23:00**	Final Volume:	**1 mL**
Analyzed:	**11-14-07 12:13**	Percent Solids:	**55**
Analyst:	**MJB**	Dilution Factor:	**200**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	3,600
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	3,600
208-96-8	Acenaphthylene	BRL		ug/Kg	3,600
83-32-9	Acenaphthene	**8,200**		ug/Kg	3,600
86-73-7	Fluorene	**14,000**		ug/Kg	3,600
85-01-8	Phenanthrene	**54,000**		ug/Kg	3,600
120-12-7	Anthracene	**6,500**		ug/Kg	3,600
206-44-0	Fluoranthene	**8,400**		ug/Kg	3,600
129-00-0	Pyrene	**31,000**		ug/Kg	3,600
56-55-3	Benzo[a]anthracene	**18,000**		ug/Kg	3,600
218-01-9	Chrysene	**25,000**		ug/Kg	3,600
205-99-2	Benzo[b]fluoranthene	**7,000**		ug/Kg	3,600
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	3,600
50-32-8	Benzo[a]pyrene	**13,000**		ug/Kg	3,600
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	3,600
53-70-3	Dibenzo[a,h]anthracene	**5,100**		ug/Kg	3,600
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	3,600

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	4,800	n/a	d	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

d Surrogate recovery not measurable due to required sample dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**WIF02-102507-S2**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**112302-2**	QC Batch ID:	**EP-2684-M**
Sampled:	**10-25-07 13:50**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**11-01-07 18:45**	Sample Weight:	**15 g**
Extracted:	**11-08-07 23:00**	Final Volume:	**1 mL**
Analyzed (AL):	**11-09-07 22:09**	% Solids:	**91**
Analyzed (AR):	**11-09-07 22:53**	Aliphatic Dilution Factor:	**1**
Analyst:	**KMC**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	33
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	33
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	33
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	33

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.9	2.5	**86** %	40 - 140 %
	2-Bromonaphthalene	2.9	2.3	**80** %	40 - 140 %
Extraction:	Chloro-octadecane	2.9	2.1	**74** %	40 - 140 %
	ortho-Terphenyl	2.9	2.8	**95** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**WIF02-102507-S2**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**112302-02**	QC Batch ID:	**EP-2684-M**
Sampled:	**10-25-07 13:50**	Instrument ID:	**MS-6 HP 6890**
Received:	**11-01-07 18:45**	Sample Volume:	**15 g**
Extracted:	**11-08-07 23:00**	Final Volume:	**1 mL**
Analyzed:	**11-13-07 18:30**	Percent Solids:	**91**
Analyst:	**MJB**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	11
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	11
208-96-8	Acenaphthylene	BRL		ug/Kg	11
83-32-9	Acenaphthene	BRL		ug/Kg	11
86-73-7	Fluorene	BRL		ug/Kg	11
85-01-8	Phenanthrene	BRL		ug/Kg	11
120-12-7	Anthracene	BRL		ug/Kg	11
206-44-0	Fluoranthene	BRL		ug/Kg	11
129-00-0	Pyrene	BRL		ug/Kg	11
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	11
218-01-9	Chrysene	BRL		ug/Kg	11
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	11
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	11
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	11
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	11
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	11
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	11

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,900	2,400	**82** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**Brandt Island Road 1**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**112302-3**	QC Batch ID:	**EP-2684-M**
Sampled:	**10-26-07 14:55**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**11-01-07 18:45**	Sample Weight:	**16 g**
Extracted:	**11-08-07 23:00**	Final Volume:	**1 mL**
Analyzed (AL):	**11-09-07 23:37**	% Solids:	**91**
Analyzed (AR):	**11-10-07 00:20**	Aliphatic Dilution Factor:	**1**
Analyst:	**KMC**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	32
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	32
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	32
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	32

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.8	2.3	**81** %	40 - 140 %
	2-Bromonaphthalene	2.8	2.2	**79** %	40 - 140 %
Extraction:	Chloro-octadecane	2.8	2.0	**73** %	40 - 140 %
	ortho-Terphenyl	2.8	2.5	**88** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**Brandt Island Road 1**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**112302-03**	QC Batch ID:	**EP-2684-M**
Sampled:	**10-26-07 14:55**	Instrument ID:	**MS-6 HP 6890**
Received:	**11-01-07 18:45**	Sample Volume:	**16 g**
Extracted:	**11-08-07 23:00**	Final Volume:	**1 mL**
Analyzed:	**11-13-07 19:11**	Percent Solids:	**91**
Analyst:	**MJB**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	11
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	11
208-96-8	Acenaphthylene	BRL		ug/Kg	11
83-32-9	Acenaphthene	BRL		ug/Kg	11
86-73-7	Fluorene	BRL		ug/Kg	11
85-01-8	Phenanthrene	**76**		ug/Kg	11
120-12-7	Anthracene	**11**		ug/Kg	11
206-44-0	Fluoranthene	**170**		ug/Kg	11
129-00-0	Pyrene	**140**		ug/Kg	11
56-55-3	Benzo[a]anthracene	**63**		ug/Kg	11
218-01-9	Chrysene	**78**		ug/Kg	11
205-99-2	Benzo[b]fluoranthene	**130**		ug/Kg	11
207-08-9	Benzo[k]fluoranthene	**42**		ug/Kg	11
50-32-8	Benzo[a]pyrene	**80**		ug/Kg	11
193-39-5	Indeno[1,2,3-c,d]pyrene	**58**		ug/Kg	11
53-70-3	Dibenzo[a,h]anthracene	**20**		ug/Kg	11
191-24-2	Benzo[g,h,i]perylene	**53**		ug/Kg	11

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,800	2,100	**74** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**Brandt Island Road 2**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**112302-4**	QC Batch ID:	**EP-2684-M**
Sampled:	**10-26-07 15:00**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**11-01-07 18:45**	Sample Weight:	**16 g**
Extracted:	**11-08-07 23:00**	Final Volume:	**1 mL**
Analyzed (AL):	**11-10-07 01:05**	% Solids:	**87**
Analyzed (AR):	**11-10-07 01:48**	Aliphatic Dilution Factor:	**1**
Analyst:	**KMC**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	33
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	33
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	33
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	33

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.9	2.4	**83** %	40 - 140 %
	2-Bromonaphthalene	2.9	2.4	**82** %	40 - 140 %
Extraction:	Chloro-octadecane	2.9	2.0	**69** %	40 - 140 %
	ortho-Terphenyl	2.9	2.8	**95** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**Brandt Island Road 2**	Matrix:	**Soil**
Project:	**Buzzards Bay/3871-002**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**112302-04**	QC Batch ID:	**EP-2684-M**
Sampled:	**10-26-07 15:00**	Instrument ID:	**MS-6 HP 6890**
Received:	**11-01-07 18:45**	Sample Volume:	**16 g**
Extracted:	**11-08-07 23:00**	Final Volume:	**1 mL**
Analyzed:	**11-13-07 19:51**	Percent Solids:	**87**
Analyst:	**MJB**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	11
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	11
208-96-8	Acenaphthylene	BRL		ug/Kg	11
83-32-9	Acenaphthene	BRL		ug/Kg	11
86-73-7	Fluorene	BRL		ug/Kg	11
85-01-8	Phenanthrene	BRL		ug/Kg	11
120-12-7	Anthracene	BRL		ug/Kg	11
206-44-0	Fluoranthene	**23**		ug/Kg	11
129-00-0	Pyrene	**23**		ug/Kg	11
56-55-3	Benzo[a]anthracene	**12**		ug/Kg	11
218-01-9	Chrysene	**15**		ug/Kg	11
205-99-2	Benzo[b]fluoranthene	**26**		ug/Kg	11
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	11
50-32-8	Benzo[a]pyrene	**15**		ug/Kg	11
193-39-5	Indeno[1,2,3-c,d]pyrene	**12**		ug/Kg	11
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	11
191-24-2	Benzo[g,h,i]perylene	**11**		ug/Kg	11

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,900	2,300	**79** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Buzzards Bay/3871-002**	Lab ID:	**112302**
Client:	**GeoInsight, Inc.**	Received:	**11-01-07 18:45**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1 . No documentation discrepancies, changes, or amendments were noted.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1 . MA DEP EPH Non-conformance: Sample 112302-01. Sample did not have measureable surrogate recoveries due to required sample dilution.

2 . MA DEP EPH Note: Sample 112302-01. Sample was diluted prior to analysis. Dilution was required due to presence of non-target analyte interference.

3 . MA DEP EPH Note: 112302-01. Sample was diluted prior to fractionation due to sample matrix.

4 . MA DEP EPH Note: Samples 112302-1, -2, -3 and -4. Polynuclear aromatic hydrocarbon (PAH) target analytes were identified and quantified by GC/MS-SIM, in accordance with the method provision for alternate determinative methodologies. GC/MS-SIM was used to achieve low quantification limits necessary for regulatory compliance. Target analytes were determined utilizing the same sample extract used for carbon range determination by GC/FID.

GROUNDWATER ANALYTICAL

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Buzzards Bay, MA 02532
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CHAIN-OF-CUSTODY RECORD AND WORK ORDER

Project Name: Buzzards Bay	Firm: GeoInsight, Inc.
Project Number: 3871-002	Address: 5 Lan Drive, Suite 200
Sampler Name: K. Trainer	City / State / Zip: Westford, MA 01886
Project Manager: Kevin Trainer	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- [X] STANDARD (10 Business Days)
- [ ] PRIORITY (5 Business Days)
- [ ] RUSH (RAN-_____)
  (Rush requires Rush Authorization Number)
  - [ ] Please Email to: _____
  - [ ] Please FAX to: _____

BILLING

- [ ] Purchase Order No.: _____
- [ ] Third Party Billing: _____
- [ ] GWA Quote: _____

ANALYSIS REQUEST

OPTIONS: Volatiles: ☐ TIC Search | Semivolatiles: ☐ 1 Acid Only ☐ B/N Only ☐ TIC Search | Pest/Herb/PCBs Extractable: ☐ Acid Only ☐ B/N Only ☐ TIC Search | Vol.: ☐ TIC Search | Metals: Specify For Water Samples ☐ Total ☐ Dissolved

SDWA: ☐ 524.2 | ☐ 525.2 | ☐ 505 ☐ 508 | ☐ 531.1 | ☐ 515.1 | ☐ 504.1 EDB/DBCP | ☐ Lead and Copper

NPDES: ☐ 624 | ☐ 602+MTBE | ☐ 625 | ☐ 625 PAHs only | ☐ 608 Pesticides | ☐ 608 PCBs | ☐ 615 | ☐ 13 Priority Pollutant

RCRA/21E: ☐ 8260B TCL+MTBE | ☐ 8260B | ☐ 8260B Aromatics | ☐ 8260B Halocarbons | ☐ 8021B Vermont | ☐ 8270D | ☐ 8270D PAHs only | ☐ 8081A Pesticides | ☐ 8082 PCBs | ☐ 8151A Herbicides | ☐ 8011 EDB/DBCP | ☐ 8 RCRA ☐ 5 RCRA ☐ 14 MA DEP Metals ☐ 23 TAL | ☐ Specify:

Petroleum Hydrocarbon — Ext. TPH: ☐ ME DRO ☐ CT ETPH ☐ MA DEP EPH w/all targets ☐ EPH Carbon Ranges only ☐ EPH w/4 PAHs S/M ☐ Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00-Mod.) ☐ TPH by GC/FID (8015M Mod) Quantitative Only — Vol. TPH: ☐ Gasoline Range Organics (GRO) ☐ ME GRO ☐ MA DEP VPH w/all targets ☐ VPH Carbon ranges only

Haz. Waste: ☐ TCLP ☐ SPLP ☐ 8 Metals ☐ Ph.only ☐ VOA ☐ Semi VOA ☐ Pesticides ☐ Herbicides ☐ Corrosivity (as pH) ☐ Reactivity ☐ Ignitability (as Flashpoint) ☐ Paint Filter ☐ MA Basic Disposal: 8260/8TCL, TPH, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity ☐ MA Extended Disposal: 8260B, 8270D, TPH, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity

General Chemistry: ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Fluoride ☐ Sulfate ☐ Dissolved Phosphorus ☐ Ammonia ☐ TKN ☐ Total Phosphorus ☐ Total N (as N02/N03/TKN) ☐ Oil & Grease ☐ COD ☐ TOC ☐ BOD ☐ TDS ☐ TSS ☐ TS ☐ Alkalinity ☐ Total Cyanide ☐ Physiologically Available Cyanide ☐ Available Cyanide

Other: ☐ pH ☐ Dissolved Oxygen ☐ Turbidity ☐ Total Coliform ☐ Fecal Coliform ☐ HPC ☐ MA DEP Asbestos in Soil ☐ Asbestos (PLM)

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)
10/25/07	1:25	W1F02-102507-S1	SOIL	GRAB	1 × 250mL/8 oz Glass	ICE	NO	
10/25/07	1:50	W1F02-102507-S2	SOIL	GRAB	1 × 250mL/8 oz Glass	ICE	NO	
10/26/07	2:55	Brandt Island Road 1	SOIL	GRAB	1 × 250mL/8 oz Glass	ICE	NO	
10/26/07	3:00	Brandt Island Road 2	SOIL	GRAB	1 × 250mL/8 oz Glass	ICE	NO	

REMARKS / SPECIAL INSTRUCTIONS

- [x] YES ☐ NO MCP Data Certification required.
- ☐ YES ☐ NO MCP Drinking Water Sample included.
  (Volatile analyses require duplicate collection and Trip Blanks).
- ☐ Analyze Duplicates and Trips Blanks only if positive results.
  N/A
- ☐ YES ☐ NO RCP Data Certification required.

Signature: _____

Note: Need S/M for low-level detection of target analytes.

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☐ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-2	☐ MWRA
☑ MA	☐ NY STARS	☐ _____
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☐ _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required	Selection of QC Sample
☐ Sample Duplicate	☐ Please use sample:
☐ Matrix Spike	_____
☐ Matrix Spike Duplicate	

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

	Date	Time		
Relinquished by Sampler:	10/31/07	7:35	Received by:	11/1/07 1445
Relinquished by:	11/1/07	1845	Received by:	
Relinquished by:			Received by Laboratory:	

Receipt Temperature: 2.8 ☐ Ice ☐ Refrigerated 2-8°C Recommended

Container Count: 4

Shipping/Airbill Number:

Method of Shipment: ☑ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____

Custody Seal Number:

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**MA DEP EPH Method**	Instrument ID:	**GC-9 Agilent 6890**	Instrument ID:	**GC-9 Agilent 6890**
QC Batch ID:	**EP-2684-M**	Extracted:	**11-08-07 23:00**	Extracted:	**11-08-07 23:00**
Matrix:	**Soil**	Analyzed (AL):	**11-09-07 14:49**	Analyzed (AL):	**11-09-07 16:17**
Units:	**mg/Kg**	Analyzed (AR):	**11-09-07 15:33**	Analyzed (AR):	**11-09-07 17:01**
		Analyst:	**KMC**	Analyst:	**KMC**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
111-84-2	*n*-Nonane (C_9)	3.3	1.7	**51** %	3.3	1.6	**48** %	**7** %	30 - 140 %	25%
124-18-5	*n*-Decane (C_{10})	3.3	1.9	**57** %	3.3	1.8	**54** %	**6** %	40 - 140 %	25%
112-40-3	*n*-Dodecane (C_{12})	3.3	1.9	**58** %	3.3	1.8	**55** %	**6** %	40 - 140 %	25%
629-59-4	*n*-Tetradecane (C_{14})	3.3	2.0	**61** %	3.3	2.0	**60** %	**1** %	40 - 140 %	25%
544-76-3	*n*-Hexadecane (C_{16})	3.3	2.2	**66** %	3.3	2.2	**67** %	**0** %	40 - 140 %	25%
593-45-3	*n*-Octadecane (C_{18})	3.3	2.4	**73** %	3.3	2.4	**72** %	**2** %	40 - 140 %	25%
n/a	*n*-C9 to *n*-C18 Group	20	12	**61** %	20	12	**59** %	**3** %	40 - 140 %	25%
629-92-5	*n*-Nonadecane (C_{19})	3.3	2.4	**72** %	3.3	2.3	**70** %	**3** %	40 - 140 %	25%
112-95-8	*n*-Eicosane (C_{20})	3.3	2.4	**73** %	3.3	2.3	**71** %	**3** %	40 - 140 %	25%
629-97-0	*n*-Docosane (C_{22})	3.3	2.4	**73** %	3.3	2.3	**70** %	**4** %	40 - 140 %	25%
646-31-1	*n*-Tetracosane (C_{24})	3.3	2.4	**73** %	3.3	2.3	**70** %	**3** %	40 - 140 %	25%
630-01-3	*n*-Hexacosane (C_{26})	3.3	2.4	**73** %	3.3	2.3	**70** %	**4** %	40 - 140 %	25%
630-02-4	*n*-Octacosane (C_{28})	3.3	2.4	**72** %	3.3	2.3	**70** %	**3** %	40 - 140 %	25%
638-68-6	*n*-Triacontane (C_{30})	3.3	2.4	**73** %	3.3	2.3	**70** %	**4** %	40 - 140 %	25%
630-06-8	*n*-Hexatriacontane (C_{36})	3.3	2.1	**64** %	3.3	2.0	**60** %	**6** %	40 - 140 %	25%
n/a	*n*-C19 to *n*-C36 Group	26	19	**72** %	26	18	**69** %	**4** %	40 - 140 %	25%
91-20-3	Naphthalene	3.3	2.1	**63** %	3.3	1.9	**58** %	**8** %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	3.3	2.4	**71** %	3.3	2.1	**65** %	**10** %	40 - 140 %	25%
208-96-8	Acenaphthylene	3.3	2.3	**71** %	3.3	2.3	**68** %	**3** %	40 - 140 %	25%
83-32-9	Acenaphthene	3.3	2.5	**75** %	3.3	2.4	**73** %	**3** %	40 - 140 %	25%
86-73-7	Fluorene	3.3	2.5	**76** %	3.3	2.5	**74** %	**2** %	40 - 140 %	25%
85-01-8	Phenanthrene	3.3	2.7	**81** %	3.3	2.6	**78** %	**4** %	40 - 140 %	25%
120-12-7	Anthracene	3.3	2.7	**82** %	3.3	2.6	**78** %	**5** %	40 - 140 %	25%
206-44-0	Fluoranthene	3.3	3.0	**90** %	3.3	2.8	**86** %	**5** %	40 - 140 %	25%
129-00-0	Pyrene	3.3	2.9	**88** %	3.3	2.8	**85** %	**4** %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	3.3	2.9	**87** %	3.3	2.7	**83** %	**5** %	40 - 140 %	25%
218-01-9	Chrysene	3.3	3.2	**98** %	3.3	3.1	**94** %	**3** %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	3.3	2.8	**86** %	3.3	2.7	**82** %	**5** %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	3.3	3.2	**98** %	3.3	3.1	**94** %	**4** %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	3.3	3.0	**92** %	3.3	2.9	**88** %	**5** %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	3.3	2.8	**86** %	3.3	2.7	**81** %	**5** %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	3.3	3.2	**97** %	3.3	3.1	**94** %	**3** %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	3.3	2.9	**89** %	3.3	2.8	**86** %	**4** %	40 - 140 %	25%
n/a	PAH Group	56	47	**84** %	56	45	**80** %	**5** %	40 - 140 %	25%

QC Surrogate Compound		Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.2	**81** %	2.7	2.1	**78** %		40 - 140 %
	2-Bromonaphthalene	2.7	2.0	**74** %	2.7	1.9	**70** %		40 - 140 %
Extraction:	Chloro-octadecane	2.7	1.7	**63** %	2.7	1.6	**59** %		40 - 140 %
	ortho-Terphenyl	2.7	2.3	**85** %	2.7	2.2	**81** %		40 - 140 %

Fractionation Breakthrough Evaluation						QC Limits
91-20-3	Naphthalene	LCS	**0** %	LCSD	**0** %	5%
91-57-6	2-Methylnaphthalene	LCS	**0** %	LCSD	**0** %	5%

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Method modified by use of microwave accelerated solvent extraction technique.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**MA DEP EPH**	Instrument ID:	**GC-9 Agilent 6890**
QC Batch ID:	**EP-2684-M**	Extracted:	**11-08-07 23:00**
Matrix:	**Soil**	Analyzed (AL):	**11-09-07 17:45**
		Analyzed (AR):	**11-09-07 18:29**
		Analyst:	**KMC**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	30
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	30

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.2	**82** %	40 - 140 %
	2-Bromonaphthalene	2.7	2.1	**78** %	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.1	**77** %	40 - 140 %
	ortho-Terphenyl	2.7	2.5	**93** %	40 - 140 %

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C Modified**	Instrument ID:	**MS-6 HP 6890**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**EP-2684-M**	Extracted:	**11-08-07 23:00**	Extracted:	**11-08-07 23:00**
Matrix:	**Soil**	Analyzed:	**11-13-07 11:03**	Analyzed:	**11-13-07 11:44**
Units:	**ug/Kg**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	330	200	**61** %	330	200	**61** %	**0** %	40 - 140 %	20%
91-57-6	2-Methylnaphthalene	330	220	**67** %	330	230	**70** %	**4** %	40 - 140 %	20%
85-01-8	Phenanthrene	330	270	**82** %	330	290	**88** %	**7** %	40 - 140 %	20%
83-32-9	Acenaphthene	330	250	**76** %	330	250	**76** %	**0** %	40 - 140 %	20%
208-96-8	Acenaphthylene	330	250	**76** %	330	260	**79** %	**4** %	40 - 140 %	20%
86-73-7	Fluorene	330	250	**76** %	330	270	**82** %	**8** %	40 - 140 %	20%
120-12-7	Anthracene	330	270	**82** %	330	290	**88** %	**7** %	40 - 140 %	20%
206-44-0	Fluoranthene	330	290	**88** %	330	310	**94** %	**7** %	40 - 140 %	20%
129-00-0	Pyrene	330	280	**85** %	330	300	**91** %	**7** %	40 - 140 %	20%
56-55-3	Benzo[a]anthracene	330	270	**82** %	330	290	**88** %	**7** %	40 - 140 %	20%
218-01-9	Chrysene	330	270	**82** %	330	290	**88** %	**7** %	40 - 140 %	20%
205-99-2	Benzo[b]fluoranthene	330	290	**88** %	330	310	**94** %	**7** %	40 - 140 %	20%
207-08-9	Benzo[k]fluoranthene	330	290	**88** %	330	310	**94** %	**7** %	40 - 140 %	20%
50-32-8	Benzo[a]pyrene	330	290	**88** %	330	320	**97** %	**10** %	40 - 140 %	20%
193-39-5	Indeno[1,2,3-c,d]pyrene	330	320	**97** %	330	350	**106** %	**9** %	40 - 140 %	20%
53-70-3	Dibenzo[a,h]anthracene	330	270	**82** %	330	290	**88** %	**7** %	40 - 140 %	20%
191-24-2	Benzo[g,h,i]perylene	330	300	**91** %	330	330	**100** %	**10** %	40 - 140 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
ortho -Terphenyl	2,700	2,200	**81** %	2,700	2,200	**81** %		40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3510C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Mod.) - EPH PAHs by GC/MS-SIM**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**EP-2684-M**	Extracted:	**11-08-07 23:00**
Matrix:	**Soil**	Analyzed:	**11-13-07 12:25**
		Analyst:	**MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	10
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	10
208-96-8	Acenaphthylene	BRL		ug/Kg	10
83-32-9	Acenaphthene	BRL		ug/Kg	10
86-73-7	Fluorene	BRL		ug/Kg	10
85-01-8	Phenanthrene	BRL		ug/Kg	10
120-12-7	Anthracene	BRL		ug/Kg	10
206-44-0	Fluoranthene	BRL		ug/Kg	10
129-00-0	Pyrene	BRL		ug/Kg	10
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	10
218-01-9	Chrysene	BRL		ug/Kg	10
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	10
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	10
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	10
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	10
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	10
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	10

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,700	2,200	**83** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.
Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT

Department of Health Services, PH-0586 — Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental Lab/out state.pdf

MAINE

Department of Health and Human Services, MA0103 — Drinking Water and Wastewater
http://www.maine.gov/dhhs/eng/water/Templates/LabCertification/LabCertification.htm

Department of Environmental Protection, LB-0072 — Asbestos Analytical Laboratory (Bulk)

MASSACHUSETTS

Department of Environmental Protection, M-MA-103 — Potable Water and Non-Potable Water
http://public.dep.state.ma.us/labcert/labcert.aspx

Department of Labor,
Division of Occupational Safety, AA000195 — Asbestos Analytical Services, Class A
http://www.mass.gov/dos/forms/la-rpt_list_aa.pdf

NEW HAMPSHIRE

Department of Environmental Services, 2027 — Drinking Water and Wastewater
http://www.des.state.nh.us/asp/NHELAP/labsview.asp

NIST NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

NVLAP Lab Code 200751-1 — Bulk Asbestos Fiber Analysis (PLM)
http://ts.nist.gov/Standards/scopes/plmtm.htm

NEW YORK

Department of Health, 11754 — Potable Water, Non-Potable Water and Solid Waste
http://www.wadsworth.org/labcert/elap/comm.html

RHODE ISLAND

Department of Health,
Division of Laboratories, LAO00054 — Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry
http://www.health.ri.gov/labs/outofstatelabs.pdf

Department of Health,
Office of Occupational and Radiological Health, AAL-110B3 — Asbestos Analytical Service, Polarized Light Microscopy (PLM)
http://www.health.ri.gov/environment/occupational/asbestos/licensees/AsbestosAnalyticalLabs.pdf

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921 — Foreign soil import permit

VERMONT

Department of Health, VT87643 — Drinking Water Microbiological, Inorganic and Organic Analyses
http://healthvermont.gov/enviro/ph_lab/documents/certified_labs.pdf

Groundwater Analytical, Inc.
P.O. Box 1200
228 Main Street
Buzzards Bay, MA 02532

Telephone (508) 759-4441
FAX (508) 759-4475
www.groundwateranalytical.com

January 7, 2008

Mr. Kevin Trainer
GeoInsight, Inc.
5 Lan Drive
Second Floor
Westford, MA 01886

LABORATORY REPORT

Project: **Buzzards Bay Oil Spill/3871-002-16**
Lab ID: **113768**
Received: **12-26-07**

Dear Kevin:

Enclosed are the analytical results for the above referenced project. The project was processed for Standard turnaround.

This letter authorizes the release of the analytical results, and should be considered a part of this report. This report contains a sample receipt report detailing the samples received, a project narrative indicating project changes and non-conformances, a quality control report, and a statement of our state certifications.

The analytical results contained in this report meet all applicable NELAC or NVLAP standards, except as may be specifically noted, or described in the project narrative. The analytical results relate only to the samples received. This report may only be used or reproduced in its entirety.

I attest under the pains and penalties of perjury that, based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,

Eric H. Jensen
Operations Manager

EHJ/elm
Enclosures

GROUNDWATER ANALYTICAL

Sample Receipt Report

Project:	**Buzzards Bay Oil Spill/3871-002-16**	Delivery:	**GWA Courier**	Temperature:	**2.9'C**
Client:	**GeoInsight, Inc.**	Airbill:	**n/a**	Chain of Custody:	**Present**
Lab ID:	**113768**	Lab Receipt:	**12-26-07**	Custody Seal(s):	**n/a**

Lab ID	Field ID		Matrix	Sampled	Method				Notes
113768-1	HA-01 2'		Soil	12/21/07 11:30	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1010693	120 mL Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
113768-2	HA-02 2.5'		Soil	12/21/07 11:45	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1010695	120 mL Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
113768-3	HA-03 3'		Soil	12/21/07 11:50	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C721463	120 mL Amber Glass	Proline	BX21346	None	n/a	n/a	n/a		

Lab ID	Field ID		Matrix	Sampled	Method				Notes
113768-4	HA-04 2.5'		Soil	12/21/07 11:55	MA DEP EPH with PAHs by 8270C-Mod SIM				
Con ID	**Container**	**Vendor**	**QC Lot**	**Preserv**	**QC Lot**	**Prep**	**Ship**		
C1010694	120 mL Amber Glass	n/a	n/a	None	n/a	n/a	n/a		

GROUNDWATER ANALYTICAL

Data Certification

Project:	**Buzzards Bay Oil Spill/3871-002-16**	Lab ID:	**113768**
Client:	**GeoInsight, Inc.**	Received:	**12-26-07 16:58**

MA DEP Compendium of Analytical Methods						
Project Location:	**n/a**			MA DEP RTN:	**n/a**	
This Form provides certifications for the following data set:						
MA DEP EPH:	113768-1,-2,-3,-4					
Sample Matrices:	Groundwater ( )	Soil/Sediment (X)	Drinking Water ( )	Other ( )		
MCP SW-846 Methods Used	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )	
	8270C ( )	8081A ( )	VPH ( )	6020A ( )	9012A[2] ( )	
As specified in MA DEP Compendium of Analytical Methods. (check all that apply)	8082 ( )	8021B ( )	EPH (X)	7000 S[3] ( )	Other ( )	
	1. List Release Tracking Number (RTN), if known.					
	2. SW-846 Method 9012A (Equivalent to 9014) or MA DEP Physiologically Available Cyanide (PAC) Method					
	3. S - SW-846 Methods 7000 Series. List individual method and analyte.					

An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status.

A.	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the data set?	Yes
B.	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes
C.	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty," as described in Section 2.0 of the MA DEP document CAM VII A, *Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data* ?	Yes
D.	VPH and EPH methods only: Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	Yes

A response to questions E and F below is required for "Presumptive Certainty" status.

E.	Were all QC performance standards and recommendations for the specified methods achieved?	Yes
F.	Were results for all analyte-list compounds/elements for the specified method(s) reported?	Yes

All No answers are addressed in the attached Project Narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:		Position:	Operations Manager
Printed Name:	Eric H. Jensen	Date:	01-07-08

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**HA-01 2'**	Matrix:	**Soil**
Project:	**Buzzards Bay Oil Spill/3871-002-16**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**113768-1**	QC Batch ID:	**EP-2714-M**
Sampled:	**12-21-07 11:30**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**12-26-07 16:58**	Sample Weight:	**15 g**
Extracted:	**12-28-07 23:00**	Final Volume:	**1 mL**
Analyzed (AL):	**01-01-08 01:22**	% Solids:	**81**
Analyzed (AR):	**01-01-08 02:06**	Aliphatic Dilution Factor:	**1**
Analyst:	**KMC**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	37
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	37
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	37
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	37

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.3	3.5	**107** %	40 - 140 %
	2-Bromonaphthalene	3.3	3.5	**108** %	40 - 140 %
Extraction:	Chloro-octadecane	3.3	2.8	**85** %	40 - 140 %
	ortho-Terphenyl	3.3	3.2	**98** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**HA-01 2'**	Matrix:	**Soil**
Project:	**Buzzards Bay Oil Spill/3871-002-16**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**113768-01**	QC Batch ID:	**EP-2714-M**
Sampled:	**12-21-07 11:30**	Instrument ID:	**MS-6 HP 6890**
Received:	**12-26-07 16:58**	Sample Volume:	**15 g**
Extracted:	**12-28-07 23:00**	Final Volume:	**1 mL**
Analyzed:	**01-01-08 01:24**	Percent Solids:	**81.378**
Analyst:	**MJB**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	12
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	12
208-96-8	Acenaphthylene	BRL		ug/Kg	12
83-32-9	Acenaphthene	BRL		ug/Kg	12
86-73-7	Fluorene	BRL		ug/Kg	12
85-01-8	Phenanthrene	BRL		ug/Kg	12
120-12-7	Anthracene	BRL		ug/Kg	12
206-44-0	Fluoranthene	BRL		ug/Kg	12
129-00-0	Pyrene	BRL		ug/Kg	12
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	12
218-01-9	Chrysene	BRL		ug/Kg	12
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	12
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	12
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	12
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	12
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	12
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	12

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,300	2,300	**70** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**HA-02 2.5'**	Matrix:	**Soil**
Project:	**Buzzards Bay Oil Spill/3871-002-16**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**113768-2**	QC Batch ID:	**EP-2714-M**
Sampled:	**12-21-07 11:45**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**12-26-07 16:58**	Sample Weight:	**15 g**
Extracted:	**12-28-07 23:00**	Final Volume:	**1 mL**
Analyzed (AL):	**01-01-08 02:50**	% Solids:	**73**
Analyzed (AR):	**01-01-08 03:34**	Aliphatic Dilution Factor:	**1**
Analyst:	**KMC**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	41
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	41
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	41
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	41

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.6	4.0	**110** %	40 - 140 %
	2-Bromonaphthalene	3.6	3.9	**109** %	40 - 140 %
Extraction:	Chloro-octadecane	3.6	2.6	**72** %	40 - 140 %
	ortho-Terphenyl	3.6	3.5	**98** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**HA-02 2.5'**	Matrix:	**Soil**
Project:	**Buzzards Bay Oil Spill/3871-002-16**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**113768-02**	QC Batch ID:	**EP-2714-M**
Sampled:	**12-21-07 11:45**	Instrument ID:	**MS-6 HP 6890**
Received:	**12-26-07 16:58**	Sample Volume:	**15 g**
Extracted:	**12-28-07 23:00**	Final Volume:	**1 mL**
Analyzed:	**01-01-08 02:04**	Percent Solids:	**72.853**
Analyst:	**MJB**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	14
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	14
208-96-8	Acenaphthylene	BRL		ug/Kg	14
83-32-9	Acenaphthene	BRL		ug/Kg	14
86-73-7	Fluorene	BRL		ug/Kg	14
85-01-8	Phenanthrene	BRL		ug/Kg	14
120-12-7	Anthracene	BRL		ug/Kg	14
206-44-0	Fluoranthene	BRL		ug/Kg	14
129-00-0	Pyrene	BRL		ug/Kg	14
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	14
218-01-9	Chrysene	BRL		ug/Kg	14
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	14
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	14
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	14
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	14
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	14
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	14

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,600	2,500	**70** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

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GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**HA-03 3'**	Matrix:	**Soil**
Project:	**Buzzards Bay Oil Spill/3871-002-16**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**113768-3**	QC Batch ID:	**EP-2714-M**
Sampled:	**12-21-07 11:50**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**12-26-07 16:58**	Sample Weight:	**16 g**
Extracted:	**12-28-07 23:00**	Final Volume:	**1 mL**
Analyzed (AL):	**01-01-08 04:18**	% Solids:	**87**
Analyzed (AR):	**01-01-08 05:02**	Aliphatic Dilution Factor:	**1**
Analyst:	**KMC**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	33
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	33
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	33
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	33

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.0	3.2	**107** %	40 - 140 %
	2-Bromonaphthalene	3.0	3.1	**106** %	40 - 140 %
Extraction:	Chloro-octadecane	3.0	2.2	**74** %	40 - 140 %
	ortho-Terphenyl	3.0	2.8	**94** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed? Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved? Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1? No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**HA-03 3'**	Matrix:	**Soil**
Project:	**Buzzards Bay Oil Spill/3871-002-16**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**113768-03**	QC Batch ID:	**EP-2714-M**
Sampled:	**12-21-07 11:50**	Instrument ID:	**MS-6 HP 6890**
Received:	**12-26-07 16:58**	Sample Volume:	**16 g**
Extracted:	**12-28-07 23:00**	Final Volume:	**1 mL**
Analyzed:	**01-01-08 02:45**	Percent Solids:	**86.731**
Analyst:	**MJB**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	11
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	11
208-96-8	Acenaphthylene	BRL		ug/Kg	11
83-32-9	Acenaphthene	BRL		ug/Kg	11
86-73-7	Fluorene	BRL		ug/Kg	11
85-01-8	Phenanthrene	BRL		ug/Kg	11
120-12-7	Anthracene	BRL		ug/Kg	11
206-44-0	Fluoranthene	BRL		ug/Kg	11
129-00-0	Pyrene	BRL		ug/Kg	11
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	11
218-01-9	Chrysene	BRL		ug/Kg	11
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	11
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	11
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	11
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	11
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	11
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	11

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,000	2,000	**66** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Massachusetts DEP EPH Method
Extractable Petroleum Hydrocarbons by GC/FID

Field ID:	**HA-04 2.5'**	Matrix:	**Soil**
Project:	**Buzzards Bay Oil Spill/3871-002-16**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**113768-4**	QC Batch ID:	**EP-2714-M**
Sampled:	**12-21-07 11:55**	Instrument ID:	**GC-9 Agilent 6890**
Received:	**12-26-07 16:58**	Sample Weight:	**15 g**
Extracted:	**12-28-07 23:00**	Final Volume:	**1 mL**
Analyzed (AL):	**01-01-08 07:14**	% Solids:	**83**
Analyzed (AR):	**01-01-08 07:58**	Aliphatic Dilution Factor:	**1**
Analyst:	**KMC**	Aromatic Dilution Factor:	**1**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	36
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	36
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	36
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	36

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	3.2	3.1	**97** %	40 - 140 %
	2-Bromonaphthalene	3.2	3.1	**99** %	40 - 140 %
Extraction:	Chloro-octadecane	3.2	2.7	**85** %	40 - 140 %
	ortho-Terphenyl	3.2	2.9	**93** %	40 - 140 %

QA/QC Certification

1. Were all QA/QC procedures required by the method followed?	Yes
2. Were all performance/acceptance standards for the required QA/QC procedures achieved?	Yes
3. Were any significant modifications made to the method, as specified in Section 11.3.1.1?	No

Method non-conformances indicated above are detailed below on this data report, or in the accompanying project narrative and project quality control report. Release of this data is authorized by the accompanying signed project cover letter. The accompanying cover letter, project narrative and quality control report are considered part of this data report.

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique. Results are reported on a dry weight basis.

Report Notations:

BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

EPA Method 8270C (Modified)
MA DEP EPH Polynuclear Aromatic Hydrocarbons by GC/MS-SIM

Field ID:	**HA-04 2.5'**	Matrix:	**Soil**
Project:	**Buzzards Bay Oil Spill/3871-002-16**	Container:	**120 mL Amber Glass**
Client:	**GeoInsight, Inc.**	Preservation:	**Cool**
Laboratory ID:	**113768-04**	QC Batch ID:	**EP-2714-M**
Sampled:	**12-21-07 11:55**	Instrument ID:	**MS-6 HP 6890**
Received:	**12-26-07 16:58**	Sample Volume:	**15 g**
Extracted:	**12-28-07 23:00**	Final Volume:	**1 mL**
Analyzed:	**01-01-08 03:25**	Percent Solids:	**82.553**
Analyst:	**MJB**	Dilution Factor:	**1**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	12
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	12
208-96-8	Acenaphthylene	BRL		ug/Kg	12
83-32-9	Acenaphthene	BRL		ug/Kg	12
86-73-7	Fluorene	BRL		ug/Kg	12
85-01-8	Phenanthrene	**21**		ug/Kg	12
120-12-7	Anthracene	BRL		ug/Kg	12
206-44-0	Fluoranthene	**25**		ug/Kg	12
129-00-0	Pyrene	**25**		ug/Kg	12
56-55-3	Benzo[a]anthracene	**13**		ug/Kg	12
218-01-9	Chrysene	BRL		ug/Kg	12
205-99-2	Benzo[b]fluoranthene	**13**		ug/Kg	12
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	12
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	12
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	12
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	12
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	12

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	3,200	2,100	**66** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546. Results are reported on a dry weight basis.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Project Narrative

Project:	**Buzzards Bay Oil Spill/3871-002-16**	Lab ID:	**113768**
Client:	**GeoInsight, Inc.**	Received:	**12-26-07 16:58**

A. Documentation and Client Communication

The following documentation discrepancies, and client changes or amendments were noted for this project:

1 . No documentation discrepancies, changes, or amendments were noted.

B. Method Modifications, Non-Conformances and Observations

The sample(s) in this project were analyzed by the references analytical method(s), and no method modifications, non-conformances or analytical issues were noted, except as indicated below:

1 . MA DEP EPH Note: Samples 113768-1, -2, -3 and -4. Polynuclear aromatic hydrocarbon (PAH) target analytes were identified and quantified by GC/MS-SIM, in accordance with the method provision for alternate determinative methodologies. GC/MS-SIM was used to achieve low quantification limits necessary for regulatory compliance. Target analytes were determined utilizing the same sample extract used for carbon range determination by GC/FID.

GROUNDWATER ANALYTICAL

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Buzzards Bay, MA 02532
Telephone (508) 759-4441 • FAX (508) 759-4475
www.groundwateranalytical.com

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

Project Name: Buzzards Bay Oil Spill	Firm: GeoInsight
Project Number: 3871-002-16	Address: 5 Lan Drive, Suite 200
Sampler Name: K. Trainer	City / State / Zip: Westford, MA 01886
Project Manager: K. Trainer	Telephone: 978-692-1114

INSTRUCTIONS: Use separate line for each container (except replicates).

TURNAROUND

- ☑ STANDARD (10 Business Days)
- ☐ PRIORITY (5 Business Days)
- ☐ RUSH (RAN-_____)
  (Rush requires Rush Authorization Number)
- ☑ Please Email to: kd trainer@geoinc.com
- ☐ Please FAX to: _____

BILLING

- ☐ Purchase Order No.: _____
- ☐ Third Party Billing: _____
- ☐ GWA Quote: _____

ANALYSIS REQUEST

OPTIONS: Volatiles ☐ TIC Search; Semivolatiles ☐ Acid Only ☐ B/N Only ☐ TIC Search; Pest/Herb/PCBs Extractable Vol.; Metals ☐ Specify For Water Samples ☐ Total ☐ Dissolved

SDWA: ☐ 524.2; ☐ 525.2; ☐ 505 ☐ 508; ☐ 531.1; ☐ 515.1; ☐ 504.1 EDB/DBCP; ☐ Lead and Copper

NPDES: ☐ 624; ☐ 602-MTBE; ☐ 625; ☐ 625 PAHs only; ☐ 608 Pesticides; ☐ 608 PCBs; ☐ 615; ☐ 13 Priority Pollutant

RCRA/21E: ☐ 8260B TCL+MTBE; ☐ 8260B; ☐ 8260B Aromatics; ☐ 8260B Halocarbons; ☐ 8021B Vermont; ☐ 8270D; ☐ 8270D PAHs only; ☐ 8081A Pesticides; ☐ 8082 PCBs; ☐ 8151A Herbicides; ☐ 8011 EPH/DBCP; ☐ 8 RCRA; ☐ 5 RCRA; ☐ 14 MA DEP Metals; ☐ 23 TAL; ☐ Specify

Petroleum Hydrocarbon — Ext. TPH: ☐ Diesel Range Organics (DRO) ☐ ME DRO; ☐ GT ETPH; ☒ MA DEP EPH: w/all targets ☐ EPH Carbon Ranges only ☐ EPH w/4 PAHs; ☐ Hydrocarbon Fingerprint (GC/FID by ASTM D3328-00-Mod.); ☐ TPH by GC/FID (8015B Mod) Quantitative Only. Vol. TPH: ☐ Gasoline Range Organics (GRO) ☐ ME GRO; ☐ MA DEP VPH w/all targets ☐ VPH Carbon ranges only

Haz. Waste: ☐ TCLP ☐ SPLP ☐ 8 Metals ☐ Pb only ☐ VOA ☐ Semi VOA ☐ Pesticides ☐ Herbicides; ☐ Corrosivity (as pH) ☐ Reactivity ☐ Ignitability (as Flashpoint) ☐ Paint Filter; ☐ MA Basic Disposal: 8260B/TCL, TPH, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity; ☐ MA Extended Disposal: 8260B, 8270D, TPH, PCBs, 5 Metals, Corrosivity, Ignitability, Reactivity

General Chemistry: ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Fluoride ☐ Sulfate; ☐ Dissolved Phosphorus; ☐ Ammonia ☐ TKN ☐ Total Phosphorus ☐ Total N (as NH3/NO3/TKN); ☐ Oil & Grease; ☐ COD ☐ TOC; ☐ BOD ☐ TDS ☐ TSS ☐ TS ☐ Alkalinity; ☐ Total Cyanide ☐ Physiologically Available Cyanide ☐ Available Cyanide

Other: ☐ pH ☐ Dissolved Oxygen ☐ Turbidity; ☐ Total Coliform ☐ Fecal Coliform ☐ HPC; ☐ MA DEP Asbestos in Soil ☐ Asbestos (PLM)

Sampling DATE	Sampling TIME	SAMPLE IDENTIFICATION	Matrix	Type	Container(s)	Preservation	Filtered	LABORATORY NUMBER (Lab Use Only)
12/24/07	11:30	HA-01 2'	SOIL	COMPOSITE	1 × 250mL/8 oz Glass	ICE	NO	
12/24/07	11:45	HA-02 2.5'	SOIL	COMPOSITE	1 × 250mL/8 oz Glass	ICE	NO	
12/24/07	11:50	HA-03 3'	SOIL	COMPOSITE	1 × 250mL/8 oz Glass	ICE	NO	
12/24/07	11:55	HA-04 2.5'	SOIL	COMPOSITE	1 × 250mL/8 oz Glass	ICE	NO	

REMARKS / SPECIAL INSTRUCTIONS

- ☐ YES ☐ NO MCP Data Certification required.
- ☐ YES ☐ NO MCP Drinking Water Sample included.
  (Volatile analyses require duplicate collection and Trip Blanks).
- ☐ Analyze Duplicates and Trips Blanks only if positive results.
- ☐ YES ☐ NO RCP Data Certification required.

Signature: _____

* Must use low-level detection (SIM) for PAH target analytes

DATA QUALITY OBJECTIVES

Regulatory Program

State	Standard	Deliverables
☐ CT	☒ MCP GW-1/S-1	☐ PWS Form
☐ ME	☐ MCP GW-2/S-2	☐ MWRA
☒ MA	☐ NY STARS	☐ _____
☐ NH	☐ Drinking Water	
☐ NY	☐ Wastewater	
☐ RI	☐ Waste Disposal	
☐ VT	☐ Dredge Material	
☐ ___	☐ _____	

Project Specific QC

Many regulatory programs and EPA methods require project specific QC. Project specific QC includes Sample Duplicates, Matrix Spikes, and/or Matrix Spike Duplicates. Laboratory QC is not project specific unless prearranged. Project specific QC samples are charged on a per sample basis. **Each MS, MSD and Sample Duplicate requires an additional sample aliquot.**

Project Specific QC Required	Selection of QC Sample
☐ Sample Duplicate	☐ Please use sample: _____
☐ Matrix Spike	
☐ Matrix Spike Duplicate	

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

	Date	Time			
Relinquished by Sampler:	12/24/07	7:30	Received by:	12/26/07 1227	Receipt Temperature: 2-9 ☐ Ice ☐ Refrigerated 2-6°C Recommended
Relinquished by:	12/24/07	1458	Received by:		Container Count: 4
Relinquished by:			Received by Laboratory:		Shipping/Airbill Number:
Method of Shipment: ☐ GWA Courier ☐ Express Mail ☐ Federal Express ☐ UPS ☐ Hand ☐ _____					Custody Seal Number:

Quality Assurance/Quality Control

A. Program Overview

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans,* US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste,* US EPA, SW-846, Update III (1996).

Quality Control protocols include written Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. All samples, standards, blanks, laboratory control samples, matrix spikes and sample duplicates are spiked with internal standards and surrogate compounds. All instrument sequences begin with an initial calibration verification standard and a blank; and excepting GC/MS sequences, all sequences close with a continuing calibration standard. GC/MS systems are tuned to appropriate ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one laboratory control sample, one method blank, one matrix spike sample, and one sample duplicate for each sample preparation batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

B. Definitions

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples of the same matrix which are prepared together for the same analysis, using the same lots of reagents and the same techniques or manipulations, all within the same continuum of time, up to but not exceeding 24 hours.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target analytes representative of the method analytes. Accuracy is defined as the degree of agreement of the measured value with the true or expected value. Percent Recoveries for the Laboratory Control Samples are calculated to assess accuracy.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Surrogate Compounds are used to assess the effectiveness of an analytical method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to the target analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**MA DEP EPH Method**	Instrument ID:	**GC-9 Agilent 6890**	Instrument ID:	**GC-9 Agilent 6890**
QC Batch ID:	**EP-2714-M**	Extracted:	**12-28-07 23:00**	Extracted:	**12-28-07 23:00**
Matrix:	**Soil**	Analyzed (AL):	**12-31-07 16:33**	Analyzed (AL):	**12-31-07 18:01**
Units:	**mg/Kg**	Analyzed (AR):	**12-31-07 17:17**	Analyzed (AR):	**12-31-07 18:45**
		Analyst:	**KMC**	Analyst:	**KMC**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
111-84-2	*n*-Nonane (C_9)	3.3	2.0	**62** %	3.3	2.1	**64** %	**4** %	30 - 140 %	25%
124-18-5	*n*-Decane (C_{10})	3.3	2.4	**72** %	3.3	2.5	**75** %	**4** %	40 - 140 %	25%
112-40-3	*n*-Dodecane (C_{12})	3.3	2.5	**77** %	3.3	2.7	**81** %	**5** %	40 - 140 %	25%
629-59-4	*n*-Tetradecane (C_{14})	3.3	2.6	**80** %	3.3	2.8	**84** %	**5** %	40 - 140 %	25%
544-76-3	*n*-Hexadecane (C_{16})	3.3	2.8	**85** %	3.3	3.0	**90** %	**5** %	40 - 140 %	25%
593-45-3	*n*-Octadecane (C_{18})	3.3	3.0	**90** %	3.3	3.1	**93** %	**4** %	40 - 140 %	25%
n/a	*n*-C9 to *n*-C18 Group	20	15	**77** %	20	16	**81** %	**5** %	40 - 140 %	25%
629-92-5	*n*-Nonadecane (C_{19})	3.3	2.9	**88** %	3.3	3.0	**92** %	**4** %	40 - 140 %	25%
112-95-8	*n*-Eicosane (C_{20})	3.3	3.0	**90** %	3.3	3.1	**93** %	**4** %	40 - 140 %	25%
629-97-0	*n*-Docosane (C_{22})	3.3	2.9	**89** %	3.3	3.0	**92** %	**4** %	40 - 140 %	25%
646-31-1	*n*-Tetracosane (C_{24})	3.3	3.0	**91** %	3.3	3.1	**95** %	**4** %	40 - 140 %	25%
630-01-3	*n*-Hexacosane (C_{26})	3.3	2.9	**88** %	3.3	3.0	**91** %	**4** %	40 - 140 %	25%
630-02-4	*n*-Octacosane (C_{28})	3.3	3.0	**90** %	3.3	3.1	**94** %	**4** %	40 - 140 %	25%
638-68-6	*n*-Triacontane (C_{30})	3.3	3.0	**92** %	3.3	3.1	**95** %	**4** %	40 - 140 %	25%
630-06-8	*n*-Hexatriacontane (C_{36})	3.3	2.7	**82** %	3.3	2.8	**85** %	**3** %	40 - 140 %	25%
n/a	*n*-C19 to *n*-C36 Group	26	23	**89** %	26	24	**92** %	**4** %	40 - 140 %	25%
91-20-3	Naphthalene	3.3	2.4	**73** %	3.3	2.5	**76** %	**4** %	40 - 140 %	25%
91-57-6	2-Methylnaphthalene	3.3	2.6	**80** %	3.3	2.8	**85** %	**6** %	40 - 140 %	25%
208-96-8	Acenaphthylene	3.3	2.6	**79** %	3.3	2.7	**82** %	**3** %	40 - 140 %	25%
83-32-9	Acenaphthene	3.3	2.7	**82** %	3.3	2.8	**84** %	**2** %	40 - 140 %	25%
86-73-7	Fluorene	3.3	2.8	**84** %	3.3	2.9	**88** %	**4** %	40 - 140 %	25%
85-01-8	Phenanthrene	3.3	3.0	**90** %	3.3	3.1	**93** %	**3** %	40 - 140 %	25%
120-12-7	Anthracene	3.3	2.8	**84** %	3.3	2.9	**87** %	**4** %	40 - 140 %	25%
206-44-0	Fluoranthene	3.3	3.0	**90** %	3.3	3.1	**93** %	**3** %	40 - 140 %	25%
129-00-0	Pyrene	3.3	2.9	**89** %	3.3	3.0	**92** %	**3** %	40 - 140 %	25%
56-55-3	Benzo[a]anthracene	3.3	3.2	**96** %	3.3	3.2	**98** %	**2** %	40 - 140 %	25%
218-01-9	Chrysene	3.3	3.2	**98** %	3.3	3.3	**100** %	**2** %	40 - 140 %	25%
205-99-2	Benzo[b]fluoranthene	3.3	3.0	**91** %	3.3	3.0	**92** %	**1** %	40 - 140 %	25%
207-08-9	Benzo[k]fluoranthene	3.3	3.3	**99** %	3.3	3.3	**100** %	**1** %	40 - 140 %	25%
50-32-8	Benzo[a]pyrene	3.3	3.2	**96** %	3.3	3.2	**97** %	**1** %	40 - 140 %	25%
193-39-5	Indeno[1,2,3-c,d]pyrene	3.3	3.0	**92** %	3.3	3.1	**93** %	**1** %	40 - 140 %	25%
53-70-3	Dibenzo[a,h]anthracene	3.3	3.2	**97** %	3.3	3.3	**99** %	**1** %	40 - 140 %	25%
191-24-2	Benzo[g,h,i]perylene	3.3	3.0	**92** %	3.3	3.1	**93** %	**1** %	40 - 140 %	25%
n/a	PAH Group	56	50	**89** %	56	51	**91** %	**3** %	40 - 140 %	25%

QC Surrogate Compound		Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.6	**96** %	2.7	2.7	**100** %		40 - 140 %
	2-Bromonaphthalene	2.7	2.6	**96** %	2.7	2.6	**96** %		40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.0	**74** %	2.7	1.6	**59** %		40 - 140 %
	ortho-Terphenyl	2.7	2.4	**89** %	2.7	2.5	**93** %		40 - 140 %

Fractionation Breakthrough Evaluation						QC Limits
91-20-3	Naphthalene	LCS	**0** %	LCSD	**0** %	5%
91-57-6	2-Methylnaphthalene	LCS	**0** %	LCSD	**1** %	5%

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004). Method modified by use of microwave accelerated solvent extraction technique.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**MA DEP EPH**	Instrument ID:	**GC-9 Agilent 6890**
QC Batch ID:	**EP-2714-M**	Extracted:	**12-28-07 23:00**
Matrix:	**Soil**	Analyzed (AL):	**12-31-07 15:08**
		Analyzed (AR):	**12-31-07 15:49**
		Analyst:	**KMC**

EPH Ranges	Concentration	Notes	Units	Reporting Limit
n-C9 to n-C18 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C19 to n-C36 Aliphatic Hydrocarbons †	BRL		mg/Kg	30
n-C11 to n-C22 Aromatic Hydrocarbons †◊	BRL		mg/Kg	30
Unadjusted n-C11 to n-C22 Aromatic Hydrocarbons †	BRL		mg/Kg	30

QC Surrogate Compound		Spiked	Measured	Recovery	QC Limits
Fractionation:	2-Fluorobiphenyl	2.7	2.9	**108** %	40 - 140 %
	2-Bromonaphthalene	2.7	2.9	**108** %	40 - 140 %
Extraction:	Chloro-octadecane	2.7	2.3	**86** %	40 - 140 %
	ortho -Terphenyl	2.7	2.7	**103** %	40 - 140 %

Method Reference: Method for the Determination of Extractable Petroleum Hydrocarbons, MA DEP (Revision 1.1, 2004).
Sample extraction performed by microwave accelerated solvent extraction technique.

Report Notations:
BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

† Hydrocarbon range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range.

◊ n-C11 to n-C22 Aromatic Hydrocarbons range data excludes the method target analyte concentrations.

GROUNDWATER ANALYTICAL

Quality Control Report
Laboratory Control Samples

		LCS		LCSD	
Category:	**EPA 8270C Modified**	Instrument ID:	**MS-6 HP 6890**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**EP-2714-M**	Extracted:	**12-28-07 23:00**	Extracted:	**12-28-07 23:00**
Matrix:	**Soil**	Analyzed:	**12-31-07 23:22**	Analyzed:	**01-01-08 00:03**
Units:	**ug/Kg**	Analyst:	**MJB**	Analyst:	**MJB**

CAS Number	Analyte	LCS			LCS Duplicate				QC Limits	
		Spiked	Measured	Recovery	Spiked	Measured	Recovery	RPD	Spike	RPD
91-20-3	Naphthalene	330	200	**61** %	330	200	**61** %	**0** %	40 - 140 %	20%
91-57-6	2-Methylnaphthalene	330	210	**64** %	330	230	**70** %	**9** %	40 - 140 %	20%
85-01-8	Phenanthrene	330	220	**67** %	330	220	**67** %	**0** %	40 - 140 %	20%
83-32-9	Acenaphthene	330	240	**73** %	330	240	**73** %	**0** %	40 - 140 %	20%
208-96-8	Acenaphthylene	330	230	**70** %	330	230	**70** %	**0** %	40 - 140 %	20%
86-73-7	Fluorene	330	240	**73** %	330	240	**73** %	**0** %	40 - 140 %	20%
120-12-7	Anthracene	330	220	**67** %	330	220	**67** %	**0** %	40 - 140 %	20%
206-44-0	Fluoranthene	330	240	**73** %	330	230	**70** %	**4** %	40 - 140 %	20%
129-00-0	Pyrene	330	240	**73** %	330	240	**73** %	**0** %	40 - 140 %	20%
56-55-3	Benzo[a]anthracene	330	260	**79** %	330	250	**76** %	**4** %	40 - 140 %	20%
218-01-9	Chrysene	330	240	**73** %	330	250	**76** %	**4** %	40 - 140 %	20%
205-99-2	Benzo[b]fluoranthene	330	280	**85** %	330	280	**85** %	**0** %	40 - 140 %	20%
207-08-9	Benzo[k]fluoranthene	330	270	**82** %	330	270	**82** %	**0** %	40 - 140 %	20%
50-32-8	Benzo[a]pyrene	330	280	**85** %	330	280	**85** %	**0** %	40 - 140 %	20%
193-39-5	Indeno[1,2,3-c,d]pyrene	330	280	**85** %	330	270	**82** %	**4** %	40 - 140 %	20%
53-70-3	Dibenzo[a,h]anthracene	330	270	**82** %	330	260	**79** %	**4** %	40 - 140 %	20%
191-24-2	Benzo[g,h,i]perylene	330	260	**79** %	330	250	**76** %	**4** %	40 - 140 %	20%

QC Surrogate Compound	Spiked	Measured	Recovery	Spiked	Measured	Recovery		QC Limits
ortho -Terphenyl	2,700	2,100	**78** %	2,700	2,000	**74** %		40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3510C.

Report Notations: All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

The LCS and LCSD are prepared from separate source standards than those used for calibration.

GROUNDWATER ANALYTICAL

Quality Control Report
Method Blank

Category:	**EPA Method 8270C (Mod.) - EPH PAHs by GC/MS-SIM**	Instrument ID:	**MS-6 HP 6890**
QC Batch ID:	**EP-2714-M**	Extracted:	**12-28-07 23:00**
Matrix:	**Soil**	Analyzed:	**01-01-08 00:44**
		Analyst:	**MJB**

CAS Number	Analyte	Concentration	Notes	Units	Reporting Limit
91-20-3	Naphthalene	BRL		ug/Kg	10
91-57-6	2-Methylnaphthalene	BRL		ug/Kg	10
208-96-8	Acenaphthylene	BRL		ug/Kg	10
83-32-9	Acenaphthene	BRL		ug/Kg	10
86-73-7	Fluorene	BRL		ug/Kg	10
85-01-8	Phenanthrene	BRL		ug/Kg	10
120-12-7	Anthracene	BRL		ug/Kg	10
206-44-0	Fluoranthene	BRL		ug/Kg	10
129-00-0	Pyrene	BRL		ug/Kg	10
56-55-3	Benzo[a]anthracene	BRL		ug/Kg	10
218-01-9	Chrysene	BRL		ug/Kg	10
205-99-2	Benzo[b]fluoranthene	BRL		ug/Kg	10
207-08-9	Benzo[k]fluoranthene	BRL		ug/Kg	10
50-32-8	Benzo[a]pyrene	BRL		ug/Kg	10
193-39-5	Indeno[1,2,3-c,d]pyrene	BRL		ug/Kg	10
53-70-3	Dibenzo[a,h]anthracene	BRL		ug/Kg	10
191-24-2	Benzo[g,h,i]perylene	BRL		ug/Kg	10

QC Surrogate Compound	Spiked	Measured	Recovery	QC Limits
ortho-Terphenyl	2,700	1,900	**71** %	40 - 140 %

Method Reference: Test Methods for Evaluating Solid Waste, US EPA, SW-846, Third Edition, Update III (1996).
Method modified by use of selected ion monitoring (SIM) in accordance with Section 7.5.5 of the method.
Method protocol modified to include acidification and the surrogate compound in accordance with the MA DEP Method for the Determination of Extractable Petroleum Hydrocarbons.
Sample extraction performed by EPA Method 3546.

Report Notations: BRL Indicates concentration, if any, is below reporting limit for analyte. Reporting limit is the lowest concentration that can be reliably quantified under routine laboratory operating conditions. Reporting limits are adjusted for sample size and dilution.

GROUNDWATER ANALYTICAL

Certifications and Approvals

Groundwater Analytical maintains environmental laboratory certification in a variety of states.
Copies of our current certificates may be obtained from our website:

http://www.groundwateranalytical.com/qualifications.htm

CONNECTICUT

Department of Health Services, PH-0586 — Potable Water, Wastewater, Solid Waste and Soil
http://www.dph.state.ct.us/BRS/Environmental Lab/out state.pdf

MAINE

Department of Health and Human Services, MA0103 — Drinking Water and Wastewater
http://www.maine.gov/dhhs/eng/water/Templates/LabCertification/LabCertification.htm

Department of Environmental Protection, LB-0072 — Asbestos Analytical Laboratory (Bulk)

MASSACHUSETTS

Department of Environmental Protection, M-MA-103 — Potable Water and Non-Potable Water
http://public.dep.state.ma.us/labcert/labcert.aspx

Department of Labor,
Division of Occupational Safety, AA000195 — Asbestos Analytical Services, Class A
http://www.mass.gov/dos/forms/la-rpt list aa.pdf

NIST NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

NVLAP Lab Code 200751-1 — Bulk Asbestos Fiber Analysis (PLM)
http://ts.nist.gov/Standards/scopes/plmtm.htm

RHODE ISLAND

Department of Health,
Division of Laboratories, LAO00054 — Potable and Non-Potable Water Microbiology, Organic and Inorganic Chemistry
http://www.health.ri.gov/labs/outofstatelabs.pdf

Department of Health,
Office of Occupational and Radiological Health, AAL-110B3 — Asbestos Analytical Service, Polarized Light Microscopy (PLM)
http://www.health.ri.gov/environment/occupational/asbestos/licensees/AsbestosAnalyticalLabs.pdf

U.S. DEPARTMENT OF AGRICULTURE

USDA, Soil Permit, S-53921 — Foreign soil import permit

GROUNDWATER ANALYTICAL

Certifications and Approvals

MASSACHUSETTS **Department of Environmental Protection, M-MA-103**

Groundwater Analytical maintains MassDEP environmental laboratory certification for only the methods anc analytes listed below. Analyses for certified analytes are conducted in accordance with MassDEP certificatior standards, except as may be specifically noted in the project narrative

Potable Water (Drinking Water)

Analyte	Method
1,2-Dibromo-3-Chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Alkalinity, Total	SM 2320-B
Antimony	EPA 200.9
Arsenic	EPA 200.9
Barium	EPA 200.7
Beryllium	EPA 200.7
Cadmium	EPA 200.7
Calcium	EPA 200.7
Chlorine, Residual Free	SM 4500-CL-G
Chromium	EPA 200.7
Copper	EPA 200.7
Cyanide, Total	Lachat 10-204-00-1-A
E. Coli	EC-MUG SM 9221-F
E. Coli	Enz. Sub. SM 9223
E. Coli	NA-MUG SM 9222-G
Fecal Coliform	MF SM 9222-D
Fluoride	EPA 300.0
Fluoride	SM 4500-F-C
Heterotrophic Plate Count	SM 9215-B
Lead	EPA 200.9
Mercury	EPA 245.1
Nickel	EPA 200.7
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Nitrite-N	EPA 300.0
Nitrite-N	Lachat 10-107-04-1-C
Perchlorate	EPA 314.0
pH	SM 4500-H-B
Selenium	EPA 200.9
Sodium	EPA 200.7
Sulfate	EPA 300.0
Thallium	EPA 200.9
Total Coliform	Enz. Sub. SM 9223
Total Coliform	MF SM 9222-B
Total Dissolved Solids	SM 2540-C
Trihalomethanes	EPA 524.2
Turbidity	SM 2130-B
Volatile Organic Compounds	EPA 524.2

Non-Potable Water (Wastewater)

Analyte	Method
Aldrin	EPA 608
Alkalinity, Total	Lachat 10-303-31-1-A
Aluminum	EPA 200.7
Ammonia-N	Lachat 10-107-06-1-B
Antimony	EPA 200.7
Antimony	EPA 200.9
Arsenic	EPA 200.7
Arsenic	EPA 200.9
Beryllium	EPA 200.7
Biochemical Oxygen Demand	SM 5210-B
Cadmium	EPA 200.7
Calcium	EPA 200.7

Non-Potable Water (Wastewater)

Analyte	Method
Chemical Oxygen Demand	SM 5220-D
Chlordane	EPA 608
Chloride	EPA 300.0
Chlorine, Total Residual	SM 4500-CL-G
Chromium	EPA 200.7
Cobalt	EPA 200.7
Copper	EPA 200.7
Copper	EPA 200.9
Cyanide, Total	Lachat 10-204-00-1-A
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
Dieldrin	EPA 608
Fluoride	EPA 300.0
Hardness (CaCO3), Total	EPA 200.7
Hardness (CaCO3), Total	SM 2340-B
Heptachlor	EPA 608
Heptachlor Epoxide	EPA 608
Iron	EPA 200.7
Kjeldahl-N	Lachat 10-107-06-02-D
Lead	EPA 200.7
Lead	EPA 200.9
Magnesium	EPA 200.7
Manganese	EPA 200.7
Mercury	EPA 245.1
Molybdenum	EPA 200.7
Nickel	EPA 200.7
Nitrate-N	EPA 300.0
Nitrate-N	Lachat 10-107-04-1-C
Non-Filterable Residue	SM 2540-D
Oil and Grease	EPA 1664
Orthophosphate	Lachat 10-115-01-1-A
pH	SM 4500-H-B
Phenolics, Total	Lachat 10-210-00-1-B
Phosphorus, Total	Lachat 10-115-01-1-C
Phosphorus, Total	SM 4500-P-B,E
Polychlorinated Biphenyls (Oil)	EPA 600/4-81-045
Polychlorinated Biphenyls (Water)	EPA 608
Potassium	EPA 200.7
Selenium	EPA 200.7
Selenium	EPA 200.9
Silver	EPA 200.7
Sodium	EPA 200.7
Specific Conductivity	SM 2510-B
Strontium	EPA 200.7
Sulfate	EPA 300.0
Thallium	EPA 200.7
Thallium	EPA 200.9
Titanium	EPA 200.7
Total Dissolved Solids	SM 2540-C
Total Organic Carbon	SM 5310-B
Vanadium	EPA 200.7
Volatile Aromatics	EPA 602
Volatile Aromatics	EPA 624
Volatile Halocarbons	EPA 624
Zinc	EPA 200.7

PHASE IV ACTIVITIES – LEISURE SHORES AND HOWARD'S BEACH
B120 RELEASE
BUZZARDS BAY, MASSACHUSETTS

1. Trench excavation in cobble beach area – September 10, 2007.

2. Trench excavation in cobble beach area – September 10, 2007.

3. Trench excavation in cobble beach area – September 10, 2007.

4. Sheen on water surface in trench (cobble beach area) – September 10, 2007.

5. Oil particles ("flecks") floating on water surface in trench (cobble beach area) – September 12, 2007.

6. Oiled sediment and tarball in test pit near channel and fringing marsh – September 13, 2007.

7. Cleanup activities in Area #1 – October 25, 2007.

8. Oiled snare encountered in Test Pit #1 – October 25, 2007.

9. Sheen on water surface in Test Pit #1 – October 25, 2007.

10. Preparing waste packs for storage – October 25, 2007.

11. Cobble replacement – November 5, 2007.

12. Sand replacement – November 5, 2007.

13. Trench excavation – December 7, 2007.

14. Oiled cobble – December 7, 2007.

MSS Facility
1 Cranberry Highway
st Wareham, MA 02576
one (508) 291-4452 Fax (508) 291-1522

Ticket: 461213
Date: 10/29/2001
Time: 11:41:18 -
Sc
Gross:25420 lb In M
Tare:14040 lb Out Sc
Net:11380 lb

Truck: 999
ustomer: 73901i/TRIDENT ENV GROUP License: NO ID
Carrier: 39088/TRIDENT ENVIRONMETruck Type: Packer

Approval #: 7393

Comment:

rigin	Materials & Services	Quantity	Unit
25/Mass	100% of IND-TON/Industrial-T	5.69	ton

Driver: _____ Deputy Weighmaster: _____
JB

COVANTA
SECURE SERVICES

PRESHIPMENT NOTIFICATION

Ship From/Scheduling Information

Delivery Date:	**Monday, October 29, 2007**		Time:	**11:00 AM**	Estimated Tons:
Company:	**Bouchard Transportation Co., Inc.**		Address:	**58 South Service Road, Suite 150**	
Contact:	**Bill Zoullas**	**508-229-3545**	City, State:	**Melville, NY 11747**	
Transporter:	**Direct**		Generator WTS#:	**COV14815**	Location #: **1**
Shipment Pickup Date/Time:					

Waste Information

Approval #:	Add #	Waste Description	Quantity	Class	Packaging
7393		Oil (#6) Spill Cleanup			
Additional Approval #'s					
			Ship Container #:		
			Booking #:		

Billing Information

Company:	Trident Environmental Group	*Bill to WTS #:*	COV13275	*Location #:* 1
Contact:	William Nineve	Telephone:	508-229-3545	
Address:	62 LaCombe Street, Unit 14	Fax:	508-229-8130	
City, State Zip:	Malboro, MA 01752	Purchase Order #:		
COMMENTS:				

Certificate of Disposal

To the exclusion of the following comments, the listed material has been received and delivered to the refuse pit or feed chute for combustion in the unit(s) in accordance with the conditions of the approval to accept said wastes as provided for in the Supplemental Waste Disposal Agreement. The listed material has been processed for energy recovery at Covanta SEMASS Partnership in accordance with all applicable local, state, and federal regulations. The placement of these materials into the pit or feed chute was witnessed by:

X Bobby O'Brien Jr 10/29/07

Witness Signature: Date

Company:	Covanta SEMASS Partnership
Address:	141 Cranberry Highway
City, State,Zip:	West Wareham, MA 02576
Contact Name:	Matt Wettmore
Telephone:	508-291-4400

COMMENTS:

For further assistance please contact your Customer Representative: **Rowena Montalvo** **(973) 882-4121**

Visit Our Online Customer Center, created with you in mind

REV. 06/2003 **www.CovantaSecureServices.com/CustomerCenter**

COVANTA
SECURE SERVICES

THIS FORM MUST BE COMPLETED AND ACCOMPANY EACH LOAD OF WASTE DELIVERED FOR DISPOSAL.

NON-HAZARDOUS CERTIFICATION

Approval #: **7393** Add #: Ship Container Number:

Company: **Bouchard Transportation Co.,** Address: **58 South Service Road, Suite 150**

Fax: **508-229-8130** City, State **Melville, NY 11747**

Generator WTS#: **COV14815** Location #: **1**

Waste Description: **Oil (#6) Spill Cleanup**

As an authorized representative of **Bouchard Transportation Co., Inc.** , I certify that the materials consigned to

Covanta SEMASS Partnership 141 Cranberry Highway West Wareham, MA 02576

for destruction by incineration are not subject to regulations as hazardous waste under the Federal Resource Conservation and Recovery Act (RCRA) Regulations, 40 CFR Part 260 et seq., State and Local Regulations.

The materials are non-hazardous, non-TSCA, and non-RCRA hazardous waste. Only those materials described, above shall be delivered on this load.

Generator's Authorized Representative

Name: **Bill Zoulias** Signature:

Print Title: Project Manager Date: 10/26/07

Note: Some or all of the information contained in this document constitutes trade secret information of the generator, broker or distributor named herein or confidential, proprietary customer subsidiaries or affiliates. Disclosure of this information to any third-parties without prior notice to all parties named on this form, and an opportunity of those parties to request a hearing regarding said disclosure may be prohibited under applicable federal and state laws.

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REV. 06/2003

SEMASS Facility
141 Cranberry Highway
West Wareham, MA 02576
Phone (508) 291-4452 Fax (508) 291-1522

Ticket: 461214
Date: 10/29/2007
Time: 11:44:16 - 1
Scal
Gross:16220 lb In Scal
Tare:10880 lb Out Scal
Net: 5340 lb

Truck: 6666
Customer: 73901i/TRIDENT ENV GROUP
Carrier: 39088/TRIDENT ENVIRONMETruck Type: Packer

Approval #: 7393

Comment:

Origin	Materials & Services	Quantity	Unit
1725/Mass	100% of IND-TON/Industrial-T	2.67	ton

Driver: _____ Deputy Weighmaster: _____
JB

COVANTA
SECURE SERVICES

PRESHIPMENT NOTIFICATION

Ship From/Scheduling Information

Delivery Date:	Monday, October 29, 2007		Time:	11:00 AM	Estimated Tons:
Company:	Bouchard Transportation Co., Inc.		Address:	58 South Service Road, Suite 150	
Contact:	Bill Zoulias	508-229-3545	City, State:	Melville, NY 11747	
Transporter:	Direct		Generator WTS#:	COV14815	Location #: 1
Shipment Pickup Date/Time:					

Waste Information

Approval #:	Add #	Waste Description	Quantity	Class	Packaging
7393		Oil (#6) Spill Cleanup			
Additional Approval #'s					
			Ship Container #:		
			Booking #:		

Billing Information

Company:	Trident Environmental Group	Bill to WTS #:	COV13275 Location #: 1
Contact:	William Nineve	Telephone:	508-229-3545
Address:	62 LaCombe Street, Unit 14	Fax:	508-229-8130
City, State Zip:	Malboro, MA 01752	Purchase Order #:	
COMMENTS:			

Certificate of Disposal

To the exclusion of the following comments, the listed material has been received and delivered to the refuse pit or feed chute for combustion in the unit(s) in accordance with the conditions of the approval to accept said wastes as provided for in the Supplemental Waste Disposal Agreement. The listed material has been processed for energy recovery at Covanta SEMASS Partnership in accordance with all applicable local, state, and federal regulations. The placement of these materials into the pit or feed chute was witnessed by:

X _____ 10/29/07

Witness Signature: Date

Company:	Covanta SEMASS Partnership
Address:	141 Cranberry Highway
City, State,Zip:	West Wareham, MA 02576
Contact Name:	Matt Wettmore
Telephone:	508-291-4400

COMMENTS:

For further assistance please contact your Customer Representative: **Rowena Montalvo** **(973) 882-4121**

Note: Some or all of the information contained in this document constitutes trade secret information of the generator, broker or distributor named herein or confidential, proprietary customer subsidiaries or affiliates. Disclosure of this information to any third-parties without prior notice to all parties named on this form, and an opportunity of those parties to request a hearing regarding said disclosure may be prohibited under applicable federal and state laws.

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REV. 06/2003

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COVANTA
SECURE SERVICES

THIS FORM MUST BE COMPLETED AND
ACCOMPANY EACH LOAD OF WASTE DELIVERED FOR DISPOSAL.

NON-HAZARDOUS CERTIFICATION

Approval #: **7393** Add #: Ship Container Number:

Company: **Bouchard Transportation Co.,** Address: **58 South Service Road, Suite 150**

Fax: **508-229-8130** City, State **Melville, NY 11747**

Generator WTS#: **COV14815** Location #: **1**

Waste Description: **Oil (#6) Spill Cleanup**

As an authorized representative of **Bouchard Transportation Co., Inc.** , I certify that the materials consigned to

Covanta SEMASS Partnership 141 Cranberry Highway West Wareham, MA 02576

for destruction by incineration are not subject to regulations as hazardous waste under the Federal Resource Conservation and Recovery Act (RCRA) Regulations, 40 CFR Part 260 et seq., State and Local Regulations.

The materials are non-hazardous, non-TSCA, and non-RCRA hazardous waste. Only those materials described, above shall be delivered on this load.

Generator's Authorized Representative

Name: **Bill Zoulias** Signature:

Print Title: Project Manager Date: 10/26/10

Note: Some or all of the information contained in this document constitutes trade secret information of the generator, broker or distributor named herein or confidential, proprietary customer subsidiaries or affiliates. Disclosure of this information to any third-parties without prior notice to all parties named on this form, and an opportunity of those parties to request a hearing regarding said disclosure may be prohibited under applicable federal and state laws.

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REV. 06/2003

Schedule Information for Semass

Date: *10/29/2007*

Date	*Time*	*Customer*	*Generator*	*No.*	*Approval*	*Type*	*Vehicle*	*Origin*	*Hauler*	*Est Ton*	*Sched Contact*	*Phone*	*Notes*	*Acct Manager*
Monday, October 29, 2007	11:0 am	Trident Environmental Group	Bouchard Transportation		Approval #7393	Ind	Trailer	MA			Bill Nineve	(508) 229-3545		Dolores Hroncich
Monday, October 29, 2007	~~2:0 pm~~ 11:00 AM	Trident Environmental Group	Bouchard Transportation		Approval #7393	Ind	Trailer	MA			Bill Nineve	(508) 229-3545		Dolores Hroncich

Total number of loads

SEMASS Facility
141 Cranberry Highway
West Wareham, MA 02576
Phone (508) 291-4452 Fax (508) 291-1522

Ticket: 461314
Date: 10/29/2007
Time: 15:21:59 - Sc

Gross:25340 lb In Sc
Tare:13960 lb Out Sc
Net:11380 lb

Truck: 999
Customer: 739011/TRIDENT ENV GROUP License: NO ID
Carrier: 39068/TRIDENT ENVIRONMETruck Type: Packer

Comment:

Origin	Materials & Services	Quantity	Unit
1725/Mass	100% of IND-TON/Industrial-T	5.69	ton

Driver: [signature]

Deputy Weighmaster: Jessica Goulart

COVANTA
SECURE SERVICES

PRESHIPMENT NOTIFICATION

Ship From/Scheduling Information

Delivery Date:	Monday, October 29, 2007	Time: 2:00pm	Estimated Tons:
Company:	Bouchard Transportation Co., Inc.	Address:	58 South Service Road, Suite 150
Contact:	Bill Zoulias 508-229-3545	City, State:	Melville, NY 11747
Transporter:	Direct	Generator WTS#:	COV14815 Location #: 1
Shipment Pickup Date/Time:			

Waste Information

Approval #:	Add #	Waste Description	Quantity	Class	Packaging
7393		Oil (#6) Spill Cleanup			
Additional Approval #'s					
			Ship Container #:		
			Booking #:		

Billing Information

Company:	Trident Environmental Group	Bill to WTS #:	COV13275 Location #: 1
Contact:	William Nineve	Telephone:	508-229-3545
Address:	62 LaCombe Street, Unit 14	Fax:	508-229-8130
City, State Zip:	Malboro, MA 01752	Purchase Order #:	
COMMENTS:			

Certificate of Disposal

To the exclusion of the following comments, the listed material has been received and delivered to the refuse pit or feed chute for combustion in the unit(s) in accordance with the conditions of the approval to accept said wastes as provided for in the Supplemental Waste Disposal Agreement. The listed material has been processed for energy recovery at Covanta SEMASS Partnership in accordance with all applicable local, state, and federal regulations. The placement of these materials into the pit or feed chute was witnessed by:

X _____ 10/29/07

Witness Signature: Date

Company:	Covanta SEMASS Partnership
Address:	141 Cranberry Highway
City, State,Zip:	West Wareham, MA 02576
Contact Name:	Matt Wettmore
Telephone:	508-291-4400

COMMENTS:

For further assistance please contact your Customer Representative: **Rowena Montalvo** **(973) 882-4121**

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COVANTA
SECURE SERVICES

THIS FORM MUST BE COMPLETED AND
ACCOMPANY EACH LOAD OF WASTE DELIVERED FOR DISPOSAL.

NON-HAZARDOUS CERTIFICATION

Approval #: **7393** Add #: Ship Container Number:

Company: **Bouchard Transportation Co.,** Address: **58 South Service Road, Suite 150**

Fax: **508-229-8130** City, State **Melville, NY 11747**

Generator WTS#: **COV14815** Location #: **1**

Waste Description: **Oil (#6) Spill Cleanup**

As an authorized representative of **Bouchard Transportation Co., Inc.** , I certify that the materials consigned to

Covanta SEMASS Partnership **141 Cranberry Highway** **West Wareham, MA 02576**

for destruction by incineration are not subject to regulations as hazardous waste under the Federal Resource Conservation and Recovery Act (RCRA) Regulations, 40 CFR Part 260 et seq., State and Local Regulations.

The materials are non-hazardous, non-TSCA, and non-RCRA hazardous waste. Only those materials described above shall be delivered on this load.

Generator's Authorized Representative

Name: **Bill Zoulias** Signature:

Print Title: Project Manager Date: 10/26/07

Note: Some or all of the information contained in this document constitutes trade secret information of the generator, broker or distributor named herein or confidential, proprietary customer subsidiaries or affiliates. Disclosure of this information to any third-parties without prior notice to all parties named on this form, and an opportunity of those parties to request a hearing regarding said disclosure may be prohibited under applicable federal and state laws.

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REV. 06/2003

Schedule Information for Semass

Date: *10/29/2007*

Date	*Time*	*Customer*	*Generator*	*No.*	*Approval*	*Type*	*Vehicle*	*Origin*	*Hauler*	*Est Ton*	*Sched Contact*	*Phone*	*Notes*	*Acct Manager*
Monday, October 29, 2007	11:0 am	Trident Environmental Group	Bouchard Transportation		Approval #7393	Ind	Trailer	MA			Bill Nineve	(508) 229-3545		Dolores Hroncich
Monday, October 29, 2007	12:0 pm	Trident Environmental Group	Bouchard Transportation		Approval #7393	Ind	Trailer	MA			Bill Nineve	(508) 229-3545		Dolores Hroncich
Monday, October 29, 2007	2:0 pm	Trident Environmental Group	Bouchard Transportation		Approval #7393	Ind	Trailer	MA			Bill Nineve	(508) 229-3545		Dolores Hroncich

Total number of loads