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

Arcadis
Mayflower AR Project
(Contract # B0086003.1302)
August 9, 2013 and August 13, 2013
Collection Dates

Determination of:
Aliphatic Hydrocarbons (ALI), Total Petroleum Hydrocarbons (TPH), and Polycyclic Aromatic Hydrocarbons (PAHs) in Water Samples

(QC Batch ENV 3084)

September 17, 2013

Technical Report 13-3103

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Introduction

B&B Laboratories received a shipment of four (4) ice chests that were sent by Daniel Mays of Arcadis using FedEx on August 12, 2013 and arrived on August 13, 2013 in College Station, Texas. The ice chests arrived sealed and in good condition.

Cooler Number	Temperature	Samples Received
1	5.1°C 1.2°C (Temp Blank)	Eleven (11) soils in 8oz or 4oz jars Two (2) 1L water samples in B/R amber bottles.
2	1.5°C 2.3°C (Temp Blank)	Eleven (11) sediments in 8oz or 4oz jars Four (4) 1L water samples in B/R amber bottles.
3	2.1°C 1.9°C (Temp Blank)	Twenty-one (21) sediments in 8oz or 4oz jars
4	6.1°C 0.9°C (Temp Blank)	Seventeen (17) sediments in 8oz or 4oz jars Two (2) 1L water samples in B/R amber bottles.

B&B Laboratories received a shipment of one (1) ice chests that was sent by Daniel Mays of Arcadis using FedEx on August 13, 2013 and arrived on August 14, 2013 in College Station, Texas. The ice chest arrived sealed and in good condition.

Cooler Number	Temperature	Samples Received
1	0.9°C 0.9°C (Temp Blank)	Twenty-one (21) soils in 8oz or 4oz jars Two (2) 1L water samples in B/R amber bottles.

The water and sediment/soil samples were collected between August 9, 2013 and August 13, 2013 in support of the Mayflower AR, Project (Arcadis-US Contract # B0086003.1301 and B0086003.1302). The water samples were logged in according to B&B Laboratories standard operating procedure (B&B 1009) and were stored in an access-controlled refrigerator (4.0°C) prior to analysis. The sediment/soil samples were logged in according to B&B Laboratories standard operating procedure (B&B 1009) and were stored in an access-controlled freezer (<-16.0°C) prior to analysis. The water samples were analyzed for Total Petroleum Hydrocarbons (TPH) and C_9 to C_{40} Aliphatic Hydrocarbons (ALI) by GC/FID, Polycyclic Aromatic Hydrocarbons (PAH) by GC/MS-SIM, and selected biological markers by GC/MS-SIM.

The analytical results for ALI, TPH, PAH, and biological markers are included in this report.

Analytical Methods

The standard operating procedures for TPH, ALI, PAH, hopanes, and TAS are listed in Table 1.

Table 1. Standard Operating Procedures for each analytical test.

Matrix	Extraction	ALI/TPH	PAH
Water	B&B 1011	B&B 1016	B&B 1006

Data Reporting

The reporting units for each analyte are listed in Table 2. 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". The RPD for analytes in duplicate samples that are <3X MDL are qualified with an "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. Data Qualifier Definitions are listed in Table 3. The method detection limits (MDL) for each analyte are listed in Table 4.

Table 2. Analytical reporting units.

Matrix	TPH	ALI	PAH
Water	µg/L	µg/L	ng/L

Table 3. Data Qualifier Definitions.

Qualifier	Definition
B	Analyte detected in the procedural blank greater than 3X MDL
D	Diluted Value
E	Analyte concentration exceeds the calibration range of the GC/MS for that specific analysis.
I	Analytical interference
J	Analyte detected below the method detection limit
L	Loss due to matrix effect
NA	Not Applicable
U	Analyte not detected
X	Analyte <3X MDL
Y	Spiked level of analyte <50% of the native concentration
*	Outside QA limits, refer to narrative

Table 4. Method Detection Limits.

Aliphatics	**Water MDLs**
Sample size	1L, 1ml final extract volume
Unit of measure	µg/L
n-C9	0.288
n-C10	0.252
n-C11	0.251
n-C12	0.266
n-C13	0.258
i-c15	0.256
n-C14	0.277
i-c16	0.234
n-C15	0.256
n-C16	0.234
i-c18	0.100
n-C17	0.174
Pristane	0.190
n-C18	0.100
Phytane	0.201
n-C19	0.073
n-C20	0.077
n-C21	0.081
n-C22	0.150
n-C23	0.117
n-C24	0.069
n-C25	0.066
n-C26	0.070
n-C27	0.069
n-C28	0.077
n-C29	0.087
n-C30	0.081
n-C31	0.126
n-C32	0.083
n-C33	0.282
n-C34	0.106
n-C35	0.112
n-C36	0.113
n-C37	0.148
n-C38	0.127
n-C39	0.160
n-C40	0.144
Total Petroleum Hydrocarbons	13
Total Resolved Hydrocarbons	13
Unresolved Complex Mixture	13
Extractable Organic Matter	100

Table 4. Continued. Method Detection Limits.

PAH Sample size Unit of measure	Water MDLs 1.0L, 1mL final extract ng/L
cis/trans Decalin	1.14
C1-Decalins	2.28
C2-Decalins	2.28
C3-Decalins	2.28
C4-Decalins	2.28
Naphthalene	2.91
C1-Naphthalenes	1.36
C2-Naphthalenes	5.82
C3-Naphthalenes	5.82
C4-Naphthalenes	5.82
Benzothiophene	1.29
C1-Benzothiophenes	2.57
C2-Benzothiophenes	2.57
C3-Benzothiophenes	2.57
C4-Benzothiophenes	2.57
Biphenyl	5.09
Acenaphthylene	1.17
Acenaphthene	1.44
Dibenzofuran	1.19
Fluorene	0.81
C1-Fluorenes	1.63
C2-Fluorenes	1.63
C3-Fluorenes	1.63
Carbazole	0.83
Anthracene	0.77
Phenanthrene	2.26
C1-Phenanthrenes/Anthracenes	0.70
C2-Phenanthrenes/Anthracenes	3.03
C3-Phenanthrenes/Anthracenes	3.03
C4-Phenanthrenes/Anthracenes	3.03
Dibenzothiophene	0.82
C1-Dibenzothiophenes	0.67
C2-Dibenzothiophenes	1.34
C3-Dibenzothiophenes	1.34
C4-Dibenzothiophenes	1.34
Fluoranthene	1.09
Pyrene	1.37
C1-Fluoranthenes/Pyrenes	2.47
C2-Fluoranthenes/Pyrenes	2.47
C3-Fluoranthenes/Pyrenes	2.47
C4-Fluoranthenes/Pyrenes	2.47
Naphthobenzothiophene	1.03
C1-Naphthobenzothiophenes	2.07
C2-Naphthobenzothiophenes	2.07
C3-Naphthobenzothiophenes	2.07
C4-Naphthobenzothiophenes	2.07
Benz(a)anthracene	0.74
Chrysene/Triphenylene	0.80
C1-Chrysenes	1.60

PAH (continued) Sample size Unit of measure	**Water MDLs** 1.0L, 1mL final extract ng/L
C2-Chrysenes	1.60
C3-Chrysenes	1.60
C4-Chrysenes	1.60
Benzo(b)fluoranthene	2.38
Benzo(k,j)fluoranthene	2.51
Benzo(a)fluoranthene	2.51
Benzo(e)pyrene	2.69
Benzo(a)pyrene	1.91
Perylene	0.63
Indeno(1,2,3-c,d)pyrene	1.39
Dibenzo(a,h)anthracene	1.14
Benzo(g,h,i)perylene	2.51
Individual Alkyl Isomers,TAS, and Hopanes	
2-Methylnaphthalene	1.10
1-Methylnaphthalene	1.42
2,6-Dimethylnaphthalene	0.70
1,6,7-Trimethylnaphthalene	0.67
1-Methylfluorene	1.47
4-Methyldibenzothiophene	0.97
2/3-Methyldibenzothiophene	0.97
1-Methyldibenzothiophene	0.97
3-Methylphenanthrene	0.94
2-Methylphenanthrene	0.94
2-Methylanthracene	0.94
4/9-Methylphenanthrene	0.94
1-Methylphenanthrene	0.94
3,6-Dimethylphenanthrene	1.67
Retene	1.59
2-Methylfluoranthene	1.15
Benzo(b)fluorene	1.37
C29-Hopane	8.19
18a-Oleanane	8.19
C30-Hopane	8.19
C20-TAS	2.60
C21-TAS	2.60
C26(20S)-TAS	2.60
C26(20R)/C27(20S)-TAS	2.60
C28(20S)-TAS	2.60
C27(20R)-TAS	2.60
C28(20R)-TAS	2.60

Quality Assurance/Quality Control - Waters

Total Petroleum Hydrocarbons (TPH) and Aliphatic Hydrocarbons (ALI)

The quality assurance/quality control procedure for this program included the analyses of a procedural blank and a blank spike/blank spike duplicate per analytical batch of no more than 20 samples. Additionally, a standard reference material (SRM) was analyzed with each data set. The SRM is a petroleum sample (NIST SRM 2779) that is analyzed with each TPH/ALI 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 blank spike/blank spike duplicate are used to measure accuracy and precision of the analysis. All QC samples are subject to the identical preparation and analysis steps as samples. The QC criterion for blanks specifies no more than 2 analytes to exceed 3x target MDL unless analyte not detected in associated sample(s) or analyte concentration >10x blank value. The QC criteria for spike recoveries are between 40-120%. The QC criterion for RPDs in valid spiked duplicates is ≤30%. The QC criterion for the NIST SRM 2779 is <20% 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%. Refer to Table 5 for Method Performance Criteria for Aliphatic Hydrocarbons and TPH.

Polycyclic Aromatic Hydrocarbons (PAH)

The quality assurance/quality control procedure for this program included the analyses of a procedural blank and a blank spike/blank spike duplicate of no more than 20 samples. A standard reference oil (NIST 2779) were analyzed with this data set. Procedural blanks are used to determine that sample preparation and analyses are free of contaminants. The blank spike/blank spike duplicate is used to measure accuracy and precision of the analysis. A SRM is a material for which a mean and confidence interval are certified for specific analytes. SRMs are selected based on matrix similarities as well as type and level of certified analytes. All SRMs are traceable to NIST. SRMs are used to verify analytical accuracy. All QC samples are subject to the identical preparation and analysis steps as samples. The QC criterion for blanks specifies no more than 2 analytes to exceed 3x target MDL unless analyte not detected in associated sample(s) or analyte concentration >10x blank value. The QC criteria for spike recoveries are between 40-120% (except for Biphenyl which is 40% to 140%, Decalin which is 25% to 120%, and Perylene which is 10-120%). The QC criterion for RPDs for valid spiked duplicates is ≤30%. The QC criterion for the reference oil 2779 SRM is ± 20% the NIST reference range for those compounds whose concentration is greater than the detection limit of10 ng/g.

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 whose recovery criteria are 10-120%. Refer to Table 6 for Method Performance Criteria for PAH.

Quality Assurance/Quality Control Variances - Waters

Aliphatic Hydrocarbons (ALI) and Total Petroleum Hydrocarbons (TPH)

Initial Calibration (Six Point)

Observation

- No variances were observed.

Initial Calibration Verification

Observation

- No variances were observed.

Mass Discrimination Ratio

Observation

- No variances were observed.

Internal Standard Area Response

Observation

- No variances were observed.

Continuing Calibration Checks

Observation

- No variances were observed.

Surrogate Recoveries

Observation

- No variances were observed.

Procedural Blank

Observation

- No variances were observed.

Blank Spike/Blank Spike Duplicate

Observation

- No variances were observed.

Laboratory Control Standard (Petroleum)

Observation

- No variances were observed.

Additional QC Batch Information

Observation

- No variances were observed.

Polycyclic Aromatic Hydrocarbons (PAH)

Initial Calibration (Six Point)

Observation

- No variances were observed.

Initial Calibration Verification

Observation

- No variances were observed.

Mass Discrimination Ratio

Observation

- No variances were observed.

Internal Standard Area Response

Observation

- No variances were observed.

Continuing Calibration Checks

Observation

- No variances were observed.

Surrogate Recoveries

Observation

- No variances were observed.

Procedural Blank

Observation

- No variances were observed.

Blank Spike/Blank Spike Duplicate

Observation

- No variances were observed.

Laboratory Control Standard (Solution and Petroleum)

Observation

- No variances were observed.

Additional QC Batch Information

Observation

- The concentrations reported for the C1-Naphthalenes, C1-Dibenzothiophenes, and the C1-Phenanthrene/Anthracenes are calculated using the RRF of the parent compound (Naphthalene, Dibenzothiophene, and Phenanthrene). The concentration of these individual isomers is based on their RRF or an individual isomer from the same family.

Table 5. Method Performance Criteria for Alkanes/Isoprenoids Compounds and Total Petroleum Hydrocarbons

Element or Sample Type	Minimum Frequency	Measurement Quality Objective/ Acceptance Criteria	Corrective Action
Initial Calibration (all target analytes, except i-C13, i-C14, i-C15 and i-C18)	Prior to every sequence, or as needed based on continuing calibration/verification check.	6-point calibration curve %RSD ≤ 15	Resolve before proceeding.
Continuing Calibration Verification (CCV)	Every 12 hours or every 10 field samples, whichever is more frequent	%D ≤ 25	Perform Instrument Maintenance. Re-analyze affected samples.
Initial Calibration Verification (Second Source or can be met if CCAL is second source)	Per initial calibration	%R target analytes 80-120%	Resolve before proceeding.
SRM 2779 Reference Oil (Instrument SRM)	One per batch per GC sequence	Baseline resolution of n-C17 from pristane and analytes must be <20% of laboratory derived mean	Resolve before proceeding.
Performance Evaluation Mixture (PEM)	One per batch per GC sequence	%R 75-125%	Resolve before proceeding.
Matrix Spike/Matrix Spike Duplicate (Sediments, Soils, Tissues only)	One per batch/every 20 field samples	%R 40% - 120% for target analytes; average %R 60-120% for valid spikes, RPD ≤30%. No more than 2 analytes may exceed 40-120%	Evaluate impact to data, discuss with manager to determine if corrective action is needed.
Blank Spike/Blank Spike Duplicate	One per batch/every 20 field samples	%R 40% - 120% for target analytes; RPD ≤30%. No more than 2 analytes may exceed 40-120%	Evaluate impact to data, discuss with lab manager to determine if corrective action is needed.
Procedural Blank	One per batch/every 20 field samples	No more than 2 analytes to exceed 3x MDL unless analyte not detected in associated sample(s) or analyte concentration >10x blank value	Resolve before proceeding. QA coordinator may be contacted to resolve issues.
Laboratory Duplicate (not required for aqueous samples)	One per batch/every 20 field samples	RPD ≤ 30% if analyte concentration is 3x greater than the MDL, no more than 2 individual analyte RPDs with conc. 3x MDL can exceed 35%.	Evaluate impact to data, discuss with lab manager to determine if corrective action is needed.
Mass Discrimination	Initial calibration and CCVs (mid-level)	Ratio for the raw areas of n-C36 / n-C20 ≥0.70	Resolve before proceeding.
Internal Standard (IS)	Every sample	50% - 200% of the area of the IS in the associated calibration standard	Resolve before proceeding.
Surrogates	Every sample	%R 40-120%	Re-extract affected samples. Evaluate impact to data, discuss with lab manager, determine if corrective action is needed.

Table 6. Method Performance Criteria for Extended PAH (Parent and Alkyl Homologs) and Related Compounds.

Element or Sample Type	Minimum Frequency	Measurement Quality Objective/ Acceptance Criteria	Corrective Action
Tuning	Prior to every sequence	Tune as specified in laboratory SOP	Resolve before proceeding.
Initial Calibration (All parent PAH and selected alkyl homologue PAH)	Prior to every sequence, or as needed based on continuing calibration/verification check.	6-point calibration curve over two orders of magnitude RPD ≤ 20%	Resolve before proceeding.
Continuing Calibration Verification (CCV)	Every 12 hours or 6-9 field samples	RPD ≤ 25%, No more than 2 analytes can be between 25% and 35% RPD.	Perform instrument maintenance. Re-analyze affected samples.
Initial Calibration Verification (Second Source or can be met if CCV is second source)	Per initial calibration	%R target analytes 80-120%	Resolve before proceeding.
SRM 1941b for sediment; SRM 1974c for tissue If available use SRMs for appropriate matrices	One per batch/every 20 field samples	Within ±30% of NIST 95% uncertainty range for analytes within the quantitation range. No more than 2 analytes may exceed this criterion.	Resolve before proceeding.
SRM 2779 Reference Oil	One per batch/every 20 field samples	Peak resolution >70% of 4/9-methylphenanthrene from 1-methylphenanthrene (m/z 192). Within ±20% of NIST 95% uncertainty range for analytes within the quantitation range. No more than 2 analytes may exceed this criterion.	Resolve before proceeding.
Matrix Spike/Matrix Spike Duplicate (Sediments, Soils, Tissues only)	One per batch/every 20 field samples	%R 40% - 120% for target analytes, except biphenyl (40-140%), decalin (25-120%) and perylene (10-120%); RPD ≤30%, average %R 60-120% for valid spikes. No more than 2 analytes may exceed 40-120% recovery or >35% RPD.	Evaluate impact to data, discuss with lab manager to determine if corrective action is needed.
Blank Spike/Blank Spike Duplicate	One per batch/every 20 field samples	See MS/MSD criteria above.	Evaluate impact to data, discuss with lab manager to determine if corrective action is needed.
Procedural Blank	One per batch/every 20 field samples	No more than 2 analytes to exceed 3x target MDL unless analyte not detected in associated sample(s) or analyte concentration >10x blank value	Resolve before proceeding. Lab manager may be contacted to resolve issues.
Laboratory Duplicate (not required for aqueous samples)	One per batch/every 20 field samples	RPD ≤ 30% if analyte concentration is 3x greater than the MDL, no more than 2 individual analyte RPDs with conc. 3x MDL can exceed 35%.	Evaluate impact to data, discuss with lab manager, and determine if corrective action is needed.

Table 6. Continued. Method Performance Criteria for Extended PAH (Parent and Alkyl Homologs) and Related Compounds.

Element or Sample Type	Minimum Frequency	Measurement Quality Objective/ Acceptance Criteria	Corrective Action
Mass Discrimination	Initial calibration and CCVs (mid-level)	Ratio for the concentration of Benzo[g,h,i]perylene to phenanthrene ≥0.70	Resolve before proceeding.
Internal Standard (IS)	Every sample	50% - 200% of the area of the IS in the associated calibration standard	Resolve before proceeding.
Surrogates	Every sample	%R 40-120% except d12-perylene which is 10-120%	Re-extract affected samples. Evaluate impact to data, discuss with lab manager, if corrective action is needed.

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

Juan A. Ramirez
Environmental Laboratory Manager

Donell S. Frank
Project Quality Manager

Sample/Analyses Description

Arcadis - Mayflower AR
Sample Inventory

#	File Number	Client Identification	Collection Date	Received Date	Analysis	Matrix	Comments	B&B SDG	Client Project #
1	ARC1768	SED-DA-DI-Water	08/09/13	08/13/13	PAH, TPH, ALI	Water	2 of 2	13081301	B0086003.1302
2	ARC1854	SO-DA-EB-05-081313	08/13/13	08/14/13	PAH	Water	44 analytes, 1 of 2	13081401	B0086003.1302

Water Samples

Aliphatic Hydrocarbons (C9 – C40)/ Total Petroleum Hydrocarbons/ Extractable Organic Matter Concentrations

Arcadis-Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Client Submitted Samples

Sample Name	ARC1768.D
Client Name	SED-DA-DI-Water
Matrix	Water
Collection Date	08/09/13
Received Date	08/13/13
Extraction Date	08/15/13
Extraction Batch	ENV 3084
Date Acquired	20-Aug-2013, 05:59:37
Method	ALI2012.M
Sample Volume (L)	1.06
Dilution	1X

Target Compounds	Su. Corrected Conc. (µg/L)	Q
n-C9	<0.288	U
n-C10	<0.252	U
n-C11	<0.251	U
n-C12	<0.266	U
n-C13	<0.258	U
i-C15	<0.256	U
n-C14	<0.277	U
i-C16	<0.234	U
n-C15	<0.256	U
n-C16	<0.234	U
i-C18	<0.1	U
n-C17	<0.174	U
Pristane	<0.19	U
n-C18	<0.1	U
Phytane	<0.201	U
n-C19	<0.073	U
n-C20	<0.077	U
n-C21	<0.081	U
n-C22	<0.15	U
n-C23	<0.117	U
n-C24	<0.069	U
n-C25	<0.066	U
n-C26	<0.07	U
n-C27	<0.069	U
n-C28	<0.077	U
n-C29	<0.087	U
n-C30	<0.081	U
n-C31	<0.126	U
n-C32	<0.083	U
n-C33	<0.282	U
n-C34	<0.106	U
n-C35	<0.112	U
n-C36	<0.113	U
n-C37	<0.148	U
n-C38	<0.127	U
n-C39	<0.16	U
n-C40	<0.144	U
Total Alkanes		U
Total Petroleum Hydrocarbons	121	
Total Resolved Hydrocarbons	54	
Unresolved Complex Mixture	66	
EOM (µg/L)	792	

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	94
n-eicosane-d42	97
n-triacontane-d62	104

Arcadis-Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Procedural Blank Report

Sample Name	ENV3084A.D
Client Name	Procedural Blank
Matrix	Water
Collection Date	NA
Received Date	NA
Extraction Date	08/15/13
Extraction Batch	ENV 3084
Date Acquired	20-Aug-2013, 02:27:52
Method	ALI2012.M
Sample Volume (L)	1.0
Dilution	1X

Target Compounds	Su. Corrected Conc. (µg/L)	Q	Q	3X MDL Conc. (µg/L)	Actual MDL Conc. (µg/L)
n-C9	<0.288	U		0.865	0.288
n-C10	<0.252	U		0.755	0.252
n-C11	<0.251	U		0.752	0.251
n-C12	<0.266	U		0.799	0.266
n-C13	<0.258	U		0.775	0.258
i-C15	<0.256	U		0.769	0.256
n-C14	<0.277	U		0.830	0.277
i-C16	<0.234	U		0.702	0.234
n-C15	<0.256	U		0.769	0.256
n-C16	<0.234	U		0.702	0.234
i-C18	<0.1	U		0.301	0.100
n-C17	<0.174	U		0.521	0.174
Pristane	<0.19	U		0.570	0.190
n-C18	<0.1	U		0.301	0.100
Phytane	<0.201	U		0.602	0.201
n-C19	<0.073	U		0.220	0.073
n-C20	<0.077	U		0.232	0.077
n-C21	<0.081	U		0.242	0.081
n-C22	<0.15	U		0.449	0.150
n-C23	<0.117	U		0.351	0.117
n-C24	<0.069	U		0.206	0.069
n-C25	<0.066	U		0.197	0.066
n-C26	<0.07	U		0.211	0.070
n-C27	<0.069	U		0.206	0.069
n-C28	<0.077	U		0.231	0.077
n-C29	<0.087	U		0.262	0.087
n-C30	<0.081	U		0.243	0.081
n-C31	<0.126	U		0.378	0.126
n-C32	<0.083	U		0.248	0.083
n-C33	<0.282	U		0.846	0.282
n-C34	<0.106	U		0.319	0.106
n-C35	<0.112	U		0.335	0.112
n-C36	<0.113	U		0.339	0.113
n-C37	<0.148	U		0.444	0.148
n-C38	<0.127	U		0.382	0.127
n-C39	<0.16	U		0.481	0.160
n-C40	<0.144	U		0.431	0.144
Total Alkanes		U			
Total Petroleum Hydrocarbons	<13	U		39.0	13.0
Total Resolved Hydrocarbons	<13	U		39.0	13.0
Unresolved Complex Mixture	<13	U		39.0	13.0
EOM (µg/L)	<100	U		300	100

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	83
n-eicosane-d42	99
n-triacontane-d62	99

Arcadis-Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3084B.D	ENV3084C.D
Client Name	Blank Spike	Blank Spike Duplicate
Matrix	Water	Water
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	08/15/13	08/15/13
Extraction Batch	ENV 3084	ENV 3084
Date Acquired	20-Aug-2013, 03:38:27	20-Aug-2013, 04:49:04
Method	ALI2012.M	ALI2012.M
Sample Volume (L)	1.0	1.0
Dilution	1X	1X

Target Compounds	Su. Corrected Conc. (µg/L)	Recovery (%)	Q	Su. Corrected Conc. (µg/L)	Recovery (%)	Q	RPD (%)	Q	Spike Amount (µg)
n-C9	7.26	73		7.45	75		3		10.0
n-C10	8.14	81		7.75	78		5		10.0
n-C11	8.79	89		8.24	83		6		9.90
n-C12	8.86	89		8.26	82		7		10.0
n-C13	9.39	94		8.51	85		10		10.0
n-C14	9.68	98		8.79	89		10		9.86
n-C15	10.32	103		9.65	97		7		9.98
n-C16	10.26	103		9.79	98		5		10.0
n-C17	10.2	102		10.1	102		1		9.94
Pristane	10.3	104		10.2	103		1		9.90
n-C18	10.5	104		10.5	104		0		10.0
Phytane	10.4	105		10.4	105		0		9.91
n-C19	10.5	106		10.5	106		0		10.0
n-C20	10.4	104		10.4	104		0		10.0
n-C21	10.4	103		10.4	104		0		10.0
n-C22	10.5	106		10.5	106		0		9.95
n-C23	10.4	105		10.5	105		0		9.91
n-C24	10.4	104		10.5	105		1		10.0
n-C25	10.6	106		10.7	106		0		10.0
n-C26	10.7	107		10.8	108		1		10.0
n-C27	10.8	109		10.9	110		1		9.89
n-C28	11.1	110		11.2	112		1		10.0
n-C29	11.0	109		10.9	109		0		10.0
n-C30	11.0	110		10.9	109		1		10.0
n-C31	11.2	111		11.0	110		1		10.0
n-C32	11.0	110		10.8	108		2		10.0
n-C33	11.1	111		10.8	108		3		10.0
n-C34	11.2	111		10.9	109		2		10.0
n-C35	11.3	113		11.0	110		3		10.0
n-C36	11.1	112		10.7	108		4		9.90
n-C37	11.5	115		10.9	109		5		10.0
n-C38	11.6	116		10.9	109		6		10.0
n-C39	11.7	117		10.9	108		7		10.0
n-C40	11.4	114		10.8	108		5		10.0
Average %Recovery		105			102				

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

Arcadis-Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Standard Reference Material Report

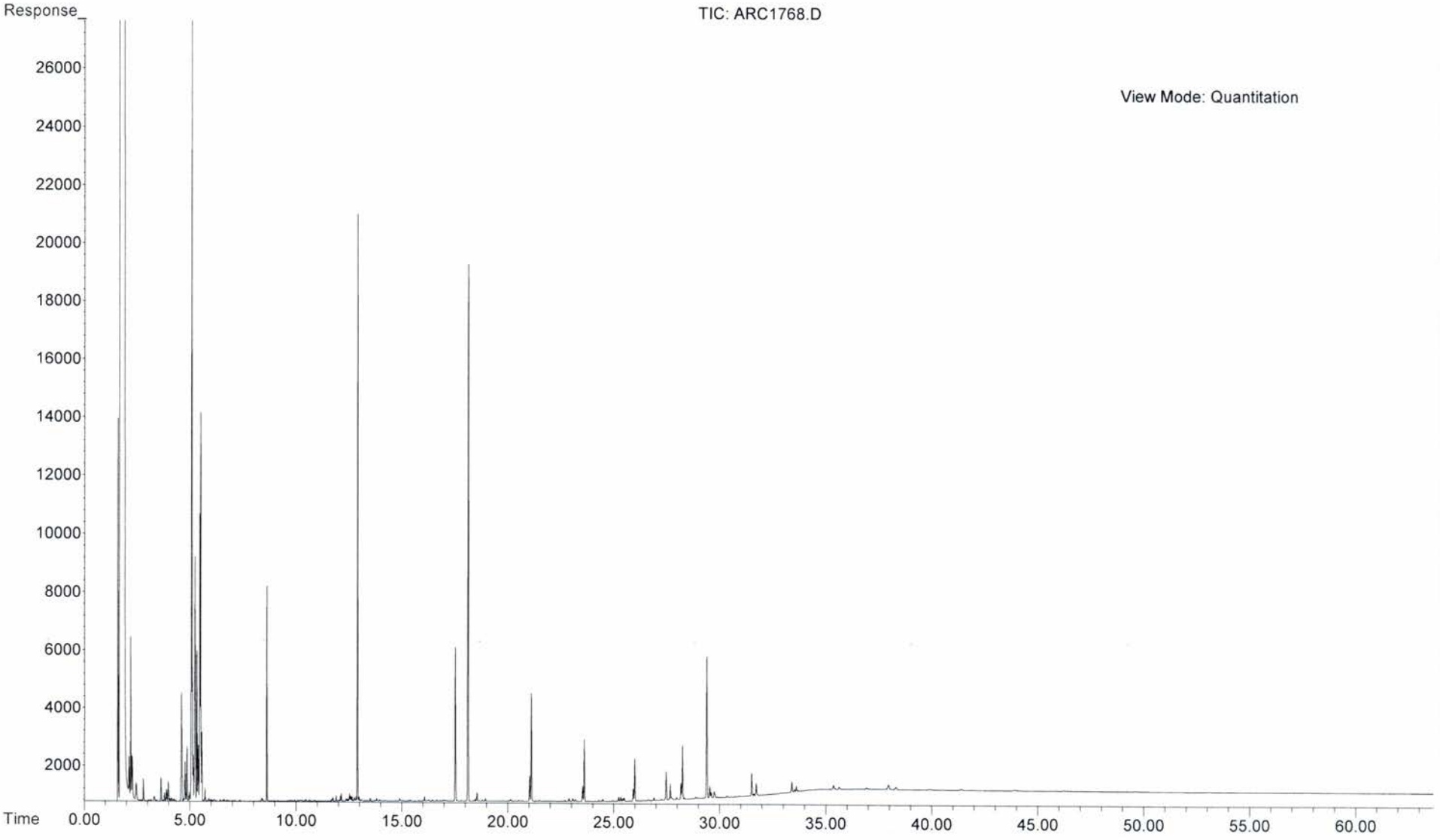
Sample Name	FID10081C.D
Client Name	AL-SRM2779-20-01
Matrix	Reference Oil
Collection Date	NA
Received Date	NA
Extraction Date	08/15/13
Extraction Batch	ENV 3084
Date Acquired	19-Aug-2013, 21:44:56
Method	ALI2012.M
Sample Dry Weight (mg)	20.0
Sample Wet Weight (mg)	NA
% Dry	NA
% Moisture	NA
% Lipid (dry)	NA
% Lipid (wet)	NA
Dilution	1X

Target Compounds	Su. Corrected Conc. (µg/mg)	Q	Q	RPD (%)	B&B Average	-20% Conc. (µg/mg)	+20% Conc. (µg/mg)
n-C9	14.0			4	13.5	10.8	16.2
n-C10	12.4			3	12.0	9.60	14.4
n-C11	11.6			7	10.8	8.64	13.0
n-C12	10.0			2	9.82	7.86	11.8
n-C13	8.93			6	8.41	6.73	10.1
i-C15	2.00			3	1.95	1.56	2.34
n-C14	7.99			4	7.70	6.16	9.24
i-C16	2.73			8	2.95	2.36	3.54
n-C15	7.61			5	7.23	5.78	8.68
n-C16	6.09			1	6.15	4.92	7.38
i-C18	1.60			2	1.56	1.25	1.87
n-C17	5.07			8	4.69	3.75	5.63
Pristane	2.68			10	2.42	1.94	2.90
n-C18	4.14			7	3.84	3.07	4.61
Phytane	1.61			6	1.51	1.21	1.81
n-C19	3.48			0	3.47	2.78	4.16
n-C20	3.02			6	2.84	2.27	3.41
n-C21	2.48			4	2.37	1.90	2.84
n-C22	2.24			9	2.04	1.63	2.45
n-C23	1.97			7	1.84	1.47	2.21
n-C24	1.69			2	1.66	1.33	1.99
n-C25	1.31			4	1.37	1.10	1.64
n-C26	1.19			5	1.13	0.904	1.36
n-C27	0.964			8	0.892	0.714	1.07
n-C28	0.857			10	0.776	0.621	0.931
n-C29	0.789			7	0.739	0.591	0.887
n-C30	0.697			5	0.666	0.533	0.799
n-C31	0.597			10	0.539	0.431	0.647
n-C32	0.463			4	0.443	0.354	0.532
n-C33	0.500			7	0.467	0.374	0.560
n-C34	0.427			0	0.428	0.342	0.514
n-C35	0.352			3	0.342	0.274	0.410
n-C36	0.222	J		5	0.211	0.169	0.253
n-C37	0.223	J		8	0.206	0.165	0.247
n-C38	0.181	J		5	0.172	0.138	0.206
n-C39	0.169	J		0	0.169	0.135	0.203
n-C40	0.172	J		2	0.176	0.141	0.211
Total Petroleum Hydrocarbons	599			1	607	484	726

Surrogate (Su)	Su Recovery (%)
n-dodecane-d26	96
n-eicosane-d42	97
n-triacontane-d62	97

Total Petroleum Hydrocarbons Chromatograms

File :P:\2013\J13034\Aliphatics\ENV 3084\FID10081\ARC1768.D
Operator : Meghan Dailey
Acquired : 20-Aug-2013, 05:59 using AcqMethod ALI2012.M
Instrument : HP5890
Sample Name: SED-DA-DI-Water
Misc Info :
Vial Number: 59



Polycyclic Aromatic Hydrocarbon Concentration

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Client Submitted Samples

Sample Name	ARC1768.D	ARC1854.D
Client Name	SED-DA-DI-Water	SO-DA-EB-05-081313
Matrix	Water	Water
Collection Date	08/09/13	08/13/13
Received Date	08/13/13	08/14/13
Extraction Date	08/15/13	08/15/13
Extraction Batch	ENV 3084	ENV 3084
Date Acquired	8/21/13 10:28	8/21/13 11:37
Method	PAH-2012.M	PAH-2012.M
Sample Volume (L)	1.06	1.07
% Dry	NA	NA
% Moisture	NA	NA
Dilution	1X	1X

Target Compounds	Su. Corrected Conc. (ng/L)	Q	Su. Corrected Conc. (ng/L)	Q
cis/trans Decalin	<1.1	U	NA	
C1-Decalins	<2.3	U	NA	
C2-Decalins	<2.3	U	NA	
C3-Decalins	<2.3	U	NA	
C4-Decalins	<2.3	U	NA	
Naphthalene	107		51.8	
C1-Naphthalenes	1.85		1.91	
C2-Naphthalenes	<5.8	U	<5.8	U
C3-Naphthalenes	<5.8	U	<5.8	U
C4-Naphthalenes	<5.8	U	<5.8	U
Benzothiophene	<1.3	U	NA	
C1-Benzothiophenes	<2.6	U	NA	
C2-Benzothiophenes	<2.6	U	NA	
C3-Benzothiophenes	<2.6	U	NA	
C4-Benzothiophenes	<2.6	U	NA	
Biphenyl	1.04	J	NA	
Acenaphthylene	<1.2	U	<1.2	U
Acenaphthene	<1.4	U	<1.4	U
Dibenzofuran	0.83	J	NA	
Fluorene	0.55	J	0.629	J
C1-Fluorenes	<1.6	U	<1.6	U
C2-Fluorenes	<1.6	U	<1.6	U
C3-Fluorenes	<1.6	U	<1.6	U
Carbazole	0.427	J	NA	
Anthracene	<0.8	U	<0.8	U
Phenanthrene	3.61		3.25	
C1-Phenanthrenes/Anthracenes	<0.7	U	<0.7	U
C2-Phenanthrenes/Anthracenes	<3	U	<3	U
C3-Phenanthrenes/Anthracenes	<3	U	<3	U
C4-Phenanthrenes/Anthracenes	<3	U	<3	U
Dibenzothiophene	<0.8	U	<0.8	U
C1-Dibenzothiophenes	<0.7	U	<0.7	U
C2-Dibenzothiophenes	<1.3	U	<1.3	U
C3-Dibenzothiophenes	<1.3	U	<1.3	U
C4-Dibenzothiophenes	<1.3	U	<1.3	U
Fluoranthene	0.874	J	1.03	J
Pyrene	1.23	J	1.17	J
C1-Fluoranthenes/Pyrenes	<2.5	U	<2.5	U
C2-Fluoranthenes/Pyrenes	<2.5	U	<2.5	U
C3-Fluoranthenes/Pyrenes	<2.5	U	<2.5	U
C4-Fluoranthenes/Pyrenes	<2.5	U	<2.5	U
Naphthobenzothiophene	<1	U	NA	
C1-Naphthobenzothiophenes	<2.1	U	NA	
C2-Naphthobenzothiophenes	<2.1	U	NA	
C3-Naphthobenzothiophenes	<2.1	U	NA	
C4-Naphthobenzothiophenes	<2.1	U	NA	
Benz(a)anthracene	<0.7	U	<0.7	U
Chrysene/Triphenylene	<0.8	U	<0.8	U
C1-Chrysenes	<1.6	U	<1.6	U
C2-Chrysenes	<1.6	U	<1.6	U
C3-Chrysenes	<1.6	U	<1.6	U
C4-Chrysenes	<1.6	U	<1.6	U
Benzo(b)fluoranthene	<2.4	U	<2.4	U
Benzo(k,j)fluoranthene	<2.5	U	<2.5	U
Benzo(a)fluoranthene	<2.5	U	NA	
Benzo(e)pyrene	<2.7	U	<2.7	U
Benzo(a)pyrene	<1.9	U	<1.9	U
Perylene	<0.6	U	<0.6	U
Indeno(1,2,3-c,d)pyrene	<1.4	U	<1.4	U
Dibenzo(a,h)anthracene	<1.1	U	<1.1	U
Benzo(g,h,i)perylene	<2.5	U	<2.5	U
Total PAHs	117		59.8	

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Client Submitted Samples

Sample Name	ARC1768.D	ARC1854.D
Client Name	SED-DA-DI-Water	SO-DA-EB-05-081313
Matrix	Water	Water
Collection Date	08/09/13	08/13/13
Received Date	08/13/13	08/14/13
Extraction Date	08/15/13	08/15/13
Extraction Batch	ENV 3084	ENV 3084
Date Acquired	8/21/13 10:28	8/21/13 11:37
Method	PAH-2012.M	PAH-2012.M
Sample Volume (L)	1.06	1.07
% Dry	NA	NA
% Moisture	NA	NA
Dilution	1X	1X

Target Compounds	Su. Corrected Conc. (ng/L)	Q	Su. Corrected Conc. (ng/L)	Q
Individual Alkyl Isomers and Hopanes				
2-Methylnaphthalene	1.84		1.52	
1-Methylnaphthalene	1.05	J	1.50	
2,6-Dimethylnaphthalene	<0.7	U	NA	
1,6,7-Trimethylnaphthalene	<0.7	U	NA	
1-Methylfluorene	<1.5	U	NA	
4-Methyldibenzothiophene	<1	U	NA	
2/3-Methyldibenzothiophene	<1	U	NA	
1-Methyldibenzothiophene	<1	U	NA	
3-Methylphenanthrene	<0.9	U	NA	
2-Methylphenanthrene	<0.9	U	NA	
2-Methylanthracene	<0.9	U	NA	
4/9-Methylphenanthrene	<0.9	U	NA	
1-Methylphenanthrene	<0.9	U	NA	
3,6-Dimethylphenanthrene	<1.7	U	NA	
Retene	<1.6	U	NA	
2-Methylfluoranthene	<1.1	U	NA	
Benzo(b)fluorene	<1.4	U	NA	
C29-Hopane	<8.2	U	NA	
18a-Oleanane	<8.2	U	NA	
C30-Hopane	<8.2	U	NA	
C20-TAS	<2.6	U	NA	
C21-TAS	<2.6	U	NA	
C26(20S)-TAS	<2.6	U	NA	
C26(20R)/C27(20S)-TAS	<2.6	U	NA	
C28(20S)-TAS	<2.6	U	NA	
C27(20R)-TAS	<2.6	U	NA	
C28(20R)-TAS	<2.6	U	NA	

Surrogate Recovery		
Naphthalene-d8	85	89
Acenaphthene-d10	87	88
Phenanthrene-d10	106	110
Chrysene-d12	73	72
Perylene-d12	87	84

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Procedural Blank Report

Sample Name	ENV3084A.D
Client Name	Procedural Blank
Matrix	Water
Collection Date	NA
Received Date	NA
Extraction Date	08/15/13
Extraction Batch	ENV 3084
Date Acquired	8/21/13 7:03
Method	PAH-2012.M
Sample Volume (L)	1.0
% Dry	NA
% Moisture	NA
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/L)	Q	3X MDL	Actual MDL
cis/trans Decalin	<1.1	U	3.43	1.14
C1-Decalins	<2.3	U	6.85	2.28
C2-Decalins	<2.3	U	6.85	2.28
C3-Decalins	<2.3	U	6.85	2.28
C4-Decalins	<2.3	U	6.85	2.28
Naphthalene	5.98		8.72	2.91
C1-Naphthalenes	2.22		4.09	1.36
C2-Naphthalenes	<5.8	U	17.4	5.82
C3-Naphthalenes	<5.8	U	17.4	5.82
C4-Naphthalenes	<5.8	U	17.4	5.82
Benzothiophene	<1.3	U	3.86	1.29
C1-Benzothiophenes	<2.6	U	7.72	2.57
C2-Benzothiophenes	<2.6	U	7.72	2.57
C3-Benzothiophenes	<2.6	U	7.72	2.57
C4-Benzothiophenes	<2.6	U	7.72	2.57
Biphenyl	1.48	J	15.3	5.09
Acenaphthylene	<1.2	U	3.52	1.17
Acenaphthene	<1.4	U	4.31	1.44
Dibenzofuran	0.89	J	3.57	1.19
Fluorene	0.47	J	2.44	0.81
C1-Fluorenes	<1.6	U	4.88	1.63
C2-Fluorenes	<1.6	U	4.88	1.63
C3-Fluorenes	<1.6	U	4.88	1.63
Carbazole	<0.8	U	2.50	0.833
Anthracene	<0.8	U	2.30	0.767
Phenanthrene	2.04	J	6.79	2.26
C1-Phenanthrenes/Anthracenes	<0.7	U	2.10	0.701
C2-Phenanthrenes/Anthracenes	<3	U	9.09	3.03
C3-Phenanthrenes/Anthracenes	<3	U	9.09	3.03
C4-Phenanthrenes/Anthracenes	<3	U	9.09	3.03
Dibenzothiophene	<0.8	U	2.47	0.824
C1-Dibenzothiophenes	<0.7	U	2.01	0.670
C2-Dibenzothiophenes	<1.3	U	4.02	1.34
C3-Dibenzothiophenes	<1.3	U	4.02	1.34
C4-Dibenzothiophenes	<1.3	U	4.02	1.34
Fluoranthene	0.5	J	3.28	1.09
Pyrene	1.0	J	4.12	1.37
C1-Fluoranthenes/Pyrenes	<2.5	U	7.41	2.47
C2-Fluoranthenes/Pyrenes	<2.5	U	7.41	2.47
C3-Fluoranthenes/Pyrenes	<2.5	U	7.41	2.47
C4-Fluoranthenes/Pyrenes	<2.5	U	7.41	2.47
Naphthobenzothiophene	<1	U	3.10	1.03
C1-Naphthobenzothiophenes	<2.1	U	6.20	2.07
C2-Naphthobenzothiophenes	<2.1	U	6.20	2.07
C3-Naphthobenzothiophenes	<2.1	U	6.20	2.07
C4-Naphthobenzothiophenes	<2.1	U	6.20	2.07
Benz(a)anthracene	<0.7	U	2.21	0.737
Chrysene/Triphenylene	<0.8	U	2.40	0.799
C1-Chrysenes	<1.6	U	4.80	1.60
C2-Chrysenes	<1.6	U	4.80	1.60
C3-Chrysenes	<1.6	U	4.80	1.60
C4-Chrysenes	<1.6	U	4.80	1.60
Benzo(b)fluoranthene	<2.4	U	7.15	2.38
Benzo(k,j)fluoranthene	<2.5	U	7.53	2.51
Benzo(a)fluoranthene	<2.5	U	7.53	2.51
Benzo(e)pyrene	<2.7	U	8.08	2.69
Benzo(a)pyrene	<1.9	U	5.74	1.91
Perylene	<0.6	U	1.90	0.635
Indeno(1,2,3-c,d)pyrene	<1.4	U	4.18	1.39
Dibenzo(a,h)anthracene	<1.1	U	3.41	1.14
Benzo(g,h,i)perylene	<2.5	U	7.53	2.51
Total PAHs	14.6			

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Procedural Blank Report

Sample Name	ENV3084A.D
Client Name	Procedural Blank
Matrix	Water
Collection Date	NA
Received Date	NA
Extraction Date	08/15/13
Extraction Batch	ENV 3084
Date Acquired	8/21/13 7:03
Method	PAH-2012.M
Sample Volume (L)	1.0
% Dry	NA
% Moisture	NA
Dilution	1X

Target Compounds	Su. Corrected Conc. (ng/L)	Q	3X MDL	Actual MDL
Individual Alkyl Isomers and Hopanes				
2-Methylnaphthalene	2.02		3.31	1.10
1-Methylnaphthalene	1.47		4.26	1.42
2,6-Dimethylnaphthalene	<0.7	U	2.09	0.696
1,6,7-Trimethylnaphthalene	<0.7	U	2.00	0.668
1-Methylfluorene	<1.5	U	4.41	1.47
4-Methyldibenzothiophene	<1	U	2.90	0.966
2/3-Methyldibenzothiophene	<1	U	2.90	0.966
1-Methyldibenzothiophene	<1	U	2.90	0.966
3-Methylphenanthrene	<0.9	U	2.82	0.939
2-Methylphenanthrene	<0.9	U	2.82	0.939
2-Methylanthracene	<0.9	U	2.82	0.939
4/9-Methylphenanthrene	<0.9	U	2.82	0.939
1-Methylphenanthrene	<0.9	U	2.82	0.939
3,6-Dimethylphenanthrene	<1.7	U	5.01	1.67
Retene	<1.6	U	4.78	1.59
2-Methylfluoranthene	<1.1	U	3.44	1.15
Benzo(b)fluorene	<1.4	U	4.12	1.37
C29-Hopane	<8.2	U	24.6	8.19
18a-Oleanane	<8.2	U	24.6	8.19
C30-Hopane	<8.2	U	24.6	8.19
C20-TAS	<2.6	U	7.80	2.60
C21-TAS	<2.6	U	7.80	2.60
C26(20S)-TAS	<2.6	U	7.80	2.60
C26(20R)/C27(20S)-TAS	<2.6	U	7.80	2.60
C28(20S)-TAS	<2.6	U	7.80	2.60
C27(20R)-TAS	<2.6	U	7.80	2.60
C28(20R)-TAS	<2.6	U	7.80	2.60

Surrogate Recovery	
Naphthalene-d8	87
Acenaphthene-d10	87
Phenanthrene-d10	107
Chrysene-d12	72
Perylene-d12	83

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3084B.D	ENV3084C.D
Client Name	Blank Spike	Blank Spike Dupl.
Matrix	Water	Water
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	08/15/13	08/15/13
Extraction Batch	ENV 3084	ENV 3084
Date Acquired	8/21/13 8:11	8/21/13 9:20
Method	PAH-2012.M	PAH-2012.M
Sample Volume (L)	1.0	1.0
% Dry	NA	NA
% Moisture	NA	NA
Dilution	1X	1X

Target Compounds	Su. Corrected Amount (ng)	Q	Recovery (%)	Q	Su. Corrected Amount (ng)	Q	Recovery (%)	Q	RPD (%)	Q	Spike amount (ng)
cis/trans Decalin	94.2		95		102		103		8		98.9
C1-Decalins	NA				NA						
C2-Decalins	NA				NA						
C3-Decalins	NA				NA						
C4-Decalins	NA				NA						
Naphthalene	92		92		90.8		91		1		100
C1-Naphthalenes	NA				NA						
C2-Naphthalenes	NA				NA						
C3-Naphthalenes	NA				NA						
C4-Naphthalenes	NA				NA						
Benzothiophene	84.9		85		84.6		85		0		99.4
C1-Benzothiophenes	NA				NA						
C2-Benzothiophenes	NA				NA						
C3-Benzothiophenes	NA				NA						
C4-Benzothiophenes	NA				NA						
Biphenyl	75		75		84.5		85		13		99.1
Acenaphthylene	73.6		74		83.0		84		12		99.2
Acenaphthene	74.4		74		84.3		84		13		100
Dibenzofuran	76.1		76		84.9		85		11		99.5
Fluorene	89.1		89		87.9		88		1		100
C1-Fluorenes	NA				NA						
C2-Fluorenes	NA				NA						
C3-Fluorenes	NA				NA						
Carbazole	85.5		86		87.0		88		2		99.1
Anthracene	92.9		93		90.1		90		3		100
Phenanthrene	101		102		102		103		1		99.1
C1-Phenanthrenes/Anthracenes	NA				NA						
C2-Phenanthrenes/Anthracenes	NA				NA						
C3-Phenanthrenes/Anthracenes	NA				NA						
C4-Phenanthrenes/Anthracenes	NA				NA						
Dibenzothiophene	116		118		114		115		2		98.6
C1-Dibenzothiophenes	NA				NA						
C2-Dibenzothiophenes	NA				NA						
C3-Dibenzothiophenes	NA				NA						
C4-Dibenzothiophenes	NA				NA						
Fluoranthene	85.5		85		83.6		84		2		100
Pyrene	103		103		105		105		2		100
C1-Fluoranthenes/Pyrenes	NA				NA						
C2-Fluoranthenes/Pyrenes	NA				NA						
C3-Fluoranthenes/Pyrenes	NA				NA						
C4-Fluoranthenes/Pyrenes	NA				NA						
Naphthobenzothiophene	76.3		76		83.4		83		9		101
C1-Naphthobenzothiophenes	NA				NA						
C2-Naphthobenzothiophenes	NA				NA						
C3-Naphthobenzothiophenes	NA				NA						
C4-Naphthobenzothiophenes	NA				NA						
Benz(a)anthracene	87.3		87		98.8		99		12		99.8
Chrysene/Triphenylene	73.9		74		83.2		84		12		99.4
C1-Chrysenes	NA				NA						
C2-Chrysenes	NA				NA						
C3-Chrysenes	NA				NA						
C4-Chrysenes	NA				NA						
Benzo(b)fluoranthene	87.2		87		88.9		89		2		100
Benzo(k,j)fluoranthene	58.9		59		54.5		55		8		99.6
Benzo(a)fluoranthene	NA				NA						
Benzo(e)pyrene	83.1		83		80.9		81		3		99.6
Benzo(a)pyrene	83.1		83		81.3		81		2		99.8
Perylene	87.1		87		83.7		84		4		100
Indeno(1,2,3-c,d)pyrene	76.2		78		75.4		77		1		98.3
Dibenzo(a,h)anthracene	82.0		83		81.2		82		1		99.1
Benzo(g,h,i)perylene	76.5		77		74.6		75		3		99.1
Average % Recovery			86				88				

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Blank Spike Report

Sample Name	ENV3084B.D	ENV3084C.D
Client Name	Blank Spike	Blank Spike Dupl.
Matrix	Water	Water
Collection Date	NA	NA
Received Date	NA	NA
Extraction Date	08/15/13	08/15/13
Extraction Batch	ENV 3084	ENV 3084
Date Acquired	8/21/13 8:11	8/21/13 9:20
Method	PAH-2012.M	PAH-2012.M
Sample Volume (L)	1.0	1.0
% Dry	NA	NA
% Moisture	NA	NA
Dilution	1X	1X

Target Compounds	Su. Corrected Amount (ng)	Q	Recovery (%)	Q	Su. Corrected Amount (ng)	Q	Recovery (%)	Q	RPD (%)	Q	Spike amount (ng)
Individual Alkyl Isomers and Hopanes											
2-Methylnaphthalene	74.4		74		81.2		81		9		100
1-Methylnaphthalene	73.7		74		82.5		83		11		99.9
2,6-Dimethylnaphthalene	73.6		74		82.8		83		12		100
1,6,7-Trimethylnaphthalene	88.3		88		87.5		88		1		100
1-Methylfluorene	83.7		83		96.3		96		14		101
4-Methyldibenzothiophene	101		100		100		100		0		101
2/3-Methyldibenzothiophene	NA				NA						
1-Methyldibenzothiophene	NA				NA						
3-Methylphenanthrene	NA				NA						
2-Methylphenanthrene	NA				NA						
2-Methylanthracene	NA				NA						
4/9-Methylphenanthrene	NA				NA						
1-Methylphenanthrene	86.9		88		85.9		87		1		98.9
3,6-Dimethylphenanthrene	88.6		88		87.4		87		1		100
Retene	81.5		91		80.4		90		1		89.4
2-Methylfluoranthene	101.1		100		102		102		1		101
Benzo(b)fluorene	90.2		89		87.5		87		3		101
C29-Hopane	NA				NA						
18a-Oleanane	NA				NA						
C30-Hopane	85.4		85		84.5		84		1		100
C20-TAS	NA				NA						
C21-TAS	NA				NA						
C26(20S)-TAS	NA				NA						
C26(20R)/C27(20S)-TAS	99.1		99		86.1		86		14		100
C28(20S)-TAS	NA				NA						
C27(20R)-TAS	NA				NA						
C28(20R)-TAS	NA				NA						

Surrogate Recovery		
Naphthalene-d8	91	92
Acenaphthene-d10	80	92
Phenanthrene-d10	112	113
Chrysene-d12	77	89
Perylene-d12	89	87

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Standard Reference Material Report

Sample Name	MS70058K.D
Client Name	AR-SRM2779-WK4.0-002
Matrix	Gulf of Mexico Crude Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3084
Date Acquired	8/20/13 18:28
Method	PAH-2012.M
Sample Weight (mg)	4.1

Target Compounds	Su. Corrected Conc. (ng/mg)	Q	Q1	RPD (%)	SRM 2779 Certified Value (ug/g)	-20% Certified Value (ug/g)	+20% Certified Value (ug/g)
cis/trans Decalin	674						
C1-Decalins	988						
C2-Decalins	884						
C3-Decalins	777						
C4-Decalins	502						
Naphthalene	716			18	855 ± 46	647	1081
C1-Naphthalenes	1535						
C2-Naphthalenes	1798						
C3-Naphthalenes	1200						
C4-Naphthalenes	672						
Benzothiophene	7.46	J					
C1-Benzothiophenes	33.4						
C2-Benzothiophenes	23.0						
C3-Benzothiophenes	35.2						
C4-Benzothiophenes	27.4						
Biphenyl	147						
Acenaphthylene	9.44	J					
Acenaphthene	12.4						
Dibenzofuran	27.2						
Fluorene	118						
C1-Fluorenes	254						
C2-Fluorenes	382						
C3-Fluorenes	329						
Carbazole	4.3	J					
Anthracene	4.2	J		22	3.42 ± 0.59	2.26	4.81
Phenanthrene	220			16	258 ± 27	185	342
C1-Phenanthrenes/Anthracenes	550						
C2-Phenanthrenes/Anthracenes	625						
C3-Phenanthrenes/Anthracenes	441						
C4-Phenanthrenes/Anthracenes	252						
Dibenzothiophene	40.0			26	51.8 ± 2.1	39.8	64.7
C1-Dibenzothiophenes	101						
C2-Dibenzothiophenes	147						
C3-Dibenzothiophenes	114						
C4-Dibenzothiophenes	43.6						
Fluoranthene	3.90	J		11	4.36 ± 0.40	3.17	5.71
Pyrene	12.6						
C1-Fluoranthenes/Pyrenes	74.0						
C2-Fluoranthenes/Pyrenes	122						
C3-Fluoranthenes/Pyrenes	117						
C4-Fluoranthenes/Pyrenes	93.8						
Naphthobenzothiophene	20.4						
C1-Naphthobenzothiophenes	54.5						
C2-Naphthobenzothiophenes	64.6						
C3-Naphthobenzothiophenes	46.4						
C4-Naphthobenzothiophenes	19.8						
Benz(a)anthracene	7.04	J		0	7.03 ± 0.85	4.94	9.5
Chrysene/Triphenylene	37.4			24	47.4 ± 1.7	36.6	58.9
C1-Chrysenes	93.9						
C2-Chrysenes	115						
C3-Chrysenes	73.5						
C4-Chrysenes	45.8						
Benzo(b)fluoranthene	4.61	J		20	5.62 ± 0.34	4.22	7.15
Benzo(k,j)fluoranthene	0.278	J					
Benzo(a)fluoranthene	<10	U					
Benzo(e)pyrene	8.8	J		21	10.78 ± 0.60	8.14	13.7
Benzo(a)pyrene	1.44	J					
Perylene	0.513	J					
Indeno(1,2,3-c,d)pyrene	0.720	J					
Dibenzo(a,h)anthracene	0.408	J		34	0.574 ± 0.091	0.386	0.798
Benzo(g,h,i)perylene	1.57	J		30	2.11 ± 0.26	1.48	2.84
Total PAHs	14713						

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Standard Reference Material Report

Sample Name	MS70058K.D
Client Name	AR-SRM2779-WK4.0-002
Matrix	Gulf of Mexico Crude Oil
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3084
Date Acquired	8/20/13 18:28
Method	PAH-2012.M
Sample Weight (mg)	4.1

Target Compounds	Su. Corrected Conc. (ng/mg)	Q	RPD (%)	SRM 2779 Certified Value (ug/g)	-20% Certified Value (ug/g)	+20% Certified Value (ug/g)
Individual Alkyl Isomers and Hopanes						
2-Methylnaphthalene	1439		12	1630 ± 50	1264	2016
1-Methylnaphthalene	973		16	1140 ± 20	896	1392
2,6-Dimethylnaphthalene	871					
1,6,7-Trimethylnaphthalene	315					
1-Methylfluorene	215					
4-Methyldibenzothiophene	89.0					
2/3-Methyldibenzothiophene	41.2					
1-Methyldibenzothiophene	29.4					
3-Methylphenanthrene	141		38	206 ± 32	139	286
2-Methylphenanthrene	181		24	230 ± 14	173	293
2-Methylanthracene	10.9					
4/9-Methylphenanthrene	196		17	232 ± 19	170	301
1-Methylphenanthrene	140		18	169 ± 10	127	215
3,6-Dimethylphenanthrene	42.9					
Retene	22.8					
2-Methylfluoranthene	3.28	J				
Benzo(b)fluorene	12.7					
C29-Hopane	27.6					
18a-Oleanane	<10	U				
C30-Hopane	48.1					
C20-TAS	6.74	J				
C21-TAS	8.06	J				
C26(20S)-TAS	3.77	J				
C26(20R)/C27(20S)-TAS	11.7					
C28(20S)-TAS	8.20	J				
C27(20R)-TAS	7.38	J				
C28(20R)-TAS	5.55	J				

Surrogate Recovery	
Naphthalene-d8	93
Acenaphthene-d10	93
Phenanthrene-d10	90
Chrysene-d12	97
Perylene-d12	91

Peak Resolution	
4/9-Methylphenanthrene from 1-Methylyphenanthrene (m/z 192)	88%

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Material Report

Sample Name	MS70058J.D
Client Name	AR-WKCC-250-038
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3084
Date Acquired	8/20/13 17:20
Method	PAH-2012.M
Sample Volume (mL)	1.0

Target Compounds	Concentration (ng/mL)	Q	RPD (%)	LCM Certified Conc. (ng/mL)	-15% Certified Conc. (ng/mL)	+15% Certified Conc. (ng/mL)
cis/trans Decalin	239		3.3	247	210	284
C1-Decalins	NA					
C2-Decalins	NA					
C3-Decalins	NA					
C4-Decalins	NA					
Naphthalene	243		2.7	250	213	288
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	242		2.6	249	211	286
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
C4-Benzothiophenes	NA					
Biphenyl	242		2.2	248	211	285
Acenaphthylene	231		7.3	248	211	285
Acenaphthene	232		7.6	251	213	288
Dibenzofuran	239		4.1	249	211	286
Fluorene	236		5.8	251	213	288
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	226		9.4	248	211	285
Anthracene	239		4.7	251	213	288
Phenanthrene	248		0.1	248	211	285
C1-Phenanthrenes/Anthracenes	NA					
C2-Phenanthrenes/Anthracenes	NA					
C3-Phenanthrenes/Anthracenes	NA					
C4-Phenanthrenes/Anthracenes	NA					
Dibenzothiophene	246		0.1	247	210	283
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
C4-Dibenzothiophenes	NA					
Fluoranthene	231		7.9	250	213	288
Pyrene	244		2.6	250	213	288
C1-Fluoranthenes/Pyrenes	NA					
C2-Fluoranthenes/Pyrenes	NA					
C3-Fluoranthenes/Pyrenes	NA					
C4-Fluoranthenes/Pyrenes	NA					
Naphthobenzothiophene	218		14.2	252	214	289
C1-Naphthobenzothiophenes	NA					
C2-Naphthobenzothiophenes	NA					
C3-Naphthobenzothiophenes	NA					
C4-Naphthobenzothiophenes	NA					
Benz(a)anthracene	236		5.7	250	212	287
Chrysene/Triphenylene	225		10.1	249	211	286
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	229		8.9	251	213	288
Benzo(k,j)fluoranthene	228		8.6	249	212	286
Benzo(a)fluoranthene	NA					
Benzo(e)pyrene	231		7.7	249	212	286
Benzo(a)pyrene	230		8.2	250	212	287
Perylene	233		7.0	250	213	288
Indeno(1,2,3-c,d)pyrene	225		8.7	246	209	283
Dibenzo(a,h)anthracene	229		7.7	248	211	285
Benzo(g,h,i)perylene	238		4.1	248	211	285

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Material Report

Sample Name	MS70058J.D
Client Name	AR-WKCC-250-038
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3084
Date Acquired	8/20/13 17:20
Method	PAH-2012.M
Sample Volume (mL)	1.0

Target Compounds	Concentration (ng/mL)	Q	RPD (%)	LCM Certified Conc. (ng/mL)	-15% Certified Conc. (ng/mL)	+15% Certified Conc. (ng/mL)
Individual Alkyl Isomers and Hopanes						
2-Methylnaphthalene	236		5.7	250	213	288
1-Methylnaphthalene	238		4.9	250	212	287
2,6-Dimethylnaphthalene	237		5.2	250	213	288
1,6,7-Trimethylnaphthalene	231		7.9	250	213	288
1-Methylfluorene	224		11.7	252	214	290
4-Methyldibenzothiophene	241		4.3	252	214	290
2/3-Methyldibenzothiophene	NA					
1-Methyldibenzothiophene	NA					
3-Methylphenanthrene	NA					
2-Methylphenanthrene	NA					
2-Methylanthracene	NA					
4/9-Methylphenanthrene	NA					
1-Methylphenanthrene	223		10.1	247	210	284
3,6-Dimethylphenanthrene	222		11.9	250	213	288
Retene	206		7.9	223	190	257
2-Methylfluoranthene	236		6.6	252	214	289
Benzo(b)fluorene	215		16.1	252	214	290
C29-Hopane	NA					
18a-Oleanane	NA					
C30-Hopane	247		1.3	250	213	288
C20-TAS	NA					
C21-TAS	NA					
C26(20S)-TAS	NA					
C26(20R)/C27(20S)-TAS	221		12.3	250	213	288
C28(20S)-TAS	NA					
C27(20R)-TAS	NA					
C28(20R)-TAS	NA					

Surrogate Recovery	
Naphthalene-d8	96
Acenaphthene-d10	93
Phenanthrene-d10	102
Chrysene-d12	90
Perylene-d12	96

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Material Report

Sample Name	MS70058I.D
Client Name	AR-WKICV-250-004
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3084
Date Acquired	8/20/13 16:11
Method	PAH-2012.M
Sample Volume (mL)	1.0

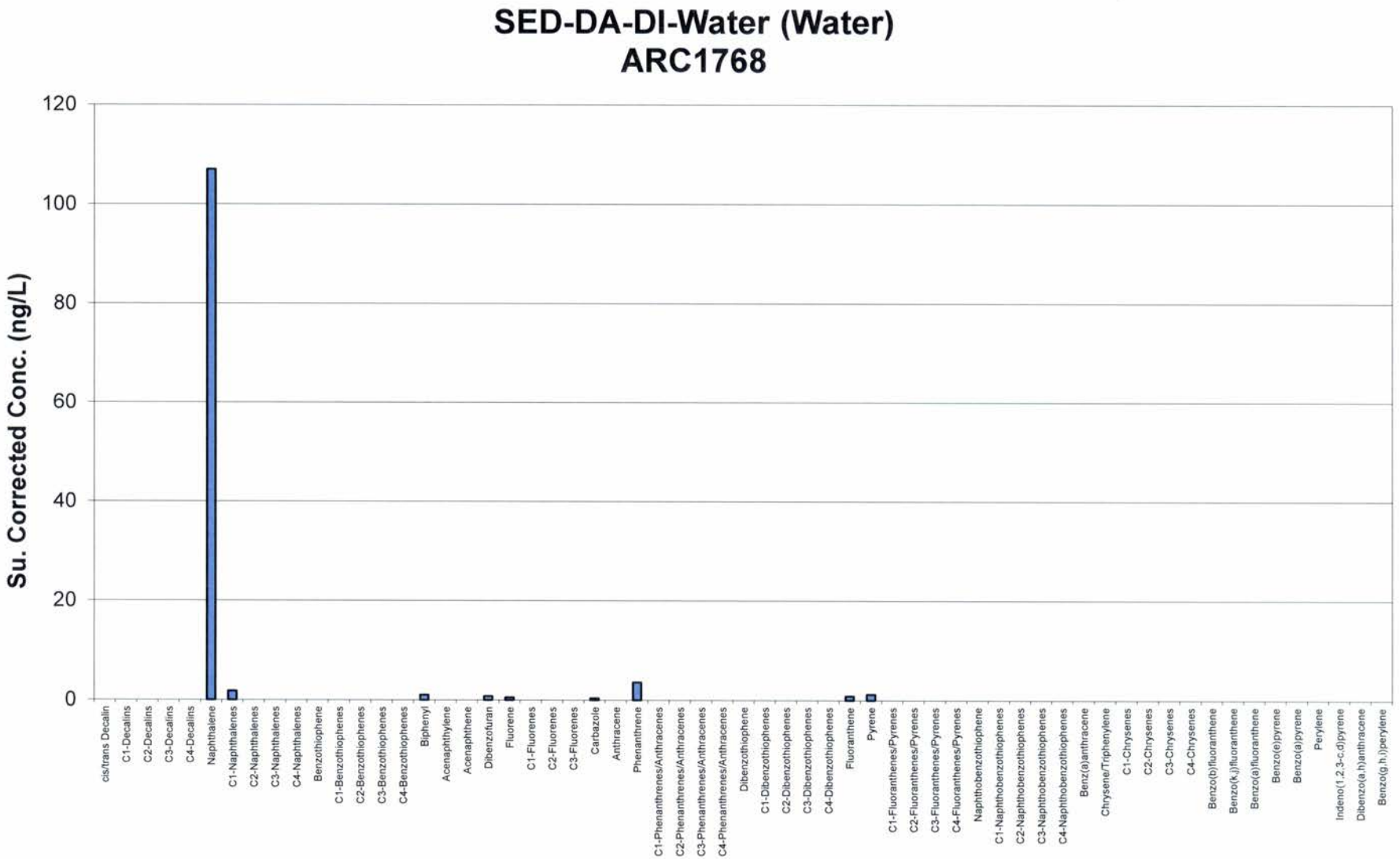
Target Compounds	Concentration (ng/mL)	Q	RPD (%)	ICV Certified Conc. (ng/mL)	-20% Certified Conc. (ng/mL)	+20% Certified Conc. (ng/mL)
cis/trans Decalin	270		7.7	250	200	300
C1-Decalins	NA					
C2-Decalins	NA					
C3-Decalins	NA					
C4-Decalins	NA					
Naphthalene	286		13.4	250	200	300
C1-Naphthalenes	NA					
C2-Naphthalenes	NA					
C3-Naphthalenes	NA					
C4-Naphthalenes	NA					
Benzothiophene	285		13.1	250	200	300
C1-Benzothiophenes	NA					
C2-Benzothiophenes	NA					
C3-Benzothiophenes	NA					
C4-Benzothiophenes	NA					
Biphenyl	284		12.3	251	201	301
Acenaphthylene	286					
Acenaphthene	279		11.0	250	200	300
Dibenzofuran	291		15.2	250	200	300
Fluorene	286		13.4	250	200	300
C1-Fluorenes	NA					
C2-Fluorenes	NA					
C3-Fluorenes	NA					
Carbazole	284		12.5	250	200	300
Anthracene	277		10.3	250	200	300
Phenanthrene	284		12.7	250	200	300
C1-Phenanthrenes/Anthracenes	NA					
C2-Phenanthrenes/Anthracenes	NA					
C3-Phenanthrenes/Anthracenes	NA					
C4-Phenanthrenes/Anthracenes	NA					
Dibenzothiophene	288		14.0	250	200	300
C1-Dibenzothiophenes	NA					
C2-Dibenzothiophenes	NA					
C3-Dibenzothiophenes	NA					
C4-Dibenzothiophenes	NA					
Fluoranthene	284		12.6	250	200	300
Pyrene	294		16.1	250	200	300
C1-Fluoranthenes/Pyrenes	NA					
C2-Fluoranthenes/Pyrenes	NA					
C3-Fluoranthenes/Pyrenes	NA					
C4-Fluoranthenes/Pyrenes	NA					
Naphthobenzothiophene	NA					
C1-Naphthobenzothiophenes	NA					
C2-Naphthobenzothiophenes	NA					
C3-Naphthobenzothiophenes	NA					
C4-Naphthobenzothiophenes	NA					
Benz(a)anthracene	269		7.3	250	200	300
Chrysene/Triphenylene	284		12.5	250	200	300
C1-Chrysenes	NA					
C2-Chrysenes	NA					
C3-Chrysenes	NA					
C4-Chrysenes	NA					
Benzo(b)fluoranthene	290		14.9	250	200	300
Benzo(k,j)fluoranthene	279		11.0	250	200	300
Benzo(a)fluoranthene	NA					
Benzo(e)pyrene	277		10.3	250	200	300
Benzo(a)pyrene	270		7.5	250	200	300
Perylene	275		9.4	251	200	301
Indeno(1,2,3-c,d)pyrene	278		10.6	250	200	300
Dibenzo(a,h)anthracene	289		14.4	250	200	300
Benzo(g,h,i)perylene	283		12.2	250	200	300

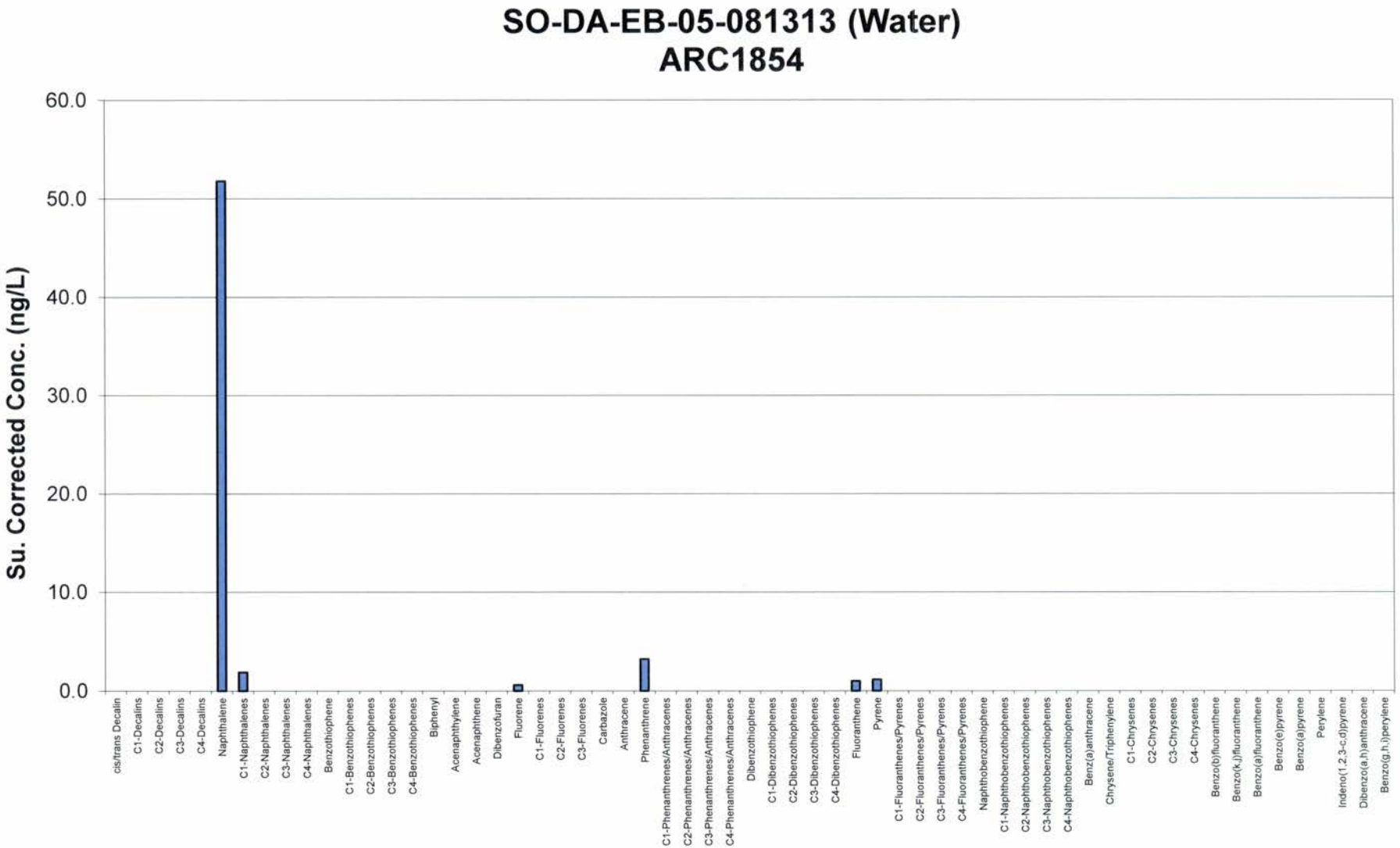
Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Laboratory Control Material Report

Sample Name	MS70058I.D
Client Name	AR-WKICV-250-004
Matrix	Solution
Collection Date	NA
Received Date	NA
Extraction Date	NA
Extraction Batch	ENV 3084
Date Acquired	8/20/13 16:11
Method	PAH-2012.M
Sample Volume (mL)	1.0

Target Compounds	Concentration (ng/mL)	Q	RPD (%)	ICV Certified Conc. (ng/mL)	-20% Certified Conc. (ng/mL)	+20% Certified Conc. (ng/mL)
Individual Alkyl Isomers and Hopanes						
2-Methylnaphthalene	294		16.0	250	200	301
1-Methylnaphthalene	294		15.8	251	200	301
2,6-Dimethylnaphthalene	292		15.3	250	200	300
1,6,7-Trimethylnaphthalene	290		14.6	250	200	301
1-Methylfluorene	NA					
4-Methyldibenzothiophene	NA					
2/3-Methyldibenzothiophene	NA					
1-Methyldibenzothiophene	NA					
3-Methylphenanthrene	NA					
2-Methylphenanthrene	NA					
2-Methylanthracene	NA					
4/9-Methylphenanthrene	NA					
1-Methylphenanthrene	270		7.7	250	200	300
3,6-Dimethylphenanthrene	NA					
Retene	NA					
2-Methylfluoranthene	NA					
Benzo(b)fluorene	NA					
C29-Hopane	NA					
18a-Oleanane	NA					
C30-Hopane	NA					
C20-TAS	NA					
C21-TAS	NA					
C26(20S)-TAS	NA					
C26(20R)/C27(20S)-TAS	NA					
C28(20S)-TAS	NA					
C27(20R)-TAS	NA					
C28(20R)-TAS	NA					
Surrogate Recovery						
Naphthalene-d8	235		6.4	250	200	300
Acenaphthene-d10	229		8.8	250	200	300
Phenanthrene-d10	242		3.4	250	200	300
Chrysene-d12	225		10.5	250	200	300
Perylene-d12	232		7.4	250	200	300

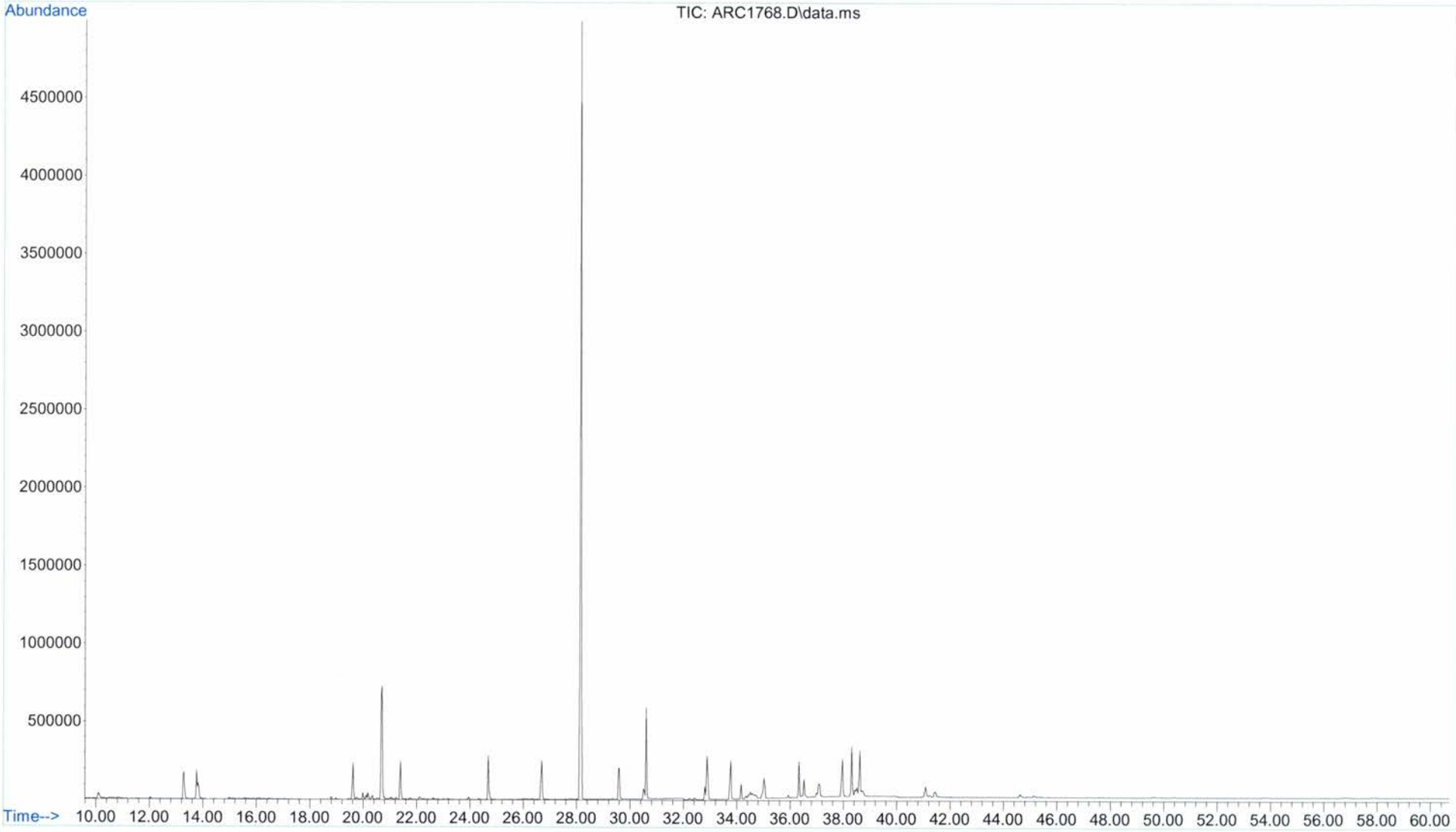
Polycyclic Aromatic Hydrocarbon Histograms


SED-DA-DI-Water (Water)
ARC1768
Su. Corrected Conc. (ng/L)
120
100
80
60
40
20
0
cis/trans Decalin
C1-Decalins
C2-Decalins
C3-Decalins
C4-Decalins
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
C4-Benzothiophenes
Biphenyl
Acenaphthylene
Acenaphthene
Dibenzofuran
Fluorene
C1-Fluorenes
C2-Fluorenes
C3-Fluorenes
Carbazole
Anthracene
Phenanthrene
C1-Phenanthrenes/Anthracenes
C2-Phenanthrenes/Anthracenes
C3-Phenanthrenes/Anthracenes
C4-Phenanthrenes/Anthracenes
Dibenzothiophene
C1-Dibenzothiophenes
C2-Dibenzothiophenes
C3-Dibenzothiophenes
C4-Dibenzothiophenes
Fluoranthene
Pyrene
C1-Fluoranthenes/Pyrenes
C2-Fluoranthenes/Pyrenes
C3-Fluoranthenes/Pyrenes
C4-Fluoranthenes/Pyrenes
Naphthobenzothiophene
C1-Naphthobenzothiophenes
C2-Naphthobenzothiophenes
C3-Naphthobenzothiophenes
C4-Naphthobenzothiophenes
Benz(a)anthracene
Chrysene/Triphenylene
C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes
Benzo(b)fluoranthene
Benzo(k,j)fluoranthene
Benzo(a)fluoranthene
Benzo(e)pyrene
Benzo(a)pyrene
Perylene
Indeno(1,2,3-c,d)pyrene
Dibenzo(a,h)anthracene
Benzo(g,h,i)perylene

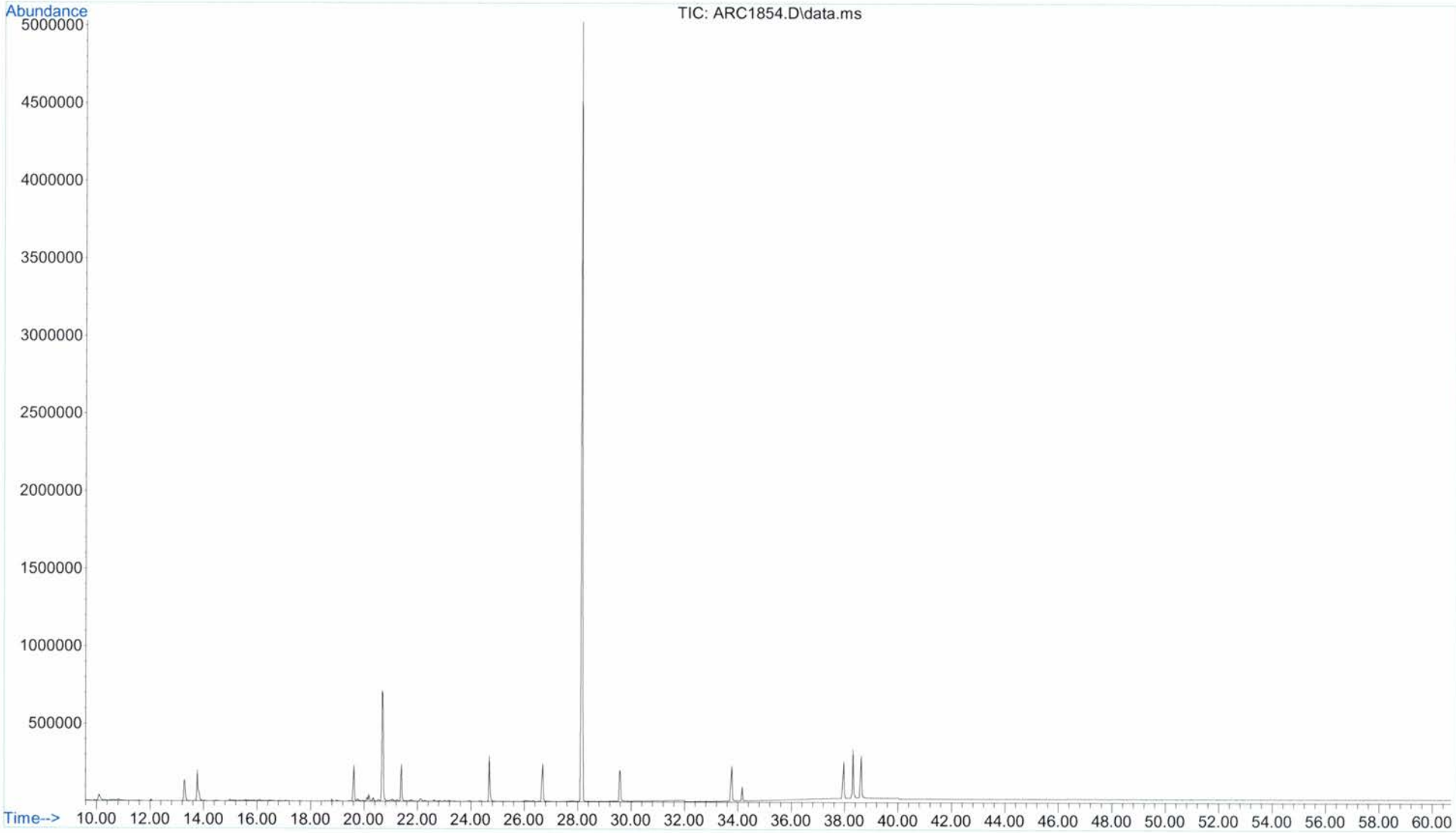

SO-DA-EB-05-081313 (Water)
ARC1854
Su. Corrected Conc. (ng/L)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
cis/trans Decalin
C1-Decalins
C2-Decalins
C3-Decalins
C4-Decalins
Naphthalene
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
Benzothiophene
C1-Benzothiophenes
C2-Benzothiophenes
C3-Benzothiophenes
C4-Benzothiophenes
Biphenyl
Acenaphthylene
Acenaphthene
Dibenzofuran
Fluorene
C1-Fluorenes
C2-Fluorenes
C3-Fluorenes
Carbazole
Anthracene
Phenanthrene
C1-Phenanthrenes/Anthracenes
C2-Phenanthrenes/Anthracenes
C3-Phenanthrenes/Anthracenes
C4-Phenanthrenes/Anthracenes
Dibenzothiophene
C1-Dibenzothiophenes
C2-Dibenzothiophenes
C3-Dibenzothiophenes
C4-Dibenzothiophenes
Fluoranthene
Pyrene
C1-Fluoranthenes/Pyrenes
C2-Fluoranthenes/Pyrenes
C3-Fluoranthenes/Pyrenes
C4-Fluoranthenes/Pyrenes
Naphthobenzothiophene
C1-Naphthobenzothiophenes
C2-Naphthobenzothiophenes
C3-Naphthobenzothiophenes
C4-Naphthobenzothiophenes
Benz(a)anthracene
Chrysene/Triphenylene
C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes
Benzo(b)fluoranthene
Benzo(k,j)fluoranthene
Benzo(a)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 :C:\GCMS7\MS70058\ARC1768.D
Operator : YM
Acquired : 21 Aug 2013 10:28 using AcqMethod PAH-2012.M
Instrument : GCMSD
Sample Name: SED-DA-DI-Water
Misc Info :
Vial Number: 25



File :C:\GCMS7\MS70058\ARC1854.D
Operator : YM
Acquired : 21 Aug 2013 11:37 using AcqMethod PAH-2012.M
Instrument : GCMSD
Sample Name: SO-DA-EB-05-081313
Misc Info :
Vial Number: 26



Total Petroleum Hydrocarbons/ Aliphatic Hydrocarbons Raw Data

B&B LABORATORIES ALIPHATICS/TEH QA FORM

Extraction Page: ENV 3084	Analyst: M. Dailey
Client: Arcadis Mayflower	Date: September 17, 2013
Job: #: J13034	Project Quality Manager: J Fuad
SDG #: 13081301 and 13081401	Date: 09/18/13

Initial Calibration: No Failures	ICV No Failures
Surrogate Recoveries: No Failures	
Procedural Blank: No Failures	
Blank Spike: No Failures	
Blank Spike Duplicate: No Failures	
Laboratory Duplicate: NA	
Matrix Spike: NA	
Matirx Spike Duplicate: NA	
MC-252 Reference Oil No Failures	
Mass Discrimination Check (n-C36/n-C20 >0.7) No Failures	

FID Sequence Summary Report

B&B Laboratories, Inc.

Sequence name: FID10080 2013-08-19 15-44-06

Acquisition date: 8/19/2013 3:44:07 PM

Acquired by: Mark C. Garner

Data Directory C:\CHEM32\3\DATA\FID10080 2013-08-19 15-44-06

Line	Location	Sample Name	Datafile	Method	Injection Date
4	Vial 51	Solvent Blank	FID10081A.D	ALI2012.M	08/19/2013 19:23:19
5	Vial 52	AL-WKCC-25-024	FID10081B.D	ALI2012.M	08/19/2013 20:34:22
6	Vial 53	AL-SRM2779-20-01	FID10081C.D	ALI2012.M	08/19/2013 21:44:56
7	Vial 51	Solvent Blank	FID10081D.D	ALI2012.M	08/19/2013 22:56:02
8	Vial 54	AL-RetWin-001	FID10081E.D	ALI2012.M	08/20/2013 00:06:34
9	Vial 55	AL-WKPem-001	FID10081F.D	ALI2012.M	08/20/2013 01:17:13
10	Vial 56		ENV3084A.D	ALI2012.M	08/20/2013 02:27:52
11	Vial 57		ENV3084B.D	ALI2012.M	08/20/2013 03:38:27
12	Vial 58		ENV3084C.D	ALI2012.M	08/20/2013 04:49:04
13	Vial 59	ARC1768.D	~~ARC1678.D~~ MP 9/6/13	ALI2012.M	08/20/2013 05:59:37
14	Vial 60		ARC1854.D	ALI2012.M	08/20/2013 07:10:15
15	Vial 61	AL-WKCC-25-024	FID10081G.D	ALI2012.M	08/20/2013 08:21:01

Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3084\FID10081\
Data File : FID10081B.D
Signal(s) : FID2B.CH
Acq On : 19-Aug-2013, 20:34:22
Operator : Mark C. Garner
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 52 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:19:51 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	I	n-hexadecane-d34	1.000	1.000	0.0	84	0.00
2		n-C8	0.962	0.991	-3.0	84	0.00
3		n-C9	1.011	1.024	-1.3	83	0.00
4		n-C10	1.064	1.073	-0.8	83	0.00
5		n-C11	1.069	1.079	-0.9	83	0.00
6	S	n-dodecane-d26	0.992	1.002	-1.0	84	0.00
7		n-C12	1.116	1.137	-1.9	84	0.00
10		n-C13	1.122	1.142	-1.8	84	0.00
12		n-C14	1.164	1.186	-1.9	84	0.00
14		n-C15	1.189	1.209	-1.7	84	0.00
15		n-C16	1.208	1.223	-1.2	83	0.00
16	I	5a-androstane	1.000	1.000	0.0	82	0.00
18		n-C17	0.952	0.980	-2.9	83	0.00
19		Pristane	0.949	0.977	-3.0	83	0.00
20		n-C18	0.944	0.967	-2.4	83	0.00
21		Phytane	0.962	0.987	-2.6	83	0.00
22		n-C19	0.948	0.972	-2.5	83	0.00
23	S	n-eicosane-d42	0.758	0.769	-1.5	82	0.00
24		n-C20	0.957	0.979	-2.3	83	0.00
25		n-C21	0.969	0.994	-2.6	83	0.00
26		n-C22	0.974	0.998	-2.5	83	0.00
27		n-C23	0.982	1.008	-2.6	83	0.00
28		n-C24	0.984	1.012	-2.8	83	0.00
29		n-C25	0.985	1.016	-3.1	84	0.00
30		n-C26	0.989	1.020	-3.1	84	0.00
31		n-C27	0.964	0.996	-3.3	84	0.01
32		n-C28	0.976	1.014	-3.9	84	0.01
33		n-C29	0.978	1.012	-3.5	84	0.01
34	S	n-triacontane-d62	0.754	0.776	-2.9	84	0.00
35		n-C30	0.964	1.005	-4.3	84	0.00
36		n-C31	0.944	0.985	-4.3	84	0.00
37		n-C32	0.929	0.970	-4.4	84	0.00
38		n-C33	0.898	0.936	-4.2	83	0.00
39		n-C34	0.903	0.938	-3.9	83	0.00
40		n-C35	0.872	0.898	-3.0	83	0.00
41		n-C36	0.935	0.949	-1.5	82	0.00
42		n-C37	0.842	0.836	0.7	80	0.00
43		n-C38	0.827	0.809	2.2	79	0.00

44	n-C39	0.795	0.762	4.2	78	0.00
45	n-C40	0.722	0.696	3.6	76	0.00

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.017	0.000	100.0#	0#	-9.02#
9	i-14	0.018	0.000	100.0#	0#	-9.72#
11	i-15	0.018	0.000	100.0#	0#	-10.87#
13	i-16	0.019	0.000	100.0#	0#	-11.76#
17	i-18	0.019	0.000	100.0#	0#	-13.71#
46	TPH	0.018	0.000	100.0#	0#	-29.03#
47	TRH1	0.018	0.000	100.0#	0#	-7.74#
48	TRH2	0.018	0.000	100.0#	0#	-15.91#
49	TRH3	0.018	0.000	100.0#	0#	-23.36#
50	TRH4	0.018	0.000	100.0#	0#	-28.38#
51	TRH5	0.018	0.000	100.0#	0#	-33.36#
52	TRH6	0.018	0.000	100.0#	0#	-44.81#
53	GRO	0.018	0.000	100.0#	0#	-5.27#
54	DRO	0.018	0.000	100.0#	0#	-14.30#
55	RRO	0.018	0.000	100.0#	0#	-32.99#

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

FID1C08BACK081213.M Thu Aug 22 11:20:02 2013

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3084\FID10081\
Data File : FID10081B.D
Signal(s) : FID2B.CH
Acq On : 19-Aug-2013, 20:34:22
Operator : Mark C. Garner
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 52 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:19:51 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.902	320789	50.000	ug/mlm
16) I	5a-androstane	18.136	410792	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.629	160777	25.254	ug/mlm
23) S	n-eicosane-d42	17.536	158701	25.513	ug/mlm
34) S	n-triacontane-d62	29.402	159440	25.780	ug/mlm
Target Compounds					
2)	n-C8	3.499	159125	25.792	ug/mlm
3)	n-C9	4.817	164232	25.324	ug/mlm
4)	n-C10	6.227	172126	25.220	ug/mlm
5)	n-C11	7.577	173206	25.262	ug/mlm
7)	n-C12	8.835	179211	25.025	ug/mlm
8)	i-13	0.000	0	N.D.	ug/ml
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	10.004	183416	25.489	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.096	189008	25.310	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.123	192910	25.299	ug/mlm
15)	n-C16	13.154	194224	25.062	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.252	198501	25.405	ug/mlm
19)	Pristane	14.368	198536	25.494	ug/mlm
20)	n-C18	15.424	198509	25.625	ug/mlm
21)	Phytane	15.586	201924	25.582	ug/mlm
22)	n-C19	16.658	199130	25.606	ug/mlm
24)	n-C20	17.933	201077	25.616	ug/mlm
25)	n-C21	19.230	202021	25.411	ug/mlm
26)	n-C22	20.528	204963	25.649	ug/mlm
27)	n-C23	21.811	204709	25.419	ug/mlm
28)	n-C24	23.071	205209	25.430	ug/mlm
29)	n-C25	24.301	207641	25.693	ug/mlm
30)	n-C26	25.498	209510	25.829	ug/mlm
31)	n-C27	26.660	204434	25.861	ug/mlm
32)	n-C28	27.787	208010	25.981	ug/mlm
33)	n-C29	28.880	207708	25.895	ug/mlm
35)	n-C30	29.938	205275	25.962	ug/mlm
36)	n-C31	30.963	202199	26.110	ug/mlm
37)	n-C32	31.957	196365	25.769	ug/mlm
38)	n-C33	32.924	192059	26.080	ug/mlm
39)	n-C34	33.862	192013	25.925	ug/mlm
40)	n-C35	34.856	184268	25.756	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3084\FID10081\
Data File : FID10081B.D
Signal(s) : FID2B.CH
Acq On : 19-Aug-2013, 20:34:22
Operator : Mark C. Garner
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 52 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:19:51 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.985	190787	24.884	ug/mlm
42)	n-C37	37.287	171680	24.854	ug/mlm
43)	n-C38	38.804	166216	24.511	ug/mlm
44)	n-C39	40.595	156314	23.976	ug/mlm
45)	n-C40	42.686	142402	24.028	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

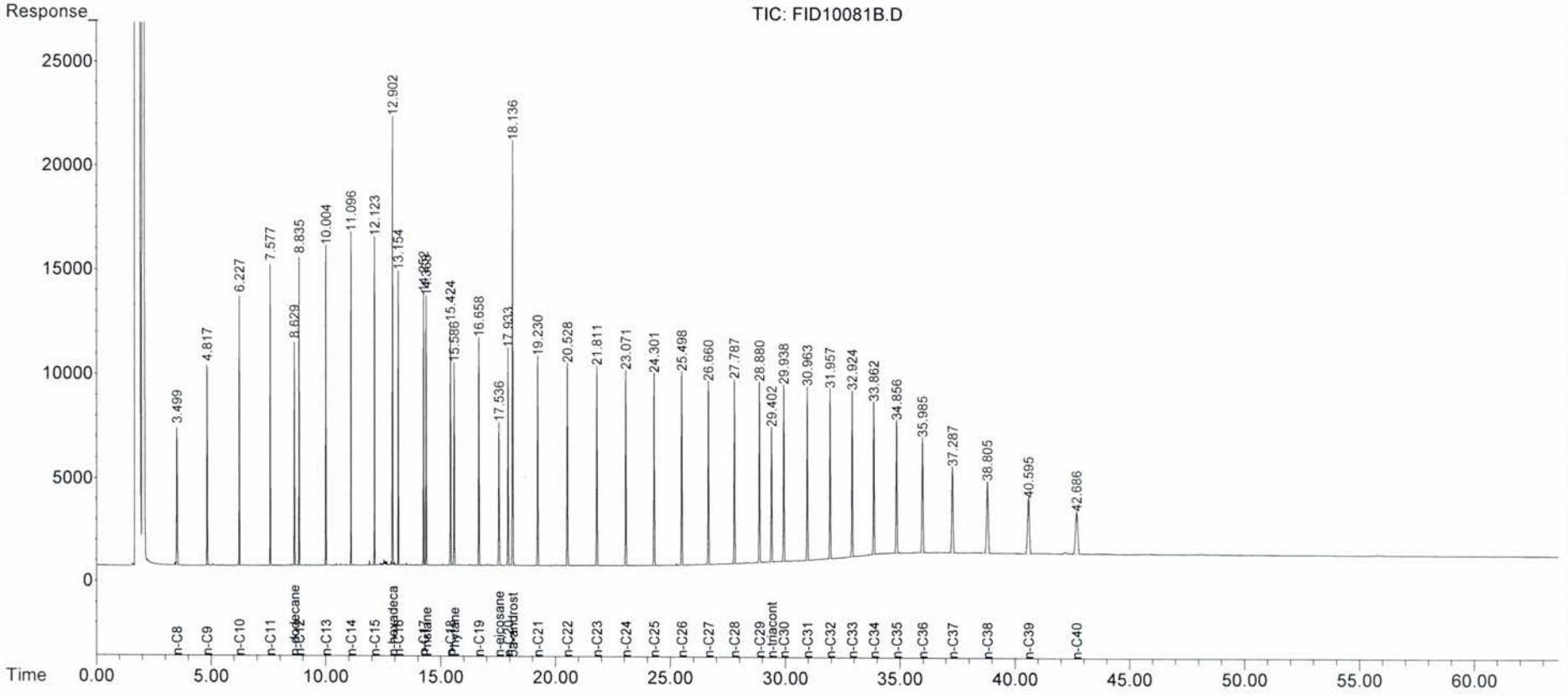
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3084\FID10081\
Data File : FID10081B.D
Signal(s) : FID2B.CH
Acq On : 19-Aug-2013, 20:34:22
Operator : Mark C. Garner
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 52 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:19:51 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2013\J13034\Aliphatics\ENV 3084\FID10081\
Data File : FID10081G.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 08:21:01
Operator : Meghan Dailey
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 61 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:25:02 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	I	n-hexadecane-d34	1.000	1.000	0.0	80	0.00
2		n-C8	0.962	0.990	-2.9	80	0.00
3		n-C9	1.011	1.030	-1.9	80	0.00
4		n-C10	1.064	1.086	-2.1	80	0.00
5		n-C11	1.069	1.094	-2.3	80	0.00
6	S	n-dodecane-d26	0.992	1.011	-1.9	80	0.00
7		n-C12	1.116	1.146	-2.7	80	0.00
10		n-C13	1.122	1.147	-2.2	80	0.00
12		n-C14	1.164	1.193	-2.5	80	0.00
14		n-C15	1.189	1.210	-1.8	80	0.00
15		n-C16	1.208	1.223	-1.2	80	0.00
16	I	5a-androstane	1.000	1.000	0.0	79	0.00
18		n-C17	0.952	0.979	-2.8	79	0.00
19		Pristane	0.949	0.977	-3.0	80	0.00
20		n-C18	0.944	0.970	-2.8	79	0.00
21		Phytane	0.962	0.990	-2.9	79	0.00
22		n-C19	0.948	0.972	-2.5	79	0.00
23	S	n-eicosane-d42	0.758	0.768	-1.3	79	0.00
24		n-C20	0.957	0.978	-2.2	79	0.00
25		n-C21	0.969	0.994	-2.6	79	0.00
26		n-C22	0.974	0.999	-2.6	79	0.00
27		n-C23	0.982	1.010	-2.9	80	0.00
28		n-C24	0.984	1.015	-3.2	80	0.00
29		n-C25	0.985	1.020	-3.6	80	0.00
30		n-C26	0.989	1.025	-3.6	80	0.00
31		n-C27	0.964	1.002	-3.9	81	0.00
32		n-C28	0.976	1.019	-4.4	81	0.00
33		n-C29	0.978	1.022	-4.5	81	0.00
34	S	n-triacontane-d62	0.754	0.782	-3.7	81	0.00
35		n-C30	0.964	1.013	-5.1	81	-0.01
36		n-C31	0.944	0.994	-5.3	81	-0.01
37		n-C32	0.929	0.981	-5.6	81	0.00
38		n-C33	0.898	0.947	-5.5	81	0.00
39		n-C34	0.903	0.949	-5.1	80	-0.01
40		n-C35	0.872	0.912	-4.6	80	-0.01
41		n-C36	0.935	0.962	-2.9	79	-0.01
42		n-C37	0.842	0.850	-1.0	78	-0.02
43		n-C38	0.827	0.822	0.6	77	-0.02

44	n-C39	0.795	0.774	2.6	76	-0.03
45	n-C40	0.722	0.708	1.9	74	-0.02

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.017	0.000	100.0#	0#	-9.02#
9	i-14	0.018	0.000	100.0#	0#	-9.72#
11	i-15	0.018	0.000	100.0#	0#	-10.87#
13	i-16	0.019	0.000	100.0#	0#	-11.76#
17	i-18	0.019	0.000	100.0#	0#	-13.71#
46	TPH	0.018	0.000	100.0#	0#	-29.03#
47	TRH1	0.018	0.000	100.0#	0#	-7.74#
48	TRH2	0.018	0.000	100.0#	0#	-15.91#
49	TRH3	0.018	0.000	100.0#	0#	-23.36#
50	TRH4	0.018	0.000	100.0#	0#	-28.38#
51	TRH5	0.018	0.000	100.0#	0#	-33.36#
52	TRH6	0.018	0.000	100.0#	0#	-44.81#
53	GRO	0.018	0.000	100.0#	0#	-5.27#
54	DRO	0.018	0.000	100.0#	0#	-14.30#
55	RRO	0.018	0.000	100.0#	0#	-32.99#

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

FID1C08BACK081213.M Thu Aug 22 11:25:16 2013

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3084\FID10081\
Data File : FID10081G.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 08:21:01
Operator : Meghan Dailey
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 61 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:25:02 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.899	305819	50.000	ug/mlm
16) I	5a-androstane	18.127	392692	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.627	154647	25.481	ug/mlm
23) S	n-eicosane-d42	17.529	151666	25.506	ug/mlm
34) S	n-triacontane-d62	29.394	153512	25.965	ug/mlm
Target Compounds					
2)	n-C8	3.498	151557	25.767	ug/mlm
3)	n-C9	4.815	157489	25.473	ug/mlm
4)	n-C10	6.224	166127	25.532	ug/mlm
5)	n-C11	7.575	167515	25.628	ug/mlm
7)	n-C12	8.833	172253	25.230	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	10.001	175710	25.614	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.092	181292	25.465	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.119	184169	25.335	ug/mlm
15)	n-C16	13.149	185188	25.066	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.248	189650	25.391	ug/mlm
19)	Pristane	14.364	189830	25.500	ug/mlm
20)	n-C18	15.419	190320	25.701	ug/mlm
21)	Phytane	15.581	193552	25.651	ug/mlm
22)	n-C19	16.653	190363	25.607	ug/mlm
24)	n-C20	17.926	192063	25.595	ug/mlm
25)	n-C21	19.223	193205	25.422	ug/mlm
26)	n-C22	20.521	196116	25.673	ug/mlm
27)	n-C23	21.804	195968	25.456	ug/mlm
28)	n-C24	23.064	196639	25.491	ug/mlm
29)	n-C25	24.294	199226	25.788	ug/mlm
30)	n-C26	25.493	201245	25.954	ug/mlm
31)	n-C27	26.653	196518	26.006	ug/mlm
32)	n-C28	27.779	199822	26.108	ug/mlm
33)	n-C29	28.871	200618	26.164	ug/mlm
35)	n-C30	29.930	197778	26.166	ug/mlm
36)	n-C31	30.954	194914	26.330	ug/mlm
37)	n-C32	31.949	189905	26.070	ug/mlm
38)	n-C33	32.915	185644	26.370	ug/mlm
39)	n-C34	33.851	185705	26.229	ug/mlm
40)	n-C35	34.844	178947	26.166	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3084\FID10081\
Data File : FID10081G.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 08:21:01
Operator : Meghan Dailey
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 61 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:25:02 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.974	184897	25.227	ug/mlm
42)	n-C37	37.272	166710	25.247	ug/mlm
43)	n-C38	38.787	161378	24.894	ug/mlm
44)	n-C39	40.566	151820	24.360	ug/mlm
45)	n-C40	42.664	138468	24.441	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

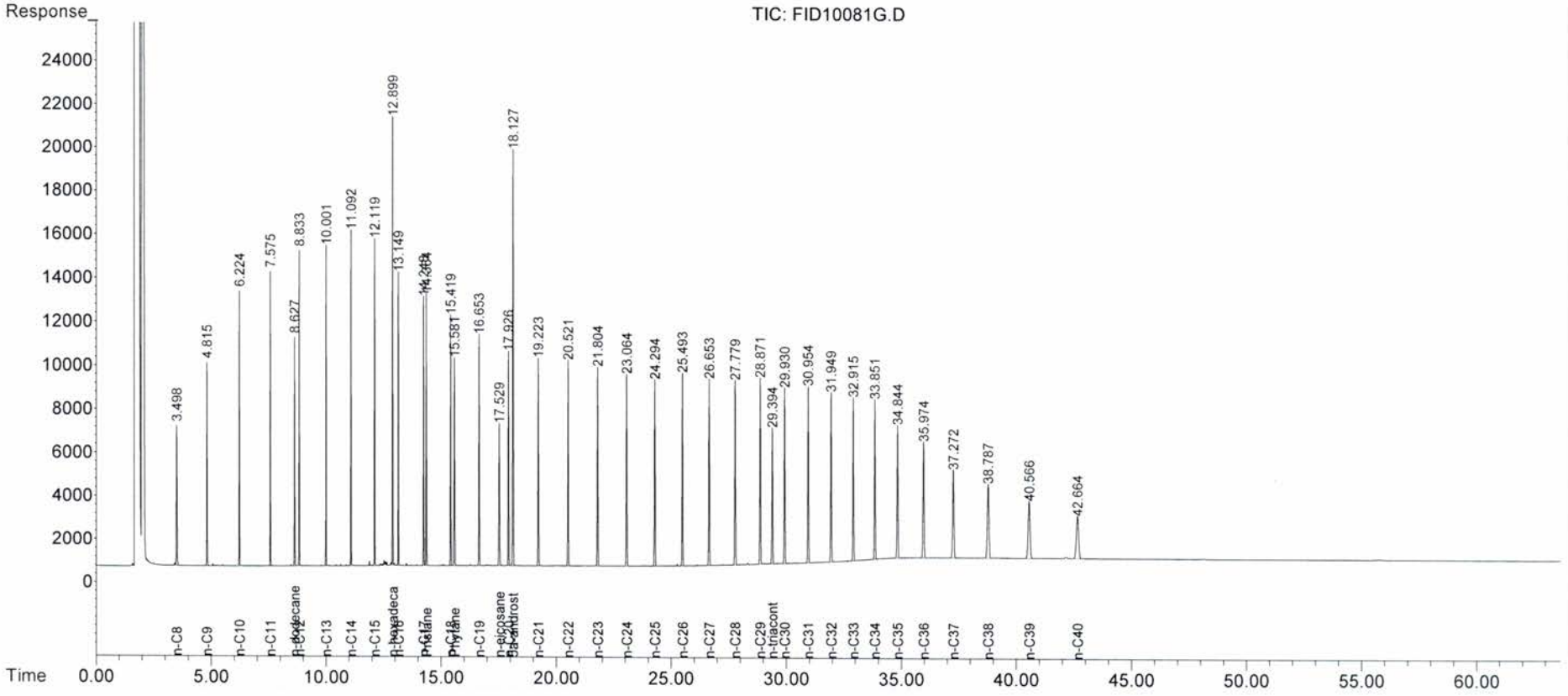
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13034\Aliphatics\ENV 3084\FID10081\
Data File : FID10081G.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 08:21:01
Operator : Meghan Dailey
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 61 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:25:02 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



				Concentration
Data File Name	**FID10081C.D**			FID10081C.D
Sample Name	**AL-SRM2779-20-01**			AL-SRM2779-20-01
Misc Info	**0**			19-Aug-2013, 21:44:56
Data File Path	**C:\msdchem\2\data\FID10081**			ALI2012.M
Operator	**Mark C. Garner**			
Date Acquired	**19-Aug-2013, 21:44:56**			0.05
Instrument Name	**HP5890**			
Acq. Method File	**ALI2012.M**		Vial #	53
Vial Number	**53**		IS Area 1	328020
Sample Multiplier	**0.05**		IS Area 2	465164

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.50	2097090	16.62	16.621
3)	n-C9	4.83	1795360	13.54	13.537
4)	n-C10	6.24	1665250	11.93	11.931
5)	n-C11	7.59	1573630	11.22	11.223
7)	n-C12	8.85	1412360	9.64	9.644
8)	i-13	9.03	339858	2.31	2.309
9)	i-14	9.73	215894	1.41	1.414
10)	n-C13	10.02	1269120	8.62	8.624
11)	i-15	10.88	301473	1.93	1.933
12)	n-C14	11.11	1178970	7.72	7.720
13)	i-16	11.77	418565	2.64	2.641
14)	n-C15	12.14	1145800	7.35	7.348
15)	n-C16	13.17	932897	5.89	5.886
17)	i-18	13.72	270392	1.54	1.541
18)	n-C17	14.27	866642	4.90	4.898
19)	Pristane	14.38	455806	2.58	2.584
20)	n-C18	15.44	700651	3.99	3.994
21)	Phytane	15.60	277478	1.55	1.552
22)	n-C19	16.68	592717	3.37	3.365
24)	n-C20	17.95	519306	2.92	2.921
25)	n-C21	19.25	430988	2.39	2.394
26)	n-C22	20.54	392183	2.17	2.167
27)	n-C23	21.83	346855	1.90	1.902
28)	n-C24	23.09	298865	1.64	1.635
29)	n-C25	24.31	231518	1.26	1.265
30)	n-C26	25.51	210581	1.15	1.146
31)	n-C27	26.67	166713	0.93	0.931
32)	n-C28	27.80	150052	0.83	0.828
33)	n-C29	28.88	138472	0.76	0.762
35)	n-C30	29.94	120537	0.67	0.673
36)	n-C31	30.97	101166	0.58	0.577
37)	n-C32	31.96	77114.2	0.45	0.447
38)	n-C33	32.93	80487.1	0.48	0.483
39)	n-C34	33.87	69181.1	0.41	0.412
40)	n-C35	34.86	55089.5	0.34	0.340
41)	n-C36	35.99	37150.9	0.21	0.214
42)	n-C37	37.28	33661.9	0.22	0.215
43)	n-C38	38.80	26946.1	0.18	0.175
44)	n-C39	40.60	24039.5	0.16	0.163
45)	n-C40	42.69	22240.2	0.17	0.166
46)	TPH	7.59	107925000	641.92	641.915
47)	TRH1	7.59	19854200	118.09	118.088
48)	TRH2	12.14	13422100	79.83	79.832
49)	TRH3	21.83	2195300	13.06	13.057
50)	TRH4	26.67	1497070	8.90	8.904
51)	TRH5	31.96	1337590	7.96	7.956
52)	TRH6	37.28	136115	0.81	0.810
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.63	125480	0.96	96.4
23)	n-eicosane-d42	17.54	136913	0.97	96.6
34)	n-triacontane-d62	29.41	135957	0.97	97.0
1)	n-hexadecane-d34	12.91	328020	2.50	328020.000
16)	5a-androstane	18.15	465164	2.50	465164.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : FID10081C.D
Signal(s) : FID2B.CH
Acq On : 19-Aug-2013, 21:44:56
Operator : Mark C. Garner
Sample : AL-SRM2779-20-01
Misc :
ALS Vial : 53 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Aug 23 16:47:28 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc Units
Internal Standards					
1)	I	n-hexadecane-d34	12.908	328020	50.000 ug/mlm
16)	I	5a-androstane	18.151	465164	50.072 ug/mlm
System Monitoring Compounds					
6)	S	n-dodecane-d26	8.632	125480	0.964 ug/mlm
23)	S	n-eicosane-d42	17.541	136913	0.972 ug/mlm
34)	S	n-triacontane-d62	29.411	135957	0.971 ug/mlm
Target Compounds					
2)		n-C8	3.501	2097095	16.621 ug/mlm
3)		n-C9	4.828	1795364	13.537 ug/mlm
4)		n-C10	6.240	1665246	11.930 ug/mlm
5)		n-C11	7.592	1573631	11.223 ug/mlm
7)		n-C12	8.850	1412362	9.644 ug/mlm
8)		i-13	9.030	339858	2.309 ug/mlm
9)		i-14	9.729	215894	1.414 ug/mlm
10)		n-C13	10.020	1269121	8.624 ug/mlm
11)		i-15	10.883	301473	1.933 ug/mlm
12)		n-C14	11.112	1178973	7.720 ug/mlm
13)		i-16	11.774	418565	2.641 ug/mlm
14)		n-C15	12.139	1145798	7.348 ug/mlm
15)		n-C16	13.169	932897	5.886 ug/mlm
17)		i-18	13.723	270392	1.541 ug/mlm
18)		n-C17	14.269	866642	4.898 ug/mlm
19)		Pristane	14.375	455806	2.584 ug/mlm
20)		n-C18	15.441	700651	3.994 ug/mlm
21)		Phytane	15.595	277478	1.552 ug/mlm
22)		n-C19	16.675	592717	3.365 ug/mlm
24)		n-C20	17.951	519306	2.921 ug/mlm
25)		n-C21	19.245	430988	2.394 ug/mlm
26)		n-C22	20.543	392183	2.167 ug/mlm
27)		n-C23	21.826	346855	1.902 ug/mlm
28)		n-C24	23.086	298865	1.635 ug/mlm
29)		n-C25	24.314	231518	1.265 ug/mlm
30)		n-C26	25.510	210581	1.146 ug/mlm
31)		n-C27	26.669	166713	0.931 ug/mlm
32)		n-C28	27.795	150052	0.828 ug/mlm
33)		n-C29	28.885	138472	0.762 ug/mlm
35)		n-C30	29.944	120537	0.673 ug/mlm
36)		n-C31	30.968	101166	0.577 ug/mlm
37)		n-C32	31.962	77114	0.447 ug/mlm
38)		n-C33	32.927	80487	0.483 ug/mlm
39)		n-C34	33.867	69181	0.412 ug/mlm
40)		n-C35	34.860	55090	0.340 ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : FID10081C.D
Signal(s) : FID2B.CH
Acq On : 19-Aug-2013, 21:44:56
Operator : Mark C. Garner
Sample : AL-SRM2779-20-01
Misc :
ALS Vial : 53 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Aug 23 16:47:28 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.992	37151	0.214	ug/mlm
42)	n-C37	37.284	33662	0.215	ug/mlm
43)	n-C38	38.805	26946	0.175	ug/mlm
44)	n-C39	40.603	24040	0.163	ug/mlm
45)	n-C40	42.686	22240	0.166	ug/mlm
46)	TPH	7.592f	107925329	641.915	ug/mlm
47)	TRH1	7.592	19854189	118.088	ug/mlm
48)	TRH2	12.139f	13422067	79.831	ug/mlm
49)	TRH3	21.826f	2195296	13.057	ug/mlm
50)	TRH4	26.669f	1497067	8.904	ug/mlm
51)	TRH5	31.962f	1337585	7.956	ug/mlm
52)	TRH6	37.284f	136115	0.810	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

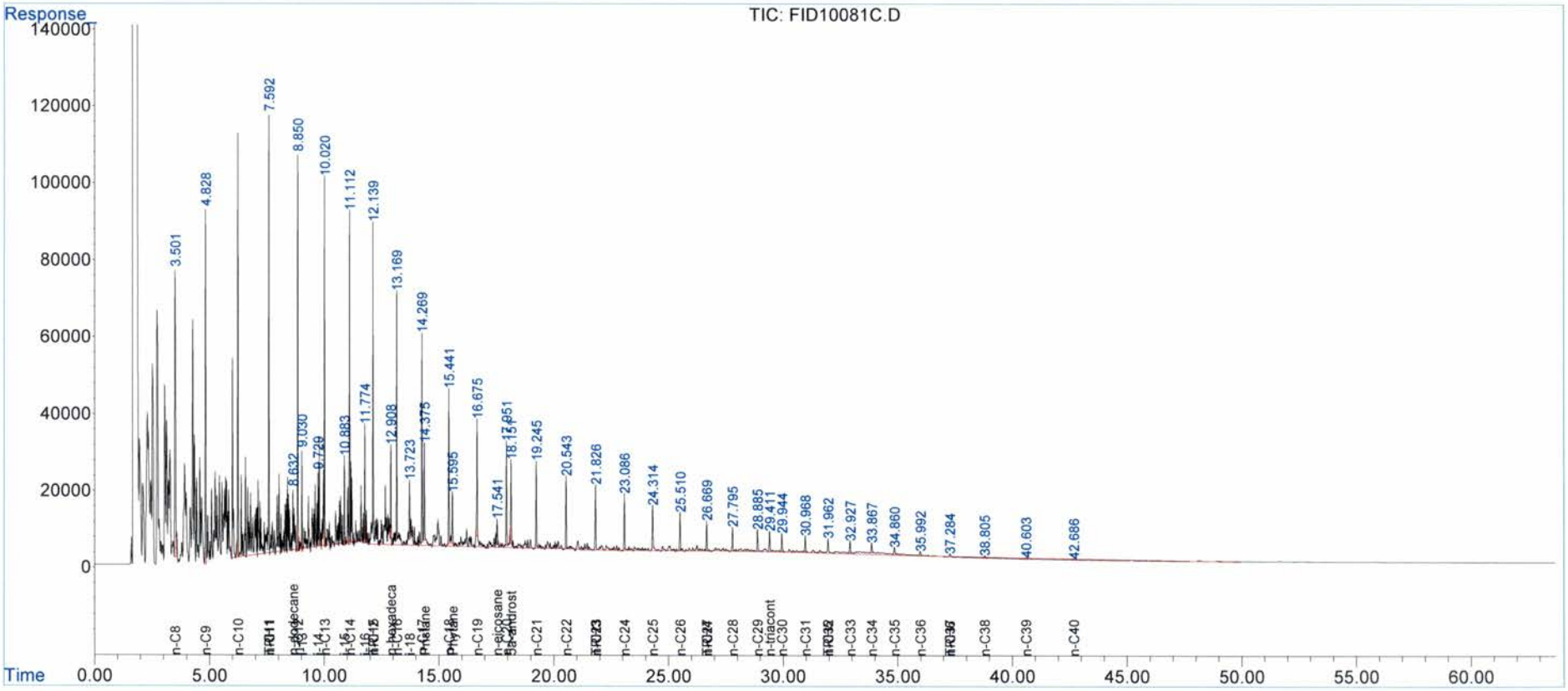
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : FID10081C.D
Signal(s) : FID2B.CH
Acq On : 19-Aug-2013, 21:44:56
Operator : Mark C. Garner
Sample : AL-SRM2779-20-01
Misc :
ALS Vial : 53 Sample Multiplier: 0.05

Integration File: autoint1.e
Quant Time: Aug 23 16:47:28 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**FID10081F.D**		FID10081F.D
Sample Name	**AL-WKPem-001**		AL-WKPem-001
Misc Info	**0**		20-Aug-2013, 01:17:13
Data File Path	**C:\msdchem\2\data\FID10081**		ALI2012.M
Operator	**Mark C. Garner**		
Date Acquired	**20-Aug-2013, 01:17:13**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALI2012.M**	Vial #	55
Vial Number	**55**	IS Area 1	317967
Sample Multiplier	**1**	IS Area 2	408672

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	0.00	0	0.00	0.000
3)	n-C9	0.00	0	0.00	0.000
4)	n-C10	0.00	0	0.00	0.000
5)	n-C11	0.00	0	0.00	0.000
7)	n-C12	0.00	0	0.00	0.000
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	0.00	0	0.00	0.000
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	0.00	0	0.00	0.000
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	0.00	0	0.00	0.000
15)	n-C16	0.00	0	0.00	0.000
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	0.00	0	0.00	0.000
19)	Pristane	0.00	0	0.00	0.000
20)	n-C18	0.00	0	0.00	0.000
21)	Phytane	0.00	0	0.00	0.000
22)	n-C19	0.00	0	0.00	0.000
24)	n-C20	0.00	0	0.00	0.000
25)	n-C21	0.00	0	0.00	0.000
26)	n-C22	0.00	0	0.00	0.000
27)	n-C23	0.00	0	0.00	0.000
28)	n-C24	0.00	0	0.00	0.000
29)	n-C25	0.00	0	0.00	0.000
30)	n-C26	0.00	0	0.00	0.000
31)	n-C27	0.00	0	0.00	0.000
32)	n-C28	0.00	0	0.00	0.000
33)	n-C29	0.00	0	0.00	0.000
35)	n-C30	0.00	0	0.00	0.000
36)	n-C31	0.00	0	0.00	0.000
37)	n-C32	0.00	0	0.00	0.000
38)	n-C33	0.00	0	0.00	0.000
39)	n-C34	0.00	0	0.00	0.000
40)	n-C35	0.00	0	0.00	0.000
41)	n-C36	0.00	0	0.00	0.000
42)	n-C37	0.00	0	0.00	0.000
43)	n-C38	0.00	0	0.00	0.000
44)	n-C39	0.00	0	0.00	0.000
45)	n-C40	0.00	0	0.00	0.000
46)	TPH	12.90	9387940	1271.12	1271.120
47)	TRH1	8.63	133106	18.02	18.022
48)	TRH2	12.90	930733	126.02	126.020
49)	TRH3	26.14	10416	1.41	1.410
50)	TRH4	29.40	152886	20.70	20.701
51)	TRH5	36.00	126055	17.07	17.068
52)	TRH6	37.11	83827.7	11.35	11.350
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.63	126017	19.97	99.9
23)	n-eicosane-d42	17.53	121436	19.62	97.5
34)	n-triacontane-d62	29.40	121707	19.78	98.8
1)	n-hexadecane-d34	12.90	317967	50.00	317967.000
16)	5a-androstane	18.13	408672	50.07	408672.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : FID10081F.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 01:17:13
Operator : Mark C. Garner
Sample : AL-WKPem-001
Misc :
ALS Vial : 55 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:31:00 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Thu Aug 22 11:16:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.901	317967	50.000	ug/mlm
16) I	5a-androstane	18.132	408672	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.628	126017	19.970	ug/mlm
23) S	n-eicosane-d42	17.532	121436	19.623	ug/mlm
34) S	n-triacontane-d62	29.398	121707	19.781	ug/mlm
Target Compounds					
2)	n-C8	0.000	0	N.D.	ug/mld
3)	n-C9	0.000	0	N.D.	ug/mld
4)	n-C10	0.000	0	N.D.	ug/mld
5)	n-C11	0.000	0	N.D.	ug/mld
7)	n-C12	0.000	0	N.D.	ug/mld
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	0.000	0	N.D.	ug/mld
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	0.000	0	N.D.	ug/mld
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	0.000	0	N.D.	ug/mld
15)	n-C16	0.000	0	N.D.	ug/mld
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	0.000	0	N.D.	ug/mld
19)	Pristane	0.000	0	N.D.	ug/mld
20)	n-C18	0.000	0	N.D.	ug/mld
21)	Phytane	0.000	0	N.D.	ug/mld
22)	n-C19	0.000	0	N.D.	ug/mld
24)	n-C20	0.000	0	N.D.	ug/mld
25)	n-C21	0.000	0	N.D.	ug/mld
26)	n-C22	0.000	0	N.D.	ug/mld
27)	n-C23	0.000	0	N.D.	ug/mld
28)	n-C24	0.000	0	N.D.	ug/mld
29)	n-C25	0.000	0	N.D.	ug/mld
30)	n-C26	0.000	0	N.D.	ug/mld
31)	n-C27	0.000	0	N.D.	ug/mld
32)	n-C28	0.000	0	N.D.	ug/mld
33)	n-C29	0.000	0	N.D.	ug/mld
35)	n-C30	0.000	0	N.D.	ug/mld
36)	n-C31	0.000	0	N.D.	ug/mld
37)	n-C32	0.000	0	N.D.	ug/mld
38)	n-C33	0.000	0	N.D.	ug/mld
39)	n-C34	0.000	0	N.D.	ug/mld
40)	n-C35	0.000	0	N.D.	ug/mld

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : FID10081F.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 01:17:13
Operator : Mark C. Garner
Sample : AL-WKPem-001
Misc :
ALS Vial : 55 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:31:00 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Thu Aug 22 11:16:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	0.000	0	N.D.	ug/mld
42)	n-C37	0.000	0	N.D.	ug/mld
43)	n-C38	0.000	0	N.D.	ug/mld
44)	n-C39	0.000	0	N.D.	ug/mld
45)	n-C40	0.000	0	N.D.	ug/mld
46)	TPH	12.901f	9387940	1271.115	ug/mlm
47)	TRH1	8.628	133106	18.022	ug/mlm
48)	TRH2	12.901f	930733	126.020	ug/mlm
49)	TRH3	26.135f	10416	1.410	ug/mlm
50)	TRH4	29.398	152886	20.701	ug/mlm
51)	TRH5	35.999f	126055	17.068	ug/mlm
52)	TRH6	37.114f	83828	11.350	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/ml

SemiQuant Compounds - Not Calibrated on this Instrument

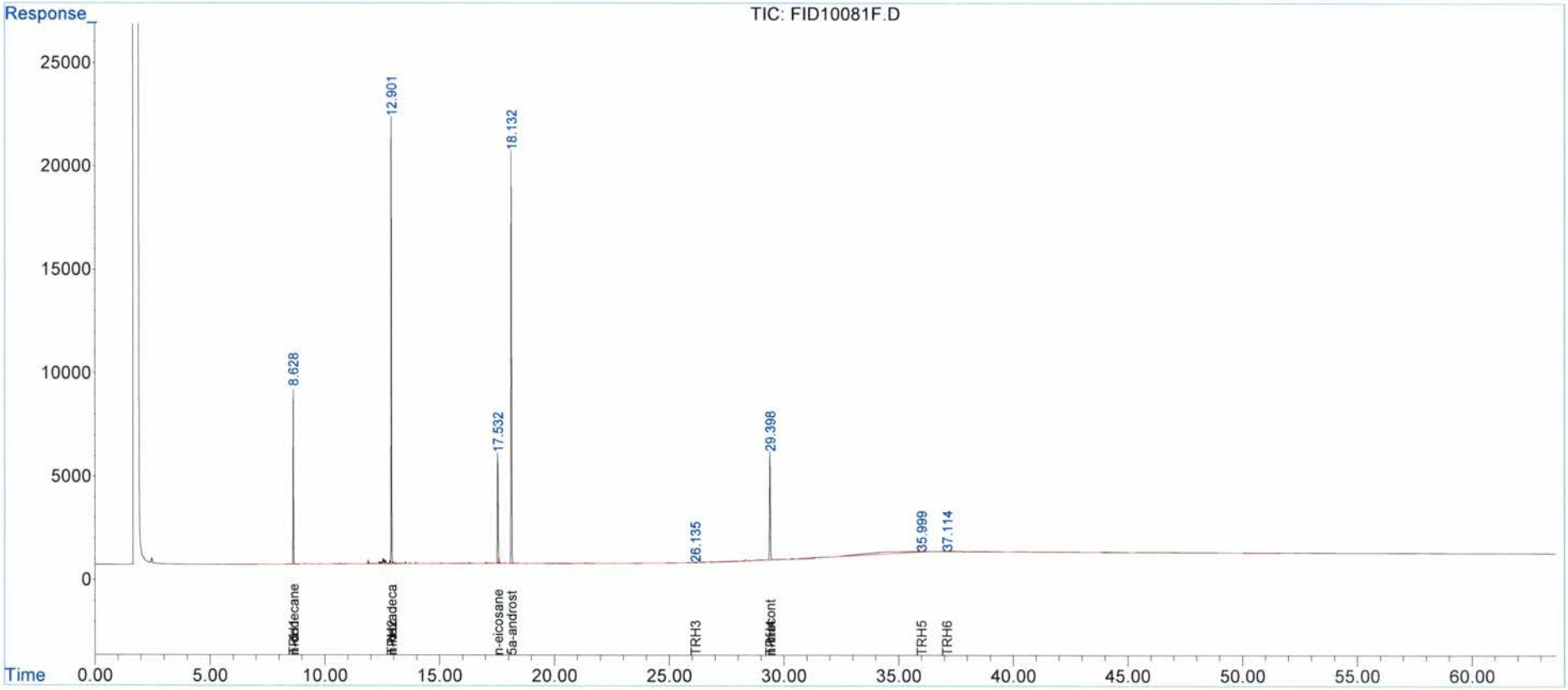
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : FID10081F.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 01:17:13
Operator : Mark C. Garner
Sample : AL-WKPem-001
Misc :
ALS Vial : 55 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 22 11:31:00 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Thu Aug 22 11:16:11 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3084A.D**		ENV3084A.D
Sample Name	**Procedural Blank**		Procedural Blank
Misc Info	**0**		20-Aug-2013, 02:27:52
Data File Path	**C:\msdchem\1\data\FID10081**		ALI2012.M
Operator	**Meghan Dailey**		
Date Acquired	**20-Aug-2013, 02:27:52**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALI2012.M**	Vial #	56
Vial Number	**56**	IS Area 1	297963
Sample Multiplier	**1**	IS Area 2	386092

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	0.00	0	0.00	0.000
3)	n-C9	0.00	0	0.00	0.000
4)	n-C10	0.00	0	0.00	0.000
5)	n-C11	0.00	0	0.00	0.000
7)	n-C12	0.00	0	0.00	0.000
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	0.00	0	0.00	0.000
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	0.00	0	0.00	0.000
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	0.00	0	0.00	0.000
15)	n-C16	0.00	0	0.00	0.000
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	0.00	0	0.00	0.000
19)	Pristane	0.00	0	0.00	0.000
20)	n-C18	0.00	0	0.00	0.000
21)	Phytane	0.00	0	0.00	0.000
22)	n-C19	0.00	0	0.00	0.000
24)	n-C20	0.00	0	0.00	0.000
25)	n-C21	0.00	0	0.00	0.000
26)	n-C22	0.00	0	0.00	0.000
27)	n-C23	0.00	0	0.00	0.000
28)	n-C24	0.00	0	0.00	0.000
29)	n-C25	0.00	0	0.00	0.000
30)	n-C26	0.00	0	0.00	0.000
31)	n-C27	0.00	0	0.00	0.000
32)	n-C28	0.00	0	0.00	0.000
33)	n-C29	0.00	0	0.00	0.000
35)	n-C30	0.00	0	0.00	0.000
36)	n-C31	0.00	0	0.00	0.000
37)	n-C32	0.00	0	0.00	0.000
38)	n-C33	0.00	0	0.00	0.000
39)	n-C34	0.00	0	0.00	0.000
40)	n-C35	0.00	0	0.00	0.000
41)	n-C36	0.00	0	0.00	0.000
42)	n-C37	0.00	0	0.00	0.000
43)	n-C38	0.00	0	0.00	0.000
44)	n-C39	0.00	0	0.00	0.000
45)	n-C40	0.00	0	0.00	0.000
46)	TPH	12.90	8301980	1189.82	1189.820
47)	TRH1	8.63	128863	18.47	18.468
48)	TRH2	12.90	908946	130.27	130.268
49)	TRH3	24.49	10482.8	1.50	1.502
50)	TRH4	29.40	137957	19.77	19.772
51)	TRH5	35.70	127530	18.28	18.277
52)	TRH6	37.68	34899.2	5.00	5.002
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.63	97786.7	16.54	82.7
23)	n-eicosane-d42	17.53	115251	19.71	97.9
34)	n-triacontane-d62	29.40	114801	19.75	98.6
1)	n-hexadecane-d34	12.90	297963	50.00	297963.000
16)	5a-androstane	18.13	386092	50.07	386092.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ENV3084A.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 02:27:52
Operator : Meghan Dailey
Sample : Procedural Blank
Misc :
ALS Vial : 56 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 31 16:12:32 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.900	297963	50.000	ug/mlm
16) I	5a-androstane	18.131	386092	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.627	97787	16.537	ug/mlm
23) S	n-eicosane-d42	17.531	115251	19.713	ug/mlm
34) S	n-triacontane-d62	29.397	114801	19.750	ug/mlm
Target Compounds					
2)	n-C8	0.000	0	N.D.	ug/mld
3)	n-C9	0.000	0	N.D.	ug/mld
4)	n-C10	0.000	0	N.D.	ug/mld
5)	n-C11	0.000	0	N.D.	ug/mld
7)	n-C12	0.000	0	N.D.	ug/mld
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	0.000	0	N.D.	ug/mld
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	0.000	0	N.D.	ug/mld
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	0.000	0	N.D.	ug/mld
15)	n-C16	0.000	0	N.D.	ug/mld
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	0.000	0	N.D.	ug/mld
19)	Pristane	0.000	0	N.D.	ug/mld
20)	n-C18	0.000	0	N.D.	ug/mld
21)	Phytane	0.000	0	N.D.	ug/mld
22)	n-C19	0.000	0	N.D.	ug/mld
24)	n-C20	0.000	0	N.D.	ug/mld
25)	n-C21	0.000	0	N.D.	ug/mld
26)	n-C22	0.000	0	N.D.	ug/mld
27)	n-C23	0.000	0	N.D.	ug/mld
28)	n-C24	0.000	0	N.D.	ug/mld
29)	n-C25	0.000	0	N.D.	ug/mld
30)	n-C26	0.000	0	N.D.	ug/mld
31)	n-C27	0.000	0	N.D.	ug/mld
32)	n-C28	0.000	0	N.D.	ug/mld
33)	n-C29	0.000	0	N.D.	ug/mld
35)	n-C30	0.000	0	N.D.	ug/mld
36)	n-C31	0.000	0	N.D.	ug/mld
37)	n-C32	0.000	0	N.D.	ug/mld
38)	n-C33	0.000	0	N.D.	ug/mld
39)	n-C34	0.000	0	N.D.	ug/mld
40)	n-C35	0.000	0	N.D.	ug/mld

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ENV3084A.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 02:27:52
Operator : Meghan Dailey
Sample : Procedural Blank
Misc :
ALS Vial : 56 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 31 16:12:32 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	0.000	0	N.D.	ug/mld
42)	n-C37	0.000	0	N.D.	ug/mld
43)	n-C38	0.000	0	N.D.	ug/mld
44)	n-C39	0.000	0	N.D.	ug/mld
45)	n-C40	0.000	0	N.D.	ug/mld
46)	TPH	12.900f	8301976	1189.819	ug/mlm
47)	TRH1	8.627	128863	18.468	ug/mlm
48)	TRH2	12.900f	908946	130.268	ug/mlm
49)	TRH3	24.486	10483	1.502	ug/mlm
50)	TRH4	29.397	137957	19.772	ug/mlm
51)	TRH5	35.703f	127530	18.277	ug/mlm
52)	TRH6	37.677f	34899	5.002	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

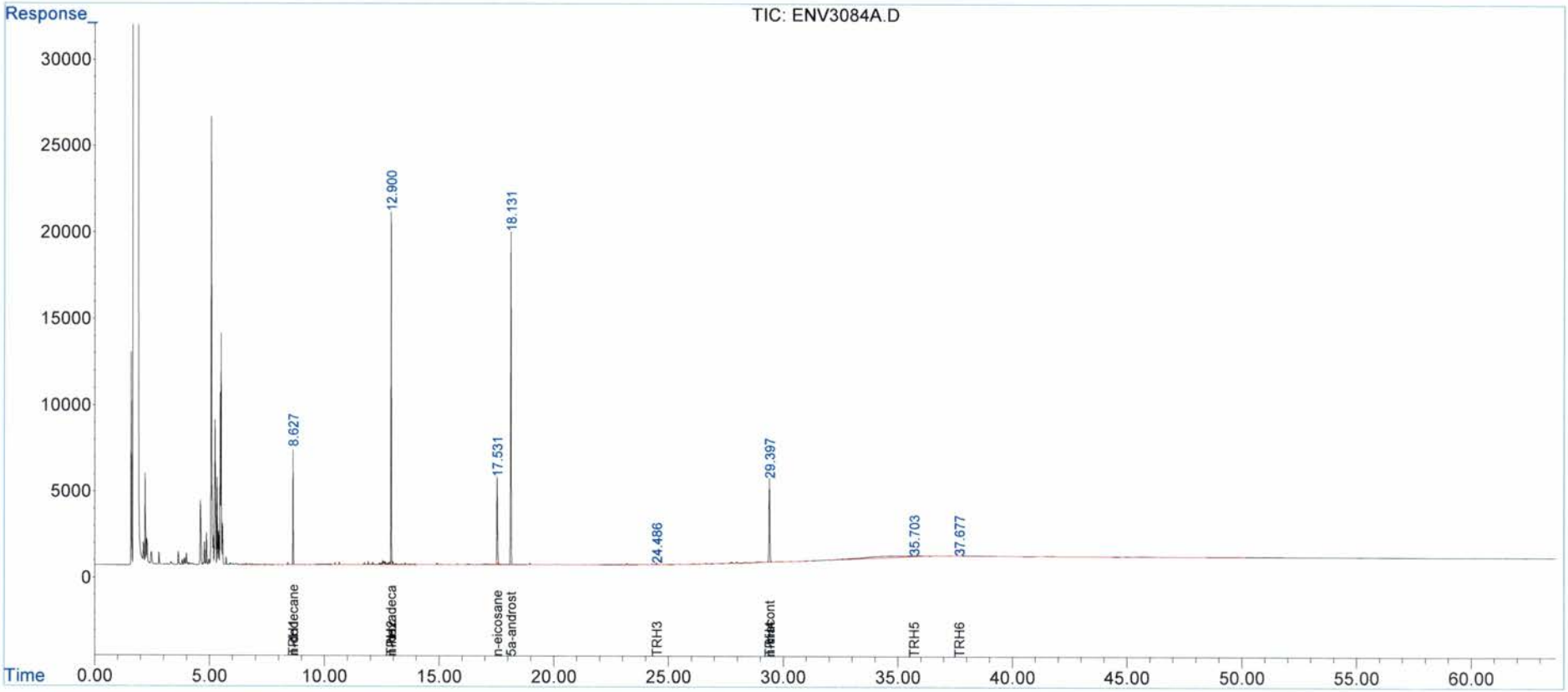
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ENV3084A.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 02:27:52
Operator : Meghan Dailey
Sample : Procedural Blank
Misc :
ALS Vial : 56 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 31 16:12:32 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3084B.D**		ENV3084B.D
Sample Name	**Blank Spike**		Blank Spike
Misc Info	**0**		20-Aug-2013, 03:38:27
Data File Path	**C:\msdchem\2\data\FID10081**		ALI2012.M
Operator	**Meghan Dailey**		
Date Acquired	**20-Aug-2013, 03:38:27**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALI2012.M**	Vial #	57
Vial Number	**57**	IS Area 1	300343
Sample Multiplier	**1**	IS Area 2	392323

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.50	22062.7	3.82	3.819
3)	n-C9	4.82	42774	7.04	7.045
4)	n-C10	6.22	50481.7	7.90	7.900
5)	n-C11	7.57	54757.8	8.53	8.530
7)	n-C12	8.83	57681.5	8.60	8.603
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	10.00	61396	9.11	9.113
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	11.09	65677.6	9.39	9.394
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	12.12	71567.4	10.02	10.025
15)	n-C16	13.15	72269.6	9.96	9.960
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	14.25	73662	9.87	9.871
19)	Pristane	14.36	74431	10.01	10.008
20)	n-C18	15.42	75229.5	10.17	10.169
21)	Phytane	15.58	76357.2	10.13	10.129
22)	n-C19	16.65	75869.3	10.22	10.215
24)	n-C20	17.92	75788.7	10.11	10.110
25)	n-C21	19.22	76456.3	10.07	10.070
26)	n-C22	20.52	78136	10.24	10.238
27)	n-C23	21.80	77755.1	10.11	10.110
28)	n-C24	23.06	78115.3	10.14	10.136
29)	n-C25	24.29	79575.4	10.31	10.310
30)	n-C26	25.49	80496.7	10.39	10.391
31)	n-C27	26.65	79127.4	10.48	10.481
32)	n-C28	27.78	82342.3	10.77	10.769
33)	n-C29	28.87	81490.6	10.64	10.638
35)	n-C30	29.93	80585	10.67	10.672
36)	n-C31	30.95	80071.8	10.83	10.827
37)	n-C32	31.95	77794.8	10.69	10.690
38)	n-C33	32.91	76131.6	10.82	10.825
39)	n-C34	33.85	76727.1	10.85	10.847
40)	n-C35	34.84	75232.7	11.01	11.011
41)	n-C36	35.97	79103.4	10.80	10.803
42)	n-C37	37.27	73790.3	11.19	11.185
43)	n-C38	38.79	73086	11.28	11.285
44)	n-C39	40.57	70762.8	11.36	11.365
45)	n-C40	42.66	62789.8	11.09	11.093
46)	TPH	0.00	0	0.00	0.000
47)	TRH1	0.00	0	0.00	0.000
48)	TRH2	0.00	0	0.00	0.000
49)	TRH3	0.00	0	0.00	0.000
50)	TRH4	0.00	0	0.00	0.000
51)	TRH5	0.00	0	0.00	0.000
52)	TRH6	0.00	0	0.00	0.000
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.63	100180	16.81	84.0
23)	n-eicosane-d42	17.53	116130	19.55	97.1
34)	n-triacontane-d62	29.39	115277	19.52	97.5
1)	n-hexadecane-d34	12.90	300343	50.00	300343.000
16)	5a-androstane	18.13	392323	50.07	392323.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ENV3084B.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 03:38:27
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 57 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 26 08:57:18 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.900	300343	50.000	ug/mlm
16) I	5a-androstane	18.131	392323	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.627	100180	16.807	ug/mlm
23) S	n-eicosane-d42	17.530	116130	19.548	ug/mlm
34) S	n-triacontane-d62	29.394	115277	19.516	ug/mlm
Target Compounds					
2)	n-C8	3.498	22063	3.819	ug/mlm
3)	n-C9	4.816	42774	7.045	ug/mlm
4)	n-C10	6.224	50482	7.900	ug/mlm
5)	n-C11	7.575	54758	8.530	ug/mlm
7)	n-C12	8.832	57681	8.603	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	10.001	61396	9.113	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.092	65678	9.394	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.119	71567	10.025	ug/mlm
15)	n-C16	13.149	72270	9.960	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.246	73662	9.871	ug/mlm
19)	Pristane	14.363	74431	10.008	ug/mlm
20)	n-C18	15.418	75230	10.168	ug/mlm
21)	Phytane	15.580	76357	10.129	ug/mlm
22)	n-C19	16.651	75869	10.215	ug/mlm
24)	n-C20	17.925	75789	10.109	ug/mlm
25)	n-C21	19.221	76456	10.070	ug/mlm
26)	n-C22	20.519	78136	10.238	ug/mlm
27)	n-C23	21.803	77755	10.110	ug/mlm
28)	n-C24	23.063	78115	10.136	ug/mlm
29)	n-C25	24.292	79575	10.310	ug/mlm
30)	n-C26	25.492	80497	10.391	ug/mlm
31)	n-C27	26.650	79127	10.481	ug/mlm
32)	n-C28	27.779	82342	10.769	ug/mlm
33)	n-C29	28.870	81491	10.638	ug/mlm
35)	n-C30	29.928	80585	10.672	ug/mlm
36)	n-C31	30.953	80072	10.827	ug/mlm
37)	n-C32	31.947	77795	10.690	ug/mlm
38)	n-C33	32.913	76132	10.824	ug/mlm
39)	n-C34	33.852	76727	10.847	ug/mlm
40)	n-C35	34.844	75233	11.011	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ENV3084B.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 03:38:27
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 57 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 26 08:57:18 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.972	79103	10.803	ug/mlm
42)	n-C37	37.274	73790	11.185	ug/mlm
43)	n-C38	38.788	73086	11.285	ug/mlm
44)	n-C39	40.570	70763	11.365	ug/mlm
45)	n-C40	42.662	62790	11.093	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

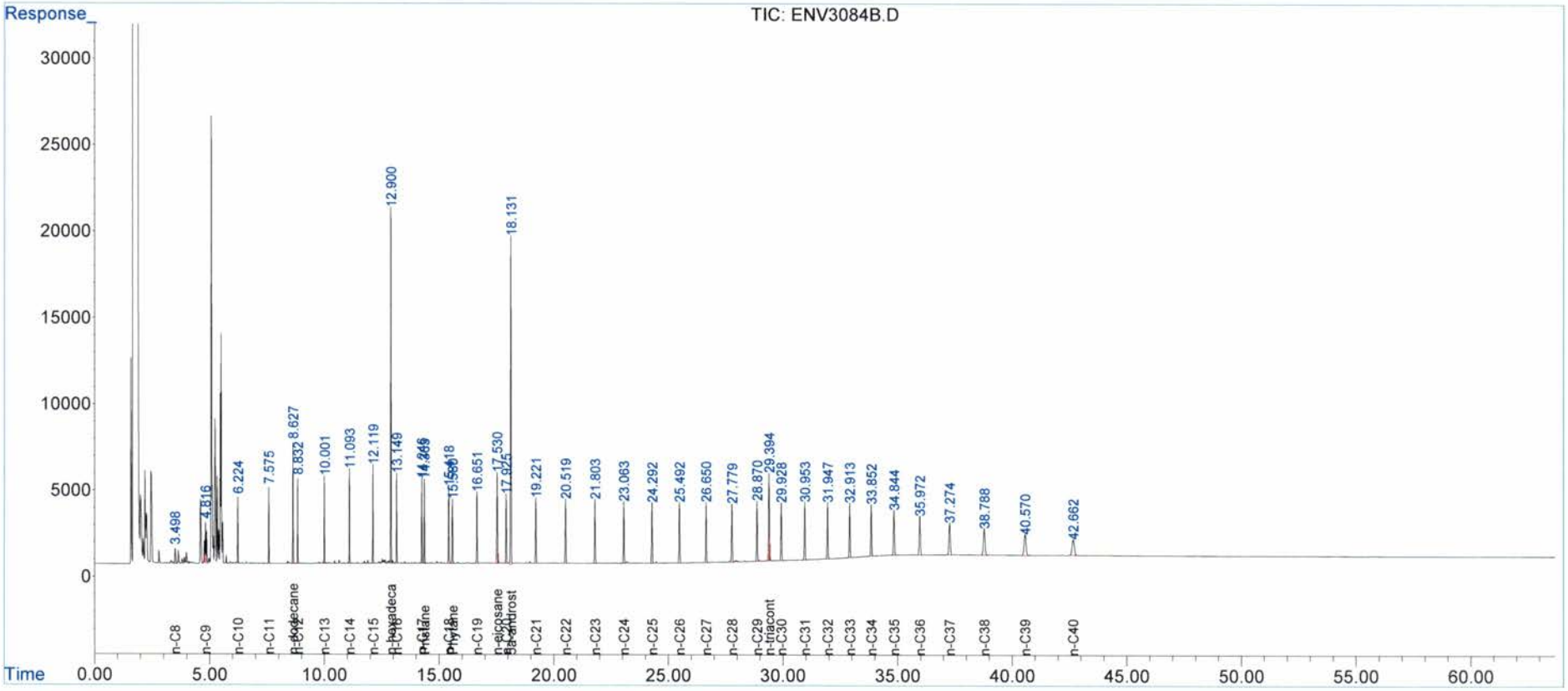
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ENV3084B.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 03:38:27
Operator : Meghan Dailey
Sample : Blank Spike
Misc :
ALS Vial : 57 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 26 08:57:18 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ENV3084C.D**		ENV3084C.D
Sample Name	**Blank Spike Duplicate**		Blank Spike Duplicate
Misc Info	**0**		20-Aug-2013, 04:49:04
Data File Path	**C:\msdchem\2\data\FID10081**		ALI2012.M
Operator	**Mark C. Garner**		
Date Acquired	**20-Aug-2013, 04:49:04**		1
Instrument Name	**HP5890**		
Acq. Method File	**ALI2012.M**	Vial #	58
Vial Number	**58**	IS Area 1	285155
Sample Multiplier	**1**	IS Area 2	368292

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	3.50	23475.5	4.28	4.281
3)	n-C9	4.82	42465.9	7.37	7.367
4)	n-C10	6.22	46524.2	7.67	7.668
5)	n-C11	7.57	49679.3	8.15	8.151
7)	n-C12	8.83	51987.6	8.17	8.167
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	10.00	53805.9	8.41	8.412
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	11.09	57710.1	8.69	8.694
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	12.12	64698.4	9.55	9.545
15)	n-C16	13.15	66696.9	9.68	9.682
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	14.25	69951.3	9.99	9.986
19)	Pristane	14.36	70430.8	10.09	10.088
20)	n-C18	15.42	71816.8	10.34	10.341
21)	Phytane	15.58	72653.4	10.27	10.267
22)	n-C19	16.65	72677.4	10.42	10.424
24)	n-C20	17.93	72583.5	10.31	10.314
25)	n-C21	19.22	73341.7	10.29	10.290
26)	n-C22	20.52	74681.5	10.42	10.424
27)	n-C23	21.80	74620.4	10.34	10.335
28)	n-C24	23.06	75296	10.41	10.408
29)	n-C25	24.29	76465.9	10.55	10.554
30)	n-C26	25.49	77705.8	10.69	10.685
31)	n-C27	26.65	76155.3	10.75	10.745
32)	n-C28	27.77	79681.8	11.10	11.101
33)	n-C29	28.87	77793.2	10.82	10.818
35)	n-C30	29.93	76528.3	10.80	10.796
36)	n-C31	30.95	75735.9	10.91	10.909
37)	n-C32	31.95	73139.7	10.71	10.706
38)	n-C33	32.91	70661.8	10.70	10.702
39)	n-C34	33.85	71691.1	10.80	10.797
40)	n-C35	34.84	69807.4	10.88	10.883
41)	n-C36	35.97	72843.7	10.60	10.597
42)	n-C37	37.27	66898.6	10.80	10.802
43)	n-C38	38.79	65827.7	10.83	10.827
44)	n-C39	40.57	62783.5	10.74	10.741
45)	n-C40	42.67	56839.6	10.70	10.697
46)	TPH	0.00	0	0.00	0.000
47)	TRH1	0.00	0	0.00	0.000
48)	TRH2	0.00	0	0.00	0.000
49)	TRH3	0.00	0	0.00	0.000
50)	TRH4	0.00	0	0.00	0.000
51)	TRH5	0.00	0	0.00	0.000
52)	TRH6	0.00	0	0.00	0.000
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.63	97003.7	17.14	85.7
23)	n-eicosane-d42	17.53	111001	19.90	98.9
34)	n-triacontane-d62	29.39	109234	19.70	98.4
1)	n-hexadecane-d34	12.90	285155	50.00	285155.000
16)	5a-androstane	18.13	368292	50.07	368292.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ENV3084C.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 04:49:04
Operator : Mark C. Garner
Sample : Blank Spike Duplicate
Misc :
ALS Vial : 58 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 26 09:04:40 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.899	285155	50.000	ug/mlm
16) I	5a-androstane	18.129	368292	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.626	97004	17.141	ug/mlm
23) S	n-eicosane-d42	17.530	111001	19.904	ug/mlm
34) S	n-triacontane-d62	29.394	109234	19.700	ug/mlm
Target Compounds					
2)	n-C8	3.496	23476	4.281	ug/mlm
3)	n-C9	4.816	42466	7.366	ug/ml
4)	n-C10	6.223	46524	7.668	ug/mlm
5)	n-C11	7.574	49679	8.151	ug/mlm
7)	n-C12	8.831	51988	8.167	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	10.001	53806	8.412	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.092	57710	8.694	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.119	64698	9.545	ug/mlm
15)	n-C16	13.148	66697	9.682	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.246	69951	9.986	ug/mlm
19)	Pristane	14.363	70431	10.088	ug/mlm
20)	n-C18	15.418	71817	10.341	ug/mlm
21)	Phytane	15.580	72653	10.267	ug/mlm
22)	n-C19	16.651	72677	10.424	ug/mlm
24)	n-C20	17.926	72583	10.314	ug/mlm
25)	n-C21	19.222	73342	10.290	ug/mlm
26)	n-C22	20.518	74682	10.424	ug/mlm
27)	n-C23	21.802	74620	10.335	ug/mlm
28)	n-C24	23.063	75296	10.408	ug/mlm
29)	n-C25	24.292	76466	10.553	ug/mlm
30)	n-C26	25.488	77706	10.685	ug/mlm
31)	n-C27	26.650	76155	10.745	ug/mlm
32)	n-C28	27.775	79682	11.101	ug/mlm
33)	n-C29	28.868	77793	10.818	ug/mlm
35)	n-C30	29.926	76528	10.796	ug/mlm
36)	n-C31	30.950	75736	10.909	ug/mlm
37)	n-C32	31.947	73140	10.706	ug/mlm
38)	n-C33	32.913	70662	10.702	ug/mlm
39)	n-C34	33.850	71691	10.797	ug/mlm
40)	n-C35	34.840	69807	10.883	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ENV3084C.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 04:49:04
Operator : Mark C. Garner
Sample : Blank Spike Duplicate
Misc :
ALS Vial : 58 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 26 09:04:40 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.970	72844	10.597	ug/mlm
42)	n-C37	37.272	66899	10.802	ug/mlm
43)	n-C38	38.787	65828	10.827	ug/mlm
44)	n-C39	40.569	62784	10.741	ug/mlm
45)	n-C40	42.668	56840	10.697	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

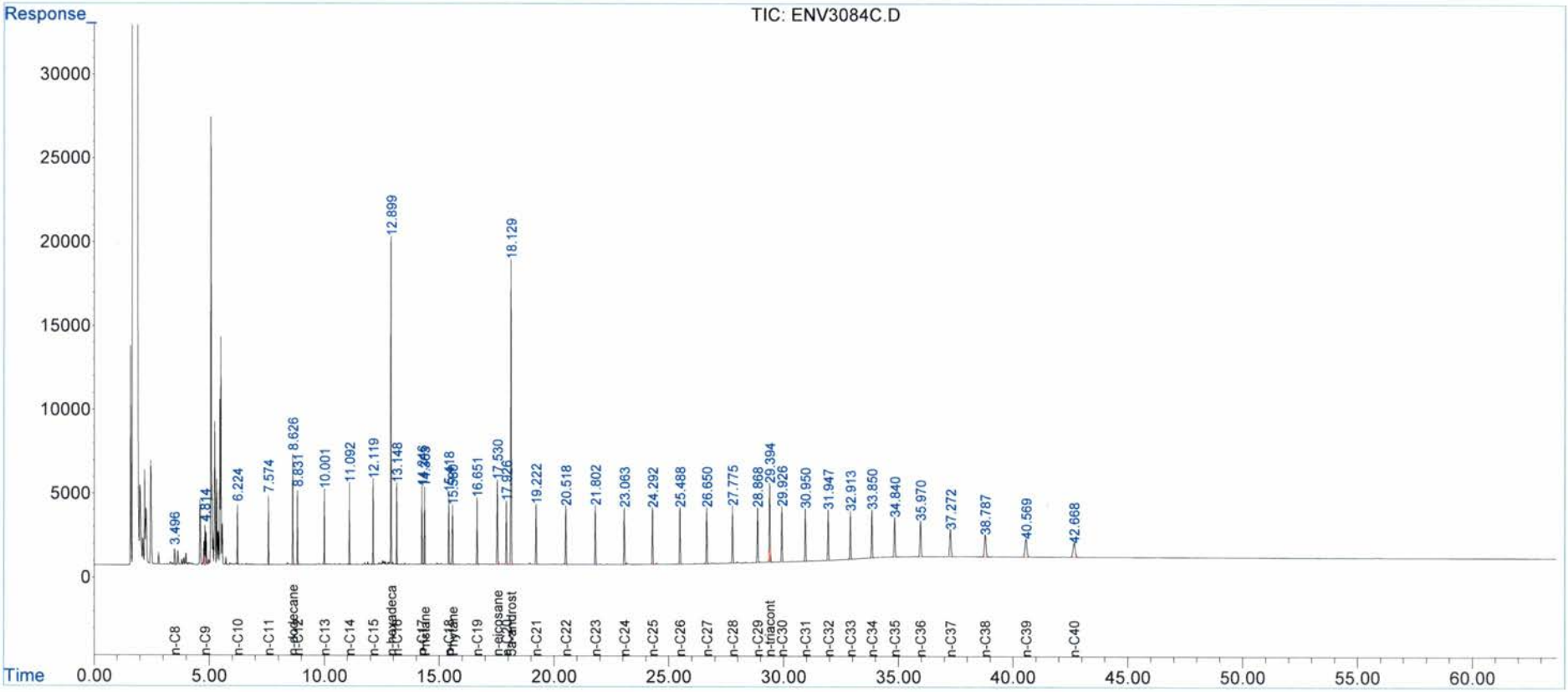
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ENV3084C.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 04:49:04
Operator : Mark C. Garner
Sample : Blank Spike Duplicate
Misc :
ALS Vial : 58 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 26 09:04:40 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



			Concentration
Data File Name	**ARC1768.D**		ARC1768.D
Sample Name	**SED-DA-DI-Water**		SED-DA-DI-Water
Misc Info	**0**		20-Aug-2013, 05:59:37
Data File Path	**C:\msdchem\2\data\FID10081**		ALI2012.M
Operator	**Meghan Dailey**		
Date Acquired	**20-Aug-2013, 05:59:37**		0.943396
Instrument Name	**HP5890**		
Acq. Method File	**ALI2012.M**	Vial #	59
Vial Number	**59**	IS Area 1	295424
Sample Multiplier	**0.943396**	IS Area 2	381222

#	Name	Ret Time	Target Response	Amount	Concentration
2)	n-C8	0.00	0	0.00	0.000
3)	n-C9	0.00	0	0.00	0.000
4)	n-C10	0.00	0	0.00	0.000
5)	n-C11	0.00	0	0.00	0.000
7)	n-C12	0.00	0	0.00	0.000
8)	i-13	0.00	0	0.00	0.000
9)	i-14	0.00	0	0.00	0.000
10)	n-C13	0.00	0	0.00	0.000
11)	i-15	0.00	0	0.00	0.000
12)	n-C14	0.00	0	0.00	0.000
13)	i-16	0.00	0	0.00	0.000
14)	n-C15	0.00	0	0.00	0.000
15)	n-C16	0.00	0	0.00	0.000
17)	i-18	0.00	0	0.00	0.000
18)	n-C17	0.00	0	0.00	0.000
19)	Pristane	0.00	0	0.00	0.000
20)	n-C18	0.00	0	0.00	0.000
21)	Phytane	0.00	0	0.00	0.000
22)	n-C19	0.00	0	0.00	0.000
24)	n-C20	0.00	0	0.00	0.000
25)	n-C21	0.00	0	0.00	0.000
26)	n-C22	0.00	0	0.00	0.000
27)	n-C23	0.00	0	0.00	0.000
28)	n-C24	0.00	0	0.00	0.000
29)	n-C25	0.00	0	0.00	0.000
30)	n-C26	0.00	0	0.00	0.000
31)	n-C27	0.00	0	0.00	0.000
32)	n-C28	0.00	0	0.00	0.000
33)	n-C29	0.00	0	0.00	0.000
35)	n-C30	0.00	0	0.00	0.000
36)	n-C31	0.00	0	0.00	0.000
37)	n-C32	0.00	0	0.00	0.000
38)	n-C33	0.00	0	0.00	0.000
39)	n-C34	0.00	0	0.00	0.000
40)	n-C35	0.00	0	0.00	0.000
41)	n-C36	0.00	0	0.00	0.000
42)	n-C37	0.00	0	0.00	0.000
43)	n-C38	0.00	0	0.00	0.000
44)	n-C39	0.00	0	0.00	0.000
45)	n-C40	0.00	0	0.00	0.000
46)	TPH	12.90	9613720	1316.43	1316.434
47)	TRH1	8.63	147903	20.25	20.253
48)	TRH2	12.90	1120600	153.45	153.446
49)	TRH3	29.39	398124	54.52	54.516
50)	TRH4	33.40	22124.6	3.03	3.030
51)	TRH5	35.38	12065	1.65	1.652
52)	TRH6	37.96	26855.8	3.68	3.677
53)	GRO	0.00	0	0.00	0.000
54)	DRO	0.00	0	0.00	0.000
55)	RRO	0.00	0	0.00	0.000
6)	n-dodecane-d26	8.63	110257	17.74	94.0
23)	n-eicosane-d42	17.53	112099	18.32	96.5
34)	n-triacontane-d62	29.39	119824	19.70	104.3
1)	n-hexadecane-d34	12.90	295424	47.17	295424.000
16)	5a-androstane	18.13	381222	47.24	381222.000

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ARC1768.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 05:59:37
Operator : Meghan Dailey
Sample : SED-DA-DI-Water
Misc :
ALS Vial : 59 Sample Multiplier: 0.943396

Integration File: autoint1.e
Quant Time: Aug 31 18:15:02 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
Internal Standards					
1) I	n-hexadecane-d34	12.899	295424	50.000	ug/mlm
16) I	5a-androstane	18.129	381222	50.072	ug/mlm
System Monitoring Compounds					
6) S	n-dodecane-d26	8.626	110257	17.741	ug/mlm
23) S	n-eicosane-d42	17.529	112099	18.320	ug/mlm
34) S	n-triacontane-d62	29.392	119824	19.695	ug/mlm
Target Compounds					
2)	n-C8	0.000	0	N.D.	ug/mld
3)	n-C9	0.000	0	N.D.	ug/mld
4)	n-C10	0.000	0	N.D.	ug/mld
5)	n-C11	0.000	0	N.D.	ug/mld
7)	n-C12	0.000	0	N.D.	ug/mld
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	0.000	0	N.D.	ug/mld
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	0.000	0	N.D.	ug/mld
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	0.000	0	N.D.	ug/mld
15)	n-C16	0.000	0	N.D.	ug/mld
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	0.000	0	N.D.	ug/mld
19)	Pristane	0.000	0	N.D.	ug/mld
20)	n-C18	0.000	0	N.D.	ug/mld
21)	Phytane	0.000	0	N.D.	ug/mld
22)	n-C19	0.000	0	N.D.	ug/mld
24)	n-C20	0.000	0	N.D.	ug/mld
25)	n-C21	0.000	0	N.D.	ug/mld
26)	n-C22	0.000	0	N.D.	ug/mld
27)	n-C23	0.000	0	N.D.	ug/mld
28)	n-C24	0.000	0	N.D.	ug/mld
29)	n-C25	0.000	0	N.D.	ug/mld
30)	n-C26	0.000	0	N.D.	ug/mld
31)	n-C27	0.000	0	N.D.	ug/mld
32)	n-C28	0.000	0	N.D.	ug/mld
33)	n-C29	0.000	0	N.D.	ug/mld
35)	n-C30	0.000	0	N.D.	ug/mld
36)	n-C31	0.000	0	N.D.	ug/mld
37)	n-C32	0.000	0	N.D.	ug/mld
38)	n-C33	0.000	0	N.D.	ug/mld
39)	n-C34	0.000	0	N.D.	ug/mld
40)	n-C35	0.000	0	N.D.	ug/mld

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ARC1768.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 05:59:37
Operator : Meghan Dailey
Sample : SED-DA-DI-Water
Misc :
ALS Vial : 59 Sample Multiplier: 0.943396

Integration File: autoint1.e
Quant Time: Aug 31 18:15:02 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	0.000	0	N.D.	ug/mld
42)	n-C37	0.000	0	N.D.	ug/mld
43)	n-C38	0.000	0	N.D.	ug/ml
44)	n-C39	0.000	0	N.D.	ug/ml
45)	n-C40	0.000	0	N.D.	ug/mld
46)	TPH	12.899f	9613725	1316.430	ug/mlm
47)	TRH1	8.626	147903	20.253	ug/mlm
48)	TRH2	12.899f	1120599	153.446	ug/mlm
49)	TRH3	29.392f	398124	54.516	ug/mlm
50)	TRH4	33.405f	22125	3.030	ug/mlm
51)	TRH5	35.375f	12065	1.652	ug/mlm
52)	TRH6	37.957f	26856	3.677	ug/mlm
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

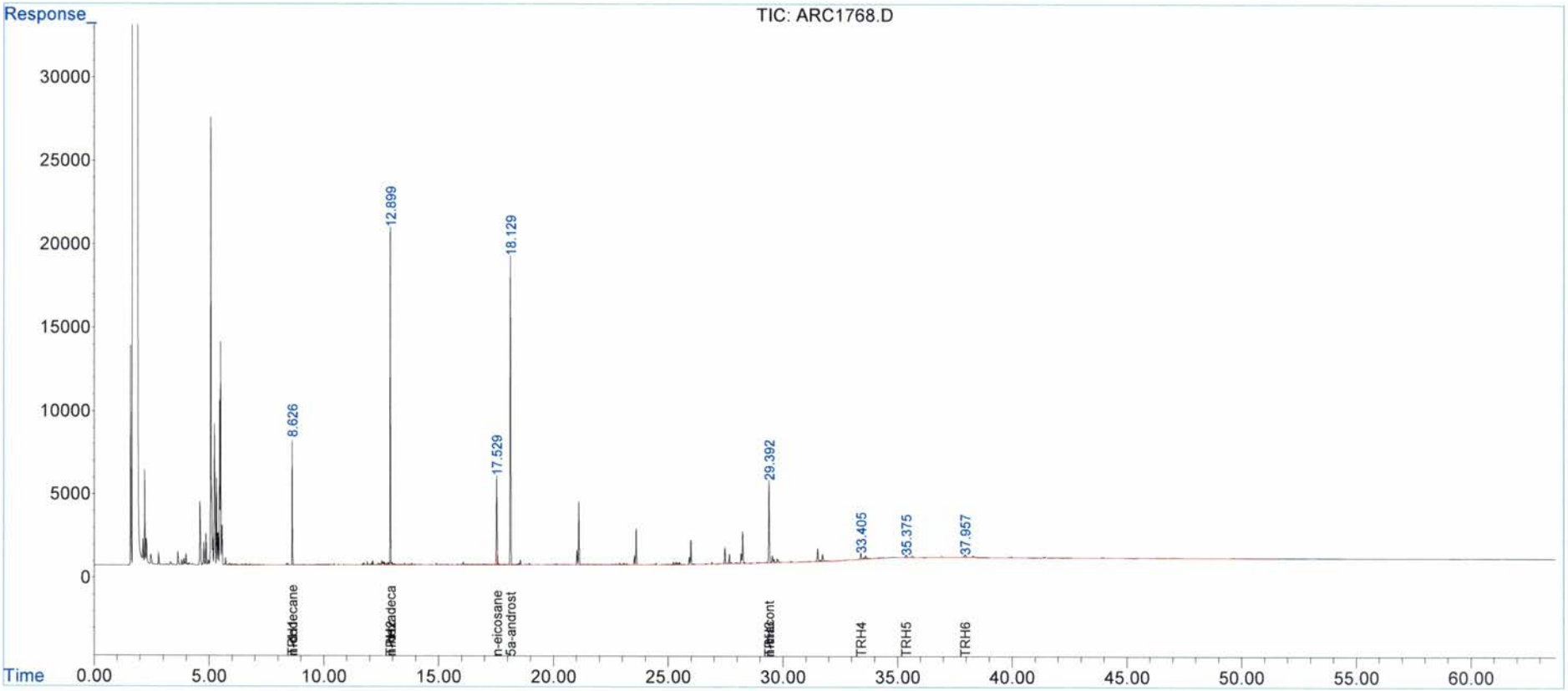
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\FID10081\
Data File : ARC1768.D
Signal(s) : FID2B.CH
Acq On : 20-Aug-2013, 05:59:37
Operator : Meghan Dailey
Sample : SED-DA-DI-Water
Misc :
ALS Vial : 59 Sample Multiplier: 0.943396

Integration File: autoint1.e
Quant Time: Aug 31 18:15:02 2013
Quant Method : P:\2013\J13034\Aliphatics\ENV 3084\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Polycyclic Aromatic Hydrocarbon Raw Data

B&B LABORATORIES PAHs QA FORM

Extraction Page: ENV 3084	Analyst: Y. Miao
Client: Arcadis Mayflower Project	Date: September 17, 2013
Job: #: J13034	Project Quality Manager: W Juan
SDG #: 13081301 and 13081401	Date: 09/18/13

Initial Calibration: No failures	ICV No failures
Surrogate Recoveries: No failures	
Procedural Blank: No failures	
Blank Spike: No failures	
Blank Spike Duplicate: No failures	
Laboratory Duplicate: NA	
Matrix Spike: NA	
Matirx Spike Duplicate: NA	
SRM/LCS (Solution, Tissue, Sediment): Solution no failures	
CCC (from a second source): No failures	
SRM-2279 Reference Oil No failures	
Mass Discrimination Check (benzo(ghi)perylene/phenanthrene >0.7) No failures	

Sequence Name: C:\msdchem\1\data\MS70057\MS70058.S
Comment: Arcadis-Mayflower AR-Water-PAH (08/19/13)
Operator: YM
Data Path: C:\MSDCHEM\1\DATA\MS70058\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

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

Sequence Barcode Options
( ) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
(X) Barcode Disabled

Line		Sample Name/Misc Info		
1)	Sample	1	MS70058A	PAH-2012 Solvent rinse
2)	Sample	2	MS70058B	PAH-2012 AR-WKC1-020-030
3)	Sample	3	MS70058C	PAH-2012 AR-WKC2-100-030
4)	Sample	4	MS70058D	PAH-2012 AR-WKC3-250-030
5)	Sample	5	MS70058E	PAH-2012 AR-WKC4-500-030
6)	Sample	6	MS70058F	PAH-2012 AR-WKC5-1000-030
7)	Sample	7	MS70058G	PAH-2012 AR-WKC6-5000-030
8)	Sample	8	MS70058H	PAH-2012 AR-WKISSU-250-002
9)	Sample	9	MS70058I	PAH-2012 AR-WKICV-250-004
10)	Sample	10	MS70058J	PAH-2012 AR-WKCC-250-038
11)	Sample	11	MS70058K	PAH-2012 AR-SRM2779-WK4.0-002
12)	Sample	12	ENV3080A	PAH-2012
13)	Sample	13	ENV3080B	PAH-2012
14)	Sample	14	ENV3080C	PAH-2012
15)	Sample	15	ARC1762	PAH-2012
16)	Sample	16	ARC1763	PAH-2012
17)	Sample	17	ARC1765	PAH-2012
18)	Sample	18	ARC1767	PAH-2012
19)	Sample	19	MS70058L	PAH-2012 AR-WKCC-250-038
20)	Sample	20	ARC1769	PAH-2012
21)	Sample	21	ARC1771	PAH-2012
22)	Sample	22	ENV3084A	PAH-2012
23)	Sample	23	ENV3084B	PAH-2012
24)	Sample	24	ENV3084C	PAH-2012
25)	Sample	25	ARC1768	PAH-2012
26)	Sample	26	ARC1854	PAH-2012
27)	Sample	27	MS70058M	PAH-2012 AR-WKCC-250-038

In separate folder

7 In separate folder

Last Modified: Mon Aug 19 14:53:03 2013 Page: 1

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70058\
Data File : MS70058J.D
Acq On : 20 Aug 2013 5:20 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 22 06:42:05 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorene-d10	1.000	1.000	0.0	84	0.00
2	S	Naphthalene-d8	1.671	1.604	4.0	87	0.00
3	T	cis/trans Decalin	0.292	0.283	3.1	83	0.00
4	un	C1-Decalins	0.292	0.000	100.0#	0#	-12.32#
5	un	C2-Decalins	0.292	0.000	100.0#	0#	-13.52#
6	un	C3-Decalins	0.292	0.000	100.0#	0#	-15.88#
7	un	C4-Decalins	0.292	0.000	100.0#	0#	-18.33#
8	T	Naphthalene	1.823	1.775	2.6	88	0.00
9	T	2-Methylnaphthalene	1.196	1.129	5.6	86	0.00
10	T	1-Methylnaphthalene	1.109	1.056	4.8	86	0.00
11	T	2,6-Dimethylnaphthalene	1.048	0.995	5.1	86	0.00
12	T	1,6,7-Trimethylnaphthalene	0.954	0.881	7.7	85	0.00
13	un	C2-Naphthalenes	1.823	0.000	100.0#	0#	-18.89#
14	un	C3-Naphthalenes	1.823	0.000	100.0#	0#	-20.37#
15	un	C4-Naphthalenes	1.823	0.000	100.0#	0#	-22.26#
16	T	Benzothiophene	1.510	1.472	2.5	89	0.03
17	un	C1-Benzothiophenes	1.510	0.000	100.0#	0#	-15.49#
18	un	C2-Benzothiophenes	1.510	0.000	100.0#	0#	-17.92#
19	un	C3-Benzothiophenes	1.510	0.000	100.0#	0#	-20.31#
20	un	C4-Benzothiophenes	1.510	0.000	100.0#	0#	-22.23#
21	S	Acenaphthene-d10	0.969	0.899	7.2	85	0.00
22	T	Biphenyl	1.535	1.501	2.2	88	0.00
23	T	Acenaphthylene	1.633	1.519	7.0	87	0.00
24	T	Acenaphthene	1.047	0.971	7.3	85	0.00
25	T	Dibenzofuran	1.752	1.682	4.0	87	0.00
26	T	Fluorene	1.345	1.270	5.6	85	0.00
27	T	1-Methylfluorene	0.721	0.642	11.0	83	0.00
28	un	C1-Fluorenes	1.345	0.000	100.0#	0#	-23.51#
29	un	C2-Fluorenes	1.345	0.000	100.0#	0#	-24.79#
30	un	C3-Fluorenes	1.345	0.000	100.0#	0#	-27.59#
31	I	Pyrene-d10	1.000	1.000	0.0	82	0.00
32	S	Phenanthrene-d10	0.885	0.905	-2.3	88	0.00
33	T	Carbazole	0.917	0.835	8.9	80	0.00
34	T	Dibenzothiophene	1.122	1.121	0.1	86	0.00
35	T	4-Methyldibenzothiophene	0.708	0.678	4.2	86	0.00
36	un	2/3-Methyldibenzothiophene	0.708	0.000	100.0#	0#	-26.21#
37	un	1-Methyldibenzothiophene	0.708	0.000	100.0#	0#	-26.52#
38	un	C2-Dibenzothiophenes	1.122	0.000	100.0#	0#	-27.83#
39	un	C3-Dibenzothiophenes	1.122	0.000	100.0#	0#	-28.49#
40	un	C4-Dibenzothiophenes	1.122	0.000	100.0#	0#	-31.09#
41	T	Phenanthrene	0.993	0.992	0.1	88	0.00
42	T	Anthracene	0.907	0.865	4.6	83	0.00
43	un	3-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#
44	un	2-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#
45	un	2-Methylanthracene	0.816	0.000	100.0#	0#	-26.73#
46	un	4/9-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#

Data Path : C:\GCMS7\MS70058\
Data File : MS70058J.D
Acq On : 20 Aug 2013 5:20 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 22 06:42:05 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47	T	1-Methylphenanthrene	0.816	0.737	9.7	82	0.00
48	T	3,6-Dimethylphenanthrene	0.810	0.719	11.2	80	0.00
49	T	Retene	0.371	0.343	7.5	82	0.00
50	un	C2-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-28.56#
51	un	C3-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-29.43#
52	un	C4-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-32.06#
53	T	Naphthobenzothiophene	1.302	1.129	13.3	78	0.00
54	un	C1-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-34.55#
55	un	C2-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-36.02#
56	un	C3-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-37.42#
57	un	C4-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-37.92#
58	T	Fluoranthene	1.295	1.197	7.6	81	0.00
59	T	Pyrene	1.217	1.186	2.5	86	-0.03
60	T	2-Methylfluoranthene	0.792	0.742	6.3	83	0.00
61	T	Benzo(b)fluorene	0.893	0.760	14.9	77	0.00
62	un	C1-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-30.71#
63	un	C2-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-32.18#
64	un	C3-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-34.00#
65	un	C4-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-35.09#
66	S	Chrysene-d12	1.235	1.116	9.6	82	0.00
67	T	Benz(a)anthracene	1.018	0.962	5.5	91	0.00
68	T	Chrysene/Triphenylene	1.450	1.311	9.6	80	0.00
69	un	C1-Chrysenes	1.450	0.000	100.0#	0#	-35.83#
70	un	C2-Chrysenes	1.450	0.000	100.0#	0#	-36.99#
71	un	C3-Chrysenes	1.450	0.000	100.0#	0#	-38.11#
72	un	C4-Chrysenes	1.450	0.000	100.0#	0#	-39.74#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	77	0.00
74	un	C29-Hopane	0.393	0.000	100.0#	0#	-40.28#
75	un	18a-Oleanane	0.393	0.000	100.0#	0#	-42.34#
76	T	C30-Hopane	0.393	0.388	1.3	82	0.00
77	T	Benzo(b)fluoranthene	1.350	1.235	8.5	80	0.00
78	T	Benzo(k,j)fluoranthene	1.469	1.347	8.3	79	0.00
79	un	Benzo(a)fluoranthene	1.469	0.000	100.0#	0#	-37.34#
80	T	Benzo(e)pyrene	1.395	1.292	7.4	81	0.00
81	T	Benzo(a)pyrene	1.313	1.210	7.8	80	-0.04
82	T	Indeno(1,2,3-c,d)pyrene	1.633	1.497	8.3	80	0.00
83	T	Dibenzo(a,h)anthracene	1.302	1.206	7.4	81	0.00
84	un	C1-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-48.31#
85	un	C2-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-50.30#
86	un	C3-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-51.23#
87	T	Benzo(g,h,i)perylene	1.444	1.386	4.0	83	-0.04
88	S	Perylene-d12	1.215	1.168	3.9	81	0.00
89	T	Perylene	1.347	1.256	6.8	82	-0.04
90	S	5(b)H-Cholane	0.262	0.239	8.8	79	0.00
91	un	C20-TAS	1.496	0.000	100.0#	0#	-33.30#
92	un	C21-TAS	1.496	0.000	100.0#	0#	-34.24#

Data Path : C:\GCMS7\MS70058\
Data File : MS70058J.D
Acq On : 20 Aug 2013 5:20 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 22 06:42:05 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
93 un	C26(20S)-TAS	1.496	0.000	100.0#	0#	-38.70#
94 T	C26(20R)/C27(20S)-TAS	1.496	1.322	11.6	77	-0.04
95 un	C28(20S)-TAS	1.496	0.000	100.0#	0#	-40.24#
96 un	C27(20R)-TAS	1.496	0.000	100.0#	0#	-41.09#
97 un	C28(20R)-TAS	1.496	0.000	100.0#	0#	-41.42#

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

Data Path : C:\GCMS7\MS70058\
Data File : MS70058J.D
Acq On : 20 Aug 2013 5:20 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 22 06:42:05 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	363550m	251.05		0.00
31) Pyrene-d10	29.600	212	668267m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	669193m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	580957m	240.12		0.00
21) Acenaphthene-d10	19.616	164	325634m	232.15		0.00
32) Phenanthrene-d10	24.683	188	603510m	255.68		0.00
66) Chrysene-d12	33.770	240	743978m	225.91		0.00
88) Perylene-d12	38.619	264	780613m	240.27		0.00
90) 5(b)H-Cholane	34.158	217	159529m	227.60		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	101260m	239.32		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.822	128	642580m	243.38		
9) 2-Methylnaphthalene	16.078	142	409276m	236.37		
10) 1-Methylnaphthalene	16.413	142	381806m	237.79		
11) 2,6-Dimethylnaphthalene	18.168	156	360334m	237.38		
12) 1,6,7-Trimethylnaphtha...	21.037	170	319064m	230.91		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.017	134	529535m	242.21		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.638	154	538681m	242.39		
23) Acenaphthylene	19.115	152	545412m	230.57		
24) Acenaphthene	19.728	154	352129m	232.15		
25) Dibenzofuran	20.313	168	605813m	238.83		
26) Fluorene	21.483	166	460706m	236.49		
27) 1-Methylfluorene	23.471	180	234071m	224.12		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	551331m	225.59		
34) Dibenzothiophene	24.337	184	736622m	246.20		
35) 4-Methyldibenzothiophene	25.860	198	455711m	241.49		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.		
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.787	178	655326m	247.54		
42) Anthracene	24.960	178	578073m	239.13		

Data Path : C:\GCMS7\MS70058\
Data File : MS70058J.D
Acq On : 20 Aug 2013 5:20 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 22 06:42:05 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	485994m	223.47		
48) 3,6-Dimethylphenanthrene	27.973	206	480056m	222.24		
49) Retene	30.639	234	204289m	206.43		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.916	234	757550m	218.22		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	798429m	231.18		
59) Pyrene	29.635	202	790314m	243.55		
60) 2-Methylfluoranthene	30.397	216	497837m	235.68		
61) Benzo(b)fluorene	31.020	216	511185m	214.62		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	640218m	235.79		
68) Chrysene/Triphenylene	33.847	228	868411m	224.62		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.672	191	259480m	246.74		
77) Benzo(b)fluoranthene	37.261	252	827143m	229.22		
78) Benzo(k,j)fluoranthene	37.339	252	896953m	228.46		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.231	252	860107m	230.63		
81) Benzo(a)pyrene	38.386	252	806989m	229.92		
82) Indeno(1,2,3-c,d)pyrene	43.078	276	983229m	225.23		
83) Dibenzo(a,h)anthracene	43.152	278	798433m	229.44		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.405	276	918284m	237.83		
89) Perylene	38.697	252	840225m	233.40		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.317	231	883697m	220.94		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Data Path : C:\GCMS7\MS70058\
Data File : MS70058J.D
Acq On : 20 Aug 2013 5:20 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 22 06:42:05 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058J.D
Acq On : 20 Aug 2013 5:20 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Aug 22 06:42:05 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
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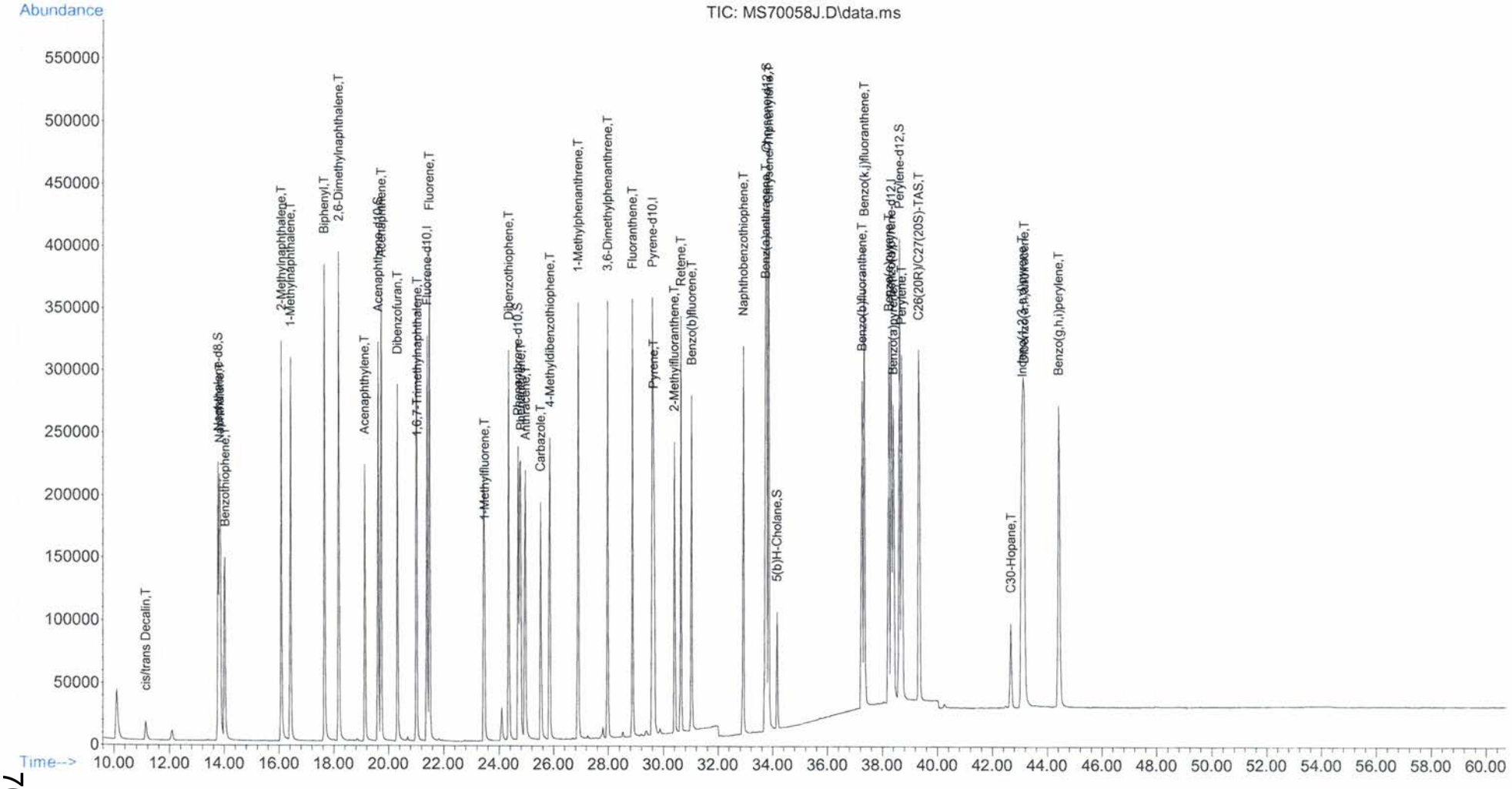
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration



Data Path : C:\GCMS7\MS70058\
Data File : MS70058L.D
Acq On : 21 Aug 2013 3:37 am
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 21 19:57:32 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorene-d10	1.000	1.000	0.0	88	0.00
2	S	Naphthalene-d8	1.671	1.619	3.1	92	0.00
3	T	cis/trans Decalin	0.292	0.330	-13.0	101	0.00
4	un	C1-Decalins	0.292	0.000	100.0#	0#	-12.32#
5	un	C2-Decalins	0.292	0.000	100.0#	0#	-13.52#
6	un	C3-Decalins	0.292	0.000	100.0#	0#	-15.88#
7	un	C4-Decalins	0.292	0.000	100.0#	0#	-18.33#
8	T	Naphthalene	1.823	1.812	0.6	95	0.00
9	T	2-Methylnaphthalene	1.196	1.118	6.5	89	0.00
10	T	1-Methylnaphthalene	1.109	1.046	5.7	89	0.00
11	T	2,6-Dimethylnaphthalene	1.048	1.022	2.5	92	0.00
12	T	1,6,7-Trimethylnaphthalene	0.954	0.907	4.9	91	-0.03
13	un	C2-Naphthalenes	1.823	0.000	100.0#	0#	-18.89#
14	un	C3-Naphthalenes	1.823	0.000	100.0#	0#	-20.37#
15	un	C4-Naphthalenes	1.823	0.000	100.0#	0#	-22.26#
16	T	Benzothiophene	1.510	1.499	0.7	95	0.00
17	un	C1-Benzothiophenes	1.510	0.000	100.0#	0#	-15.49#
18	un	C2-Benzothiophenes	1.510	0.000	100.0#	0#	-17.92#
19	un	C3-Benzothiophenes	1.510	0.000	100.0#	0#	-20.31#
20	un	C4-Benzothiophenes	1.510	0.000	100.0#	0#	-22.23#
21	S	Acenaphthene-d10	0.969	0.896	7.5	89	0.00
22	T	Biphenyl	1.535	1.511	1.6	93	0.00
23	T	Acenaphthylene	1.633	1.593	2.4	96	0.00
24	T	Acenaphthene	1.047	0.977	6.7	89	0.00
25	T	Dibenzofuran	1.752	1.696	3.2	92	0.00
26	T	Fluorene	1.345	1.310	2.6	92	0.00
27	T	1-Methylfluorene	0.721	0.700	2.9	95	-0.03
28	un	C1-Fluorenes	1.345	0.000	100.0#	0#	-23.51#
29	un	C2-Fluorenes	1.345	0.000	100.0#	0#	-24.79#
30	un	C3-Fluorenes	1.345	0.000	100.0#	0#	-27.59#
31	I	Pyrene-d10	1.000	1.000	0.0	84	0.00
32	S	Phenanthrene-d10	0.885	1.020	-15.3	101	0.00
33	T	Carbazole	0.917	0.934	-1.9	91	0.00
34	T	Dibenzothiophene	1.122	1.196	-6.6	93	0.00
35	T	4-Methyldibenzothiophene	0.708	0.709	-0.1	91	-0.03
36	un	2/3-Methyldibenzothiophene	0.708	0.000	100.0#	0#	-26.21#
37	un	1-Methyldibenzothiophene	0.708	0.000	100.0#	0#	-26.52#
38	un	C2-Dibenzothiophenes	1.122	0.000	100.0#	0#	-27.83#
39	un	C3-Dibenzothiophenes	1.122	0.000	100.0#	0#	-28.49#
40	un	C4-Dibenzothiophenes	1.122	0.000	100.0#	0#	-31.09#
41	T	Phenanthrene	0.993	1.096	-10.4	99	-0.03
42	T	Anthracene	0.907	0.935	-3.1	91	-0.03
43	un	3-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#
44	un	2-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#
45	un	2-Methylanthracene	0.816	0.000	100.0#	0#	-26.73#
46	un	4/9-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#

Data Path : C:\GCMS7\MS70058\
Data File : MS70058L.D
Acq On : 21 Aug 2013 3:37 am
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 21 19:57:32 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47	T	1-Methylphenanthrene	0.816	0.719	11.9	81	0.00
48	T	3,6-Dimethylphenanthrene	0.810	0.716	11.6	81	0.00
49	T	Retene	0.371	0.372	-0.3	91	0.00
50	un	C2-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-28.56#
51	un	C3-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-29.43#
52	un	C4-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-32.06#
53	T	Naphthobenzothiophene	1.302	1.056	18.9	74	0.00
54	un	C1-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-34.55#
55	un	C2-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-36.02#
56	un	C3-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-37.42#
57	un	C4-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-37.92#
58	T	Fluoranthene	1.295	1.167	9.9	80	0.00
59	T	Pyrene	1.217	1.343	-10.4	99	-0.03
60	T	2-Methylfluoranthene	0.792	0.843	-6.4	96	0.00
61	T	Benzo(b)fluorene	0.893	0.768	14.0	79	0.00
62	un	C1-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-30.71#
63	un	C2-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-32.18#
64	un	C3-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-34.00#
65	un	C4-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-35.09#
66	S	Chrysene-d12	1.235	1.042	15.6	77	0.00
67	T	Benz(a)anthracene	1.018	0.927	8.9	89	0.00
68	T	Chrysene/Triphenylene	1.450	1.286	11.3	80	0.00
69	un	C1-Chrysenes	1.450	0.000	100.0#	0#	-35.83#
70	un	C2-Chrysenes	1.450	0.000	100.0#	0#	-36.99#
71	un	C3-Chrysenes	1.450	0.000	100.0#	0#	-38.11#
72	un	C4-Chrysenes	1.450	0.000	100.0#	0#	-39.74#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	82	0.00
74	un	C29-Hopane	0.393	0.000	100.0#	0#	-40.28#
75	un	18a-Oleanane	0.393	0.000	100.0#	0#	-42.34#
76	T	C30-Hopane	0.393	0.377	4.1	86	0.00
77	T	Benzo(b)fluoranthene	1.350	1.268	6.1	88	0.00
78	T	Benzo(k,j)fluoranthene	1.469	1.166	20.6	73	0.00
79	un	Benzo(a)fluoranthene	1.469	0.000	100.0#	0#	-37.34#
80	T	Benzo(e)pyrene	1.395	1.242	11.0	83	0.00
81	T	Benzo(a)pyrene	1.313	1.273	3.0	90	-0.04
82	T	Indeno(1,2,3-c,d)pyrene	1.633	1.466	10.2	84	-0.04
83	T	Dibenzo(a,h)anthracene	1.302	1.174	9.8	84	-0.04
84	un	C1-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-48.31#
85	un	C2-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-50.30#
86	un	C3-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-51.23#
87	T	Benzo(g,h,i)perylene	1.444	1.331	7.8	85	-0.04
88	S	Perylene-d12	1.215	1.117	8.1	83	0.00
89	T	Perylene	1.347	1.299	3.6	91	-0.04
90	S	5(b)H-Cholane	0.262	0.248	5.3	88	0.00
91	un	C20-TAS	1.496	0.000	100.0#	0#	-33.30#
92	un	C21-TAS	1.496	0.000	100.0#	0#	-34.24#

Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70058\
Data File : MS70058L.D
Acq On : 21 Aug 2013 3:37 am
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 21 19:57:32 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
93 un	C26(20S)-TAS	1.496	0.000	100.0#	0#	-38.70#
94 T	C26(20R)/C27(20S)-TAS	1.496	1.306	12.7	81	-0.04
95 un	C28(20S)-TAS	1.496	0.000	100.0#	0#	-40.24#
96 un	C27(20R)-TAS	1.496	0.000	100.0#	0#	-41.09#
97 un	C28(20R)-TAS	1.496	0.000	100.0#	0#	-41.42#

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

Data Path : C:\GCMS7\MS70058\
Data File : MS70058L.D
Acq On : 21 Aug 2013 3:37 am
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 21 19:57:32 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	380945m	251.05		0.00
31) Pyrene-d10	29.600	212	680436m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	715683m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	614444m	242.37		0.00
21) Acenaphthene-d10	19.616	164	340192m	231.45		0.00
32) Phenanthrene-d10	24.683	188	692626m	288.19		0.00
66) Chrysene-d12	33.770	240	707203m	210.91		0.00
88) Perylene-d12	38.619	264	798607m	229.84		0.00
90) 5(b)H-Cholane	34.158	217	177451m	236.73		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	123926m	279.51		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.822	128	687276m	248.42		
9) 2-Methylnaphthalene	16.078	142	424653m	234.06		
10) 1-Methylnaphthalene	16.413	142	396298m	235.54		
11) 2,6-Dimethylnaphthalene	18.168	156	387887m	243.86		
12) 1,6,7-Trimethylnaphtha...	21.009	170	344170m	237.71		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.989	134	565112m	246.68		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.638	154	568077m	243.94		
23) Acenaphthylene	19.115	152	599586m	241.90		
24) Acenaphthene	19.728	154	371354m	233.64		
25) Dibenzofuran	20.313	168	640194m	240.86		
26) Fluorene	21.483	166	498064m	243.99		
27) 1-Methylfluorene	23.436	180	267480m	244.41		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	628275m	252.48		
34) Dibenzothiophene	24.337	184	800368m	262.72		
35) 4-Methyldibenzothiophene	25.826	198	485196m	252.52		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.		
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.752	178	736992m	273.41		
42) Anthracene	24.925	178	636222m	258.48		

Data Path : C:\GCMS7\MS70058\
Data File : MS70058L.D
Acq On : 21 Aug 2013 3:37 am
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 21 19:57:32 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	482377m	217.84		
48) 3,6-Dimethylphenanthrene	27.973	206	486526m	221.21		
49) Retene	30.639	234	225465m	223.75		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.916	234	721191m	204.03		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	792925m	225.48		
59) Pyrene	29.635	202	911586m	275.90		
60) 2-Methylfluoranthene	30.397	216	575848m	267.73		
61) Benzo(b)fluorene	31.020	216	525965m	216.87		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	628107m	227.19		
68) Chrysene/Triphenylene	33.847	228	867788m	220.44		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.672	191	269606m	239.72		
77) Benzo(b)fluoranthene	37.261	252	907869m	235.25		
78) Benzo(k,j)fluoranthene	37.339	252	829910m	197.65		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.231	252	884291m	221.71		
81) Benzo(a)pyrene	38.386	252	907994m	241.89		
82) Indeno(1,2,3-c,d)pyrene	43.041	276	1030069m	220.63		
83) Dibenzo(a,h)anthracene	43.115	278	831709m	223.47		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.405	276	942702m	228.30		
89) Perylene	38.697	252	929230m	241.36		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.318	231	933354m	218.20		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Data Path : C:\GCMS7\MS70058\
Data File : MS70058L.D
Acq On : 21 Aug 2013 3:37 am
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 21 19:57:32 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

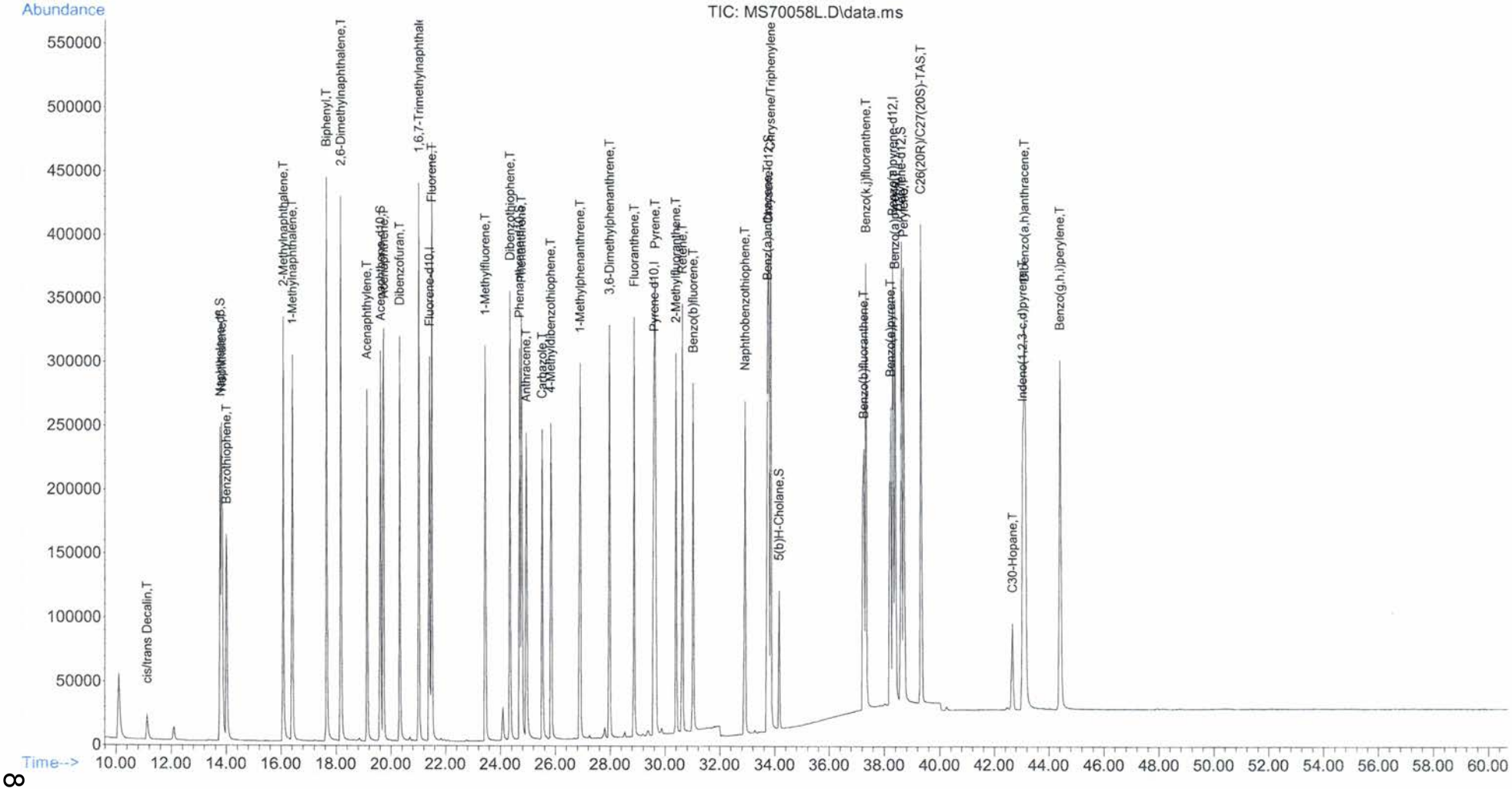
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058L.D
Acq On : 21 Aug 2013 3:37 am
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Aug 21 19:57:32 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration



Data Path : C:\GCMS7\MS70058\
Data File : MS70058M.D
Acq On : 21 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 21 20:07:40 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorene-d10	1.000	1.000	0.0	88	0.00
2	S	Naphthalene-d8	1.671	1.610	3.7	91	0.00
3	T	cis/trans Decalin	0.292	0.309	-5.8	94	0.00
4	un	C1-Decalins	0.292	0.000	100.0#	0#	-12.32#
5	un	C2-Decalins	0.292	0.000	100.0#	0#	-13.52#
6	un	C3-Decalins	0.292	0.000	100.0#	0#	-15.88#
7	un	C4-Decalins	0.292	0.000	100.0#	0#	-18.33#
8	T	Naphthalene	1.823	1.823	0.0	95	0.00
9	T	2-Methylnaphthalene	1.196	1.100	8.0	87	0.00
10	T	1-Methylnaphthalene	1.109	1.048	5.5	89	0.00
11	T	2,6-Dimethylnaphthalene	1.048	1.024	2.3	92	0.00
12	T	1,6,7-Trimethylnaphthalene	0.954	0.929	2.6	93	-0.03
13	un	C2-Naphthalenes	1.823	0.000	100.0#	0#	-18.89#
14	un	C3-Naphthalenes	1.823	0.000	100.0#	0#	-20.37#
15	un	C4-Naphthalenes	1.823	0.000	100.0#	0#	-22.26#
16	T	Benzothiophene	1.510	1.500	0.7	94	0.00
17	un	C1-Benzothiophenes	1.510	0.000	100.0#	0#	-15.49#
18	un	C2-Benzothiophenes	1.510	0.000	100.0#	0#	-17.92#
19	un	C3-Benzothiophenes	1.510	0.000	100.0#	0#	-20.31#
20	un	C4-Benzothiophenes	1.510	0.000	100.0#	0#	-22.23#
21	S	Acenaphthene-d10	0.969	0.898	7.3	88	0.00
22	T	Biphenyl	1.535	1.552	-1.1	95	0.00
23	T	Acenaphthylene	1.633	1.564	4.2	94	0.00
24	T	Acenaphthene	1.047	0.994	5.1	90	-0.03
25	T	Dibenzofuran	1.752	1.681	4.1	90	0.00
26	T	Fluorene	1.345	1.321	1.8	92	0.00
27	T	1-Methylfluorene	0.721	0.738	-2.4	99	-0.03
28	un	C1-Fluorenes	1.345	0.000	100.0#	0#	-23.51#
29	un	C2-Fluorenes	1.345	0.000	100.0#	0#	-24.79#
30	un	C3-Fluorenes	1.345	0.000	100.0#	0#	-27.59#
31	I	Pyrene-d10	1.000	1.000	0.0	83	0.00
32	S	Phenanthrene-d10	0.885	1.044	-18.0	103	0.00
33	T	Carbazole	0.917	0.918	-0.1	89	0.00
34	T	Dibenzothiophene	1.122	1.196	-6.6	93	0.00
35	T	4-Methyldibenzothiophene	0.708	0.742	-4.8	95	-0.03
36	un	2/3-Methyldibenzothiophene	0.708	0.000	100.0#	0#	-26.21#
37	un	1-Methyldibenzothiophene	0.708	0.000	100.0#	0#	-26.52#
38	un	C2-Dibenzothiophenes	1.122	0.000	100.0#	0#	-27.83#
39	un	C3-Dibenzothiophenes	1.122	0.000	100.0#	0#	-28.49#
40	un	C4-Dibenzothiophenes	1.122	0.000	100.0#	0#	-31.09#
41	T	Phenanthrene	0.993	1.155	-16.3	104	-0.03
42	T	Anthracene	0.907	0.973	-7.3	95	-0.03
43	un	3-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#
44	un	2-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#
45	un	2-Methylanthracene	0.816	0.000	100.0#	0#	-26.73#
46	un	4/9-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#

Data Path : C:\GCMS7\MS70058\
Data File : MS70058M.D
Acq On : 21 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 21 20:07:40 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47	T	1-Methylphenanthrene	0.816	0.702	14.0	79	0.00
48	T	3,6-Dimethylphenanthrene	0.810	0.671	17.2	75	0.00
49	T	Retene	0.371	0.359	3.2	87	0.00
50	un	C2-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-28.56#
51	un	C3-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-29.43#
52	un	C4-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-32.06#
53	T	Naphthobenzothiophene	1.302	0.996	23.5	70	0.00
54	un	C1-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-34.55#
55	un	C2-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-36.02#
56	un	C3-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-37.42#
57	un	C4-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-37.92#
58	T	Fluoranthene	1.295	1.118	13.7	76	0.00
59	T	Pyrene	1.217	1.437	-18.1	105	-0.03
60	T	2-Methylfluoranthene	0.792	0.854	-7.8	97	0.00
61	T	Benzo(b)fluorene	0.893	0.700	21.6	72	0.00
62	un	C1-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-30.71#
63	un	C2-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-32.18#
64	un	C3-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-34.00#
65	un	C4-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-35.09#
66	S	Chrysene-d12	1.235	0.976	21.0	72	0.00
67	T	Benz(a)anthracene	1.018	0.920	9.6	88	0.00
68	T	Chrysene/Triphenylene	1.450	1.135	21.7	70	0.00
69	un	C1-Chrysenes	1.450	0.000	100.0#	0#	-35.83#
70	un	C2-Chrysenes	1.450	0.000	100.0#	0#	-36.99#
71	un	C3-Chrysenes	1.450	0.000	100.0#	0#	-38.11#
72	un	C4-Chrysenes	1.450	0.000	100.0#	0#	-39.74#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	79	0.00
74	un	C29-Hopane	0.393	0.000	100.0#	0#	-40.28#
75	un	18a-Oleanane	0.393	0.000	100.0#	0#	-42.34#
76	T	C30-Hopane	0.393	0.372	5.3	80	0.00
77	T	Benzo(b)fluoranthene	1.350	1.434	-6.2	95	-0.04
78	T	Benzo(k,j)fluoranthene	1.469	1.067	27.4#	64	0.00
79	un	Benzo(a)fluoranthene	1.469	0.000	100.0#	0#	-37.34#
80	T	Benzo(e)pyrene	1.395	1.297	7.0	83	-0.04
81	T	Benzo(a)pyrene	1.313	1.346	-2.5	91	-0.04
82	T	Indeno(1,2,3-c,d)pyrene	1.633	1.485	9.1	81	-0.04
83	T	Dibenzo(a,h)anthracene	1.302	1.199	7.9	82	-0.04
84	un	C1-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-48.31#
85	un	C2-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-50.30#
86	un	C3-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-51.23#
87	T	Benzo(g,h,i)perylene	1.444	1.348	6.6	82	-0.04
88	S	Perylene-d12	1.215	1.107	8.9	79	0.00
89	T	Perylene	1.347	1.351	-0.3	90	-0.04
90	S	5(b)H-Cholane	0.262	0.241	8.0	81	0.00
91	un	C20-TAS	1.496	0.000	100.0#	0#	-33.30#
92	un	C21-TAS	1.496	0.000	100.0#	0#	-34.24#

Data Path : C:\GCMS7\MS70058\
Data File : MS70058M.D
Acq On : 21 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 21 20:07:40 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
93 un	C26(20S)-TAS	1.496	0.000	100.0#	0#	-38.70#
94 T	C26(20R)/C27(20S)-TAS	1.496	1.339	10.5	79	-0.04
95 un	C28(20S)-TAS	1.496	0.000	100.0#	0#	-40.24#
96 un	C27(20R)-TAS	1.496	0.000	100.0#	0#	-41.09#
97 un	C28(20R)-TAS	1.496	0.000	100.0#	0#	-41.42#

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

Data Path : C:\GCMS7\MS70058\
Data File : MS70058M.D
Acq On : 21 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 21 20:07:40 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	378279m	251.05		0.00
31) Pyrene-d10	29.600	212	677095m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	682402m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	606751m	241.02		0.00
21) Acenaphthene-d10	19.616	164	338450m	231.89		0.00
32) Phenanthrene-d10	24.683	188	705822m	295.13		0.00
66) Chrysene-d12	33.770	240	659432m	197.63		0.00
88) Perylene-d12	38.619	264	754335m	227.68		0.00
90) 5(b)H-Cholane	34.158	217	164386m	229.99		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	115247m	261.77		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.822	128	686567m	249.91		
9) 2-Methylnaphthalene	16.078	142	414681m	230.17		
10) 1-Methylnaphthalene	16.413	142	394230m	235.96		
11) 2,6-Dimethylnaphthalene	18.168	156	385847m	244.29		
12) 1,6,7-Trimethylnaphtha...	21.009	170	349876m	243.35		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.989	134	561733m	246.93		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.638	154	579252m	250.49		
23) Acenaphthylene	19.115	152	584266m	237.38		
24) Acenaphthene	19.700	154	375248m	237.76		
25) Dibenzofuran	20.313	168	630206m	238.78		
26) Fluorene	21.483	166	498684m	246.02		
27) 1-Methylfluorene	23.436	180	280056m	257.71		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	614614m	248.21		
34) Dibenzothiophene	24.337	184	796615m	262.78		
35) 4-Methyldibenzothiophene	25.826	198	505383m	264.32		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.		
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.752	178	773025m	288.19		
42) Anthracene	24.925	178	659120m	269.11		

Data Path : C:\GCMS7\MS70058\
Data File : MS70058M.D
Acq On : 21 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 21 20:07:40 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	468750m	212.73		
48) 3,6-Dimethylphenanthrene	27.973	206	453421m	207.17		
49) Retene	30.639	234	216597m	216.01		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.916	234	676786m	192.41		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	756144m	216.08		
59) Pyrene	29.635	202	970385m	295.15		
60) 2-Methylfluoranthene	30.397	216	581103m	271.51		
61) Benzo(b)fluorene	31.020	216	477176m	197.73		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	620046m	225.38		
68) Chrysene/Triphenylene	33.847	228	762313m	194.60		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.672	191	253343m	236.24		
77) Benzo(b)fluoranthene	37.223	252	979131m	266.09		
78) Benzo(k,j)fluoranthene	37.339	252	723932m	180.82		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.192	252	880360m	231.49		
81) Benzo(a)pyrene	38.386	252	915517m	255.79		
82) Indeno(1,2,3-c,d)pyrene	43.041	276	994653m	223.43		
83) Dibenzo(a,h)anthracene	43.115	278	809587m	228.14		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.405	276	910235m	231.19		
89) Perylene	38.697	252	921633m	251.06		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.317	231	912321m	223.68		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Data Path : C:\GCMS7\MS70058\
Data File : MS70058M.D
Acq On : 21 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 21 20:07:40 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

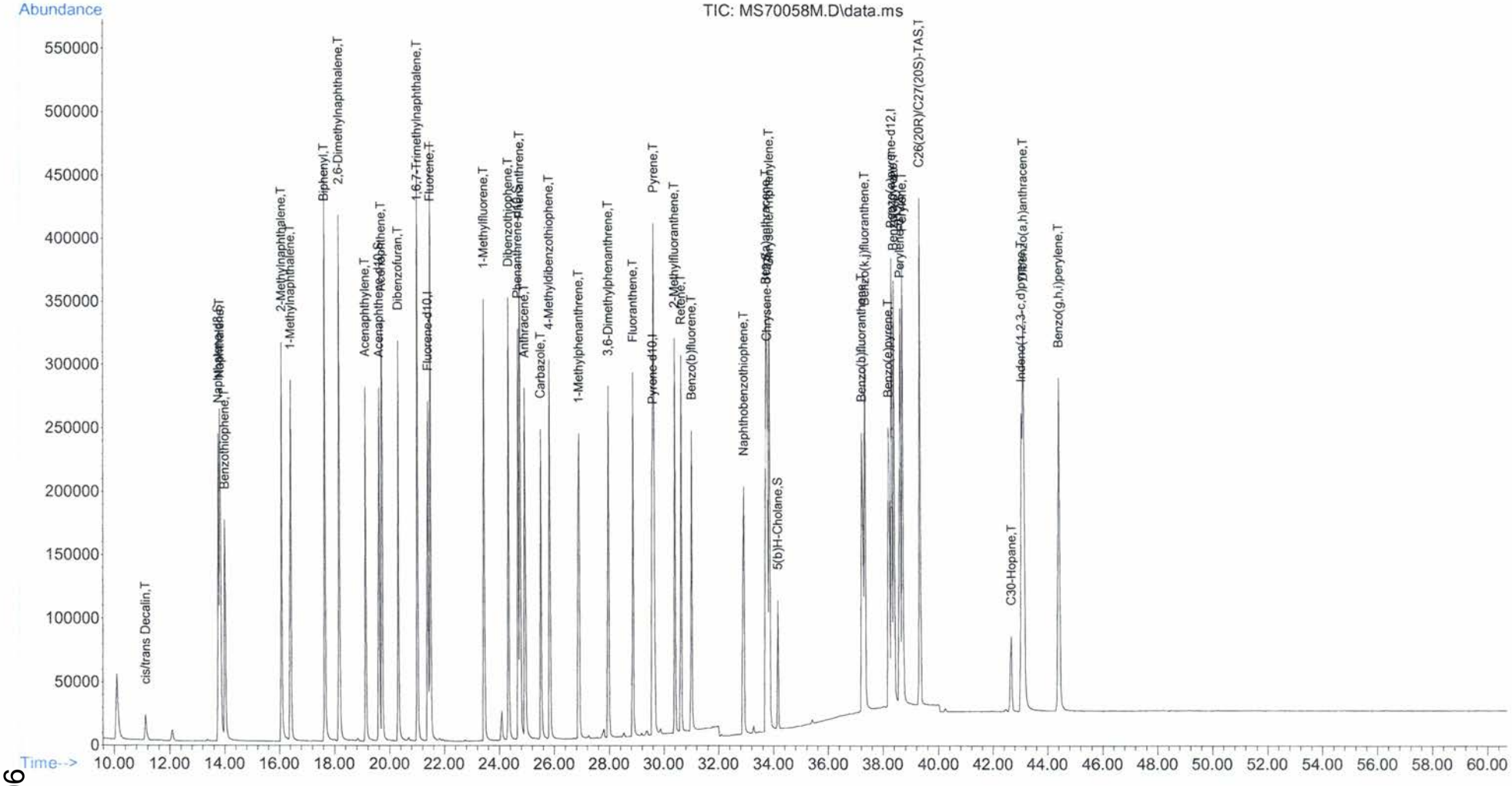
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058M.D
Acq On : 21 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKCC-250-038
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Aug 21 20:07:40 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name	MS70058H.D
Data File Path	C:\msdchem\2\data\MS70058\
Operator	YM
Date Acquired	8/20/2013 15:03
Acq. Method File	PAH-2012.M
Sample Name	AR-WKISSU-250-002
Misc Info	0
Instrument Name	GCMSD
Vial Number	8
Sample Multiplier	1
Sample Amount	0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

MS70058H.D
AR-WKISSU-250-002
8/20/2013
PAH-2012.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	0.00	0	0.0000	0.0000
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	0.00	0	0.0000	0.0000
9)+10)	C1-Naphthalenes	0.00	0	0.0000	0.0000
13)	C2-Naphthalenes	0.00	0	0.0000	0.0000
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	0.00	0	0.0000	0.0000
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	0.00	0	0.0000	0.0000
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	0.00	0	0.0000	0.0000
26)	Fluorene	0.00	0	0.0000	0.0000
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	0.00	0	0.0000	0.0000
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	0.00	0	0.0000	0.0000
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	0.00	0	0.0000	0.0000
35)+36)+37)	C1-Dibenzothiophenes	0.00	0	0.0000	0.0000
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	0.00	0	0.0000	0.0000
59)	Pyrene	0.00	0	0.0000	0.0000
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	0.00	0	0.0000	0.0000
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	0.00	0	0.0000	0.0000
68)	Chrysene/Triphenylene	0.00	0	0.0000	0.0000
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	0.00	0	0.0000	0.0000
78)	Benzo(k,j)fluoranthene	0.00	0	0.0000	0.0000
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	0.00	0	0.0000	0.0000
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	0.00	0	0.0000	0.0000
82)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.0000	0.0000
83)	Dibenzo(a,h)anthracene	0.00	0	0.0000	0.0000
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	0.00	0	0.0000	0.0000

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	0.00	0	0.0000	0.0000
10)	1-Methylnaphthalene	0.00	0	0.0000	0.0000
11)	2,6-Dimethylnaphthalene	0.00	0	0.0000	0.0000
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	0.00	0	0.0000	0.0000
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	0.00	0	0.0000	0.0000
48)	3,6-Dimethylphenanthrene	0.00	0	0.0000	0.0000
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	0.00	0	0.0000	0.0000
61)	Benzo(b)fluorene	0.00	0	0.0000	0.0000
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	0.00	0	0.0000	0.0000
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	0.00	0	0.0000	0.0000
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.77	549145	235.34	94.09
21)	Acenaphthene-d10	19.62	311487	230.25	92.04
32)	Phenanthrene-d10	24.68	556103	240.84	96.26
66)	Chrysene-d12	33.77	691395	214.62	85.83
88)	Perylene-d12	38.62	754927	232.20	92.87
90)	5(b)H-Cholane	34.16	160076	228.22	91.29
	Internal Standards				
1)	Fluorene-d10	21.40	350628	251.05	
31)	Pyrene-d10	29.60	653720	250.63	
73)	Benzo(a)pyrene-d12	38.31	669669	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : MS70058H.D
Acq On : 20 Aug 2013 3:03 pm
Operator : YM
Sample : AR-WKISSU-250-002
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 21 19:38:12 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	350628m	251.05		0.00
31) Pyrene-d10	29.600	212	653720m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	669669m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	549145m	235.34		0.00
21) Acenaphthene-d10	19.616	164	311487m	230.25		0.00
32) Phenanthrene-d10	24.683	188	556103m	240.84		0.00
66) Chrysene-d12	33.770	240	691395m	214.62		0.00
88) Perylene-d12	38.619	264	754927m	232.19		0.00
90) 5(b)H-Cholane	34.158	217	160076m	228.22		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	0.000		0	N.D.	d	
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	0.000		0	N.D.	d	
9) 2-Methylnaphthalene	0.000		0	N.D.	d	
10) 1-Methylnaphthalene	0.000		0	N.D.	d	
11) 2,6-Dimethylnaphthalene	0.000		0	N.D.	d	
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	0.000		0	N.D.	d	
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	0.000		0	N.D.	d	
23) Acenaphthylene	0.000		0	N.D.	d	
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	0.000		0	N.D.	d	
26) Fluorene	0.000		0	N.D.	d	
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	0.000		0	N.D.	d	
34) Dibenzothiophene	0.000		0	N.D.	d	
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	0.000		0	N.D.	d	
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : MS70058H.D
Acq On : 20 Aug 2013 3:03 pm
Operator : YM
Sample : AR-WKISSU-250-002
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 21 19:38:12 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	0.000		0	N.D.	d	
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d	
49) Retene	0.000		0	N.D.	d	
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	0.000		0	N.D.	d	
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	0.000		0	N.D.	d	
59) Pyrene	0.000		0	N.D.	d	
60) 2-Methylfluoranthene	0.000		0	N.D.	d	
61) Benzo(b)fluorene	0.000		0	N.D.	d	
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	0.000		0	N.D.	d	
68) Chrysene/Triphenylene	0.000		0	N.D.	d	
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	0.000		0	N.D.	d	
77) Benzo(b)fluoranthene	0.000		0	N.D.	d	
78) Benzo(k,j)fluoranthene	0.000		0	N.D.	d	
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	0.000		0	N.D.	d	
81) Benzo(a)pyrene	0.000		0	N.D.	d	
82) Indeno(1,2,3-c,d)pyrene	0.000		0	N.D.	d	
83) Dibenzo(a,h)anthracene	0.000		0	N.D.	d	
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	0.000		0	N.D.	d	
89) Perylene	0.000		0	N.D.	d	
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	0.000		0	N.D.	d	
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : MS70058H.D
Acq On : 20 Aug 2013 3:03 pm
Operator : YM
Sample : AR-WKISSU-250-002
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 21 19:38:12 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

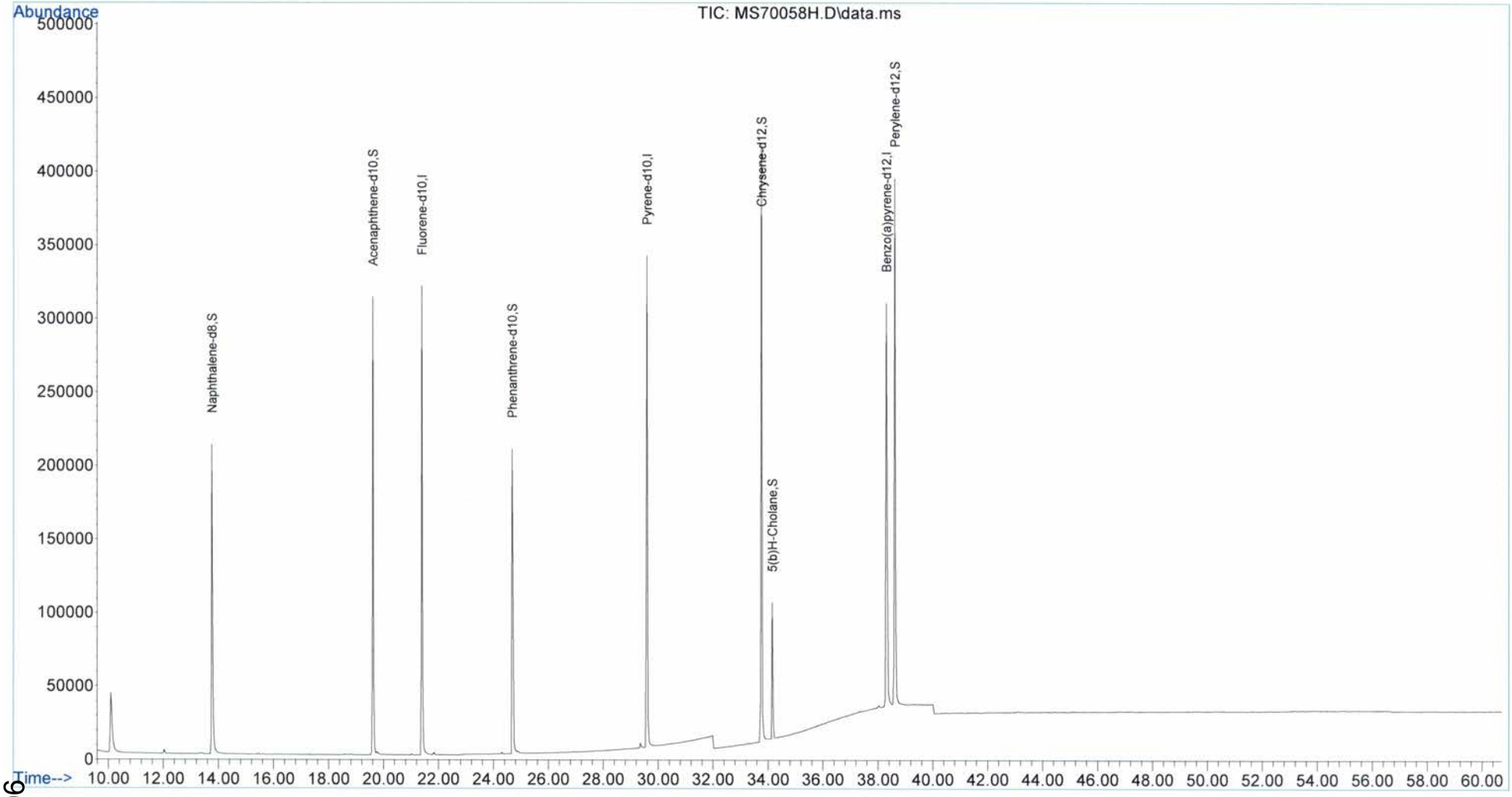
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : MS70058H.D
Acq On : 20 Aug 2013 3:03 pm
Operator : YM
Sample : AR-WKISSU-250-002
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Aug 21 19:38:12 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name MS70058K.D
Data File Path C:\msdchem\2\data\MS70058\
Operator YM
Date Acquired 8/20/2013 18:28
Acq. Method File PAH-2012.M
Sample Name AR-SRM2779-WK4.0-002
Misc Info 0
Instrument Name GCMSD
Vial Number 11
Sample Multiplier 0.24461
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

MS70058K.D
AR-SRM2779-WK4.0-002
8/20/2013
PAH-2012.M
4.088140305

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	11.12	1648980	607.7287	674.3006
4)	C1-Decalins	12.29	2417040	890.7987	988.3787
5)	C2-Decalins	13.77	2160900	796.3988	883.6381
6)	C3-Decalins	16.64	1900720	700.5092	777.2445
7)	C4-Decalins	17.67	1228780	452.8661	502.4740
8)	Naphthalene	13.82	10920700	645.0023	715.6573
9)+10)	C1-Naphthalenes	16.25	23429700	1383.8134	1535.3994
13)	C2-Naphthalenes	18.45	27429500	1620.0496	1797.5134
14)	C3-Naphthalenes	20.45	18307900	1081.3058	1199.7545
15)	C4-Naphthalenes	22.76	10259000	605.9210	672.2949
16)	Benzothiophene	14.05	94243	6.7220	7.4583
17)	C1-Benzothiophenes	15.58	421643	30.0741	33.3684
18)	C2-Benzothiophenes	18.20	290453	20.7169	22.9862
19)	C3-Benzothiophenes	20.28	444271	31.6880	35.1592
20)	C4-Benzothiophenes	22.04	345706	24.6579	27.3590
22)	Biphenyl	17.64	1883700	132.1738	146.6524
23)	Acenaphthylene	19.12	129080	8.5094	9.4415
24)	Acenaphthene	19.73	108446	11.1489	12.3702
25)	Dibenzofuran	20.31	399086	24.5346	27.2222
26)	Fluorene	21.48	1327050	106.2261	117.8623
28)	C1-Fluorenes	23.47	2856030	228.6157	253.6588
29)	C2-Fluorenes	25.20	4305020	344.6041	382.3528
30)	C3-Fluorenes	26.83	3706350	296.6826	329.1818
33)	Carbazole	25.51	68814	3.8365	4.2568
42)	Anthracene	24.96	67934	3.8291	4.2485
41)	Phenanthrene	24.79	3860870	198.7133	220.4808
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	26.67	9624150	495.3409	549.6017
50)	C2-Phenanthrenes/Anthracenes	28.35	10942100	563.1729	624.8641
51)	C3-Phenanthrenes/Anthracenes	29.88	7722070	397.4448	440.9818
52)	C4-Phenanthrenes/Anthracenes	31.33	4405180	226.7283	251.5646
34)	Dibenzothiophene	24.34	790666	36.0068	39.9511
35)+36)+37)	C1-Dibenzothiophenes	26.16	1992881	90.7556	100.6971
38)	C2-Dibenzothiophenes	27.25	2907470	132.4062	146.9102
39)	C3-Dibenzothiophenes	28.77	2249370	102.4363	113.6574
40)	C4-Dibenzothiophenes	30.19	863138	39.3074	43.6132
58)	Fluoranthene	28.91	88990	3.5107	3.8953
59)	Pyrene	29.67	270793	11.3705	12.6161
62)	C1-Fluoranthenes/Pyrenes	31.47	1691050	66.7135	74.0214
63)	C2-Fluoranthenes/Pyrenes	32.57	2788690	110.0163	122.0677
64)	C3-Fluoranthenes/Pyrenes	33.96	2666210	105.1840	116.7061
65)	C4-Fluoranthenes/Pyrenes	35.09	2143580	84.5658	93.8294
53)	Naphthobenzothiophene	32.92	469357	18.4220	20.4400
54)	C1-Naphthobenzothiophenes	34.08	1252090	49.1439	54.5272
55)	C2-Naphthobenzothiophenes	35.75	1484330	58.2590	64.6408
56)	C3-Naphthobenzothiophenes	37.15	1064580	41.7840	46.3612
57)	C4-Naphthobenzothiophenes	38.11	455615	17.8827	19.8416
67)	Benz(a)anthracene	33.73	126528	6.3493	7.0448
68)	Chrysene/Triphenylene	33.81	956687	33.7161	37.4094
69)	C1-Chrysenes	35.21	2401180	84.6236	93.8934
70)	C2-Chrysenes	36.25	2949480	103.9470	115.3336
71)	C3-Chrysenes	37.96	1879480	66.2375	73.4932
72)	C4-Chrysenes	39.36	1170930	41.2664	45.7869
77)	Benzo(b)fluoranthene	37.26	116144	4.1527	4.6076
78)	Benzo(k,j)fluoranthene	37.30	7620	0.2504	0.2778
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.23	228067	7.8903	8.7546
81)	Benzo(a)pyrene	38.39	35285	1.2971	1.4392
89)	Perylene	38.74	12899	0.4623	0.5129
82)	Indeno(1,2,3-c,d)pyrene	43.11	21960	0.6490	0.7201
83)	Dibenzo(a,h)anthracene	43.15	9916	0.3676	0.4079
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	44.44	42218	1.4108	1.5653

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.08	14401900	1297.0665	1439.1501
10)	1-Methylnaphthalene	16.41	9027800	876.7654	972.8082
11)	2,6-Dimethylnaphthalene	18.20	7639230	784.7700	870.7355
12)	1,6,7-Trimethylnaphthalene	21.04	2517390	284.1023	315.2235
27)	1-Methylfluorene	23.47	1297010	193.6563	214.8698
35)	4-Methyldibenzothiophene	25.86	1111440	80.2514	89.0423
36)	2/3-Methyldibenzothiophene	26.14	514725	37.1656	41.2368
37)	1-Methyldibenzothiophene	26.48	366716	26.4788	29.3793
43)	3-Methylphenanthrene	26.45	2023050	126.7469	140.6310
44)	2-Methylphenanthrene	26.52	2605190	163.2190	181.0983
45)	2-Methylanthracene	26.69	156540	9.8075	10.8818
46)	4/9-Methylphenanthrene	26.80	2819570	176.6505	196.0012
47)	1-Methylphenanthrene	26.90	2019800	126.5438	140.4057
48)	3,6-Dimethylphenanthrene	27.97	612712	38.6486	42.8823
49)	Retene	30.71	149114	20.5302	22.7792
60)	2-Methylfluoranthene	30.43	45871	2.9589	3.2830
61)	Benzo(b)fluorene	31.02	199350	11.4038	12.6530
74)	C29-Hopane	40.68	202848	24.8871	27.6133
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	41.97	353599	43.3826	48.1348
91)	C20-TAS	33.30	188349	6.0758	6.7414
92)	C21-TAS	34.39	225099	7.2613	8.0567
93)	C26(20S)-TAS	38.50	105261	3.3955	3.7675
94)	C26(20R)/C27(20S)-TAS	39.40	326497	10.5322	11.6859
95)	C28(20S)-TAS	40.17	229039	7.3884	8.1977
96)	C27(20R)-TAS	40.61	206177	6.6509	7.3795
97)	C28(20R)-TAS	41.75	155049	5.0016	5.5495
	Surrogate Standards				
2)	Naphthalene-d8	13.77	885153	57.05	93.25
21)	Acenaphthene-d10	19.62	513581	57.10	93.31
32)	Phenanthrene-d10	24.68	955527	55.16	90.13
66)	Chrysene-d12	33.77	1440560	59.60	97.45
88)	Perylene-d12	38.62	1399870	55.59	90.90
90)	5(b)H-Cholane	34.16	348352	64.12	104.86
	Internal Standards				
1)	Fluorene-d10	21.40	570271	61.41	
31)	Pyrene-d10	29.60	1199700	61.31	
73)	Benzo(a)pyrene-d12	38.31	1268700	61.23	

Data Path : C:\msdchem\2\data\MS70058\
Data File : MS70058K.D
Acq On : 20 Aug 2013 6:28 pm
Operator : YM
Sample : AR-SRM2779-WK4.0-002
Misc :
ALS Vial : 11 Sample Multiplier: 0.24461

Quant Time: Aug 21 20:33:38 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	570271m	251.05		0.00
31) Pyrene-d10	29.600	212	1199703m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	1268702m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	885153m	57.05		0.00
21) Acenaphthene-d10	19.616	164	513581m	57.10		0.00
32) Phenanthrene-d10	24.683	188	955527m	55.16		0.00
66) Chrysene-d12	33.770	240	1440562m	59.60		0.00
88) Perylene-d12	38.619	264	1399874m	55.59		0.00
90) 5(b)H-Cholane	34.158	217	348352m	64.12		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	1648977m	607.73		
4) C1-Decalins	12.290	152	2417041m	890.80		
5) C2-Decalins	13.766	166	2160900m	796.40		
6) C3-Decalins	16.636	180	1900724m	700.51		
7) C4-Decalins	17.666	194	1228782m	452.87		
8) Naphthalene	13.822	128	10920673m	645.00		
9) 2-Methylnaphthalene	16.079	142	14401916m	1297.07		
10) 1-Methylnaphthalene	16.413	142	9027798m	876.76		
11) 2,6-Dimethylnaphthalene	18.196	156	7639226m	784.77		
12) 1,6,7-Trimethylnaphtha...	21.037	170	2517391m	284.10		
13) C2-Naphthalenes	18.446	156	27429460m	1620.05		
14) C3-Naphthalenes	20.452	170	18307864m	1081.31		
15) C4-Naphthalenes	22.764	184	10258996m	605.92		
16) Benzothiophene	14.045	134	94243m	6.72		
17) C1-Benzothiophenes	15.577	148	421643m	30.07		
18) C2-Benzothiophenes	18.196	162	290453m	20.72		
19) C3-Benzothiophenes	20.285	176	444271m	31.69		
20) C4-Benzothiophenes	22.040	190	345706m	24.66		
22) Biphenyl	17.639	154	1883701m	132.17		
23) Acenaphthylene	19.115	152	129080m	8.51		
24) Acenaphthene	19.728	154	108446m	11.15		
25) Dibenzofuran	20.313	168	399086m	24.53		
26) Fluorene	21.483	166	1327050m	106.23		
27) 1-Methylfluorene	23.471	180	1297008m	193.66		
28) C1-Fluorenes	23.471	180	2856025m	228.62		
29) C2-Fluorenes	25.202	194	4305022m	344.60		
30) C3-Fluorenes	26.830	208	3706354m	296.68		
33) Carbazole	25.514	167	68814m	3.84		
34) Dibenzothiophene	24.337	184	790666m	36.01		
35) 4-Methyldibenzothiophene	25.860	198	1111442m	80.25		
36) 2/3-Methyldibenzothiop...	26.137	198	514725m	37.17		
37) 1-Methyldibenzothiophene	26.484	198	366716m	26.48		
38) C2-Dibenzothiophenes	27.246	212	2907471m	132.41		
39) C3-Dibenzothiophenes	28.769	226	2249373m	102.44		
40) C4-Dibenzothiophenes	30.189	240	863138m	39.31		
41) Phenanthrene	24.787	178	3860866m	198.71		
42) Anthracene	24.960	178	67934m	3.83		
43) 3-Methylphenanthrene	26.449	192	2023045m	126.75		

Data Path : C:\msdchem\2\data\MS70058\
Data File : MS70058K.D
Acq On : 20 Aug 2013 6:28 pm
Operator : YM
Sample : AR-SRM2779-WK4.0-002
Misc :
ALS Vial : 11 Sample Multiplier: 0.24461

Quant Time: Aug 21 20:33:38 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	26.518	192	2605188m	163.22		
45) 2-Methylanthracene	26.691	192	156540m	9.81		
46) 4/9-Methylphenanthrene	26.795	192	2819572m	176.65		
47) 1-Methylphenanthrene	26.899	192	2019804m	126.54		
48) 3,6-Dimethylphenanthrene	27.973	206	612712m	38.65		
49) Retene	30.708	234	149114m	20.53		
50) C2-Phenanthrenes/Anthr...	28.354	206	10942070m	563.17		
51) C3-Phenanthrenes/Anthr...	29.877	220	7722071m	397.44		
52) C4-Phenanthrenes/Anthr...	31.332	234	4405177m	226.73		
53) Naphthobenzothiophene	32.916	234	469357m	18.42		
54) C1-Naphthobenzothiophenes	34.080	248	1252092m	49.14		
55) C2-Naphthobenzothiophenes	35.748	262	1484329m	58.26		
56) C3-Naphthobenzothiophenes	37.145	276	1064576m	41.78		
57) C4-Naphthobenzothiophenes	38.115	290	455615m	17.88		
58) Fluoranthene	28.908	202	88990m	3.51		
59) Pyrene	29.669	202	270793m	11.37		
60) 2-Methylfluoranthene	30.431	216	45871m	2.96		
61) Benzo(b)fluorene	31.020	216	199350m	11.40		
62) C1-Fluoranthenes/Pyrenes	31.470	216	1691052m	66.71		
63) C2-Fluoranthenes/Pyrenes	32.567	230	2788692m	110.02		
64) C3-Fluoranthenes/Pyrenes	33.964	244	2666209m	105.18		
65) C4-Fluoranthenes/Pyrenes	35.089	258	2143577m	84.57		
67) Benz(a)anthracene	33.731	228	126528m	6.35		
68) Chrysene/Triphenylene	33.809	228	956687m	33.72		
69) C1-Chrysenes	35.205	242	2401181m	84.62		
70) C2-Chrysenes	36.253	256	2949483m	103.95		
71) C3-Chrysenes	37.960	270	1879477m	66.24		
72) C4-Chrysenes	39.356	284	1170931m	41.27		
74) C29-Hopane	40.681	191	202848m	24.89		
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	41.972	191	353599m	43.38		
77) Benzo(b)fluoranthene	37.261	252	116144m	4.15		
78) Benzo(k,j)fluoranthene	37.300	252	7620m	0.25		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.231	252	228067m	7.89		
81) Benzo(a)pyrene	38.386	252	35285m	1.30		
82) Indeno(1,2,3-c,d)pyrene	43.115	276	21960m	0.65		
83) Dibenzo(a,h)anthracene	43.152	278	9916m	0.37		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.442	276	42218m	1.41		
89) Perylene	38.736	252	12899m	0.46		
91) C20-TAS	33.304	231	188349m	6.08		
92) C21-TAS	34.391	231	225099m	7.26		
93) C26(20S)-TAS	38.503	231	105261m	3.40		
94) C26(20R)/C27(20S)-TAS	39.395	231	326497m	10.53		
95) C28(20S)-TAS	40.165	231	229039m	7.39		
96) C27(20R)-TAS	40.608	231	206177m	6.65		
97) C28(20R)-TAS	41.751	231	155049m	5.00		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : MS70058K.D
Acq On : 20 Aug 2013 6:28 pm
Operator : YM
Sample : AR-SRM2779-WK4.0-002
Misc :
ALS Vial : 11 Sample Multiplier: 0.24461

Quant Time: Aug 21 20:33:38 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : MS70058K.D
Acq On : 20 Aug 2013 6:28 pm
Operator : YM
Sample : AR-SRM2779-WK4.0-002
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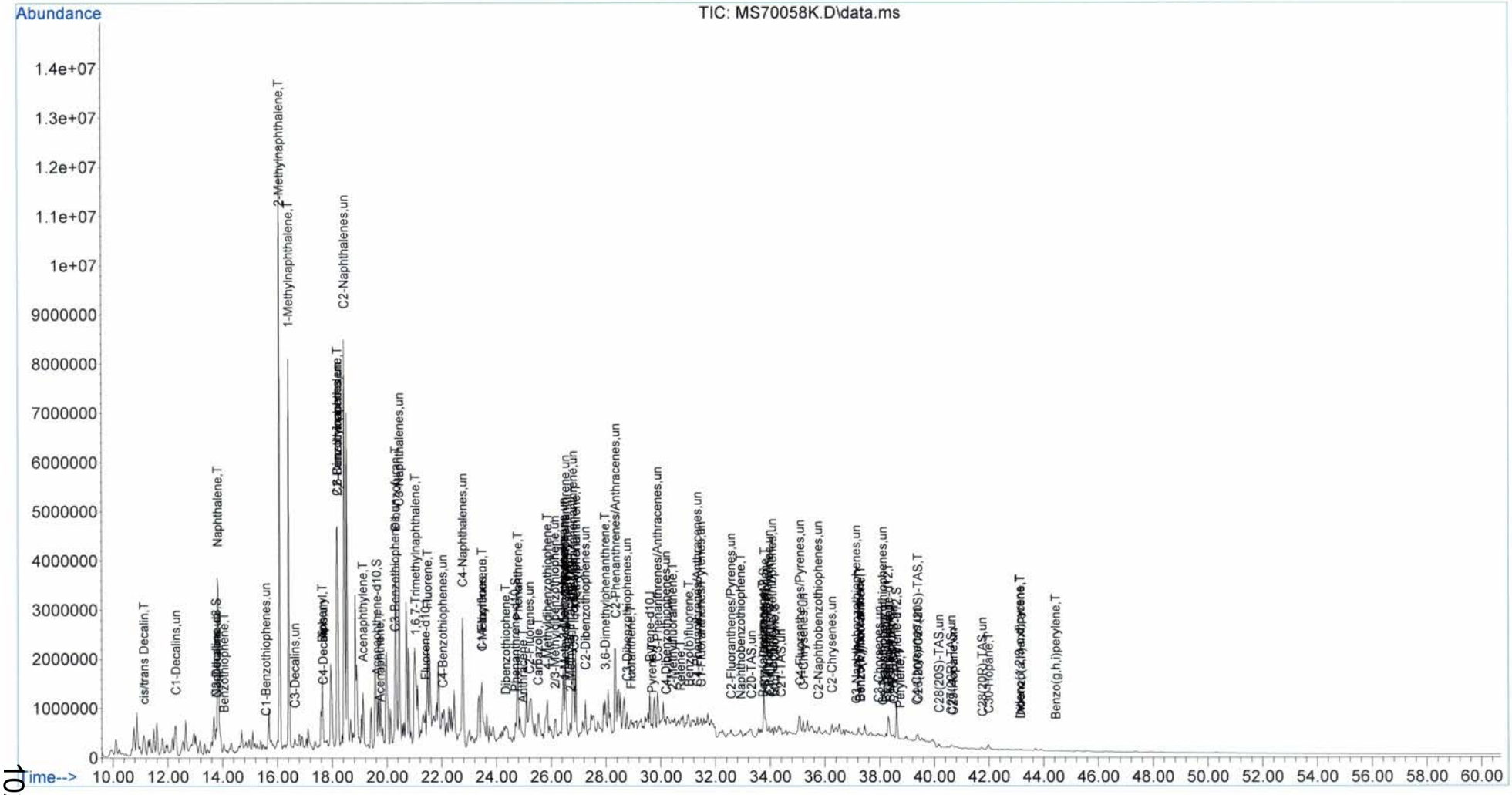
Quant Time: Aug 21 20:33:38 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name ENV3084A.D
Data File Path C:\msdchem\2\data\MS70058\
Operator YM
Date Acquired 8/21/2013 7:03
Acq. Method File PAH-2012.M
Sample Name Procedural Blank
Misc Info 0
Instrument Name GCMSD
Vial Number 22
Sample Multiplier 1
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ENV3084A.D
Procedural Blank
8/21/2013
PAH-2012.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	0.00	0	0.0000	0.0000
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.85	14014	5.9752	5.5811
9)+10)	C1-Naphthalenes	16.25	5200	2.2171	2.0709
13)	C2-Naphthalenes	0.00	0	0.0000	0.0000
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	0.00	0	0.0000	0.0000
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.67	2931	1.4847	1.3867
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	20.31	2011	0.8925	0.8336
26)	Fluorene	21.48	807	0.4663	0.4356
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	0.00	0	0.0000	0.0000
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	24.79	4675	2.0427	1.9080
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	0.00	0	0.0000	0.0000
35)+36)+37)	C1-Dibenzothiophenes	0.00	0	0.0000	0.0000
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	28.87	1623	0.5436	0.5077
59)	Pyrene	29.63	2705	0.9642	0.9007
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	0.00	0	0.0000	0.0000
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	0.00	0	0.0000	0.0000
68)	Chrysene/Triphenylene	0.00	0	0.0000	0.0000
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	0.00	0	0.0000	0.0000
78)	Benzo(k,j)fluoranthene	0.00	0	0.0000	0.0000
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	0.00	0	0.0000	0.0000
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	0.00	0	0.0000	0.0000
82)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.0000	0.0000
83)	Dibenzo(a,h)anthracene	0.00	0	0.0000	0.0000
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	0.00	0	0.0000	0.0000

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.08	3107	2.0200	1.8868
10)	1-Methylnaphthalene	16.41	2093	1.4674	1.3706
11)	2,6-Dimethylnaphthalene	0.00	0	0.0000	0.0000
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	0.00	0	0.0000	0.0000
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	0.00	0	0.0000	0.0000
48)	3,6-Dimethylphenanthrene	0.00	0	0.0000	0.0000
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	0.00	0	0.0000	0.0000
61)	Benzo(b)fluorene	0.00	0	0.0000	0.0000
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	0.00	0	0.0000	0.0000
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	0.00	0	0.0000	0.0000
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.77	465541	216.61	86.60
21)	Acenaphthene-d10	19.62	271300	217.73	87.04
32)	Phenanthrene-d10	24.68	546595	267.86	107.06
66)	Chrysene-d12	33.77	511818	179.77	71.90
88)	Perylene-d12	38.62	651165	207.44	82.97
90)	5(b)H-Cholane	34.16	142677	210.69	84.28
	Internal Standards				
1)	Fluorene-d10	21.40	322946	251.05	
31)	Pyrene-d10	29.60	577726	250.63	
73)	Benzo(a)pyrene-d12	38.31	646545	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084A.D
Acq On : 21 Aug 2013 7:03 am
Operator : YM
Sample : Procedural Blank
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Aug 22 07:57:28 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	322946m	251.05		0.00
31) Pyrene-d10	29.600	212	577726m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	646545m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	465541m	216.61		0.00
21) Acenaphthene-d10	19.616	164	271300m	217.73		0.00
32) Phenanthrene-d10	24.683	188	546595m	267.86		0.00
66) Chrysene-d12	33.770	240	511818m	179.77		0.00
88) Perylene-d12	38.619	264	651165m	207.44		0.00
90) 5(b)H-Cholane	34.158	217	142677m	210.69		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	0.000		0	N.D.	d	
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.850	128	14014m	5.98		
9) 2-Methylnaphthalene	16.079	142	3107m	2.02		
10) 1-Methylnaphthalene	16.413	142	2093m	1.47		
11) 2,6-Dimethylnaphthalene	0.000		0	N.D.	d	
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.	d	
16) Benzothiophene	0.000		0	N.D.	d	
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.666	154	2931m	1.48		
23) Acenaphthylene	0.000		0	N.D.	d	
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	20.313	168	2011m	0.89		
26) Fluorene	21.483	166	807m	0.47		
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	0.000		0	N.D.	d	
34) Dibenzothiophene	0.000		0	N.D.	d	
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.787	178	4675m	2.04		
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084A.D
Acq On : 21 Aug 2013 7:03 am
Operator : YM
Sample : Procedural Blank
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Aug 22 07:57:28 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	0.000		0	N.D.	d	
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d	
49) Retene	0.000		0	N.D.	d	
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	0.000		0	N.D.	d	
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	1623m	0.54		
59) Pyrene	29.635	202	2705m	0.96		
60) 2-Methylfluoranthene	0.000		0	N.D.	d	
61) Benzo(b)fluorene	0.000		0	N.D.	d	
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	0.000		0	N.D.	d	
68) Chrysene/Triphenylene	0.000		0	N.D.	d	
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	0.000		0	N.D.	d	
77) Benzo(b)fluoranthene	0.000		0	N.D.	d	
78) Benzo(k,j)fluoranthene	0.000		0	N.D.	d	
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	0.000		0	N.D.	d	
81) Benzo(a)pyrene	0.000		0	N.D.	d	
82) Indeno(1,2,3-c,d)pyrene	0.000		0	N.D.	d	
83) Dibenzo(a,h)anthracene	0.000		0	N.D.	d	
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	0.000		0	N.D.	d	
89) Perylene	0.000		0	N.D.	d	
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	0.000		0	N.D.	d	
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084A.D
Acq On : 21 Aug 2013 7:03 am
Operator : YM
Sample : Procedural Blank
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Aug 22 07:57:28 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

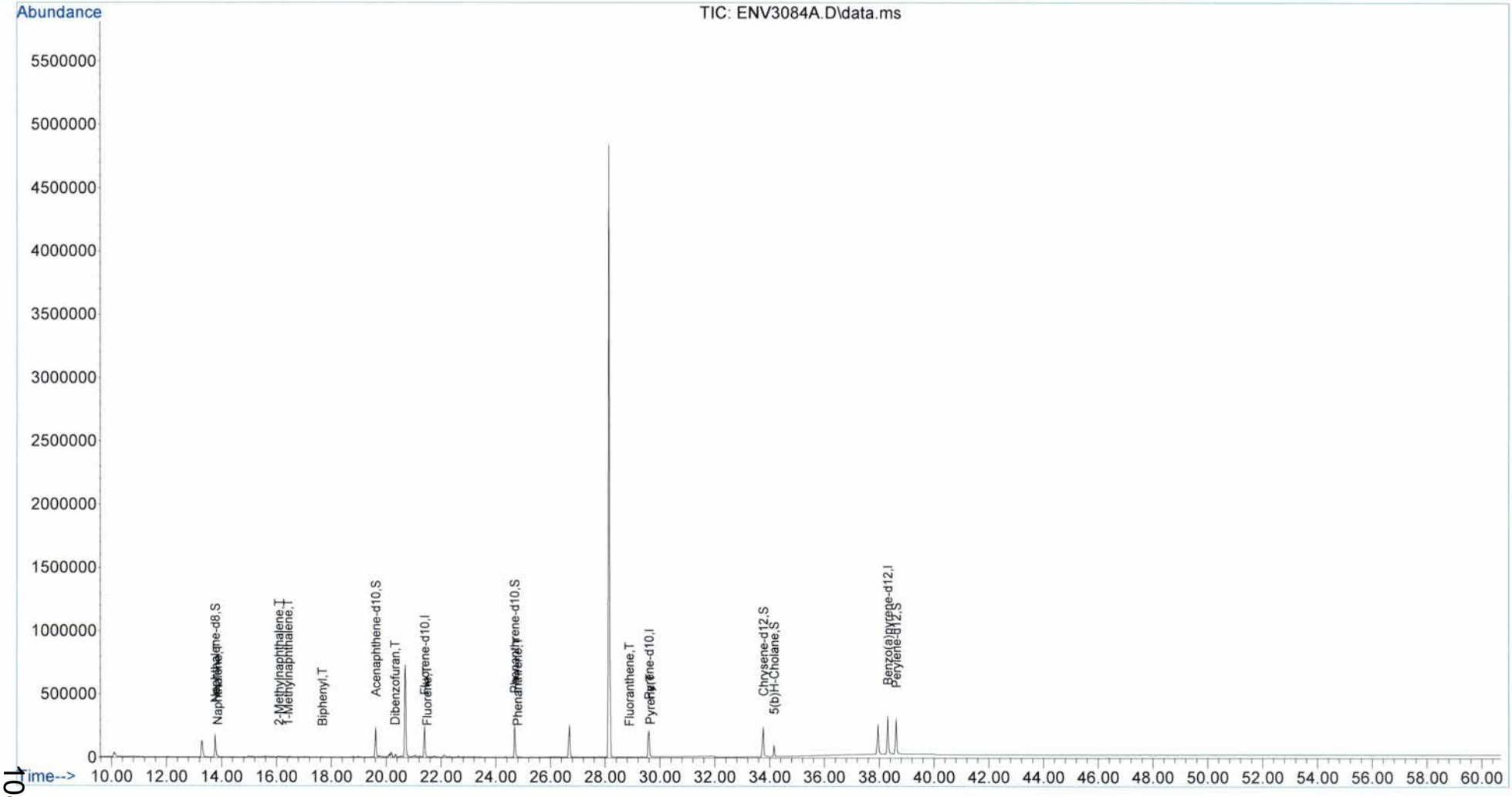
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084A.D
Acq On : 21 Aug 2013 7:03 am
Operator : YM
Sample : Procedural Blank
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Aug 22 07:57:28 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name ENV3084B.D
Data File Path C:\GCMS7\MS70058\
Operator YM
Date Acquired 8/21/2013 8:11
Acq. Method File PAH-2012.M
Sample Name Blank Spike
Misc Info 0
Instrument Name GCMSD
Vial Number 23
Sample Multiplier 1
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ENV3084B.D
Blank Spike
8/21/2013
PAH-2012.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	11.12	39223	94.2078	83.8410
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.82	239484	92.1803	82.0366
9)+10)	C1-Naphthalenes	16.25	243227	93.6210	83.3188
13)	C2-Naphthalenes	0.00	0	0.0000	0.0000
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	14.02	182721	84.9351	75.5887
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.64	163077	74.5721	66.3661
23)	Acenaphthylene	19.12	171260	73.5776	65.4810
24)	Acenaphthene	19.73	111058	74.4081	66.2201
25)	Dibenzofuran	20.31	189932	76.0959	67.7222
26)	Fluorene	21.48	170872	89.1385	79.3296
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	25.51	176181	85.4805	76.0741
42)	Anthracene	24.93	189312	92.8616	82.6430
41)	Phenanthrene	24.75	226329	101.3750	90.2195
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	5.38	159372	71.3843	63.5291
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	24.34	293713	116.4030	103.5938
35)+36)+37)	C1-Dibenzothiophenes	8.61	160519	63.6162	56.6157
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	28.87	249155	85.5407	76.1277
59)	Pyrene	29.63	281869	103.0000	91.6657
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	32.92	223287	76.2683	67.8756
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	33.73	199942	87.3154	77.7071
68)	Chrysene/Triphenylene	33.85	240796	73.8520	65.7252
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	37.22	301347	87.2177	77.6201
78)	Benzo(k,j)fluoranthene	37.34	221503	58.9233	52.4393
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.19	296787	83.1139	73.9679
81)	Benzo(a)pyrene	38.39	279436	83.1494	73.9995
89)	Perylene	38.70	300185	87.0880	77.5047
82)	Indeno(1,2,3-c,d)pyrene	43.04	318693	76.2439	67.8539
83)	Dibenzo(a,h)anthracene	43.11	273248	82.0062	72.9821
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	44.41	282987	76.5469	68.1236

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.08	126705	74.3680	66.1844
10)	1-Methylnaphthalene	16.41	116522	73.7496	65.6341
11)	2,6-Dimethylnaphthalene	18.17	109902	73.5782	65.4815
12)	1,6,7-Trimethylnaphthalene	21.01	120002	88.2601	78.5478
27)	1-Methylfluorene	23.44	86065	83.7464	74.5308
35)	4-Methyldibenzothiophene	25.83	160519	100.8650	89.7657
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	26.90	159372	86.8941	77.3321
48)	3,6-Dimethylphenanthrene	27.97	161319	88.5545	78.8098
49)	Retene	30.64	68005	81.4824	72.5159
60)	2-Methylfluoranthene	30.40	180121	101.1100	89.9837
61)	Benzo(b)fluorene	31.02	181100	90.1569	80.2359
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.67	85968	85.3768	75.9818
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	39.32	379635	99.1303	88.2218
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.77	541275	227.36	90.90
21)	Acenaphthene-d10	19.62	277608	201.13	80.40
32)	Phenanthrene-d10	24.68	559622	281.13	112.36
66)	Chrysene-d12	33.77	537378	193.49	77.38
88)	Perylene-d12	38.62	696027	223.74	89.49
90)	5(b)H-Cholane	34.16	143556	213.91	85.56
	Internal Standards				
1)	Fluorene-d10	21.40	357731	251.05	
31)	Pyrene-d10	29.60	563576	250.63	
73)	Benzo(a)pyrene-d12	38.31	640746	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084B.D
Acq On : 21 Aug 2013 8:11 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Aug 21 21:42:02 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorene-d10	21.399	176	357731m	251.05	0.00
31) Pyrene-d10	29.600	212	563576m	250.63	0.00
73) Benzo(a)pyrene-d12	38.309	264	640746m	250.32	0.00
System Monitoring Compounds					
2) Naphthalene-d8	13.766	136	541275m	227.36	0.00
21) Acenaphthene-d10	19.616	164	277608m	201.13	0.00
32) Phenanthrene-d10	24.683	188	559622m	281.13	0.00
66) Chrysene-d12	33.770	240	537378m	193.49	0.00
88) Perylene-d12	38.619	264	696027m	223.74	0.00
90) 5(b)H-Cholane	34.158	217	143556m	213.91	0.00
Target Compounds					Qvalue
3) cis/trans Decalin	11.120	138	39223m	94.21	
4) C1-Decalins	0.000		0	N.D. d	
5) C2-Decalins	0.000		0	N.D. d	
6) C3-Decalins	0.000		0	N.D. d	
7) C4-Decalins	0.000		0	N.D. d	
8) Naphthalene	13.822	128	239484m	92.18	
9) 2-Methylnaphthalene	16.079	142	126705m	74.37	
10) 1-Methylnaphthalene	16.413	142	116522m	73.75	
11) 2,6-Dimethylnaphthalene	18.168	156	109902m	73.58	
12) 1,6,7-Trimethylnaphtha...	21.009	170	120002m	88.26	
13) C2-Naphthalenes	0.000		0	N.D. d	
14) C3-Naphthalenes	0.000		0	N.D. d	
15) C4-Naphthalenes	0.000		0	N.D.	
16) Benzothiophene	14.017	134	182721m	84.94	
17) C1-Benzothiophenes	0.000		0	N.D. d	
18) C2-Benzothiophenes	0.000		0	N.D. d	
19) C3-Benzothiophenes	0.000		0	N.D. d	
20) C4-Benzothiophenes	0.000		0	N.D. d	
22) Biphenyl	17.639	154	163077m	74.57	
23) Acenaphthylene	19.115	152	171260m	73.58	
24) Acenaphthene	19.728	154	111058m	74.41	
25) Dibenzofuran	20.313	168	189932m	76.10	
26) Fluorene	21.483	166	170872m	89.14	
27) 1-Methylfluorene	23.436	180	86065m	83.75	
28) C1-Fluorenes	0.000		0	N.D. d	
29) C2-Fluorenes	0.000		0	N.D. d	
30) C3-Fluorenes	0.000		0	N.D. d	
33) Carbazole	25.514	167	176181m	85.48	
34) Dibenzothiophene	24.337	184	293713m	116.40	
35) 4-Methyldibenzothiophene	25.826	198	160519m	100.86	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D. d	
37) 1-Methyldibenzothiophene	0.000		0	N.D. d	
38) C2-Dibenzothiophenes	0.000		0	N.D. d	
39) C3-Dibenzothiophenes	0.000		0	N.D. d	
40) C4-Dibenzothiophenes	0.000		0	N.D. d	
41) Phenanthrene	24.752	178	226329m	101.37	
42) Anthracene	24.925	178	189312m	92.86	
43) 3-Methylphenanthrene	0.000		0	N.D. d	

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084B.D
Acq On : 21 Aug 2013 8:11 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Aug 21 21:42:02 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	159372m	86.89		
48) 3,6-Dimethylphenanthrene	27.973	206	161319m	88.55		
49) Retene	30.639	234	68005m	81.48		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	32.916	234	223287m	76.27		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	249155m	85.54		
59) Pyrene	29.635	202	281869m	103.00		
60) 2-Methylfluoranthene	30.397	216	180121m	101.11		
61) Benzo(b)fluorene	31.020	216	181100m	90.16		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	199942m	87.32		
68) Chrysene/Triphenylene	33.848	228	240796m	73.85		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.672	191	85968m	85.38		
77) Benzo(b)fluoranthene	37.223	252	301347m	87.22		
78) Benzo(k,j)fluoranthene	37.339	252	221503m	58.92		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.193	252	296787m	83.11		
81) Benzo(a)pyrene	38.386	252	279436m	83.15		
82) Indeno(1,2,3-c,d)pyrene	43.041	276	318693m	76.24		
83) Dibenzo(a,h)anthracene	43.115	278	273248m	82.01		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.		
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.405	276	282987m	76.55		
89) Perylene	38.697	252	300185m	87.09		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.318	231	379635m	99.13		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084B.D
Acq On : 21 Aug 2013 8:11 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Aug 21 21:42:02 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

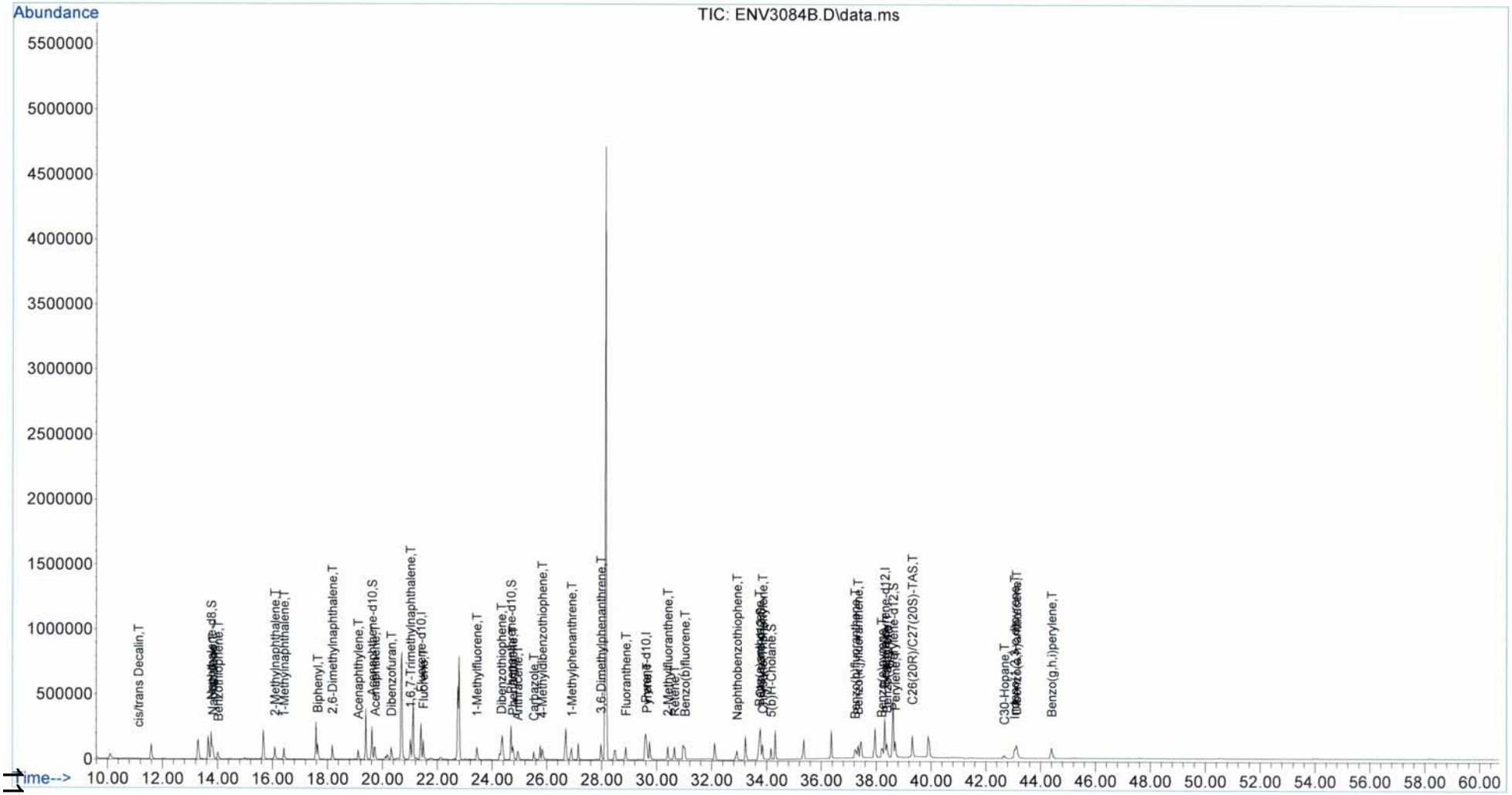
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084B.D
Acq On : 21 Aug 2013 8:11 am
Operator : YM
Sample : Blank Spike
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Aug 21 21:42:02 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name ENV3084C.D
Data File Path C:\GCMS7\MS70058\
Operator YM
Date Acquired 8/21/2013 9:20
Acq. Method File PAH-2012.M
Sample Name Blank Spike Dupl.
Misc Info 0
Instrument Name GCMSD
Vial Number 24
Sample Multiplier 1
Sample Amount 0

Surrogate/Internal Multiplier Factor: 1.00

AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ENV3084C.D
Blank Spike Dupl.
8/21/2013
PAH-2012.M
1

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	11.12	36685	101.6470	89.7649
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.82	204524	90.8165	80.2004
9)+10)	C1-Naphthalenes	16.25	232920	103.4254	91.3354
13)	C2-Naphthalenes	0.00	0	0.0000	0.0000
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	13.99	157855	84.6479	74.7529
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.64	160232	84.5263	74.6455
23)	Acenaphthylene	19.11	167386	82.9599	73.2622
24)	Acenaphthene	19.73	109119	84.3393	74.4804
25)	Dibenzofuran	20.31	183635	84.8746	74.9531
26)	Fluorene	21.48	146003	87.8649	77.5939
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	25.51	176939	86.9532	76.7887
42)	Anthracene	24.93	181325	90.0885	79.5575
41)	Phenanthrene	24.75	224719	101.9490	90.0316
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	5.38	155517	70.5539	62.3064
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	24.34	283300	113.7210	100.4275
35)+36)+37)	C1-Dibenzothiophenes	8.61	157890	63.3795	55.9707
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	28.87	240502	83.6326	73.8563
59)	Pyrene	29.63	283399	104.8920	92.6306
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	32.92	240957	83.3631	73.6183
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	33.73	223286	98.7647	87.2195
68)	Chrysene/Triphenylene	33.85	267689	83.1567	73.4360
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	37.22	308241	88.9258	78.5307
78)	Benzo(k,j)fluoranthene	37.34	205719	54.5483	48.1718
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	38.19	289954	80.9388	71.4774
81)	Benzo(a)pyrene	38.39	274150	81.3138	71.8086
89)	Perylene	38.70	289444	83.7015	73.9171
82)	Indeno(1,2,3-c,d)pyrene	43.04	316378	75.4464	66.6270
83)	Dibenzo(a,h)anthracene	43.11	271602	81.2497	71.7519
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	44.41	276746	74.6177	65.8952

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.08	119903	81.1860	71.6957
10)	1-Methylnaphthalene	16.41	113017	82.5191	72.8730
11)	2,6-Dimethylnaphthalene	18.17	107244	82.8277	73.1455
12)	1,6,7-Trimethylnaphthalene	21.01	103182	87.5465	77.3127
27)	1-Methylfluorene	23.44	85803	96.3166	85.0576
35)	4-Methyldibenzothiophene	25.83	157890	100.4900	88.7431
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	26.90	155517	85.8835	75.8441
48)	3,6-Dimethylphenanthrene	27.97	157159	87.3813	77.1668
49)	Retene	30.64	66278	80.4351	71.0326
60)	2-Methylfluoranthene	30.40	180266	102.4940	90.5129
61)	Benzo(b)fluorene	31.02	173575	87.5229	77.2918
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	42.67	85340	84.4802	74.6048
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	39.32	330652	86.0618	76.0015
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.77	473704	229.54	91.77
21)	Acenaphthene-d10	19.62	274284	229.25	91.64
32)	Phenanthrene-d10	24.68	556800	283.31	113.24
66)	Chrysene-d12	33.77	611336	222.95	89.17
88)	Perylene-d12	38.62	677450	217.07	86.82
90)	5(b)H-Cholane	34.16	154942	230.13	92.05
	Internal Standards				
1)	Fluorene-d10	21.40	310097	251.05	
31)	Pyrene-d10	29.60	556415	250.63	
73)	Benzo(a)pyrene-d12	38.31	642816	250.33	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084C.D
Acq On : 21 Aug 2013 9:20 am
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 21 21:47:50 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	310097m	251.05		0.00
31) Pyrene-d10	29.600	212	556415m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	642816m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	473704m	229.54		0.00
21) Acenaphthene-d10	19.616	164	274284m	229.25		0.00
32) Phenanthrene-d10	24.683	188	556800m	283.31		0.00
66) Chrysene-d12	33.770	240	611336m	222.95		0.00
88) Perylene-d12	38.619	264	677450m	217.07		0.00
90) 5(b)H-Cholane	34.158	217	154942m	230.13		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	36685m	101.65		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.822	128	204524m	90.82		
9) 2-Methylnaphthalene	16.078	142	119903m	81.19		
10) 1-Methylnaphthalene	16.413	142	113017m	82.52		
11) 2,6-Dimethylnaphthalene	18.168	156	107244m	82.83		
12) 1,6,7-Trimethylnaphtha...	21.009	170	103182m	87.55		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.989	134	157855m	84.65		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.638	154	160232m	84.53		
23) Acenaphthylene	19.115	152	167386m	82.96		
24) Acenaphthene	19.728	154	109119m	84.34		
25) Dibenzofuran	20.313	168	183635m	84.87		
26) Fluorene	21.483	166	146003m	87.86		
27) 1-Methylfluorene	23.436	180	85803m	96.32		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	176939m	86.95		
34) Dibenzothiophene	24.337	184	283300m	113.72		
35) 4-Methyldibenzothiophene	25.826	198	157890m	100.49		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.752	178	224719m	101.95		
42) Anthracene	24.925	178	181325m	90.09		
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084C.D
Acq On : 21 Aug 2013 9:20 am
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 21 21:47:50 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	155517m	85.88		
48) 3,6-Dimethylphenanthrene	27.973	206	157159m	87.38		
49) Retene	30.639	234	66278m	80.44		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.916	234	240957m	83.36		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	240502m	83.63		
59) Pyrene	29.635	202	283399m	104.89		
60) 2-Methylfluoranthene	30.396	216	180266m	102.49		
61) Benzo(b)fluorene	31.020	216	173575m	87.52		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	223286m	98.76		
68) Chrysene/Triphenylene	33.847	228	267689m	83.16		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.672	191	85340m	84.48		
77) Benzo(b)fluoranthene	37.222	252	308241m	88.93		
78) Benzo(k,j)fluoranthene	37.339	252	205719m	54.55		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.192	252	289954m	80.94		
81) Benzo(a)pyrene	38.386	252	274150m	81.31		
82) Indeno(1,2,3-c,d)pyrene	43.041	276	316378m	75.45		
83) Dibenzo(a,h)anthracene	43.115	278	271602m	81.25		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.405	276	276746m	74.62		
89) Perylene	38.697	252	289444m	83.70		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.317	231	330652m	86.06		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084C.D
Acq On : 21 Aug 2013 9:20 am
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 21 21:47:50 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

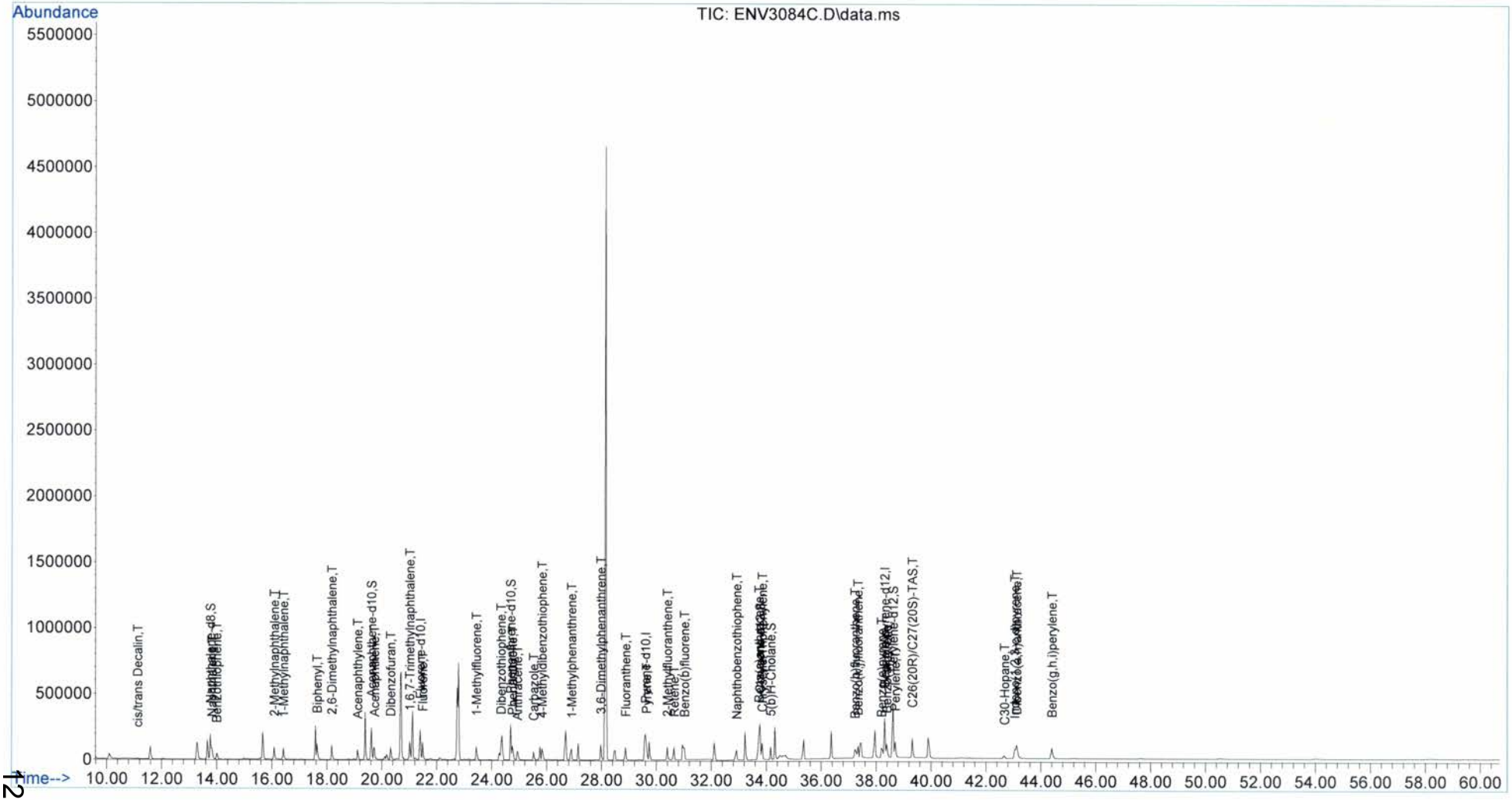
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ENV3084C.D
Acq On : 21 Aug 2013 9:20 am
Operator : YM
Sample : Blank Spike Dupl.
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Aug 21 21:47:50 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name	ARC1768.D
Data File Path	C:\GCMS7\MS70058\
Operator	YM
Date Acquired	8/21/2013 10:28
Acq. Method File	PAH-2012.M
Sample Name	SED-DA-DI-Water
Misc Info	0
Instrument Name	GCMSD
Vial Number	25
Sample Multiplier	0.9434
Sample Amount	0

Surrogate/Internal Multiplier Factor:	1.00
AR-WKSU-2500-001:	**(ng/mL)**
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ARC1768.D
SED-DA-DI-Water
8/21/2013
PAH-2012.M
1.05999576

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	0.00	0	0.0000	0.0000
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.82	271375	106.9816	101.0539
9)+10)	C1-Naphthalenes	16.25	4682	1.8457	1.7435
13)	C2-Naphthalenes	0.00	0	0.0000	0.0000
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	0.00	0	0.0000	0.0000
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	17.67	2231	1.0449	0.9870
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	20.31	2029	0.8326	0.7864
26)	Fluorene	21.48	1038	0.5546	0.5239
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	25.51	1020	0.4265	0.4029
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	24.75	9341	3.6057	3.4059
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	0.00	0	0.0000	0.0000
35)+36)+37)	C1-Dibenzothiophenes	0.00	0	0.0000	0.0000
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	28.87	2953	0.8737	0.8253
59)	Pyrene	29.63	3916	1.2332	1.1649
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	0.00	0	0.0000	0.0000
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	0.00	0	0.0000	0.0000
68)	Chrysene/Triphenylene	0.00	0	0.0000	0.0000
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	0.00	0	0.0000	0.0000
78)	Benzo(k,j)fluoranthene	0.00	0	0.0000	0.0000
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	0.00	0	0.0000	0.0000
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	0.00	0	0.0000	0.0000
82)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.0000	0.0000
83)	Dibenzo(a,h)anthracene	0.00	0	0.0000	0.0000
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	0.00	0	0.0000	0.0000

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.08	3069	1.8449	1.7426
10)	1-Methylnaphthalene	16.41	1613	1.0456	0.9877
11)	2,6-Dimethylnaphthalene	0.00	0	0.0000	0.0000
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	0.00	0	0.0000	0.0000
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	0.00	0	0.0000	0.0000
48)	3,6-Dimethylphenanthrene	0.00	0	0.0000	0.0000
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	0.00	0	0.0000	0.0000
61)	Benzo(b)fluorene	0.00	0	0.0000	0.0000
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	0.00	0	0.0000	0.0000
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	0.00	0	0.0000	0.0000
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.77	468171	201.41	85.35
21)	Acenaphthene-d10	19.62	275614	204.51	86.66
32)	Phenanthrene-d10	24.68	577186	249.88	105.87
66)	Chrysene-d12	33.77	558330	173.25	73.45
88)	Perylene-d12	38.62	709341	205.53	87.13
90)	5(b)H-Cholane	34.16	156278	209.89	88.99
	Internal Standards				
1)	Fluorene-d10	21.40	329516	236.84	
31)	Pyrene-d10	29.60	616946	236.44	
73)	Benzo(a)pyrene-d12	38.31	670630	236.16	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ARC1768.D
Acq On : 21 Aug 2013 10:28 am
Operator : YM
Sample : SED-DA-DI-Water
Misc :
ALS Vial : 25 Sample Multiplier: 0.9434

Quant Time: Aug 21 21:25:02 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	329516m	251.05		0.00
31) Pyrene-d10	29.600	212	616946m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	670630m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	468171m	201.41		0.00
21) Acenaphthene-d10	19.616	164	275614m	204.51		0.00
32) Phenanthrene-d10	24.683	188	577186m	249.88		0.00
66) Chrysene-d12	33.770	240	558330m	173.25		0.00
88) Perylene-d12	38.619	264	709341m	205.53		0.00
90) 5(b)H-Cholane	34.158	217	156278m	209.89		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	0.000		0	N.D.	d	
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.822	128	271375m	106.98		
9) 2-Methylnaphthalene	16.079	142	3069m	1.84		
10) 1-Methylnaphthalene	16.413	142	1613m	1.05		
11) 2,6-Dimethylnaphthalene	0.000		0	N.D.	d	
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.	d	
16) Benzothiophene	0.000		0	N.D.	d	
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.666	154	2231m	1.04		
23) Acenaphthylene	0.000		0	N.D.	d	
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	20.313	168	2029m	0.83		
26) Fluorene	21.483	166	1038m	0.55		
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	1020m	0.43		
34) Dibenzothiophene	0.000		0	N.D.	d	
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.752	178	9341m	3.61		
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ARC1768.D
Acq On : 21 Aug 2013 10:28 am
Operator : YM
Sample : SED-DA-DI-Water
Misc :
ALS Vial : 25 Sample Multiplier: 0.9434

Quant Time: Aug 21 21:25:02 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	0.000		0	N.D.	d	
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d	
49) Retene	0.000		0	N.D.	d	
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	0.000		0	N.D.	d	
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	2953m	0.87		
59) Pyrene	29.635	202	3916m	1.23		
60) 2-Methylfluoranthene	0.000		0	N.D.	d	
61) Benzo(b)fluorene	0.000		0	N.D.	d	
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	0.000		0	N.D.	d	
68) Chrysene/Triphenylene	0.000		0	N.D.	d	
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	0.000		0	N.D.	d	
77) Benzo(b)fluoranthene	0.000		0	N.D.	d	
78) Benzo(k,j)fluoranthene	0.000		0	N.D.	d	
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	0.000		0	N.D.	d	
81) Benzo(a)pyrene	0.000		0	N.D.	d	
82) Indeno(1,2,3-c,d)pyrene	0.000		0	N.D.	d	
83) Dibenzo(a,h)anthracene	0.000		0	N.D.	d	
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	0.000		0	N.D.	d	
89) Perylene	0.000		0	N.D.	d	
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	0.000		0	N.D.	d	
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ARC1768.D
Acq On : 21 Aug 2013 10:28 am
Operator : YM
Sample : SED-DA-DI-Water
Misc :
ALS Vial : 25 Sample Multiplier: 0.9434

Quant Time: Aug 21 21:25:02 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

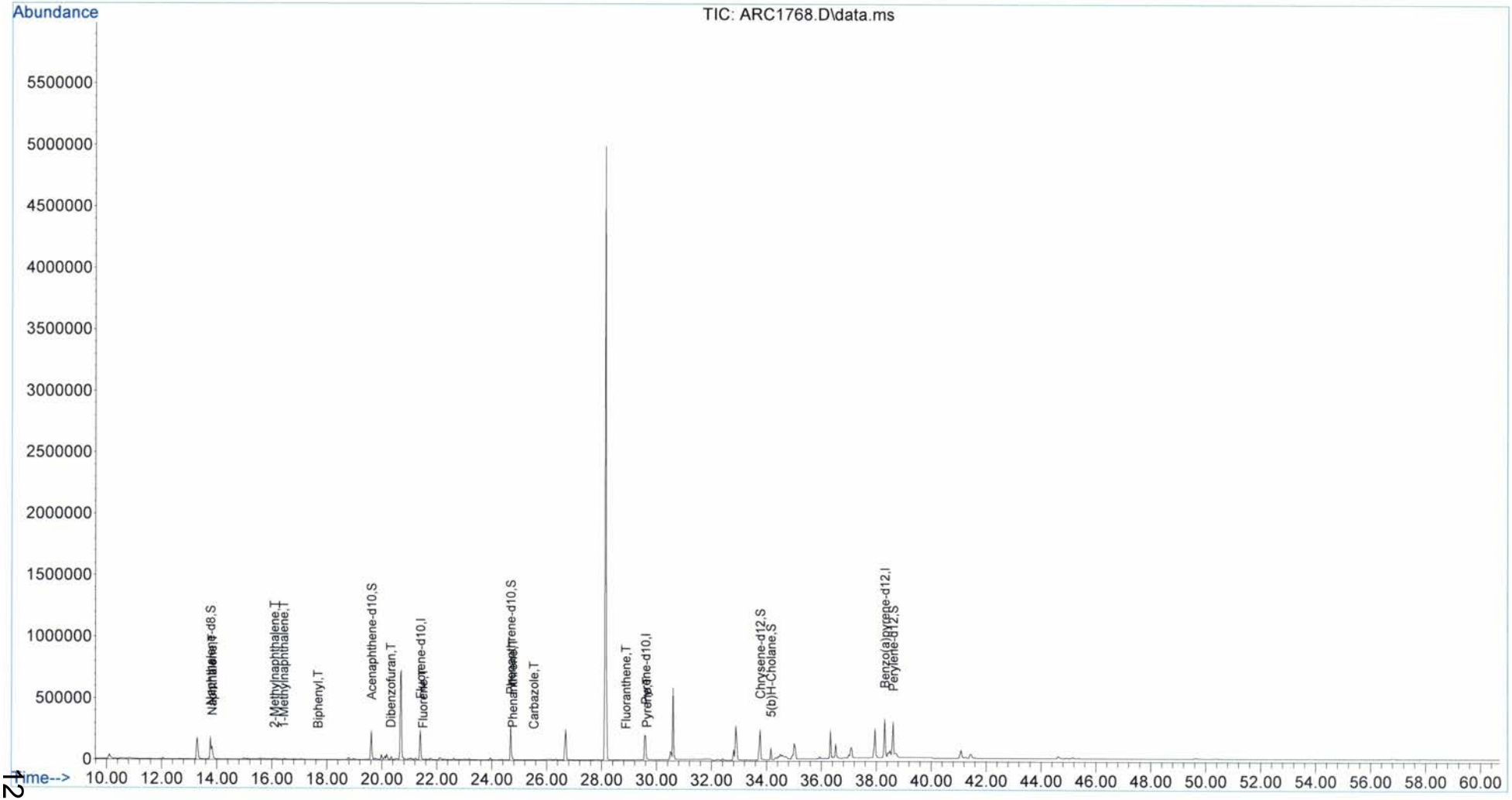
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ARC1768.D
Acq On : 21 Aug 2013 10:28 am
Operator : YM
Sample : SED-DA-DI-Water
Misc :
ALS Vial : 25 Sample Multiplier: 0.9434

Quant Time: Aug 21 21:25:02 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration



Tissues, Sediments and Water PAH Report (use Phenanthrene-d10 as surrogate correction)

Data File Name	ARC1854.D
Data File Path	C:\GCMS7\MS70058\
Operator	YM
Date Acquired	8/21/2013 11:37
Acq. Method File	PAH-2012.M
Sample Name	SO-DA-EB-05-081313
Misc Info	0
Instrument Name	GCMSD
Vial Number	26
Sample Multiplier	0.93458
Sample Amount	0

Surrogate/Internal Multiplier Factor:	1.00
AR-WKSU-2500-001: (ng/mL)	
Naphthalene-d8	250.125
Acenaphthene-d10	250.163
Phenanthrene-d10	250.194
Chrysene-d12	250.038
Perylene-d12	250.031
5(b)H-Cholane	250.000

Copy data below to Spread Sheet

ARC1854.D
SO-DA-EB-05-081313
8/21/2013
PAH-2012.M
1.069999358

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
3)	cis/trans Decalin	0.00	0	0.0000	0.0000
4)	C1-Decalins	0.00	0	0.0000	0.0000
5)	C2-Decalins	0.00	0	0.0000	0.0000
6)	C3-Decalins	0.00	0	0.0000	0.0000
7)	C4-Decalins	0.00	0	0.0000	0.0000
8)	Naphthalene	13.82	134833	51.7886	47.2456
9)+10)	C1-Naphthalenes	16.25	4968	1.9082	1.7408
13)	C2-Naphthalenes	0.00	0	0.0000	0.0000
14)	C3-Naphthalenes	0.00	0	0.0000	0.0000
15)	C4-Naphthalenes	0.00	0	0.0000	0.0000
16)	Benzothiophene	0.00	0	0.0000	0.0000
17)	C1-Benzothiophenes	0.00	0	0.0000	0.0000
18)	C2-Benzothiophenes	0.00	0	0.0000	0.0000
19)	C3-Benzothiophenes	0.00	0	0.0000	0.0000
20)	C4-Benzothiophenes	0.00	0	0.0000	0.0000
22)	Biphenyl	0.00	0	0.0000	0.0000
23)	Acenaphthylene	0.00	0	0.0000	0.0000
24)	Acenaphthene	0.00	0	0.0000	0.0000
25)	Dibenzofuran	0.00	0	0.0000	0.0000
26)	Fluorene	21.48	1208	0.6288	0.5737
28)	C1-Fluorenes	0.00	0	0.0000	0.0000
29)	C2-Fluorenes	0.00	0	0.0000	0.0000
30)	C3-Fluorenes	0.00	0	0.0000	0.0000
33)	Carbazole	0.00	0	0.0000	0.0000
42)	Anthracene	0.00	0	0.0000	0.0000
41)	Phenanthrene	24.75	8342	3.2548	2.9693
43)+44)+45)+46)+47)	C1-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
50)	C2-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
51)	C3-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
52)	C4-Phenanthrenes/Anthracenes	0.00	0	0.0000	0.0000
34)	Dibenzothiophene	0.00	0	0.0000	0.0000
35)+36)+37)	C1-Dibenzothiophenes	0.00	0	0.0000	0.0000
38)	C2-Dibenzothiophenes	0.00	0	0.0000	0.0000
39)	C3-Dibenzothiophenes	0.00	0	0.0000	0.0000
40)	C4-Dibenzothiophenes	0.00	0	0.0000	0.0000
58)	Fluoranthene	28.87	3430	1.0258	0.9358
59)	Pyrene	29.63	3686	1.1733	1.0704
62)	C1-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
63)	C2-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
64)	C3-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
65)	C4-Fluoranthenes/Pyrenes	0.00	0	0.0000	0.0000
53)	Naphthobenzothiophene	0.00	0	0.0000	0.0000
54)	C1-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
55)	C2-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
56)	C3-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
57)	C4-Naphthobenzothiophenes	0.00	0	0.0000	0.0000
67)	Benz(a)anthracene	0.00	0	0.0000	0.0000
68)	Chrysene/Triphenylene	0.00	0	0.0000	0.0000
69)	C1-Chrysenes	0.00	0	0.0000	0.0000
70)	C2-Chrysenes	0.00	0	0.0000	0.0000
71)	C3-Chrysenes	0.00	0	0.0000	0.0000
72)	C4-Chrysenes	0.00	0	0.0000	0.0000
77)	Benzo(b)fluoranthene	0.00	0	0.0000	0.0000
78)	Benzo(k,j)fluoranthene	0.00	0	0.0000	0.0000
79)	Benzo(a)fluoranthene	0.00	0	0.0000	0.0000
80)	Benzo(e)pyrene	0.00	0	0.0000	0.0000
81)	Benzo(a)pyrene	0.00	0	0.0000	0.0000
89)	Perylene	0.00	0	0.0000	0.0000
82)	Indeno(1,2,3-c,d)pyrene	0.00	0	0.0000	0.0000
83)	Dibenzo(a,h)anthracene	0.00	0	0.0000	0.0000
84)	C1-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
85)	C2-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
86)	C3-Dibenzo(a,h)anthracenes	0.00	0	0.0000	0.0000
87)	Benzo(g,h,i)perylene	0.00	0	0.0000	0.0000

#	Compound Name	Ret Time (minute)	Target Response (area)	Concentration	Su. Corrected Concentration
	Individual Alkyl Isomers and Hopanes				
9)	2-Methylnaphthalene	16.08	2598	1.5216	1.3881
10)	1-Methylnaphthalene	16.41	2370	1.4968	1.3655
11)	2,6-Dimethylnaphthalene	0.00	0	0.0000	0.0000
12)	1,6,7-Trimethylnaphthalene	0.00	0	0.0000	0.0000
27)	1-Methylfluorene	0.00	0	0.0000	0.0000
35)	4-Methyldibenzothiophene	0.00	0	0.0000	0.0000
36)	2/3-Methyldibenzothiophene	0.00	0	0.0000	0.0000
37)	1-Methyldibenzothiophene	0.00	0	0.0000	0.0000
43)	3-Methylphenanthrene	0.00	0	0.0000	0.0000
44)	2-Methylphenanthrene	0.00	0	0.0000	0.0000
45)	2-Methylanthracene	0.00	0	0.0000	0.0000
46)	4/9-Methylphenanthrene	0.00	0	0.0000	0.0000
47)	1-Methylphenanthrene	0.00	0	0.0000	0.0000
48)	3,6-Dimethylphenanthrene	0.00	0	0.0000	0.0000
49)	Retene	0.00	0	0.0000	0.0000
60)	2-Methylfluoranthene	0.00	0	0.0000	0.0000
61)	Benzo(b)fluorene	0.00	0	0.0000	0.0000
74)	C29-Hopane	0.00	0	0.0000	0.0000
75)	18a-Oleanane	0.00	0	0.0000	0.0000
76)	C30-Hopane	0.00	0	0.0000	0.0000
91)	C20-TAS	0.00	0	0.0000	0.0000
92)	C21-TAS	0.00	0	0.0000	0.0000
93)	C26(20S)-TAS	0.00	0	0.0000	0.0000
94)	C26(20R)/C27(20S)-TAS	0.00	0	0.0000	0.0000
95)	C28(20S)-TAS	0.00	0	0.0000	0.0000
96)	C27(20R)-TAS	0.00	0	0.0000	0.0000
97)	C28(20R)-TAS	0.00	0	0.0000	0.0000
	Surrogate Standards				
2)	Naphthalene-d8	13.77	498156	208.81	89.32
21)	Acenaphthene-d10	19.62	285400	206.34	88.25
32)	Phenanthrene-d10	24.68	585719	256.31	109.62
66)	Chrysene-d12	33.77	534824	167.75	71.78
88)	Perylene-d12	38.62	677772	195.57	83.69
90)	5(b)H-Cholane	34.16	147910	197.84	84.67
	Internal Standards				
1)	Fluorene-d10	21.40	335040	234.63	
31)	Pyrene-d10	29.57	604650	234.23	
73)	Benzo(a)pyrene-d12	38.31	667110	233.95	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ARC1854.D
Acq On : 21 Aug 2013 11:37 am
Operator : YM
Sample : SO-DA-EB-05-081313
Misc :
ALS Vial : 26 Sample Multiplier: 0.93458

Quant Time: Aug 22 07:55:28 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	335040m	251.05		0.00
31) Pyrene-d10	29.566	212	604650m	250.63		-0.03
73) Benzo(a)pyrene-d12	38.309	264	667110m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	498156m	208.81		0.00
21) Acenaphthene-d10	19.616	164	285400m	206.34		0.00
32) Phenanthrene-d10	24.683	188	585719m	256.31		0.00
66) Chrysene-d12	33.770	240	534824m	167.75		0.00
88) Perylene-d12	38.619	264	677772m	195.57		0.00
90) 5(b)H-Cholane	34.158	217	147910m	197.84		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	0.000		0	N.D.	d	
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.822	128	134833m	51.79		
9) 2-Methylnaphthalene	16.079	142	2598m	1.52		
10) 1-Methylnaphthalene	16.413	142	2370m	1.50		
11) 2,6-Dimethylnaphthalene	0.000		0	N.D.	d	
12) 1,6,7-Trimethylnaphtha...	0.000		0	N.D.	d	
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.	d	
16) Benzothiophene	0.000		0	N.D.	d	
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	0.000		0	N.D.	d	
23) Acenaphthylene	0.000		0	N.D.	d	
24) Acenaphthene	0.000		0	N.D.	d	
25) Dibenzofuran	0.000		0	N.D.	d	
26) Fluorene	21.483	166	1208m	0.63		
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	0.000		0	N.D.	d	
34) Dibenzothiophene	0.000		0	N.D.	d	
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.752	178	8342m	3.25		
42) Anthracene	0.000		0	N.D.	d	
43) 3-Methylphenanthrene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ARC1854.D
Acq On : 21 Aug 2013 11:37 am
Operator : YM
Sample : SO-DA-EB-05-081313
Misc :
ALS Vial : 26 Sample Multiplier: 0.93458

Quant Time: Aug 22 07:55:28 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	0.000		0	N.D.	d	
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d	
49) Retene	0.000		0	N.D.	d	
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	0.000		0	N.D.	d	
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	3430m	1.03		
59) Pyrene	29.635	202	3686m	1.17		
60) 2-Methylfluoranthene	0.000		0	N.D.	d	
61) Benzo(b)fluorene	0.000		0	N.D.	d	
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	0.000		0	N.D.	d	
68) Chrysene/Triphenylene	0.000		0	N.D.	d	
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.		
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	0.000		0	N.D.	d	
77) Benzo(b)fluoranthene	0.000		0	N.D.	d	
78) Benzo(k,j)fluoranthene	0.000		0	N.D.	d	
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	0.000		0	N.D.	d	
81) Benzo(a)pyrene	0.000		0	N.D.	d	
82) Indeno(1,2,3-c,d)pyrene	0.000		0	N.D.	d	
83) Dibenzo(a,h)anthracene	0.000		0	N.D.	d	
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	0.000		0	N.D.	d	
89) Perylene	0.000		0	N.D.	d	
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	0.000		0	N.D.	d	
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ARC1854.D
Acq On : 21 Aug 2013 11:37 am
Operator : YM
Sample : SO-DA-EB-05-081313
Misc :
ALS Vial : 26 Sample Multiplier: 0.93458

Quant Time: Aug 22 07:55:28 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\2\data\MS70058\
Data File : ARC1854.D
Acq On : 21 Aug 2013 11:37 am
Operator : YM
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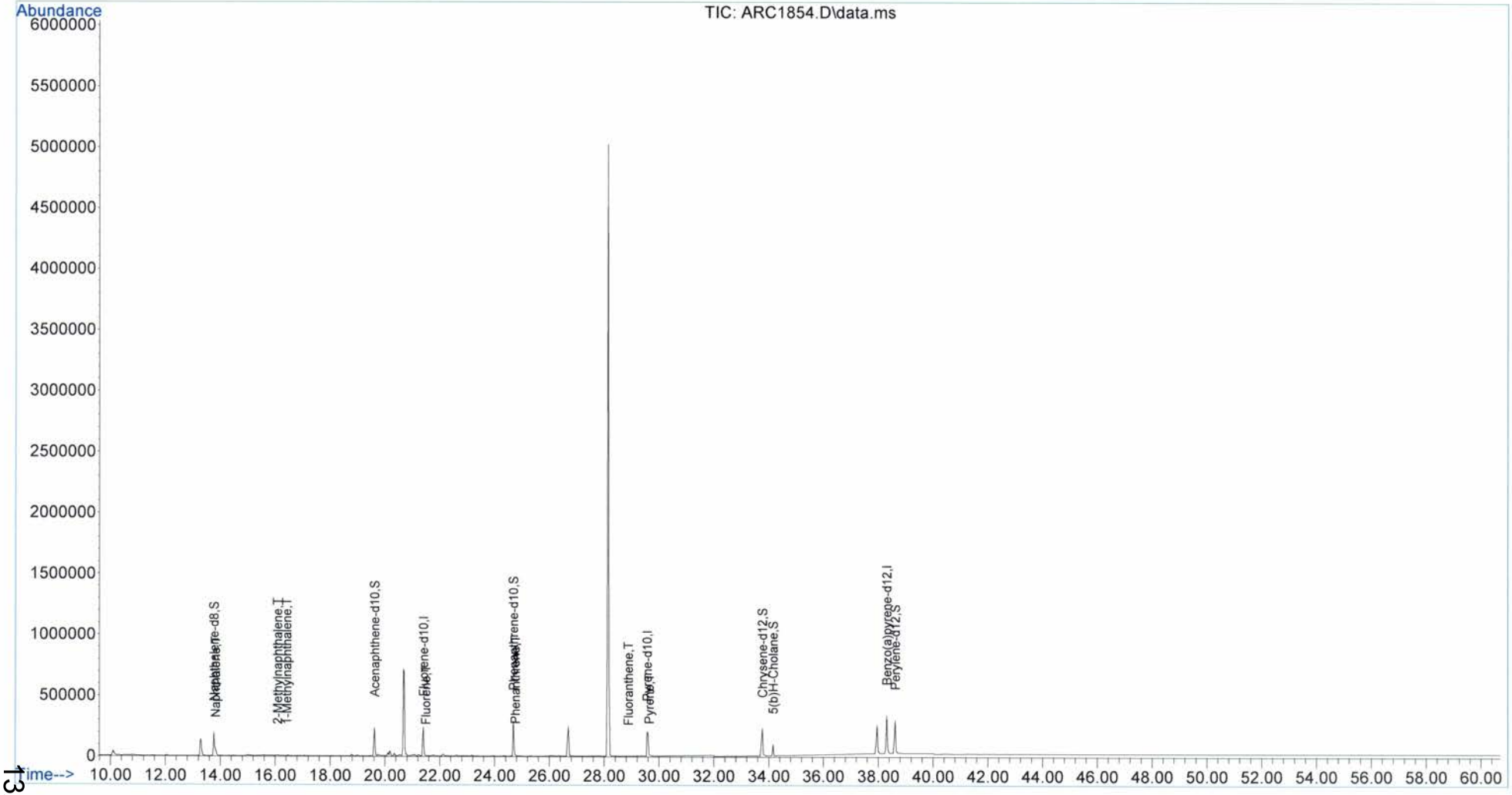
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration



Aliphatic Hydrocarbons/
Total Petroleum Hydrocarbons/
Initial Calibration Data
and
Initial Calibration Verification Data

TPH/Aliphatic
ICAL
FID1C08BACK081213.M

GC/FID-1 BACK

Calibration Status Report HP5890

Method Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Method File : FID1C08BACK081213.M
Title : C8 - C40 aliphatic
Last Update : Mon Aug 12 14:55:52 2013
Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	1	50	P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID10073C.D
2	2	10	50	P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID10073D.D
3	3	25	50	P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID10073E.D
4	4	40	50	P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID10073F.D
5	5	50	50	P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID10073G.D
6	6	100	50	P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID10073H.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Aug 12 14:22 2013	Aug 12 14:22 2013	09-Aug-2013, 22:41:20
2	2	Aug 12 14:27 2013	Aug 12 14:27 2013	09-Aug-2013, 23:51:52
3	3	Aug 12 14:31 2013	Aug 12 14:31 2013	10-Aug-2013, 01:02:24
4	4	Aug 12 14:35 2013	Aug 12 14:35 2013	10-Aug-2013, 02:13:04
5	5	Aug 12 14:39 2013	Aug 12 14:39 2013	10-Aug-2013, 03:23:38
6	6	Aug 12 14:44 2013	Aug 12 14:44 2013	10-Aug-2013, 04:34:12

FID1C08BACK081213.M Mon Aug 12 14:56:11 2013

Response Factor Report HP5890

Method Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Method File : FID1C08BACK081213.M
Title : C8 - C40 aliphatic
Last Update : Mon Aug 12 14:55:52 2013
Response Via : Initial Calibration

8/12/13

Calibration Files
1 =FID10073C.D 2 =FID10073D.D 3 =FID10073E.D
4 =FID10073F.D 5 =FID10073G.D 6 =FID10073H.D

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	n-hexadecane-d34	----------ISTD----------							
2)		n-C8	0.956	1.014	0.983	0.969	0.986	0.862	0.962	5.46
3)		n-C9	1.005	1.064	1.032	1.028	1.029	0.908	1.011	5.35
4)		n-C10	1.066	1.103	1.083	1.086	1.085	0.960	1.064	4.91
5)		n-C11	1.074	1.101	1.086	1.095	1.092	0.965	1.069	4.85
6)	S	n-dodecane-d26	1.000	1.009	1.002	1.038	1.003	0.902	0.992	4.70
7)		n-C12	1.127	1.150	1.137	1.128	1.145	1.009	1.116	4.76
8)		i-13	1.125	1.152	1.141	1.154	1.149	1.009	1.122	4.99
9)		i-14	1.170	1.198	1.187	1.190	1.192	1.046	1.164	5.04
10)		n-C13	1.125	1.152	1.141	1.154	1.149	1.009	1.122	4.99
11)		i-15	1.214	1.225	1.209	1.211	1.212	1.060	1.189	5.30
12)		n-C14	1.170	1.198	1.187	1.190	1.192	1.046	1.164	5.04
13)		i-16	1.249	1.244	1.228	1.223	1.231	1.073	1.208	5.52
14)		n-C15	1.214	1.225	1.209	1.211	1.212	1.060	1.189	5.30
15)		n-C16	1.249	1.244	1.228	1.223	1.231	1.073	1.208	5.52
16)	I	5a-androstane	----------ISTD----------							
17)		i-18	0.955	0.968	0.960	0.971	0.965	0.845	0.944	5.17
18)		n-C17	0.969	0.979	0.969	0.967	0.975	0.856	0.952	5.00
19)		Pristane	0.966	0.974	0.966	0.967	0.972	0.851	0.949	5.09
20)		n-C18	0.955	0.968	0.960	0.971	0.965	0.845	0.944	5.17
21)		Phytane	0.974	0.988	0.980	0.984	0.986	0.861	0.962	5.18
22)		n-C19	0.960	0.973	0.965	0.972	0.970	0.847	0.948	5.25
23)	S	n-eicosane-d42	0.775	0.770	0.767	0.793	0.764	0.679	0.758	5.27
24)		n-C20	0.972	0.980	0.973	0.985	0.978	0.853	0.957	5.36
25)		n-C21	0.984	0.996	0.987	0.989	0.994	0.865	0.969	5.29
26)		n-C22	0.992	0.999	0.990	1.001	0.996	0.867	0.974	5.39
27)		n-C23	1.005	1.008	0.998	0.999	1.006	0.873	0.982	5.42
28)		n-C24	1.009	1.011	1.000	0.999	1.008	0.874	0.984	5.46
29)		n-C25	1.002	1.013	1.001	1.009	1.010	0.875	0.985	5.48
30)		n-C26	1.013	1.013	1.004	1.018	1.012	0.872	0.989	5.78
31)		n-C27	0.982	0.991	0.979	0.991	0.987	0.852	0.964	5.69
32)		n-C28	0.997	1.003	0.990	1.004	1.000	0.861	0.976	5.81
33)		n-C29	0.998	1.006	0.993	1.009	1.002	0.858	0.978	6.03
34)	S	n-triacontane...	0.779	0.767	0.759	0.791	0.763	0.664	0.754	6.05
35)		n-C30	0.982	0.996	0.983	0.990	0.989	0.841	0.964	6.24
36)		n-C31	0.952	0.983	0.967	0.976	0.968	0.818	0.944	6.65
37)		n-C32	0.945	0.974	0.956	0.949	0.950	0.800	0.929	6.91
38)		n-C33	0.915	0.942	0.924	0.926	0.913	0.765	0.898	7.34
39)		n-C34	0.938	0.949	0.929	0.924	0.912	0.764	0.903	7.64
40)		n-C35	0.893	0.928	0.895	0.895	0.881	0.741	0.872	7.59
41)		n-C36	0.984	0.990	0.958	0.937	0.941	0.798	0.935	7.53
42)		n-C37	0.876	0.892	0.858	0.858	0.848	0.719	0.842	7.38
43)		n-C38	0.841	0.875	0.844	0.850	0.834	0.714	0.827	6.86
44)		n-C39	0.828	0.830	0.806	0.815	0.803	0.686	0.795	6.84
45)		n-C40	0.672	0.763	0.749	0.760	0.747	0.643	0.722	7.11
46)		TPH	0.918	0.936	0.922	0.930	0.924	0.800	0.905	5.73
47)		TRH1	0.918	0.936	0.922	0.930	0.924	0.800	0.905	5.73
48)		TRH2	0.918	0.936	0.922	0.930	0.924	0.800	0.905	5.73
49)		TRH3	0.918	0.936	0.922	0.930	0.924	0.800	0.905	5.73
50)		TRH4	0.918	0.936	0.922	0.930	0.924	0.800	0.905	5.73
51)		TRH5	0.918	0.936	0.922	0.930	0.924	0.800	0.905	5.73
52)		TRH6	0.918	0.936	0.922	0.930	0.924	0.800	0.905	5.73

53)	GRO	0.918	0.936	0.922	0.930	0.924	0.800	0.905	5.73
54)	DRO	0.918	0.936	0.922	0.930	0.924	0.800	0.905	5.73
55)	RRO	0.918	0.936	0.922	0.930	0.924	0.800	0.905	5.73

(#) = Out of Range

FID1C08BACK081213.M Mon Aug 12 14:56:03 2013

Area for TPH Calculations

Last Calibration Update Mon Aug 12 14:44:48 2013
Quant Method FID1C08BACK081213.M

	Level 1 FID10073C.D	Level 2 FID10073D.D	Level 3 FID10073E.D	Level 4 FID10073F.D	Level 5 FID10073G.D	Level 6 FID10073H.D
n-C8	9117	77857	188499	291362	352928	722182
n-C9	9578	81584	197797	309016	368042	759329
n-C10	10163	84579	207556	326517	388060	803179
n-C11	10255	84486	208394	329031	391233	807832
n-C12	10555	86658	214265	339153	402706	829898
n-C13	10739	88505	219073	346829	411631	846199
n-C14	11088	91324	226227	357826	424031	869751
n-C15	11521	93428	230576	364007	431554	883118
n-C16	11792	94455	232923	367530	435910	889122
n-C17	11948	96726	238635	376430	446735	911137
Pristane	11944	96562	238683	376376	446725	908737
n-C18	11923	96930	239559	378180	448208	911921
Phytane	12125	98535	243595	383107	456112	925459
n-C19	11967	97244	240347	378543	449691	911938
n-C20	12143	98208	243017	383571	454323	920851
n-C21	12167	98724	243725	384963	457017	923803
n-C22	12394	99952	246952	389670	462814	935593
n-C23	12412	99765	246307	388885	462119	931772
n-C24	12449	99865	246380	389086	462171	931521
n-C25	12463	100899	248590	392936	466818	939992
n-C26	12663	101467	250624	396256	470373	942117
n-C27	12261	99138	243994	385742	457968	918311
n-C28	12439	100297	246825	391092	463855	927617
n-C29	12460	100743	247866	392769	465313	925638
n-C30	12206	99218	244132	385624	456903	903030
n-C31	11880	98300	241138	380036	449032	881127
n-C32	11645	96156	235110	369310	434911	850522
n-C33	11419	94217	230336	360673	423685	824270
n-C34	11691	94703	231131	359862	421994	822174
n-C35	11142	92834	223108	348317	408561	798634
n-C36	12037	97002	233923	364710	427630	842927
n-C37	10939	89315	214042	334137	393746	775887
n-C38	10515	87583	210812	330963	387580	770733
n-C39	10331	82965	201077	317436	372412	739442
n-C40	8368	76169	186397	295785	345664	691641
Average Area (use for TPH, TRPH, GRO, DRO, RRO)	11450	93611	229760	361878	428527	862212
Average of n-C38 & n-C40	9442	81876	198605	313374	366622	731187
n-C36/n-C20	0.99	0.99	0.96	0.95	0.94	0.92

For Isoprenoids (other than Pristane and Phytane) use area for normal alkane; i-C13 use n-C13

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073C.D
Signal(s) : FID2B.CH
Acq On : 09-Aug-2013, 22:41:20
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-019
Misc :
ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:22:32 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Tue Aug 06 16:29:04 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	n-hexadecane-d34	12.909	381314	50.000	ug/mlm
16) I	5a-androstane	18.142	499832	50.072	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.631	9529	1.268	ug/mlm
23) S	n-eicosane-d42	17.541	9737	1.276	ug/mlm
34) S	n-triacontane-d62	29.404	9732	1.312	ug/mlm
	Target Compounds				
2)	n-C8	3.499	9117	1.288	ug/mlm
3)	n-C9	4.818	9578	1.279	ug/mlm
4)	n-C10	6.228	10163	1.281	ug/mlm
5)	n-C11	7.579	10255	1.277	ug/mlm
7)	n-C12	8.836	10555	1.249	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	10.006	10739	1.258	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.099	11088	1.247	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.126	11521	1.268	ug/mlm
15)	n-C16	13.157	11792	1.283	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.255	11948	1.238	ug/mlm
19)	Pristane	14.373	11944	1.242	ug/mlm
20)	n-C18	15.427	11923	1.250	ug/mlm
21)	Phytane	15.591	12125	1.247	ug/mlm
22)	n-C19	16.662	11967	1.251	ug/mlm
24)	n-C20	17.937	12143	1.258	ug/mlm
25)	n-C21	19.232	12167	1.249	ug/mlm
26)	n-C22	20.531	12394	1.269	ug/mlm
27)	n-C23	21.814	12412	1.265	ug/mlm
28)	n-C24	23.075	12449	1.267	ug/mlm
29)	n-C25	24.305	12463	1.271	ug/mlm
30)	n-C26	25.501	12662	1.290	ug/mlm
31)	n-C27	26.662	12261	1.286	ug/mlm
32)	n-C28	27.788	12439	1.285	ug/mlm
33)	n-C29	28.881	12460	1.291	ug/mlm
35)	n-C30	29.938	12206	1.280	ug/mlm
36)	n-C31	30.963	11880	1.269	ug/mlm
37)	n-C32	31.959	11645	1.264	ug/mlm
38)	n-C33	32.925	11419	1.279	ug/mlm
39)	n-C34	33.864	11691	1.302	ug/mlm
40)	n-C35	34.856	11142	1.268	ug/mlm

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073C.D
Signal(s) : FID2B.CH
Acq On : 09-Aug-2013, 22:41:20
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-019
Misc :
ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:22:32 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Tue Aug 06 16:29:04 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.985	12037	1.280	ug/mlm
42)	n-C37	37.292	10938	1.293	ug/mlm
43)	n-C38	38.813	10515	1.233	ug/mlm
44)	n-C39	40.587	10331	1.258	ug/mlm
45)	n-C40	42.695	8368	1.113	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

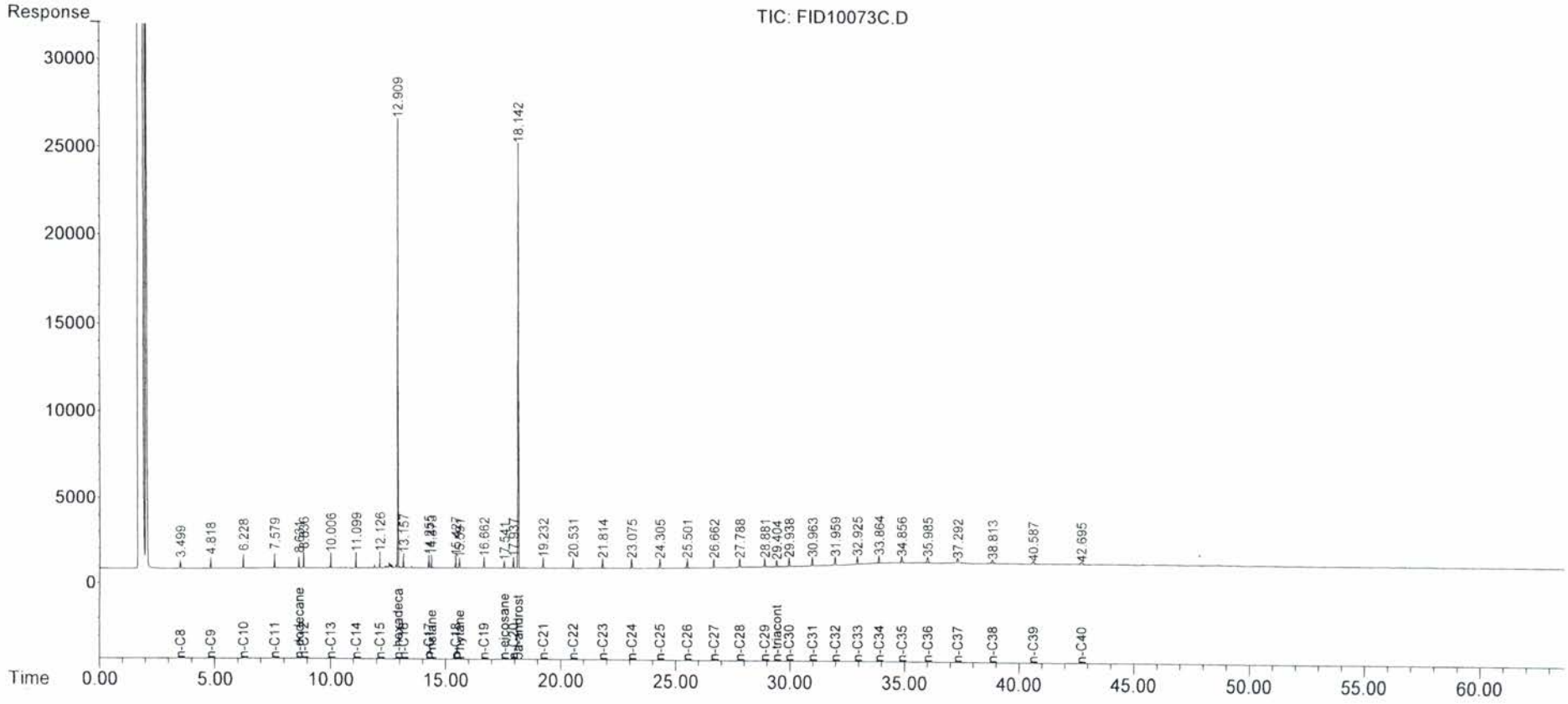
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073C.D
Signal(s) : FID2B.CH
Acq On : 09-Aug-2013, 22:41:20
Operator : Meghan Dailey
Sample : AL-WKC1-1.25-019
Misc :
ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:22:32 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Tue Aug 06 16:29:04 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073D.D
Signal(s) : FID2B.CH
Acq On : 09-Aug-2013, 23:51:52
Operator : Meghan Dailey
Sample : AL-WKC2-10-019
Misc :
ALS Vial : 54 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:27:09 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:22:42 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1)	I n-hexadecane-d34	12.909	383354	50.000	ug/mlm
16)	I 5a-androstane	18.141	500714	50.072	ug/mlm
	System Monitoring Compounds				
6)	S n-dodecane-d26	8.631	77356	10.231	ug/mlm
23)	S n-eicosane-d42	17.540	77526	10.128	ug/mlm
34)	S n-triacontane-d62	29.406	76777	10.287	ug/mlm
	Target Compounds				
2)	n-C8	3.498	77857	10.892	ug/mlm
3)	n-C9	4.817	81584	10.815	ug/mlm
4)	n-C10	6.227	84579	10.582	ug/mlm
5)	n-C11	7.579	84486	10.453	ug/mlm
7)	n-C12	8.837	86658	10.200	ug/mlm
8)	i-13	0.000	0	N.D.	ug/ml
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	10.006	88505	10.324	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.099	91324	10.247	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.126	93428	10.267	ug/mlm
15)	n-C16	13.157	94455	10.230	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.256	96726	10.035	ug/mlm
19)	Pristane	14.373	96562	10.048	ug/mlm
20)	n-C18	15.428	96930	10.154	ug/mlm
21)	Phytane	15.591	98535	10.134	ug/mlm
22)	n-C19	16.663	97244	10.159	ug/mlm
24)	n-C20	17.938	98208	10.170	ug/mlm
25)	n-C21	19.233	98724	10.123	ug/mlm
26)	n-C22	20.532	99952	10.215	ug/mlm
27)	n-C23	21.815	99765	10.143	ug/mlm
28)	n-C24	23.075	99865	10.146	ug/mlm
29)	n-C25	24.305	100899	10.256	ug/mlm
30)	n-C26	25.501	101467	10.295	ug/mlm
31)	n-C27	26.663	99138	10.346	ug/mlm
32)	n-C28	27.790	100297	10.344	ug/mlm
33)	n-C29	28.882	100743	10.394	ug/mlm
35)	n-C30	29.939	99218	10.395	ug/mlm
36)	n-C31	30.967	98300	10.525	ug/mlm
37)	n-C32	31.960	96156	10.465	ug/mlm
38)	n-C33	32.925	94217	10.567	ug/mlm
39)	n-C34	33.865	94703	10.516	ug/mlm
40)	n-C35	34.858	92834	10.609	ug/mlm

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073D.D
Signal(s) : FID2B.CH
Acq On : 09-Aug-2013, 23:51:52
Operator : Meghan Dailey
Sample : AL-WKC2-10-019
Misc :
ALS Vial : 54 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:27:09 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:22:42 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.991	97002	10.282	ug/mlm
42)	n-C37	37.292	89315	10.441	ug/mlm
43)	n-C38	38.812	87583	10.374	ug/mlm
44)	n-C39	40.596	82965	10.141	ug/mlm
45)	n-C40	42.703	76169	10.196	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

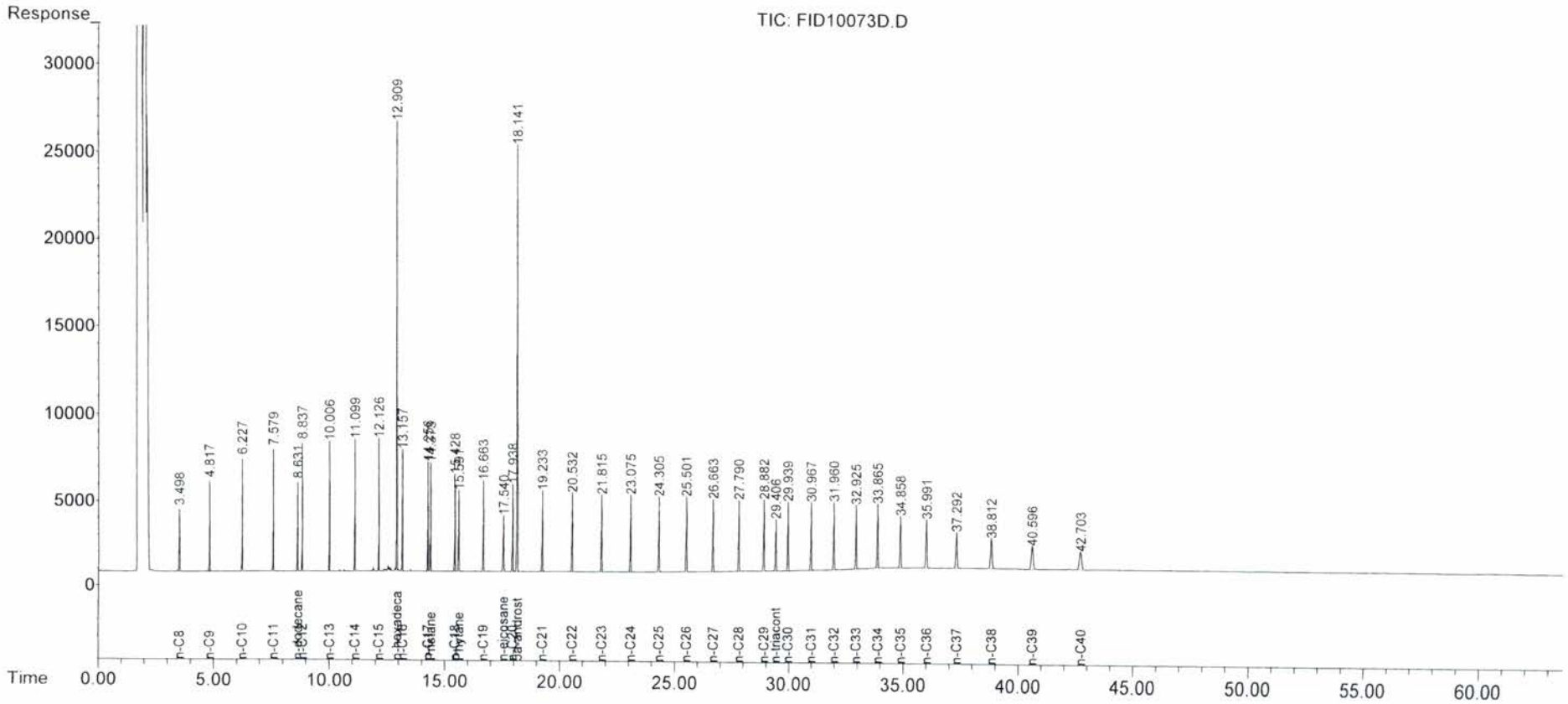
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073D.D
Signal(s) : FID2B.CH
Acq On : 09-Aug-2013, 23:51:52
Operator : Meghan Dailey
Sample : AL-WKC2-10-019
Misc :
ALS Vial : 54 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:27:09 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:22:42 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073E.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 01:02:24
Operator : Meghan Dailey
Sample : AL-WKC3-25-019
Misc :
ALS Vial : 55 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:31:09 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:27:17 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1) I	n-hexadecane-d34	12.908	383337	50.000	ug/mlm
16) I	5a-androstane	18.141	499201	50.072	ug/mlm
	System Monitoring Compounds				
6) S	n-dodecane-d26	8.632	192147	25.357	ug/mlm
23) S	n-eicosane-d42	17.543	192449	25.260	ug/mlm
34) S	n-triacontane-d62	29.408	189467	25.458	ug/mlm
	Target Compounds				
2)	n-C8	3.500	188499	26.082	ug/mlm
3)	n-C9	4.817	197797	25.968	ug/mlm
4)	n-C10	6.228	207556	25.806	ug/mlm
5)	n-C11	7.579	208394	25.673	ug/mlm
7)	n-C12	8.838	214265	25.157	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	10.007	219073	25.524	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.100	226227	25.373	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.128	230576	25.332	ug/mlm
15)	n-C16	13.159	232923	25.212	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.258	238635	24.904	ug/mlm
19)	Pristane	14.375	238683	24.989	ug/mlm
20)	n-C18	15.430	239559	25.239	ug/mlm
21)	Phytane	15.592	243595	25.194	ug/mlm
22)	n-C19	16.664	240347	25.238	ug/mlm
24)	n-C20	17.940	243017	25.294	ug/mlm
25)	n-C21	19.237	243725	25.107	ug/mlm
26)	n-C22	20.534	246952	25.348	ug/mlm
27)	n-C23	21.818	246307	25.134	ug/mlm
28)	n-C24	23.079	246380	25.127	ug/mlm
29)	n-C25	24.308	248590	25.348	ug/mlm
30)	n-C26	25.506	250624	25.500	ug/mlm
31)	n-C27	26.666	243994	25.522	ug/mlm
32)	n-C28	27.792	246825	25.525	ug/mlm
33)	n-C29	28.884	247866	25.641	ug/mlm
35)	n-C30	29.941	244132	25.667	ug/mlm
36)	n-C31	30.967	241138	25.897	ug/mlm
37)	n-C32	31.963	235110	25.665	ug/mlm
38)	n-C33	32.927	230336	25.955	ug/mlm
39)	n-C34	33.866	231131	25.796	ug/mlm
40)	n-C35	34.861	223108	25.644	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073E.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 01:02:24
Operator : Meghan Dailey
Sample : AL-WKC3-25-019
Misc :
ALS Vial : 55 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:31:09 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:27:17 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.993	233923	24.947	ug/mlm
42)	n-C37	37.297	214042	25.190	ug/mlm
43)	n-C38	38.815	210812	25.157	ug/mlm
44)	n-C39	40.596	201077	24.827	ug/mlm
45)	n-C40	42.700	186397	25.260	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

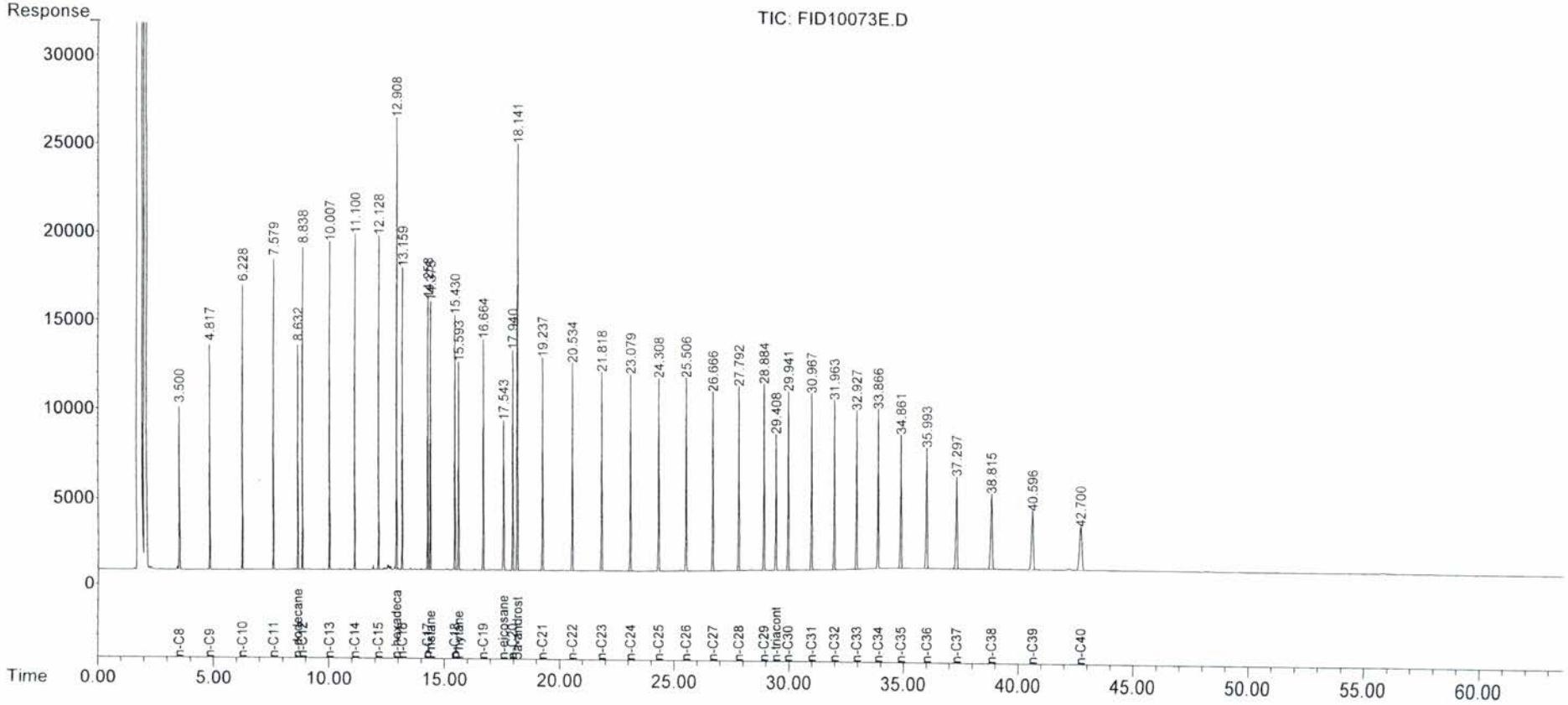
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073E.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 01:02:24
Operator : Meghan Dailey
Sample : AL-WKC3-25-019
Misc :
ALS Vial : 55 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:31:09 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:27:17 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073F.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 02:13:04
Operator : Meghan Dailey
Sample : AL-WKC4-40-019
Misc :
ALS Vial : 56 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:35:43 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:31:22 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Internal Standards						
1)	I	n-hexadecane-d34	12.908	375489	50.000	ug/mlm
16)	I	5a-androstane	18.140	487025	50.072	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.633	311896	41.967	ug/mlm
23)	S	n-eicosane-d42	17.544	310706	41.899	ug/mlm
34)	S	n-triacontane-d62	29.411	308189	42.522	ug/mlm
Target Compounds						
2)		n-C8	3.502	291362	40.861	ug/mlm
3)		n-C9	4.819	309016	41.145	ug/mlm
4)		n-C10	6.229	326517	41.240	ug/mlm
5)		n-C11	7.581	329031	41.251	ug/mlm
7)		n-C12	8.839	339153	40.589	ug/mlm
8)		i-13	0.000	0	N.D.	ug/mld
9)		i-14	0.000	0	N.D.	ug/mld
10)		n-C13	10.009	346829	41.232	ug/mlm
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	11.102	357826	40.959	ug/mlm
13)		i-16	0.000	0	N.D.	ug/mld
14)		n-C15	12.129	364007	40.821	ug/mlm
15)		n-C16	13.160	367530	40.604	ug/mlm
17)		i-18	0.000	0	N.D.	ug/mld
18)		n-C17	14.260	376430	40.354	ug/mlm
19)		Pristane	14.378	376376	40.477	ug/mlm
20)		n-C18	15.432	378180	40.939	ug/mlm
21)		Phytane	15.596	383107	40.697	ug/mlm
22)		n-C19	16.667	378543	40.853	ug/mlm
24)		n-C20	17.943	383571	41.056	ug/mlm
25)		n-C21	19.240	384963	40.770	ug/mlm
26)		n-C22	20.538	389670	41.108	ug/mlm
27)		n-C23	21.822	388885	40.776	ug/mlm
28)		n-C24	23.081	389086	40.765	ug/mlm
29)		n-C25	24.313	392936	41.167	ug/mlm
30)		n-C26	25.509	396256	41.409	ug/mlm
31)		n-C27	26.669	385742	41.435	ug/mlm
32)		n-C28	27.795	391092	41.544	ug/mlm
33)		n-C29	28.887	392769	41.730	ug/mlm
35)		n-C30	29.946	385624	41.618	ug/mlm
36)		n-C31	30.970	380036	41.882	ug/mlm
37)		n-C32	31.965	369310	41.347	ug/mlm
38)		n-C33	32.933	360673	41.691	ug/mlm
39)		n-C34	33.870	359862	41.185	ug/mlm
40)		n-C35	34.867	348317	41.116	ug/mlm

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073F.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 02:13:04
Operator : Meghan Dailey
Sample : AL-WKC4-40-019
Misc :
ALS Vial : 56 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:35:43 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:31:22 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.999	364710	39.988	ug/mlm
42)	n-C37	37.305	334137	40.468	ug/mlm
43)	n-C38	38.823	330963	40.678	ug/mlm
44)	n-C39	40.615	317436	40.438	ug/mlm
45)	n-C40	42.706	295785	41.391	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

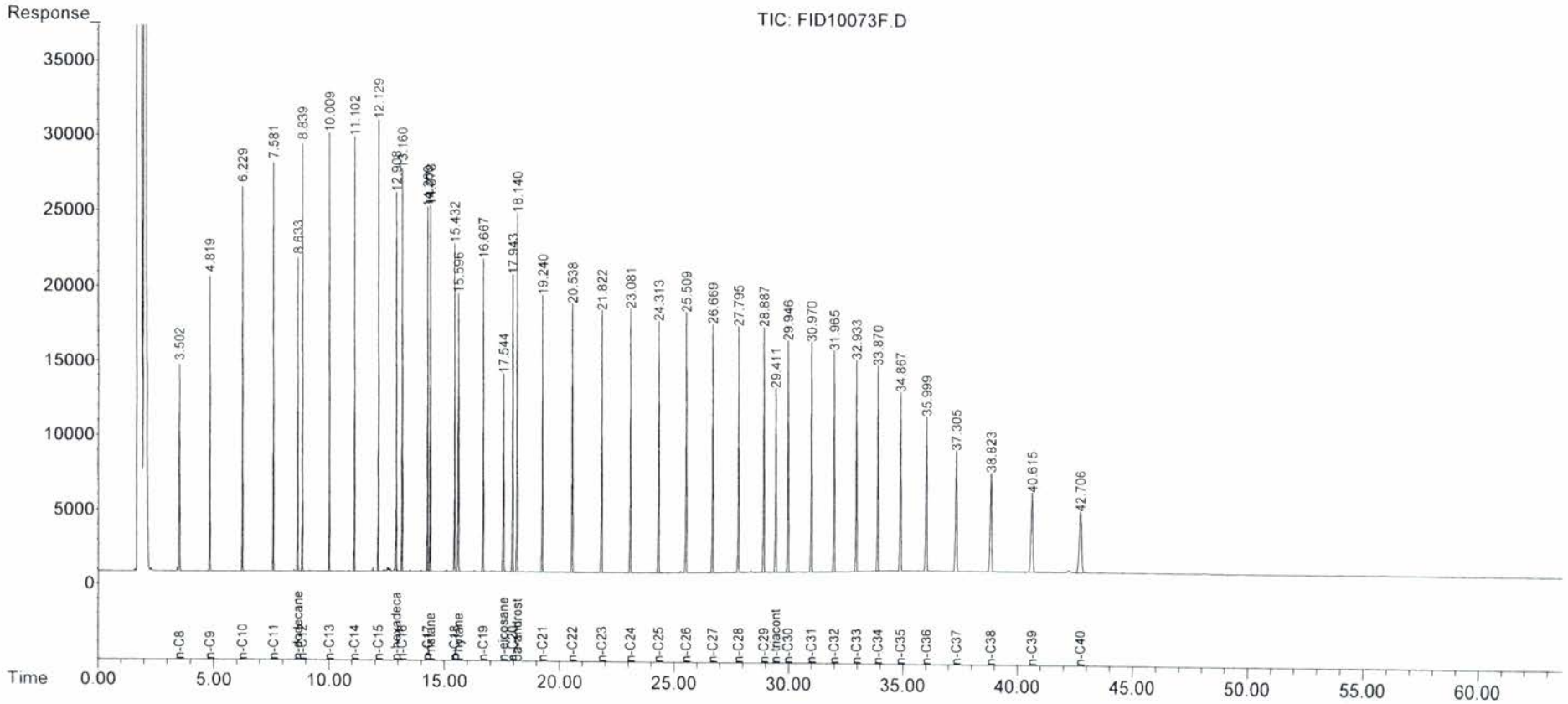
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073F.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 02:13:04
Operator : Meghan Dailey
Sample : AL-WKC4-40-019
Misc :
ALS Vial : 56 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:35:43 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:31:22 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073G.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 03:23:38
Operator : Meghan Dailey
Sample : AL-WKC5-50-019
Misc :
ALS Vial : 57 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:39:27 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:35:51 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

		Compound	R.T.	Response	Conc	Units
Internal Standards						
1)	I	n-hexadecane-d34	12.906	357816	50.000	ug/mlm
16)	I	5a-androstane	18.139	464561	50.072	ug/mlm
System Monitoring Compounds						
6)	S	n-dodecane-d26	8.633	358855	50.638	ug/mlm
23)	S	n-eicosane-d42	17.545	356753	50.580	ug/mlm
34)	S	n-triacontane-d62	29.411	354384	51.088	ug/mlm
Target Compounds						
2)		n-C8	3.501	352928	51.800	ug/mlm
3)		n-C9	4.819	368042	51.249	ug/mlm
4)		n-C10	6.229	388060	51.284	ug/mlm
5)		n-C11	7.581	391233	51.377	ug/mlm
7)		n-C12	8.839	402706	50.536	ug/mlm
8)		i-13	0.000	0	N.D.	ug/mld
9)		i-14	0.000	0	N.D.	ug/mld
10)		n-C13	10.009	411631	51.353	ug/mlm
11)		i-15	0.000	0	N.D.	ug/mld
12)		n-C14	11.102	424031	50.953	ug/mlm
13)		i-16	0.000	0	N.D.	ug/mld
14)		n-C15	12.129	431554	50.807	ug/mlm
15)		n-C16	13.161	435910	50.527	ug/mlm
17)		i-18	0.000	0	N.D.	ug/mld
18)		n-C17	14.260	446735	50.362	ug/mlm
19)		Pristane	14.378	446725	50.515	ug/mlm
20)		n-C18	15.434	448208	51.001	ug/mlm
21)		Phytane	15.597	456112	50.944	ug/mlm
22)		n-C19	16.668	449691	51.012	ug/mlm
24)		n-C20	17.944	454323	51.068	ug/mlm
25)		n-C21	19.240	457017	50.810	ug/mlm
26)		n-C22	20.540	462814	51.227	ug/mlm
27)		n-C23	21.823	462119	50.801	ug/mlm
28)		n-C24	23.084	462171	50.740	ug/mlm
29)		n-C25	24.314	466818	51.222	ug/mlm
30)		n-C26	25.511	470373	51.448	ug/mlm
31)		n-C27	26.672	457968	51.476	ug/mlm
32)		n-C28	27.796	463855	51.542	ug/mlm
33)		n-C29	28.890	465313	51.675	ug/mlm
35)		n-C30	29.947	456903	51.523	ug/mlm
36)		n-C31	30.972	449032	51.687	ug/mlm
37)		n-C32	31.968	434911	50.849	ug/mlm
38)		n-C33	32.933	423685	51.159	ug/mlm
39)		n-C34	33.874	421994	50.519	ug/mlm
40)		n-C35	34.869	408561	50.518	ug/mlm

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073G.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 03:23:38
Operator : Meghan Dailey
Sample : AL-WKC5-50-019
Misc :
ALS Vial : 57 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:39:27 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:35:51 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	36.001	427630	49.200	ug/mlm
42)	n-C37	37.306	393746	50.145	ug/mlm
43)	n-C38	38.829	387580	50.139	ug/mlm
44)	n-C39	40.614	372412	50.024	ug/mlm
45)	n-C40	42.721	345664	51.025	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

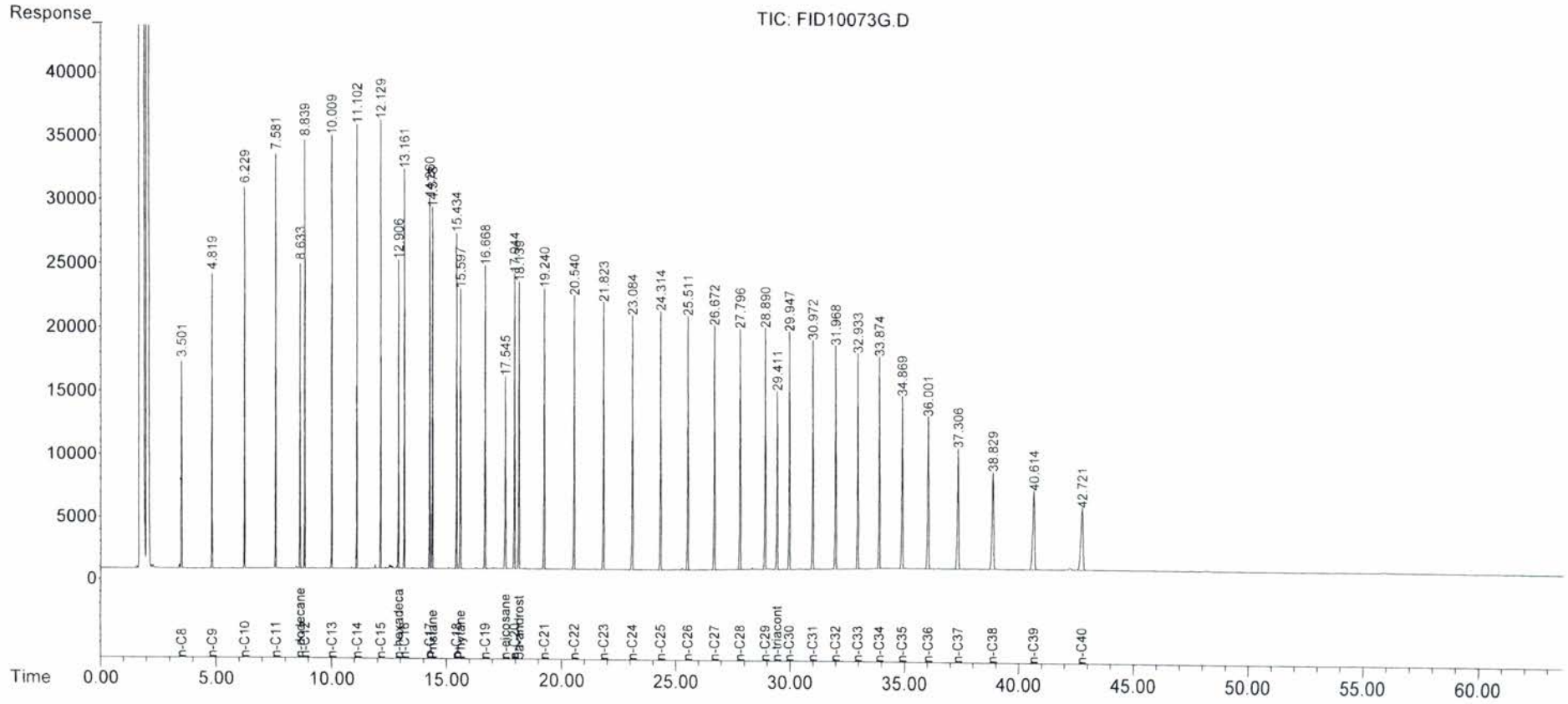
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073G.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 03:23:38
Operator : Meghan Dailey
Sample : AL-WKC5-50-019
Misc :
ALS Vial : 57 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:39:27 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:35:51 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073H.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 04:34:12
Operator : Meghan Dailey
Sample : AL-WKC6-100-019
Misc :
ALS Vial : 58 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:44:35 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:39:35 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc Units
Internal Standards				
1) I	n-hexadecane-d34	12.908	418348	50.000 ug/mlm
16) I	5a-androstane	18.144	539676	50.072 ug/mlm
System Monitoring Compounds				
6) S	n-dodecane-d26	8.638	754320	91.028 ug/mlm
23) S	n-eicosane-d42	17.554	737163	90.109 ug/mlm
34) S	n-triacontane-d62	29.423	716353	88.574 ug/mlm
Target Compounds				
2)	n-C8	3.507	722182	90.132 ug/mlm
3)	n-C9	4.824	759329	90.124 ug/mlm
4)	n-C10	6.234	803179	90.562 ug/mlm
5)	n-C11	7.586	807832	90.609 ug/mlm
7)	n-C12	8.845	829898	89.043 ug/mlm
8)	i-13	0.000	0	N.D. ug/mld
9)	i-14	0.000	0	N.D. ug/mld
10)	n-C13	10.015	846199	90.319 ug/mlm
11)	i-15	0.000	0	N.D. ug/mld
12)	n-C14	11.108	869751	89.435 ug/mlm
13)	i-16	0.000	0	N.D. ug/mld
14)	n-C15	12.136	883118	88.949 ug/mlm
15)	n-C16	13.168	889122	88.123 ug/mlm
17)	i-18	0.000	0	N.D. ug/mld
18)	n-C17	14.269	911137	88.670 ug/mlm
19)	Pristane	14.387	908737	88.705 ug/mlm
20)	n-C18	15.442	911921	89.529 ug/mlm
21)	Phytane	15.607	925459	89.160 ug/mlm
22)	n-C19	16.679	911938	89.200 ug/mlm
24)	n-C20	17.956	920851	89.249 ug/mlm
25)	n-C21	19.253	923803	88.458 ug/mlm
26)	n-C22	20.552	935593	89.158 ug/mlm
27)	n-C23	21.836	931772	88.135 ug/mlm
28)	n-C24	23.096	931521	87.965 ug/mlm
29)	n-C25	24.329	939992	88.677 ug/mlm
30)	n-C26	25.524	942117	88.555 ug/mlm
31)	n-C27	26.685	918311	88.675 ug/mlm
32)	n-C28	27.812	927617	88.513 ug/mlm
33)	n-C29	28.904	925638	88.221 ug/mlm
35)	n-C30	29.963	903030	87.339 ug/mlm
36)	n-C31	30.987	881127	86.994 ug/mlm
37)	n-C32	31.978	850522	85.310 ug/mlm
38)	n-C33	32.947	824270	85.429 ug/mlm
39)	n-C34	33.886	822174	84.619 ug/mlm
40)	n-C35	34.884	798634	84.985 ug/mlm

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073H.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 04:34:12
Operator : Meghan Dailey
Sample : AL-WKC6-100-019
Misc :
ALS Vial : 58 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:44:35 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:39:35 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	36.020	842927	83.625	ug/mlm
42)	n-C37	37.324	775887	85.305	ug/mlm
43)	n-C38	38.855	770733	86.269	ug/mlm
44)	n-C39	40.641	739442	85.992	ug/mlm
45)	n-C40	42.750	691641	88.458	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

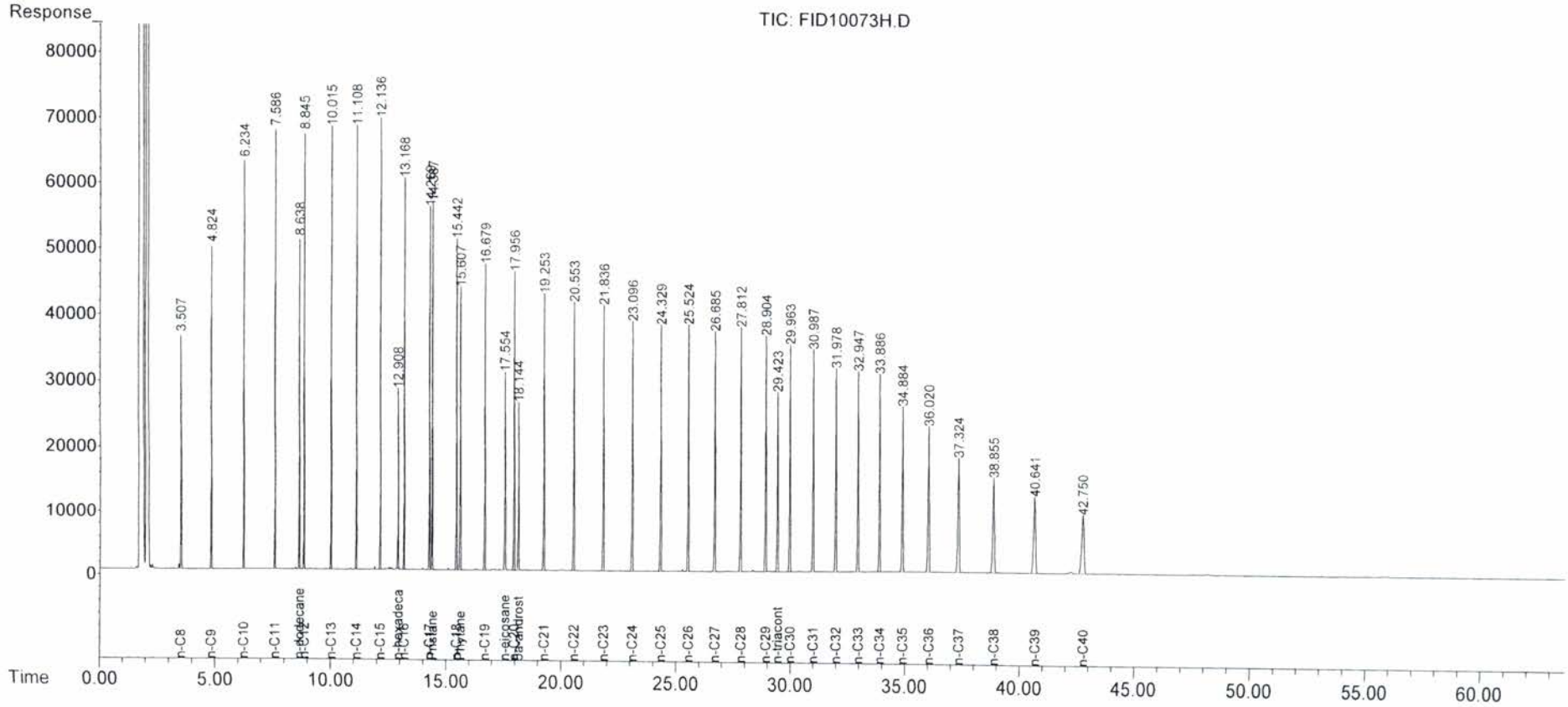
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073H.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 04:34:12
Operator : Meghan Dailey
Sample : AL-WKC6-100-019
Misc :
ALS Vial : 58 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 14:44:35 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:39:35 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073I.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 05:44:45
Operator : Meghan Dailey
Sample : AL-WKICV-25-002
Misc :
ALS Vial : 59 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 15:02:23 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	I	n-hexadecane-d34	1.000	1.000	0.0	86	0.00
2		n-C8	0.962	1.020	-6.0	90	0.00
3		n-C9	1.011	1.085	-7.3	91	0.00
4		n-C10	1.064	1.119	-5.2	89	0.00
5		n-C11	1.069	1.146	-7.2	91	0.00
6	S	n-dodecane-d26	0.992	0.985	0.7	85	0.00
7		n-C12	1.116	1.182	-5.9	90	0.00
10		n-C13	1.122	1.185	-5.6	90	0.00
12		n-C14	1.164	1.218	-4.6	89	0.00
14		n-C15	1.189	1.255	-5.6	90	0.00
15		n-C16	1.208	1.290	-6.8	91	0.00
16	I	5a-androstane	1.000	1.000	0.0	87	0.00
18		n-C17	0.952	0.997	-4.7	89	0.00
19		Pristane	0.949	0.983	-3.6	88	0.00
20		n-C18	0.944	0.996	-5.5	90	0.00
21		Phytane	0.962	0.995	-3.4	88	0.00
22		n-C19	0.948	1.014	-7.0	91	0.00
23	S	n-eicosane-d42	0.758	0.762	-0.5	86	0.00
24		n-C20	0.957	1.003	-4.8	89	0.00
25		n-C21	0.969	1.043	-7.6	92	0.00
26		n-C22	0.974	1.033	-6.1	90	0.00
27		n-C23	0.982	1.041	-6.0	90	0.00
28		n-C24	0.984	1.041	-5.8	90	0.00
29		n-C25	0.985	0.956	2.9	83	0.00
30		n-C26	0.989	1.051	-6.3	91	0.00
31		n-C27	0.964	1.047	-8.6	93	0.00
32		n-C28	0.976	1.050	-7.6	92	0.00
33		n-C29	0.978	1.041	-6.4	91	0.00
34	S	n-triacontane-d62	0.754	0.774	-2.7	88	0.00
35		n-C30	0.964	1.047	-8.6	92	0.00
36		n-C31	0.944	1.010	-7.0	90	0.00
37		n-C32	0.929	1.021	-9.9	93	0.00
38		n-C33	0.898	0.951	-5.9	89	0.00
39		n-C34	0.903	0.988	-9.4	92	0.00
40		n-C35	0.872	0.955	-9.5	92	0.00
41		n-C36	0.935	1.003	-7.3	91	0.00
42		n-C37	0.842	0.910	-8.1	92	0.00
43		n-C38	0.827	0.873	-5.6	90	0.00

44	n-C39	0.795	0.867	-9.1	93	0.00
45	n-C40	0.722	0.818	-13.3	95	0.00

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.017	0.000	100.0#	0#	-9.03#
9	i-14	0.018	0.000	100.0#	0#	-9.73#
11	i-15	0.018	0.000	100.0#	0#	-10.88#
13	i-16	0.019	0.000	100.0#	0#	-11.77#
17	i-18	0.019	0.000	100.0#	0#	-13.72#
46	TPH	0.018	0.000	100.0#	0#	-29.05#
47	TRH1	0.018	0.000	100.0#	0#	-7.75#
48	TRH2	0.018	0.000	100.0#	0#	-15.92#
49	TRH3	0.018	0.000	100.0#	0#	-23.38#
50	TRH4	0.018	0.000	100.0#	0#	-28.40#
51	TRH5	0.018	0.000	100.0#	0#	-33.37#
52	TRH6	0.018	0.000	100.0#	0#	-44.83#
53	GRO	0.018	0.000	100.0#	0#	-5.27#
54	DRO	0.018	0.000	100.0#	0#	-14.31#
55	RRO	0.018	0.000	100.0#	0#	-33.00#

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

FID1C08BACK081213.M Mon Aug 12 15:02:29 2013

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073I.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 05:44:45
Operator : Meghan Dailey
Sample : AL-WKICV-25-002
Misc :
ALS Vial : 59 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 15:02:23 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1)	I n-hexadecane-d34	12.907	330942	50.000	ug/mlm
16)	I 5a-androstane	18.136	432505	50.072	ug/mlm
	System Monitoring Compounds				
6)	S n-dodecane-d26	8.631	163035	24.823	ug/mlm
23)	S n-eicosane-d42	17.540	165577	25.282	ug/mlm
34)	S n-triacontane-d62	29.404	167282	25.690	ug/mlm
	Target Compounds				
2)	n-C8	3.496	168879	26.533	ug/mlm
3)	n-C9	4.816	179593	26.844	ug/mlm
4)	n-C10	6.227	185126	26.292	ug/mlm
5)	n-C11	7.579	189776	26.830	ug/mlm
7)	n-C12	8.837	192281	26.026	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	10.007	196420	26.459	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.100	200305	26.000	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.127	206706	26.276	ug/mlm
15)	n-C16	13.158	211253	26.423	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.257	212692	25.854	ug/mlm
19)	Pristane	14.374	210324	25.652	ug/mlm
20)	n-C18	15.429	215216	26.387	ug/mlm
21)	Phytane	15.592	214414	25.801	ug/mlm
22)	n-C19	16.663	218721	26.713	ug/mlm
24)	n-C20	17.938	216961	26.252	ug/mlm
25)	n-C21	19.234	223177	26.663	ug/mlm
26)	n-C22	20.533	223302	26.541	ug/mlm
27)	n-C23	21.816	222653	26.259	ug/mlm
28)	n-C24	23.076	222147	26.147	ug/mlm
29)	n-C25	24.306	205799	24.186	ug/mlm
30)	n-C26	25.502	227305	26.616	ug/mlm
31)	n-C27	26.663	226247	27.184	ug/mlm
32)	n-C28	27.790	226655	26.888	ug/mlm
33)	n-C29	28.881	225171	26.663	ug/mlm
35)	n-C30	29.940	225180	27.049	ug/mlm
36)	n-C31	30.965	218164	26.758	ug/mlm
37)	n-C32	31.961	217713	27.136	ug/mlm
38)	n-C33	32.925	205273	26.474	ug/mlm
39)	n-C34	33.866	212894	27.301	ug/mlm
40)	n-C35	34.858	206307	27.389	ug/mlm

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073I.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 05:44:45
Operator : Meghan Dailey
Sample : AL-WKICV-25-002
Misc :
ALS Vial : 59 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 15:02:23 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.988	212254	26.294	ug/mlm
42)	n-C37	37.290	196605	27.033	ug/mlm
43)	n-C38	38.812	188880	26.454	ug/mlm
44)	n-C39	40.597	187313	27.289	ug/mlm
45)	n-C40	42.701	176284	28.251	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

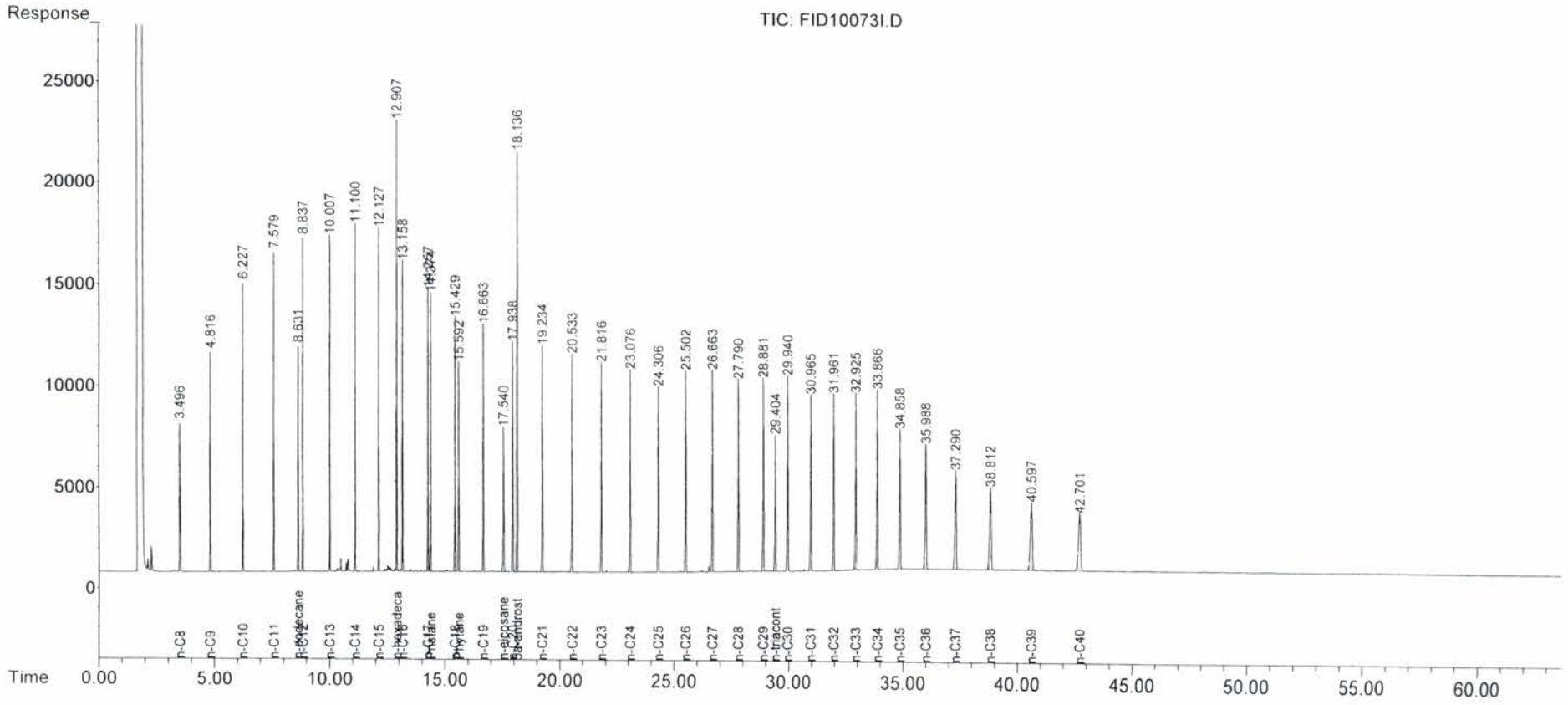
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073I.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 05:44:45
Operator : Meghan Dailey
Sample : AL-WKICV-25-002
Misc :
ALS Vial : 59 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 15:02:23 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Evaluate Continuing Calibration Report

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073J.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 06:55:19
Operator : Meghan Dailey
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 60 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 15:06:55 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(Min)
1	I	n-hexadecane-d34	1.000	1.000	0.0	86	0.00
2		n-C8	0.962	0.992	-3.1	86	0.00
3		n-C9	1.011	1.035	-2.4	86	0.00
4		n-C10	1.064	1.090	-2.4	86	0.00
5		n-C11	1.069	1.090	-2.0	86	0.00
6	S	n-dodecane-d26	0.992	1.006	-1.4	86	0.00
7		n-C12	1.116	1.140	-2.2	86	0.00
10		n-C13	1.122	1.140	-1.6	86	0.00
12		n-C14	1.164	1.189	-2.1	86	0.00
14		n-C15	1.189	1.210	-1.8	86	0.00
15		n-C16	1.208	1.228	-1.7	86	0.00
16	I	5a-androstane	1.000	1.000	0.0	86	0.00
18		n-C17	0.952	0.971	-2.0	86	0.00
19		Pristane	0.949	0.967	-1.9	86	0.00
20		n-C18	0.944	0.961	-1.8	86	0.00
21		Phytane	0.962	0.980	-1.9	86	0.00
22		n-C19	0.948	0.965	-1.8	86	0.00
23	S	n-eicosane-d42	0.758	0.764	-0.8	85	0.00
24		n-C20	0.957	0.975	-1.9	86	0.00
25		n-C21	0.969	0.989	-2.1	86	0.00
26		n-C22	0.974	0.992	-1.8	86	0.00
27		n-C23	0.982	1.002	-2.0	86	0.00
28		n-C24	0.984	1.006	-2.2	86	0.00
29		n-C25	0.985	1.008	-2.3	86	0.00
30		n-C26	0.989	1.012	-2.3	86	0.00
31		n-C27	0.964	0.988	-2.5	86	0.00
32		n-C28	0.976	1.006	-3.1	87	0.00
33		n-C29	0.978	1.011	-3.4	87	0.00
34	S	n-triacontane-d62	0.754	0.773	-2.5	87	0.00
35		n-C30	0.964	1.003	-4.0	87	0.00
36		n-C31	0.944	0.991	-5.0	88	0.00
37		n-C32	0.929	0.984	-5.9	88	0.00
38		n-C33	0.898	0.956	-6.5	88	0.00
39		n-C34	0.903	0.961	-6.4	88	0.00
40		n-C35	0.872	0.926	-6.2	88	0.00
41		n-C36	0.935	0.977	-4.5	87	0.00
42		n-C37	0.842	0.859	-2.0	86	0.00
43		n-C38	0.827	0.827	0.0	84	0.00

44	n-C39	0.795	0.772	2.9	82	0.00
45	n-C40	0.722	0.705	2.4	80	0.00

Evaluate Continuing Calibration Report - Not Founds

8	i-13	0.017	0.000	100.0#	0# -9.03#
9	i-14	0.018	0.000	100.0#	0# -9.73#
11	i-15	0.018	0.000	100.0#	0# -10.88#
13	i-16	0.019	0.000	100.0#	0# -11.77#
17	i-18	0.019	0.000	100.0#	0# -13.72#
46	TPH	0.018	0.000	100.0#	0# -29.05#
47	TRH1	0.018	0.000	100.0#	0# -7.75#
48	TRH2	0.018	0.000	100.0#	0# -15.92#
49	TRH3	0.018	0.000	100.0#	0# -23.38#
50	TRH4	0.018	0.000	100.0#	0# -28.40#
51	TRH5	0.018	0.000	100.0#	0# -33.37#
52	TRH6	0.018	0.000	100.0#	0# -44.83#
53	GRO	0.018	0.000	100.0#	0# -5.27#
54	DRO	0.018	0.000	100.0#	0# -14.31#
55	RRO	0.018	0.000	100.0#	0# -33.00#

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

FID1C08BACK081213.M Mon Aug 12 15:07:00 2013

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073J.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 06:55:19
Operator : Meghan Dailey
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 60 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 15:06:55 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
	Internal Standards				
1)	I n-hexadecane-d34	12.907	328340	50.000	ug/mlm
16)	I 5a-androstane	18.136	427035	50.072	ug/mlm
	System Monitoring Compounds				
6)	S n-dodecane-d26	8.631	165083	25.334	ug/mlm
23)	S n-eicosane-d42	17.540	163902	25.347	ug/mlm
34)	S n-triacontane-d62	29.404	165064	25.674	ug/mlm
	Target Compounds				
2)	n-C8	3.497	162962	25.806	ug/mlm
3)	n-C9	4.816	169849	25.588	ug/mlm
4)	n-C10	6.227	178929	25.613	ug/mlm
5)	n-C11	7.579	179128	25.525	ug/mlm
7)	n-C12	8.837	184006	25.103	ug/mlm
8)	i-13	0.000	0	N.D.	ug/mld
9)	i-14	0.000	0	N.D.	ug/mld
10)	n-C13	10.007	187399	25.444	ug/mlm
11)	i-15	0.000	0	N.D.	ug/mld
12)	n-C14	11.099	194009	25.382	ug/mlm
13)	i-16	0.000	0	N.D.	ug/mld
14)	n-C15	12.127	197616	25.320	ug/mlm
15)	n-C16	13.157	199600	25.164	ug/mlm
17)	i-18	0.000	0	N.D.	ug/mld
18)	n-C17	14.257	204555	25.184	ug/mlm
19)	Pristane	14.374	204309	25.237	ug/mlm
20)	n-C18	15.429	205116	25.471	ug/mlm
21)	Phytane	15.592	208514	25.412	ug/mlm
22)	n-C19	16.663	205679	25.442	ug/mlm
24)	n-C20	17.938	208214	25.516	ug/mlm
25)	n-C21	19.234	209048	25.295	ug/mlm
26)	n-C22	20.532	211817	25.498	ug/mlm
27)	n-C23	21.816	211505	25.264	ug/mlm
28)	n-C24	23.076	211947	25.266	ug/mlm
29)	n-C25	24.305	214178	25.494	ug/mlm
30)	n-C26	25.503	216121	25.631	ug/mlm
31)	n-C27	26.663	210693	25.639	ug/mlm
32)	n-C28	27.789	214562	25.780	ug/mlm
33)	n-C29	28.880	215842	25.885	ug/mlm
35)	n-C30	29.937	213096	25.926	ug/mlm
36)	n-C31	30.965	211394	26.259	ug/mlm
37)	n-C32	31.958	207072	26.140	ug/mlm
38)	n-C33	32.923	203830	26.625	ug/mlm
39)	n-C34	33.863	204389	26.546	ug/mlm
40)	n-C35	34.857	197418	26.545	ug/mlm

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073J.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 06:55:19
Operator : Meghan Dailey
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 60 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 15:06:55 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

	Compound	R.T.	Response	Conc	Units
41)	n-C36	35.988	204046	25.601	ug/mlm
42)	n-C37	37.290	183360	25.535	ug/mlm
43)	n-C38	38.805	176689	25.064	ug/mlm
44)	n-C39	40.589	164587	24.285	ug/mlm
45)	n-C40	42.694	149936	24.337	ug/mlm
46)	TPH	0.000	0	N.D.	ug/mld
47)	TRH1	0.000	0	N.D.	ug/mld
48)	TRH2	0.000	0	N.D.	ug/mld
49)	TRH3	0.000	0	N.D.	ug/mld
50)	TRH4	0.000	0	N.D.	ug/mld
51)	TRH5	0.000	0	N.D.	ug/mld
52)	TRH6	0.000	0	N.D.	ug/mld
53)	GRO	0.000	0	N.D.	ug/mld
54)	DRO	0.000	0	N.D.	ug/mld
55)	RRO	0.000	0	N.D.	ug/mld

SemiQuant Compounds - Not Calibrated on this Instrument

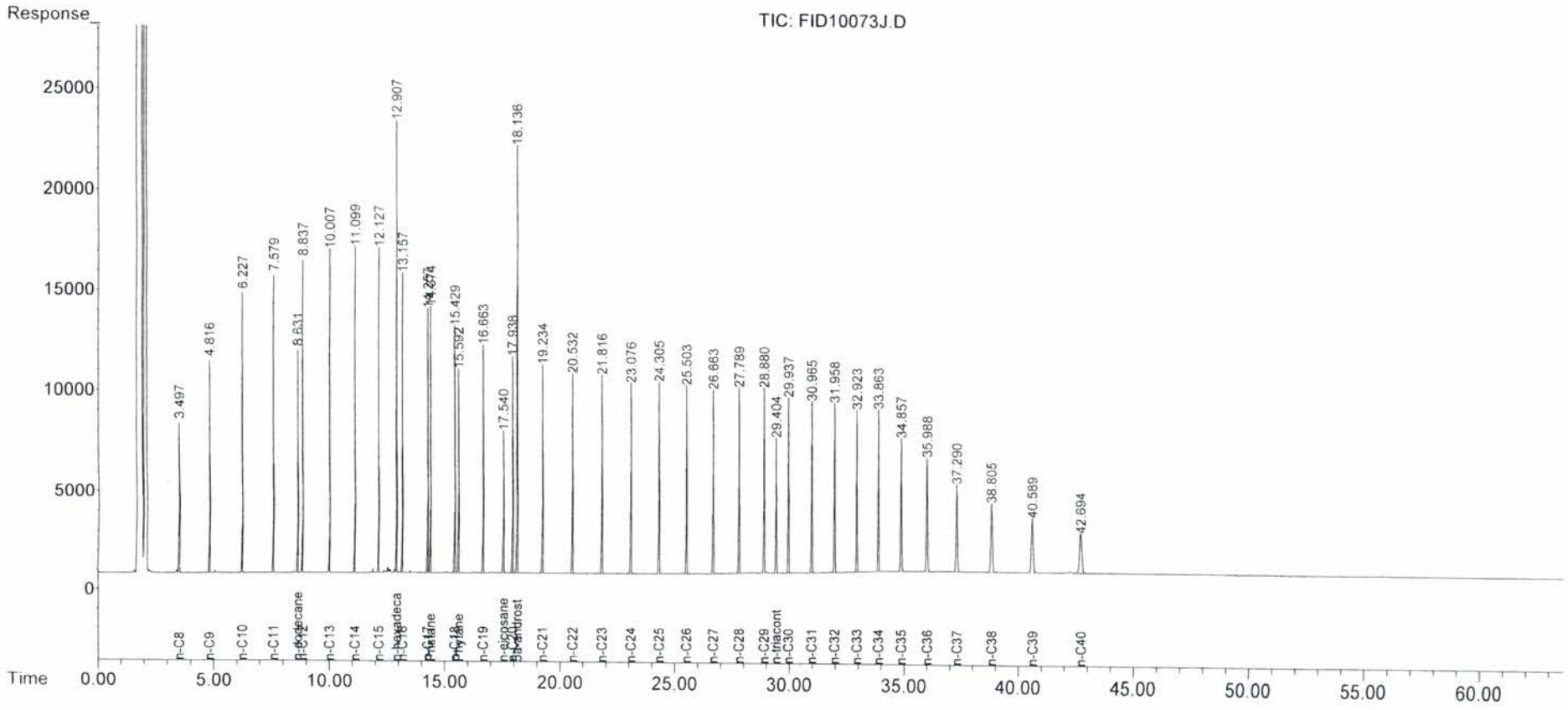
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data Path : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\
Data File : FID10073J.D
Signal(s) : FID2B.CH
Acq On : 10-Aug-2013, 06:55:19
Operator : Meghan Dailey
Sample : AL-WKCC-25-024
Misc :
ALS Vial : 60 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Aug 12 15:06:55 2013
Quant Method : P:\2013\J13001\ALI\MSDCHEM data\FID 1\FID10073\FID1C08BACK081213.M
Quant Title : C8 - C40 aliphatic
QLast Update : Mon Aug 12 14:55:52 2013
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Aliphatic Mass Discrimination Ratio

Arcadis-Mayflower AR Client Project # B0086003.1302

Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data

Mass Discrimination

File Name	Sample Name	n-C20 (Area)	n-C36 (Area)	n-C36/n-C20 ratio	Q
FID10073C.D	AL-WKC1-1.25-019	12143	12037	0.99	
FID10073D.D	AL-WKC2-10-019	98208	97002	0.99	
FID10073E.D	AL-WKC3-25-019	243017	233923	0.96	
FID10073F.D	AL-WKC4-40-019	383571	364710	0.95	
FID10073G.D	AL-WKC5-50-019	454323	427630	0.94	
FID10073H.D	AL-WKC6-100-019	920851	842927	0.92	
FID10073I.D	AL-WKICV-25-002	216961	212254	0.98	
FID10073J.D	AL-WKCC-25-024	208214	204046	0.98	
FID10081B.D	AL-WKCC-25-024	201077	190787	0.95	
FID10081G.D	AL-WKCC-25-024	192063	184897	0.96	

Qualifiers (Q): Ratio of n-C36 to n-C20 needs to be > 0.70

Aliphatic Internal Standard Area Data

Arcadis-Mayflower AR
Aliphatic Hydrocarbon and Total Petroleum Hydrocarbon Data
Area of Internal Standards

File Name	Sample Name	Internal Standard 1 n-hexadecane-d34			Internal Standard 2 5α-androstane		
		Response (Area)	50% (Area)	200% (Area)	Response (Area)	50% (Area)	200% (Area)
FID10073E.D	**AL-WKC3-25-019**	**383337**	**191669**	**766674**	**499201**	**249601**	**998402**
FID10073I.D	**AL-WKICV-25-002**	**330942**	**165471**	**661884**	**432505**	**216253**	**865010**
FID10073J.D	**AL-WKCC-25-024**	**328340**	**164170**	**656680**	**427035**	**213518**	**854070**
FID10081B.D	**AL-WKCC-25-024**	**320789**	**160395**	**641578**	**410792**	**205396**	**821584**
FID10081C.D	AL-SRM2779-20-01	328020			465164		
FID10081F.D	AL-WKPem-001	317967			408672		
ENV3084A.D	Procedural Blank	297963			386092		
ENV3084B.D	Blank Spike	300343			392323		
ENV3084C.D	Blank Spike Duplicate	285155			368292		
ARC1768.D	SED-DA-DI-Water	295424			381222		
FID10081G.D	**AL-WKCC-25-024**	**305819**	**152910**	**611638**	**392692**	**196346**	**785384**

Polycyclic Aromatic Hydrocarbon
Initial Calibration Data
and
Initial Calibration Verification Data

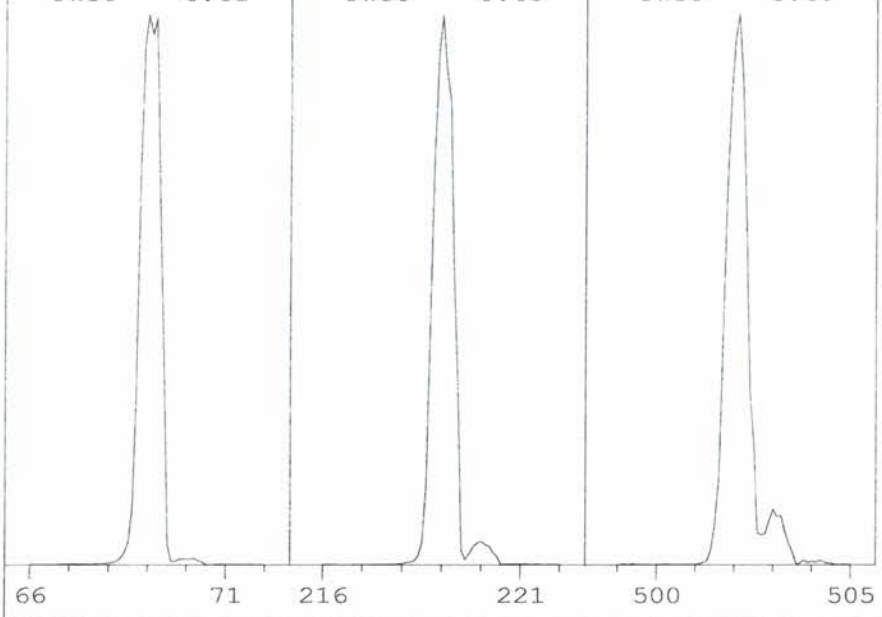
PAH ICAL
AR 70058.M

GC/MS 7
(PAH-2012)

Mon Aug 19 13:28:22 2013
C:\MSDCHEM\1\5973N\atune.u

Instrument: GCMSD
US21854533

Mass	69.00	Mass	219.00	Mass	502.10
Ab	427543	Ab	355264	Ab	25828
Pw50	0.61	Pw50	0.60	Pw50	0.60

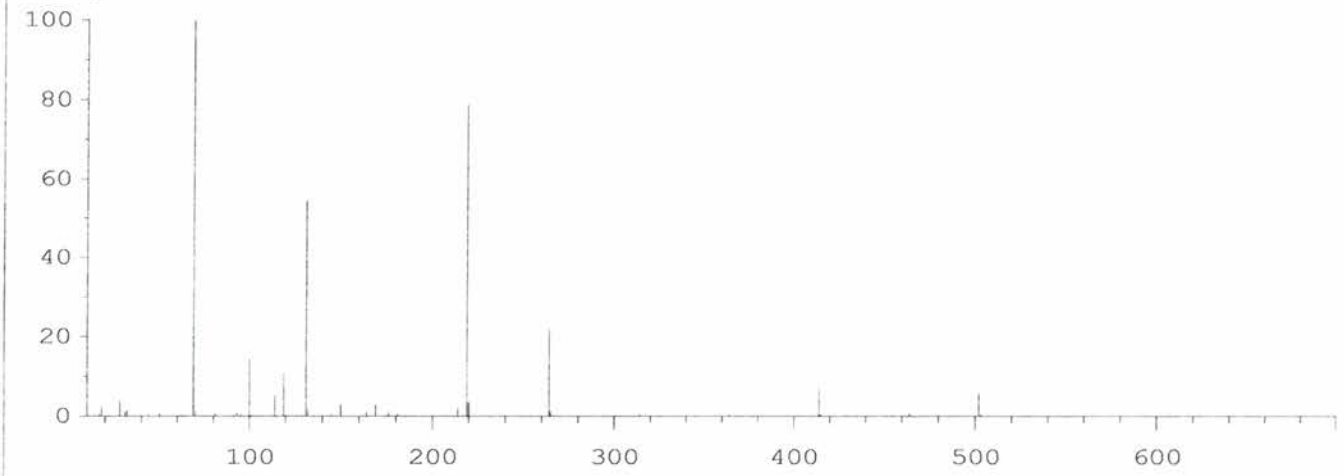


Ion Pol	Pos	MassGain	428
		MassOffs	-9
Emission	34.6	AmuGain	2298
EIEnrgy	69.9	AmuOffs	129
Filament	1	Wid219	-0.021
		DC Pol	Neg
Repeller	30.96		
IonFcus	81.6	HEDEnab	On
EntLens	14.5	EMVolts	2235
EntOffs	17.07		
		Samples	8
PFTBA	Open	Averages	3
		Stepsize	0.10

Temperatures and Pressures:

MS Source	290	Turbo Speed	100
MS Quad	180		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100 Step: 0.10
177 peaks Base: 69.00 Abundance: 398848



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	398848	100.00	70.00	4631	1.16
219.00	314496	78.85	220.00	14566	4.63
502.00	23856	5.98	503.10	2177	9.13

Air/Water Check: H2O~2.38% N2~4.22% O2~1.43% CO2~0.51% N2/H2O~177.23%

Column(1) Flow: 1.446 Column(2): 0 ml/min. Interface Temp: 290

Ramp Criteria:
Ion Focus Maximum 90 volts using ion 502; EM Gain 281961
Repeller Maximum 35 volts using ion 219; Gain Factor 2.82

MassGain Values(Samples): 424(3) 431(2) 430(1) 432(0) 428(FS)

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	129.0	129.0	129.0	129.0	129.0	129.0	129.0
Entrance Lens Offset:	17.1	17.1	17.1	17.1	17.1	17.1	17.1

MS70058 YM

Method Path : C:\GCMS7\MS70058\
Method File : AR70058.M
Title : PAH Calibration Table-2013A
Last Update : Wed Aug 21 18:15:55 2013
Response Via : Initial Calibration

Calibration Files
1 =MS70058B.D 2 =MS70058C.D 3 =MS70058D.D 4 =MS70058E.D 5 =MS70058F.D
6 =MS70058G.D

		Compound	1	2	3	4	5	6	Avg	%RSD
1)	I	Fluorene-d10	ISTD							
2)	S	Naphthalene-d8	1.960	1.675	1.560	1.610	1.595	1.625	1.671	8.77
3)	T	cis/trans Decalin	0.352	0.291	0.289	0.277	0.274	0.271	0.292	10.35
4)	un	C1-Decalins	0.352	0.291	0.289	0.277	0.274	0.271	0.292	10.35
5)	un	C2-Decalins	0.352	0.291	0.289	0.277	0.274	0.271	0.292	10.35
6)	un	C3-Decalins	0.352	0.291	0.289	0.277	0.274	0.271	0.292	10.35
7)	un	C4-Decalins	0.352	0.291	0.289	0.277	0.274	0.271	0.292	10.35
8)	T	Naphthalene	2.132	1.797	1.693	1.755	1.755	1.807	1.823	8.58
9)	T	2-Methylnaphth...	1.380	1.184	1.109	1.158	1.153	1.189	1.196	7.92
10)	T	1-Methylnaphth...	1.295	1.109	1.035	1.075	1.058	1.081	1.109	8.51
11)	T	2,6-Dimethylna...	1.160	1.030	0.982	0.995	1.039	1.084	1.048	6.26
12)	T	1,6,7-Trimethy...	1.121	0.939	0.878	0.907	0.913	0.966	0.954	9.12
13)	un	C2-Naphthalenes	2.132	1.797	1.693	1.755	1.755	1.807	1.823	8.58
14)	un	C3-Naphthalenes	2.132	1.797	1.693	1.755	1.755	1.807	1.823	8.58
15)	un	C4-Naphthalenes	2.132	1.797	1.693	1.755	1.755	1.807	1.823	8.58
16)	T	Benzothiophene	1.775	1.492	1.395	1.443	1.453	1.502	1.510	8.96
17)	un	C1-Benzothioph...	1.775	1.492	1.395	1.443	1.453	1.502	1.510	8.96
18)	un	C2-Benzothioph...	1.775	1.492	1.395	1.443	1.453	1.502	1.510	8.96
19)	un	C3-Benzothioph...	1.775	1.492	1.395	1.443	1.453	1.502	1.510	8.96
20)	un	C4-Benzothioph...	1.775	1.492	1.395	1.443	1.453	1.502	1.510	8.96
21)	S	Acenaphthene-d10	1.146	0.955	0.895	0.934	0.923	0.958	0.969	9.30
22)	T	Biphenyl	1.720	1.507	1.439	1.490	1.503	1.549	1.535	6.37
23)	T	Acenaphthylene	1.797	1.585	1.465	1.604	1.599	1.750	1.633	7.40
24)	T	Acenaphthene	1.234	1.038	0.966	1.000	1.005	1.042	1.047	9.11
25)	T	Dibenzofuran	1.973	1.718	1.635	1.722	1.708	1.753	1.752	6.59
26)	T	Fluorene	1.527	1.321	1.255	1.312	1.323	1.333	1.345	6.93
27)	T	1-Methylfluorene	0.854	0.702	0.651	0.689	0.688	0.743	0.721	9.92
28)	un	C1-Fluorenes	1.527	1.321	1.255	1.312	1.323	1.333	1.345	6.93
29)	un	C2-Fluorenes	1.527	1.321	1.255	1.312	1.323	1.333	1.345	6.93
30)	un	C3-Fluorenes	1.527	1.321	1.255	1.312	1.323	1.333	1.345	6.93
31)	I	Pyrene-d10	ISTD							
32)	S	Phenanthrene-d10	0.960	0.864	0.842	0.904	0.870	0.870	0.885	4.70
33)	T	Carbazole	0.936	0.882	0.864	0.950	0.939	0.930	0.917	3.82
34)	T	Dibenzothiophene	1.186	1.105	1.077	1.153	1.110	1.102	1.122	3.56
35)	T	4-Methyldibenz...	0.805	0.683	0.650	0.691	0.658	0.760	0.708	8.68
36)	un	2/3-Methyldibe...	0.805	0.683	0.650	0.691	0.658	0.760	0.708	8.68
37)	un	1-Methyldibenz...	0.805	0.683	0.650	0.691	0.658	0.760	0.708	8.68
38)	un	C2-Dibenzothio...	1.186	1.105	1.077	1.153	1.110	1.102	1.122	3.56
39)	un	C3-Dibenzothio...	1.186	1.105	1.077	1.153	1.110	1.102	1.122	3.56
40)	un	C4-Dibenzothio...	1.186	1.105	1.077	1.153	1.110	1.102	1.122	3.56
41)	T	Phenanthrene	1.127	0.977	0.926	0.984	0.931	1.012	0.993	7.40
42)	T	Anthracene	0.976	0.868	0.858	0.909	0.865	0.964	0.907	5.80
43)	un	3-Methylphenan...	0.928	0.784	0.743	0.795	0.764	0.881	0.816	8.87
44)	un	2-Methylphenan...	0.928	0.784	0.743	0.795	0.764	0.881	0.816	8.87
45)	un	2-Methylanthra...	0.928	0.784	0.743	0.795	0.764	0.881	0.816	8.87
46)	un	4/9-Methylphen...	0.928	0.784	0.743	0.795	0.764	0.881	0.816	8.87
47)	T	1-Methylphenan...	0.928	0.784	0.743	0.795	0.764	0.881	0.816	8.87
48)	T	3,6-Dimethylph...	0.908	0.774	0.742	0.804	0.790	0.842	0.810	7.22
49)	T	Retene	0.437	0.361	0.343	0.369	0.360	0.357	0.371	8.93
50)	un	C2-Phenanthren...	1.127	0.977	0.926	0.984	0.931	1.012	0.993	7.40
51)	un	C3-Phenanthren...	1.127	0.977	0.926	0.984	0.931	1.012	0.993	7.40
52)	un	C4-Phenanthren...	1.127	0.977	0.926	0.984	0.931	1.012	0.993	7.40
53)	T	Naphthobenzoth...	1.623	1.298	1.189	1.219	1.216	1.266	1.302	12.46

Method Path : C:\GCMS7\MS70058\
Method File : AR70058.M
Title : PAH Calibration Table-2013A

54)	un	C1-Naphthobenz...	1.623	1.298	1.189	1.219	1.216	1.266	1.302	12.46
55)	un	C2-Naphthobenz...	1.623	1.298	1.189	1.219	1.216	1.266	1.302	12.46
56)	un	C3-Naphthobenz...	1.623	1.298	1.189	1.219	1.216	1.266	1.302	12.46
57)	un	C4-Naphthobenz...	1.623	1.298	1.189	1.219	1.216	1.266	1.302	12.46
58)	T	Fluoranthene	1.518	1.289	1.221	1.305	1.255	1.184	1.295	9.08
59)	T	Pyrene	1.396	1.208	1.141	1.193	1.166	1.198	1.217	7.47
60)	T	2-Methylfluora...	0.941	0.773	0.738	0.783	0.765	0.753	0.792	9.38
61)	T	Benzo(b)fluorene	1.052	0.863	0.816	0.878	0.863	0.888	0.893	9.13
62)	un	C1-Fluoranthen...	1.518	1.289	1.221	1.305	1.255	1.184	1.295	9.08
63)	un	C2-Fluoranthen...	1.518	1.289	1.221	1.305	1.255	1.184	1.295	9.08
64)	un	C3-Fluoranthen...	1.518	1.289	1.221	1.305	1.255	1.184	1.295	9.08
65)	un	C4-Fluoranthen...	1.518	1.289	1.221	1.305	1.255	1.184	1.295	9.08
66)	S	Chrysene-d12	1.440	1.215	1.127	1.181	1.182	1.264	1.235	8.93
67)	T	Benz(a)anthracene	1.209	1.007	0.872	0.909	0.953	1.159	1.018	13.46
68)	T	Chrysene/Triph...	1.791	1.443	1.354	1.425	1.405	1.283	1.450	12.19
69)	un	C1-Chrysenes	1.791	1.443	1.354	1.425	1.405	1.283	1.450	12.19
70)	un	C2-Chrysenes	1.791	1.443	1.354	1.425	1.405	1.283	1.450	12.19
71)	un	C3-Chrysenes	1.791	1.443	1.354	1.425	1.405	1.283	1.450	12.19
72)	un	C4-Chrysenes	1.791	1.443	1.354	1.425	1.405	1.283	1.450	12.19
73)	I	Benzo(a)pyrene-d12	----------ISTD----------							
74)	un	C29-Hopane	0.462	0.393	0.363	0.365	0.377	0.401	0.393	9.30
75)	un	18a-Oleanane	0.462	0.393	0.363	0.365	0.377	0.401	0.393	9.30
76)	T	C30-Hopane	0.462	0.393	0.363	0.365	0.377	0.401	0.393	9.30
77)	T	Benzo(b)fluora...	1.616	1.308	1.184	1.252	1.342	1.397	1.350	11.09
78)	T	Benzo(k,j)fluo...	1.777	1.449	1.307	1.386	1.476	1.418	1.469	11.01
79)	un	Benzo(a)fluora...	1.777	1.449	1.307	1.386	1.476	1.418	1.469	11.01
80)	T	Benzo(e)pyrene	1.709	1.361	1.225	1.289	1.369	1.418	1.395	12.04
81)	T	Benzo(a)pyrene	1.519	1.250	1.164	1.217	1.249	1.478	1.313	11.26
82)	T	Indeno(1,2,3-c...	1.914	1.573	1.443	1.523	1.619	1.726	1.633	10.22
83)	T	Dibenzo(a,h)an...	1.516	1.238	1.151	1.218	1.294	1.394	1.302	10.21
84)	un	C1-Dibenzo(a,h...	1.516	1.238	1.151	1.218	1.294	1.394	1.302	10.21
85)	un	C2-Dibenzo(a,h...	1.516	1.238	1.151	1.218	1.294	1.394	1.302	10.21
86)	un	C3-Dibenzo(a,h...	1.516	1.238	1.151	1.218	1.294	1.394	1.302	10.21
87)	T	Benzo(g,h,i)pe...	1.719	1.427	1.289	1.345	1.421	1.466	1.444	10.30
88)	S	Perylene-d12	1.437	1.206	1.106	1.157	1.201	1.184	1.215	9.44
89)	T	Perylene	1.583	1.275	1.180	1.245	1.294	1.503	1.347	11.79
90)	S	5(b)H-Cholane	0.319	0.255	0.233	0.246	0.259	0.260	0.262	11.28
91)	un	C20-TAS	1.814	1.500	1.331	1.359	1.415	1.557	1.496	11.87
92)	un	C21-TAS	1.814	1.500	1.331	1.359	1.415	1.557	1.496	11.87
93)	un	C26(20S)-TAS	1.814	1.500	1.331	1.359	1.415	1.557	1.496	11.87
94)	T	C26(20R)/C27(2...	1.814	1.500	1.331	1.359	1.415	1.557	1.496	11.87
95)	un	C28(20S)-TAS	1.814	1.500	1.331	1.359	1.415	1.557	1.496	11.87
96)	un	C27(20R)-TAS	1.814	1.500	1.331	1.359	1.415	1.557	1.496	11.87
97)	un	C28(20R)-TAS	1.814	1.500	1.331	1.359	1.415	1.557	1.496	11.87

(#) = Out of Range

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058B.D
Acq On : 20 Aug 2013 8:11 am
Operator : YM
Sample : AR-WKC1-020-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 21 18:08:35 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 07:52:32 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	506663m	251.05		0.00
31) Pyrene-d10	29.600	212	1038061m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	1071576m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	79140m	23.89		0.00
21) Acenaphthene-d10	19.616	164	46304m	23.91		0.00
32) Phenanthrene-d10	24.683	188	79566m	21.78		0.00
66) Chrysene-d12	33.770	240	119341m	23.43		0.00
88) Perylene-d12	38.619	264	123078m	23.52		0.00
90) 5(b)H-Cholane	34.158	217	27311m	24.01		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	14041m	36.56		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.850	128	86047m	23.35		
9) 2-Methylnaphthalene	16.078	142	55756m	23.17		
10) 1-Methylnaphthalene	16.413	142	52210m	23.52		
11) 2,6-Dimethylnaphthalene	18.195	156	46838m	21.93		
12) 1,6,7-Trimethylnaphtha...	21.037	170	45244m	23.54		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.	d	
16) Benzothiophene	14.017	134	71198m	23.40		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.666	154	68816m	22.11		
23) Acenaphthylene	19.143	152	71965m	20.67		
24) Acenaphthene	19.728	154	49900m	23.81		
25) Dibenzofuran	20.313	168	79245m	22.71		
26) Fluorene	21.483	166	61758m	22.78		
27) 1-Methylfluorene	23.471	180	34742m	23.75		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	76811m	20.15		
34) Dibenzothiophene	24.337	184	96885m	21.07		
35) 4-Methyldibenzothiophene	25.860	198	67223m	22.94		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.787	178	92502m	23.04		
42) Anthracene	24.960	178	81112m	21.98		

Data Path : C:\GCMS7\MS70058\
Data File : MS70058B.D
Acq On : 20 Aug 2013 8:11 am
Operator : YM
Sample : AR-WKC1-020-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 21 18:08:35 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 07:52:32 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	75994m	22.56		
48) 3,6-Dimethylphenanthrene	27.973	206	75332m	22.64		
49) Retene	30.639	234	32310m	20.94		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.916	234	135305m	25.16		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	125872m	23.69		
59) Pyrene	29.669	202	115605m	22.89		
60) 2-Methylfluoranthene	30.396	216	78457m	24.15		
61) Benzo(b)fluorene	31.020	216	87922m	23.86		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	99955m	21.11		
68) Chrysene/Triphenylene	33.847	228	147448m	26.15		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.672	191	39520m	21.80		
77) Benzo(b)fluoranthene	37.261	252	138659m	21.90		
78) Benzo(k,j)fluoranthene	37.339	252	151489m	22.70		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.231	252	145740m	24.60		
81) Benzo(a)pyrene	38.425	252	129828m	23.23		
82) Indeno(1,2,3-c,d)pyrene	43.078	276	161067m	22.70		
83) Dibenzo(a,h)anthracene	43.152	278	128636m	22.74		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.442	276	145809m	23.28		
89) Perylene	38.697	252	135638m	23.24		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.356	231	155342m	23.97		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Data Path : C:\GCMS7\MS70058\
Data File : MS70058B.D
Acq On : 20 Aug 2013 8:11 am
Operator : YM
Sample : AR-WKC1-020-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 21 18:08:35 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 07:52:32 2013
Response via : Initial Calibration

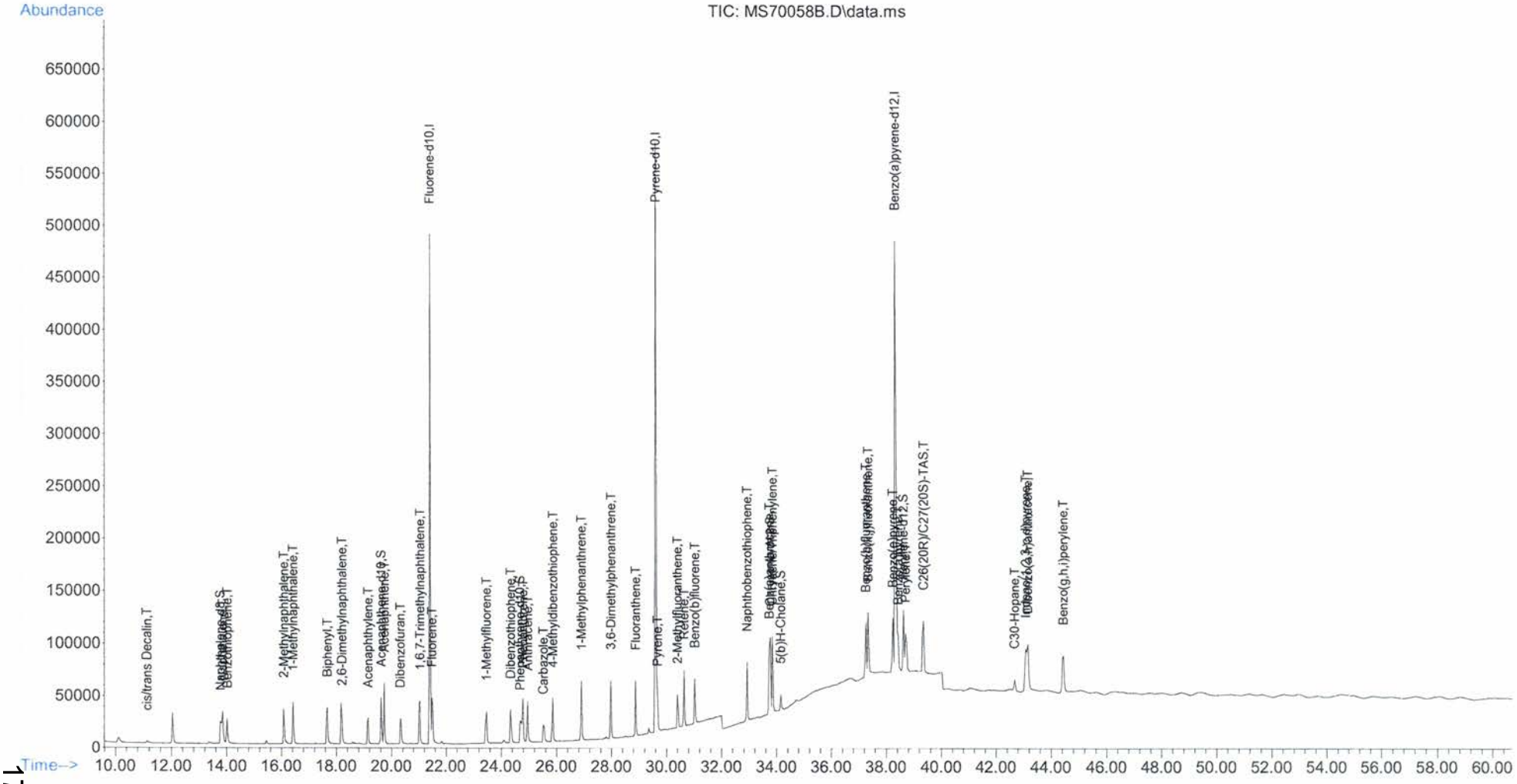
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058B.D
Acq On : 20 Aug 2013 8:11 am
Operator : YM
Sample : AR-WKC1-020-030
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Aug 21 18:08:35 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 07:52:32 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058C.D
Acq On : 20 Aug 2013 9:19 am
Operator : YM
Sample : AR-WKC2-100-030
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 21 18:10:18 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 07:59:15 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	438555m	251.05		0.00
31) Pyrene-d10	29.600	212	843284m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	887795m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	292742m	101.24		0.00
21) Acenaphthene-d10	19.616	164	166953m	99.12		0.00
32) Phenanthrene-d10	24.683	188	291101m	98.11		0.00
66) Chrysene-d12	33.770	240	408967m	98.70		0.00
88) Perylene-d12	38.619	264	427910m	98.87		0.00
90) 5(b)H-Cholane	34.158	217	90425m	96.49		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	50218m	136.06		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.850	128	313966m	98.49		
9) 2-Methylnaphthalene	16.078	142	207077m	99.05		
10) 1-Methylnaphthalene	16.413	142	193458m	100.59		
11) 2,6-Dimethylnaphthalene	18.168	156	179871m	97.40		
12) 1,6,7-Trimethylnaphtha...	21.037	170	164061m	98.60		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.017	134	258988m	98.04		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.638	154	260807m	96.93		
23) Acenaphthylene	19.115	152	274703m	90.99		
24) Acenaphthene	19.728	154	181705m	99.61		
25) Dibenzofuran	20.313	168	298698m	98.22		
26) Fluorene	21.483	166	231265m	98.92		
27) 1-Methylfluorene	23.471	180	123570m	97.87		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	294023m	94.76		
34) Dibenzothiophene	24.337	184	366626m	98.00		
35) 4-Methyldibenzothiophene	25.860	198	231794m	97.48		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.787	178	325705m	98.90		
42) Anthracene	24.960	178	292797m	97.46		

Data Path : C:\GCMS7\MS70058\
Data File : MS70058C.D
Acq On : 20 Aug 2013 9:19 am
Operator : YM
Sample : AR-WKC2-100-030
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 21 18:10:18 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 07:59:15 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	260851m	95.13		
48) 3,6-Dimethylphenanthrene	27.973	206	260708m	96.28		
49) Retene	30.639	234	108425m	86.85		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.916	234	439523m	100.39		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	434161m	100.69		
59) Pyrene	29.635	202	406603m	99.58		
60) 2-Methylfluoranthene	30.396	216	261744m	98.72		
61) Benzo(b)fluorene	31.020	216	292843m	97.61		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	338105m	86.24		
68) Chrysene/Triphenylene	33.847	228	482641m	103.78		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.672	191	139283m	98.11		
77) Benzo(b)fluoranthene	37.261	252	464944m	86.91		
78) Benzo(k,j)fluoranthene	37.339	252	511831m	90.93		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.231	252	480777m	97.35		
81) Benzo(a)pyrene	38.386	252	442339m	95.30		
82) Indeno(1,2,3-c,d)pyrene	43.078	276	548450m	93.56		
83) Dibenzo(a,h)anthracene	43.152	278	434977m	92.92		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.405	276	501546m	96.88		
89) Perylene	38.697	252	452563m	93.60		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.356	231	532142m	99.59		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058C.D
Acq On : 20 Aug 2013 9:19 am
Operator : YM
Sample : AR-WKC2-100-030
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 21 18:10:18 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 07:59:15 2013
Response via : Initial Calibration

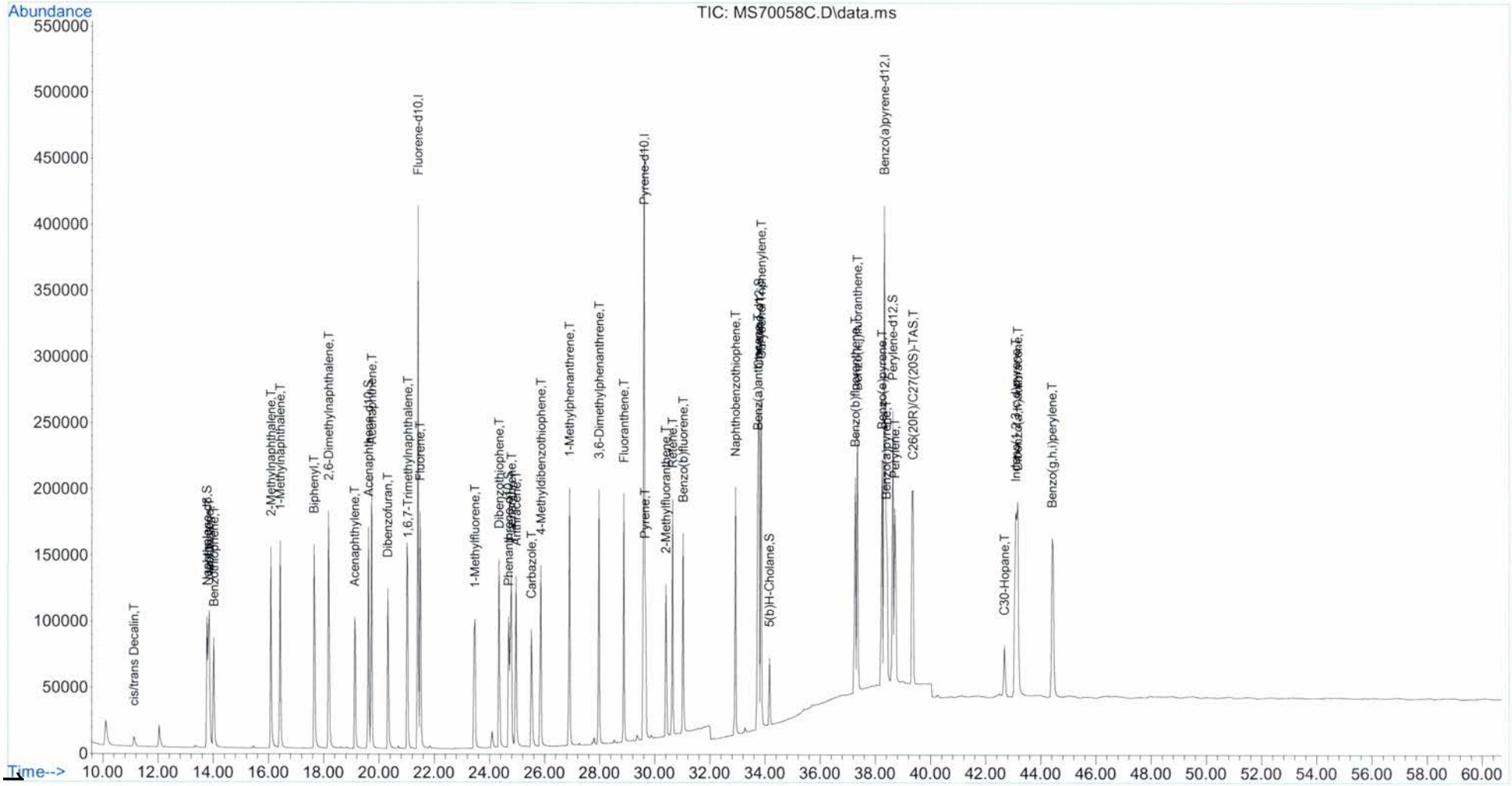
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058C.D
Acq On : 20 Aug 2013 9:19 am
Operator : YM
Sample : AR-WKC2-100-030
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Aug 21 18:10:18 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 07:59:15 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058D.D
Acq On : 20 Aug 2013 10:28 am
Operator : YM
Sample : AR-WKC3-250-030
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 21 18:12:38 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:09:46 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	430907m	251.05		0.00
31) Pyrene-d10	29.600	212	811827m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	868995m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	669755m	234.92		0.00
21) Acenaphthene-d10	19.616	164	384325m	231.92		0.00
32) Phenanthrene-d10	24.683	188	682740m	239.13		0.00
66) Chrysene-d12	33.770	240	912809m	228.77		0.00
88) Perylene-d12	38.619	264	960102m	226.06		0.00
90) 5(b)H-Cholane	34.158	217	202528m	220.80		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	122590m	312.65		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.850	128	726480m	232.15		
9) 2-Methylnaphthalene	16.079	142	476506m	231.91		
10) 1-Methylnaphthalene	16.413	142	443581m	234.15		
11) 2,6-Dimethylnaphthalene	18.168	156	421343m	232.21		
12) 1,6,7-Trimethylnaphtha...	21.037	170	376705m	230.27		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.017	134	594900m	229.16		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.639	154	611716m	231.69		
23) Acenaphthylene	19.115	152	623788m	210.17		
24) Acenaphthene	19.728	154	415218m	231.24		
25) Dibenzofuran	20.313	168	697966m	232.83		
26) Fluorene	21.483	166	539754m	234.48		
27) 1-Methylfluorene	23.471	180	281543m	227.23		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	693164m	232.52		
34) Dibenzothiophene	24.337	184	859609m	238.70		
35) 4-Methyldibenzothiophene	25.860	198	530427m	231.87		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.787	178	742735m	233.07		
42) Anthracene	24.960	178	696540m	240.42		

Data Path : C:\GCMS7\MS70058\
Data File : MS70058D.D
Acq On : 20 Aug 2013 10:28 am
Operator : YM
Sample : AR-WKC3-250-030
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 21 18:12:38 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:09:46 2013
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43)	3-Methylphenanthrene	0.000		0	N.D.	d	
44)	2-Methylphenanthrene	0.000		0	N.D.	d	
45)	2-Methylanthracene	0.000		0	N.D.	d	
46)	4/9-Methylphenanthrene	0.000		0	N.D.	d	
47)	1-Methylphenanthrene	26.899	192	595269m	225.53		
48)	3,6-Dimethylphenanthrene	27.973	206	601212m	230.55		
49)	Retene	30.639	234	248373m	206.62		
50)	C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51)	C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52)	C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53)	Naphthobenzothiophene	32.916	234	968728m	229.94		
54)	C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55)	C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56)	C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57)	C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58)	Fluoranthene	28.873	202	990023m	238.52		
59)	Pyrene	29.635	202	924113m	235.06		
60)	2-Methylfluoranthene	30.397	216	602084m	235.49		
61)	Benzo(b)fluorene	31.020	216	666525m	230.54		
62)	C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63)	C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64)	C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65)	C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67)	Benz(a)anthracene	33.731	228	704911m	184.68		
68)	Chrysene/Triphenylene	33.847	228	1089534m	241.10		
69)	C1-Chrysenes	0.000		0	N.D.	d	
70)	C2-Chrysenes	0.000		0	N.D.	d	
71)	C3-Chrysenes	0.000		0	N.D.	d	
72)	C4-Chrysenes	0.000		0	N.D.	d	
74)	C29-Hopane	0.000		0	N.D.	d	
75)	18a-Oleanane	0.000		0	N.D.	d	
76)	C30-Hopane	42.672	191	315099m	228.28		
77)	Benzo(b)fluoranthene	37.261	252	1029925m	193.45		
78)	Benzo(k,j)fluoranthene	37.339	252	1129858m	201.93		
79)	Benzo(a)fluoranthene	0.000		0	N.D.	d	
80)	Benzo(e)pyrene	38.231	252	1059096m	218.24		
81)	Benzo(a)pyrene	38.386	252	1008368m	221.58		
82)	Indeno(1,2,3-c,d)pyrene	43.078	276	1231378m	214.73		
83)	Dibenzo(a,h)anthracene	43.152	278	989750m	216.08		
84)	C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85)	C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86)	C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87)	Benzo(g,h,i)perylene	44.405	276	1108227m	218.45		
89)	Perylene	38.697	252	1025337m	217.04		
91)	C20-TAS	0.000		0	N.D.	d	
92)	C21-TAS	0.000		0	N.D.	d	
93)	C26(20S)-TAS	0.000		0	N.D.	d	
94)	C26(20R)/C27(20S)-TAS	39.356	231	1154939m	220.39		
95)	C28(20S)-TAS	0.000		0	N.D.	d	
96)	C27(20R)-TAS	0.000		0	N.D.	d	
97)	C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058D.D
Acq On : 20 Aug 2013 10:28 am
Operator : YM
Sample : AR-WKC3-250-030
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 21 18:12:38 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:09:46 2013
Response via : Initial Calibration

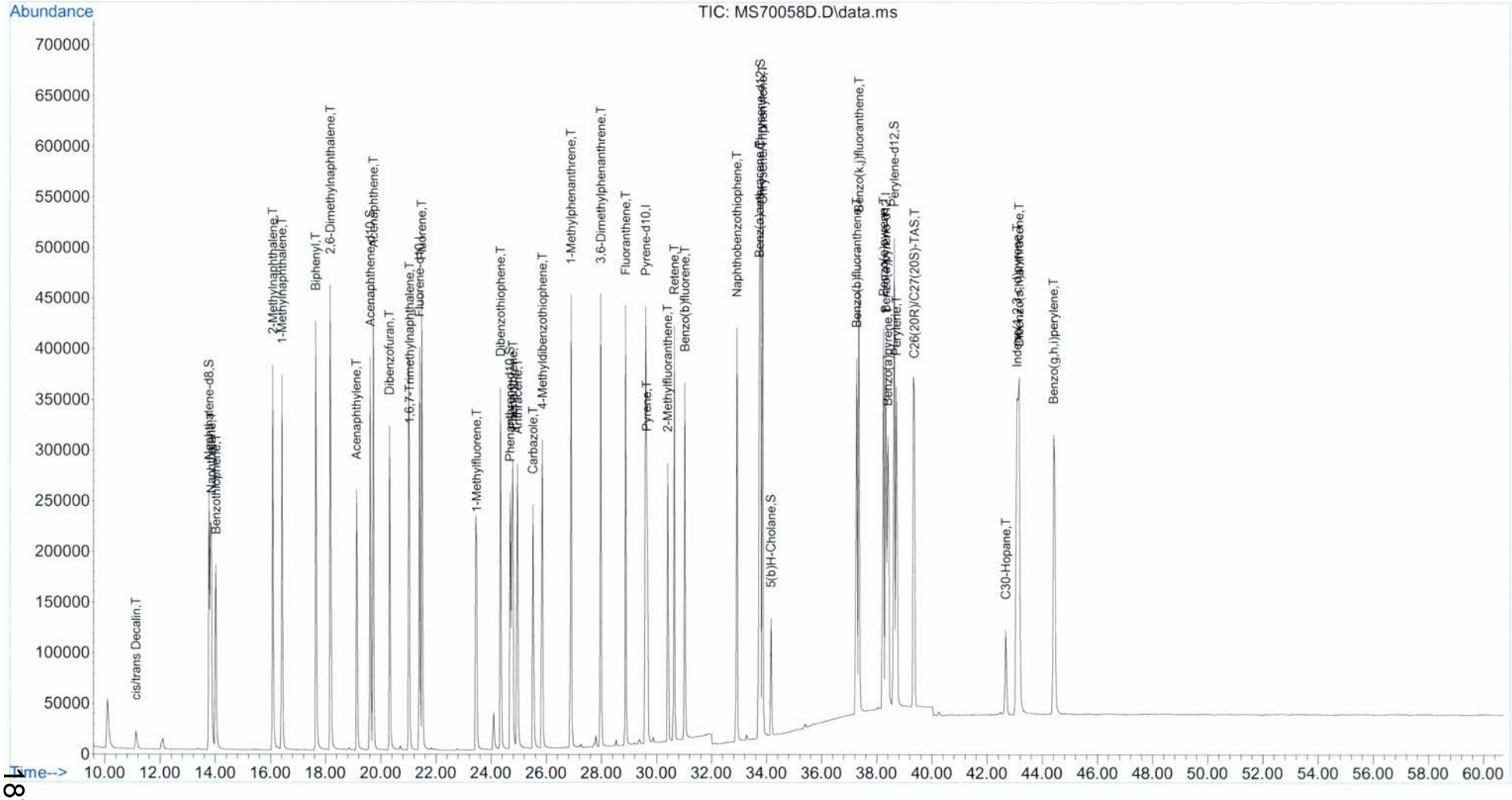
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058D.D
Acq On : 20 Aug 2013 10:28 am
Operator : YM
Sample : AR-WKC3-250-030
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Aug 21 18:12:38 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:09:46 2013
Response via : Initial Calibration



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Data Path : C:\GCMS7\MS70058\
Data File : MS70058E.D
Acq On : 20 Aug 2013 11:37 am
Operator : YM
Sample : AR-WKC4-500-030
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 21 18:13:44 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:15:36 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	443412m	251.05		0.00
31) Pyrene-d10	29.600	212	826442m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	877800m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	1422186m	483.61		0.00
21) Acenaphthene-d10	19.616	164	825383m	483.43		0.00
32) Phenanthrene-d10	24.683	188	1492441m	513.50		0.00
66) Chrysene-d12	33.770	240	1947924m	479.25		0.00
88) Perylene-d12	38.619	264	2029180m	472.97		0.00
90) 5(b)H-Cholane	34.158	217	431889m	466.51		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	241835m	555.03		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.822	128	1550197m	481.51		
9) 2-Methylnaphthalene	16.078	142	1023507m	484.52		
10) 1-Methylnaphthalene	16.413	142	948259m	485.69		
11) 2,6-Dimethylnaphthalene	18.168	156	878495m	471.19		
12) 1,6,7-Trimethylnaphtha...	21.037	170	801335m	475.75		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.017	134	1266543m	474.52		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.638	154	1303857m	479.83		
23) Acenaphthylene	19.115	152	1405083m	459.96		
24) Acenaphthene	19.728	154	884940m	478.53		
25) Dibenzofuran	20.313	168	1512856m	489.65		
26) Fluorene	21.483	166	1160911m	489.66		
27) 1-Methylfluorene	23.471	180	613120m	481.16		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	1551548m	512.59		
34) Dibenzothiophene	24.337	184	1874726m	510.94		
35) 4-Methyldibenzothiophene	25.860	198	1147996m	492.96		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.787	178	1608208m	494.31		
42) Anthracene	24.960	178	1502621m	506.87		

Data Path : C:\GCMS7\MS70058\
Data File : MS70058E.D
Acq On : 20 Aug 2013 11:37 am
Operator : YM
Sample : AR-WKC4-500-030
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 21 18:13:44 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:15:36 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	1295751m	482.34		
48) 3,6-Dimethylphenanthrene	27.973	206	1327155m	499.65		
49) Retene	30.639	234	544170m	444.62		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.916	234	2022788m	471.56		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	2153106m	509.43		
59) Pyrene	29.635	202	1967106m	491.17		
60) 2-Methylfluoranthene	30.396	216	1300451m	498.91		
61) Benzo(b)fluorene	31.020	216	1459930m	495.78		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	1495624m	381.70		
68) Chrysene/Triphenylene	33.847	228	2334634m	505.33		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.672	191	640458m	459.42		
77) Benzo(b)fluoranthene	37.261	252	2198693m	403.40		
78) Benzo(k,j)fluoranthene	37.339	252	2419524m	422.76		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.231	252	2250416m	458.75		
81) Benzo(a)pyrene	38.386	252	2130124m	462.74		
82) Indeno(1,2,3-c,d)pyrene	43.078	276	2625486m	454.38		
83) Dibenzo(a,h)anthracene	43.152	278	2116435m	458.58		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.405	276	2336634m	457.13		
89) Perylene	38.697	252	2184959m	459.61		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.356	231	2383151m	450.70		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058E.D
Acq On : 20 Aug 2013 11:37 am
Operator : YM
Sample : AR-WKC4-500-030
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 21 18:13:44 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:15:36 2013
Response via : Initial Calibration

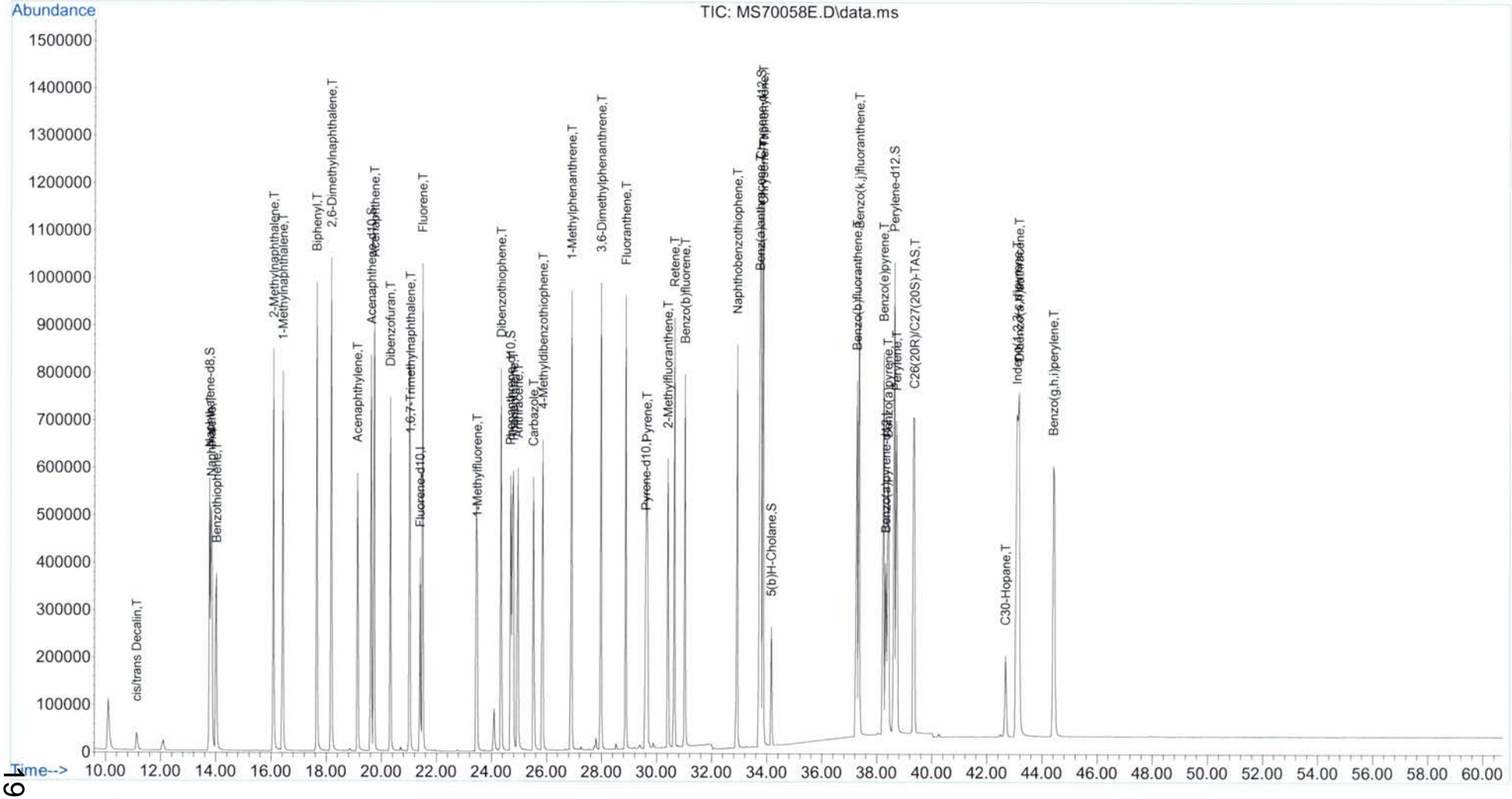
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058E.D
Acq On : 20 Aug 2013 11:37 am
Operator : YM
Sample : AR-WKC4-500-030
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Aug 21 18:13:44 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:15:36 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058F.D
Acq On : 20 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKC5-1000-030
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 21 18:14:47 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:20:59 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	454932m	251.05		0.00
31) Pyrene-d10	29.600	212	886279m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	862311m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	2892489m	957.45		0.00
21) Acenaphthene-d10	19.616	164	1673265m	954.63		0.00
32) Phenanthrene-d10	24.683	188	3079296m	986.18		0.00
66) Chrysene-d12	33.770	240	4181212m	958.82		0.00
88) Perylene-d12	38.619	264	4136387m	983.46		0.00
90) 5(b)H-Cholane	34.158	217	893712m	984.49		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	490465m	1031.60		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.822	128	3179697m	963.13		
9) 2-Methylnaphthalene	16.079	142	2091791m	965.59		
10) 1-Methylnaphthalene	16.413	142	1916205m	955.28		
11) 2,6-Dimethylnaphthalene	18.168	156	1882620m	991.04		
12) 1,6,7-Trimethylnaphtha...	21.037	170	1654942m	957.90		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.989	134	2617710m	957.42		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.639	154	2699873m	970.79		
23) Acenaphthylene	19.115	152	2874427m	918.11		
24) Acenaphthene	19.728	154	1824973m	961.76		
25) Dibenzofuran	20.313	168	3080485m	971.19		
26) Fluorene	21.483	166	2401650m	986.51		
27) 1-Methylfluorene	23.471	180	1255387m	960.61		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	3290526m	1015.64		
34) Dibenzothiophene	24.337	184	3868836m	983.25		
35) 4-Methyldibenzothiophene	25.860	198	2347348m	939.52		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.787	178	3264156m	932.84		
42) Anthracene	24.960	178	3069201m	961.88		

Data Path : C:\GCMS7\MS70058\
Data File : MS70058F.D
Acq On : 20 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKC5-1000-030
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 21 18:14:47 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:20:59 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	2670509m	926.69		
48) 3,6-Dimethylphenanthrene	27.973	206	2798295m	982.00		
49) Retene	30.639	234	1138472m	867.67		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.916	234	4327441m	940.75		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	4441966m	979.87		
59) Pyrene	29.635	202	4122107m	959.44		
60) 2-Methylfluoranthene	30.397	216	2723322m	973.71		
61) Benzo(b)fluorene	31.020	216	3081019m	975.89		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	3364667m	795.06		
68) Chrysene/Triphenylene	33.847	228	4940132m	994.15		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.672	191	1298017m	951.21		
77) Benzo(b)fluoranthene	37.261	252	4631142m	853.99		
78) Benzo(k,j)fluoranthene	37.339	252	5063308m	889.89		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.231	252	4695426m	974.46		
81) Benzo(a)pyrene	38.386	252	4292504m	947.90		
82) Indeno(1,2,3-c,d)pyrene	43.078	276	5481033m	968.45		
83) Dibenzo(a,h)anthracene	43.152	278	4418773m	977.51		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.442	276	4851943m	968.76		
89) Perylene	38.697	252	4463675m	957.89		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.356	231	4874686m	940.58		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058F.D
Acq On : 20 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKC5-1000-030
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 21 18:14:47 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:20:59 2013
Response via : Initial Calibration

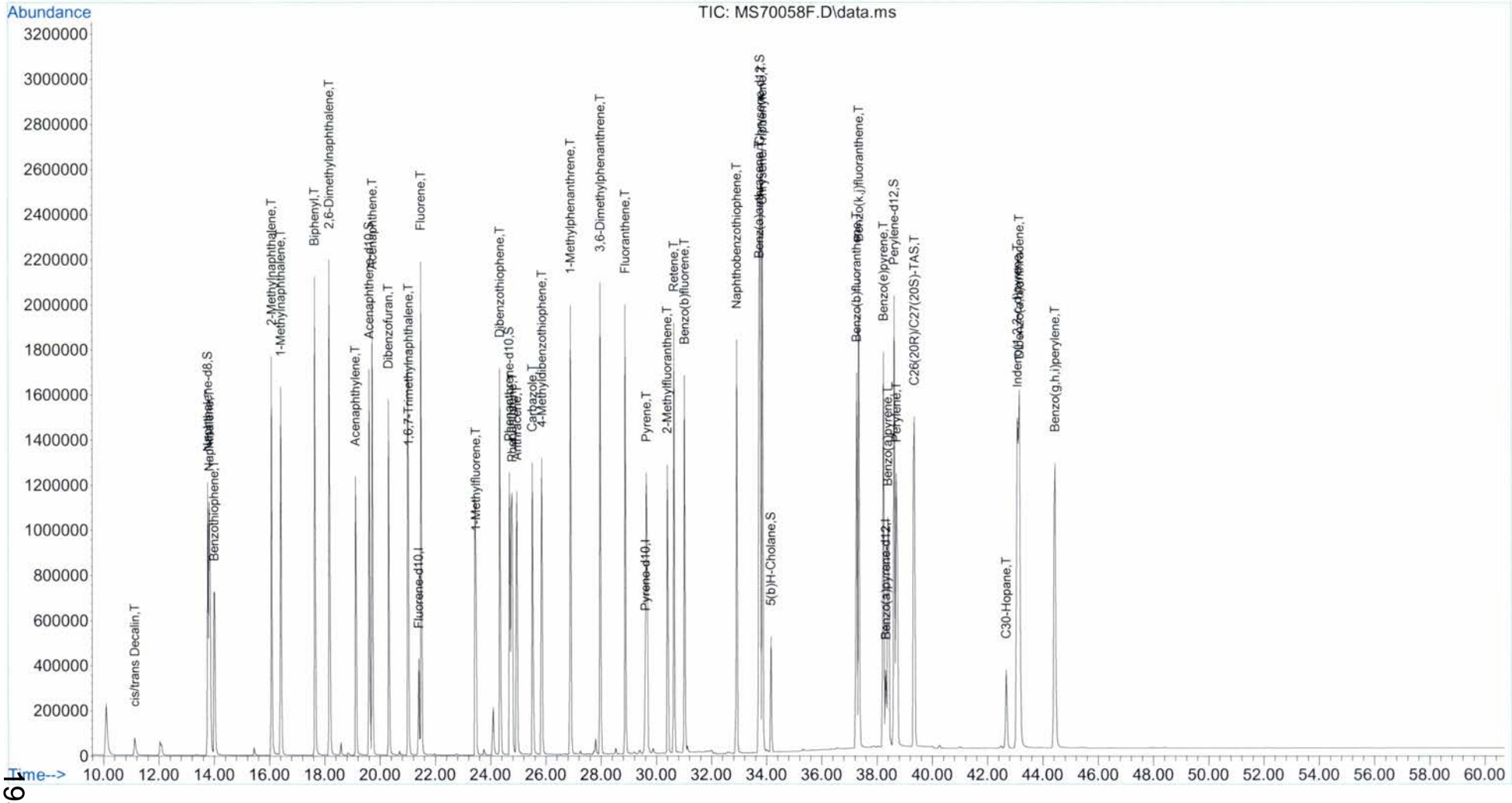
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058F.D
Acq On : 20 Aug 2013 12:46 pm
Operator : YM
Sample : AR-WKC5-1000-030
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Aug 21 18:14:47 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:20:59 2013
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058G.D
Acq On : 20 Aug 2013 1:54 pm
Operator : YM
Sample : AR-WKC6-5000-030
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 21 18:15:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:27:01 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	427820m	251.05		0.00
31) Pyrene-d10	29.600	212	823180m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	815579m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.766	136	13849608m	4867.87		0.00
21) Acenaphthene-d10	19.616	164	8171582m	4952.89		0.00
32) Phenanthrene-d10	24.683	188	14301625m	4923.52		0.00
66) Chrysene-d12	33.770	240	20765066m	5123.06		0.00
88) Perylene-d12	38.619	264	19295443m	4859.89		0.00
90) 5(b)H-Cholane	34.158	217	4236272m	4944.78		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	2286079m	4832.54		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.822	128	15398679m	4957.81		
9) 2-Methylnaphthalene	16.079	142	10145197m	4980.29		
10) 1-Methylnaphthalene	16.413	142	9204335m	4874.28		
11) 2,6-Dimethylnaphthalene	18.168	156	9234401m	5170.55		
12) 1,6,7-Trimethylnaphtha...	21.037	170	8234521m	5066.88		
13) C2-Naphthalenes	0.000		0	N.D.	d	
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	13.989	134	12717360m	4944.34		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.639	154	13083134m	5003.72		
23) Acenaphthylene	19.115	152	14792152m	5024.63		
24) Acenaphthene	19.728	154	8895816m	4983.31		
25) Dibenzofuran	20.313	168	14863533m	4980.03		
26) Fluorene	21.483	166	11384280m	4968.73		
27) 1-Methylfluorene	23.471	180	6377472m	5189.93		
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	15130163m	5026.55		
34) Dibenzothiophene	24.337	184	17844069m	4882.34		
35) 4-Methyldibenzothiophene	25.860	198	12580711m	5417.58		
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.787	178	16474671m	5059.44		
42) Anthracene	24.960	178	15882496m	5342.89		

Data Path : C:\GCMS7\MS70058\
Data File : MS70058G.D
Acq On : 20 Aug 2013 1:54 pm
Operator : YM
Sample : AR-WKC6-5000-030
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 21 18:15:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:27:01 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	14306788m	5343.84		
48) 3,6-Dimethylphenanthrene	27.973	206	13846614m	5227.88		
49) Retene	30.639	234	5234804m	4295.24		
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.		
53) Naphthobenzothiophene	32.916	234	20915744m	4893.87		
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	19463309m	4620.04		
59) Pyrene	29.669	202	19673492m	4925.93		
60) 2-Methylfluoranthene	30.397	216	12459506m	4792.96		
61) Benzo(b)fluorene	31.020	216	14722013m	5020.03		
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	19003544m	4802.89		
68) Chrysene/Triphenylene	33.848	228	20935992m	4511.80		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	42.672	191	6529229m	5081.01		
77) Benzo(b)fluoranthene	37.261	252	22798695m	4394.66		
78) Benzo(k,j)fluoranthene	37.339	252	23005309m	4227.55		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.231	252	23002161m	5050.31		
81) Benzo(a)pyrene	38.425	252	24032827m	5608.60		
82) Indeno(1,2,3-c,d)pyrene	43.078	276	27633173m	5175.07		
83) Dibenzo(a,h)anthracene	43.152	278	22496496m	5280.22		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.442	276	23660232m	5010.14		
89) Perylene	38.736	252	24502635m	5569.11		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	39.356	231	25364062m	5186.36		
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058G.D
Acq On : 20 Aug 2013 1:54 pm
Operator : YM
Sample : AR-WKC6-5000-030
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 21 18:15:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:27:01 2013
Response via : Initial Calibration

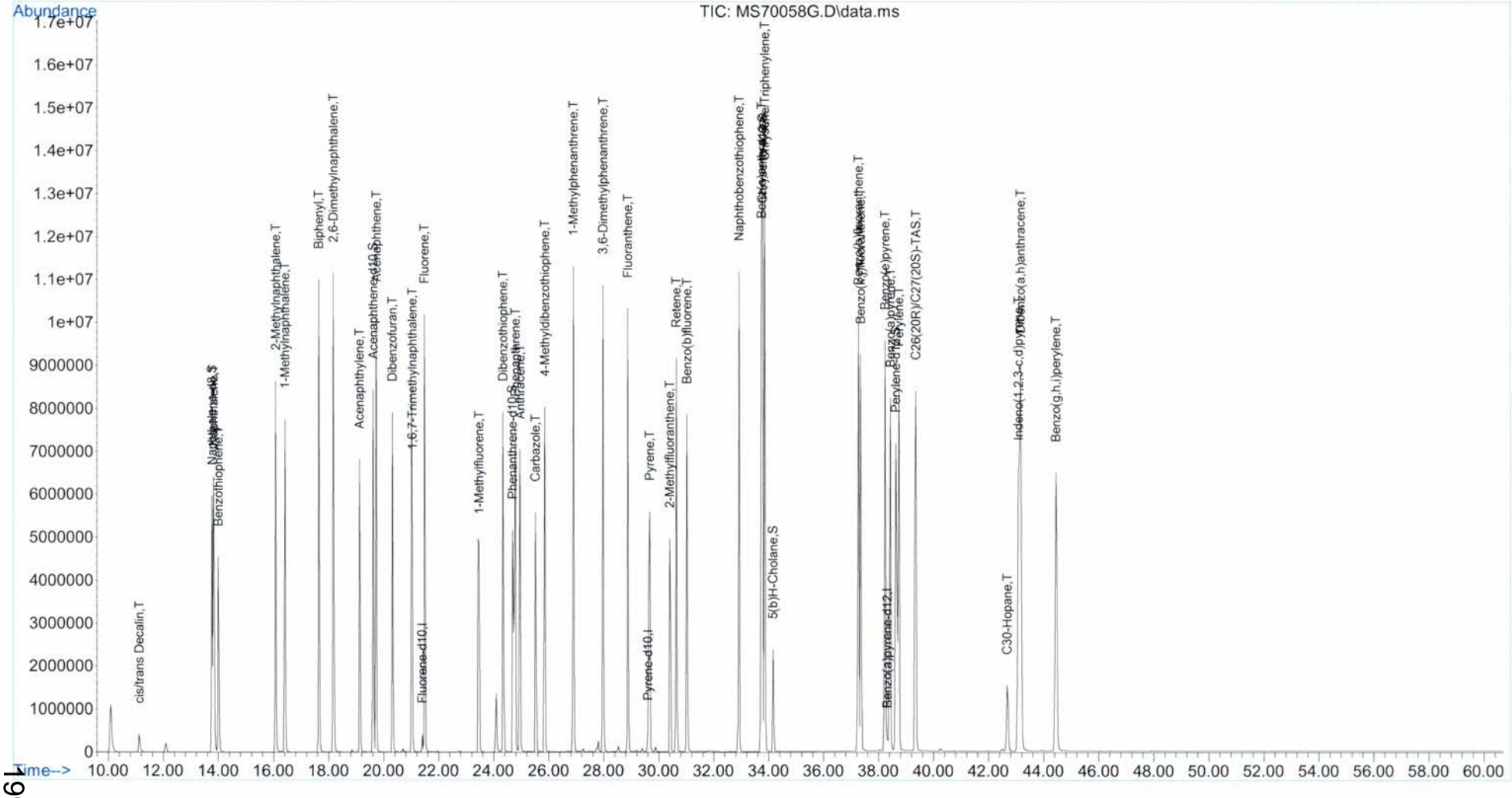
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058G.D
Acq On : 20 Aug 2013 1:54 pm
Operator : YM
Sample : AR-WKC6-5000-030
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Aug 21 18:15:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 08:27:01 2013
Response via : Initial Calibration



Evaluate Continuing Calibration Report

Data Path : C:\GCMS7\MS70058\
Data File : MS70058I.D
Acq On : 20 Aug 2013 4:11 pm
Operator : YM
Sample : AR-WKICV-250-004
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 21 19:44:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorene-d10	1.000	1.000	0.0	100	0.00
2	S	Naphthalene-d8	1.671	1.567	6.2	101	0.00
3	T	cis/trans Decalin	0.292	0.319	-9.2	111	0.00
4	un	C1-Decalins	0.292	0.000	100.0#	0#	-12.32#
5	un	C2-Decalins	0.292	0.000	100.0#	0#	-13.52#
6	un	C3-Decalins	0.292	0.000	100.0#	0#	-15.88#
7	un	C4-Decalins	0.292	0.000	100.0#	0#	-18.33#
8	T	Naphthalene	1.823	2.087	-14.5	124	0.00
9	T	2-Methylnaphthalene	1.196	1.405	-17.5	127	0.00
10	T	1-Methylnaphthalene	1.109	1.303	-17.5	126	0.00
11	T	2,6-Dimethylnaphthalene	1.048	1.223	-16.7	125	0.00
12	T	1,6,7-Trimethylnaphthalene	0.954	1.106	-15.9	127	0.00
13	un	C2-Naphthalenes	1.823	0.000	100.0#	0#	-18.89#
14	un	C3-Naphthalenes	1.823	0.000	100.0#	0#	-20.37#
15	un	C4-Naphthalenes	1.823	0.000	100.0#	0#	-22.26#
16	T	Benzothiophene	1.510	1.733	-14.8	125	0.03
17	un	C1-Benzothiophenes	1.510	0.000	100.0#	0#	-15.49#
18	un	C2-Benzothiophenes	1.510	0.000	100.0#	0#	-17.92#
19	un	C3-Benzothiophenes	1.510	0.000	100.0#	0#	-20.31#
20	un	C4-Benzothiophenes	1.510	0.000	100.0#	0#	-22.23#
21	S	Acenaphthene-d10	0.969	0.887	8.5	99	0.00
22	T	Biphenyl	1.535	1.757	-14.5	123	0.00
23	T	Acenaphthylene	1.633	1.887	-15.6	129	0.00
24	T	Acenaphthene	1.047	1.167	-11.5	121	0.00
25	T	Dibenzofuran	1.752	2.051	-17.1	126	0.00
26	T	Fluorene	1.345	1.537	-14.3	123	0.00
27	T	1-Methylfluorene	0.721	0.000	100.0#	0#	-23.47#
28	un	C1-Fluorenes	1.345	0.000	100.0#	0#	-23.51#
29	un	C2-Fluorenes	1.345	0.000	100.0#	0#	-24.79#
30	un	C3-Fluorenes	1.345	0.000	100.0#	0#	-27.59#
31	I	Pyrene-d10	1.000	1.000	0.0	101	0.00
32	S	Phenanthrene-d10	0.885	0.856	3.3	103	0.00
33	T	Carbazole	0.917	1.049	-14.4	123	0.00
34	T	Dibenzothiophene	1.122	1.311	-16.8	123	0.00
35	T	4-Methyldibenzothiophene	0.708	0.000	100.0#	0#	-25.86#
36	un	2/3-Methyldibenzothiophene	0.708	0.000	100.0#	0#	-26.21#
37	un	1-Methyldibenzothiophene	0.708	0.000	100.0#	0#	-26.52#
38	un	C2-Dibenzothiophenes	1.122	0.000	100.0#	0#	-27.83#
39	un	C3-Dibenzothiophenes	1.122	0.000	100.0#	0#	-28.49#
40	un	C4-Dibenzothiophenes	1.122	0.000	100.0#	0#	-31.09#
41	T	Phenanthrene	0.993	1.139	-14.7	124	0.00
42	T	Anthracene	0.907	1.003	-10.6	118	0.00
43	un	3-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#
44	un	2-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#
45	un	2-Methylanthracene	0.816	0.000	100.0#	0#	-26.73#
46	un	4/9-Methylphenanthrene	0.816	0.000	100.0#	0#	-26.93#

Data Path : C:\GCMS7\MS70058\
Data File : MS70058I.D
Acq On : 20 Aug 2013 4:11 pm
Operator : YM
Sample : AR-WKICV-250-004
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 21 19:44:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
47	T	1-Methylphenanthrene	0.816	0.892	-9.3	121	0.00
48	T	3,6-Dimethylphenanthrene	0.810	0.000	100.0#	0#	-27.97#
49	T	Retene	0.371	0.000	100.0#	0#	-30.64#
50	un	C2-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-28.56#
51	un	C3-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-29.43#
52	un	C4-Phenanthrenes/Anthracene	0.993	0.000	100.0#	0#	-32.06#
53	T	Naphthobenzothiophene	1.302	0.000	100.0#	0#	-32.92#
54	un	C1-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-34.55#
55	un	C2-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-36.02#
56	un	C3-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-37.42#
57	un	C4-Naphthobenzothiophenes	1.302	0.000	100.0#	0#	-37.92#
58	T	Fluoranthene	1.295	1.469	-13.4	122	0.00
59	T	Pyrene	1.217	1.431	-17.6	127	-0.03
60	T	2-Methylfluoranthene	0.792	0.000	100.0#	0#	-30.40#
61	T	Benzo(b)fluorene	0.893	0.000	100.0#	0#	-31.02#
62	un	C1-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-30.71#
63	un	C2-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-32.18#
64	un	C3-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-34.00#
65	un	C4-Fluoranthenes/Pyrenes	1.295	0.000	100.0#	0#	-35.09#
66	S	Chrysene-d12	1.235	1.112	10.0	100	0.00
67	T	Benz(a)anthracene	1.018	1.098	-7.9	127	0.00
68	T	Chrysene/Triphenylene	1.450	1.654	-14.1	124	0.00
69	un	C1-Chrysenes	1.450	0.000	100.0#	0#	-35.83#
70	un	C2-Chrysenes	1.450	0.000	100.0#	0#	-36.99#
71	un	C3-Chrysenes	1.450	0.000	100.0#	0#	-38.11#
72	un	C4-Chrysenes	1.450	0.000	100.0#	0#	-39.74#
73	I	Benzo(a)pyrene-d12	1.000	1.000	0.0	96	0.00
74	un	C29-Hopane	0.393	0.000	100.0#	0#	-40.28#
75	un	18a-Oleanane	0.393	0.000	100.0#	0#	-42.34#
76	T	C30-Hopane	0.393	0.000	100.0#	0#	-42.67#
77	T	Benzo(b)fluoranthene	1.350	1.565	-15.9	127	0.00
78	T	Benzo(k,j)fluoranthene	1.469	1.648	-12.2	121	0.00
79	un	Benzo(a)fluoranthene	1.469	0.000	100.0#	0#	-37.34#
80	T	Benzo(e)pyrene	1.395	1.554	-11.4	122	0.00
81	T	Benzo(a)pyrene	1.313	1.419	-8.1	117	-0.04
82	T	Indeno(1,2,3-c,d)pyrene	1.633	1.849	-13.2	123	0.00
83	T	Dibenzo(a,h)anthracene	1.302	1.518	-16.6	127	0.00
84	un	C1-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-48.31#
85	un	C2-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-50.30#
86	un	C3-Dibenzo(a,h)anthracenes	1.302	0.000	100.0#	0#	-51.23#
87	T	Benzo(g,h,i)perylene	1.444	1.648	-14.1	123	-0.04
88	S	Perylene-d12	1.215	1.128	7.2	98	0.00
89	T	Perylene	1.347	1.481	-9.9	121	-0.04
90	S	5(b)H-Cholane	0.262	0.232	11.5	96	0.00
91	un	C20-TAS	1.496	0.000	100.0#	0#	-33.30#
92	un	C21-TAS	1.496	0.000	100.0#	0#	-34.24#

Data Path : C:\GCMS7\MS70058\
Data File : MS70058I.D
Acq On : 20 Aug 2013 4:11 pm
Operator : YM
Sample : AR-WKICV-250-004
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 21 19:44:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev Area%	Dev(min)
93 un	C26(20S)-TAS	1.496	0.000	100.0#	0# -38.70#
94 T	C26(20R)/C27(20S)-TAS	1.496	0.000	100.0#	0# -39.36#
95 un	C28(20S)-TAS	1.496	0.000	100.0#	0# -40.24#
96 un	C27(20R)-TAS	1.496	0.000	100.0#	0# -41.09#
97 un	C28(20R)-TAS	1.496	0.000	100.0#	0# -41.42#

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

Data Path : C:\GCMS7\MS70058\
Data File : MS70058I.D
Acq On : 20 Aug 2013 4:11 pm
Operator : YM
Sample : AR-WKICV-250-004
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 21 19:44:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorene-d10	21.399	176	432645m	251.05		0.00
31) Pyrene-d10	29.600	212	820890m	250.63		0.00
73) Benzo(a)pyrene-d12	38.309	264	836417m	250.32		0.00
System Monitoring Compounds						
2) Naphthalene-d8	13.767	136	675423m	234.59		0.00
21) Acenaphthene-d10	19.616	164	382324m	229.03		0.00
32) Phenanthrene-d10	24.683	188	701341m	241.89		0.00
66) Chrysene-d12	33.770	240	910527m	225.08		0.00
88) Perylene-d12	38.619	264	942784m	232.16		0.00
90) 5(b)H-Cholane	34.158	217	193711m	221.12		0.00
Target Compounds						Qvalue
3) cis/trans Decalin	11.120	138	136097m	270.28		
4) C1-Decalins	0.000		0	N.D.	d	
5) C2-Decalins	0.000		0	N.D.	d	
6) C3-Decalins	0.000		0	N.D.	d	
7) C4-Decalins	0.000		0	N.D.	d	
8) Naphthalene	13.822	128	899076m	286.14		
9) 2-Methylnaphthalene	16.079	142	605774m	293.99		
10) 1-Methylnaphthalene	16.413	142	560997m	293.59		
11) 2,6-Dimethylnaphthalene	18.168	156	527039m	291.75		
12) 1,6,7-Trimethylnaphtha...	21.037	170	476600m	289.84		
13) C2-Naphthalenes	0.000		0	N.D.		
14) C3-Naphthalenes	0.000		0	N.D.	d	
15) C4-Naphthalenes	0.000		0	N.D.		
16) Benzothiophene	14.017	134	742311m	285.31		
17) C1-Benzothiophenes	0.000		0	N.D.	d	
18) C2-Benzothiophenes	0.000		0	N.D.	d	
19) C3-Benzothiophenes	0.000		0	N.D.	d	
20) C4-Benzothiophenes	0.000		0	N.D.	d	
22) Biphenyl	17.639	154	750363m	283.71		
23) Acenaphthylene	19.115	152	806414m	286.47		
24) Acenaphthene	19.728	154	503879m	279.14		
25) Dibenzofuran	20.313	168	879285m	291.28		
26) Fluorene	21.483	166	663417m	286.16		
27) 1-Methylfluorene	0.000		0	N.D.	d	
28) C1-Fluorenes	0.000		0	N.D.	d	
29) C2-Fluorenes	0.000		0	N.D.	d	
30) C3-Fluorenes	0.000		0	N.D.	d	
33) Carbazole	25.514	167	851274m	283.56		
34) Dibenzothiophene	24.337	184	1058594m	288.03		
35) 4-Methyldibenzothiophene	0.000		0	N.D.	d	
36) 2/3-Methyldibenzothiop...	0.000		0	N.D.	d	
37) 1-Methyldibenzothiophene	0.000		0	N.D.	d	
38) C2-Dibenzothiophenes	0.000		0	N.D.	d	
39) C3-Dibenzothiophenes	0.000		0	N.D.	d	
40) C4-Dibenzothiophenes	0.000		0	N.D.	d	
41) Phenanthrene	24.787	178	924154m	284.19		
42) Anthracene	24.960	178	823793m	277.42		

Data Path : C:\GCMS7\MS70058\
Data File : MS70058I.D
Acq On : 20 Aug 2013 4:11 pm
Operator : YM
Sample : AR-WKICV-250-004
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 21 19:44:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 3-Methylphenanthrene	0.000		0	N.D.	d	
44) 2-Methylphenanthrene	0.000		0	N.D.	d	
45) 2-Methylanthracene	0.000		0	N.D.	d	
46) 4/9-Methylphenanthrene	0.000		0	N.D.	d	
47) 1-Methylphenanthrene	26.899	192	722058m	270.28		
48) 3,6-Dimethylphenanthrene	0.000		0	N.D.	d	
49) Retene	0.000		0	N.D.	d	
50) C2-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
51) C3-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
52) C4-Phenanthrenes/Anthr...	0.000		0	N.D.	d	
53) Naphthobenzothiophene	0.000		0	N.D.	d	
54) C1-Naphthobenzothiophenes	0.000		0	N.D.	d	
55) C2-Naphthobenzothiophenes	0.000		0	N.D.	d	
56) C3-Naphthobenzothiophenes	0.000		0	N.D.	d	
57) C4-Naphthobenzothiophenes	0.000		0	N.D.	d	
58) Fluoranthene	28.873	202	1204071m	283.81		
59) Pyrene	29.635	202	1171625m	293.93		
60) 2-Methylfluoranthene	0.000		0	N.D.	d	
61) Benzo(b)fluorene	0.000		0	N.D.	d	
62) C1-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
63) C2-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
64) C3-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
65) C4-Fluoranthenes/Pyrenes	0.000		0	N.D.	d	
67) Benz(a)anthracene	33.731	228	897675m	269.14		
68) Chrysene/Triphenylene	33.848	228	1346634m	283.55		
69) C1-Chrysenes	0.000		0	N.D.	d	
70) C2-Chrysenes	0.000		0	N.D.	d	
71) C3-Chrysenes	0.000		0	N.D.	d	
72) C4-Chrysenes	0.000		0	N.D.	d	
74) C29-Hopane	0.000		0	N.D.	d	
75) 18a-Oleanane	0.000		0	N.D.	d	
76) C30-Hopane	0.000		0	N.D.	d	
77) Benzo(b)fluoranthene	37.262	252	1310197m	290.49		
78) Benzo(k,j)fluoranthene	37.339	252	1370735m	279.33		
79) Benzo(a)fluoranthene	0.000		0	N.D.	d	
80) Benzo(e)pyrene	38.231	252	1293164m	277.42		
81) Benzo(a)pyrene	38.387	252	1182765m	269.61		
82) Indeno(1,2,3-c,d)pyrene	43.078	276	1518230m	278.25		
83) Dibenzo(a,h)anthracene	43.152	278	1256399m	288.86		
84) C1-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
85) C2-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
86) C3-Dibenzo(a,h)anthrac...	0.000		0	N.D.	d	
87) Benzo(g,h,i)perylene	44.405	276	1364035m	282.65		
89) Perylene	38.697	252	1238351m	275.22		
91) C20-TAS	0.000		0	N.D.	d	
92) C21-TAS	0.000		0	N.D.	d	
93) C26(20S)-TAS	0.000		0	N.D.	d	
94) C26(20R)/C27(20S)-TAS	0.000		0	N.D.	d	
95) C28(20S)-TAS	0.000		0	N.D.	d	
96) C27(20R)-TAS	0.000		0	N.D.	d	
97) C28(20R)-TAS	0.000		0	N.D.	d	

Data Path : C:\GCMS7\MS70058\
Data File : MS70058I.D
Acq On : 20 Aug 2013 4:11 pm
Operator : YM
Sample : AR-WKICV-250-004
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 21 19:44:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\GCMS7\MS70058\
Data File : MS70058I.D
Acq On : 20 Aug 2013 4:11 pm
Operator : YM
Sample : AR-WKICV-250-004
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Aug 21 19:44:45 2013
Quant Method : C:\GCMS7\MS70058\AR70058.M
Quant Title : PAH Calibration Table-2013A
QLast Update : Wed Aug 21 18:15:55 2013
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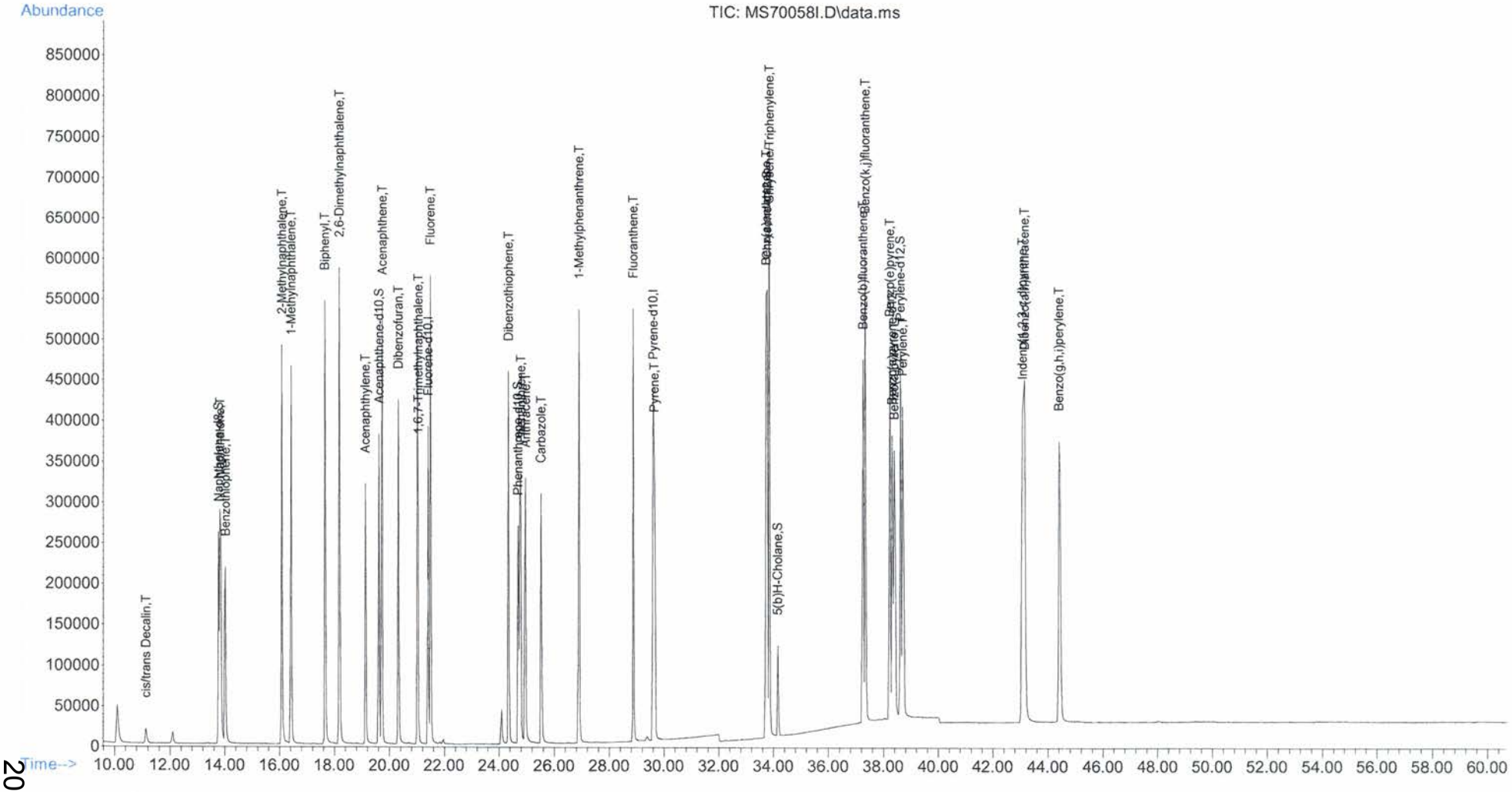

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PAH Mass Discrimination Ratio

B&B Laboratories
Project J13034
Report 13-3103

Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
Mass Discrimination Sheet

Client Project #B0086003.1302

File Name	Sample Name	Benzo(g,h,i)perylene Concentration (ng/mL)	Phenanthrene Concentration (ng/mL)	Benzo(g,h,i)perylene/ Phenanthrene ratio	Q
MS70058B.D	AR-WKC1-020-030	23.3	23.0	1.01	
MS70058C.D	AR-WKC2-100-030	96.9	98.9	0.98	
MS70058D.D	AR-WKC3-250-030	218	233	0.94	
MS70058E.D	AR-WKC4-500-030	457	494	0.92	
MS70058F.D	AR-WKC5-1000-030	969	933	1.04	
MS70058G.D	AR-WKC6-5000-030	5010	5059	0.99	
MS70058I.D	AR-WKICV-250-004	283	284	0.99	
MS70058J.D	AR-WKCC-250-038	238	248	0.96	
MS70058L.D	AR-WKCC-250-038	228	273	0.83	
MS70058M.D	AR-WKCC-250-038	231	288	0.80	

Qualifiers (Q): Ratio of Benzo(g,h,i)perylene to Phenanthrene needs to be ≥ 0.70

PAH Internal Standard Area Data

B&B Laboratories
Project J13034
Report 13-3103

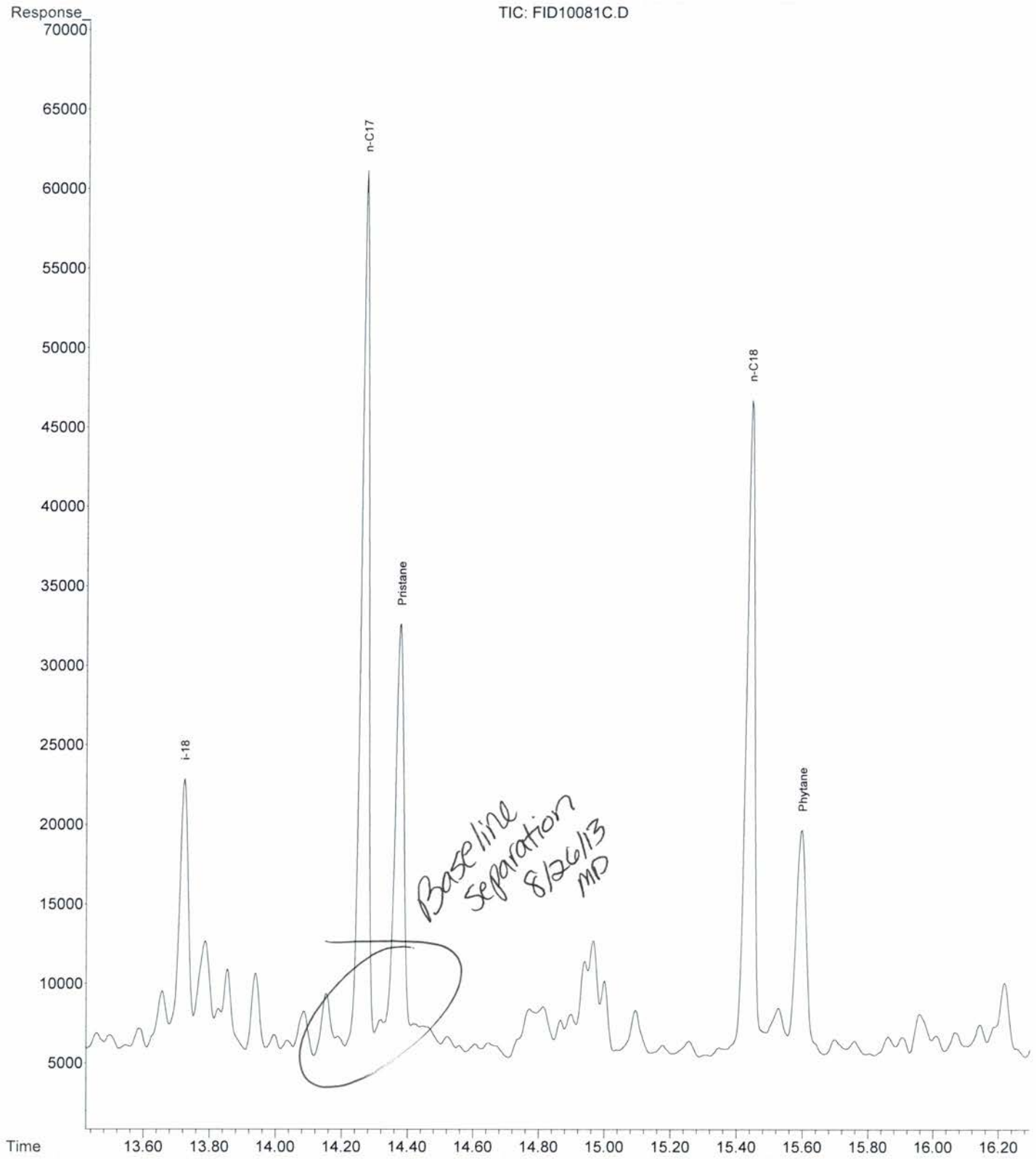
Arcadis - Mayflower AR
Polycyclic Aromatic Hydrocarbon Data
The Area of the Internal Standards in the Associated Calibration Standard

Client Project #B0086003.1302

File Name	Sample Name	Internal Standard 1 Fluorene-d10			Internal Standard 2 Pyrene-d10			Internal Standard 3 Benzo(a)pyrene-d12		
		Response (Area)	50% (Area)	200% (Area)	Response (Area)	50% (Area)	200% (Area)	Response (Area)	50% (Area)	200% (Area)
MS70058D.D	**AR-WKC3-250-030**	**430907**	**215454**	**861814**	**811827**	**405914**	**1623654**	**868995**	**434498**	**1737990**
MS70058I.D	**AR-WKICV-250-004**	**432645**			**820890**			**836417**		
MS70058J.D	**AR-WKCC-250-038**	**363550**	**181775**	**727100**	**668267**	**334134**	**1336534**	**669193**	**334597**	**1338386**
MS70058L.D	**AR-WKCC-250-038**	**380945**	**190473**	**761890**	**680436**	**340218**	**1360872**	**715683**	**357842**	**1431366**
ENV3084A.D	Procedural Blank	322946			577726			646545		
ENV3084B.D	Blank Spike	357731			563576			640746		
ENV3084C.D	Blank Spike Dupl.	310097			556415			642816		
ARC1768.D	SED-DA-DI-Water	329516			616946			670630		
ARC1854.D	SO-DA-EB-05-081313	335040			604650			667110		
MS70058M.D	**AR-WKCC-250-038**	**378279**	**189140**	**756558**	**677095**	**338548**	**1354190**	**682402**	**341201**	**1364804**

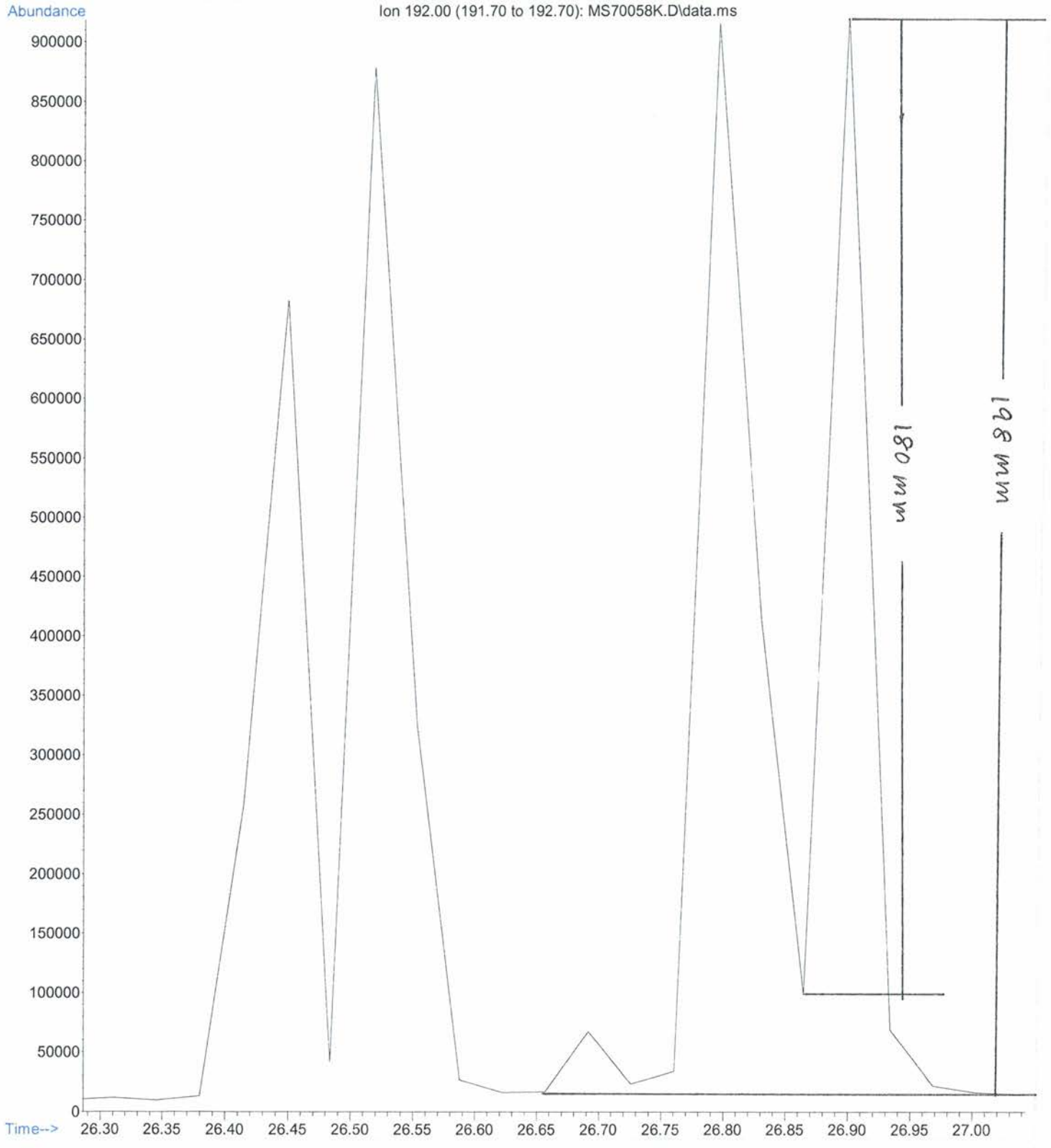
SRM-2779 Reference Oil Aliphatic and PAH Resolution Checks

File :P:\2013\J13034\Aliphatics\ENV 3084\FID10081\FID10081C.D
Operator : Mark C. Garner
Acquired : 19-Aug-2013, 21:44:56 using AcqMethod ALI2012.M
Instrument : HP5890
Sample Name: AL-SRM2779-20-01
Misc Info :
Vial Number: 53



File :C:\GCMS7\MS70058\MS70058K.D
Operator : YM
Acquired : 20 Aug 2013 6:28 pm using AcqMethod PAH-2012.M
Instrument : GCMSD
Sample Name: AR-SRM2779-WK4.0-002
Misc Info :
Vial Number: 11

91% separation



Supporting Documents

Shipping, Sample Receiving, and Project Initiation Documents

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 8/13/13 SDG#: 13081301

Sender: Arcadis- Mayflower, AR

1. Number of Shipping Containers: 4 Arcadis: Daniel Mays

Comments: 1 of 4, large blue cooler

2. Airbill Present? (Yes) No Shipping Company: Fed EX

Airbill Number: 7958 1083 5888 Comments: PON

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact Comments: on top of duct tape

4. Chain of Custody Records?
(No) Yes Comments: in cooler 3

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

Temperature/Comments: 5.1°C / temp blank 1.2°C (T6

6. List of Broken Containers:

None

7. Number of Samples Expected: 4 coolers Number of Samples Received: _____

8. Problems/Discrepancies:

None

Cooler 1:
11 soils
2 waters

9. Resolutions:

N/A

10. Checked in by: Amanda Brewster Date: 8/13/13

large blue cooler

Ice type: wet Ice
Cooler temp: 5.1
Temp blank: 1.2
Thermometer: 6
Custody seal:

Sdg 13081301
Cooler 1 of 4

eurofins | Lancaster Laboratories

480555

CUSTODY SEAL

DATE: 8/14/13

SIGNATURE:

2425 New Holland Pike, Lancaster, PA 17601-5994 (717) 656-2300

ORIGIN ID:MPJA (979) 693-3446
B & B LABORATORIES
14391 S DOWLING RD STE B
COLLEGE STATION, TX 778453473
UNITED STATES US

SHIP DATE: 12AUG13
ACTWGT: 56.7 LB
CAD: /POS1400
DIMS: 24x13x13 IN
BILL SENDER

TO B & B LABORATORIES
B & B LABS
14391B S DOWLING RD

COLLEGE STATION TX 77845
(979) 693-3446
INV:
PO:
REF:
DEPT:

FedEx Express

2 of 4
MPS# 0691 7958 1083 5888
Trk# 8022 2781 5939
0200

TUE - 13 AUG 10:30A
PRIORITY OVERNIGHT

XH CLLA

77845
TX-US IAH

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 8/13/13 SDG#: 13081301

Sender: Arcadis- Mayflower AR

1. Number of Shipping Containers: 4 Arcadis: Daniel Mays

Comments: 2of4, large blue cooler

2. Airbill Present? (Yes) No Shipping Company: Fed Ex

Airbill Number: 7958 1083 5899 Comments: PoN

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact Comments: on top of duct tape

4. Chain of Custody Records?
(No) Yes Comments in cooler 3

5. General Sample Conditions:
Frozen (Cool) Unrefrigerated
Dry Ice Blue Ice (Ice) Temperature/Comments: 1.5°c / temp blank 2.3°c (T6

6. List of Broken Containers:

None

7. Number of Samples Expected: 4 coolers Number of Samples Received: _____

8. Problems/Discrepancies:

None

Cooler 2:
11 seds
4 waters

9. Resolutions:

N/A

10. Checked in by: Amanda Brewster Date: 8/13/13

large
blue cooler

Ice type: wet ice
Cooler temp: 1.5
Temp blank: 2.3
Thermometer: 6
Custody seal:

Sdg 1308 1301
Cooler 2 of 4

eurofins | Lancaster Laboratories

491094
CUSTODY SEAL
2425 New Holland Pike, Lancaster, PA 17601-5994 (717) 656-2300

DATE: 8-12-13
SIGNATURE:

ID:MPJA (979) 693-3446
LABORATORIES
S DOWLING RD STE B
E STATION, TX 778453473
STATES US

SHIP DATE: 12AUG13
ACTWGT: 60.0 LB
CAD: /PDS1400
DIMS: 24x13x13 IN
BILL SENDER

TO B LABORATORIES
& B LABS
7391B S DOWLING RD

COLLEGE STATION TX 77845
693-3446 REF:
DEPT:

FedEx Express

3 of 4
MPS# 7958 1083 5899
Mstr# 8022 2781 5939
0200

TUE - 13 AUG
PRIORITY OVERNIGHT

XH CLLA

77845
TX-US IAH

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 8/13/13 SDG#: 13081301

Sender: Arcadis - Mayflower AR

1. Number of Shipping Containers: 4 Arcadis: Daniel Mays

Comments: 3of4, large blue cooler

2. Airbill Present? (Yes)/No Shipping Company: Fed Ex

Airbill Number: 8022 2781 5939 Comments: PON

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact Comments: on top of duct tape

4. Chain of Custody Records?
No (Yes) Comments: all COCs in Cooler 3

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

Temperature/Comments: 2.1°C / temp blank 1.9°C (T6

6. List of Broken Containers:

None

7. Number of Samples Expected: 4 coolers Number of Samples Received: _____

8. Problems/Discrepancies:

None

Cooler 3:
21 seds

9. Resolutions:

N/A

10. Checked in by: Amanda Brewster Date: 8/13/13

large blue cooler

Ice type: wet Ice
Cooler temp: 2.1
Temp blank: 1.9
Thermometer: 6
Custody seal:

Sdg 13081301
Cooler 3 of 4

eurofins | Lancaster Laboratories

480556
CUSTODY SEAL

2425 New Holland Pike, Lancaster, PA 17601-5994 (717) 656-2300

DATE: 4/16/13
SIGNATURE:

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8022 2781 5939

0200

1 From
Date
Sender's Name
Phone
Company
Address
Dept./Floor/Suite/Room
City
State
ZIP

2 Your Internal Billing Reference

3 To
Recipient's Name
Phone
Company
Address
We cannot deliver to P.O. boxes or P.O. ZIP codes.
Dept./Floor/Suite/Room
Address
Use this line for the HOLD location address or for continuation of your shipping address.
City
State
ZIP

HOLD Weekday
FedEx location address REQUIRED. NOT available for FedEx First Overnight.
HOLD Saturday
FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

4 Express Package Service * To most locations.
NOTE: Service order has changed. Please select carefully.
Packages up to 1
For packages over 150 lbs., use FedEx Express Freight

Next Business Day
- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days
- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.
FedEx Envelope* | FedEx Pak* | FedEx Box | FedEx Tube

6 Special Handling and Delivery Signature Options
SATURDAY Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.
No Signature Required — Package may be left without obtaining a signature for delivery.
Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.
Indirect Signature — If no one is available at recipient address, someone at a neighboring address may sign for delivery. Fee applies.

Does this shipment contain dangerous goods?
No | Yes — As per attached Shipper's Declaration | Yes — Shipper's Declaration not required | Dry Ice — Dry Ice, 9, UN 1845 — x ___ kg
Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.
Cargo Aircraft Only

7 Payment Bill to:
Enter FedEx Acct. No. or Credit Card No. below.
Sender Acct. No. in Section 1 will be billed | Recipient | Third Party | Credit Card | Cash
Total Packages
Total Weight
lbs.
Credit Card Auth.

Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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8022 2781 5939

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 8/13/13 SDG#: 13081301

Sender: Arcadis- May flower AR

1. Number of Shipping Containers: 4 Arcadis: Daniel Mays

Comments: 4 of 4, large blue cooler

2. Airbill Present? (Yes)/No Shipping Company: Fed EX

Airbill Number: 8022 2781 5939 Comments: PON

3. Custody Seals on Container?
No (Yes) Intact) Not Intact Comments:

4. Chain of Custody Records?
(No) (Yes) AB 8/13/13 Comments In Cooler 3

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

Temperature/Comments: 6.1°C / temp blank 0.9°C CTG

6. List of Broken Containers:

None

7. Number of Samples Expected: 4 coolers Number of Samples Received: _____

8. Problems/Discrepancies:

~~COC~~ AB 8/13/13

Cooler 4:
17 seds
2 waters

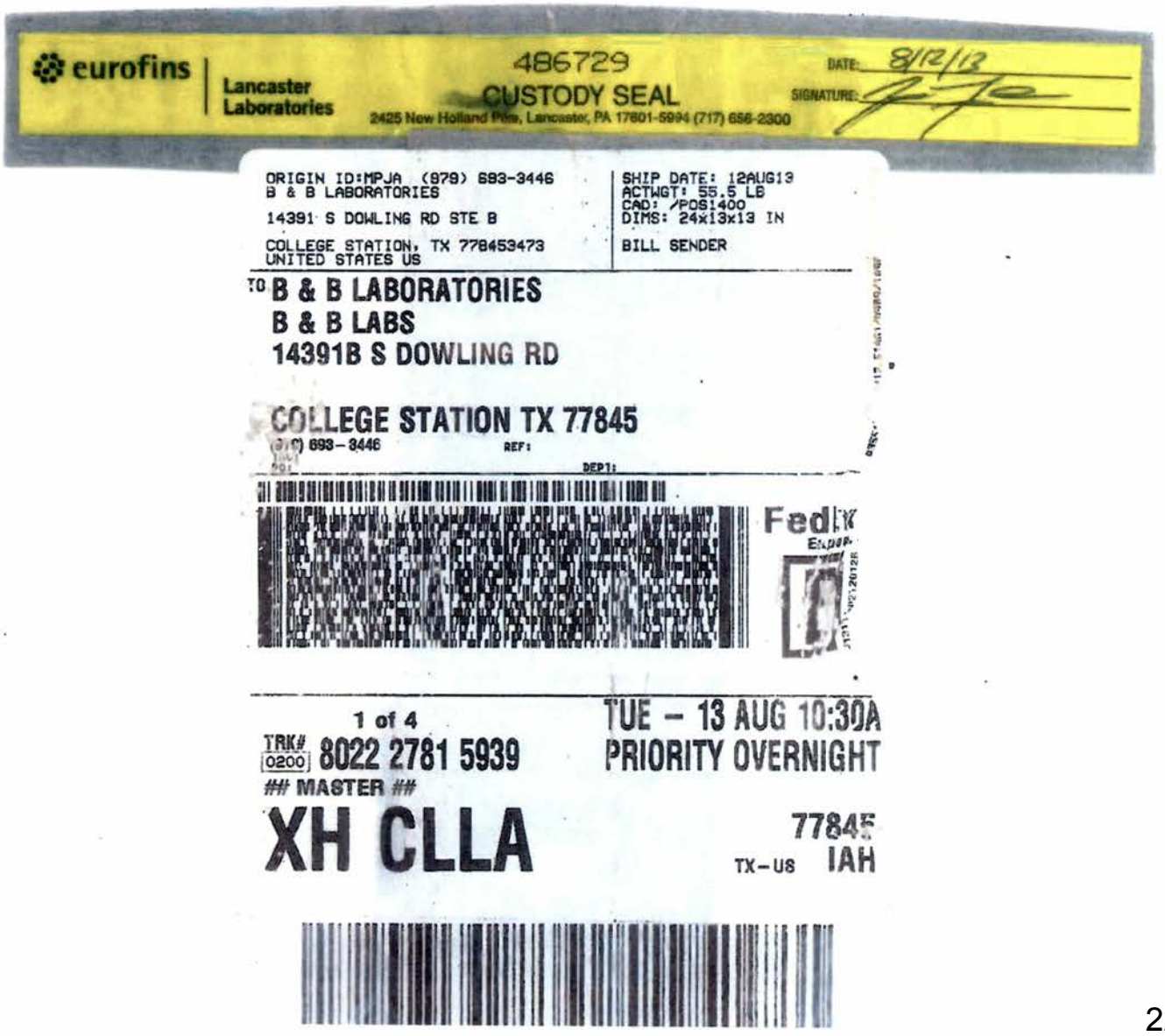
9. Resolutions:

10. Checked in by: Amanda Brewster Date: 8/13/13

large blue cooler

Ice type: wet ice
Cooler temp: 6.1
Temp blank: 0.9
Thermometer: 6
Custody seal:

Sdg 13081301
Cooler 4 of 4



CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.
Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: Mayflower Pipeline Incident BC086002.1701

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs + 8270 SIM	Analyses: TEH by mod 8015	Analyses:	Analyses: Cooler #	Analyses:	Comments
SED-DA-021 (0-0.5)	8/9/13	1235	Sed	none	8oz	1	X	X		2		Full List
SED-DA-021 (0.5-1.0)		1240			4oz					2		44 PAH List
SED-DA-021 (1.0-1.5)		1245								2		↓
SED-DA-021 (1.5-2.0)		1250								2		Extract + Hold
SED-DA-021 (2.0-3.0)		1255								2		Extract + Hold
SED-DA-021 (3.0-3.3)		1300								2		Extract + Hold
SED-DA-042 (0-0.5)		1400			8oz			X		2		Full List
SED-DA-042 (0-0.5)ms		1400			8oz			X		2		Full List
SED-DA-042 (0-0.5)msD		1400			8oz			X		2		Full List
SED-DA-042 (0.5-1.0)	↓	1405	↓	↓	4oz	↓	↓			2		44 PAHs List
					Total # of Containers	10						

Other Instructions: Sdg 13081301 Cooler 3 of 4 (1)

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays	ARCADIS	8-12-13	1700	Printed Name: Amanda Brewster	B&B Labs	8/13/13	11:30
Signature: ↓	↓	↓	↓	Signature: Amanda Brewster			
Printed Name:				Printed Name:			
Signature:				Signature:			

Matrix:
T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material
G=Glass C=Core
P=Plastic B=Bag

B&B Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: Mayflower Pipeline Incident B0086003.1301

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs + 8270 SIM	Analyses: TEH by 8015 Sol's	Analyses:	Analyses:	Cooler #	Other Instructions / Comments
												sdg 13081301 Cooler 3 of 4 (2)
SED-DA-042 (1.0-1.5)	8/9/13	1410	Sed	none	4oz	1	X				2	44 PAHs List
SED-DA-EB-07-080913	8/9/13	1015	Water	none	LAG	2	X	X			2,2	Full List
SED-DA-DI-Water	8/9/13	1020	Water	none	LAG	2	X	X			2,2	Full List
SED-DA-EB-08-081013	8/10/13	825	Water	none	LAG	2	X	X			4,4	Full List
SED-DA-045 (0-0.5)		900	Sed		8oz	1	X	X			4	Full List
SED-DA-045 (0.5-1.0)		905			4oz	1					4	44 PAH List
SED-DA-052 (0-0.5)		930			8oz	1		X			4	Full List
SED-DA-052 (0.5-1.0)		935			4oz	1					4	44 PAH List
SED-DA-052 (1.0-1.5)		940			4oz	1					4	44 PAH List
SED-DA-Dup-06-081013					8oz	1	X	X			4	Full List

Total # of Containers: 13

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays	ARCADIS	8-12-13	1700	Printed Name: Amanda Brewster	B&B Labs	8/13/13	11:30
Signature:				Signature: Amanda Brewster			
Printed Name:				Printed Name:			
Signature:				Signature:			

Matrix:

T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material

G=Glass C=Core
P=Plastic B=Bag

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B&B Laboratories, Inc.

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: Mayflower Pipeline Incident B0086003.1301

B&B Contact: Jim Ramirez

Sampler Signature: Daniel Mays

Analyses

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	PAHs + 8270 SIM	TEH by mod 8015			Cooler #		Other Instructions / Comments
SED-DA-018 (0-0.5)	8/10/13	1040	Sed	none	8oz	1	X	X			4		sdg 13081301 Cooler 3 of 4 (3) / Full List
SED-DA-018 (0.5-1.0)		1045			4oz		X				4		44 PAH List
SED-DA-018 (1.0-1.5)		1050			4oz		X				4		↓
SED-DA-018 (1.5-2.0)		1055			4oz		X				4		
SED-DA-019 (0-0.5)		1115			8oz		X	X			4		Full List
SED-DA-019 (0-0.5) MS		1115			8oz		X	X			4		label: MS/MSD
SED-DA-019 (0-0.5) MSD		1115			8oz		X	X			4		label: ↓ MS/MSD
SED-DA-019 (0.5-1.0)		1120			4oz		X				4		44 PAH List
SED-DA-019 (1.0-1.5)		1125			4oz		X				4		44 PAH List
SED-DA-019 (1.5-2.0)		1130			4oz		X				4		Extract + Hold
					Total # of Containers	10							

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays	ARCADIS	8-12-13	1700	Printed Name: Amanda Brewster	B&B Labs	8/13/13	11:30
Signature: ↓	↓	↓	↓	Signature: Amanda Brewster			
Printed Name:				Printed Name:			
Signature:				Signature:			

Matrix:

T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material

G=Glass C=Core
P=Plastic B=Bag

CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.
Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs + 3270 S-IM	Analyses: TEH by mod 8015	Analyses:	Analyses: Cooler #	Other Instructions	Comments
SED-DA-019 (2.0-2.5)	8/10/13	1135	Sed	none	4oz	1	X			4	sdg 13081301 Cooler 3 of 4 (4)	Extract + Hold
So-DA-026 (0-0.5)	8/11/13	830			4oz	1	X			1		4/4 PAHs List
So-DA-026 (0-0.5) MS		830				1	X			1		
So-DA-026 (0-0.5) MSD		830				1	X			1		
So-DA-026 (0.5-1.0)		835				1	X			1		
So-DA-026 (1.0-1.5)		840				1	X			1		
So-DA-028 (0-0.5)		1000				1	X			1		
So-DA-028 (0.5-1.0)		1005				1	X			1		
So-DA-028 (1.0-1.5)		1010				1	X			1		
VV So-DA-EB-04-081113		1200	Water		VOA	2	X			1,1		
						Total # of Containers	10					

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays	ARCADIS	8-12-13	1706	Printed Name: Amanda Brewster	B&B Labs	8/13/13	11:30
Signature:				Signature: Amanda Brewster			
Printed Name:				Printed Name:			
Signature:				Signature:			

Matrix:
T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material
G=Glass C=Core
P=Plastic B=Bag

B&B Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs + 8270 Sim	Analyses: TEH by mod 8015	Cooler #	Other Instructions: Sdg 13081301 Cooler 3 of 4 (5) — Comments
SO-DA-029 (0-0.5)	8/11/13	1030	Sed	none	4oz	1	X		1	44 PAHs List
SO-DA-029 (0.5-1.0)	↓	1035	↓		↓	1	X		1	↓
SO-DA-029 (1.0-1.5)		1040				1	X		1	
SED-DA-046 (0-0.5)	8/12/13	835			8oz	1		X	3	Full List
SED-DA-046 (0.5-1.0)		840			4oz	1			3	44 PAH List
SED-DA-046 (1.0-1.5)		845			4oz	1			3	44 PAH List
SED-DA-049 (0-0.5)		905			8oz	1		X	3	Full List
SED-DA-049 (0.5-1.0)		910			4oz	1			3	44 PAH List
SED-DA-049 (1.0-1.5)		915			4oz	1			3	44 PAH List
SED-DA-043 (0-0.5)	↓	950	↓	↓	8oz	1	↓	X	3	Full List
					Total # of Containers					

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays	ARCADIS	8-12-13	1700	Printed Name: Amanda Brewster	B&B Labs	8/13/13	11:30
Signature: ↓	↓	↓	↓	Signature: Amanda Brewster			
Printed Name:				Printed Name:			
Signature:				Signature:			

Matrix:

T=Tissue S=Soil/Sediment R=Rinseate P=Product G=Gas Ws=Waste HW=Hazardous Waste W=Water

Sample Container: Vol/material

G=Glass P=Plastic C=Core B=Bag

CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: Maxflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs + 8270 Sim	Analyses: TEH by Mod 8015	Cooler #	Other Instructions: sdg 13081301 Cooler 3 of 4 (6) — Comments
SED-DA-043 (0.5-1.0)	8/12/13	955	Sed	none	4oz	1	X		3	44 PAH List
SED-DA-043 (1.0-1.5)		1000			4oz				3	44 PAH List
SED-DA-044 (0-0.5)		1010			8oz			X	3	Full List
SED-DA-044 (0.5-1.0)		1015			4oz				3	44 PAH List
SED-DA-044 (1.0-1.5)		1020			4oz				3	44 PA List
SED-DA-047 (0-0.5)		1030			8oz			X	3	Full List
SED-DA-047 (0.5-1.0)		1035			4oz				3	44 PAH List
SED-DA-047 (1.0-1.5)		1040			4oz				3	44 PA List
SED-DA-048 (0-0.5)		1245			8oz			X	3	Full List
SED-DA-048 (0-0.5) MS		1245			8oz			X	3	Full List
					Total # of Containers					

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays	ARCADIS	8-12-13	1700	Printed Name: Amanda Brewster	B&B Labs	8/13/13	11:30
Signature:				Signature: Amanda Brewster			
Printed Name:				Printed Name:			
Signature:				Signature:			

Matrix:

T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material

G=Glass C=Core
P=Plastic B=Bag

CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature: Daniel Mays

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs + 8270 SIM	Analyses: TEH by mod 8015	Analyses:	Analyses: Cooler #	Analyses:	Comments
SED-DA-048 (0-0.5) MSD	8/12/13	1245	Sed	none	8oz	1	X	X		3		Full List
SED-DA-048 (0.5-1.0)	↓	1250	↓	↓	4oz	1	X			3		44 PAHs List
SED-DA-048 (1.0-1.5)	↓	1255	↓	↓	4oz	1	X			3		44 PAHs List
SED-DA-Dup-07-081213	↓		↓	↓	8oz	1	X	X		3		Full List
				Total # of Containers								

Other Instructions: Sdg 13081301 Cooler 3 of 4 (7)

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Daniel Mays	ARCADIS	8-12-13	1706	Printed Name: Amanda Brewster	B&B Labs	8/13/13	11:30
Signature: ↓	↓	↓	↓	Signature: Amanda Brewster			
Printed Name:				Printed Name:			
Signature:				Signature:			

Matrix:

T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material

G=Glass C=Core
P=Plastic B=Bag

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64453	J13034	Arcadis - Mayflower AR	ARC1765	SED-DA-EB-07-080913	08/09/13	08/13/13	PAH, TPH, ALI	WATER	1 of 2	13081301	Cooler 2	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64454	J13034	Arcadis - Mayflower AR	ARC1766	SED-DA-EB-07-080913	08/09/13	08/13/13	HOLD	WATER	2 of 2	13081301	Cooler 2	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64455	J13034	Arcadis - Mayflower AR	ARC1767	SED-DA-DI-Water	08/09/13	08/13/13	PAH, TPH, ALI	WATER	1 of 2	13081301	Cooler 2	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64456	J13034	Arcadis - Mayflower AR	ARC1768	SED-DA-DI-Water	08/09/13	08/13/13	HOLD	WATER	2 of 2	13081301	Cooler 2	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64457	J13034	Arcadis - Mayflower AR	ARC1769	SED-DA-EB-08-081013	08/10/13	08/13/13	PAH, TPH, ALI	WATER	1 of 2	13081301	Cooler 4	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64458	J13034	Arcadis - Mayflower AR	ARC1770	SED-DA-EB-08-081013	08/10/13	08/13/13	HOLD	WATER	2 of 2	13081301	Cooler 4	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64459	J13034	Arcadis - Mayflower AR	ARC1771	SO-DA-EB-04-081113	08/11/13	08/13/13	PAH	WATER	44 analytes, 1 of 2	13081301	Cooler 1	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64460	J13034	Arcadis - Mayflower AR	ARC1772	SO-DA-EB-04-081113	08/11/13	08/13/13	HOLD	WATER	2 of 2	13081301	Cooler 1	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302
64461	J13034	Arcadis - Mayflower AR	ARC1773	SO-DA-026 (0-0.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64462	J13034	Arcadis - Mayflower AR	ARC1774	SO-DA-026 (0-0.5) MS	08/11/13	08/13/13	PAH	SOIL	44 analytes, MS	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64463	J13034	Arcadis - Mayflower AR	ARC1775	SO-DA-026 (0-0.5) MSD	08/11/13	08/13/13	PAH	SOIL	44 analytes, MSD	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64464	J13034	Arcadis - Mayflower AR	ARC1776	SO-DA-026 (0.5-1.0)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64465	J13034	Arcadis - Mayflower AR	ARC1777	SO-DA-026 (1.0-1.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64466	J13034	Arcadis - Mayflower AR	ARC1778	SO-DA-028 (0-0.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64467	J13034	Arcadis - Mayflower AR	ARC1779	SO-DA-028 (0.5-1.0)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64468	J13034	Arcadis - Mayflower AR	ARC1780	SO-DA-028 (1.0-1.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64469	J13034	Arcadis - Mayflower AR	ARC1781	SO-DA-029 (0-0.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64470	J13034	Arcadis - Mayflower AR	ARC1782	SO-DA-029 (0.5-1.0)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64471	J13034	Arcadis - Mayflower AR	ARC1783	SO-DA-029 (1.0-1.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64472	J13034	Arcadis - Mayflower AR	ARC1784	SED-DA-021 (0-0.5)	08/09/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64473	J13034	Arcadis - Mayflower AR	ARC1785	SED-DA-021 (0.5-1.0)	08/09/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64474	J13034	Arcadis - Mayflower AR	ARC1786	SED-DA-021 (1.0-1.5)	08/09/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64475	J13034	Arcadis - Mayflower AR	ARC1787	SED-DA-021 (1.5-2.0)	08/09/13	08/13/13	extract & HOLD	SED		13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64476	J13034	Arcadis - Mayflower AR	ARC1788	SED-DA-021 (2.0-3.0)	08/09/13	08/13/13	extract & HOLD	SED		13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64477	J13034	Arcadis - Mayflower AR	ARC1789	SED-DA-021 (3.0-3.3)	08/09/13	08/13/13	extract & HOLD	SED		13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64478	J13034	Arcadis - Mayflower AR	ARC1790	SED-DA-042 (0-0.5)	08/09/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64479	J13034	Arcadis - Mayflower AR	ARC1791	SED-DA-042 (0-0.5) MS	08/09/13	08/13/13	PAH, TPH, ALI	SED	MS	13081301	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64480	J13034	Arcadis - Mayflower AR	ARC1792	SED-DA-042 (0-0.5) MSD	08/09/13	08/13/13	PAH, TPH, ALI	SED	MSD	13081301	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64481	J13034	Arcadis - Mayflower AR	ARC1793	SED-DA-042 (0.5-1.0)	08/09/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64482	J13034	Arcadis - Mayflower AR	ARC1794	SED-DA-042 (1.0-1.5)	08/09/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64483	J13034	Arcadis - Mayflower AR	ARC1795	SED-DA-046 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64484	J13034	Arcadis - Mayflower AR	ARC1796	SED-DA-046 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64485	J13034	Arcadis - Mayflower AR	ARC1797	SED-DA-046 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64486	J13034	Arcadis - Mayflower AR	ARC1798	SED-DA-049 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64487	J13034	Arcadis - Mayflower AR	ARC1799	SED-DA-049 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64488	J13034	Arcadis - Mayflower AR	ARC1800	SED-DA-049 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64489	J13034	Arcadis - Mayflower AR	ARC1801	SED-DA-043 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64490	J13034	Arcadis - Mayflower AR	ARC1802	SED-DA-043 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64491	J13034	Arcadis - Mayflower AR	ARC1803	SED-DA-043 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64492	J13034	Arcadis - Mayflower AR	ARC1804	SED-DA-044 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64493	J13034	Arcadis - Mayflower AR	ARC1805	SED-DA-044 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64494	J13034	Arcadis - Mayflower AR	ARC1806	SED-DA-044 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64495	J13034	Arcadis - Mayflower AR	ARC1807	SED-DA-047 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64496	J13034	Arcadis - Mayflower AR	ARC1808	SED-DA-047 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64497	J13034	Arcadis - Mayflower AR	ARC1809	SED-DA-047 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64498	J13034	Arcadis - Mayflower AR	ARC1810	SED-DA-048 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64499	J13034	Arcadis - Mayflower AR	ARC1811	SED-DA-048 (0-0.5) MS	08/12/13	08/13/13	PAH, TPH, ALI	SED	MS	13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64500	J13034	Arcadis - Mayflower AR	ARC1812	SED-DA-048 (0-0.5) MSD	08/12/13	08/13/13	PAH, TPH, ALI	SED	MSD	13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64501	J13034	Arcadis - Mayflower AR	ARC1813	SED-DA-048 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64502	J13034	Arcadis - Mayflower AR	ARC1814	SED-DA-048 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64503	J13034	Arcadis - Mayflower AR	ARC1815	SED-DA-DUP-07-081213	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64504	J13034	Arcadis - Mayflower AR	ARC1816	SED-DA-045 (0-0.5)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64505	J13034	Arcadis - Mayflower AR	ARC1817	SED-DA-045 (0.5-1.0)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64506	J13034	Arcadis - Mayflower AR	ARC1818	SED-DA-052 (0-0.5)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64507	J13034	Arcadis - Mayflower AR	ARC1819	SED-DA-052 (0.5-1.0)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64508	J13034	Arcadis - Mayflower AR	ARC1820	SED-DA-052 (1.0-1.5)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64509	J13034	Arcadis - Mayflower AR	ARC1821	SED-DA-DUP-06-081013	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64510	J13034	Arcadis - Mayflower AR	ARC1822	SED-DA-018 (0-0.5)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64511	J13034	Arcadis - Mayflower AR	ARC1823	SED-DA-018 (0.5-1.0)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64512	J13034	Arcadis - Mayflower AR	ARC1824	SED-DA-018 (1.0-1.5)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64513	J13034	Arcadis - Mayflower AR	ARC1825	SED-DA-018 (1.5-2.0)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64514	J13034	Arcadis - Mayflower AR	ARC1826	SED-DA-019 (0-0.5)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64515	J13034	Arcadis - Mayflower AR	ARC1827	SED-DA-019 (0-0.5) MS	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64516	J13034	Arcadis - Mayflower AR	ARC1828	SED-DA-019 (0-0.5) MSD	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64517	J13034	Arcadis - Mayflower AR	ARC1829	SED-DA-019 (0.5-1.0)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64518	J13034	Arcadis - Mayflower AR	ARC1830	SED-DA-019 (1.0-1.5)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64519	J13034	Arcadis - Mayflower AR	ARC1831	SED-DA-019 (1.5-2.0)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	a	Project #
64520	J13034	Arcadis - Mayflower AR	ARC1832	SED-DA-019 (2.0-2.5)	08/10/13	08/13/13	HOLD	SED	on HOLD per Lyndi Mott 8/13/13	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13081301
Client: Arcadis - Mayflower AR
Initiation Date: 8/13/13

Number of Samples: 4
Matrix: Water
Due Date: 45 days : 9/27/13
Comments: 3 waters: PAH, TPH, ALI
1 water: PAH 44 analytes
received 8/13/13

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

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): ali / PAH Volume(s): 100 µl
Spike Standard(s): ali / PAH Volume(s): 100 µl
Internal Standard(s): ali / PAH Volume(s): 100 µl
Final Extract Volume (ml): 1.0 Final Solvent: DCM

Comments:

~~PAH's only~~ 8/13/13

Sample Custodian Signature: amanda Brewster Date: 8/13/13
Laboratory Manager Signature: _____ Date: 8/13/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	a	Project #
64453	J13034	Arcadis - Mayflower AR	ARC1765	SED-DA-EB-07-080913	08/09/13	08/13/13	PAH, TPH, ALI	WATER	1 of 2	13081301	Cooler 2	Arcadis: Daniel Mays	1L amber glass BR bottle		B0086003.1302
64455	J13034	Arcadis - Mayflower AR	ARC1767	SED-DA-DI-Water	08/09/13	08/13/13	PAH, TPH, ALI	WATER	1 of 2	13081301	Cooler 2	Arcadis: Daniel Mays	1L amber glass BR bottle		B0086003.1302
64457	J13034	Arcadis - Mayflower AR	ARC1769	SED-DA-EB-08-081013	08/10/13	08/13/13	PAH, TPH, ALI	WATER	1 of 2	13081301	Cooler 4	Arcadis: Daniel Mays	1L amber glass BR bottle		B0086003.1302
64459	J13034	Arcadis - Mayflower AR	ARC1771	SO-DA-EB-04-081113	08/11/13	08/13/13	PAH	WATER	44 analytes, 1 of 2	13081301	Cooler 1	Arcadis: Daniel Mays	1L amber glass BR bottle		B0086003.1302

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13081301
Client: Arcadis - Mayflower AR
Initiation Date: 8/13/13

Number of Samples: 13
Matrix: sediments
Due Date: 45 days: 9/27/13
Comments: PAH, TPH, ALI
received 8/13/13

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	☑ SRM/LCS 1941b	☐ Blank Spike
☐	Blank Spike Duplicate	☑	Matrix Spike
☑	Matrix Spike Duplicate	☑	Duplicate

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ALI — Volume(s): 100 ul
Spike Standard(s): PAH, ALI — Volume(s): 100 ul
Internal Standard(s): PAH, ALI — Volume(s): 100 ul
Final Extract Volume (ml): 1.0 — Final Solvent: DCM

Comments:

Sample Custodian Signature: Amanda Brewster — Date: 8/13/13
Laboratory Manager Signature: _____ — Date: 8/15/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64472	J13034	Arcadis - Mayflower AR	ARC1784	SED-DA-021 (0-0.5)	08/09/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64478	J13034	Arcadis - Mayflower AR	ARC1790	SED-DA-042 (0-0.5)	08/09/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64479	J13034	Arcadis - Mayflower AR	ARC1791	SED-DA-042 (0-0.5) MS	08/09/13	08/13/13	PAH, TPH, ALI	SED	MS	13081301	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64480	J13034	Arcadis - Mayflower AR	ARC1792	SED-DA-042 (0-0.5) MSD	08/09/13	08/13/13	PAH, TPH, ALI	SED	MSD	13081301	Cooler 2	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64483	J13034	Arcadis - Mayflower AR	ARC1795	SED-DA-046 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64486	J13034	Arcadis - Mayflower AR	ARC1798	SED-DA-049 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64489	J13034	Arcadis - Mayflower AR	ARC1801	SED-DA-043 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64492	J13034	Arcadis - Mayflower AR	ARC1804	SED-DA-044 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64495	J13034	Arcadis - Mayflower AR	ARC1807	SED-DA-047 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64498	J13034	Arcadis - Mayflower AR	ARC1810	SED-DA-048 (0-0.5)	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64499	J13034	Arcadis - Mayflower AR	ARC1811	SED-DA-048 (0-0.5) MS	08/12/13	08/13/13	PAH, TPH, ALI	SED	MS	13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64500	J13034	Arcadis - Mayflower AR	ARC1812	SED-DA-048 (0-0.5) MSD	08/12/13	08/13/13	PAH, TPH, ALI	SED	MSD	13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64503	J13034	Arcadis - Mayflower AR	ARC1815	SED-DA-DUP-07-081213	08/12/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 3	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302

T3

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13081301
Client: Arcadis - MayflowerAK
Initiation Date: 8/13/13

Number of Samples: 27
Matrix: soil/sediment
Due Date: 45 days: 9/27/13
Comments: PAH: 44 analytes
received 8/13/13

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	☑ SRM/LCS 1944/6	☐	Blank Spike
☐ Blank Spike Duplicate		☑	Matrix Spike
☑ Matrix Spike Duplicate		☑	Duplicate

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ACI — Volume(s): 100µl
Spike Standard(s): PAH, ACI — Volume(s): 100µl
Internal Standard(s): PAH, ACI — Volume(s): 100µl
Final Extract Volume (ml): 1.0 — Final Solvent: DCM

Comments:

PAH, 44 list

Sample Custodian Signature: Amanda Brewster — Date: 8/13/13
Laboratory Manager Signature: _____ — Date: _____

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64461	J13034	Arcadis - Mayflower AR	ARC1773	SO-DA-026 (0-0.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64462	J13034	Arcadis - Mayflower AR	ARC1774	SO-DA-026 (0-0.5) MS	08/11/13	08/13/13	PAH	SOIL	44 analytes, MS	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64463	J13034	Arcadis - Mayflower AR	ARC1775	SO-DA-026 (0-0.5) MSD	08/11/13	08/13/13	PAH	SOIL	44 analytes, MSD	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64464	J13034	Arcadis - Mayflower AR	ARC1776	SO-DA-026 (0.5-1.0)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64465	J13034	Arcadis - Mayflower AR	ARC1777	SO-DA-026 (1.0-1.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64466	J13034	Arcadis - Mayflower AR	ARC1778	SO-DA-028 (0-0.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64467	J13034	Arcadis - Mayflower AR	ARC1779	SO-DA-028 (0.5-1.0)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64468	J13034	Arcadis - Mayflower AR	ARC1780	SO-DA-028 (1.0-1.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64469	J13034	Arcadis - Mayflower AR	ARC1781	SO-DA-029 (0-0.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64470	J13034	Arcadis - Mayflower AR	ARC1782	SO-DA-029 (0.5-1.0)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64471	J13034	Arcadis - Mayflower AR	ARC1783	SO-DA-029 (1.0-1.5)	08/11/13	08/13/13	PAH	SOIL	44 analytes	13081301	Cooler 1	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64473	J13034	Arcadis - Mayflower AR	ARC1785	SED-DA-021 (0.5-1.0)	08/09/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64474	J13034	Arcadis - Mayflower AR	ARC1786	SED-DA-021 (1.0-1.5)	08/09/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64481	J13034	Arcadis - Mayflower AR	ARC1793	SED-DA-042 (0.5-1.0)	08/09/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64482	J13034	Arcadis - Mayflower AR	ARC1794	SED-DA-042 (1.0-1.5)	08/09/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64484	J13034	Arcadis - Mayflower AR	ARC1796	SED-DA-046 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64485	J13034	Arcadis - Mayflower AR	ARC1797	SED-DA-046 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64487	J13034	Arcadis - Mayflower AR	ARC1799	SED-DA-049 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64488	J13034	Arcadis - Mayflower AR	ARC1800	SED-DA-049 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64490	J13034	Arcadis - Mayflower AR	ARC1802	SED-DA-043 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64491	J13034	Arcadis - Mayflower AR	ARC1803	SED-DA-043 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64493	J13034	Arcadis - Mayflower AR	ARC1805	SED-DA-044 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64494	J13034	Arcadis - Mayflower AR	ARC1806	SED-DA-044 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64496	J13034	Arcadis - Mayflower AR	ARC1808	SED-DA-047 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64497	J13034	Arcadis - Mayflower AR	ARC1809	SED-DA-047 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64501	J13034	Arcadis - Mayflower AR	ARC1813	SED-DA-048 (0.5-1.0)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64502	J13034	Arcadis - Mayflower AR	ARC1814	SED-DA-048 (1.0-1.5)	08/12/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 3	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302

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B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13081301
Client: Arcadis-Mayflower AR
Initiation Date: 8/13/13

Number of Samples: 3
Matrix: sediments
Due Date: 45 days: 9/27/13
Comments: extract : hold
received 8/13/13

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	☑ SRM/LCS 1941b	☐ Blank Spike	
☐ Blank Spike Duplicate		☑ Matrix Spike	____
☑ Matrix Spike Duplicate	____	☑ Duplicate	____

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ALI — Volume(s): 100 µl
Spike Standard(s): 8+17, ALI — Volume(s): 100 µl
Internal Standard(s): 8+17, ALI — Volume(s): 100 µl
Final Extract Volume (ml): 1.0 — Final Solvent: DCM

Comments:

Sample Custodian Signature: Amanda Brewster — Date: 8/13/13
Laboratory Manager Signature: _____ — Date: 8/13/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	a	Project #
64475	J13034	Arcadis - Mayflower AR	ARC1787	SED-DA-021 (1.5-2.0)	08/09/13	08/13/13	extract & HOLD	SED		13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64476	J13034	Arcadis - Mayflower AR	ARC1788	SED-DA-021 (2.0-3.0)	08/09/13	08/13/13	extract & HOLD	SED		13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302
64477	J13034	Arcadis - Mayflower AR	ARC1789	SED-DA-021 (3.0-3.3)	08/09/13	08/13/13	extract & HOLD	SED		13081301	Cooler 2	Arcadis: Daniel Mays	4oz clear glass jar		B0086003.1302

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From: Parmelee, Rhiannon
Sent: Monday, August 12, 2013 5:34 PM
To: Mott, Lyndi
Cc: Tomlinson, Lisa; Skwarski, Alison
Subject: RE: DARSP on hold?

Here are the samples I want all of the labs to hold and not analyze yet (ALS/B&B will be shipped today):

SED-DA-045(0.0-0.5)
SED-DA-045(0.5-1.0)

SED-DA-052(0.0-0.5)
SED-DA-052(0.5-1.0)
SED-DA-052(1.0-1.5)

SED-DA-018(0.0-0.5)
SED-DA-018(0.5-1.0)
SED-DA-018(1.0-1.5)
SED-DA-018(1.5-2.0)

SED-DA-019(0.0-0.5)
SED-DA-019(0.0-0.5) MS/MSD
SED-DA-019(0.5-1.0)
SED-DA-019(1.0-1.5)
SED-DA-019(1.5-2.0)
SED-DA-019(2.0-2.5)

amanda brewster

From: juanramirez@tdi-bi.com
Sent: Tuesday, August 13, 2013 9:55 AM
To: 'Amanda J. Brewster'
Subject: FW: DARSP on hold

Juan Ramirez
Environmental Lab Manager
TDI-BI/B&B Labs
14391B South Dowling Rd.
College Station, TX 77845
Office - (979) 693-3446
Fax - (979) 693-6389
Cell – (979) 777-0793

Web Site: http://tdi-bi.com/

From: Mott, Lyndi [mailto:Lyndi.Mott@arcadis-us.com]
Sent: Monday, August 12, 2013 8:14 PM
To: Juan Ramirez
Cc: Tomlinson, Lisa; Capria, Dennis; Chandler, Jennifer
Subject: RE: DARSP on hold

Juan,

There is also a field duplicate with these samples that should also be placed on hold.
SED-DA-DUP-06

Thank you,
Lyndi Mott

From: Mott, Lyndi
Sent: Monday, August 12, 2013 5:43 PM
To: Juan Ramirez
Cc: Tomlinson, Lisa; Capria, Dennis; Chandler, Jennifer
Subject: FW: DARSP on hold?

Juan,

The following samples from the Downstream Area (DARSP) that were collected over the weekend and are being shipped today are to be placed on hold. We should be able to give direction on how to proceed by the end of the week.

Thank you,

amanda brewster

From: amanda brewster <amandabrewster@tdi-bi.com>
Sent: Tuesday, August 13, 2013 3:32 PM
To: 'Mays, Daniel'; 'Lewis, Ryan'; Parmelee, Rhiannon (Rhiannon.Parmelee@arcadis-us.com); 'Jennifer.Chandler@arcadis-us.com'; 'Dennis.Capria@arcadis-us.com'; Mott, Lyndi (Lyndi.Mott@arcadis-us.com)
Cc: Juan Ramirez (juanramirez@tdi-bi.com); Donell Frank; 'tommcdonald@tdi-bi.com' (tommcdonald@tdi-bi.com)
Subject: Samples Received 8/13/13
Attachments: COC 8-13-13.pdf

Hi Daniel/Ryan,

We received your coolers today in good condition.
The internal temperature of Cooler 1 was 5.1ºC and the temperature blank was 1.2ºC
The internal temperature of Cooler 2 was 1.5ºC and the temperature blank was 2.3ºC
The internal temperature of Cooler 3 was 2.1ºC and the temperature blank was 1.9ºC
The internal temperature of Cooler 4 was 6.1ºC and the temperature blank was 0.9ºC

A PDF of the COCs is attached for your records.

Regards,
Amanda

From: Mays, Daniel [mailto:Daniel.Mays@arcadis-us.com]
Sent: Monday, August 12, 2013 6:46 PM
To: amanda brewster
Cc: Lewis, Ryan
Subject: Coolers Shipped 8-12-13

Good Evening Amanda,

The coolers shipped today from the XOM-Mayflower Site are under tracking #8022 2781 5939.

Additionally Ryan Lewis will be sending this e-mails in the future as I will be offsite.

Regards,

Danny Mays | Environmental Specialist, E.I. | daniel.mays@arcadis-us.com
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Professional Affiliate/ARCADIS G&M of North Carolina, Inc.
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amanda brewster

From: juanramirez@tdi-bi.com
Sent: Wednesday, August 14, 2013 11:05 AM
To: 'Mott, Lyndi'
Cc: 'Parmelee, Rhiannon'; 'Tomlinson, Lisa'; 'Skwarski, Alison'; 'Chandler, Jennifer'; 'Amanda J. Brewster'; Donell Frank; 'Tom Mc Donald'
Subject: RE: DARSP samples taken off hold

Hello Lyndi,

Will update our records and will send you an updated inventory of samples received as of today with requested analysis.

Juan

Juan Ramirez
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From: Mott, Lyndi [mailto:Lyndi.Mott@arcadis-us.com]
Sent: Wednesday, August 14, 2013 10:29 AM
To: Juan Ramirez
Cc: Parmelee, Rhiannon; Tomlinson, Lisa; Skwarski, Alison; Chandler, Jennifer
Subject: DARSP samples taken off hold
Importance: High

Juan,

We are good to go with processing all of these samples EXCEPT SED-DA-019(2.0-2.5). We want to archive SED-DA-019(2.0-2.5). The team was able to collect the 2.0-3.0 interval for this location, which was the intended target.

As a reminder, we can analyze the following that were collected on Saturday:

SED-DA-045(0.0-0.5)
SED-DA-045(0.5-1.0)

SED-DA-052(0.0-0.5)
SED-DA-052(0.5-1.0)
SED-DA-052(1.0-1.5)

SED-DA-018(0.0-0.5)
SED-DA-018(0.5-1.0)
SED-DA-018(1.0-1.5)
SED-DA-018(1.5-2.0)

SED-DA-019(0.0-0.5)
SED-DA-019(0.0-0.5) MS/MSD
SED-DA-019(0.5-1.0)
SED-DA-019(1.0-1.5)
SED-DA-019(1.5-2.0)

SED-DA-DUP-06

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B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13081301
Client: Arcadis-Mayflower AR
Initiation Date: 8/14/13

Number of Samples: 8
Matrix: sediments
Due Date: 45 days: 9/28/13
Comments: PAH: 44 analytes
received 8/13/13

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	☑ SRM/LCS 1944	☑ Blank Spike
☐	Blank Spike Duplicate	☑	Matrix Spike
☑	Matrix Spike Duplicate	☑	Duplicate

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ALI Volume(s): 100ml
Spike Standard(s): PAH, ALI Volume(s): 100ml
Internal Standard(s): PAH, ALI Volume(s): 100ml
Final Extract Volume (ml): 1.0 Final Solvent: DCM

Comments:

Sample Custodian Signature: amanda Brewster Date: 8/14/13
Laboratory Manager Signature: Date: 8/14/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64505	J13034	Arcadis - Mayflower AR	ARC1817	SED-DA-045 (0.5-1.0)	08/10/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64507	J13034	Arcadis - Mayflower AR	ARC1819	SED-DA-052 (0.5-1.0)	08/10/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64508	J13034	Arcadis - Mayflower AR	ARC1820	SED-DA-052 (1.0-1.5)	08/10/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64511	J13034	Arcadis - Mayflower AR	ARC1823	SED-DA-018 (0.5-1.0)	08/10/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64512	J13034	Arcadis - Mayflower AR	ARC1824	SED-DA-018 (1.0-1.5)	08/10/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64513	J13034	Arcadis - Mayflower AR	ARC1825	SED-DA-018 (1.5-2.0)	08/10/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64517	J13034	Arcadis - Mayflower AR	ARC1829	SED-DA-019 (0.5-1.0)	08/10/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302
64518	J13034	Arcadis - Mayflower AR	ARC1830	SED-DA-019 (1.0-1.5)	08/10/13	08/13/13	PAH	SED	44 analytes	13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302

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B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13081301
Client: Arcadis-Mayflower AR
Initiation Date: 8/14/13

Number of Samples: 1
Matrix: sed
Due Date: N/A
Comments: extract: HOLD
received 8/13/13

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	☑ SRM/LCS 1941b	☐ Blank Spike
☐	Blank Spike Duplicate	☑	Matrix Spike _____
☑	Matrix Spike Duplicate _____	☑	Duplicate _____

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): 244, 1-CL Volume(s): 100 µl

Spike Standard(s): PAH, 1-CL Volume(s): 100 µl

Internal Standard(s): PAH, 1-CL Volume(s): 100 µl

Final Extract Volume (ml): 1.0 Final Solvent: DCM

Comments:

Sample Custodian Signature: amanda Brewster Date: 8/14/13

Laboratory Manager Signature: _____ Date: 8/14/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64519	J13034	Arcadis - Mayflower AR	ARC1831	SED-DA-019 (1.5-2.0)	08/10/13	08/13/13	extract & HOLD	SED		13081301	Cooler 4	Arcadis: Daniel Mays	4oz clear glass jar	B0086003.1302

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13081301
Client: Arcadis - Mayflower AR
Initiation Date: 8/14/13

Number of Samples: 7
Matrix: sediments
Due Date: 45 days: 9/28/13
Comments: PAH, TPH, ALI
received 8/13/13

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	☐ SRM/LCS 541b	☐	Blank Spike
☐ Blank Spike Duplicate		☑	Matrix Spike ____
☐ Matrix Spike Duplicate ____		☐	Duplicate ____

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ALI — Volume(s): 100 µl

Spike Standard(s): PAH, ALI — Volume(s): 100 µl

Internal Standard(s): PAH, ALI — Volume(s): 100 µl

Final Extract Volume (ml): 1.0 — Final Solvent: DCM

Comments:

Sample Custodian Signature: Amanda Brewster — Date: 8/14/13

Laboratory Manager Signature: ____ — Date: 8/14/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64504	J13034	Arcadis - Mayflower AR	ARC1816	SED-DA-045 (0-0.5)	08/10/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64506	J13034	Arcadis - Mayflower AR	ARC1818	SED-DA-052 (0-0.5)	08/10/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64509	J13034	Arcadis - Mayflower AR	ARC1821	SED-DA-DUP-06-081013	08/10/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64510	J13034	Arcadis - Mayflower AR	ARC1822	SED-DA-018 (0-0.5)	08/10/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64514	J13034	Arcadis - Mayflower AR	ARC1826	SED-DA-019 (0-0.5)	08/10/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64515	J13034	Arcadis - Mayflower AR	ARC1827	SED-DA-019 (0-0.5) MS	08/10/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302
64516	J13034	Arcadis - Mayflower AR	ARC1828	SED-DA-019 (0-0.5) MSD	08/10/13	08/13/13	PAH, TPH, ALI	SED		13081301	Cooler 4	Arcadis: Daniel Mays	8oz clear glass jar	B0086003.1302

amanda brewster

From: juanramirez@tdi-bi.com
Sent: Thursday, August 15, 2013 9:04 AM
To: 'Mott, Lyndi'; 'amanda brewster'; 'Donell Frank'
Cc: 'Chandler, Jennifer'; 'Capria, Dennis'; 'Tom Mc Donald'
Subject: RE: Samples Received 8/13/13

We will extract the duplicate bottle with the next set of waters.

Juan

Juan Ramirez
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College Station, TX 77845
Office - (979) 693-3446
Fax - (979) 693-6389
Cell – (979) 777-0793

Web Site: http://tdi-bi.com/

From: Mott, Lyndi [mailto:Lyndi.Mott@arcadis-us.com]
Sent: Thursday, August 15, 2013 8:59 AM
To: juanramirez@tdi-bi.com; 'amanda brewster'; 'Donell Frank'
Cc: Chandler, Jennifer; Capria, Dennis; 'Tom Mc Donald'
Subject: RE: Samples Received 8/13/13

Juan,

If you have other water matrices to extract by 8/16, can you include the 2nd liter of DI water. That way we would have a duplicate analysis of the DI water. I apologize that I didn't let you know sooner. I didn't realize they had already shipped the DI water.

Thank you,
Lyndi Mott

From: juanramirez@tdi-bi.com [mailto:juanramirez@tdi-bi.com]
Sent: Thursday, August 15, 2013 8:50 AM
To: Mott, Lyndi; 'amanda brewster'; 'Donell Frank'
Cc: Chandler, Jennifer; Capria, Dennis; 'Tom Mc Donald'
Subject: RE: Samples Received 8/13/13

Lyndi,

We have extracted 1 liter bottle for ARC1767 (SED-DA-DI-Water). Do we also need to extract the 2nd 1 liter bottle? Extraction Holding time for the sample is due 8/16/2013.

Juan

Juan Ramirez
Environmental Lab Manager
TDI-BI/B&B Labs
14391B South Dowling Rd.
College Station, TX 77845
Office - (979) 693-3446
Fax - (979) 693-6389
Cell – (979) 777-0793

Web Site: http://tdi-bi.com/

From: Mott, Lyndi [mailto:Lyndi.Mott@arcadis-us.com]
Sent: Thursday, August 15, 2013 8:05 AM
To: amanda brewster; Juan Ramirez; Donell Frank
Cc: Chandler, Jennifer; Capria, Dennis
Subject: RE: Samples Received 8/13/13

All,

On this coc is a sample labeled as DI water; SED-DA-DI water. We sent 2 liters just in case we need to reanalyze. This is unopened DI water that we received from Lancaster. We want to see what is in the DI water since we are seeing hits in the equipment blanks. We are trying to determine if the source is from the field or the DI water since your method has much lower detection limits than Lancaster. Please analyze the DI water in the same manner as the equipment blanks. Thank you,

Lyndi Mott | Project Chemistry/Data Quality Specialist | lyndi.mott@arcadis-us.com

ARCADIS U.S., Inc. | 2929 Briarpark Drive | Suite 300 | Houston, TX 77042
T. 713.953.4829 I T. 832.534.8140 I M. 315.569.9448
www.arcadis-us.com

From: amanda brewster [mailto:amandabrewster@tdi-bi.com]
Sent: Tuesday, August 13, 2013 3:32 PM
To: Mays, Daniel; Lewis, Ryan; Parmelee, Rhiannon; Chandler, Jennifer; Capria, Dennis; Mott, Lyndi
Cc: Juan Ramirez; Donell Frank; tommcdonald@tdi-bi.com
Subject: Samples Received 8/13/13

Hi Daniel/Ryan,

We received your coolers today in good condition.
The internal temperature of Cooler 1 was 5.1ºC and the temperature blank was 1.2ºC
The internal temperature of Cooler 2 was 1.5ºC and the temperature blank was 2.3ºC
The internal temperature of Cooler 3 was 2.1ºC and the temperature blank was 1.9ºC
The internal temperature of Cooler 4 was 6.1ºC and the temperature blank was 0.9ºC

A PDF of the COCs is attached for your records.

Regards,
Amanda

From: Mays, Daniel [mailto:Daniel.Mays@arcadis-us.com]
Sent: Monday, August 12, 2013 6:46 PM
To: amanda brewster
Cc: Lewis, Ryan
Subject: Coolers Shipped 8-12-13

Good Evening Amanda,

The coolers shipped today from the XOM-Mayflower Site are under tracking #8022 2781 5939.

Additionally Ryan Lewis will be sending this e-mails in the future as I will be offsite.

Regards,
Danny Mays | Environmental Specialist, E.I. | daniel.mays@arcadis-us.com
ARCADIS U.S., Inc. | 801 Corporate Center Drive, Suite 300 | Raleigh, North Carolina 27607
T: 919-415-2281 | M: 919-812-1417 | F: 919-854-5448
Professional Affiliate/ARCADIS G&M of North Carolina, Inc.
Please consider the environment before printing this email.

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13081301
Client: Arcadis-Mayflower AR
Initiation Date: 8/15/13
received 8/13/13

Number of Samples: 1
Matrix: water
Due Date: 45 days: 9/29/13
Comments: PAH, TPH, ALI
collected 8/09/13
extract by 8/15/13

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	☐ SRM/LCS	☐ Blank Spike	
☐ Blank Spike Duplicate		☐ Matrix Spike	
☐ Matrix Spike Duplicate		☐ Duplicate	

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, ALI — Volume(s): 1 ml

Spike Standard(s): PAH, ALI — Volume(s): 1 ml

Internal Standard(s): PAH, ALI — Volume(s): 1 ml

Final Extract Volume (ml): 1.0 — Final Solvent: DCM

Comments:

Sample Custodian Signature: Amanda Brewster — Date: 8/15/13

Laboratory Manager Signature: _____ — Date: 8/15/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64456	J13034	Arcadis - Mayflower AR	ARC1768	SED-DA-DI-Water	08/09/13	08/13/13	PAH, TPH, ALI	WATER	2 of 2	13081301	Cooler 2	Arcadis: Daniel Mays	1L amber glass BR bottle	B0086003.1302

B&B LABORATORIES RECEIVING/INTEGRITY REPORT

Job: J13034 Date Received: 8/14/13 SDG#: 13081401

Sender: Arcadis- Mayflower, AR

1. Number of Shipping Containers: 1 Arcadis: Ryan Lewis

Comments: large blue cooler

2. Airbill Present? (Yes)/No Shipping Company: Fed Ex

Airbill Number: 8022 2781 5847 Comments: PON

3. Custody Seals on Container?
No (Yes) (Intact) Not Intact Comments: on top of duct tape

4. Chain of Custody Records?
No (Yes) Comments

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

Temperature/Comments: 0.9°C / temp blank 0.9°C (T6

6. List of Broken Containers:

None

7. Number of Samples Expected: 1 cooler Number of Samples Received: 21 soil
2 water

8. Problems/Discrepancies:

None

9. Resolutions:

N/A

10. Checked in by: Amanda Brewster Date: 8/14/13

large blue cooler

Ice type: wet ice
Cooler temp: 0.9
Temp blank: 0.9
Thermometer: 6
Custody seal:

SDG 13081401
Cooler 1 of 1

eurofins | Lancaster Laboratories

480554
CUSTODY SEAL

2425 New Holland Pike, Lancaster, PA 17601-5994 (717) 656-2300

DATE: 8/13/13

SIGNATURE:

FedEx NEW Packaging

8022 2781 5847

0200

Recipient's Copy

1 From

Date 8-13-20

Sender's Name Rya Lewis Phone 903 83-926

Company ABCADIS

Address [redacted]

Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

HOLD Weekday
FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday
FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City State ZIP

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.
For packages over 150 lbs., use the new FedEx Express Freight 1Ft Article

Next Business Day

- FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

FedEx Envelope* FedEx Pak* FedEx Box FedEx Tube Other

6 Special Handling and Delivery Signature Options

SATURDAY Delivery
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required — Package may be left without obtaining a signature for delivery.

Direct Signature — Someone at recipient's address may sign for delivery. Not applicable for FedEx Express Saver.

Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Not applicable for FedEx Express Saver.

Does this shipment contain dangerous goods?

One box must be checked.

No Yes — As per attached Shipper's Declaration. Yes — Shipper's Declaration not required. Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

Cargo Aircraft Only

7 Payment Bill to:

Enter FedEx Acct. No. or Credit Card No. below.

Sender Acct. No. in Section 1 will be billed. Recipient Third Party Credit Card Cash/Check

Total Packages Total Weight

____ ____ lbs.

Credit Card Auth.

*Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

644

8022 2781 5847

259

CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: Book6003.1301 Mayflower Pipeline

B&B Contact: Juan Ramirez

Sampler Signature:

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs + 8270 SIM	Other Instructions	Comments
SO-DA-001 (0-0.5)	8/13/13	1030	Sed	none	4oz	1	X	sdg 13081401 Cooler 1 of 1 (1)	44 PAHs List
SO-DA-001 (0.5-1.0)		1035				1			
SO-DA-001 (1.0-1.5)		1040				1			
SO-DA-002 (0-0.5)		1100				1			
SO-DA-002 (0-0.5)MS		1100				1			
SO-DA-002 (0-0.5)MSD		1100				1			
SO-DA-002 (0.5-1.0)		1105				1			
SO-DA-002 (1.0-1.5)		1110				1			
SO-DA-003 (0-0.5)		1215				1			
SO-DA-003 (0.5-1.0)		1220				1			
					Total # of Containers	10			

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Jonathan Flemerfelt	ARCADIS	8/13/13	1630	Printed Name: Amanda Brewster	B&B Labs	8/14/13	11:00
Signature:				Signature: Amanda Brewster			
Printed Name:				Printed Name:			
Signature:				Signature:			

Matrix:

T=Tissue G=Gas
S=Soil/Sediment Ws=Waste
R=Rinseate HW=Hazardous Waste
P=Product W=Water

Sample Container: Vol/material

G=Glass C=Core
P=Plastic B=Bag

CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: B0086003.1301 Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature:

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs + 8270 SIM	Other Instructions	Comments
SO-DA-003 (1-1.5)	8/13/13	1225	Sed	none	4oz	1	X	SDG 13081401 Cooler 1 of 1 (2)	4/4 PAHs List
SO-DA-004 (0-0.5)		1330				1			
SO-DA-004 (0.5-1.0)		1335				1			
SO-DA-004 (1.0-1.5)		1340				1			
SO-DA-005 (0-0.5)		1400				1			
SO-DA-005 (0.5-1.0)		1405				1			
SO-DA-005 (1.0-1.5)		1410				1			
SO-DA-006 (0-0.5)		1430				1			
SO-DA-006 (0.5-1.0)		1435				1			
SO-DA-006 (1.0-1.5)		1440				1			
					Total # of Containers	10			

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Jonathan Flores-Gill	ARCADIS	8/12/13	1630	Printed Name: Amanda Brewster	B&B Labs	8/14/13	11:00
Signature:	↓	↓	↓	Signature: Amanda Brewster			
Printed Name:				Printed Name:			
Signature:				Signature:			

Matrix:

T=Tissue S=Soil/Sediment R=Rinseate P=Product G=Gas Ws=Waste HW=Hazardous Waste W=Water

Sample Container: Vol/material

G=Glass P=Plastic C=Core B=Bag

CHAIN OF CUSTODY RECORD

B&B Laboratories, Inc.

Home Office 14391B South Dowling Road College Station TX 77845 phone (979) 693-3446 fax (979) 693-6389 http://www.tdi-bi.com

TDI Brooks

Client: ARCADIS

Project ID: B008600.3.1301 Mayflower Pipeline Incident

B&B Contact: Juan Ramirez

Sampler Signature:

Sample ID	Sample Date	Sample Time	Sample Matrix	Preservative	Containers Type	Containers No.	Analyses: PAHs + 8270 S.I.M.	Other Instructions	Comments
SO-DA-Ap-06-081313	8/13/13		Soil	none	4oz	1		SDG 1308 1401 cooler 1 of 1 (3)	44 PAHs List
SO-DA-EB-05-081313	↓	1610	Water	↓	LAG	2			↓

Total # of Containers: 3

Relinquished By	Company Name	Date	Time	Received By	Company Name	Date	Time
Printed Name: Jonathan Flamer Felt	ARCADIS	8/13/13	1630	Printed Name: Amanda Brewster	B&B Labs	8/14/13	11:00
Signature:	↓	↓	↓	Signature: Amanda Brewster			
Printed Name				Printed Name:			
Signature:				Signature:			

Matrix:

T=Tissue S=Soil/Sediment R=Rinseate P=Product G=Gas Ws=Waste HW=Hazardous Waste W=Water

Sample Container: Vol/material

G=Glass P=Plastic C=Core B=Bag

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	a	Project #
64522	J13034	Arcadis - Mayflower AR	ARC1833	SO-DA-001 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64523	J13034	Arcadis - Mayflower AR	ARC1834	SO-DA-001 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64524	J13034	Arcadis - Mayflower AR	ARC1835	SO-DA-001 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64525	J13034	Arcadis - Mayflower AR	ARC1836	SO-DA-002 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64526	J13034	Arcadis - Mayflower AR	ARC1837	SO-DA-002 (0-0.5) MS	08/13/13	08/14/13	PAH	SOIL	44 analytes, MS	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64527	J13034	Arcadis - Mayflower AR	ARC1838	SO-DA-002 (0-0.5) MSD	08/13/13	08/14/13	PAH	SOIL	44 analytes, MSD	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64528	J13034	Arcadis - Mayflower AR	ARC1839	SO-DA-002 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64529	J13034	Arcadis - Mayflower AR	ARC1840	SO-DA-002 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64530	J13034	Arcadis - Mayflower AR	ARC1841	SO-DA-003 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64531	J13034	Arcadis - Mayflower AR	ARC1842	SO-DA-003 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64532	J13034	Arcadis - Mayflower AR	ARC1843	SO-DA-003 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64533	J13034	Arcadis - Mayflower AR	ARC1844	SO-DA-004 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64534	J13034	Arcadis - Mayflower AR	ARC1845	SO-DA-004 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64535	J13034	Arcadis - Mayflower AR	ARC1846	SO-DA-004 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64536	J13034	Arcadis - Mayflower AR	ARC1847	SO-DA-005 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64537	J13034	Arcadis - Mayflower AR	ARC1848	SO-DA-005 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64538	J13034	Arcadis - Mayflower AR	ARC1849	SO-DA-005 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64539	J13034	Arcadis - Mayflower AR	ARC1850	SO-DA-006 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64540	J13034	Arcadis - Mayflower AR	ARC1851	SO-DA-006 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64541	J13034	Arcadis - Mayflower AR	ARC1852	SO-DA-006 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64542	J13034	Arcadis - Mayflower AR	ARC1853	SO-DA-DUP-06-081313	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar		B0086003.1302
64543	J13034	Arcadis - Mayflower AR	ARC1854	SO-DA-EB-05-081313	08/13/13	08/14/13	PAH	WATER	44 analytes, 1 of 2	13081401	Cooler 1	Arcadis: Ryan Lewis	1L amber glass BR bottle		B0086003.1302
64544	J13034	Arcadis - Mayflower AR	ARC1855	SO-DA-EB-05-081313	08/13/13	08/14/13	HOLD	WATER	44 analytes, 2 of 2	13081401	Cooler 1	Arcadis: Ryan Lewis	1L amber glass BR bottle		B0086003.1302

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13081401
Client: Arcadis- Mayflower AR
Initiation Date: 8/14/13

Number of Samples: 21
Matrix: Soil
Due Date: 45 days: 9/28/13
Comments: PAH: 44 analytes
received 8/14/13

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	☑ SRM/LCS 1941b	☐	Blank Spike
☐ Blank Spike Duplicate		☑	Matrix Spike
☑ Matrix Spike Duplicate		☑	Duplicate

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, AL Volume(s): 100 µl
Spike Standard(s): PAH, AL Volume(s): 100 µl
Internal Standard(s): PAH, AL Volume(s): 100 µl
Final Extract Volume (ml): 1.0 Final Solvent: DCM

Comments:

Sample Custodian Signature: Amanda Brewster Date: 8/14/13
Laboratory Manager Signature: _____ Date: 8/14/13

Log #	Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
64522	J13034	Arcadis - Mayflower AR	ARC1833	SO-DA-001 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64523	J13034	Arcadis - Mayflower AR	ARC1834	SO-DA-001 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64524	J13034	Arcadis - Mayflower AR	ARC1835	SO-DA-001 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64525	J13034	Arcadis - Mayflower AR	ARC1836	SO-DA-002 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64526	J13034	Arcadis - Mayflower AR	ARC1837	SO-DA-002 (0-0.5) MS	08/13/13	08/14/13	PAH	SOIL	44 analytes, MS	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64527	J13034	Arcadis - Mayflower AR	ARC1838	SO-DA-002 (0-0.5) MSD	08/13/13	08/14/13	PAH	SOIL	44 analytes, MSD	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64528	J13034	Arcadis - Mayflower AR	ARC1839	SO-DA-002 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64529	J13034	Arcadis - Mayflower AR	ARC1840	SO-DA-002 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64530	J13034	Arcadis - Mayflower AR	ARC1841	SO-DA-003 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64531	J13034	Arcadis - Mayflower AR	ARC1842	SO-DA-003 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64532	J13034	Arcadis - Mayflower AR	ARC1843	SO-DA-003 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64533	J13034	Arcadis - Mayflower AR	ARC1844	SO-DA-004 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64534	J13034	Arcadis - Mayflower AR	ARC1845	SO-DA-004 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64535	J13034	Arcadis - Mayflower AR	ARC1846	SO-DA-004 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64536	J13034	Arcadis - Mayflower AR	ARC1847	SO-DA-005 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64537	J13034	Arcadis - Mayflower AR	ARC1848	SO-DA-005 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64538	J13034	Arcadis - Mayflower AR	ARC1849	SO-DA-005 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64539	J13034	Arcadis - Mayflower AR	ARC1850	SO-DA-006 (0-0.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64540	J13034	Arcadis - Mayflower AR	ARC1851	SO-DA-006 (0.5-1.0)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64541	J13034	Arcadis - Mayflower AR	ARC1852	SO-DA-006 (1.0-1.5)	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302
64542	J13034	Arcadis - Mayflower AR	ARC1853	SO-DA-DUP-06-081313	08/13/13	08/14/13	PAH	SOIL	44 analytes	13081401	Cooler 1	Arcadis: Ryan Lewis	4oz clear glass jar	B0086003.1302

B&B LABORATORIES SAMPLE INITIATION FORM-ENV

Job #: J13034
SDG: 13081401
Client: Arcadis-Mayflower, AR
Initiation Date: 8/14/13

Number of Samples: 1
Matrix: water
Due Date: 45 days: 9/28/13
Comments: collected 8/13/13
extract by 8/19/13
received 8/14/13

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

SEE BACK FOR SPECIFIC STANDARDS TO USE

Surrogate(s): PAH, All — Volume(s): 100µl
Spike Standard(s): PAH, All — Volume(s): 100µl
Internal Standard(s): PAH, All — Volume(s): 100µl
Final Extract Volume (ml): 1.0 — Final Solvent: DCM

Comments:

Sample Custodian Signature: Amanda Brewster — Date: 8/14/13 8/13/14 AB 8/14/13
Laboratory Manager Signature: _____ — Date: 8/14/13

Job #	CLIENT NAME	FILENAME	CLIENT ID	COL. DATE	RECVD	Analysis	MATRIX	COMMENTS	B&B SDG	Cooler #	Sent by:	Container	Project #
J13034	Arcadis - Mayflower AR	ARC1854	SO-DA-EB-05-081313	08/13/13	08/14/13	PAH	WATER	44 analytes, 1 of 2	13081401	Cooler 1	Arcadis: Ryan Lewis	1L amber glass BR bottle	B0086003.1302

amanda brewster

From: amanda brewster <amandabrewster@tdi-bi.com>
Sent: Wednesday, August 14, 2013 10:52 AM
To: 'Lewis, Ryan'; 'Mays, Daniel'; Parmelee, Rhiannon (Rhiannon.Parmelee@arcadis-us.com); 'Jennifer.Chandler@arcadis-us.com'; 'Dennis.Capria@arcadis-us.com'; Mott, Lyndi (Lyndi.Mott@arcadis-us.com)
Cc: Juan Ramirez (juanramirez@tdi-bi.com); Donell Frank; 'tommcdonald@tdi-bi.com' (tommcdonald@tdi-bi.com)
Subject: Samples Received 8/14/13
Attachments: COC 8-14-13.pdf

Hi Ryan,

We received your cooler this morning in good condition.
The internal temperature of the cooler was 0.9ºC and the temperature blank was 0.9ºC.
A PDF of the COC is attached for your records.

Regards,
Amanda

From: Lewis, Ryan [mailto:Ryan.Lewis@arcadis-us.com]
Sent: Tuesday, August 13, 2013 7:18 PM
To: amandabrewster@tdi-bi.com
Cc: Mays, Daniel
Subject: One Cooler Shipped 8-13-2013

Good Evening Amanda,

One cooler shipped today from the XOM-Mayflower Site are under tracking #8022 2781 5847.

Regards,

Ryan B Lewis | Geologist 1 | ryan.lewis@arcadis-us.com

ARCADIS U.S., Inc. | 111 SW Columbia Street, Suite 670 | Portland, OR 97201
T: 503 220 8201 ext. 1101 | M: 503 863 9060
www.arcadis-us.com

ARCADIS, Imagine the result
Please consider the environment before printing this email.

Laboratory Bench Sheet Logs

B&B LABORATORIES ENVIRONMENTAL EXTRACTION LOG

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

Job #: J13034 SDG #: 1308130l, 1308140l

Client: Arcadis - Mayflower AR

Analysis: ☒ PAH ☐ PESTS ☐ PCB ☒ ALI

Other: TPH

Extraction Solvent: DCM

Final Solvent: DCM Final Volume: 1.0 mL

Lipids Y / (N)
Dry Wt. Y / (N)
Copper Y / (N)
EOM (Y) / N
Columns (Y) / N
Long / (Short)

Surrogate: 100 µL
PAH: AR-WKSU-2500-002
Pest/PCB: —
Aliphatic: AL-WKSU-200-001
Other: —

Spike: 100 µL
PAH: AR-WKSK-1000-020
Pest/PCB: —
Aliphatic: AL-WKSK-100-020
Other: —

GC Int Std: 100 µL
PAH: AR-WKIS-2500-002
Pest/PCB: —
Aliphatic: AL-WKIS-500-001
Other: —

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

General Comments:

Report 13-3103

All samples get PAH + ALI standards. See comments for specific analysis – CK

	Added	Witness
Surrogate:	8/15/13 CK	8-15-13 EM
Spike:	8/15/13 CK	8-15-13 EM
Internal:	8/16/13 HA	8/16/13 CK

	Sample Name	Client ID	Wet Wt. (g or L)	Dry Wt. %	Dry Wt. (g)	Extraction Comments
1	ENV3084A	Procedural Blank	1.00			
2	ENV3084B	Blank Spike	1.00			
3	ENV3084C	Blank Spike Duplicate	1.00			
4	ARC1768	SED-DA-DI-Water	1.06			
5	ARC1854	SO-DA-EB-05-081313	1.07			PAH only
6						
7						
8						
9						
10						
11						
12						

8/15/13 CK

Internal Chain of Custody

Extraction Prep	Date: 8-15-13	Date: 8-15-13
	Initials: EM	Initials: EM
Extraction	Date: 8-15-13	Date: 8-15-13
	Initials: EM	Initials: EM
Concentration	Date: 8-15-13	Date: 8-15-13
	Initials: EM	Initials: EM
Short Columns	Date: 8-16-13	Date: 8-16-13
	Initials: EM	Initials: EM

ENV 3084

B&B LABORATORIES ENVIRONMENTAL EXTRACTION LOG

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

8/15/13 CK

Internal Chain of Custody

Concentration Short Columns		
Date: 8-16-13	Date: 8-16-13	
Initials: CK	Initials: CK	
Columns SA1		
Date:	Date:	
Initials:	Initials:	
Concentration SA1		
Date:	Date:	
Initials:	Initials:	
Columns SA2		
Date:	Date:	
Initials:	Initials:	
Concentration SA2		
Date:	Date:	
Initials:	Initials:	
Transfer for HPLC		
Date:	Date:	
Initials:	Initials:	
HPLC		
Date:	Date:	
Initials:	Initials:	
Post-HPLC Concentration		
Date:	Date:	
Initials:	Initials:	
Final Extract Transfer		
Date: 8/16/13	Initials: HA	

Dry Weight Page

—

Lipid/EOM Page

EOM1023

Clean-up/Separation/Other Columns

—

Lot Numbers

DCM: 52314
Hexane: —
Hydromatrix: —
Water: DI045-B
Silica: BCBJ9493V
Alumina: TG14BZEMS
Sodium Sulfate: 2092C525
Pentane: —
Copper: —
Hydrochloric Acid: 52144
SPE Columns: —
Other: —

Sample Storage Box #

J13034-1

HPLC Storage Box #

—

QC Review

Date	Initials
8/19/13	JA

Copied to Folders

8/19/13 CK

ENV 3084

B&B LABORATORIES EOM LOGBOOK

MATRIX: OTHER / SEDIMENT / (WATER)

Job #: J13034 SDG #: 13081301, 13081401

Client: Arcadis - Mayflower AR

General comments:

Lab Manager Date/Int: 8/19/13

Transferred by Date/Int: 8/16/13 CK From ENV Pg: ENV3084 From DRY Pg:

Date/Int: 8/16/13 HA Bal. Cal. ✓

Date/Int: 8/16/13 CK

	Sample Name	Client ID	Smpl Wt./Vol (g/L) Wet Wt. Dry Wt.	Dry Wt. (%)	Final Extract Vol (mL)	Initial Filter Wt (mg)	Filter & Sample Wt (mg)	Wt. of 100 µl EOM Wt. (mg)	EOM µg/g (Wet Wt. Basis)	EOM µg/g (Dry Wt. Basis)	Comments
1	ENV3084A	Procedural Blank	1.00		3	22.957	22.959	0.002	60		
2	ENV3084B	Blank Spike	1.00		3	24.047	24.059	0.012	360		
3	ENV3084C	Blank Spike Duplicate	1.00		3	22.104	22.117	0.013	390		
4	ARC1678	SED-DA-DI-Water	1.06		3	24.629	24.657	0.028	792		
5	ARC1854	SD-DA-EB-05-081313	1.07		3	23.778	23.780	0.002	56		
6				8/16/13 CK						8/16/13 CK	
7											
8											
9											
10											
11											
12											

EOM 1023

B&B LABORATORIES EOM LOGBOOK

	Sample Name	Client ID	Smpl Wt./Vol (g/L) Wet Wt. Dry Wt.	Dry Wt. (%)	Final Extract Vol (mL)	Initial Filter Wt (mg)	Filter & Sample Wt (mg)	Wt. of 100 µl EOM Wt. (mg)	EOM µg/g (Wet Wt. Basis)	EOM µg/g (Dry Wt. Basis)	Comments
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											

8/16/13 CK

$$EOM = \frac{(EOM\ Wt.\ (mg))\ (Final\ Extract\ Vol.\ (ml))}{(Smpl\ Wt/Vol.\ (g/L))\ (0.10\ ml)} \times 1000$$

$$\%RPD = \frac{(EOM_1 - EOM_2)}{(EOM_1 + EOM_2) \times 0.5} \times 100\%$$

	Initial Filter Wt (mg)	Filter & Sample Wt (mg)	Wt. of 100 µl Lipid Wt. (mg)
Solvent Blank	22.030	22.030	0.000
EOM Standard	21.888	32.243	10.355

EOM-WKLC-10-004

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

Date/Int:	RPD
Sample:	
Duplicate:	

EOM 1023

Last Page