ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163233727F

FedEx Express

7 of 15
MPS# 0263 7762 9046 7888
Mstr# 7762 9046 7395

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

0201

44 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163233727F

FedEx Express

6 of 15
MPS# 0263 7762 9046 7421
Mstr# 7762 9046 7395

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

0201

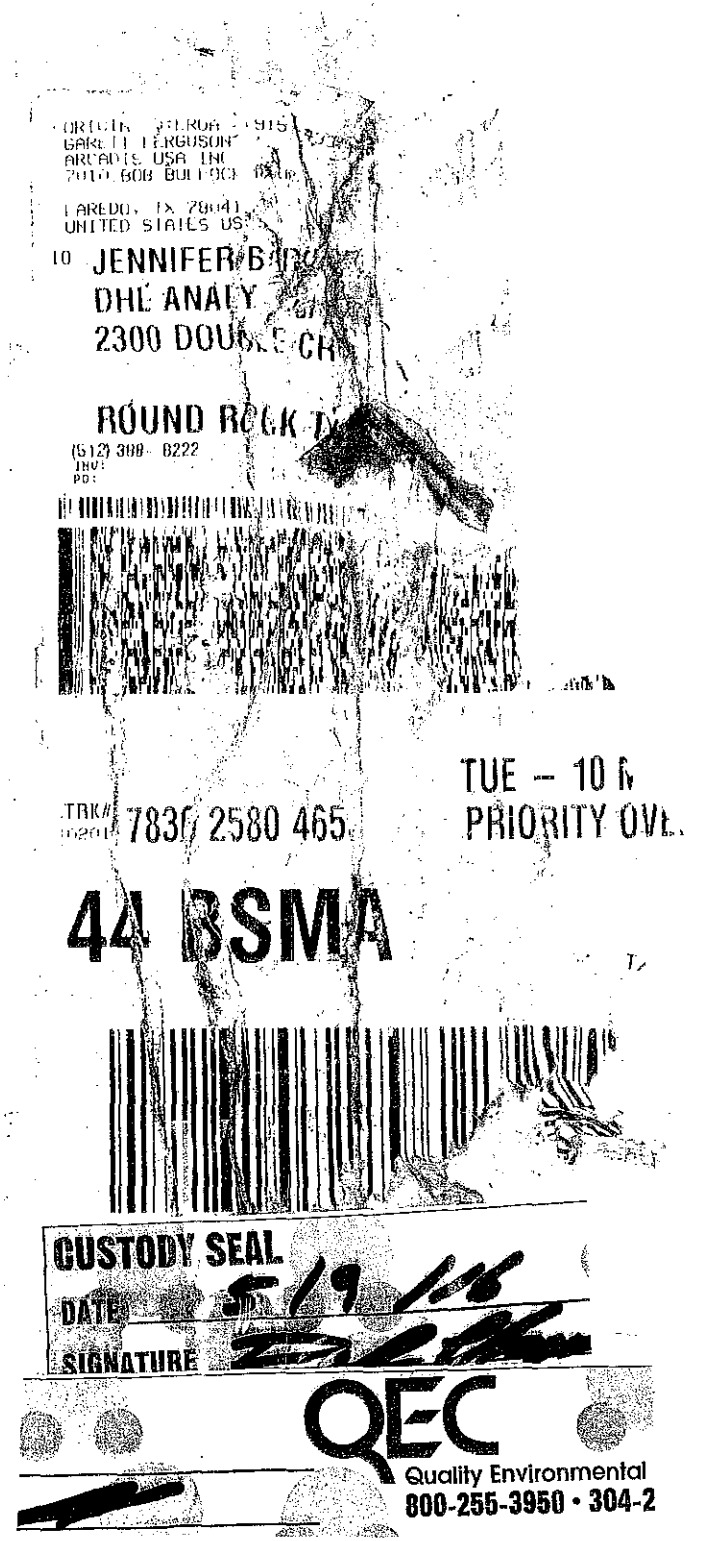
44 BSMA

78664
TX-US AUS

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

QEC
Quality Environmental Containers
0-255-3950 • 304-255-3900


GARETT FERGUSON
ARCADIS USA INC
7010 BOB BULLOCK
LAREDO, TX 78041
UNITED STATES US
10 JENNIFER B
DHL ANALY
2300 DOUBLE CR
ROUND ROCK T
(512) 308- 8222
INV:
PO:
TUE -- 10 M
PRIORITY OVE
TRK#
7830 2580 465
44 BSMA
CUSTODY SEAL
DATE 5/9/16
SIGNATURE
QEC
Quality Environmental
800-255-3950 • 304-2


ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP
SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN
BILL SENDER
CUSTODY SEAL
DATE 5/9/16
SIGNATURE
QEC
Quality Env
800-255-3
ROUND ROCK TX 78664
(512) 388-8222
REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044
DEPT:
FedEx Express
8 of 15
MPS# 7762 9046 7693
0263
Mstr# 7762 9046 7395
0201
TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT
44 BSMA
78664
TX-US AUS
label:

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

TO JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163223/727F

FedEx Express

1 of 15

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7762 9046 7395
MASTER

44 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 5/10/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163223/727F

FedEx Express

2 of 2

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9903 5308
Mstr# 7762 9903 5640 0201

44 BSMA

78664
TX-US AUS

QEC
Quality Environmental Containers
950 • 304-255-3900

CUSTODY SEAL
DATE 05/10/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J16323/727F

FedEx Express

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

13 of 15
MPS# 7762 9046 7646

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J16323/727F

FedEx Express

11 of 15
TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9046 7443
Mstr# 7762 9046 7395 0201

44 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J1.6323/727F

FedEx Express

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

2 of 15
MPS# 0263 7762 9046 7579 0201
Mstr# 7762 9046 7395

78664
TX-US AUS

44 BSMA

CUSTODY SEAL 5/9/16
DATE
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J1.6323/727F

FedEx Express

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

5 of 15
MPS# 0263 7762 9046 7605 0201
Mstr# 7762 9046 7395

78664
TX-US AUS

44 BSMA

CUSTODY SEAL 05/09/16
DATE
SIGNATURE

QEC
Quality Environmental
800-255-3950 • 304-

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163231727F

FedEx Express

14 of 15

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9046 7822
Mstr# 7762 9046 7395

0201

78664
TX-US AUS

44 BSMA

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 05/10/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163231727F

FedEx Express

4 of 15

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9046 7590
Mstr# 7762 9046 7395

0201

78664
TX-US AUS

44 BSMA

CUSTODY SEAL
DATE 05/10/16
SIGNATURE

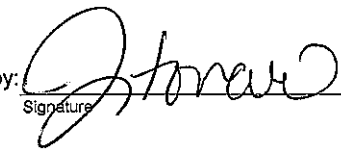
QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Arcadis** Date Received: **5/10/2016**

Work Order Number **1605097** Received by **JT**

Checklist completed by:  5/11/2016 (Signature / Date) Reviewed by  5/11/2016 (Initials / Date)

Carrier name FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	**1.4** °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 8086
	Adjusted? _____		Checked by _____
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

DHL Analytical, Inc.
Laboratory Review Checklist: Reportable Data

Project Name: Laredo SGR	**Date:** 6/1/2016
Reviewer Name: Angie O'Donnell	**Laboratory Work Order:** 1605097
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-Custody (C-O-C)					
R1	OI	**1)** Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	**X**				**R1-01**
		2) Were all departures from standard conditions described in an exception report?			**X**		
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	**X**				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	**X**				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	**X**				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	**X**				
		3) Were calculations checked by a peer or supervisor?	**X**				
		4) Were all analyte identifications checked by a peer or supervisor?	**X**				
		5) Were sample detection limits reported for all analytes not detected?	**X**				
		6) Were all results for soil and sediment samples reported on a dry weight basis?	**X**				
		7) Were % moisture (or solids) reported for all soil and sediment samples?	**X**				
		8) Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035?			**X**		
		9) If required for the project, TICs reported?			**X**		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?	**X**				
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?	**X**				
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	**X**				
		2) Were blanks analyzed at the appropriate frequency?	**X**				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	**X**				
		4) Were blank concentrations < MQL?	**X**				
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	**X**				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	**X**				
		3) Were LCSs analyzed at the required frequency?	**X**				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	**X**				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	**X**				
		6) Was the LCSD RPD within QC limits (if applicable)?	**X**				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	**X**				
		2) Were MS/MSD analyzed at the appropriate frequency?	**X**				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		**X**			**R7-03**
		4) Were MS/MSD RPDs within laboratory QC limits?		**X**			**R7-04**
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	**X**				
		2) Were analytical duplicates analyzed at the appropriate frequency?	**X**				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	**X**				
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	**X**				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	**X**				
		3) Are unadjusted MQLs and DCSs included in the laboratory data package?	**X**				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	**X**				**R10-01**
		2) Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?	**X**				
		3) Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	**X**				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

DHL Analytical, Inc.
Laboratory Review Checklist (continued): Supporting Data

Project Name: Laredo SGR | **Date:** 6/1/2016

Reviewer Name: Angie O'Donnell | **Laboratory Work Order:** 1605097

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	**X**				
		2) Were percent RSDs or correlation coefficient criteria met?	**X**				
		3) Was the number of standards recommended in the method used for all analytes?	**X**				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	**X**				
		5) Are ICAL data available for all instruments used?	**X**				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	**X**				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):**					
		1) Was the CCV analyzed at the method-required frequency?	**X**				
		2) Were percent differences for each analyte within the method-required QC limits?	**X**				
		3) Was the ICAL curve verified for each analyte?	**X**				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	**X**				
S3	O	**Mass Spectral Tuning:**					
		1) Was the appropriate compound for the method used for tuning?	**X**				
		2) Were ion abundance data within the method-required QC limits?	**X**				
S4	O	**Internal Standards (IS):**					
		1) Were IS area counts and retention times within the method-required QC limits?	**X**				
S5	OI	**Raw Data (NELAC Section 5.5.10)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	**X**				
		2) Were data associated with manual integrations flagged on the raw data?	**X**				
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			**X**		
S7	O	**Tentatively Identified Compounds (TICs):**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			**X**		
S8	I	**Interference Check Sample (ICS) Results:**					
		1) Were percent recoveries within method QC limits?	**X**				
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		**X**			**S9-01**
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	**X**				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	**X**				
S11	OI	**Proficiency Test Reports:**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	**X**				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	**X**				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	**X**				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5 – Appendix C?	**X**				
		2) Is documentation of the analyst's competency up-to-date and on file?	**X**				
S15	OI	**Verification/Validation Documentation for Methods** (NELAC Chapter 5)					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	**X**				
S16	OI	**Laboratory Standard Operating Procedures (SOPs):**					
		1) Are laboratory SOPs current and on file for each method performed?	**X**				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;
R2 Sample identification cross-reference;
R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC Chapter 5,
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
R5 Test reports/summary forms for blank samples;
R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) The amount of analyte measured in the duplicate,
  b) The calculated RPD, and
  c) The laboratory's QC limits for analytical duplicates.
R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on June 1-5, 2015. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

John DuPont – General Manager

Scott Schroeder – Technical Director



Signature

06/01/16

Date

DHL Analytical, Inc. **Date:** *01-Jun-16*

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605097

CASE NARRATIVE

This case narrative describes abnormalities and deviations that may affect the results and summarizes all known issues that need to be highlighted for the data user to assess the results. This case narrative and the report contents are compliant with DoD QSM Ver. 5.0 and NELAC.

The "U" flag indicates the results for that sample are nondetect.

Samples were analyzed using the methods outlined in the following references:

Method SW8270D-LL - PAH Analysis (The compound Benzo[j]fluoranthene is not NELAC or DOD Certified)
Method SW6020A- Metals Analysis

Exception Report R1-01

Samples were received on and log-in performed on 5/10/2016. A total of 45 samples were received and 42 samples were analyzed. The samples arrived in good condition and were properly packaged. Additional analysis was not requested per the client's request on 5/17/2016.

Exception Report R7-03 and R7-04

For Metals Analysis, for water Batch 75180, the recovery of Lead for the Matrix Spike (1605097-27 MS) was below the method control limits. This is flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated LCS. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

For Metals Analysis, for soil Batch 75169, the recovery of Lead for the Matrix Spike Duplicate (1605096-70 MSD) was below the method control limits. This is flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated LCS. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

For PAH Analysis, for soil batch 75192, the recoveries/RPDs of up to fourteen compounds for the Matrix Spike and Matrix Spike Duplicate (1605098-17 MS/MSD) were outside of the method control limits. These were flagged accordingly in the QC Summary Report. The recoveries of these compounds were within method control limits in the associated LCS. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

Exception Report R10-01

For PAH Analysis, the samples were diluted due to observed color of extract; dilution meets project specifications.

For all of the surface and subsurface samples in this project, DHL Analytical performed an Incremental Sampling Method (ISM) according to an internal SOP, as approved by the client and included in the project QAPP. This workorder consist of the following sample types: sub-surface Samples (DHL WO # 1605097-01 through -15, -31 through -45) processed to pass #10 sieve (2mm) and the remaining samples analyzed were discreet soil samples collected in 4 ounce soil containers and ISM process not used, as per project specs.

Exception Report S9-01

For Lead Analysis, the RPD of Lead for the Serial Dilution (1605097-41 SD) was marginally above the method control limit. This is flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated Post Digestion Spike. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

A summary of project communication follows:

The Subcontract Agreement No. D16-003 for Arcadis Project No. 04285081.0000.00043 was sent to DHL Analytical from client and signed on 1/6/2016, the contract for work signed and approved by both parties on 1/12/2016. A Modification No. 01-D16-003 was signed by both parties on 4/21/2016.

The bottlekit was requested from Ana Gutierrez of Arcadis sent via email to John DuPont on 4/21/2016.
The following DHL Bottle Orders:
#6941 sent on 4/28/2016 via Lonestar Overnight Ground to arrive by 5/2/2016
#6942 sent on 5/3/2016 via Lonestar Overnight Ground to arrive by 5/4/2016
#6943 sent on 5/6/2016 via Lonestar Overnight Ground to arrive by 5/9/2016
#6944 sent on 5/10/2016 via Lonestar Overnight Ground to arrive by 5/11/2016.

This sample delivery group arrives at DHL Analytical on 5/6/2016. A Sample Summary was sent on 5/10/2016. A Sample Summary was sent on 5/11/2016. Associated shipping documents are kept in the project folder and/or client folder as part of the Administrative records filed in the QA office.

DHL project manager/qa staff discussed with client the following issues:
email communications 5/13/2016 - from J. DuPont to the Arcadis Kansas Laredo email group regarding request to dilute based on color of extract
email communications 5/27/2016 - from J. DuPont to L. Mott of Arcadis regarding exceedance(s) for

various MS/MSDs for PAH analysis and an and recovery of MS/MSD and RPD for Lead exceeded limits. The client accepted the corrective action for the quality exceedances on 5/31/2016.

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605097

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1605097-01	SGR-DU004(0-2)-A		05/08/16 11:00 AM	5/10/2016
1605097-02	SGR-DU004(2-4)-A		05/08/16 11:03 AM	5/10/2016
1605097-03	SGR-DU004(4-6)-A		05/08/16 11:05 AM	5/10/2016
1605097-04	SGR-DU004(6-8)-A		05/08/16 11:07 AM	5/10/2016
1605097-05	SGR-DU004(8-10)-A		05/08/16 11:08 AM	5/10/2016
1605097-06	SGR-DU004(0-2)-B		05/08/16 11:10 AM	5/10/2016
1605097-07	SGR-DU004(2-4)-B		05/08/16 11:13 AM	5/10/2016
1605097-08	SGR-DU004(4-6)-B		05/08/16 11:14 AM	5/10/2016
1605097-09	SGR-DU004(6-8)-B		05/08/16 11:16 AM	5/10/2016
1605097-10	SGR-DU004(8-10)-B		05/08/16 11:18 AM	5/10/2016
1605097-11	SGR-DU004(0-2)-C		05/08/16 11:20 AM	5/10/2016
1605097-12	SGR-DU004(2-4)-C		05/08/16 11:21 AM	5/10/2016
1605097-13	SGR-DU004(4-6)-C		05/08/16 11:22 AM	5/10/2016
1605097-14	SGR-DU004(6-8)-C		05/08/16 11:23 AM	5/10/2016
1605097-15	SGR-DU004(8-10)-C		05/08/16 11:24 AM	5/10/2016
1605097-16	SGR-DU191-STRAT1		05/08/16 12:00 PM	5/10/2016
1605097-17	SGR-DU191-STRAT2		05/08/16 12:05 PM	5/10/2016
1605097-18	SGR-DU191-STRAT3		05/08/16 12:10 PM	5/10/2016
1605097-19	SGR-DU191-STRAT4		05/08/16 12:15 PM	5/10/2016
1605097-20	SGR-DU191-STRAT5		05/08/16 12:20 PM	5/10/2016
1605097-21	ROW-10(0-0.5)		05/08/16 10:05 AM	5/10/2016
1605097-22	ROW-10(0.5-2.0)		05/08/16 10:20 AM	5/10/2016
1605097-23	ROW-11(0-0.5)		05/08/16 10:40 AM	5/10/2016
1605097-24	ROW-11(0.5-2.0)		05/08/16 10:50 AM	5/10/2016
1605097-25	ROW-11(2-4)		05/08/16 11:00 AM	5/10/2016
1605097-26	DUP04(20160508)		05/08/16 10:30 AM	5/10/2016
1605097-27	EB12(20160508)		05/08/16 12:30 PM	5/10/2016
1605097-28	SGR-DU023-A		05/08/16 02:30 PM	5/10/2016
1605097-29	SGR-DU023-B		05/08/16 02:50 PM	5/10/2016
1605097-30	EB13(20160508)		05/08/16 04:30 PM	5/10/2016
1605097-31	SGR-DU019-01(0-2)-A		05/08/16 03:48 PM	5/10/2016
1605097-32	SGR-DU019-01(2-4)-A		05/08/16 03:50 PM	5/10/2016
1605097-33	SGR-DU019-01(4-6)-A		05/08/16 03:52 PM	5/10/2016
1605097-34	SGR-DU019-01(6-8)-A		05/08/16 03:53 PM	5/10/2016
1605097-35	SGR-DU019-01(8-10)-A		05/08/16 03:56 PM	5/10/2016
1605097-36	SGR-DU019-01(0-2)-B		05/08/16 03:37 PM	5/10/2016
1605097-37	SGR-DU019-01(2-4)-B		05/08/16 03:39 PM	5/10/2016
1605097-38	SGR-DU019-01(4-6)-B		05/08/16 03:43 PM	5/10/2016
1605097-39	SGR-DU019-01(6-8)-B		05/08/16 03:45 PM	5/10/2016
1605097-40	SGR-DU019-01(8-10)-B		05/08/16 03:46 PM	5/10/2016
1605097-41	SGR-DU019-01(0-2)-C		05/08/16 03:57 PM	5/10/2016
1605097-42	SGR-DU019-01(2-4)-C		05/08/16 03:58 PM	5/10/2016

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605097

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1605097-43	SGR-DU019-01(4-6)-C		05/08/16 03:59 PM	5/10/2016
1605097-44	SGR-DU019-01(6-8)-C		05/08/16 04:00 PM	5/10/2016
1605097-45	SGR-DU019-01(8-10)-C		05/08/16 04:01 PM	5/10/2016

Lab Order: 1605097
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605097-01A	SGR-DU004(0-2)-A	05/08/16 11:00 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(0-2)-A	05/08/16 11:00 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/16/16 09:01 AM	75169
1605097-02A	SGR-DU004(2-4)-A	05/08/16 11:03 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(2-4)-A	05/08/16 11:03 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/16/16 09:01 AM	75169
1605097-03A	SGR-DU004(4-6)-A	05/08/16 11:05 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(4-6)-A	05/08/16 11:05 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/16/16 09:01 AM	75169
1605097-04A	SGR-DU004(6-8)-A	05/08/16 11:07 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(6-8)-A	05/08/16 11:07 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/16/16 09:01 AM	75169
1605097-05A	SGR-DU004(8-10)-A	05/08/16 11:08 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(8-10)-A	05/08/16 11:08 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/16/16 09:01 AM	75169
1605097-06A	SGR-DU004(0-2)-B	05/08/16 11:10 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(0-2)-B	05/08/16 11:10 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/16/16 09:01 AM	75169
1605097-07A	SGR-DU004(2-4)-B	05/08/16 11:13 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(2-4)-B	05/08/16 11:13 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/16/16 09:01 AM	75169
1605097-08A	SGR-DU004(4-6)-B	05/08/16 11:14 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(4-6)-B	05/08/16 11:14 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-09A	SGR-DU004(6-8)-B	05/08/16 11:16 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(6-8)-B	05/08/16 11:16 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-10A	SGR-DU004(8-10)-B	05/08/16 11:18 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(8-10)-B	05/08/16 11:18 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-11A	SGR-DU004(0-2)-C	05/08/16 11:20 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(0-2)-C	05/08/16 11:20 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-12A	SGR-DU004(2-4)-C	05/08/16 11:21 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(2-4)-C	05/08/16 11:21 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-13A	SGR-DU004(4-6)-C	05/08/16 11:22 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/15/16 11:31 AM	75161
	SGR-DU004(4-6)-C	05/08/16 11:22 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-14A	SGR-DU004(6-8)-C	05/08/16 11:23 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU004(6-8)-C	05/08/16 11:23 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203

Lab Order: 1605097
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605097-15A	SGR-DU004(8-10)-C	05/08/16 11:24 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU004(8-10)-C	05/08/16 11:24 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-16A	SGR-DU191-STRAT1	05/08/16 12:00 PM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	SGR-DU191-STRAT1	05/08/16 12:00 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU191-STRAT1	05/08/16 12:00 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-17A	SGR-DU191-STRAT2	05/08/16 12:05 PM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	SGR-DU191-STRAT2	05/08/16 12:05 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU191-STRAT2	05/08/16 12:05 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-18A	SGR-DU191-STRAT3	05/08/16 12:10 PM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	SGR-DU191-STRAT3	05/08/16 12:10 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU191-STRAT3	05/08/16 12:10 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-19A	SGR-DU191-STRAT4	05/08/16 12:15 PM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	SGR-DU191-STRAT4	05/08/16 12:15 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU191-STRAT4	05/08/16 12:15 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-20A	SGR-DU191-STRAT5	05/08/16 12:20 PM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	SGR-DU191-STRAT5	05/08/16 12:20 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU191-STRAT5	05/08/16 12:20 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 11:29 AM	75135
1605097-21A	ROW-10(0-0.5)	05/08/16 10:05 AM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	ROW-10(0-0.5)	05/08/16 10:05 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/13/16 10:10 AM	75151
	ROW-10(0-0.5)	05/08/16 10:05 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 11:29 AM	75135
1605097-23A	ROW-11(0-0.5)	05/08/16 10:40 AM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	ROW-11(0-0.5)	05/08/16 10:40 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/13/16 10:10 AM	75151
	ROW-11(0-0.5)	05/08/16 10:40 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 11:29 AM	75135
1605097-26A	DUP04(20160508)	05/08/16 10:30 AM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	DUP04(20160508)	05/08/16 10:30 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	DUP04(20160508)	05/08/16 10:30 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 11:29 AM	75135
1605097-27A	EB12(20160508)	05/08/16 12:30 PM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	05/19/16 08:30 AM	75180
1605097-27B	EB12(20160508)	05/08/16 12:30 PM	Equip Blank	SW3510C	Aq Prep Sep Funnel: PAH	05/13/16 08:48 AM	75146

Lab Order: 1605097
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605097-28A	SGR-DU023-A	05/08/16 02:30 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU023-A	05/08/16 02:30 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-29A	SGR-DU023-B	05/08/16 02:50 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU023-B	05/08/16 02:50 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-30A	EB13(20160508)	05/08/16 04:30 PM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	05/19/16 08:30 AM	75180
1605097-30B	EB13(20160508)	05/08/16 04:30 PM	Equip Blank	SW3510C	Aq Prep Sep Funnel: PAH	05/13/16 08:48 AM	75146
1605097-31A	SGR-DU019-01(0-2)-A	05/08/16 03:48 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(0-2)-A	05/08/16 03:48 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-32A	SGR-DU019-01(2-4)-A	05/08/16 03:50 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(2-4)-A	05/08/16 03:50 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-33A	SGR-DU019-01(4-6)-A	05/08/16 03:52 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(4-6)-A	05/08/16 03:52 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-34A	SGR-DU019-01(6-8)-A	05/08/16 03:53 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(6-8)-A	05/08/16 03:53 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-35A	SGR-DU019-01(8-10)-A	05/08/16 03:56 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(8-10)-A	05/08/16 03:56 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-36A	SGR-DU019-01(0-2)-B	05/08/16 03:37 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(0-2)-B	05/08/16 03:37 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75203
1605097-37A	SGR-DU019-01(2-4)-B	05/08/16 03:39 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(2-4)-B	05/08/16 03:39 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605097-38A	SGR-DU019-01(4-6)-B	05/08/16 03:43 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(4-6)-B	05/08/16 03:43 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605097-39A	SGR-DU019-01(6-8)-B	05/08/16 03:45 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(6-8)-B	05/08/16 03:45 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605097-40A	SGR-DU019-01(8-10)-B	05/08/16 03:46 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(8-10)-B	05/08/16 03:46 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605097-41A	SGR-DU019-01(0-2)-C	05/08/16 03:57 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(0-2)-C	05/08/16 03:57 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216

Lab Order: 1605097
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605097-42A	SGR-DU019-01(2-4)-C	05/08/16 03:58 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(2-4)-C	05/08/16 03:58 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605097-43A	SGR-DU019-01(4-6)-C	05/08/16 03:59 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/16/16 11:25 AM	75175
	SGR-DU019-01(4-6)-C	05/08/16 03:59 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605097-44A	SGR-DU019-01(6-8)-C	05/08/16 04:00 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU019-01(6-8)-C	05/08/16 04:00 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605097-45A	SGR-DU019-01(8-10)-C	05/08/16 04:01 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU019-01(8-10)-C	05/08/16 04:01 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216

Lab Order: 1605097
Client: Arcadis
Project: Laredo SGR

ISM PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605097-01A	SGR-DU004(0-2)-A	5/8/2016 11:00:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-02A	SGR-DU004(2-4)-A	5/8/2016 11:03:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-03A	SGR-DU004(4-6)-A	5/8/2016 11:05:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-04A	SGR-DU004(6-8)-A	5/8/2016 11:07:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-05A	SGR-DU004(8-10)-A	5/8/2016 11:08:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-06A	SGR-DU004(0-2)-B	5/8/2016 11:10:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-07A	SGR-DU004(2-4)-B	5/8/2016 11:13:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-08A	SGR-DU004(4-6)-B	5/8/2016 11:14:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-09A	SGR-DU004(6-8)-B	5/8/2016 11:16:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-10A	SGR-DU004(8-10)-B	5/8/2016 11:18:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-11A	SGR-DU004(0-2)-C	5/8/2016 11:20:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-12A	SGR-DU004(2-4)-C	5/8/2016 11:21:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-13A	SGR-DU004(4-6)-C	5/8/2016 11:22:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-14A	SGR-DU004(6-8)-C	5/8/2016 11:23:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-15A	SGR-DU004(8-10)-C	5/8/2016 11:24:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-28A	SGR-DU023-A	5/8/2016 2:30:00 PM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/11/2016 3:30:00 PM	75117
1605097-29A	SGR-DU023-B	5/8/2016 2:50:00 PM	Soil	ISM-1	Incremental Sample Prep 250µ Sieve	5/11/2016 3:30:00 PM	75117
1605097-31A	SGR-DU019-01(0-2)-A	5/8/2016 3:48:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-32A	SGR-DU019-01(2-4)-A	5/8/2016 3:50:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-33A	SGR-DU019-01(4-6)-A	5/8/2016 3:52:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-34A	SGR-DU019-01(6-8)-A	5/8/2016 3:53:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-35A	SGR-DU019-01(8-10)-A	5/8/2016 3:56:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/11/2016 2:00:20 PM	75116
1605097-36A	SGR-DU019-01(0-2)-B	5/8/2016 3:37:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605097-37A	SGR-DU019-01(2-4)-B	5/8/2016 3:39:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605097-38A	SGR-DU019-01(4-6)-B	5/8/2016 3:43:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605097-39A	SGR-DU019-01(6-8)-B	5/8/2016 3:45:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605097-40A	SGR-DU019-01(8-10)-B	5/8/2016 3:46:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605097-41A	SGR-DU019-01(0-2)-C	5/8/2016 3:57:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141

Lab Order: 1605097
Client: Arcadis
Project: Laredo SGR

ISM PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605097-42A	SGR-DU019-01(2-4)-C	5/8/2016 3:58:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605097-43A	SGR-DU019-01(4-6)-C	5/8/2016 3:59:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605097-44A	SGR-DU019-01(6-8)-C	5/8/2016 4:00:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605097-45A	SGR-DU019-01(8-10)-C	5/8/2016 4:01:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141

Lab Order: 1605097
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605097-01A	SGR-DU004(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/19/16 03:47 PM	GCMS6_160519A
	SGR-DU004(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75169	5	05/19/16 07:28 PM	ICP-MS3_160519A
1605097-02A	SGR-DU004(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/19/16 04:27 PM	GCMS6_160519A
	SGR-DU004(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75169	5	05/19/16 07:33 PM	ICP-MS3_160519A
1605097-03A	SGR-DU004(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/19/16 05:07 PM	GCMS6_160519A
	SGR-DU004(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75169	5	05/19/16 07:39 PM	ICP-MS3_160519A
1605097-04A	SGR-DU004(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/19/16 09:43 PM	GCMS6_160519A
	SGR-DU004(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75169	5	05/19/16 07:45 PM	ICP-MS3_160519A
1605097-05A	SGR-DU004(8-10)-A	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/19/16 10:23 PM	GCMS6_160519A
	SGR-DU004(8-10)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75169	5	05/19/16 07:51 PM	ICP-MS3_160519A
1605097-06A	SGR-DU004(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/19/16 11:04 PM	GCMS6_160519A
	SGR-DU004(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75169	5	05/19/16 07:57 PM	ICP-MS3_160519A
1605097-07A	SGR-DU004(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/19/16 11:44 PM	GCMS6_160519A
	SGR-DU004(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75169	5	05/19/16 08:03 PM	ICP-MS3_160519A
1605097-08A	SGR-DU004(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/20/16 12:23 AM	GCMS6_160519A
	SGR-DU004(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 05:18 PM	ICP-MS3_160525A
1605097-09A	SGR-DU004(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/20/16 01:03 AM	GCMS6_160519A
	SGR-DU004(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 05:24 PM	ICP-MS3_160525A
1605097-10A	SGR-DU004(8-10)-B	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/20/16 01:42 AM	GCMS6_160519A
	SGR-DU004(8-10)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 05:30 PM	ICP-MS3_160525A
1605097-11A	SGR-DU004(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/20/16 02:23 AM	GCMS6_160519A
	SGR-DU004(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 05:36 PM	ICP-MS3_160525A
1605097-12A	SGR-DU004(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/20/16 03:03 AM	GCMS6_160519A
	SGR-DU004(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 05:42 PM	ICP-MS3_160525A
1605097-13A	SGR-DU004(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75161	10	05/20/16 03:43 AM	GCMS6_160519A
	SGR-DU004(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 05:48 PM	ICP-MS3_160525A
1605097-14A	SGR-DU004(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 11:01 AM	GCMS6_160520A
	SGR-DU004(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 05:54 PM	ICP-MS3_160525A

Lab Order: 1605097
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605097-15A	SGR-DU004(8-10)-C	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 11:40 AM	GCMS6_160520A
	SGR-DU004(8-10)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 06:00 PM	ICP-MS3_160525A
1605097-16A	SGR-DU191-STRAT1	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 12:57 PM	GCMS8_160520A
	SGR-DU191-STRAT1	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	SGR-DU191-STRAT1	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 06:06 PM	ICP-MS3_160525A
1605097-17A	SGR-DU191-STRAT2	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 01:34 PM	GCMS8_160520A
	SGR-DU191-STRAT2	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	SGR-DU191-STRAT2	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 07:00 PM	ICP-MS3_160525A
1605097-18A	SGR-DU191-STRAT3	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 02:11 PM	GCMS8_160520A
	SGR-DU191-STRAT3	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	SGR-DU191-STRAT3	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 07:06 PM	ICP-MS3_160525A
1605097-19A	SGR-DU191-STRAT4	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 02:48 PM	GCMS8_160520A
	SGR-DU191-STRAT4	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	SGR-DU191-STRAT4	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 07:12 PM	ICP-MS3_160525A
1605097-20A	SGR-DU191-STRAT5	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 03:24 PM	GCMS8_160520A
	SGR-DU191-STRAT5	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	SGR-DU191-STRAT5	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75135	5	05/16/16 03:57 PM	ICP-MS4_160516B
1605097-21A	ROW-10(0-0.5)	Soil	SW8270D-LL	PAHs: GC/MS	75151	10	05/14/16 05:36 AM	GCMS8_160513A
	ROW-10(0-0.5)	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	ROW-10(0-0.5)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75135	5	05/16/16 03:59 PM	ICP-MS4_160516B
1605097-23A	ROW-11(0-0.5)	Soil	SW8270D-LL	PAHs: GC/MS	75151	10	05/14/16 06:13 AM	GCMS8_160513A
	ROW-11(0-0.5)	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	ROW-11(0-0.5)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75135	5	05/16/16 04:01 PM	ICP-MS4_160516B
1605097-26A	DUP04(20160508)	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 04:02 PM	GCMS8_160520A
	DUP04(20160508)	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	DUP04(20160508)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75135	5	05/16/16 04:03 PM	ICP-MS4_160516B
1605097-27A	EB12(20160508)	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75180	1	05/20/16 01:30 PM	ICP-MS4_160520C
1605097-27B	EB12(20160508)	Equip Blank	SW8270D-LL	PAHs: GC/MS	75146	1	05/18/16 06:58 PM	GCMS8_160518B

Lab Order: 1605097
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605097-28A	SGR-DU023-A	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 12:21 PM	GCMS6_160520A
	SGR-DU023-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 05:06 PM	ICP-MS3_160525A
1605097-29A	SGR-DU023-B	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 01:00 PM	GCMS6_160520A
	SGR-DU023-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 07:18 PM	ICP-MS3_160525A
1605097-30A	EB13(20160508)	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75180	1	05/20/16 02:12 PM	ICP-MS4_160520C
1605097-30B	EB13(20160508)	Equip Blank	SW8270D-LL	PAHs: GC/MS	75146	1	05/18/16 07:34 PM	GCMS8_160518B
1605097-31A	SGR-DU019-01(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 01:40 PM	GCMS6_160520A
	SGR-DU019-01(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 07:24 PM	ICP-MS3_160525A
1605097-32A	SGR-DU019-01(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 02:20 PM	GCMS6_160520A
	SGR-DU019-01(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 07:30 PM	ICP-MS3_160525A
1605097-33A	SGR-DU019-01(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 02:59 PM	GCMS6_160520A
	SGR-DU019-01(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 07:36 PM	ICP-MS3_160525A
1605097-34A	SGR-DU019-01(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 03:39 PM	GCMS6_160520A
	SGR-DU019-01(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 07:42 PM	ICP-MS3_160525A
1605097-35A	SGR-DU019-01(8-10)-A	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 04:18 PM	GCMS6_160520A
	SGR-DU019-01(8-10)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 07:48 PM	ICP-MS3_160525A
1605097-36A	SGR-DU019-01(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 04:58 PM	GCMS6_160520A
	SGR-DU019-01(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75203	5	05/25/16 07:54 PM	ICP-MS3_160525A
1605097-37A	SGR-DU019-01(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 10:16 PM	GCMS6_160520A
	SGR-DU019-01(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 09:00 PM	ICP-MS3_160525A
1605097-38A	SGR-DU019-01(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 10:55 PM	GCMS6_160520A
	SGR-DU019-01(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 09:06 PM	ICP-MS3_160525A
1605097-39A	SGR-DU019-01(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 05:38 PM	GCMS6_160520A
	SGR-DU019-01(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 09:12 PM	ICP-MS3_160525A
1605097-40A	SGR-DU019-01(8-10)-B	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/20/16 11:35 PM	GCMS6_160520A
	SGR-DU019-01(8-10)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 09:18 PM	ICP-MS3_160525A
1605097-41A	SGR-DU019-01(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/21/16 12:15 AM	GCMS6_160520A
	SGR-DU019-01(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 08:48 PM	ICP-MS3_160525A

Lab Order: 1605097
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605097-42A	SGR-DU019-01(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/21/16 12:55 AM	GCMS6_160520A
	SGR-DU019-01(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 09:24 PM	ICP-MS3_160525A
1605097-43A	SGR-DU019-01(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75175	10	05/21/16 01:35 AM	GCMS6_160520A
	SGR-DU019-01(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 09:30 PM	ICP-MS3_160525A
1605097-44A	SGR-DU019-01(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 04:38 PM	GCMS8_160520A
	SGR-DU019-01(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 09:36 PM	ICP-MS3_160525A
1605097-45A	SGR-DU019-01(8-10)-C	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 05:16 PM	GCMS8_160520A
	SGR-DU019-01(8-10)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 09:42 PM	ICP-MS3_160525A

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605097-01
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:00 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	14.2	0.0893	0.268	0.134		mg/Kg-dry	5	05/19/16 07:28 PM
IS: Bismuth	75.2	0	30-120	0		%REC	5	05/19/16 07:28 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/19/16 03:47 PM
Acenaphthylene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/19/16 03:47 PM
Anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/19/16 03:47 PM
Benzo[a]anthracene	0.136	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/19/16 03:47 PM
Benzo[a]pyrene	0.181	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/19/16 03:47 PM
Benzo[b]fluoranthene	0.175	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/19/16 03:47 PM
Benzo[e]pyrene	0.149	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/19/16 03:47 PM
Benzo[g,h,i]perylene	0.145	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/19/16 03:47 PM
Benzo[j]fluoranthene	0.0996	0.0496	0.0992	0.0744	N	mg/Kg-dry	10	05/19/16 03:47 PM
Benzo[k]fluoranthene	0.0987	0.0496	0.0992	0.0744	J	mg/Kg-dry	10	05/19/16 03:47 PM
Chrysene	0.167	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/19/16 03:47 PM
Dibenz[a,h]anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/19/16 03:47 PM
Fluoranthene	0.207	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/19/16 03:47 PM
Fluorene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/19/16 03:47 PM
Indeno[1,2,3-cd]pyrene	0.114	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/19/16 03:47 PM
Phenanthrene	0.0741	0.0496	0.0992	0.0744	J	mg/Kg-dry	10	05/19/16 03:47 PM
Pyrene	0.188	0.0496	0.0992	0.0744		mg/Kg-dry	10	05/19/16 03:47 PM
IS: Acenaphthene-d10	69.1	0	50-200	0		%REC	10	05/19/16 03:47 PM
IS: Chrysene-d12	67.3	0	50-200	0		%REC	10	05/19/16 03:47 PM
IS: Naphthalene-d8	112	0	50-200	0		%REC	10	05/19/16 03:47 PM
IS: Perylene-d12	68.7	0	50-200	0		%REC	10	05/19/16 03:47 PM
IS: Phenanthrene-d10	65.6	0	50-200	0		%REC	10	05/19/16 03:47 PM
Surr: 2-Fluorobiphenyl	84.2	0	46-115	0		%REC	10	05/19/16 03:47 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605097-01
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:00 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.0	0	58-133	0		%REC	10	05/19/16 03:47 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605097-02
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:03 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	11.5	0.0971	0.291	0.146		mg/Kg-dry	5	05/19/16 07:33 PM
IS: Bismuth	77.9	0	30-120	0		%REC	5	05/19/16 07:33 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/19/16 04:27 PM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/19/16 04:27 PM
Anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/19/16 04:27 PM
Benzo[a]anthracene	0.0963	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/19/16 04:27 PM
Benzo[a]pyrene	0.119	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/19/16 04:27 PM
Benzo[b]fluoranthene	0.107	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/19/16 04:27 PM
Benzo[e]pyrene	0.0957	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/19/16 04:27 PM
Benzo[g,h,i]perylene	0.0918	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/19/16 04:27 PM
Benzo[j]fluoranthene	0.0789	0.0490	0.0980	0.0735	JN	mg/Kg-dry	10	05/19/16 04:27 PM
Benzo[k]fluoranthene	0.0680	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/19/16 04:27 PM
Chrysene	0.115	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/19/16 04:27 PM
Dibenz[a,h]anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/19/16 04:27 PM
Fluoranthene	0.146	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/19/16 04:27 PM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/19/16 04:27 PM
Indeno[1,2,3-cd]pyrene	0.0725	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/19/16 04:27 PM
Phenanthrene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/19/16 04:27 PM
Pyrene	0.138	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/19/16 04:27 PM
IS: Acenaphthene-d10	70.3	0	50-200	0		%REC	10	05/19/16 04:27 PM
IS: Chrysene-d12	67.9	0	50-200	0		%REC	10	05/19/16 04:27 PM
IS: Naphthalene-d8	112	0	50-200	0		%REC	10	05/19/16 04:27 PM
IS: Perylene-d12	69.7	0	50-200	0		%REC	10	05/19/16 04:27 PM
IS: Phenanthrene-d10	65.0	0	50-200	0		%REC	10	05/19/16 04:27 PM
Surr: 2-Fluorobiphenyl	79.7	0	46-115	0		%REC	10	05/19/16 04:27 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605097-02
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:03 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	70.4	0	58-133	0		%REC	10	05/19/16 04:27 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605097-03
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:05 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	9.21	0.0962	0.288	0.144		mg/Kg-dry	5	05/19/16 07:39 PM
IS: Bismuth	81.7	0	30-120	0		%REC	5	05/19/16 07:39 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Acenaphthylene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Anthracene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Benzo[a]anthracene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Benzo[a]pyrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Benzo[b]fluoranthene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Benzo[e]pyrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Benzo[g,h,i]perylene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Benzo[j]fluoranthene	0.0740	0.0494	0.0987	0.0740	NU	mg/Kg-dry	10	05/19/16 05:07 PM
Benzo[k]fluoranthene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Chrysene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Dibenz[a,h]anthracene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Fluoranthene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Fluorene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Indeno[1,2,3-cd]pyrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Phenanthrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
Pyrene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/19/16 05:07 PM
IS: Acenaphthene-d10	68.4	0	50-200	0		%REC	10	05/19/16 05:07 PM
IS: Chrysene-d12	67.5	0	50-200	0		%REC	10	05/19/16 05:07 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/19/16 05:07 PM
IS: Perylene-d12	68.0	0	50-200	0		%REC	10	05/19/16 05:07 PM
IS: Phenanthrene-d10	65.2	0	50-200	0		%REC	10	05/19/16 05:07 PM
Surr: 2-Fluorobiphenyl	80.6	0	46-115	0		%REC	10	05/19/16 05:07 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605097-03
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:05 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.9	0	58-133	0		%REC	10	05/19/16 05:07 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605097-04
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:07 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.80	0.0909	0.273	0.136		mg/Kg-dry	5	05/19/16 07:45 PM
IS: Bismuth	81.8	0	30-120	0		%REC	5	05/19/16 07:45 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Acenaphthylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Benzo[a]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Benzo[a]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Benzo[b]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Benzo[e]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Benzo[g,h,i]perylene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Benzo[j]fluoranthene	0.0745	0.0497	0.0993	0.0745	NU	mg/Kg-dry	10	05/19/16 09:43 PM
Benzo[k]fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Chrysene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Dibenz[a,h]anthracene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Fluoranthene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Fluorene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Indeno[1,2,3-cd]pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Phenanthrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
Pyrene	0.0745	0.0497	0.0993	0.0745	U	mg/Kg-dry	10	05/19/16 09:43 PM
IS: Acenaphthene-d10	67.0	0	50-200	0		%REC	10	05/19/16 09:43 PM
IS: Chrysene-d12	65.2	0	50-200	0		%REC	10	05/19/16 09:43 PM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/19/16 09:43 PM
IS: Perylene-d12	66.3	0	50-200	0		%REC	10	05/19/16 09:43 PM
IS: Phenanthrene-d10	62.6	0	50-200	0		%REC	10	05/19/16 09:43 PM
Surr: 2-Fluorobiphenyl	82.7	0	46-115	0		%REC	10	05/19/16 09:43 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605097-04
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:07 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.1	0	58-133	0		%REC	10	05/19/16 09:43 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605097-05
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:08 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	9.04	0.0962	0.288	0.144		mg/Kg-dry	5	05/19/16 07:51 PM
IS: Bismuth	84.1	0	30-120	0		%REC	5	05/19/16 07:51 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Acenaphthylene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Anthracene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Benzo[a]anthracene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Benzo[a]pyrene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Benzo[b]fluoranthene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Benzo[e]pyrene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Benzo[g,h,i]perylene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Benzo[j]fluoranthene	0.0727	0.0485	0.0970	0.0727	NU	mg/Kg-dry	10	05/19/16 10:23 PM
Benzo[k]fluoranthene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Chrysene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Dibenz[a,h]anthracene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Fluoranthene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Fluorene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Indeno[1,2,3-cd]pyrene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Phenanthrene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
Pyrene	0.0727	0.0485	0.0970	0.0727	U	mg/Kg-dry	10	05/19/16 10:23 PM
IS: Acenaphthene-d10	67.2	0	50-200	0		%REC	10	05/19/16 10:23 PM
IS: Chrysene-d12	67.5	0	50-200	0		%REC	10	05/19/16 10:23 PM
IS: Naphthalene-d8	108	0	50-200	0		%REC	10	05/19/16 10:23 PM
IS: Perylene-d12	68.1	0	50-200	0		%REC	10	05/19/16 10:23 PM
IS: Phenanthrene-d10	65.2	0	50-200	0		%REC	10	05/19/16 10:23 PM
Surr: 2-Fluorobiphenyl	82.9	0	46-115	0		%REC	10	05/19/16 10:23 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605097-05
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:08 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.3	0	58-133	0		%REC	10	05/19/16 10:23 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605097-06
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:10 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	12.7	0.0885	0.265	0.133		mg/Kg-dry	5	05/19/16 07:57 PM
IS: Bismuth	80.4	0	30-120	0		%REC	5	05/19/16 07:57 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/19/16 11:04 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/19/16 11:04 PM
Anthracene	0.0971	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/19/16 11:04 PM
Benzo[a]anthracene	0.352	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
Benzo[a]pyrene	0.323	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
Benzo[b]fluoranthene	0.288	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
Benzo[e]pyrene	0.240	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
Benzo[g,h,i]perylene	0.193	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
Benzo[j]fluoranthene	0.182	0.0495	0.0990	0.0743	N	mg/Kg-dry	10	05/19/16 11:04 PM
Benzo[k]fluoranthene	0.175	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
Chrysene	0.382	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
Dibenz[a,h]anthracene	0.0632	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/19/16 11:04 PM
Fluoranthene	0.730	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/19/16 11:04 PM
Indeno[1,2,3-cd]pyrene	0.168	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
Phenanthrene	0.434	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
Pyrene	0.616	0.0495	0.0990	0.0743		mg/Kg-dry	10	05/19/16 11:04 PM
IS: Acenaphthene-d10	64.1	0	50-200	0		%REC	10	05/19/16 11:04 PM
IS: Chrysene-d12	64.6	0	50-200	0		%REC	10	05/19/16 11:04 PM
IS: Naphthalene-d8	104	0	50-200	0		%REC	10	05/19/16 11:04 PM
IS: Perylene-d12	65.2	0	50-200	0		%REC	10	05/19/16 11:04 PM
IS: Phenanthrene-d10	63.1	0	50-200	0		%REC	10	05/19/16 11:04 PM
Surr: 2-Fluorobiphenyl	86.4	0	46-115	0		%REC	10	05/19/16 11:04 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605097-06
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:10 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.6	0	58-133	0		%REC	10	05/19/16 11:04 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605097-07
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:13 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	10.2	0.0862	0.259	0.129		mg/Kg-dry	5	05/19/16 08:03 PM
IS: Bismuth	82.3	0	30-120	0		%REC	5	05/19/16 08:03 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Acenaphthylene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Anthracene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Benzo[a]anthracene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Benzo[a]pyrene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Benzo[b]fluoranthene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Benzo[e]pyrene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Benzo[g,h,i]perylene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Benzo[j]fluoranthene	0.0737	0.0492	0.0983	0.0737	NU	mg/Kg-dry	10	05/19/16 11:44 PM
Benzo[k]fluoranthene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Chrysene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Dibenz[a,h]anthracene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Fluoranthene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Fluorene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Indeno[1,2,3-cd]pyrene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Phenanthrene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
Pyrene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/19/16 11:44 PM
IS: Acenaphthene-d10	69.1	0	50-200	0		%REC	10	05/19/16 11:44 PM
IS: Chrysene-d12	66.3	0	50-200	0		%REC	10	05/19/16 11:44 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/19/16 11:44 PM
IS: Perylene-d12	67.9	0	50-200	0		%REC	10	05/19/16 11:44 PM
IS: Phenanthrene-d10	65.5	0	50-200	0		%REC	10	05/19/16 11:44 PM
Surr: 2-Fluorobiphenyl	83.9	0	46-115	0		%REC	10	05/19/16 11:44 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605097-07
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:13 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.4	0	58-133	0		%REC	10	05/19/16 11:44 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605097-08
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:14 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	9.21	0.0885	0.265	0.133		mg/Kg-dry	5	05/25/16 05:18 PM
IS: Bismuth	96.3	0	30-120	0		%REC	5	05/25/16 05:18 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Benzo[a]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Benzo[a]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Benzo[b]fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Benzo[e]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Benzo[g,h,i]perylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Benzo[j]fluoranthene	0.0748	0.0499	0.0997	0.0748	NU	mg/Kg-dry	10	05/20/16 12:23 AM
Benzo[k]fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Chrysene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Indeno[1,2,3-cd]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Phenanthrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
Pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 12:23 AM
IS: Acenaphthene-d10	68.1	0	50-200	0		%REC	10	05/20/16 12:23 AM
IS: Chrysene-d12	65.6	0	50-200	0		%REC	10	05/20/16 12:23 AM
IS: Naphthalene-d8	111	0	50-200	0		%REC	10	05/20/16 12:23 AM
IS: Perylene-d12	67.6	0	50-200	0		%REC	10	05/20/16 12:23 AM
IS: Phenanthrene-d10	63.3	0	50-200	0		%REC	10	05/20/16 12:23 AM
Surr: 2-Fluorobiphenyl	83.6	0	46-115	0		%REC	10	05/20/16 12:23 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605097-08
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:14 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	70.3	0	58-133	0		%REC	10	05/20/16 12:23 AM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605097-09
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:16 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.32	0.0980	0.294	0.147		mg/Kg-dry	5	05/25/16 05:24 PM
IS: Bismuth	93.7	0	30-120	0		%REC	5	05/25/16 05:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Acenaphthylene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Anthracene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Benzo[a]anthracene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Benzo[a]pyrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Benzo[b]fluoranthene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Benzo[e]pyrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Benzo[g,h,i]perylene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Benzo[j]fluoranthene	0.0700	0.0466	0.0933	0.0700	NU	mg/Kg-dry	10	05/20/16 01:03 AM
Benzo[k]fluoranthene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Chrysene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Dibenz[a,h]anthracene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Fluoranthene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Fluorene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Indeno[1,2,3-cd]pyrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Phenanthrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
Pyrene	0.0700	0.0466	0.0933	0.0700	U	mg/Kg-dry	10	05/20/16 01:03 AM
IS: Acenaphthene-d10	63.4	0	50-200	0		%REC	10	05/20/16 01:03 AM
IS: Chrysene-d12	62.6	0	50-200	0		%REC	10	05/20/16 01:03 AM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/20/16 01:03 AM
IS: Perylene-d12	63.6	0	50-200	0		%REC	10	05/20/16 01:03 AM
IS: Phenanthrene-d10	60.7	0	50-200	0		%REC	10	05/20/16 01:03 AM
Surr: 2-Fluorobiphenyl	82.5	0	46-115	0		%REC	10	05/20/16 01:03 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605097-09
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:16 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	69.0	0	58-133	0		%REC	10	05/20/16 01:03 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605097-10
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:18 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	9.86	0.0980	0.294	0.147		mg/Kg-dry	5	05/25/16 05:30 PM
IS: Bismuth	91.4	0	30-120	0		%REC	5	05/25/16 05:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Acenaphthylene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Anthracene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Benzo[a]anthracene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Benzo[a]pyrene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Benzo[b]fluoranthene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Benzo[e]pyrene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Benzo[g,h,i]perylene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Benzo[j]fluoranthene	0.0705	0.0470	0.0940	0.0705	NU	mg/Kg-dry	10	05/20/16 01:42 AM
Benzo[k]fluoranthene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Chrysene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Dibenz[a,h]anthracene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Fluoranthene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Fluorene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Indeno[1,2,3-cd]pyrene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Phenanthrene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
Pyrene	0.0705	0.0470	0.0940	0.0705	U	mg/Kg-dry	10	05/20/16 01:42 AM
IS: Acenaphthene-d10	68.0	0	50-200	0		%REC	10	05/20/16 01:42 AM
IS: Chrysene-d12	65.1	0	50-200	0		%REC	10	05/20/16 01:42 AM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/20/16 01:42 AM
IS: Perylene-d12	66.5	0	50-200	0		%REC	10	05/20/16 01:42 AM
IS: Phenanthrene-d10	63.7	0	50-200	0		%REC	10	05/20/16 01:42 AM
Surr: 2-Fluorobiphenyl	88.0	0	46-115	0		%REC	10	05/20/16 01:42 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605097-10
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:18 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.5	0	58-133	0		%REC	10	05/20/16 01:42 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605097-11
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:20 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	11.1	0.0885	0.265	0.133		mg/Kg-dry	5	05/25/16 05:36 PM
IS: Bismuth	95.0	0	30-120	0		%REC	5	05/25/16 05:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 02:23 AM
Acenaphthylene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 02:23 AM
Anthracene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 02:23 AM
Benzo[a]anthracene	0.0704	0.0484	0.0969	0.0727	J	mg/Kg-dry	10	05/20/16 02:23 AM
Benzo[a]pyrene	0.0897	0.0484	0.0969	0.0727	J	mg/Kg-dry	10	05/20/16 02:23 AM
Benzo[b]fluoranthene	0.0857	0.0484	0.0969	0.0727	J	mg/Kg-dry	10	05/20/16 02:23 AM
Benzo[e]pyrene	0.0750	0.0484	0.0969	0.0727	J	mg/Kg-dry	10	05/20/16 02:23 AM
Benzo[g,h,i]perylene	0.0726	0.0484	0.0969	0.0727	J	mg/Kg-dry	10	05/20/16 02:23 AM
Benzo[j]fluoranthene	0.0727	0.0484	0.0969	0.0727	NU	mg/Kg-dry	10	05/20/16 02:23 AM
Benzo[k]fluoranthene	0.0521	0.0484	0.0969	0.0727	J	mg/Kg-dry	10	05/20/16 02:23 AM
Chrysene	0.0869	0.0484	0.0969	0.0727	J	mg/Kg-dry	10	05/20/16 02:23 AM
Dibenz[a,h]anthracene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 02:23 AM
Fluoranthene	0.108	0.0484	0.0969	0.0727		mg/Kg-dry	10	05/20/16 02:23 AM
Fluorene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 02:23 AM
Indeno[1,2,3-cd]pyrene	0.0603	0.0484	0.0969	0.0727	J	mg/Kg-dry	10	05/20/16 02:23 AM
Phenanthrene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 02:23 AM
Pyrene	0.0984	0.0484	0.0969	0.0727		mg/Kg-dry	10	05/20/16 02:23 AM
IS: Acenaphthene-d10	64.4	0	50-200	0		%REC	10	05/20/16 02:23 AM
IS: Chrysene-d12	62.7	0	50-200	0		%REC	10	05/20/16 02:23 AM
IS: Naphthalene-d8	102	0	50-200	0		%REC	10	05/20/16 02:23 AM
IS: Perylene-d12	63.3	0	50-200	0		%REC	10	05/20/16 02:23 AM
IS: Phenanthrene-d10	64.0	0	50-200	0		%REC	10	05/20/16 02:23 AM
Surr: 2-Fluorobiphenyl	81.8	0	46-115	0		%REC	10	05/20/16 02:23 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605097-11
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:20 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	70.6	0	58-133	0		%REC	10	05/20/16 02:23 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605097-12
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:21 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	10.1	0.0943	0.283	0.142		mg/Kg-dry	5	05/25/16 05:42 PM
IS: Bismuth	89.5	0	30-120	0		%REC	5	05/25/16 05:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Acenaphthylene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Anthracene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Benzo[a]anthracene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Benzo[a]pyrene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Benzo[b]fluoranthene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Benzo[e]pyrene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Benzo[g,h,i]perylene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Benzo[j]fluoranthene	0.0722	0.0481	0.0962	0.0722	NU	mg/Kg-dry	10	05/20/16 03:03 AM
Benzo[k]fluoranthene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Chrysene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Dibenz[a,h]anthracene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Fluoranthene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Fluorene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Indeno[1,2,3-cd]pyrene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Phenanthrene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
Pyrene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 03:03 AM
IS: Acenaphthene-d10	67.5	0	50-200	0		%REC	10	05/20/16 03:03 AM
IS: Chrysene-d12	67.9	0	50-200	0		%REC	10	05/20/16 03:03 AM
IS: Naphthalene-d8	109	0	50-200	0		%REC	10	05/20/16 03:03 AM
IS: Perylene-d12	68.0	0	50-200	0		%REC	10	05/20/16 03:03 AM
IS: Phenanthrene-d10	65.3	0	50-200	0		%REC	10	05/20/16 03:03 AM
Surr: 2-Fluorobiphenyl	82.8	0	46-115	0		%REC	10	05/20/16 03:03 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605097-12
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:21 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.8	0	58-133	0		%REC	10	05/20/16 03:03 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605097-13
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:22 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.92	0.0971	0.291	0.146		mg/Kg-dry	5	05/25/16 05:48 PM
IS: Bismuth	92.0	0	30-120	0		%REC	5	05/25/16 05:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Benzo[a]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Benzo[a]pyrene	0.0511	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/20/16 03:43 AM
Benzo[b]fluoranthene	0.0507	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/20/16 03:43 AM
Benzo[e]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Benzo[g,h,i]perylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Benzo[j]fluoranthene	0.0747	0.0498	0.0996	0.0747	NU	mg/Kg-dry	10	05/20/16 03:43 AM
Benzo[k]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Chrysene	0.0533	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/20/16 03:43 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Fluoranthene	0.0688	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/20/16 03:43 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Indeno[1,2,3-cd]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Phenanthrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 03:43 AM
Pyrene	0.0635	0.0498	0.0996	0.0747	J	mg/Kg-dry	10	05/20/16 03:43 AM
IS: Acenaphthene-d10	64.9	0	50-200	0		%REC	10	05/20/16 03:43 AM
IS: Chrysene-d12	63.8	0	50-200	0		%REC	10	05/20/16 03:43 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/20/16 03:43 AM
IS: Perylene-d12	64.1	0	50-200	0		%REC	10	05/20/16 03:43 AM
IS: Phenanthrene-d10	62.7	0	50-200	0		%REC	10	05/20/16 03:43 AM
Surr: 2-Fluorobiphenyl	79.8	0	46-115	0		%REC	10	05/20/16 03:43 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605097-13
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:22 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	67.6	0	58-133	0		%REC	10	05/20/16 03:43 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605097-14
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:23 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	9.93	0.0862	0.259	0.129		mg/Kg-dry	5	05/25/16 05:54 PM
IS: Bismuth	88.1	0	30-120	0		%REC	5	05/25/16 05:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Benzo[a]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Benzo[a]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Benzo[b]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Benzo[e]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Benzo[g,h,i]perylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Benzo[j]fluoranthene	0.0747	0.0498	0.0996	0.0747	NU	mg/Kg-dry	10	05/20/16 11:01 AM
Benzo[k]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Chrysene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Indeno[1,2,3-cd]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Phenanthrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
Pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/20/16 11:01 AM
IS: Acenaphthene-d10	67.1	0	50-200	0		%REC	10	05/20/16 11:01 AM
IS: Chrysene-d12	70.8	0	50-200	0		%REC	10	05/20/16 11:01 AM
IS: Naphthalene-d8	108	0	50-200	0		%REC	10	05/20/16 11:01 AM
IS: Perylene-d12	72.3	0	50-200	0		%REC	10	05/20/16 11:01 AM
IS: Phenanthrene-d10	62.5	0	50-200	0		%REC	10	05/20/16 11:01 AM
Surr: 2-Fluorobiphenyl	80.7	0	46-115	0		%REC	10	05/20/16 11:01 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605097-14
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:23 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	69.2	0	58-133	0		%REC	10	05/20/16 11:01 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605097-15
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:24 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	9.65	0.0952	0.286	0.143		mg/Kg-dry	5	05/25/16 06:00 PM
IS: Bismuth	89.6	0	30-120	0		%REC	5	05/25/16 06:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Benzo[a]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Benzo[b]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Benzo[g,h,i]perylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/20/16 11:40 AM
Benzo[k]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Chrysene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Dibenz[a,h]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Indeno[1,2,3-cd]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/20/16 11:40 AM
IS: Acenaphthene-d10	66.9	0	50-200	0		%REC	10	05/20/16 11:40 AM
IS: Chrysene-d12	65.5	0	50-200	0		%REC	10	05/20/16 11:40 AM
IS: Naphthalene-d8	107	0	50-200	0		%REC	10	05/20/16 11:40 AM
IS: Perylene-d12	66.1	0	50-200	0		%REC	10	05/20/16 11:40 AM
IS: Phenanthrene-d10	62.8	0	50-200	0		%REC	10	05/20/16 11:40 AM
Surr: 2-Fluorobiphenyl	82.7	0	46-115	0		%REC	10	05/20/16 11:40 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU004(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605097-15
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 11:24 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	70.0	0	58-133	0		%REC	10	05/20/16 11:40 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU191-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605097-16
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:00 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	10.6	0.111	0.333	0.166		mg/Kg-dry	5	05/25/16 06:06 PM
IS: Bismuth	91.5	0	30-120	0		%REC	5	05/25/16 06:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Acenaphthylene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Anthracene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Benzo[a]anthracene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Benzo[a]pyrene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Benzo[b]fluoranthene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Benzo[e]pyrene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Benzo[g,h,i]perylene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Benzo[j]fluoranthene	0.0885	0.0590	0.118	0.0885	NU	mg/Kg-dry	10	05/20/16 12:57 PM
Benzo[k]fluoranthene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Chrysene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Dibenz[a,h]anthracene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Fluoranthene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Fluorene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Indeno[1,2,3-cd]pyrene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Phenanthrene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
Pyrene	0.0885	0.0590	0.118	0.0885	U	mg/Kg-dry	10	05/20/16 12:57 PM
IS: Acenaphthene-d10	96.4	0	50-200	0		%REC	10	05/20/16 12:57 PM
IS: Chrysene-d12	85.0	0	50-200	0		%REC	10	05/20/16 12:57 PM
IS: Naphthalene-d8	93.8	0	50-200	0		%REC	10	05/20/16 12:57 PM
IS: Perylene-d12	87.7	0	50-200	0		%REC	10	05/20/16 12:57 PM
IS: Phenanthrene-d10	76.8	0	50-200	0		%REC	10	05/20/16 12:57 PM
Surr: 2-Fluorobiphenyl	84.3	0	46-115	0		%REC	10	05/20/16 12:57 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU191-STRAT1
Project:	Laredo SGR	**Lab ID:**	1605097-16
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:00 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	73.3	0	58-133	0		%REC	10	05/20/16 12:57 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	19.6	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU191-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605097-17
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:05 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	42.6	0.105	0.316	0.158		mg/Kg-dry	5	05/25/16 07:00 PM
IS: Bismuth	88.5	0	30-120	0		%REC	5	05/25/16 07:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Acenaphthylene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Anthracene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Benzo[a]anthracene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Benzo[a]pyrene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Benzo[b]fluoranthene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Benzo[e]pyrene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Benzo[g,h,i]perylene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Benzo[j]fluoranthene	0.0774	0.0516	0.103	0.0774	NU	mg/Kg-dry	10	05/20/16 01:34 PM
Benzo[k]fluoranthene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Chrysene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Dibenz[a,h]anthracene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Fluoranthene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Fluorene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Indeno[1,2,3-cd]pyrene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Phenanthrene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
Pyrene	0.0774	0.0516	0.103	0.0774	U	mg/Kg-dry	10	05/20/16 01:34 PM
IS: Acenaphthene-d10	98.9	0	50-200	0		%REC	10	05/20/16 01:34 PM
IS: Chrysene-d12	85.2	0	50-200	0		%REC	10	05/20/16 01:34 PM
IS: Naphthalene-d8	94.0	0	50-200	0		%REC	10	05/20/16 01:34 PM
IS: Perylene-d12	87.6	0	50-200	0		%REC	10	05/20/16 01:34 PM
IS: Phenanthrene-d10	78.7	0	50-200	0		%REC	10	05/20/16 01:34 PM
Surr: 2-Fluorobiphenyl	86.5	0	46-115	0		%REC	10	05/20/16 01:34 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU191-STRAT2
Project:	Laredo SGR	**Lab ID:**	1605097-17
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:05 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.0	0	58-133	0		%REC	10	05/20/16 01:34 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	10.6	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU191-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605097-18
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:10 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	10.1	0.105	0.315	0.158		mg/Kg-dry	5	05/25/16 07:06 PM
IS: Bismuth	89.7	0	30-120	0		%REC	5	05/25/16 07:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Acenaphthylene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Anthracene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Benzo[a]anthracene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Benzo[a]pyrene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Benzo[b]fluoranthene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Benzo[e]pyrene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Benzo[g,h,i]perylene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Benzo[j]fluoranthene	0.0763	0.0508	0.102	0.0763	NU	mg/Kg-dry	10	05/20/16 02:11 PM
Benzo[k]fluoranthene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Chrysene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Dibenz[a,h]anthracene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Fluoranthene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Fluorene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Indeno[1,2,3-cd]pyrene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Phenanthrene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
Pyrene	0.0763	0.0508	0.102	0.0763	U	mg/Kg-dry	10	05/20/16 02:11 PM
IS: Acenaphthene-d10	98.2	0	50-200	0		%REC	10	05/20/16 02:11 PM
IS: Chrysene-d12	84.7	0	50-200	0		%REC	10	05/20/16 02:11 PM
IS: Naphthalene-d8	95.5	0	50-200	0		%REC	10	05/20/16 02:11 PM
IS: Perylene-d12	88.1	0	50-200	0		%REC	10	05/20/16 02:11 PM
IS: Phenanthrene-d10	77.3	0	50-200	0		%REC	10	05/20/16 02:11 PM
Surr: 2-Fluorobiphenyl	86.0	0	46-115	0		%REC	10	05/20/16 02:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU191-STRAT3
Project:	Laredo SGR	**Lab ID:**	1605097-18
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:10 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.6	0	58-133	0		%REC	10	05/20/16 02:11 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	6.69	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:					
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU191-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605097-19
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:15 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	22.2	0.0920	0.276	0.138		mg/Kg-dry	5	05/25/16 07:12 PM
IS: Bismuth	85.3	0	30-120	0		%REC	5	05/25/16 07:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Acenaphthylene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Anthracene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Benzo[a]anthracene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Benzo[a]pyrene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Benzo[b]fluoranthene	0.0616	0.0547	0.109	0.0821	J	mg/Kg-dry	10	05/20/16 02:48 PM
Benzo[e]pyrene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Benzo[g,h,i]perylene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Benzo[j]fluoranthene	0.0821	0.0547	0.109	0.0821	NU	mg/Kg-dry	10	05/20/16 02:48 PM
Benzo[k]fluoranthene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Chrysene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Dibenz[a,h]anthracene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Fluoranthene	0.0690	0.0547	0.109	0.0821	J	mg/Kg-dry	10	05/20/16 02:48 PM
Fluorene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Indeno[1,2,3-cd]pyrene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Phenanthrene	0.0821	0.0547	0.109	0.0821	U	mg/Kg-dry	10	05/20/16 02:48 PM
Pyrene	0.0627	0.0547	0.109	0.0821	J	mg/Kg-dry	10	05/20/16 02:48 PM
IS: Acenaphthene-d10	97.2	0	50-200	0		%REC	10	05/20/16 02:48 PM
IS: Chrysene-d12	85.3	0	50-200	0		%REC	10	05/20/16 02:48 PM
IS: Naphthalene-d8	93.7	0	50-200	0		%REC	10	05/20/16 02:48 PM
IS: Perylene-d12	86.5	0	50-200	0		%REC	10	05/20/16 02:48 PM
IS: Phenanthrene-d10	76.0	0	50-200	0		%REC	10	05/20/16 02:48 PM
Surr: 2-Fluorobiphenyl	87.4	0	46-115	0		%REC	10	05/20/16 02:48 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU191-STRAT4
Project:	Laredo SGR	**Lab ID:**	1605097-19
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:15 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.2	0	58-133	0		%REC	10	05/20/16 02:48 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	8.70	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU191-STRAT5
Project:	Laredo SGR	**Lab ID:**	1605097-20
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:20 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	11.0	0.103	0.308	0.154		mg/Kg-dry	5	05/16/16 03:57 PM
IS: Bismuth	86.3	0	30-120	0		%REC	5	05/16/16 03:57 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Acenaphthylene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Anthracene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Benzo[a]anthracene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Benzo[a]pyrene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Benzo[b]fluoranthene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Benzo[e]pyrene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Benzo[g,h,i]perylene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Benzo[j]fluoranthene	0.0843	0.0562	0.112	0.0843	NU	mg/Kg-dry	10	05/20/16 03:24 PM
Benzo[k]fluoranthene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Chrysene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Dibenz[a,h]anthracene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Fluoranthene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Fluorene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Indeno[1,2,3-cd]pyrene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Phenanthrene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
Pyrene	0.0843	0.0562	0.112	0.0843	U	mg/Kg-dry	10	05/20/16 03:24 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/20/16 03:24 PM
IS: Chrysene-d12	84.0	0	50-200	0		%REC	10	05/20/16 03:24 PM
IS: Naphthalene-d8	96.9	0	50-200	0		%REC	10	05/20/16 03:24 PM
IS: Perylene-d12	86.9	0	50-200	0		%REC	10	05/20/16 03:24 PM
IS: Phenanthrene-d10	81.1	0	50-200	0		%REC	10	05/20/16 03:24 PM
Surr: 2-Fluorobiphenyl	86.7	0	46-115	0		%REC	10	05/20/16 03:24 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU191-STRAT5
Project:	Laredo SGR	**Lab ID:**	1605097-20
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:20 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.2	0	58-133	0		%REC	10	05/20/16 03:24 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	13.0	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-10(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605097-21
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 10:05 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	9.27	0.104	0.313	0.157		mg/Kg-dry	5	05/16/16 03:59 PM
IS: Bismuth	86.5	0	30-120	0		%REC	5	05/16/16 03:59 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Acenaphthylene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Anthracene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Benzo[a]anthracene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Benzo[a]pyrene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Benzo[b]fluoranthene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Benzo[e]pyrene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Benzo[g,h,i]perylene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Benzo[j]fluoranthene	0.0817	0.0545	0.109	0.0817	NU	mg/Kg-dry	10	05/14/16 05:36 AM
Benzo[k]fluoranthene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Chrysene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Dibenz[a,h]anthracene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Fluoranthene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Fluorene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Indeno[1,2,3-cd]pyrene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Phenanthrene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
Pyrene	0.0817	0.0545	0.109	0.0817	U	mg/Kg-dry	10	05/14/16 05:36 AM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/14/16 05:36 AM
IS: Chrysene-d12	84.9	0	50-200	0		%REC	10	05/14/16 05:36 AM
IS: Naphthalene-d8	94.9	0	50-200	0		%REC	10	05/14/16 05:36 AM
IS: Perylene-d12	85.7	0	50-200	0		%REC	10	05/14/16 05:36 AM
IS: Phenanthrene-d10	91.9	0	50-200	0		%REC	10	05/14/16 05:36 AM
Surr: 2-Fluorobiphenyl	82.9	0	46-115	0		%REC	10	05/14/16 05:36 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-10(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605097-21
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 10:05 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	87.7	0	58-133	0		%REC	10	05/14/16 05:36 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	12.1	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-11(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605097-23
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 10:40 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	24.1	0.114	0.341	0.171		mg/Kg-dry	5	05/16/16 04:01 PM
IS: Bismuth	93.5	0	30-120	0		%REC	5	05/16/16 04:01 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0874	0.0583	0.117	0.0874	U	mg/Kg-dry	10	05/14/16 06:13 AM
Acenaphthylene	0.0874	0.0583	0.117	0.0874	U	mg/Kg-dry	10	05/14/16 06:13 AM
Anthracene	0.0874	0.0583	0.117	0.0874	U	mg/Kg-dry	10	05/14/16 06:13 AM
Benzo[a]anthracene	0.0637	0.0583	0.117	0.0874	J	mg/Kg-dry	10	05/14/16 06:13 AM
Benzo[a]pyrene	0.0769	0.0583	0.117	0.0874	J	mg/Kg-dry	10	05/14/16 06:13 AM
Benzo[b]fluoranthene	0.0756	0.0583	0.117	0.0874	J	mg/Kg-dry	10	05/14/16 06:13 AM
Benzo[e]pyrene	0.0874	0.0583	0.117	0.0874	U	mg/Kg-dry	10	05/14/16 06:13 AM
Benzo[g,h,i]perylene	0.0742	0.0583	0.117	0.0874	J	mg/Kg-dry	10	05/14/16 06:13 AM
Benzo[j]fluoranthene	0.0874	0.0583	0.117	0.0874	NU	mg/Kg-dry	10	05/14/16 06:13 AM
Benzo[k]fluoranthene	0.0874	0.0583	0.117	0.0874	U	mg/Kg-dry	10	05/14/16 06:13 AM
Chrysene	0.0811	0.0583	0.117	0.0874	J	mg/Kg-dry	10	05/14/16 06:13 AM
Dibenz[a,h]anthracene	0.0874	0.0583	0.117	0.0874	U	mg/Kg-dry	10	05/14/16 06:13 AM
Fluoranthene	0.0880	0.0583	0.117	0.0874	J	mg/Kg-dry	10	05/14/16 06:13 AM
Fluorene	0.0874	0.0583	0.117	0.0874	U	mg/Kg-dry	10	05/14/16 06:13 AM
Indeno[1,2,3-cd]pyrene	0.0607	0.0583	0.117	0.0874	J	mg/Kg-dry	10	05/14/16 06:13 AM
Phenanthrene	0.0874	0.0583	0.117	0.0874	U	mg/Kg-dry	10	05/14/16 06:13 AM
Pyrene	0.0811	0.0583	0.117	0.0874	J	mg/Kg-dry	10	05/14/16 06:13 AM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/14/16 06:13 AM
IS: Chrysene-d12	83.3	0	50-200	0		%REC	10	05/14/16 06:13 AM
IS: Naphthalene-d8	96.3	0	50-200	0		%REC	10	05/14/16 06:13 AM
IS: Perylene-d12	86.5	0	50-200	0		%REC	10	05/14/16 06:13 AM
IS: Phenanthrene-d10	94.8	0	50-200	0		%REC	10	05/14/16 06:13 AM
Surr: 2-Fluorobiphenyl	84.4	0	46-115	0		%REC	10	05/14/16 06:13 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-11(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605097-23
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 10:40 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	88.2	0	58-133	0		%REC	10	05/14/16 06:13 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	14.7	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP04(20160508)
Project:	Laredo SGR	**Lab ID:**	1605097-26
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 10:30 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	9.80	0.110	0.331	0.165		mg/Kg-dry	5	05/16/16 04:03 PM
IS: Bismuth	93.9	0	30-120	0		%REC	5	05/16/16 04:03 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Acenaphthylene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Anthracene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Benzo[a]anthracene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Benzo[a]pyrene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Benzo[b]fluoranthene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Benzo[e]pyrene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Benzo[g,h,i]perylene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Benzo[j]fluoranthene	0.0851	0.0568	0.114	0.0851	NU	mg/Kg-dry	10	05/20/16 04:02 PM
Benzo[k]fluoranthene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Chrysene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Dibenz[a,h]anthracene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Fluoranthene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Fluorene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Indeno[1,2,3-cd]pyrene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Phenanthrene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
Pyrene	0.0851	0.0568	0.114	0.0851	U	mg/Kg-dry	10	05/20/16 04:02 PM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/20/16 04:02 PM
IS: Chrysene-d12	84.4	0	50-200	0		%REC	10	05/20/16 04:02 PM
IS: Naphthalene-d8	95.6	0	50-200	0		%REC	10	05/20/16 04:02 PM
IS: Perylene-d12	86.5	0	50-200	0		%REC	10	05/20/16 04:02 PM
IS: Phenanthrene-d10	77.3	0	50-200	0		%REC	10	05/20/16 04:02 PM
Surr: 2-Fluorobiphenyl	83.2	0	46-115	0		%REC	10	05/20/16 04:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP04(20160508)
Project:	Laredo SGR	**Lab ID:**	1605097-26
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 10:30 AM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.0	0	58-133	0		%REC	10	05/20/16 04:02 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	16.0	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB12(20160508)
Project:	Laredo SGR	**Lab ID:**	1605097-27
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:30 PM
Lab Order:	1605097	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER			**SW6020A**					Analyst: **RO**
Lead	0.000900	0.000300	0.00100	0.000900	U	mg/L	1	05/20/16 01:30 PM
IS: Bismuth	97.8	0	30-120	0		%REC	1	05/20/16 01:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Acenaphthylene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Anthracene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Benzo[a]anthracene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Benzo[a]pyrene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Benzo[b]fluoranthene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Benzo[e]pyrene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Benzo[g,h,i]perylene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Benzo[j]fluoranthene	0.0000616	0.0000385	0.0000770	0.0000616	NU	mg/L	1	05/18/16 06:58 PM
Benzo[k]fluoranthene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Chrysene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Dibenz[a,h]anthracene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Fluoranthene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Fluorene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Indeno[1,2,3-cd]pyrene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Phenanthrene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
Pyrene	0.0000616	0.0000385	0.0000770	0.0000616	U	mg/L	1	05/18/16 06:58 PM
IS: Acenaphthene-d10	92.4	0	50-200	0		%REC	1	05/18/16 06:58 PM
IS: Chrysene-d12	95.1	0	50-200	0		%REC	1	05/18/16 06:58 PM
IS: Naphthalene-d8	93.3	0	50-200	0		%REC	1	05/18/16 06:58 PM
IS: Perylene-d12	93.8	0	50-200	0		%REC	1	05/18/16 06:58 PM
IS: Phenanthrene-d10	89.5	0	50-200	0		%REC	1	05/18/16 06:58 PM
Surr: 2-Fluorobiphenyl	59.9	0	53-106	0		%REC	1	05/18/16 06:58 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	EB12(20160508)
Project:	Laredo SGR	**Lab ID:**	1605097-27
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 12:30 PM
Lab Order:	1605097	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	64.8	0	58-132	0		%REC	1	05/18/16 06:58 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU023-A
Project:	Laredo SGR	**Lab ID:**	1605097-28
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 02:30 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	29.5	0.0926	0.278	0.139		mg/Kg-dry	5	05/25/16 05:06 PM
IS: Bismuth	97.0	0	30-120	0		%REC	5	05/25/16 05:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/20/16 12:21 PM
Acenaphthylene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/20/16 12:21 PM
Anthracene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/20/16 12:21 PM
Benzo[a]anthracene	0.262	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
Benzo[a]pyrene	0.348	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
Benzo[b]fluoranthene	0.353	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
Benzo[e]pyrene	0.289	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
Benzo[g,h,i]perylene	0.280	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
Benzo[j]fluoranthene	0.188	0.0473	0.0945	0.0709	N	mg/Kg-dry	10	05/20/16 12:21 PM
Benzo[k]fluoranthene	0.179	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
Chrysene	0.339	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
Dibenz[a,h]anthracene	0.0622	0.0473	0.0945	0.0709	J	mg/Kg-dry	10	05/20/16 12:21 PM
Fluoranthene	0.460	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
Fluorene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/20/16 12:21 PM
Indeno[1,2,3-cd]pyrene	0.225	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
Phenanthrene	0.154	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
Pyrene	0.407	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/20/16 12:21 PM
IS: Acenaphthene-d10	66.7	0	50-200	0		%REC	10	05/20/16 12:21 PM
IS: Chrysene-d12	63.9	0	50-200	0		%REC	10	05/20/16 12:21 PM
IS: Naphthalene-d8	106	0	50-200	0		%REC	10	05/20/16 12:21 PM
IS: Perylene-d12	65.2	0	50-200	0		%REC	10	05/20/16 12:21 PM
IS: Phenanthrene-d10	64.5	0	50-200	0		%REC	10	05/20/16 12:21 PM
Surr: 2-Fluorobiphenyl	81.9	0	46-115	0		%REC	10	05/20/16 12:21 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU023-A
Project:	Laredo SGR	**Lab ID:**	1605097-28
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 02:30 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	72.8	0	58-133	0		%REC	10	05/20/16 12:21 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU023-B
Project:	Laredo SGR	**Lab ID:**	1605097-29
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 02:50 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	27.0	0.0862	0.259	0.129		mg/Kg-dry	5	05/25/16 07:18 PM
IS: Bismuth	86.1	0	30-120	0		%REC	5	05/25/16 07:18 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/20/16 01:00 PM
Acenaphthylene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/20/16 01:00 PM
Anthracene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/20/16 01:00 PM
Benzo[a]anthracene	0.238	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
Benzo[a]pyrene	0.316	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
Benzo[b]fluoranthene	0.326	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
Benzo[e]pyrene	0.267	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
Benzo[g,h,i]perylene	0.262	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
Benzo[j]fluoranthene	0.174	0.0494	0.0987	0.0740	N	mg/Kg-dry	10	05/20/16 01:00 PM
Benzo[k]fluoranthene	0.165	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
Chrysene	0.300	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
Dibenz[a,h]anthracene	0.0599	0.0494	0.0987	0.0740	J	mg/Kg-dry	10	05/20/16 01:00 PM
Fluoranthene	0.433	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
Fluorene	0.0740	0.0494	0.0987	0.0740	U	mg/Kg-dry	10	05/20/16 01:00 PM
Indeno[1,2,3-cd]pyrene	0.204	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
Phenanthrene	0.145	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
Pyrene	0.380	0.0494	0.0987	0.0740		mg/Kg-dry	10	05/20/16 01:00 PM
IS: Acenaphthene-d10	68.5	0	50-200	0		%REC	10	05/20/16 01:00 PM
IS: Chrysene-d12	65.5	0	50-200	0		%REC	10	05/20/16 01:00 PM
IS: Naphthalene-d8	109	0	50-200	0		%REC	10	05/20/16 01:00 PM
IS: Perylene-d12	67.2	0	50-200	0		%REC	10	05/20/16 01:00 PM
IS: Phenanthrene-d10	63.7	0	50-200	0		%REC	10	05/20/16 01:00 PM
Surr: 2-Fluorobiphenyl	80.7	0	46-115	0		%REC	10	05/20/16 01:00 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU023-B
Project:	Laredo SGR	**Lab ID:**	1605097-29
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 02:50 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	71.1	0	58-133	0		%REC	10	05/20/16 01:00 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB13(20160508)
Project:	Laredo SGR	**Lab ID:**	1605097-30
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 04:30 PM
Lab Order:	1605097	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER			**SW6020A**					Analyst: **RO**
Lead	0.000900	0.000300	0.00100	0.000900	U	mg/L	1	05/20/16 02:12 PM
IS: Bismuth	96.1	0	30-120	0		%REC	1	05/20/16 02:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000617	0.0000386	0.0000772	0.0000617	U	mg/L	1	05/18/16 07:34 PM
Acenaphthylene	0.0000617	0.0000386	0.0000772	0.0000617	U	mg/L	1	05/18/16 07:34 PM
Anthracene	0.0000617	0.0000386	0.0000772	0.0000617	U	mg/L	1	05/18/16 07:34 PM
Benzo[a]anthracene	0.0000523	0.0000386	0.0000772	0.0000617	J	mg/L	1	05/18/16 07:34 PM
Benzo[a]pyrene	0.000104	0.0000386	0.0000772	0.0000617		mg/L	1	05/18/16 07:34 PM
Benzo[b]fluoranthene	0.000106	0.0000386	0.0000772	0.0000617		mg/L	1	05/18/16 07:34 PM
Benzo[e]pyrene	0.0000790	0.0000386	0.0000772	0.0000617		mg/L	1	05/18/16 07:34 PM
Benzo[g,h,i]perylene	0.0000913	0.0000386	0.0000772	0.0000617		mg/L	1	05/18/16 07:34 PM
Benzo[j]fluoranthene	0.0000436	0.0000386	0.0000772	0.0000617	JN	mg/L	1	05/18/16 07:34 PM
Benzo[k]fluoranthene	0.0000550	0.0000386	0.0000772	0.0000617	J	mg/L	1	05/18/16 07:34 PM
Chrysene	0.0000761	0.0000386	0.0000772	0.0000617	J	mg/L	1	05/18/16 07:34 PM
Dibenz[a,h]anthracene	0.0000617	0.0000386	0.0000772	0.0000617	U	mg/L	1	05/18/16 07:34 PM
Fluoranthene	0.0000419	0.0000386	0.0000772	0.0000617	J	mg/L	1	05/18/16 07:34 PM
Fluorene	0.0000617	0.0000386	0.0000772	0.0000617	U	mg/L	1	05/18/16 07:34 PM
Indeno[1,2,3-cd]pyrene	0.0000782	0.0000386	0.0000772	0.0000617		mg/L	1	05/18/16 07:34 PM
Phenanthrene	0.0000617	0.0000386	0.0000772	0.0000617	U	mg/L	1	05/18/16 07:34 PM
Pyrene	0.0000617	0.0000386	0.0000772	0.0000617	U	mg/L	1	05/18/16 07:34 PM
IS: Acenaphthene-d10	93.5	0	50-200	0		%REC	1	05/18/16 07:34 PM
IS: Chrysene-d12	93.8	0	50-200	0		%REC	1	05/18/16 07:34 PM
IS: Naphthalene-d8	95.3	0	50-200	0		%REC	1	05/18/16 07:34 PM
IS: Perylene-d12	93.6	0	50-200	0		%REC	1	05/18/16 07:34 PM
IS: Phenanthrene-d10	91.1	0	50-200	0		%REC	1	05/18/16 07:34 PM
Surr: 2-Fluorobiphenyl	64.6	0	53-106	0		%REC	1	05/18/16 07:34 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	EB13(20160508)
Project:	Laredo SGR	**Lab ID:**	1605097-30
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 04:30 PM
Lab Order:	1605097	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	68.6	0	58-132	0		%REC	1	05/18/16 07:34 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605097-31
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:48 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	16.4	0.0980	0.294	0.147		mg/Kg-dry	5	05/25/16 07:24 PM
IS: Bismuth	86.3	0	30-120	0		%REC	5	05/25/16 07:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0734	0.0489	0.0978	0.0734	U	mg/Kg-dry	10	05/20/16 01:40 PM
Acenaphthylene	0.0734	0.0489	0.0978	0.0734	U	mg/Kg-dry	10	05/20/16 01:40 PM
Anthracene	0.0923	0.0489	0.0978	0.0734	J	mg/Kg-dry	10	05/20/16 01:40 PM
Benzo[a]anthracene	0.704	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Benzo[a]pyrene	0.826	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Benzo[b]fluoranthene	0.830	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Benzo[e]pyrene	0.664	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Benzo[g,h,i]perylene	0.592	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Benzo[j]fluoranthene	0.445	0.0489	0.0978	0.0734	N	mg/Kg-dry	10	05/20/16 01:40 PM
Benzo[k]fluoranthene	0.417	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Chrysene	0.871	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Dibenz[a,h]anthracene	0.132	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Fluoranthene	1.36	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Fluorene	0.0734	0.0489	0.0978	0.0734	U	mg/Kg-dry	10	05/20/16 01:40 PM
Indeno[1,2,3-cd]pyrene	0.478	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Phenanthrene	0.490	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
Pyrene	1.17	0.0489	0.0978	0.0734		mg/Kg-dry	10	05/20/16 01:40 PM
IS: Acenaphthene-d10	69.1	0	50-200	0		%REC	10	05/20/16 01:40 PM
IS: Chrysene-d12	67.5	0	50-200	0		%REC	10	05/20/16 01:40 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/20/16 01:40 PM
IS: Perylene-d12	68.5	0	50-200	0		%REC	10	05/20/16 01:40 PM
IS: Phenanthrene-d10	64.2	0	50-200	0		%REC	10	05/20/16 01:40 PM
Surr: 2-Fluorobiphenyl	80.2	0	46-115	0		%REC	10	05/20/16 01:40 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605097-31
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:48 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	70.0	0	58-133	0		%REC	10	05/20/16 01:40 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605097-32
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:50 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.39	0.0952	0.286	0.143		mg/Kg-dry	5	05/25/16 07:30 PM
IS: Bismuth	84.4	0	30-120	0		%REC	5	05/25/16 07:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Acenaphthylene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Anthracene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Benzo[a]anthracene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Benzo[a]pyrene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Benzo[b]fluoranthene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Benzo[e]pyrene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Benzo[g,h,i]perylene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Benzo[j]fluoranthene	0.0740	0.0493	0.0986	0.0740	NU	mg/Kg-dry	10	05/20/16 02:20 PM
Benzo[k]fluoranthene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Chrysene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Dibenz[a,h]anthracene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Fluoranthene	0.0629	0.0493	0.0986	0.0740	J	mg/Kg-dry	10	05/20/16 02:20 PM
Fluorene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Indeno[1,2,3-cd]pyrene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Phenanthrene	0.0740	0.0493	0.0986	0.0740	U	mg/Kg-dry	10	05/20/16 02:20 PM
Pyrene	0.0600	0.0493	0.0986	0.0740	J	mg/Kg-dry	10	05/20/16 02:20 PM
IS: Acenaphthene-d10	63.2	0	50-200	0		%REC	10	05/20/16 02:20 PM
IS: Chrysene-d12	63.7	0	50-200	0		%REC	10	05/20/16 02:20 PM
IS: Naphthalene-d8	104	0	50-200	0		%REC	10	05/20/16 02:20 PM
IS: Perylene-d12	63.7	0	50-200	0		%REC	10	05/20/16 02:20 PM
IS: Phenanthrene-d10	60.0	0	50-200	0		%REC	10	05/20/16 02:20 PM
Surr: 2-Fluorobiphenyl	78.0	0	46-115	0		%REC	10	05/20/16 02:20 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605097-32
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:50 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	72.3	0	58-133	0		%REC	10	05/20/16 02:20 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605097-33
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:52 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.59	0.0990	0.297	0.149		mg/Kg-dry	5	05/25/16 07:36 PM
IS: Bismuth	86.2	0	30-120	0		%REC	5	05/25/16 07:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0704	0.0469	0.0938	0.0704	U	mg/Kg-dry	10	05/20/16 02:59 PM
Acenaphthylene	0.0704	0.0469	0.0938	0.0704	U	mg/Kg-dry	10	05/20/16 02:59 PM
Anthracene	0.0704	0.0469	0.0938	0.0704	U	mg/Kg-dry	10	05/20/16 02:59 PM
Benzo[a]anthracene	0.0486	0.0469	0.0938	0.0704	J	mg/Kg-dry	10	05/20/16 02:59 PM
Benzo[a]pyrene	0.0638	0.0469	0.0938	0.0704	J	mg/Kg-dry	10	05/20/16 02:59 PM
Benzo[b]fluoranthene	0.0652	0.0469	0.0938	0.0704	J	mg/Kg-dry	10	05/20/16 02:59 PM
Benzo[e]pyrene	0.0517	0.0469	0.0938	0.0704	J	mg/Kg-dry	10	05/20/16 02:59 PM
Benzo[g,h,i]perylene	0.0508	0.0469	0.0938	0.0704	J	mg/Kg-dry	10	05/20/16 02:59 PM
Benzo[j]fluoranthene	0.0704	0.0469	0.0938	0.0704	NU	mg/Kg-dry	10	05/20/16 02:59 PM
Benzo[k]fluoranthene	0.0704	0.0469	0.0938	0.0704	U	mg/Kg-dry	10	05/20/16 02:59 PM
Chrysene	0.0614	0.0469	0.0938	0.0704	J	mg/Kg-dry	10	05/20/16 02:59 PM
Dibenz[a,h]anthracene	0.0704	0.0469	0.0938	0.0704	U	mg/Kg-dry	10	05/20/16 02:59 PM
Fluoranthene	0.0811	0.0469	0.0938	0.0704	J	mg/Kg-dry	10	05/20/16 02:59 PM
Fluorene	0.0704	0.0469	0.0938	0.0704	U	mg/Kg-dry	10	05/20/16 02:59 PM
Indeno[1,2,3-cd]pyrene	0.0704	0.0469	0.0938	0.0704	U	mg/Kg-dry	10	05/20/16 02:59 PM
Phenanthrene	0.0704	0.0469	0.0938	0.0704	U	mg/Kg-dry	10	05/20/16 02:59 PM
Pyrene	0.0754	0.0469	0.0938	0.0704	J	mg/Kg-dry	10	05/20/16 02:59 PM
IS: Acenaphthene-d10	69.4	0	50-200	0		%REC	10	05/20/16 02:59 PM
IS: Chrysene-d12	68.4	0	50-200	0		%REC	10	05/20/16 02:59 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/20/16 02:59 PM
IS: Perylene-d12	69.1	0	50-200	0		%REC	10	05/20/16 02:59 PM
IS: Phenanthrene-d10	65.0	0	50-200	0		%REC	10	05/20/16 02:59 PM
Surr: 2-Fluorobiphenyl	79.7	0	46-115	0		%REC	10	05/20/16 02:59 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605097-33
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:52 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	69.0	0	58-133	0		%REC	10	05/20/16 02:59 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605097-34
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:53 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.87	0.0901	0.270	0.135		mg/Kg-dry	5	05/25/16 07:42 PM
IS: Bismuth	81.9	0	30-120	0		%REC	5	05/25/16 07:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/20/16 03:39 PM
Acenaphthylene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/20/16 03:39 PM
Anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/20/16 03:39 PM
Benzo[a]anthracene	0.0904	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/20/16 03:39 PM
Benzo[a]pyrene	0.117	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/20/16 03:39 PM
Benzo[b]fluoranthene	0.116	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/20/16 03:39 PM
Benzo[e]pyrene	0.0935	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/20/16 03:39 PM
Benzo[g,h,i]perylene	0.0903	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/20/16 03:39 PM
Benzo[j]fluoranthene	0.0653	0.0499	0.0998	0.0749	JN	mg/Kg-dry	10	05/20/16 03:39 PM
Benzo[k]fluoranthene	0.0619	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/20/16 03:39 PM
Chrysene	0.122	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/20/16 03:39 PM
Dibenz[a,h]anthracene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/20/16 03:39 PM
Fluoranthene	0.169	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/20/16 03:39 PM
Fluorene	0.0749	0.0499	0.0998	0.0749	U	mg/Kg-dry	10	05/20/16 03:39 PM
Indeno[1,2,3-cd]pyrene	0.0718	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/20/16 03:39 PM
Phenanthrene	0.0572	0.0499	0.0998	0.0749	J	mg/Kg-dry	10	05/20/16 03:39 PM
Pyrene	0.157	0.0499	0.0998	0.0749		mg/Kg-dry	10	05/20/16 03:39 PM
IS: Acenaphthene-d10	68.7	0	50-200	0		%REC	10	05/20/16 03:39 PM
IS: Chrysene-d12	67.8	0	50-200	0		%REC	10	05/20/16 03:39 PM
IS: Naphthalene-d8	111	0	50-200	0		%REC	10	05/20/16 03:39 PM
IS: Perylene-d12	69.0	0	50-200	0		%REC	10	05/20/16 03:39 PM
IS: Phenanthrene-d10	64.8	0	50-200	0		%REC	10	05/20/16 03:39 PM
Surr: 2-Fluorobiphenyl	81.6	0	46-115	0		%REC	10	05/20/16 03:39 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605097-34
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:53 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	70.7	0	58-133	0		%REC	10	05/20/16 03:39 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605097-35
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:56 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.31	0.0952	0.286	0.143		mg/Kg-dry	5	05/25/16 07:48 PM
IS: Bismuth	88.1	0	30-120	0		%REC	5	05/25/16 07:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Acenaphthylene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Anthracene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Benzo[a]anthracene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Benzo[a]pyrene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Benzo[b]fluoranthene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Benzo[e]pyrene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Benzo[g,h,i]perylene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Benzo[j]fluoranthene	0.0732	0.0488	0.0976	0.0732	NU	mg/Kg-dry	10	05/20/16 04:18 PM
Benzo[k]fluoranthene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Chrysene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Dibenz[a,h]anthracene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Fluoranthene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Fluorene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Indeno[1,2,3-cd]pyrene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Phenanthrene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
Pyrene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/20/16 04:18 PM
IS: Acenaphthene-d10	68.0	0	50-200	0		%REC	10	05/20/16 04:18 PM
IS: Chrysene-d12	68.5	0	50-200	0		%REC	10	05/20/16 04:18 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/20/16 04:18 PM
IS: Perylene-d12	70.4	0	50-200	0		%REC	10	05/20/16 04:18 PM
IS: Phenanthrene-d10	64.2	0	50-200	0		%REC	10	05/20/16 04:18 PM
Surr: 2-Fluorobiphenyl	79.5	0	46-115	0		%REC	10	05/20/16 04:18 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605097-35
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:56 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	71.4	0	58-133	0		%REC	10	05/20/16 04:18 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605097-36
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:37 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	16.2	0.0847	0.254	0.127		mg/Kg-dry	5	05/25/16 07:54 PM
IS: Bismuth	89.3	0	30-120	0		%REC	5	05/25/16 07:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/20/16 04:58 PM
Acenaphthylene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/20/16 04:58 PM
Anthracene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/20/16 04:58 PM
Benzo[a]anthracene	0.271	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
Benzo[a]pyrene	0.346	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
Benzo[b]fluoranthene	0.340	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
Benzo[e]pyrene	0.278	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
Benzo[g,h,i]perylene	0.259	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
Benzo[j]fluoranthene	0.185	0.0491	0.0981	0.0736	N	mg/Kg-dry	10	05/20/16 04:58 PM
Benzo[k]fluoranthene	0.174	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
Chrysene	0.353	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
Dibenz[a,h]anthracene	0.0588	0.0491	0.0981	0.0736	J	mg/Kg-dry	10	05/20/16 04:58 PM
Fluoranthene	0.499	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
Fluorene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/20/16 04:58 PM
Indeno[1,2,3-cd]pyrene	0.213	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
Phenanthrene	0.179	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
Pyrene	0.450	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 04:58 PM
IS: Acenaphthene-d10	66.8	0	50-200	0		%REC	10	05/20/16 04:58 PM
IS: Chrysene-d12	68.1	0	50-200	0		%REC	10	05/20/16 04:58 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/20/16 04:58 PM
IS: Perylene-d12	69.3	0	50-200	0		%REC	10	05/20/16 04:58 PM
IS: Phenanthrene-d10	63.3	0	50-200	0		%REC	10	05/20/16 04:58 PM
Surr: 2-Fluorobiphenyl	83.3	0	46-115	0		%REC	10	05/20/16 04:58 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605097-36
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:37 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	72.5	0	58-133	0		%REC	10	05/20/16 04:58 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605097-37
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:39 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	10.9	0.0926	0.278	0.139		mg/Kg-dry	5	05/25/16 09:00 PM
IS: Bismuth	84.1	0	30-120	0		%REC	5	05/25/16 09:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0706	0.0471	0.0942	0.0706	U	mg/Kg-dry	10	05/20/16 10:16 PM
Acenaphthylene	0.0706	0.0471	0.0942	0.0706	U	mg/Kg-dry	10	05/20/16 10:16 PM
Anthracene	0.0706	0.0471	0.0942	0.0706	U	mg/Kg-dry	10	05/20/16 10:16 PM
Benzo[a]anthracene	0.0838	0.0471	0.0942	0.0706	J	mg/Kg-dry	10	05/20/16 10:16 PM
Benzo[a]pyrene	0.113	0.0471	0.0942	0.0706		mg/Kg-dry	10	05/20/16 10:16 PM
Benzo[b]fluoranthene	0.113	0.0471	0.0942	0.0706		mg/Kg-dry	10	05/20/16 10:16 PM
Benzo[e]pyrene	0.0945	0.0471	0.0942	0.0706		mg/Kg-dry	10	05/20/16 10:16 PM
Benzo[g,h,i]perylene	0.0933	0.0471	0.0942	0.0706	J	mg/Kg-dry	10	05/20/16 10:16 PM
Benzo[j]fluoranthene	0.0620	0.0471	0.0942	0.0706	JN	mg/Kg-dry	10	05/20/16 10:16 PM
Benzo[k]fluoranthene	0.0575	0.0471	0.0942	0.0706	J	mg/Kg-dry	10	05/20/16 10:16 PM
Chrysene	0.110	0.0471	0.0942	0.0706		mg/Kg-dry	10	05/20/16 10:16 PM
Dibenz[a,h]anthracene	0.0706	0.0471	0.0942	0.0706	U	mg/Kg-dry	10	05/20/16 10:16 PM
Fluoranthene	0.142	0.0471	0.0942	0.0706		mg/Kg-dry	10	05/20/16 10:16 PM
Fluorene	0.0706	0.0471	0.0942	0.0706	U	mg/Kg-dry	10	05/20/16 10:16 PM
Indeno[1,2,3-cd]pyrene	0.0776	0.0471	0.0942	0.0706	J	mg/Kg-dry	10	05/20/16 10:16 PM
Phenanthrene	0.0706	0.0471	0.0942	0.0706	U	mg/Kg-dry	10	05/20/16 10:16 PM
Pyrene	0.135	0.0471	0.0942	0.0706		mg/Kg-dry	10	05/20/16 10:16 PM
IS: Acenaphthene-d10	64.2	0	50-200	0		%REC	10	05/20/16 10:16 PM
IS: Chrysene-d12	65.2	0	50-200	0		%REC	10	05/20/16 10:16 PM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/20/16 10:16 PM
IS: Perylene-d12	66.4	0	50-200	0		%REC	10	05/20/16 10:16 PM
IS: Phenanthrene-d10	60.9	0	50-200	0		%REC	10	05/20/16 10:16 PM
Surr: 2-Fluorobiphenyl	80.6	0	46-115	0		%REC	10	05/20/16 10:16 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605097-37
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:39 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	70.1	0	58-133	0		%REC	10	05/20/16 10:16 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605097-38
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:43 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	7.35	0.0862	0.259	0.129		mg/Kg-dry	5	05/25/16 09:06 PM
IS: Bismuth	85.4	0	30-120	0		%REC	5	05/25/16 09:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Acenaphthylene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Anthracene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Benzo[a]anthracene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Benzo[a]pyrene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Benzo[b]fluoranthene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Benzo[e]pyrene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Benzo[g,h,i]perylene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Benzo[j]fluoranthene	0.0727	0.0484	0.0969	0.0727	NU	mg/Kg-dry	10	05/20/16 10:55 PM
Benzo[k]fluoranthene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Chrysene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Dibenz[a,h]anthracene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Fluoranthene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Fluorene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Indeno[1,2,3-cd]pyrene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Phenanthrene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
Pyrene	0.0727	0.0484	0.0969	0.0727	U	mg/Kg-dry	10	05/20/16 10:55 PM
IS: Acenaphthene-d10	69.9	0	50-200	0		%REC	10	05/20/16 10:55 PM
IS: Chrysene-d12	68.3	0	50-200	0		%REC	10	05/20/16 10:55 PM
IS: Naphthalene-d8	111	0	50-200	0		%REC	10	05/20/16 10:55 PM
IS: Perylene-d12	69.8	0	50-200	0		%REC	10	05/20/16 10:55 PM
IS: Phenanthrene-d10	65.2	0	50-200	0		%REC	10	05/20/16 10:55 PM
Surr: 2-Fluorobiphenyl	80.2	0	46-115	0		%REC	10	05/20/16 10:55 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605097-38
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:43 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	68.8	0	58-133	0		%REC	10	05/20/16 10:55 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605097-39
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:45 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.27	0.0847	0.254	0.127		mg/Kg-dry	5	05/25/16 09:12 PM
IS: Bismuth	84.9	0	30-120	0		%REC	5	05/25/16 09:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 05:38 PM
Acenaphthylene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 05:38 PM
Anthracene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 05:38 PM
Benzo[a]anthracene	0.0684	0.0481	0.0962	0.0722	J	mg/Kg-dry	10	05/20/16 05:38 PM
Benzo[a]pyrene	0.0982	0.0481	0.0962	0.0722		mg/Kg-dry	10	05/20/16 05:38 PM
Benzo[b]fluoranthene	0.0951	0.0481	0.0962	0.0722	J	mg/Kg-dry	10	05/20/16 05:38 PM
Benzo[e]pyrene	0.0775	0.0481	0.0962	0.0722	J	mg/Kg-dry	10	05/20/16 05:38 PM
Benzo[g,h,i]perylene	0.0725	0.0481	0.0962	0.0722	J	mg/Kg-dry	10	05/20/16 05:38 PM
Benzo[j]fluoranthene	0.0504	0.0481	0.0962	0.0722	JN	mg/Kg-dry	10	05/20/16 05:38 PM
Benzo[k]fluoranthene	0.0487	0.0481	0.0962	0.0722	J	mg/Kg-dry	10	05/20/16 05:38 PM
Chrysene	0.0852	0.0481	0.0962	0.0722	J	mg/Kg-dry	10	05/20/16 05:38 PM
Dibenz[a,h]anthracene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 05:38 PM
Fluoranthene	0.0977	0.0481	0.0962	0.0722		mg/Kg-dry	10	05/20/16 05:38 PM
Fluorene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 05:38 PM
Indeno[1,2,3-cd]pyrene	0.0616	0.0481	0.0962	0.0722	J	mg/Kg-dry	10	05/20/16 05:38 PM
Phenanthrene	0.0722	0.0481	0.0962	0.0722	U	mg/Kg-dry	10	05/20/16 05:38 PM
Pyrene	0.0942	0.0481	0.0962	0.0722	J	mg/Kg-dry	10	05/20/16 05:38 PM
IS: Acenaphthene-d10	67.6	0	50-200	0		%REC	10	05/20/16 05:38 PM
IS: Chrysene-d12	67.3	0	50-200	0		%REC	10	05/20/16 05:38 PM
IS: Naphthalene-d8	109	0	50-200	0		%REC	10	05/20/16 05:38 PM
IS: Perylene-d12	68.5	0	50-200	0		%REC	10	05/20/16 05:38 PM
IS: Phenanthrene-d10	64.1	0	50-200	0		%REC	10	05/20/16 05:38 PM
Surr: 2-Fluorobiphenyl	81.4	0	46-115	0		%REC	10	05/20/16 05:38 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605097-39
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:45 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	70.5	0	58-133	0		%REC	10	05/20/16 05:38 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605097-40
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:46 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	4.05	0.0862	0.259	0.129		mg/Kg-dry	5	05/25/16 09:18 PM
IS: Bismuth	90.3	0	30-120	0		%REC	5	05/25/16 09:18 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Acenaphthylene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Benzo[a]anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Benzo[a]pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Benzo[b]fluoranthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Benzo[e]pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Benzo[g,h,i]perylene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Benzo[j]fluoranthene	0.0744	0.0496	0.0992	0.0744	NU	mg/Kg-dry	10	05/20/16 11:35 PM
Benzo[k]fluoranthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Chrysene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Dibenz[a,h]anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Fluoranthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Fluorene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Indeno[1,2,3-cd]pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Phenanthrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
Pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/20/16 11:35 PM
IS: Acenaphthene-d10	67.1	0	50-200	0		%REC	10	05/20/16 11:35 PM
IS: Chrysene-d12	67.8	0	50-200	0		%REC	10	05/20/16 11:35 PM
IS: Naphthalene-d8	110	0	50-200	0		%REC	10	05/20/16 11:35 PM
IS: Perylene-d12	69.0	0	50-200	0		%REC	10	05/20/16 11:35 PM
IS: Phenanthrene-d10	63.2	0	50-200	0		%REC	10	05/20/16 11:35 PM
Surr: 2-Fluorobiphenyl	80.4	0	46-115	0		%REC	10	05/20/16 11:35 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605097-40
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:46 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	71.7	0	58-133	0		%REC	10	05/20/16 11:35 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605097-41
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:57 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	13.1	0.0926	0.278	0.139		mg/Kg-dry	5	05/25/16 08:48 PM
IS: Bismuth	86.9	0	30-120	0		%REC	5	05/25/16 08:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/21/16 12:15 AM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/21/16 12:15 AM
Anthracene	0.0601	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/21/16 12:15 AM
Benzo[a]anthracene	0.670	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Benzo[a]pyrene	0.847	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Benzo[b]fluoranthene	0.837	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Benzo[e]pyrene	0.682	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Benzo[g,h,i]perylene	0.636	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Benzo[j]fluoranthene	0.438	0.0495	0.0989	0.0742	N	mg/Kg-dry	10	05/21/16 12:15 AM
Benzo[k]fluoranthene	0.421	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Chrysene	0.842	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Dibenz[a,h]anthracene	0.136	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Fluoranthene	1.14	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/21/16 12:15 AM
Indeno[1,2,3-cd]pyrene	0.538	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Phenanthrene	0.345	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
Pyrene	1.02	0.0495	0.0989	0.0742		mg/Kg-dry	10	05/21/16 12:15 AM
IS: Acenaphthene-d10	61.5	0	50-200	0		%REC	10	05/21/16 12:15 AM
IS: Chrysene-d12	61.3	0	50-200	0		%REC	10	05/21/16 12:15 AM
IS: Naphthalene-d8	100	0	50-200	0		%REC	10	05/21/16 12:15 AM
IS: Perylene-d12	62.0	0	50-200	0		%REC	10	05/21/16 12:15 AM
IS: Phenanthrene-d10	60.5	0	50-200	0		%REC	10	05/21/16 12:15 AM
Surr: 2-Fluorobiphenyl	80.8	0	46-115	0		%REC	10	05/21/16 12:15 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605097-41
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:57 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	71.6	0	58-133	0		%REC	10	05/21/16 12:15 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605097-42
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:58 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	8.74	0.0862	0.259	0.129		mg/Kg-dry	5	05/25/16 09:24 PM
IS: Bismuth	86.7	0	30-120	0		%REC	5	05/25/16 09:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/21/16 12:55 AM
Acenaphthylene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/21/16 12:55 AM
Anthracene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/21/16 12:55 AM
Benzo[a]anthracene	0.105	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/21/16 12:55 AM
Benzo[a]pyrene	0.132	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/21/16 12:55 AM
Benzo[b]fluoranthene	0.134	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/21/16 12:55 AM
Benzo[e]pyrene	0.109	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/21/16 12:55 AM
Benzo[g,h,i]perylene	0.102	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/21/16 12:55 AM
Benzo[j]fluoranthene	0.0691	0.0473	0.0945	0.0709	JN	mg/Kg-dry	10	05/21/16 12:55 AM
Benzo[k]fluoranthene	0.0702	0.0473	0.0945	0.0709	J	mg/Kg-dry	10	05/21/16 12:55 AM
Chrysene	0.135	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/21/16 12:55 AM
Dibenz[a,h]anthracene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/21/16 12:55 AM
Fluoranthene	0.180	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/21/16 12:55 AM
Fluorene	0.0709	0.0473	0.0945	0.0709	U	mg/Kg-dry	10	05/21/16 12:55 AM
Indeno[1,2,3-cd]pyrene	0.0868	0.0473	0.0945	0.0709	J	mg/Kg-dry	10	05/21/16 12:55 AM
Phenanthrene	0.0734	0.0473	0.0945	0.0709	J	mg/Kg-dry	10	05/21/16 12:55 AM
Pyrene	0.163	0.0473	0.0945	0.0709		mg/Kg-dry	10	05/21/16 12:55 AM
IS: Acenaphthene-d10	65.9	0	50-200	0		%REC	10	05/21/16 12:55 AM
IS: Chrysene-d12	65.9	0	50-200	0		%REC	10	05/21/16 12:55 AM
IS: Naphthalene-d8	105	0	50-200	0		%REC	10	05/21/16 12:55 AM
IS: Perylene-d12	66.5	0	50-200	0		%REC	10	05/21/16 12:55 AM
IS: Phenanthrene-d10	66.1	0	50-200	0		%REC	10	05/21/16 12:55 AM
Surr: 2-Fluorobiphenyl	79.4	0	46-115	0		%REC	10	05/21/16 12:55 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605097-42
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:58 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	68.7	0	58-133	0		%REC	10	05/21/16 12:55 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605097-43
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:59 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	9.16	0.0870	0.261	0.130		mg/Kg-dry	5	05/25/16 09:30 PM
IS: Bismuth	85.1	0	30-120	0		%REC	5	05/25/16 09:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Acenaphthene	0.0730	0.0487	0.0974	0.0730	U	mg/Kg-dry	10	05/21/16 01:35 AM
Acenaphthylene	0.0730	0.0487	0.0974	0.0730	U	mg/Kg-dry	10	05/21/16 01:35 AM
Anthracene	0.0730	0.0487	0.0974	0.0730	U	mg/Kg-dry	10	05/21/16 01:35 AM
Benzo[a]anthracene	0.0863	0.0487	0.0974	0.0730	J	mg/Kg-dry	10	05/21/16 01:35 AM
Benzo[a]pyrene	0.111	0.0487	0.0974	0.0730		mg/Kg-dry	10	05/21/16 01:35 AM
Benzo[b]fluoranthene	0.115	0.0487	0.0974	0.0730		mg/Kg-dry	10	05/21/16 01:35 AM
Benzo[e]pyrene	0.0799	0.0487	0.0974	0.0730	J	mg/Kg-dry	10	05/21/16 01:35 AM
Benzo[g,h,i]perylene	0.0929	0.0487	0.0974	0.0730	J	mg/Kg-dry	10	05/21/16 01:35 AM
Benzo[j]fluoranthene	0.0525	0.0487	0.0974	0.0730	JN	mg/Kg-dry	10	05/21/16 01:35 AM
Benzo[k]fluoranthene	0.0620	0.0487	0.0974	0.0730	J	mg/Kg-dry	10	05/21/16 01:35 AM
Chrysene	0.100	0.0487	0.0974	0.0730		mg/Kg-dry	10	05/21/16 01:35 AM
Dibenz[a,h]anthracene	0.0730	0.0487	0.0974	0.0730	U	mg/Kg-dry	10	05/21/16 01:35 AM
Fluoranthene	0.129	0.0487	0.0974	0.0730		mg/Kg-dry	10	05/21/16 01:35 AM
Fluorene	0.0730	0.0487	0.0974	0.0730	U	mg/Kg-dry	10	05/21/16 01:35 AM
Indeno[1,2,3-cd]pyrene	0.0808	0.0487	0.0974	0.0730	J	mg/Kg-dry	10	05/21/16 01:35 AM
Phenanthrene	0.0730	0.0487	0.0974	0.0730	U	mg/Kg-dry	10	05/21/16 01:35 AM
Pyrene	0.121	0.0487	0.0974	0.0730		mg/Kg-dry	10	05/21/16 01:35 AM
IS: Acenaphthene-d10	69.2	0	50-200	0		%REC	10	05/21/16 01:35 AM
IS: Chrysene-d12	68.2	0	50-200	0		%REC	10	05/21/16 01:35 AM
IS: Naphthalene-d8	112	0	50-200	0		%REC	10	05/21/16 01:35 AM
IS: Perylene-d12	69.2	0	50-200	0		%REC	10	05/21/16 01:35 AM
IS: Phenanthrene-d10	65.6	0	50-200	0		%REC	10	05/21/16 01:35 AM
Surr: 2-Fluorobiphenyl	79.2	0	46-115	0		%REC	10	05/21/16 01:35 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605097-43
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 03:59 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **DEW**
Surr: 4-Terphenyl-d14	72.0	0	58-133	0		%REC	10	05/21/16 01:35 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605097-44
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 04:00 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	6.40	0.0943	0.283	0.142		mg/Kg-dry	5	05/25/16 09:36 PM
IS: Bismuth	82.2	0	30-120	0		%REC	5	05/25/16 09:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Benzo[a]anthracene	0.0506	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/20/16 04:38 PM
Benzo[a]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Benzo[b]fluoranthene	0.0531	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/20/16 04:38 PM
Benzo[e]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Benzo[g,h,i]perylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Benzo[j]fluoranthene	0.0748	0.0499	0.0997	0.0748	NU	mg/Kg-dry	10	05/20/16 04:38 PM
Benzo[k]fluoranthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Chrysene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Dibenz[a,h]anthracene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Fluoranthene	0.104	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/20/16 04:38 PM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Indeno[1,2,3-cd]pyrene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/20/16 04:38 PM
Phenanthrene	0.0667	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/20/16 04:38 PM
Pyrene	0.0813	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/20/16 04:38 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/20/16 04:38 PM
IS: Chrysene-d12	82.5	0	50-200	0		%REC	10	05/20/16 04:38 PM
IS: Naphthalene-d8	95.6	0	50-200	0		%REC	10	05/20/16 04:38 PM
IS: Perylene-d12	85.2	0	50-200	0		%REC	10	05/20/16 04:38 PM
IS: Phenanthrene-d10	79.2	0	50-200	0		%REC	10	05/20/16 04:38 PM
Surr: 2-Fluorobiphenyl	87.7	0	46-115	0		%REC	10	05/20/16 04:38 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605097-44
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 04:00 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.1	0	58-133	0		%REC	10	05/20/16 04:38 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605097-45
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 04:01 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	5.46	0.0893	0.268	0.134		mg/Kg-dry	5	05/25/16 09:42 PM
IS: Bismuth	85.2	0	30-120	0		%REC	5	05/25/16 09:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Acenaphthylene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Anthracene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Benzo[a]anthracene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Benzo[a]pyrene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Benzo[b]fluoranthene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Benzo[e]pyrene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Benzo[g,h,i]perylene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Benzo[j]fluoranthene	0.0731	0.0487	0.0975	0.0731	NU	mg/Kg-dry	10	05/20/16 05:16 PM
Benzo[k]fluoranthene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Chrysene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Dibenz[a,h]anthracene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Fluoranthene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Fluorene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Indeno[1,2,3-cd]pyrene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Phenanthrene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
Pyrene	0.0731	0.0487	0.0975	0.0731	U	mg/Kg-dry	10	05/20/16 05:16 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/20/16 05:16 PM
IS: Chrysene-d12	85.9	0	50-200	0		%REC	10	05/20/16 05:16 PM
IS: Naphthalene-d8	97.7	0	50-200	0		%REC	10	05/20/16 05:16 PM
IS: Perylene-d12	87.6	0	50-200	0		%REC	10	05/20/16 05:16 PM
IS: Phenanthrene-d10	79.1	0	50-200	0		%REC	10	05/20/16 05:16 PM
Surr: 2-Fluorobiphenyl	88.7	0	46-115	0		%REC	10	05/20/16 05:16 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU019-01(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605097-45
Project No:	04285081.0000.00044	**Collection Date:**	05/08/16 04:01 PM
Lab Order:	1605097	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.0	0	58-133	0		%REC	10	05/20/16 05:16 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160518B

Sample ID **DCS1-74845**	Batch ID: **74845**	TestNo: **SW6020A**	Units: **mg/Kg**
SampType: **DCS**	Run ID: **ICP-MS3_160518B**	Analysis Date: **5/18/2016 2:52:00 PM**	Prep Date: **4/28/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.289	0.300	0.2500	0	116	80	120	0	0	

Qualifiers:	B	Analyte detected in the associated Method Blank	DF	Dilution Factor	
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit	Page 1 of 51
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	
	RL	Reporting Limit	S	Spike Recovery outside control limits	
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified	

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160519A

The QC data in batch 75169 applies to the following samples: 1605097-01A, 1605097-02A, 1605097-03A, 1605097-04A, 1605097-05A, 1605097-06A, 1605097-07A

Sample ID	**MB-75169**	Batch ID:	**75169**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MBLK**	Run ID:	**ICP-MS3_160519A**	Analysis Date:	**5/19/2016 4:40:00 PM**	Prep Date:	**5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		98.1	30	120			

Sample ID	**LCSD-75169**	Batch ID:	**75169**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**LCSD**	Run ID:	**ICP-MS3_160519A**	Analysis Date:	**5/19/2016 4:52:00 PM**	Prep Date:	**5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	49.6	0.300	50.00	0	99.1	84	118	1.22	20	
IS: Bismuth	50.0		200.0		90.2	30	120	0	0	

Sample ID	**LCS-75169**	Batch ID:	**75169**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**LCS**	Run ID:	**ICP-MS3_160519A**	Analysis Date:	**5/19/2016 5:04:00 PM**	Prep Date:	**5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	49.0	0.300	50.00	0	97.9	84	118			
IS: Bismuth	50.0		200.0		91.8	30	120			

Sample ID	**1605096-70A SD**	Batch ID:	**75169**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**SD**	Run ID:	**ICP-MS3_160519A**	Analysis Date:	**5/19/2016 5:16:00 PM**	Prep Date:	**5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	181	1.39	0	190.4				4.97	10	
IS: Bismuth	231		185.2		95.0	30	120	0	0	

Sample ID	**1605096-70A PDS**	Batch ID:	**75169**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**PDS**	Run ID:	**ICP-MS3_160519A**	Analysis Date:	**5/19/2016 6:15:00 PM**	Prep Date:	**5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	239	0.278	46.30	190.4	105	80	120			
IS: Bismuth	46.3		925.9		79.7	30	120			

Sample ID	**1605096-70A MS**	Batch ID:	**75169**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MS**	Run ID:	**ICP-MS3_160519A**	Analysis Date:	**5/19/2016 6:21:00 PM**	Prep Date:	**5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	233	0.273	45.45	190.4	93.2	84	118			
IS: Bismuth	45.5		181.8		80.8	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160519A

Sample ID **1605096-70A MSD**	Batch ID: **75169**	TestNo: **SW6020A**	Units: **mg/Kg-dry**		
SampType: **MSD**	Run ID: **ICP-MS3_160519A**	Analysis Date: **5/19/2016 6:27:00 PM**	Prep Date: **5/16/2016**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	216	0.291	48.54	190.4	52.7	84	118	7.47	20	S
IS: Bismuth	48.5		194.2		82.8	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160519A

Sample ID **ICV1-160519**	Batch ID: **R85905**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS3_160519A**	Analysis Date: **5/19/2016 1:04:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.0984	0.00100	0.100	0	98.4	90	110			
IS: Bismuth	0.200		0.200		87.9	30	120			

Sample ID **ILCVL-160519**	Batch ID: **R85905**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160519A**	Analysis Date: **5/19/2016 1:16:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000993	0.00100	0.00100	0	99.3	80	120			
IS: Bismuth	0.200		0.200		90.2	30	120			

Sample ID **CCV2-160519**	Batch ID: **R85905**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_160519A**	Analysis Date: **5/19/2016 4:22:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.200	0.00100	0.200	0	99.9	90	110			
IS: Bismuth	0.200		0.200		93.6	30	120			

Sample ID **LCVL2-160519**	Batch ID: **R85905**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160519A**	Analysis Date: **5/19/2016 4:34:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00101	0.00100	0.00100	0	101	80	120			
IS: Bismuth	0.200		0.200		95.5	30	120			

Sample ID **CCV3-160519**	Batch ID: **R85905**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_160519A**	Analysis Date: **5/19/2016 6:39:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.201	0.00100	0.200	0	101	90	110			
IS: Bismuth	0.200		0.200		85.1	30	120			

Sample ID **LCVL3-160519**	Batch ID: **R85905**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160519A**	Analysis Date: **5/19/2016 6:57:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00102	0.00100	0.00100	0	102	80	120			
IS: Bismuth	0.200		0.200		89.5	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160519A

Sample ID **CCV4-160519**	Batch ID: **R85905**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_160519A**	Analysis Date: **5/19/2016 8:09:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.192	0.00100	0.200	0	95.8	90	110			
IS: Bismuth	0.200		0.200		80.4	30	120			

Sample ID **LCVL4-160519**	Batch ID: **R85905**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160519A**	Analysis Date: **5/19/2016 8:21:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00100	0.00100	0.00100	0	100	80	120			
IS: Bismuth	0.200		0.200		82.4	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160525A

The QC data in batch 75203 applies to the following samples: 1605097-08A, 1605097-09A, 1605097-10A, 1605097-11A, 1605097-12A, 1605097-13A, 1605097-14A, 1605097-15A, 1605097-16A, 1605097-17A, 1605097-18A, 1605097-19A, 1605097-28A, 1605097-29A, 1605097-31A, 1605097-32A, 1605097-33A, 1605097-34A, 1605097-35A, 1605097-36A

Sample ID **MB-75203** Batch ID: **75203** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 4:42:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		107	30	120			

Sample ID **LCS-75203** Batch ID: **75203** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 4:48:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.6	0.300	50.00	0	101	84	118			
IS: Bismuth	50.0		200.0		104	30	120			

Sample ID **LCSD-75203** Batch ID: **75203** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 4:54:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.2	0.300	50.00	0	100	84	118	0.744	20	
IS: Bismuth	50.0		200.0		106	30	120	0	0	

Sample ID **1605097-28A SD** Batch ID: **75203** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 5:12:00 PM** Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	28.3	1.39	0	29.54				4.32	10	
IS: Bismuth	231		185.2		105	30	120	0	0	

Sample ID **1605097-28A PDS** Batch ID: **75203** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 6:12:00 PM** Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	78.8	0.278	46.30	29.54	106	80	120			
IS: Bismuth	46.3		925.9		88.4	30	120			

Sample ID **1605097-28A MS** Batch ID: **75203** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 6:18:00 PM** Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	76.6	0.278	46.30	29.54	102	84	118			
IS: Bismuth	46.3		185.2		88.3	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160525A

Sample ID **1605097-28A MSD**	Batch ID: **75203**	TestNo: **SW6020A**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 6:23:00 PM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	77.0	0.288	48.08	29.54	98.7	84	118	0.457	20	
IS: Bismuth	48.1		192.3		87.9	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160525A

The QC data in batch 75216 applies to the following samples: 1605097-37A, 1605097-38A, 1605097-39A, 1605097-40A, 1605097-41A, 1605097-42A, 1605097-43A, 1605097-44A, 1605097-45A

Sample ID **MB-75216** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 8:24:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		98.4	30	120			

Sample ID **LCS-75216** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 8:30:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.3	0.300	50.00	0	101	84	118			
IS: Bismuth	50.0		200.0		94.1	30	120			

Sample ID **LCSD-75216** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 8:36:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	51.2	0.300	50.00	0	102	84	118	1.63	20	
IS: Bismuth	50.0		200.0		94.6	30	120	0	0	

Sample ID **1605097-41A SD** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 8:54:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	11.8	1.39	0	13.12				10.5	10	R
IS: Bismuth	231		185.2		92.0	30	120	0	0	

Sample ID **1605097-41A PDS** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 9:54:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	58.9	0.278	46.30	13.12	99.0	80	120			
IS: Bismuth	46.3		925.9		85.0	30	120			

Sample ID **1605097-41A MS** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 10:00:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	59.1	0.270	45.05	13.12	102	84	118			
IS: Bismuth	45.0		180.2		85.4	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160525A

Sample ID **1605097-41A MSD**	Batch ID: **75216**	TestNo: **SW6020A**	Units: **mg/Kg-dry**		
SampType: **MSD**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 10:06:00 PM**	Prep Date: **5/18/2016**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	58.9	0.278	46.30	13.12	98.8	84	118	0.434	20	
IS: Bismuth	46.3		185.2		86.0	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160525A

Sample ID **ICV1-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 12:52:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.0996	0.00100	0.100	0	99.6	90	110			
IS: Bismuth	0.200		0.200		91.9	30	120			

Sample ID **ILCVL-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 1:04:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00103	0.00100	0.00100	0	103	80	120			
IS: Bismuth	0.200		0.200		93.6	30	120			

Sample ID **CCV2-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 4:18:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.204	0.00100	0.200	0	102	90	110			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID **LCVL2-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 4:30:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00113	0.00100	0.00100	0	113	80	120			
IS: Bismuth	0.200		0.200		107	30	120			

Sample ID **CCV3-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 6:35:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.203	0.00100	0.200	0	102	90	110			
IS: Bismuth	0.200		0.200		95.0	30	120			

Sample ID **LCVL3-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 6:48:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00108	0.00100	0.00100	0	108	80	120			
IS: Bismuth	0.200		0.200		95.2	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160525A

Sample ID **CCV4-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 8:00:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.201	0.00100	0.200	0	101	90	110			
IS: Bismuth	0.200		0.200		93.0	30	120			

Sample ID **LCVL4-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 8:12:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00101	0.00100	0.00100	0	101	80	120			
IS: Bismuth	0.200		0.200		95.5	30	120			

Sample ID **CCV5-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 10:18:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.204	0.00100	0.200	0	102	90	110			
IS: Bismuth	0.200		0.200		90.1	30	120			

Sample ID **LCVL5-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 10:30:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00103	0.00100	0.00100	0	103	80	120			
IS: Bismuth	0.200		0.200		94.0	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160427C

Sample ID **DCS1-74736**	Batch ID: **74736**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **DCS**	Run ID: **ICP-MS4_160427C**	Analysis Date: **4/27/2016 4:25:00 PM**	Prep Date: **4/21/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000486	0.00100	0.000500	0	97.2	80	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160429A

Sample ID **DCS1-74845**	Batch ID: **74845**	TestNo: **SW6020A**	Units: **mg/Kg**
SampType: **DCS**	Run ID: **ICP-MS4_160429A**	Analysis Date: **4/29/2016 12:19:00 PM**	Prep Date: **4/28/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.310	0.300	0.2500	0	124	70	130	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160516B

The QC data in batch 75135 applies to the following samples: 1605097-20A, 1605097-21A, 1605097-23A, 1605097-26A

Sample ID	**MB-75135**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MBLK**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 3:45:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		86.3	30	120			

Sample ID	**LCS-75135**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**LCS**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 3:47:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	49.0	0.300	50.00	0	97.9	84	118			
IS: Bismuth	50.0		200.0		90.6	30	120			

Sample ID	**LCSD-75135**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**LCSD**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 3:49:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	46.2	0.300	50.00	0	92.3	84	118	5.88	20	
IS: Bismuth	50.0		200.0		85.8	30	120	0	0	

Sample ID	**1605098-41A SD**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**SD**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 3:55:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	18.0	1.52	0	18.06				0.218	10	
IS: Bismuth	254		202.8		92.8	30	120	0	0	

Sample ID	**1605098-41A PDS**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**PDS**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 4:15:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	72.0	0.304	50.70	18.06	106	80	120			
IS: Bismuth	50.7		1014		85.8	30	120			

Sample ID	**1605098-41A MS**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MS**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 4:17:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	70.5	0.322	53.66	18.06	97.7	84	118			
IS: Bismuth	53.7		214.6		82.7	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160516B

Sample ID **1605098-41A MSD**	Batch ID: **75135**	TestNo: **SW6020A**	Units: **mg/Kg-dry**		
SampType: **MSD**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 4:19:00 PM**	Prep Date: **5/12/2016**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	67.6	0.313	52.14	18.06	95.0	84	118	4.15	20	
IS: Bismuth	52.1		208.6		86.4	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160516B

Sample ID **ICV-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 12:45:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.101	0.00100	0.100	0	101	90	110			
IS: Bismuth	0.200		0.200		104	30	120			

Sample ID **LCVL-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 1:04:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000965	0.00100	0.00100	0	96.5	80	120			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID **CCV4-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 3:36:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.203	0.00100	0.200	0	102	90	110			
IS: Bismuth	0.200		0.200		91.5	30	120			

Sample ID **LCVL4-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 3:41:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000968	0.00100	0.00100	0	96.8	80	120			
IS: Bismuth	0.200		0.200		94.1	30	120			

Sample ID **CCV5-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 4:25:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.194	0.00100	0.200	0	97.1	90	110			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID **LCVL5-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 4:29:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000940	0.00100	0.00100	0	94.0	80	120			
IS: Bismuth	0.200		0.200		98.8	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

The QC data in batch 75180 applies to the following samples: 1605097-27A, 1605097-30A

Sample ID	**MB-75180**	Batch ID:	**75180**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:22:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000900	0.00100								U
IS: Bismuth	0.200		0.200		100	30	120			

Sample ID	**LCS-75180**	Batch ID:	**75180**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:24:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.197	0.00100	0.200	0	98.4	88	115			
IS: Bismuth	0.200		0.200		95.8	30	120			

Sample ID	**LCSD-75180**	Batch ID:	**75180**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCSD**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:26:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.201	0.00100	0.200	0	100	88	115	1.93	20	
IS: Bismuth	0.200		0.200		94.8	30	120	0	0	

Sample ID	**1605097-27A SD**	Batch ID:	**75180**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**SD**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:32:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00450	0.00500	0	0				0	10	U
IS: Bismuth	1.00		0.200		96.7	30	120	0	0	

Sample ID	**1605097-27A PDS**	Batch ID:	**75180**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**PDS**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:52:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.200	0.00100	0.200	0	100	80	120			
IS: Bismuth	0.200		0.200		93.7	30	120			

Sample ID	**1605097-27A MS**	Batch ID:	**75180**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**ICP-MS4_160520C**	Analysis Date:	**5/20/2016 1:54:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.162	0.00100	0.200	0	80.9	88	115			S
IS: Bismuth	0.200		0.200		94.8	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

Sample ID **1605097-27A MSD**	Batch ID: **75180**	TestNo: **SW6020A**	Units: **mg/L**		
SampType: **MSD**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 1:56:00 PM**	Prep Date: **5/19/2016**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.196	0.00100	0.200	0	97.9	88	115	19.1	20	
IS: Bismuth	0.200		0.200		96.4	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

Sample ID **ICV-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 11:28:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.102	0.00100	0.100	0	102	90	110			
IS: Bismuth	0.200		0.200		98.5	30	120			

Sample ID **LCVL-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 11:40:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000967	0.00100	0.00100	0	96.7	80	120			
IS: Bismuth	0.200		0.200		96.1	30	120			

Sample ID **CCV2-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 1:06:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.200	0.00100	0.200	0	99.9	90	110			
IS: Bismuth	0.200		0.200		93.7	30	120			

Sample ID **LCVL2-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 1:11:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000963	0.00100	0.00100	0	96.3	80	120			
IS: Bismuth	0.200		0.200		96.0	30	120			

Sample ID **CCV3-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 1:58:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.198	0.00100	0.200	0	98.9	90	110			
IS: Bismuth	0.200		0.200		96.1	30	120			

Sample ID **LCVL3-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 2:04:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000977	0.00100	0.00100	0	97.7	80	120			
IS: Bismuth	0.200		0.200		96.8	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

Sample ID **CCV4-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 2:24:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.197	0.00100	0.200	0	98.4	90	110			
IS: Bismuth	0.200		0.200		96.0	30	120			

Sample ID **LCVL4-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 2:41:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000974	0.00100	0.00100	0	97.4	80	120			
IS: Bismuth	0.200		0.200		95.3	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160502D

Sample ID **DCS-74876**	Batch ID: **74876**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **DCS**	Run ID: **GCMS6_160502D**	Analysis Date: **5/2/2016 1:24:00 PM**	Prep Date: **4/29/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00921	0.0100	0.01000	0	92.1	20	200	0	0	
Acenaphthylene	0.00964	0.0100	0.01000	0	96.4	20	200	0	0	
Anthracene	0.00923	0.0100	0.01000	0	92.3	20	200	0	0	
Benzo[a]anthracene	0.00934	0.0100	0.01000	0	93.4	20	200	0	0	
Benzo[a]pyrene	0.00897	0.0100	0.01000	0	89.7	20	200	0	0	
Benzo[b]fluoranthene	0.00923	0.0100	0.01000	0	92.3	20	200	0	0	
Benzo[e]pyrene	0.00939	0.0100	0.01000	0	93.9	20	200	0	0	
Benzo[g,h,i]perylene	0.0109	0.0100	0.01000	0	109	20	200	0	0	
Benzo[j]fluoranthene	0.00874	0.0100	0.01000	0	87.4	20	200	0	0	N
Benzo[k]fluoranthene	0.00895	0.0100	0.01000	0	89.5	20	200	0	0	
Chrysene	0.00935	0.0100	0.01000	0	93.5	20	200	0	0	
Dibenz[a,h]anthracene	0.0102	0.0100	0.01000	0	102	20	200	0	0	
Fluoranthene	0.0109	0.0100	0.01000	0	109	20	200	0	0	
Fluorene	0.00957	0.0100	0.01000	0	95.7	20	200	0	0	
Indeno[1,2,3-cd]pyrene	0.0102	0.0100	0.01000	0	102	20	200	0	0	
Phenanthrene	0.0100	0.0100	0.01000	0	100	20	200	0	0	
Pyrene	0.0107	0.0100	0.01000	0	107	20	200	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160519A

The QC data in batch 75161 applies to the following samples: 1605097-01A, 1605097-02A, 1605097-03A, 1605097-04A, 1605097-05A, 1605097-06A, 1605097-07A, 1605097-08A, 1605097-09A, 1605097-10A, 1605097-11A, 1605097-12A, 1605097-13A

Sample ID **LCS-75161** Batch ID: **75161** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS6_160519A** Analysis Date: **5/19/2016 9:43:00 AM** Prep Date: **5/15/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.810	0.0100	1.000	0	81.0	44	111			
Acenaphthylene	0.857	0.0100	1.000	0	85.7	39	116			
Anthracene	0.846	0.0100	1.000	0	84.6	50	114			
Benzo[a]anthracene	0.894	0.0100	1.000	0	89.4	54	122			
Benzo[a]pyrene	0.831	0.0100	1.000	0	83.1	50	125			
Benzo[b]fluoranthene	0.868	0.0100	1.000	0	86.8	53	128			
Benzo[e]pyrene	0.876	0.0100	1.000	0	87.6	43	140			
Benzo[g,h,i]perylene	0.839	0.0100	1.000	0	83.9	49	127			
Benzo[j]fluoranthene	0.869	0.0100	1.000	0	86.9	45	125			N
Benzo[k]fluoranthene	0.879	0.0100	1.000	0	87.9	56	123			
Chrysene	0.855	0.0100	1.000	0	85.5	57	118			
Dibenz[a,h]anthracene	0.816	0.0100	1.000	0	81.6	50	129			
Fluoranthene	0.927	0.0100	1.000	0	92.7	55	119			
Fluorene	0.814	0.0100	1.000	0	81.4	47	114			
Indeno[1,2,3-cd]pyrene	0.794	0.0100	1.000	0	79.4	49	130			
Phenanthrene	0.826	0.0100	1.000	0	82.6	49	113			
Pyrene	0.904	0.0100	1.000	0	90.4	55	117			
IS: Acenaphthene-d10	4.00		4.000		58.1	50	200			
IS: Chrysene-d12	4.00		4.000		62.7	50	200			
IS: Naphthalene-d8	4.00		4.000		99.8	50	200			
IS: Perylene-d12	4.00		4.000		67.1	50	200			
IS: Phenanthrene-d10	4.00		4.000		54.9	50	200			
Surr: 2-Fluorobiphenyl	0.817		1.000		81.7	46	115			
Surr: 4-Terphenyl-d14	0.734		1.000		73.4	58	133			

Sample ID **MB-75161** Batch ID: **75161** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS6_160519A** Analysis Date: **5/19/2016 10:27:00 AM** Prep Date: **5/15/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160519A

Sample ID **MB-75161**	Batch ID: **75161**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS6_160519A**	Analysis Date: **5/19/2016 10:27:00 AM**	Prep Date: **5/15/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		57.5	50	200			
IS: Chrysene-d12	4.00		4.000		58.7	50	200			
IS: Naphthalene-d8	4.00		4.000		97.4	50	200			
IS: Perylene-d12	4.00		4.000		60.7	50	200			
IS: Phenanthrene-d10	4.00		4.000		55.4	50	200			
Surr: 2-Fluorobiphenyl	0.813		1.000		81.3	46	115			
Surr: 4-Terphenyl-d14	0.718		1.000		71.8	58	133			

Sample ID **1605097-03AMS**	Batch ID: **75161**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160519A**	Analysis Date: **5/19/2016 5:47:00 PM**	Prep Date: **5/15/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.700	0.0977	0.9766	0	71.7	44	111			
Acenaphthylene	0.729	0.0977	0.9766	0	74.6	39	116			
Anthracene	0.770	0.0977	0.9766	0	78.8	50	114			
Benzo[a]anthracene	0.774	0.0977	0.9766	0	79.3	54	122			
Benzo[a]pyrene	0.745	0.0977	0.9766	0	76.3	50	125			
Benzo[b]fluoranthene	0.784	0.0977	0.9766	0	80.3	53	128			
Benzo[e]pyrene	0.868	0.0977	0.9766	0	88.8	43	140			
Benzo[g,h,i]perylene	0.725	0.0977	0.9766	0	74.3	49	127			
Benzo[j]fluoranthene	0.829	0.0977	0.9766	0	84.9	45	125			N
Benzo[k]fluoranthene	0.782	0.0977	0.9766	0	80.1	56	123			
Chrysene	0.772	0.0977	0.9766	0	79.1	57	118			
Dibenz[a,h]anthracene	0.703	0.0977	0.9766	0	71.9	50	129			
Fluoranthene	0.811	0.0977	0.9766	0	83.0	55	119			
Fluorene	0.708	0.0977	0.9766	0	72.5	47	114			
Indeno[1,2,3-cd]pyrene	0.695	0.0977	0.9766	0	71.2	49	130			
Phenanthrene	0.771	0.0977	0.9766	0	78.9	49	113			
Pyrene	0.808	0.0977	0.9766	0	82.8	55	117			
IS: Acenaphthene-d10	39.1		3.906		68.3	50	200			
IS: Chrysene-d12	39.1		3.906		67.4	50	200			
IS: Naphthalene-d8	39.1		3.906		110	50	200			
IS: Perylene-d12	39.1		3.906		67.6	50	200			
IS: Phenanthrene-d10	39.1		3.906		65.1	50	200			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160519A

Sample ID **1605097-03AMS**	Batch ID: **75161**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160519A**	Analysis Date: **5/19/2016 5:47:00 PM**	Prep Date: **5/15/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	0.830		0.9766		85.0	46	115			
Surr: 4-Terphenyl-d14	0.750		0.9766		76.8	58	133			

Sample ID **1605097-03AMSD**	Batch ID: **75161**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS6_160519A**	Analysis Date: **5/19/2016 6:27:00 PM**	Prep Date: **5/15/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.688	0.0945	0.9452	0	72.8	44	111	1.69	20	
Acenaphthylene	0.717	0.0945	0.9452	0	75.9	39	116	1.53	20	
Anthracene	0.728	0.0945	0.9452	0	77.0	50	114	5.61	20	
Benzo[a]anthracene	0.747	0.0945	0.9452	0	79.1	54	122	3.54	20	
Benzo[a]pyrene	0.713	0.0945	0.9452	0	75.4	50	125	4.40	20	
Benzo[b]fluoranthene	0.740	0.0945	0.9452	0	78.2	53	128	5.84	20	
Benzo[e]pyrene	0.830	0.0945	0.9452	0	87.8	43	140	4.43	20	
Benzo[g,h,i]perylene	0.686	0.0945	0.9452	0	72.6	49	127	5.61	20	
Benzo[j]fluoranthene	0.791	0.0945	0.9452	0	83.7	45	125	4.61	20	N
Benzo[k]fluoranthene	0.747	0.0945	0.9452	0	79.1	56	123	4.52	20	
Chrysene	0.734	0.0945	0.9452	0	77.6	57	118	5.08	20	
Dibenz[a,h]anthracene	0.667	0.0945	0.9452	0	70.6	50	129	5.16	20	
Fluoranthene	0.760	0.0945	0.9452	0	80.4	55	119	6.43	20	
Fluorene	0.682	0.0945	0.9452	0	72.2	47	114	3.72	20	
Indeno[1,2,3-cd]pyrene	0.657	0.0945	0.9452	0	69.5	49	130	5.61	20	
Phenanthrene	0.729	0.0945	0.9452	0	77.2	49	113	5.55	20	
Pyrene	0.749	0.0945	0.9452	0	79.3	55	117	7.59	20	
IS: Acenaphthene-d10	37.8		3.781		69.2	50	200	0	0	
IS: Chrysene-d12	37.8		3.781		67.3	50	200	0	0	
IS: Naphthalene-d8	37.8		3.781		111	50	200	0	0	
IS: Perylene-d12	37.8		3.781		67.9	50	200	0	0	
IS: Phenanthrene-d10	37.8		3.781		66.1	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.832		0.9452		88.1	46	115	0	0	
Surr: 4-Terphenyl-d14	0.699		0.9452		73.9	58	133	0	0	

Sample ID **SB-160519**	Batch ID: **75161**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS6_160519A**	Analysis Date: **5/19/2016 9:04:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100	0							U
Acenaphthylene	0.00750	0.0100	0							U
Anthracene	0.00750	0.0100	0							U
Benzo[a]anthracene	0.00750	0.0100	0							U
Benzo[a]pyrene	0.00750	0.0100	0							U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160519A

Sample ID **SB-160519**	Batch ID: **75161**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**		
SampType: **SBLK**	Run ID: **GCMS6_160519A**	Analysis Date: **5/19/2016 9:04:00 PM**	Prep Date:		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[b]fluoranthene	0.00750	0.0100	0							U
Benzo[e]pyrene	0.00750	0.0100	0							U
Benzo[g,h,i]perylene	0.00750	0.0100	0							U
Benzo[j]fluoranthene	0.00750	0.0100	0							NU
Benzo[k]fluoranthene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Dibenz[a,h]anthracene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Fluorene	0.00750	0.0100	0							U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100	0							U
Phenanthrene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160519A

Sample ID **ICV-160519**	Batch ID: **R85896**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS6_160519A**	Analysis Date: **5/19/2016 9:03:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.96	0.0100	2.000	0	97.9	80	120			
Acenaphthylene	2.09	0.0100	2.000	0	104	80	120			
Anthracene	1.83	0.0100	2.000	0	91.6	80	120			
Benzo[a]anthracene	1.96	0.0100	2.000	0	97.9	80	120			
Benzo[a]pyrene	1.90	0.0100	2.000	0	94.8	80	120			
Benzo[b]fluoranthene	1.94	0.0100	2.000	0	97.1	80	120			
Benzo[e]pyrene	1.85	0.0100	2.000	0	92.7	80	120			
Benzo[g,h,i]perylene	1.83	0.0100	2.000	0	91.6	80	120			
Benzo[j]fluoranthene	1.90	0.0100	2.000	0	95.1	80	120			N
Benzo[k]fluoranthene	1.92	0.0100	2.000	0	96.2	80	120			
Chrysene	1.84	0.0100	2.000	0	92.0	80	120			
Dibenz[a,h]anthracene	1.83	0.0100	2.000	0	91.6	80	120			
Fluoranthene	1.95	0.0100	2.000	0	97.4	80	120			
Fluorene	2.02	0.0100	2.000	0	101	80	120			
Indeno[1,2,3-cd]pyrene	1.77	0.0100	2.000	0	88.7	80	120			
Phenanthrene	1.88	0.0100	2.000	0	93.9	80	120			
Pyrene	1.89	0.0100	2.000	0	94.6	80	120			
IS: Acenaphthene-d10	4.00		4.000		87.3	50	200			
IS: Chrysene-d12	4.00		4.000		91.7	50	200			
IS: Naphthalene-d8	4.00		4.000		145	50	200			
IS: Perylene-d12	4.00		4.000		91.7	50	200			
IS: Phenanthrene-d10	4.00		4.000		90.9	50	200			
Surr: 2-Fluorobiphenyl	2.07		2.000		104	65	120			
Surr: 4-Terphenyl-d14	1.86		2.000		92.9	65	120			

Sample ID **ICV2-160519**	Batch ID: **R85896**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS6_160519A**	Analysis Date: **5/19/2016 7:44:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.94	0.0100	2.000	0	97.1	80	120			
Acenaphthylene	2.10	0.0100	2.000	0	105	80	120			
Anthracene	1.82	0.0100	2.000	0	91.2	80	120			
Benzo[a]anthracene	1.98	0.0100	2.000	0	98.8	80	120			
Benzo[a]pyrene	1.89	0.0100	2.000	0	94.5	80	120			
Benzo[b]fluoranthene	1.94	0.0100	2.000	0	97.2	80	120			
Benzo[e]pyrene	1.88	0.0100	2.000	0	93.9	80	120			
Benzo[g,h,i]perylene	1.79	0.0100	2.000	0	89.4	80	120			
Benzo[j]fluoranthene	1.90	0.0100	2.000	0	95.1	80	120			N
Benzo[k]fluoranthene	1.92	0.0100	2.000	0	96.0	80	120			
Chrysene	1.86	0.0100	2.000	0	92.9	80	120			
Dibenz[a,h]anthracene	1.79	0.0100	2.000	0	89.5	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160519A

Sample ID **ICV2-160519**	Batch ID: **R85896**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS6_160519A**	Analysis Date: **5/19/2016 7:44:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.94	0.0100	2.000	0	97.2	80	120			
Fluorene	2.01	0.0100	2.000	0	101	80	120			
Indeno[1,2,3-cd]pyrene	1.74	0.0100	2.000	0	87.1	80	120			
Phenanthrene	1.88	0.0100	2.000	0	94.0	80	120			
Pyrene	1.87	0.0100	2.000	0	93.4	80	120			
IS: Acenaphthene-d10	4.00		4.000		90.3	50	200			
IS: Chrysene-d12	4.00		4.000		92.0	50	200			
IS: Naphthalene-d8	4.00		4.000		144	50	200			
IS: Perylene-d12	4.00		4.000		92.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		93.2	50	200			
Surr: 2-Fluorobiphenyl	2.04		2.000		102	65	120			
Surr: 4-Terphenyl-d14	1.84		2.000		92.2	65	120			

Sample ID **CCV1-160519**	Batch ID: **R85896**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS6_160519A**	Analysis Date: **5/20/2016 4:23:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.871	0.0100	1.000	0	87.1	50	150			
Acenaphthylene	0.943	0.0100	1.000	0	94.3	50	150			
Anthracene	0.904	0.0100	1.000	0	90.4	50	150			
Benzo[a]anthracene	0.906	0.0100	1.000	0	90.6	50	150			
Benzo[a]pyrene	0.873	0.0100	1.000	0	87.3	50	150			
Benzo[b]fluoranthene	0.877	0.0100	1.000	0	87.7	50	150			
Benzo[e]pyrene	0.905	0.0100	1.000	0	90.5	50	150			
Benzo[g,h,i]perylene	0.810	0.0100	1.000	0	81.0	50	150			
Benzo[j]fluoranthene	0.916	0.0100	1.000	0	91.6	50	150			N
Benzo[k]fluoranthene	0.890	0.0100	1.000	0	89.0	50	150			
Chrysene	0.862	0.0100	1.000	0	86.2	50	150			
Dibenz[a,h]anthracene	0.832	0.0100	1.000	0	83.2	50	150			
Fluoranthene	0.895	0.0100	1.000	0	89.5	50	150			
Fluorene	0.869	0.0100	1.000	0	86.9	50	150			
Indeno[1,2,3-cd]pyrene	0.810	0.0100	1.000	0	81.0	50	150			
Phenanthrene	0.847	0.0100	1.000	0	84.7	50	150			
Pyrene	0.877	0.0100	1.000	0	87.7	50	150			
IS: Acenaphthene-d10	4.00		4.000		66.9	50	200			
IS: Chrysene-d12	4.00		4.000		65.3	50	200			
IS: Naphthalene-d8	4.00		4.000		108	50	200			
IS: Perylene-d12	4.00		4.000		66.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		63.7	50	200			
Surr: 2-Fluorobiphenyl	1.03		1.000		103	50	150			
Surr: 4-Terphenyl-d14	0.865		1.000		86.5	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160520A

The QC data in batch 75175 applies to the following samples: 1605097-14A, 1605097-15A, 1605097-28A, 1605097-29A, 1605097-31A, 1605097-32A, 1605097-33A, 1605097-34A, 1605097-35A, 1605097-36A, 1605097-37A, 1605097-38A, 1605097-39A, 1605097-40A, 1605097-41A, 1605097-42A, 1605097-43A

Sample ID **LCS-75175** Batch ID: **75175** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS6_160520A** Analysis Date: **5/20/2016 9:42:00 AM** Prep Date: **5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.640	0.0100	1.000	0	64.0	44	111			
Acenaphthylene	0.679	0.0100	1.000	0	67.9	39	116			
Anthracene	0.682	0.0100	1.000	0	68.2	50	114			
Benzo[a]anthracene	0.681	0.0100	1.000	0	68.1	54	122			
Benzo[a]pyrene	0.640	0.0100	1.000	0	64.0	50	125			
Benzo[b]fluoranthene	0.664	0.0100	1.000	0	66.4	53	128			
Benzo[e]pyrene	0.749	0.0100	1.000	0	74.9	43	140			
Benzo[g,h,i]perylene	0.626	0.0100	1.000	0	62.6	49	127			
Benzo[j]fluoranthene	0.705	0.0100	1.000	0	70.5	45	125			N
Benzo[k]fluoranthene	0.678	0.0100	1.000	0	67.8	56	123			
Chrysene	0.650	0.0100	1.000	0	65.0	57	118			
Dibenz[a,h]anthracene	0.624	0.0100	1.000	0	62.4	50	129			
Fluoranthene	0.732	0.0100	1.000	0	73.2	55	119			
Fluorene	0.638	0.0100	1.000	0	63.8	47	114			
Indeno[1,2,3-cd]pyrene	0.605	0.0100	1.000	0	60.5	49	130			
Phenanthrene	0.657	0.0100	1.000	0	65.7	49	113			
Pyrene	0.714	0.0100	1.000	0	71.4	55	117			
IS: Acenaphthene-d10	4.00		4.000		60.5	50	200			
IS: Chrysene-d12	4.00		4.000		66.4	50	200			
IS: Naphthalene-d8	4.00		4.000		98.4	50	200			
IS: Perylene-d12	4.00		4.000		70.3	50	200			
IS: Phenanthrene-d10	4.00		4.000		56.6	50	200			
Surr: 2-Fluorobiphenyl	0.781		1.000		78.1	46	115			
Surr: 4-Terphenyl-d14	0.716		1.000		71.6	58	133			

Sample ID **MB-75175** Batch ID: **75175** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS6_160520A** Analysis Date: **5/20/2016 10:21:00 AM** Prep Date: **5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160520A

Sample ID **MB-75175**	Batch ID: **75175**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS6_160520A**	Analysis Date: **5/20/2016 10:21:00 AM**	Prep Date: **5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		59.5	50	200			
IS: Chrysene-d12	4.00		4.000		63.8	50	200			
IS: Naphthalene-d8	4.00		4.000		97.5	50	200			
IS: Perylene-d12	4.00		4.000		66.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		54.5	50	200			
Surr: 2-Fluorobiphenyl	0.813		1.000		81.3	46	115			
Surr: 4-Terphenyl-d14	0.746		1.000		74.6	58	133			

Sample ID **1605097-39AMS**	Batch ID: **75175**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160520A**	Analysis Date: **5/20/2016 6:18:00 PM**	Prep Date: **5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.650	0.0978	0.9785	0	66.4	44	111			
Acenaphthylene	0.679	0.0978	0.9785	0	69.4	39	116			
Anthracene	0.687	0.0978	0.9785	0	70.2	50	114			
Benzo[a]anthracene	0.725	0.0978	0.9785	0.06843	67.1	54	122			
Benzo[a]pyrene	0.723	0.0978	0.9785	0.09817	63.9	50	125			
Benzo[b]fluoranthene	0.750	0.0978	0.9785	0.09509	67.0	53	128			
Benzo[e]pyrene	0.814	0.0978	0.9785	0.07748	75.3	43	140			
Benzo[g,h,i]perylene	0.687	0.0978	0.9785	0.07247	62.8	49	127			
Benzo[j]fluoranthene	0.747	0.0978	0.9785	0.05043	71.2	45	125			N
Benzo[k]fluoranthene	0.703	0.0978	0.9785	0.04870	66.8	56	123			
Chrysene	0.719	0.0978	0.9785	0.08518	64.7	57	118			
Dibenz[a,h]anthracene	0.623	0.0978	0.9785	0	63.7	50	129			
Fluoranthene	0.755	0.0978	0.9785	0.09769	67.1	55	119			
Fluorene	0.644	0.0978	0.9785	0	65.8	47	114			
Indeno[1,2,3-cd]pyrene	0.656	0.0978	0.9785	0.06160	60.8	49	130			
Phenanthrene	0.693	0.0978	0.9785	0	70.8	49	113			
Pyrene	0.750	0.0978	0.9785	0.09423	67.0	55	117			
IS: Acenaphthene-d10	39.1		3.914		70.1	50	200			
IS: Chrysene-d12	39.1		3.914		67.8	50	200			
IS: Naphthalene-d8	39.1		3.914		112	50	200			
IS: Perylene-d12	39.1		3.914		69.2	50	200			
IS: Phenanthrene-d10	39.1		3.914		66.0	50	200			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160520A

Sample ID **1605097-39AMS**	Batch ID: **75175**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS6_160520A**	Analysis Date: **5/20/2016 6:18:00 PM**	Prep Date: **5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	0.779		0.9785		79.6	46	115			
Surr: 4-Terphenyl-d14	0.676		0.9785		69.0	58	133			

Sample ID **1605097-39AMSD**	Batch ID: **75175**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS6_160520A**	Analysis Date: **5/20/2016 6:58:00 PM**	Prep Date: **5/16/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.684	0.0986	0.9862	0	69.4	44	111	5.11	20	
Acenaphthylene	0.698	0.0986	0.9862	0	70.7	39	116	2.65	20	
Anthracene	0.710	0.0986	0.9862	0	72.0	50	114	3.36	20	
Benzo[a]anthracene	0.717	0.0986	0.9862	0.06843	65.8	54	122	1.15	20	
Benzo[a]pyrene	0.688	0.0986	0.9862	0.09817	59.8	50	125	4.99	20	
Benzo[b]fluoranthene	0.714	0.0986	0.9862	0.09509	62.7	53	128	4.97	20	
Benzo[e]pyrene	0.787	0.0986	0.9862	0.07748	71.9	43	140	3.36	20	
Benzo[g,h,i]perylene	0.663	0.0986	0.9862	0.07247	59.8	49	127	3.65	20	
Benzo[j]fluoranthene	0.747	0.0986	0.9862	0.05043	70.7	45	125	0.049	20	N
Benzo[k]fluoranthene	0.692	0.0986	0.9862	0.04870	65.3	56	123	1.47	20	
Chrysene	0.706	0.0986	0.9862	0.08518	62.9	57	118	1.83	20	
Dibenz[a,h]anthracene	0.634	0.0986	0.9862	0	64.3	50	129	1.71	20	
Fluoranthene	0.759	0.0986	0.9862	0.09769	67.0	55	119	0.565	20	
Fluorene	0.681	0.0986	0.9862	0	69.0	47	114	5.52	20	
Indeno[1,2,3-cd]pyrene	0.638	0.0986	0.9862	0.06160	58.4	49	130	2.87	20	
Phenanthrene	0.726	0.0986	0.9862	0	73.6	49	113	4.65	20	
Pyrene	0.747	0.0986	0.9862	0.09423	66.2	55	117	0.383	20	
IS: Acenaphthene-d10	39.4		3.945		63.7	50	200	0	0	
IS: Chrysene-d12	39.4		3.945		63.0	50	200	0	0	
IS: Naphthalene-d8	39.4		3.945		105	50	200	0	0	
IS: Perylene-d12	39.4		3.945		63.4	50	200	0	0	
IS: Phenanthrene-d10	39.4		3.945		62.5	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.810		0.9862		82.1	46	115	0	0	
Surr: 4-Terphenyl-d14	0.703		0.9862		71.2	58	133	0	0	

Sample ID **SBLK-160520**	Batch ID: **75175**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS6_160520A**	Analysis Date: **5/20/2016 9:35:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100	0							U
Acenaphthylene	0.00750	0.0100	0							U
Anthracene	0.00750	0.0100	0							U
Benzo[a]anthracene	0.00750	0.0100	0							U
Benzo[a]pyrene	0.00750	0.0100	0							U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160520A

Sample ID **SBLK-160520**	Batch ID: **75175**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS6_160520A**	Analysis Date: **5/20/2016 9:35:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[b]fluoranthene	0.00750	0.0100	0							U
Benzo[e]pyrene	0.00750	0.0100	0							U
Benzo[g,h,i]perylene	0.00750	0.0100	0							U
Benzo[j]fluoranthene	0.00750	0.0100	0							NU
Benzo[k]fluoranthene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Dibenz[a,h]anthracene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Fluorene	0.00750	0.0100	0							U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100	0							U
Phenanthrene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							
Surr: 2-Fluorobiphenyl	0.000220		0							
Surr: 4-Terphenyl-d14	0.000190		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160520A

Sample ID **ICV-160520**	Batch ID: **R85926**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS6_160520A**	Analysis Date: **5/20/2016 9:02:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.98	0.0100	2.000	0	99.2	80	120			
Acenaphthylene	2.12	0.0100	2.000	0	106	80	120			
Anthracene	1.83	0.0100	2.000	0	91.5	80	120			
Benzo[a]anthracene	1.95	0.0100	2.000	0	97.7	80	120			
Benzo[a]pyrene	1.90	0.0100	2.000	0	94.8	80	120			
Benzo[b]fluoranthene	1.95	0.0100	2.000	0	97.6	80	120			
Benzo[e]pyrene	1.87	0.0100	2.000	0	93.5	80	120			
Benzo[g,h,i]perylene	1.81	0.0100	2.000	0	90.3	80	120			
Benzo[j]fluoranthene	1.89	0.0100	2.000	0	94.7	80	120			N
Benzo[k]fluoranthene	1.90	0.0100	2.000	0	95.2	80	120			
Chrysene	1.86	0.0100	2.000	0	93.1	80	120			
Dibenz[a,h]anthracene	1.83	0.0100	2.000	0	91.6	80	120			
Fluoranthene	1.97	0.0100	2.000	0	98.7	80	120			
Fluorene	2.03	0.0100	2.000	0	101	80	120			
Indeno[1,2,3-cd]pyrene	1.79	0.0100	2.000	0	89.4	80	120			
Phenanthrene	1.88	0.0100	2.000	0	93.9	80	120			
Pyrene	1.89	0.0100	2.000	0	94.6	80	120			
IS: Acenaphthene-d10	4.00		4.000		85.8	50	200			
IS: Chrysene-d12	4.00		4.000		89.6	50	200			
IS: Naphthalene-d8	4.00		4.000		144	50	200			
IS: Perylene-d12	4.00		4.000		90.1	50	200			
IS: Phenanthrene-d10	4.00		4.000		88.5	50	200			
Surr: 2-Fluorobiphenyl	2.12		2.000		106	65	120			
Surr: 4-Terphenyl-d14	1.85		2.000		92.4	65	120			

Sample ID **ICV2-160520**	Batch ID: **R85926**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS6_160520A**	Analysis Date: **5/20/2016 8:16:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.97	0.0100	2.000	0	98.4	80	120			
Acenaphthylene	2.09	0.0100	2.000	0	105	80	120			
Anthracene	1.81	0.0100	2.000	0	90.6	80	120			
Benzo[a]anthracene	1.96	0.0100	2.000	0	97.9	80	120			
Benzo[a]pyrene	1.89	0.0100	2.000	0	94.6	80	120			
Benzo[b]fluoranthene	1.91	0.0100	2.000	0	95.4	80	120			
Benzo[e]pyrene	1.85	0.0100	2.000	0	92.6	80	120			
Benzo[g,h,i]perylene	1.80	0.0100	2.000	0	90.0	80	120			
Benzo[j]fluoranthene	1.87	0.0100	2.000	0	93.5	80	120			N
Benzo[k]fluoranthene	1.91	0.0100	2.000	0	95.3	80	120			
Chrysene	1.85	0.0100	2.000	0	92.6	80	120			
Dibenz[a,h]anthracene	1.82	0.0100	2.000	0	90.8	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS6_160520A

Sample ID **ICV2-160520**	Batch ID: **R85926**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS6_160520A**	Analysis Date: **5/20/2016 8:16:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.94	0.0100	2.000	0	97.2	80	120			
Fluorene	2.02	0.0100	2.000	0	101	80	120			
Indeno[1,2,3-cd]pyrene	1.77	0.0100	2.000	0	88.3	80	120			
Phenanthrene	1.88	0.0100	2.000	0	94.0	80	120			
Pyrene	1.86	0.0100	2.000	0	93.2	80	120			
IS: Acenaphthene-d10	4.00		4.000		88.0	50	200			
IS: Chrysene-d12	4.00		4.000		89.9	50	200			
IS: Naphthalene-d8	4.00		4.000		141	50	200			
IS: Perylene-d12	4.00		4.000		90.4	50	200			
IS: Phenanthrene-d10	4.00		4.000		91.7	50	200			
Surr: 2-Fluorobiphenyl	2.06		2.000		103	65	120			
Surr: 4-Terphenyl-d14	1.84		2.000		92.0	65	120			

Sample ID **CCV-160520**	Batch ID: **R85926**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS6_160520A**	Analysis Date: **5/21/2016 2:15:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.863	0.0100	1.000	0	86.3	50	150			
Acenaphthylene	0.926	0.0100	1.000	0	92.6	50	150			
Anthracene	0.904	0.0100	1.000	0	90.4	50	150			
Benzo[a]anthracene	0.896	0.0100	1.000	0	89.6	50	150			
Benzo[a]pyrene	0.855	0.0100	1.000	0	85.5	50	150			
Benzo[b]fluoranthene	0.871	0.0100	1.000	0	87.1	50	150			
Benzo[e]pyrene	0.894	0.0100	1.000	0	89.4	50	150			
Benzo[g,h,i]perylene	0.805	0.0100	1.000	0	80.5	50	150			
Benzo[j]fluoranthene	0.913	0.0100	1.000	0	91.3	50	150			N
Benzo[k]fluoranthene	0.895	0.0100	1.000	0	89.5	50	150			
Chrysene	0.858	0.0100	1.000	0	85.8	50	150			
Dibenz[a,h]anthracene	0.841	0.0100	1.000	0	84.1	50	150			
Fluoranthene	0.899	0.0100	1.000	0	89.9	50	150			
Fluorene	0.861	0.0100	1.000	0	86.1	50	150			
Indeno[1,2,3-cd]pyrene	0.821	0.0100	1.000	0	82.1	50	150			
Phenanthrene	0.847	0.0100	1.000	0	84.7	50	150			
Pyrene	0.871	0.0100	1.000	0	87.1	50	150			
IS: Acenaphthene-d10	4.00		4.000		67.7	50	200			
IS: Chrysene-d12	4.00		4.000		66.0	50	200			
IS: Naphthalene-d8	4.00		4.000		106	50	200			
IS: Perylene-d12	4.00		4.000		67.1	50	200			
IS: Phenanthrene-d10	4.00		4.000		64.9	50	200			
Surr: 2-Fluorobiphenyl	1.01		1.000		101	50	150			
Surr: 4-Terphenyl-d14	0.865		1.000		86.5	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160510B

Sample ID **DCS-74876**	Batch ID: **74876**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **DCS**	Run ID: **GCMS8_160510B**	Analysis Date: **5/11/2016 4:29:00 AM**	Prep Date: **4/29/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0113	0.0100	0.01000	0	113	20	200	0	0	
Acenaphthylene	0.0116	0.0100	0.01000	0	116	20	200	0	0	
Anthracene	0.0104	0.0100	0.01000	0	104	20	200	0	0	
Benzo[a]anthracene	0.0111	0.0100	0.01000	0	111	20	200	0	0	
Benzo[a]pyrene	0.0100	0.0100	0.01000	0	100	20	200	0	0	
Benzo[b]fluoranthene	0.0105	0.0100	0.01000	0	105	20	200	0	0	
Benzo[e]pyrene	0.0110	0.0100	0.01000	0	110	20	200	0	0	
Benzo[g,h,i]perylene	0.0110	0.0100	0.01000	0	110	20	200	0	0	
Benzo[j]fluoranthene	0.0106	0.0100	0.01000	0	106	20	200	0	0	N
Benzo[k]fluoranthene	0.0104	0.0100	0.01000	0	104	20	200	0	0	
Chrysene	0.0118	0.0100	0.01000	0	118	20	200	0	0	
Dibenz[a,h]anthracene	0.0119	0.0100	0.01000	0	119	20	200	0	0	
Fluoranthene	0.0133	0.0100	0.01000	0	133	20	200	0	0	
Fluorene	0.0102	0.0100	0.01000	0	102	20	200	0	0	
Indeno[1,2,3-cd]pyrene	0.0107	0.0100	0.01000	0	107	20	200	0	0	
Phenanthrene	0.0127	0.0100	0.01000	0	127	20	200	0	0	
Pyrene	0.0133	0.0100	0.01000	0	133	20	200	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

The QC data in batch 75151 applies to the following samples: 1605097-21A, 1605097-23A

Sample ID **LCS-75151** Batch ID: **75151** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160513A** Analysis Date: **5/14/2016 4:22:00 AM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.822	0.0100	1.000	0	82.2	44	111			
Acenaphthylene	0.841	0.0100	1.000	0	84.1	39	116			
Anthracene	0.793	0.0100	1.000	0	79.3	50	114			
Benzo[a]anthracene	0.887	0.0100	1.000	0	88.7	54	122			
Benzo[a]pyrene	0.881	0.0100	1.000	0	88.1	50	125			
Benzo[b]fluoranthene	0.911	0.0100	1.000	0	91.1	53	128			
Benzo[e]pyrene	0.880	0.0100	1.000	0	88.0	43	140			
Benzo[g,h,i]perylene	0.964	0.0100	1.000	0	96.4	49	127			
Benzo[j]fluoranthene	0.951	0.0100	1.000	0	95.1	45	125			N
Benzo[k]fluoranthene	1.04	0.0100	1.000	0	104	56	123			
Chrysene	0.900	0.0100	1.000	0	90.0	57	118			
Dibenz[a,h]anthracene	1.01	0.0100	1.000	0	101	50	129			
Fluoranthene	0.851	0.0100	1.000	0	85.1	55	119			
Fluorene	0.738	0.0100	1.000	0	73.8	47	114			
Indeno[1,2,3-cd]pyrene	0.985	0.0100	1.000	0	98.5	49	130			
Phenanthrene	0.857	0.0100	1.000	0	85.7	49	113			
Pyrene	0.844	0.0100	1.000	0	84.4	55	117			
IS: Acenaphthene-d10	4.00		4.000		102	50	200			
IS: Chrysene-d12	4.00		4.000		86.8	50	200			
IS: Naphthalene-d8	4.00		4.000		104	50	200			
IS: Perylene-d12	4.00		4.000		92.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		80.6	50	200			
Surr: 2-Fluorobiphenyl	0.800		1.000		80.0	46	115			
Surr: 4-Terphenyl-d14	0.800		1.000		80.0	58	133			

Sample ID **MB-75151** Batch ID: **75151** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160513A** Analysis Date: **5/14/2016 5:00:00 AM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U
Chrysene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

Sample ID **MB-75151**	Batch ID: **75151**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 5:00:00 AM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		100	50	200			
IS: Chrysene-d12	4.00		4.000		88.8	50	200			
IS: Naphthalene-d8	4.00		4.000		102	50	200			
IS: Perylene-d12	4.00		4.000		98.7	50	200			
IS: Phenanthrene-d10	4.00		4.000		79.0	50	200			
Surr: 2-Fluorobiphenyl	0.777		1.000		77.7	46	115			
Surr: 4-Terphenyl-d14	0.771		1.000		77.1	58	133			

Sample ID **1605096-14AMS**	Batch ID: **75151**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 10:33:00 AM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.900	0.0978	0.9775	0	92.1	44	111			
Acenaphthylene	0.895	0.0978	0.9775	0	91.5	39	116			
Anthracene	0.911	0.0978	0.9775	0.06435	86.7	50	114			
Benzo[a]anthracene	1.38	0.0978	0.9775	0.4604	94.2	54	122			
Benzo[a]pyrene	1.56	0.0978	0.9775	0.6222	95.9	50	125			
Benzo[b]fluoranthene	1.55	0.0978	0.9775	0.5931	97.4	53	128			
Benzo[e]pyrene	1.35	0.0978	0.9775	0.4568	91.6	43	140			
Benzo[g,h,i]perylene	1.58	0.0978	0.9775	0.5691	104	49	127			
Benzo[j]fluoranthene	1.25	0.0978	0.9775	0.3035	97.0	45	125			N
Benzo[k]fluoranthene	1.34	0.0978	0.9775	0.3441	102	56	123			
Chrysene	1.51	0.0978	0.9775	0.5960	93.4	57	118			
Dibenz[a,h]anthracene	1.15	0.0978	0.9775	0.1572	102	50	129			
Fluoranthene	1.44	0.0978	0.9775	0.6633	79.2	55	119			
Fluorene	0.893	0.0978	0.9775	0	91.3	47	114			
Indeno[1,2,3-cd]pyrene	1.49	0.0978	0.9775	0.4750	104	49	130			
Phenanthrene	1.19	0.0978	0.9775	0.2818	93.0	49	113			
Pyrene	1.32	0.0978	0.9775	0.5727	76.1	55	117			
IS: Acenaphthene-d10	39.1		3.910		113	50	200			
IS: Chrysene-d12	39.1		3.910		79.6	50	200			
IS: Naphthalene-d8	39.1		3.910		96.5	50	200			
IS: Perylene-d12	39.1		3.910		84.7	50	200			
IS: Phenanthrene-d10	39.1		3.910		96.2	50	200			
Surr: 2-Fluorobiphenyl	0.865		0.9775		88.5	46	115			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

Sample ID **1605096-14AMS**	Batch ID: **75151**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 10:33:00 AM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.879		0.9775		89.9	58	133			

Sample ID **1605096-14AMSD**	Batch ID: **75151**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 11:10:00 AM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.889	0.0976	0.9756	0	91.1	44	111	1.25	20	
Acenaphthylene	0.887	0.0976	0.9756	0	90.9	39	116	0.908	20	
Anthracene	0.901	0.0976	0.9756	0.06435	85.8	50	114	1.13	20	
Benzo[a]anthracene	1.37	0.0976	0.9756	0.4604	93.7	54	122	0.486	20	
Benzo[a]pyrene	1.54	0.0976	0.9756	0.6222	94.2	50	125	1.18	20	
Benzo[b]fluoranthene	1.52	0.0976	0.9756	0.5931	95.4	53	128	1.43	20	
Benzo[e]pyrene	1.33	0.0976	0.9756	0.4568	89.7	43	140	1.56	20	
Benzo[g,h,i]perylene	1.54	0.0976	0.9756	0.5691	100	49	127	2.35	20	
Benzo[j]fluoranthene	1.24	0.0976	0.9756	0.3035	96.1	45	125	0.830	20	N
Benzo[k]fluoranthene	1.32	0.0976	0.9756	0.3441	100	56	123	1.26	20	
Chrysene	1.52	0.0976	0.9756	0.5960	94.5	57	118	0.560	20	
Dibenz[a,h]anthracene	1.13	0.0976	0.9756	0.1572	99.7	50	129	2.13	20	
Fluoranthene	1.47	0.0976	0.9756	0.6633	82.6	55	119	2.20	20	
Fluorene	0.874	0.0976	0.9756	0	89.6	47	114	2.12	20	
Indeno[1,2,3-cd]pyrene	1.46	0.0976	0.9756	0.4750	101	49	130	2.18	20	
Phenanthrene	1.20	0.0976	0.9756	0.2818	94.1	49	113	0.736	20	
Pyrene	1.35	0.0976	0.9756	0.5727	79.5	55	117	2.45	20	
IS: Acenaphthene-d10	39.0		3.902		115	50	200	0	0	
IS: Chrysene-d12	39.0		3.902		80.6	50	200	0	0	
IS: Naphthalene-d8	39.0		3.902		97.9	50	200	0	0	
IS: Perylene-d12	39.0		3.902		85.7	50	200	0	0	
IS: Phenanthrene-d10	39.0		3.902		96.3	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.870		0.9756		89.2	46	115	0	0	
Surr: 4-Terphenyl-d14	0.861		0.9756		88.3	58	133	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

Sample ID **ICV2-160513**	Batch ID: **R85824**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 1:17:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.99	0.0100	2.000	0	99.6	80	120			
Acenaphthylene	2.02	0.0100	2.000	0	101	80	120			
Anthracene	1.82	0.0100	2.000	0	91.1	80	120			
Benzo[a]anthracene	1.94	0.0100	2.000	0	96.8	80	120			
Benzo[a]pyrene	1.99	0.0100	2.000	0	99.5	80	120			
Benzo[b]fluoranthene	1.99	0.0100	2.000	0	99.5	80	120			
Benzo[e]pyrene	1.93	0.0100	2.000	0	96.3	80	120			
Benzo[g,h,i]perylene	2.11	0.0100	2.000	0	105	80	120			
Benzo[j]fluoranthene	2.12	0.0100	2.000	0	106	80	120			N
Benzo[k]fluoranthene	2.24	0.0100	2.000	0	112	80	120			
Chrysene	1.96	0.0100	2.000	0	97.9	80	120			
Dibenz[a,h]anthracene	2.19	0.0100	2.000	0	110	80	120			
Fluoranthene	1.75	0.0100	2.000	0	87.7	80	120			
Fluorene	1.90	0.0100	2.000	0	94.8	80	120			
Indeno[1,2,3-cd]pyrene	2.14	0.0100	2.000	0	107	80	120			
Phenanthrene	1.92	0.0100	2.000	0	95.9	80	120			
Pyrene	1.74	0.0100	2.000	0	86.9	80	120			
IS: Acenaphthene-d10	4.00		4.000		93.4	50	200			
IS: Chrysene-d12	4.00		4.000		83.2	50	200			
IS: Naphthalene-d8	4.00		4.000		92.3	50	200			
IS: Perylene-d12	4.00		4.000		86.1	50	200			
IS: Phenanthrene-d10	4.00		4.000		89.4	50	200			
Surr: 2-Fluorobiphenyl	2.01		2.000		101	65	120			
Surr: 4-Terphenyl-d14	2.00		2.000		100	65	120			

Sample ID **ICV3-160513**	Batch ID: **R85824**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 12:24:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0100	2.000	0	100	50	150			
Acenaphthylene	2.02	0.0100	2.000	0	101	50	150			
Anthracene	1.80	0.0100	2.000	0	90.0	50	150			
Benzo[a]anthracene	1.95	0.0100	2.000	0	97.5	50	150			
Benzo[a]pyrene	2.00	0.0100	2.000	0	100	50	150			
Benzo[b]fluoranthene	2.00	0.0100	2.000	0	99.9	50	150			
Benzo[e]pyrene	1.95	0.0100	2.000	0	97.4	50	150			
Benzo[g,h,i]perylene	2.17	0.0100	2.000	0	108	50	150			
Benzo[j]fluoranthene	2.11	0.0100	2.000	0	106	50	150			N
Benzo[k]fluoranthene	2.23	0.0100	2.000	0	112	50	150			
Chrysene	1.97	0.0100	2.000	0	98.3	50	150			
Dibenz[a,h]anthracene	2.24	0.0100	2.000	0	112	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

Sample ID **ICV3-160513**	Batch ID: **R85824**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 12:24:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.61	0.0100	2.000	0	80.4	50	150			
Fluorene	1.95	0.0100	2.000	0	97.3	50	150			
Indeno[1,2,3-cd]pyrene	2.20	0.0100	2.000	0	110	50	150			
Phenanthrene	1.93	0.0100	2.000	0	96.4	50	150			
Pyrene	1.57	0.0100	2.000	0	78.4	50	150			
IS: Acenaphthene-d10	4.00		4.000		105	50	200			
IS: Chrysene-d12	4.00		4.000		81.0	50	200			
IS: Naphthalene-d8	4.00		4.000		92.8	50	200			
IS: Perylene-d12	4.00		4.000		85.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		95.7	50	200			
Surr: 2-Fluorobiphenyl	2.12		2.000		106	50	150			
Surr: 4-Terphenyl-d14	2.00		2.000		100	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518A

Sample ID **DCS-75209**	Batch ID: **75209**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **DCS**	Run ID: **GCMS8_160518A**	Analysis Date: **5/18/2016 10:22:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000307	0.0000500	0.0000400	0	76.8	20	170	0	0	
Acenaphthylene	0.0000308	0.0000500	0.0000400	0	77.0	20	170	0	0	
Anthracene	0.0000322	0.0000500	0.0000400	0	80.5	20	170	0	0	
Benzo[a]anthracene	0.0000306	0.0000500	0.0000400	0	76.4	20	170	0	0	
Benzo[a]pyrene	0.0000288	0.0000500	0.0000400	0	72.0	20	170	0	0	
Benzo[b]fluoranthene	0.0000304	0.0000500	0.0000400	0	76.0	20	170	0	0	
Benzo[e]pyrene	0.0000308	0.0000500	0.0000400	0	76.9	20	170	0	0	
Benzo[g,h,i]perylene	0.0000282	0.0000500	0.0000400	0	70.4	20	170	0	0	
Benzo[j]fluoranthene	0.0000254	0.0000500	0.0000400	0	63.6	20	170	0	0	N
Benzo[k]fluoranthene	0.0000283	0.0000500	0.0000400	0	70.8	20	170	0	0	
Chrysene	0.0000293	0.0000500	0.0000400	0	73.4	20	170	0	0	
Dibenz[a,h]anthracene	0.0000221	0.0000500	0.0000400	0	55.2	20	170	0	0	
Fluoranthene	0.0000331	0.0000500	0.0000400	0	82.7	20	170	0	0	
Fluorene	0.0000302	0.0000500	0.0000400	0	75.4	20	170	0	0	
Indeno[1,2,3-cd]pyrene	0.0000275	0.0000500	0.0000400	0	68.8	20	170	0	0	
Phenanthrene	0.0000339	0.0000500	0.0000400	0	84.6	20	170	0	0	
Pyrene	0.0000328	0.0000500	0.0000400	0	81.9	20	170	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518B

The QC data in batch 75146 applies to the following samples: 1605097-27B, 1605097-30B

Sample ID **LCS-75146** Batch ID: **75146** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **LCS** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 2:03:00 PM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00262	0.0000500	0.00400	0	65.5	48	114			
Acenaphthylene	0.00261	0.0000500	0.00400	0	65.4	35	121			
Anthracene	0.00247	0.0000500	0.00400	0	61.7	53	119			
Benzo[a]anthracene	0.00297	0.0000500	0.00400	0	74.3	59	120			
Benzo[a]pyrene	0.00301	0.0000500	0.00400	0	75.2	53	120			
Benzo[b]fluoranthene	0.00309	0.0000500	0.00400	0	77.3	53	126			
Benzo[e]pyrene	0.00295	0.0000500	0.00400	0	73.6	40	140			
Benzo[g,h,i]perylene	0.00300	0.0000500	0.00400	0	74.9	44	128			
Benzo[j]fluoranthene	0.00295	0.0000500	0.00400	0	73.8	45	124			N
Benzo[k]fluoranthene	0.00309	0.0000500	0.00400	0	77.1	54	125			
Chrysene	0.00298	0.0000500	0.00400	0	74.6	57	120			
Dibenz[a,h]anthracene	0.00302	0.0000500	0.00400	0	75.4	44	131			
Fluoranthene	0.00291	0.0000500	0.00400	0	72.7	58	120			
Fluorene	0.00272	0.0000500	0.00400	0	68.0	50	118			
Indeno[1,2,3-cd]pyrene	0.00300	0.0000500	0.00400	0	75.0	48	130			
Phenanthrene	0.00259	0.0000500	0.00400	0	64.8	53	115			
Pyrene	0.00292	0.0000500	0.00400	0	73.0	53	121			
IS: Acenaphthene-d10	0.00800		0.00800		78.1	50	200			
IS: Chrysene-d12	0.00800		0.00800		77.8	50	200			
IS: Naphthalene-d8	0.00800		0.00800		81.0	50	200			
IS: Perylene-d12	0.00800		0.00800		76.7	50	200			
IS: Phenanthrene-d10	0.00800		0.00800		78.1	50	200			
Surr: 2-Fluorobiphenyl	4.48		8.000		56.0	53	106			
Surr: 4-Terphenyl-d14	5.28		8.000		65.9	58	132			

Sample ID **MB-75146** Batch ID: **75146** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **MBLK** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 2:40:00 PM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000400	0.0000500								U
Acenaphthylene	0.0000400	0.0000500								U
Anthracene	0.0000400	0.0000500								U
Benzo[a]anthracene	0.0000400	0.0000500								U
Benzo[a]pyrene	0.0000400	0.0000500								U
Benzo[b]fluoranthene	0.0000400	0.0000500								U
Benzo[e]pyrene	0.0000400	0.0000500								U
Benzo[g,h,i]perylene	0.0000400	0.0000500								U
Benzo[j]fluoranthene	0.0000400	0.0000500								NU
Benzo[k]fluoranthene	0.0000400	0.0000500								U
Chrysene	0.0000400	0.0000500								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518B

Sample ID **MB-75146**	Batch ID: **75146**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 2:40:00 PM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dibenz[a,h]anthracene	0.0000400	0.0000500								U
Fluoranthene	0.0000400	0.0000500								U
Fluorene	0.0000400	0.0000500								U
Indeno[1,2,3-cd]pyrene	0.0000400	0.0000500								U
Phenanthrene	0.0000400	0.0000500								U
Pyrene	0.0000400	0.0000500								U
IS: Acenaphthene-d10	0.00800		0.00800		82.7	50	200			
IS: Chrysene-d12	0.00800		0.00800		85.3	50	200			
IS: Naphthalene-d8	0.00800		0.00800		85.3	50	200			
IS: Perylene-d12	0.00800		0.00800		85.3	50	200			
IS: Phenanthrene-d10	0.00800		0.00800		84.3	50	200			
Surr: 2-Fluorobiphenyl	4.61		8.000		57.6	53	106			
Surr: 4-Terphenyl-d14	5.33		8.000		66.7	58	132			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518B

Sample ID **ICV-160518**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **ICV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 9:35:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0000500	2.00	0	101	80	120			
Acenaphthylene	2.01	0.0000500	2.00	0	101	80	120			
Anthracene	1.88	0.0000500	2.00	0	93.9	80	120			
Benzo[a]anthracene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[a]pyrene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[b]fluoranthene	2.13	0.0000500	2.00	0	106	80	120			
Benzo[e]pyrene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[g,h,i]perylene	2.11	0.0000500	2.00	0	105	80	120			
Benzo[j]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			N
Benzo[k]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			
Chrysene	2.11	0.0000500	2.00	0	106	80	120			
Dibenz[a,h]anthracene	2.11	0.0000500	2.00	0	105	80	120			
Fluoranthene	2.14	0.0000500	2.00	0	107	80	120			
Fluorene	2.02	0.0000500	2.00	0	101	80	120			
Indeno[1,2,3-cd]pyrene	2.10	0.0000500	2.00	0	105	80	120			
Phenanthrene	1.88	0.0000500	2.00	0	94.0	80	120			
Pyrene	2.14	0.0000500	2.00	0	107	80	120			
IS: Acenaphthene-d10	4.00		4.00		87.5	50	200			
IS: Chrysene-d12	4.00		4.00		88.7	50	200			
IS: Naphthalene-d8	4.00		4.00		88.3	50	200			
IS: Perylene-d12	4.00		4.00		87.9	50	200			
IS: Phenanthrene-d10	4.00		4.00		86.7	50	200			
Surr: 2-Fluorobiphenyl	1910		2000		95.7	65	120			
Surr: 4-Terphenyl-d14	2040		2000		102	65	120			

Sample ID **ICV2-160518**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **ICV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 8:49:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0000500	2.00	0	100	80	120			
Acenaphthylene	1.99	0.0000500	2.00	0	99.7	80	120			
Anthracene	1.86	0.0000500	2.00	0	93.0	80	120			
Benzo[a]anthracene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[a]pyrene	2.13	0.0000500	2.00	0	107	80	120			
Benzo[b]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[e]pyrene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[g,h,i]perylene	2.14	0.0000500	2.00	0	107	80	120			
Benzo[j]fluoranthene	2.13	0.0000500	2.00	0	106	80	120			N
Benzo[k]fluoranthene	2.19	0.0000500	2.00	0	109	80	120			
Chrysene	2.10	0.0000500	2.00	0	105	80	120			
Dibenz[a,h]anthracene	2.13	0.0000500	2.00	0	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518B

Sample ID **ICV2-160518**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **ICV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 8:49:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.07	0.0000500	2.00	0	104	80	120			
Fluorene	2.01	0.0000500	2.00	0	101	80	120			
Indeno[1,2,3-cd]pyrene	2.11	0.0000500	2.00	0	105	80	120			
Phenanthrene	1.86	0.0000500	2.00	0	93.1	80	120			
Pyrene	2.07	0.0000500	2.00	0	104	80	120			
IS: Acenaphthene-d10	4.00		4.00		96.3	50	200			
IS: Chrysene-d12	4.00		4.00		93.5	50	200			
IS: Naphthalene-d8	4.00		4.00		94.6	50	200			
IS: Perylene-d12	4.00		4.00		93.4	50	200			
IS: Phenanthrene-d10	4.00		4.00		93.3	50	200			
Surr: 2-Fluorobiphenyl	1920		2000		96.2	65	120			
Surr: 4-Terphenyl-d14	2030		2000		102	65	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

The QC data in batch 75192 applies to the following samples: 1605097-16A, 1605097-17A, 1605097-18A, 1605097-19A, 1605097-20A, 1605097-26A, 1605097-44A, 1605097-45A

Sample ID **LCS-75192** Batch ID: **75192** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160520A** Analysis Date: **5/20/2016 9:50:00 AM** Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.752	0.0100	1.000	0	75.2	44	111			
Acenaphthylene	0.763	0.0100	1.000	0	76.3	39	116			
Anthracene	0.719	0.0100	1.000	0	71.9	50	114			
Benzo[a]anthracene	0.755	0.0100	1.000	0	75.5	54	122			
Benzo[a]pyrene	0.739	0.0100	1.000	0	73.9	50	125			
Benzo[b]fluoranthene	0.758	0.0100	1.000	0	75.8	53	128			
Benzo[e]pyrene	0.828	0.0100	1.000	0	82.8	43	140			
Benzo[g,h,i]perylene	0.762	0.0100	1.000	0	76.2	49	127			
Benzo[j]fluoranthene	0.774	0.0100	1.000	0	77.4	45	125			N
Benzo[k]fluoranthene	0.768	0.0100	1.000	0	76.8	56	123			
Chrysene	0.757	0.0100	1.000	0	75.7	57	118			
Dibenz[a,h]anthracene	0.771	0.0100	1.000	0	77.1	50	129			
Fluoranthene	0.811	0.0100	1.000	0	81.1	55	119			
Fluorene	0.715	0.0100	1.000	0	71.5	47	114			
Indeno[1,2,3-cd]pyrene	0.771	0.0100	1.000	0	77.1	49	130			
Phenanthrene	0.722	0.0100	1.000	0	72.2	49	113			
Pyrene	0.816	0.0100	1.000	0	81.6	55	117			
IS: Acenaphthene-d10	4.00		4.000		86.3	50	200			
IS: Chrysene-d12	4.00		4.000		85.4	50	200			
IS: Naphthalene-d8	4.00		4.000		89.4	50	200			
IS: Perylene-d12	4.00		4.000		89.4	50	200			
IS: Phenanthrene-d10	4.00		4.000		73.7	50	200			
Surr: 2-Fluorobiphenyl	0.747		1.000		74.7	46	115			
Surr: 4-Terphenyl-d14	0.710		1.000		71.0	58	133			

Sample ID **MB-75192** Batch ID: **75192** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160520A** Analysis Date: **5/20/2016 10:28:00 AM** Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

Sample ID **MB-75192**	Batch ID: **75192**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS8_160520A**	Analysis Date: **5/20/2016 10:28:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		87.3	50	200			
IS: Chrysene-d12	4.00		4.000		82.6	50	200			
IS: Naphthalene-d8	4.00		4.000		88.8	50	200			
IS: Perylene-d12	4.00		4.000		85.9	50	200			
IS: Phenanthrene-d10	4.00		4.000		72.4	50	200			
Surr: 2-Fluorobiphenyl	0.757		1.000		75.7	46	115			
Surr: 4-Terphenyl-d14	0.726		1.000		72.6	58	133			

Sample ID **SBLK2-160520**	Batch ID: **75192**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS8_160520A**	Analysis Date: **5/20/2016 8:22:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100	0							U
Acenaphthylene	0.00750	0.0100	0							U
Anthracene	0.00750	0.0100	0							U
Benzo[a]anthracene	0.00750	0.0100	0							U
Benzo[a]pyrene	0.00750	0.0100	0							U
Benzo[b]fluoranthene	0.00750	0.0100	0							U
Benzo[e]pyrene	0.00750	0.0100	0							U
Benzo[g,h,i]perylene	0.00750	0.0100	0							U
Benzo[j]fluoranthene	0.00750	0.0100	0							NU
Benzo[k]fluoranthene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Dibenz[a,h]anthracene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Fluorene	0.00750	0.0100	0							U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100	0							U
Phenanthrene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

Sample ID **1605098-17AMS**	Batch ID: **75192**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160520A**	Analysis Date: **5/21/2016 3:50:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.831	0.0951	0.9515	0.1082	76.0	44	111			
Acenaphthylene	0.749	0.0951	0.9515	0	78.7	39	116			
Anthracene	1.18	0.0951	0.9515	0.5968	60.9	50	114			
Benzo[a]anthracene	2.53	0.0951	0.9515	2.125	42.4	54	122			S
Benzo[a]pyrene	2.62	0.0951	0.9515	2.203	44.2	50	125			S
Benzo[b]fluoranthene	2.44	0.0951	0.9515	1.963	50.6	53	128			S
Benzo[e]pyrene	2.10	0.0951	0.9515	1.494	63.3	43	140			
Benzo[g,h,i]perylene	1.98	0.0951	0.9515	1.446	56.0	49	127			
Benzo[j]fluoranthene	1.61	0.0951	0.9515	1.018	62.3	45	125			N
Benzo[k]fluoranthene	1.60	0.0951	0.9515	1.017	61.3	56	123			
Chrysene	2.83	0.0951	0.9515	2.446	40.2	57	118			S
Dibenz[a,h]anthracene	0.847	0.0951	0.9515	0.2736	60.2	50	129			
Fluoranthene	5.04	0.0951	0.9515	5.136	-10.1	55	119			S
Fluorene	0.764	0.0951	0.9515	0.09971	69.8	47	114			
Indeno[1,2,3-cd]pyrene	1.80	0.0951	0.9515	1.225	60.0	49	130			
Phenanthrene	2.87	0.0951	0.9515	2.655	22.9	49	113			S
Pyrene	4.28	0.0951	0.9515	4.166	11.9	55	117			S
IS: Acenaphthene-d10	38.1		3.806		99.2	50	200			
IS: Chrysene-d12	38.1		3.806		85.8	50	200			
IS: Naphthalene-d8	38.1		3.806		94.9	50	200			
IS: Perylene-d12	38.1		3.806		88.7	50	200			
IS: Phenanthrene-d10	38.1		3.806		79.4	50	200			
Surr: 2-Fluorobiphenyl	0.814		0.9515		85.6	46	115			
Surr: 4-Terphenyl-d14	0.692		0.9515		72.8	58	133			

Sample ID **1605098-17AMSD**	Batch ID: **75192**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160520A**	Analysis Date: **5/21/2016 4:27:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.947	0.0954	0.9542	0.1082	87.9	44	111	13.1	20	
Acenaphthylene	0.779	0.0954	0.9542	0	81.6	39	116	3.94	20	
Anthracene	1.75	0.0954	0.9542	0.5968	120	50	114	39.0	20	SR
Benzo[a]anthracene	4.01	0.0954	0.9542	2.125	198	54	122	45.3	20	SR
Benzo[a]pyrene	3.97	0.0954	0.9542	2.203	185	50	125	40.9	20	SR
Benzo[b]fluoranthene	3.67	0.0954	0.9542	1.963	179	53	128	40.2	20	SR
Benzo[e]pyrene	2.95	0.0954	0.9542	1.494	153	43	140	33.9	20	SR
Benzo[g,h,i]perylene	2.69	0.0954	0.9542	1.446	131	49	127	30.5	20	SR
Benzo[j]fluoranthene	2.29	0.0954	0.9542	1.018	133	45	125	34.9	20	SRN
Benzo[k]fluoranthene	2.18	0.0954	0.9542	1.017	122	56	123	30.8	20	R
Chrysene	4.41	0.0954	0.9542	2.446	206	57	118	43.8	20	SR
Dibenz[a,h]anthracene	1.18	0.0954	0.9542	0.2736	94.8	50	129	32.8	20	R

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

Sample ID **1605098-17AMSD**	Batch ID: **75192**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160520A**	Analysis Date: **5/21/2016 4:27:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	8.88	0.0954	0.9542	5.136	392	55	119	55.1	20	SR
Fluorene	0.890	0.0954	0.9542	0.09971	82.8	47	114	15.3	20	
Indeno[1,2,3-cd]pyrene	2.46	0.0954	0.9542	1.225	130	49	130	31.3	20	R
Phenanthrene	5.08	0.0954	0.9542	2.655	254	49	113	55.5	20	SR
Pyrene	7.31	0.0954	0.9542	4.166	329	55	117	52.3	20	SR
IS: Acenaphthene-d10	38.2		3.817		95.5	50	200	0	0	
IS: Chrysene-d12	38.2		3.817		82.7	50	200	0	0	
IS: Naphthalene-d8	38.2		3.817		92.2	50	200	0	0	
IS: Perylene-d12	38.2		3.817		84.0	50	200	0	0	
IS: Phenanthrene-d10	38.2		3.817		76.6	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.818		0.9542		85.7	46	115	0	0	
Surr: 4-Terphenyl-d14	0.728		0.9542		76.3	58	133	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

Sample ID **ICV-160520**	Batch ID: **R85908**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160520A**	Analysis Date: **5/20/2016 9:14:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.02	0.0100	2.000	0	101	80	120			
Acenaphthylene	2.04	0.0100	2.000	0	102	80	120			
Anthracene	1.86	0.0100	2.000	0	93.2	80	120			
Benzo[a]anthracene	2.15	0.0100	2.000	0	107	80	120			
Benzo[a]pyrene	2.12	0.0100	2.000	0	106	80	120			
Benzo[b]fluoranthene	2.15	0.0100	2.000	0	107	80	120			
Benzo[e]pyrene	2.13	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.13	0.0100	2.000	0	107	80	120			
Benzo[j]fluoranthene	2.15	0.0100	2.000	0	108	80	120			N
Benzo[k]fluoranthene	2.16	0.0100	2.000	0	108	80	120			
Chrysene	2.13	0.0100	2.000	0	107	80	120			
Dibenz[a,h]anthracene	2.15	0.0100	2.000	0	108	80	120			
Fluoranthene	2.08	0.0100	2.000	0	104	80	120			
Fluorene	1.90	0.0100	2.000	0	95.1	80	120			
Indeno[1,2,3-cd]pyrene	2.13	0.0100	2.000	0	107	80	120			
Phenanthrene	1.87	0.0100	2.000	0	93.3	80	120			
Pyrene	2.10	0.0100	2.000	0	105	80	120			
IS: Acenaphthene-d10	4.00		4.000		99.4	50	200			
IS: Chrysene-d12	4.00		4.000		88.2	50	200			
IS: Naphthalene-d8	4.00		4.000		94.9	50	200			
IS: Perylene-d12	4.00		4.000		89.9	50	200			
IS: Phenanthrene-d10	4.00		4.000		85.8	50	200			
Surr: 2-Fluorobiphenyl	2.06		2.000		103	65	120			
Surr: 4-Terphenyl-d14	2.01		2.000		100	65	120			

Sample ID **ICV2-160520**	Batch ID: **R85908**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160520A**	Analysis Date: **5/20/2016 7:07:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.02	0.0100	2.000	0	101	80	120			
Acenaphthylene	2.04	0.0100	2.000	0	102	80	120			
Anthracene	1.85	0.0100	2.000	0	92.3	80	120			
Benzo[a]anthracene	2.13	0.0100	2.000	0	107	80	120			
Benzo[a]pyrene	2.11	0.0100	2.000	0	105	80	120			
Benzo[b]fluoranthene	2.15	0.0100	2.000	0	107	80	120			
Benzo[e]pyrene	2.12	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.11	0.0100	2.000	0	106	80	120			
Benzo[j]fluoranthene	2.11	0.0100	2.000	0	105	80	120			N
Benzo[k]fluoranthene	2.12	0.0100	2.000	0	106	80	120			
Chrysene	2.13	0.0100	2.000	0	107	80	120			
Dibenz[a,h]anthracene	2.15	0.0100	2.000	0	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

Sample ID **ICV2-160520**	Batch ID: **R85908**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160520A**	Analysis Date: **5/20/2016 7:07:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.08	0.0100	2.000	0	104	80	120			
Fluorene	1.94	0.0100	2.000	0	96.9	80	120			
Indeno[1,2,3-cd]pyrene	2.14	0.0100	2.000	0	107	80	120			
Phenanthrene	1.88	0.0100	2.000	0	94.0	80	120			
Pyrene	2.07	0.0100	2.000	0	104	80	120			
IS: Acenaphthene-d10	4.00		4.000		96.0	50	200			
IS: Chrysene-d12	4.00		4.000		83.7	50	200			
IS: Naphthalene-d8	4.00		4.000		94.0	50	200			
IS: Perylene-d12	4.00		4.000		84.8	50	200			
IS: Phenanthrene-d10	4.00		4.000		84.7	50	200			
Surr: 2-Fluorobiphenyl	2.02		2.000		101	65	120			
Surr: 4-Terphenyl-d14	2.06		2.000		103	65	120			

Sample ID **CCV-160520**	Batch ID: **R85908**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160520A**	Analysis Date: **5/21/2016 5:05:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.999	0.0100	1.000	0	99.9	50	150			
Acenaphthylene	1.02	0.0100	1.000	0	102	50	150			
Anthracene	0.924	0.0100	1.000	0	92.4	50	150			
Benzo[a]anthracene	1.01	0.0100	1.000	0	101	50	150			
Benzo[a]pyrene	0.997	0.0100	1.000	0	99.7	50	150			
Benzo[b]fluoranthene	0.995	0.0100	1.000	0	99.5	50	150			
Benzo[e]pyrene	1.00	0.0100	1.000	0	100	50	150			
Benzo[g,h,i]perylene	1.00	0.0100	1.000	0	100	50	150			
Benzo[j]fluoranthene	0.999	0.0100	1.000	0	99.9	50	150			N
Benzo[k]fluoranthene	1.01	0.0100	1.000	0	101	50	150			
Chrysene	1.01	0.0100	1.000	0	101	50	150			
Dibenz[a,h]anthracene	1.00	0.0100	1.000	0	100	50	150			
Fluoranthene	0.997	0.0100	1.000	0	99.7	50	150			
Fluorene	0.930	0.0100	1.000	0	93.0	50	150			
Indeno[1,2,3-cd]pyrene	1.01	0.0100	1.000	0	101	50	150			
Phenanthrene	0.944	0.0100	1.000	0	94.4	50	150			
Pyrene	0.997	0.0100	1.000	0	99.7	50	150			
IS: Acenaphthene-d10	4.00		4.000		107	50	200			
IS: Chrysene-d12	4.00		4.000		87.5	50	200			
IS: Naphthalene-d8	4.00		4.000		102	50	200			
IS: Perylene-d12	4.00		4.000		88.7	50	200			
IS: Phenanthrene-d10	4.00		4.000		87.3	50	200			
Surr: 2-Fluorobiphenyl	1.05		1.000		105	50	150			
Surr: 4-Terphenyl-d14	0.996		1.000		99.6	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_160512A

The QC data in batch 75130 applies to the following samples: 1605097-16A, 1605097-17A, 1605097-18A, 1605097-19A, 1605097-20A, 1605097-21A, 1605097-23A, 1605097-26A

Sample ID	**1605098-40A DUP**	Batch ID:	**75130**	TestNo:	**D2216**	Units:	**WT%**
SampType:	**DUP**	Run ID:	**PMOIST_160512A**	Analysis Date:	**5/13/2016 12:52:20 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	7.41	0	0	7.772				4.80	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

DHL Analytical, Inc.

Date: *01-Jun-16*

CLIENT: Arcadis
Work Order: 1605097
Project: Laredo SGR

MQL SUMMARY REPORT

TestNo: SW6020A	MDL	MQL
Analyte	**mg/Kg-dry**	**mg/Kg-dry**
Lead	0.100	0.300

TestNo: SW6020A	MDL	MQL
Analyte	**mg/L**	**mg/L**
Lead	0.000300	0.00100

TestNo: SW8270D-LL	MDL	MQL
Analyte	**mg/Kg-dry**	**mg/Kg-dry**
Acenaphthene	0.00500	0.0100
Acenaphthylene	0.00500	0.0100
Anthracene	0.00500	0.0100
Benzo[a]anthracene	0.00500	0.0100
Benzo[a]pyrene	0.00500	0.0100
Benzo[b]fluoranthene	0.00500	0.0100
Benzo[e]pyrene	0.00500	0.0100
Benzo[g,h,i]perylene	0.00500	0.0100
Benzo[j]fluoranthene	0.00500	0.0100
Benzo[k]fluoranthene	0.00500	0.0100
Chrysene	0.00500	0.0100
Dibenz[a,h]anthracene	0.00500	0.0100
Fluoranthene	0.00500	0.0100
Fluorene	0.00500	0.0100
Indeno[1,2,3-cd]pyrene	0.00500	0.0100
Phenanthrene	0.00500	0.0100
Pyrene	0.00500	0.0100

TestNo: SW8270D-LL	MDL	MQL
Analyte	**mg/L**	**mg/L**
Acenaphthene	0.0000250	0.0000500
Acenaphthylene	0.0000250	0.0000500
Anthracene	0.0000250	0.0000500
Benzo[a]anthracene	0.0000250	0.0000500
Benzo[a]pyrene	0.0000250	0.0000500
Benzo[b]fluoranthene	0.0000250	0.0000500
Benzo[e]pyrene	0.0000250	0.0000500
Benzo[g,h,i]perylene	0.0000250	0.0000500
Benzo[j]fluoranthene	0.0000250	0.0000500
Benzo[k]fluoranthene	0.0000250	0.0000500
Chrysene	0.0000250	0.0000500
Dibenz[a,h]anthracene	0.0000250	0.0000500
Fluoranthene	0.0000250	0.0000500
Fluorene	0.0000250	0.0000500
Indeno[1,2,3-cd]pyrene	0.0000250	0.0000500
Phenanthrene	0.0000250	0.0000500
Pyrene	0.0000250	0.0000500

Qualifiers: MQL -Method Quantitation Limit as defined by TRRP
MDL -Method Detection Limit as defined by TRRP

GCMS6
For

DHL Work Order
1605097

GCMS6_160519A
For

DHL Work Order
1605097

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Project Number(s): SEE RUN LOG.	**Run ID: GCMS6_160519A**
Batch Number(s): SEE RUN LOG.	**SOP:** ORGANICS-PAH-01
Matrix: SEE RUN LOG.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		x
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			x
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)	X			

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	x
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			x
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE	All deviations from the method and SOP that affect data quality				
1. Are all non-conformances included and noted?				X	x
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___ LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	___ Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)		

___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data:

Analyst: Karyn Lane Date: 5/20/2016 11:49

Second-Level Review: Janice Whitt Date: 5/27/2016

REVIEWED BY
By Janice Whitt at 4:03:13 PM, 5/27/2016

DHL Analytical, Inc.

Run ID: GCMS6_160519A **Run No.:** 85896

Analytical Run Date: 5/19/2016 **InstrumentID:** GCMS6

Analyst: Karyn Lane **Column:** Agilent (J&W) DB-EUPAH (20m x 0.18mmI

Calibration ID: 651 **Column ID:** 0.18mm

Column Length: 20m

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160519	1	PAH_LL_SDOD1	TUNE	R85896	5/19/2016 8:26:00 AM		
ICV-160519	1	PAH_LL_SDOD1	ICV	R85896	5/19/2016 9:03:00 AM		
LCS-75161	1	PAH_LL_SDOD1	LCS	75161	5/19/2016 9:43:00 AM		
MB-75161	1	PAH_LL_SDOD1	MBLK	75161	5/19/2016 10:27:00 AM		
1605096-68A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 11:07:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605096-69A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 11:47:00 AM		
1605096-70A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 12:26:00 PM		
1605096-71A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 1:06:00 PM		
1605096-72A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 1:47:00 PM		
1605096-73A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 2:27:00 PM		
1605096-74A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 3:08:00 PM		
1605097-01A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 3:47:00 PM		
1605097-02A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 4:27:00 PM		
1605097-03A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 5:07:00 PM		
1605097-03AMS	10	PAH_LL_SDOD1	MS	75161	5/19/2016 5:47:00 PM		
1605097-03AMSD	10	PAH_LL_SDOD1	MSD	75161	5/19/2016 6:27:00 PM		
DFTPP2-160519	1	PAH_LL_SDOD1	TUNE	R85896	5/19/2016 7:07:00 PM		
ICV2-160519	1	PAH_LL_SDOD1	ICV	R85896	5/19/2016 7:44:00 PM		
SB-160519	1	PAH_LL_SDOD1	SBLK	75161	5/19/2016 9:04:00 PM		
1605097-04A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 9:43:00 PM		
1605097-05A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 10:23:00 PM		
1605097-06A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 11:04:00 PM		
1605097-07A	10	PAH_LL_SDOD1	SAMP	75161	5/19/2016 11:44:00 PM		
1605097-08A	10	PAH_LL_SDOD1	SAMP	75161	5/20/2016 12:23:00 AM		
1605097-09A	10	PAH_LL_SDOD1	SAMP	75161	5/20/2016 1:03:00 AM		
1605097-10A	10	PAH_LL_SDOD1	SAMP	75161	5/20/2016 1:42:00 AM		
1605097-11A	10	PAH_LL_SDOD1	SAMP	75161	5/20/2016 2:23:00 AM		
1605097-12A	10	PAH_LL_SDOD1	SAMP	75161	5/20/2016 3:03:00 AM		
1605097-13A	10	PAH_LL_SDOD1	SAMP	75161	5/20/2016 3:43:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

DHL Analytical, Inc.

Run ID: GCMS6_160519A **Run No.:** 85896

CCV1-160519	1	PAH_LL_SDOD1	CCV	R85896	5/20/2016 4:23:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

Sequence Name: C:\HPCHEM\1\SEQUENCE\160519.S
Comment:
Operator:
Data Path: C:\HPCHEM\1\DATA\160519\
Pre-Seq Cmd:
Post-Seq Cmd:

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

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

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	16051901	DFTPPPAH	DFTPP-160519
2	Sample	2	16051902	PP160421	ICV-160519
3	Sample	3	16051903	PP160421	LCS-75161
4	Sample	4	16051904	PP160421	MB-75161
5	Sample	5	16051905	PP160421	1605096-68A
6	Sample	6	16051906	PP160421	1605096-69A
7	Sample	7	16051907	PP160421	1605096-70A
8	Sample	8	16051908	PP160421	1605096-71A
9	Sample	9	16051909	PP160421	1605096-72A
10	Sample	10	16051910	PP160421	1605096-73A
11	Sample	11	16051911	PP160421	1605096-74A
12	Sample	12	16051912	PP160421	1605097-01A
13	Sample	13	16051913	PP160421	1605097-02A
14	Sample	14	16051914	PP160421	1605097-03A
15	Sample	15	16051915	PP160421	1605097-03AMS
16	Sample	16	16051916	PP160421	1605097-03AMSD
17	Sample	17	16051917	DFTPPPAH	DFTPP2-160519
18	Sample	18	16051918	PP160421	ICV2-160519
19	Sample	19	16051919	PP160421	SBLK
20	Sample	20	16051920	PP160421	SB-160519
21	Sample	21	16051921	PP160421	1605097-04A
22	Sample	22	16051922	PP160421	1605097-05A
23	Sample	23	16051923	PP160421	1605097-06A
24	Sample	24	16051924	PP160421	1605097-07A
25	Sample	25	16051925	PP160421	1605097-08A
26	Sample	26	16051926	PP160421	1605097-09A
27	Sample	27	16051927	PP160421	1605097-10A
28	Sample	28	16051928	PP160421	1605097-11A
29	Sample	29	16051929	PP160421	1605097-12A
30	Sample	30	16051930	PP160421	1605097-13A
31	Sample	31	16051931	PP160421	CCV1-160519

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/15/2016 11:31:55 AM**
Digestion:
Prep End Date: **5/16/5016 10:00:00 AM**

Prep Batch **75161** Prep Code: **3550_PAHDOD** Technician: **Lauren Garcia**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-68A	Soil		10.12	10	0.988	1 of 1	
1605096-69A	Soil		10.49	10	0.953	1 of 1	
1605096-70A	Soil		10.65	10	0.939	1 of 1	
1605096-71A	Soil		10.28	10	0.973	1 of 1	
1605096-72A	Soil		10.36	10	0.965	1 of 1	
1605096-73A	Soil		10.27	10	0.974	1 of 1	
1605096-74A	Soil		10.73	10	0.932	1 of 1	
1605097-01A	Soil		10.08	10	0.992	1 of 1	
1605097-02A	Soil		10.2	10	0.980	1 of 1	
1605097-03A	Soil		10.13	10	0.987	of 3	
1605097-03AMS	Soil		10.24	10	0.977	of	
Spiked with PAHPREP160516							
1605097-03AMSD	Soil		10.58	10	0.945	of	
Spiked with PAHPREP160516							
1605097-04A	Soil		10.07	10	0.993	1 of 1	
1605097-05A	Soil		10.31	10	0.970	1 of 1	
1605097-06A	Soil		10.1	10	0.990	1 of 1	
1605097-07A	Soil		10.17	10	0.983	1 of 1	
1605097-08A	Soil		10.03	10	0.997	1 of 1	
1605097-09A	Soil		10.72	10	0.933	1 of 1	
1605097-10A	Soil		10.64	10	0.940	1 of 1	
1605097-11A	Soil		10.32	10	0.969	1 of 1	
1605097-12A	Soil		10.39	10	0.962	1 of 1	
1605097-13A	Soil		10.04	10	0.996	1 of 1	
LCS-75161	Soil		10	10	1.000	of	
MB-75161	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED BY
By Janice Whitt at 3:45:52 PM, 5/27/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/15/2016 11:31:55 AM**
Digestion:
Prep End Date: 5/16/2016 10.00 AM

Prep Batch **75161** Prep Code: **3550_PAHDOD** Technician: **Lauren Garcia**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-68A	Soil		10 .12	10	1.000	1 of 1	
1605096-69A	Soil		10 .49	10	1.000	1 of 1	
1605096-70A	Soil		10 .65	10	1.000	1 of 1	
1605096-71A	Soil		10 .23	10	1.000	1 of 1	
1605096-72A	Soil		10 .36	10	1.000	1 of 1	
1605096-73A	Soil		10 .27	10	1.000	1 of 1	
1605096-74A	Soil		10 .73	10	1.000	1 of 1	
1605097-01A	Soil		10 .08	10	1.000	1 of 1	
1605097-02A	Soil		10 .20	10	1.000	1 of 1	
1605097-03A	Soil		10 .13	10	1.000	1 of 3	
1605097-03AMS	Soil		10 .24	10	1.000	1 of 3	SPIKED WITH ~~PAHPREP~~ PAHPREP160516 5/16/16
1605097-03AMSD	Soil		10 .58	10	1.000	1 of 3	" "
1605097-04A	Soil		10 .07	10	1.000	1 of 1	
1605097-05A	Soil		10 .31	10	1.000	1 of 1	
1605097-06A	Soil		10 .10	10	1.000	1 of 1	
1605097-07A	Soil		10 .17	10	1.000	1 of 1	
1605097-08A	Soil		10 .03	10	1.000	1 of 1	
1605097-09A	Soil		10 .72	10	1.000	1 of 1	
1605097-10A	Soil		10 .64	10	1.000	1 of 1	
1605097-11A	Soil		10 .32	10	1.000	1 of 1	
1605097-12A	Soil		10 .39	10	1.000	1 of 1	
1605097-13A	Soil		10 .04	10	1.000	1 of 1	
LCS-75161	Soil		10	10	1.000	of	
MB-75161	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. D
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED BY
By Janice Whitt at 3:45:50 PM, 5/27/2016

LG 5/16/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 7:00:00 PM**
Digestion: **Start: 5/10/2016 8:30:00 PM / Stop: 5/12/2016 9:00:00 AM**
Prep End Date: **5/12/2016 5:30:00 PM**

Prep Factor Units: **mL/**

Prep Batch **75084** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-56A	Soil		0	0	#Num!	1 of 1	
1605096-57A	Soil		0	0	#Num!	1 of 1	
1605096-58A	Soil		0	0	#Num!	1 of 1	
1605096-59A	Soil		0	0	#Num!	1 of 1	
1605096-60A	Soil		0	0	#Num!	1 of 1	
1605096-61A	Soil		0	0	#Num!	1 of 1	
1605096-62A	Soil		0	0	#Num!	1 of 1	
1605096-63A	Soil		0	0	#Num!	1 of 1	
1605096-64A	Soil		0	0	#Num!	1 of 1	
1605096-65A	Soil		0	0	#Num!	1 of 1	
1605096-66A	Soil		0	0	#Num!	1 of 1	
1605096-67A	Soil		0	0	#Num!	1 of 1	
1605096-68A	Soil		0	0	#Num!	1 of 1	
1605096-69A	Soil		0	0	#Num!	1 of 1	
1605096-70A	Soil		0	0	#Num!	1 of 1	
1605096-71A	Soil		0	0	#Num!	1 of 1	
1605096-72A	Soil		0	0	#Num!	1 of 1	
1605096-73A	Soil		0	0	#Num!	1 of 1	
1605096-74A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 3:44:29 PM, 5/27/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 2:00:20 PM**
Digestion: **Start: 5/11/2016 2:30:00 PM / Stop: 5/13/2016 11:00:00 AM**
Prep End Date: **5/13/2016 3:00:00 PM**

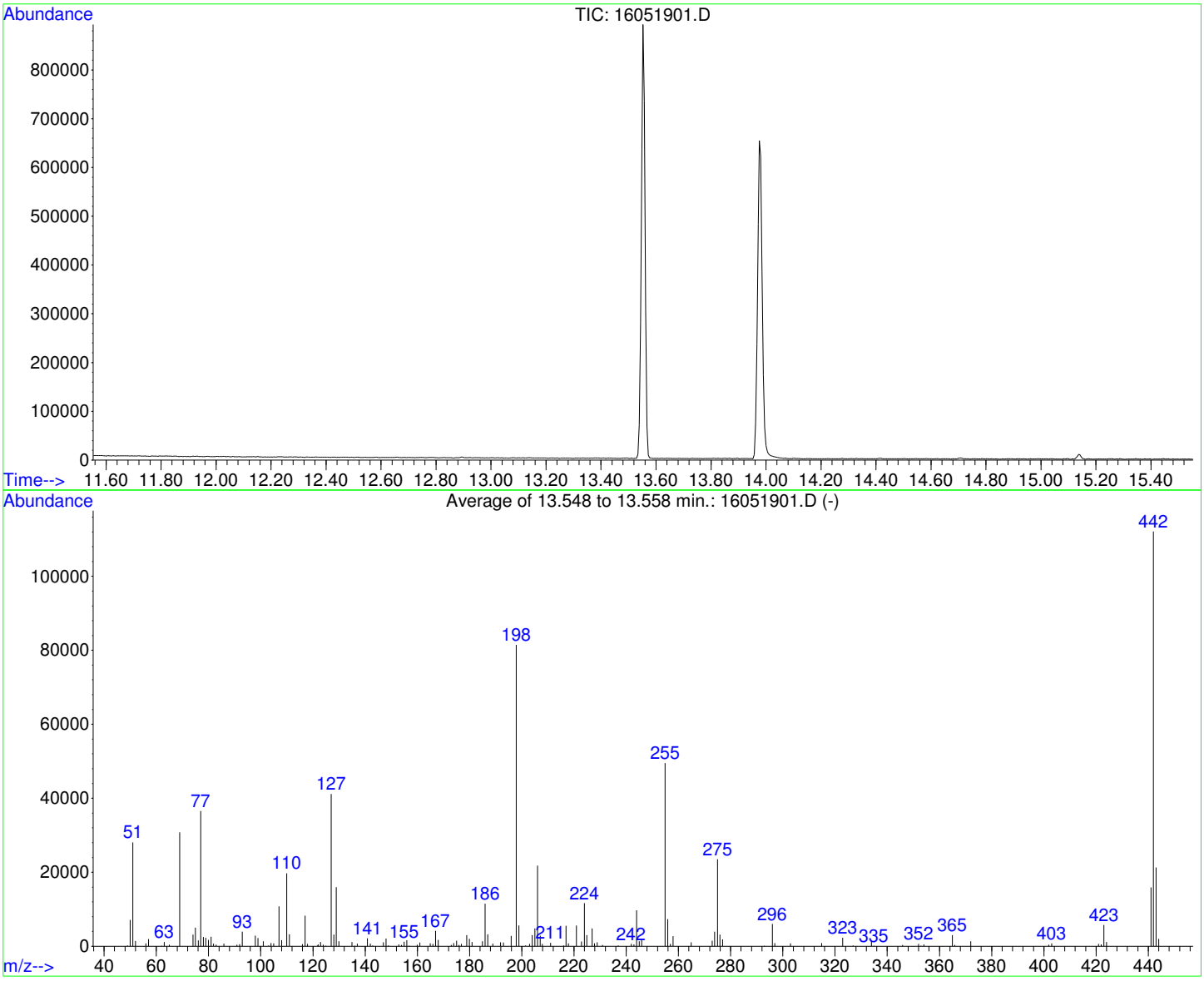
Prep Batch **75116** Prep Code: **ISM2MM_PREP** Technician: **Scott Schroeder**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605097-01A	Soil		0	0	#Num!	1	of	1	
1605097-02A	Soil		0	0	#Num!	1	of	1	
1605097-03A	Soil		0	0	#Num!		of	3	
	Extra sub sampled for MS/MSD								
1605097-04A	Soil		0	0	#Num!	1	of	1	
1605097-05A	Soil		0	0	#Num!	1	of	1	
1605097-06A	Soil		0	0	#Num!	1	of	1	
1605097-07A	Soil		0	0	#Num!	1	of	1	
1605097-08A	Soil		0	0	#Num!	1	of	1	
1605097-09A	Soil		0	0	#Num!	1	of	1	
1605097-10A	Soil		0	0	#Num!	1	of	1	
1605097-11A	Soil		0	0	#Num!	1	of	1	
1605097-12A	Soil		0	0	#Num!	1	of	1	
1605097-13A	Soil		0	0	#Num!	1	of	1	
1605097-14A	Soil		0	0	#Num!	1	of	1	
1605097-15A	Soil		0	0	#Num!	1	of	1	
1605097-31A	Soil		0	0	#Num!	1	of	1	
1605097-32A	Soil		0	0	#Num!	1	of	1	
1605097-33A	Soil		0	0	#Num!	1	of	1	
1605097-34A	Soil		0	0	#Num!	1	of	1	
1605097-35A	Soil		0	0	#Num!	1	of	1	

REVIEWED BY
By Janice Whitt at 3:44:33 PM, 5/27/2016

Data File : C:\HPCHEM\1\DATA\160519\16051901.D Vial: 1
Acq On : 19 May 2016 8:26 am Operator:
Sample : DFTPP-160519 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration

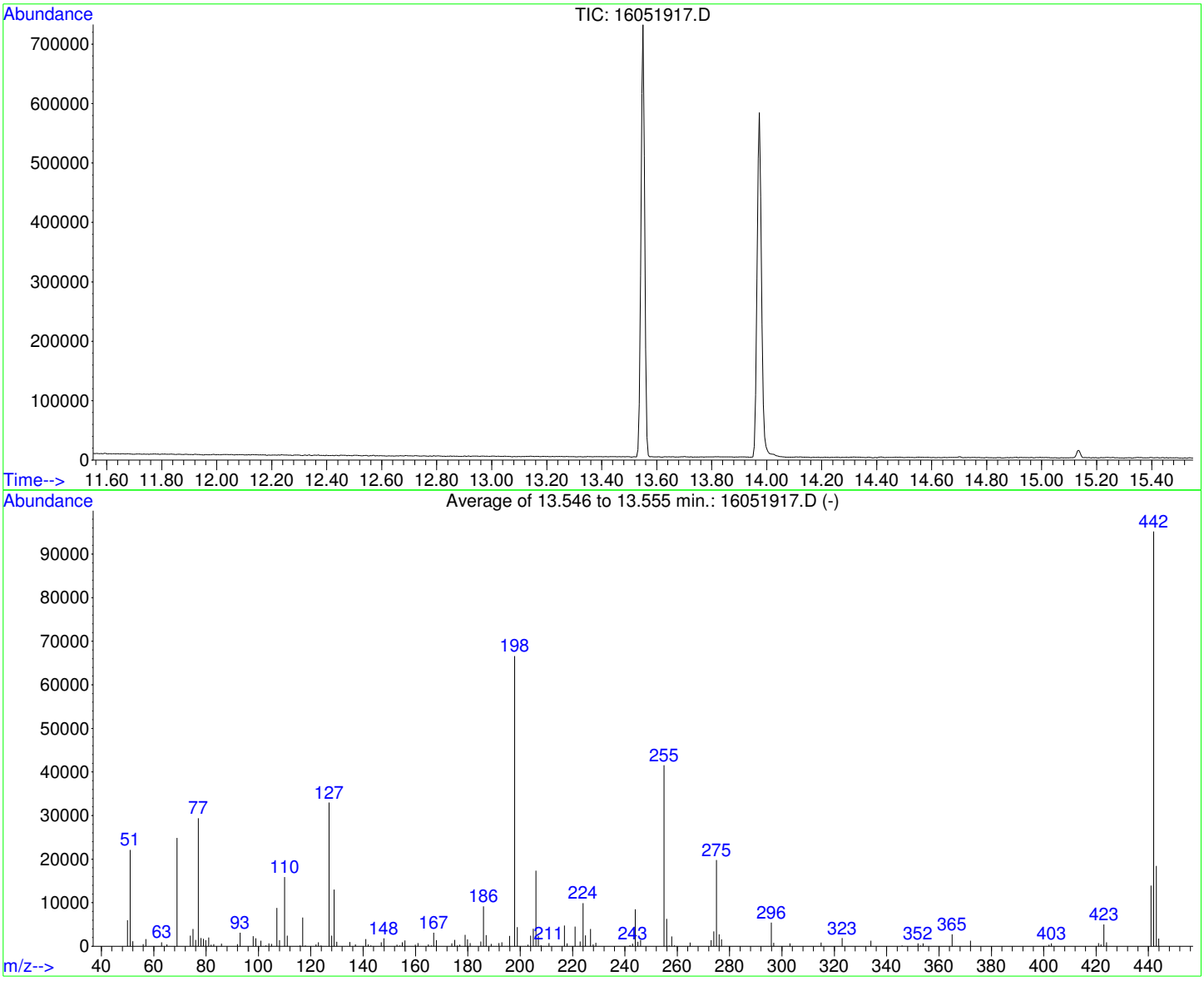


AutoFind: Scans 1586, 1587, 1588; Background Corrected with Scan 1580

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	34.5	28075	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	37.8	30829	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	50.5	41128	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	81451	PASS
199	198	5	9	6.9	5619	PASS
275	198	10	60	28.9	23557	PASS
365	198	1	200	3.7	3031	PASS
441	442	0.01	24	14.2	15884	PASS
442	198	50	400	137.7	112123	PASS
443	442	15	24	19.0	21329	PASS

REVIEWED BY
By Janice Whitt at 3:44:35 PM, 5/27/2016

Data File : C:\HPCHEM\1\DATA\160519\16051917.D Vial: 17
Acq On : 19 May 2016 7:07 pm Operator:
Sample : DFTPP2-160519 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration



AutoFind: Scans 1586, 1587, 1588; Background Corrected with Scan 1580

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	33.2	22127	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	37.3	24851	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	49.5	32971	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	66619	PASS
199	198	5	9	6.6	4413	PASS
275	198	10	60	29.7	19781	PASS
365	198	1	200	4.1	2737	PASS
441	442	0.01	24	14.7	13962	PASS
442	198	50	400	142.9	95197	PASS
443	442	15	24	19.4	18473	PASS

REVIEWED BY
By Janice Whitt at 3:45:58 PM, 5/27/2016

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051902.D Vial: 2
Acq On : 19 May 2016 9:03 am Operator:
Sample : ICV-160519 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:26 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

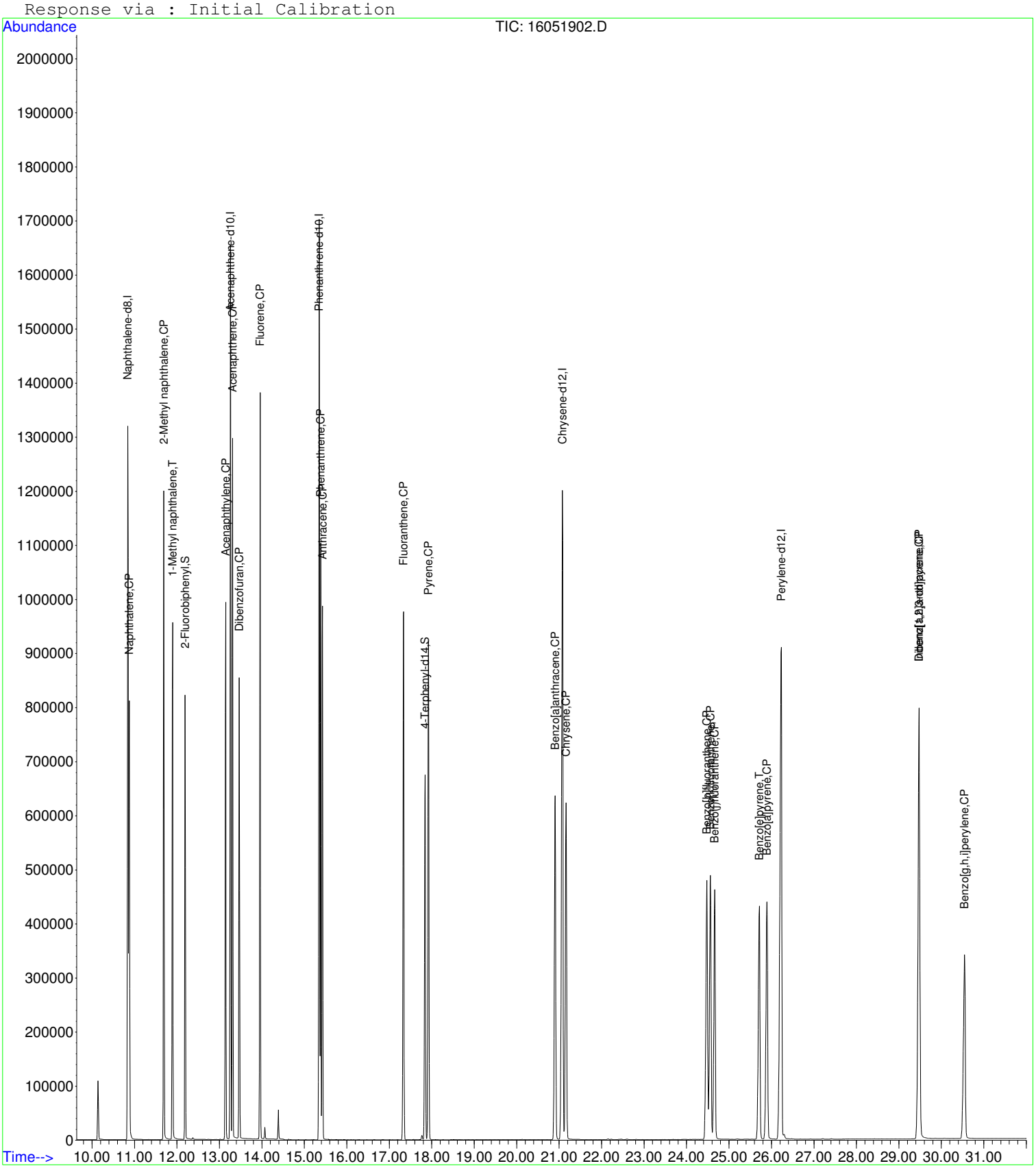
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1677320	4000.00	ug/kg	145
5) Acenaphthene-d10	13.26	164	1005196	4000.00	ug/kg	87
11) Phenanthrene-d10	15.35	188	1855983	4000.00	ug/kg	91
17) Chrysene-d12	21.08	240	2083434	4000.00	ug/kg	92
20) Perylene-d12	26.23	264	1889608	4000.00	ug/kg	92
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	608187	2074.14	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 51.85%			
16) 4-Terphenyl-d14	17.84	244	891704	1857.04	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 46.43%			
Target Compounds						Qvalue
2) Naphthalene	10.88	128	804931	1918.51	ug/kg	100
3) 2-Methyl naphthalene	11.69	142	584764	1577.85	ug/kg	98
4) 1-Methyl naphthalene	11.90	142	519512	1530.56	ug/kg	99
6) Dibenzofuran	13.47	168	730659	1939.44	ug/kg	98
8) Acenaphthylene	13.15	152	904454	2089.30	ug/kg	99
9) Acenaphthene	13.31	154	526263	1958.59	ug/kg	98
10) Fluorene	13.96	166	657903	2016.14	ug/kg	99
12) Phenanthrene	15.38	178	917003	1878.75	ug/kg	99
13) Anthracene	15.43	178	846051	1831.34	ug/kg	100
14) Fluoranthene	17.34	202	984079	1948.31	ug/kg	99
15) Pyrene	17.92	202	992704	1892.01	ug/kg	99
18) Benzo[a]anthracene	20.91	228	955901	1958.42	ug/kg	99
19) Chrysene	21.16	228	867614	1839.73	ug/kg	100
21) Benzo[b]fluoranthene	24.48	252	967036	1941.70	ug/kg	100
22) Benzo[k]fluoranthene	24.56	252	898916	1924.03	ug/kg	100
23) Benzo(j)fluoranthene	24.66	252	791282	1901.29	ug/kg	99
24) Benzo[e]pyrene	25.72	252	826949	1854.07	ug/kg	100
25) Benzo[a]pyrene	25.89	252	863815	1895.25	ug/kg	100
26) Dibenz[a,h]anthracene	29.48	278	760092	1831.15	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.48	276	878679	1774.44	ug/kg	97
28) Benzo[g,h,i]perylene	30.54	276	707526	1832.33	ug/kg	100

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051902.D Vial: 2
Acq On : 19 May 2016 9:03 am Operator:
Sample : ICV-160519 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:26 2016 Quant Results File: PP160421.RES

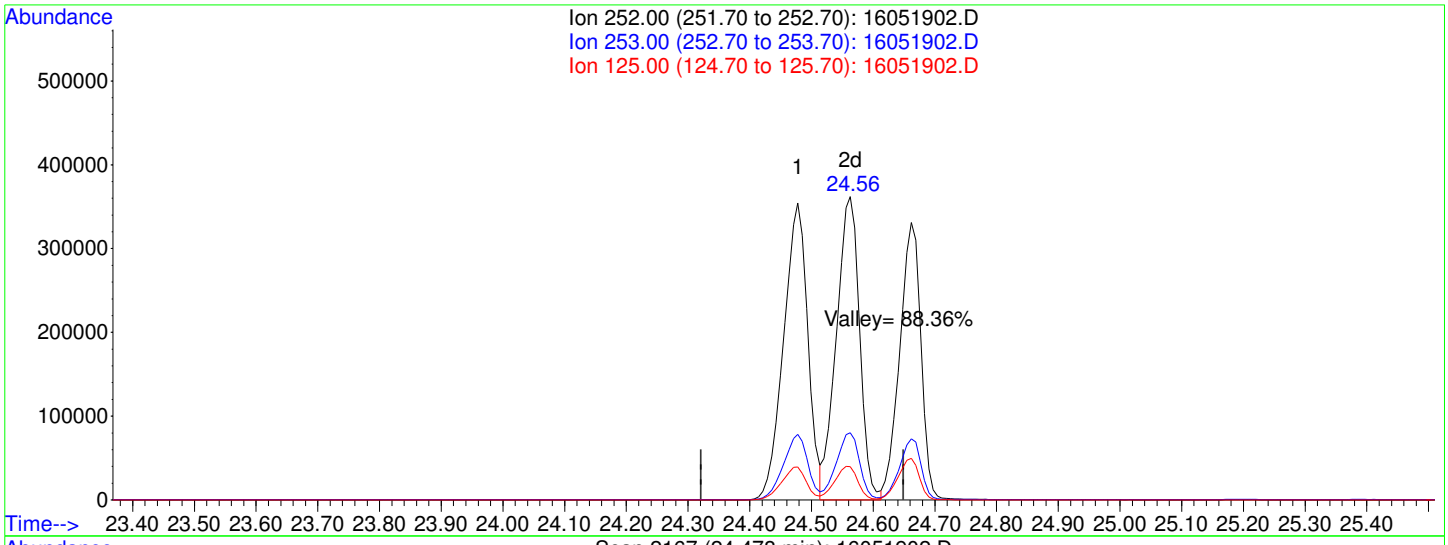
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

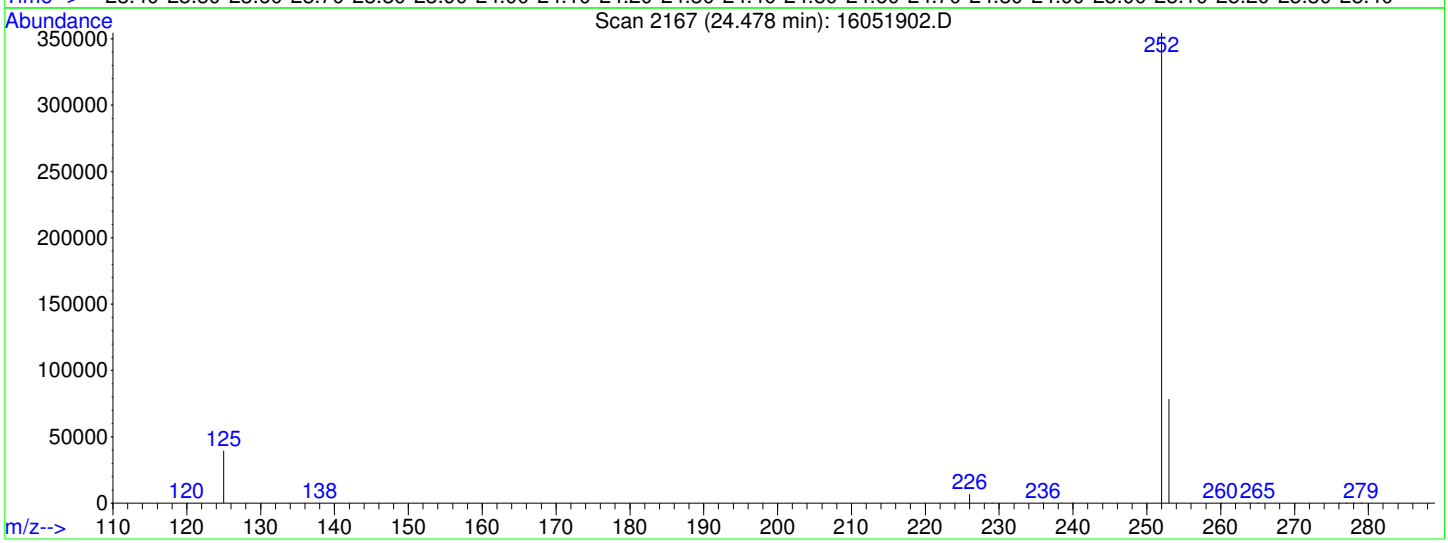


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160519\16051902.D Vial: 2
Acq On : 19 May 2016 9:03 am Operator:
Sample : ICV-160519 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 9:35 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Multiple Level Calibration





TIC: 16051902.D

(21) Benzo[b]fluoranthene (CP)

24.48min 1941.70ug/kg

response 967036

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.00
125.00	11.00	11.13
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051903.D Vial: 3
Acq On : 19 May 2016 9:43 am Operator:
Sample : LCS-75161 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:26 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

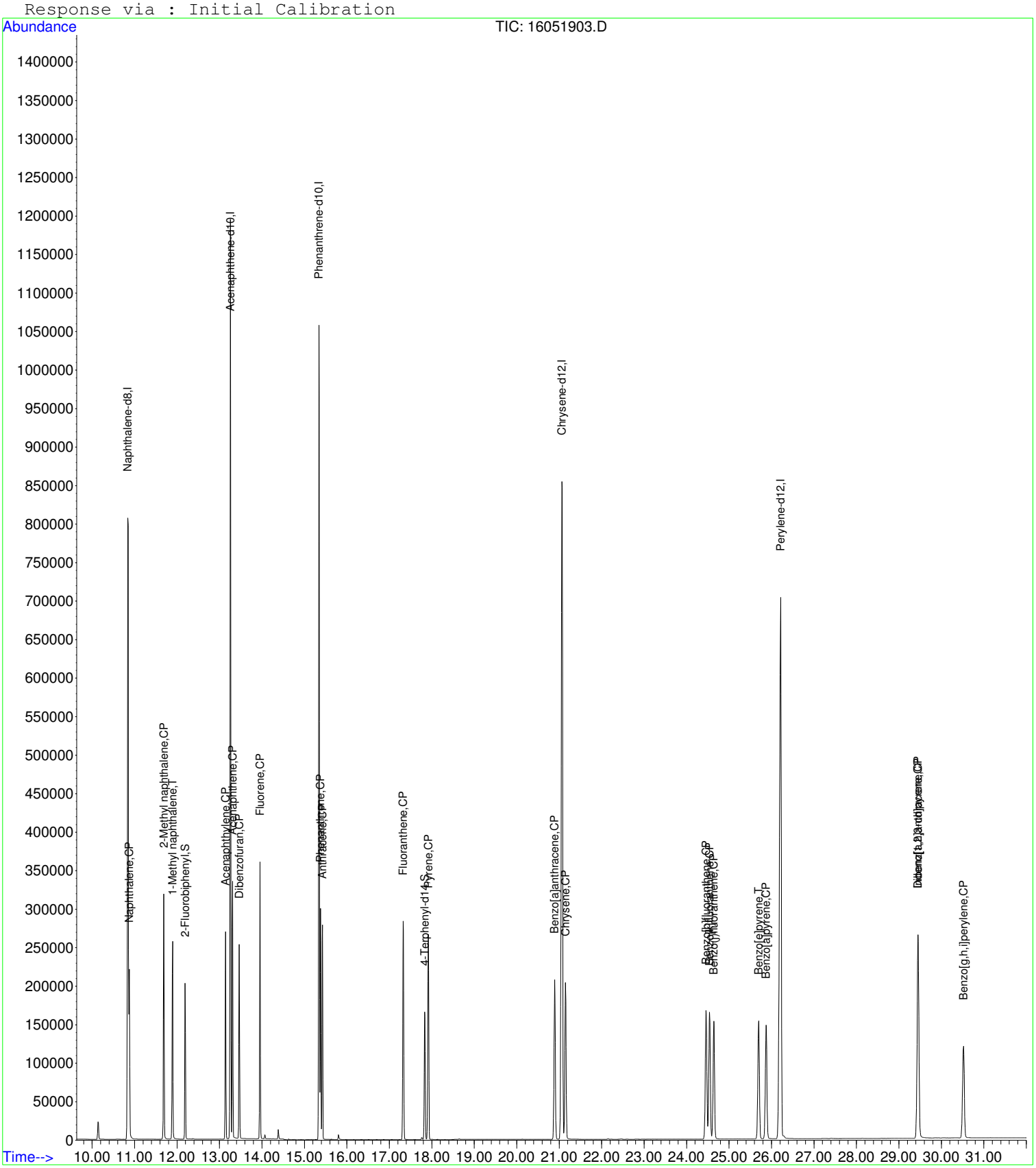
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1157322	4000.00	ug/kg	100
5) Acenaphthene-d10	13.25	164	668607	4000.00	ug/kg	58
11) Phenanthrene-d10	15.34	188	1121260	4000.00	ug/kg	55
17) Chrysene-d12	21.07	240	1425278	4000.00	ug/kg	63
20) Perylene-d12	26.22	264	1381184	4000.00	ug/kg	67
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	159318	816.86	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.42%#			
16) 4-Terphenyl-d14	17.83	244	212928	734.01	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.35%#			
Target Compounds						Qvalue
2) Naphthalene	10.88	128	220416	761.40	ug/kg	100
3) 2-Methyl naphthalene	11.69	142	163361	638.85	ug/kg	98
4) 1-Methyl naphthalene	11.90	142	144880	618.62	ug/kg	100
6) Dibenzofuran	13.46	168	211523	844.11	ug/kg	99
8) Acenaphthylene	13.15	152	246825	857.20	ug/kg	99
9) Acenaphthene	13.31	154	144811	810.26	ug/kg	98
10) Fluorene	13.96	166	176571	813.50	ug/kg	99
12) Phenanthrene	15.38	178	243636	826.24	ug/kg	99
13) Anthracene	15.42	178	236241	846.44	ug/kg	99
14) Fluoranthene	17.33	202	282979	927.37	ug/kg	99
15) Pyrene	17.92	202	286420	903.60	ug/kg	99
18) Benzo[a]anthracene	20.89	228	298623	894.33	ug/kg	99
19) Chrysene	21.15	228	275712	854.60	ug/kg	100
21) Benzo[b]fluoranthene	24.46	252	316012	868.09	ug/kg	99
22) Benzo[k]fluoranthene	24.54	252	300077	878.71	ug/kg	100
23) Benzo(j)fluoranthene	24.64	252	264483	869.43	ug/kg	98
24) Benzo[e]pyrene	25.70	252	285722	876.42	ug/kg	99
25) Benzo[a]pyrene	25.88	252	276692	830.54	ug/kg	99
26) Dibenz[a,h]anthracene	29.45	278	247525	815.82	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.46	276	287274	793.68	ug/kg	94
28) Benzo[g,h,i]perylene	30.52	276	236725	838.74	ug/kg	98

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051903.D Vial: 3
Acq On : 19 May 2016 9:43 am Operator:
Sample : LCS-75161 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:26 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051904.D Vial: 4
Acq On : 19 May 2016 10:27 am Operator:
Sample : MB-75161 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

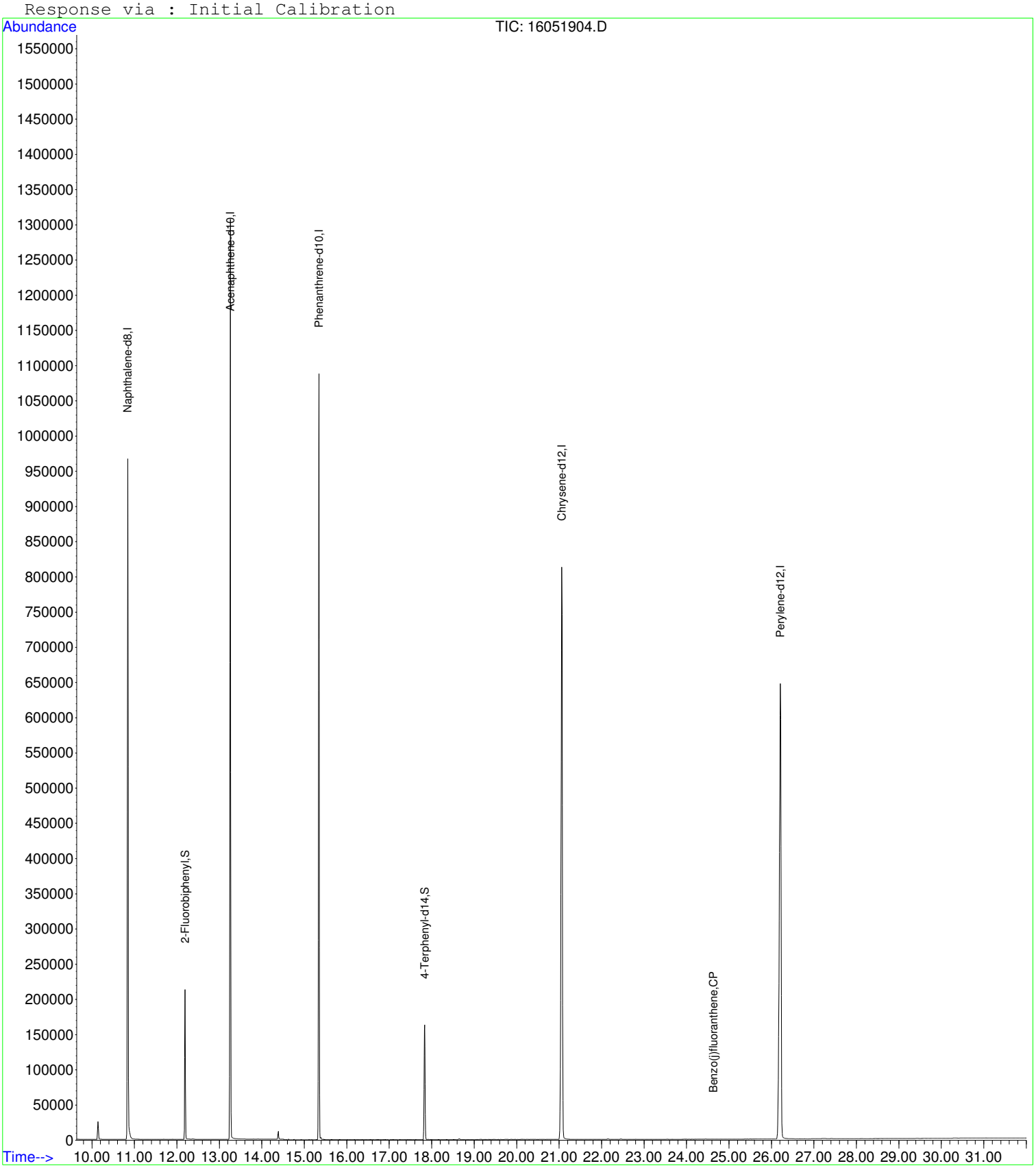
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1129556	4000.00	ug/kg	97
5) Acenaphthene-d10	13.26	164	662017	4000.00	ug/kg	58
11) Phenanthrene-d10	15.35	188	1130851	4000.00	ug/kg	55
17) Chrysene-d12	21.06	240	1333696	4000.00	ug/kg	59
20) Perylene-d12	26.21	264	1250949	4000.00	ug/kg	61
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	157028	813.13	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.33%#			
16) 4-Terphenyl-d14	17.84	244	209995	717.76	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.94%#			
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.63	252	215	0.78	ug/kg#	44

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051904.D Vial: 4
Acq On : 19 May 2016 10:27 am Operator:
Sample : MB-75161 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051912.D Vial: 12
Acq On : 19 May 2016 3:47 pm Operator:
Sample : 1605097-01A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:34 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

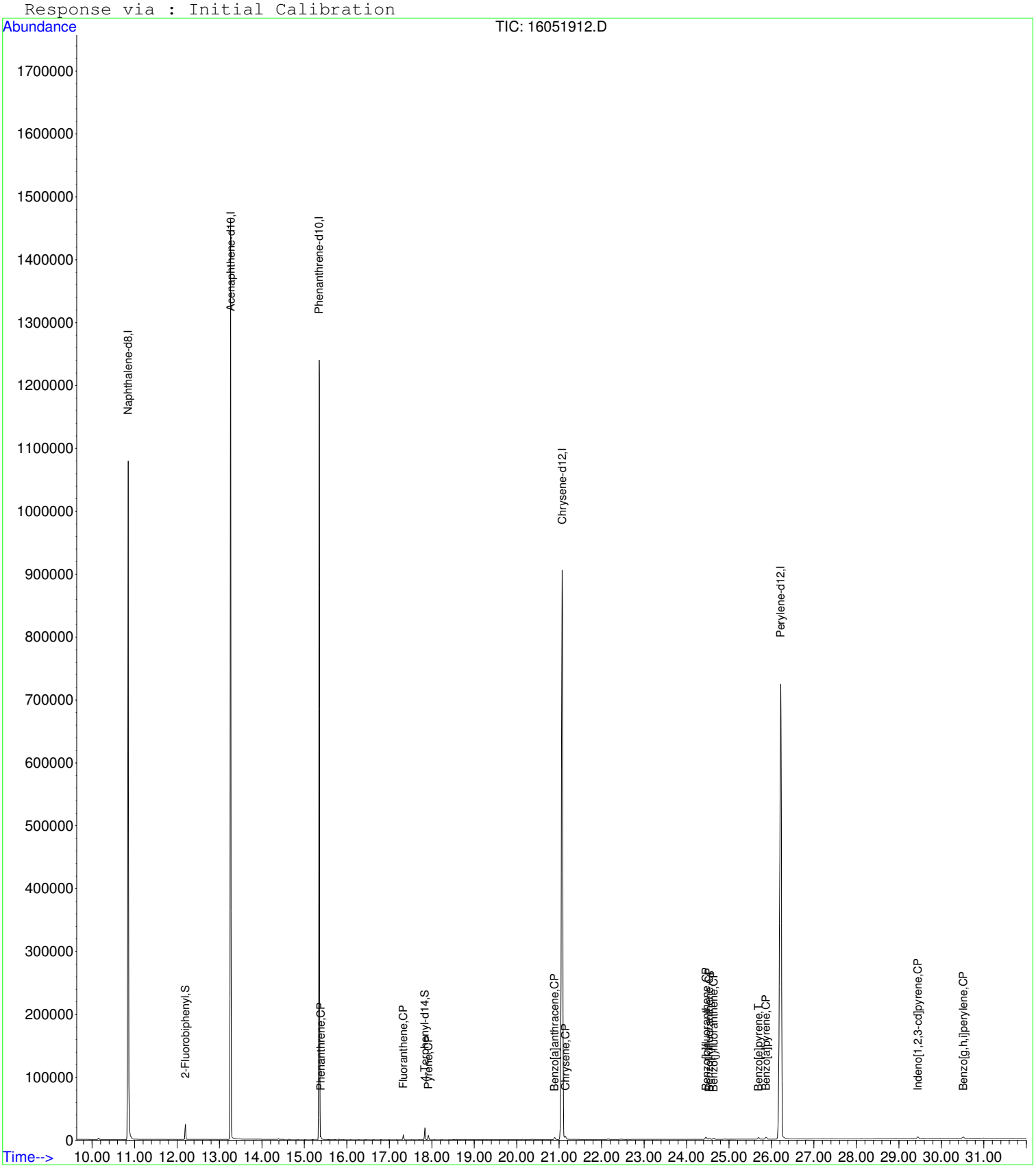
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1296847	4000.00	ug/kg	112
5) Acenaphthene-d10	13.26	164	795476	4000.00	ug/kg	69
11) Phenanthrene-d10	15.35	188	1338784	4000.00	ug/kg	66
17) Chrysene-d12	21.07	240	1529651	4000.00	ug/kg	67
20) Perylene-d12	26.22	264	1415256	4000.00	ug/kg	69
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	19539	84.20	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.11%#		
16) 4-Terphenyl-d14	17.84	244	24583	70.97	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.77%#		
Target Compounds						Qvalue
12) Phenanthrene	15.38	178	2629	7.47	ug/kg	98
14) Fluoranthene	17.33	202	7596	20.85	ug/kg	99
15) Pyrene	17.92	202	7160	18.92	ug/kg	98
18) Benzo[a]anthracene	20.89	228	4895	13.66	ug/kg	98
19) Chrysene	21.15	228	5841	16.87	ug/kg	99
21) Benzo[b]fluoranthene	24.46	252	6574	17.62	ug/kg	99
22) Benzo[k]fluoranthene	24.54	252	3481	9.95	ug/kg	99
23) Benzo(j)fluoranthene	24.64	252	3130	10.04	ug/kg	93
24) Benzo[e]pyrene	25.69	252	5025	15.04	ug/kg	97
25) Benzo[a]pyrene	25.87	252	6226	18.24	ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.46	276	4266	11.50	ug/kg	91
28) Benzo[g,h,i]perylene	30.52	276	4215	14.57	ug/kg	98

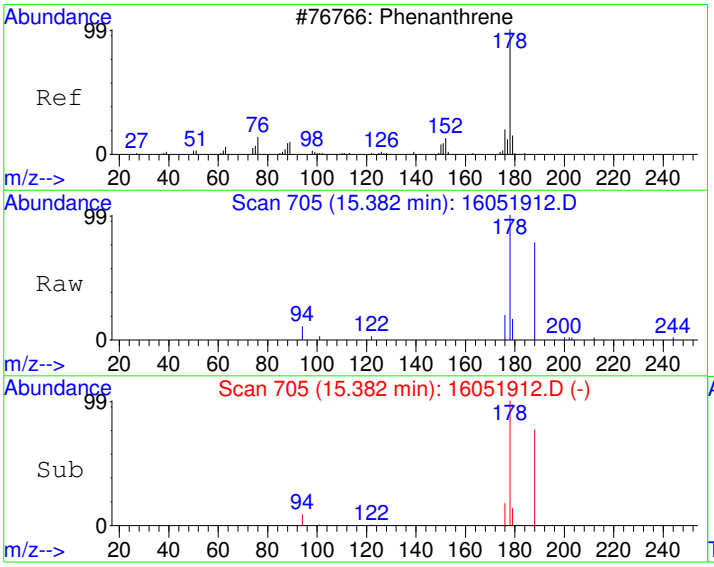
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051912.D Vial: 12
Acq On : 19 May 2016 3:47 pm Operator:
Sample : 1605097-01A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:34 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

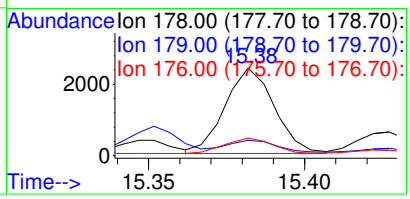


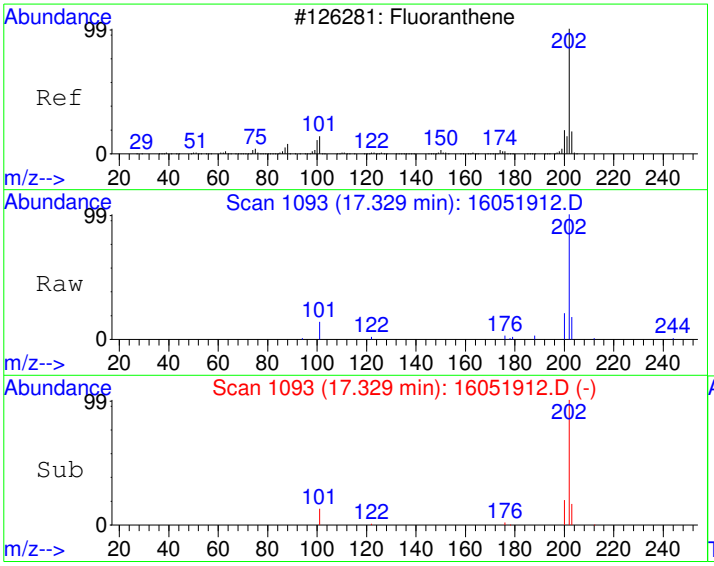


#12
Phenanthrene
Concen: 7.47 ug/kg
RT: 15.38 min Scan# 705
Delta R.T. -0.01 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:178 Resp: 2629

Ion	Ratio	Lower	Upper
178	100		
179	14.1	0.0	45.9
176	18.4	0.0	48.5

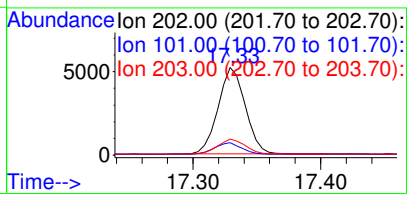


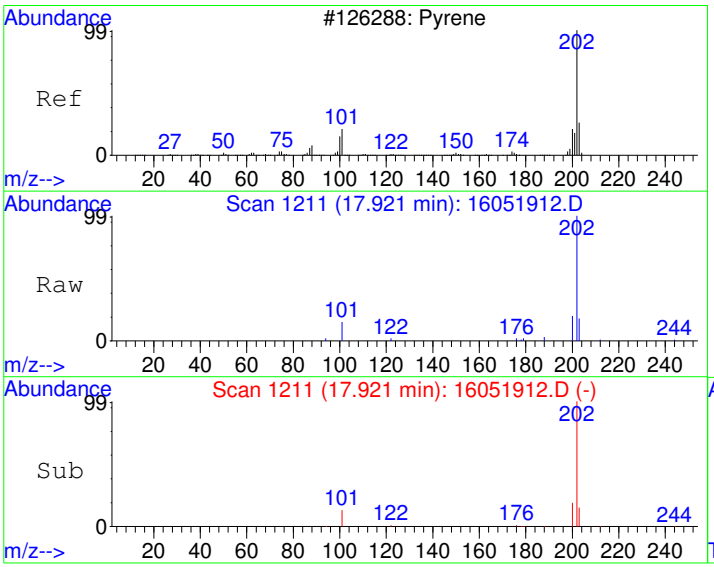


#14
Fluoranthene
Concen: 20.85 ug/kg
RT: 17.33 min Scan# 1093
Delta R.T. -0.01 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:202 Resp: 7596

Ion	Ratio	Lower	Upper
202	100		
101	13.4	0.0	43.0
203	17.3	0.0	47.9

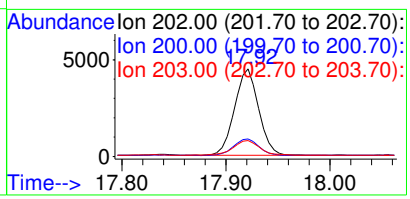


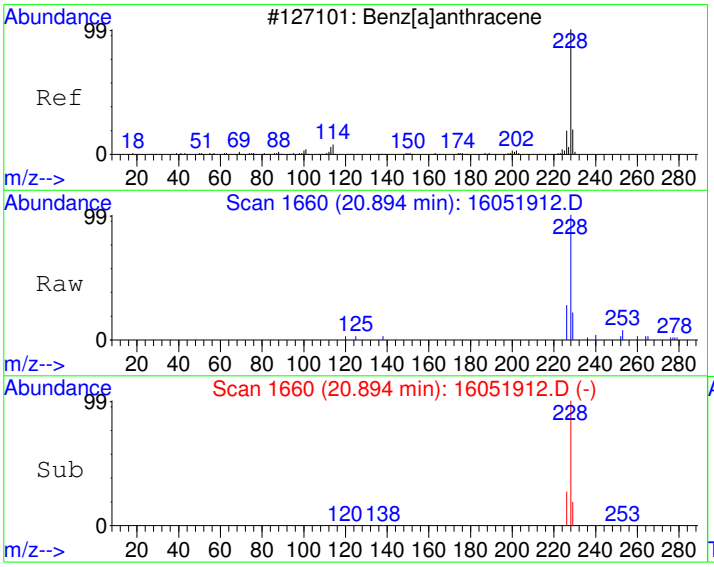


#15
Pyrene
Concen: 18.92 ug/kg
RT: 17.92 min Scan# 1211
Delta R.T. -0.01 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:202 Resp: 7160

Ion	Ratio	Lower	Upper
202	100		
200	19.2	0.0	50.0
203	17.3	0.0	48.0

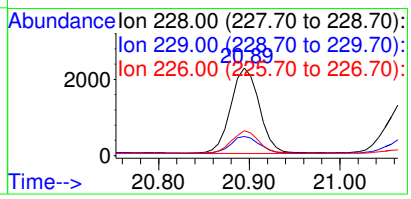


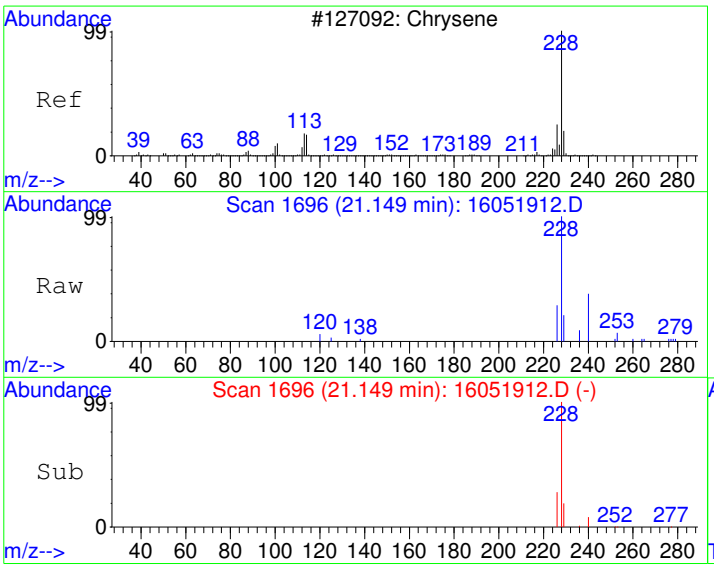


#18
Benzo[a]anthracene
Concen: 13.66 ug/kg
RT: 20.89 min Scan# 1660
Delta R.T. -0.02 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:228 Resp: 4895

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.0	50.1
226	26.3	0.0	55.2

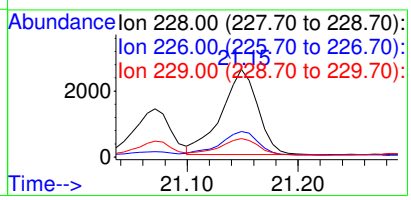


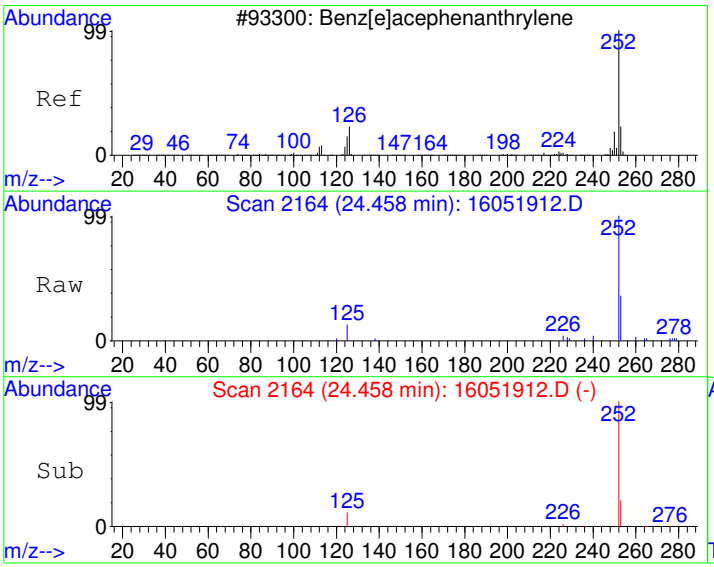


#19
Chrysene
Concen: 16.87 ug/kg
RT: 21.15 min Scan# 1696
Delta R.T. -0.02 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:228 Resp: 5841

Ion	Ratio	Lower	Upper
228	100		
226	27.5	0.0	58.1
229	19.5	0.0	50.1

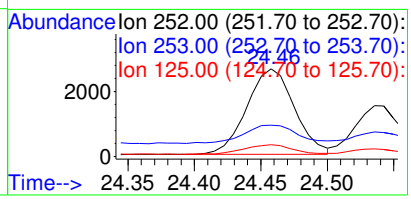


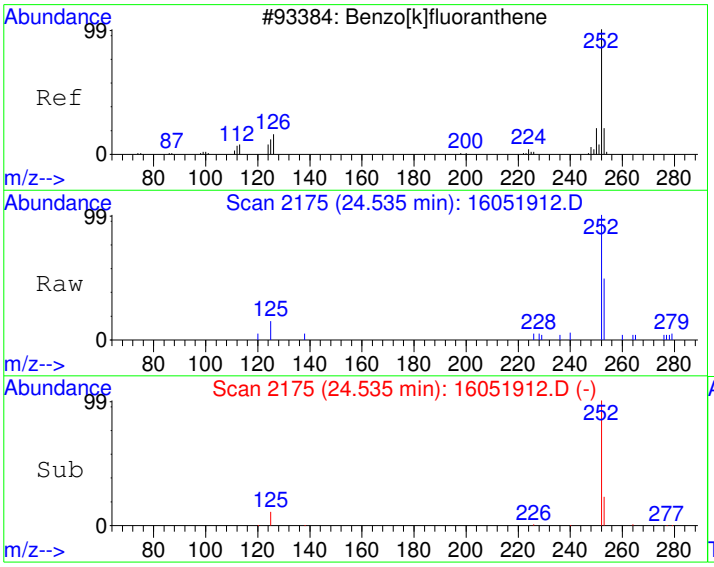


#21
Benzo[b]fluoranthene
Concen: 17.62 ug/kg
RT: 24.46 min Scan# 2164
Delta R.T. -0.03 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:252 Resp: 6574

Ion	Ratio	Lower	Upper
252	100		
253	21.5	0.0	52.2
125	11.0	0.0	41.0

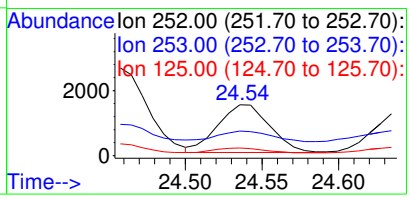


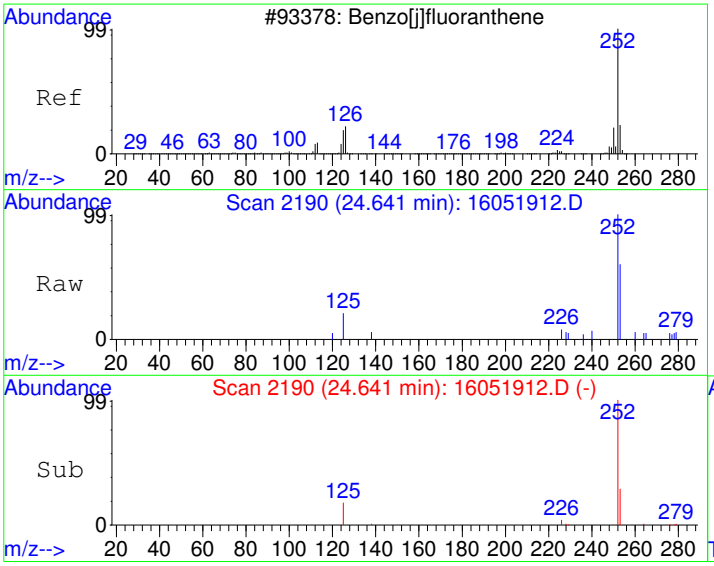


#22
Benzo[k]fluoranthene
Concen: 9.95 ug/kg
RT: 24.54 min Scan# 2175
Delta R.T. -0.03 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:252 Resp: 3481

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.1	42.1
125	10.7	0.0	31.3

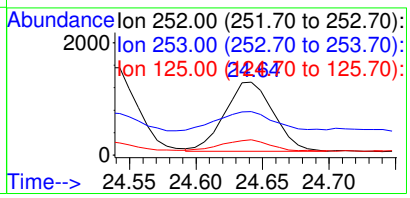


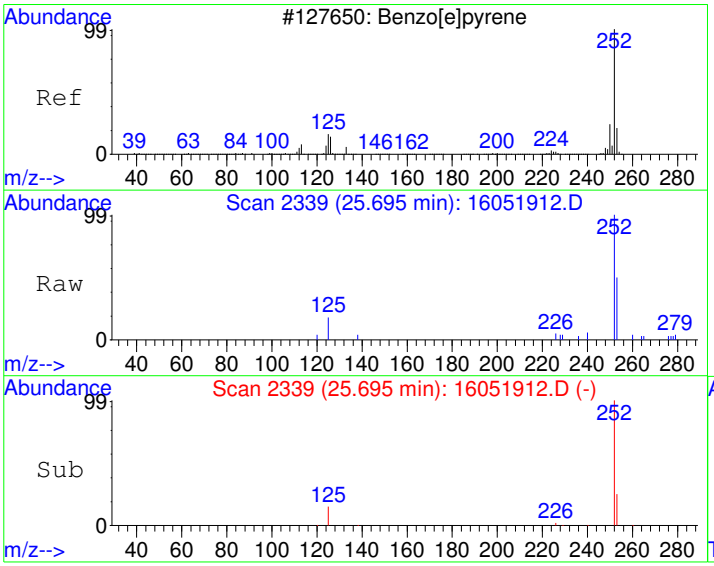


#23
Benzo(j)fluoranthene
Concen: 10.04 ug/kg
RT: 24.64 min Scan# 2190
Delta R.T. -0.03 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:252 Resp: 3130

Ion	Ratio	Lower	Upper
252	100		
253	26.7	2.1	42.1
125	15.9	0.0	34.4

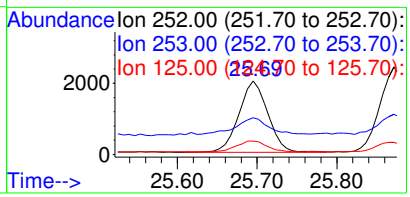


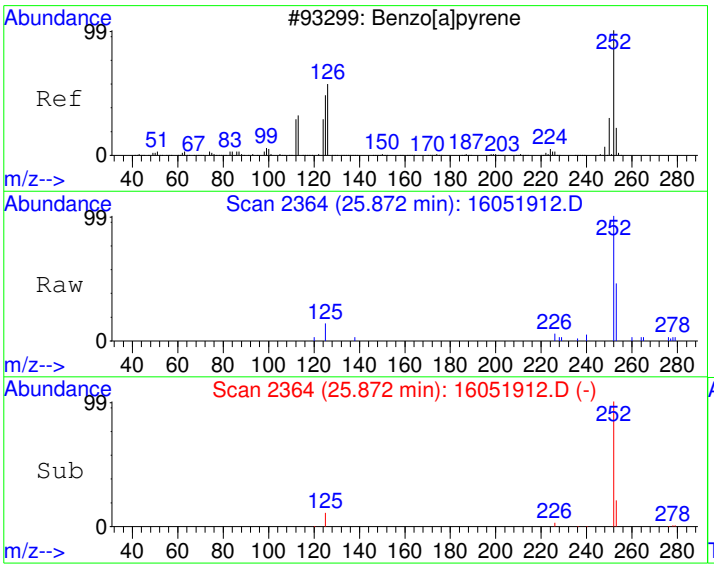


#24
Benzo[e]pyrene
Concen: 15.04 ug/kg
RT: 25.69 min Scan# 2339
Delta R.T. -0.03 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:252 Resp: 5025

Ion	Ratio	Lower	Upper
252	100		
253	24.0	2.2	42.2
125	14.8	0.0	36.1

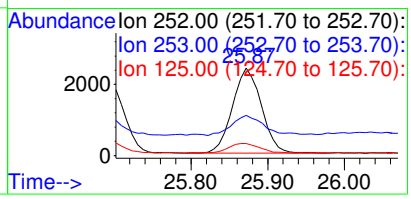


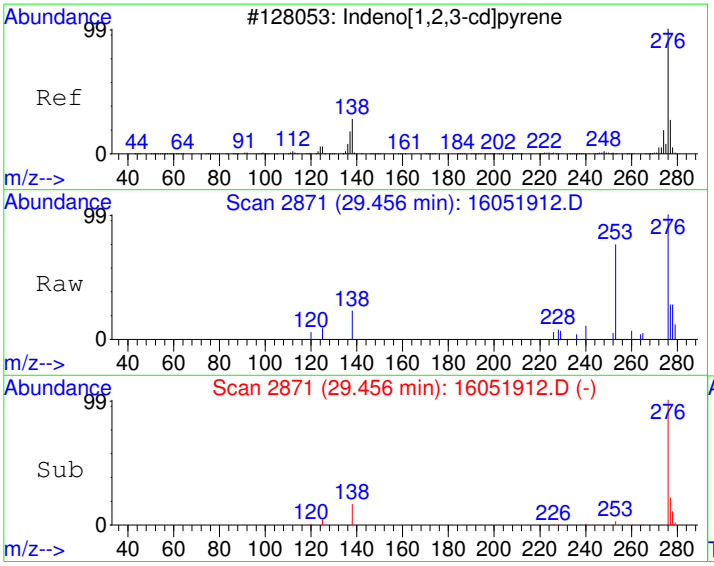


#25
Benzo[a]pyrene
Concen: 18.24 ug/kg
RT: 25.87 min Scan# 2364
Delta R.T. -0.03 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:252 Resp: 6226

Ion	Ratio	Lower	Upper
252	100		
253	23.3	1.9	41.9
125	11.1	0.0	31.7

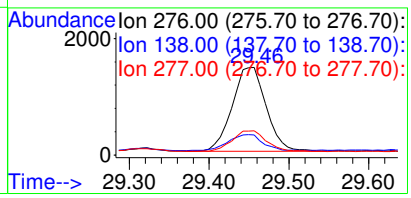


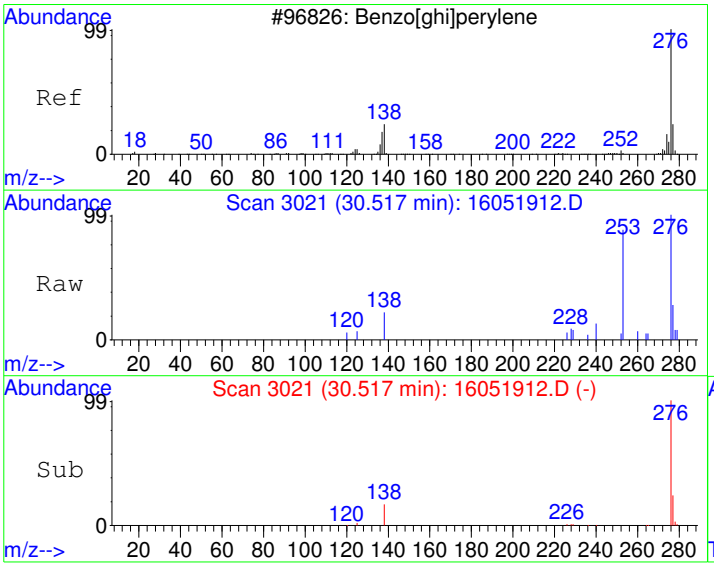


#27
Indeno[1,2,3-cd]pyrene
Concen: 11.50 ug/kg
RT: 29.46 min Scan# 2871
Delta R.T. -0.02 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:276 Resp: 4266

Ion	Ratio	Lower	Upper
276	100		
138	18.6	6.7	46.7
277	24.8	5.8	45.8

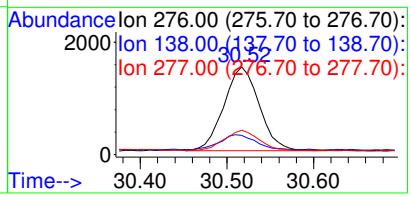




#28
Benzo[g,h,i]perylene
Concen: 14.57 ug/kg
RT: 30.52 min Scan# 3021
Delta R.T. -0.03 min
Lab File: 16051912.D
Acq: 19 May 2016 3:47 pm

Tgt Ion:276 Resp: 4215

Ion	Ratio	Lower	Upper
276	100		
138	17.4	0.0	39.1
277	24.5	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051913.D Vial: 13
Acq On : 19 May 2016 4:27 pm Operator:
Sample : 1605097-02A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:34 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

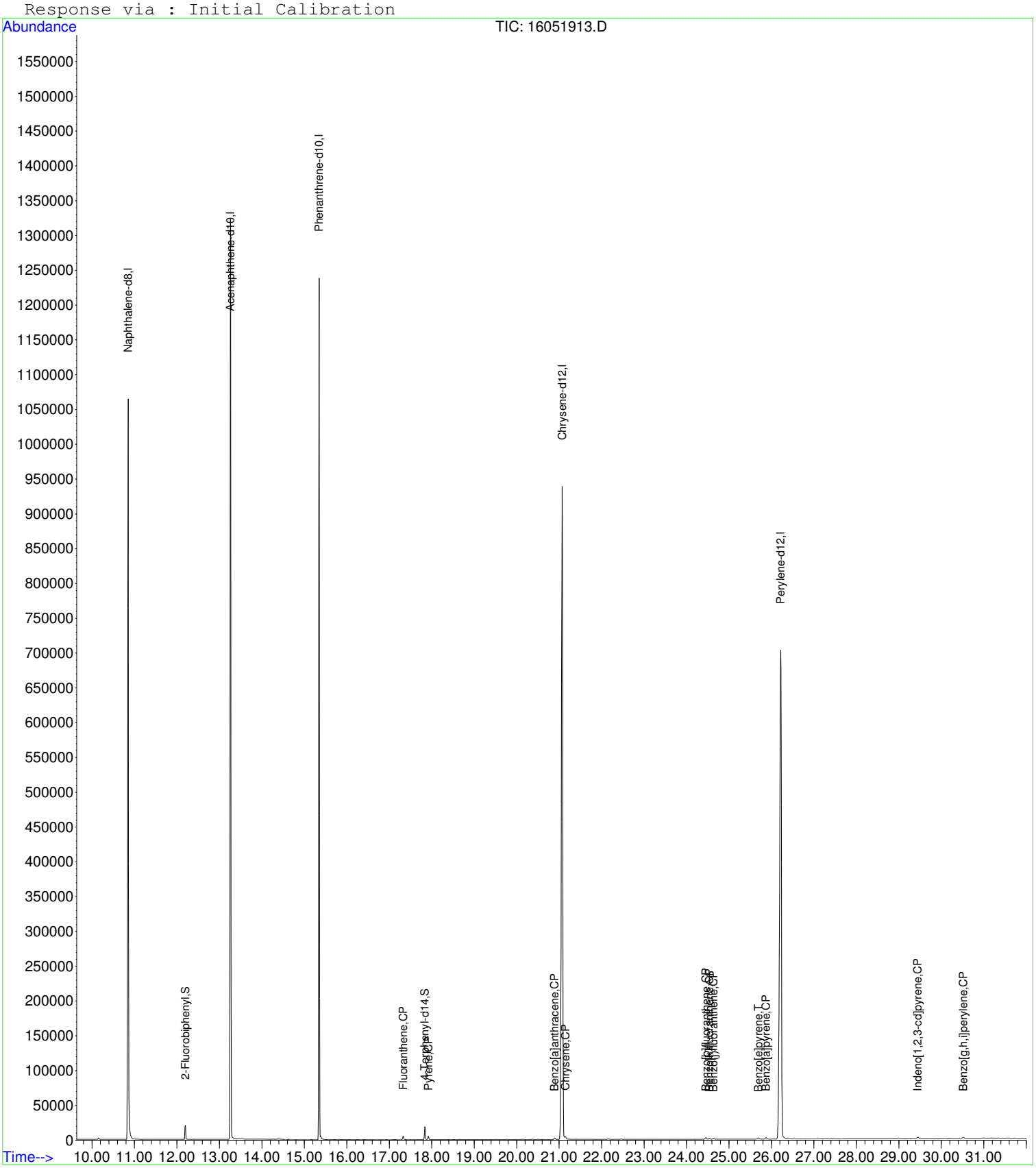
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1302010	4000.00	ug/kg	112
5) Acenaphthene-d10	13.27	164	809299	4000.00	ug/kg	70
11) Phenanthrene-d10	15.35	188	1327326	4000.00	ug/kg	65
17) Chrysene-d12	21.07	240	1542904	4000.00	ug/kg	68
20) Perylene-d12	26.22	264	1436550	4000.00	ug/kg	70
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	18819	79.71	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.99%#		
16) 4-Terphenyl-d14	17.84	244	24159	70.35	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.76%#		
Target Compounds						Qvalue
14) Fluoranthene	17.33	202	5388	14.92	ug/kg	100
15) Pyrene	17.92	202	5291	14.10	ug/kg	99
18) Benzo[a]anthracene	20.89	228	3549	9.82	ug/kg	99
19) Chrysene	21.15	228	4084	11.69	ug/kg	99
21) Benzo[b]fluoranthene	24.46	252	4147	10.95	ug/kg	99
22) Benzo[k]fluoranthene	24.54	252	2464	6.94	ug/kg	98
23) Benzo(j)fluoranthene	24.64	252	2547	8.05	ug/kg	95
24) Benzo[e]pyrene	25.70	252	3309	9.76	ug/kg	99
25) Benzo[a]pyrene	25.87	252	4194	12.10	ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.45	276	2781	7.39	ug/kg	90
28) Benzo[g,h,i]perylene	30.52	276	2748	9.36	ug/kg	98

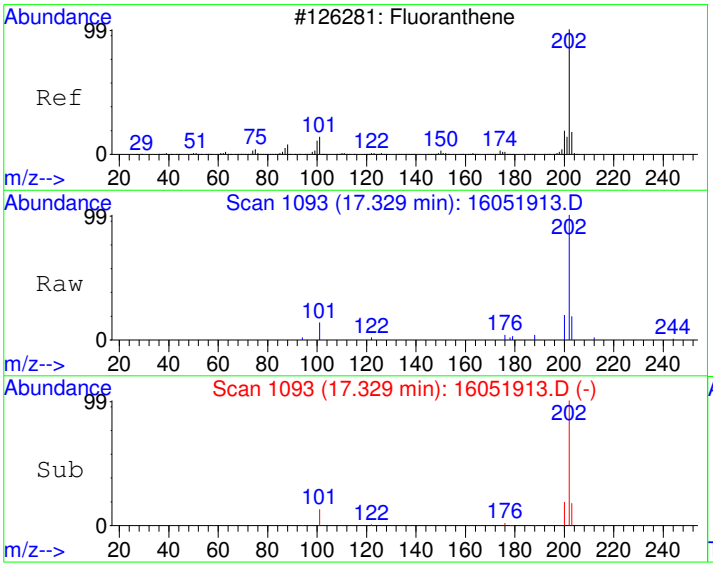
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051913.D Vial: 13
Acq On : 19 May 2016 4:27 pm Operator:
Sample : 1605097-02A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:34 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

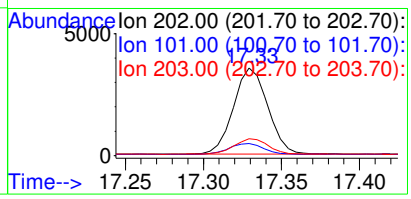


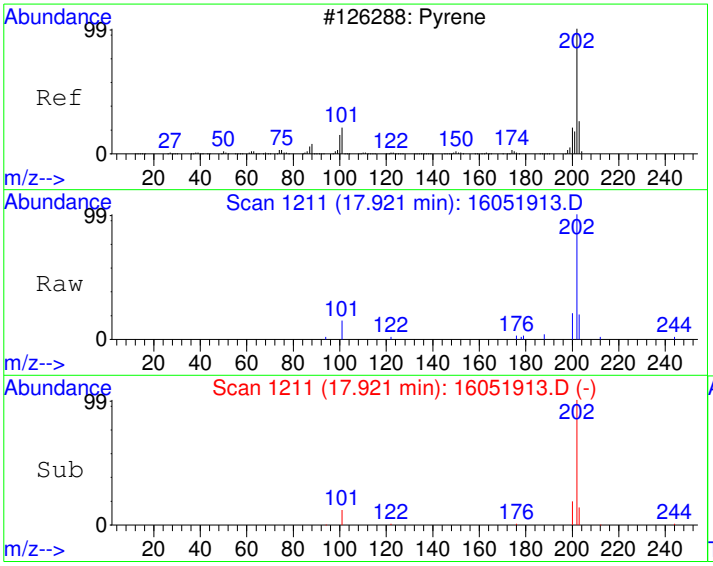


#14
Fluoranthene
Concen: 14.92 ug/kg
RT: 17.33 min Scan# 1093
Delta R.T. -0.01 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:202 Resp: 5388

Ion	Ratio	Lower	Upper
202	100		
101	12.7	0.0	43.0
203	18.0	0.0	47.9

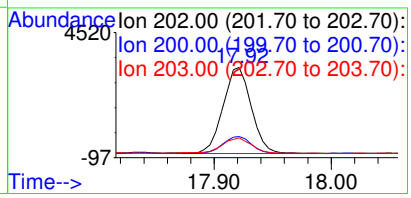


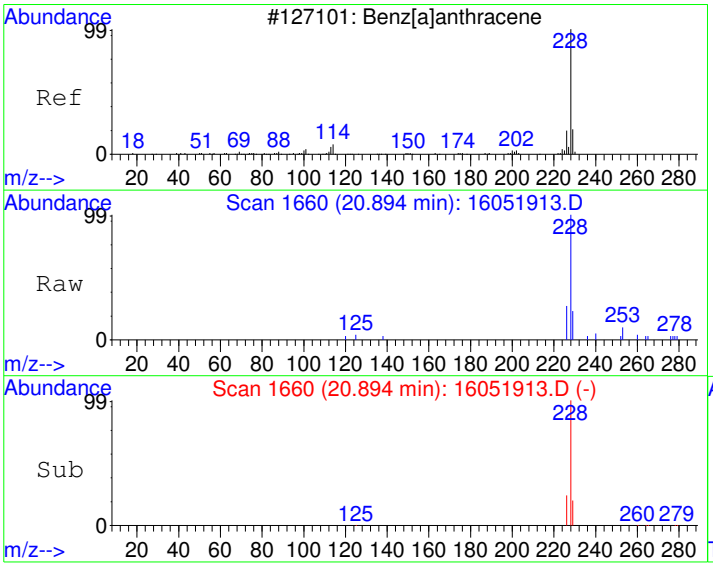


#15
Pyrene
Concen: 14.10 ug/kg
RT: 17.92 min Scan# 1211
Delta R.T. -0.01 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:202 Resp: 5291

Ion	Ratio	Lower	Upper
202	100		
200	19.6	0.0	50.0
203	18.1	0.0	48.0

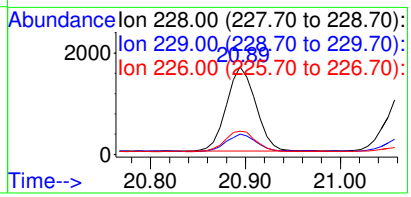


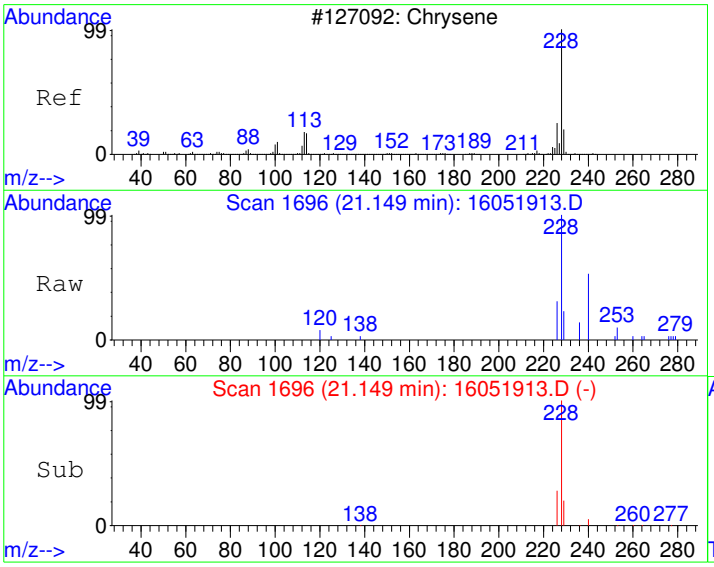


#18
Benzo[a]anthracene
Concen: 9.82 ug/kg
RT: 20.89 min Scan# 1660
Delta R.T. -0.02 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:228 Resp: 3549

Ion	Ratio	Lower	Upper
228	100		
229	20.4	0.0	50.1
226	24.3	0.0	55.2

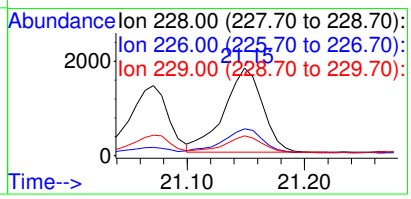


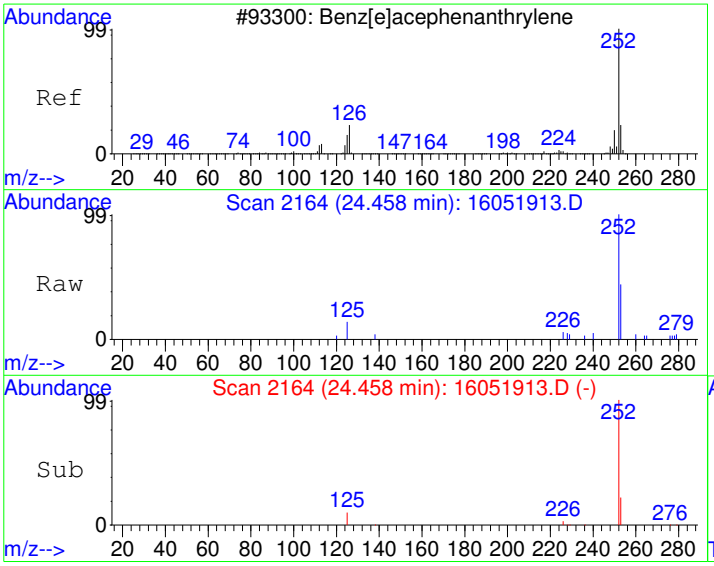


#19
Chrysene
Concen: 11.69 ug/kg
RT: 21.15 min Scan# 1696
Delta R.T. -0.02 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:228 Resp: 4084

Ion	Ratio	Lower	Upper
228	100		
226	28.5	0.0	58.1
229	19.6	0.0	50.1

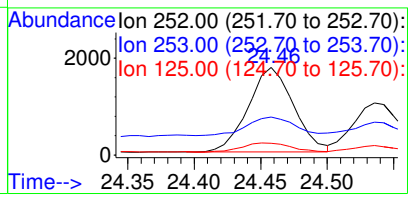


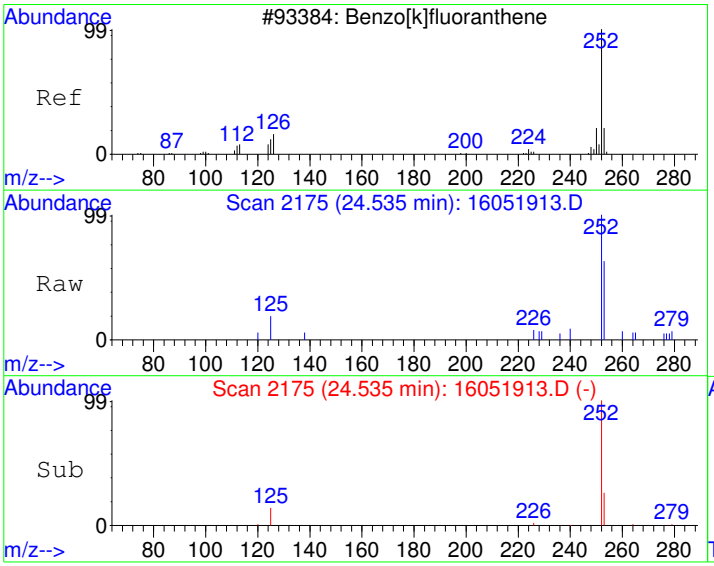


#21
Benzo[b]fluoranthene
Concen: 10.95 ug/kg
RT: 24.46 min Scan# 2164
Delta R.T. -0.03 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:252 Resp: 4147

Ion	Ratio	Lower	Upper
252	100		
253	21.7	0.0	52.2
125	10.0	0.0	41.0

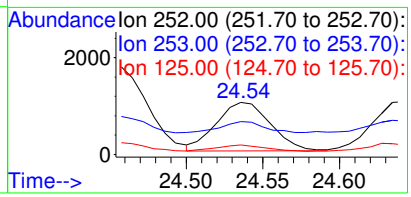


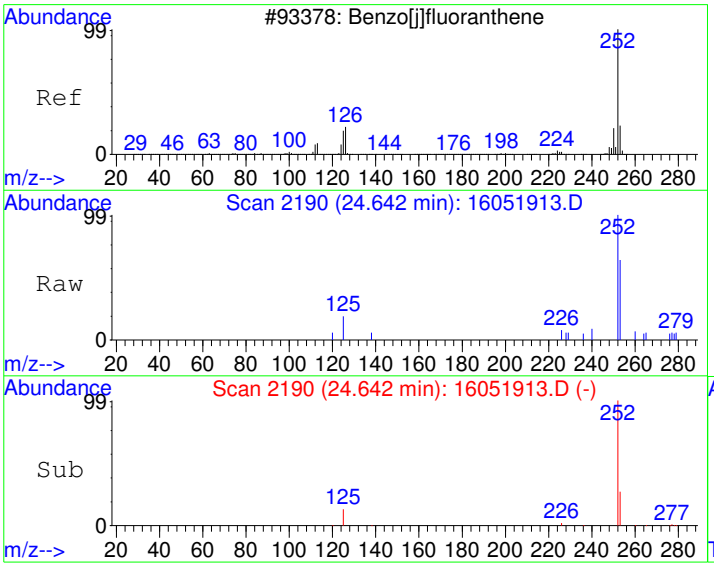


#22
Benzo[k]fluoranthene
Concen: 6.94 ug/kg
RT: 24.54 min Scan# 2175
Delta R.T. -0.03 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:252 Resp: 2464

Ion	Ratio	Lower	Upper
252	100		
253	22.7	2.1	42.1
125	12.9	0.0	31.3

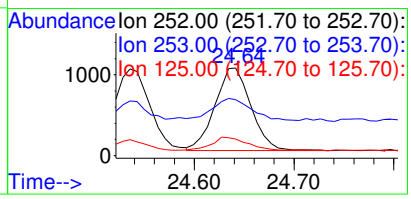


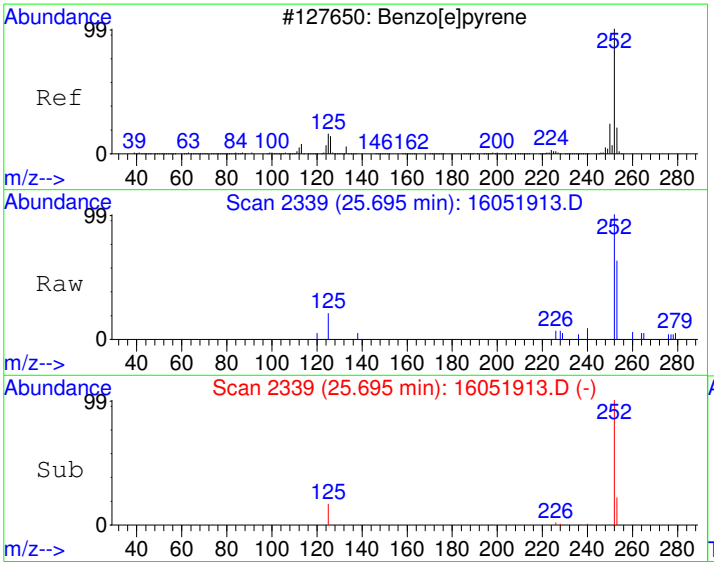


#23
Benzo(j)fluoranthene
Concen: 8.05 ug/kg
RT: 24.64 min Scan# 2190
Delta R.T. -0.03 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:252 Resp: 2547

Ion	Ratio	Lower	Upper
252	100		
253	25.8	2.1	42.1
125	14.1	0.0	34.4

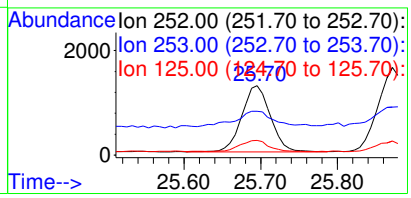


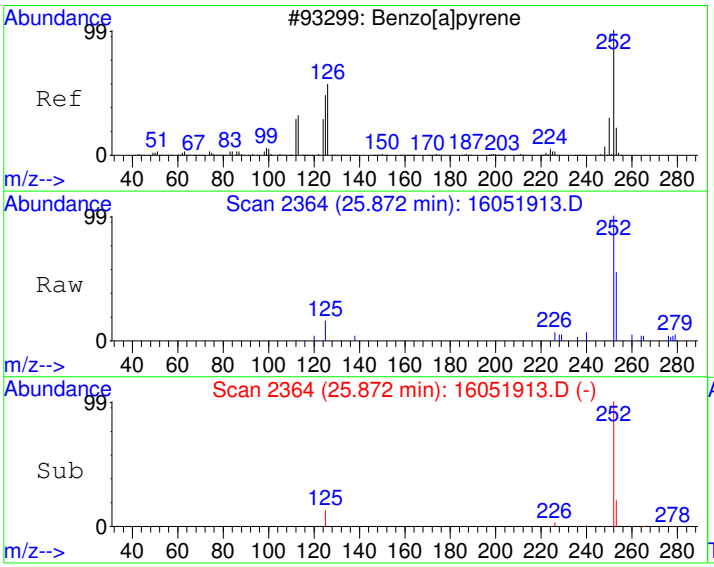


#24
Benzo[e]pyrene
Concen: 9.76 ug/kg
RT: 25.70 min Scan# 2339
Delta R.T. -0.03 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:252 Resp: 3309

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.2	42.2
125	16.8	0.0	36.1

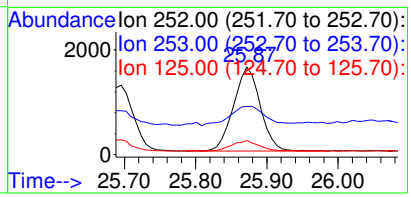


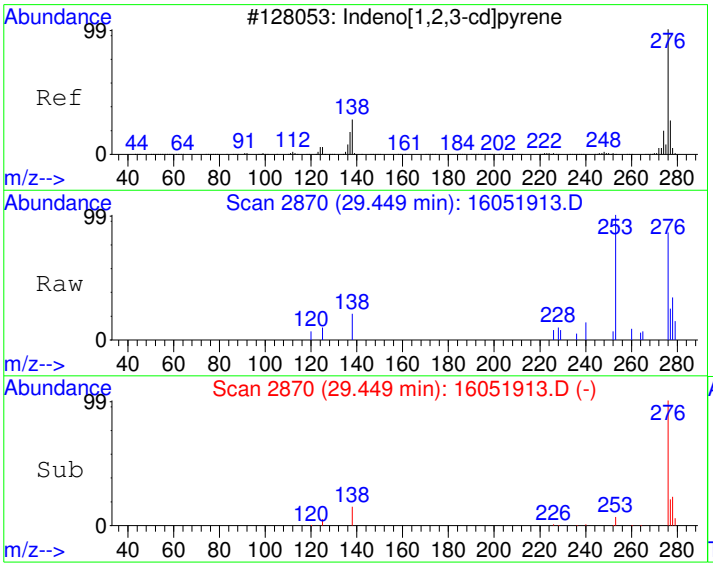


#25
Benzo[a]pyrene
Concen: 12.10 ug/kg
RT: 25.87 min Scan# 2364
Delta R.T. -0.03 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:252 Resp: 4194

Ion	Ratio	Lower	Upper
252	100		
253	20.7	1.9	41.9
125	13.0	0.0	31.7

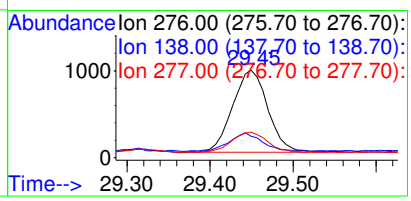


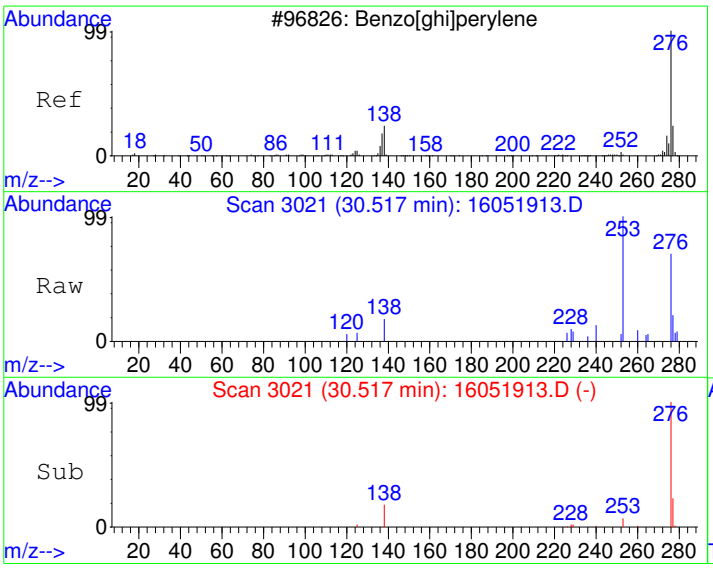


#27
Indeno[1,2,3-cd]pyrene
Concen: 7.39 ug/kg
RT: 29.45 min Scan# 2870
Delta R.T. -0.03 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:276 Resp: 2781

Ion	Ratio	Lower	Upper
276	100		
138	18.2	6.7	46.7
277	24.2	5.8	45.8

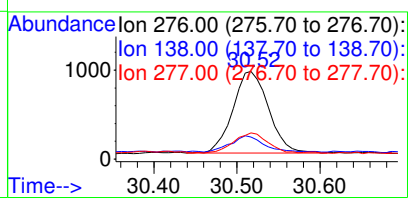




#28
Benzo[g,h,i]perylene
Concen: 9.36 ug/kg
RT: 30.52 min Scan# 3021
Delta R.T. -0.03 min
Lab File: 16051913.D
Acq: 19 May 2016 4:27 pm

Tgt Ion:276 Resp: 2748

Ion	Ratio	Lower	Upper
276	100		
138	18.4	0.0	39.1
277	25.1	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051914.D Vial: 14
Acq On : 19 May 2016 5:07 pm Operator:
Sample : 1605097-03A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:34 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

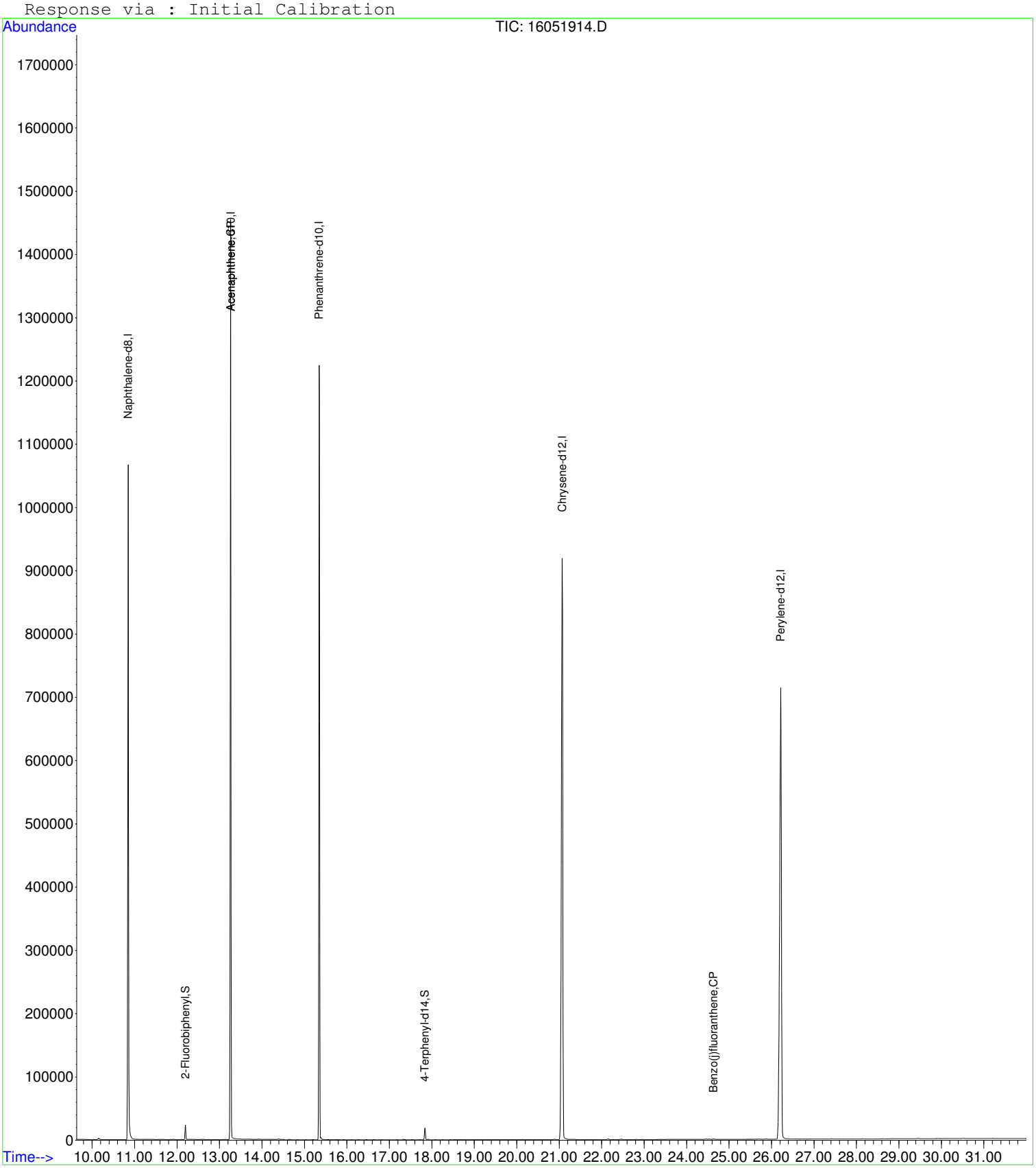
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1276043	4000.00	ug/kg	110
5) Acenaphthene-d10	13.26	164	786912	4000.00	ug/kg	68
11) Phenanthrene-d10	15.35	188	1332307	4000.00	ug/kg	65
17) Chrysene-d12	21.07	240	1533607	4000.00	ug/kg	68
20) Perylene-d12	26.22	264	1401479	4000.00	ug/kg	68
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	18493	80.56	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.01%#		
16) 4-Terphenyl-d14	17.84	244	24092	69.89	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.75%#		
Target Compounds						Qvalue
9) Acenaphthene	13.26	154	2396	11.39	ug/kg#	9
23) Benzo(j)fluoranthene	24.63	252	973	3.15	ug/kg	97

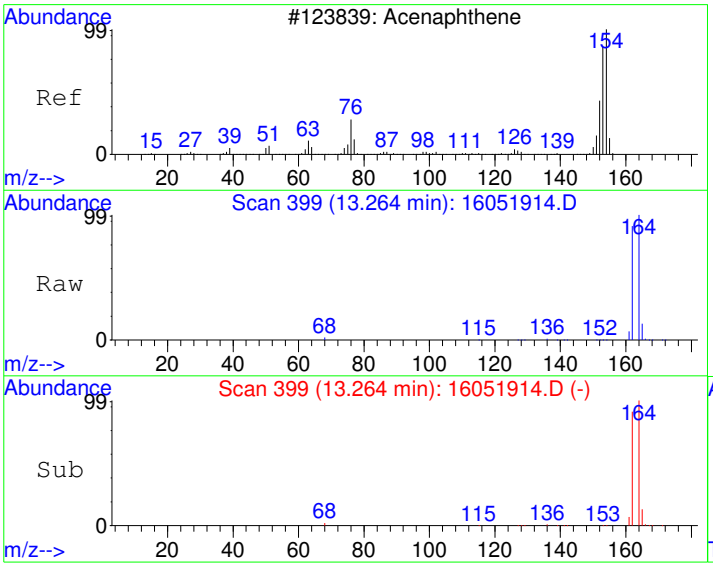
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051914.D Vial: 14
Acq On : 19 May 2016 5:07 pm Operator:
Sample : 1605097-03A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:34 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

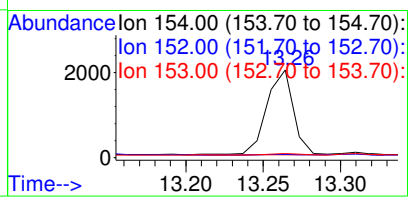


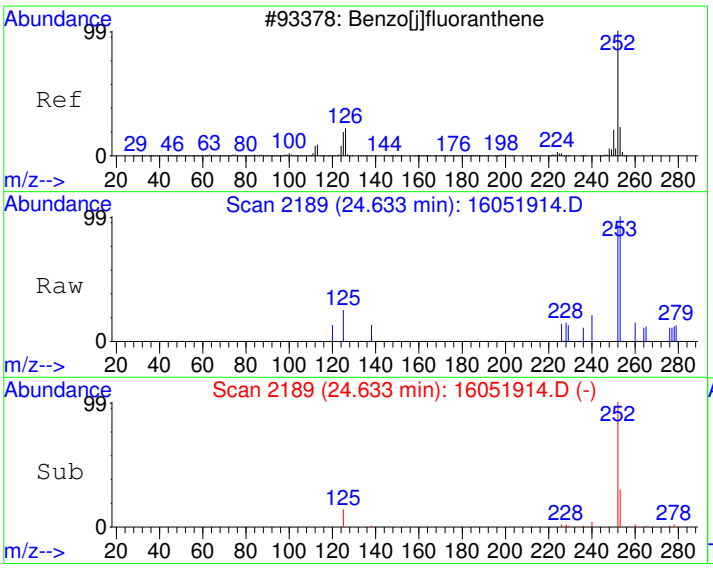


#9
Acenaphthene
Concen: 11.39 ug/kg
RT: 13.26 min Scan# 399
Delta R.T. -0.06 min
Lab File: 16051914.D
Acq: 19 May 2016 5:07 pm

Tgt Ion:154 Resp: 2396

Ion	Ratio	Lower	Upper
154	100		
152	0.6	18.9	78.9#
153	1.8	75.2	135.2#

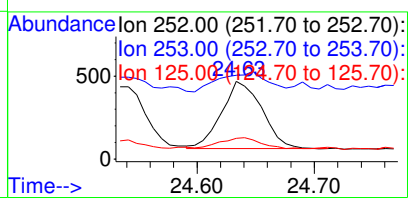




#23
Benzo(j)fluoranthene
Concen: 3.15 ug/kg
RT: 24.63 min Scan# 2189
Delta R.T. -0.04 min
Lab File: 16051914.D
Acq: 19 May 2016 5:07 pm

Tgt Ion:252 Resp: 973

Ion	Ratio	Lower	Upper
252	100		
253	23.6	2.1	42.1
125	13.5	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051915.D Vial: 15
Acq On : 19 May 2016 5:47 pm Operator:
Sample : 1605097-03AMS Inst : GC/MS #6
Misc : MS Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

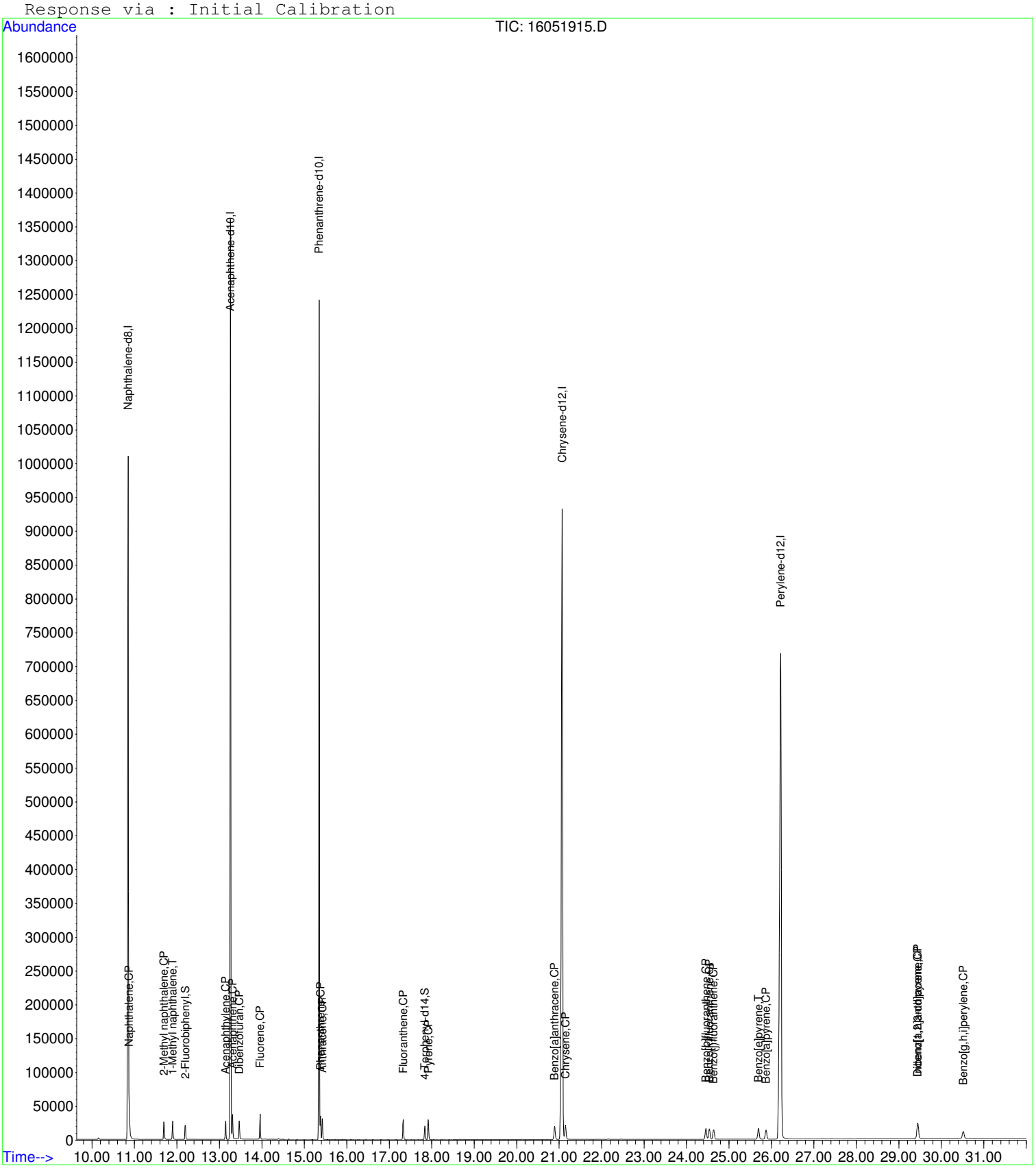
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1275138	4000.00	ug/kg	110
5) Acenaphthene-d10	13.26	164	786628	4000.00	ug/kg	68
11) Phenanthrene-d10	15.35	188	1328899	4000.00	ug/kg	65
17) Chrysene-d12	21.07	240	1530260	4000.00	ug/kg	67
20) Perylene-d12	26.22	264	1393277	4000.00	ug/kg	68
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	19514	85.04	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.13%#		
16) 4-Terphenyl-d14	17.84	244	26397	76.78	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.92%#		
Target Compounds						Qvalue
2) Naphthalene	10.88	128	22058	69.16	ug/kg	99
3) 2-Methyl naphthalene	11.69	142	16304	57.87	ug/kg	94
4) 1-Methyl naphthalene	11.90	142	14753	57.17	ug/kg	97
6) Dibenzofuran	13.47	168	22870	77.57	ug/kg	99
8) Acenaphthylene	13.15	152	25271	74.60	ug/kg	98
9) Acenaphthene	13.31	154	15069	71.67	ug/kg	97
10) Fluorene	13.96	166	18520	72.52	ug/kg	99
12) Phenanthrene	15.38	178	27585	78.93	ug/kg	99
13) Anthracene	15.42	178	26071	78.82	ug/kg	99
14) Fluoranthene	17.33	202	30024	83.02	ug/kg	98
15) Pyrene	17.92	202	31104	82.79	ug/kg	99
18) Benzo[a]anthracene	20.89	228	28428	79.30	ug/kg	99
19) Chrysene	21.15	228	27384	79.06	ug/kg	99
21) Benzo[b]fluoranthene	24.46	252	29482	80.28	ug/kg	99
22) Benzo[k]fluoranthene	24.54	252	27584	80.07	ug/kg	100
23) Benzo(j)fluoranthene	24.63	252	26037	84.85	ug/kg	98
24) Benzo[e]pyrene	25.69	252	29219	88.85	ug/kg	99
25) Benzo[a]pyrene	25.87	252	25627	76.26	ug/kg	99
26) Dibenz[a,h]anthracene	29.44	278	22019	71.94	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.44	276	25981	71.16	ug/kg	94
28) Benzo[g,h,i]perylene	30.52	276	21145	74.27	ug/kg	98

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051915.D Vial: 15
Acq On : 19 May 2016 5:47 pm Operator:
Sample : 1605097-03AMS Inst : GC/MS #6
Misc : MS Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051916.D Vial: 16
Acq On : 19 May 2016 6:27 pm Operator:
Sample : 1605097-03AMSD Inst : GC/MS #6
Misc : MSD Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

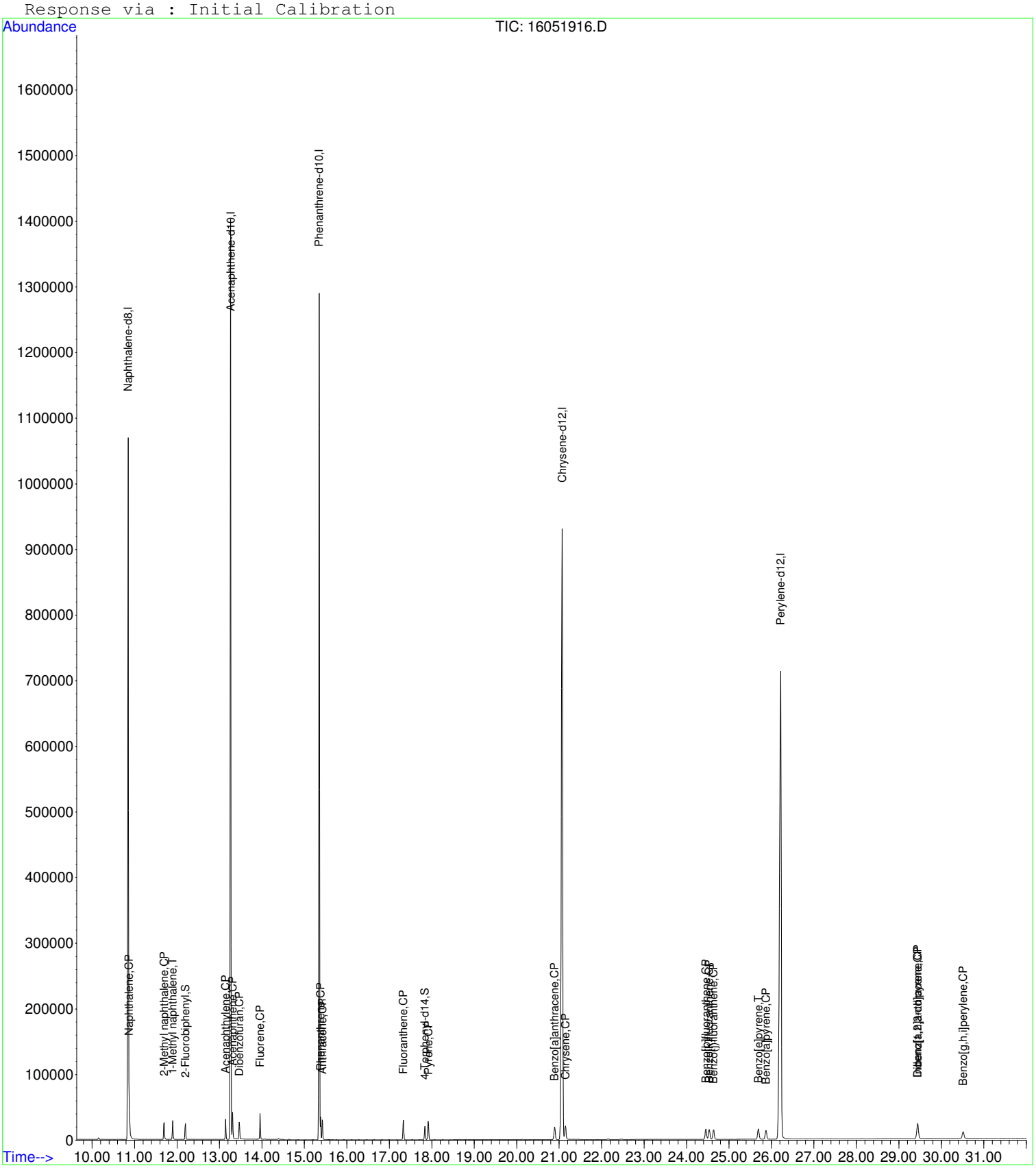
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1287064	4000.00	ug/kg	111
5) Acenaphthene-d10	13.26	164	796125	4000.00	ug/kg	69
11) Phenanthrene-d10	15.35	188	1349486	4000.00	ug/kg	66
17) Chrysene-d12	21.07	240	1527656	4000.00	ug/kg	67
20) Perylene-d12	26.22	264	1398196	4000.00	ug/kg	68
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	20453	88.07	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.20%#		
16) 4-Terphenyl-d14	17.84	244	25815	73.94	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.85%#		
Target Compounds						Qvalue
2) Naphthalene	10.88	128	22840	70.94	ug/kg	100
3) 2-Methyl naphthalene	11.70	142	16815	59.13	ug/kg	99
4) 1-Methyl naphthalene	11.90	142	15499	59.51	ug/kg	97
6) Dibenzofuran	13.46	168	23281	78.02	ug/kg	99
8) Acenaphthylene	13.15	152	26026	75.91	ug/kg	99
9) Acenaphthene	13.31	154	15494	72.81	ug/kg	99
10) Fluorene	13.96	166	18657	72.19	ug/kg	100
12) Phenanthrene	15.38	178	27381	77.15	ug/kg	99
13) Anthracene	15.42	178	25863	76.99	ug/kg	99
14) Fluoranthene	17.33	202	29537	80.43	ug/kg	98
15) Pyrene	17.92	202	30245	79.28	ug/kg	99
18) Benzo[a]anthracene	20.89	228	28301	79.08	ug/kg	99
19) Chrysene	21.15	228	26849	77.64	ug/kg	100
21) Benzo[b]fluoranthene	24.46	252	28831	78.24	ug/kg	100
22) Benzo[k]fluoranthene	24.53	252	27335	79.07	ug/kg	99
23) Benzo(j)fluoranthene	24.63	252	25783	83.72	ug/kg	98
24) Benzo[e]pyrene	25.69	252	28983	87.82	ug/kg	98
25) Benzo[a]pyrene	25.87	252	25428	75.40	ug/kg	99
26) Dibenz[a,h]anthracene	29.44	278	21681	70.59	ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.44	276	25468	69.51	ug/kg	95
28) Benzo[g,h,i]perylene	30.52	276	20730	72.55	ug/kg	97

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051916.D Vial: 16
Acq On : 19 May 2016 6:27 pm Operator:
Sample : 1605097-03AMSD Inst : GC/MS #6
Misc : MSD Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051918.D Vial: 18
Acq On : 19 May 2016 7:44 pm Operator:
Sample : ICV2-160519 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

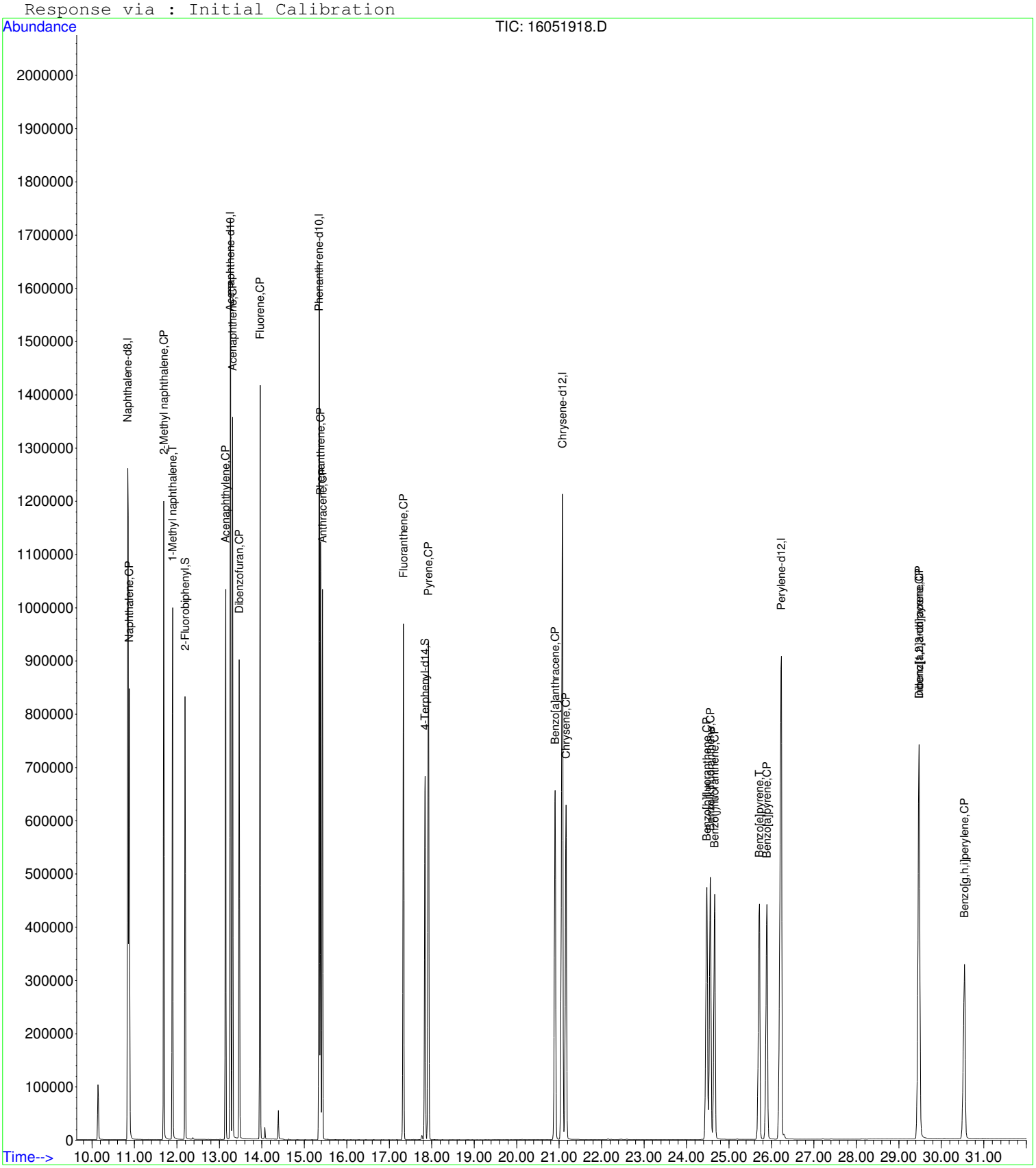
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1665776	4000.00	ug/kg	144
5) Acenaphthene-d10	13.26	164	1040034	4000.00	ug/kg	90
11) Phenanthrene-d10	15.35	188	1903949	4000.00	ug/kg	93
17) Chrysene-d12	21.08	240	2090607	4000.00	ug/kg	92
20) Perylene-d12	26.23	264	1894052	4000.00	ug/kg	92
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	619846	2043.09	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	51.08%		
16) 4-Terphenyl-d14	17.84	244	908305	1843.96	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	46.10%		
Target Compounds						Qvalue
2) Naphthalene	10.88	128	816854	1960.42	ug/kg	100
3) 2-Methyl naphthalene	11.69	142	591546	1607.21	ug/kg	98
4) 1-Methyl naphthalene	11.90	142	531009	1575.27	ug/kg	99
6) Dibenzofuran	13.47	168	755260	1937.59	ug/kg	98
8) Acenaphthylene	13.15	152	940540	2099.89	ug/kg	99
9) Acenaphthene	13.31	154	540078	1942.68	ug/kg	99
10) Fluorene	13.96	166	679462	2012.46	ug/kg	98
12) Phenanthrene	15.38	178	941682	1880.70	ug/kg	99
13) Anthracene	15.43	178	864304	1823.72	ug/kg	100
14) Fluoranthene	17.34	202	1006998	1943.46	ug/kg	99
15) Pyrene	17.92	202	1005248	1867.65	ug/kg	99
18) Benzo[a]anthracene	20.91	228	967427	1975.24	ug/kg	100
19) Chrysene	21.16	228	878937	1857.34	ug/kg	100
21) Benzo[b]fluoranthene	24.48	252	970811	1944.71	ug/kg	99
22) Benzo[k]fluoranthene	24.56	252	898933	1919.56	ug/kg	100
23) Benzo(j)fluoranthene	24.66	252	793480	1902.10	ug/kg	99
24) Benzo[e]pyrene	25.72	252	839720	1878.28	ug/kg	100
25) Benzo[a]pyrene	25.89	252	863325	1889.73	ug/kg	100
26) Dibenz[a,h]anthracene	29.48	278	745083	1790.78	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.48	276	864543	1741.80	ug/kg	97
28) Benzo[g,h,i]perylene	30.54	276	692412	1788.98	ug/kg	99

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051918.D Vial: 18
Acq On : 19 May 2016 7:44 pm Operator:
Sample : ICV2-160519 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

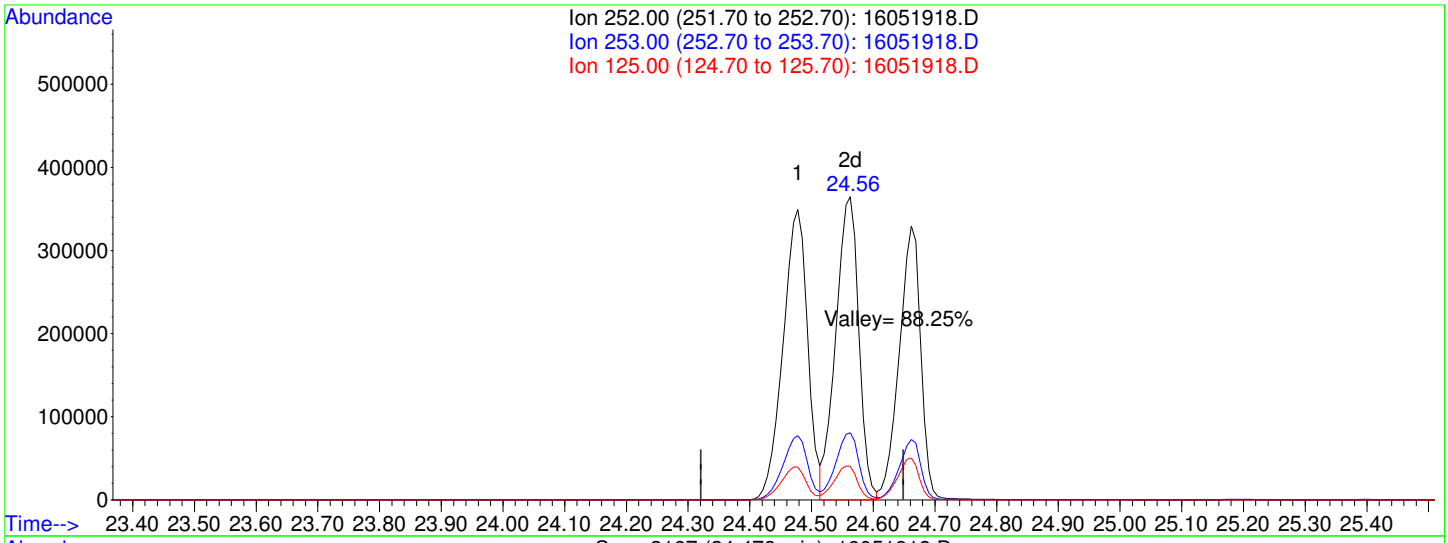
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

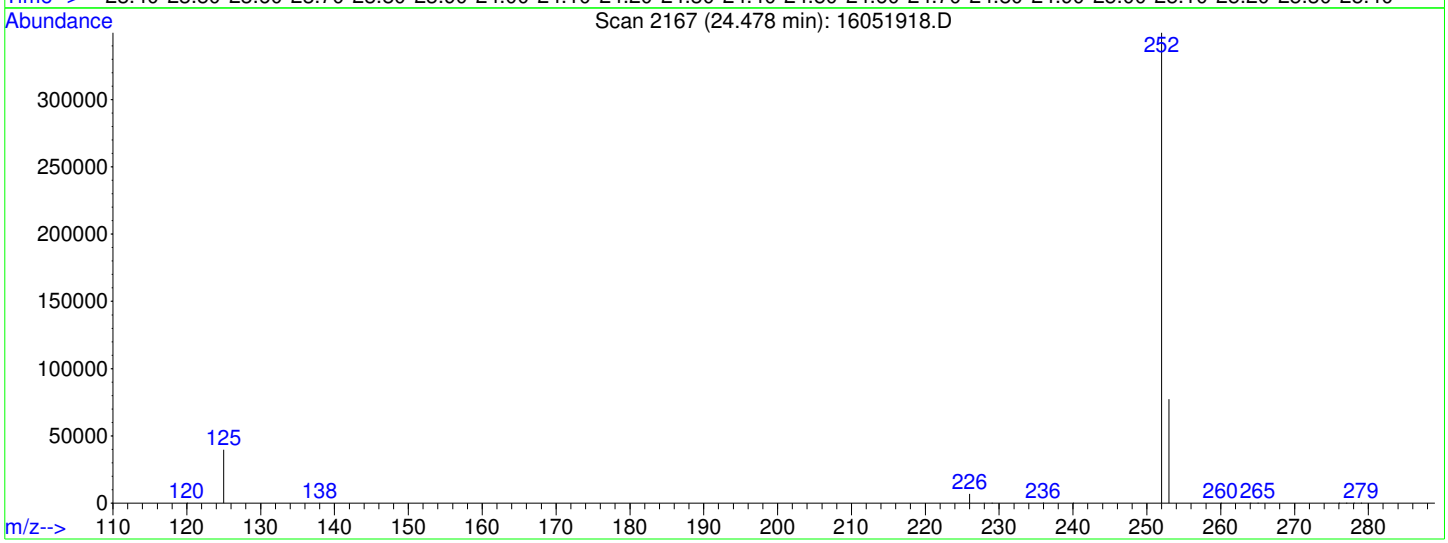


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160519\16051918.D Vial: 18
Acq On : 19 May 2016 7:44 pm Operator:
Sample : ICV2-160519 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 19 20:16 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Multiple Level Calibration





TIC: 16051918.D

(21) Benzo[b]fluoranthene (CP)

24.48min 1944.71ug/kg

response 970811

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	21.98
125.00	11.00	11.32
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051920.D Vial: 20
Acq On : 19 May 2016 9:04 pm Operator:
Sample : SB-160519 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

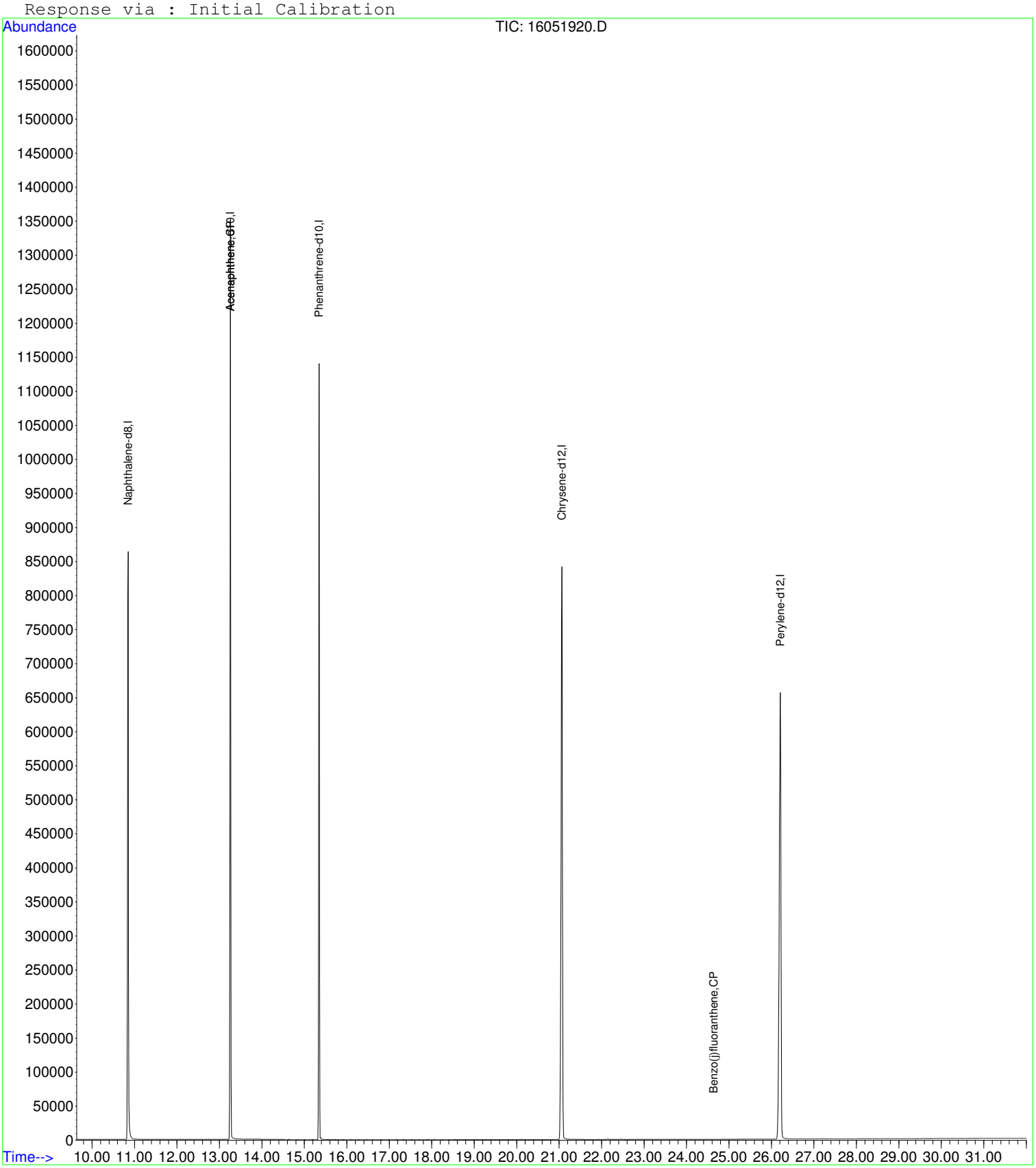
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1177486	4000.00	ug/kg	102
5) Acenaphthene-d10	13.26	164	729646	4000.00	ug/kg	63
11) Phenanthrene-d10	15.35	188	1248585	4000.00	ug/kg	61
17) Chrysene-d12	21.06	240	1399671	4000.00	ug/kg	62
20) Perylene-d12	26.21	264	1273280	4000.00	ug/kg	62
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	52	0.24	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.01%#		
16) 4-Terphenyl-d14	17.84	244	51	0.16	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.00%#		
Target Compounds						Qvalue
9) Acenaphthene	13.26	154	2175	11.15	ug/kg#	9
23) Benzo(j)fluoranthene	24.63	252	59	0.21	ug/kg#	55

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051920.D Vial: 20
Acq On : 19 May 2016 9:04 pm Operator:
Sample : SB-160519 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051921.D Vial: 21
Acq On : 19 May 2016 9:43 pm Operator:
Sample : 1605097-04A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

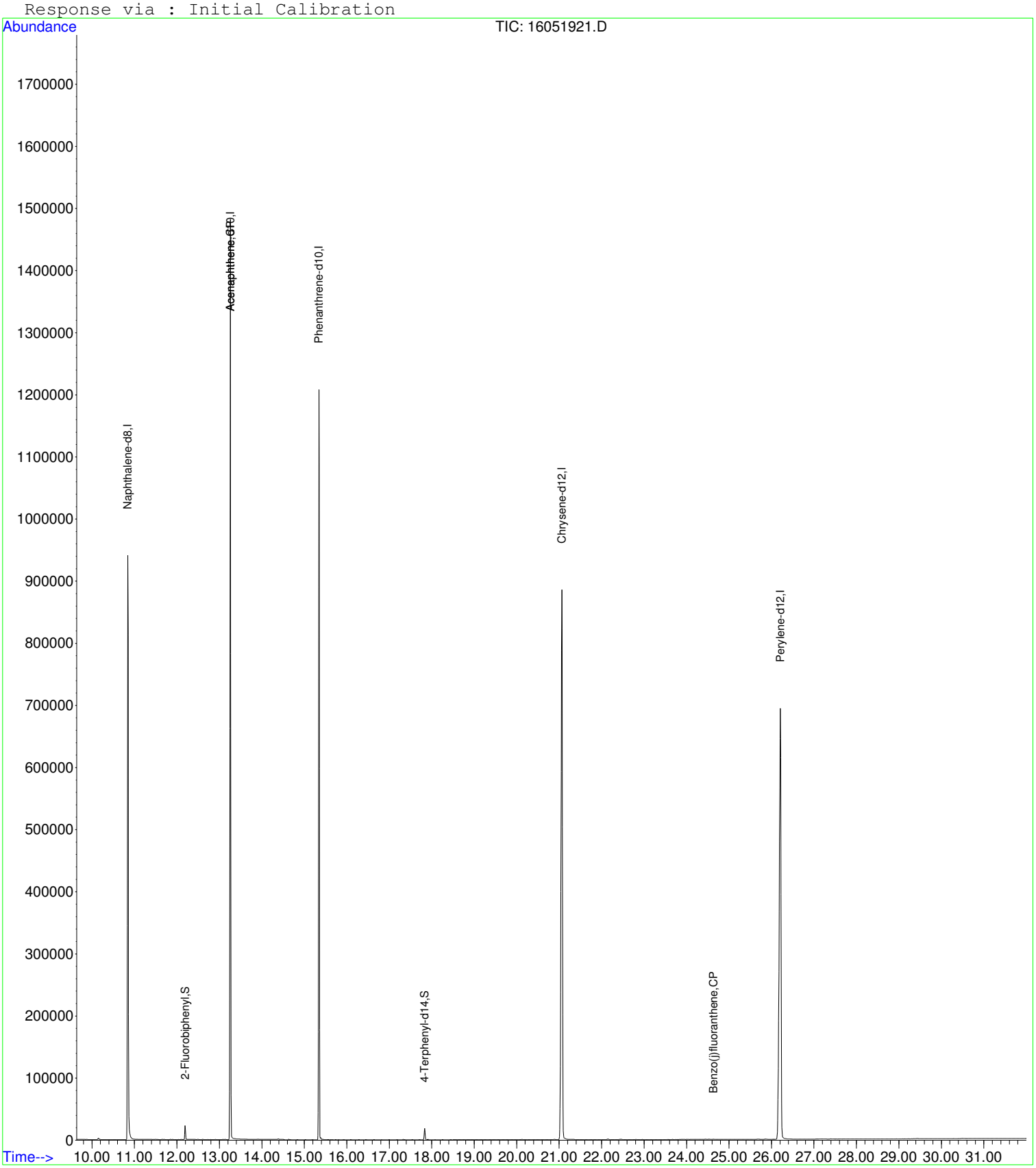
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1245292	4000.00	ug/kg	107
5) Acenaphthene-d10	13.26	164	771744	4000.00	ug/kg	67
11) Phenanthrene-d10	15.34	188	1278263	4000.00	ug/kg	63
17) Chrysene-d12	21.06	240	1482061	4000.00	ug/kg	65
20) Perylene-d12	26.21	264	1365139	4000.00	ug/kg	66
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18624	82.73	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.07%#		
16) 4-Terphenyl-d14	17.83	244	22841	69.07	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.73%#		
Target Compounds						Qvalue
9) Acenaphthene	13.26	154	2308	11.19	ug/kg#	8
23) Benzo(j)fluoranthene	24.63	252	628	2.09	ug/kg	93

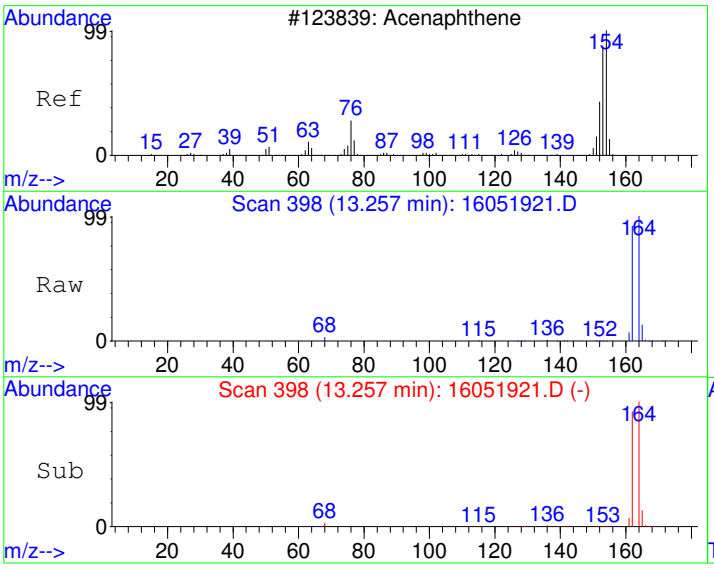
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051921.D Vial: 21
Acq On : 19 May 2016 9:43 pm Operator:
Sample : 1605097-04A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

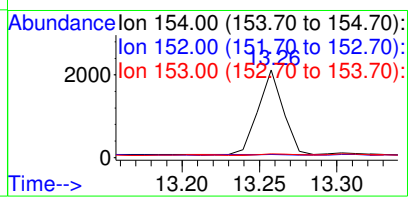


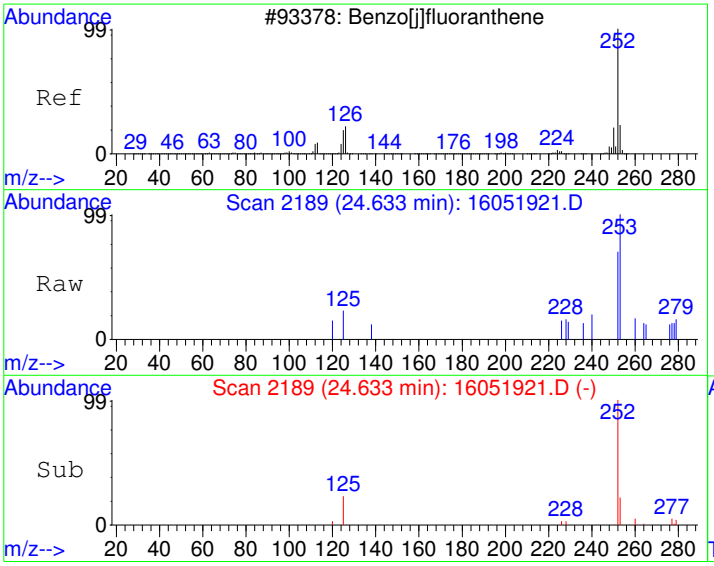


#9
Acenaphthene
Concen: 11.19 ug/kg
RT: 13.26 min Scan# 398
Delta R.T. -0.06 min
Lab File: 16051921.D
Acq: 19 May 2016 9:43 pm

Tgt Ion:154 Resp: 2308

Ion	Ratio	Lower	Upper
154	100		
152	0.6	18.9	78.9#
153	1.1	75.2	135.2#

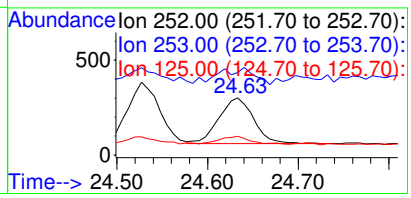




#23
Benzo(j)fluoranthene
Concen: 2.09 ug/kg
RT: 24.63 min Scan# 2189
Delta R.T. -0.04 min
Lab File: 16051921.D
Acq: 19 May 2016 9:43 pm

Tgt Ion:252 Resp: 628

Ion	Ratio	Lower	Upper
252	100		
253	18.3	2.1	42.1
125	16.2	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051922.D Vial: 22
Acq On : 19 May 2016 10:23 pm Operator:
Sample : 1605097-05A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

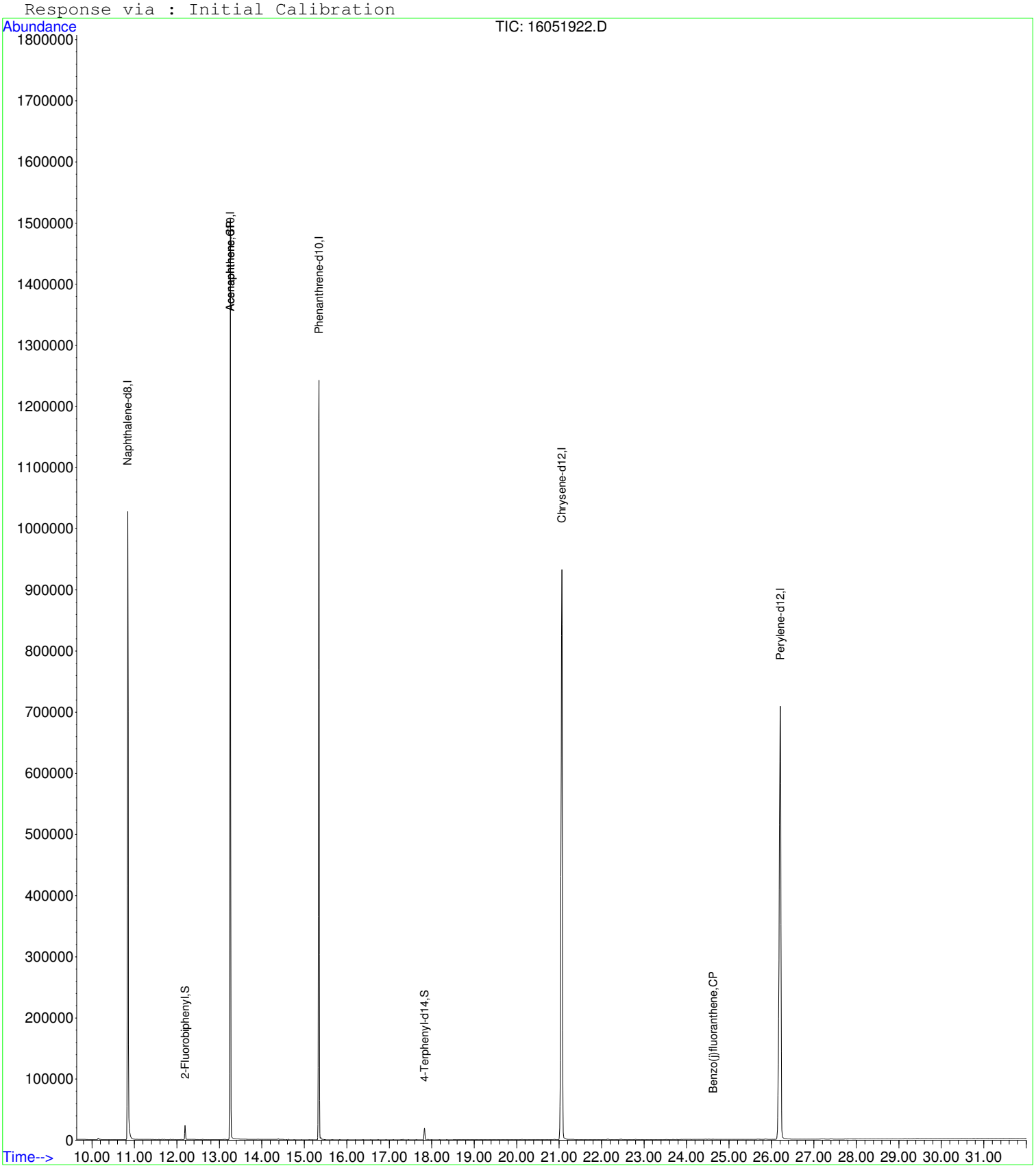
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1255694	4000.00	ug/kg	108
5) Acenaphthene-d10	13.26	164	773730	4000.00	ug/kg	67
11) Phenanthrene-d10	15.35	188	1332582	4000.00	ug/kg	65
17) Chrysene-d12	21.06	240	1532168	4000.00	ug/kg	67
20) Perylene-d12	26.21	264	1402789	4000.00	ug/kg	68
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18710	82.90	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.07%#		
16) 4-Terphenyl-d14	17.83	244	23879	69.26	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.73%#		
Target Compounds						Qvalue
9) Acenaphthene	13.26	154	2306	11.15	ug/kg#	9
23) Benzo(j)fluoranthene	24.63	252	668	2.16	ug/kg	84

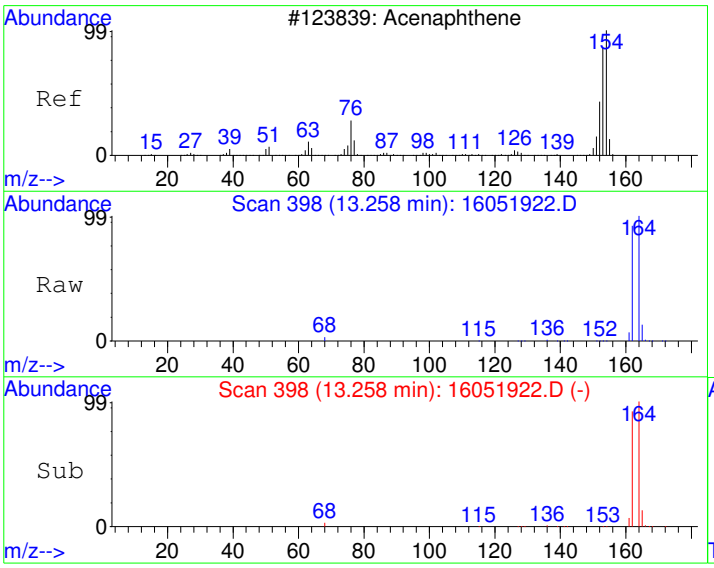
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051922.D Vial: 22
Acq On : 19 May 2016 10:23 pm Operator:
Sample : 1605097-05A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

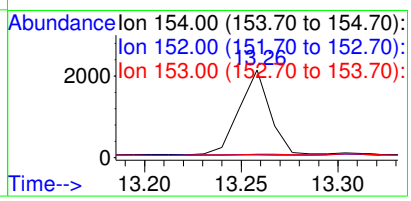


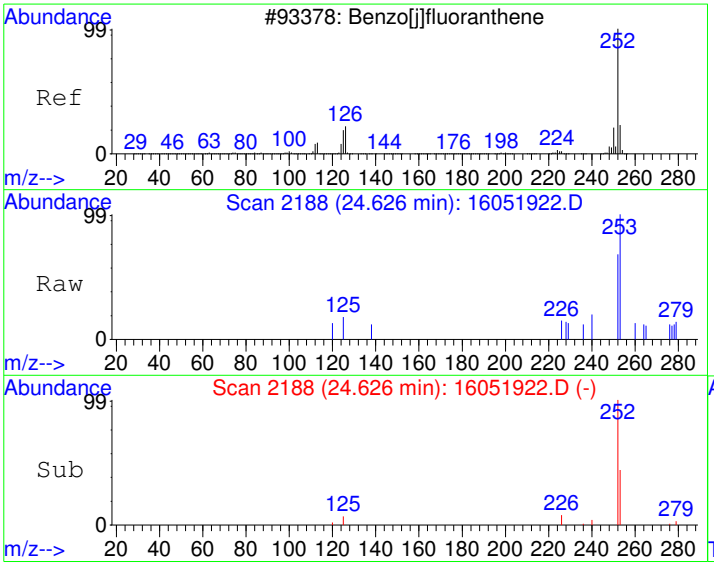


#9
Acenaphthene
Concen: 11.15 ug/kg
RT: 13.26 min Scan# 398
Delta R.T. -0.06 min
Lab File: 16051922.D
Acq: 19 May 2016 10:23 pm

Tgt Ion:154 Resp: 2306

Ion	Ratio	Lower	Upper
154	100		
152	0.4	18.9	78.9#
153	1.5	75.2	135.2#

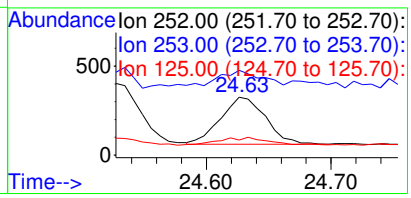




#23
Benzo(j)fluoranthene
Concen: 2.16 ug/kg
RT: 24.63 min Scan# 2188
Delta R.T. -0.04 min
Lab File: 16051922.D
Acq: 19 May 2016 10:23 pm

Tgt Ion:252 Resp: 668

Ion	Ratio	Lower	Upper
252	100		
253	31.6	2.1	42.1
125	10.2	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051923.D Vial: 23
Acq On : 19 May 2016 11:04 pm Operator:
Sample : 1605097-06A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

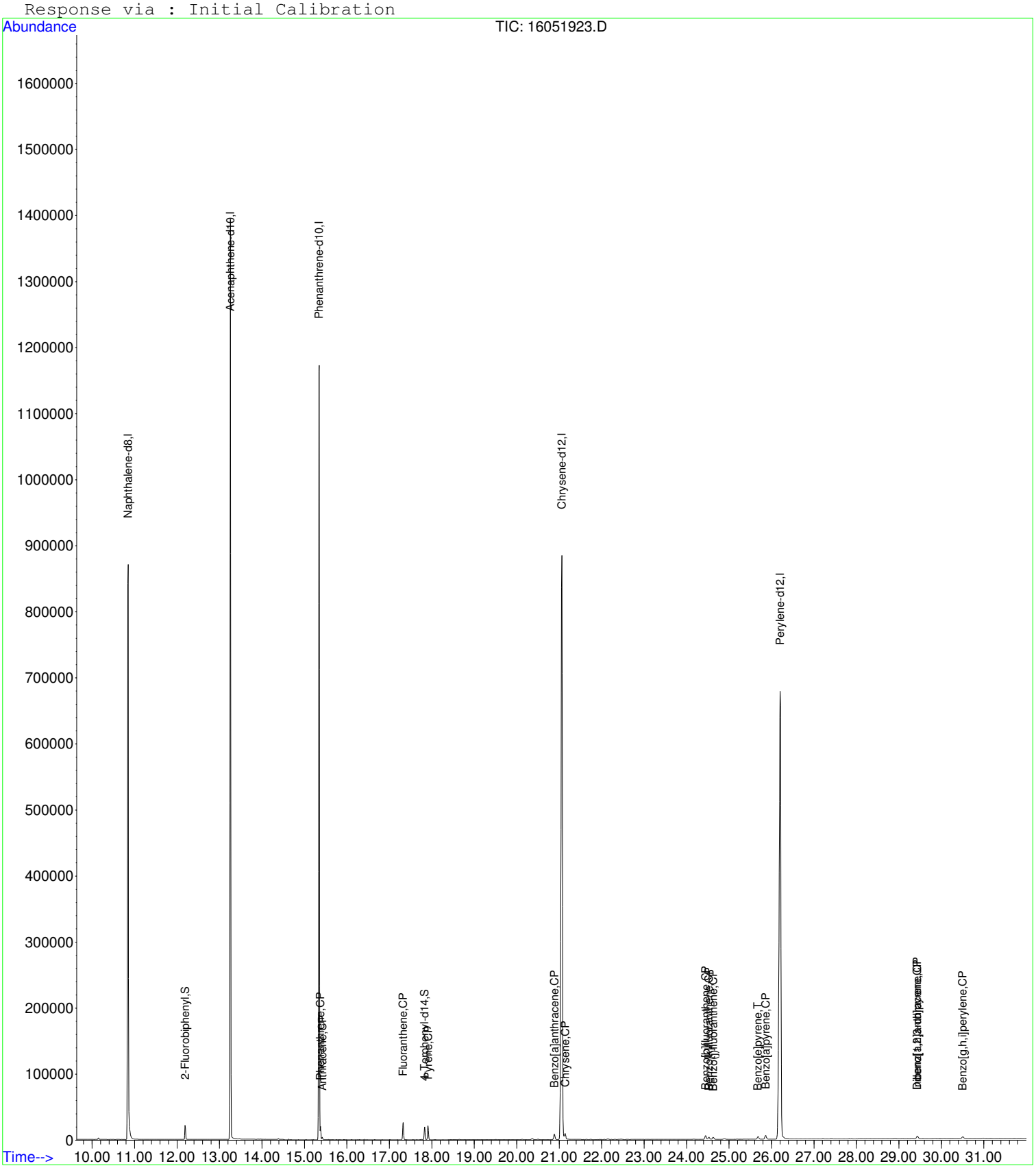
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1204483	4000.00	ug/kg	104
5) Acenaphthene-d10	13.26	164	738169	4000.00	ug/kg	64
11) Phenanthrene-d10	15.35	188	1288090	4000.00	ug/kg	63
17) Chrysene-d12	21.06	240	1467268	4000.00	ug/kg	65
20) Perylene-d12	26.20	264	1343751	4000.00	ug/kg	65
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18612	86.43	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.16%#		
16) 4-Terphenyl-d14	17.83	244	24522	73.58	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.84%#		
Target Compounds						Qvalue
12) Phenanthrene	15.38	178	14861	43.87	ug/kg	99
13) Anthracene	15.42	178	3144	9.81	ug/kg	96
14) Fluoranthene	17.32	202	25861	73.77	ug/kg	99
15) Pyrene	17.91	202	22672	62.26	ug/kg	100
18) Benzo[a]anthracene	20.89	228	12226	35.57	ug/kg	100
19) Chrysene	21.14	228	12800	38.54	ug/kg	99
21) Benzo[b]fluoranthene	24.45	252	10318	29.13	ug/kg	99
22) Benzo[k]fluoranthene	24.53	252	5857	17.63	ug/kg	97
23) Benzo(j)fluoranthene	24.63	252	5434	18.36	ug/kg	94
24) Benzo[e]pyrene	25.68	252	7680	24.21	ug/kg	97
25) Benzo[a]pyrene	25.86	252	10572	32.62	ug/kg	97
26) Dibenz[a,h]anthracene	29.43	278	1884	6.38	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.43	276	5991	17.01	ug/kg	93
28) Benzo[g,h,i]perylene	30.51	276	5345	19.47	ug/kg	97

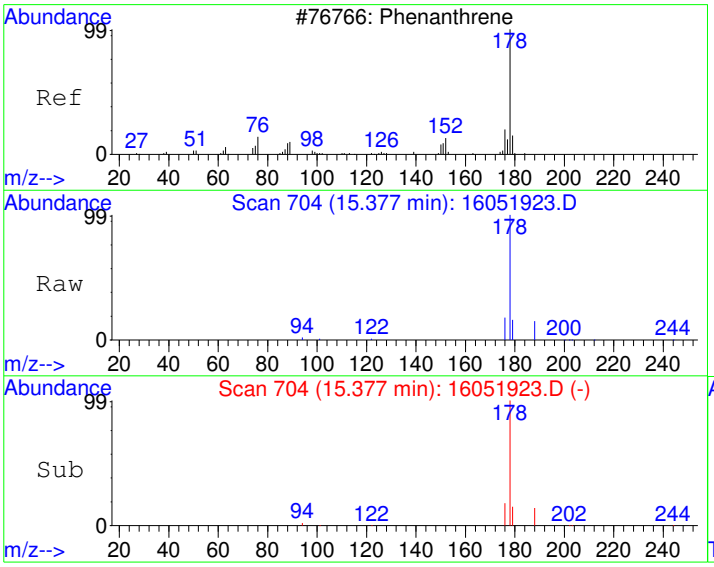
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051923.D Vial: 23
Acq On : 19 May 2016 11:04 pm Operator:
Sample : 1605097-06A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

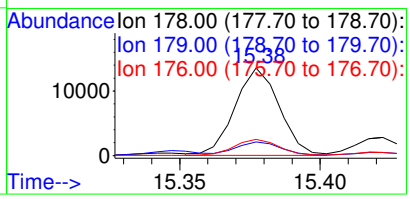


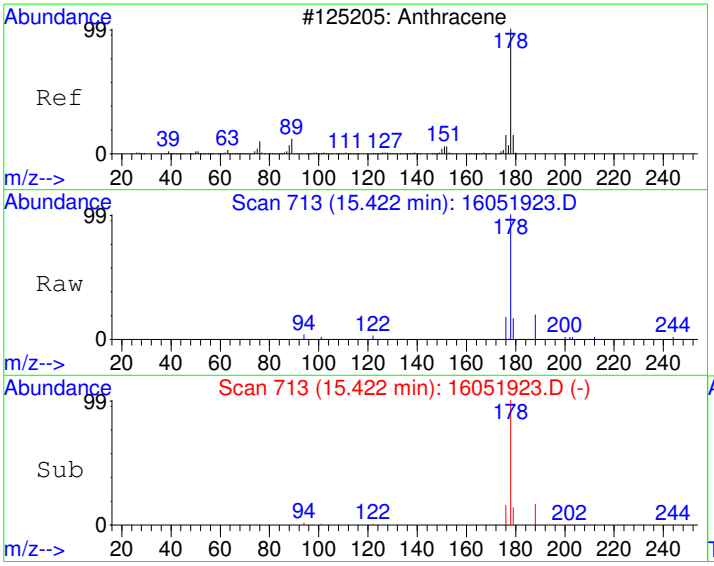


#12
Phenanthrene
Concen: 43.87 ug/kg
RT: 15.38 min Scan# 704
Delta R.T. -0.02 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:178 Resp: 14861

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	45.9
176	18.4	0.0	48.5

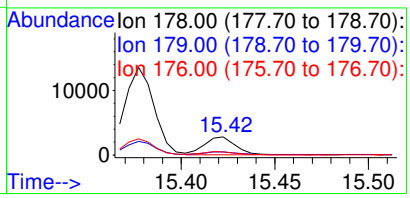


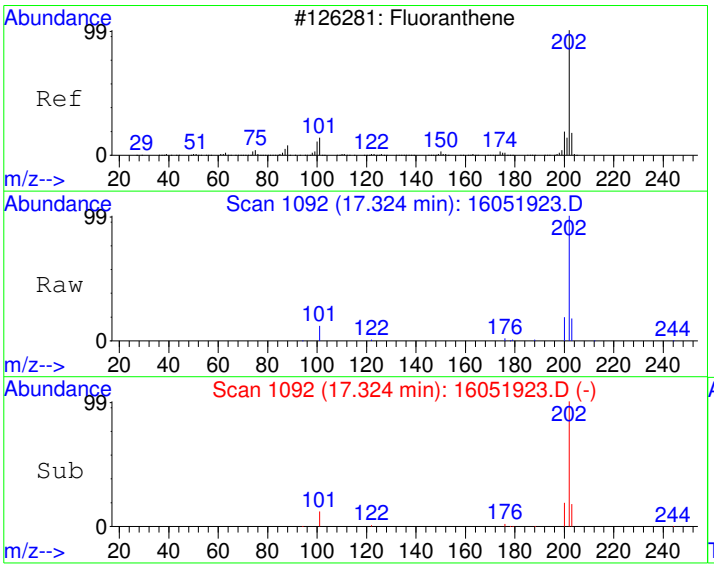


#13
Anthracene
Concen: 9.81 ug/kg
RT: 15.42 min Scan# 713
Delta R.T. -0.01 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:178 Resp: 3144

Ion	Ratio	Lower	Upper
178	100		
179	14.8	0.0	45.9
176	16.2	0.0	48.2

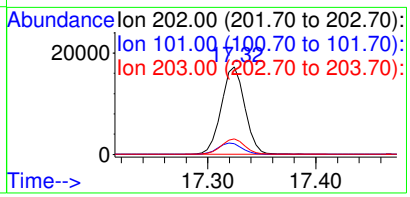


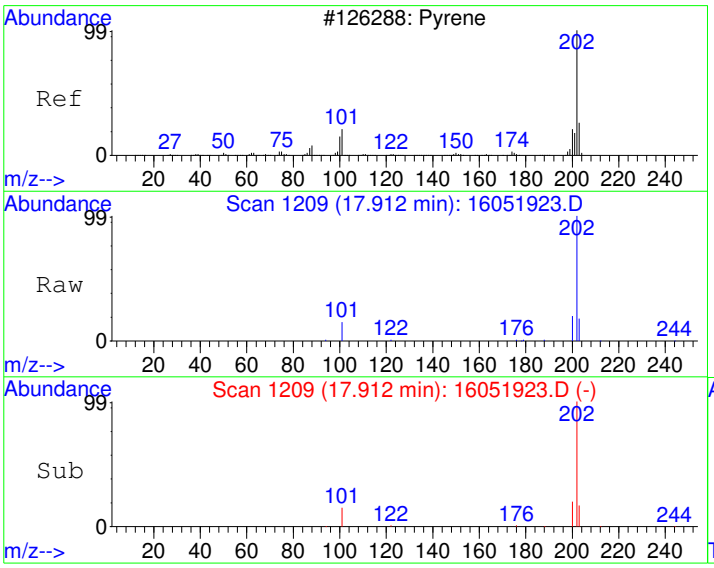


#14
Fluoranthene
Concen: 73.77 ug/kg
RT: 17.32 min Scan# 1092
Delta R.T. -0.02 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:202 Resp: 25861

Ion	Ratio	Lower	Upper
202	100		
101	12.0	0.0	43.0
203	17.7	0.0	47.9

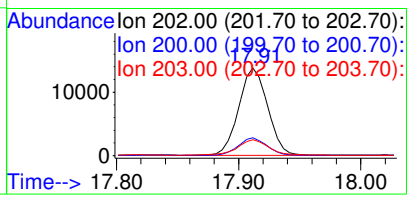


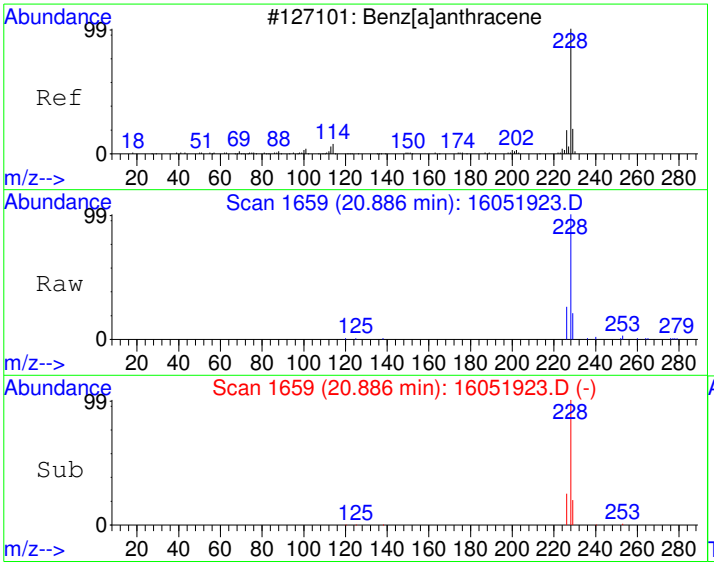


#15
Pyrene
Concen: 62.26 ug/kg
RT: 17.91 min Scan# 1209
Delta R.T. -0.02 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:202 Resp: 22672

Ion	Ratio	Lower	Upper
202	100		
200	20.2	0.0	50.0
203	17.9	0.0	48.0

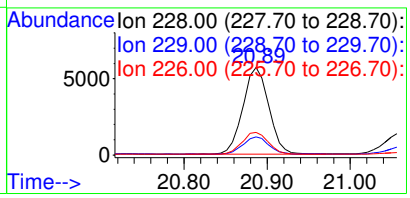


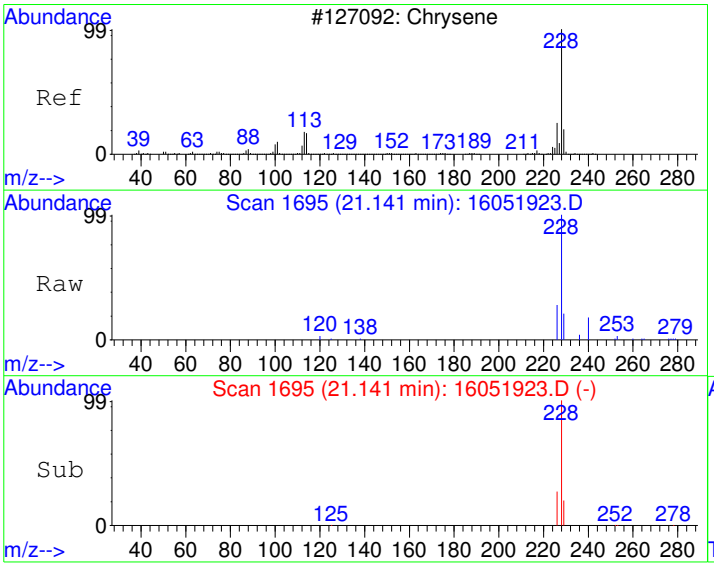


#18
Benzo[a]anthracene
Concen: 35.57 ug/kg
RT: 20.89 min Scan# 1659
Delta R.T. -0.03 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:228 Resp: 12226

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.0	50.1
226	25.3	0.0	55.2

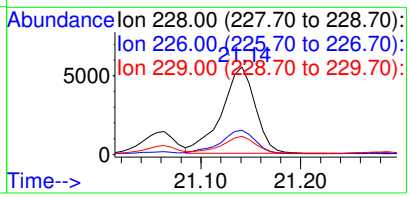


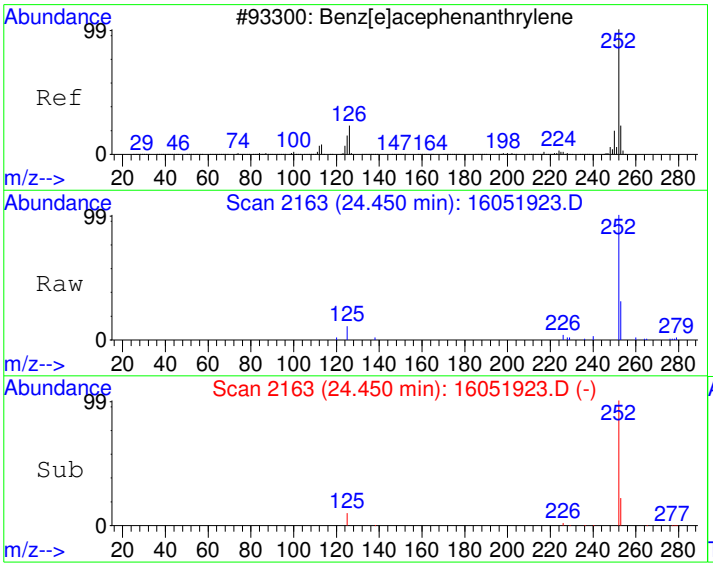


#19
Chrysene
Concen: 38.54 ug/kg
RT: 21.14 min Scan# 1695
Delta R.T. -0.03 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:228 Resp: 12800

Ion	Ratio	Lower	Upper
228	100		
226	27.2	0.0	58.1
229	19.7	0.0	50.1

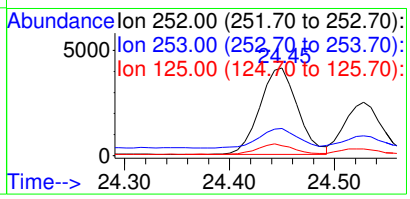


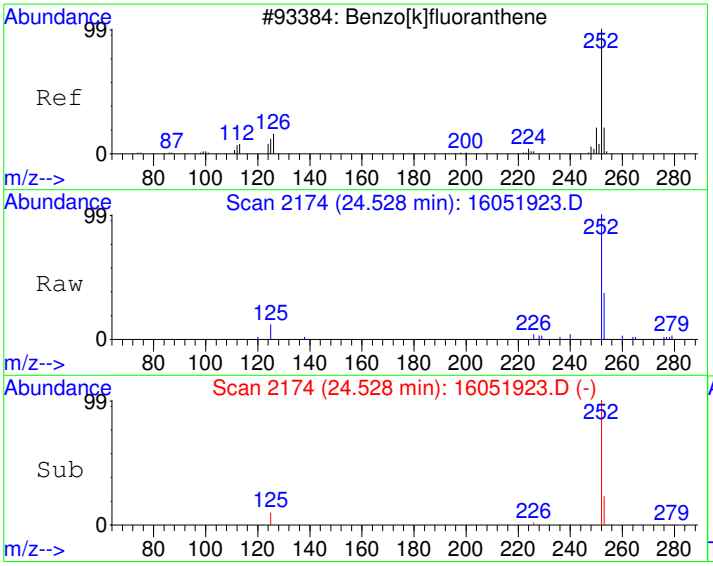


#21
Benzo[b]fluoranthene
Concen: 29.13 ug/kg
RT: 24.45 min Scan# 2163
Delta R.T. -0.04 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:252 Resp: 10318

Ion	Ratio	Lower	Upper
252	100		
253	22.2	0.0	52.2
125	9.9	0.0	41.0

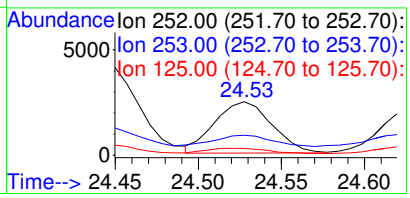


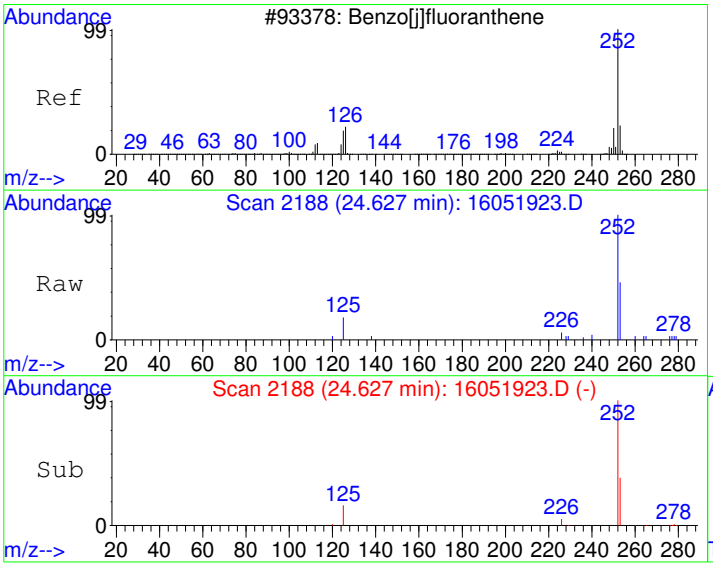


#22
Benzo[k]fluoranthene
Concen: 17.63 ug/kg
RT: 24.53 min Scan# 2174
Delta R.T. -0.04 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:252 Resp: 5857

Ion	Ratio	Lower	Upper
252	100		
253	20.5	2.1	42.1
125	10.1	0.0	31.3

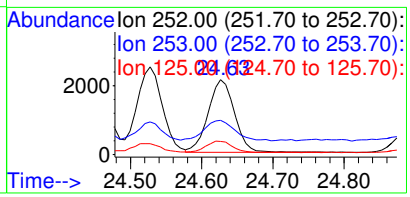


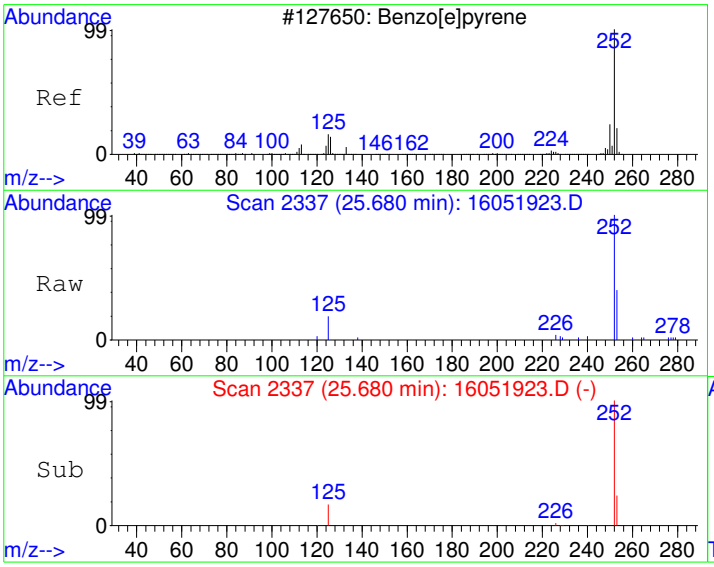


#23
Benzo(j)fluoranthene
Concen: 18.36 ug/kg
RT: 24.63 min Scan# 2188
Delta R.T. -0.04 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:252 Resp: 5434

Ion	Ratio	Lower	Upper
252	100		
253	26.4	2.1	42.1
125	15.0	0.0	34.4

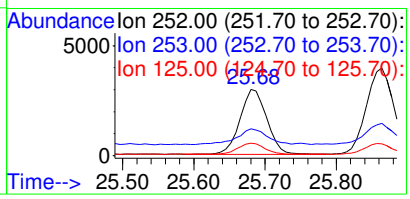


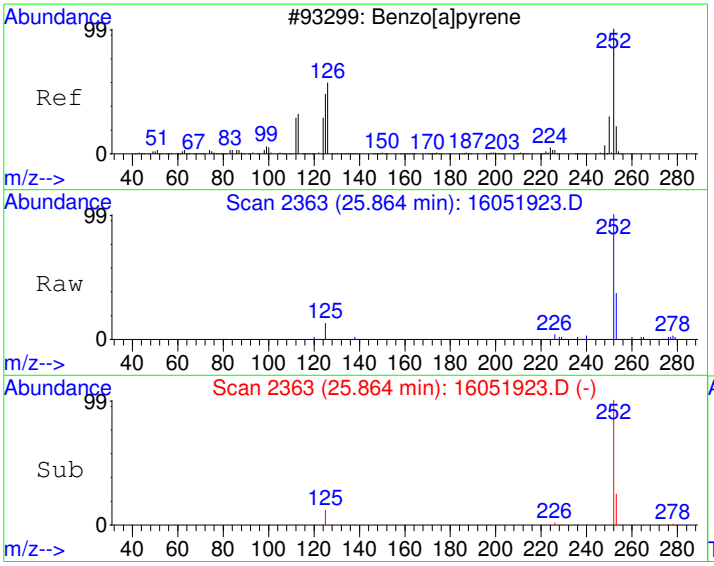


#24
Benzo[e]pyrene
Concen: 24.21 ug/kg
RT: 25.68 min Scan# 2337
Delta R.T. -0.04 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:252 Resp: 7680

Ion	Ratio	Lower	Upper
252	100		
253	23.4	2.2	42.2
125	17.2	0.0	36.1

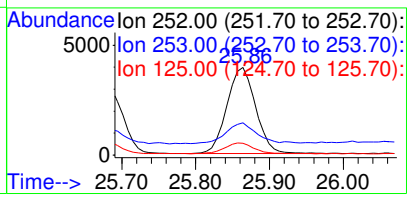


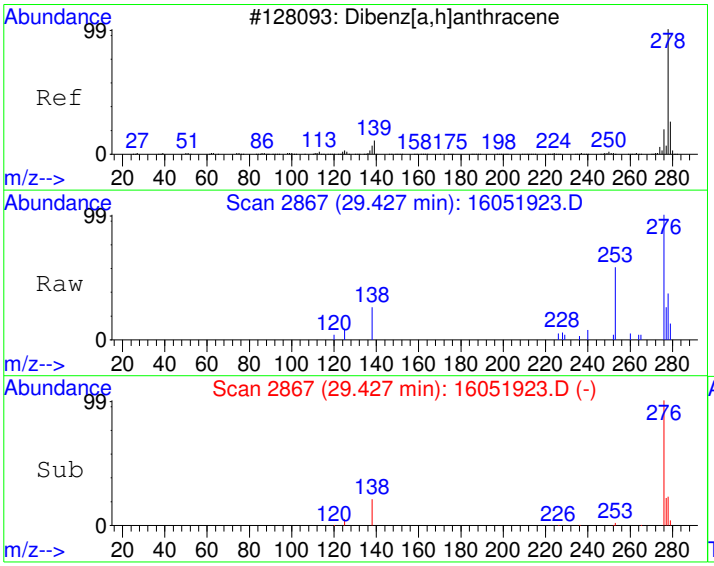


#25
Benzo[a]pyrene
Concen: 32.62 ug/kg
RT: 25.86 min Scan# 2363
Delta R.T. -0.04 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:252 Resp: 10572

Ion	Ratio	Lower	Upper
252	100		
253	23.9	1.9	41.9
125	12.1	0.0	31.7

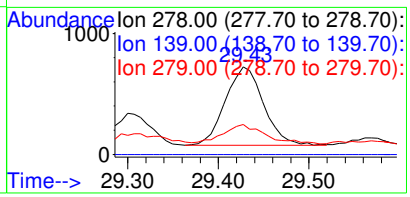


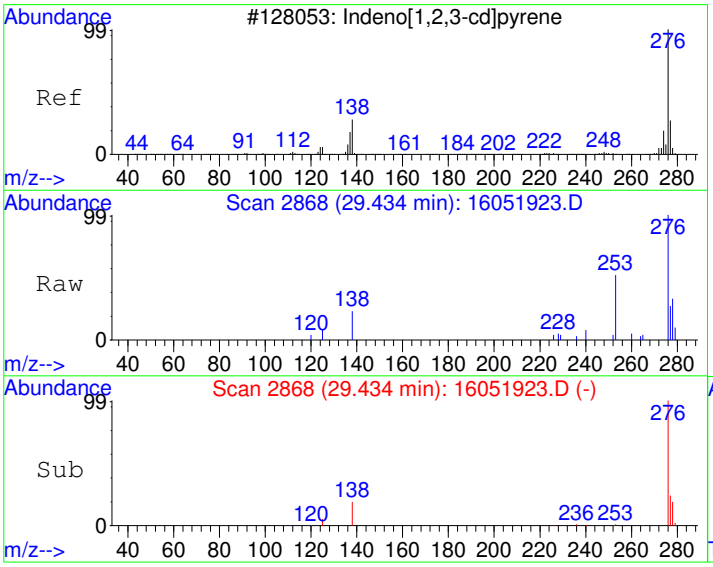


#26
Dibenz[a,h]anthracene
Concen: 6.38 ug/kg
RT: 29.43 min Scan# 2867
Delta R.T. -0.05 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:278 Resp: 1884

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	24.6	4.2	44.2

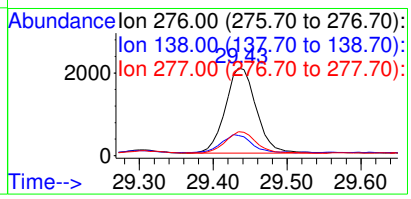


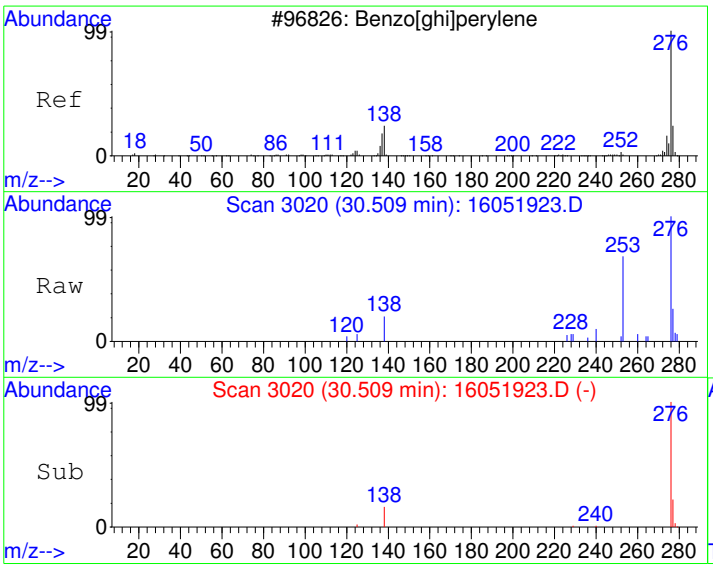


#27
Indeno[1,2,3-cd]pyrene
Concen: 17.01 ug/kg
RT: 29.43 min Scan# 2868
Delta R.T. -0.04 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:276 Resp: 5991

Ion	Ratio	Lower	Upper
276	100		
138	20.3	6.7	46.7
277	25.3	5.8	45.8

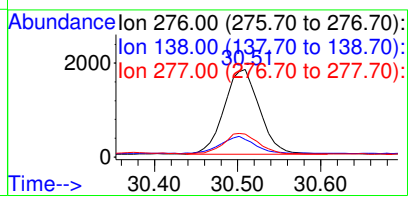




#28
Benzo[g,h,i]perylene
Concen: 19.47 ug/kg
RT: 30.51 min Scan# 3020
Delta R.T. -0.04 min
Lab File: 16051923.D
Acq: 19 May 2016 11:04 pm

Tgt Ion:276 Resp: 5345

Ion	Ratio	Lower	Upper
276	100		
138	16.5	0.0	39.1
277	23.6	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051924.D Vial: 24
Acq On : 19 May 2016 11:44 pm Operator:
Sample : 1605097-07A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

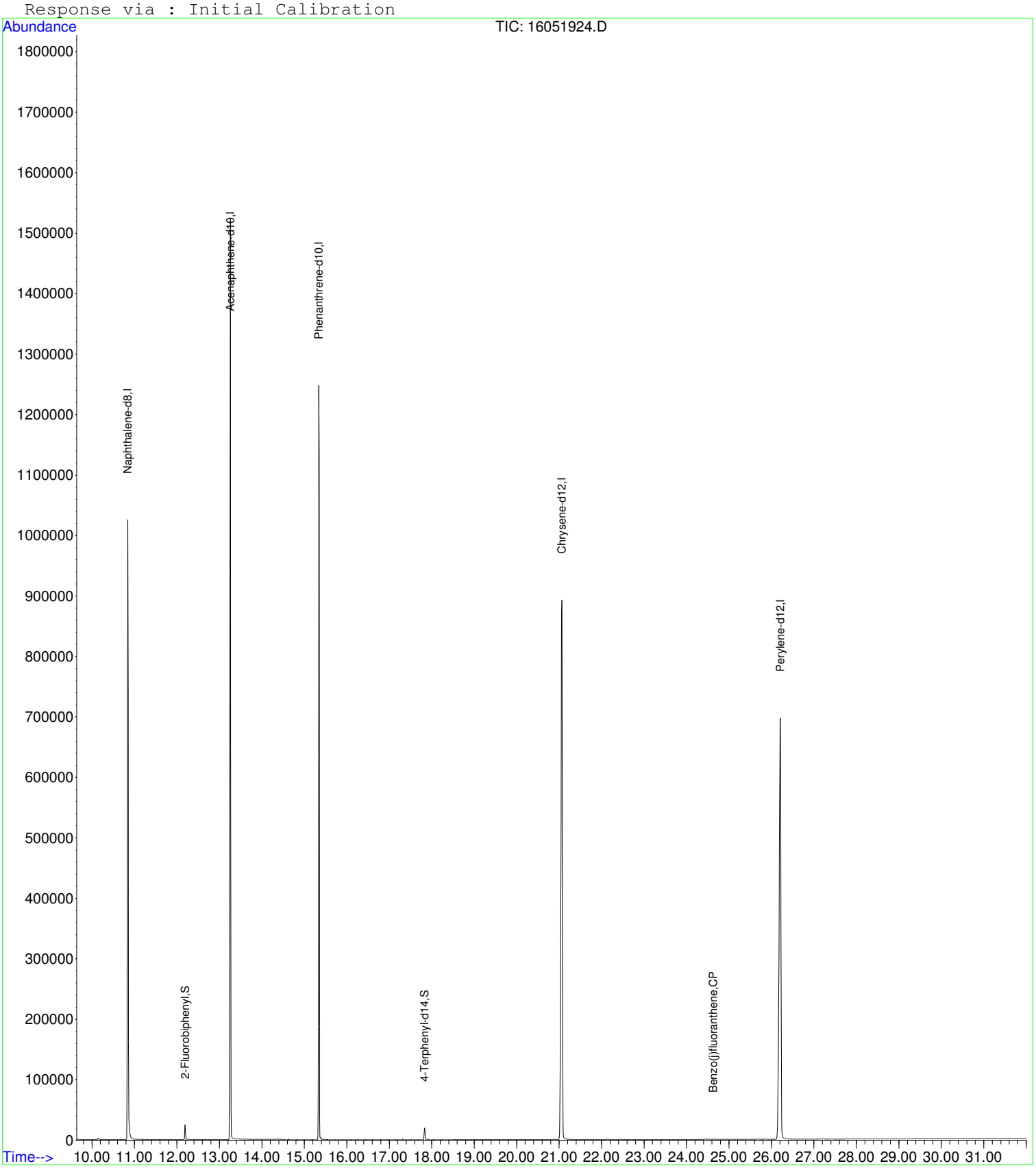
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1279528	4000.00	ug/kg	110
5) Acenaphthene-d10	13.26	164	795948	4000.00	ug/kg	69
11) Phenanthrene-d10	15.34	188	1336744	4000.00	ug/kg	65
17) Chrysene-d12	21.06	240	1505568	4000.00	ug/kg	66
20) Perylene-d12	26.21	264	1397598	4000.00	ug/kg	68
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	19485	83.92	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.10%#		
16) 4-Terphenyl-d14	17.83	244	24707	71.44	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.79%#		
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.63	252	880	2.86	ug/kg	97

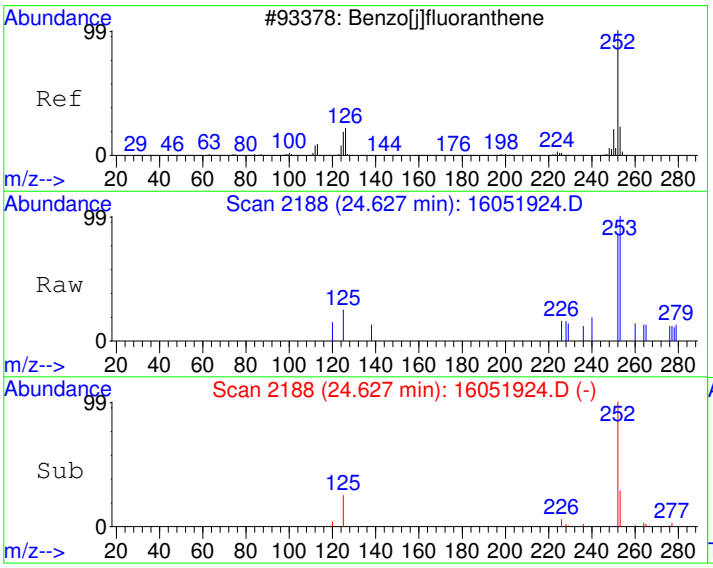
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051924.D Vial: 24
Acq On : 19 May 2016 11:44 pm Operator:
Sample : 1605097-07A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

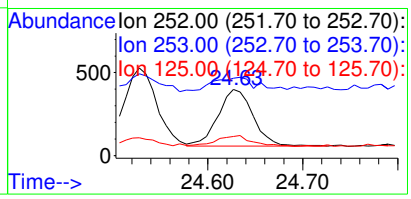




#23
Benzo(j)fluoranthene
Concen: 2.86 ug/kg
RT: 24.63 min Scan# 2188
Delta R.T. -0.04 min
Lab File: 16051924.D
Acq: 19 May 2016 11:44 pm

Tgt Ion:252 Resp: 880

Ion	Ratio	Lower	Upper
252	100		
253	21.1	2.1	42.1
125	16.1	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051925.D Vial: 25
Acq On : 20 May 2016 12:23 am Operator:
Sample : 1605097-08A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

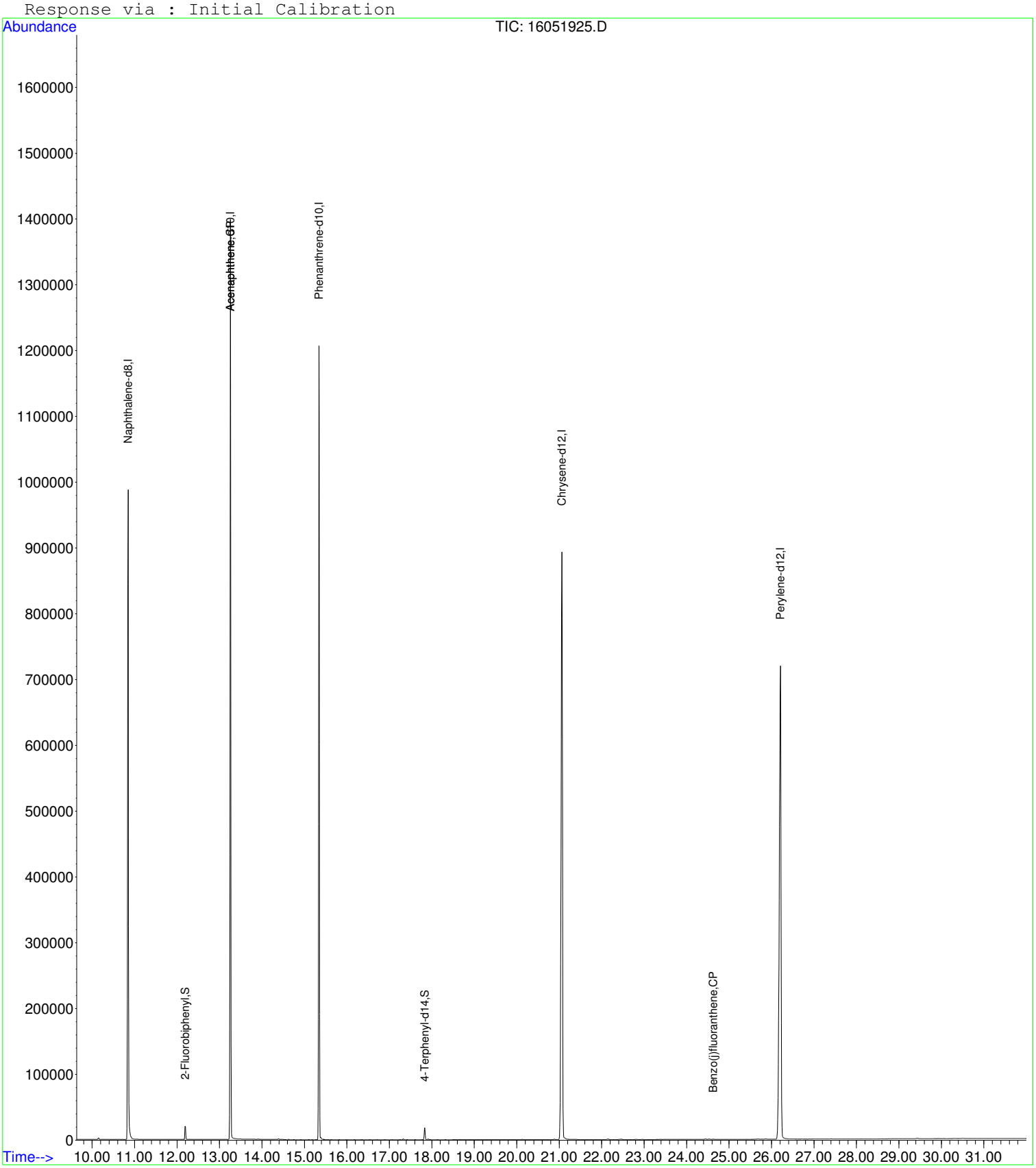
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1284976	4000.00	ug/kg	111
5) Acenaphthene-d10	13.25	164	784412	4000.00	ug/kg	68
11) Phenanthrene-d10	15.34	188	1293367	4000.00	ug/kg	63
17) Chrysene-d12	21.06	240	1490048	4000.00	ug/kg	66
20) Perylene-d12	26.21	264	1392333	4000.00	ug/kg	68
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	19122	83.57	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.09%#		
16) 4-Terphenyl-d14	17.83	244	23524	70.30	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.76%#		
Target Compounds						Qvalue
9) Acenaphthene	13.25	154	2378	11.34	ug/kg#	9
23) Benzo(j)fluoranthene	24.63	252	720	2.35	ug/kg	99

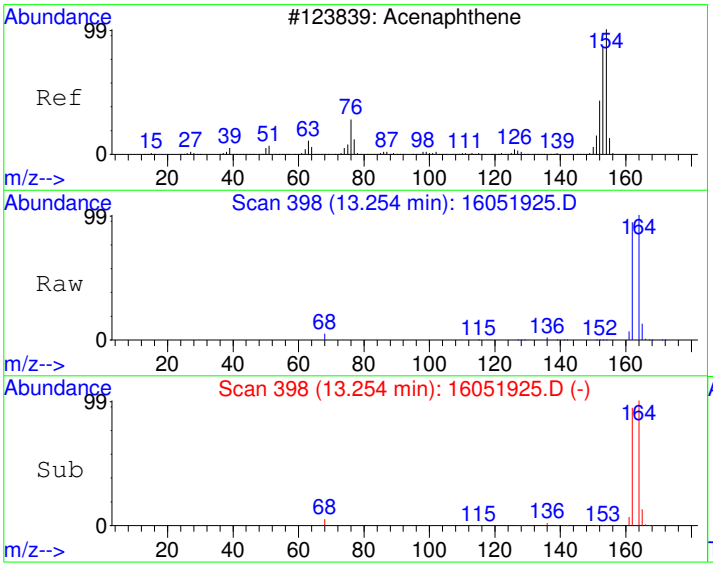
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051925.D Vial: 25
Acq On : 20 May 2016 12:23 am Operator:
Sample : 1605097-08A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

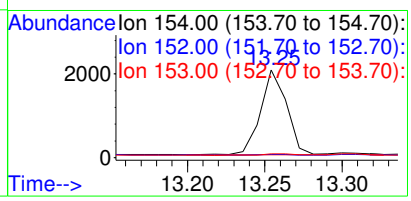


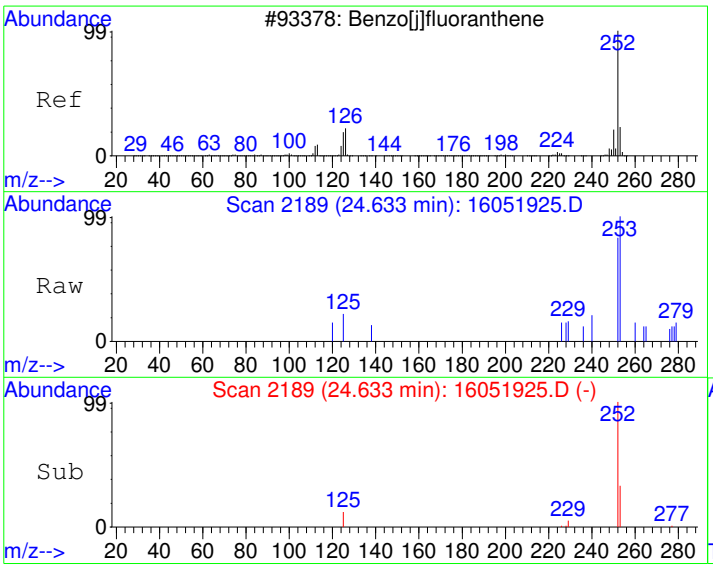


#9
Acenaphthene
Concen: 11.34 ug/kg
RT: 13.25 min Scan# 398
Delta R.T. -0.07 min
Lab File: 16051925.D
Acq: 20 May 2016 12:23 am

Tgt Ion:154 Resp: 2378

Ion	Ratio	Lower	Upper
154	100		
152	0.6	18.9	78.9#
153	1.4	75.2	135.2#

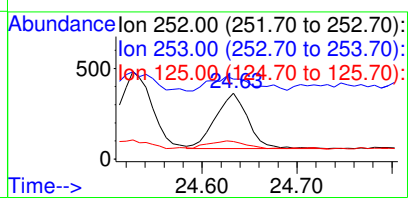




#23
Benzo(j)fluoranthene
Concen: 2.35 ug/kg
RT: 24.63 min Scan# 2189
Delta R.T. -0.04 min
Lab File: 16051925.D
Acq: 20 May 2016 12:23 am

Tgt Ion:252 Resp: 720

Ion	Ratio	Lower	Upper
252	100		
253	21.3	2.1	42.1
125	14.1	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051926.D Vial: 26
Acq On : 20 May 2016 1:03 am Operator:
Sample : 1605097-09A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

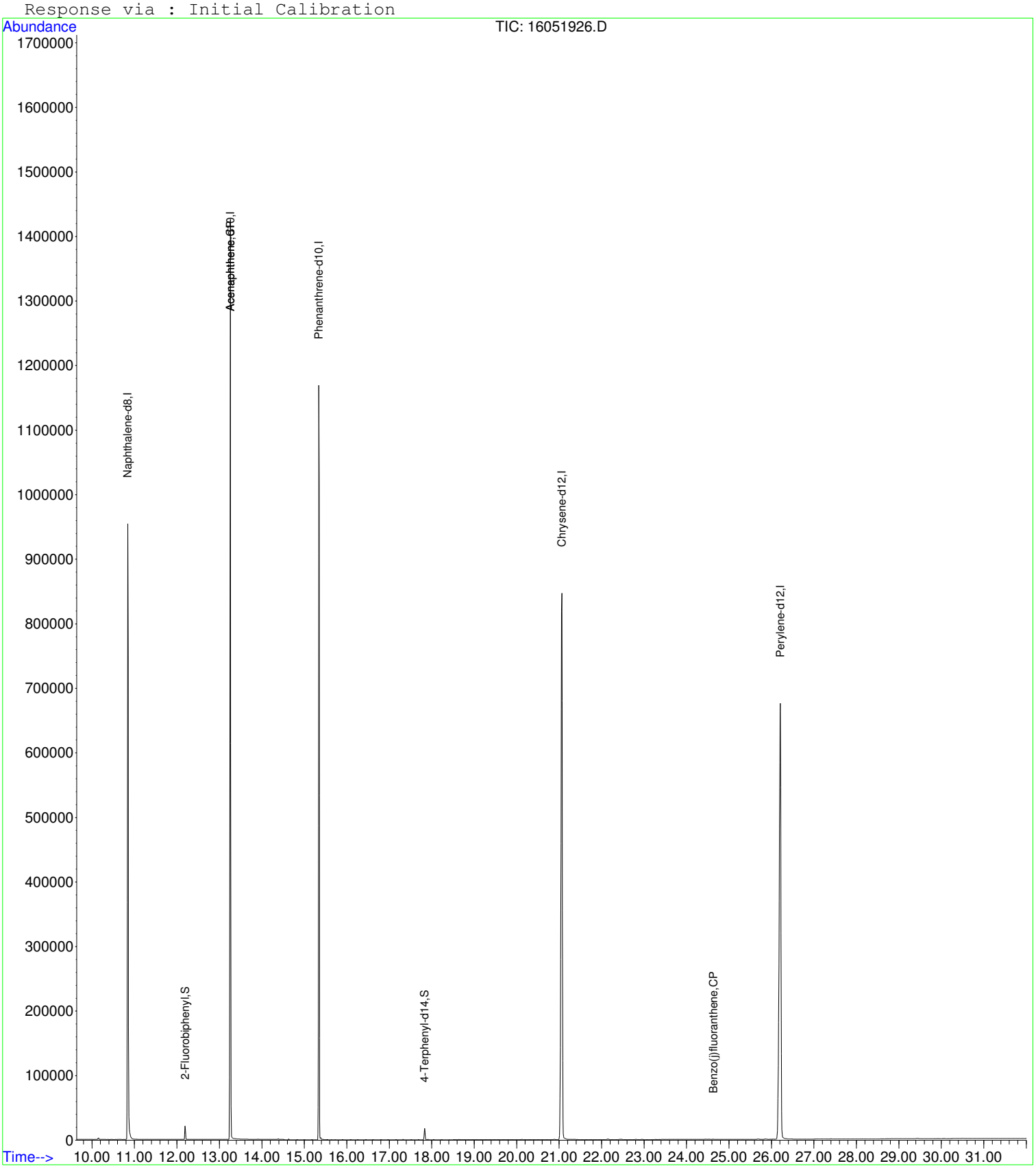
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1218848	4000.00	ug/kg	105
5) Acenaphthene-d10	13.26	164	729736	4000.00	ug/kg	63
11) Phenanthrene-d10	15.34	188	1240142	4000.00	ug/kg	61
17) Chrysene-d12	21.06	240	1423081	4000.00	ug/kg	63
20) Perylene-d12	26.21	264	1310805	4000.00	ug/kg	64
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	17562	82.50	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.06%#		
16) 4-Terphenyl-d14	17.83	244	22134	68.99	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.72%#		
Target Compounds						Qvalue
9) Acenaphthene	13.26	154	2213	11.35	ug/kg#	9
23) Benzo(j)fluoranthene	24.63	252	551	1.91	ug/kg	96

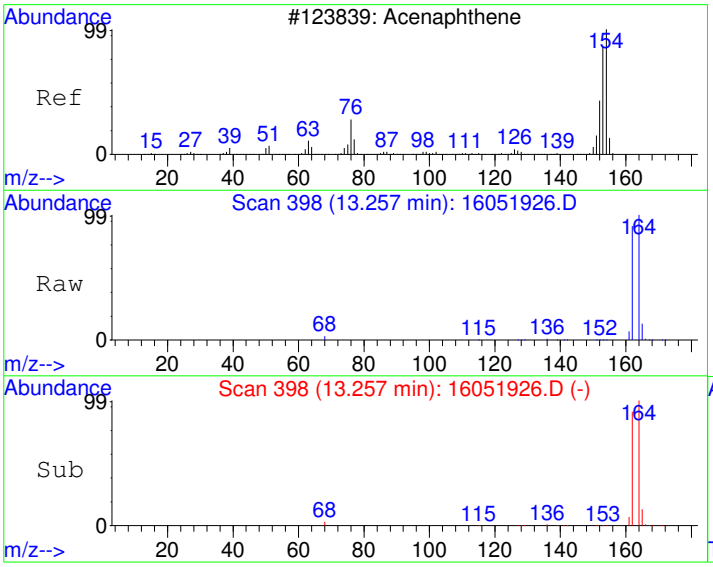
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051926.D Vial: 26
Acq On : 20 May 2016 1:03 am Operator:
Sample : 1605097-09A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:35 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

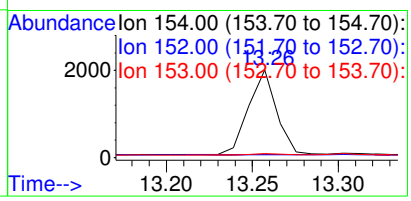


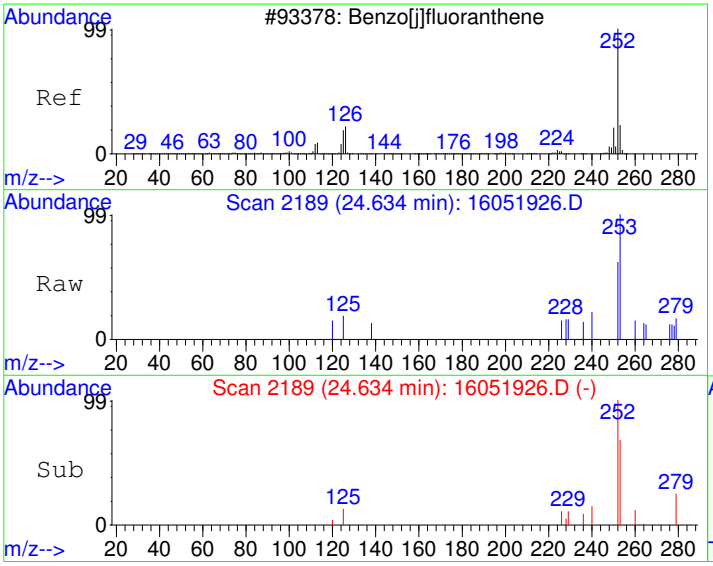


#9
Acenaphthene
Concen: 11.35 ug/kg
RT: 13.26 min Scan# 398
Delta R.T. -0.06 min
Lab File: 16051926.D
Acq: 20 May 2016 1:03 am

Tgt Ion:154 Resp: 2213

Ion	Ratio	Lower	Upper
154	100		
152	0.3	18.9	78.9#
153	1.9	75.2	135.2#

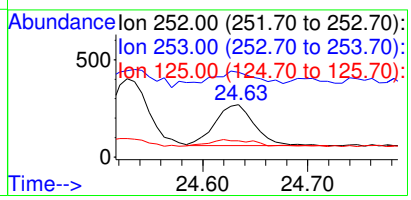




#23
Benzo(j)fluoranthene
Concen: 1.91 ug/kg
RT: 24.63 min Scan# 2189
Delta R.T. -0.04 min
Lab File: 16051926.D
Acq: 20 May 2016 1:03 am

Tgt Ion:252 Resp: 551

Ion	Ratio	Lower	Upper
252	100		
253	25.1	2.1	42.1
125	14.2	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051927.D Vial: 27
Acq On : 20 May 2016 1:42 am Operator:
Sample : 1605097-10A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:36 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

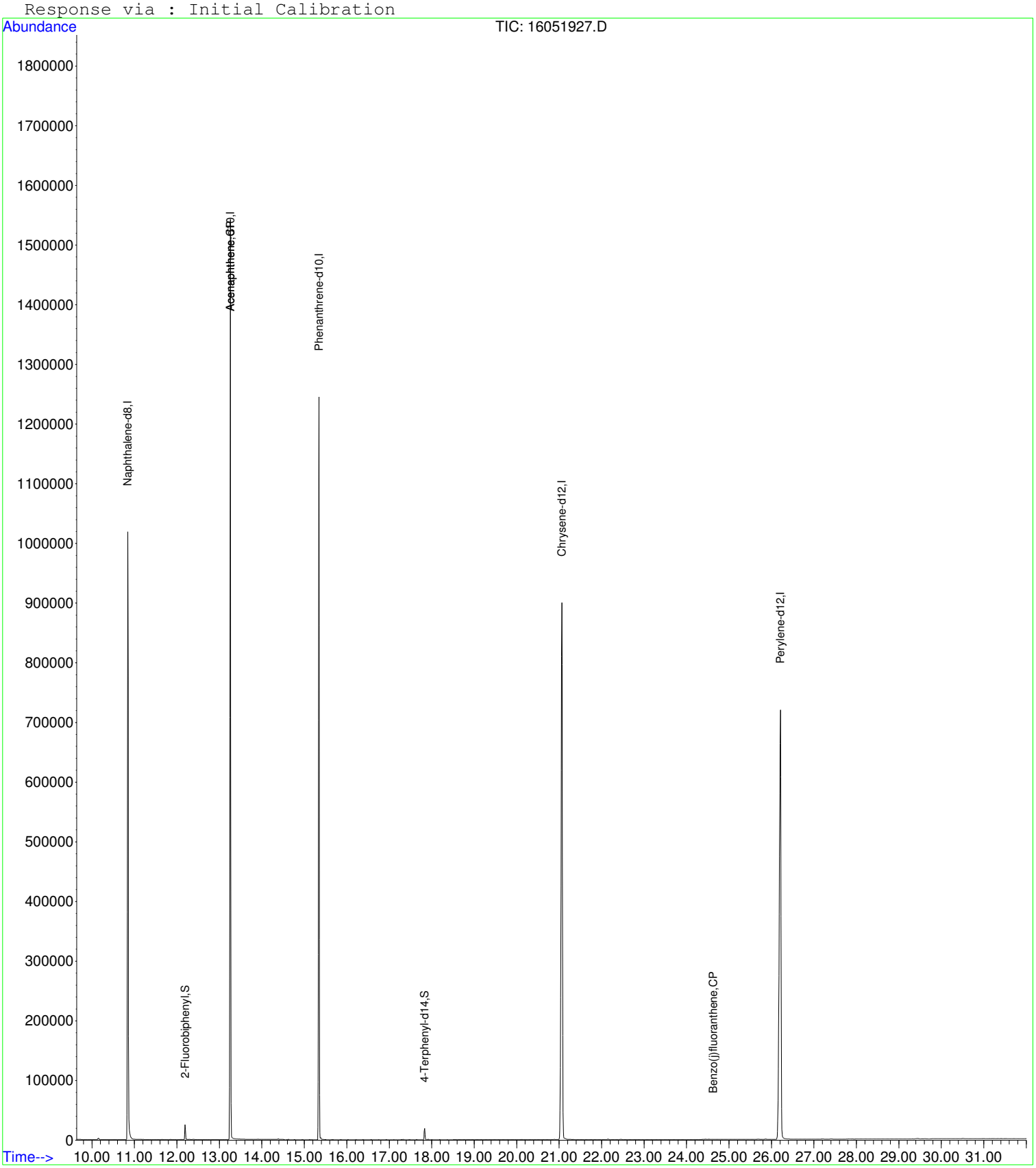
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1271834	4000.00	ug/kg	110
5) Acenaphthene-d10	13.26	164	782308	4000.00	ug/kg	68
11) Phenanthrene-d10	15.35	188	1301030	4000.00	ug/kg	64
17) Chrysene-d12	21.06	240	1479507	4000.00	ug/kg	65
20) Perylene-d12	26.21	264	1369104	4000.00	ug/kg	66
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	20090	88.03	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.20%#		
16) 4-Terphenyl-d14	17.83	244	24737	73.49	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.84%#		
Target Compounds						Qvalue
9) Acenaphthene	13.26	154	2364	11.30	ug/kg#	9
23) Benzo(j)fluoranthene	24.63	252	553	1.83	ug/kg	96

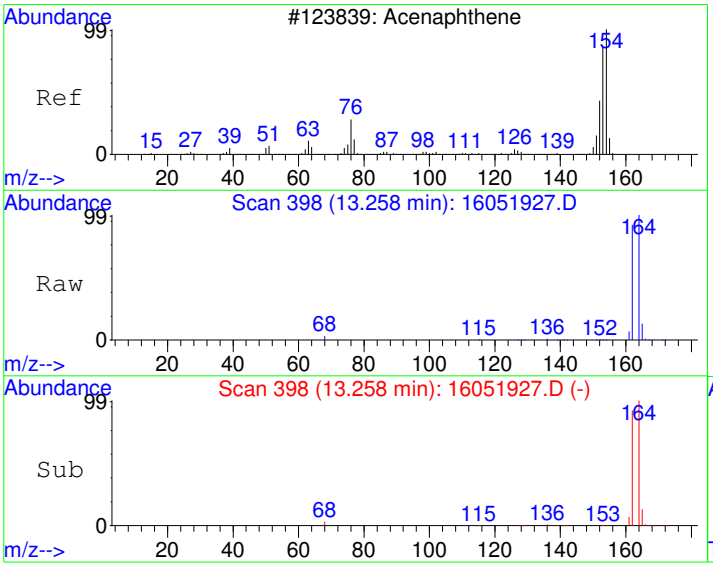
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051927.D Vial: 27
Acq On : 20 May 2016 1:42 am Operator:
Sample : 1605097-10A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:36 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

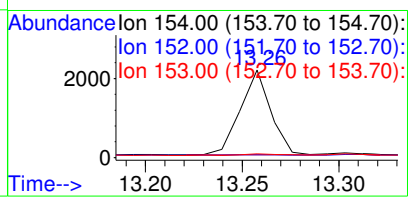


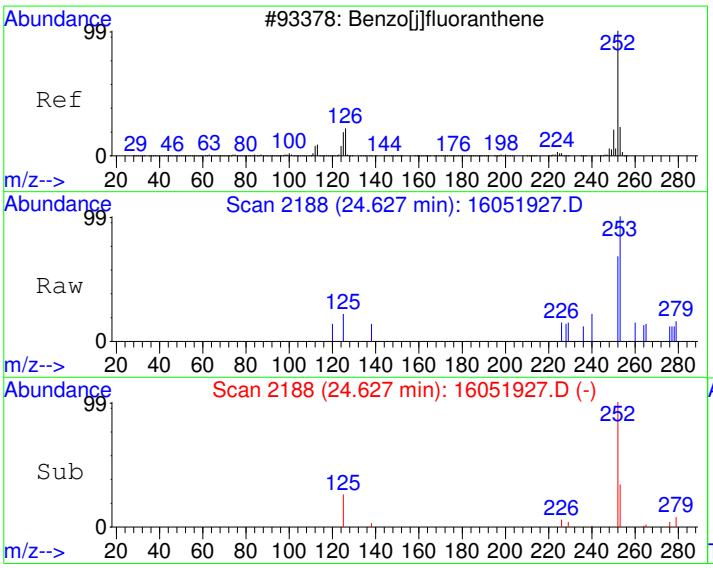


#9
Acenaphthene
Concen: 11.30 ug/kg
RT: 13.26 min Scan# 398
Delta R.T. -0.06 min
Lab File: 16051927.D
Acq: 20 May 2016 1:42 am

Tgt Ion:154 Resp: 2364

Ion	Ratio	Lower	Upper
154	100		
152	0.4	18.9	78.9#
153	2.0	75.2	135.2#

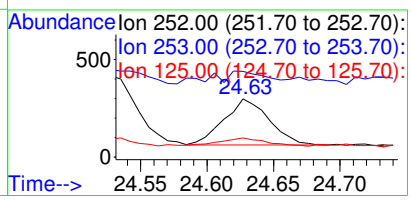




#23
Benzo(j)fluoranthene
Concen: 1.83 ug/kg
RT: 24.63 min Scan# 2188
Delta R.T. -0.04 min
Lab File: 16051927.D
Acq: 20 May 2016 1:42 am

Tgt Ion:252 Resp: 553

Ion	Ratio	Lower	Upper
252	100		
253	20.0	2.1	42.1
125	15.7	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051928.D Vial: 28
Acq On : 20 May 2016 2:23 am Operator:
Sample : 1605097-11A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:36 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

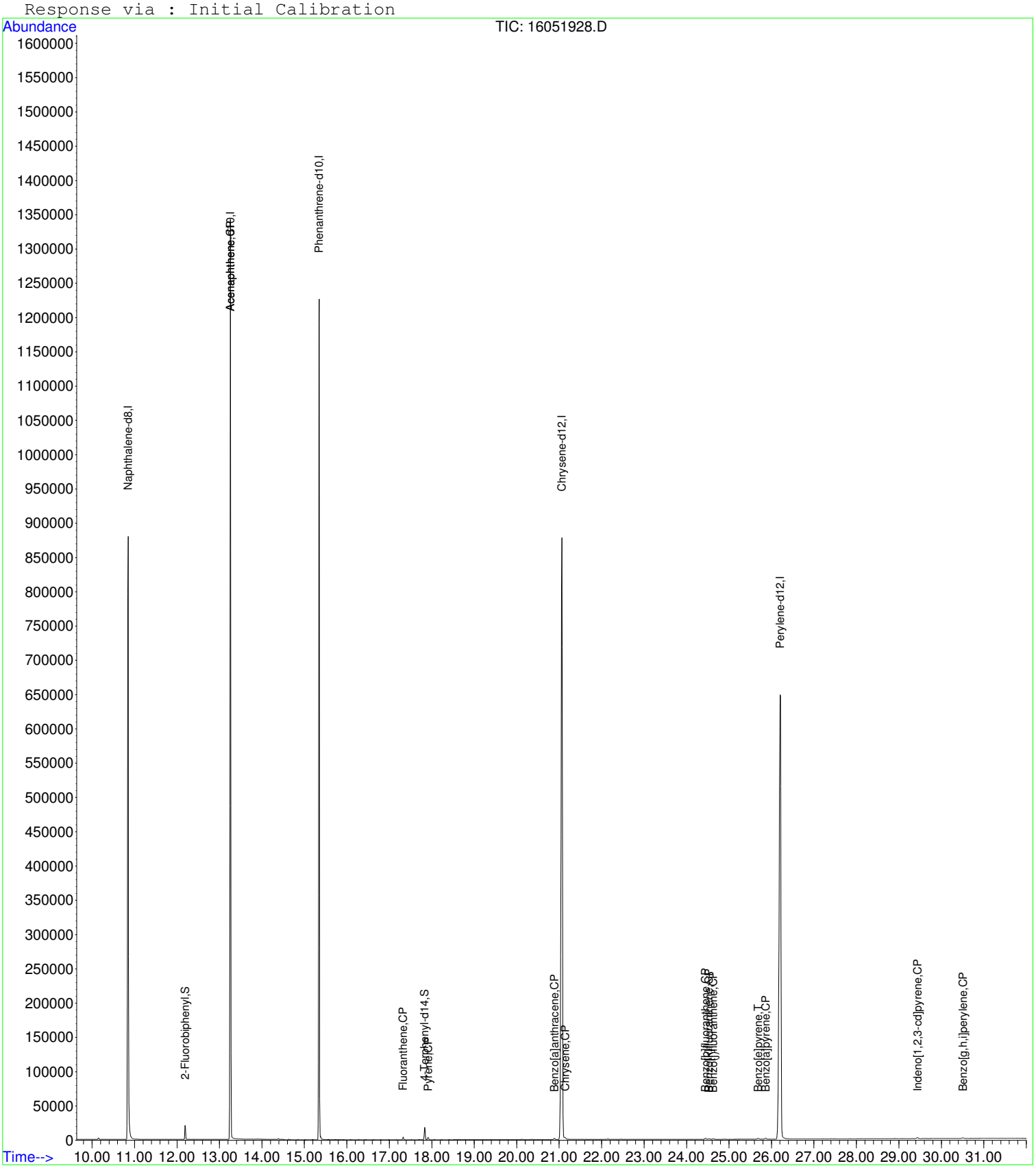
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.85	136	1181398	4000.00	ug/kg	102
5) Acenaphthene-d10	13.26	164	741176	4000.00	ug/kg	64
11) Phenanthrene-d10	15.35	188	1307266	4000.00	ug/kg	64
17) Chrysene-d12	21.06	240	1423722	4000.00	ug/kg	63
20) Perylene-d12	26.21	264	1304011	4000.00	ug/kg	63
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	17683	81.79	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.04%#		
16) 4-Terphenyl-d14	17.83	244	23864	70.56	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.76%#		
Target Compounds						Qvalue
9) Acenaphthene	13.26	154	2195	11.08	ug/kg#	9
14) Fluoranthene	17.32	202	3949	11.10	ug/kg	99
15) Pyrene	17.92	202	3752	10.15	ug/kg	99
18) Benzo[a]anthracene	20.89	228	2425	7.27	ug/kg	97
19) Chrysene	21.14	228	2890	8.97	ug/kg	97
21) Benzo[b]fluoranthene	24.44	252	3038	8.84	ug/kg	98
22) Benzo[k]fluoranthene	24.53	252	1734	5.38	ug/kg	93
23) Benzo(j)fluoranthene	24.63	252	1410	4.91	ug/kg	88
24) Benzo[e]pyrene	25.69	252	2383	7.74	ug/kg	91
25) Benzo[a]pyrene	25.86	252	2911	9.26	ug/kg	93
27) Indeno[1,2,3-cd]pyrene	29.44	276	2127	6.22	ug/kg	92
28) Benzo[g,h,i]perylene	30.50	276	1996	7.49	ug/kg	96

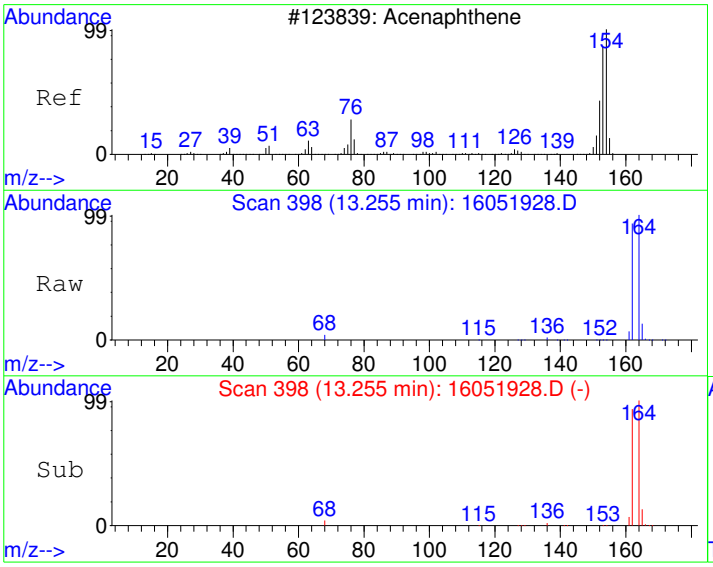
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051928.D Vial: 28
Acq On : 20 May 2016 2:23 am Operator:
Sample : 1605097-11A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:36 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

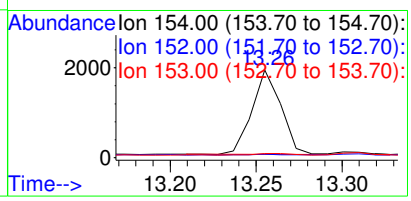


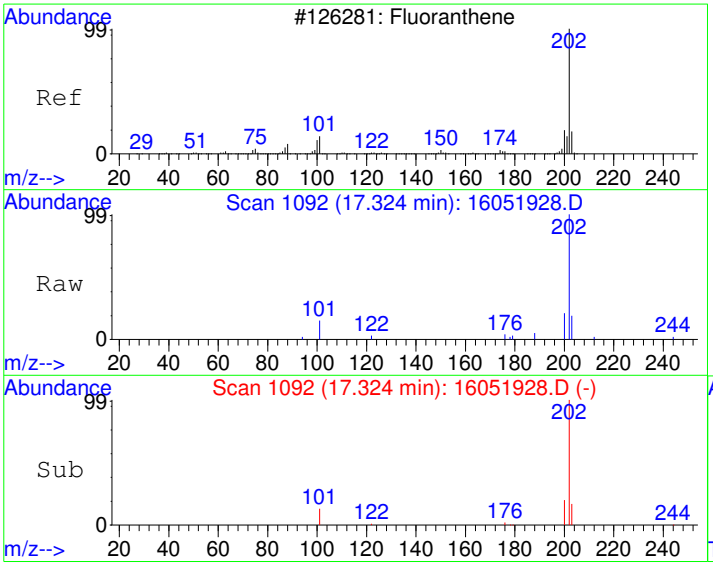


#9
Acenaphthene
Concen: 11.08 ug/kg
RT: 13.26 min Scan# 398
Delta R.T. -0.07 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:154 Resp: 2195

Ion	Ratio	Lower	Upper
154	100		
152	1.0	18.9	78.9#
153	1.7	75.2	135.2#

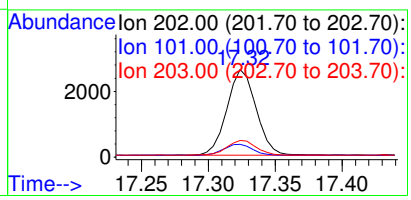


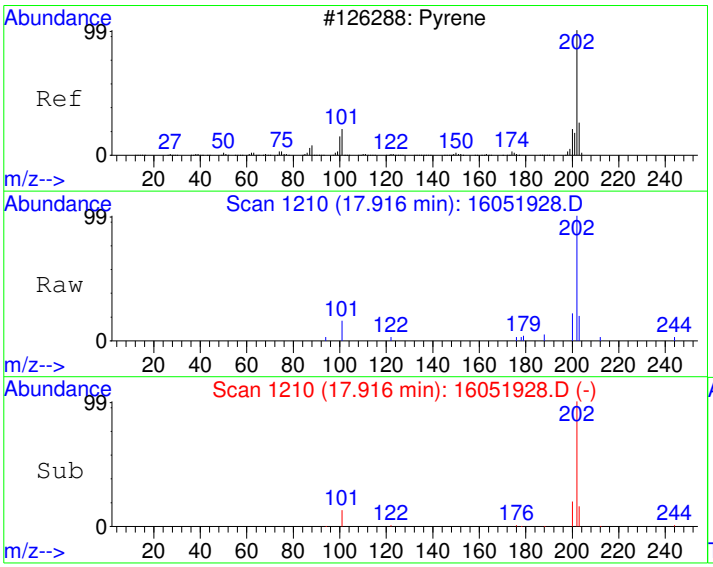


#14
Fluoranthene
Concen: 11.10 ug/kg
RT: 17.32 min Scan# 1092
Delta R.T. -0.02 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:202 Resp: 3949

Ion	Ratio	Lower	Upper
202	100		
101	12.7	0.0	43.0
203	17.3	0.0	47.9

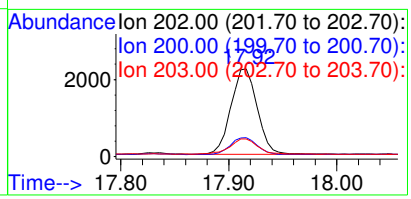


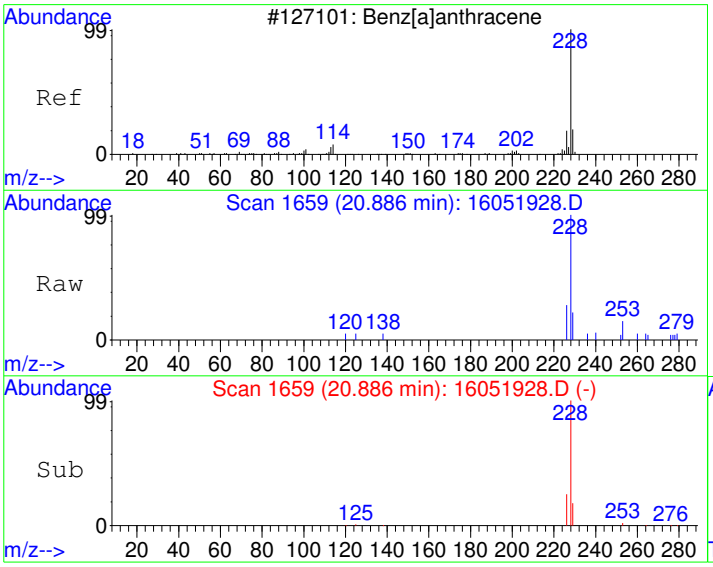


#15
Pyrene
Concen: 10.15 ug/kg
RT: 17.92 min Scan# 1210
Delta R.T. -0.02 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:202 Resp: 3752

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	50.0
203	17.7	0.0	48.0

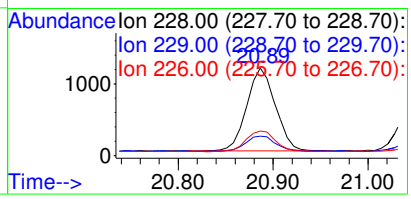


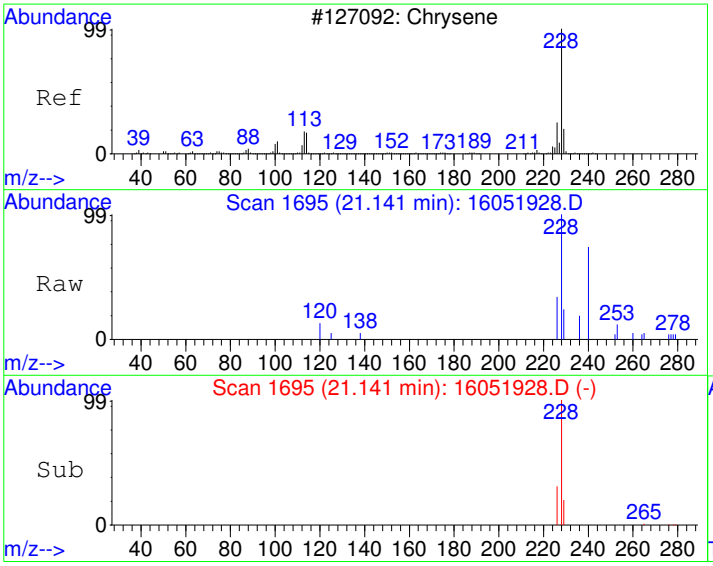


#18
Benzo[a]anthracene
Concen: 7.27 ug/kg
RT: 20.89 min Scan# 1659
Delta R.T. -0.03 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:228 Resp: 2425

Ion	Ratio	Lower	Upper
228	100		
229	18.0	0.0	50.1
226	24.5	0.0	55.2

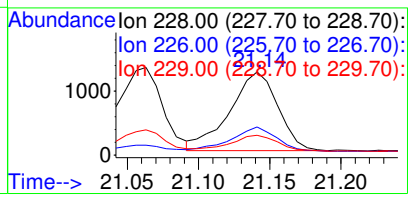


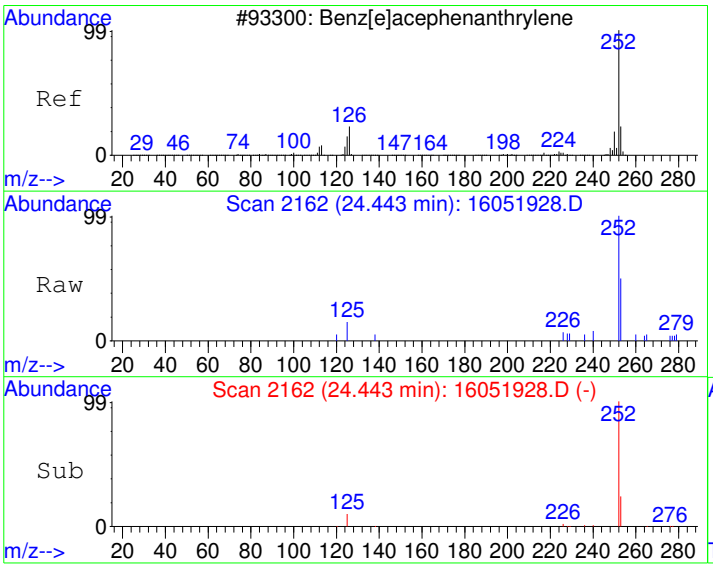


#19
Chrysene
Concen: 8.97 ug/kg
RT: 21.14 min Scan# 1695
Delta R.T. -0.03 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:228 Resp: 2890

Ion	Ratio	Lower	Upper
228	100		
226	30.7	0.0	58.1
229	20.0	0.0	50.1

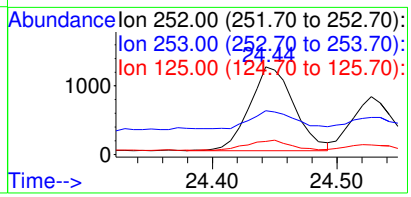


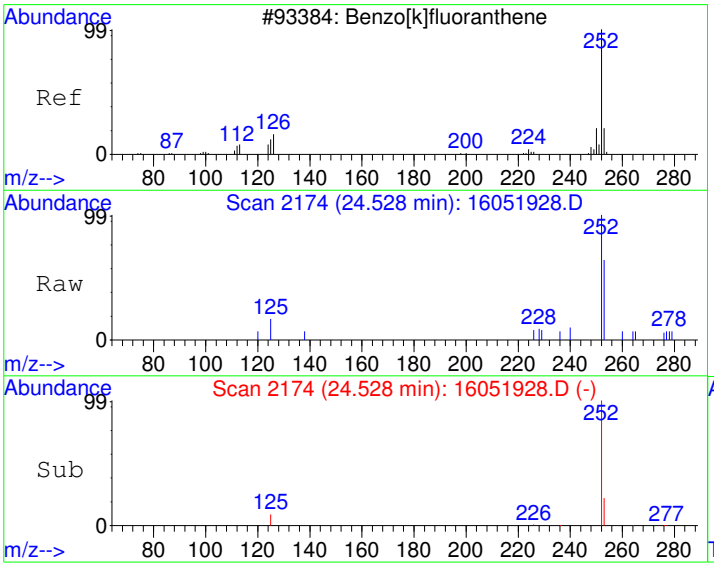


#21
Benzo[b]fluoranthene
Concen: 8.84 ug/kg
RT: 24.44 min Scan# 2162
Delta R.T. -0.04 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:252 Resp: 3038

Ion	Ratio	Lower	Upper
252	100		
253	21.2	0.0	52.2
125	10.2	0.0	41.0

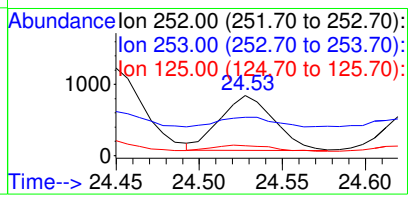


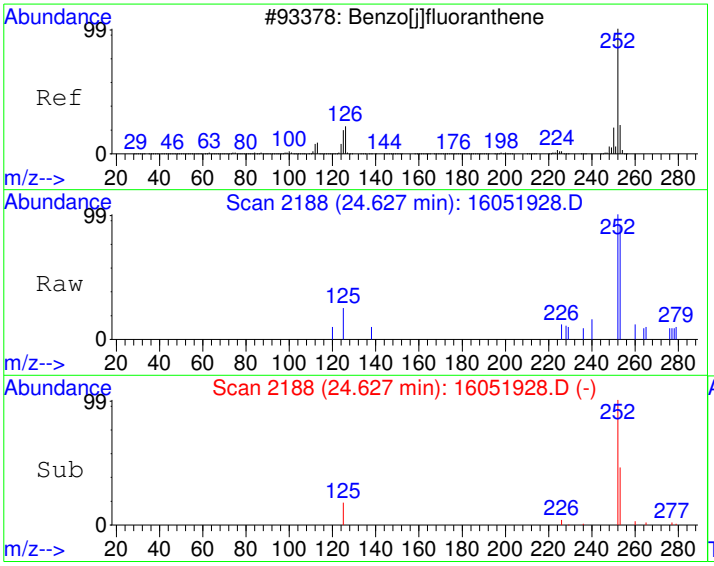


#22
Benzo[k]fluoranthene
Concen: 5.38 ug/kg
RT: 24.53 min Scan# 2174
Delta R.T. -0.04 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:252 Resp: 1734

Ion	Ratio	Lower	Upper
252	100		
253	17.9	2.1	42.1
125	10.1	0.0	31.3

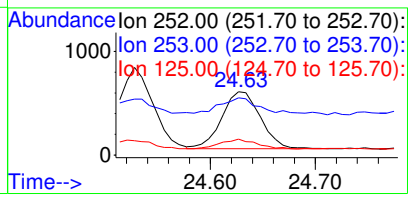


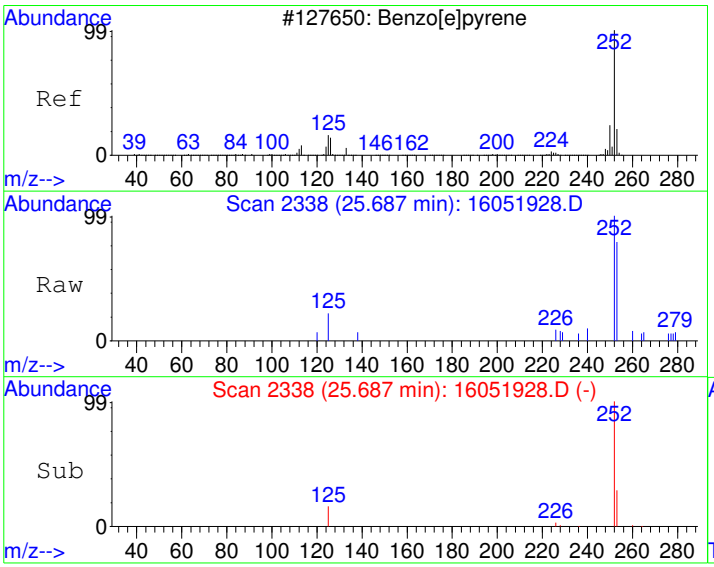


#23
Benzo(j)fluoranthene
Concen: 4.91 ug/kg
RT: 24.63 min Scan# 2188
Delta R.T. -0.04 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:252 Resp: 1410

Ion	Ratio	Lower	Upper
252	100		
253	30.1	2.1	42.1
125	16.3	0.0	34.4

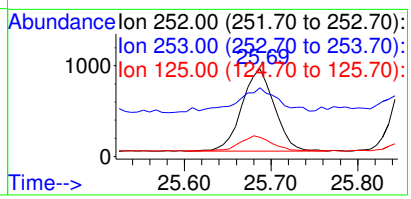


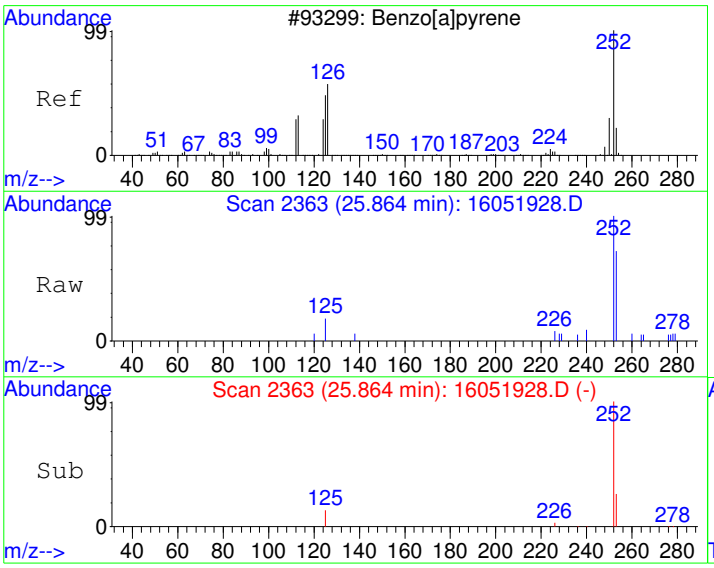


#24
Benzo[e]pyrene
Concen: 7.74 ug/kg
RT: 25.69 min Scan# 2338
Delta R.T. -0.04 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:252 Resp: 2383

Ion	Ratio	Lower	Upper
252	100		
253	29.1	2.2	42.2
125	16.8	0.0	36.1

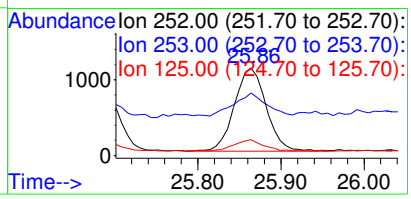


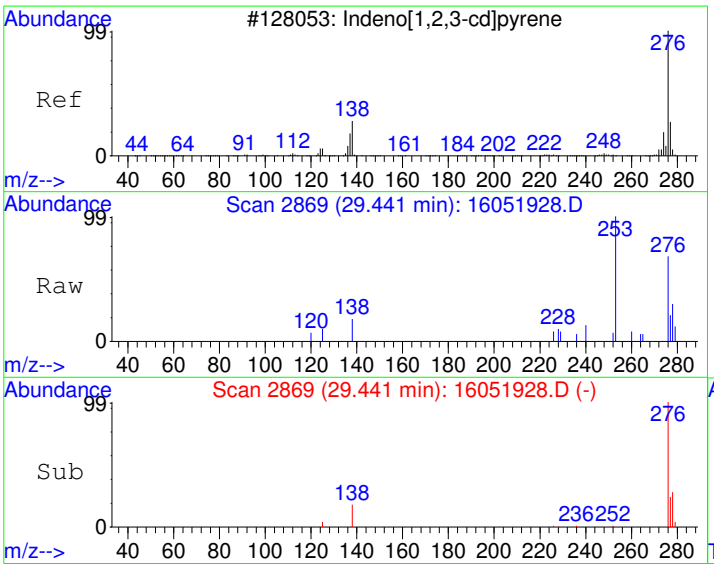


#25
Benzo[a]pyrene
Concen: 9.26 ug/kg
RT: 25.86 min Scan# 2363
Delta R.T. -0.04 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:252 Resp: 2911

Ion	Ratio	Lower	Upper
252	100		
253	25.8	1.9	41.9
125	13.8	0.0	31.7

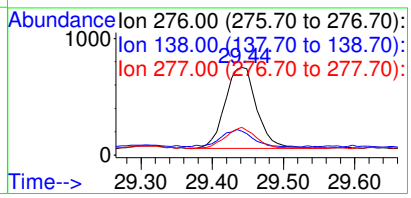


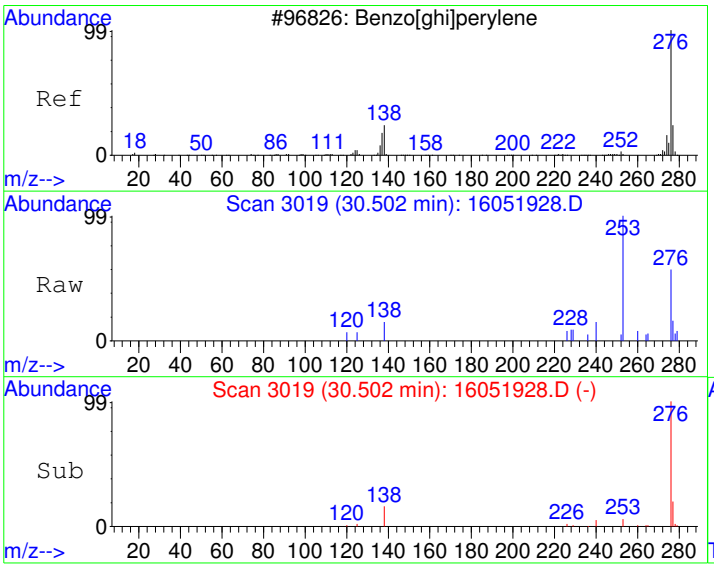


#27
Indeno[1,2,3-cd]pyrene
Concen: 6.22 ug/kg
RT: 29.44 min Scan# 2869
Delta R.T. -0.04 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:276 Resp: 2127

Ion	Ratio	Lower	Upper
276	100		
138	18.9	6.7	46.7
277	25.8	5.8	45.8

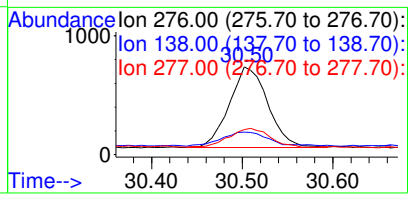




#28
Benzo[g,h,i]perylene
Concen: 7.49 ug/kg
RT: 30.50 min Scan# 3019
Delta R.T. -0.05 min
Lab File: 16051928.D
Acq: 20 May 2016 2:23 am

Tgt Ion:276 Resp: 1996

Ion	Ratio	Lower	Upper
276	100		
138	17.4	0.0	39.1
277	21.8	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051929.D Vial: 29
Acq On : 20 May 2016 3:03 am Operator:
Sample : 1605097-12A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:36 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

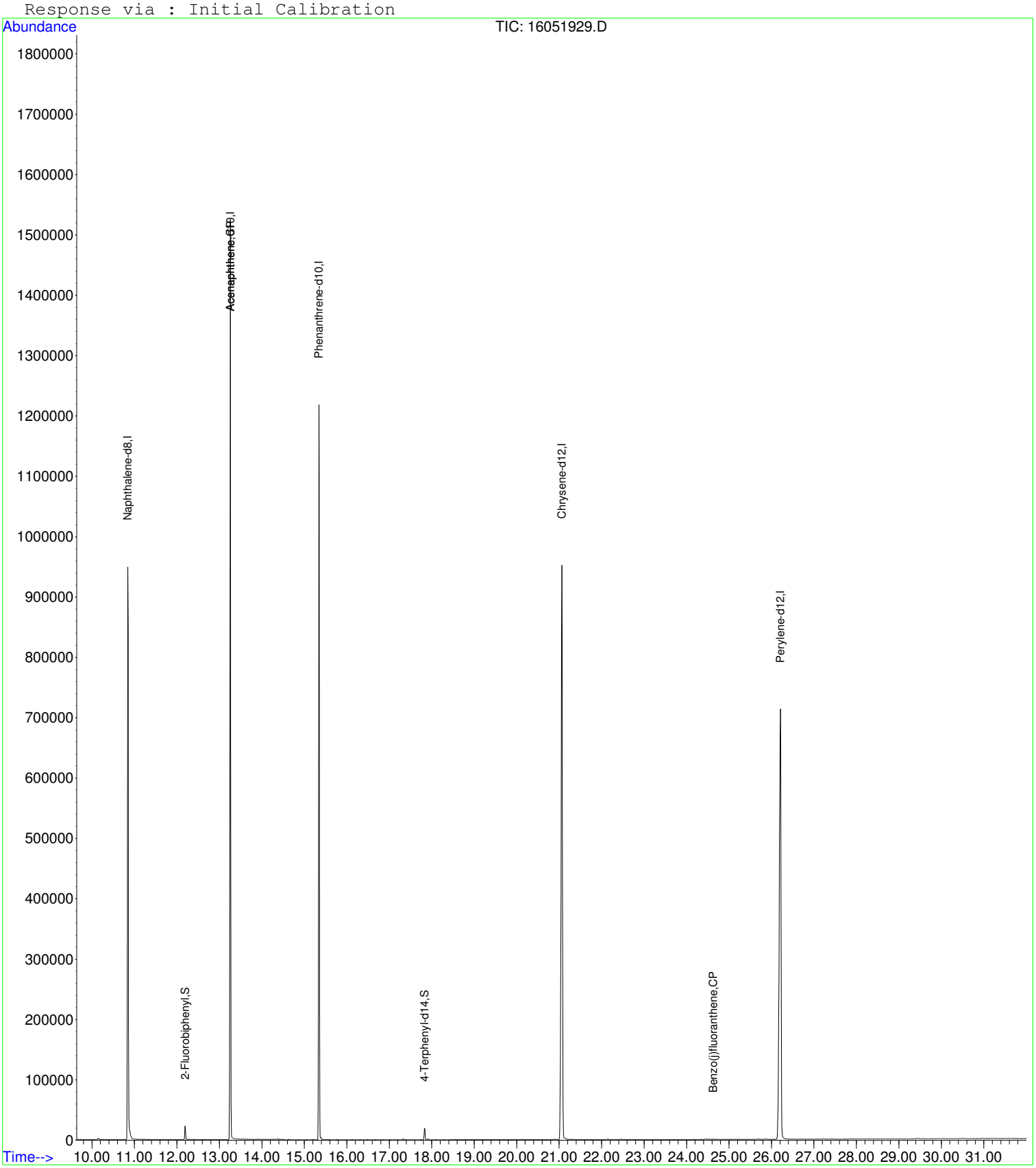
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1261519	4000.00	ug/kg	109
5) Acenaphthene-d10	13.26	164	777555	4000.00	ug/kg	68
11) Phenanthrene-d10	15.34	188	1333105	4000.00	ug/kg	65
17) Chrysene-d12	21.06	240	1541907	4000.00	ug/kg	68
20) Perylene-d12	26.21	264	1401323	4000.00	ug/kg	68
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18790	82.84	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.07%#		
16) 4-Terphenyl-d14	17.83	244	25098	72.77	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.82%#		
Target Compounds						Qvalue
9) Acenaphthene	13.26	154	2326	11.19	ug/kg#	9
23) Benzo(j)fluoranthene	24.63	252	859	2.78	ug/kg	80

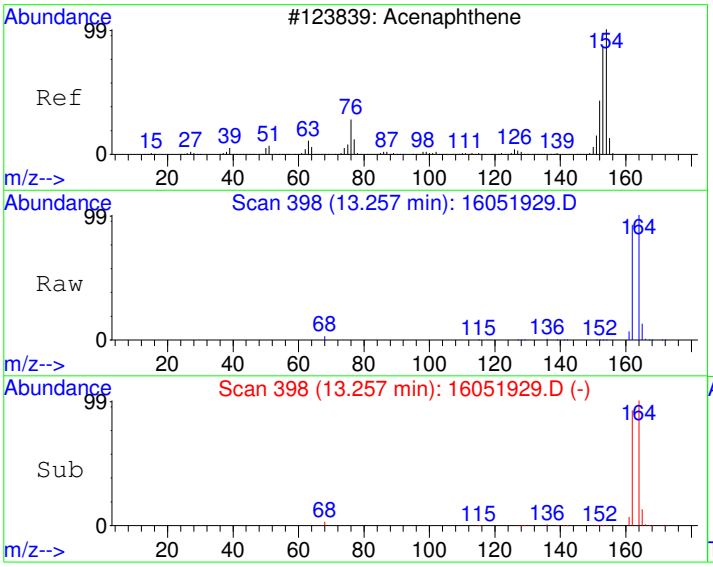
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051929.D Vial: 29
Acq On : 20 May 2016 3:03 am Operator:
Sample : 1605097-12A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:36 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

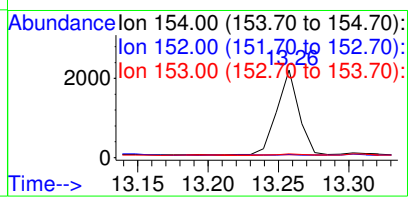


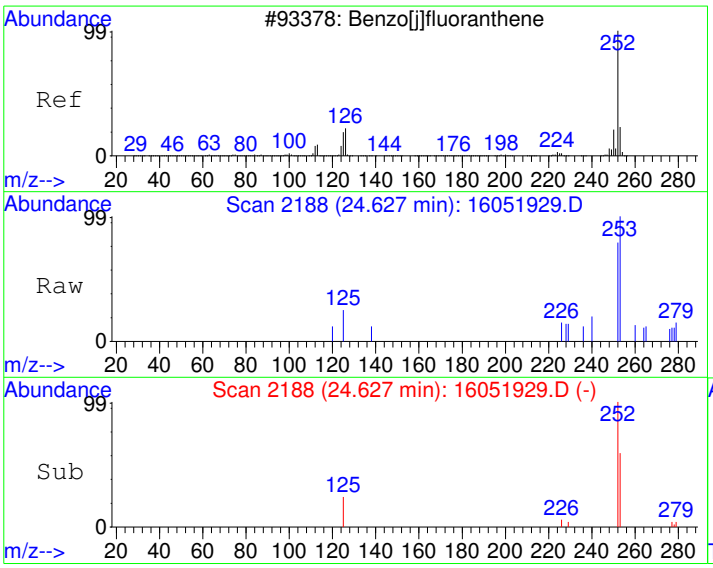


#9
Acenaphthene
Concen: 11.19 ug/kg
RT: 13.26 min Scan# 398
Delta R.T. -0.06 min
Lab File: 16051929.D
Acq: 20 May 2016 3:03 am

Tgt Ion:154 Resp: 2326

Ion	Ratio	Lower	Upper
154	100		
152	0.7	18.9	78.9#
153	1.6	75.2	135.2#

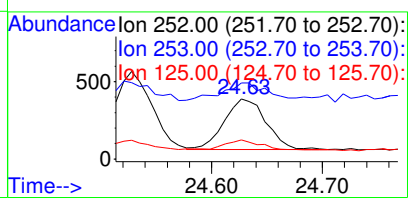




#23
Benzo(j)fluoranthene
Concen: 2.78 ug/kg
RT: 24.63 min Scan# 2188
Delta R.T. -0.04 min
Lab File: 16051929.D
Acq: 20 May 2016 3:03 am

Tgt Ion:252 Resp: 859

Ion	Ratio	Lower	Upper
252	100		
253	33.8	2.1	42.1
125	19.5	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051930.D Vial: 30
Acq On : 20 May 2016 3:43 am Operator:
Sample : 1605097-13A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:36 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

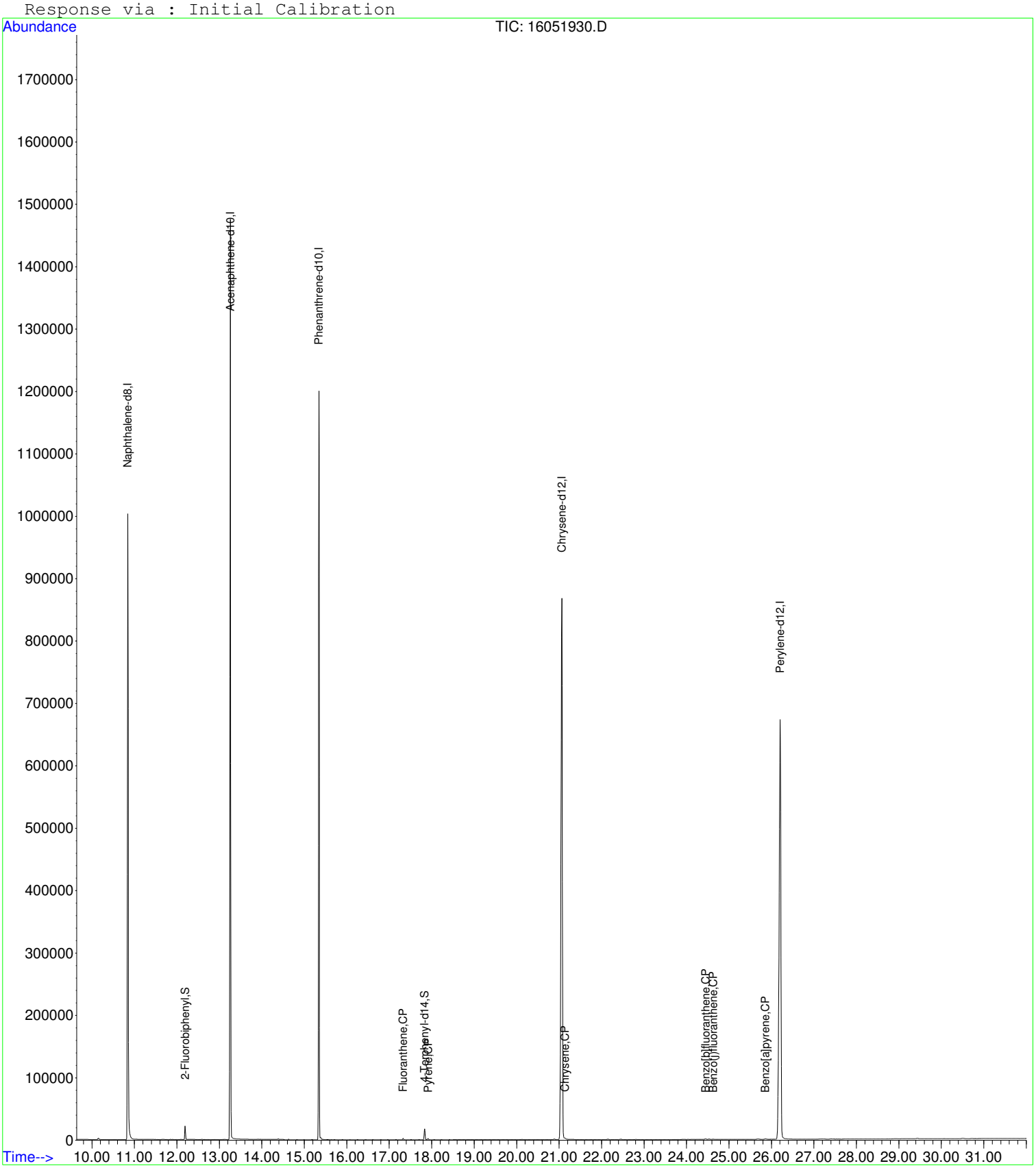
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1239907	4000.00	ug/kg	107
5) Acenaphthene-d10	13.26	164	747066	4000.00	ug/kg	65
11) Phenanthrene-d10	15.34	188	1279617	4000.00	ug/kg	63
17) Chrysene-d12	21.06	240	1449978	4000.00	ug/kg	64
20) Perylene-d12	26.20	264	1320672	4000.00	ug/kg	64
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	17397	79.83	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.00%#		
16) 4-Terphenyl-d14	17.83	244	22369	67.57	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.69%#		
Target Compounds						Qvalue
14) Fluoranthene	17.33	202	2406	6.91	ug/kg	99
15) Pyrene	17.91	202	2308	6.38	ug/kg	98
19) Chrysene	21.14	228	1756	5.35	ug/kg	99
21) Benzo[b]fluoranthene	24.45	252	1771	5.09	ug/kg	99
23) Benzo(j)fluoranthene	24.63	252	847	2.91	ug/kg	87
25) Benzo[a]pyrene	25.86	252	1635	5.13	ug/kg	95

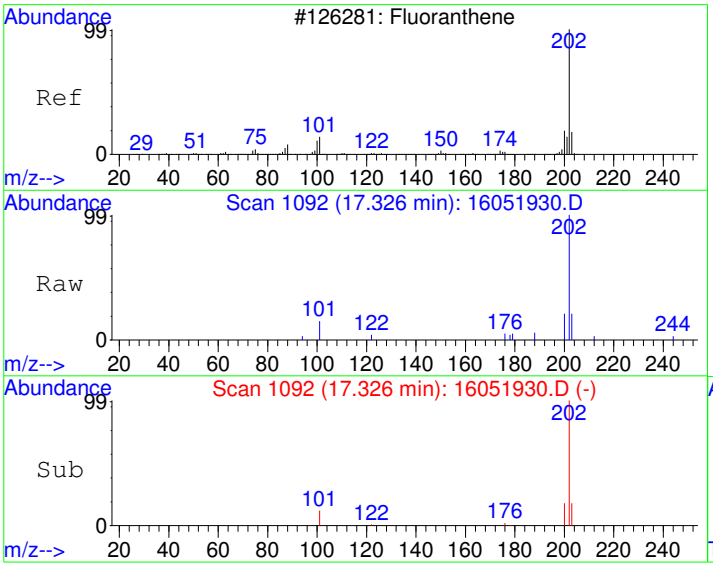
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051930.D Vial: 30
Acq On : 20 May 2016 3:43 am Operator:
Sample : 1605097-13A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:36 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

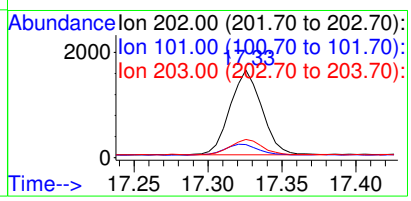


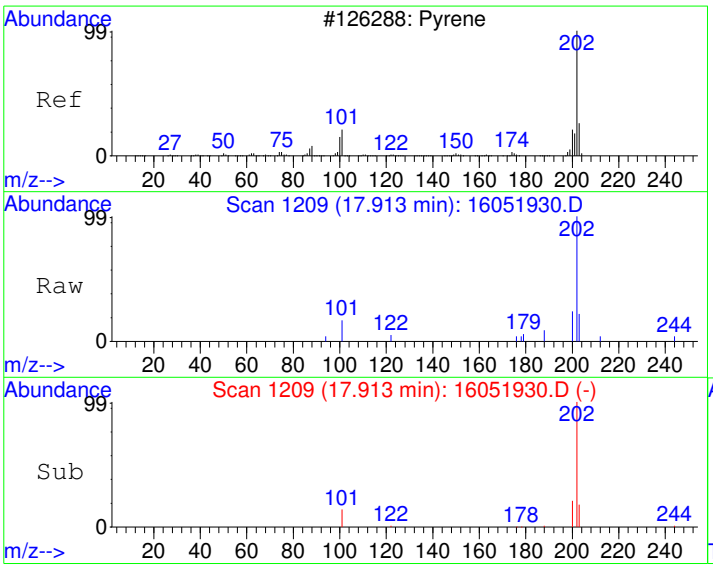


#14
Fluoranthene
Concen: 6.91 ug/kg
RT: 17.33 min Scan# 1092
Delta R.T. -0.02 min
Lab File: 16051930.D
Acq: 20 May 2016 3:43 am

Tgt Ion:202 Resp: 2406

Ion	Ratio	Lower	Upper
202	100		
101	12.4	0.0	43.0
203	18.1	0.0	47.9

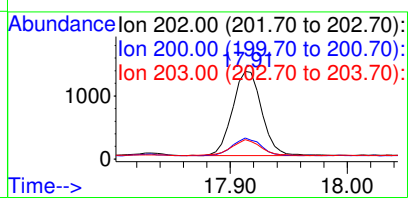


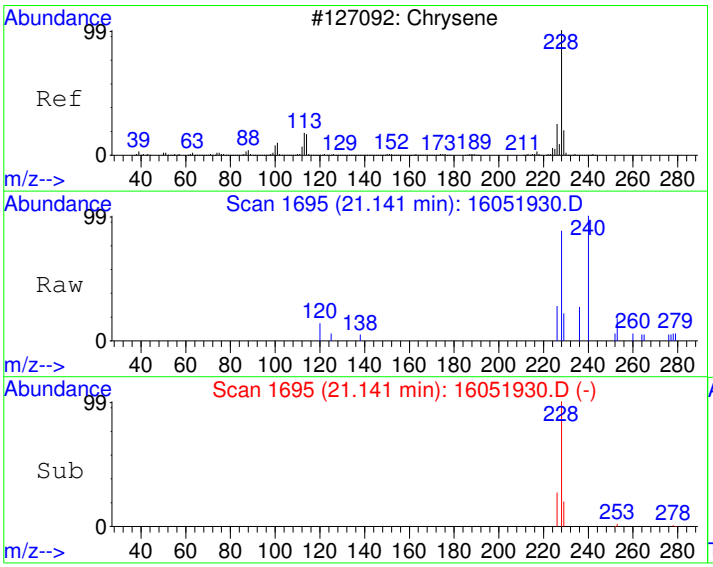


#15
Pyrene
Concen: 6.38 ug/kg
RT: 17.91 min Scan# 1209
Delta R.T. -0.02 min
Lab File: 16051930.D
Acq: 20 May 2016 3:43 am

Tgt Ion:202 Resp: 2308

Ion	Ratio	Lower	Upper
202	100		
200	21.0	0.0	50.0
203	19.2	0.0	48.0

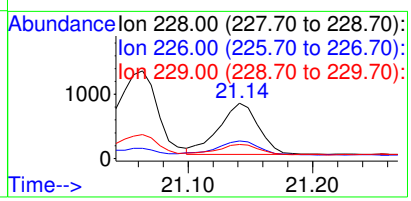


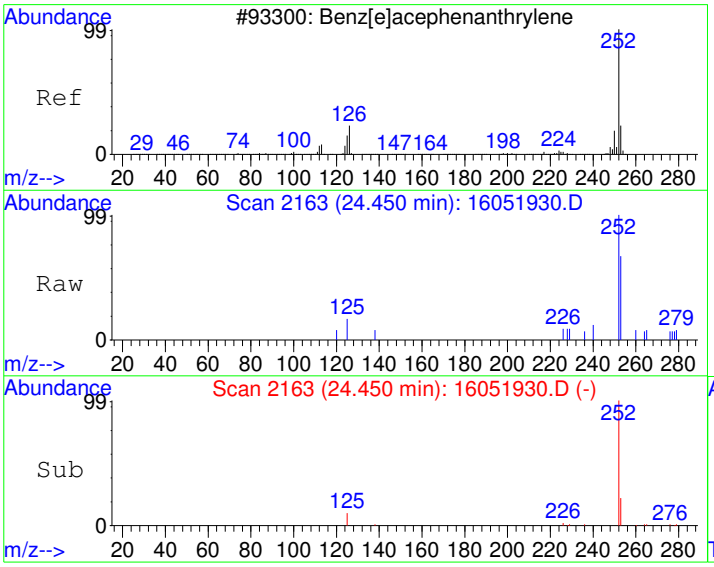


#19
Chrysene
Concen: 5.35 ug/kg
RT: 21.14 min Scan# 1695
Delta R.T. -0.03 min
Lab File: 16051930.D
Acq: 20 May 2016 3:43 am

Tgt Ion:228 Resp: 1756

Ion	Ratio	Lower	Upper
228	100		
226	27.2	0.0	58.1
229	20.4	0.0	50.1

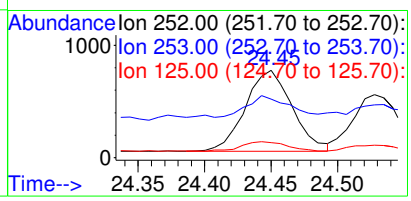


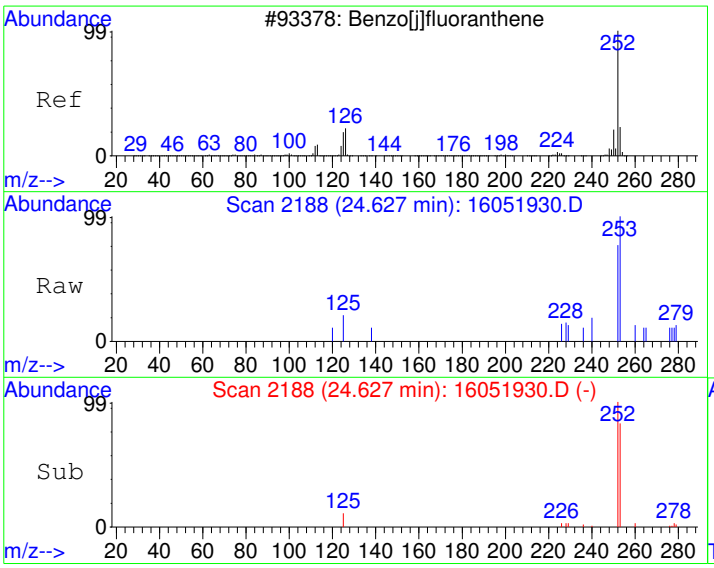


#21
Benzo[b]fluoranthene
Concen: 5.09 ug/kg
RT: 24.45 min Scan# 2163
Delta R.T. -0.04 min
Lab File: 16051930.D
Acq: 20 May 2016 3:43 am

Tgt Ion:252 Resp: 1771

Ion	Ratio	Lower	Upper
252	100		
253	22.4	0.0	52.2
125	10.2	0.0	41.0

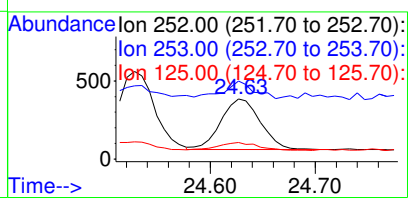


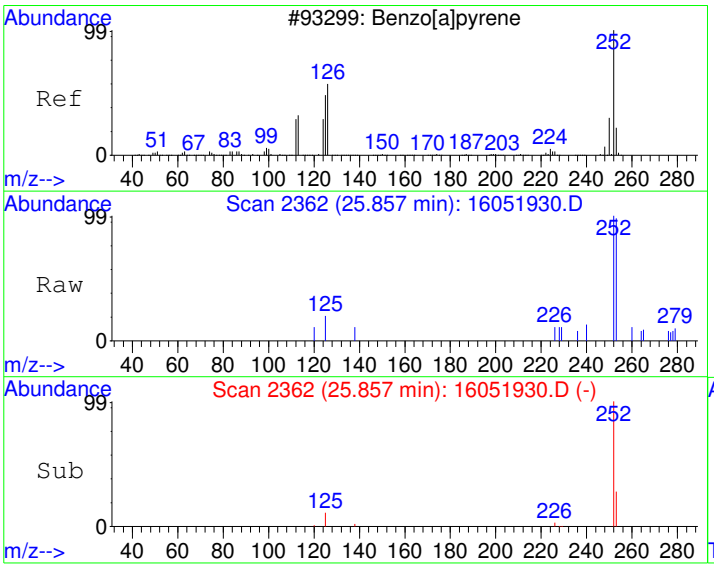


#23
Benzo(j)fluoranthene
Concen: 2.91 ug/kg
RT: 24.63 min Scan# 2188
Delta R.T. -0.04 min
Lab File: 16051930.D
Acq: 20 May 2016 3:43 am

Tgt Ion:252 Resp: 847

Ion	Ratio	Lower	Upper
252	100		
253	31.7	2.1	42.1
125	14.8	0.0	34.4

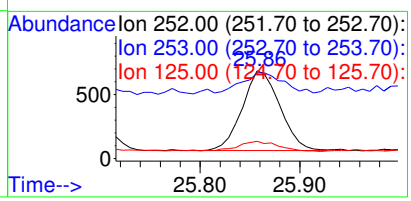




#25
Benzo[a]pyrene
Concen: 5.13 ug/kg
RT: 25.86 min Scan# 2362
Delta R.T. -0.04 min
Lab File: 16051930.D
Acq: 20 May 2016 3:43 am

Tgt Ion:252 Resp: 1635

Ion	Ratio	Lower	Upper
252	100		
253	25.5	1.9	41.9
125	12.2	0.0	31.7



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160519\16051931.D Vial: 31
Acq On : 20 May 2016 4:23 am Operator:
Sample : CCV1-160519 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

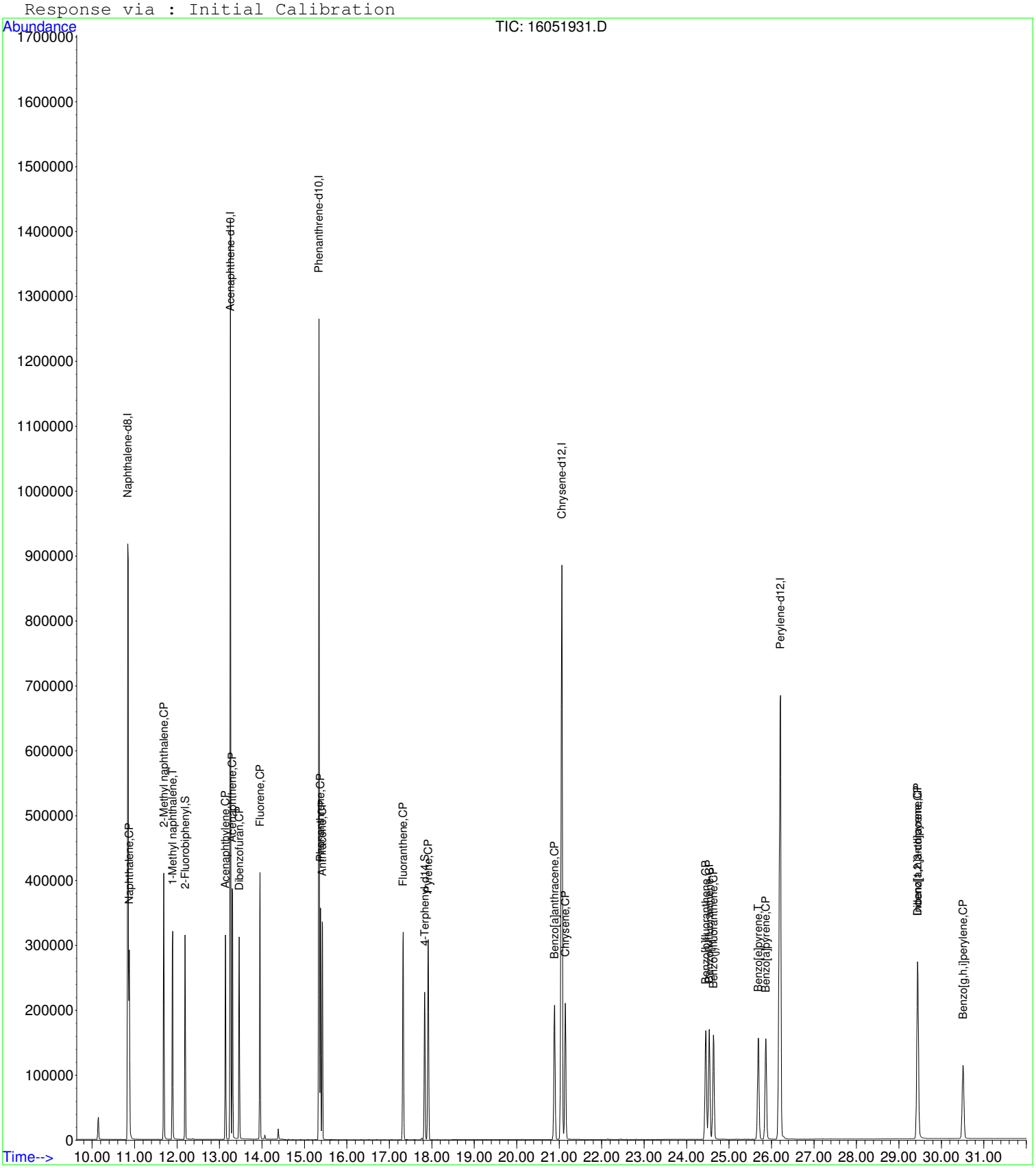
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1250771	4000.00	ug/kg	108
5) Acenaphthene-d10	13.25	164	770049	4000.00	ug/kg	67
11) Phenanthrene-d10	15.34	188	1301718	4000.00	ug/kg	64
17) Chrysene-d12	21.06	240	1482195	4000.00	ug/kg	65
20) Perylene-d12	26.21	264	1372359	4000.00	ug/kg	67
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	231409	1030.18	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 25.75%#			
16) 4-Terphenyl-d14	17.83	244	291426	865.34	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 21.63%#			
Target Compounds						Qvalue
2) Naphthalene	10.88	128	278051	888.73	ug/kg	100
3) 2-Methyl naphthalene	11.69	142	202955	734.38	ug/kg	98
4) 1-Methyl naphthalene	11.90	142	181839	718.42	ug/kg	100
6) Dibenzofuran	13.46	168	262596	909.88	ug/kg	99
8) Acenaphthylene	13.14	152	312679	942.86	ug/kg	99
9) Acenaphthene	13.31	154	179296	871.05	ug/kg	96
10) Fluorene	13.96	166	217136	868.61	ug/kg	98
12) Phenanthrene	15.38	178	289910	846.87	ug/kg	99
13) Anthracene	15.42	178	292913	904.00	ug/kg	99
14) Fluoranthene	17.33	202	317081	895.07	ug/kg	98
15) Pyrene	17.91	202	322598	876.64	ug/kg	99
18) Benzo[a]anthracene	20.89	228	314524	905.78	ug/kg	99
19) Chrysene	21.14	228	289248	862.13	ug/kg	100
21) Benzo[b]fluoranthene	24.45	252	317271	877.15	ug/kg	99
22) Benzo[k]fluoranthene	24.54	252	302059	890.20	ug/kg	100
23) Benzo(j)fluoranthene	24.63	252	276985	916.39	ug/kg	99
24) Benzo[e]pyrene	25.69	252	293081	904.77	ug/kg	99
25) Benzo[a]pyrene	25.86	252	288918	872.82	ug/kg	99
26) Dibenz[a,h]anthracene	29.44	278	250723	831.68	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.44	276	291351	810.12	ug/kg	97
28) Benzo[g,h,i]perylene	30.52	276	227135	809.93	ug/kg	99

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160519\16051931.D Vial: 31
Acq On : 20 May 2016 4:23 am Operator:
Sample : CCV1-160519 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 8:27 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



GCMS6_160520A
For

DHL Work Order
1605097

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS6_160520A
Batch Number(s): See Run Log. Matrix: See Run Log.	SOP: ORGANICS-PAH-01

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		x
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			x
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)	X			

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	x
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			x
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE	All deviations from the method and SOP that affect data quality				
1. Are all non-conformances included and noted?				X	x
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	___ Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: **See Run Log.**

Analyst: Don Winston Date: 5/23/2016

Second-Level Review: Janice Whitt Date: 5/31/2016

REVIEWED BY
By Janice Whitt at 9:31:58 AM, 5/31/2016

DHL Analytical, Inc.

Run ID: GCMS6_160520A **Run No.:** 85926

Analytical Run Date: 5/20/2016 **InstrumentID:** GCMS6

Analyst: Don Winston **Column:** Agilent (J&W) DB-EUPAH (20m x 0.18mmI

Calibration ID: 651 **Column ID:** 0.18mm

Column Length: 20m

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160520	1	PAH_LL_SDOD1	TUNE	R85926	5/20/2016 8:26:00 AM		
ICV-160520	1	PAH_LL_SDOD1	ICV	R85926	5/20/2016 9:02:00 AM		
LCS-75175	1	PAH_LL_SDOD1	LCS	75175	5/20/2016 9:42:00 AM		
MB-75175	1	PAH_LL_SDOD1	MBLK	75175	5/20/2016 10:21:00 AM		
1605097-14A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 11:01:00 AM		
1605097-15A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 11:40:00 AM		
1605097-28A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 12:21:00 PM		
1605097-29A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 1:00:00 PM		
1605097-31A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 1:40:00 PM		
1605097-32A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 2:20:00 PM		
1605097-33A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 2:59:00 PM		
1605097-34A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 3:39:00 PM		
1605097-35A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 4:18:00 PM		
1605097-36A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 4:58:00 PM		
1605097-39A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 5:38:00 PM		
1605097-39AMS	10	PAH_LL_SDOD1	MS	75175	5/20/2016 6:18:00 PM		
1605097-39AMSD	10	PAH_LL_SDOD1	MSD	75175	5/20/2016 6:58:00 PM		
DFTPP2-160520	1	PAH_LL_SDOD1	TUNE	R85926	5/20/2016 7:38:00 PM		
ICV2-160520	1	PAH_LL_SDOD1	ICV	R85926	5/20/2016 8:16:00 PM		
SBLK-160520	1	PAH_LL_SDOD1	SBLK	75175	5/20/2016 9:35:00 PM		
1605097-37A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 10:16:00 PM		
1605097-38A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 10:55:00 PM		
1605097-40A	10	PAH_LL_SDOD1	SAMP	75175	5/20/2016 11:35:00 PM		
1605097-41A	10	PAH_LL_SDOD1	SAMP	75175	5/21/2016 12:15:00 AM		
1605097-42A	10	PAH_LL_SDOD1	SAMP	75175	5/21/2016 12:55:00 AM		
1605097-43A	10	PAH_LL_SDOD1	SAMP	75175	5/21/2016 1:35:00 AM		
CCV-160520	1	PAH_LL_SDOD1	CCV	R85926	5/21/2016 2:15:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

Sequence Name: C:\HPCHEM\1\SEQUENCE\160520.S
Comment:
Operator:
Data Path: C:\HPCHEM\1\DATA\160520\
Pre-Seq Cmd:
Post-Seq Cmd:

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

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

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	16052001	DFTPPPAH	DFTPP-160520
2	Sample	2	16052002	PP160421	ICV-160520
3	Sample	3	16052003	PP160421	LCS-75175
4	Sample	4	16052004	PP160421	MB-75175
5	Sample	5	16052005	PP160421	1605097-14A
6	Sample	6	16052006	PP160421	1605097-15A
7	Sample	7	16052007	PP160421	1605097-28A
8	Sample	8	16052008	PP160421	1605097-29A
9	Sample	9	16052009	PP160421	1605097-31A
10	Sample	10	16052010	PP160421	1605097-32A
11	Sample	11	16052011	PP160421	1605097-33A
12	Sample	12	16052012	PP160421	1605097-34A
13	Sample	13	16052013	PP160421	1605097-35A
14	Sample	14	16052014	PP160421	1605097-36A
15	Sample	15	16052015	PP160421	1605097-39A
16	Sample	16	16052016	PP160421	1605097-39AMS
17	Sample	17	16052017	PP160421	1605097-39AMSD
18	Sample	18	16052018	DFTPPPAH	DFTPP2-160520
19	Sample	19	16052019	PP160421	ICV2-160520
20	Sample	20	16052020	PP160421	SBLK
21	Sample	21	16052021	PP160421	SBLK-160520
22	Sample	22	16052022	PP160421	1605097-37A
23	Sample	23	16052023	PP160421	1605097-38A
24	Sample	24	16052024	PP160421	1605097-40A
25	Sample	25	16052025	PP160421	1605097-41A
26	Sample	26	16052026	PP160421	1605097-42A
27	Sample	27	16052027	PP160421	1605097-43A
28	Sample	28	16052028	PP160421	CCV-160520

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 11:25:23 AM**
Digestion:
Prep End Date: **5/16/2016 4:05:00 PM**

Prep Batch **75175** Prep Code: **3550_PAHDOD** Technician: **Lauren Garcia**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-14A	Soil		10.04	10	0.996	1 of 1	
1605097-15A	Soil		10.11	10	0.989	1 of 1	
1605097-22A	Soil		10.42	10	0.960	1 of 1	
	Extract and hold						
1605097-24A	Soil		10.57	10	0.946	1 of 1	
	Clay like soil.						
	Extract and hold						
1605097-25A	Soil		10.17	10	0.983	1 of 1	
	Clay like soil.						
	Extract and hold						
1605097-28A	Soil		10.58	10	0.945	1 of 1	
1605097-29A	Soil		10.13	10	0.987	1 of 1	
1605097-31A	Soil		10.22	10	0.978	1 of 1	
1605097-32A	Soil		10.14	10	0.986	1 of 1	
1605097-33A	Soil		10.66	10	0.938	1 of 1	
1605097-34A	Soil		10.02	10	0.998	1 of 1	
1605097-35A	Soil		10.25	10	0.976	1 of 1	
1605097-36A	Soil		10.19	10	0.981	1 of 1	
1605097-37A	Soil		10.62	10	0.942	1 of 1	
1605097-38A	Soil		10.32	10	0.969	1 of 1	
1605097-39A	Soil		10.39	10	0.962	of 3	
1605097-39AMS	Soil		10.22	10	0.978	of	
1605097-39AMSD	Soil		10.14	10	0.986	of	
1605097-40A	Soil		10.08	10	0.992	1 of 1	
1605097-41A	Soil		10.11	10	0.989	1 of 1	
1605097-42A	Soil		10.58	10	0.945	1 of 1	
1605097-43A	Soil		10.27	10	0.974	1 of 1	

Number	Reagent Name	Amt	Units	Exp. Da
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED BY
By Janice Whitt at 8:52:20 AM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 11:25:23 AM**
Digestion:
Prep End Date: **5/16/2016 4:05:00 PM**

Prep Batch **75175** Prep Code: **3550_PAHDOD** Technician: **Lauren Garcia**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
LCS-75175	Soil		10	10	1.000	of	
MB-75175	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED BY
By Janice Whitt at 8:52:22 AM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 11:25:23 AM**
Digestion:
Prep End Date: 5/16/2016 4:05 PM

Prep Batch **75175** Prep Code: **3550_PAHDOD** Technician: **ADMIN**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-14A	Soil		10.24	10	1.000	1 of 1	
1605097-15A	Soil		10.11	10	1.000	1 of 1	
1605097-22A	Soil		10.42	10	1.000	1 of 1	
	Extract and hold						
1605097-24A	Soil		10.57	10	1.000	1 of 1	Clay Silica Gel
	Extract and hold						
1605097-25A	Soil		10.17	10	1.000	1 of 1	
	Extract and hold						
1605097-28A	Soil		10.58	10	1.000	1 of 1	
1605097-29A	Soil		10.13	10	1.000	1 of 1	
1605097-31A	Soil		10.22	10	1.000	1 of 1	
1605097-32A	Soil		10.14	10	1.000	1 of 1	
1605097-33A	Soil		10.66	10	1.000	1 of 1	
1605097-34A	Soil		10.02	10	1.000	1 of 1	
1605097-35A	Soil		10.25	10	1.000	1 of 1	
1605097-36A	Soil		10.19	10	1.000	1 of 1	
1605097-37A	Soil		10.62	10	1.000	1 of 1	
1605097-38A	Soil		10.32	10	1.000	1 of 1	
1605097-39A	Soil		10.39	10	1.000	1 of 3	
1605097-39AMS	Soil	10.22	~~10.08~~	JGS 5/16/16	1.000	1 of	
1605097-39AMSD	Soil	10.14	~~10.11~~	JGS 5/16/16	1.000	1 of	
1605097-40A	Soil		10.08	10	1.000	1 of 1	
1605097-41A	Soil		10.11	10	1.000	1 of 1	
1605097-42A	Soil		10.50	10	1.000	1 of 1	
1605097-43A	Soil		10.27	10	1.000	1 of 1	
LCS-75175	Soil		10	10	1.000	of	
MB-75175	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. D
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

5/16/16

JGS 5/16/16

REVIEWED BY
By Janice Whitt at 8:52:16 AM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 2:00:20 PM**
Digestion: **Start: 5/11/2016 2:30:00 PM / Stop: 5/13/2016 11:00:00 AM**
Prep End Date: **5/13/2016 3:00:00 PM**

Prep Batch **75116** Prep Code: **ISM2MM_PREP** Technician: **Scott Schroeder**

Prep Factor Units: mL/

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-01A	Soil		0	0	#Num!	1 of 1	
1605097-02A	Soil		0	0	#Num!	1 of 1	
1605097-03A	Soil		0	0	#Num!	of 3	
	Extra sub sampled for MS/MSD						
1605097-04A	Soil		0	0	#Num!	1 of 1	
1605097-05A	Soil		0	0	#Num!	1 of 1	
1605097-06A	Soil		0	0	#Num!	1 of 1	
1605097-07A	Soil		0	0	#Num!	1 of 1	
1605097-08A	Soil		0	0	#Num!	1 of 1	
1605097-09A	Soil		0	0	#Num!	1 of 1	
1605097-10A	Soil		0	0	#Num!	1 of 1	
1605097-11A	Soil		0	0	#Num!	1 of 1	
1605097-12A	Soil		0	0	#Num!	1 of 1	
1605097-13A	Soil		0	0	#Num!	1 of 1	
1605097-14A	Soil		0	0	#Num!	1 of 1	
1605097-15A	Soil		0	0	#Num!	1 of 1	
1605097-31A	Soil		0	0	#Num!	1 of 1	
1605097-32A	Soil		0	0	#Num!	1 of 1	
1605097-33A	Soil		0	0	#Num!	1 of 1	
1605097-34A	Soil		0	0	#Num!	1 of 1	
1605097-35A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 8:51:08 AM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 2:10:55 PM**
Digestion: **Start: 5/12/2016 3:00:00 PM / Stop: 5/16/2016 8:30:00 AM**
Prep End Date:

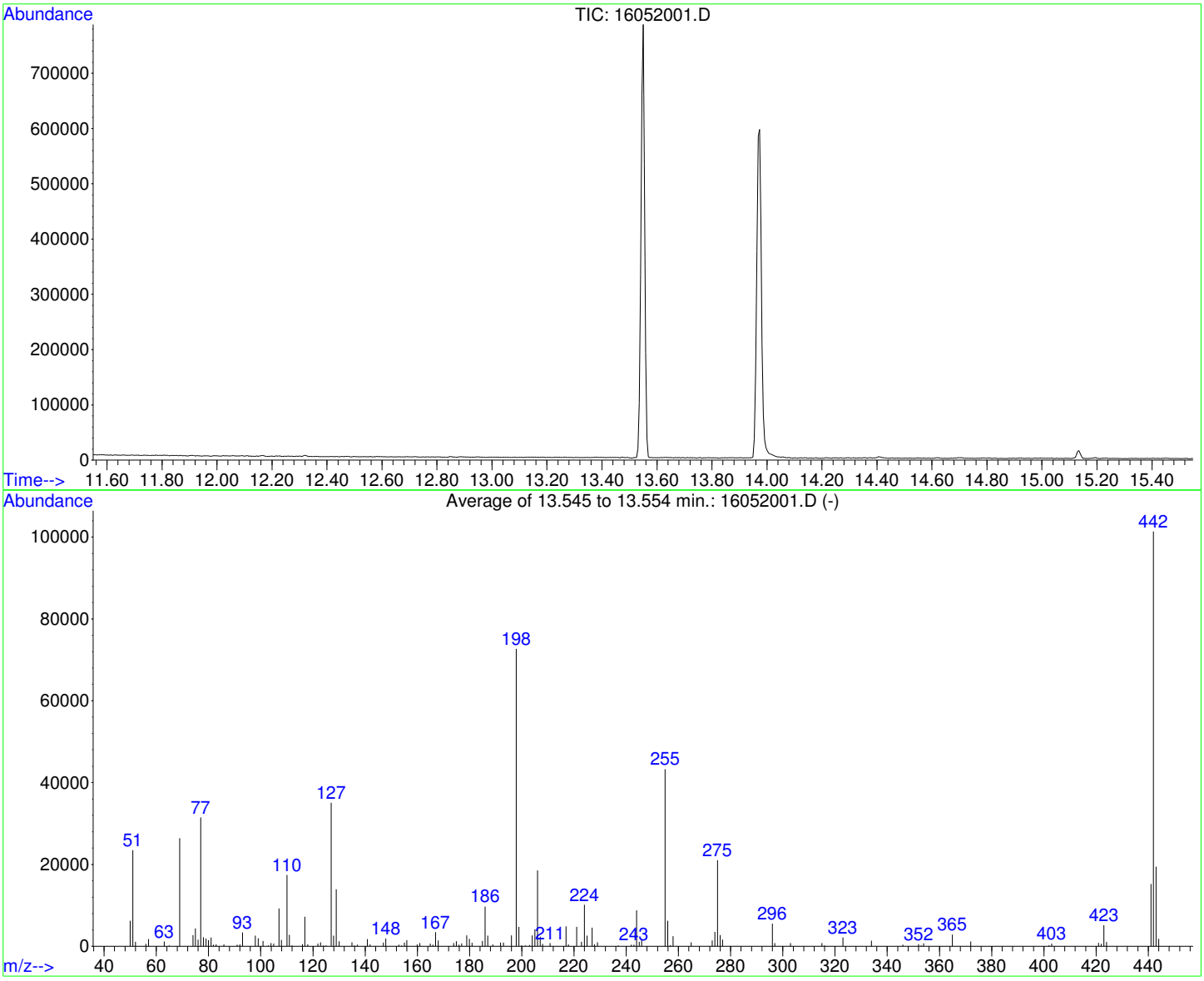
Prep Batch **75141** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605097-36A	Soil		0	0	#Num!	1	of	1	
1605097-37A	Soil		0	0	#Num!	1	of	1	
1605097-38A	Soil		0	0	#Num!	1	of	1	
1605097-39A	Soil		0	0	#Num!		of	3	
1605097-40A	Soil		0	0	#Num!	1	of	1	
1605097-41A	Soil		0	0	#Num!	1	of	1	
1605097-42A	Soil		0	0	#Num!	1	of	1	
1605097-43A	Soil		0	0	#Num!	1	of	1	
1605097-44A	Soil		0	0	#Num!	1	of	1	
1605097-45A	Soil		0	0	#Num!	1	of	1	
1605098-01A	Soil		0	0	#Num!	1	of	1	
1605098-02A	Soil		0	0	#Num!	1	of	1	
1605098-03A	Soil		0	0	#Num!	1	of	1	
1605098-04A	Soil		0	0	#Num!	1	of	1	
1605098-05A	Soil		0	0	#Num!	1	of	1	
1605098-06A	Soil		0	0	#Num!	1	of	1	
1605098-07A	Soil		0	0	#Num!	1	of	1	
1605098-08A	Soil		0	0	#Num!	1	of	1	
1605098-09A	Soil		0	0	#Num!	1	of	1	
1605098-10A	Soil		0	0	#Num!	1	of	1	

REVIEWED BY
By Janice Whitt at 8:51:10 AM, 5/31/2016

Data File : C:\HPCHEM\1\DATA\160520\16052001.D Vial: 1
Acq On : 20 May 2016 8:26 am Operator:
Sample : DFTPP-160520 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration

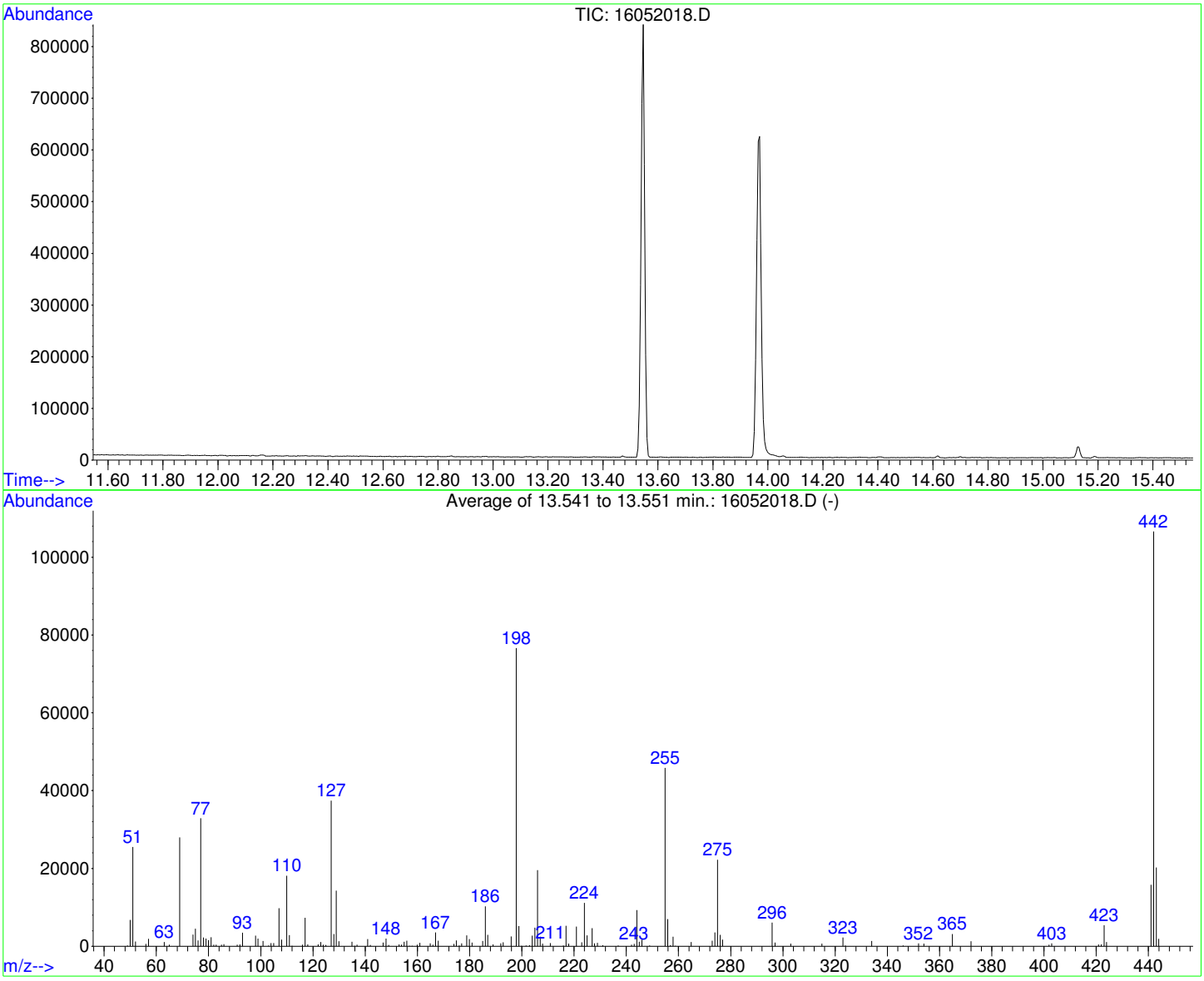


AutoFind: Scans 1585, 1586, 1587; Background Corrected with Scan 1579

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	32.4	23522	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	36.3	26419	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.2	35048	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	72685	PASS
199	198	5	9	6.5	4754	PASS
275	198	10	60	28.9	20992	PASS
365	198	1	200	3.9	2853	PASS
441	442	0.01	24	15.0	15225	PASS
442	198	50	400	139.5	101389	PASS
443	442	15	24	19.2	19459	PASS

REVIEWED BY
By Janice Whitt at 8:51:15 AM, 5/31/2016

Data File : C:\HPCHEM\1\DATA\160520\16052018.D Vial: 18
Acq On : 20 May 2016 7:38 pm Operator:
Sample : DFTPP2-160520 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration



AutoFind: Scans 1585, 1586, 1587; Background Corrected with Scan 1579

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	33.3	25528	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	36.5	27989	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.8	37440	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	76651	PASS
199	198	5	9	6.8	5198	PASS
275	198	10	60	29.0	22267	PASS
365	198	1	200	4.1	3161	PASS
441	442	0.01	24	14.8	15814	PASS
442	198	50	400	139.1	106621	PASS
443	442	15	24	19.0	20228	PASS

REVIEWED BY
By Janice Whitt at 8:52:28 AM, 5/31/2016

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052002.D Vial: 2
Acq On : 20 May 2016 9:02 am Operator:
Sample : ICV-160520 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:14 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

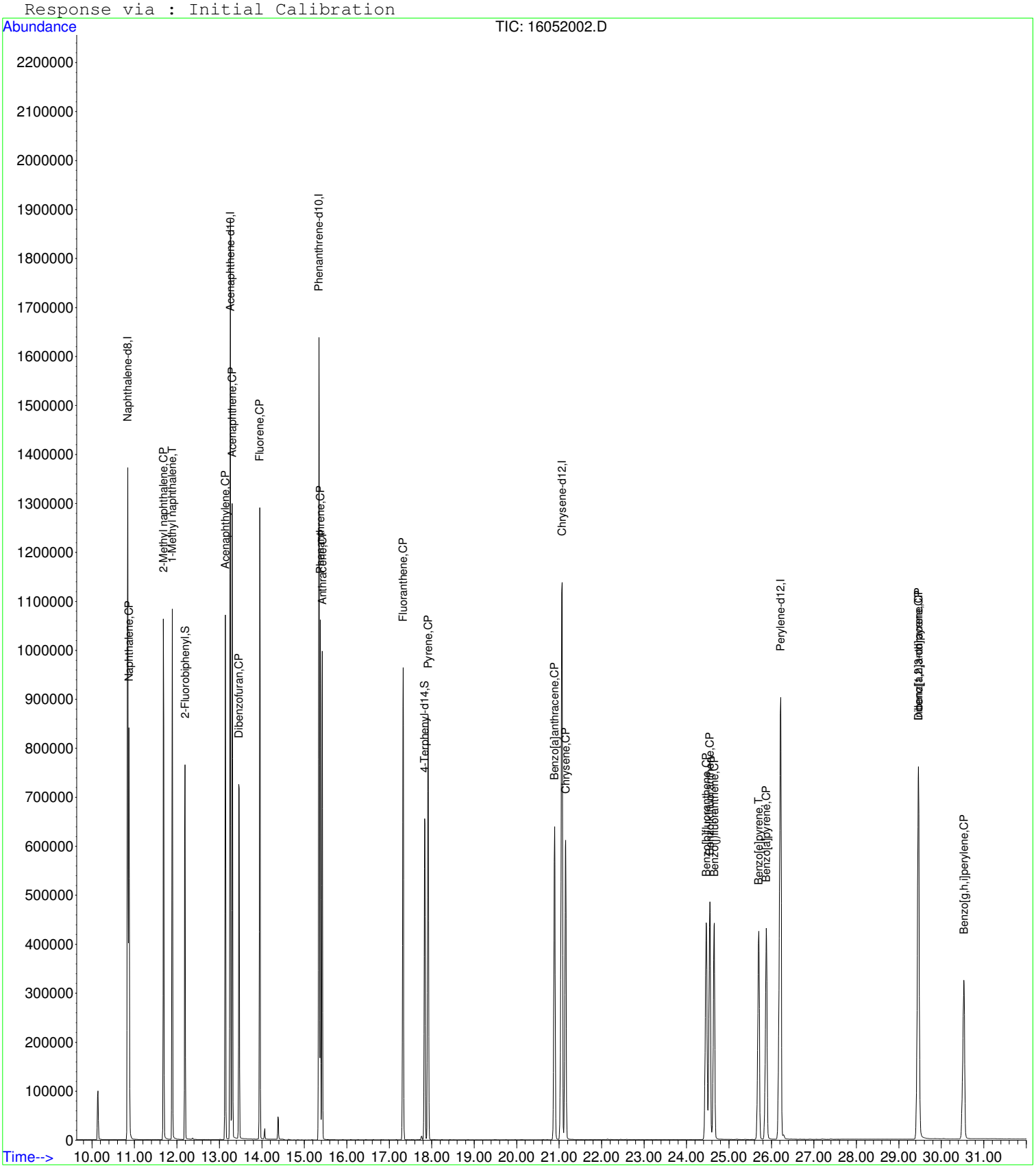
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1672477	4000.00	ug/kg	144
5) Acenaphthene-d10	13.26	164	987453	4000.00	ug/kg	86
11) Phenanthrene-d10	15.34	188	1807571	4000.00	ug/kg	89
17) Chrysene-d12	21.07	240	2034708	4000.00	ug/kg	90
20) Perylene-d12	26.22	264	1855398	4000.00	ug/kg	90
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	610095	2118.03	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 52.95%			
16) 4-Terphenyl-d14	17.84	244	863972	1847.47	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 46.19%			
Target Compounds						Qvalue
2) Naphthalene	10.87	128	807719	1930.73	ug/kg	99
3) 2-Methyl naphthalene	11.68	142	579370	1567.82	ug/kg	94
4) 1-Methyl naphthalene	11.89	142	519615	1535.30	ug/kg	96
6) Dibenzofuran	13.47	168	720171	1945.95	ug/kg	98
8) Acenaphthylene	13.14	152	901296	2119.42	ug/kg	100
9) Acenaphthene	13.30	154	523721	1984.16	ug/kg	98
10) Fluorene	13.95	166	650546	2029.42	ug/kg	100
12) Phenanthrene	15.38	178	892461	1877.44	ug/kg	99
13) Anthracene	15.42	178	823298	1829.82	ug/kg	100
14) Fluoranthene	17.33	202	970659	1973.21	ug/kg	100
15) Pyrene	17.92	202	967076	1892.53	ug/kg	100
18) Benzo[a]anthracene	20.89	228	931262	1953.63	ug/kg	99
19) Chrysene	21.15	228	857637	1862.12	ug/kg	100
21) Benzo[b]fluoranthene	24.46	252	954632	1952.14	ug/kg	99
22) Benzo[k]fluoranthene	24.55	252	873752	1904.66	ug/kg	100
23) Benzo(j)fluoranthene	24.65	252	773904	1893.82	ug/kg	100
24) Benzo[e]pyrene	25.70	252	819079	1870.28	ug/kg	99
25) Benzo[a]pyrene	25.88	252	848361	1895.66	ug/kg	99
26) Dibenz[a,h]anthracene	29.46	278	746489	1831.54	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.46	276	869149	1787.56	ug/kg	97
28) Benzo[g,h,i]perylene	30.53	276	684932	1806.52	ug/kg	100

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052002.D Vial: 2
Acq On : 20 May 2016 9:02 am Operator:
Sample : ICV-160520 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:14 2016 Quant Results File: PP160421.RES

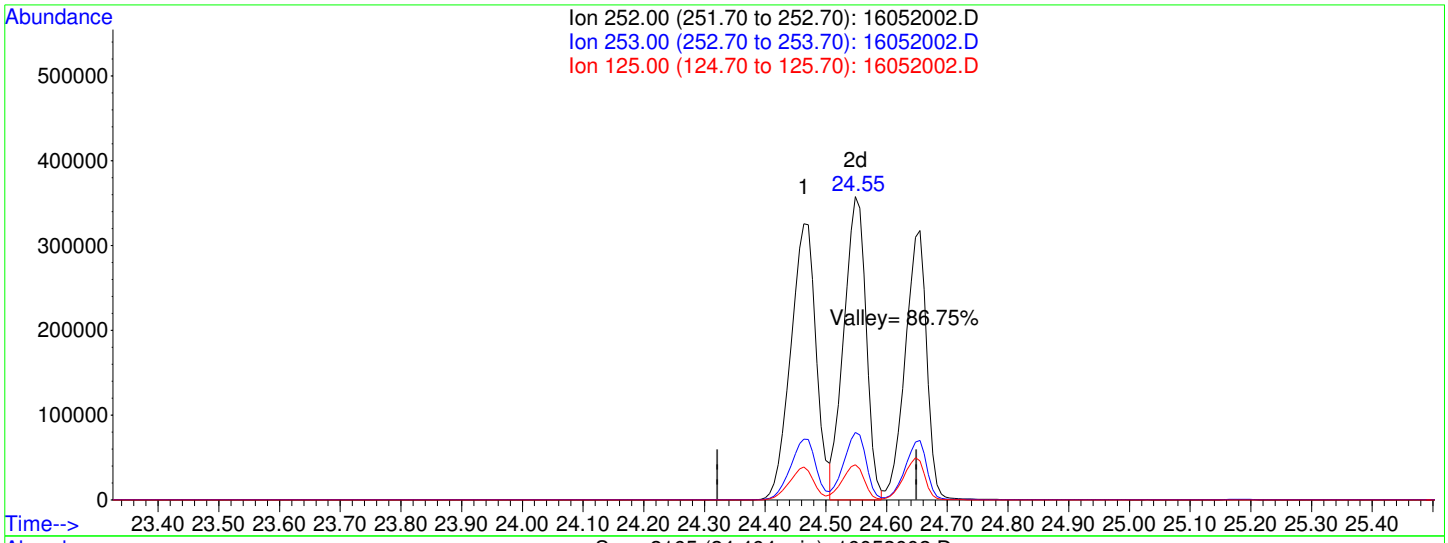
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

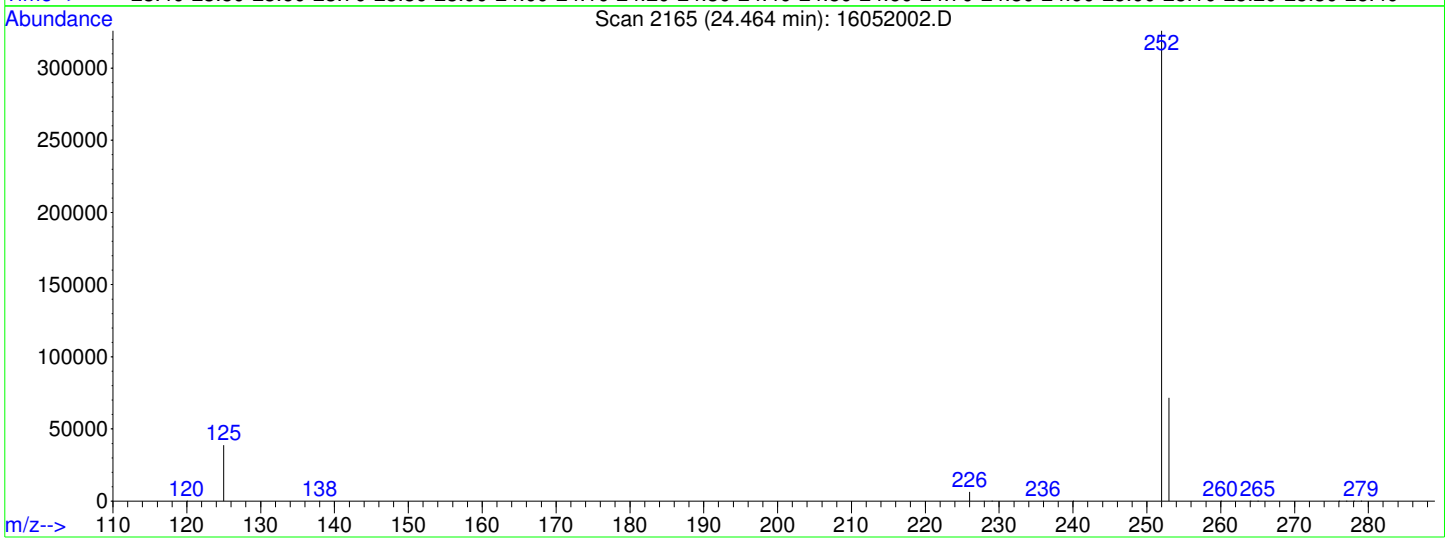


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160520\16052002.D Vial: 2
Acq On : 20 May 2016 9:02 am Operator:
Sample : ICV-160520 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 9:34 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Multiple Level Calibration





TIC: 16052002.D

(21) Benzo[b]fluoranthene (CP)

24.46min 1952.14ug/kg

response 954632

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	21.85
125.00	11.00	11.89
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052003.D Vial: 3
Acq On : 20 May 2016 9:42 am Operator:
Sample : LCS-75175 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:14 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

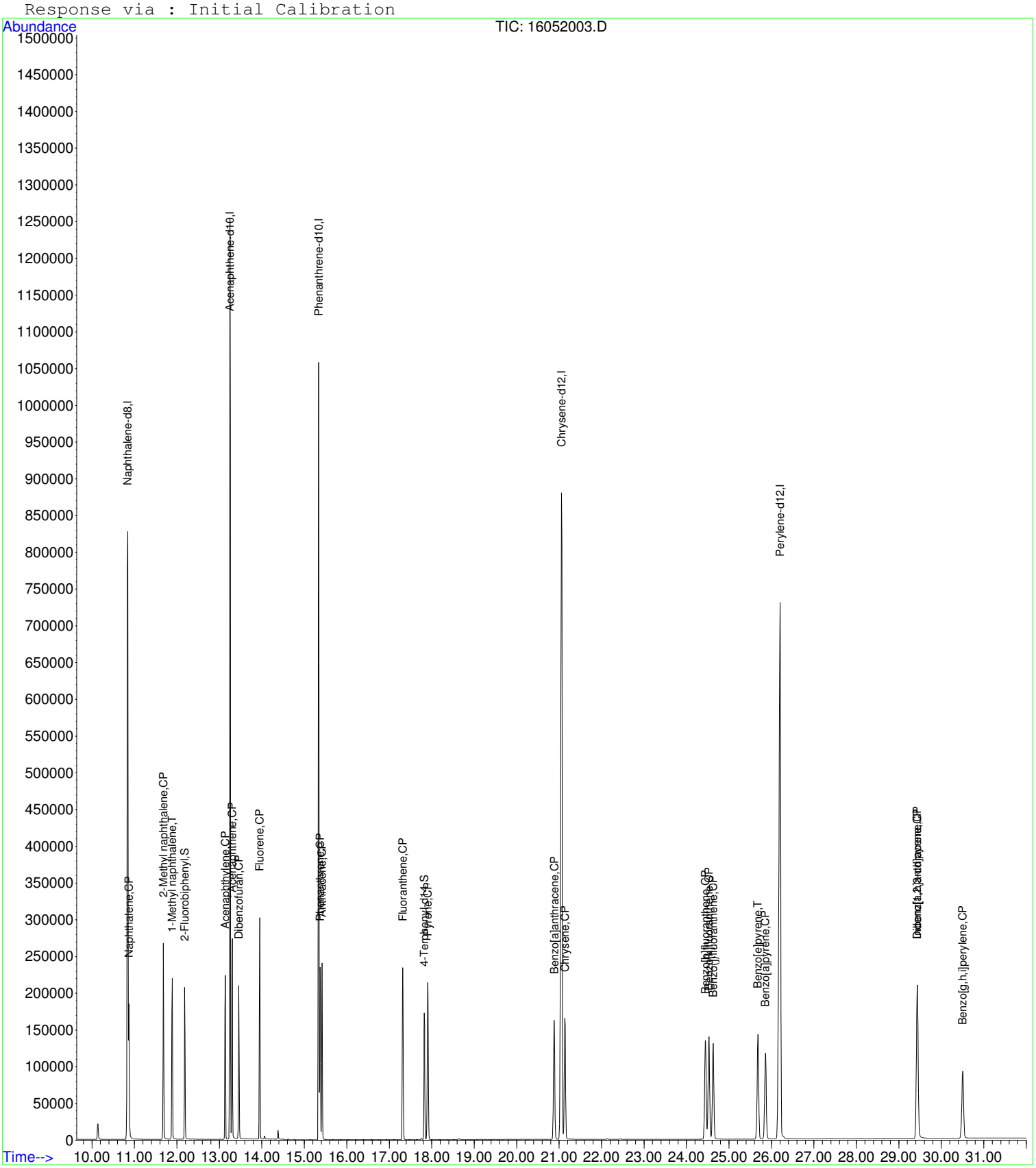
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1140841	4000.00	ug/kg	98
5) Acenaphthene-d10	13.25	164	696646	4000.00	ug/kg	61
11) Phenanthrene-d10	15.34	188	1155382	4000.00	ug/kg	57
17) Chrysene-d12	21.06	240	1507979	4000.00	ug/kg	66
20) Perylene-d12	26.20	264	1448818	4000.00	ug/kg	70
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.18	172	158784	781.35	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 19.53%#			
16) 4-Terphenyl-d14	17.83	244	214150	716.42	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.91%#			
Target Compounds						Qvalue
2) Naphthalene	10.87	128	178317	624.87	ug/kg	100
3) 2-Methyl naphthalene	11.68	142	133668	530.28	ug/kg	97
4) 1-Methyl naphthalene	11.89	142	118619	513.81	ug/kg	99
6) Dibenzofuran	13.46	168	177401	679.45	ug/kg	99
8) Acenaphthylene	13.14	152	203779	679.22	ug/kg	98
9) Acenaphthene	13.30	154	119104	639.60	ug/kg	97
10) Fluorene	13.95	166	144339	638.24	ug/kg	99
12) Phenanthrene	15.37	178	199515	656.63	ug/kg	99
13) Anthracene	15.42	178	196192	682.18	ug/kg	99
14) Fluoranthene	17.32	202	230068	731.70	ug/kg	99
15) Pyrene	17.91	202	233226	714.05	ug/kg	99
18) Benzo[a]anthracene	20.89	228	240703	681.33	ug/kg	99
19) Chrysene	21.13	228	221902	650.09	ug/kg	100
21) Benzo[b]fluoranthene	24.44	252	253435	663.69	ug/kg	99
22) Benzo[k]fluoranthene	24.53	252	242857	677.96	ug/kg	100
23) Benzo(j)fluoranthene	24.63	252	224879	704.73	ug/kg	98
24) Benzo[e]pyrene	25.68	252	256064	748.78	ug/kg	99
25) Benzo[a]pyrene	25.86	252	223786	640.38	ug/kg	100
26) Dibenz[a,h]anthracene	29.43	278	198645	624.16	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.43	276	229717	605.04	ug/kg	95
28) Benzo[g,h,i]perylene	30.51	276	185310	625.92	ug/kg	98

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052003.D Vial: 3
Acq On : 20 May 2016 9:42 am Operator:
Sample : LCS-75175 Inst : GC/MS #6
Misc : LCS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:14 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052004.D Vial: 4
Acq On : 20 May 2016 10:21 am Operator:
Sample : MB-75175 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:14 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

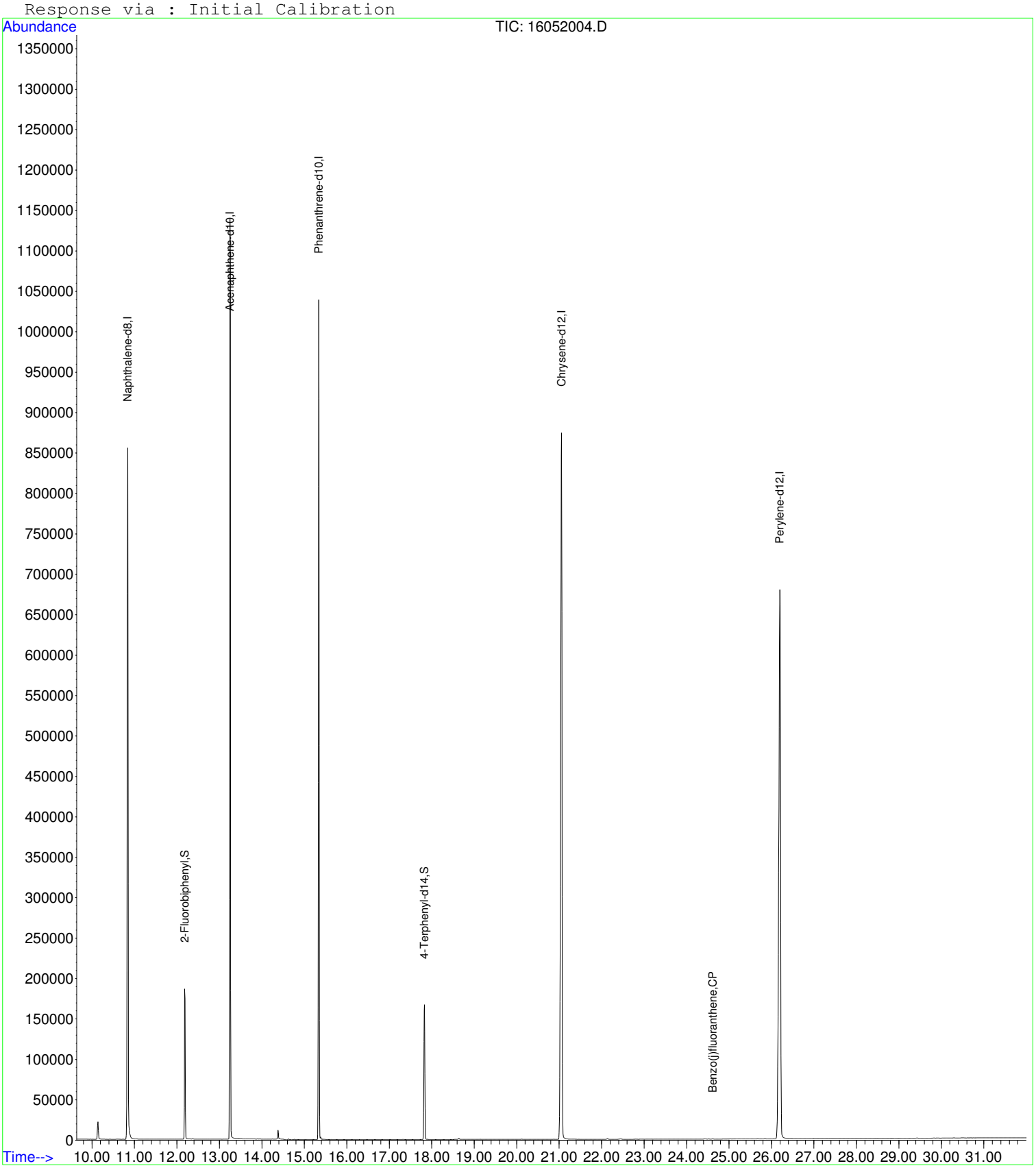
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1129762	4000.00	ug/kg	97
5) Acenaphthene-d10	13.25	164	684409	4000.00	ug/kg	59
11) Phenanthrene-d10	15.34	188	1112965	4000.00	ug/kg	54
17) Chrysene-d12	21.06	240	1449918	4000.00	ug/kg	64
20) Perylene-d12	26.20	264	1358743	4000.00	ug/kg	66
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	162410	813.48	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.34%#			
16) 4-Terphenyl-d14	17.83	244	214884	746.27	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.66%#			
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.62	252	247	0.83	ug/kg	83

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052004.D Vial: 4
Acq On : 20 May 2016 10:21 am Operator:
Sample : MB-75175 Inst : GC/MS #6
Misc : MBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:14 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052005.D Vial: 5
Acq On : 20 May 2016 11:01 am Operator:
Sample : 1605097-14A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:17 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

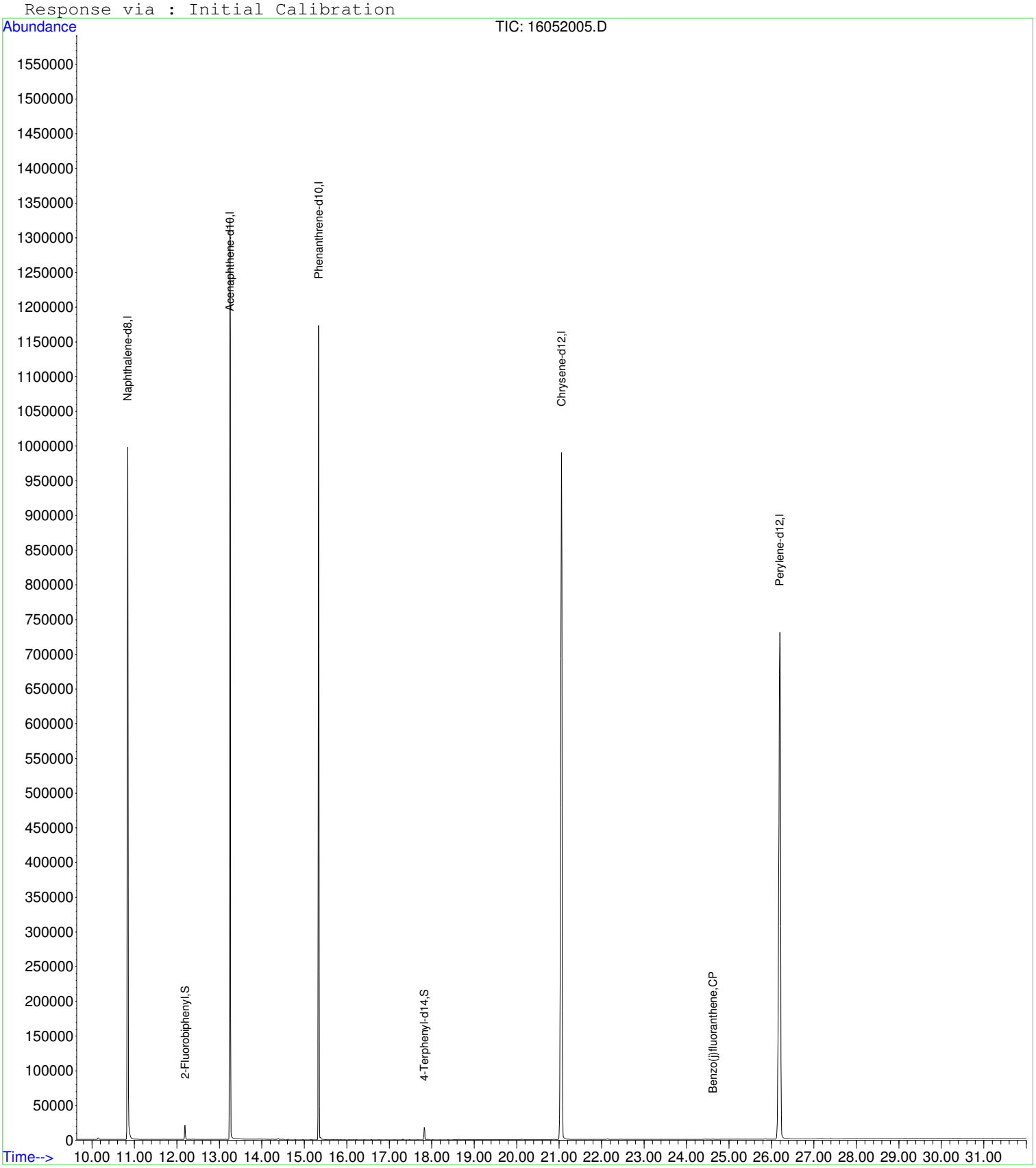
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1252425	4000.00	ug/kg	108
5) Acenaphthene-d10	13.25	164	772864	4000.00	ug/kg	67
11) Phenanthrene-d10	15.34	188	1276628	4000.00	ug/kg	63
17) Chrysene-d12	21.06	240	1607506	4000.00	ug/kg	71
20) Perylene-d12	26.20	264	1489696	4000.00	ug/kg	72
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18187	80.67	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.02%#		
16) 4-Terphenyl-d14	17.83	244	22841	69.16	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.73%#		
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.62	252	339	1.03	ug/kg	77

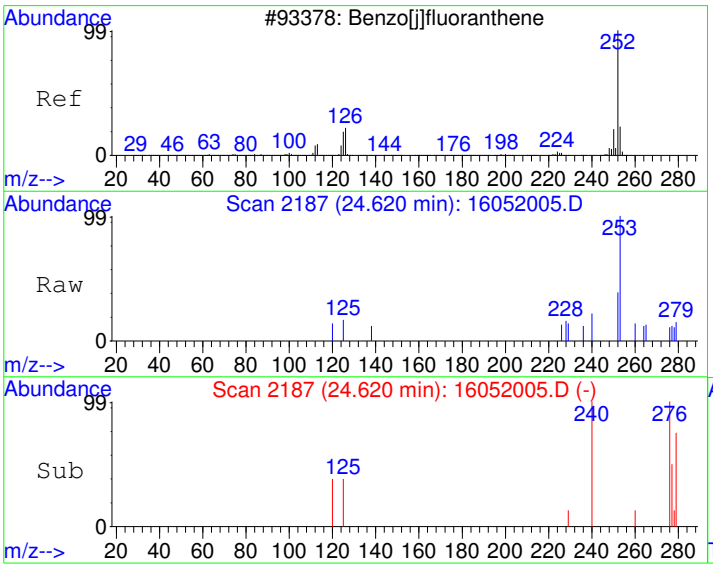
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052005.D Vial: 5
Acq On : 20 May 2016 11:01 am Operator:
Sample : 1605097-14A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:17 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

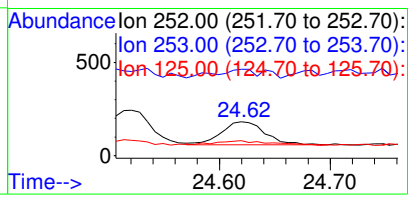




#23
Benzo(j)fluoranthene
Concen: 1.03 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052005.D
Acq: 20 May 2016 11:01 am

Tgt Ion:252 Resp: 339

Ion	Ratio	Lower	Upper
252	100		
253	37.9	2.1	42.1
125	17.7	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052006.D Vial: 6
Acq On : 20 May 2016 11:40 am Operator:
Sample : 1605097-15A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:17 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

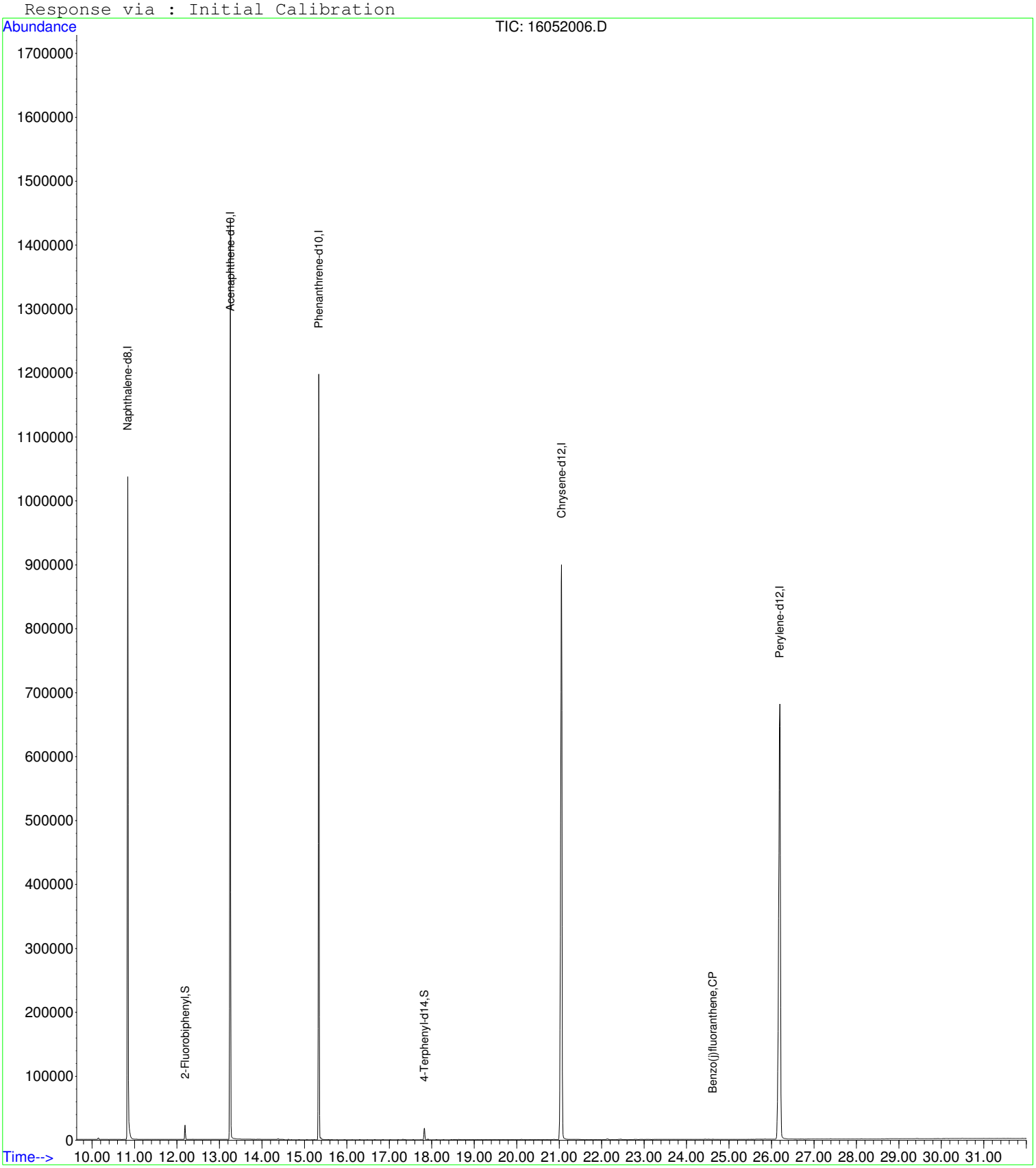
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1244798	4000.00	ug/kg	107
5) Acenaphthene-d10	13.26	164	770324	4000.00	ug/kg	67
11) Phenanthrene-d10	15.34	188	1281801	4000.00	ug/kg	63
17) Chrysene-d12	21.06	240	1487746	4000.00	ug/kg	65
20) Perylene-d12	26.20	264	1361246	4000.00	ug/kg	66
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18586	82.71	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.07%#		
16) 4-Terphenyl-d14	17.83	244	23207	69.98	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.75%#		
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.62	252	409	1.36	ug/kg	91

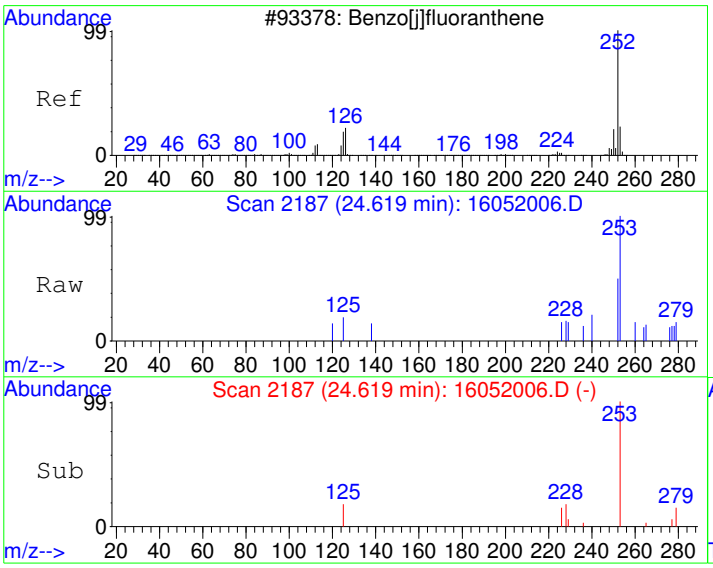
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052006.D Vial: 6
Acq On : 20 May 2016 11:40 am Operator:
Sample : 1605097-15A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:17 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

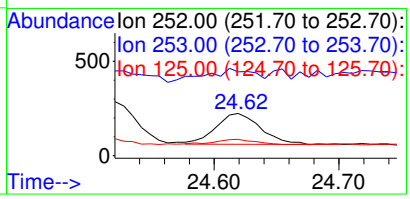




#23
Benzo(j)fluoranthene
Concen: 1.36 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052006.D
Acq: 20 May 2016 11:40 am

Tgt Ion:252 Resp: 409

Ion	Ratio	Lower	Upper
252	100		
253	16.6	2.1	42.1
125	16.6	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052007.D Vial: 7
Acq On : 20 May 2016 12:21 pm Operator:
Sample : 1605097-28A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:17 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

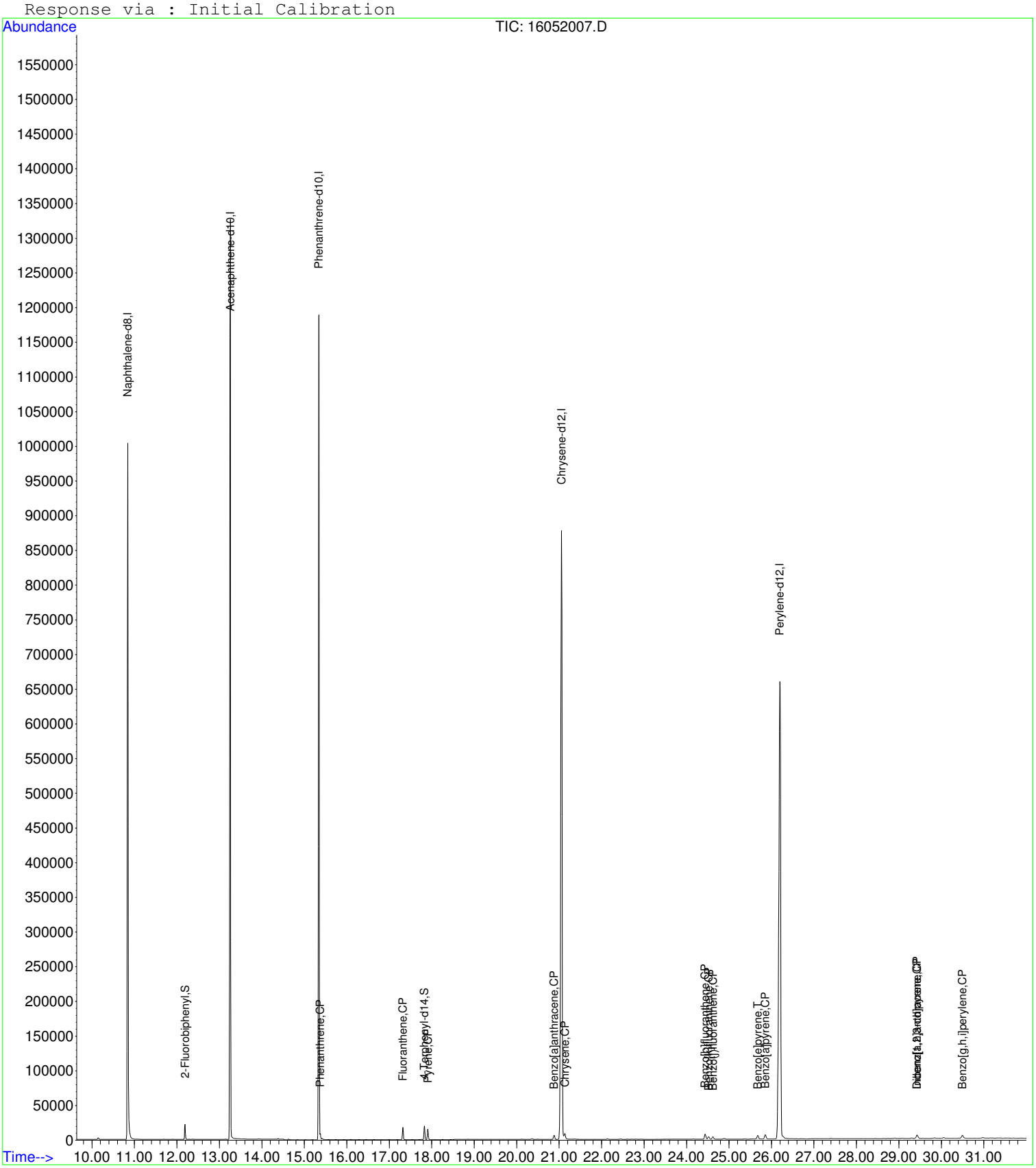
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1230280	4000.00	ug/kg	106
5) Acenaphthene-d10	13.26	164	768272	4000.00	ug/kg	67
11) Phenanthrene-d10	15.34	188	1316821	4000.00	ug/kg	64
17) Chrysene-d12	21.06	240	1450592	4000.00	ug/kg	64
20) Perylene-d12	26.20	264	1343639	4000.00	ug/kg	65
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18360	81.92	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.05%#		
16) 4-Terphenyl-d14	17.83	244	24788	72.76	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.82%#		
Target Compounds						Qvalue
12) Phenanthrene	15.37	178	5631	16.26	ug/kg	99
14) Fluoranthene	17.32	202	17423	48.62	ug/kg	98
15) Pyrene	17.91	202	16045	43.10	ug/kg	100
18) Benzo[a]anthracene	20.88	228	9414	27.70	ug/kg	99
19) Chrysene	21.13	228	11790	35.91	ug/kg	98
21) Benzo[b]fluoranthene	24.44	252	13211	37.30	ug/kg	99
22) Benzo[k]fluoranthene	24.52	252	6288	18.93	ug/kg	95
23) Benzo(j)fluoranthene	24.62	252	5880	19.87	ug/kg	89
24) Benzo[e]pyrene	25.68	252	9685	30.54	ug/kg	98
25) Benzo[a]pyrene	25.86	252	11935	36.83	ug/kg	99
26) Dibenz[a,h]anthracene	29.42	278	1942	6.58	ug/kg	93
27) Indeno[1,2,3-cd]pyrene	29.43	276	8369	23.77	ug/kg	89
28) Benzo[g,h,i]perylene	30.50	276	8147	29.67	ug/kg	96

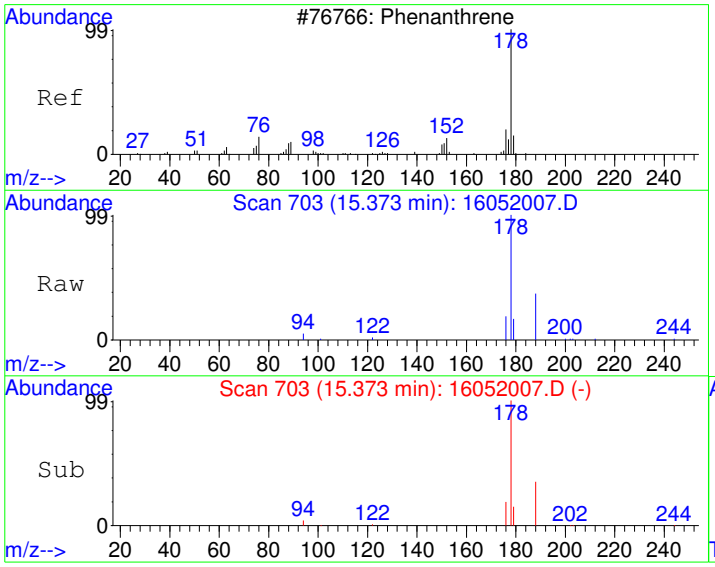
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052007.D Vial: 7
Acq On : 20 May 2016 12:21 pm Operator:
Sample : 1605097-28A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:17 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

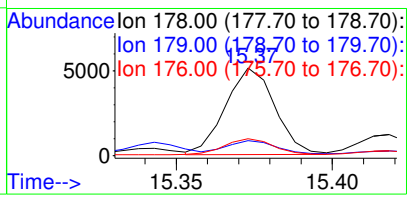


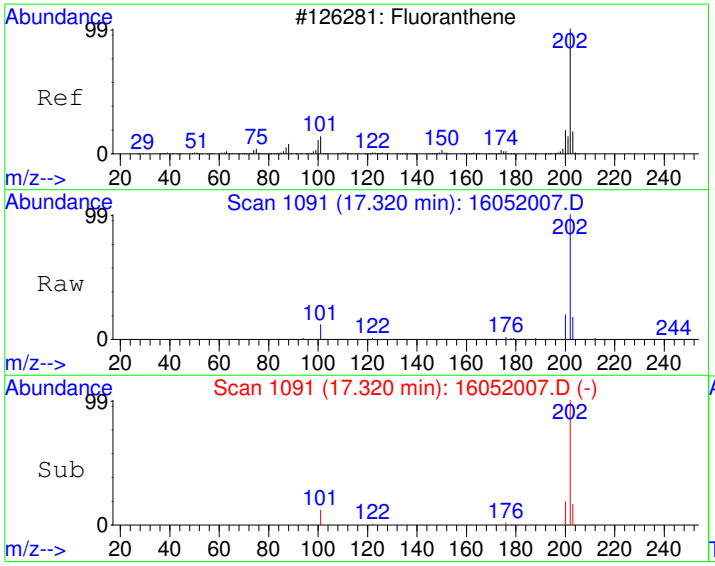


#12
Phenanthrene
Concen: 16.26 ug/kg
RT: 15.37 min Scan# 703
Delta R.T. -0.02 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:178 Resp: 5631

Ion	Ratio	Lower	Upper
178	100		
179	15.4	0.0	45.9
176	18.7	0.0	48.5

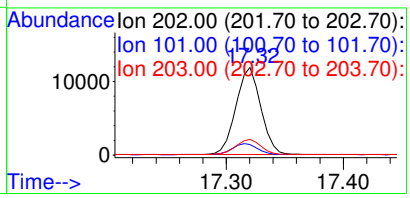


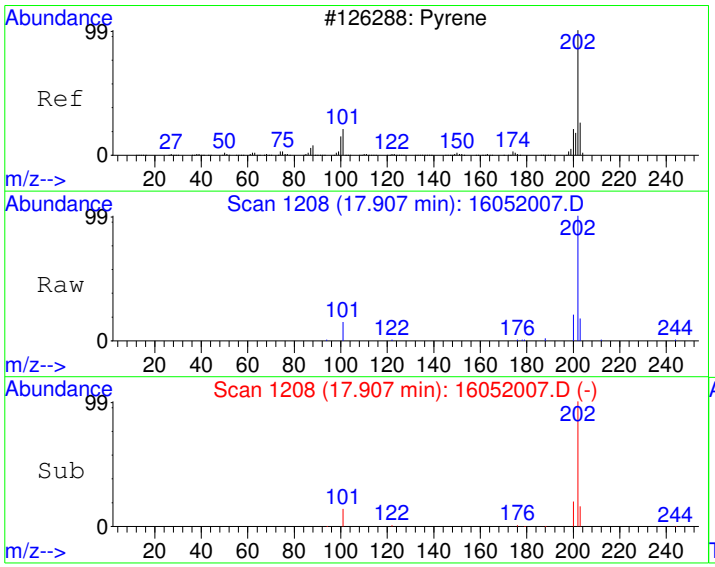


#14
Fluoranthene
Concen: 48.62 ug/kg
RT: 17.32 min Scan# 1091
Delta R.T. -0.02 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:202 Resp: 17423

Ion	Ratio	Lower	Upper
202	100		
101	11.7	0.0	43.0
203	17.2	0.0	47.9

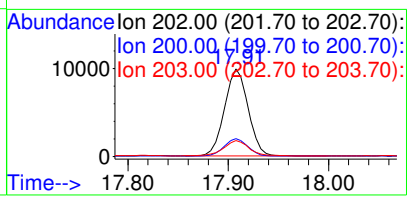


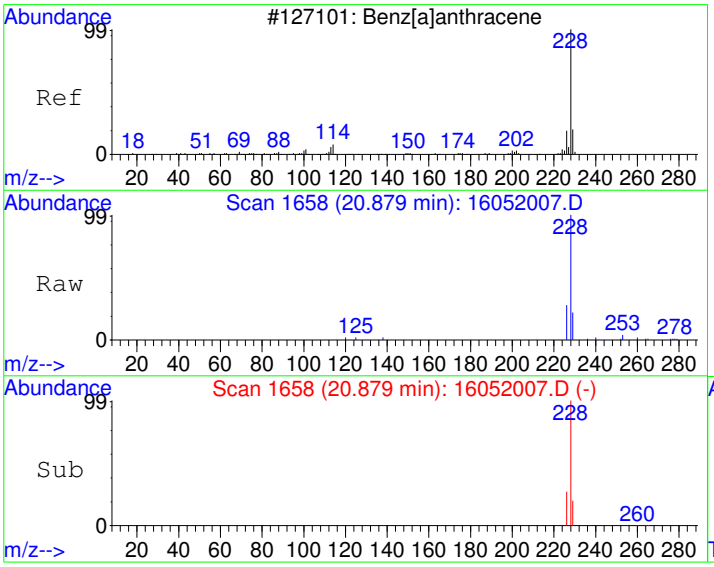


#15
Pyrene
Concen: 43.10 ug/kg
RT: 17.91 min Scan# 1208
Delta R.T. -0.03 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:202 Resp: 16045

Ion	Ratio	Lower	Upper
202	100		
200	20.1	0.0	50.0
203	17.8	0.0	48.0

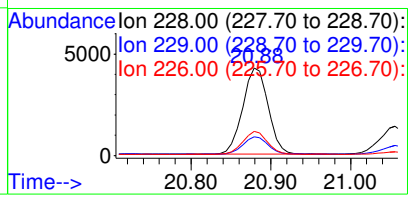


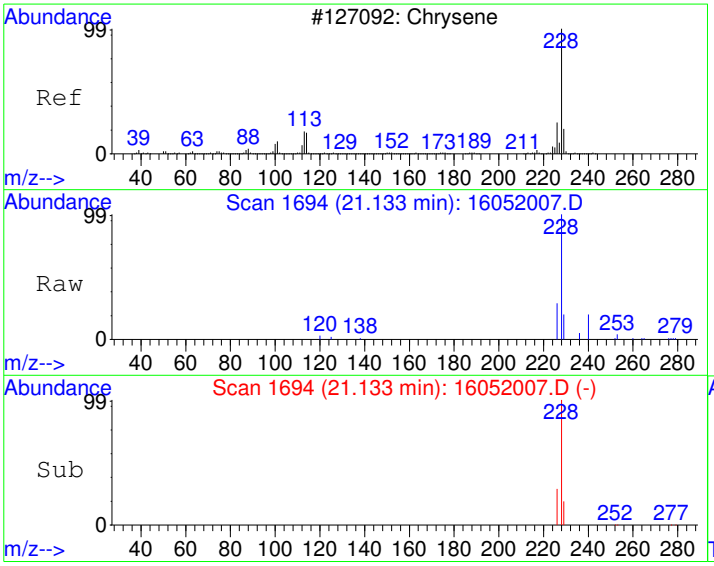


#18
Benzo[a]anthracene
Concen: 27.70 ug/kg
RT: 20.88 min Scan# 1658
Delta R.T. -0.04 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:228 Resp: 9414

Ion	Ratio	Lower	Upper
228	100		
229	20.1	0.0	50.1
226	26.5	0.0	55.2

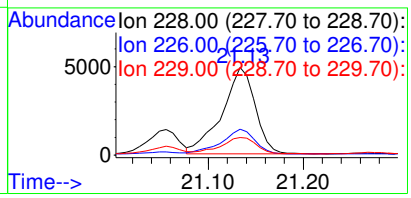


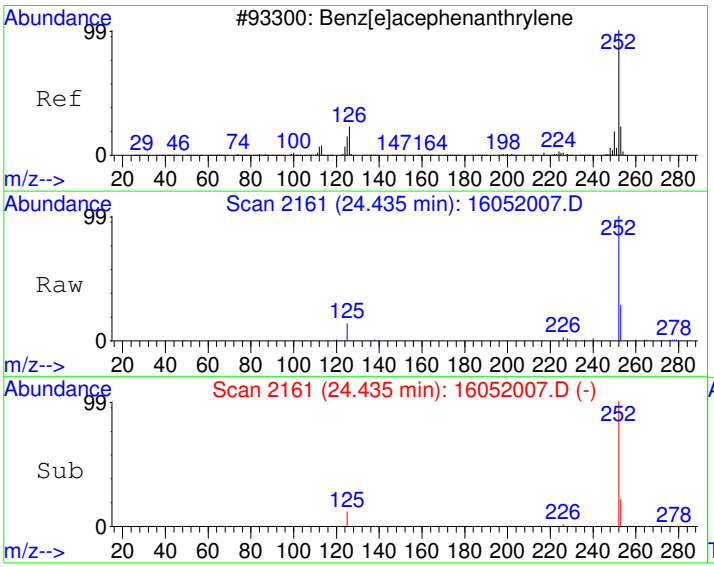


#19
Chrysene
Concen: 35.91 ug/kg
RT: 21.13 min Scan# 1694
Delta R.T. -0.04 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:228 Resp: 11790

Ion	Ratio	Lower	Upper
228	100		
226	28.5	0.0	58.1
229	18.9	0.0	50.1

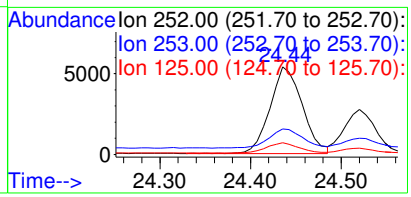


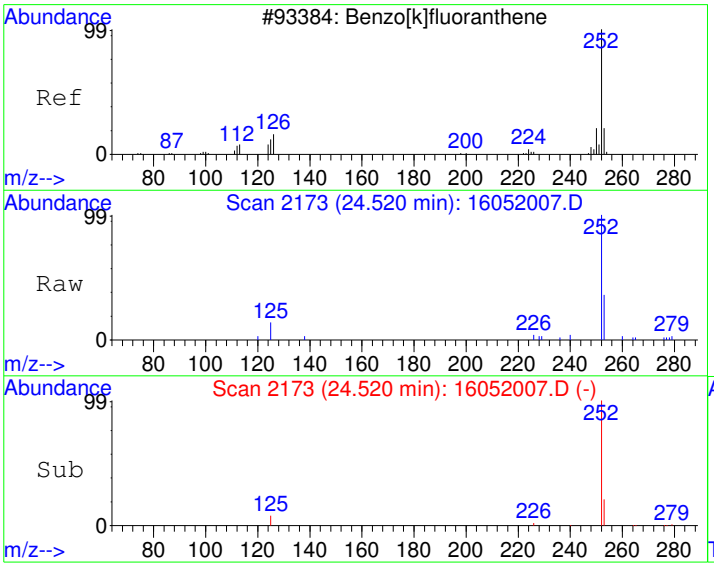


#21
Benzo[b]fluoranthene
Concen: 37.30 ug/kg
RT: 24.44 min Scan# 2161
Delta R.T. -0.05 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:252 Resp: 13211

Ion	Ratio	Lower	Upper
252	100		
253	21.9	0.0	52.2
125	12.0	0.0	41.0

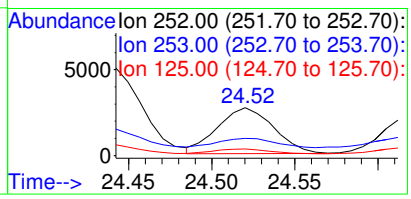


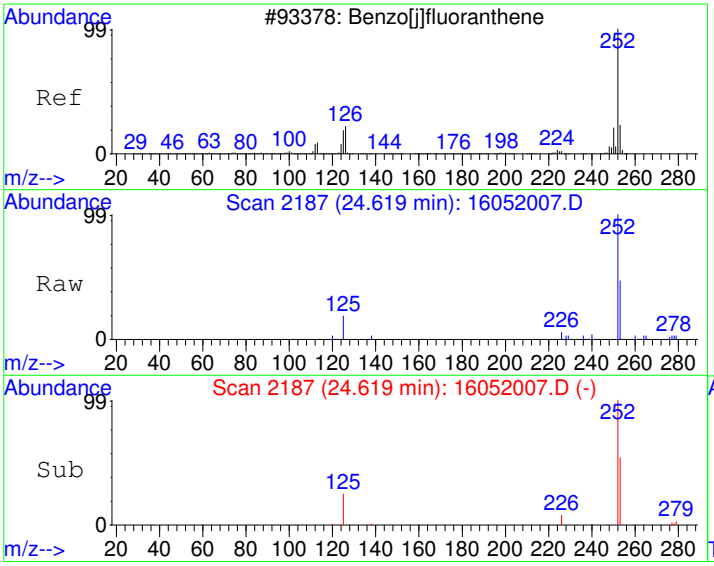


#22
Benzo[k]fluoranthene
Concen: 18.93 ug/kg
RT: 24.52 min Scan# 2173
Delta R.T. -0.05 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:252 Resp: 6288

Ion	Ratio	Lower	Upper
252	100		
253	19.3	2.1	42.1
125	10.4	0.0	31.3

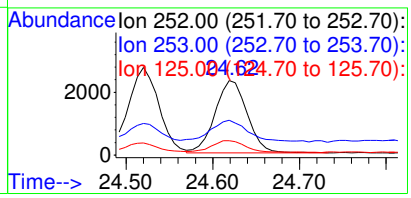


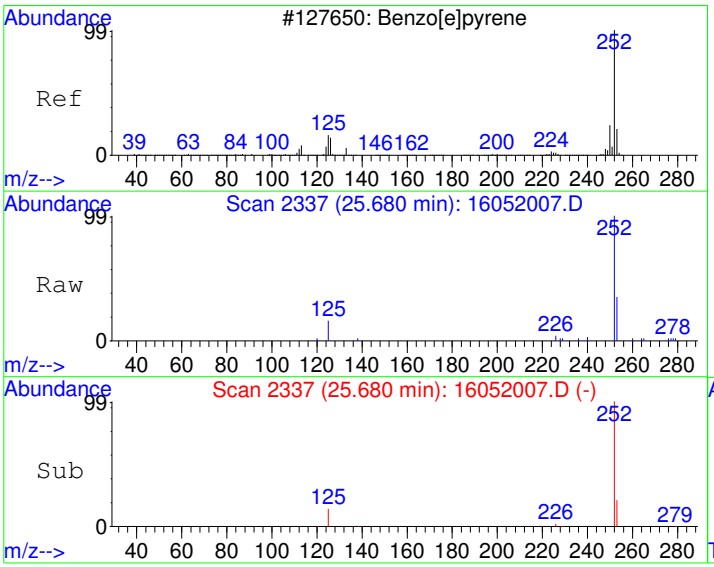


#23
Benzo(j)fluoranthene
Concen: 19.87 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:252 Resp: 5880

Ion	Ratio	Lower	Upper
252	100		
253	30.2	2.1	42.1
125	15.6	0.0	34.4

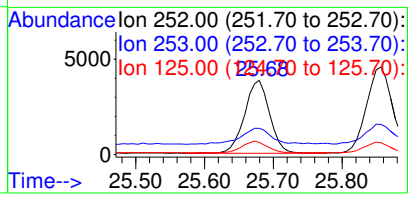


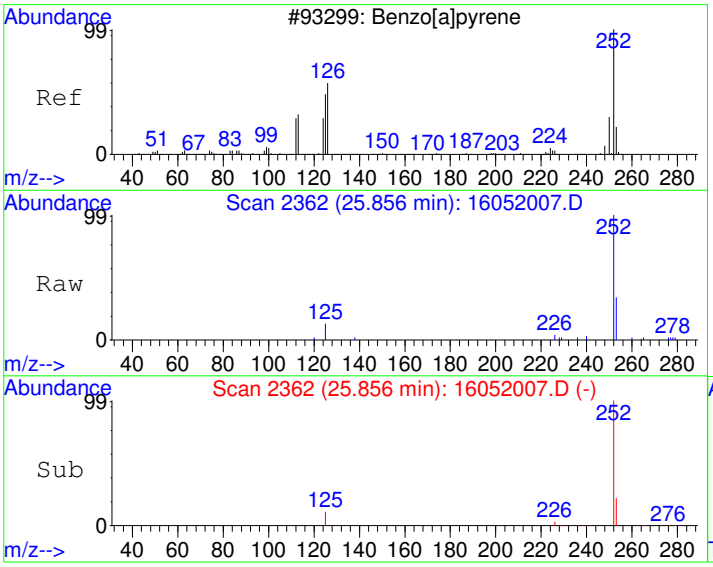


#24
Benzo[e]pyrene
Concen: 30.54 ug/kg
RT: 25.68 min Scan# 2337
Delta R.T. -0.04 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:252 Resp: 9685

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.2	42.2
125	14.2	0.0	36.1

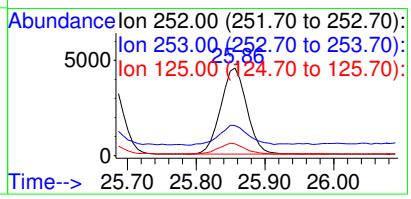


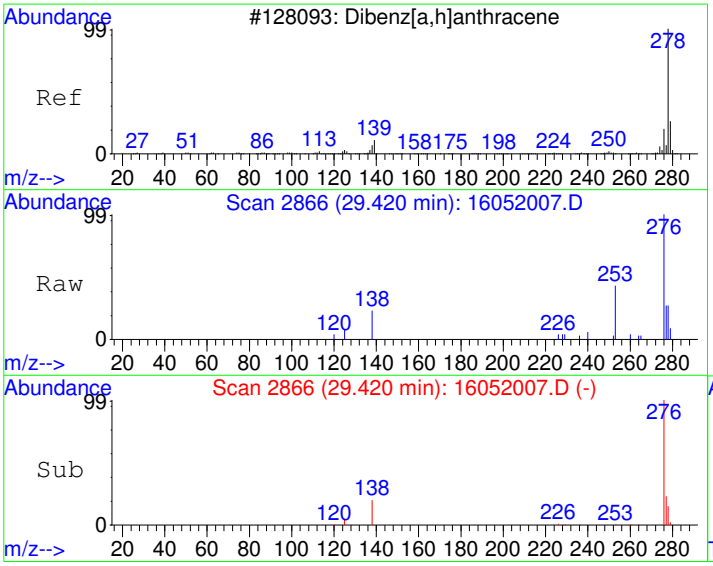


#25
Benzo[a]pyrene
Concen: 36.83 ug/kg
RT: 25.86 min Scan# 2362
Delta R.T. -0.04 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:252 Resp: 11935

Ion	Ratio	Lower	Upper
252	100		
253	22.8	1.9	41.9
125	11.5	0.0	31.7

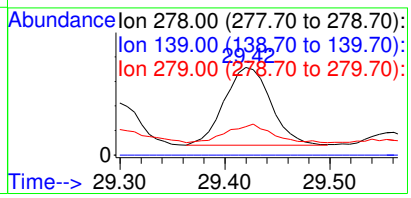


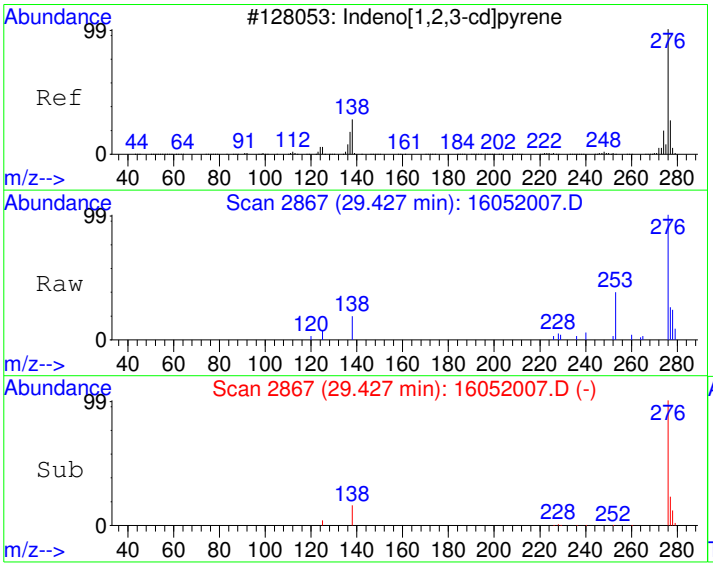


#26
Dibenz[a,h]anthracene
Concen: 6.58 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:278 Resp: 1942

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	20.9	4.2	44.2

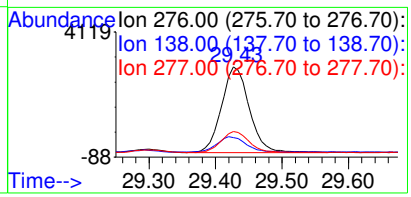


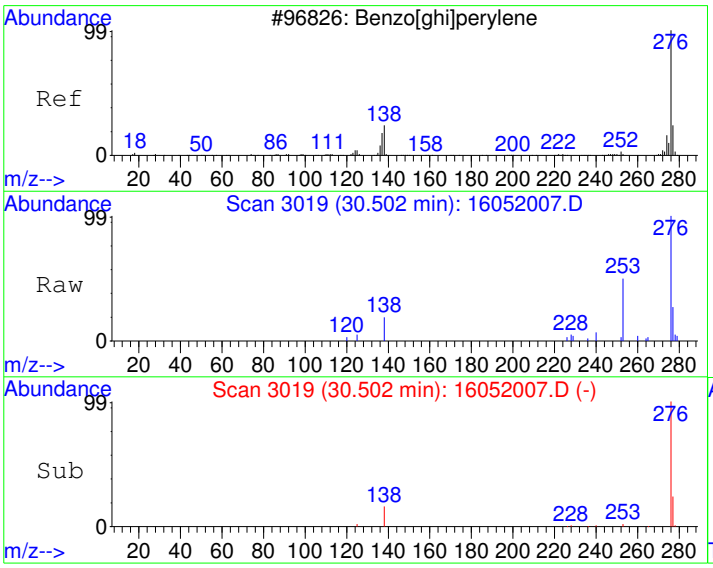


#27
Indeno[1,2,3-cd]pyrene
Concen: 23.77 ug/kg
RT: 29.43 min Scan# 2867
Delta R.T. -0.05 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:276 Resp: 8369

Ion	Ratio	Lower	Upper
276	100		
138	16.7	6.7	46.7
277	24.6	5.8	45.8

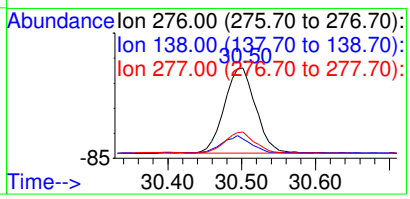




#28
Benzo[g,h,i]perylene
Concen: 29.67 ug/kg
RT: 30.50 min Scan# 3019
Delta R.T. -0.05 min
Lab File: 16052007.D
Acq: 20 May 2016 12:21 pm

Tgt Ion:276 Resp: 8147

Ion	Ratio	Lower	Upper
276	100		
138	16.3	0.0	39.1
277	25.1	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052008.D Vial: 8
Acq On : 20 May 2016 1:00 pm Operator:
Sample : 1605097-29A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:17 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

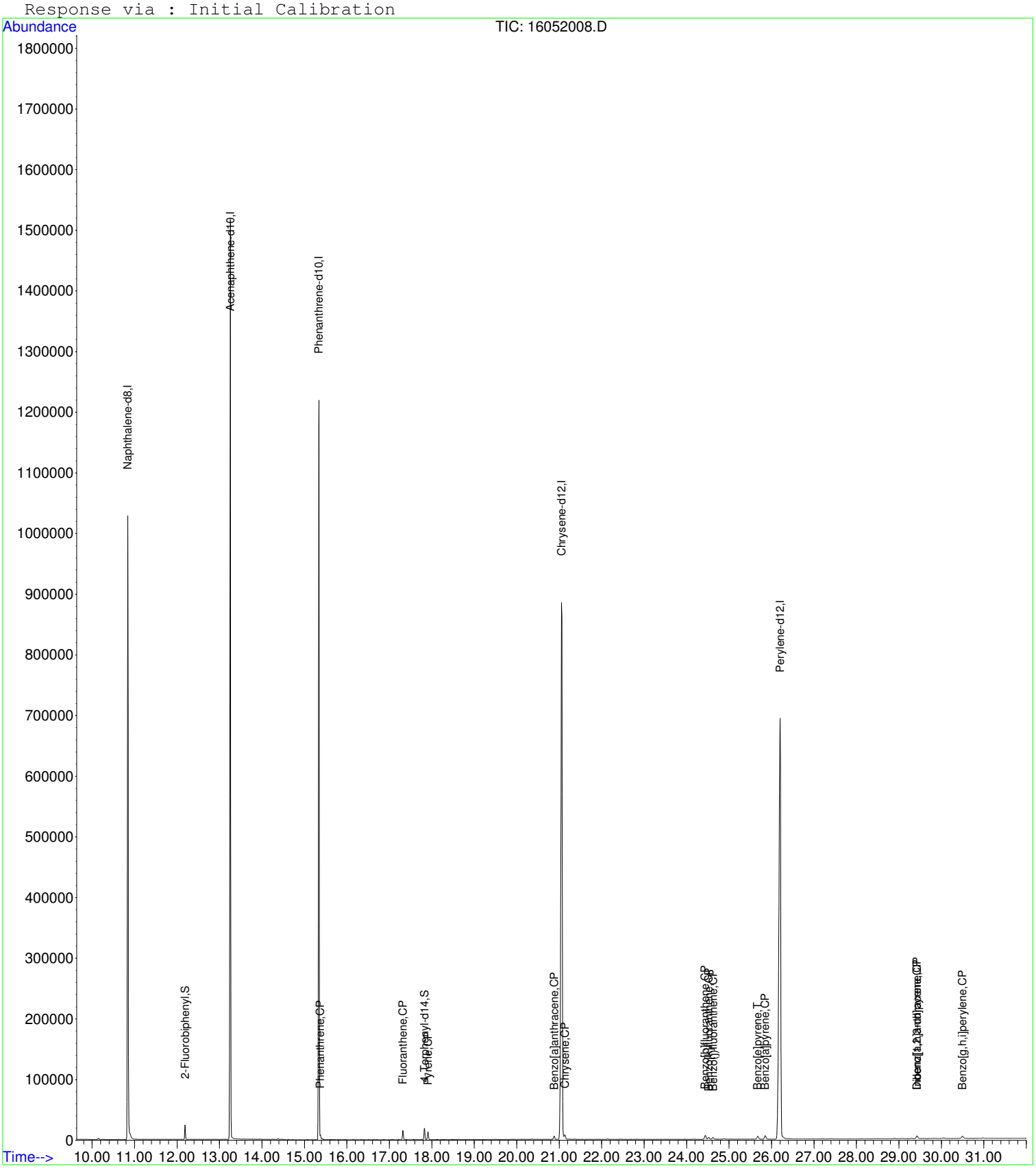
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1258278	4000.00	ug/kg	109
5) Acenaphthene-d10	13.25	164	788470	4000.00	ug/kg	68
11) Phenanthrene-d10	15.34	188	1300711	4000.00	ug/kg	64
17) Chrysene-d12	21.06	240	1488795	4000.00	ug/kg	66
20) Perylene-d12	26.20	264	1383311	4000.00	ug/kg	67
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18549	80.65	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.02%#			
16) 4-Terphenyl-d14	17.83	244	23912	71.06	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.78%#			
Target Compounds						Qvalue
12) Phenanthrene	15.37	178	5032	14.71	ug/kg	99
14) Fluoranthene	17.32	202	15528	43.87	ug/kg	98
15) Pyrene	17.91	202	14151	38.48	ug/kg	98
18) Benzo[a]anthracene	20.88	228	8406	24.10	ug/kg	97
19) Chrysene	21.13	228	10258	30.44	ug/kg	97
21) Benzo[b]fluoranthene	24.44	252	12057	33.07	ug/kg	98
22) Benzo[k]fluoranthene	24.52	252	5720	16.72	ug/kg	95
23) Benzo(j)fluoranthene	24.63	252	5356	17.58	ug/kg	93
24) Benzo[e]pyrene	25.67	252	8845	27.09	ug/kg	100
25) Benzo[a]pyrene	25.86	252	10685	32.02	ug/kg	99
26) Dibenz[a,h]anthracene	29.42	278	1846	6.07	ug/kg	93
27) Indeno[1,2,3-cd]pyrene	29.43	276	7509	20.71	ug/kg	89
28) Benzo[g,h,i]perylene	30.49	276	7505	26.55	ug/kg	99

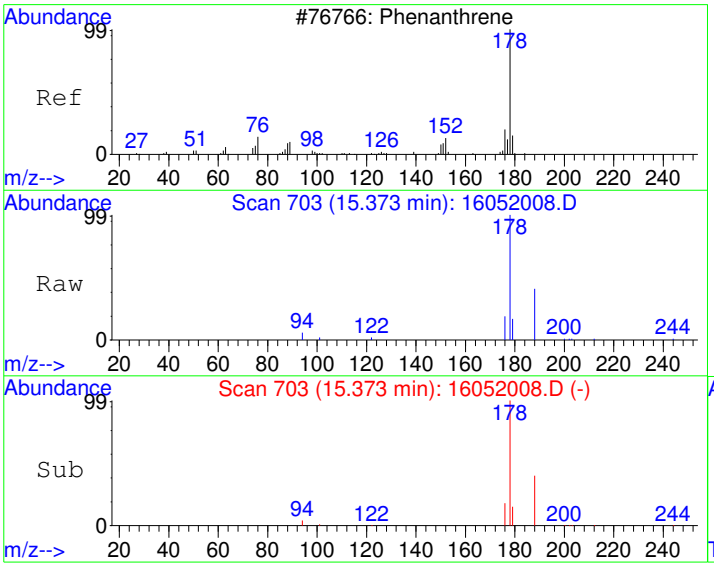
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052008.D Vial: 8
Acq On : 20 May 2016 1:00 pm Operator:
Sample : 1605097-29A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:17 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

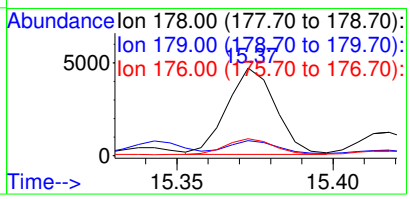


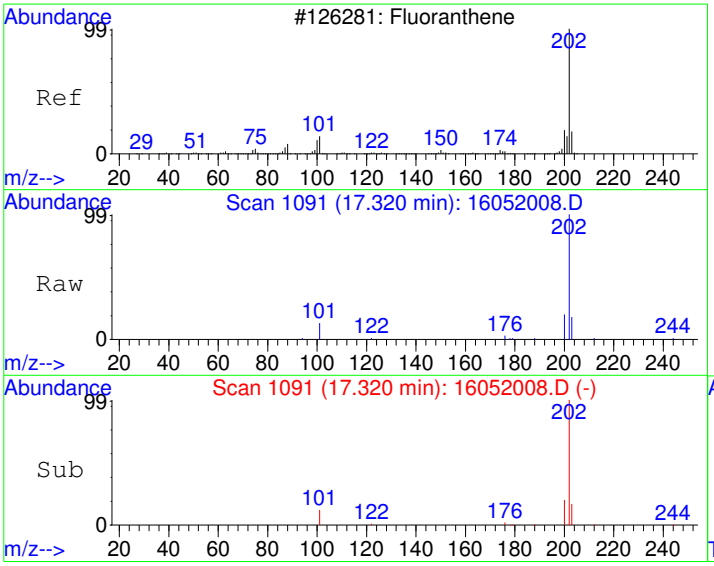


#12
Phenanthrene
Concen: 14.71 ug/kg
RT: 15.37 min Scan# 703
Delta R.T. -0.02 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:178 Resp: 5032

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	45.9
176	18.3	0.0	48.5

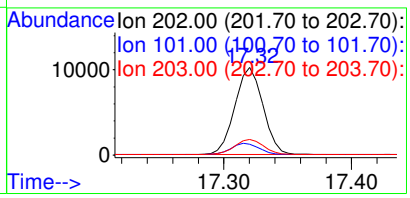


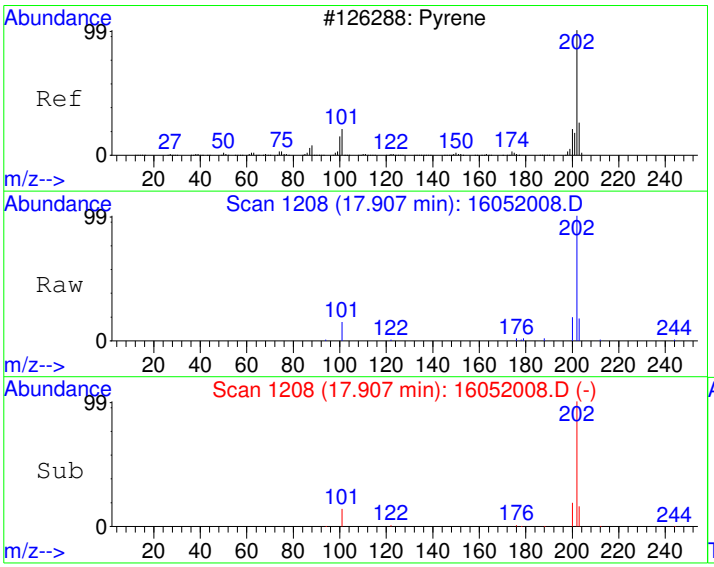


#14
Fluoranthene
Concen: 43.87 ug/kg
RT: 17.32 min Scan# 1091
Delta R.T. -0.02 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:202 Resp: 15528

Ion	Ratio	Lower	Upper
202	100		
101	12.1	0.0	43.0
203	17.1	0.0	47.9

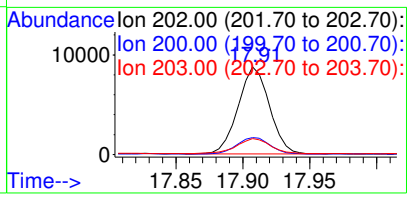


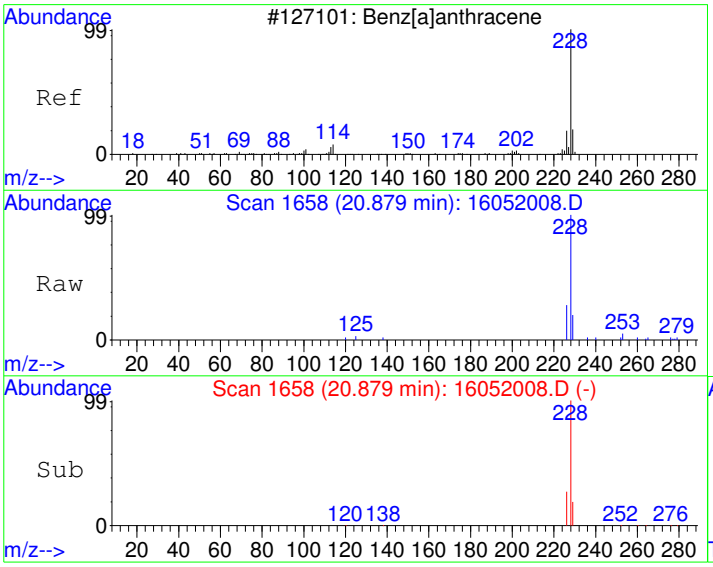


#15
Pyrene
Concen: 38.48 ug/kg
RT: 17.91 min Scan# 1208
Delta R.T. -0.03 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:202 Resp: 14151

Ion	Ratio	Lower	Upper
202	100		
200	18.9	0.0	50.0
203	17.4	0.0	48.0

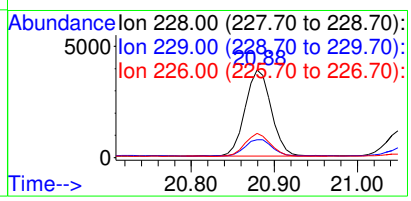


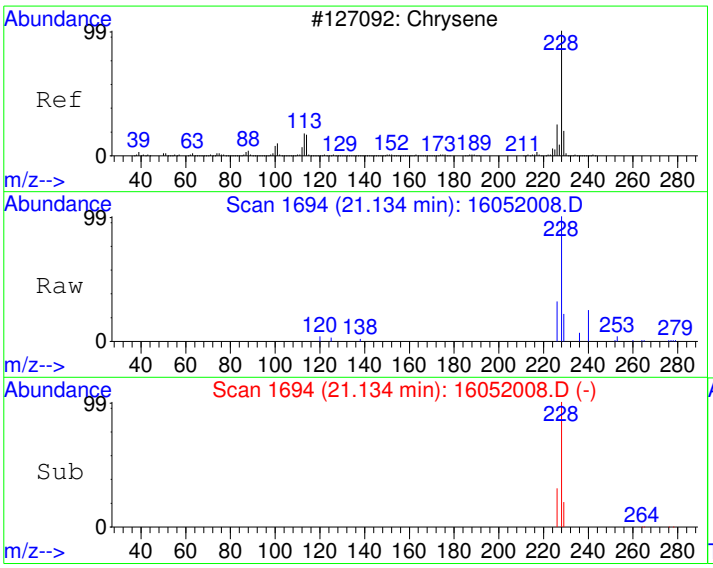


#18
Benzo[a]anthracene
Concen: 24.10 ug/kg
RT: 20.88 min Scan# 1658
Delta R.T. -0.04 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:228 Resp: 8406

Ion	Ratio	Lower	Upper
228	100		
229	18.7	0.0	50.1
226	26.6	0.0	55.2

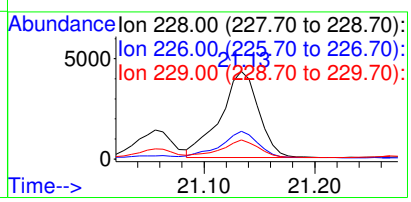


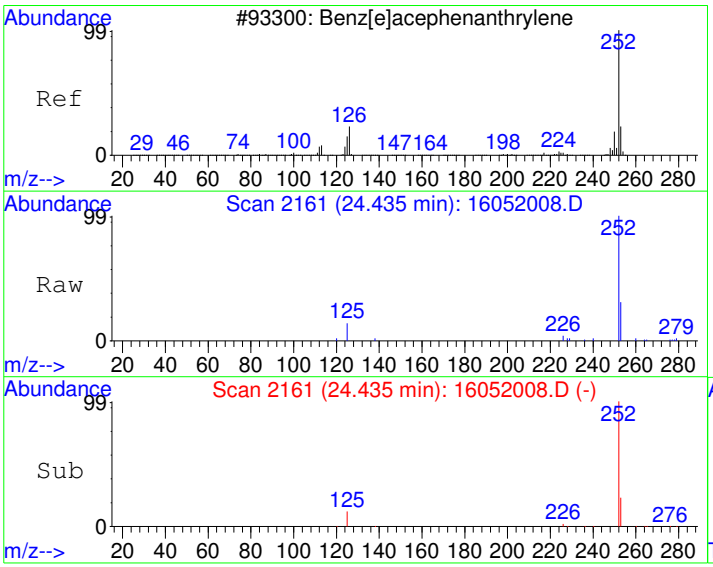


#19
Chrysene
Concen: 30.44 ug/kg
RT: 21.13 min Scan# 1694
Delta R.T. -0.04 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:228 Resp: 10258

Ion	Ratio	Lower	Upper
228	100		
226	30.6	0.0	58.1
229	20.7	0.0	50.1

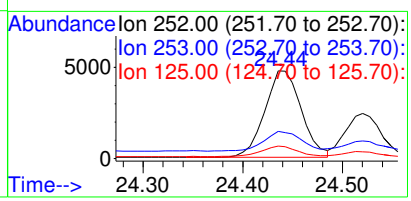


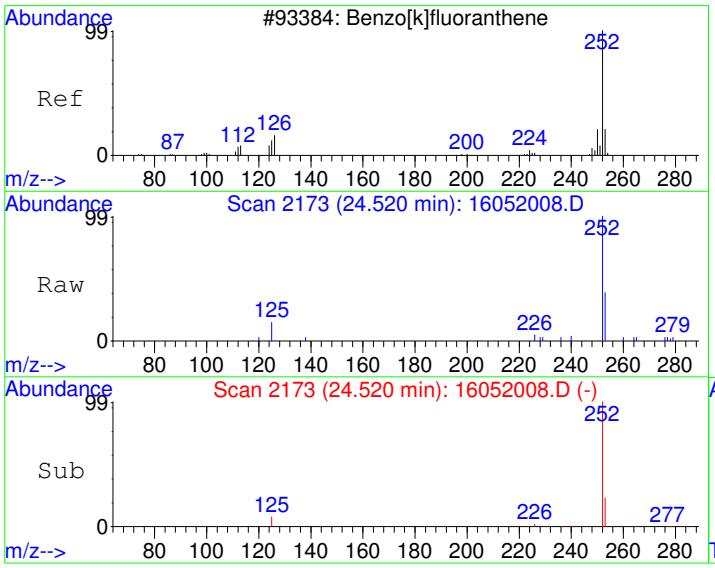


#21
Benzo[b]fluoranthene
Concen: 33.07 ug/kg
RT: 24.44 min Scan# 2161
Delta R.T. -0.05 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:252 Resp: 12057

Ion	Ratio	Lower	Upper
252	100		
253	22.6	0.0	52.2
125	12.1	0.0	41.0

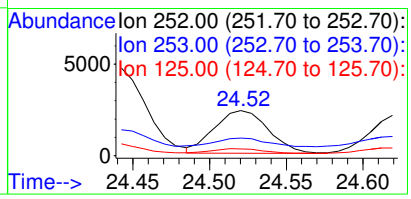


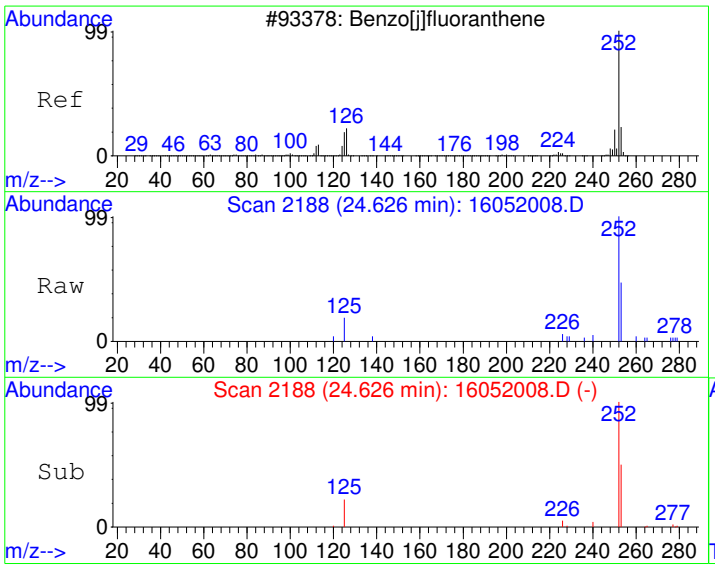


#22
Benzo[k]fluoranthene
Concen: 16.72 ug/kg
RT: 24.52 min Scan# 2173
Delta R.T. -0.05 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:252 Resp: 5720

Ion	Ratio	Lower	Upper
252	100		
253	19.3	2.1	42.1
125	10.6	0.0	31.3

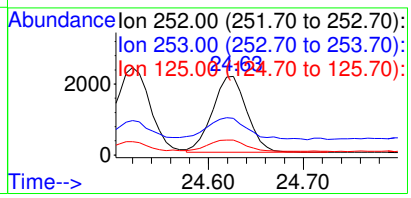


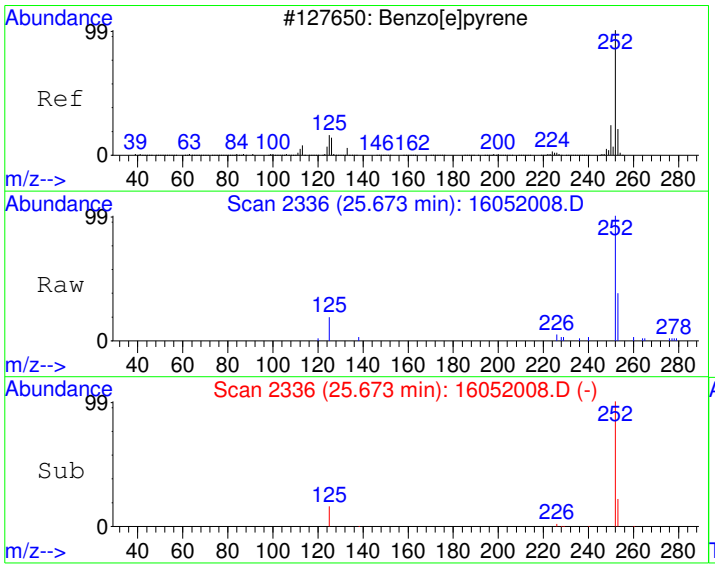


#23
Benzo(j)fluoranthene
Concen: 17.58 ug/kg
RT: 24.63 min Scan# 2188
Delta R.T. -0.04 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:252 Resp: 5356

Ion	Ratio	Lower	Upper
252	100		
253	27.8	2.1	42.1
125	14.6	0.0	34.4

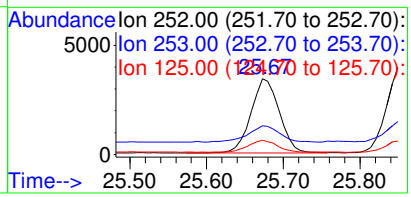


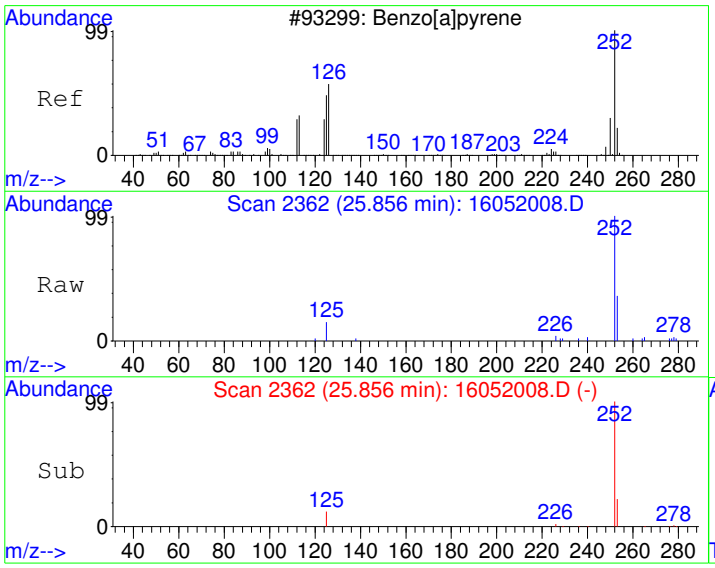


#24
Benzo[e]pyrene
Concen: 27.09 ug/kg
RT: 25.67 min Scan# 2336
Delta R.T. -0.05 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:252 Resp: 8845

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.2	42.2
125	16.2	0.0	36.1

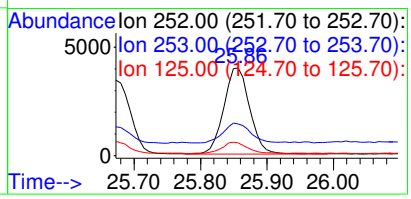


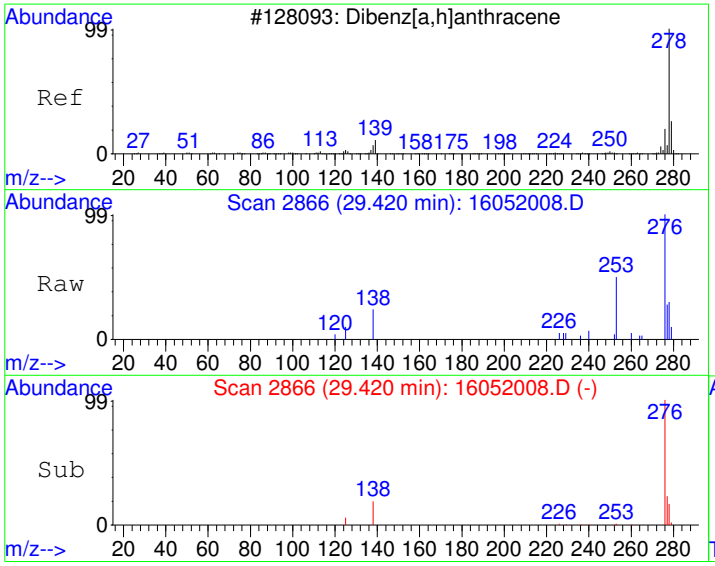


#25
Benzo[a]pyrene
Concen: 32.02 ug/kg
RT: 25.86 min Scan# 2362
Delta R.T. -0.04 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:252 Resp: 10685

Ion	Ratio	Lower	Upper
252	100		
253	21.9	1.9	41.9
125	12.4	0.0	31.7

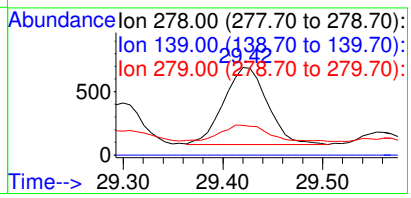


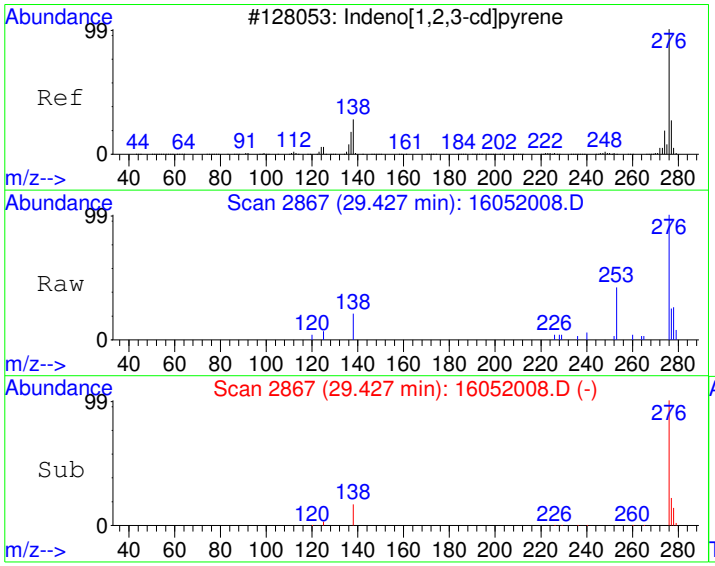


#26
Dibenz[a,h]anthracene
Concen: 6.07 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:278 Resp: 1846

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	20.7	4.2	44.2

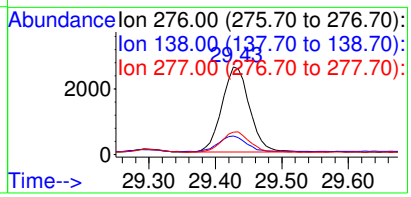


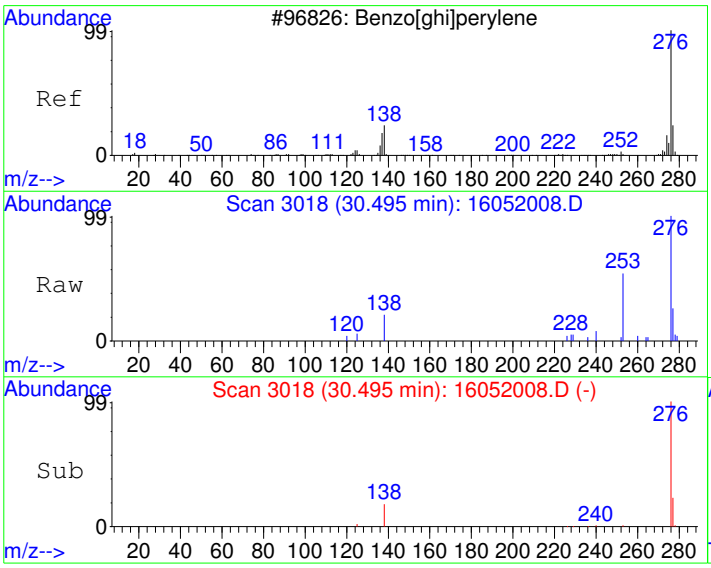


#27
Indeno[1,2,3-cd]pyrene
Concen: 20.71 ug/kg
RT: 29.43 min Scan# 2867
Delta R.T. -0.05 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:276 Resp: 7509

Ion	Ratio	Lower	Upper
276	100		
138	18.0	6.7	46.7
277	23.5	5.8	45.8

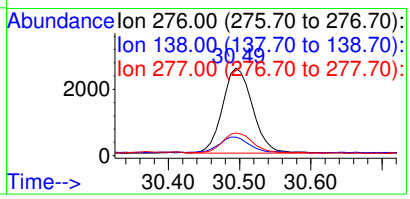




#28
Benzo[g,h,i]perylene
Concen: 26.55 ug/kg
RT: 30.49 min Scan# 3018
Delta R.T. -0.06 min
Lab File: 16052008.D
Acq: 20 May 2016 1:00 pm

Tgt Ion:276 Resp: 7505

Ion	Ratio	Lower	Upper
276	100		
138	18.3	0.0	39.1
277	23.6	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052009.D Vial: 9
Acq On : 20 May 2016 1:40 pm Operator:
Sample : 1605097-31A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:17 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

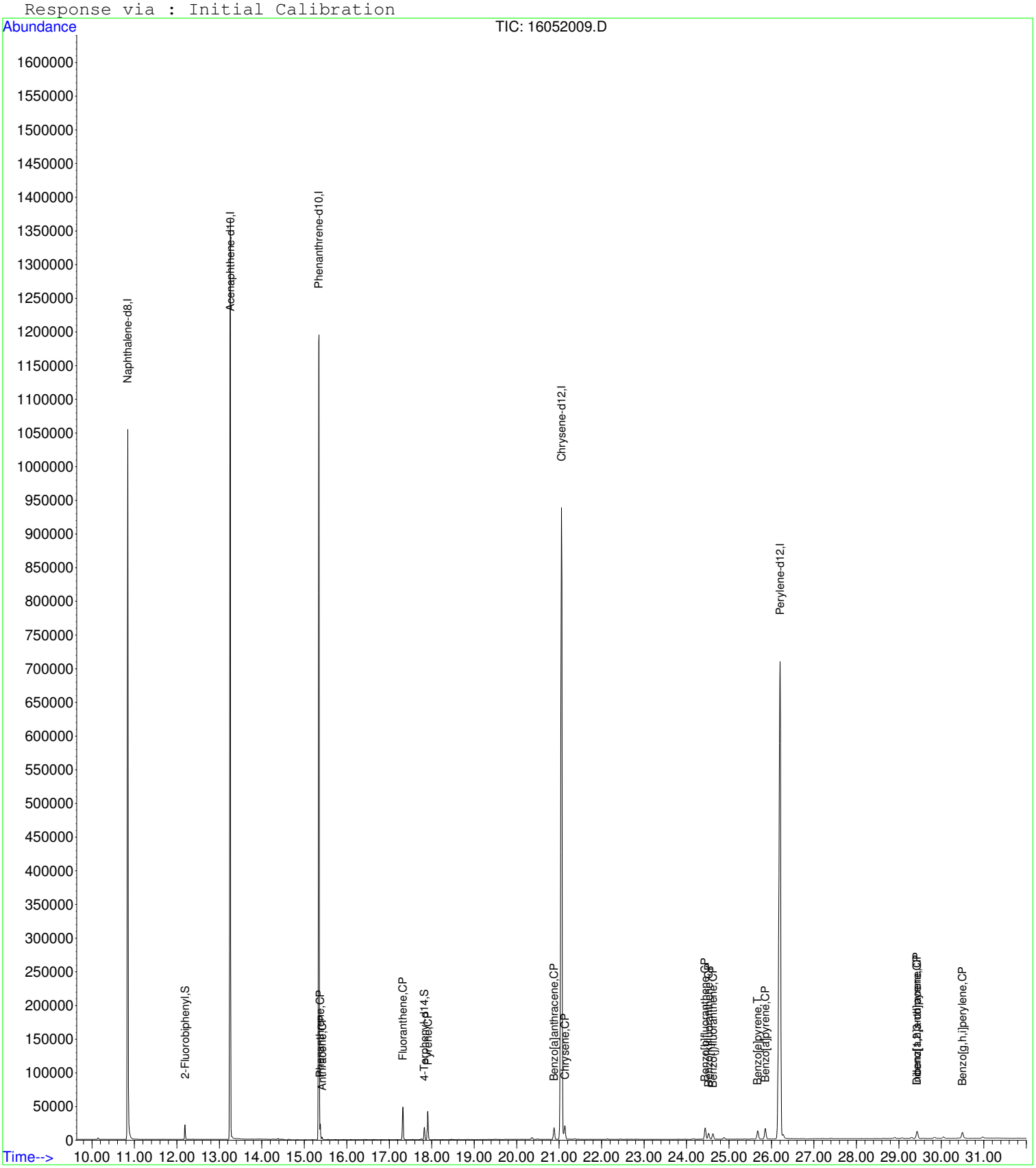
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1270620	4000.00	ug/kg	110
5) Acenaphthene-d10	13.26	164	795406	4000.00	ug/kg	69
11) Phenanthrene-d10	15.34	188	1310664	4000.00	ug/kg	64
17) Chrysene-d12	21.06	240	1532157	4000.00	ug/kg	67
20) Perylene-d12	26.20	264	1411748	4000.00	ug/kg	69
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18612	80.21	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.01%#			
16) 4-Terphenyl-d14	17.83	244	23740	70.01	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.75%#			
Target Compounds						Qvalue
12) Phenanthrene	15.37	178	17267	50.10	ug/kg	99
13) Anthracene	15.42	178	3076	9.43	ug/kg	98
14) Fluoranthene	17.32	202	49608	139.08	ug/kg	98
15) Pyrene	17.91	202	44299	119.56	ug/kg	99
18) Benzo[a]anthracene	20.88	228	25810	71.90	ug/kg	99
19) Chrysene	21.13	228	30870	89.01	ug/kg	99
21) Benzo[b]fluoranthene	24.44	252	31578	84.87	ug/kg	99
22) Benzo[k]fluoranthene	24.52	252	14892	42.66	ug/kg	97
23) Benzo(j)fluoranthene	24.62	252	14142	45.48	ug/kg	90
24) Benzo[e]pyrene	25.68	252	22606	67.84	ug/kg	99
25) Benzo[a]pyrene	25.86	252	28755	84.45	ug/kg	100
26) Dibenz[a,h]anthracene	29.42	278	4178	13.47	ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.43	276	18065	48.83	ug/kg	90
28) Benzo[g,h,i]perylene	30.49	276	17452	60.50	ug/kg	98

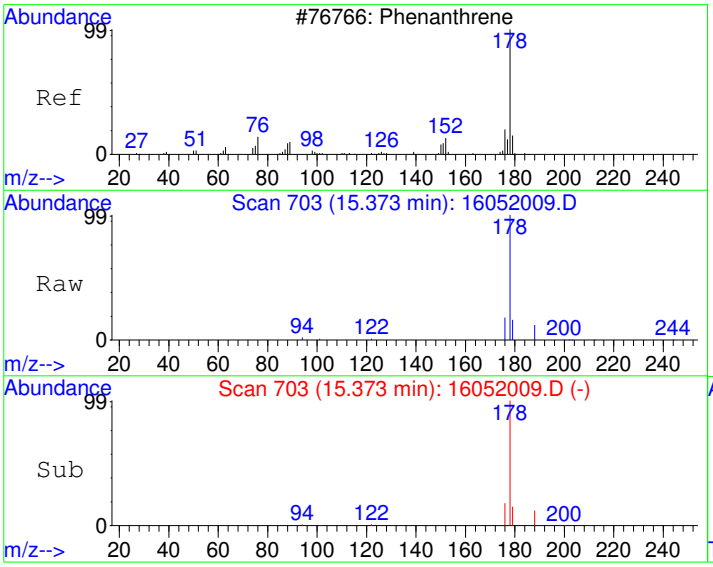
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052009.D Vial: 9
Acq On : 20 May 2016 1:40 pm Operator:
Sample : 1605097-31A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:17 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

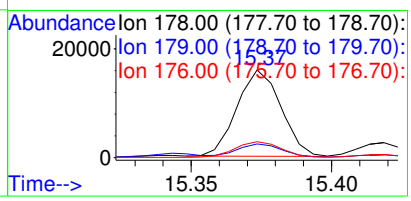


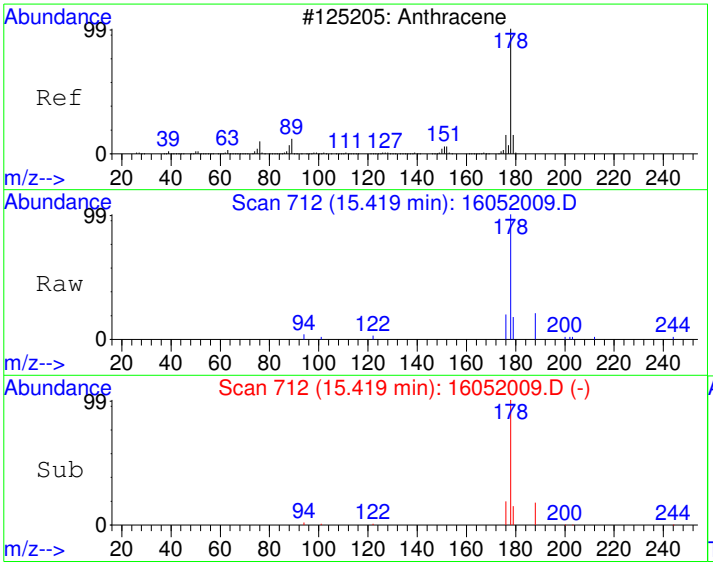


#12
Phenanthrene
Concen: 50.10 ug/kg
RT: 15.37 min Scan# 703
Delta R.T. -0.02 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:178 Resp: 17267

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	45.9
176	18.4	0.0	48.5

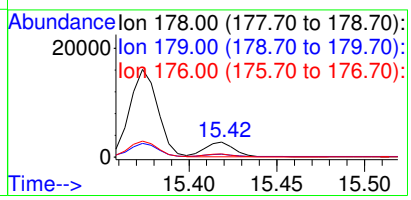


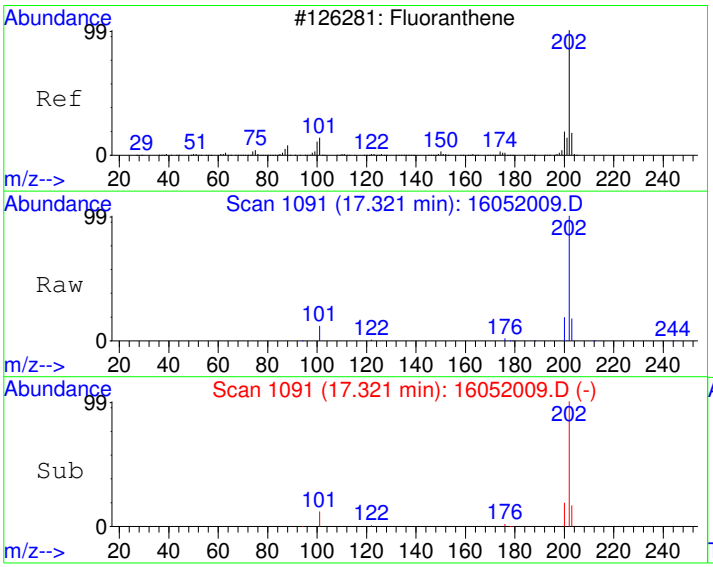


#13
Anthracene
Concen: 9.43 ug/kg
RT: 15.42 min Scan# 712
Delta R.T. -0.01 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:178 Resp: 3076

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	45.9
176	18.7	0.0	48.2

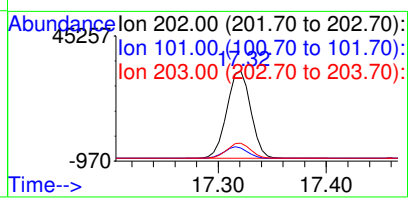


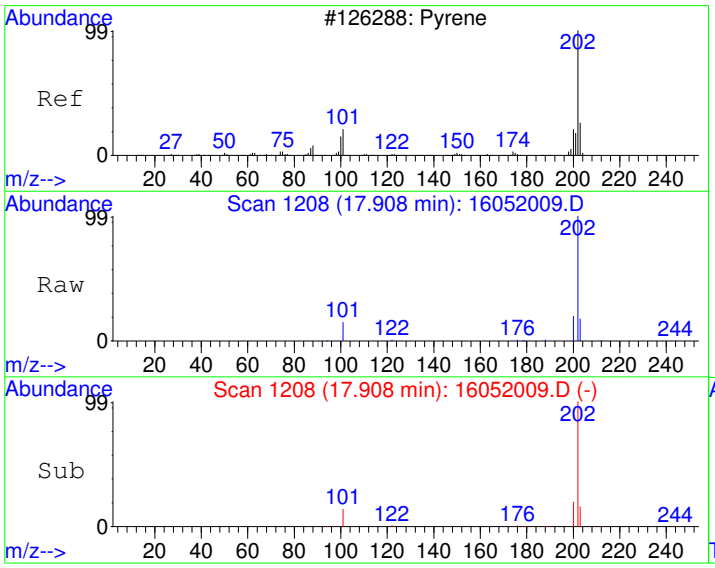


#14
Fluoranthene
Concen: 139.08 ug/kg
RT: 17.32 min Scan# 1091
Delta R.T. -0.02 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:202 Resp: 49608

Ion	Ratio	Lower	Upper
202	100		
101	12.0	0.0	43.0
203	17.5	0.0	47.9

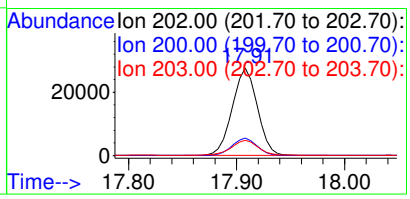


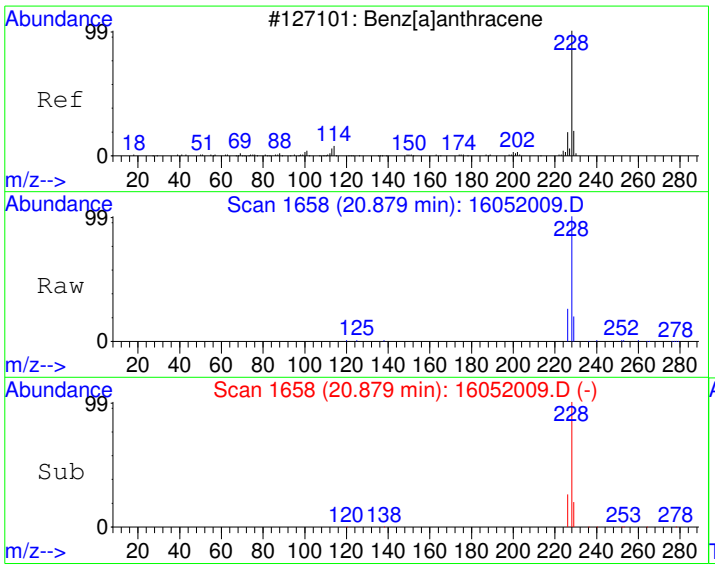


#15
Pyrene
Concen: 119.56 ug/kg
RT: 17.91 min Scan# 1208
Delta R.T. -0.02 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:202 Resp: 44299

Ion	Ratio	Lower	Upper
202	100		
200	19.8	0.0	50.0
203	17.3	0.0	48.0

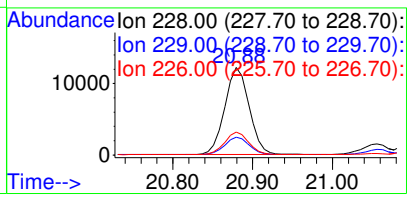


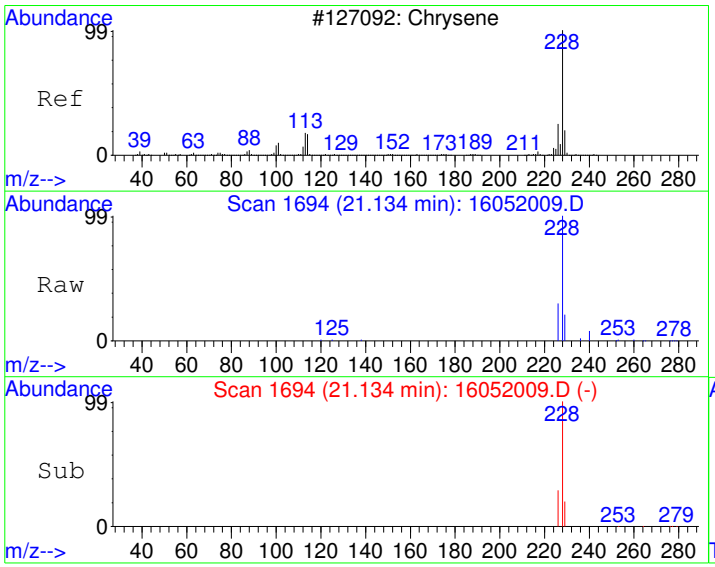


#18
Benzo[a]anthracene
Concen: 71.90 ug/kg
RT: 20.88 min Scan# 1658
Delta R.T. -0.04 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:228 Resp: 25810

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.0	50.1
226	25.8	0.0	55.2

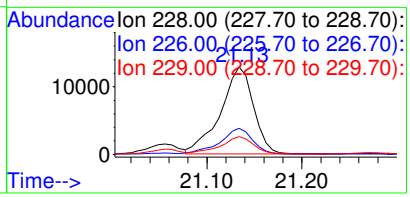


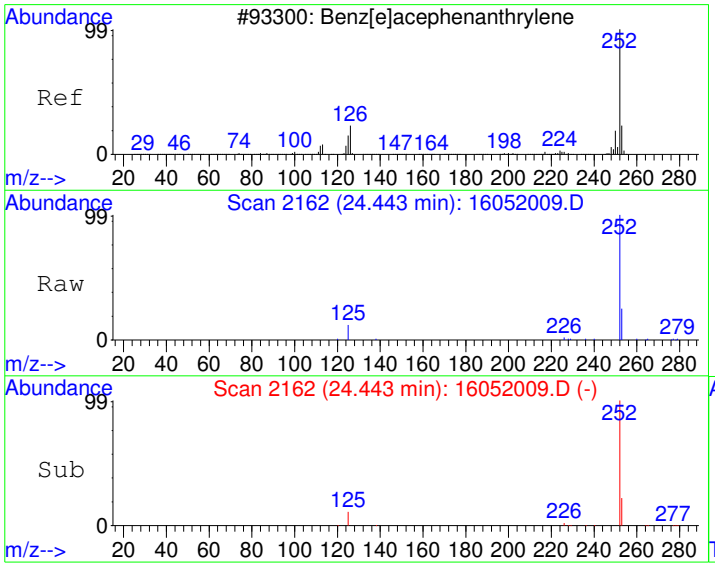


#19
Chrysene
Concen: 89.01 ug/kg
RT: 21.13 min Scan# 1694
Delta R.T. -0.04 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:228 Resp: 30870

Ion	Ratio	Lower	Upper
228	100		
226	29.4	0.0	58.1
229	20.0	0.0	50.1

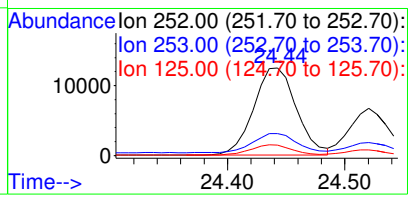


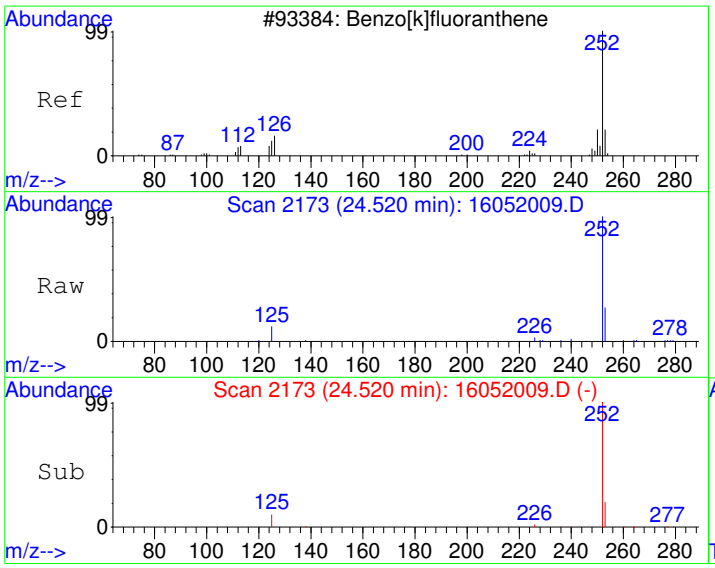


#21
Benzo[b]fluoranthene
Concen: 84.87 ug/kg
RT: 24.44 min Scan# 2162
Delta R.T. -0.04 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:252 Resp: 31578

Ion	Ratio	Lower	Upper
252	100		
253	21.9	0.0	52.2
125	11.4	0.0	41.0

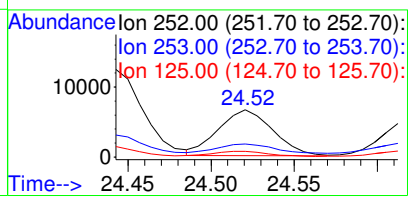


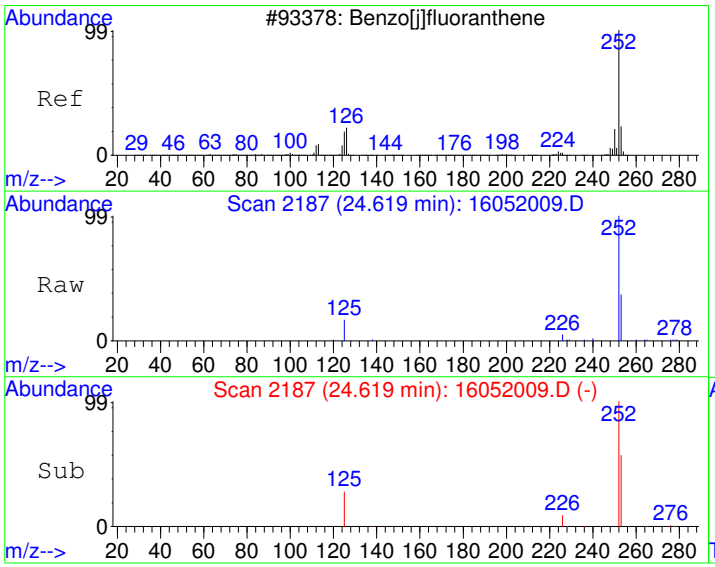


#22
Benzo[k]fluoranthene
Concen: 42.66 ug/kg
RT: 24.52 min Scan# 2173
Delta R.T. -0.05 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:252 Resp: 14892

Ion	Ratio	Lower	Upper
252	100		
253	20.0	2.1	42.1
125	10.7	0.0	31.3

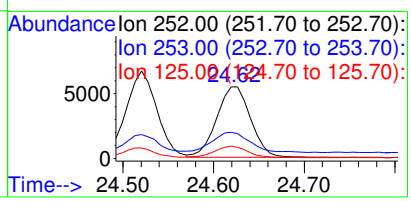


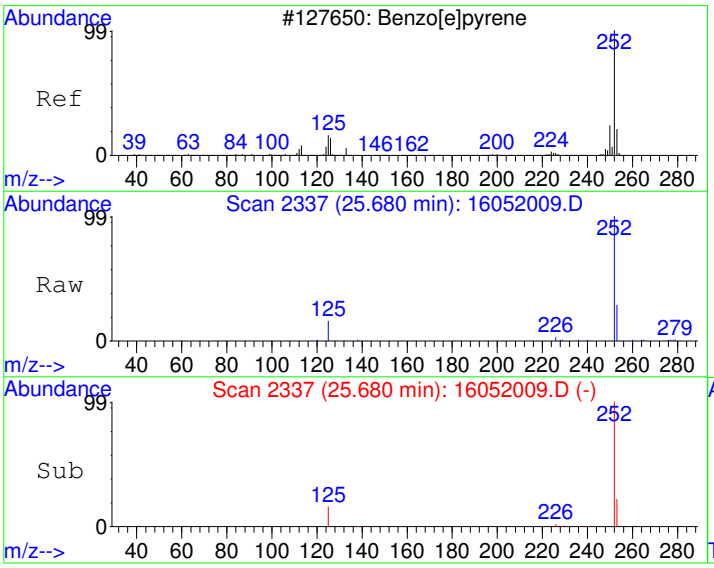


#23
Benzo(j)fluoranthene
Concen: 45.48 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:252 Resp: 14142

Ion	Ratio	Lower	Upper
252	100		
253	28.7	2.1	42.1
125	16.3	0.0	34.4

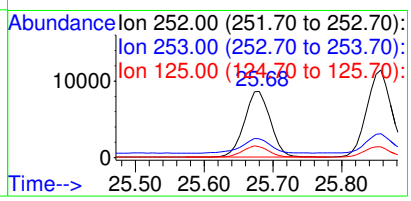


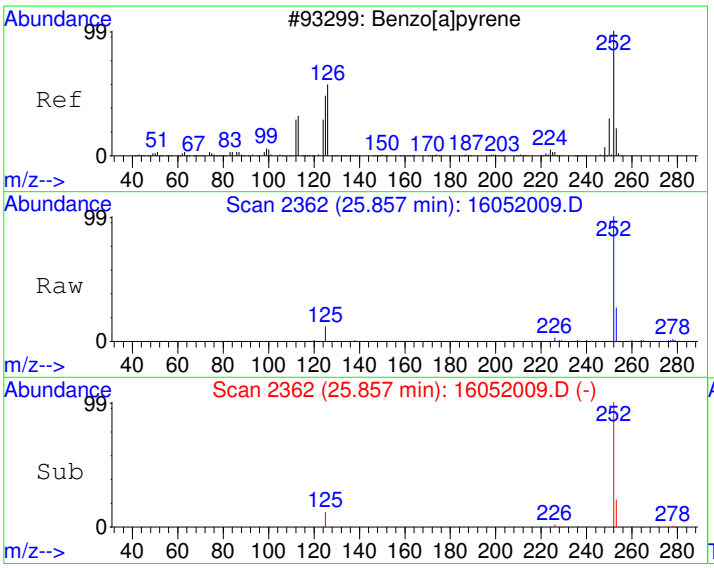


#24
Benzo[e]pyrene
Concen: 67.84 ug/kg
RT: 25.68 min Scan# 2337
Delta R.T. -0.04 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:252 Resp: 22606

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.2	42.2
125	15.7	0.0	36.1

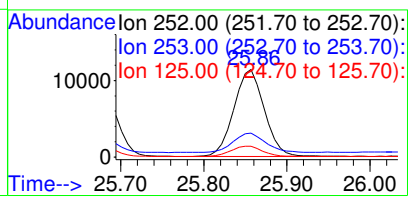


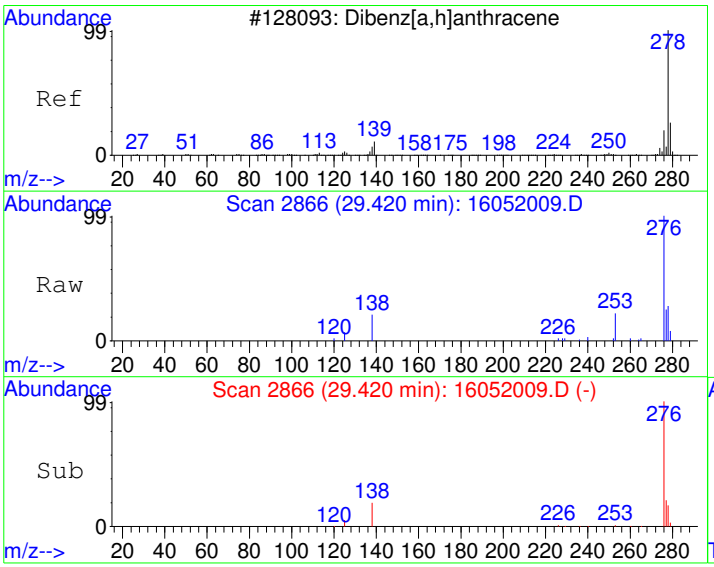


#25
Benzo[a]pyrene
Concen: 84.45 ug/kg
RT: 25.86 min Scan# 2362
Delta R.T. -0.04 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:252 Resp: 28755

Ion	Ratio	Lower	Upper
252	100		
253	22.1	1.9	41.9
125	11.6	0.0	31.7

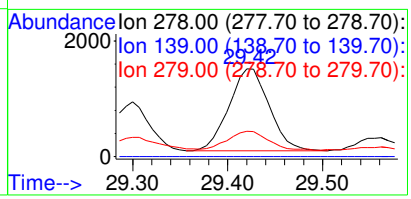


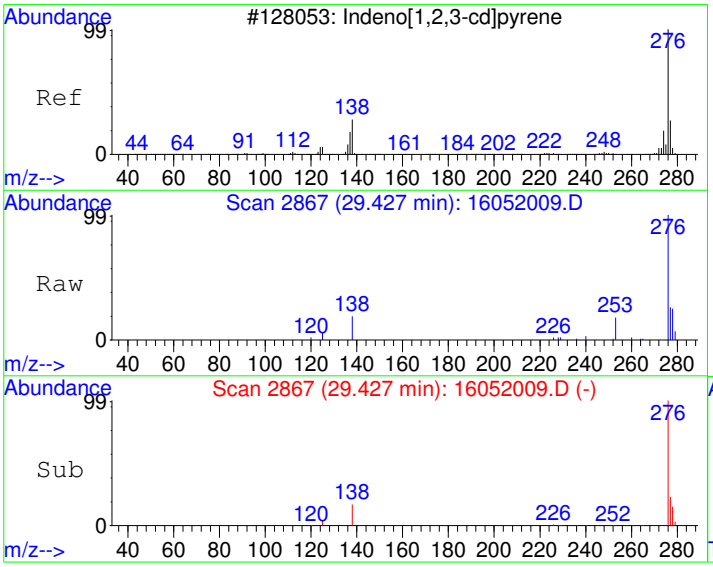


#26
Dibenz[a,h]anthracene
Concen: 13.47 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:278 Resp: 4178

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	22.3	4.2	44.2

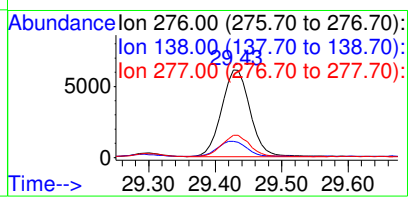


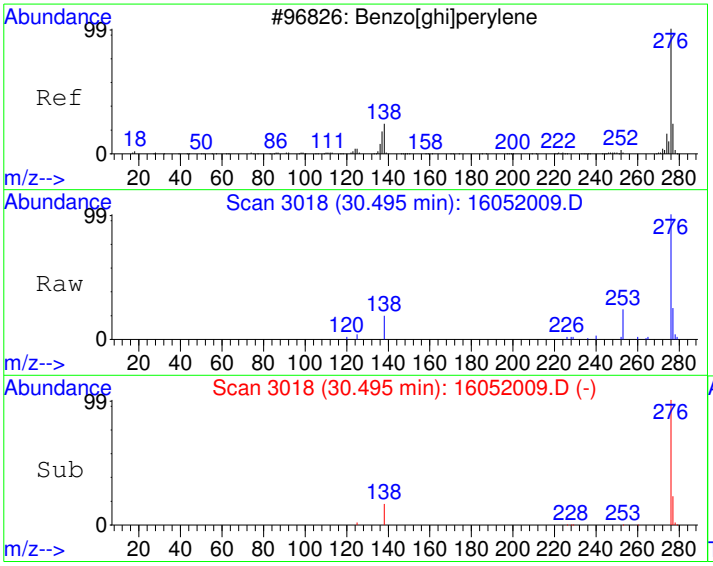


#27
Indeno[1,2,3-cd]pyrene
Concen: 48.83 ug/kg
RT: 29.43 min Scan# 2867
Delta R.T. -0.05 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:276 Resp: 18065

Ion	Ratio	Lower	Upper
276	100		
138	17.5	6.7	46.7
277	24.9	5.8	45.8

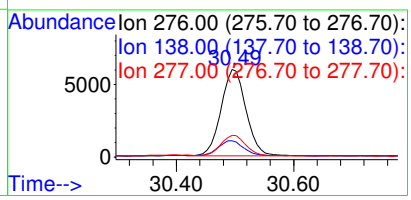




#28
Benzo[g,h,i]perylene
Concen: 60.50 ug/kg
RT: 30.49 min Scan# 3018
Delta R.T. -0.06 min
Lab File: 16052009.D
Acq: 20 May 2016 1:40 pm

Tgt Ion:276 Resp: 17452

Ion	Ratio	Lower	Upper
276	100		
138	17.3	0.0	39.1
277	23.9	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052010.D Vial: 10
Acq On : 20 May 2016 2:20 pm Operator:
Sample : 1605097-32A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:18 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

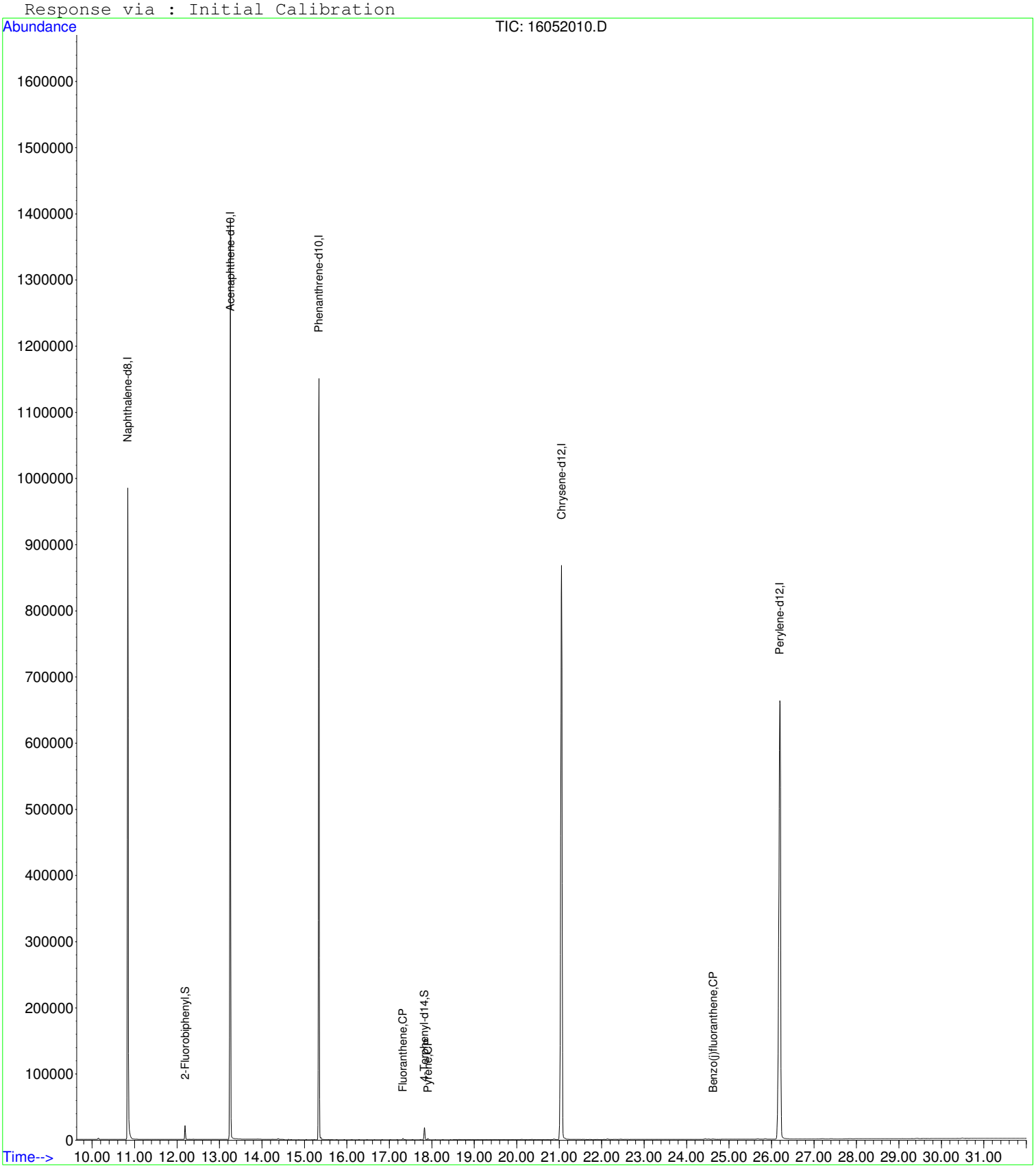
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1206311	4000.00	ug/kg	104
5) Acenaphthene-d10	13.25	164	727924	4000.00	ug/kg	63
11) Phenanthrene-d10	15.34	188	1224836	4000.00	ug/kg	60
17) Chrysene-d12	21.06	240	1447703	4000.00	ug/kg	64
20) Perylene-d12	26.20	264	1312998	4000.00	ug/kg	64
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	16574	78.05	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.95%#		
16) 4-Terphenyl-d14	17.83	244	22923	72.34	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.81%#		
Target Compounds						Qvalue
14) Fluoranthene	17.32	202	2126	6.38	ug/kg	98
15) Pyrene	17.91	202	2104	6.08	ug/kg	99
23) Benzo(j)fluoranthene	24.62	252	749	2.59	ug/kg	86

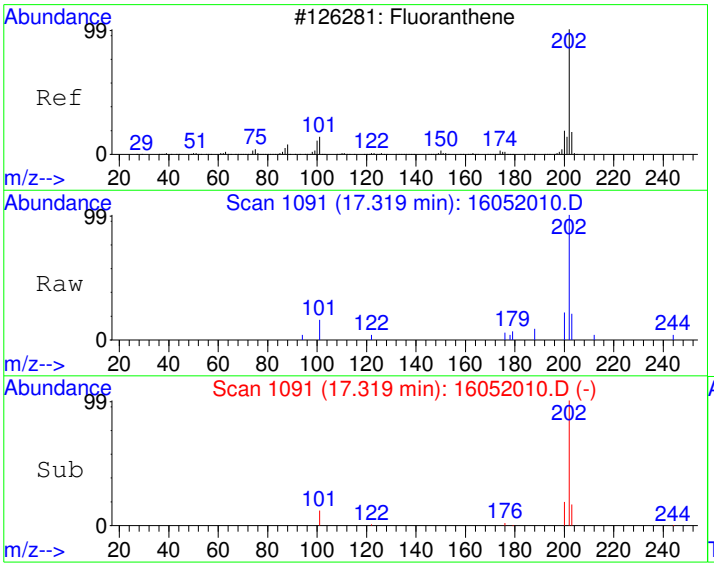
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052010.D Vial: 10
Acq On : 20 May 2016 2:20 pm Operator:
Sample : 1605097-32A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:18 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

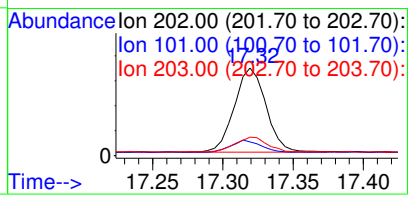


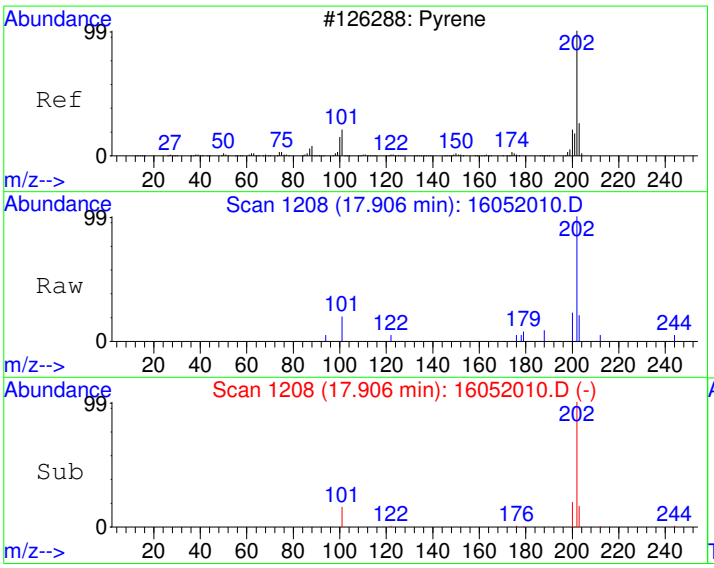


#14
Fluoranthene
Concen: 6.38 ug/kg
RT: 17.32 min Scan# 1091
Delta R.T. -0.02 min
Lab File: 16052010.D
Acq: 20 May 2016 2:20 pm

Tgt Ion:202 Resp: 2126

Ion	Ratio	Lower	Upper
202	100		
101	12.2	0.0	43.0
203	17.4	0.0	47.9

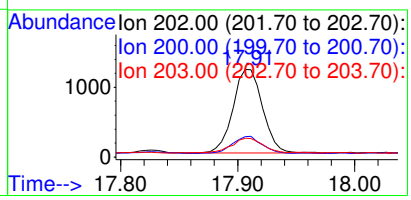


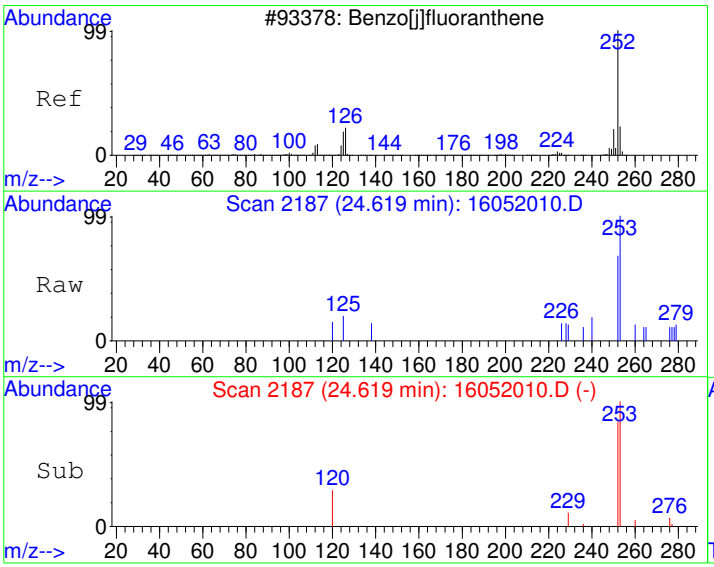


#15
Pyrene
Concen: 6.08 ug/kg
RT: 17.91 min Scan# 1208
Delta R.T. -0.03 min
Lab File: 16052010.D
Acq: 20 May 2016 2:20 pm

Tgt Ion:202 Resp: 2104

Ion	Ratio	Lower	Upper
202	100		
200	19.7	0.0	50.0
203	17.5	0.0	48.0

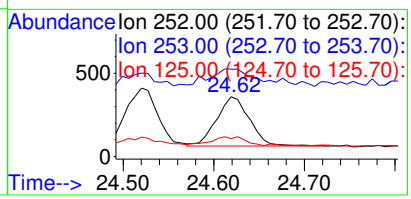




#23
Benzo(j)fluoranthene
Concen: 2.59 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052010.D
Acq: 20 May 2016 2:20 pm

Tgt Ion:252 Resp: 749

Ion	Ratio	Lower	Upper
252	100		
253	31.6	2.1	42.1
125	12.8	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052011.D Vial: 11
Acq On : 20 May 2016 2:59 pm Operator:
Sample : 1605097-33A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:18 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

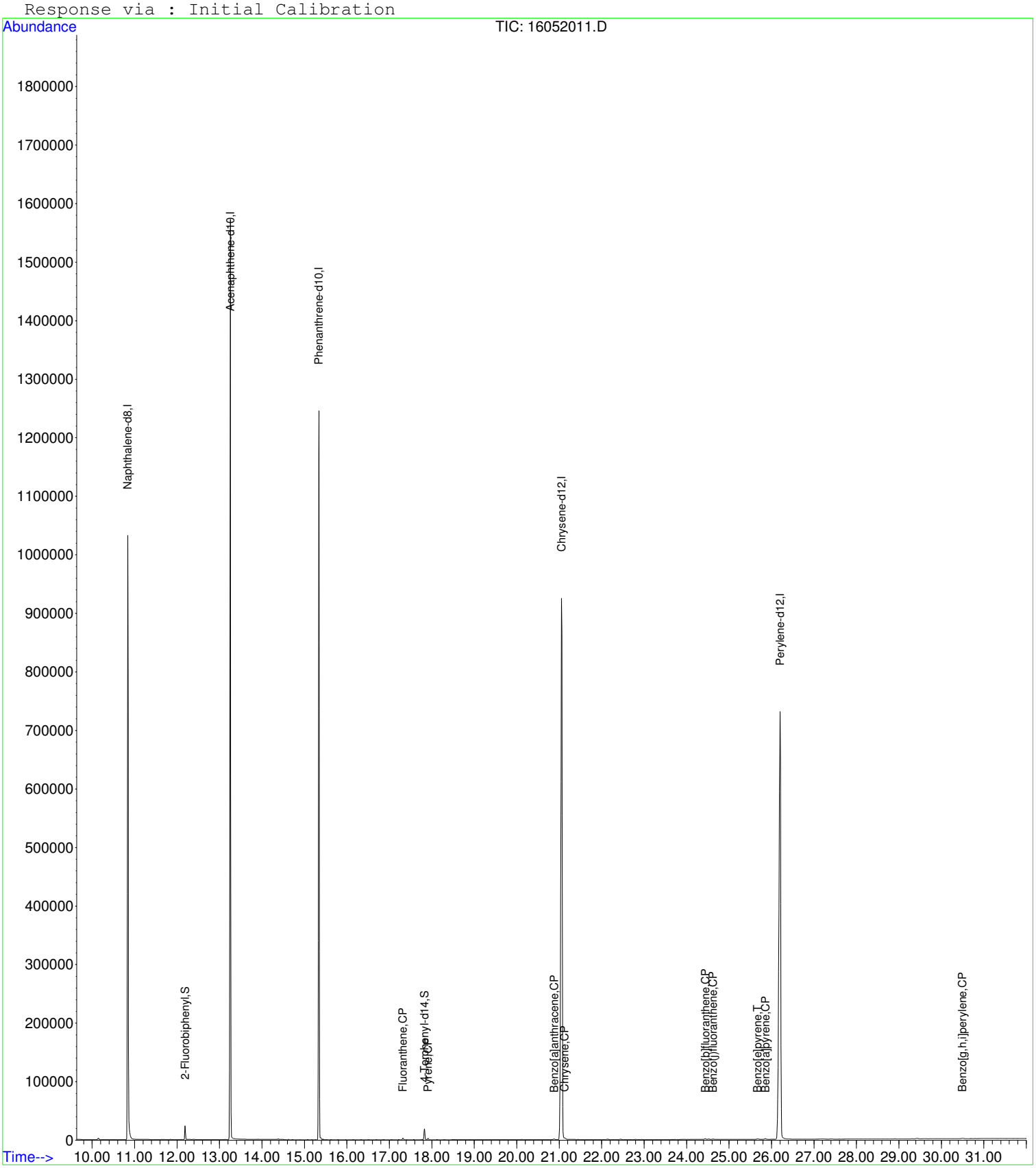
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1277172	4000.00	ug/kg	110
5) Acenaphthene-d10	13.25	164	798634	4000.00	ug/kg	69
11) Phenanthrene-d10	15.34	188	1326796	4000.00	ug/kg	65
17) Chrysene-d12	21.06	240	1553654	4000.00	ug/kg	68
20) Perylene-d12	26.20	264	1424264	4000.00	ug/kg	69
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18563	79.68	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.99%#		
16) 4-Terphenyl-d14	17.83	244	23668	68.95	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.72%#		
Target Compounds						Qvalue
14) Fluoranthene	17.32	202	3121	8.64	ug/kg	97
15) Pyrene	17.91	202	3015	8.04	ug/kg	97
18) Benzo[a]anthracene	20.88	228	1886	5.18	ug/kg	98
19) Chrysene	21.13	228	2302	6.55	ug/kg	99
21) Benzo[b]fluoranthene	24.44	252	2610	6.95	ug/kg	99
23) Benzo(j)fluoranthene	24.62	252	1198	3.82	ug/kg	87
24) Benzo[e]pyrene	25.68	252	1854	5.51	ug/kg	98
25) Benzo[a]pyrene	25.86	252	2336	6.80	ug/kg	93
28) Benzo[g,h,i]perylene	30.49	276	1575	5.41	ug/kg	97

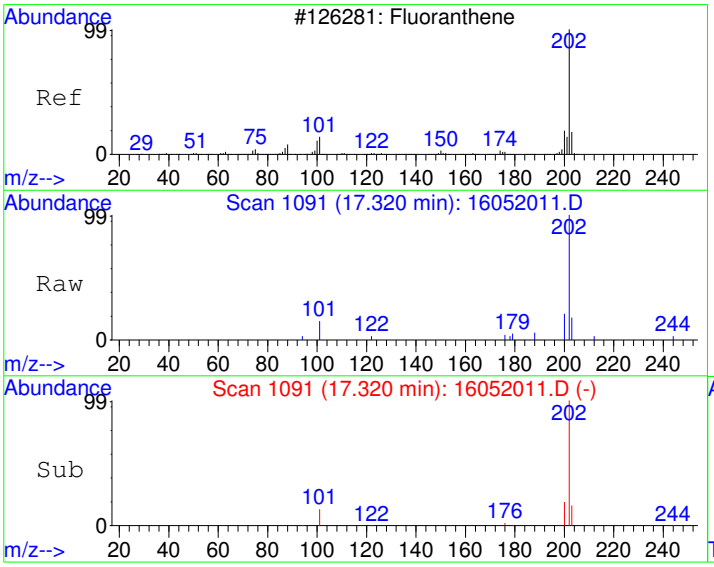
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052011.D Vial: 11
Acq On : 20 May 2016 2:59 pm Operator:
Sample : 1605097-33A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:18 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

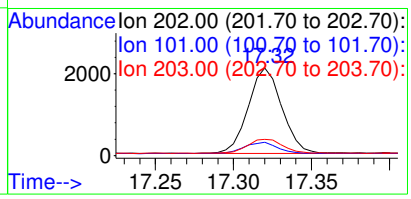


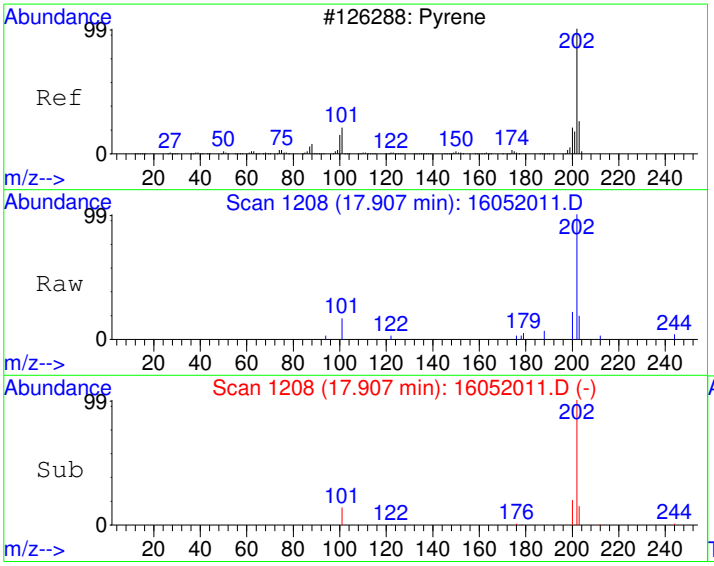


#14
Fluoranthene
Concen: 8.64 ug/kg
RT: 17.32 min Scan# 1091
Delta R.T. -0.02 min
Lab File: 16052011.D
Acq: 20 May 2016 2:59 pm

Tgt Ion:202 Resp: 3121

Ion	Ratio	Lower	Upper
202	100		
101	13.4	0.0	43.0
203	16.0	0.0	47.9

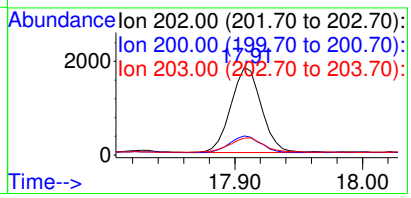


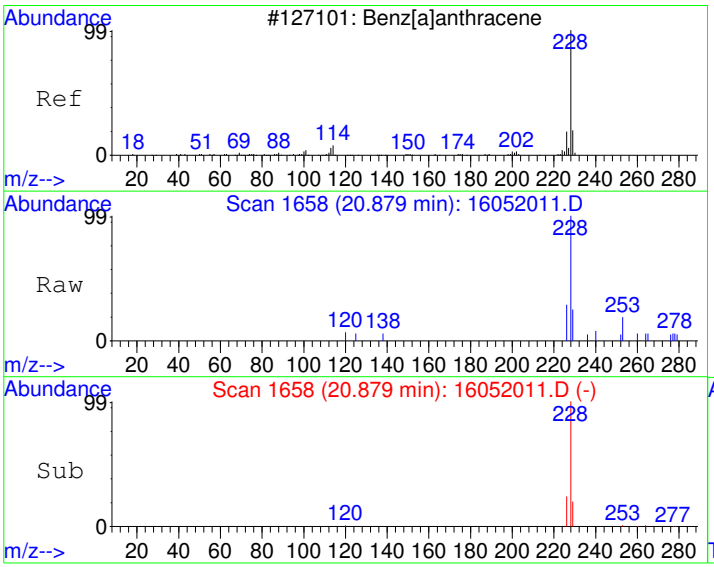


#15
Pyrene
Concen: 8.04 ug/kg
RT: 17.91 min Scan# 1208
Delta R.T. -0.03 min
Lab File: 16052011.D
Acq: 20 May 2016 2:59 pm

Tgt Ion:202 Resp: 3015

Ion	Ratio	Lower	Upper
202	100		
200	19.4	0.0	50.0
203	16.3	0.0	48.0

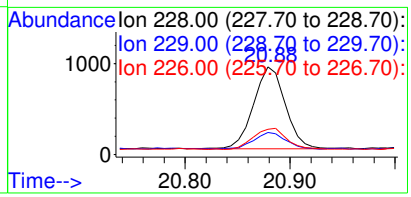


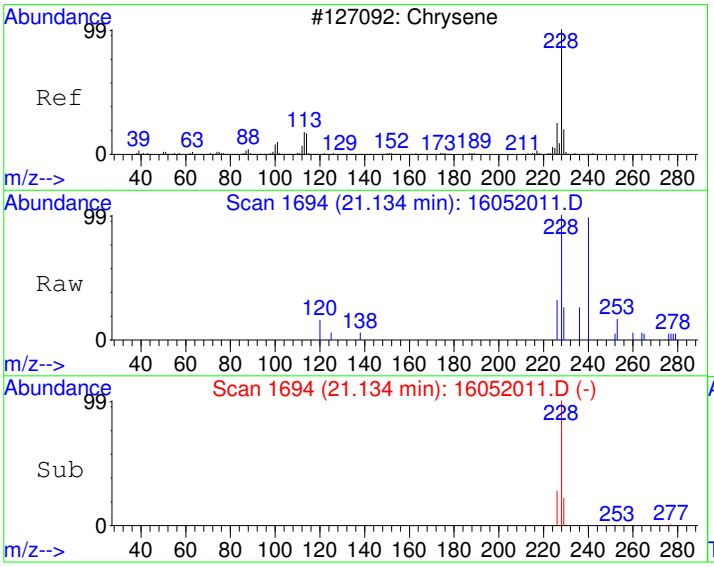


#18
Benzo[a]anthracene
Concen: 5.18 ug/kg
RT: 20.88 min Scan# 1658
Delta R.T. -0.04 min
Lab File: 16052011.D
Acq: 20 May 2016 2:59 pm

Tgt Ion:228 Resp: 1886

Ion	Ratio	Lower	Upper
228	100		
229	19.4	0.0	50.1
226	24.5	0.0	55.2

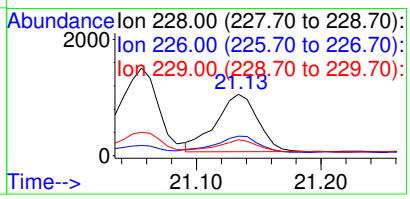


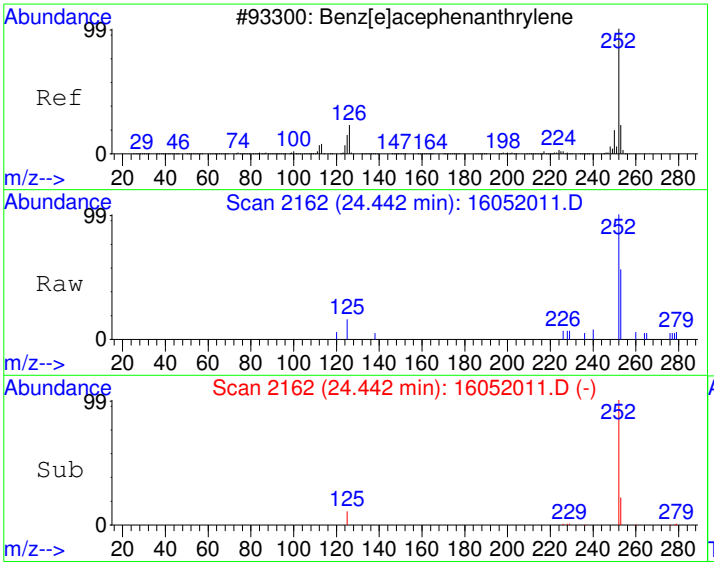


#19
Chrysene
Concen: 6.55 ug/kg
RT: 21.13 min Scan# 1694
Delta R.T. -0.04 min
Lab File: 16052011.D
Acq: 20 May 2016 2:59 pm

Tgt Ion:228 Resp: 2302

Ion	Ratio	Lower	Upper
228	100		
226	27.5	0.0	58.1
229	20.9	0.0	50.1

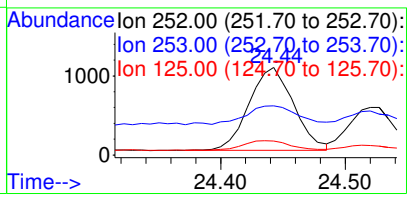


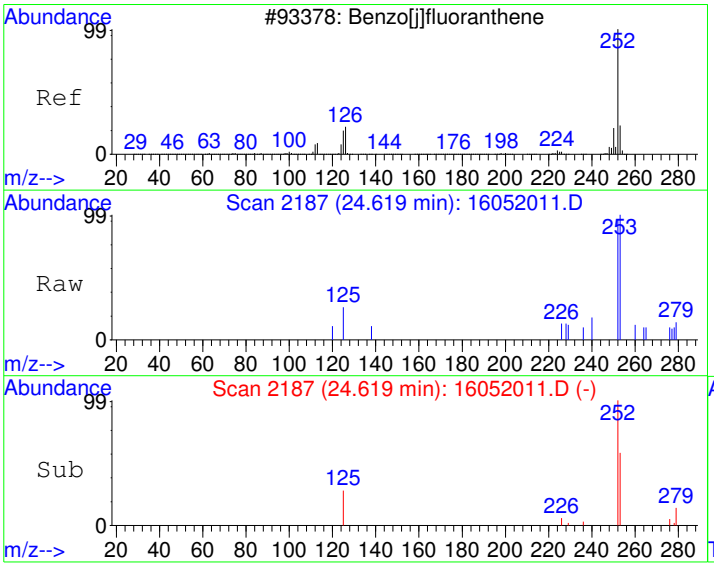


#21
Benzo[b]fluoranthene
Concen: 6.95 ug/kg
RT: 24.44 min Scan# 2162
Delta R.T. -0.04 min
Lab File: 16052011.D
Acq: 20 May 2016 2:59 pm

Tgt Ion:252 Resp: 2610

Ion	Ratio	Lower	Upper
252	100		
253	22.7	0.0	52.2
125	11.4	0.0	41.0

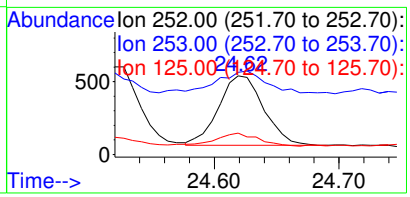


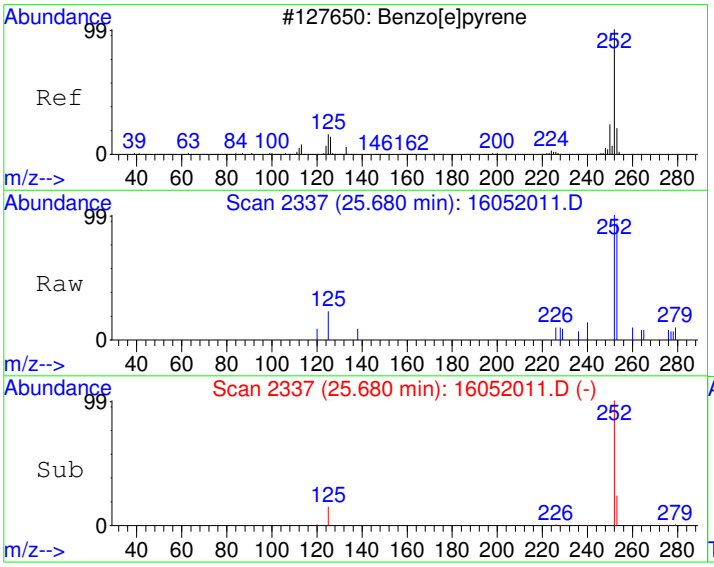


#23
Benzo(j)fluoranthene
Concen: 3.82 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052011.D
Acq: 20 May 2016 2:59 pm

Tgt Ion:252 Resp: 1198

Ion	Ratio	Lower	Upper
252	100		
253	29.1	2.1	42.1
125	18.2	0.0	34.4

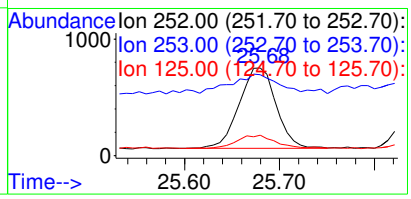


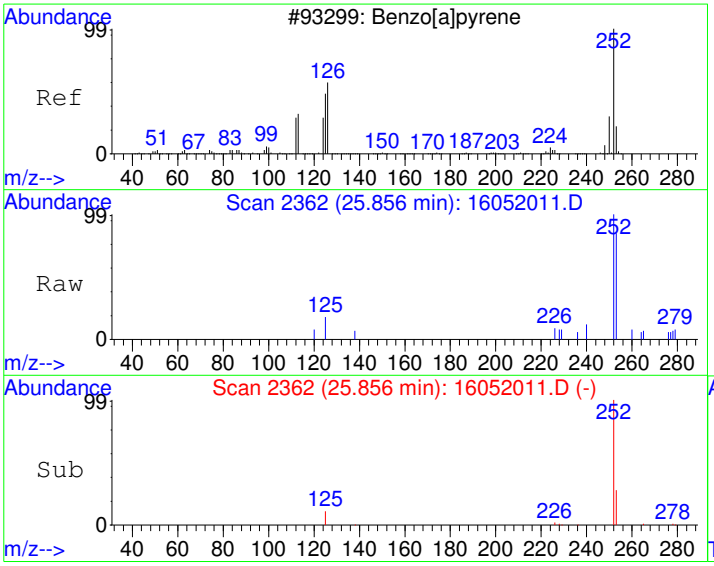


#24
Benzo[e]pyrene
Concen: 5.51 ug/kg
RT: 25.68 min Scan# 2337
Delta R.T. -0.04 min
Lab File: 16052011.D
Acq: 20 May 2016 2:59 pm

Tgt Ion:252 Resp: 1854

Ion	Ratio	Lower	Upper
252	100		
253	23.8	2.2	42.2
125	16.4	0.0	36.1

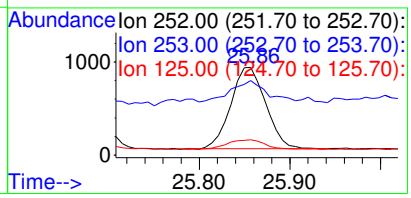


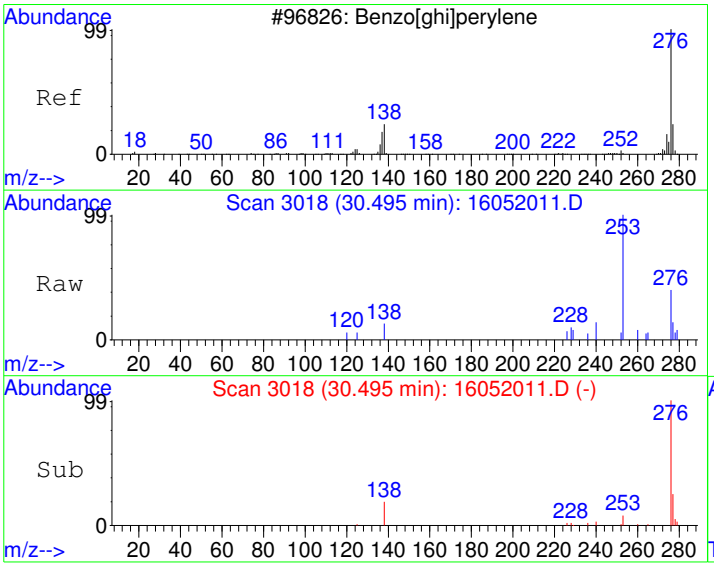


#25
Benzo[a]pyrene
Concen: 6.80 ug/kg
RT: 25.86 min Scan# 2362
Delta R.T. -0.04 min
Lab File: 16052011.D
Acq: 20 May 2016 2:59 pm

Tgt Ion:252 Resp: 2336

Ion	Ratio	Lower	Upper
252	100		
253	26.9	1.9	41.9
125	12.1	0.0	31.7

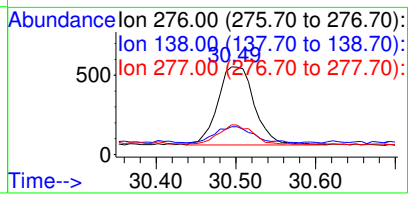




#28
Benzo[g,h,i]perylene
Concen: 5.41 ug/kg
RT: 30.49 min Scan# 3018
Delta R.T. -0.06 min
Lab File: 16052011.D
Acq: 20 May 2016 2:59 pm

Tgt Ion:276 Resp: 1575

Ion	Ratio	Lower	Upper
276	100		
138	20.5	0.0	39.1
277	25.0	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052012.D Vial: 12
Acq On : 20 May 2016 3:39 pm Operator:
Sample : 1605097-34A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:18 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

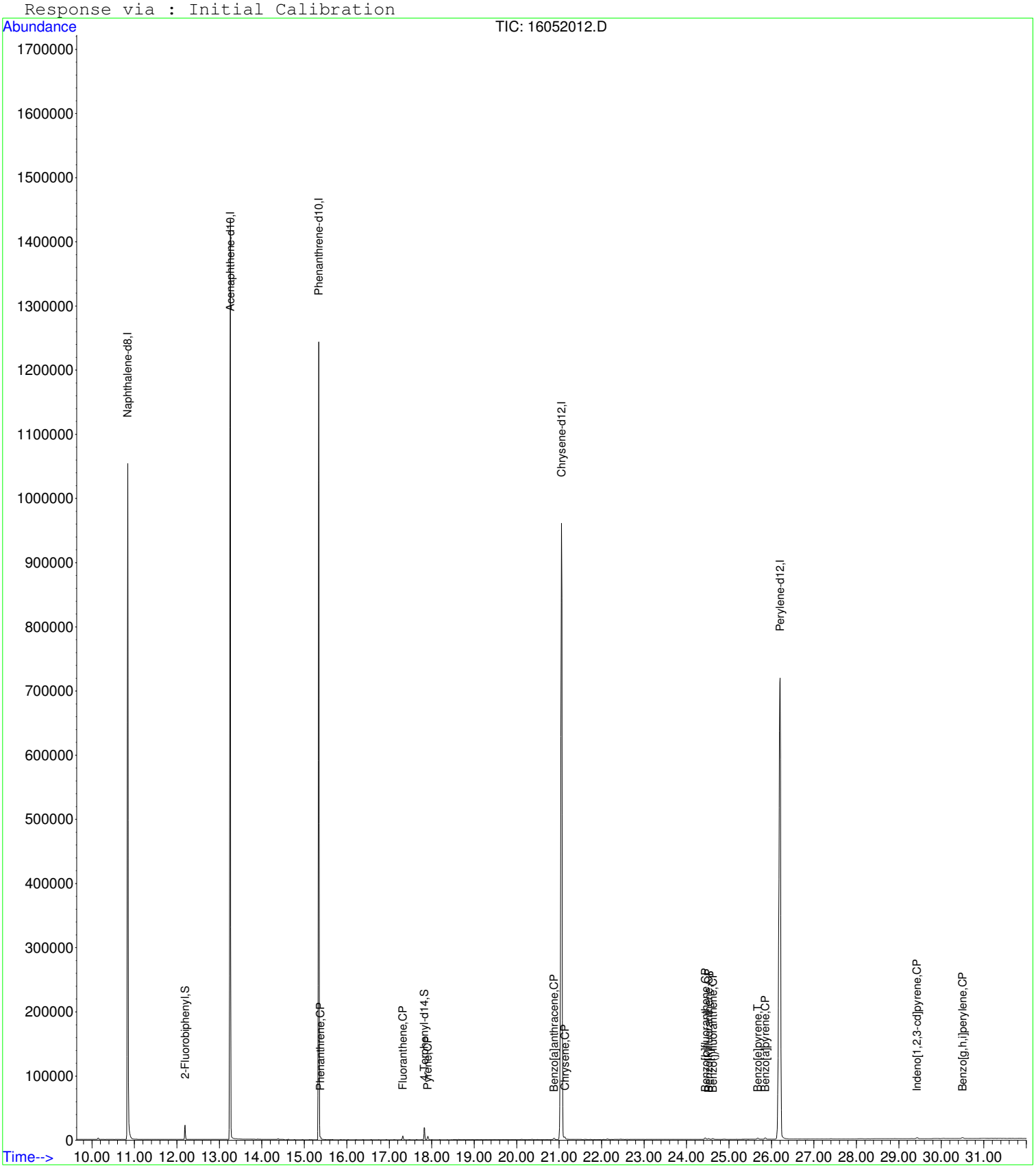
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1282037	4000.00	ug/kg	111
5) Acenaphthene-d10	13.26	164	790695	4000.00	ug/kg	69
11) Phenanthrene-d10	15.34	188	1323502	4000.00	ug/kg	65
17) Chrysene-d12	21.06	240	1541201	4000.00	ug/kg	68
20) Perylene-d12	26.20	264	1422030	4000.00	ug/kg	69
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18825	81.62	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.04%#		
16) 4-Terphenyl-d14	17.83	244	24198	70.67	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.77%#		
Target Compounds						Qvalue
12) Phenanthrene	15.38	178	1993	5.73	ug/kg	99
14) Fluoranthene	17.32	202	6101	16.94	ug/kg	99
15) Pyrene	17.91	202	5904	15.78	ug/kg	98
18) Benzo[a]anthracene	20.88	228	3272	9.06	ug/kg	99
19) Chrysene	21.13	228	4254	12.19	ug/kg	99
21) Benzo[b]fluoranthene	24.44	252	4365	11.65	ug/kg	96
22) Benzo[k]fluoranthene	24.52	252	2181	6.20	ug/kg	100
23) Benzo(j)fluoranthene	24.62	252	2049	6.54	ug/kg	93
24) Benzo[e]pyrene	25.68	252	3145	9.37	ug/kg	96
25) Benzo[a]pyrene	25.85	252	4008	11.69	ug/kg	96
27) Indeno[1,2,3-cd]pyrene	29.43	276	2681	7.19	ug/kg	86
28) Benzo[g,h,i]perylene	30.50	276	2630	9.05	ug/kg	95

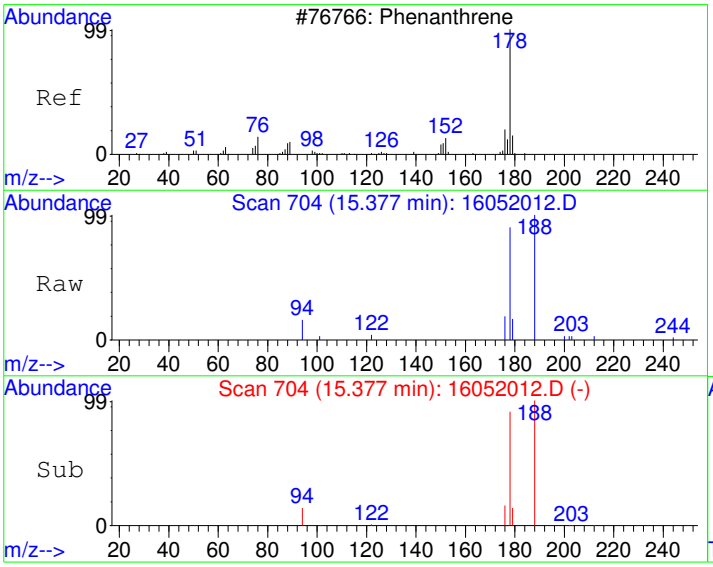
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052012.D Vial: 12
Acq On : 20 May 2016 3:39 pm Operator:
Sample : 1605097-34A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:18 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

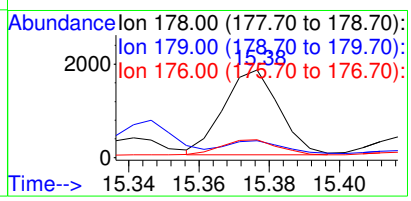


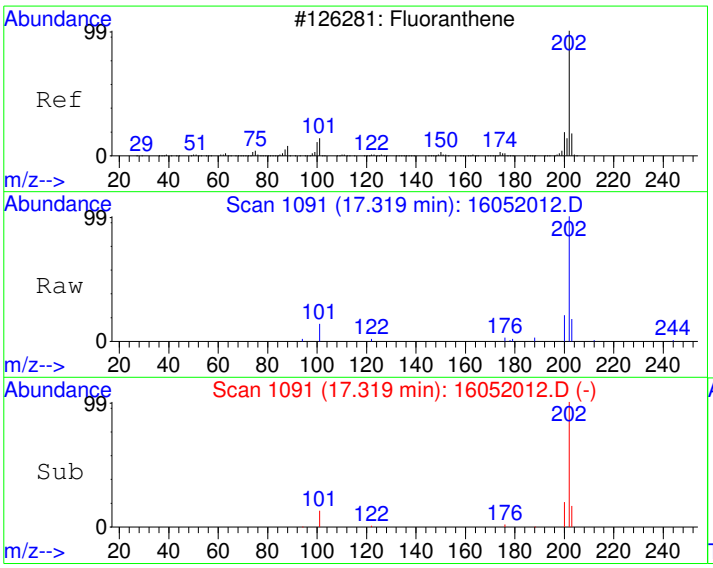


#12
Phenanthrene
Concen: 5.73 ug/kg
RT: 15.38 min Scan# 704
Delta R.T. -0.02 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:178 Resp: 1993

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	45.9
176	18.2	0.0	48.5

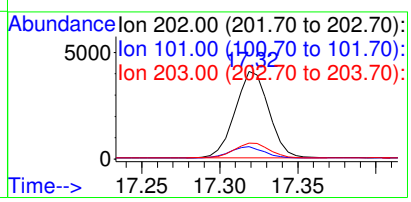


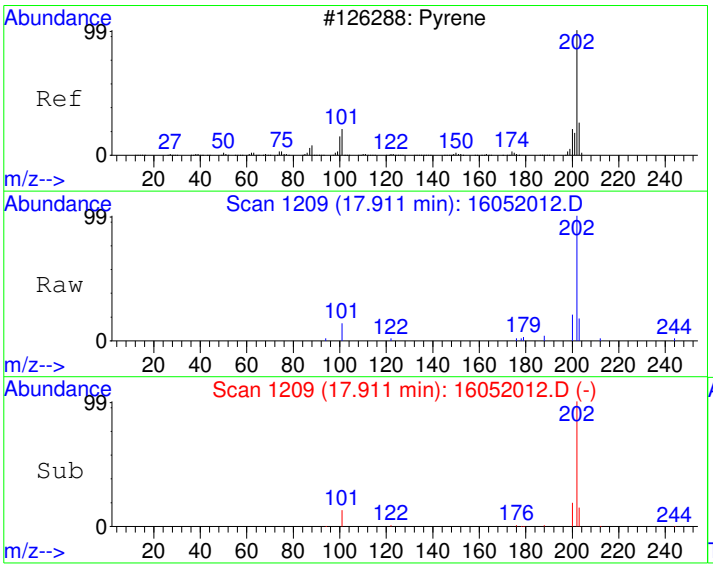


#14
Fluoranthene
Concen: 16.94 ug/kg
RT: 17.32 min Scan# 1091
Delta R.T. -0.02 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:202 Resp: 6101

Ion	Ratio	Lower	Upper
202	100		
101	13.1	0.0	43.0
203	17.0	0.0	47.9

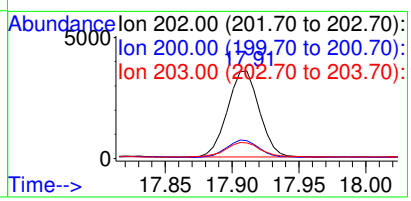


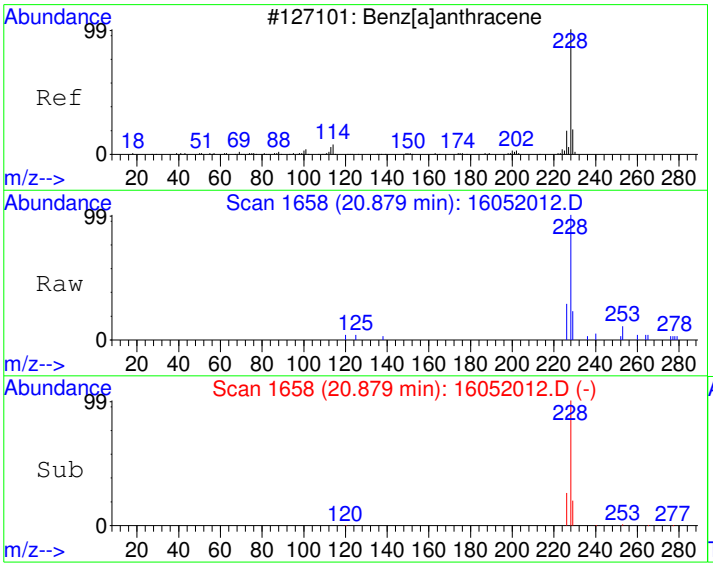


#15
Pyrene
Concen: 15.78 ug/kg
RT: 17.91 min Scan# 1209
Delta R.T. -0.02 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:202 Resp: 5904

Ion	Ratio	Lower	Upper
202	100		
200	19.2	0.0	50.0
203	16.5	0.0	48.0

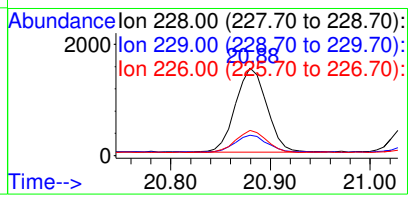


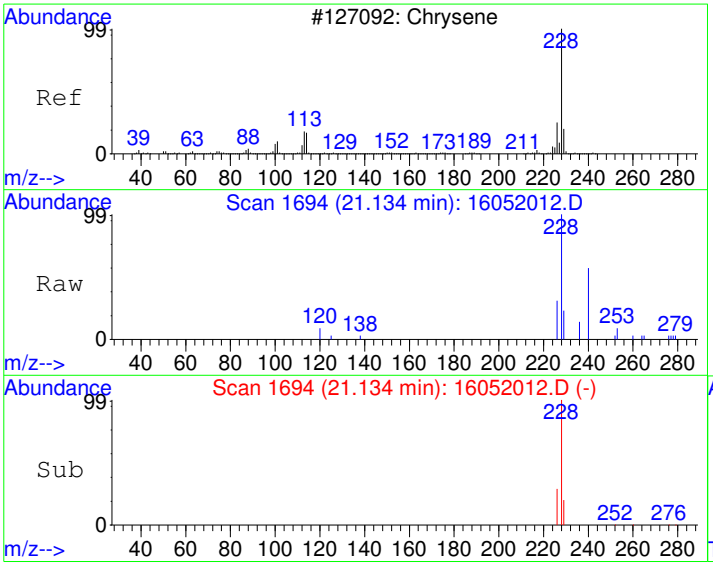


#18
Benzo[a]anthracene
Concen: 9.06 ug/kg
RT: 20.88 min Scan# 1658
Delta R.T. -0.04 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:228 Resp: 3272

Ion	Ratio	Lower	Upper
228	100		
229	20.0	0.0	50.1
226	26.2	0.0	55.2

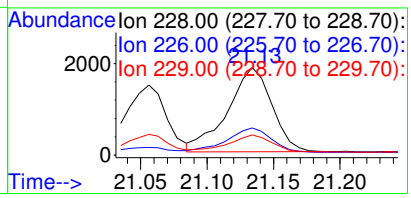


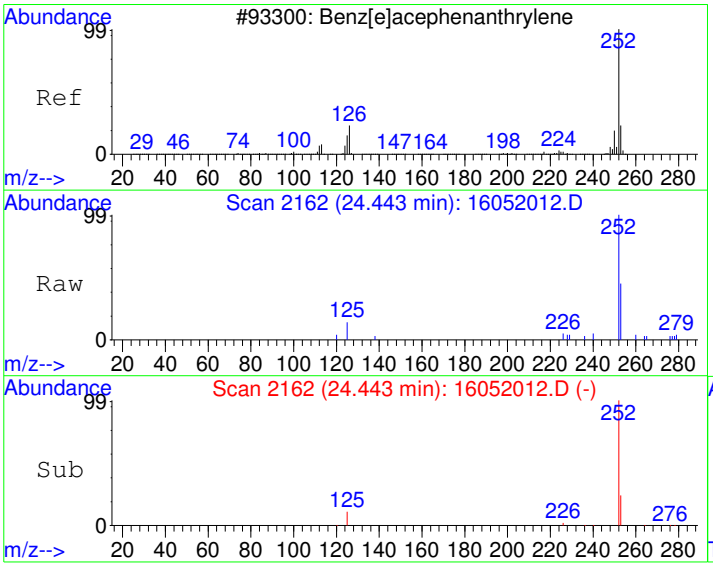


#19
Chrysene
Concen: 12.19 ug/kg
RT: 21.13 min Scan# 1694
Delta R.T. -0.04 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:228 Resp: 4254

Ion	Ratio	Lower	Upper
228	100		
226	28.7	0.0	58.1
229	20.3	0.0	50.1

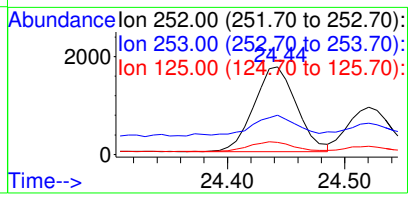


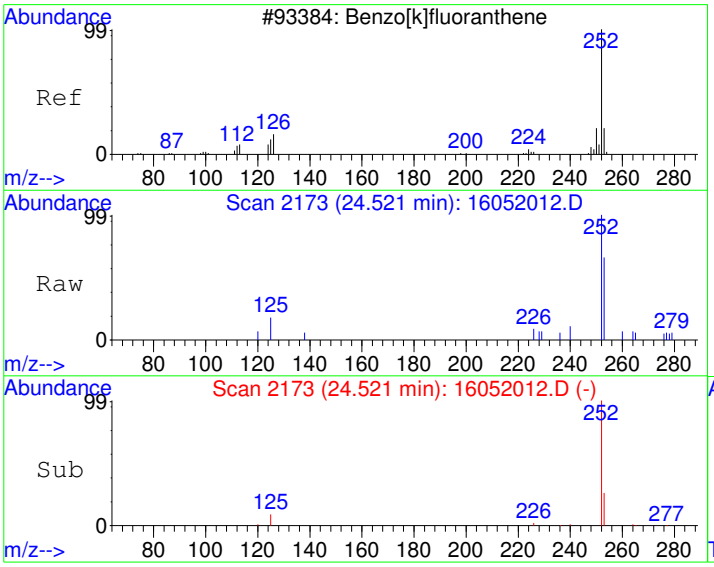


#21
Benzo[b]fluoranthene
Concen: 11.65 ug/kg
RT: 24.44 min Scan# 2162
Delta R.T. -0.04 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:252 Resp: 4365

Ion	Ratio	Lower	Upper
252	100		
253	24.8	0.0	52.2
125	10.9	0.0	41.0

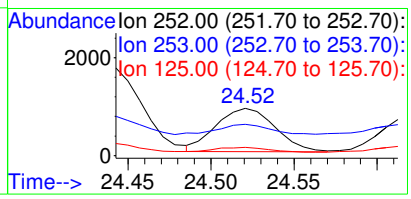


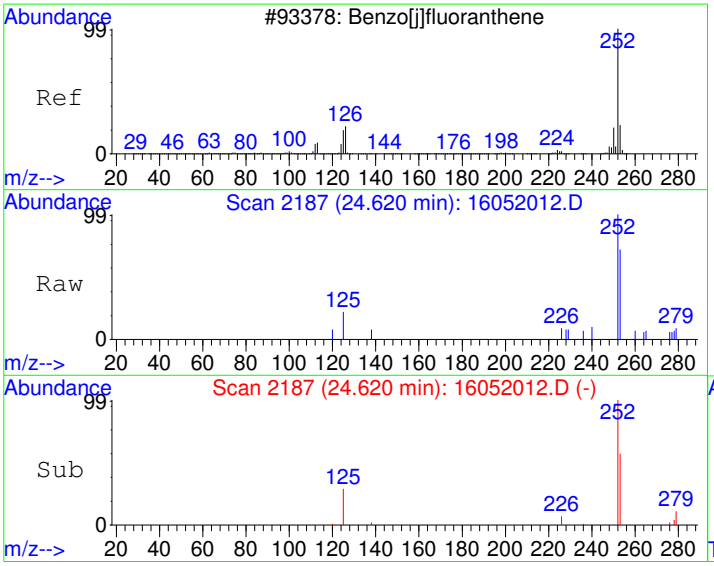


#22
Benzo[k]fluoranthene
Concen: 6.20 ug/kg
RT: 24.52 min Scan# 2173
Delta R.T. -0.05 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:252 Resp: 2181

Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.1	42.1
125	11.6	0.0	31.3

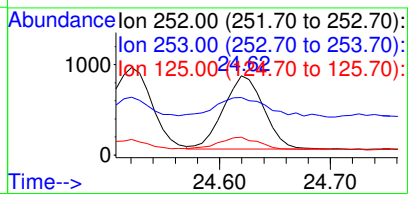


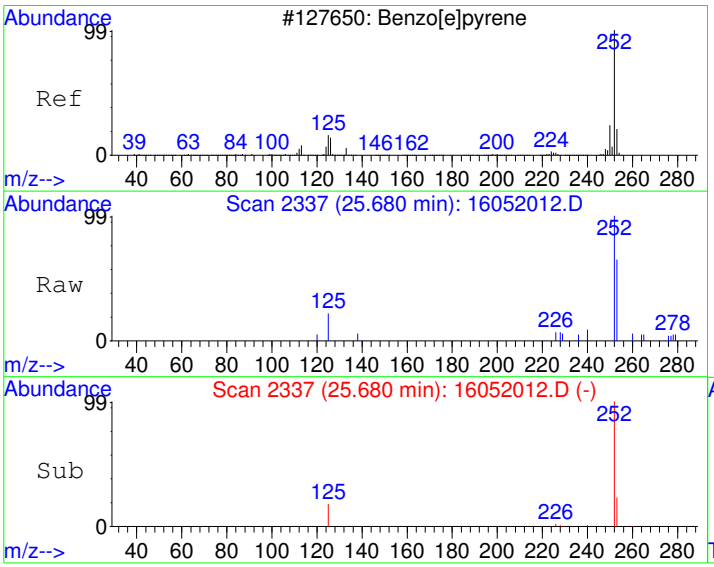


#23
Benzo(j)fluoranthene
Concen: 6.54 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:252 Resp: 2049

Ion	Ratio	Lower	Upper
252	100		
253	26.6	2.1	42.1
125	16.0	0.0	34.4

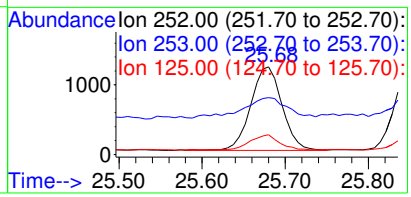


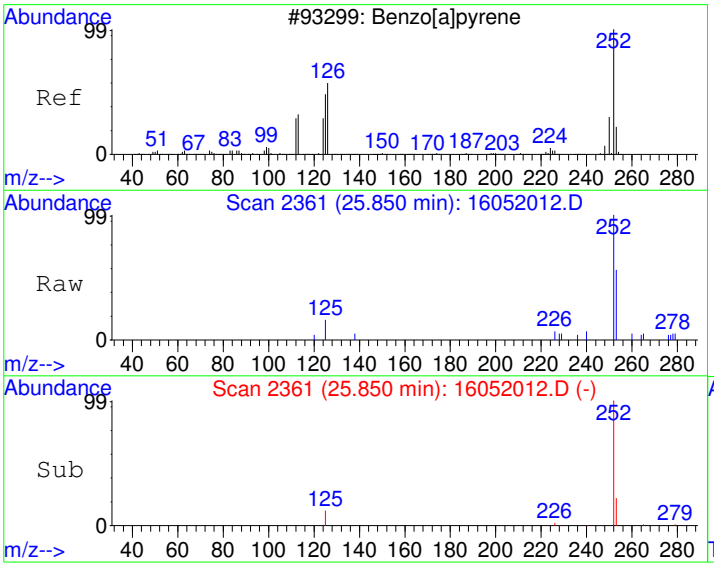


#24
Benzo[e]pyrene
Concen: 9.37 ug/kg
RT: 25.68 min Scan# 2337
Delta R.T. -0.04 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:252 Resp: 3145

Ion	Ratio	Lower	Upper
252	100		
253	24.3	2.2	42.2
125	17.9	0.0	36.1

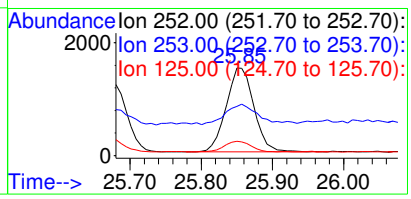


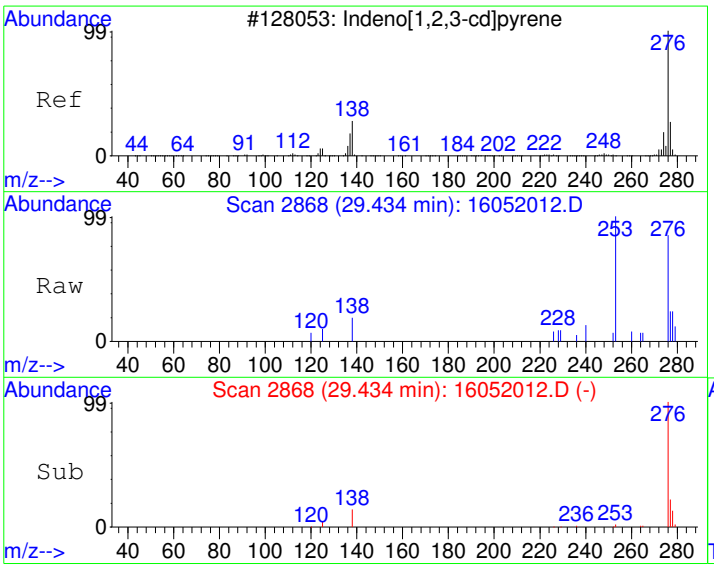


#25
Benzo[a]pyrene
Concen: 11.69 ug/kg
RT: 25.85 min Scan# 2361
Delta R.T. -0.05 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:252 Resp: 4008

Ion	Ratio	Lower	Upper
252	100		
253	19.7	1.9	41.9
125	12.7	0.0	31.7

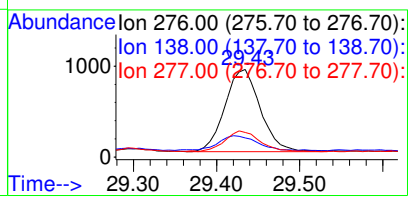


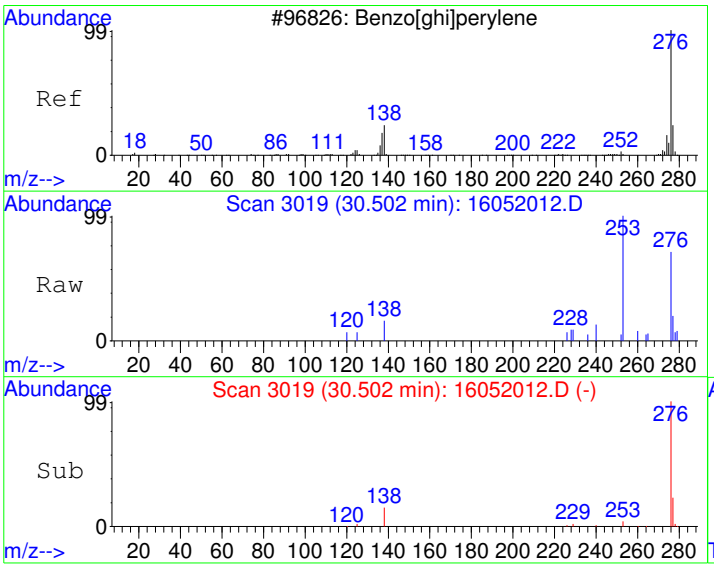


#27
Indeno[1,2,3-cd]pyrene
Concen: 7.19 ug/kg
RT: 29.43 min Scan# 2868
Delta R.T. -0.04 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:276 Resp: 2681

Ion	Ratio	Lower	Upper
276	100		
138	15.6	6.7	46.7
277	23.1	5.8	45.8

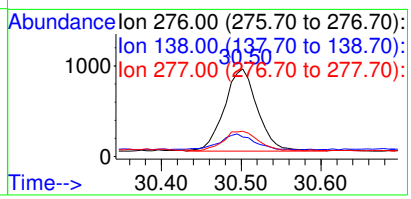




#28
Benzo[g,h,i]perylene
Concen: 9.05 ug/kg
RT: 30.50 min Scan# 3019
Delta R.T. -0.05 min
Lab File: 16052012.D
Acq: 20 May 2016 3:39 pm

Tgt Ion:276 Resp: 2630

Ion	Ratio	Lower	Upper
276	100		
138	15.2	0.0	39.1
277	23.3	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052013.D Vial: 13
Acq On : 20 May 2016 4:18 pm Operator:
Sample : 1605097-35A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:18 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

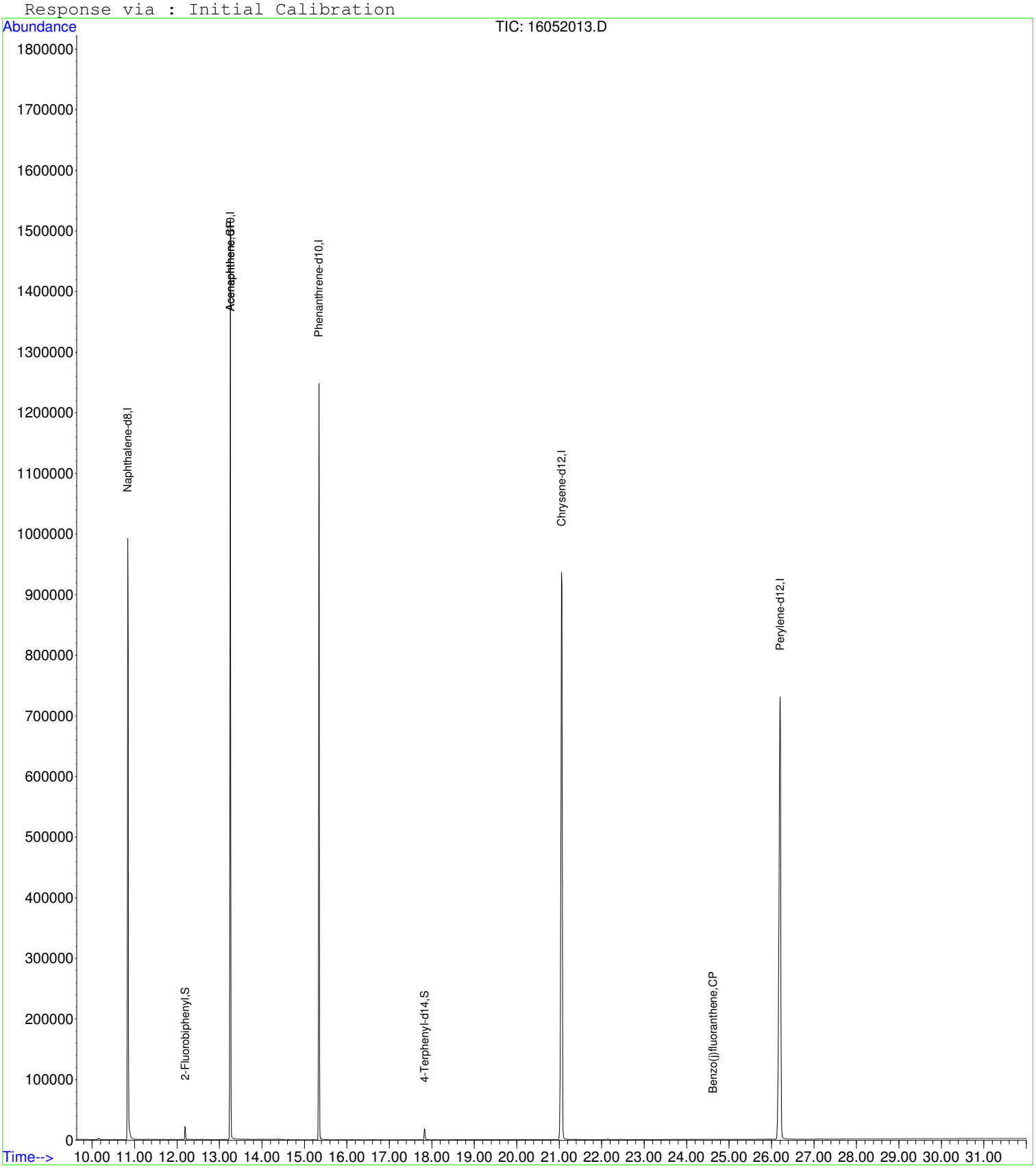
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1271210	4000.00	ug/kg	110
5) Acenaphthene-d10	13.25	164	782790	4000.00	ug/kg	68
11) Phenanthrene-d10	15.34	188	1311775	4000.00	ug/kg	64
17) Chrysene-d12	21.06	240	1556670	4000.00	ug/kg	69
20) Perylene-d12	26.20	264	1449206	4000.00	ug/kg	70
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18148	79.48	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.99%#		
16) 4-Terphenyl-d14	17.83	244	24224	71.38	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.78%#		
Target Compounds						Qvalue
9) Acenaphthene	13.25	154	2392	11.43	ug/kg#	9
23) Benzo(j)fluoranthene	24.62	252	260	0.81	ug/kg#	63

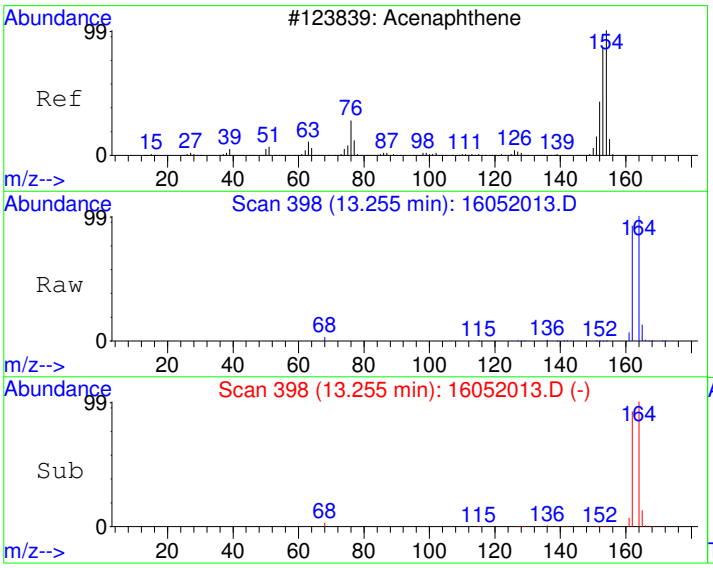
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052013.D Vial: 13
Acq On : 20 May 2016 4:18 pm Operator:
Sample : 1605097-35A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:18 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

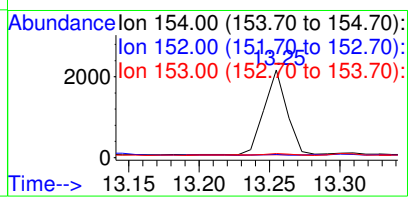


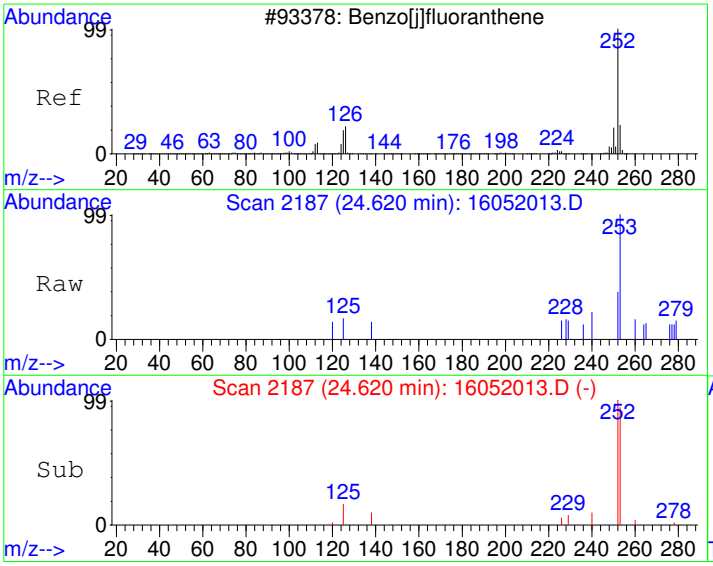


#9
Acenaphthene
Concen: 11.43 ug/kg
RT: 13.25 min Scan# 398
Delta R.T. -0.07 min
Lab File: 16052013.D
Acq: 20 May 2016 4:18 pm

Tgt Ion:154 Resp: 2392

Ion	Ratio	Lower	Upper
154	100		
152	0.7	18.9	78.9#
153	2.0	75.2	135.2#

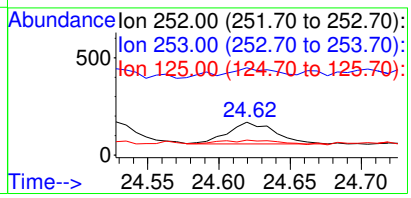




#23
Benzo(j)fluoranthene
Concen: 0.81 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052013.D
Acq: 20 May 2016 4:18 pm

Tgt Ion:252 Resp: 260

Ion	Ratio	Lower	Upper
252	100		
253	45.5	2.1	42.1#
125	22.3	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052014.D Vial: 14
Acq On : 20 May 2016 4:58 pm Operator:
Sample : 1605097-36A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:19 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

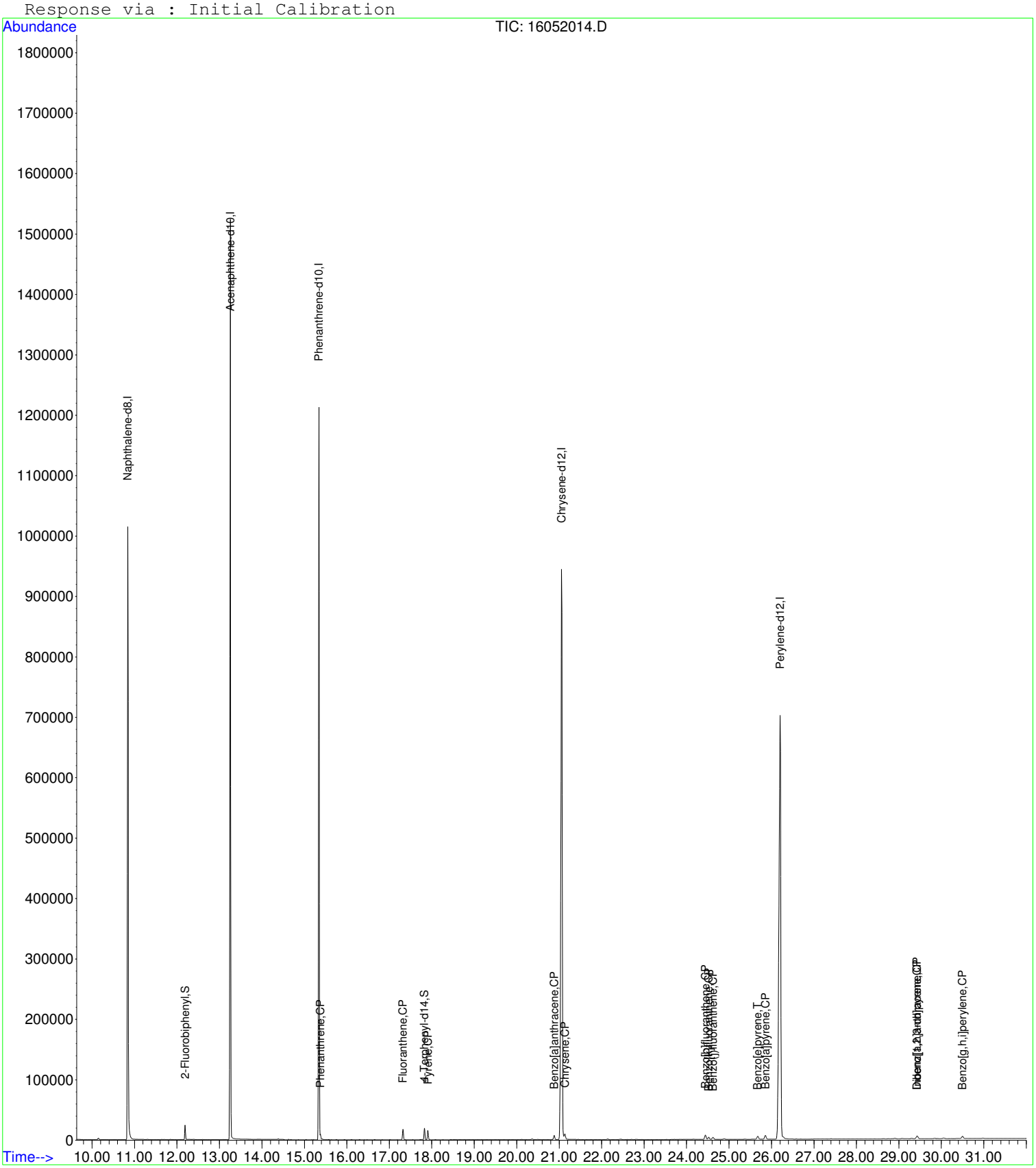
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1273228	4000.00	ug/kg	110
5) Acenaphthene-d10	13.26	164	769166	4000.00	ug/kg	67
11) Phenanthrene-d10	15.34	188	1292542	4000.00	ug/kg	63
17) Chrysene-d12	21.06	240	1547160	4000.00	ug/kg	68
20) Perylene-d12	26.20	264	1426834	4000.00	ug/kg	69
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18692	83.31	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.08%#		
16) 4-Terphenyl-d14	17.83	244	24231	72.46	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.81%#		
Target Compounds						Qvalue
12) Phenanthrene	15.38	178	6192	18.22	ug/kg	99
14) Fluoranthene	17.32	202	17899	50.88	ug/kg	99
15) Pyrene	17.91	202	16747	45.83	ug/kg	99
18) Benzo[a]anthracene	20.88	228	10000	27.59	ug/kg	100
19) Chrysene	21.13	228	12588	35.94	ug/kg	99
21) Benzo[b]fluoranthene	24.44	252	13044	34.69	ug/kg	99
22) Benzo[k]fluoranthene	24.52	252	6239	17.69	ug/kg	99
23) Benzo(j)fluoranthene	24.63	252	5934	18.88	ug/kg	93
24) Benzo[e]pyrene	25.67	252	9547	28.35	ug/kg	99
25) Benzo[a]pyrene	25.86	252	12130	35.25	ug/kg	97
26) Dibenz[a,h]anthracene	29.42	278	1879	5.99	ug/kg	93
27) Indeno[1,2,3-cd]pyrene	29.43	276	8128	21.74	ug/kg	92
28) Benzo[g,h,i]perylene	30.50	276	7689	26.37	ug/kg	97

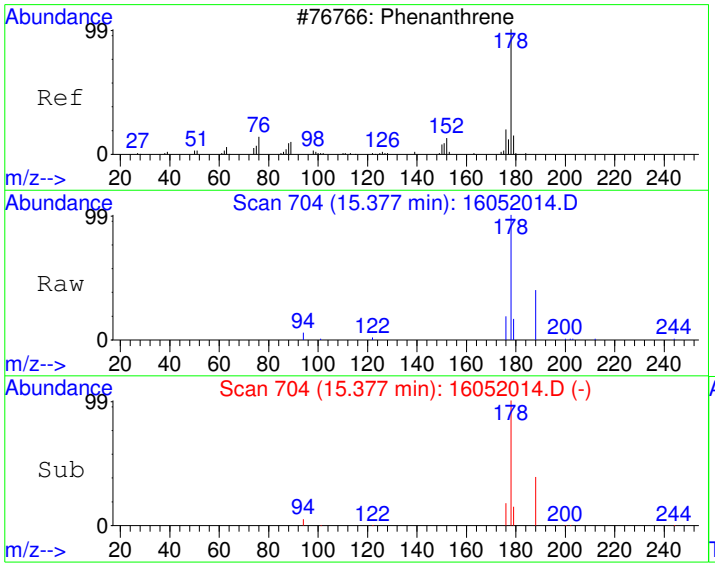
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052014.D Vial: 14
Acq On : 20 May 2016 4:58 pm Operator:
Sample : 1605097-36A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:19 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

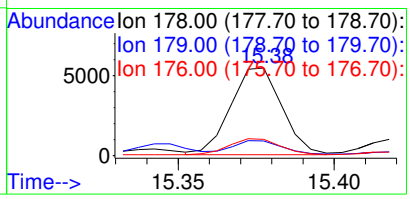


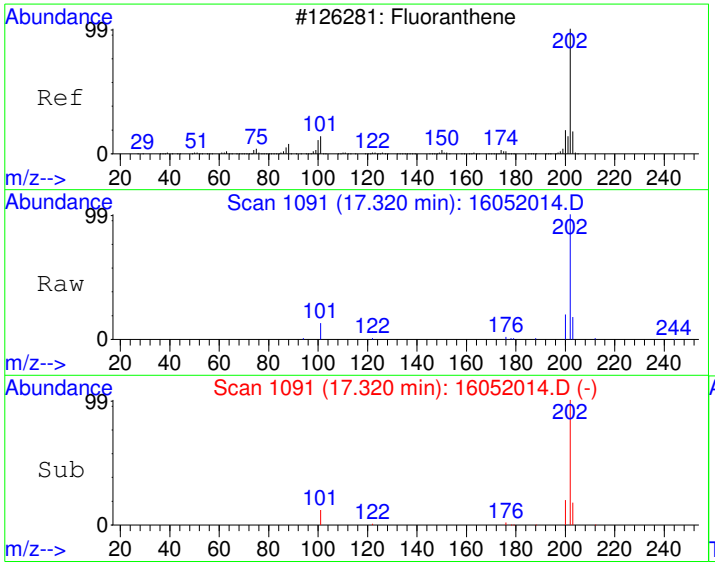


#12
Phenanthrene
Concen: 18.22 ug/kg
RT: 15.38 min Scan# 704
Delta R.T. -0.02 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:178 Resp: 6192

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	45.9
176	17.8	0.0	48.5

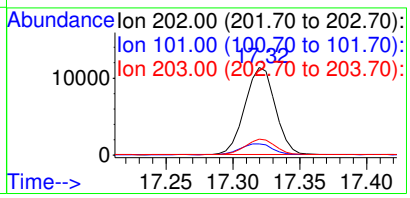


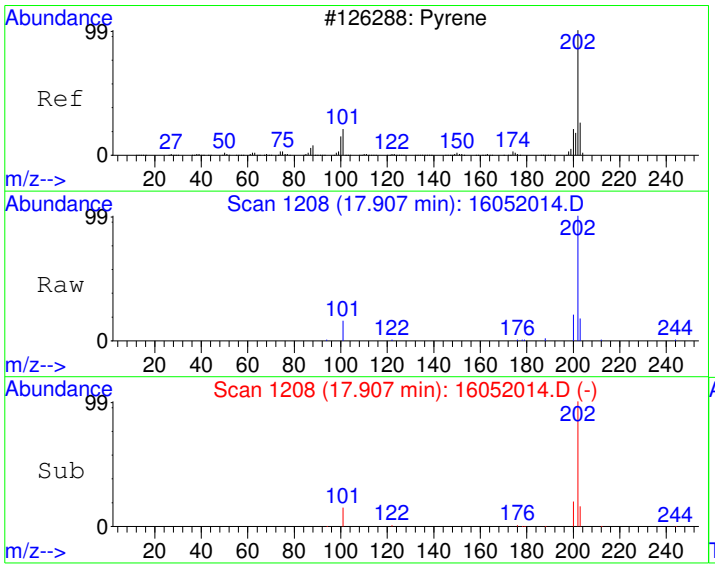


#14
Fluoranthene
Concen: 50.88 ug/kg
RT: 17.32 min Scan# 1091
Delta R.T. -0.02 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:202 Resp: 17899

Ion	Ratio	Lower	Upper
202	100		
101	12.3	0.0	43.0
203	17.8	0.0	47.9

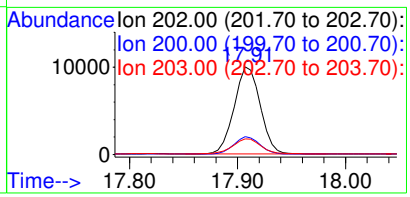


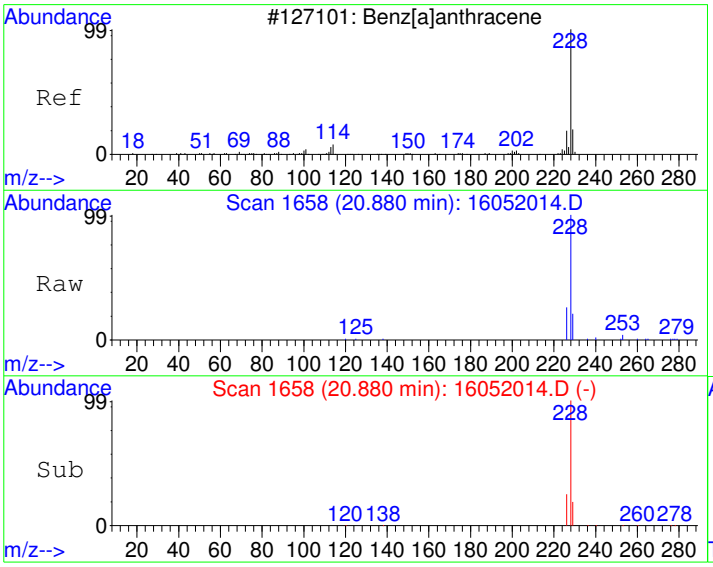


#15
Pyrene
Concen: 45.83 ug/kg
RT: 17.91 min Scan# 1208
Delta R.T. -0.03 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:202 Resp: 16747

Ion	Ratio	Lower	Upper
202	100		
200	20.2	0.0	50.0
203	17.5	0.0	48.0

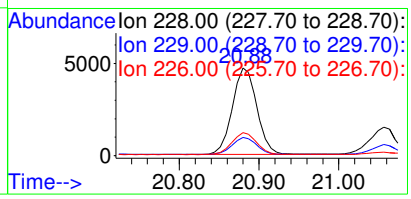


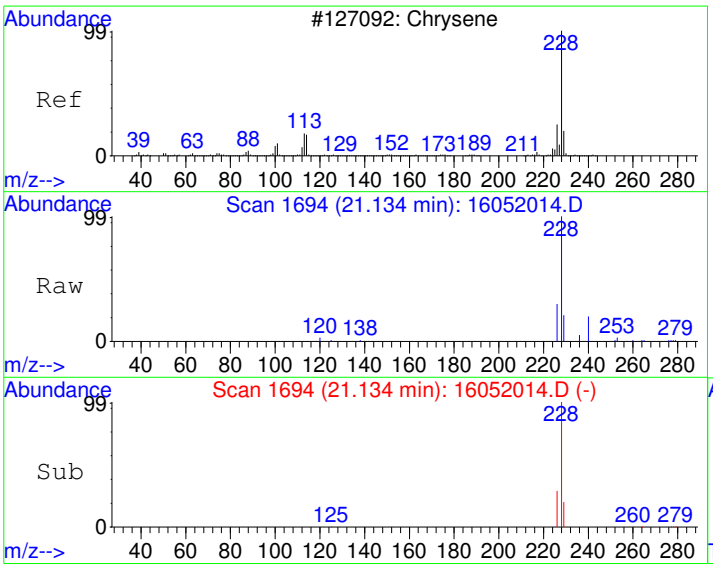


#18
Benzo[a]anthracene
Concen: 27.59 ug/kg
RT: 20.88 min Scan# 1658
Delta R.T. -0.04 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:228 Resp: 10000

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.0	50.1
226	25.3	0.0	55.2

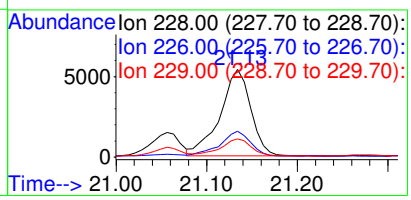


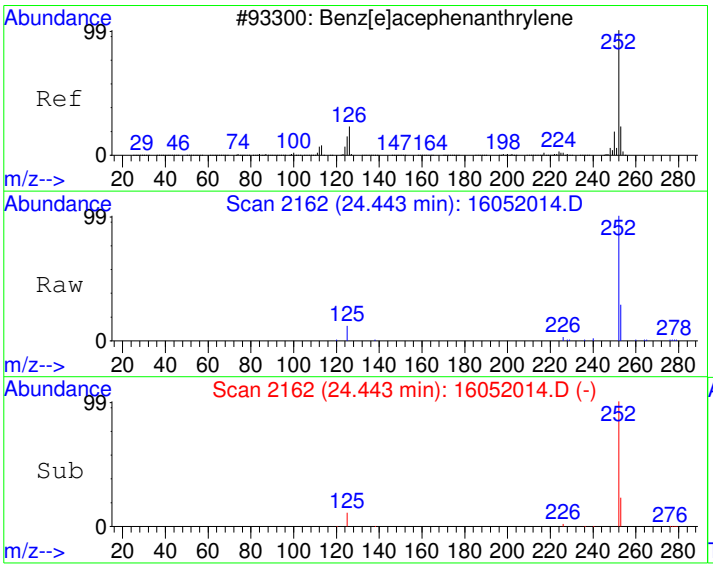


#19
Chrysene
Concen: 35.94 ug/kg
RT: 21.13 min Scan# 1694
Delta R.T. -0.04 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:228 Resp: 12588

Ion	Ratio	Lower	Upper
228	100		
226	28.9	0.0	58.1
229	20.0	0.0	50.1

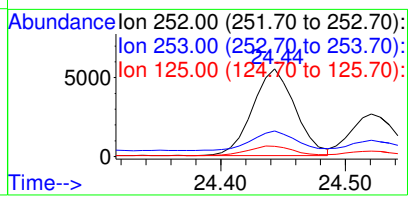


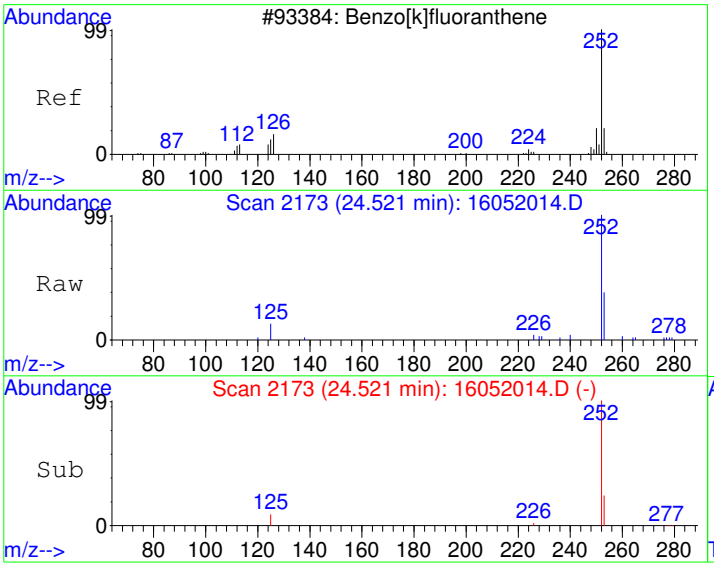


#21
Benzo[b]fluoranthene
Concen: 34.69 ug/kg
RT: 24.44 min Scan# 2162
Delta R.T. -0.04 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:252 Resp: 13044

Ion	Ratio	Lower	Upper
252	100		
253	22.4	0.0	52.2
125	10.6	0.0	41.0

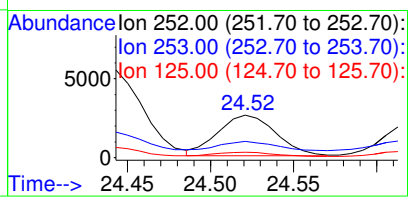


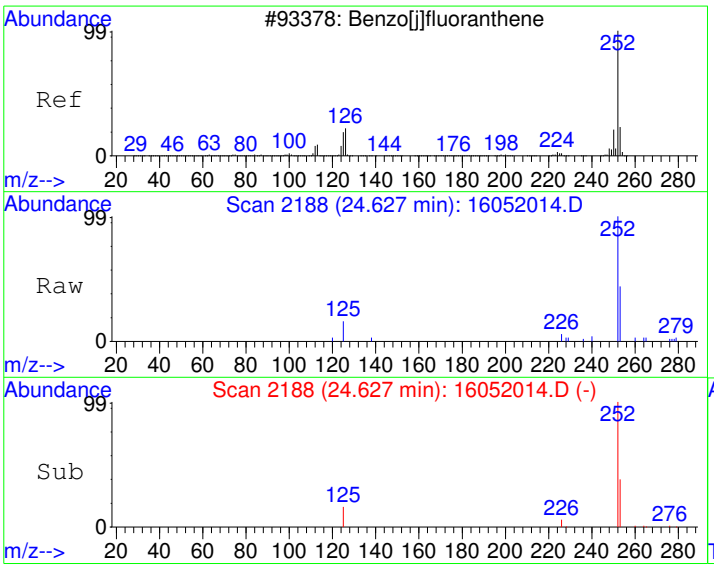


#22
Benzo[k]fluoranthene
Concen: 17.69 ug/kg
RT: 24.52 min Scan# 2173
Delta R.T. -0.05 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:252 Resp: 6239

Ion	Ratio	Lower	Upper
252	100		
253	22.6	2.1	42.1
125	10.4	0.0	31.3

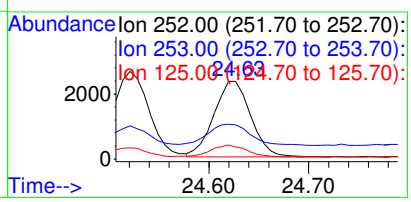


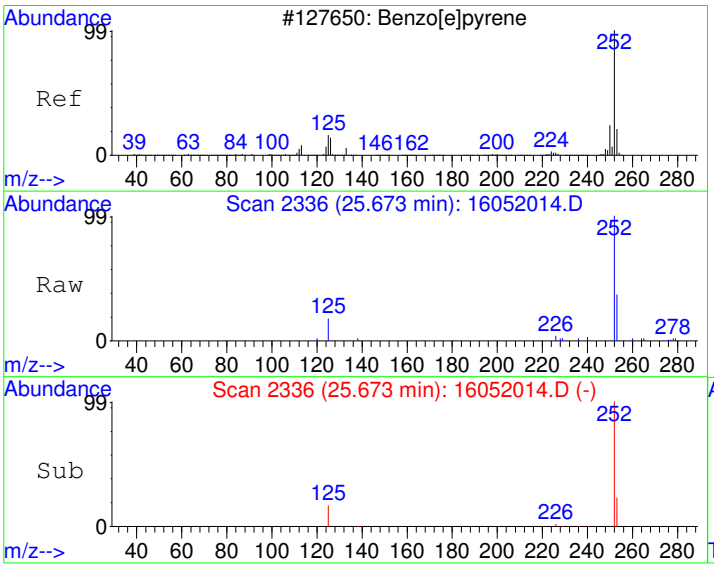


#23
Benzo(j)fluoranthene
Concen: 18.88 ug/kg
RT: 24.63 min Scan# 2188
Delta R.T. -0.04 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:252 Resp: 5934

Ion	Ratio	Lower	Upper
252	100		
253	26.7	2.1	42.1
125	13.6	0.0	34.4

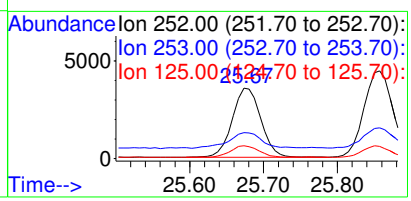


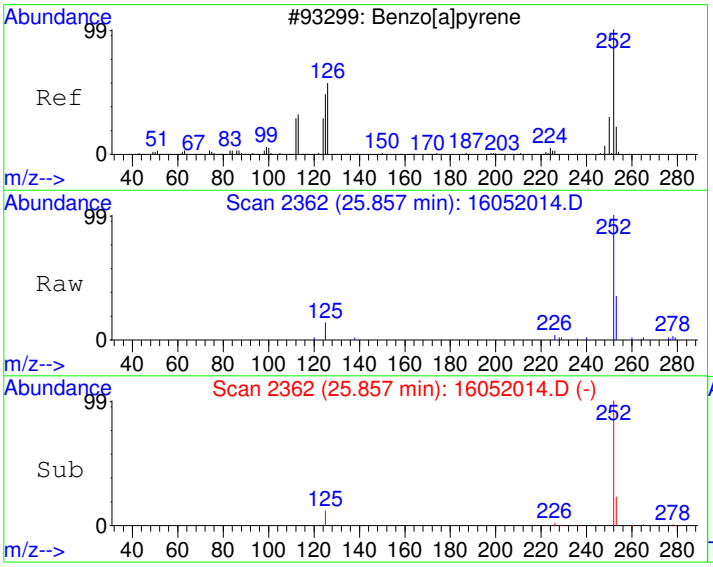


#24
Benzo[e]pyrene
Concen: 28.35 ug/kg
RT: 25.67 min Scan# 2336
Delta R.T. -0.05 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:252 Resp: 9547

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.2	42.2
125	16.7	0.0	36.1

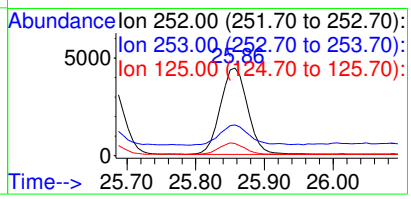


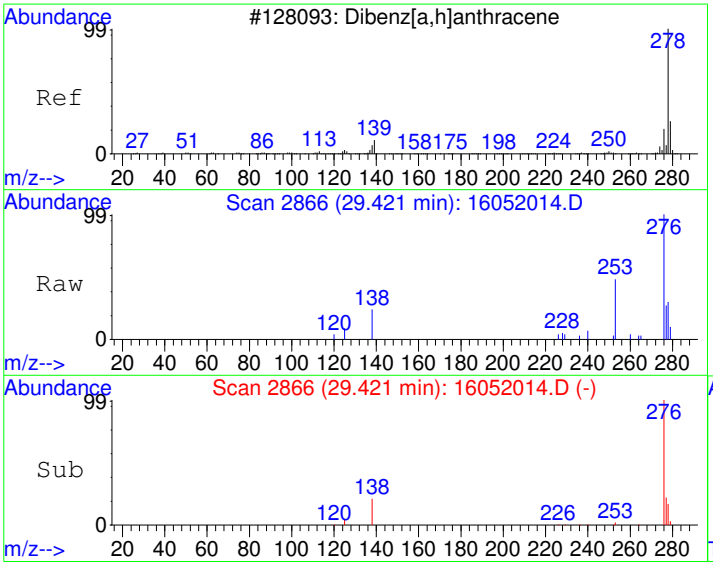


#25
Benzo[a]pyrene
Concen: 35.25 ug/kg
RT: 25.86 min Scan# 2362
Delta R.T. -0.04 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:252 Resp: 12130

Ion	Ratio	Lower	Upper
252	100		
253	23.4	1.9	41.9
125	12.4	0.0	31.7

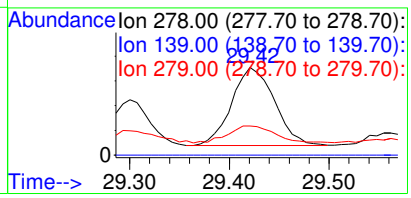


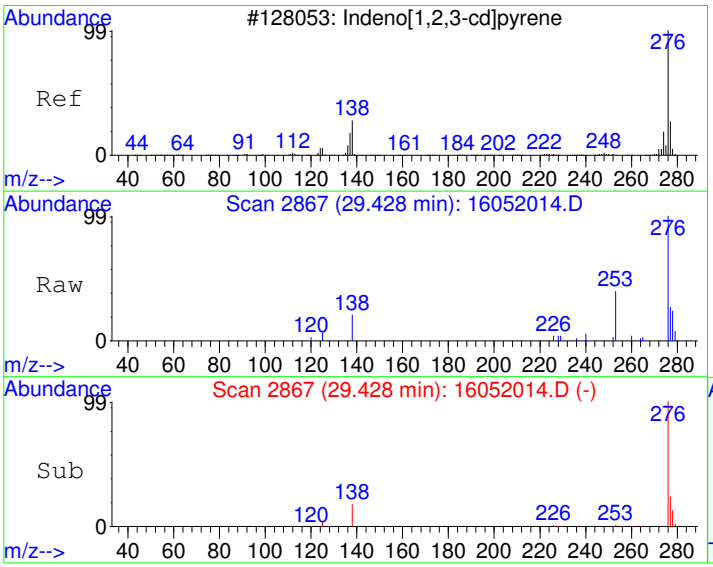


#26
Dibenz[a,h]anthracene
Concen: 5.99 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:278 Resp: 1879

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	20.8	4.2	44.2

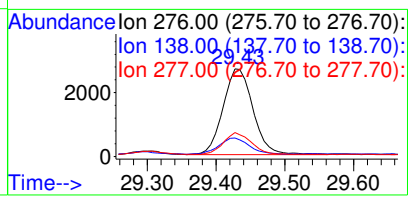


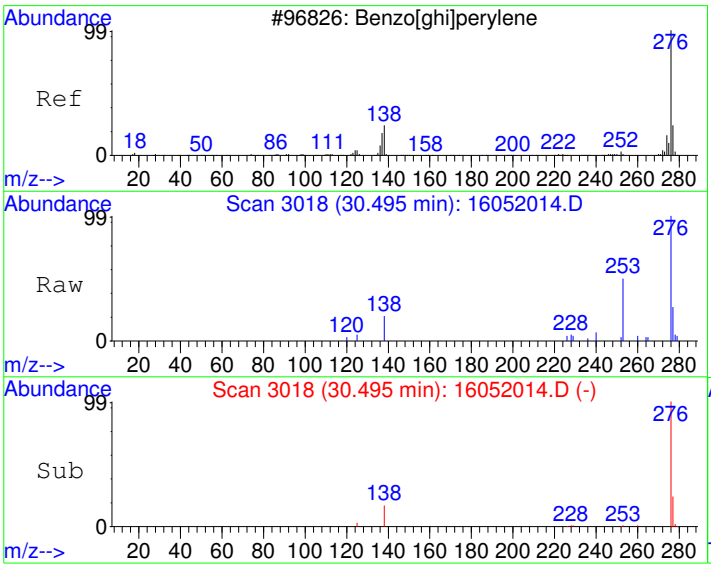


#27
Indeno[1,2,3-cd]pyrene
Concen: 21.74 ug/kg
RT: 29.43 min Scan# 2867
Delta R.T. -0.05 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:276 Resp: 8128

Ion	Ratio	Lower	Upper
276	100		
138	19.2	6.7	46.7
277	25.7	5.8	45.8

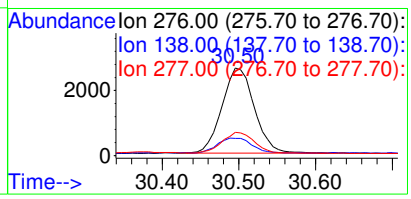




#28
Benzo[g,h,i]perylene
Concen: 26.37 ug/kg
RT: 30.50 min Scan# 3018
Delta R.T. -0.06 min
Lab File: 16052014.D
Acq: 20 May 2016 4:58 pm

Tgt Ion:276 Resp: 7689

Ion	Ratio	Lower	Upper
276	100		
138	17.1	0.0	39.1
277	24.6	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052015.D Vial: 15
Acq On : 20 May 2016 5:38 pm Operator:
Sample : 1605097-39A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:19 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

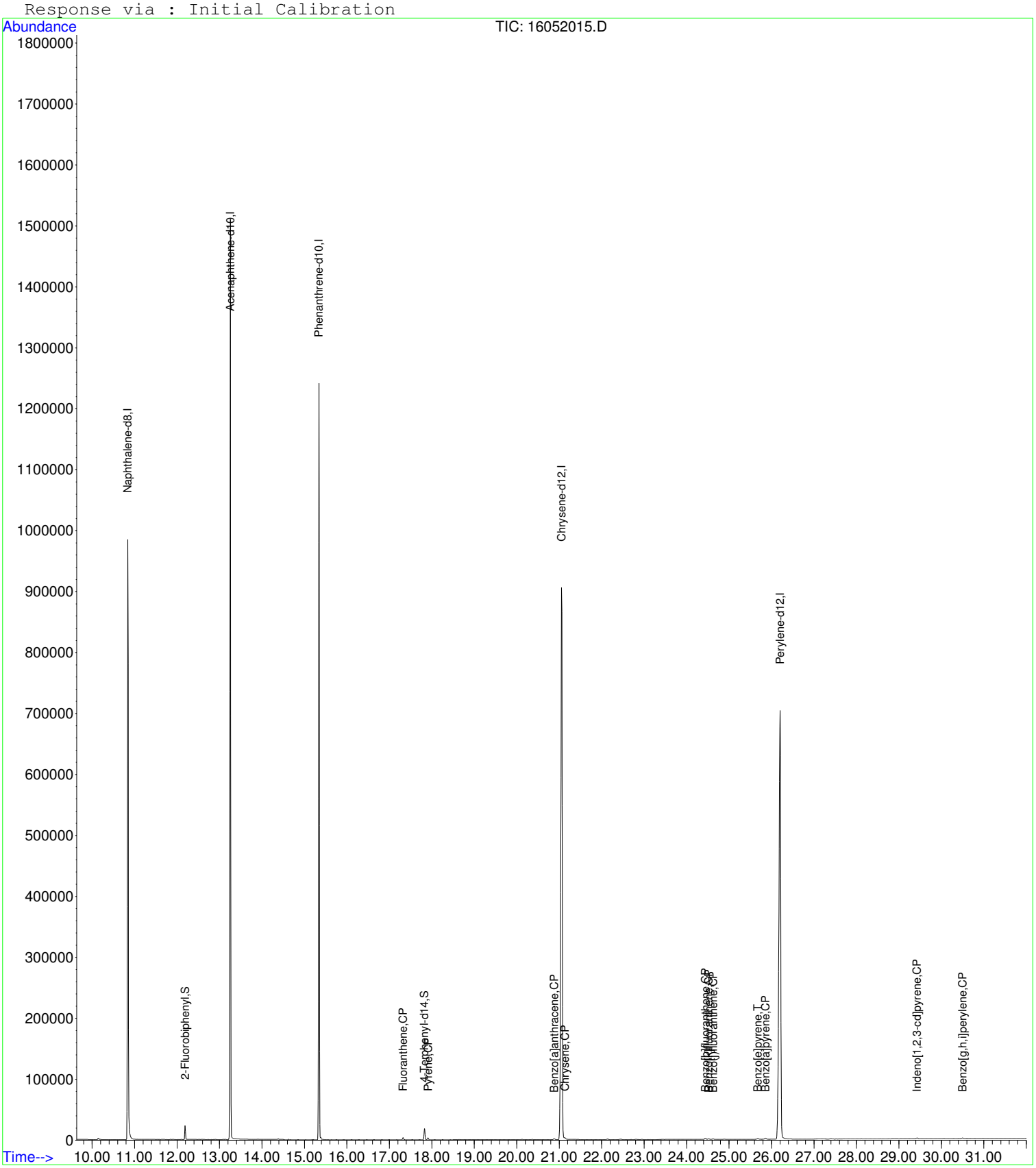
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1264708	4000.00	ug/kg	109
5) Acenaphthene-d10	13.25	164	778193	4000.00	ug/kg	68
11) Phenanthrene-d10	15.34	188	1309708	4000.00	ug/kg	64
17) Chrysene-d12	21.06	240	1528333	4000.00	ug/kg	67
20) Perylene-d12	26.20	264	1410459	4000.00	ug/kg	68
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18466	81.35	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.03%#		
16) 4-Terphenyl-d14	17.83	244	23872	70.45	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.76%#		
Target Compounds						Qvalue
14) Fluoranthene	17.32	202	3617	10.15	ug/kg	98
15) Pyrene	17.91	202	3623	9.79	ug/kg	97
18) Benzo[a]anthracene	20.88	228	2546	7.11	ug/kg	97
19) Chrysene	21.13	228	3060	8.85	ug/kg	99
21) Benzo[b]fluoranthene	24.44	252	3674	9.88	ug/kg	99
22) Benzo[k]fluoranthene	24.52	252	1763	5.06	ug/kg	95
23) Benzo(j)fluoranthene	24.63	252	1629	5.24	ug/kg	99
24) Benzo[e]pyrene	25.68	252	2680	8.05	ug/kg	97
25) Benzo[a]pyrene	25.86	252	3470	10.20	ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.43	276	2367	6.40	ug/kg	87
28) Benzo[g,h,i]perylene	30.50	276	2171	7.53	ug/kg	98

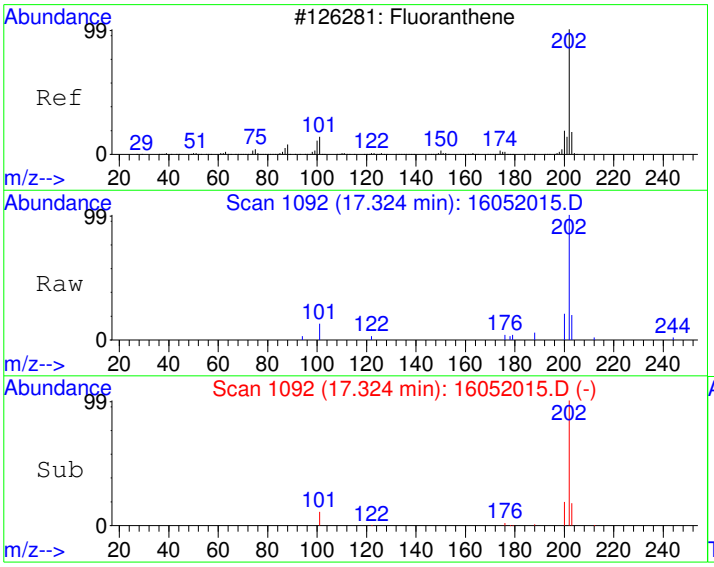
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052015.D Vial: 15
Acq On : 20 May 2016 5:38 pm Operator:
Sample : 1605097-39A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:19 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

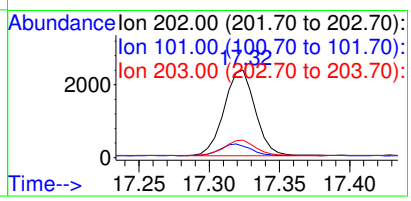


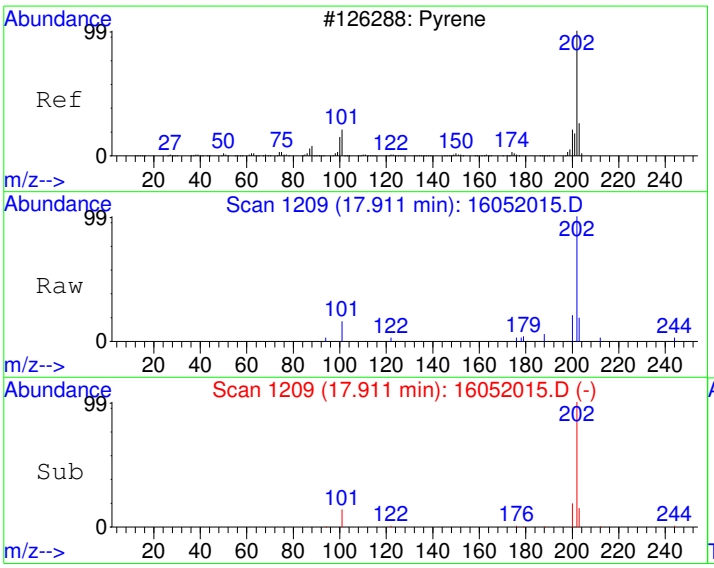


#14
Fluoranthene
Concen: 10.15 ug/kg
RT: 17.32 min Scan# 1092
Delta R.T. -0.02 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:202 Resp: 3617

Ion	Ratio	Lower	Upper
202	100		
101	11.1	0.0	43.0
203	18.1	0.0	47.9

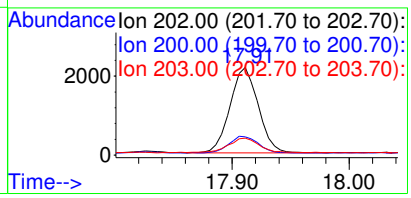


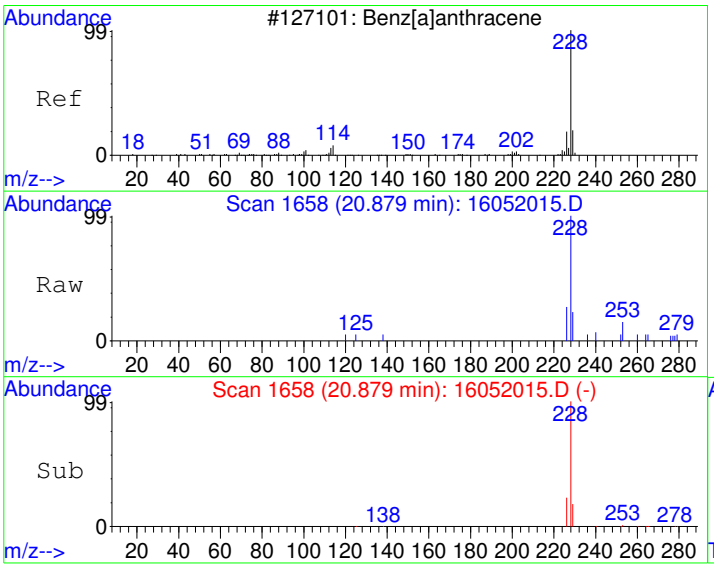


#15
Pyrene
Concen: 9.79 ug/kg
RT: 17.91 min Scan# 1209
Delta R.T. -0.02 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:202 Resp: 3623

Ion	Ratio	Lower	Upper
202	100		
200	18.8	0.0	50.0
203	16.8	0.0	48.0

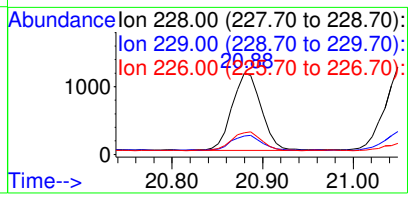


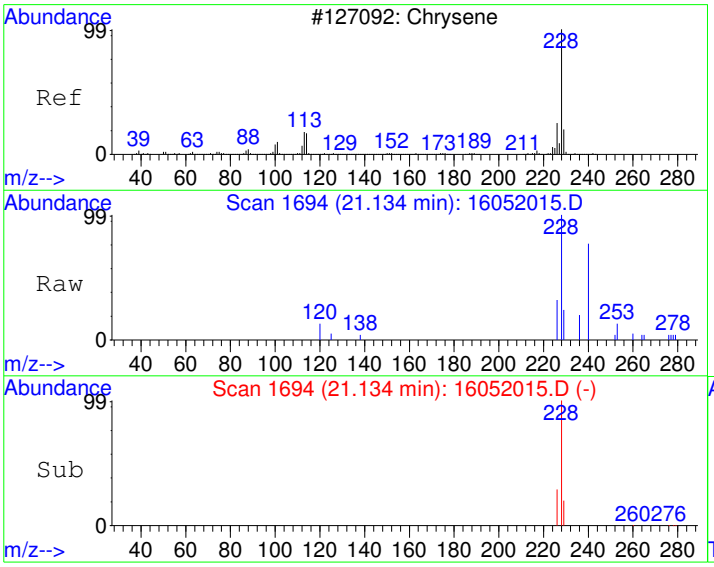


#18
Benzo[a]anthracene
Concen: 7.11 ug/kg
RT: 20.88 min Scan# 1658
Delta R.T. -0.04 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:228 Resp: 2546

Ion	Ratio	Lower	Upper
228	100		
229	18.7	0.0	50.1
226	23.3	0.0	55.2

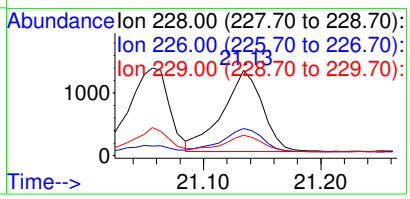


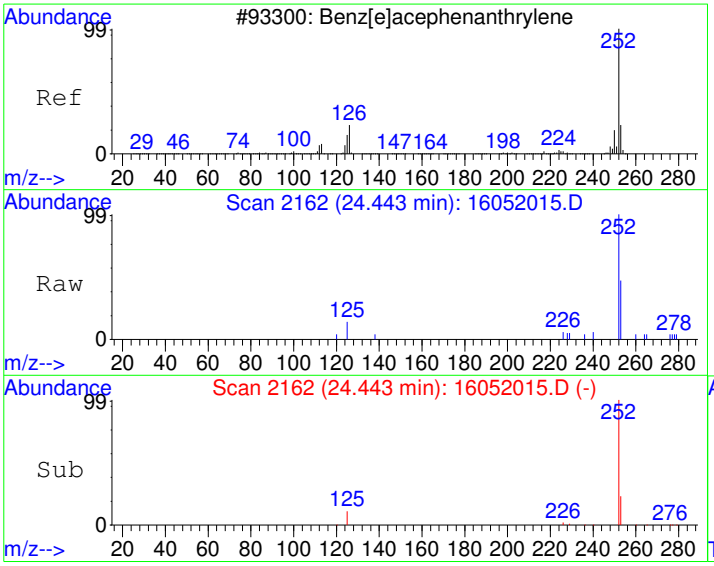


#19
Chrysene
Concen: 8.85 ug/kg
RT: 21.13 min Scan# 1694
Delta R.T. -0.04 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:228 Resp: 3060

Ion	Ratio	Lower	Upper
228	100		
226	28.9	0.0	58.1
229	20.5	0.0	50.1

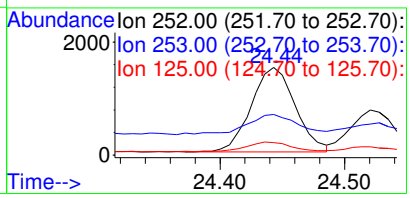


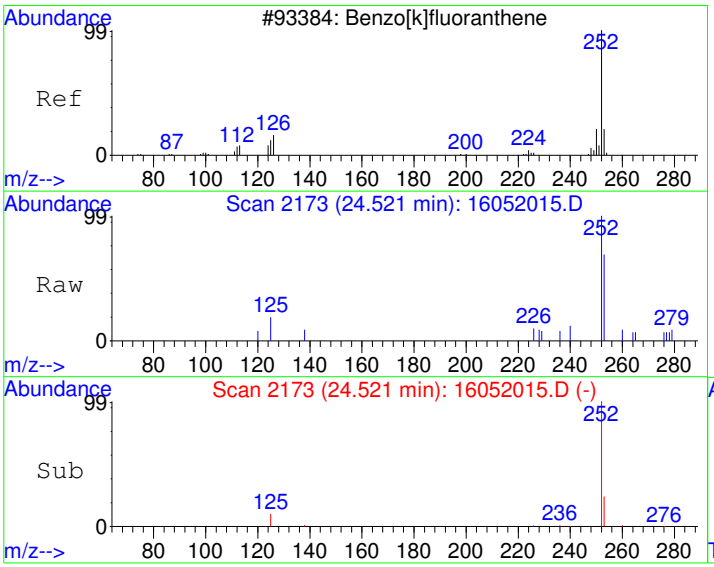


#21
Benzo[b]fluoranthene
Concen: 9.88 ug/kg
RT: 24.44 min Scan# 2162
Delta R.T. -0.04 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:252 Resp: 3674

Ion	Ratio	Lower	Upper
252	100		
253	22.1	0.0	52.2
125	10.4	0.0	41.0

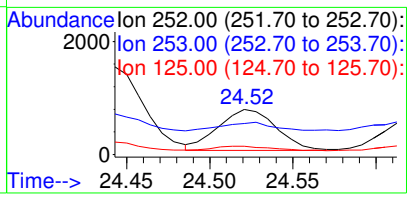


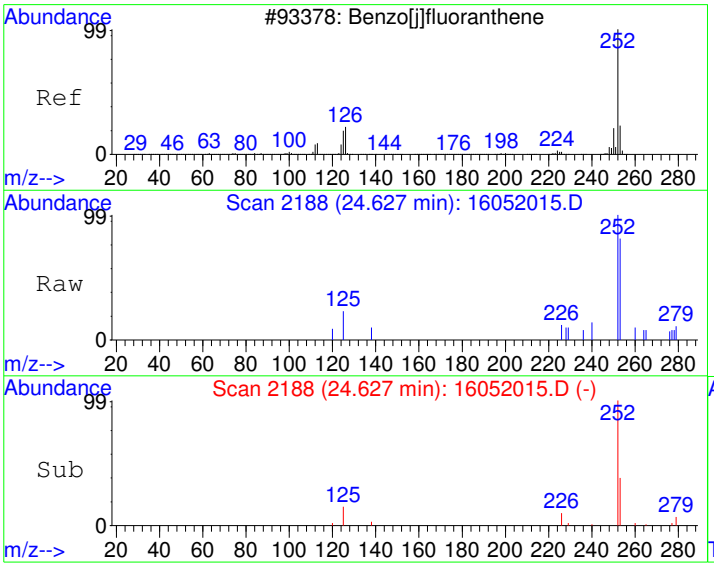


#22
Benzo[k]fluoranthene
Concen: 5.06 ug/kg
RT: 24.52 min Scan# 2173
Delta R.T. -0.05 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:252 Resp: 1763

Ion	Ratio	Lower	Upper
252	100		
253	18.4	2.1	42.1
125	11.3	0.0	31.3

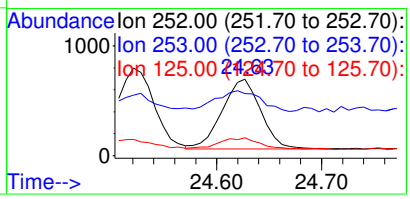


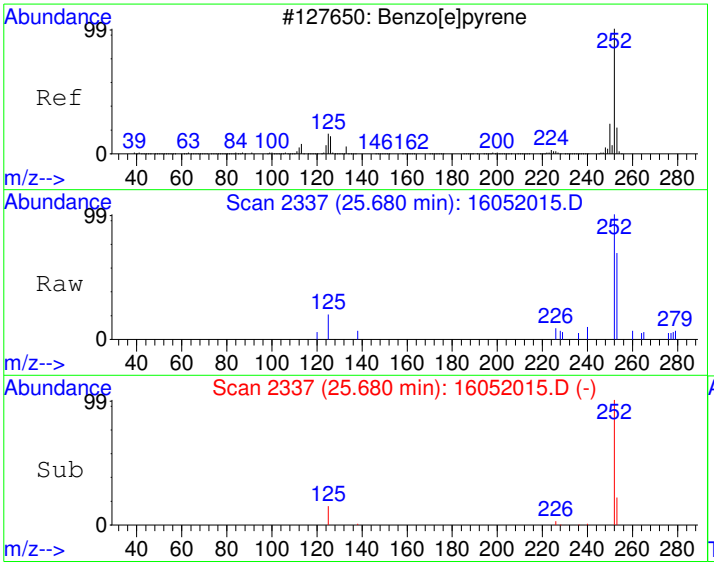


#23
Benzo(j)fluoranthene
Concen: 5.24 ug/kg
RT: 24.63 min Scan# 2188
Delta R.T. -0.04 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:252 Resp: 1629

Ion	Ratio	Lower	Upper
252	100		
253	21.6	2.1	42.1
125	15.2	0.0	34.4

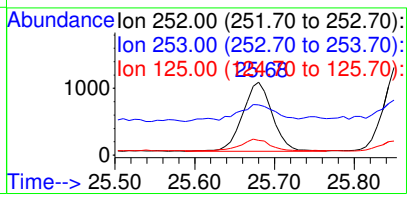


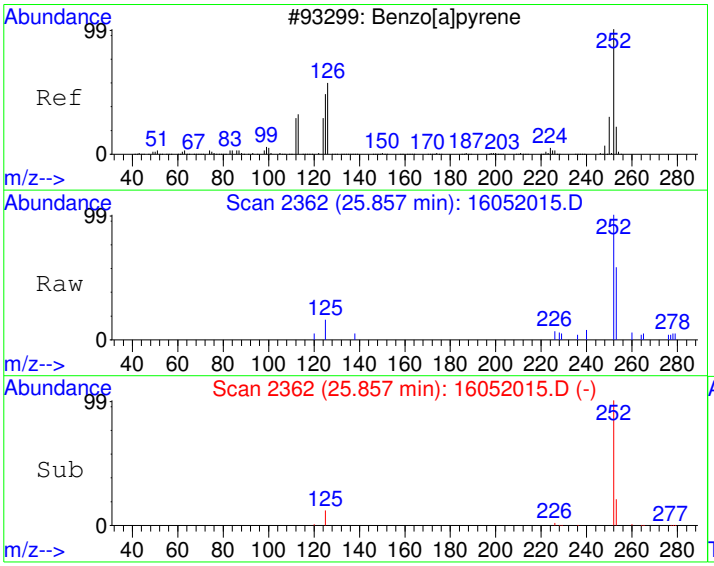


#24
Benzo[e]pyrene
Concen: 8.05 ug/kg
RT: 25.68 min Scan# 2337
Delta R.T. -0.04 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:252 Resp: 2680

Ion	Ratio	Lower	Upper
252	100		
253	23.8	2.2	42.2
125	14.5	0.0	36.1

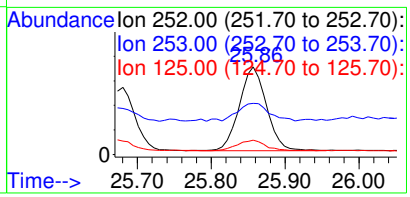


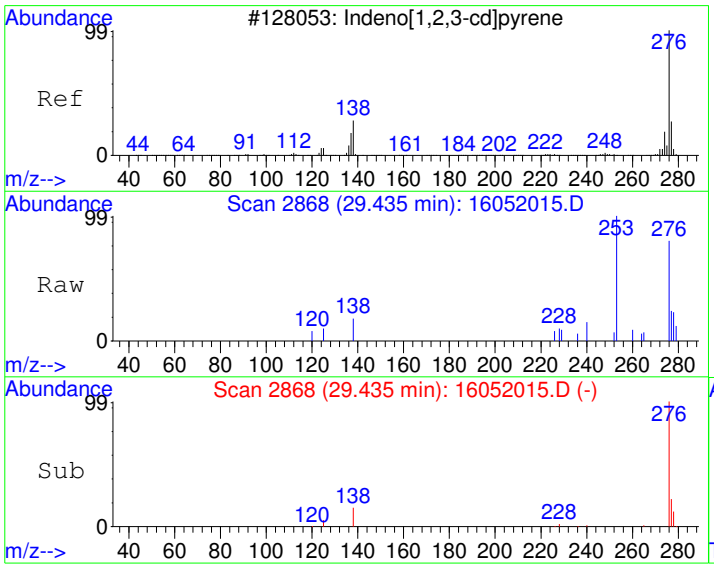


#25
Benzo[a]pyrene
Concen: 10.20 ug/kg
RT: 25.86 min Scan# 2362
Delta R.T. -0.04 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:252 Resp: 3470

Ion	Ratio	Lower	Upper
252	100		
253	21.0	1.9	41.9
125	12.3	0.0	31.7

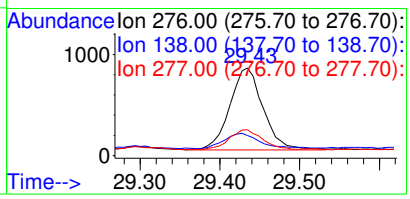


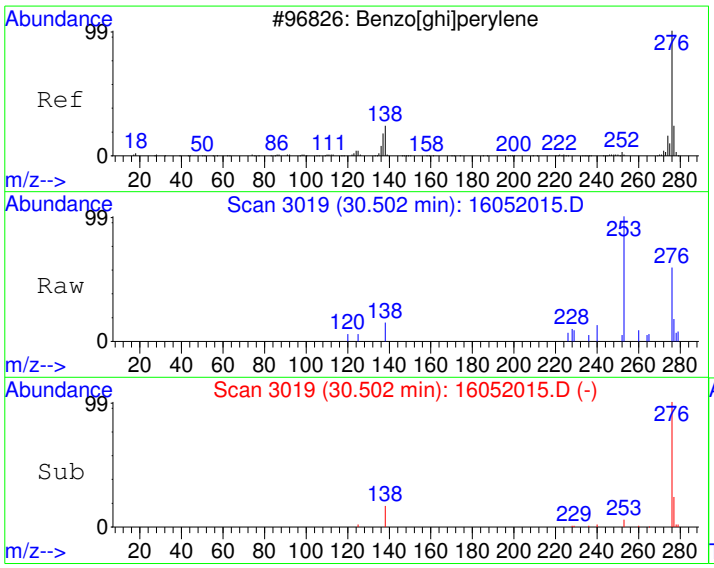


#27
Indeno[1,2,3-cd]pyrene
Concen: 6.40 ug/kg
RT: 29.43 min Scan# 2868
Delta R.T. -0.04 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:276 Resp: 2367

Ion	Ratio	Lower	Upper
276	100		
138	15.3	6.7	46.7
277	23.6	5.8	45.8

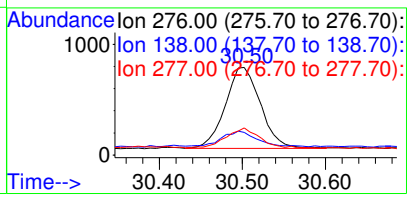




#28
Benzo[g,h,i]perylene
Concen: 7.53 ug/kg
RT: 30.50 min Scan# 3019
Delta R.T. -0.05 min
Lab File: 16052015.D
Acq: 20 May 2016 5:38 pm

Tgt Ion:276 Resp: 2171

Ion	Ratio	Lower	Upper
276	100		
138	17.1	0.0	39.1
277	24.3	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052016.D Vial: 16
Acq On : 20 May 2016 6:18 pm Operator:
Sample : 1605097-39AMS Inst : GC/MS #6
Misc : MS Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:14 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

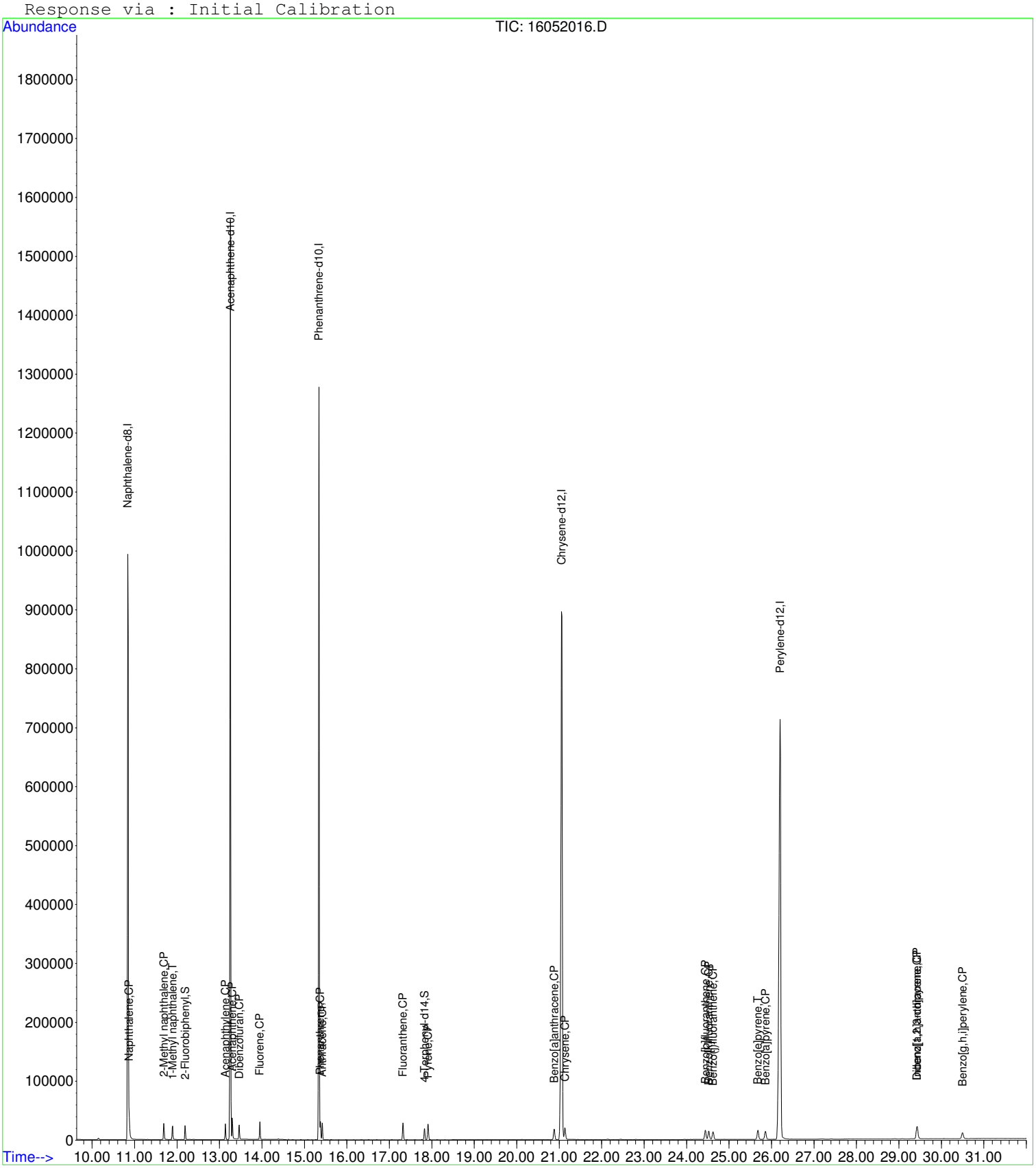
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1304053	4000.00	ug/kg	112
5) Acenaphthene-d10	13.25	164	807293	4000.00	ug/kg	70
11) Phenanthrene-d10	15.34	188	1348297	4000.00	ug/kg	66
17) Chrysene-d12	21.06	240	1540589	4000.00	ug/kg	68
20) Perylene-d12	26.20	264	1425834	4000.00	ug/kg	69
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18746	79.60	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.99%#		
16) 4-Terphenyl-d14	17.83	244	24084	69.04	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.73%#		
Target Compounds						Qvalue
2) Naphthalene	10.88	128	21393	65.58	ug/kg	99
3) 2-Methyl naphthalene	11.69	142	15662	54.36	ug/kg	96
4) 1-Methyl naphthalene	11.90	142	14441	54.72	ug/kg	99
6) Dibenzofuran	13.46	168	21561	71.26	ug/kg	99
8) Acenaphthylene	13.14	152	24137	69.43	ug/kg	99
9) Acenaphthene	13.30	154	14339	66.45	ug/kg	97
10) Fluorene	13.96	166	17249	65.82	ug/kg	98
12) Phenanthrene	15.37	178	25103	70.80	ug/kg	99
13) Anthracene	15.42	178	23565	70.21	ug/kg	98
14) Fluoranthene	17.32	202	28299	77.12	ug/kg	99
15) Pyrene	17.91	202	29202	76.61	ug/kg	99
18) Benzo[a]anthracene	20.88	228	26748	74.11	ug/kg	99
19) Chrysene	21.13	228	25614	73.45	ug/kg	99
21) Benzo[b]fluoranthene	24.44	252	28812	76.67	ug/kg	99
22) Benzo[k]fluoranthene	24.52	252	25315	71.81	ug/kg	99
23) Benzo(j)fluoranthene	24.62	252	23975	76.34	ug/kg	98
24) Benzo[e]pyrene	25.68	252	27992	83.17	ug/kg	100
25) Benzo[a]pyrene	25.86	252	25417	73.90	ug/kg	100
26) Dibenz[a,h]anthracene	29.43	278	19945	63.68	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.43	276	25060	67.07	ug/kg	92
28) Benzo[g,h,i]perylene	30.50	276	20466	70.24	ug/kg	97

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052016.D Vial: 16
Acq On : 20 May 2016 6:18 pm Operator:
Sample : 1605097-39AMS Inst : GC/MS #6
Misc : MS Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:14 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052017.D Vial: 17
Acq On : 20 May 2016 6:58 pm Operator:
Sample : 1605097-39AMSD Inst : GC/MS #6
Misc : MSD Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:15 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

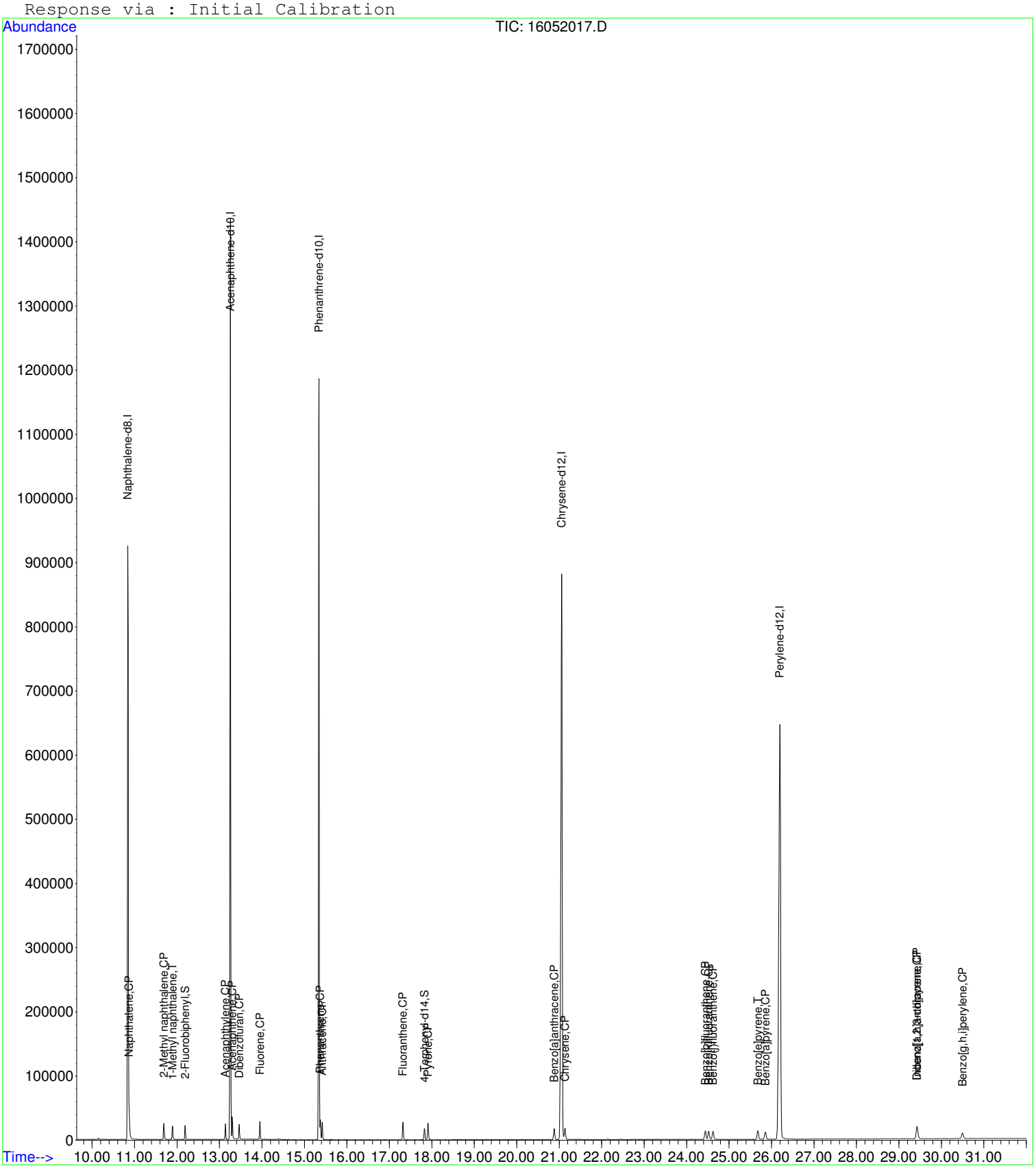
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1213225	4000.00	ug/kg	105
5) Acenaphthene-d10	13.25	164	732746	4000.00	ug/kg	64
11) Phenanthrene-d10	15.34	188	1277047	4000.00	ug/kg	63
17) Chrysene-d12	21.06	240	1431175	4000.00	ug/kg	63
20) Perylene-d12	26.20	264	1306863	4000.00	ug/kg	63
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	17550	82.11	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.05%#		
16) 4-Terphenyl-d14	17.83	244	23537	71.24	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.78%#		
Target Compounds						Qvalue
2) Naphthalene	10.88	128	20313	66.94	ug/kg	100
3) 2-Methyl naphthalene	11.69	142	14444	53.88	ug/kg	97
4) 1-Methyl naphthalene	11.90	142	13257	54.00	ug/kg	99
6) Dibenzofuran	13.46	168	20339	74.06	ug/kg	99
8) Acenaphthylene	13.14	152	22323	70.74	ug/kg	99
9) Acenaphthene	13.30	154	13591	69.39	ug/kg	97
10) Fluorene	13.96	166	16416	69.01	ug/kg	98
12) Phenanthrene	15.37	178	24714	73.59	ug/kg	99
13) Anthracene	15.42	178	22900	72.04	ug/kg	98
14) Fluoranthene	17.32	202	26744	76.95	ug/kg	99
15) Pyrene	17.91	202	27335	75.72	ug/kg	99
18) Benzo[a]anthracene	20.88	228	24372	72.69	ug/kg	99
19) Chrysene	21.13	228	23180	71.55	ug/kg	99
21) Benzo[b]fluoranthene	24.44	252	24932	72.38	ug/kg	100
22) Benzo[k]fluoranthene	24.52	252	22686	70.21	ug/kg	99
23) Benzo(j)fluoranthene	24.62	252	21812	75.78	ug/kg	98
24) Benzo[e]pyrene	25.68	252	24613	79.79	ug/kg	99
25) Benzo[a]pyrene	25.86	252	21987	69.75	ug/kg	100
26) Dibenz[a,h]anthracene	29.43	278	18450	64.27	ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.43	276	22146	64.66	ug/kg	92
28) Benzo[g,h,i]perylene	30.50	276	17944	67.19	ug/kg	97

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052017.D Vial: 17
Acq On : 20 May 2016 6:58 pm Operator:
Sample : 1605097-39AMSD Inst : GC/MS #6
Misc : MSD Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:15 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052019.D Vial: 19
Acq On : 20 May 2016 8:16 pm Operator:
Sample : ICV2-160520 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:15 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

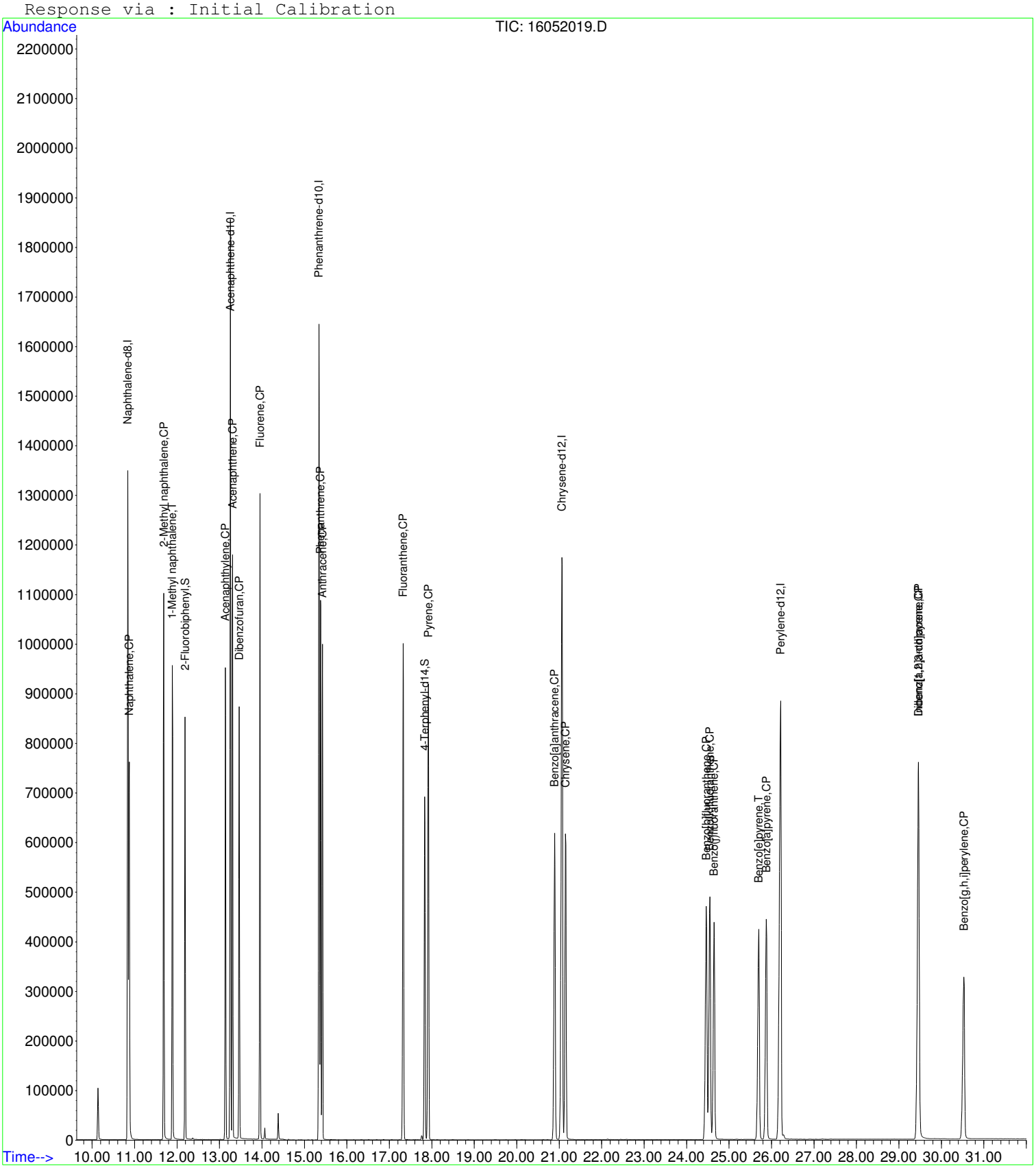
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1640084	4000.00	ug/kg	141
5) Acenaphthene-d10	13.25	164	1013544	4000.00	ug/kg	88
11) Phenanthrene-d10	15.34	188	1872835	4000.00	ug/kg	92
17) Chrysene-d12	21.07	240	2042741	4000.00	ug/kg	90
20) Perylene-d12	26.22	264	1862486	4000.00	ug/kg	90
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	609493	2061.47	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 51.54%			
16) 4-Terphenyl-d14	17.83	244	891317	1839.53	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 45.99%			
Target Compounds						Qvalue
2) Naphthalene	10.88	128	804907	1962.01	ug/kg	100
3) 2-Methyl naphthalene	11.69	142	583665	1610.64	ug/kg	99
4) 1-Methyl naphthalene	11.89	142	524199	1579.43	ug/kg	91
6) Dibenzofuran	13.46	168	738596	1944.36	ug/kg	98
8) Acenaphthylene	13.14	152	913078	2091.85	ug/kg	99
9) Acenaphthene	13.31	154	533430	1968.92	ug/kg	97
10) Fluorene	13.96	166	663158	2015.51	ug/kg	98
12) Phenanthrene	15.38	178	926343	1880.81	ug/kg	99
13) Anthracene	15.42	178	845161	1812.95	ug/kg	100
14) Fluoranthene	17.33	202	990619	1943.61	ug/kg	99
15) Pyrene	17.92	202	986542	1863.34	ug/kg	100
18) Benzo[a]anthracene	20.89	228	937247	1958.46	ug/kg	99
19) Chrysene	21.15	228	856177	1851.64	ug/kg	100
21) Benzo[b]fluoranthene	24.46	252	936164	1907.09	ug/kg	99
22) Benzo[k]fluoranthene	24.55	252	877511	1905.57	ug/kg	100
23) Benzo(j)fluoranthene	24.65	252	767025	1869.85	ug/kg	99
24) Benzo[e]pyrene	25.70	252	814395	1852.51	ug/kg	99
25) Benzo[a]pyrene	25.88	252	850086	1892.29	ug/kg	99
26) Dibenz[a,h]anthracene	29.46	278	743084	1816.24	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.46	276	861910	1765.92	ug/kg	97
28) Benzo[g,h,i]perylene	30.53	276	684889	1799.53	ug/kg	100

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052019.D Vial: 19
Acq On : 20 May 2016 8:16 pm Operator:
Sample : ICV2-160520 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:15 2016 Quant Results File: PP160421.RES

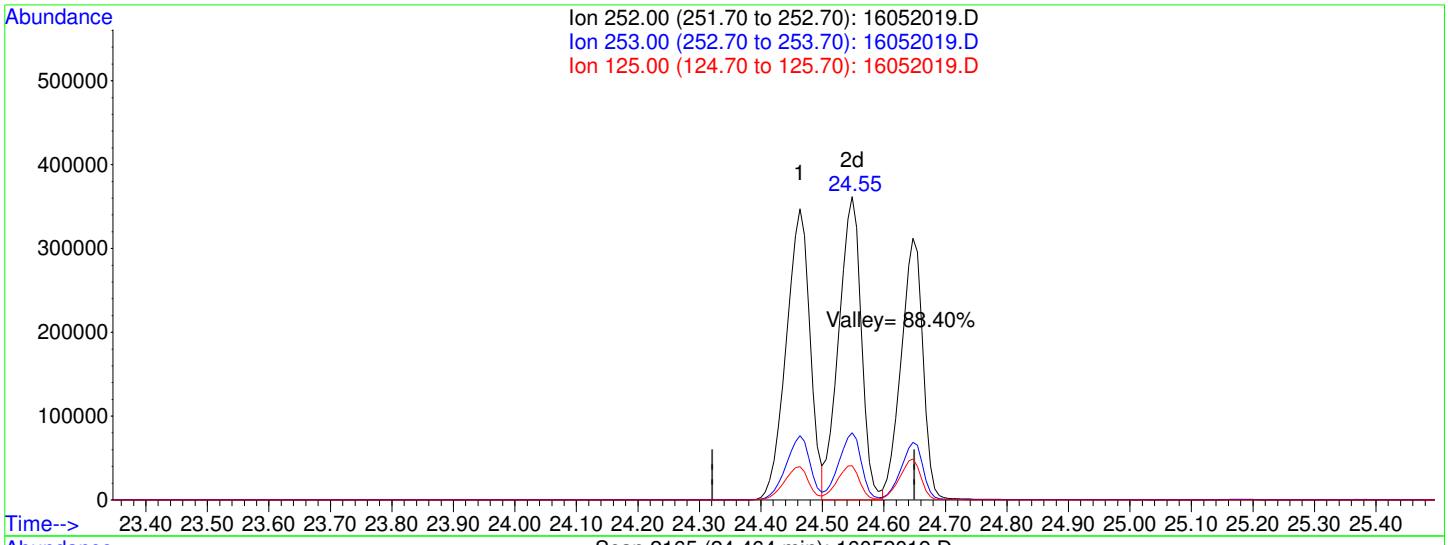
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

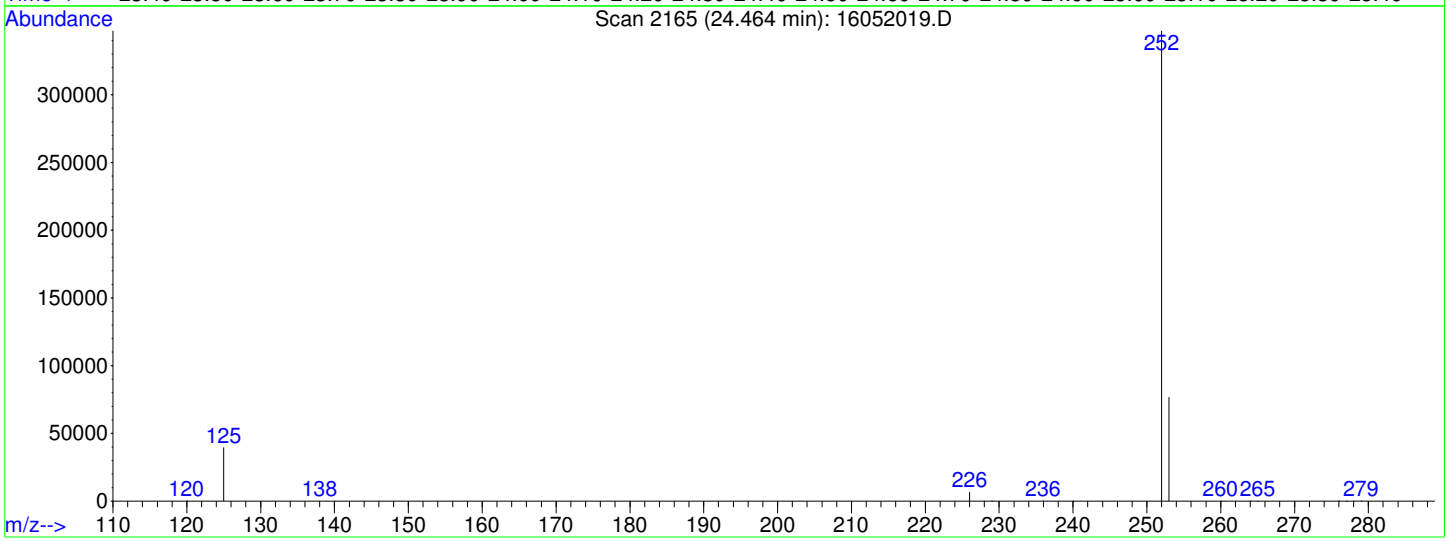


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160520\16052019.D Vial: 19
Acq On : 20 May 2016 8:16 pm Operator:
Sample : ICV2-160520 Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 20 20:48 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Multiple Level Calibration





TIC: 16052019.D

(21) Benzo[b]fluoranthene (CP)

24.46min 1907.09ug/kg

response 936164

Ion	Exp%	Act%
252.00	100	100
253.00	22.20	22.00
125.00	11.00	11.39
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052021.D Vial: 21
Acq On : 20 May 2016 9:35 pm Operator:
Sample : SBLK-160520 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:15 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

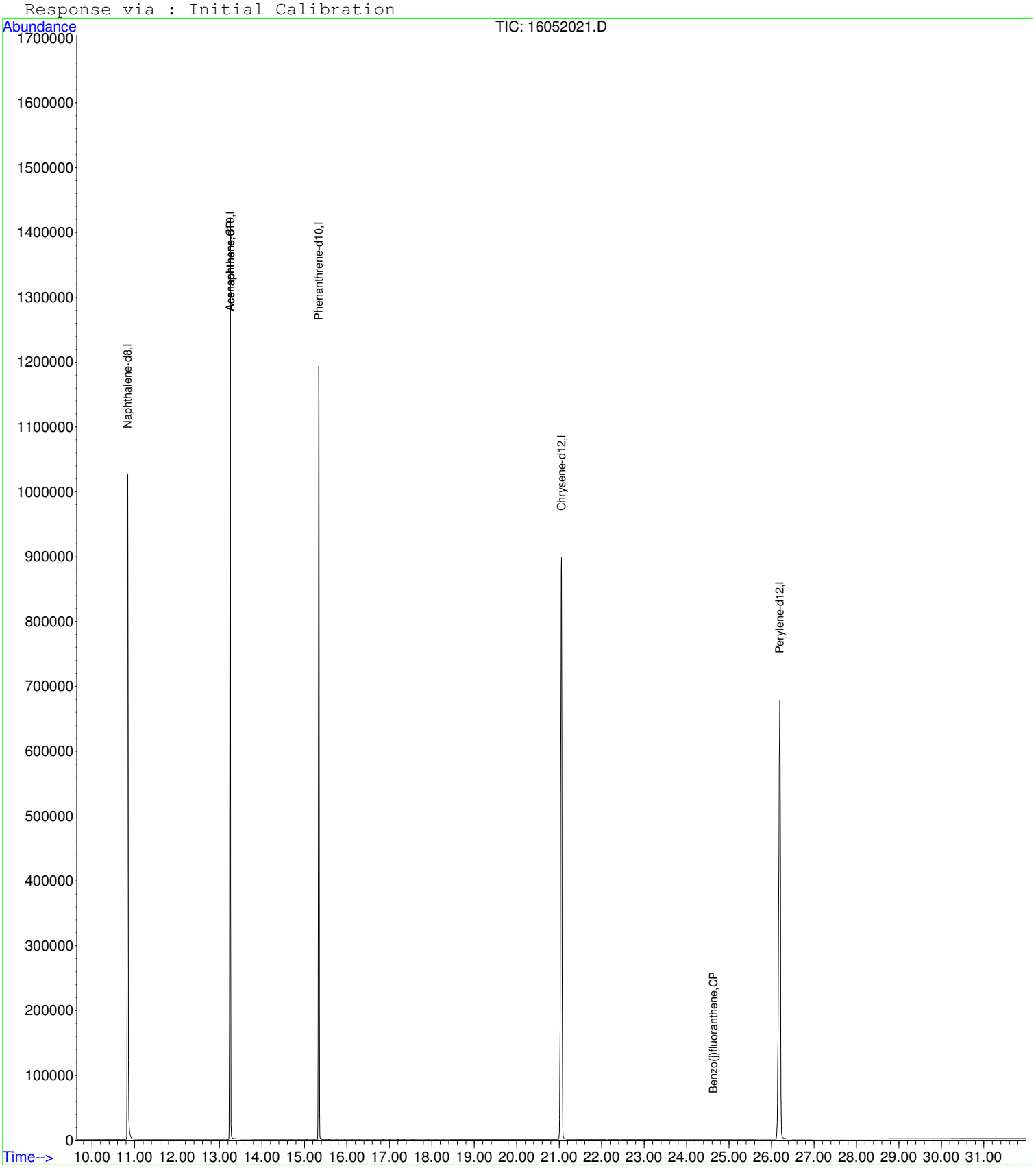
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1237952	4000.00	ug/kg	107
5) Acenaphthene-d10	13.25	164	760474	4000.00	ug/kg	66
11) Phenanthrene-d10	15.34	188	1276793	4000.00	ug/kg	63
17) Chrysene-d12	21.06	240	1474669	4000.00	ug/kg	65
20) Perylene-d12	26.20	264	1347599	4000.00	ug/kg	65
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.20	172	49	0.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.01%#		
16) 4-Terphenyl-d14	17.83	244	62	0.19	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.00%#		
Target Compounds						Qvalue
9) Acenaphthene	13.25	154	2276	~~11.20 ug/kg#~~		9
23) Benzo(j)fluoranthene	24.63	252	35	0.12	ug/kg	75

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052021.D Vial: 21
Acq On : 20 May 2016 9:35 pm Operator:
Sample : SBLK-160520 Inst : GC/MS #6
Misc : SBLK Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:15 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052022.D Vial: 22
Acq On : 20 May 2016 10:16 pm Operator:
Sample : 1605097-37A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:19 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

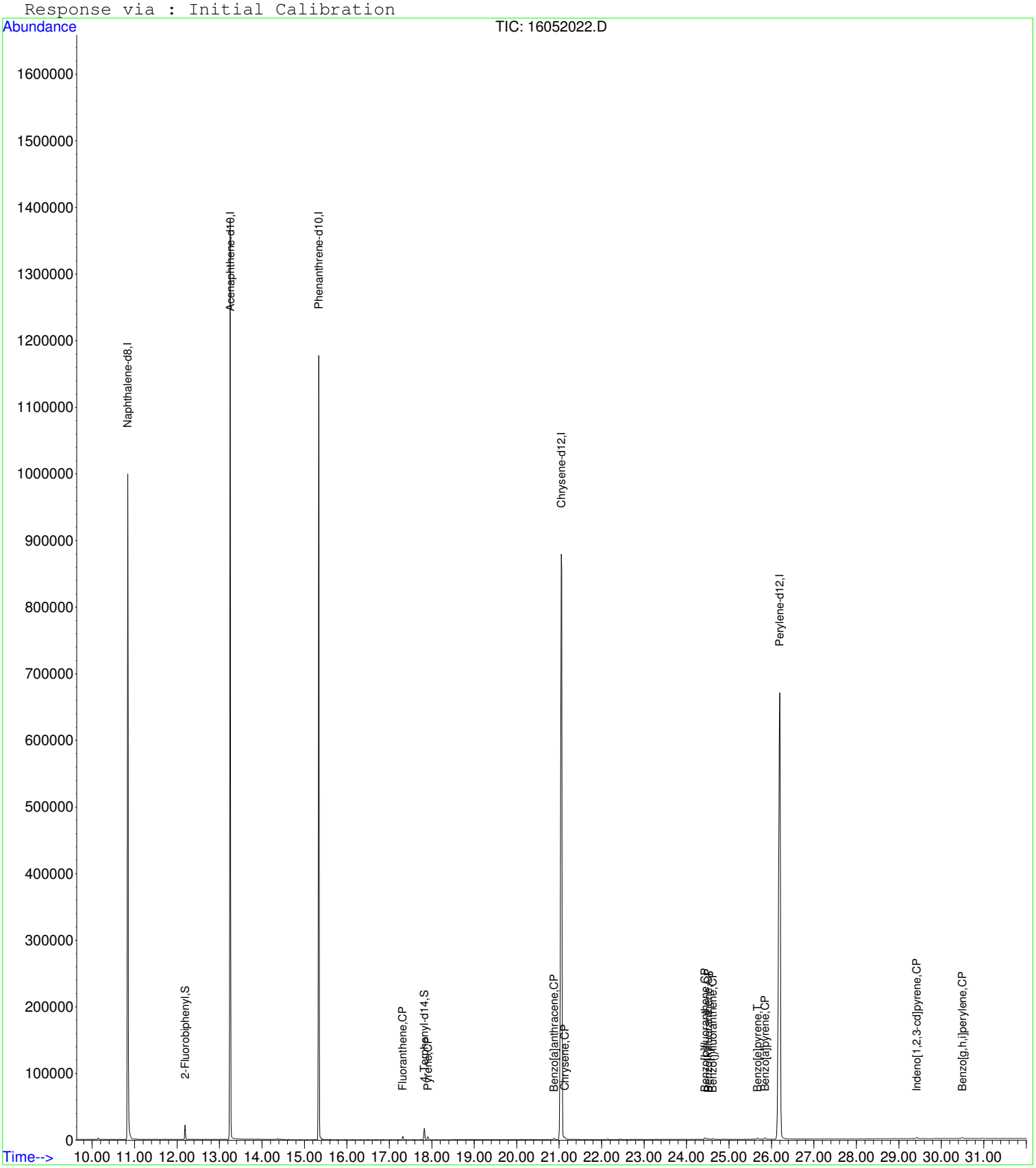
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1219132	4000.00	ug/kg	105
5) Acenaphthene-d10	13.25	164	738888	4000.00	ug/kg	64
11) Phenanthrene-d10	15.34	188	1243612	4000.00	ug/kg	61
17) Chrysene-d12	21.05	240	1480743	4000.00	ug/kg	65
20) Perylene-d12	26.20	264	1367059	4000.00	ug/kg	66
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	17375	80.61	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.02%#		
16) 4-Terphenyl-d14	17.82	244	22547	70.08	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.75%#		
Target Compounds						Qvalue
14) Fluoranthene	17.32	202	5111	15.10	ug/kg	98
15) Pyrene	17.91	202	5049	14.36	ug/kg	98
18) Benzo[a]anthracene	20.87	228	3088	8.90	ug/kg	98
19) Chrysene	21.13	228	3903	11.64	ug/kg	97
21) Benzo[b]fluoranthene	24.44	252	4337	12.04	ug/kg	98
22) Benzo[k]fluoranthene	24.51	252	2066	6.11	ug/kg	98
23) Benzo(j)fluoranthene	24.61	252	1981	6.58	ug/kg	94
24) Benzo[e]pyrene	25.67	252	3241	10.04	ug/kg	98
25) Benzo[a]pyrene	25.84	252	3963	12.02	ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.42	276	2952	8.24	ug/kg	91
28) Benzo[g,h,i]perylene	30.50	276	2768	9.91	ug/kg	97

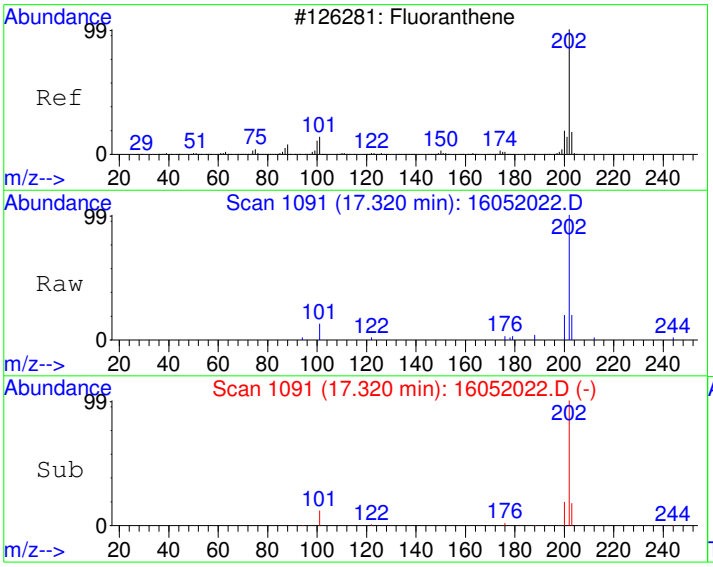
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052022.D Vial: 22
Acq On : 20 May 2016 10:16 pm Operator:
Sample : 1605097-37A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:19 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

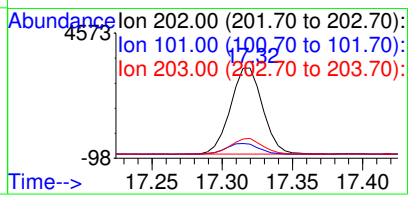


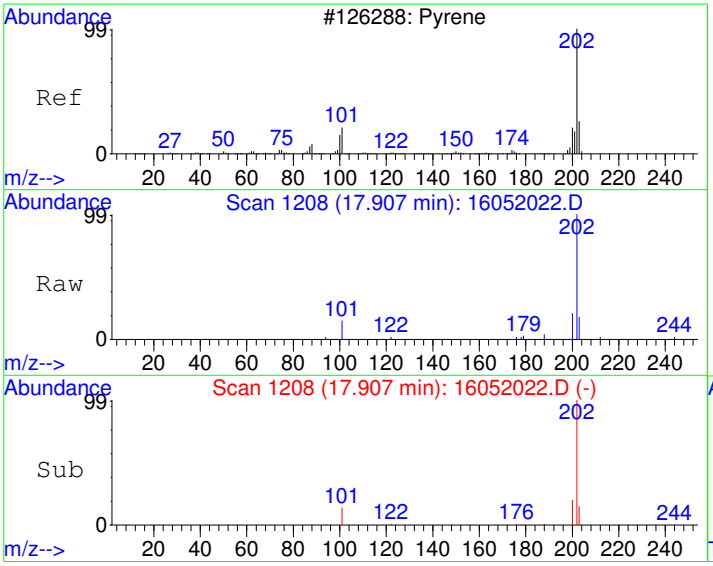


#14
Fluoranthene
Concen: 15.10 ug/kg
RT: 17.32 min Scan# 1091
Delta R.T. -0.02 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:202 Resp: 5111

Ion	Ratio	Lower	Upper
202	100		
101	11.6	0.0	43.0
203	18.3	0.0	47.9

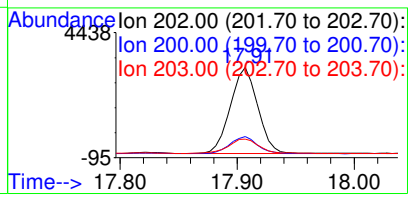


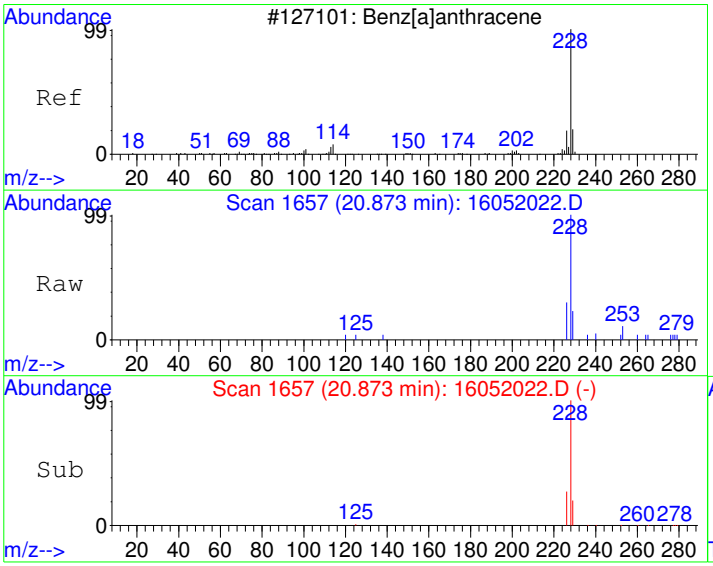


#15
Pyrene
Concen: 14.36 ug/kg
RT: 17.91 min Scan# 1208
Delta R.T. -0.03 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:202 Resp: 5049

Ion	Ratio	Lower	Upper
202	100		
200	19.8	0.0	50.0
203	16.6	0.0	48.0

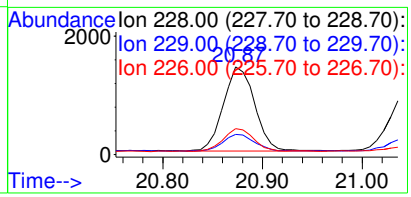


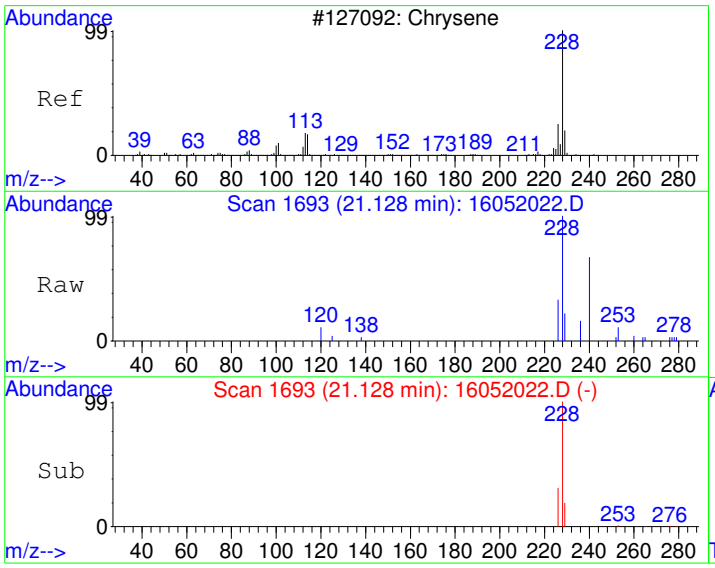


#18
Benzo[a]anthracene
Concen: 8.90 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:228 Resp: 3088

Ion	Ratio	Lower	Upper
228	100		
229	19.9	0.0	50.1
226	26.6	0.0	55.2

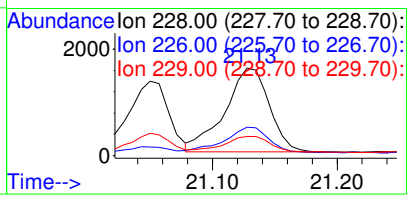


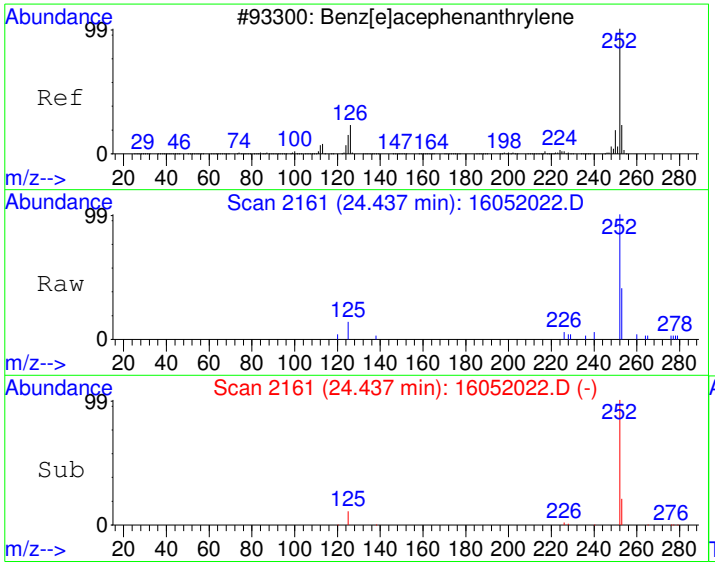


#19
Chrysene
Concen: 11.64 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:228 Resp: 3903

Ion	Ratio	Lower	Upper
228	100		
226	29.7	0.0	58.1
229	18.8	0.0	50.1

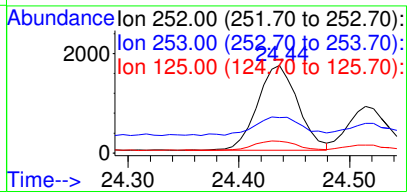


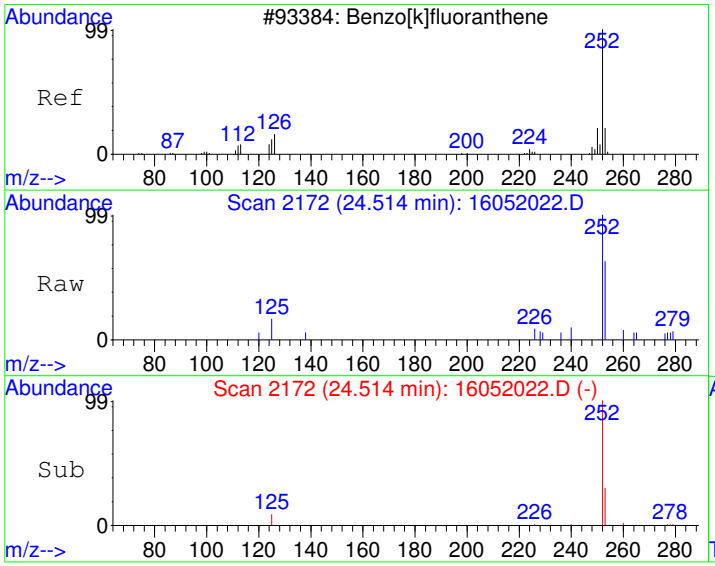


#21
Benzo[b]fluoranthene
Concen: 12.04 ug/kg
RT: 24.44 min Scan# 2161
Delta R.T. -0.05 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:252 Resp: 4337

Ion	Ratio	Lower	Upper
252	100		
253	20.8	0.0	52.2
125	10.4	0.0	41.0

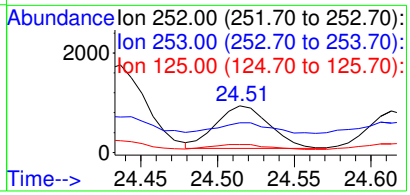


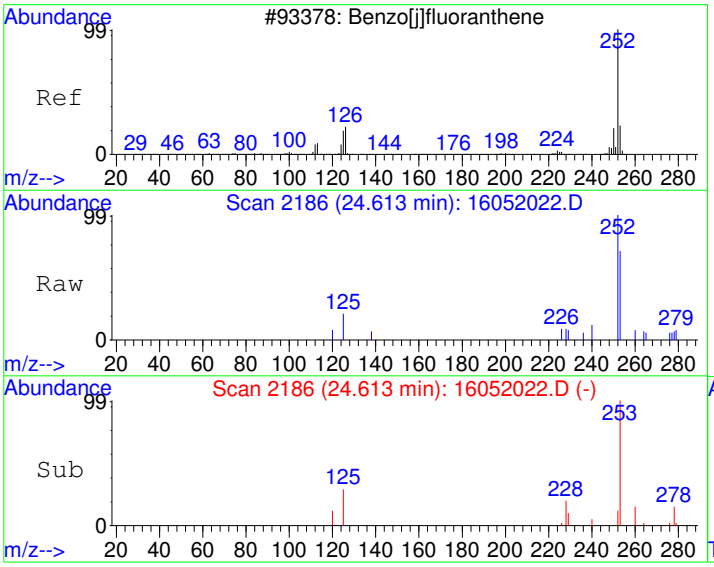


#22
Benzo[k]fluoranthene
Concen: 6.11 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.06 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:252 Resp: 2066

Ion	Ratio	Lower	Upper
252	100		
253	23.5	2.1	42.1
125	11.3	0.0	31.3

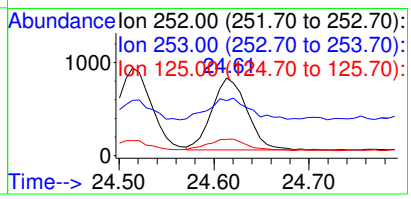


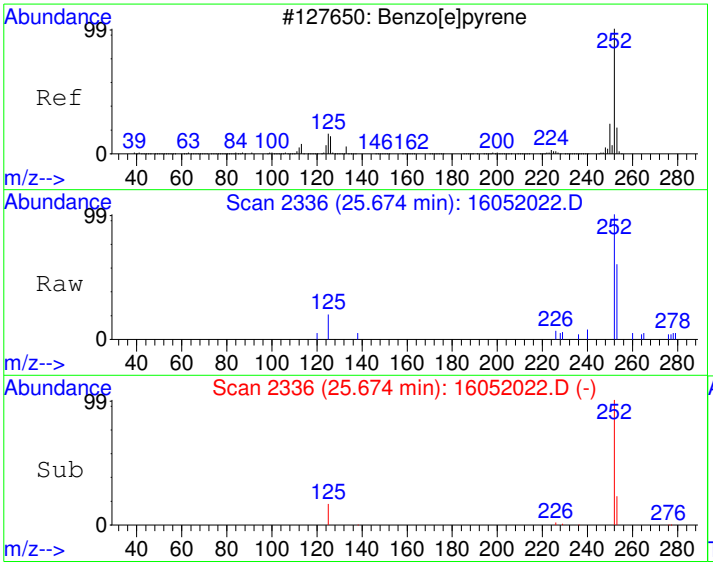


#23
Benzo(j)fluoranthene
Concen: 6.58 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:252 Resp: 1981

Ion	Ratio	Lower	Upper
252	100		
253	26.5	2.1	42.1
125	14.7	0.0	34.4

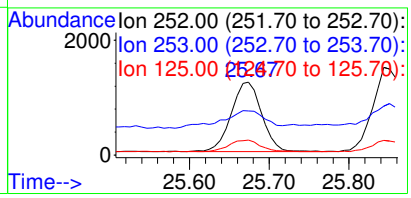


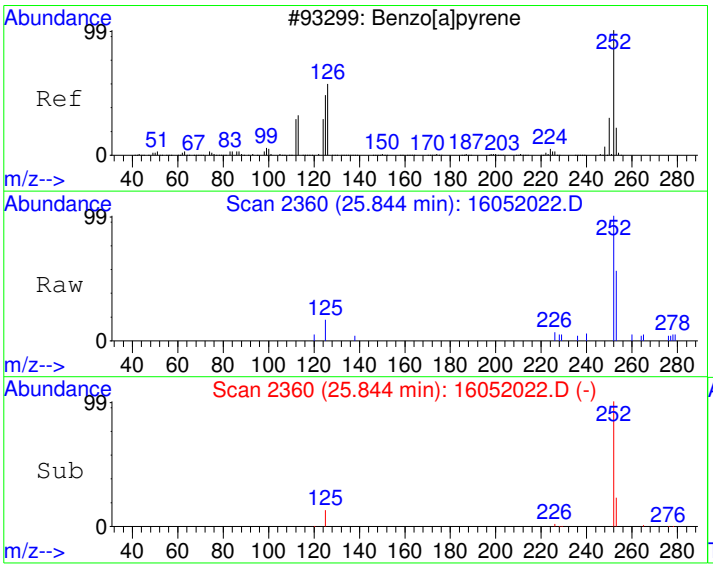


#24
Benzo[e]pyrene
Concen: 10.04 ug/kg
RT: 25.67 min Scan# 2336
Delta R.T. -0.05 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:252 Resp: 3241

Ion	Ratio	Lower	Upper
252	100		
253	20.5	2.2	42.2
125	16.4	0.0	36.1

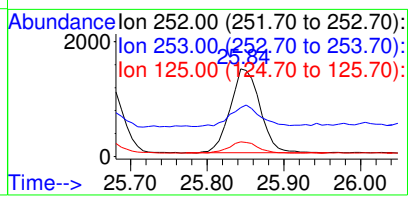


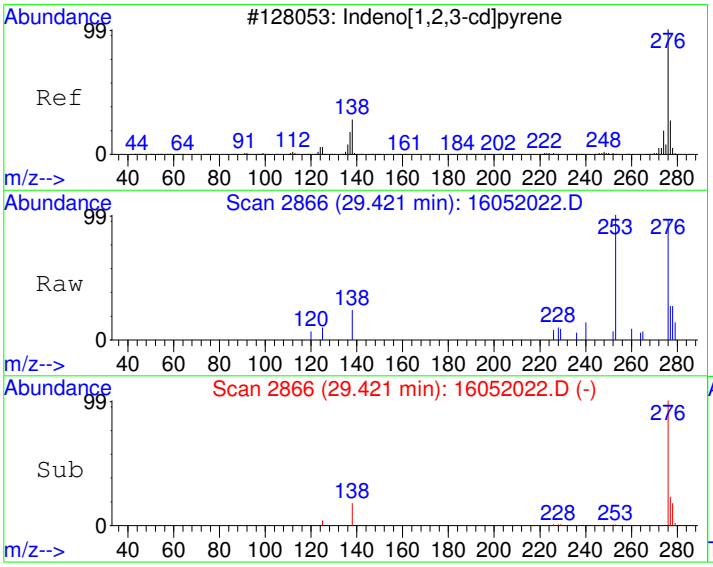


#25
Benzo[a]pyrene
Concen: 12.02 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:252 Resp: 3963

Ion	Ratio	Lower	Upper
252	100		
253	21.7	1.9	41.9
125	13.3	0.0	31.7

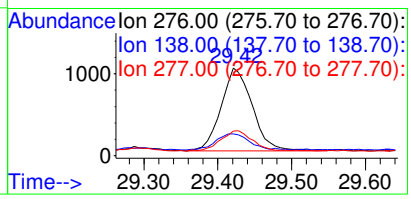


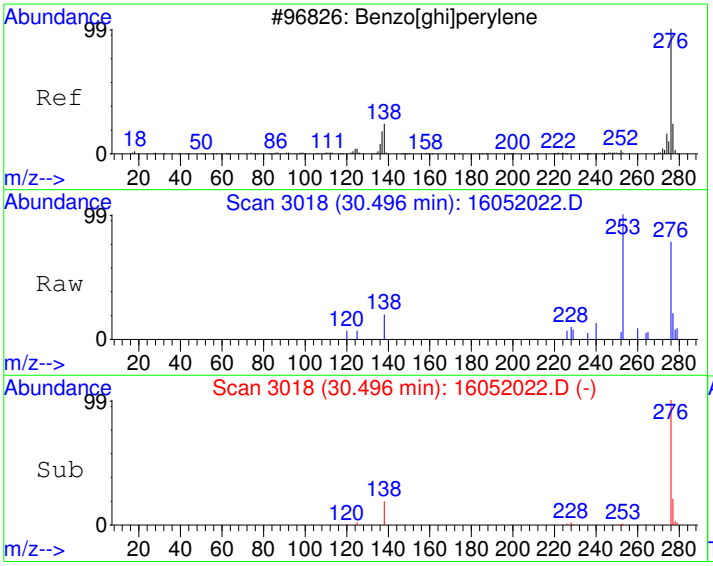


#27
Indeno[1,2,3-cd]pyrene
Concen: 8.24 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:276 Resp: 2952

Ion	Ratio	Lower	Upper
276	100		
138	19.3	6.7	46.7
277	24.3	5.8	45.8

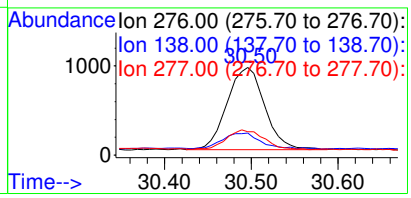




#28
Benzo[g,h,i]perylene
Concen: 9.91 ug/kg
RT: 30.50 min Scan# 3018
Delta R.T. -0.06 min
Lab File: 16052022.D
Acq: 20 May 2016 10:16 pm

Tgt Ion:276 Resp: 2768

Ion	Ratio	Lower	Upper
276	100		
138	18.9	0.0	39.1
277	21.2	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052023.D Vial: 23
Acq On : 20 May 2016 10:55 pm Operator:
Sample : 1605097-38A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:19 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

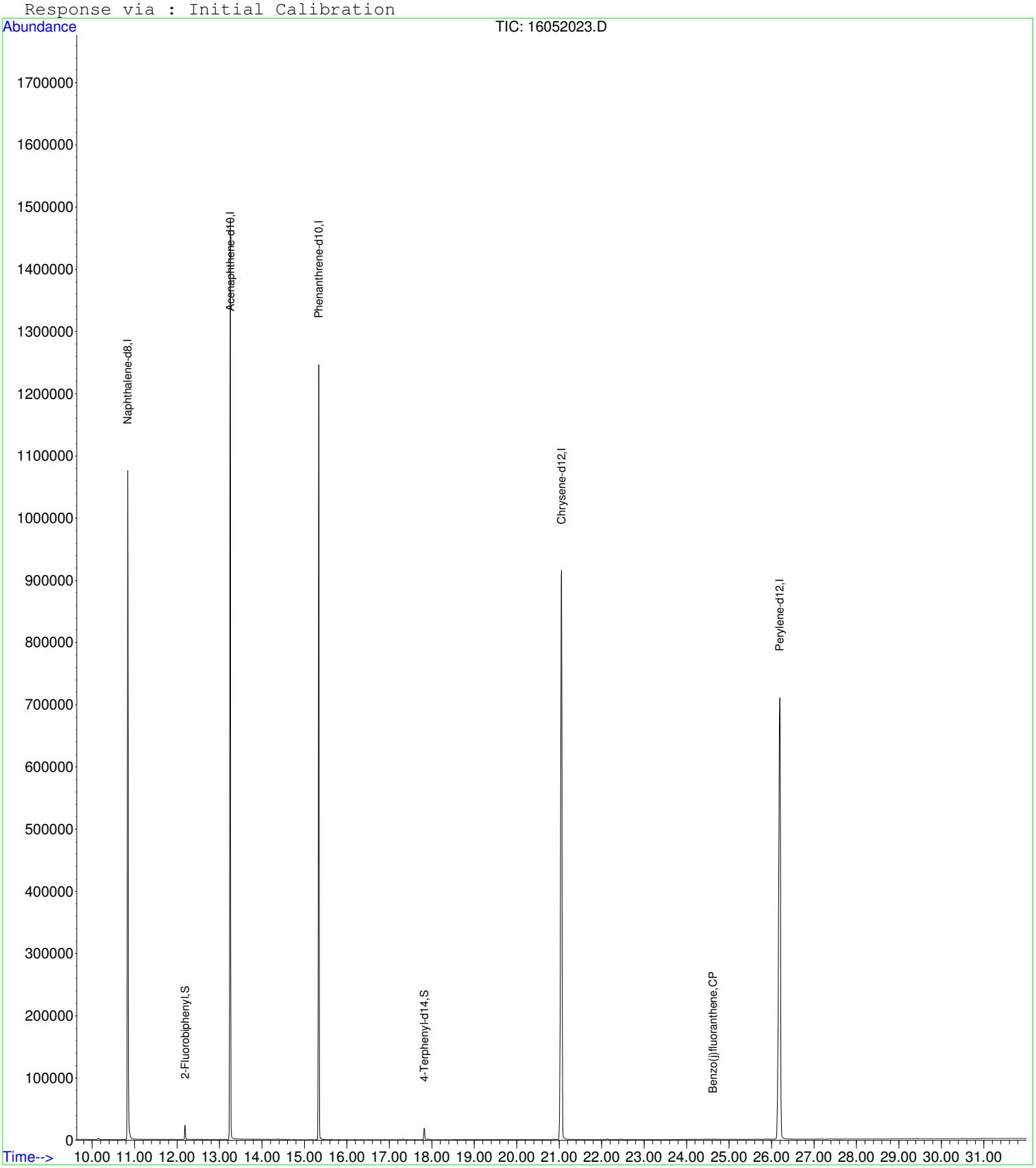
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1288212	4000.00	ug/kg	111
5) Acenaphthene-d10	13.25	164	804584	4000.00	ug/kg	70
11) Phenanthrene-d10	15.34	188	1331168	4000.00	ug/kg	65
17) Chrysene-d12	21.06	240	1551339	4000.00	ug/kg	68
20) Perylene-d12	26.20	264	1437081	4000.00	ug/kg	70
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18814	80.16	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.00%#		
16) 4-Terphenyl-d14	17.82	244	23711	68.85	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.72%#		
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.62	252	625	1.97	ug/kg	81

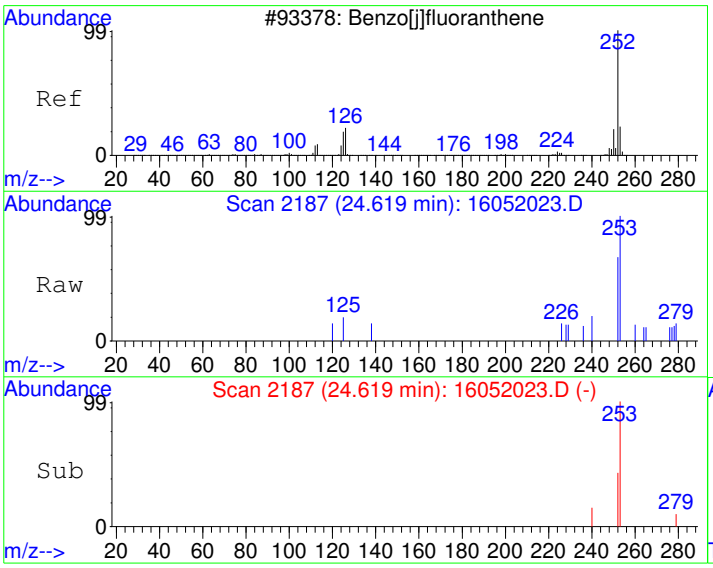
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052023.D Vial: 23
Acq On : 20 May 2016 10:55 pm Operator:
Sample : 1605097-38A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:19 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

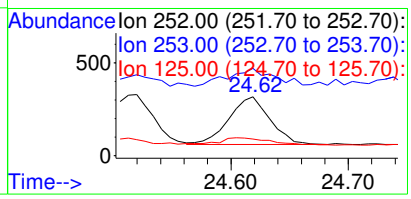




#23
Benzo(j)fluoranthene
Concen: 1.97 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052023.D
Acq: 20 May 2016 10:55 pm

Tgt Ion:252 Resp: 625

Ion	Ratio	Lower	Upper
252	100		
253	35.7	2.1	42.1
125	12.0	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052024.D Vial: 24
Acq On : 20 May 2016 11:35 pm Operator:
Sample : 1605097-40A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:19 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

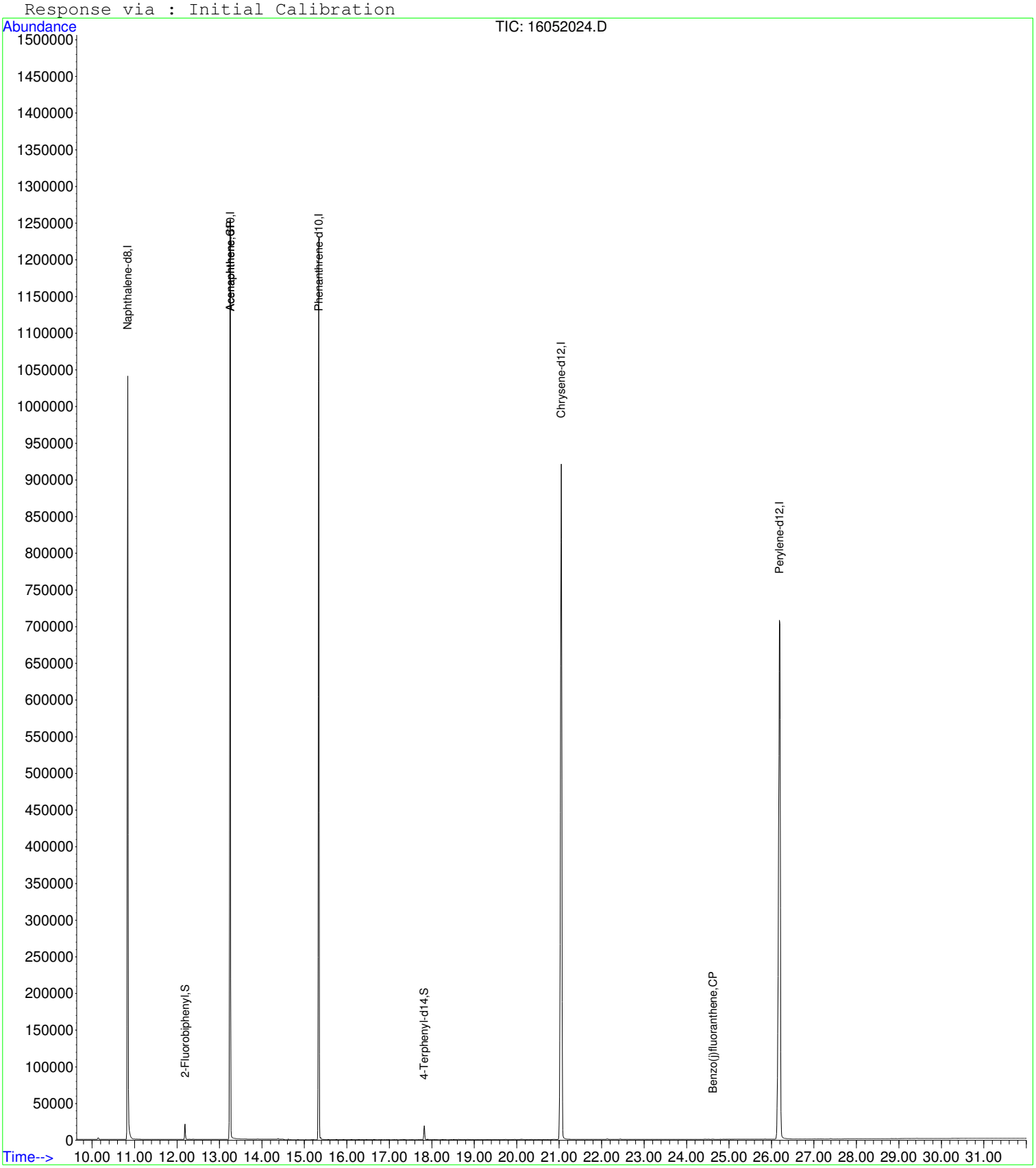
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1271039	4000.00	ug/kg	110
5) Acenaphthene-d10	13.26	164	772118	4000.00	ug/kg	67
11) Phenanthrene-d10	15.34	188	1291176	4000.00	ug/kg	63
17) Chrysene-d12	21.05	240	1540791	4000.00	ug/kg	68
20) Perylene-d12	26.19	264	1421124	4000.00	ug/kg	69
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18111	80.41	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.01%#		
16) 4-Terphenyl-d14	17.82	244	23960	71.73	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.79%#		
Target Compounds						Qvalue
9) Acenaphthene	13.25	154	2376	11.51	ug/kg#	9
23) Benzo(j)fluoranthene	24.61	252	239	0.76	ug/kg#	70

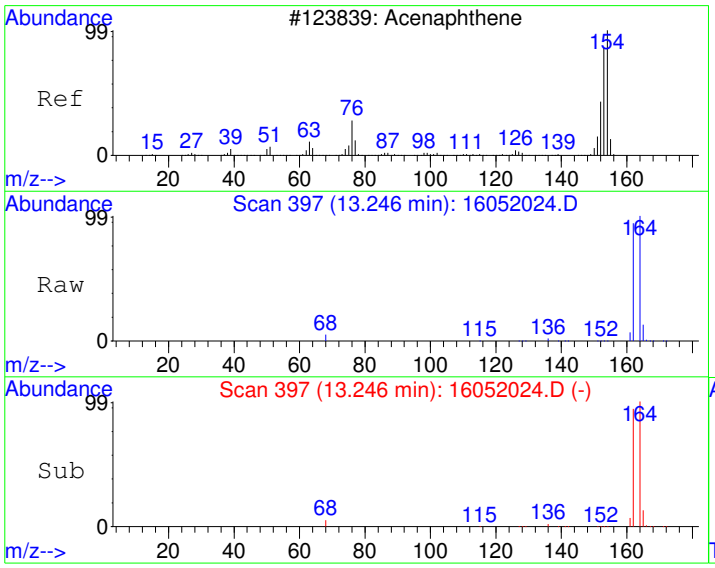
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052024.D Vial: 24
Acq On : 20 May 2016 11:35 pm Operator:
Sample : 1605097-40A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:19 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

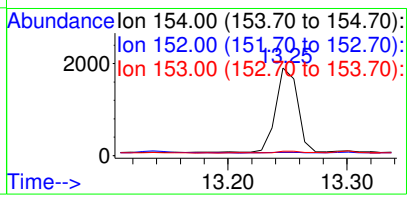


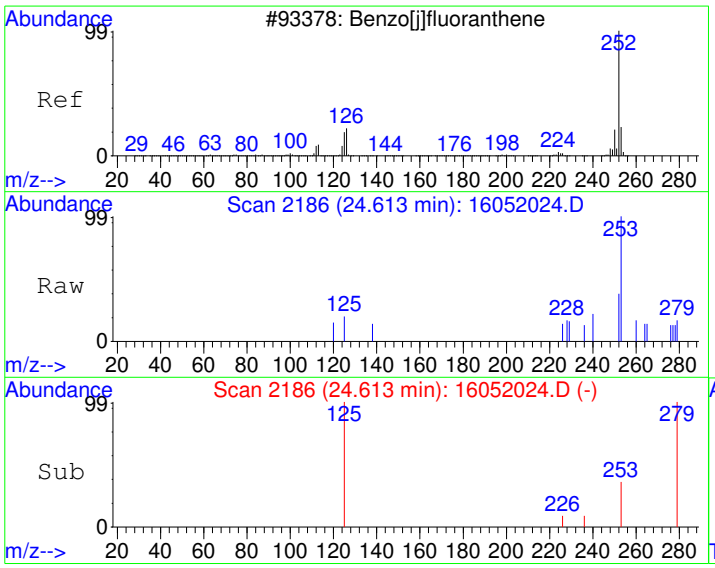


#9
Acenaphthene
Concen: 11.51 ug/kg
RT: 13.25 min Scan# 397
Delta R.T. -0.08 min
Lab File: 16052024.D
Acq: 20 May 2016 11:35 pm

Tgt Ion:154 Resp: 2376

Ion	Ratio	Lower	Upper
154	100		
152	0.9	18.9	78.9#
153	2.0	75.2	135.2#

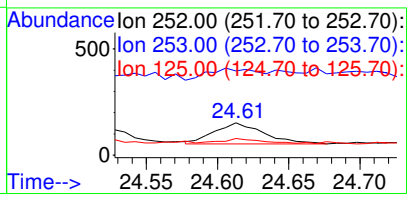




#23
Benzo(j)fluoranthene
Concen: 0.76 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052024.D
Acq: 20 May 2016 11:35 pm

Tgt Ion:252 Resp: 239

Ion	Ratio	Lower	Upper
252	100		
253	45.5	2.1	42.1#
125	15.2	0.0	34.4



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052025.D Vial: 25
Acq On : 21 May 2016 12:15 am Operator:
Sample : 1605097-41A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:20 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

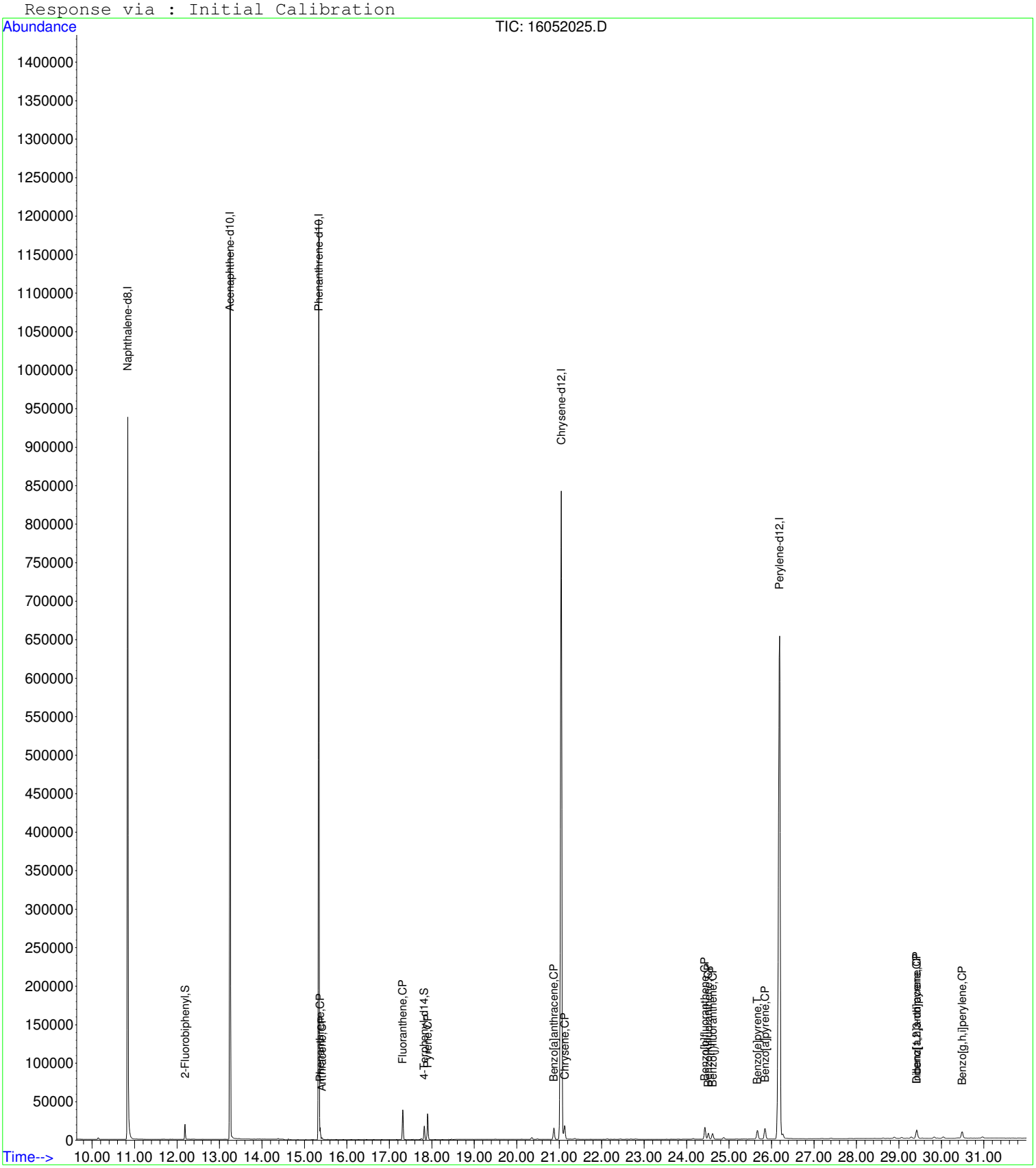
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1163566	4000.00	ug/kg	100
5) Acenaphthene-d10	13.26	164	708010	4000.00	ug/kg	62
11) Phenanthrene-d10	15.34	188	1235405	4000.00	ug/kg	60
17) Chrysene-d12	21.05	240	1393464	4000.00	ug/kg	61
20) Perylene-d12	26.19	264	1277292	4000.00	ug/kg	62
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	16698	80.85	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.02%#		
16) 4-Terphenyl-d14	17.82	244	22871	71.56	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.79%#		
Target Compounds						Qvalue
12) Phenanthrene	15.37	178	11346	34.92	ug/kg	99
13) Anthracene	15.41	178	1870	6.08	ug/kg	99
14) Fluoranthene	17.31	202	38648	114.95	ug/kg	99
15) Pyrene	17.90	202	35951	102.94	ug/kg	100
18) Benzo[a]anthracene	20.87	228	22101	67.70	ug/kg	99
19) Chrysene	21.13	228	26841	85.10	ug/kg	98
21) Benzo[b]fluoranthene	24.43	252	28494	84.64	ug/kg	100
22) Benzo[k]fluoranthene	24.51	252	13452	42.60	ug/kg	98
23) Benzo(j)fluoranthene	24.61	252	12460	44.29	ug/kg	92
24) Benzo[e]pyrene	25.67	252	20796	68.98	ug/kg	98
25) Benzo[a]pyrene	25.85	252	26393	85.67	ug/kg	99
26) Dibenz[a,h]anthracene	29.41	278	3863	13.77	ug/kg	94
27) Indeno[1,2,3-cd]pyrene	29.42	276	18211	54.41	ug/kg	91
28) Benzo[g,h,i]perylene	30.49	276	16770	64.25	ug/kg	99

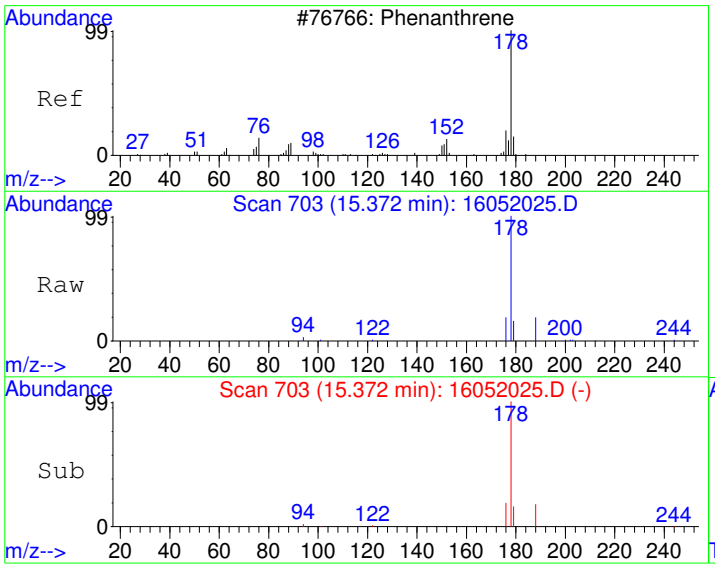
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052025.D Vial: 25
Acq On : 21 May 2016 12:15 am Operator:
Sample : 1605097-41A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:20 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

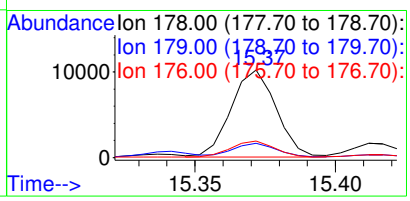


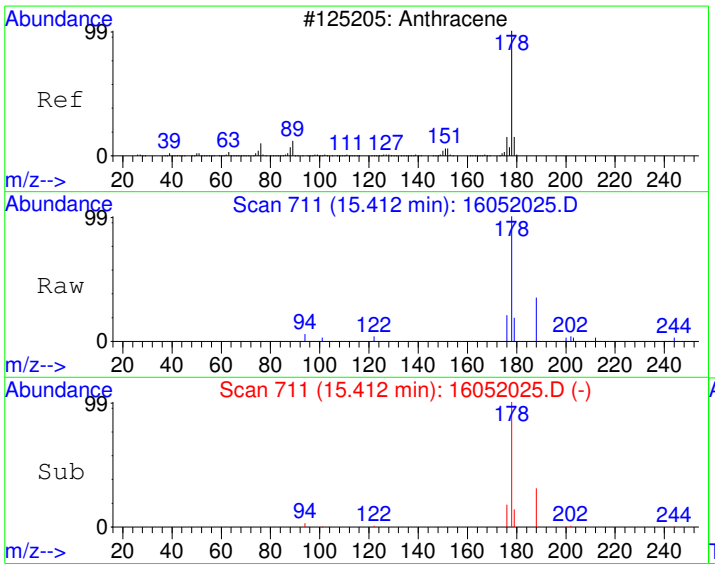


#12
Phenanthrene
Concen: 34.92 ug/kg
RT: 15.37 min Scan# 703
Delta R.T. -0.02 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:178 Resp: 11346

Ion	Ratio	Lower	Upper
178	100		
179	15.5	0.0	45.9
176	18.8	0.0	48.5

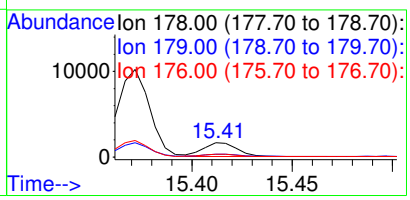


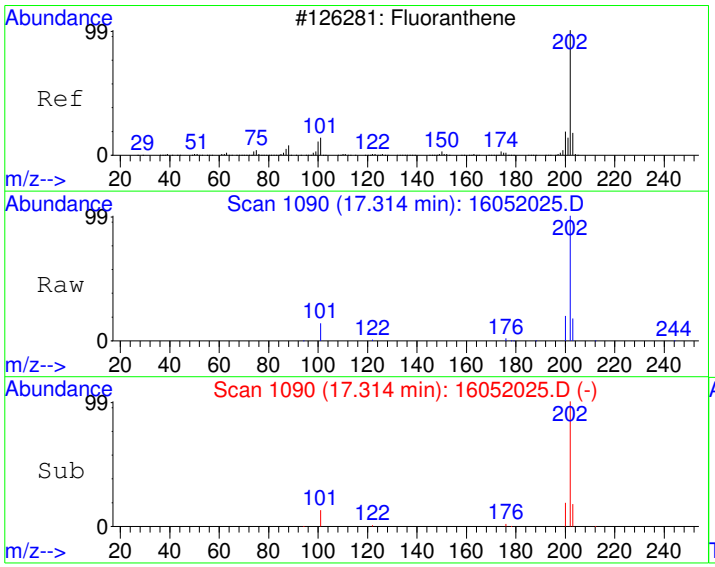


#13
Anthracene
Concen: 6.08 ug/kg
RT: 15.41 min Scan# 711
Delta R.T. -0.02 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:178 Resp: 1870

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	45.9
176	18.4	0.0	48.2

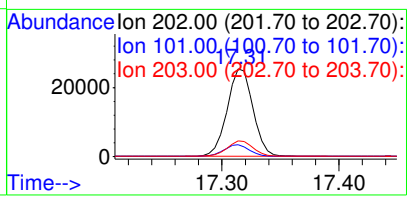


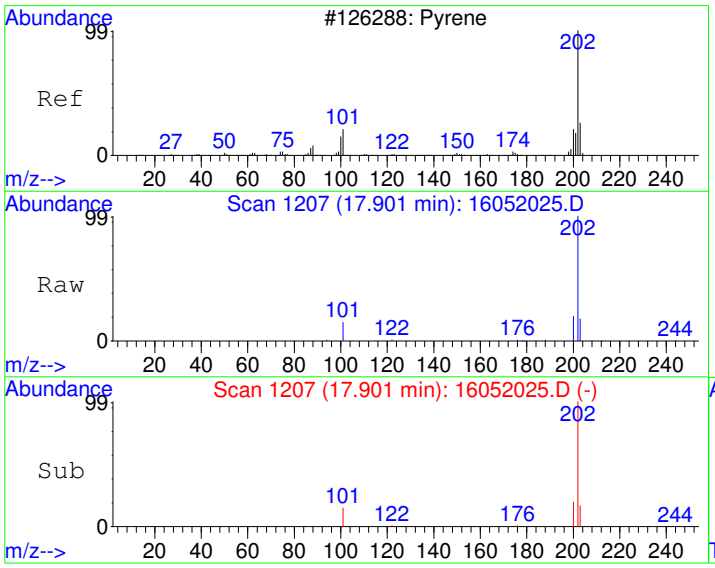


#14
Fluoranthene
Concen: 114.95 ug/kg
RT: 17.31 min Scan# 1090
Delta R.T. -0.03 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:202 Resp: 38648

Ion	Ratio	Lower	Upper
202	100		
101	13.3	0.0	43.0
203	17.6	0.0	47.9

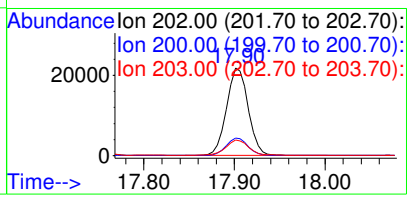


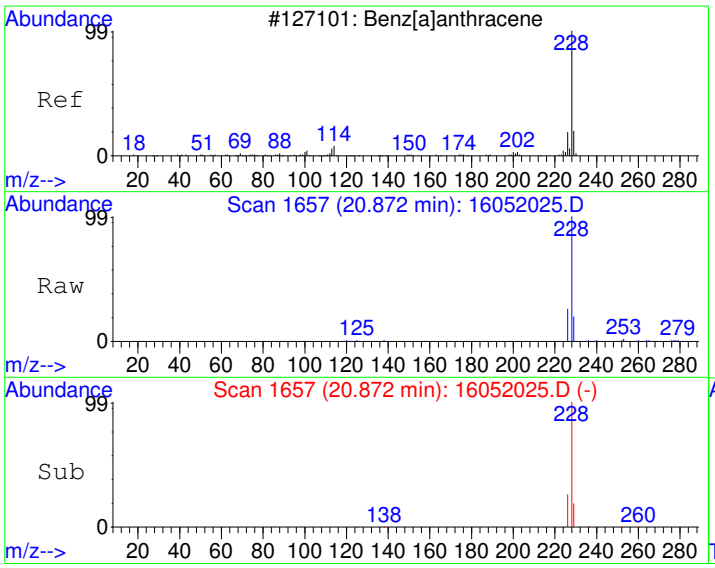


#15
Pyrene
Concen: 102.94 ug/kg
RT: 17.90 min Scan# 1207
Delta R.T. -0.03 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:202 Resp: 35951

Ion	Ratio	Lower	Upper
202	100		
200	20.0	0.0	50.0
203	17.6	0.0	48.0

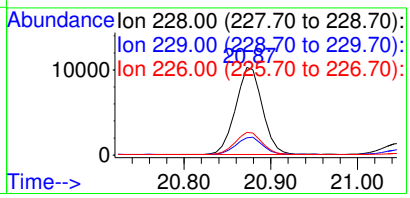


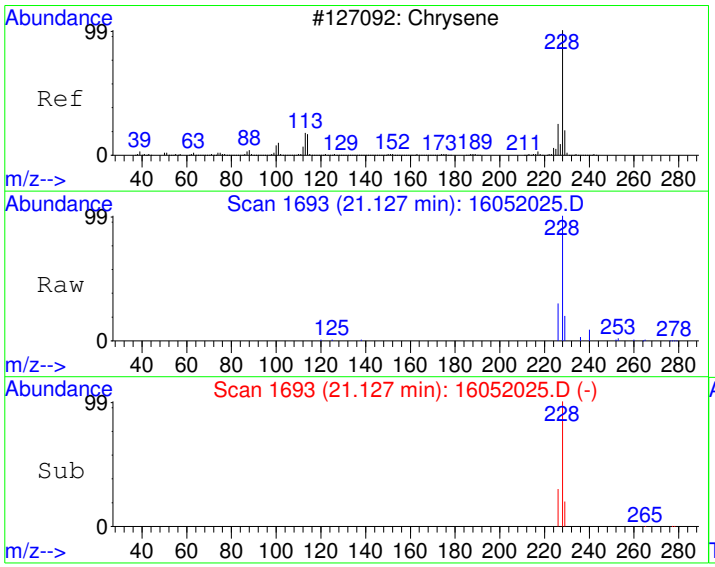


#18
Benzo[a]anthracene
Concen: 67.70 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:228 Resp: 22101

Ion	Ratio	Lower	Upper
228	100		
229	19.2	0.0	50.1
226	25.7	0.0	55.2

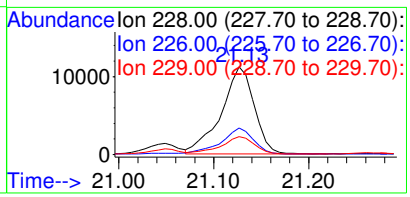


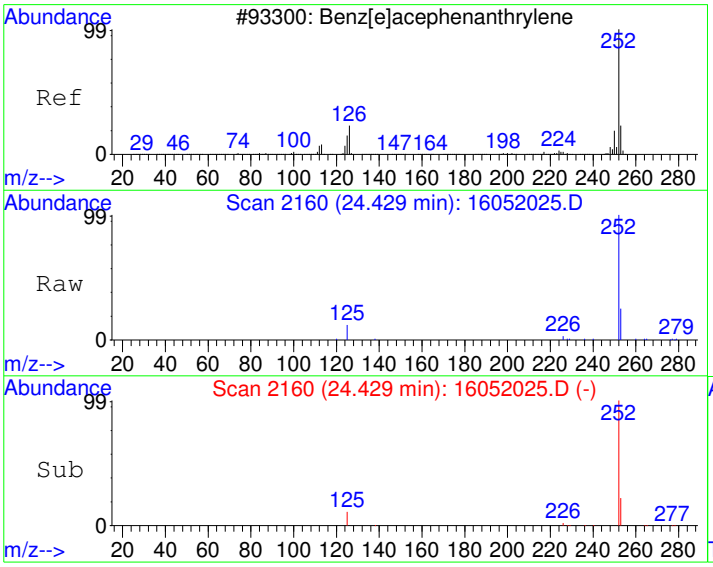


#19
Chrysene
Concen: 85.10 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:228 Resp: 26841

Ion	Ratio	Lower	Upper
228	100		
226	29.9	0.0	58.1
229	19.9	0.0	50.1

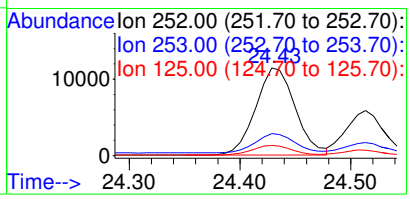


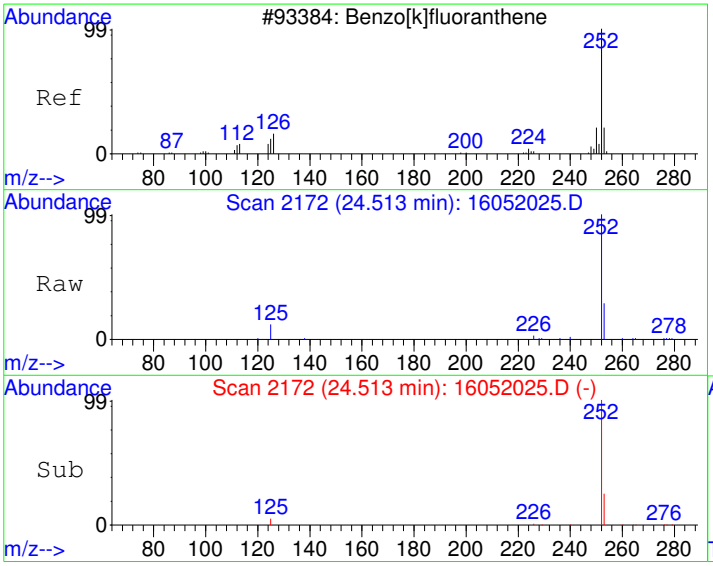


#21
Benzo[b]fluoranthene
Concen: 84.64 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:252 Resp: 28494

Ion	Ratio	Lower	Upper
252	100		
253	22.2	0.0	52.2
125	11.3	0.0	41.0

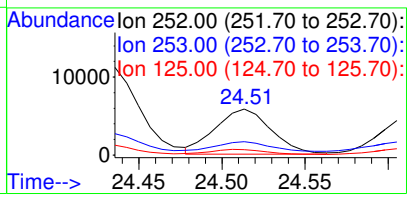


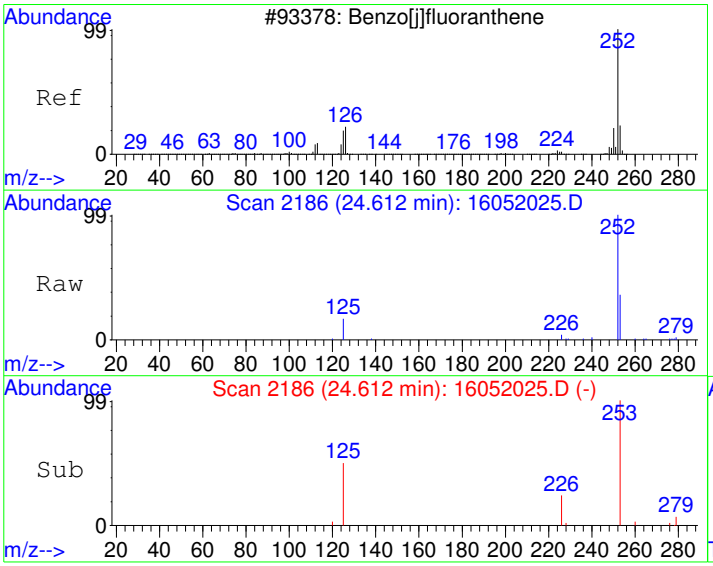


#22
Benzo[k]fluoranthene
Concen: 42.60 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.06 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:252 Resp: 13452

Ion	Ratio	Lower	Upper
252	100		
253	21.3	2.1	42.1
125	10.8	0.0	31.3

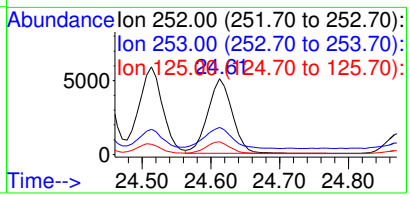


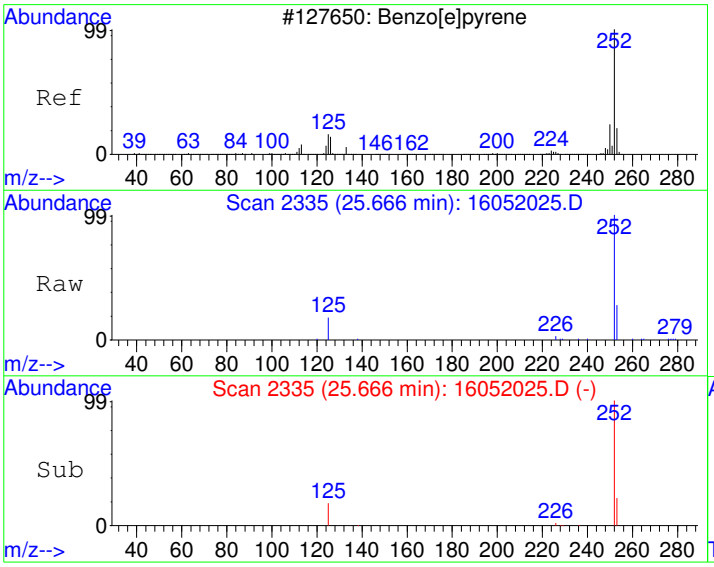


#23
Benzo(j)fluoranthene
Concen: 44.29 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:252 Resp: 12460

Ion	Ratio	Lower	Upper
252	100		
253	27.7	2.1	42.1
125	15.7	0.0	34.4

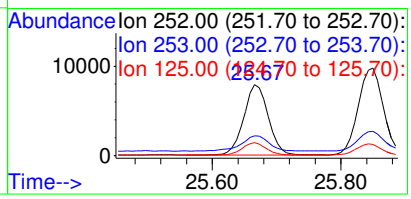


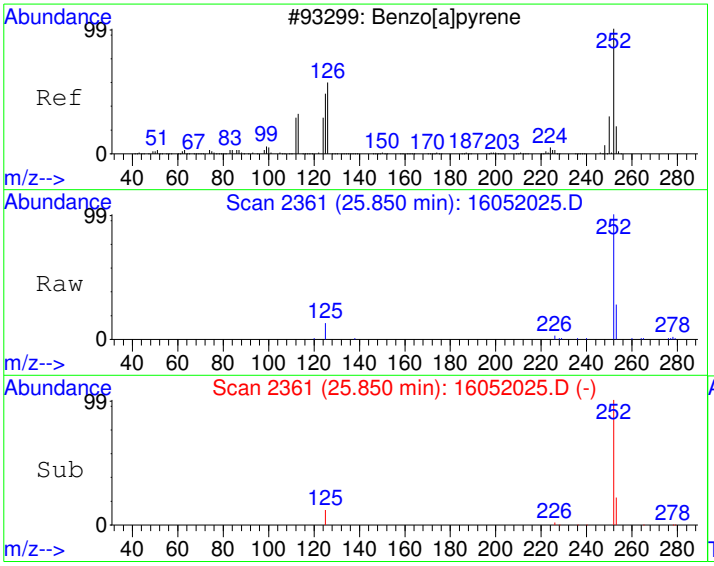


#24
Benzo[e]pyrene
Concen: 68.98 ug/kg
RT: 25.67 min Scan# 2335
Delta R.T. -0.06 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:252 Resp: 20796

Ion	Ratio	Lower	Upper
252	100		
253	21.5	2.2	42.2
125	17.6	0.0	36.1

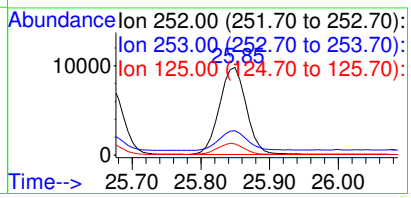


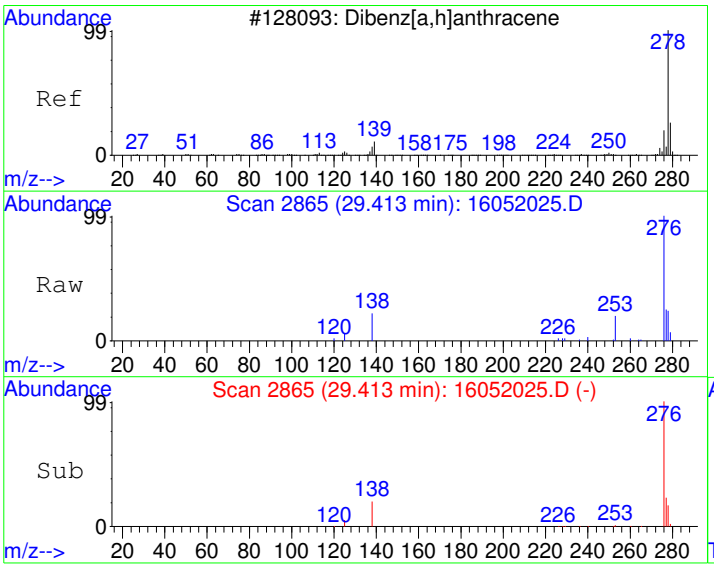


#25
Benzo[a]pyrene
Concen: 85.67 ug/kg
RT: 25.85 min Scan# 2361
Delta R.T. -0.05 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:252 Resp: 26393

Ion	Ratio	Lower	Upper
252	100		
253	22.5	1.9	41.9
125	12.1	0.0	31.7

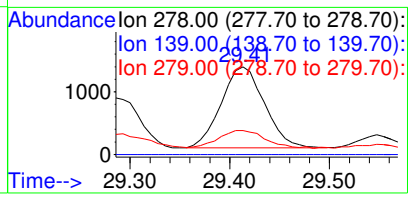


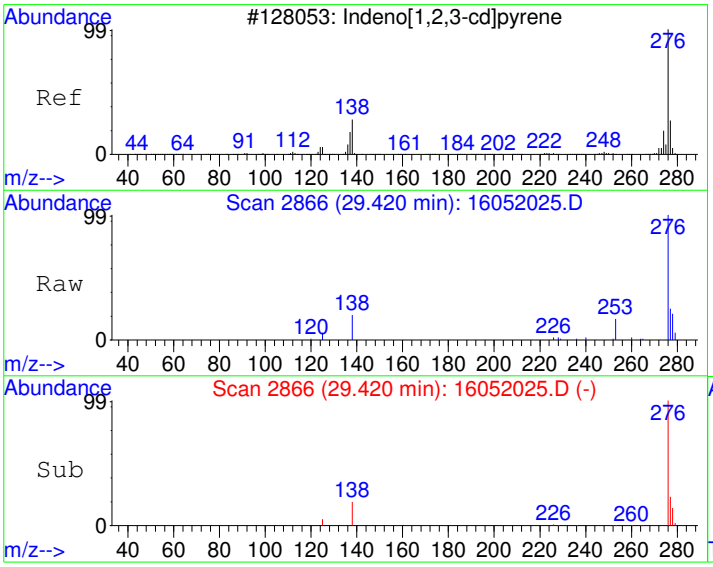


#26
Dibenz[a,h]anthracene
Concen: 13.77 ug/kg
RT: 29.41 min Scan# 2865
Delta R.T. -0.06 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:278 Resp: 3863

Ion	Ratio	Lower	Upper
278	100		
139	0.0	0.0	20.0
279	21.3	4.2	44.2

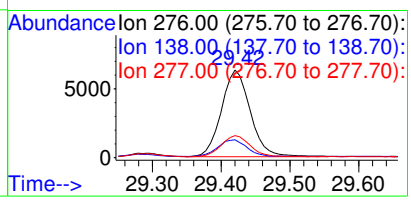


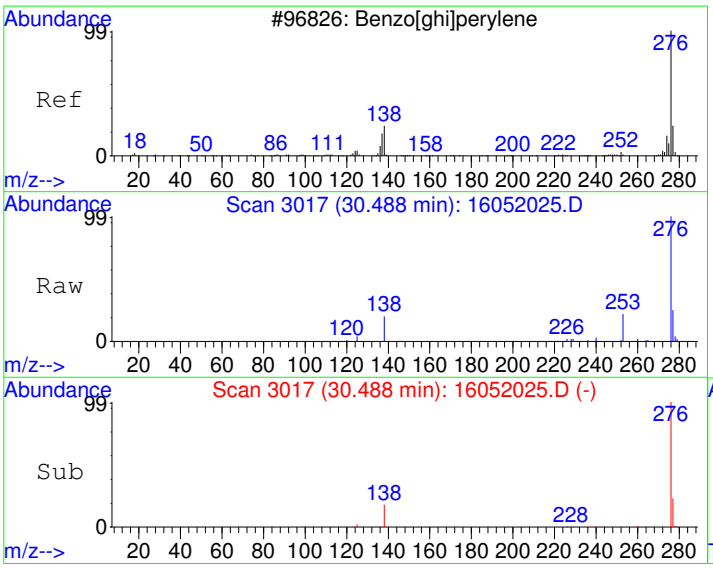


#27
Indeno[1,2,3-cd]pyrene
Concen: 54.41 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:276 Resp: 18211

Ion	Ratio	Lower	Upper
276	100		
138	19.2	6.7	46.7
277	24.4	5.8	45.8

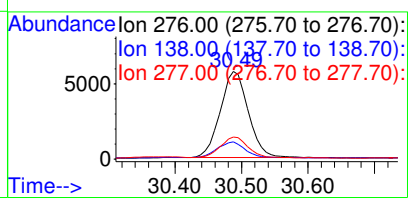




#28
Benzo[g,h,i]perylene
Concen: 64.25 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052025.D
Acq: 21 May 2016 12:15 am

Tgt Ion:276 Resp: 16770

Ion	Ratio	Lower	Upper
276	100		
138	18.3	0.0	39.1
277	24.2	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052026.D Vial: 26
Acq On : 21 May 2016 12:55 am Operator:
Sample : 1605097-42A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:20 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

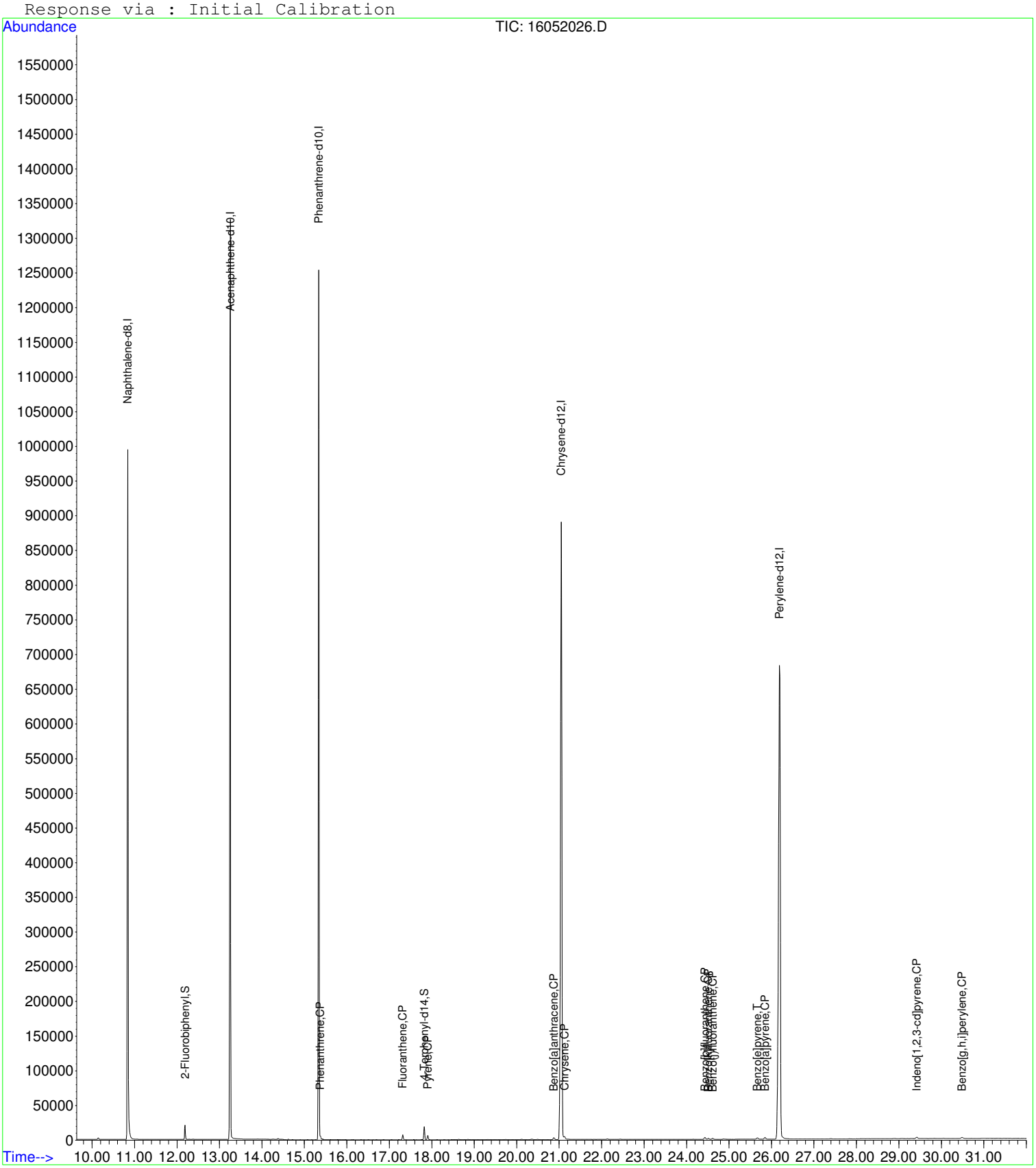
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1214999	4000.00	ug/kg	105
5) Acenaphthene-d10	13.25	164	758742	4000.00	ug/kg	66
11) Phenanthrene-d10	15.34	188	1350954	4000.00	ug/kg	66
17) Chrysene-d12	21.05	240	1497539	4000.00	ug/kg	66
20) Perylene-d12	26.19	264	1369823	4000.00	ug/kg	67
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	17585	79.45	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.99%#		
16) 4-Terphenyl-d14	17.82	244	24008	68.69	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.72%#		
Target Compounds						Qvalue
12) Phenanthrene	15.37	178	2759	7.77	ug/kg	98
14) Fluoranthene	17.32	202	7017	19.09	ug/kg	98
15) Pyrene	17.90	202	6567	17.20	ug/kg	98
18) Benzo[a]anthracene	20.87	228	3894	11.10	ug/kg	100
19) Chrysene	21.13	228	4848	14.30	ug/kg	98
21) Benzo[b]fluoranthene	24.44	252	5111	14.16	ug/kg	97
22) Benzo[k]fluoranthene	24.51	252	2515	7.43	ug/kg	98
23) Benzo(j)fluoranthene	24.61	252	2206	7.31	ug/kg	88
24) Benzo[e]pyrene	25.67	252	3722	11.51	ug/kg	98
25) Benzo[a]pyrene	25.85	252	4615	13.97	ug/kg	98
27) Indeno[1,2,3-cd]pyrene	29.42	276	3296	9.18	ug/kg	89
28) Benzo[g,h,i]perylene	30.49	276	3007	10.74	ug/kg	99

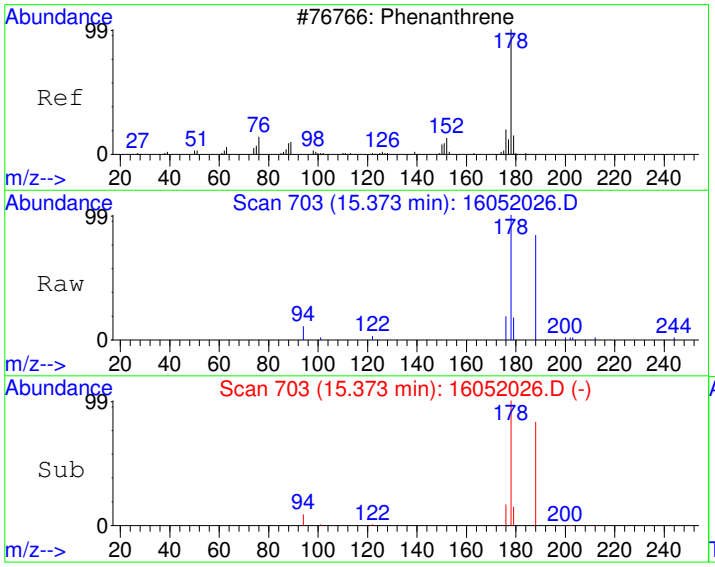
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052026.D Vial: 26
Acq On : 21 May 2016 12:55 am Operator:
Sample : 1605097-42A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:20 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

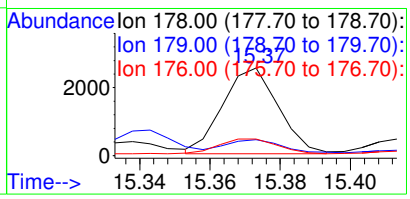


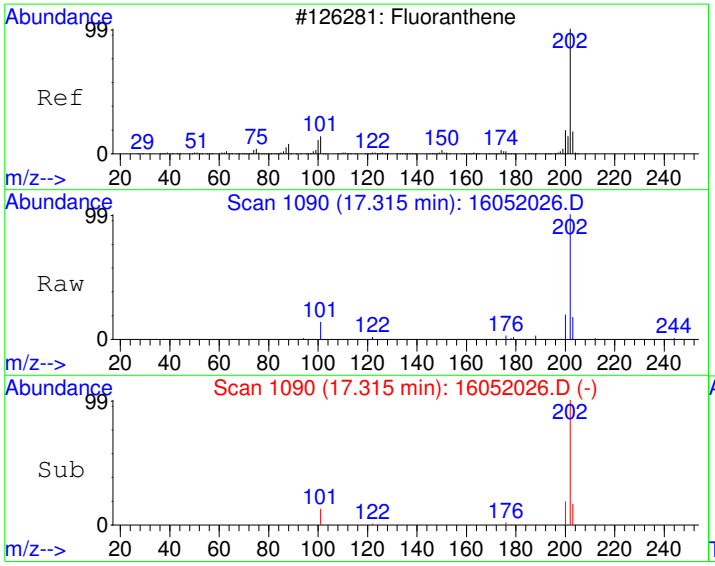


#12
Phenanthrene
Concen: 7.77 ug/kg
RT: 15.37 min Scan# 703
Delta R.T. -0.02 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:178 Resp: 2759

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	45.9
176	17.8	0.0	48.5

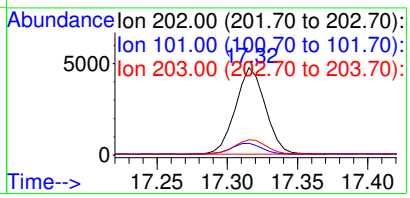


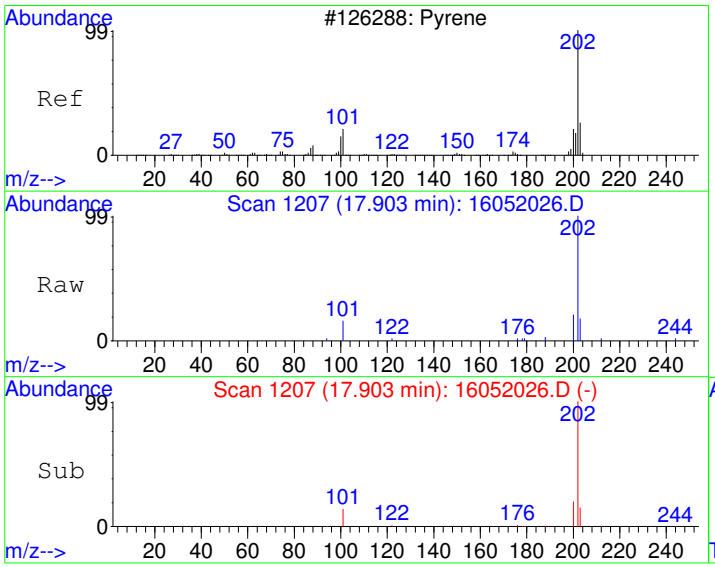


#14
Fluoranthene
Concen: 19.09 ug/kg
RT: 17.32 min Scan# 1090
Delta R.T. -0.03 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:202 Resp: 7017

Ion	Ratio	Lower	Upper
202	100		
101	12.7	0.0	43.0
203	16.6	0.0	47.9

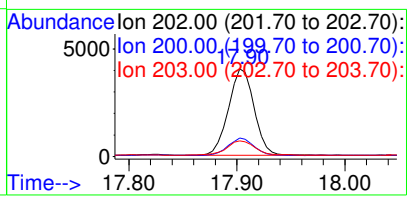


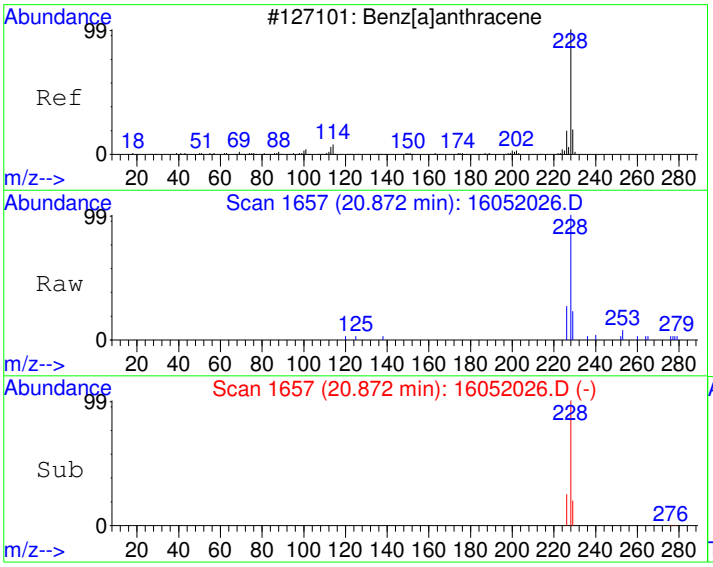


#15
Pyrene
Concen: 17.20 ug/kg
RT: 17.90 min Scan# 1207
Delta R.T. -0.03 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:202 Resp: 6567

Ion	Ratio	Lower	Upper
202	100		
200	20.0	0.0	50.0
203	16.5	0.0	48.0

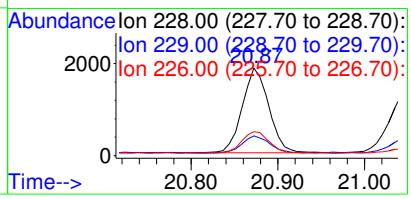


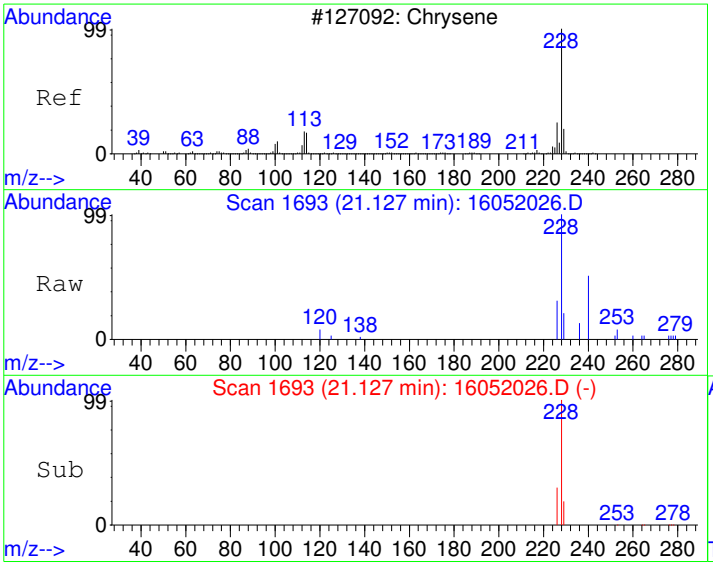


#18
Benzo[a]anthracene
Concen: 11.10 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:228 Resp: 3894

Ion	Ratio	Lower	Upper
228	100		
229	20.1	0.0	50.1
226	25.0	0.0	55.2

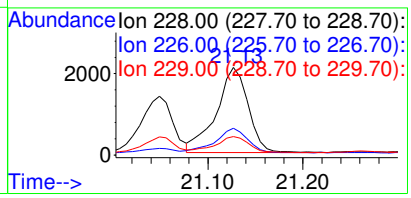


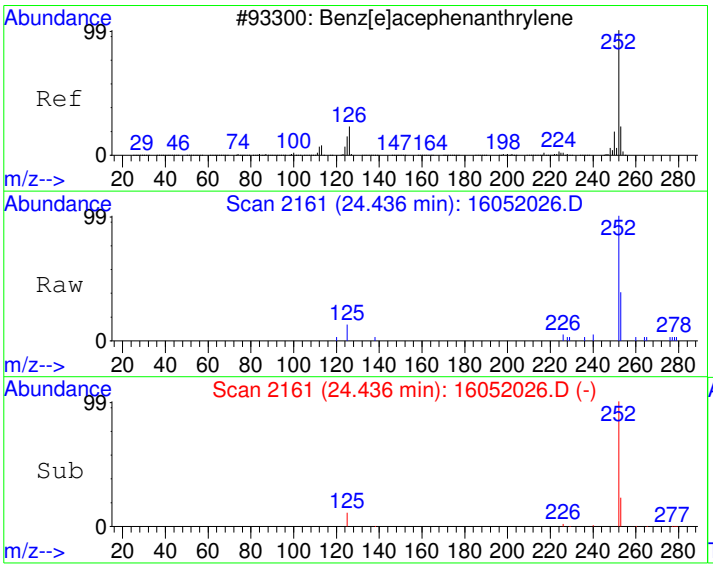


#19
Chrysene
Concen: 14.30 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:228 Resp: 4848

Ion	Ratio	Lower	Upper
228	100		
226	28.9	0.0	58.1
229	18.8	0.0	50.1

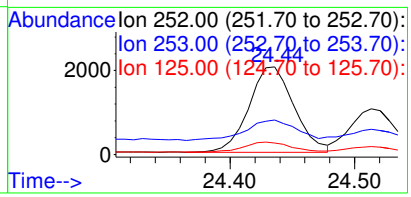


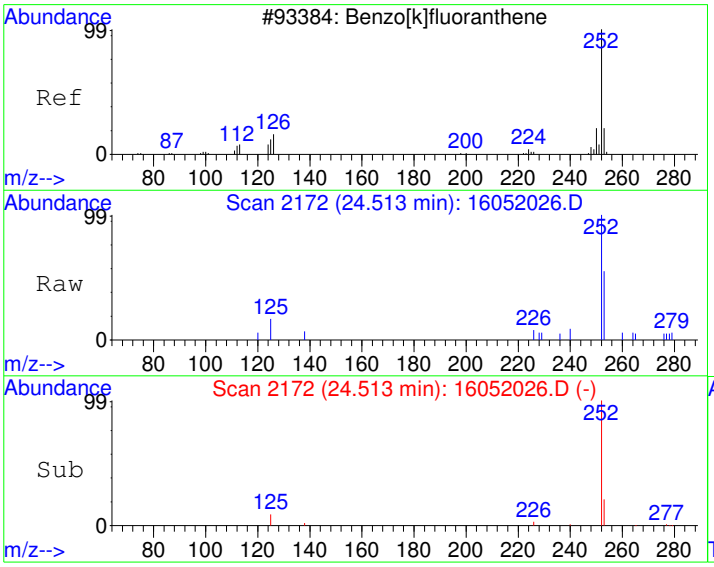


#21
Benzo[b]fluoranthene
Concen: 14.16 ug/kg
RT: 24.44 min Scan# 2161
Delta R.T. -0.05 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:252 Resp: 5111

Ion	Ratio	Lower	Upper
252	100		
253	23.9	0.0	52.2
125	10.6	0.0	41.0

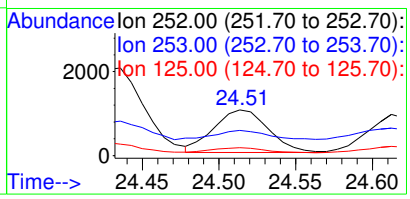


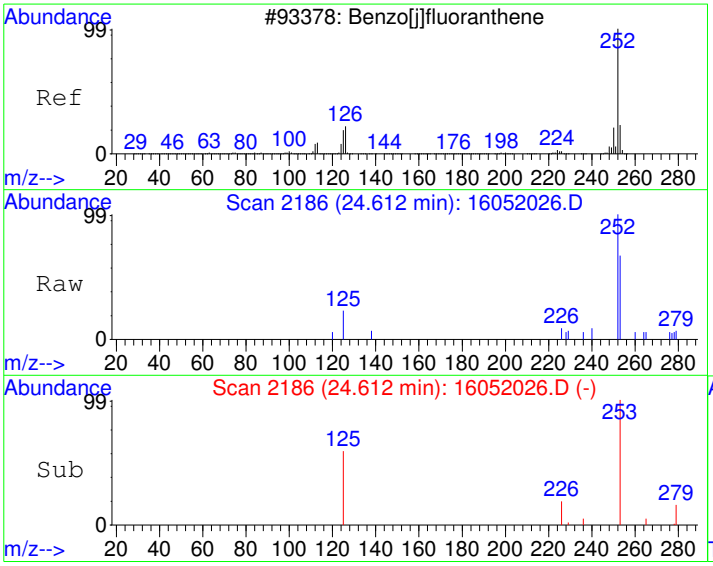


#22
Benzo[k]fluoranthene
Concen: 7.43 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.06 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:252 Resp: 2515

Ion	Ratio	Lower	Upper
252	100		
253	20.9	2.1	42.1
125	11.3	0.0	31.3

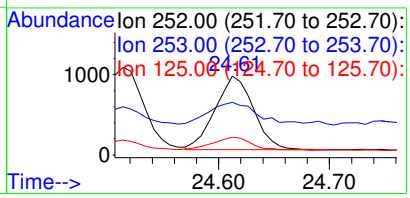


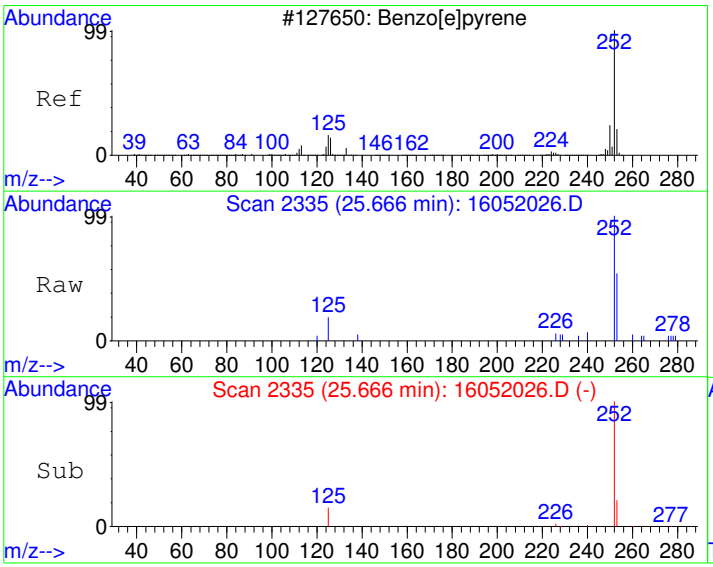


#23
Benzo(j)fluoranthene
Concen: 7.31 ug/kg
RT: 24.61 min Scan# 2186
Delta R.T. -0.06 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:252 Resp: 2206

Ion	Ratio	Lower	Upper
252	100		
253	29.1	2.1	42.1
125	17.4	0.0	34.4

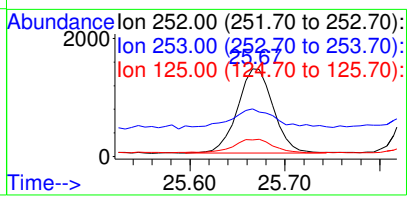


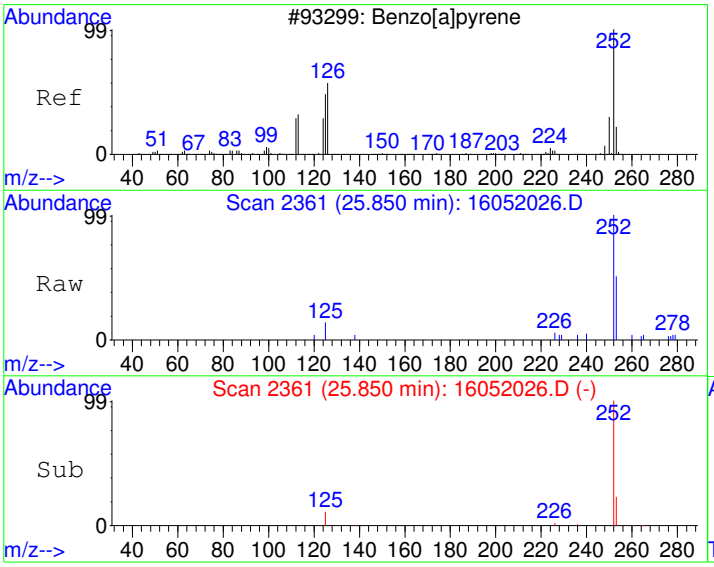


#24
Benzo[e]pyrene
Concen: 11.51 ug/kg
RT: 25.67 min Scan# 2335
Delta R.T. -0.06 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:252 Resp: 3722

Ion	Ratio	Lower	Upper
252	100		
253	21.2	2.2	42.2
125	14.8	0.0	36.1

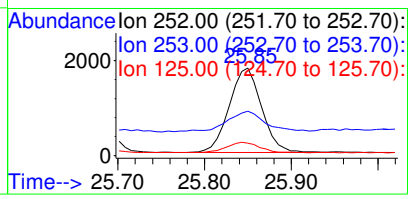


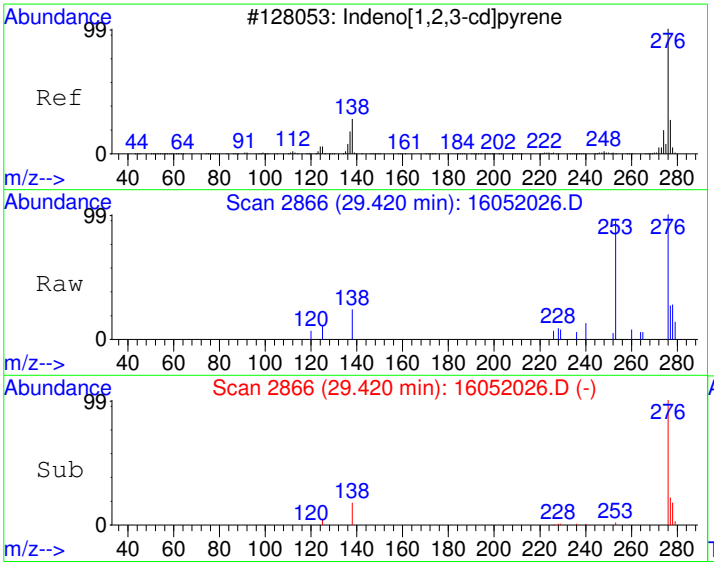


#25
Benzo[a]pyrene
Concen: 13.97 ug/kg
RT: 25.85 min Scan# 2361
Delta R.T. -0.05 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:252 Resp: 4615

Ion	Ratio	Lower	Upper
252	100		
253	23.2	1.9	41.9
125	11.2	0.0	31.7

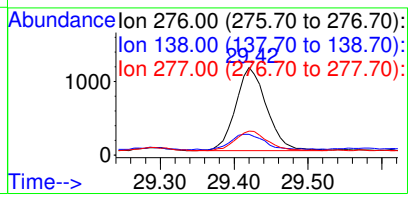


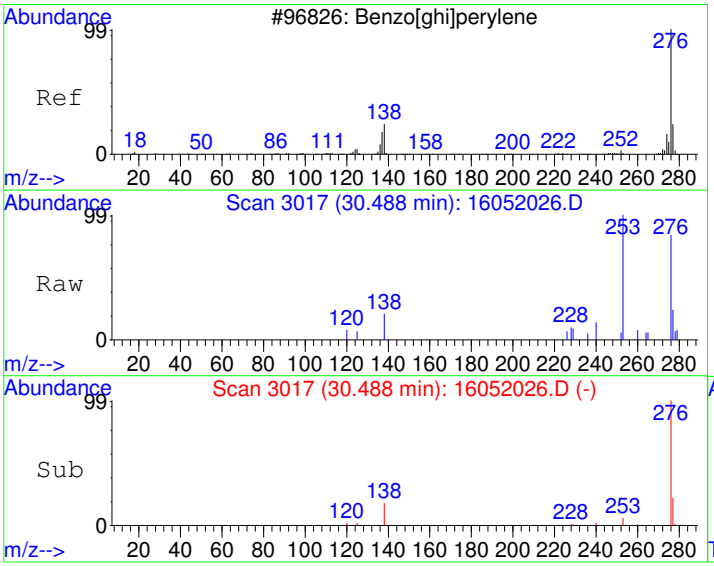


#27
Indeno[1,2,3-cd]pyrene
Concen: 9.18 ug/kg
RT: 29.42 min Scan# 2866
Delta R.T. -0.06 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:276 Resp: 3296

Ion	Ratio	Lower	Upper
276	100		
138	18.3	6.7	46.7
277	22.8	5.8	45.8

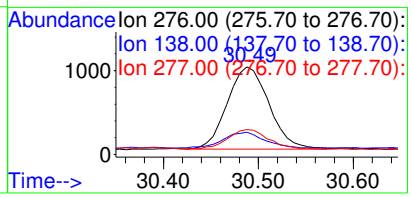




#28
Benzo[g,h,i]perylene
Concen: 10.74 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052026.D
Acq: 21 May 2016 12:55 am

Tgt Ion:276 Resp: 3007

Ion	Ratio	Lower	Upper
276	100		
138	19.1	0.0	39.1
277	23.5	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052027.D Vial: 27
Acq On : 21 May 2016 1:35 am Operator:
Sample : 1605097-43A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:20 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

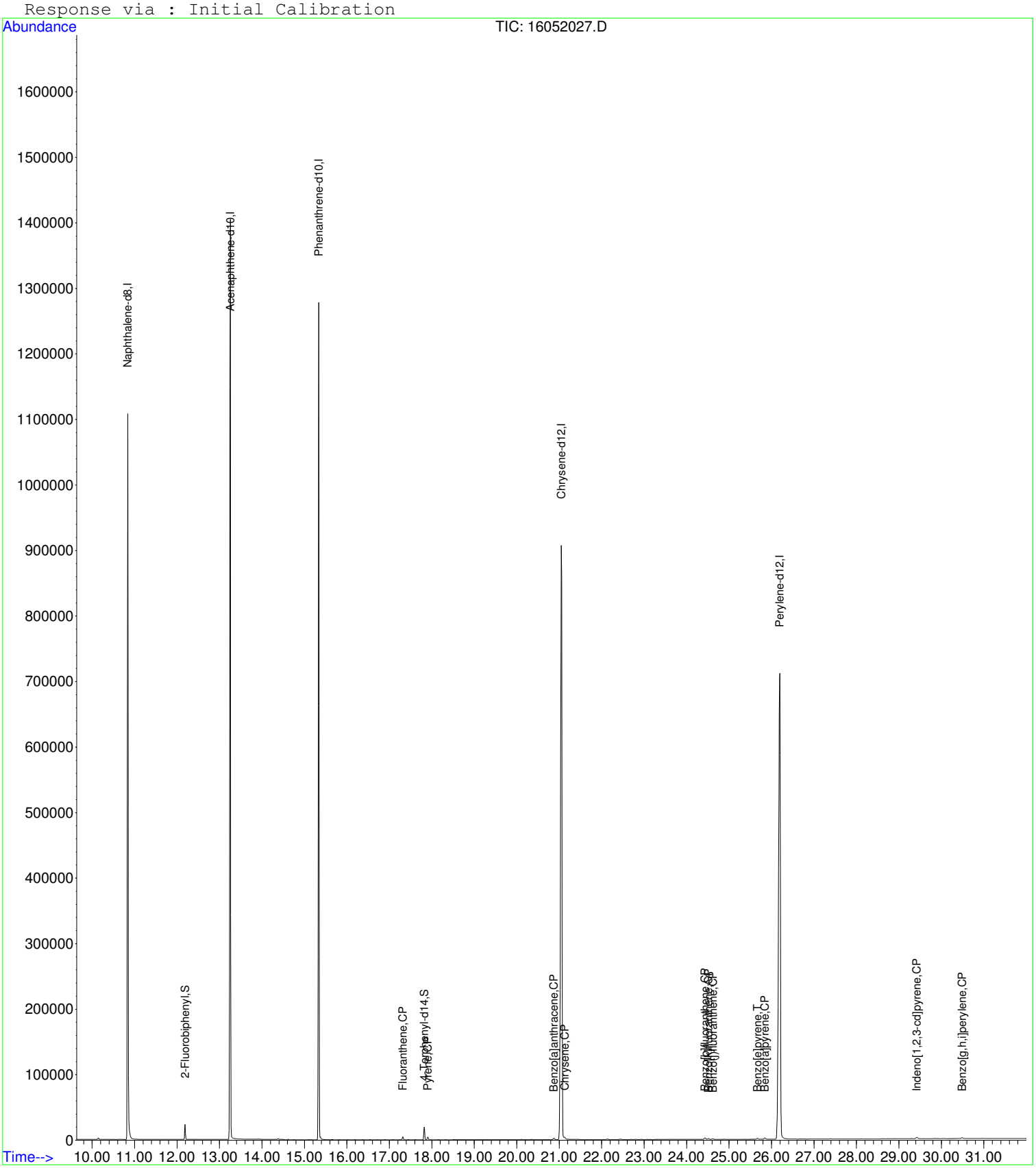
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1299691	4000.00	ug/kg	112
5) Acenaphthene-d10	13.25	164	797141	4000.00	ug/kg	69
11) Phenanthrene-d10	15.34	188	1339403	4000.00	ug/kg	66
17) Chrysene-d12	21.05	240	1548163	4000.00	ug/kg	68
20) Perylene-d12	26.20	264	1424910	4000.00	ug/kg	69
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.19	172	18413	79.18	ug/kg	-0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.98%#		
16) 4-Terphenyl-d14	17.82	244	24957	72.02	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.80%#		
Target Compounds						Qvalue
14) Fluoranthene	17.32	202	4814	13.21	ug/kg	100
15) Pyrene	17.90	202	4692	12.39	ug/kg	99
18) Benzo[a]anthracene	20.87	228	3214	8.86	ug/kg	98
19) Chrysene	21.13	228	3607	10.29	ug/kg	98
21) Benzo[b]fluoranthene	24.43	252	4421	11.77	ug/kg	97
22) Benzo[k]fluoranthene	24.51	252	2243	6.37	ug/kg	98
23) Benzo(j)fluoranthene	24.62	252	1693	5.39	ug/kg	93
24) Benzo[e]pyrene	25.67	252	2762	8.21	ug/kg	98
25) Benzo[a]pyrene	25.84	252	3908	11.37	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.43	276	3100	8.30	ug/kg	90
28) Benzo[g,h,i]perylene	30.49	276	2779	9.54	ug/kg	99

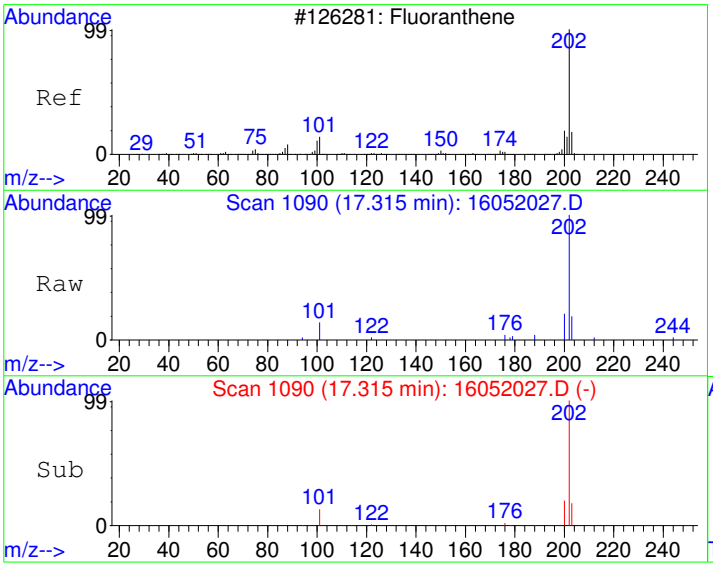
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052027.D Vial: 27
Acq On : 21 May 2016 1:35 am Operator:
Sample : 1605097-43A Inst : GC/MS #6
Misc : SAMP Multiplr: 10.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:20 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration

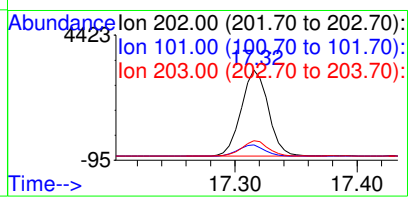


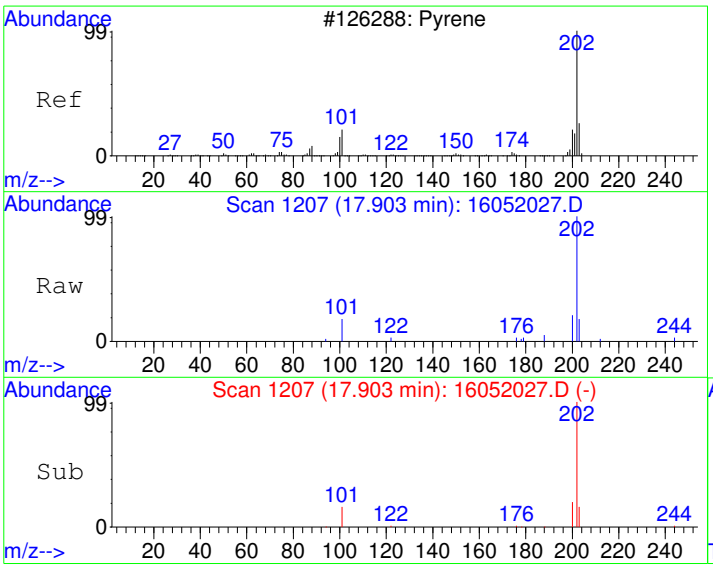


#14
Fluoranthene
Concen: 13.21 ug/kg
RT: 17.32 min Scan# 1090
Delta R.T. -0.03 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

Tgt Ion:202 Resp: 4814

Ion	Ratio	Lower	Upper
202	100		
101	12.9	0.0	43.0
203	17.7	0.0	47.9

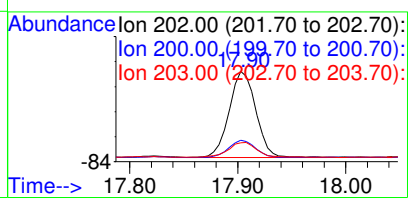


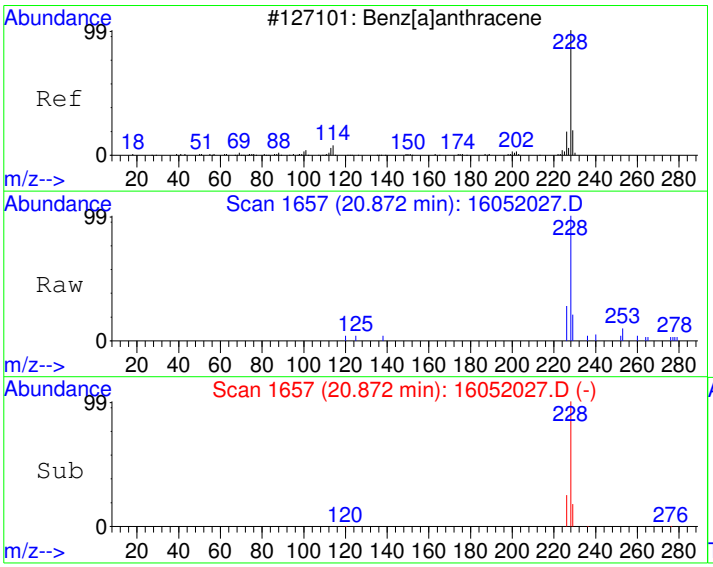


#15
Pyrene
Concen: 12.39 ug/kg
RT: 17.90 min Scan# 1207
Delta R.T. -0.03 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

Tgt Ion:202 Resp: 4692

Ion	Ratio	Lower	Upper
202	100		
200	20.1	0.0	50.0
203	16.8	0.0	48.0

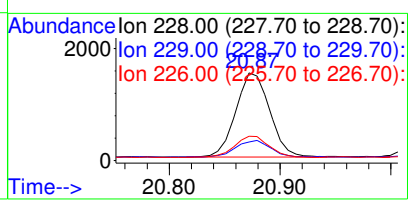


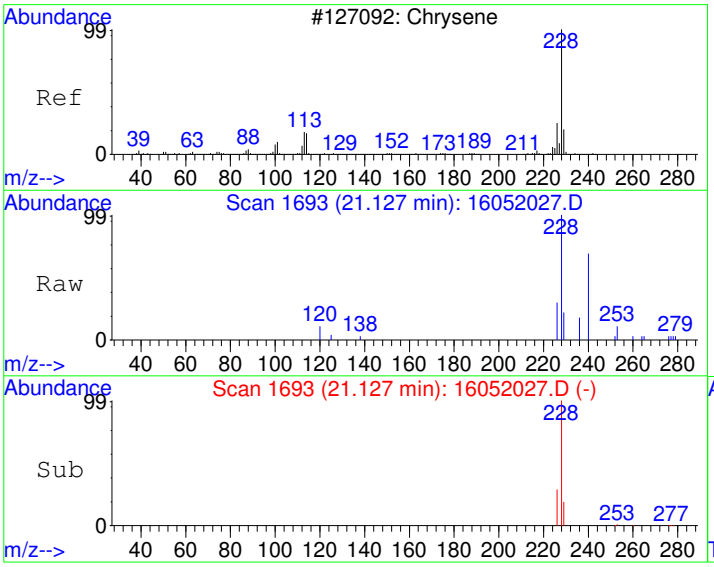


#18
Benzo[a]anthracene
Concen: 8.86 ug/kg
RT: 20.87 min Scan# 1657
Delta R.T. -0.04 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

Tgt Ion:228 Resp: 3214

Ion	Ratio	Lower	Upper
228	100		
229	17.9	0.0	50.1
226	25.1	0.0	55.2

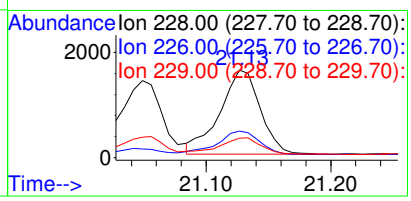


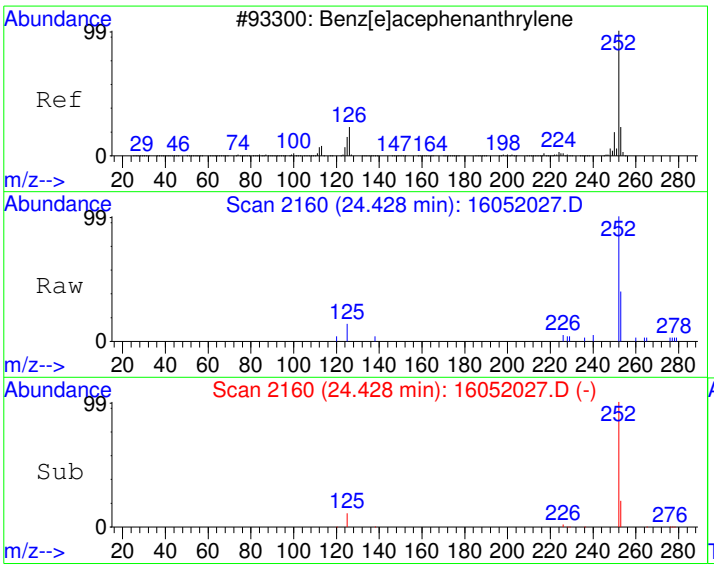


#19
Chrysene
Concen: 10.29 ug/kg
RT: 21.13 min Scan# 1693
Delta R.T. -0.04 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

Tgt Ion:228 Resp: 3607

Ion	Ratio	Lower	Upper
228	100		
226	27.6	0.0	58.1
229	19.1	0.0	50.1

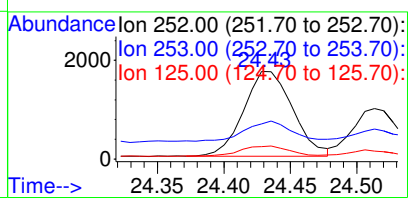


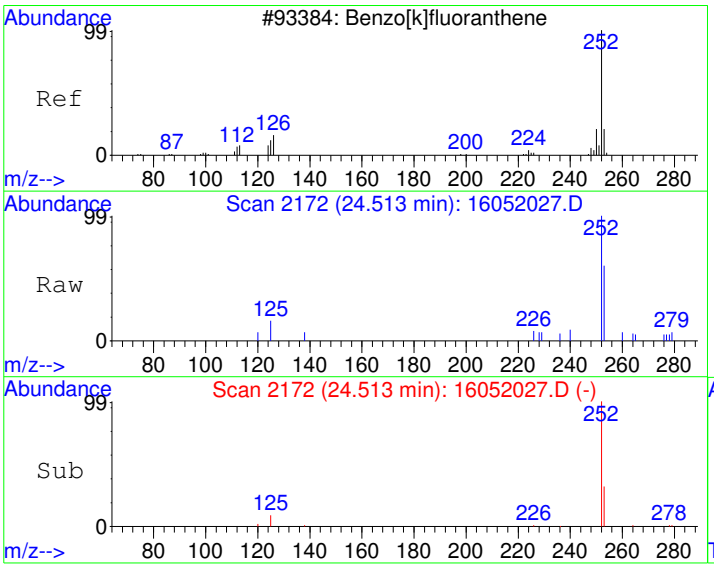


#21
Benzo[b]fluoranthene
Concen: 11.77 ug/kg
RT: 24.43 min Scan# 2160
Delta R.T. -0.06 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

Tgt Ion:252 Resp: 4421

Ion	Ratio	Lower	Upper
252	100		
253	20.3	0.0	52.2
125	11.1	0.0	41.0

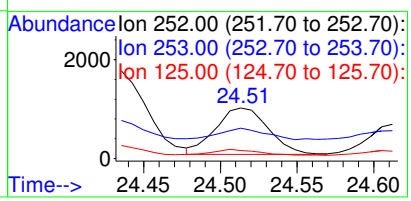


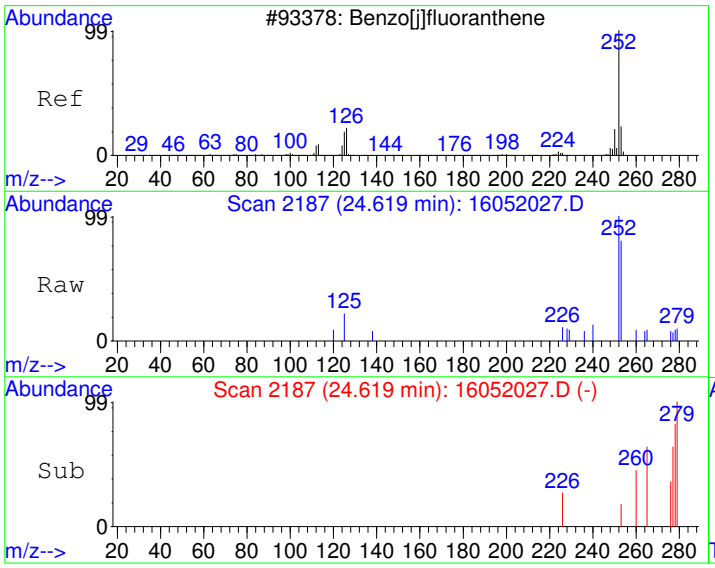


#22
Benzo[k]fluoranthene
Concen: 6.37 ug/kg
RT: 24.51 min Scan# 2172
Delta R.T. -0.06 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

Tgt Ion:252 Resp: 2243

Ion	Ratio	Lower	Upper
252	100		
253	23.4	2.1	42.1
125	10.8	0.0	31.3

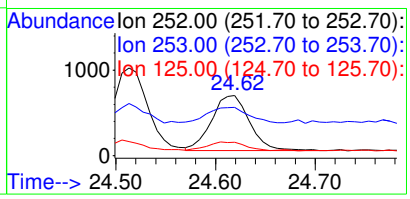


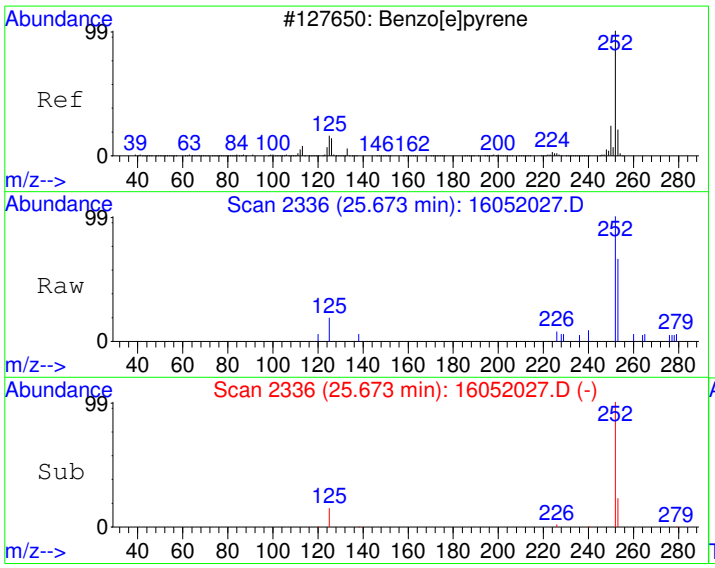


#23
Benzo(j)fluoranthene
Concen: 5.39 ug/kg
RT: 24.62 min Scan# 2187
Delta R.T. -0.05 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

Tgt Ion:252 Resp: 1693

Ion	Ratio	Lower	Upper
252	100		
253	26.9	2.1	42.1
125	14.9	0.0	34.4

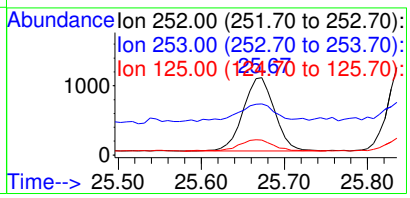


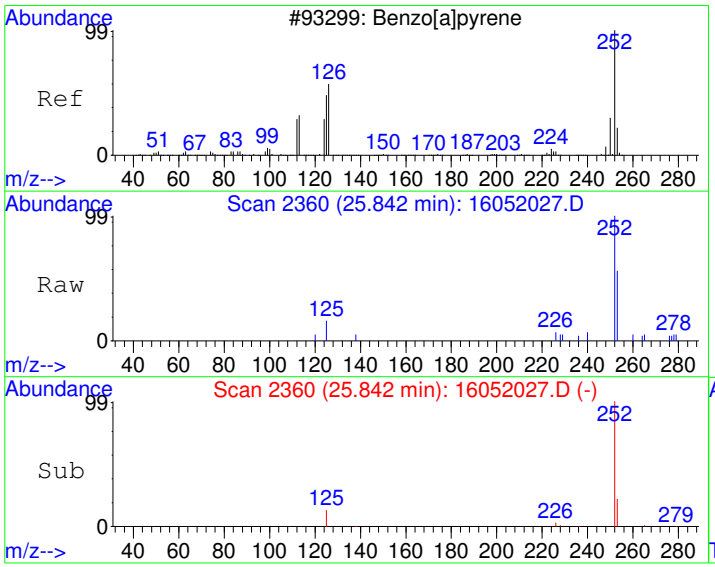


#24
Benzo[e]pyrene
Concen: 8.21 ug/kg
RT: 25.67 min Scan# 2336
Delta R.T. -0.05 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

Tgt Ion:252 Resp: 2762

Ion	Ratio	Lower	Upper
252	100		
253	23.4	2.2	42.2
125	15.1	0.0	36.1

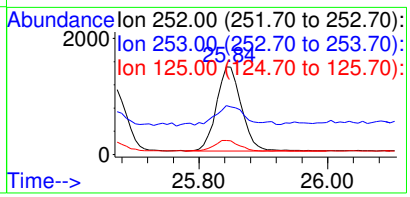


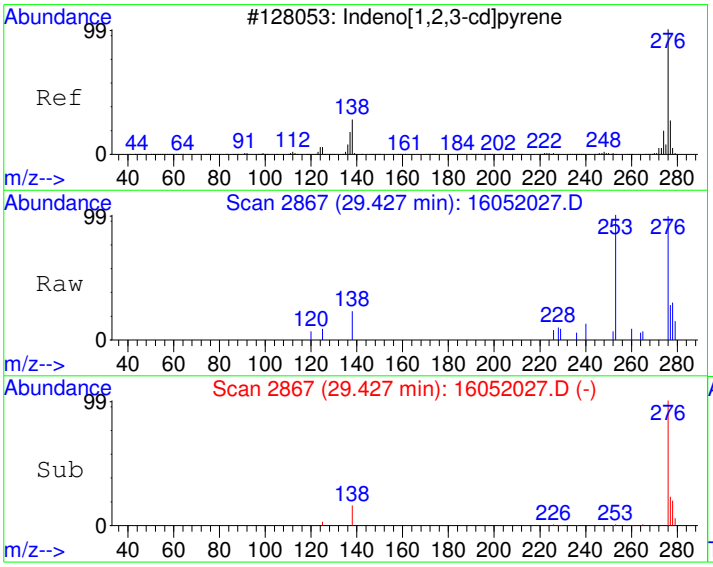


#25
Benzo[a]pyrene
Concen: 11.37 ug/kg
RT: 25.84 min Scan# 2360
Delta R.T. -0.06 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

Tgt Ion:252 Resp: 3908

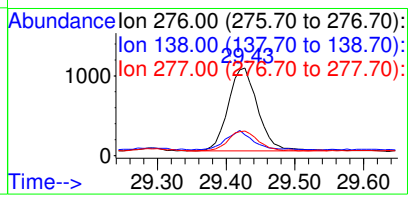
Ion	Ratio	Lower	Upper
252	100		
253	21.5	1.9	41.9
125	12.6	0.0	31.7

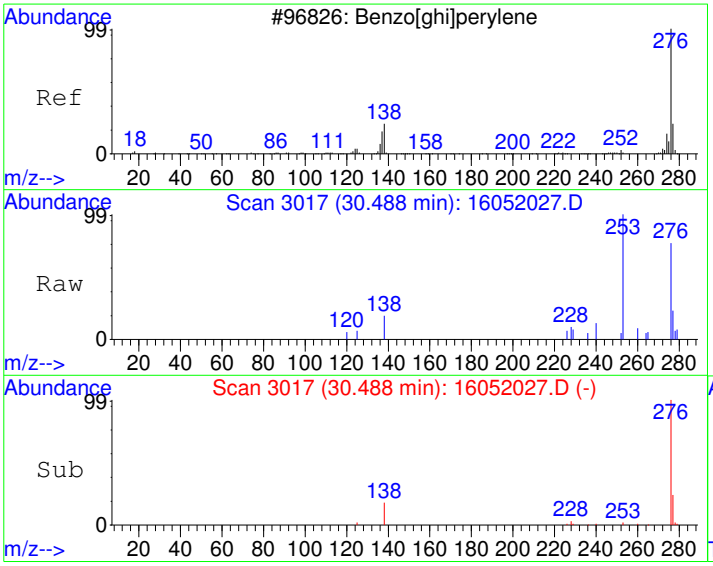




#27
Indeno[1,2,3-cd]pyrene
Concen: 8.30 ug/kg
RT: 29.43 min Scan# 2867
Delta R.T. -0.05 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

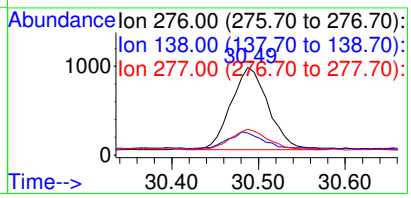
Tgt Ion:276	Resp:	3100
Ion	Ratio	Lower	Upper
276	100		
138	17.9	6.7	46.7
277	23.9	5.8	45.8





#28
Benzo[g,h,i]perylene
Concen: 9.54 ug/kg
RT: 30.49 min Scan# 3017
Delta R.T. -0.06 min
Lab File: 16052027.D
Acq: 21 May 2016 1:35 am

Tgt Ion:276	Resp:	2779
Ion	Ratio	Lower	Upper
276	100		
138	18.8	0.0	39.1
277	24.5	4.0	44.0



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160520\16052028.D Vial: 28
Acq On : 21 May 2016 2:15 am Operator:
Sample : CCV-160520 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:15 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration
DataAcq Meth : PP160421

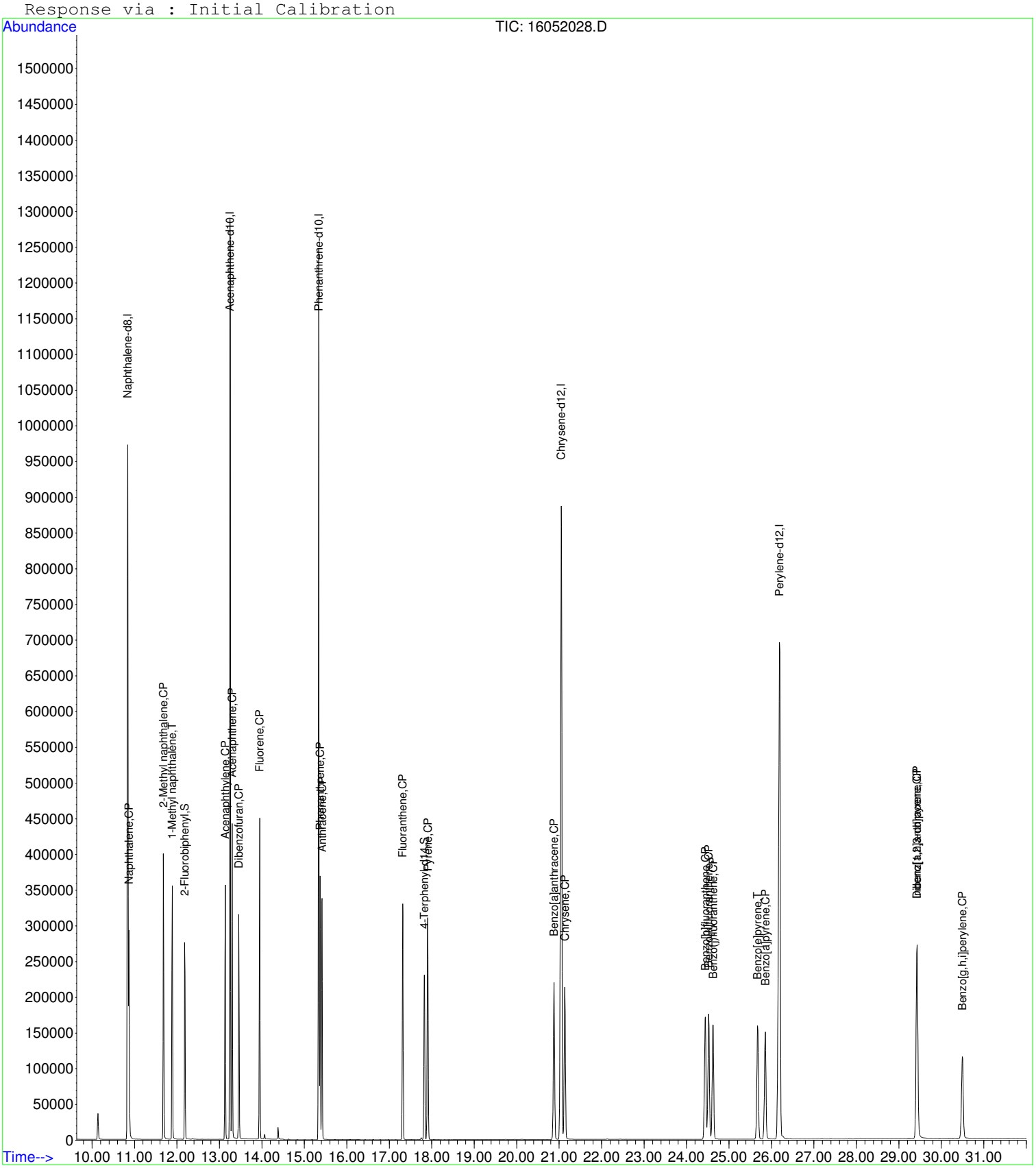
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.84	136	1231635	4000.00	ug/kg	106
5) Acenaphthene-d10	13.26	164	779612	4000.00	ug/kg	68
11) Phenanthrene-d10	15.34	188	1326088	4000.00	ug/kg	65
17) Chrysene-d12	21.05	240	1498325	4000.00	ug/kg	66
20) Perylene-d12	26.19	264	1382309	4000.00	ug/kg	67
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.18	172	228684	1005.56	ug/kg	-0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	25.14%#		
16) 4-Terphenyl-d14	17.83	244	296901	865.39	ug/kg	-0.03
Spiked Amount 4000.000	Range 40 - 140		Recovery =	21.63%#		
Target Compounds						Qvalue
2) Naphthalene	10.87	128	273639	888.21	ug/kg	100
3) 2-Methyl naphthalene	11.68	142	201528	740.55	ug/kg	96
4) 1-Methyl naphthalene	11.89	142	181384	727.76	ug/kg	98
6) Dibenzofuran	13.46	168	264912	906.64	ug/kg	99
8) Acenaphthylene	13.14	152	311007	926.31	ug/kg	99
9) Acenaphthene	13.30	154	179793	862.75	ug/kg	98
10) Fluorene	13.95	166	217938	861.12	ug/kg	99
12) Phenanthrene	15.37	178	295528	847.42	ug/kg	99
13) Anthracene	15.42	178	298499	904.31	ug/kg	99
14) Fluoranthene	17.31	202	324535	899.27	ug/kg	99
15) Pyrene	17.91	202	326633	871.29	ug/kg	99
18) Benzo[a]anthracene	20.88	228	314351	895.53	ug/kg	99
19) Chrysene	21.13	228	291099	858.30	ug/kg	99
21) Benzo[b]fluoranthene	24.44	252	317151	870.51	ug/kg	99
22) Benzo[k]fluoranthene	24.52	252	305846	894.88	ug/kg	99
23) Benzo(j)fluoranthene	24.63	252	278029	913.22	ug/kg	99
24) Benzo[e]pyrene	25.67	252	291642	893.85	ug/kg	99
25) Benzo[a]pyrene	25.86	252	285168	855.29	ug/kg	100
26) Dibenz[a,h]anthracene	29.43	278	255263	840.64	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.43	276	297411	821.02	ug/kg	97
28) Benzo[g,h,i]perylene	30.49	276	227400	805.04	ug/kg	100

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160520\16052028.D Vial: 28
Acq On : 21 May 2016 2:15 am Operator:
Sample : CCV-160520 Inst : GC/MS #6
Misc : CCV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 8:15 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Mon May 16 11:20:24 2016
Response via : Initial Calibration



GCMS6
Calibration Curve
For

DHL Work Order
1605097

CAL ID: 651

Method 8270 PAH Calibration Curve Sheet

Instrument ID: GCMS #6 **Calibration File Name:** PP160421.CAL

Target Concentration	Solvent Amount mL	Standard Preparation Stocks and Surrogate (µL/mL)	Final Volume mL
5 ppb	0.999	0.001 mL of 5000 ppb	1
10 ppb	0.998	0.002 mL of 5000 ppb	1
50 ppb	0.990	0.01 mL of 5000 ppb	1
100 ppb	0.980	0.02 mL of 5000 ppb	1
500 ppb	0.900	0.10 mL of 5000 ppb	1
1000 ppb	0.800	0.20 mL of 5000 ppb	1
2000 ppb	0.600	0.40 mL of 5000 ppb	1
5000 ppb	----	PAHCAL160421	10
SSCV 2500 ppb	0.500	0.50 mL of PAHSSCV160317-1	1
SSCV 2500 ppb	----	PAHSSCV160322-2	1

Standards Used for the Calibration Curve

Primary Stock STDs	DHL Standard ID	Second Source (SS) Stock STDs	DHL Standard ID
5 PPM (5000 PPB) PAH CAL STD	**PAHCAL160421**	5PPM (5000PPB) PAH SSCV STD	**PAHSSCV160317-1**
		5PPM (5000PPB) PAH SSCV STD	**PAHSSCV160322-2**

Review Item	Acceptance Criteria	Yes	No	N/A	2nd Level Review
1. Are all standards within expiration dates?	Primary Stocks = 1 year Intermediate Standards = 6 months	X			X
2. Are all manual integrations listed on MI tracking form? **(DoD Projects only)**	Manual Integration Tracking Form			X	X
3. Does the tune and resolution check meet criteria?	Benzo(b) / Benzo(k)phenanthrene Valley > 50% See Tune Eval Report	X			X
4. Does the ICAL curve meet criteria? Use average CF only if %RSD < 15%	%RSD < 15% COD ≥ 0.990	X			X
5. Has the low point been reprocessed under the new ICAL curve and meets criteria?	70-130% recovery	X			X
6. Has the SSCV been analyzed and meets criteria?	80-120% recovery	X			X

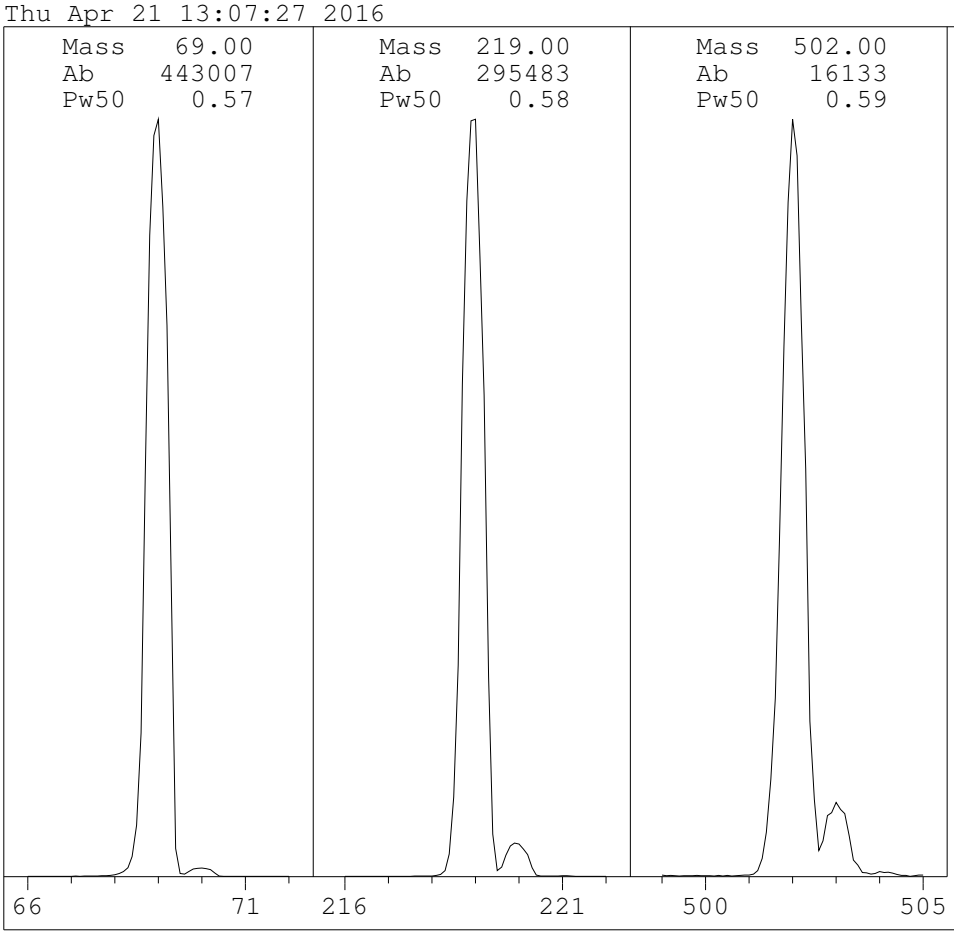
Analyst: Karyn Lane Date: 04/22/16

Second-Level Review: Date: 04/22/2016

HP5973

Instrument: GC/MS #6

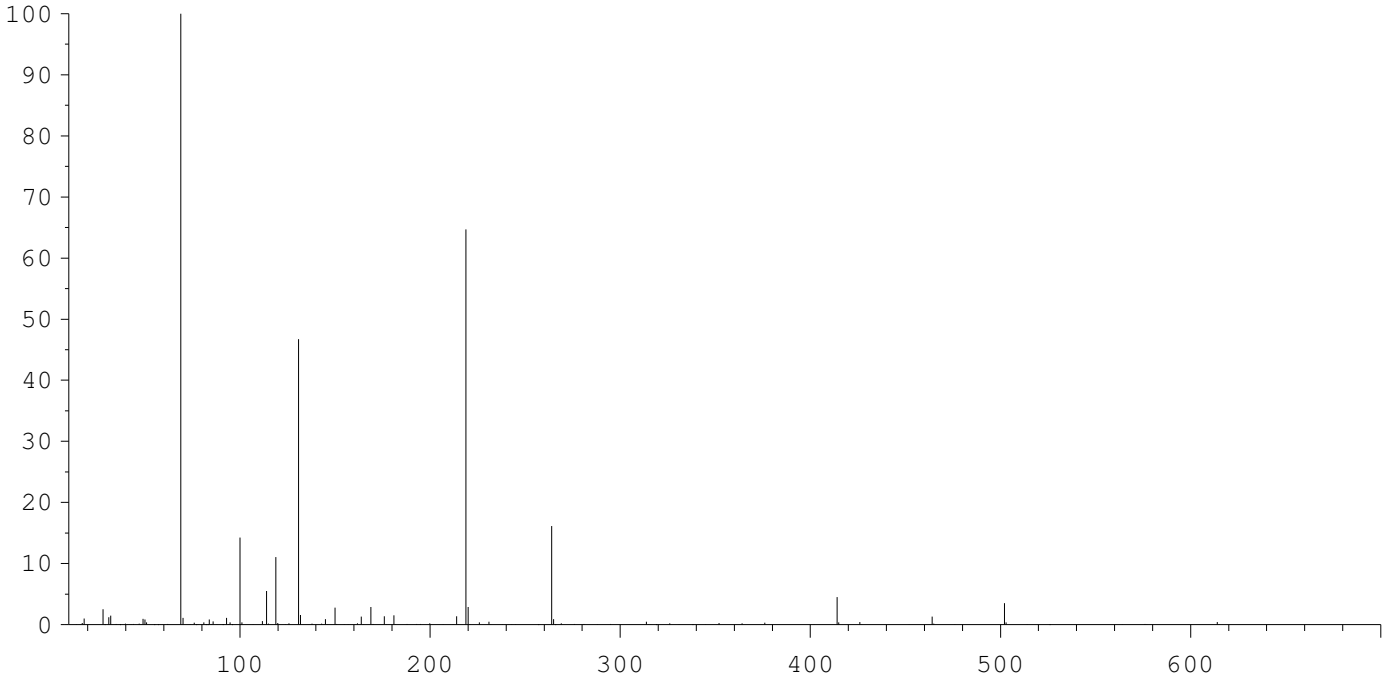
Thu Apr 21 13:07:27 2016 C:\HPCHEM\1\5973\ATUNE.U



Ion Pol	POS	MassGain	7
		MassOffs	-14
Emission	34.6	AmuGain	2195
EleEnergy	69.9	AmuOffs	127
Filament	2	Wid219	0.011
		DC Pol	POS
Repeller	19.90		
IonFocus	80.7	HED	ON
EntLens	14.0	EMVolts	1424
EntOffs	16.06		
		Samples	8
PFTBA	OPEN	Averages	3
		StepSize	0.10
Zones:			
MS Source	230	Foreline	71
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 100

125 peaks Base: 69.00 Abundance: 394176



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	394176	100.00	70.00	4405	1.12
218.90	254912	64.67	220.00	11307	4.44
502.00	13826	3.51	503.00	1441	10.42

TARGET MASS:	50	69	131	219	414	502
TARGET ABUND(%):	1.0	100.0	55.0	45.0	3.5	2.5
ACTUAL TUNE ABUND(%):	0.9	100.0	46.7	64.7	4.5	3.5

DHL Analytical, Inc.

Run ID: GCMS6_160421A **Run No.:** 85382

Analytical Run Date: 4/21/2016 **InstrumentID:** GCMS6

Analyst: Karyn Lane **Column:** Agilent (J&W) DB-EUPAH (20m x 0.18mmI

Calibration ID: 651 **Column ID:** 0.18mm

Column Length: 20m

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160421	1	PAH_ALL_W	TUNE	R85382	4/21/2016 1:12:00 PM		
PCAL-160421 (5 ppb)	1	PAH_ALL_W	CAL1	R85382	4/21/2016 2:30:00 PM		
PCAL-160421 (10 ppb)	1	PAH_ALL_W	CAL	R85382	4/21/2016 3:10:00 PM		
PCAL-160421 (50 ppb)	1	PAH_ALL_W	CAL	R85382	4/21/2016 3:51:00 PM		
PCAL-160421 (100 ppb	1	PAH_ALL_W	CAL	R85382	4/21/2016 4:31:00 PM		
PCAL-160421 (500 ppb	1	PAH_ALL_W	CAL	R85382	4/21/2016 5:11:00 PM		
PCAL-160421 (1000 pp	1	PAH_ALL_W	CAL	R85382	4/21/2016 5:50:00 PM		
PCAL-160421 (2000 pp	1	PAH_ALL_W	CAL	R85382	4/21/2016 6:30:00 PM		
PCAL-160421 (5000 pp	1	PAH_ALL_W	CAL	R85382	4/21/2016 7:10:00 PM		
PSSCV-160421 (2500 p	1	PAH_ALL_W	ICV	R85382	4/21/2016 8:30:00 PM		
PSSCV-160421 (2500 p	1	PAH_ALL_W	ICV	R85382	4/21/2016 9:10:00 PM		

REVIEWED/APPROVED

By Sherri Herschmann at 9:42:32 AM, 4/28/2016

Response Factor Report GC/MS #6

Method Path : F:\IC\GCMS#6\
Method File : PP160421.M
Title : PAH Calibration
Last Update : Fri Apr 22 09:12:07 2016
Response Via : Initial Calibration

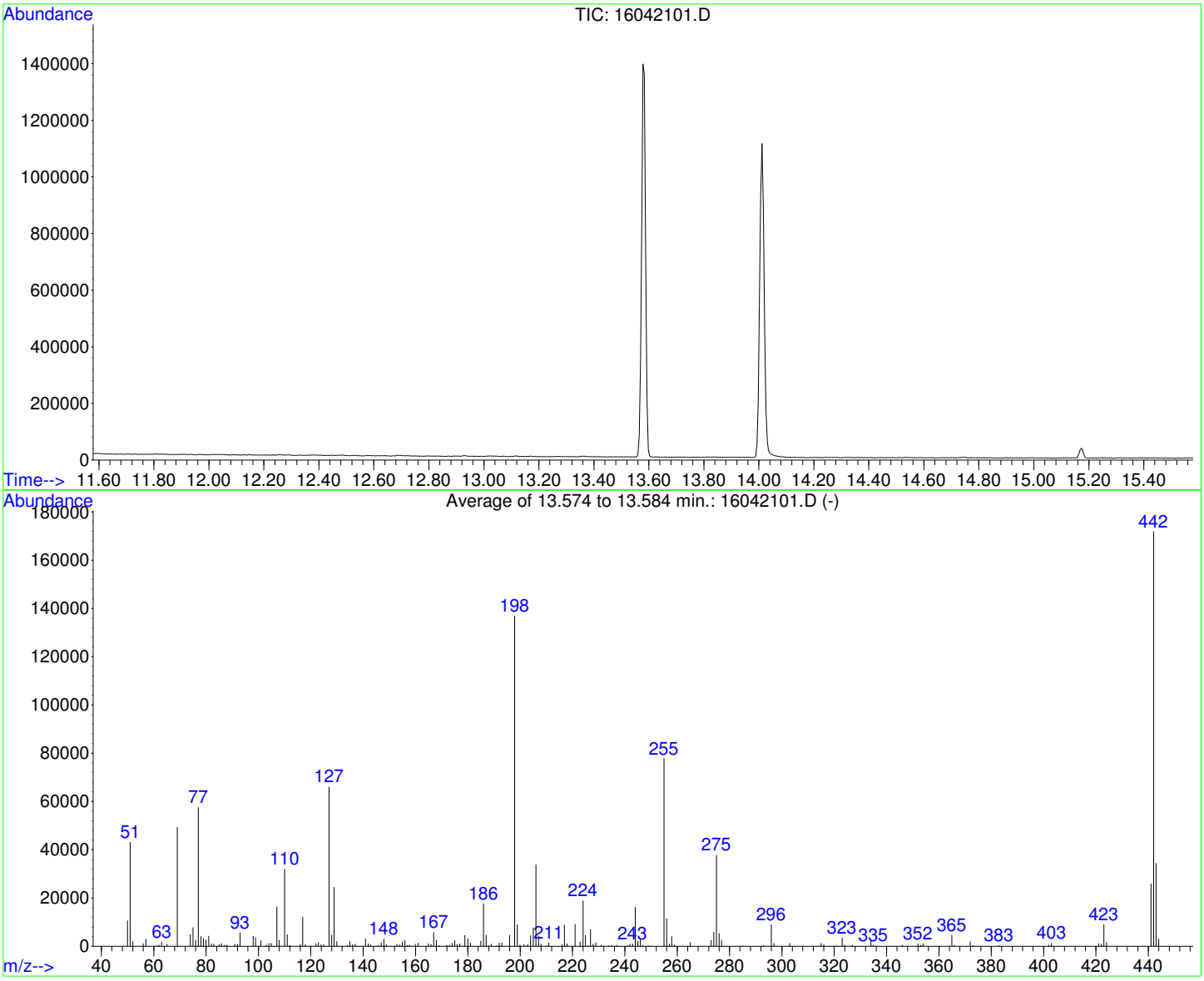
REVIEWED/APPROVED
By Sherri Herschmann at 9:42:37 AM, 4/28/2016

Calibration Files
1 =16042103.D 2 =16042104.D 3 =16042105.D 4 =16042106.D 5 =16042107.D 6 =16042108.D 7 =16042109.D
8 =16042110.D

		Compound	1	2	3	4	5	6	7	8	Avg	%RSD	Fit	RSD/CF	Constant	Linear	Quad
1)	I	Naphthalene-d8	----------ISTD----------														
2)	CP	Naphthalene	1.072	1.056	1.009	0.988	1.009	0.977	0.968	0.925	1.001	4.73	A	0.0473	0.0000	1.0005	0.0000
3)	CP	2-Methyl napht...	0.953	0.908	0.902	0.917	0.935	0.832	0.831	0.792	0.884	6.55	A	0.0655	0.0000	0.8838	0.0000
4)	T	1-Methyl napht...	0.853	0.833	0.826	0.836	0.861	0.767	0.766	0.734	0.809	5.82	A	0.0582	0.0000	0.8094	0.0000
5)	I	Acenaphthene-d10	----------ISTD----------														
6)	CP	Dibenzofuran	1.545	1.518	1.528	1.405	1.512	1.565	1.518	1.402	1.499	4.09#	A	0.0409	0.0000	1.4992	0.0000
7)	S	2-Fluorobiphenyl	1.227	1.249	1.171	1.271	1.202	1.091	1.074	1.049	1.167	7.28	A	0.0728	0.0000	1.1668	0.0000
8)	CP	Acenaphthylene	1.674	1.692	1.669	1.714	1.816	1.765	1.778	1.672	1.723	3.28	A	0.0328	0.0000	1.7226	0.0000
9)	CP	Acenaphthene	1.098	1.076	1.079	1.061	1.086	1.068	1.068	1.019	1.069	2.19	A	0.0219	0.0000	1.0692	0.0000
10)	CP	Fluorene	1.289	1.261	1.290	1.183	1.319	1.395	1.381	1.270	1.299	5.23	A	0.0523	0.0000	1.2985	0.0000
11)	I	Phenanthrene-d10	----------ISTD----------														
12)	CP	Phenanthrene	1.112	1.104	1.033	1.056	1.077	1.042	1.021	0.970	1.052	4.44	A	0.0444	0.0000	1.0519	0.0000
13)	CP	Anthracene	0.994	1.001	0.984	0.995	1.044	1.012	0.997	0.939	0.996	2.94	A	0.0294	0.0000	0.9957	0.0000
14)	CP	Fluoranthene	1.097	1.126	1.050	1.113	1.130	1.091	1.082	1.033	1.090	3.18	A	0.0318	0.0000	1.0903	0.0000
15)	CP	Pyrene	1.164	1.208	1.085	1.158	1.154	1.114	1.100	1.065	1.131	4.23	A	0.0423	0.0000	1.1308	0.0000
16)	S	4-Terphenyl-d14	1.290	1.174	0.947	1.015	0.997	0.964	0.956	0.937	1.035	12.39	A	0.1239	0.0000	1.0349	0.0000
17)	I	Chrysene-d12	----------ISTD----------														
18)	CP	Benzo[a]anthra...	0.905	0.905	0.896	0.905	0.987	0.967	0.978	0.953	0.937	4.04	A	0.0404	0.0000	0.9371	0.0000
19)	CP	Chrysene	0.917	0.912	0.890	0.892	0.939	0.912	0.909	0.873	0.905	2.24	A	0.0224	0.0000	0.9054	0.0000
20)	I	Perylene-d12	----------ISTD----------														
21)	CP	Benzo[b]fluora...	1.031	1.068	1.042	1.021	1.084	1.075	1.080	1.033	1.054	2.37	A	0.0237	0.0000	1.0543	0.0000
22)	CP	Benzo[k]fluora...	0.949	0.988	0.978	0.973	1.045	1.016	1.004	0.961	0.989	3.18	A	0.0318	0.0000	0.9890	0.0000
23)	CP	Benzo(j)fluora...	0.840	0.858	0.868	0.867	0.923	0.906	0.907	0.878	0.881	3.23	A	0.0323	0.0000	0.8810	0.0000
24)	T	Benzo[e]pyrene	0.931	0.957	0.942	0.931	0.974	0.953	0.956	0.909	0.944	2.13	A	0.0213	0.0000	0.9442	0.0000
25)	CP	Benzo[a]pyrene	0.955	0.941	0.944	0.932	0.997	0.991	0.998	0.962	0.965	2.76	A	0.0276	0.0000	0.9648	0.0000
26)	CP	Dibenz[a,h]ant...	0.881	0.820	0.849	0.840	0.906	0.908	0.913	0.911	0.879	4.22	A	0.0422	0.0000	0.8787	0.0000
27)	CP	Indeno[1,2,3-c...	1.037	0.991	1.024	1.016	1.084	1.078	1.084	1.071	1.048	3.43	A	0.0343	0.0000	1.0482	0.0000
28)	CP	Benzo[g,h,i]pe...	0.797	0.782	0.792	0.796	0.842	0.843	0.852	0.834	0.817	3.44	A	0.0344	0.0000	0.8174	0.0000

(#) = Out of Range

Data File : C:\HPCHEM\1\DATA\160421\16042101.D Vial: 1
Acq On : 21 Apr 2016 1:12 pm Operator:
Sample : DFTPP-160421 Inst : GC/MS #6
Misc : TUNE Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\DFTPPPAH.M (RTE Integrator)
Title : PAH Calibration



AutoFind: Scans 1592, 1593, 1594; Background Corrected with Scan 1586

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	31.5	43141	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	36.1	49451	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.3	66112	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	136896	PASS
199	198	5	9	6.6	9062	PASS
275	198	10	60	27.7	37883	PASS
365	198	1	200	3.4	4588	PASS
441	442	0.01	24	15.1	25970	PASS
442	198	50	400	125.6	171901	PASS
443	442	15	24	20.0	34379	PASS

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042103.D Vial: 3
Acq On : 21 Apr 2016 2:30 pm Operator:
Sample : PCAL-160421 (5 ppb) Inst : GC/MS #6
Misc : CAL1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Reprocessed low point.

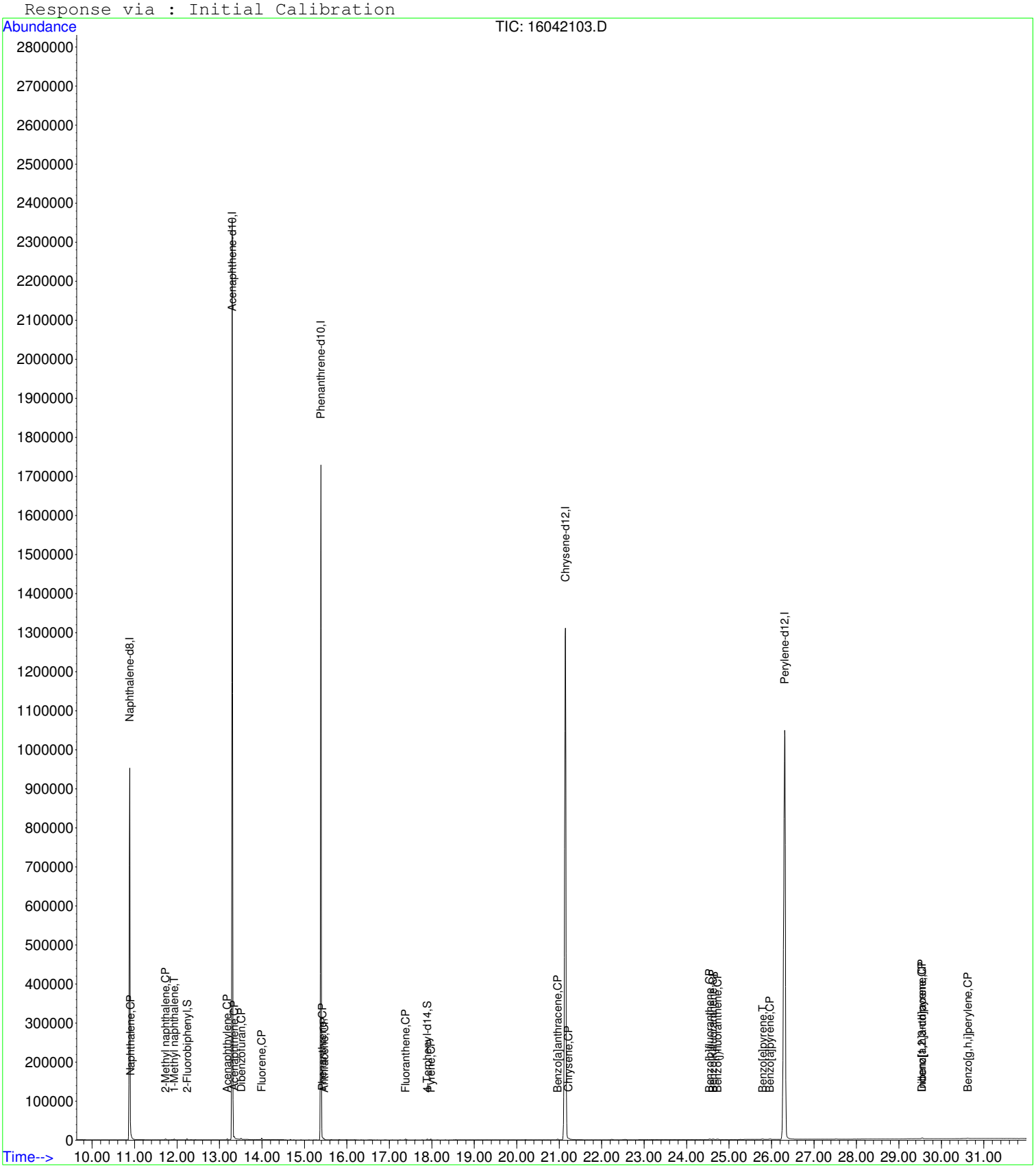
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1142778	4000.00	ug/kg	99
5) Acenaphthene-d10	13.30	164	1244911	4000.00	ug/kg	108
11) Phenanthrene-d10	15.39	188	1877690	4000.00	ug/kg	92
17) Chrysene-d12	21.15	240	2186100	4000.00	ug/kg	96
20) Perylene-d12	26.31	264	2056958	4000.00	ug/kg	100
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.23	172	1910	5.26	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.13%#		
16) 4-Terphenyl-d14	17.89	244	3028	6.23	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.16%#		
Target Compounds						Qvalue
2) Naphthalene	10.91	128	1531	5.36	ug/kg	98
3) 2-Methyl naphthalene	11.73	142	1362	5.39	ug/kg	98
4) 1-Methyl naphthalene	11.93	142	1218	5.27	ug/kg	92
6) Dibenzofuran	13.51	168	2405	5.15	ug/kg	100
8) Acenaphthylene	13.18	152	2605	4.86	ug/kg	99
9) Acenaphthene	13.35	154	1708	5.13	ug/kg	99
10) Fluorene	13.99	166	2006	4.96	ug/kg	100
12) Phenanthrene	15.42	178	2611	5.29	ug/kg	98
13) Anthracene	15.46	178	2334	4.99	ug/kg	97
14) Fluoranthene	17.38	202	2574	5.04	ug/kg	97
15) Pyrene	17.98	202	2731	5.14	ug/kg	98
18) Benzo[a]anthracene	20.96	228	2474	4.83	ug/kg	98
19) Chrysene	21.23	228	2506	5.06	ug/kg	98
21) Benzo[b]fluoranthene	24.54	252	2650	4.89	ug/kg	95
22) Benzo[k]fluoranthene	24.62	252	2439	4.80	ug/kg	99
23) Benzo(j)fluoranthene	24.73	252	2160	4.77	ug/kg	98
24) Benzo[e]pyrene	25.79	252	2395	4.93	ug/kg	99
25) Benzo[a]pyrene	25.96	252	2456	4.95	ug/kg	98
26) Dibenz[a,h]anthracene	29.54	278	2266	5.01	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.55	276	2667	4.95	ug/kg	94
28) Benzo[g,h,i]perylene	30.62	276	2050	4.88	ug/kg	98

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042103.D Vial: 3
Acq On : 21 Apr 2016 2:30 pm Operator:
Sample : PCAL-160421 (5 ppb) Inst : GC/MS #6
Misc : CAL1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042104.D Vial: 4
Acq On : 21 Apr 2016 3:10 pm Operator:
Sample : PCAL-160421 (10 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

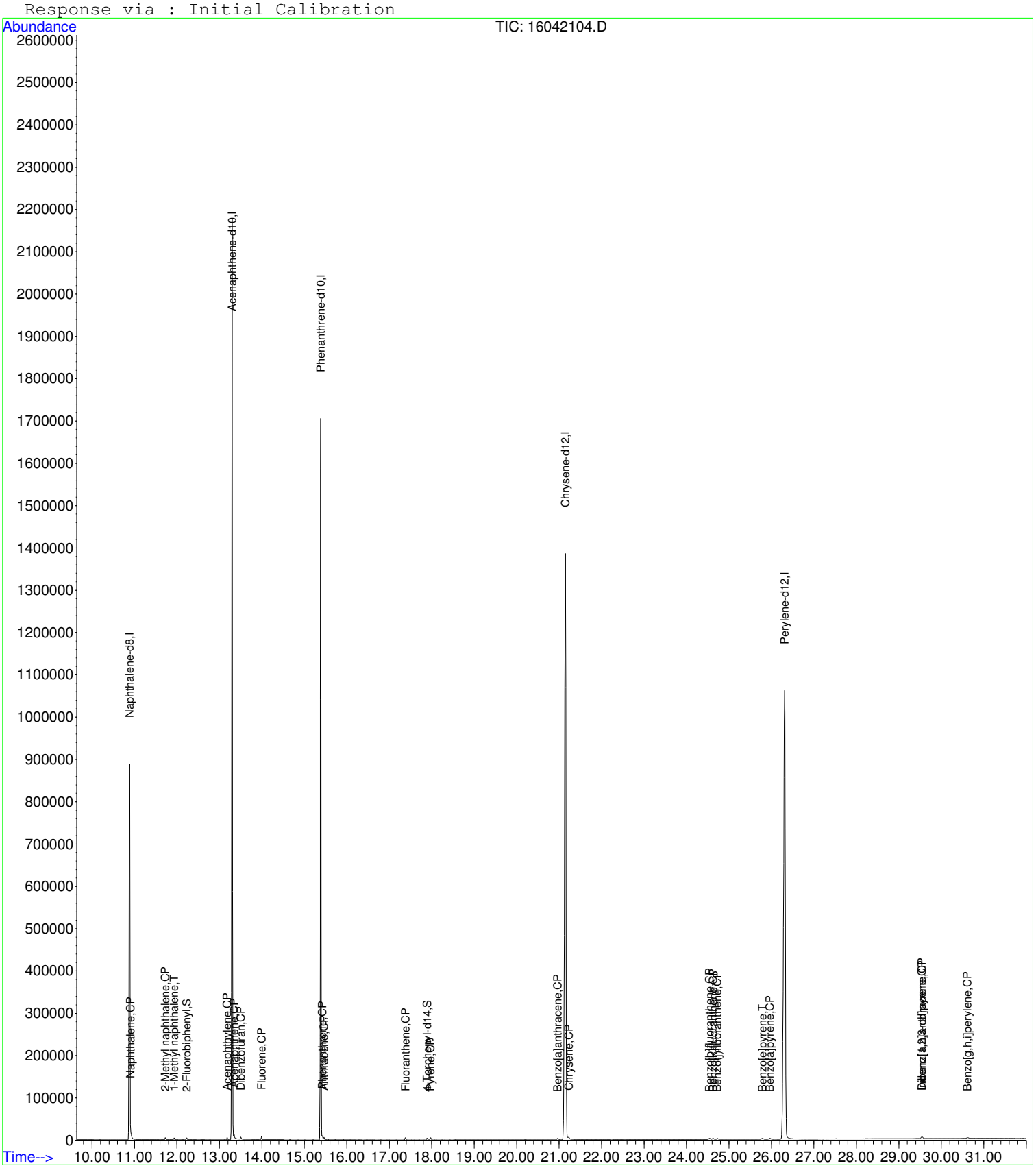
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.89	136	1199002	4000.00	ug/kg	103
5) Acenaphthene-d10	13.30	164	1222079	4000.00	ug/kg	106
11) Phenanthrene-d10	15.39	188	1882400	4000.00	ug/kg	92
17) Chrysene-d12	21.15	240	2305426	4000.00	ug/kg	101
20) Perylene-d12	26.31	264	2097207	4000.00	ug/kg	102
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.24	172	3816	10.70	ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.27%#		
16) 4-Terphenyl-d14	17.89	244	5525	11.34	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.28%#		
Target Compounds						Qvalue
2) Naphthalene	10.91	128	3165	10.55	ug/kg	99
3) 2-Methyl naphthalene	11.72	142	2722	10.27	ug/kg	96
4) 1-Methyl naphthalene	11.93	142	2498	10.30	ug/kg	98
6) Dibenzofuran	13.50	168	4637	10.12	ug/kg	97
8) Acenaphthylene	13.18	152	5169	9.82	ug/kg	99
9) Acenaphthene	13.35	154	3288	10.07	ug/kg	99
10) Fluorene	13.99	166	3853	9.71	ug/kg	100
12) Phenanthrene	15.42	178	5197	10.50	ug/kg	100
13) Anthracene	15.46	178	4709	10.05	ug/kg	99
14) Fluoranthene	17.38	202	5273	10.29	ug/kg	98
15) Pyrene	17.97	202	5684	10.68	ug/kg	98
18) Benzo[a]anthracene	20.96	228	5216	9.66	ug/kg	99
19) Chrysene	21.23	228	5255	10.07	ug/kg	100
21) Benzo[b]fluoranthene	24.54	252	5597	10.13	ug/kg	99
22) Benzo[k]fluoranthene	24.63	252	5178	9.99	ug/kg	98
23) Benzo(j)fluoranthene	24.73	252	4498	9.74	ug/kg	97
24) Benzo[e]pyrene	25.79	252	5016	10.13	ug/kg	99
25) Benzo[a]pyrene	25.96	252	4933	9.75	ug/kg	99
26) Dibenz[a,h]anthracene	29.55	278	4301	9.34	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.55	276	5196	9.45	ug/kg	97
28) Benzo[g,h,i]perylene	30.62	276	4100	9.57	ug/kg	98

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042104.D Vial: 4
Acq On : 21 Apr 2016 3:10 pm Operator:
Sample : PCAL-160421 (10 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042105.D Vial: 5
Acq On : 21 Apr 2016 3:51 pm Operator:
Sample : PCAL-160421 (50 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

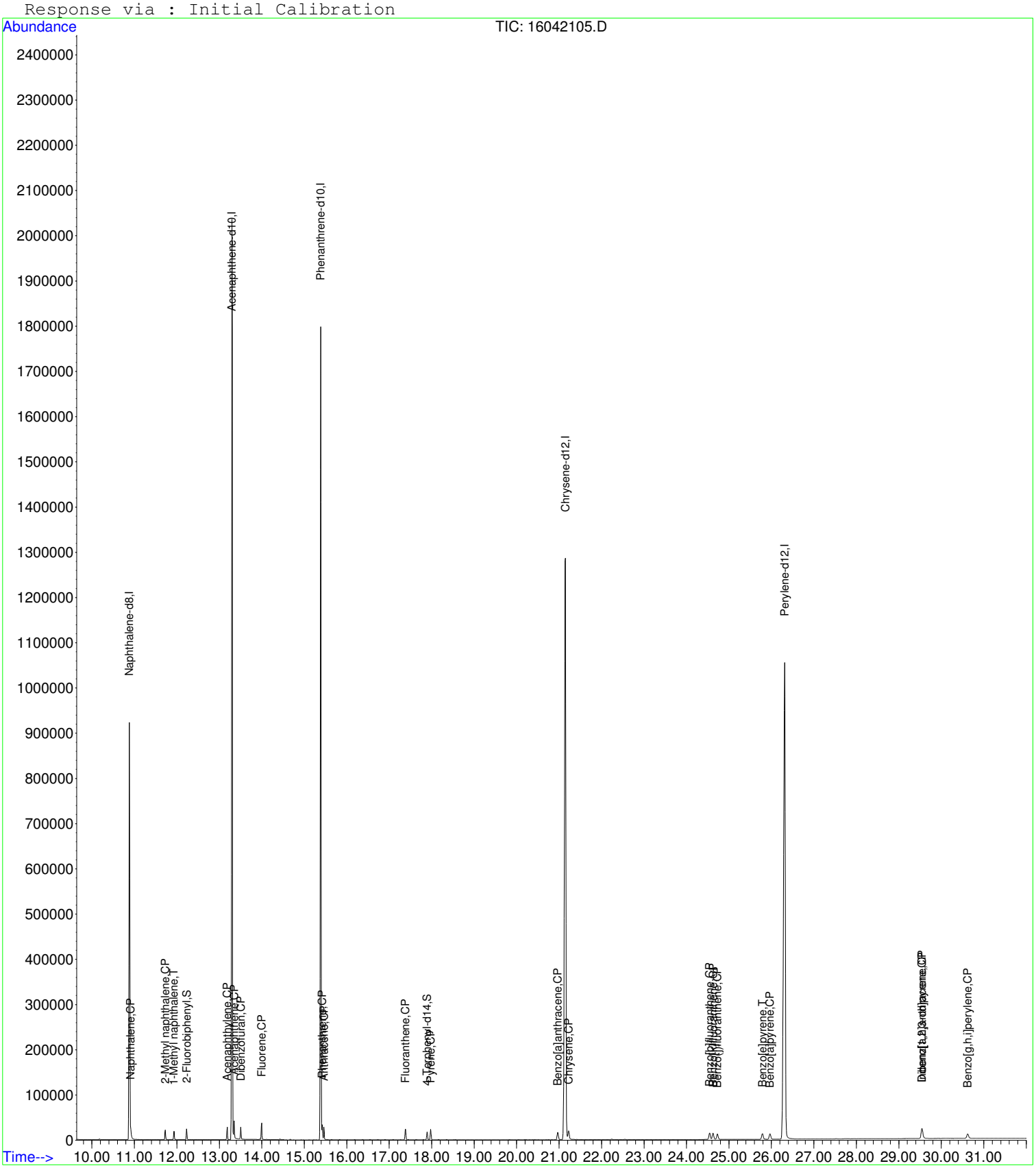
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1080570	4000.00	ug/kg	93
5) Acenaphthene-d10	13.30	164	1201613	4000.00	ug/kg	104
11) Phenanthrene-d10	15.39	188	1885707	4000.00	ug/kg	92
17) Chrysene-d12	21.15	240	2199366	4000.00	ug/kg	97
20) Perylene-d12	26.31	264	2036632	4000.00	ug/kg	99
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.23	172	17592	50.19	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.25%#		
16) 4-Terphenyl-d14	17.89	244	22329	45.77	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	1.14%#		
Target Compounds						Qvalue
2) Naphthalene	10.92	128	13632	50.43	ug/kg	99
3) 2-Methyl naphthalene	11.73	142	12186	51.04	ug/kg	97
4) 1-Methyl naphthalene	11.94	142	11156	51.02	ug/kg	99
6) Dibenzofuran	13.51	168	22945	50.95	ug/kg	99
8) Acenaphthylene	13.19	152	25071	48.45	ug/kg	98
9) Acenaphthene	13.35	154	16206	50.45	ug/kg	98
10) Fluorene	14.00	166	19379	49.68	ug/kg	98
12) Phenanthrene	15.42	178	24341	49.08	ug/kg	98
13) Anthracene	15.46	178	23196	49.42	ug/kg	99
14) Fluoranthene	17.38	202	24647	48.03	ug/kg	99
15) Pyrene	17.98	202	25571	47.97	ug/kg	99
18) Benzo[a]anthracene	20.96	228	24646	47.83	ug/kg	100
19) Chrysene	21.23	228	24465	49.14	ug/kg	99
21) Benzo[b]fluoranthene	24.54	252	26529	49.42	ug/kg	99
22) Benzo[k]fluoranthene	24.63	252	24886	49.42	ug/kg	99
23) Benzo(j)fluoranthene	24.73	252	22107	49.28	ug/kg	98
24) Benzo[e]pyrene	25.79	252	23989	49.90	ug/kg	99
25) Benzo[a]pyrene	25.96	252	24021	48.90	ug/kg	100
26) Dibenz[a,h]anthracene	29.54	278	21621	48.33	ug/kg	97
27) Indeno[1,2,3-cd]pyrene	29.55	276	26066	48.84	ug/kg	95
28) Benzo[g,h,i]perylene	30.62	276	20164	48.45	ug/kg	99

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042105.D Vial: 5
Acq On : 21 Apr 2016 3:51 pm Operator:
Sample : PCAL-160421 (50 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042106.D Vial: 6
Acq On : 21 Apr 2016 4:31 pm Operator:
Sample : PCAL-160421 (100 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

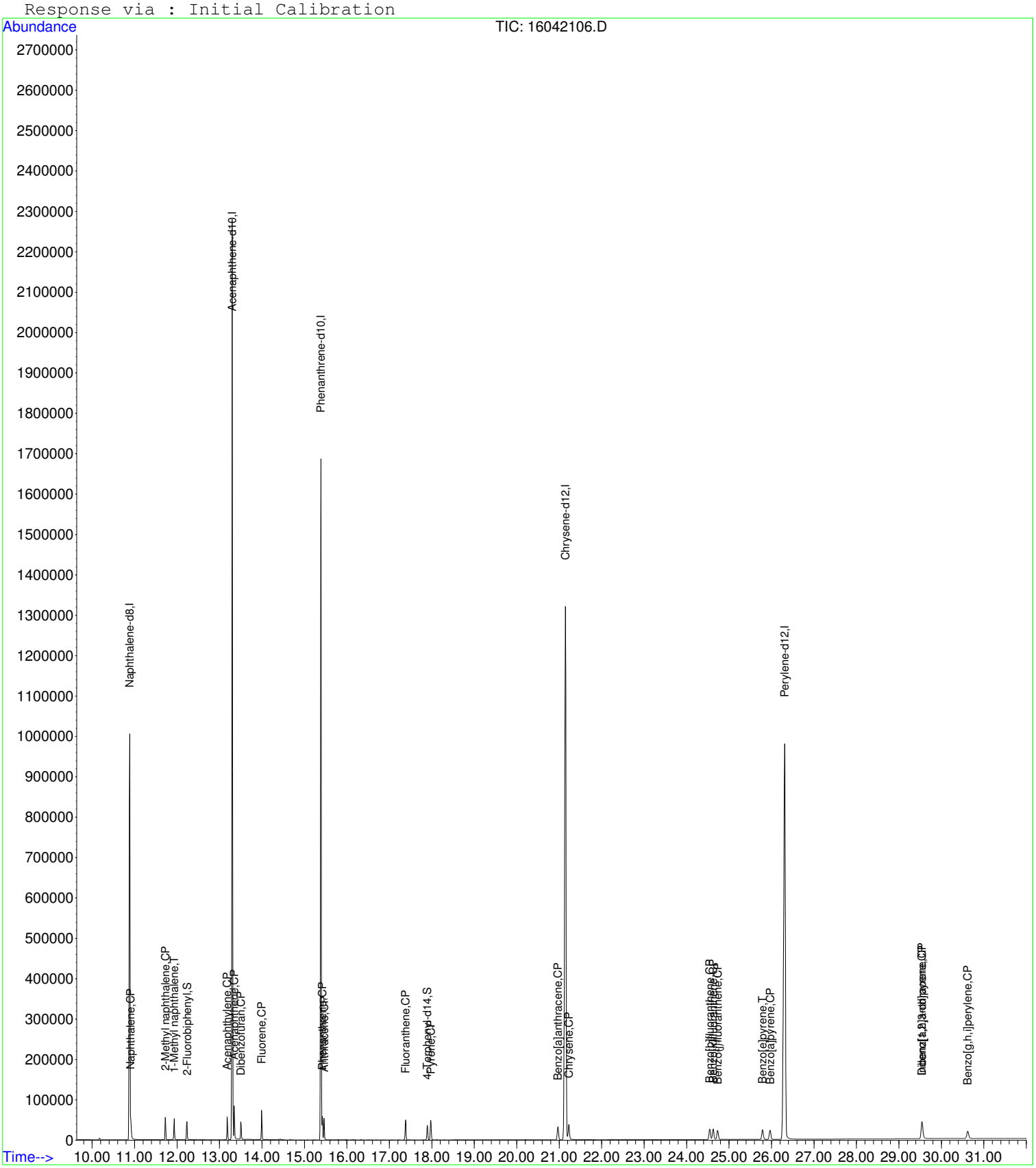
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.89	136	1270878	4000.00	ug/kg	110
5) Acenaphthene-d10	13.30	164	1176698	4000.00	ug/kg	102
11) Phenanthrene-d10	15.39	188	1800254	4000.00	ug/kg	88
17) Chrysene-d12	21.15	240	2173217	4000.00	ug/kg	96
20) Perylene-d12	26.31	264	1915994	4000.00	ug/kg	93
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.23	172	37379	108.90	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.72%#		
16) 4-Terphenyl-d14	17.89	244	45660	98.03	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.45%#		
Target Compounds						Qvalue
2) Naphthalene	10.91	128	31387	98.73	ug/kg	100
3) 2-Methyl naphthalene	11.72	142	29129	103.73	ug/kg	96
4) 1-Methyl naphthalene	11.93	142	26563	103.29	ug/kg	97
6) Dibenzofuran	13.51	168	41336	93.73	ug/kg	98
8) Acenaphthylene	13.18	152	50435	99.53	ug/kg	99
9) Acenaphthene	13.35	154	31207	99.22	ug/kg	98
10) Fluorene	13.99	166	34802	91.11	ug/kg	100
12) Phenanthrene	15.42	178	47518	100.37	ug/kg	98
13) Anthracene	15.46	178	44798	99.97	ug/kg	99
14) Fluoranthene	17.38	202	50045	102.15	ug/kg	99
15) Pyrene	17.98	202	52116	102.40	ug/kg	99
18) Benzo[a]anthracene	20.97	228	49179	96.59	ug/kg	100
19) Chrysene	21.23	228	48443	98.48	ug/kg	99
21) Benzo[b]fluoranthene	24.55	252	48925	96.88	ug/kg	99
22) Benzo[k]fluoranthene	24.63	252	46589	98.35	ug/kg	99
23) Benzo(j)fluoranthene	24.73	252	41528	98.41	ug/kg	99
24) Benzo[e]pyrene	25.79	252	44578	98.57	ug/kg	99
25) Benzo[a]pyrene	25.97	252	44648	96.61	ug/kg	100
26) Dibenz[a,h]anthracene	29.54	278	40242	95.61	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.55	276	48662	96.92	ug/kg	95
28) Benzo[g,h,i]perylene	30.62	276	38139	97.41	ug/kg	99

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042106.D Vial: 6
Acq On : 21 Apr 2016 4:31 pm Operator:
Sample : PCAL-160421 (100 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042107.D Vial: 7
Acq On : 21 Apr 2016 5:11 pm Operator:
Sample : PCAL-160421 (500 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

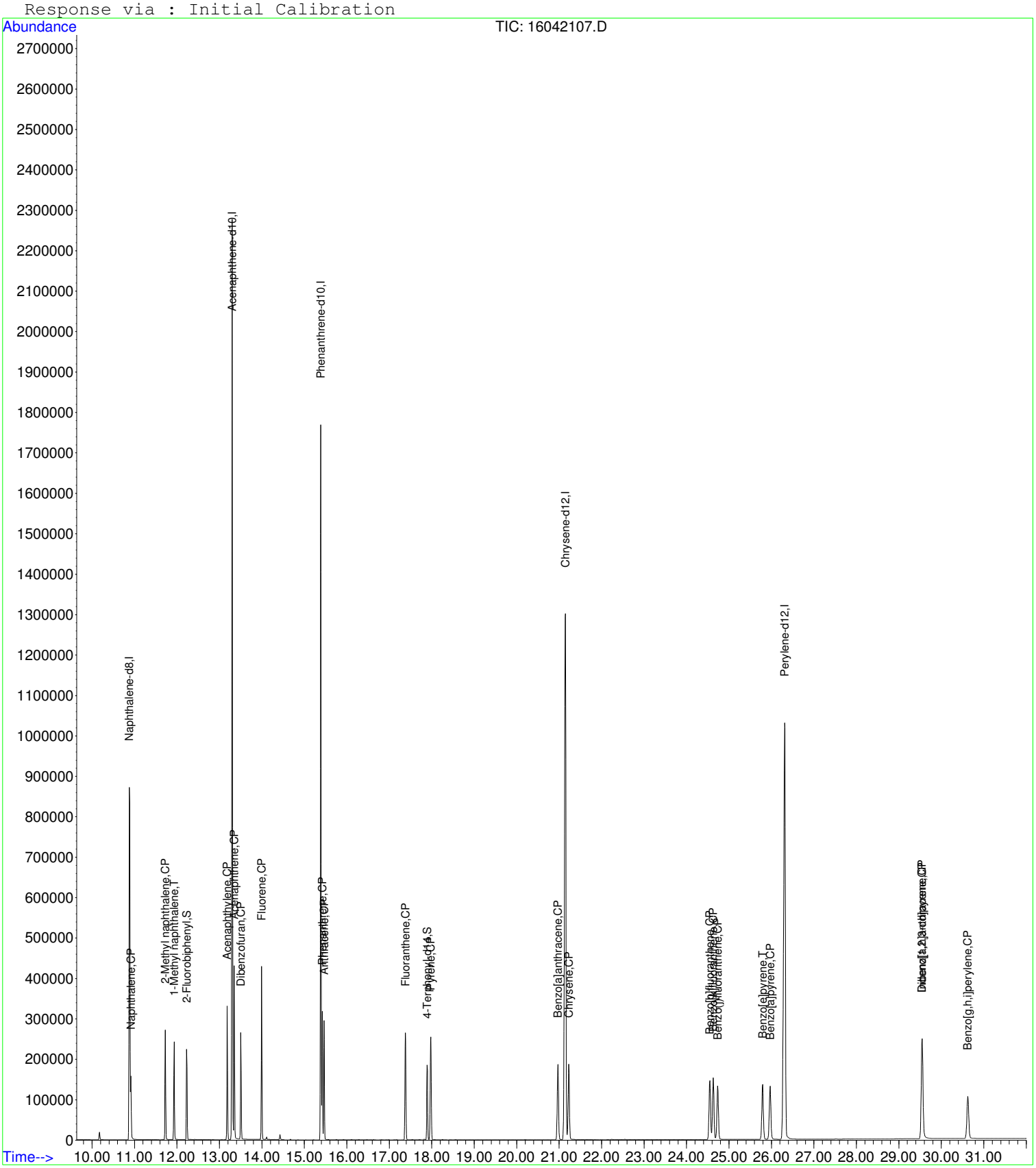
Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1148191	4000.00	ug/kg	99
5) Acenaphthene-d10	13.30	164	1212423	4000.00	ug/kg	105
11) Phenanthrene-d10	15.39	188	1918468	4000.00	ug/kg	94
17) Chrysene-d12	21.15	240	2190661	4000.00	ug/kg	96
20) Perylene-d12	26.31	264	2019677	4000.00	ug/kg	98
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.23	172	182135	514.98	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 12.87%#			
16) 4-Terphenyl-d14	17.89	244	239044	481.61	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 12.04%#			
Target Compounds						Qvalue
2) Naphthalene	10.91	128	144814	504.22	ug/kg	100
3) 2-Methyl naphthalene	11.72	142	134217	529.05	ug/kg	99
4) 1-Methyl naphthalene	11.93	142	123573	531.84	ug/kg	99
6) Dibenzofuran	13.50	168	229182	504.36	ug/kg	99
8) Acenaphthylene	13.18	152	275195	527.05	ug/kg	99
9) Acenaphthene	13.35	154	164525	507.66	ug/kg	99
10) Fluorene	13.99	166	199871	507.82	ug/kg	99
12) Phenanthrene	15.42	178	258354	512.07	ug/kg	99
13) Anthracene	15.46	178	250282	524.11	ug/kg	99
14) Fluoranthene	17.38	202	270526	518.15	ug/kg	99
15) Pyrene	17.98	202	276662	510.12	ug/kg	99
18) Benzo[a]anthracene	20.97	228	270207	526.50	ug/kg	100
19) Chrysene	21.23	228	257223	518.73	ug/kg	99
21) Benzo[b]fluoranthene	24.55	252	273668	514.11	ug/kg	99
22) Benzo[k]fluoranthene	24.63	252	263925	528.52	ug/kg	99
23) Benzo(j)fluoranthene	24.73	252	233097	524.02	ug/kg	99
24) Benzo[e]pyrene	25.79	252	245920	515.86	ug/kg	99
25) Benzo[a]pyrene	25.97	252	251605	516.48	ug/kg	100
26) Dibenz[a,h]anthracene	29.55	278	228786	515.68	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.55	276	273714	517.15	ug/kg	98
28) Benzo[g,h,i]perylene	30.62	276	212686	515.34	ug/kg	99

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

Data File : C:\HPCHEM\1\DATA\160421\16042107.D Vial: 7
Acq On : 21 Apr 2016 5:11 pm Operator:
Sample : PCAL-160421 (500 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:45 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042108.D Vial: 8
Acq On : 21 Apr 2016 5:50 pm Operator:
Sample : PCAL-160421 (1000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

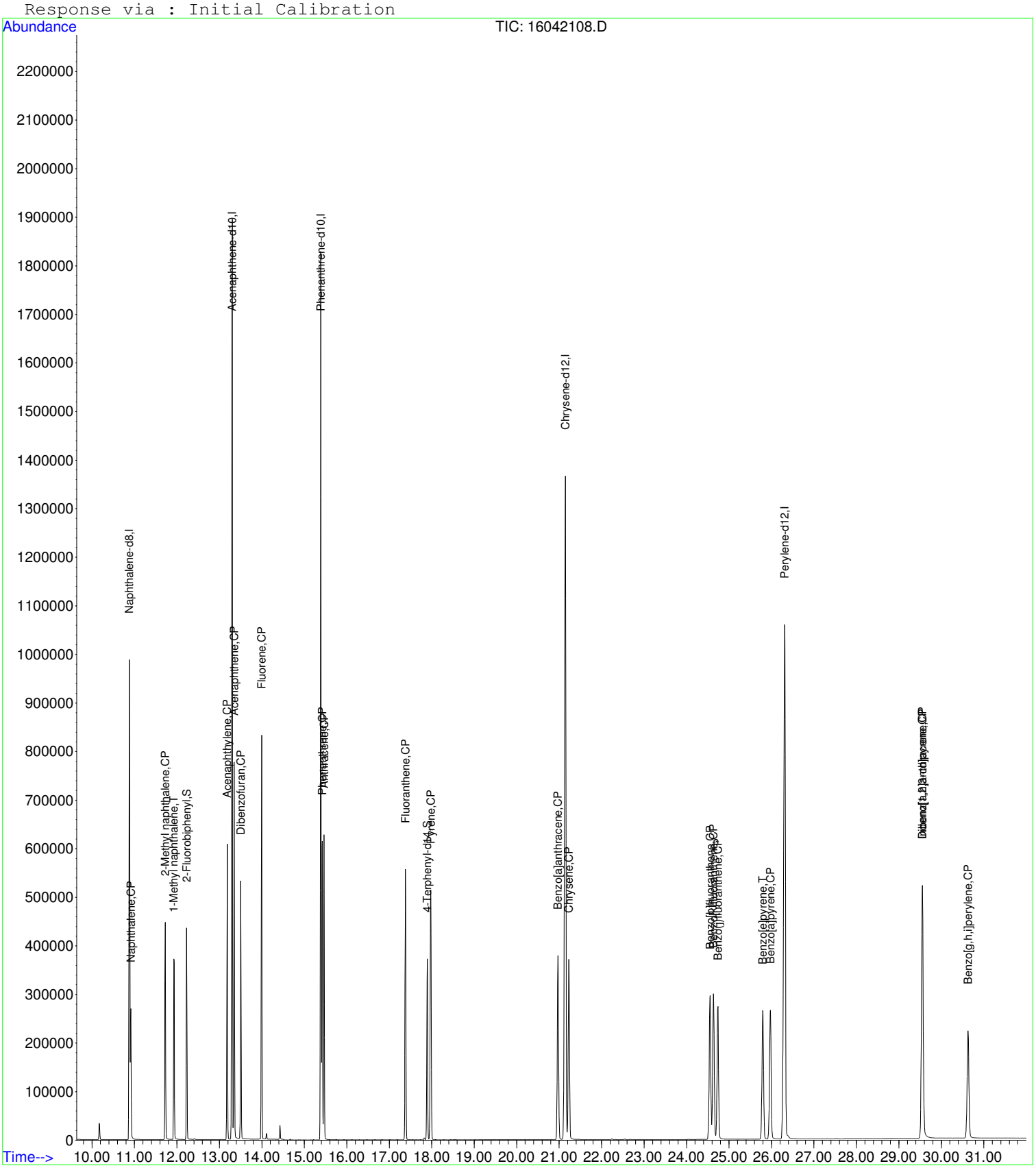
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1136496	4000.00	ug/kg	98
5) Acenaphthene-d10	13.30	164	1155470	4000.00	ug/kg	100
11) Phenanthrene-d10	15.39	188	2018968	4000.00	ug/kg	99
17) Chrysene-d12	21.15	240	2284860	4000.00	ug/kg	101
20) Perylene-d12	26.31	264	2095808	4000.00	ug/kg	102
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.23	172	315163	935.04	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	23.38%#		
16) 4-Terphenyl-d14	17.89	244	486503	931.39	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	23.28%#		
Target Compounds						Qvalue
2) Naphthalene	10.92	128	277677	976.77	ug/kg	100
3) 2-Methyl naphthalene	11.73	142	236454	941.63	ug/kg	97
4) 1-Methyl naphthalene	11.94	142	218047	948.10	ug/kg	98
6) Dibenzofuran	13.50	168	452065	1043.89	ug/kg	99
8) Acenaphthylene	13.18	152	509913	1024.72	ug/kg	99
9) Acenaphthene	13.35	154	308489	998.79	ug/kg	98
10) Fluorene	14.00	166	402991	1074.35	ug/kg	97
12) Phenanthrene	15.42	178	526173	990.99	ug/kg	99
13) Anthracene	15.46	178	510658	1016.12	ug/kg	99
14) Fluoranthene	17.38	202	550773	1002.41	ug/kg	99
15) Pyrene	17.98	202	562050	984.74	ug/kg	99
18) Benzo[a]anthracene	20.97	228	552303	1031.79	ug/kg	100
19) Chrysene	21.23	228	520856	1007.08	ug/kg	99
21) Benzo[b]fluoranthene	24.56	252	563310	1019.78	ug/kg	99
22) Benzo[k]fluoranthene	24.63	252	532095	1026.84	ug/kg	99
23) Benzo(j)fluoranthene	24.74	252	474751	1028.50	ug/kg	99
24) Benzo[e]pyrene	25.79	252	499171	1009.06	ug/kg	99
25) Benzo[a]pyrene	25.98	252	519265	1027.20	ug/kg	99
26) Dibenz[a,h]anthracene	29.55	278	475543	1032.92	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.55	276	565012	1028.75	ug/kg	97
28) Benzo[g,h,i]perylene	30.63	276	441808	1031.61	ug/kg	99

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042108.D Vial: 8
Acq On : 21 Apr 2016 5:50 pm Operator:
Sample : PCAL-160421 (1000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042109.D Vial: 9
Acq On : 21 Apr 2016 6:30 pm Operator:
Sample : PCAL-160421 (2000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

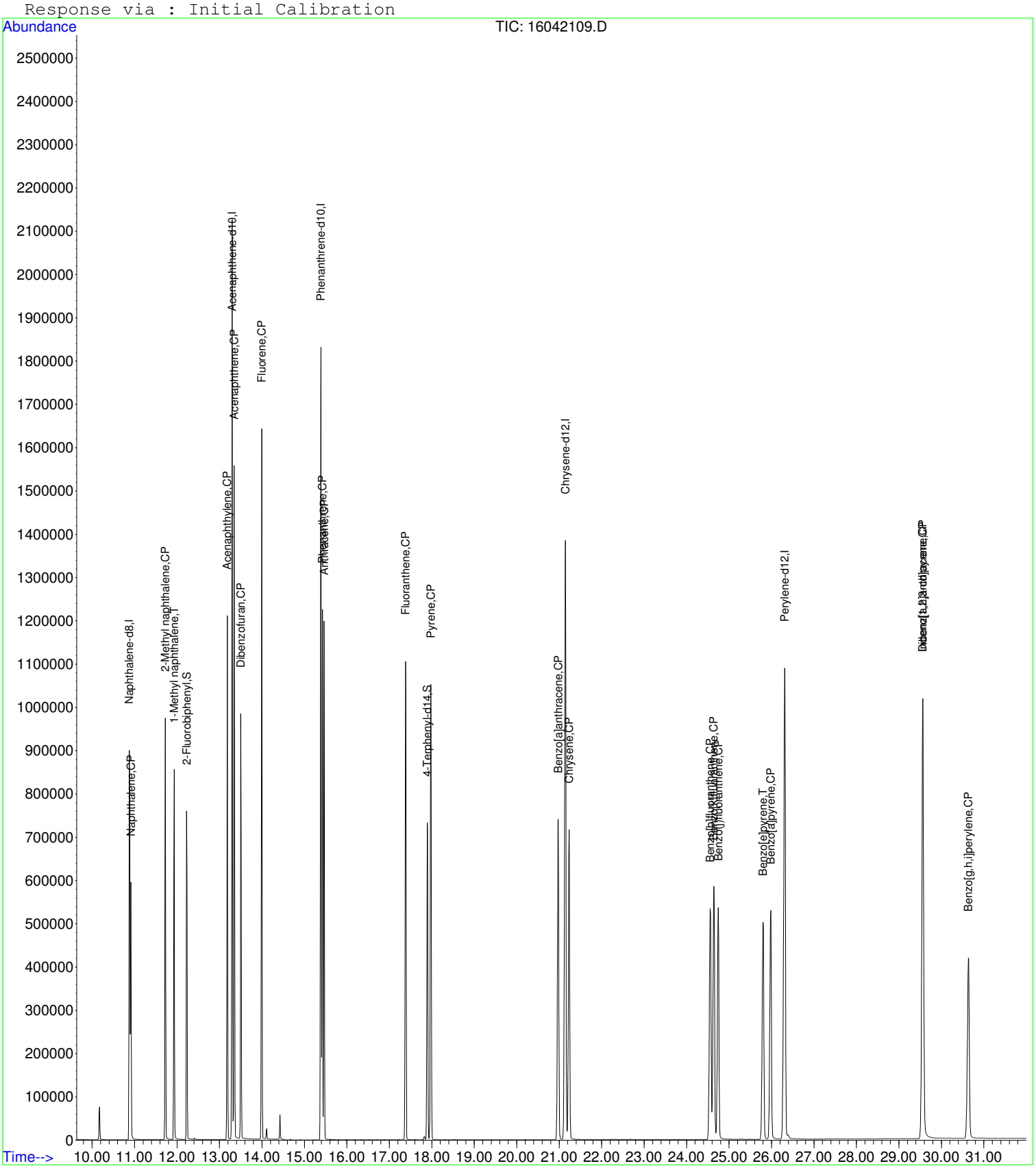
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1159180	4000.00	ug/kg	100
5) Acenaphthene-d10	13.30	164	1151209	4000.00	ug/kg	100
11) Phenanthrene-d10	15.39	188	2042352	4000.00	ug/kg	100
17) Chrysene-d12	21.15	240	2271514	4000.00	ug/kg	100
20) Perylene-d12	26.31	264	2059792	4000.00	ug/kg	100
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.23	172	618262	1841.07	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	46.03%		
16) 4-Terphenyl-d14	17.90	244	975941	1847.00	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	46.17%		
Target Compounds						Qvalue
2) Naphthalene	10.91	128	561019	1934.86	ug/kg	100
3) 2-Methyl naphthalene	11.72	142	481530	1880.07	ug/kg	100
4) 1-Methyl naphthalene	11.93	142	443761	1891.77	ug/kg	100
6) Dibenzofuran	13.50	168	873590	2024.72	ug/kg	100
8) Acenaphthylene	13.18	152	1023648	2064.73	ug/kg	100
9) Acenaphthene	13.35	154	614677	1997.49	ug/kg	100
10) Fluorene	13.99	166	794927	2127.08	ug/kg	100
12) Phenanthrene	15.42	178	1042190	1940.39	ug/kg	100
13) Anthracene	15.46	178	1017931	2002.32	ug/kg	100
14) Fluoranthene	17.38	202	1104168	1986.59	ug/kg	100
15) Pyrene	17.98	202	1123696	1946.24	ug/kg	100
18) Benzo[a]anthracene	20.98	228	1111322	2088.32	ug/kg	100
19) Chrysene	21.23	228	1032491	2008.06	ug/kg	100
21) Benzo[b]fluoranthene	24.56	252	1112314	2048.87	ug/kg	100
22) Benzo[k]fluoranthene	24.64	252	1033820	2029.96	ug/kg	100
23) Benzo(j)fluoranthene	24.75	252	933880	2058.53	ug/kg	100
24) Benzo[e]pyrene	25.80	252	984667	2025.28	ug/kg	100
25) Benzo[a]pyrene	25.98	252	1027353	2067.83	ug/kg	100
26) Dibenz[a,h]anthracene	29.56	278	940656	2078.92	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.56	276	1116484	2068.39	ug/kg	100
28) Benzo[g,h,i]perylene	30.64	276	877689	2085.21	ug/kg	100

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042109.D Vial: 9
Acq On : 21 Apr 2016 6:30 pm Operator:
Sample : PCAL-160421 (2000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

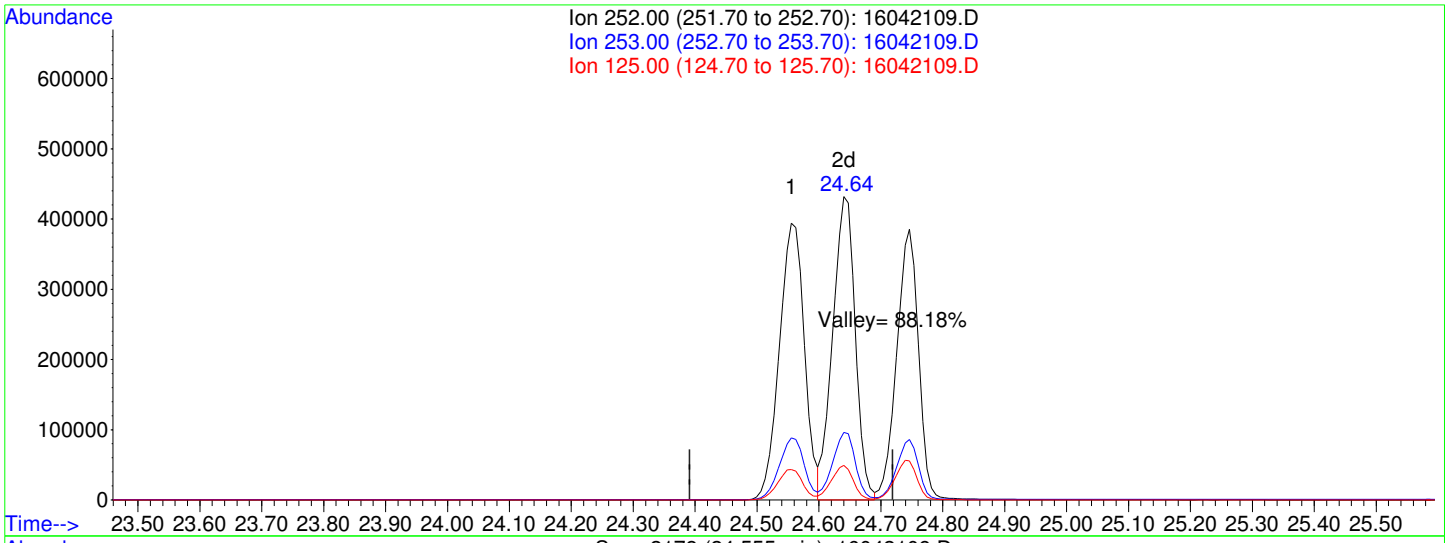
Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration

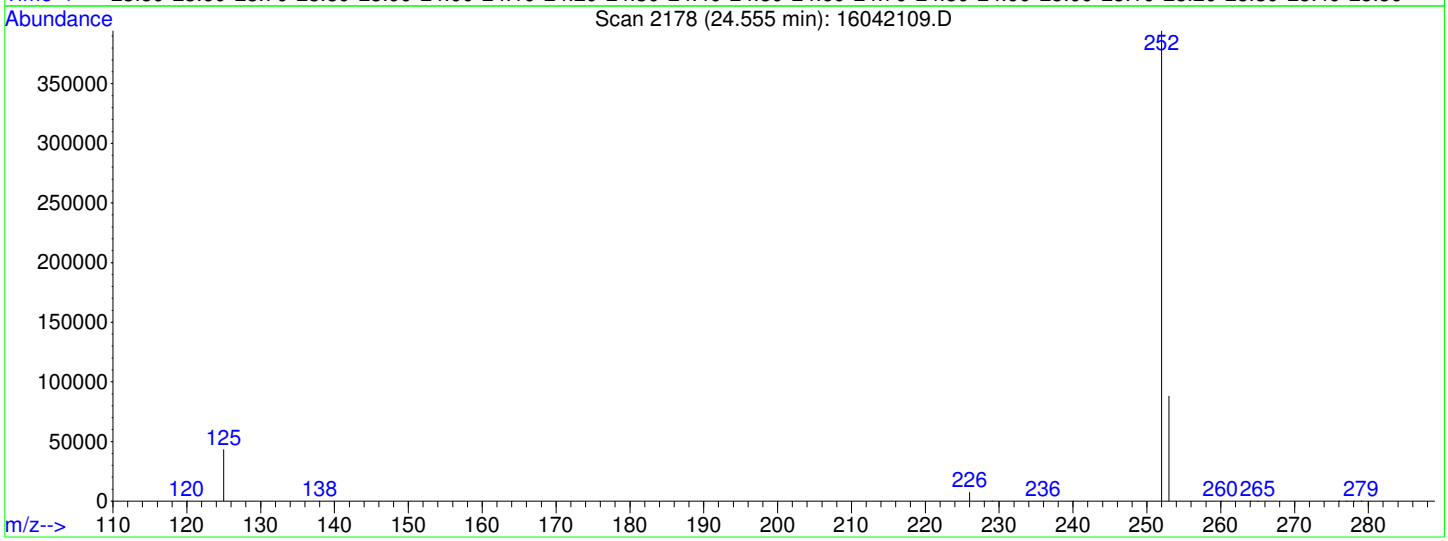


Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\160421\16042109.D Vial: 9
Acq On : 21 Apr 2016 6:30 pm Operator:
Sample : PCAL-160421 (2000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 9:10 2016 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 09:12:07 2016
Response via : Multiple Level Calibration





TIC: 16042109.D

(21) Benzo[b]fluoranthene (CP)

24.56min 1892.05ug/kg

response 1112314

Ion	Exp%	Act%
252.00	100	100
253.00	22.10	22.23
125.00	10.50	11.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042110.D Vial: 10
Acq On : 21 Apr 2016 7:10 pm Operator:
Sample : PCAL-160421 (5000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

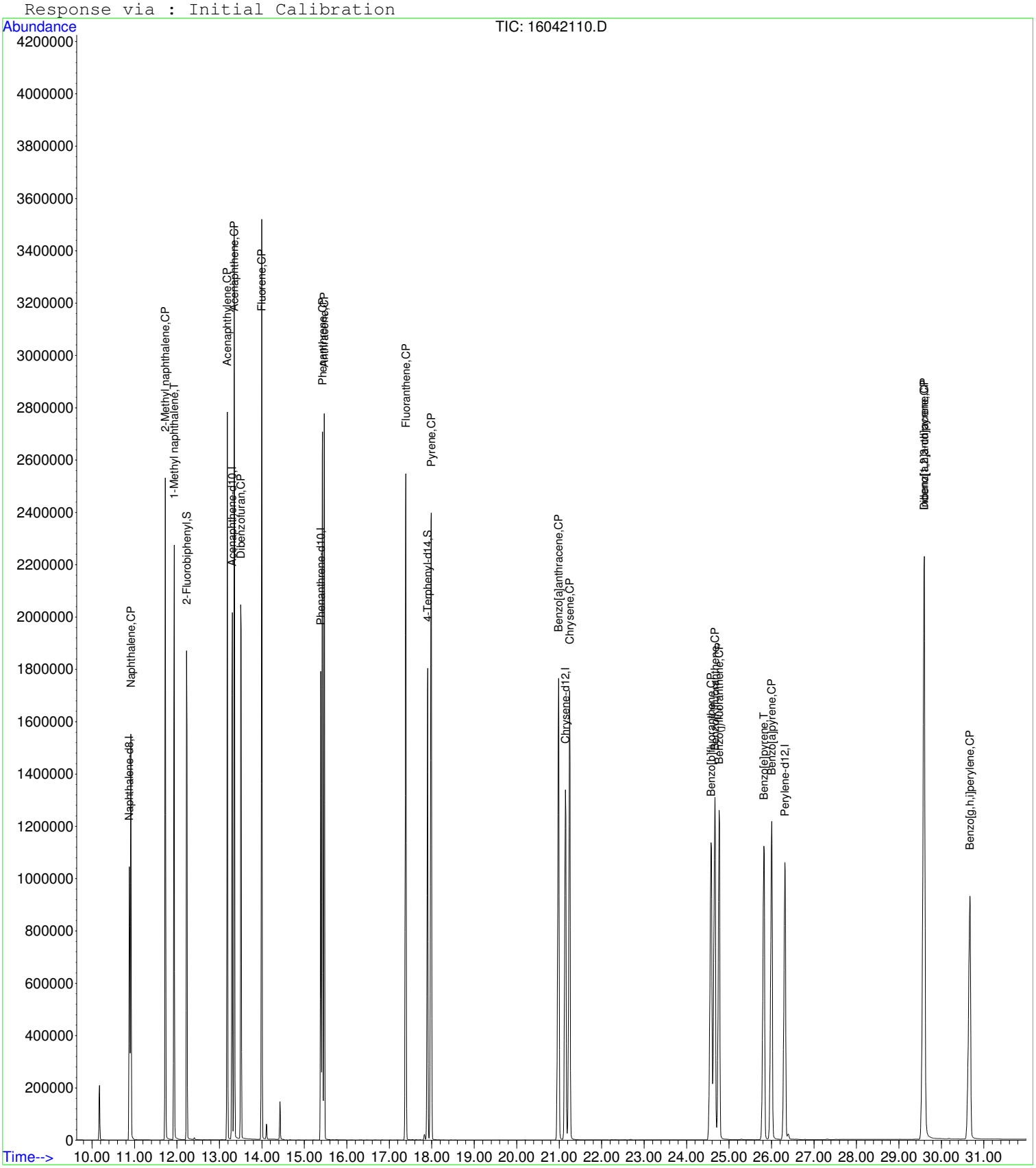
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1267887	4000.00	ug/kg	109
5) Acenaphthene-d10	13.30	164	1170622	4000.00	ug/kg	102
11) Phenanthrene-d10	15.39	188	2026803	4000.00	ug/kg	99
17) Chrysene-d12	21.15	240	2321115	4000.00	ug/kg	102
20) Perylene-d12	26.32	264	2077450	4000.00	ug/kg	101
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.23	172	1535636	4497.00	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 112.43%			
16) 4-Terphenyl-d14	17.90	244	2372972	4525.38	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 113.13%			
Target Compounds						Qvalue
2) Naphthalene	10.91	128	1466551	4624.22	ug/kg	99
3) 2-Methyl naphthalene	11.73	142	1254770	4479.04	ug/kg	99
4) 1-Methyl naphthalene	11.94	142	1162503	4530.90	ug/kg	99
6) Dibenzofuran	13.51	168	2052094	4677.28	ug/kg	99
8) Acenaphthylene	13.18	152	2446851	4853.52	ug/kg	98
9) Acenaphthene	13.35	154	1490789	4764.22	ug/kg	98
10) Fluorene	14.00	166	1858069	4889.40	ug/kg	100
12) Phenanthrene	15.43	178	2457176	4609.95	ug/kg	99
13) Anthracene	15.47	178	2377979	4713.49	ug/kg	98
14) Fluoranthene	17.39	202	2617800	4746.00	ug/kg	98
15) Pyrene	17.99	202	2697026	4707.07	ug/kg	99
18) Benzo[a]anthracene	20.99	228	2764069	5083.06	ug/kg	99
19) Chrysene	21.25	228	2532342	4819.83	ug/kg	99
21) Benzo[b]fluoranthene	24.58	252	2683309	4900.63	ug/kg	99
22) Benzo[k]fluoranthene	24.67	252	2495150	4857.71	ug/kg	99
23) Benzo(j)fluoranthene	24.77	252	2281068	4985.37	ug/kg	99
24) Benzo[e]pyrene	25.82	252	2361015	4814.90	ug/kg	99
25) Benzo[a]pyrene	26.00	252	2496967	4983.10	ug/kg	99
26) Dibenz[a,h]anthracene	29.60	278	2366235	5185.10	ug/kg	99
27) Indeno[1,2,3-cd]pyrene	29.60	276	2781552	5109.27	ug/kg	99
28) Benzo[g,h,i]perylene	30.67	276	2164787	5099.38	ug/kg	98

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042110.D Vial: 10
Acq On : 21 Apr 2016 7:10 pm Operator:
Sample : PCAL-160421 (5000 ppb) Inst : GC/MS #6
Misc : CAL Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042112.D Vial: 12
Acq On : 21 Apr 2016 8:30 pm Operator:
Sample : PSSCV-160421 (2500 ppb) Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

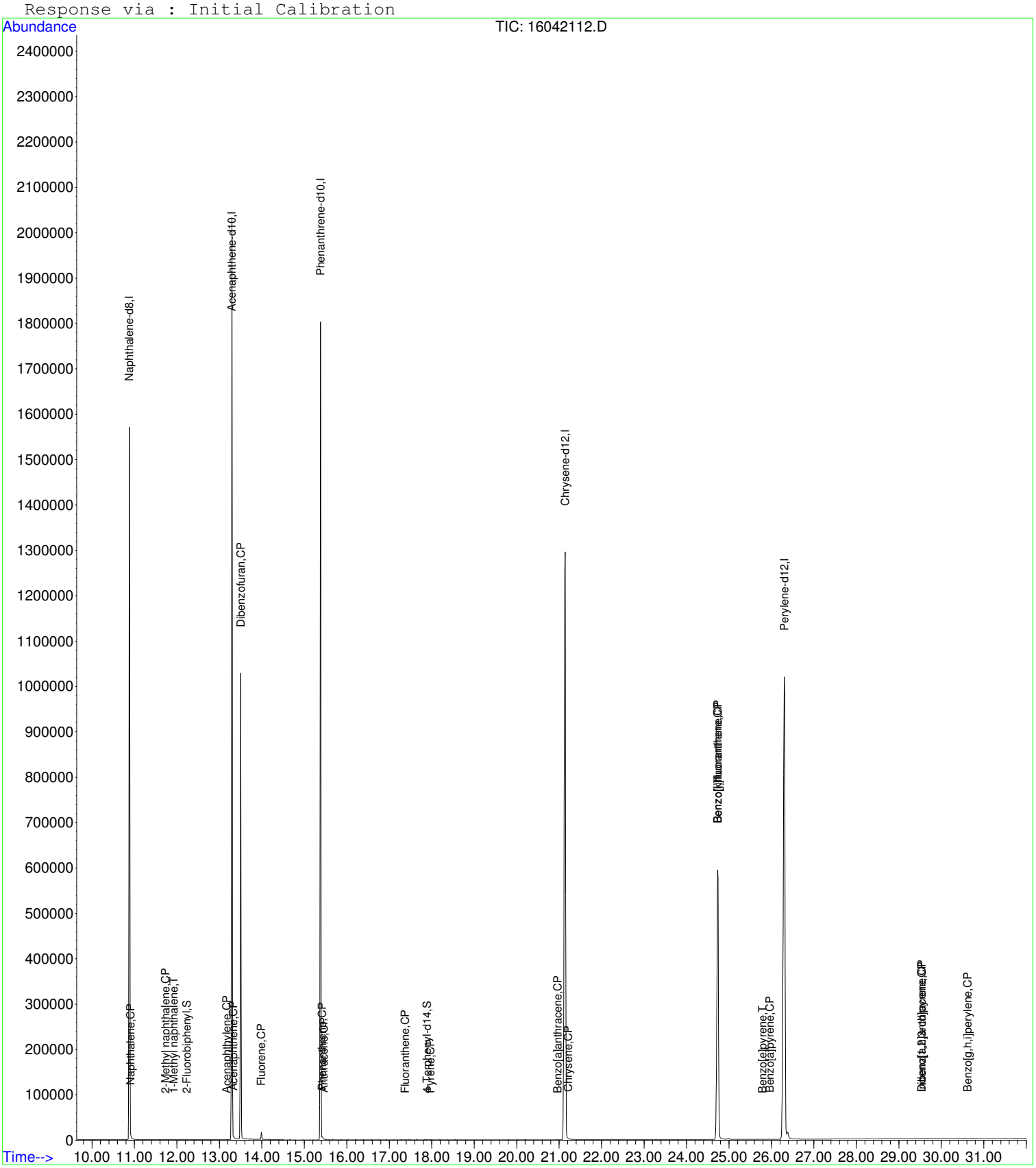
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)	
1) Naphthalene-d8	10.88	136	1773814	4000.00	ug/kg	153	
5) Acenaphthene-d10	13.29	164	1073271	4000.00	ug/kg	93	
11) Phenanthrene-d10	15.38	188	1966702	4000.00	ug/kg	96	
17) Chrysene-d12	21.14	240	2203847	4000.00	ug/kg	97	
20) Perylene-d12	26.30	264	1999501	4000.00	ug/kg	97	
System Monitoring Compounds							
7) 2-Fluorobiphenyl	12.23	172	473	1.51	ug/kg	0.00	
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.04%#			
16) 4-Terphenyl-d14	17.89	244	1537	3.02	ug/kg	-0.01	
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.08%#			
Target Compounds						Qvalue	
2) Naphthalene	10.92	128	667	1.50	ug/kg	98	
3) 2-Methyl naphthalene	11.73	142	541	1.38	ug/kg	94	
4) 1-Methyl naphthalene	11.93	142	390	1.09	ug/kg	96	
6) Dibenzofuran	13.50	168	930384	2312.95	ug/kg	99	92.52%
8) Acenaphthylene	13.18	152	654	1.41	ug/kg	99	
9) Acenaphthene	13.34	154	537	1.87	ug/kg	96	
10) Fluorene	13.99	166	8239	23.65	ug/kg	99	
12) Phenanthrene	15.42	178	915	1.77	ug/kg	99	
13) Anthracene	15.46	178	904	1.85	ug/kg	96	
14) Fluoranthene	17.37	202	754	1.41	ug/kg	97	
15) Pyrene	17.97	202	988	1.78	ug/kg	95	
18) Benzo[a]anthracene	20.96	228	786	1.52	ug/kg	92	
19) Chrysene	21.22	228	862	1.73	ug/kg	97	
21) Benzo[b]fluoranthene	0.00	252	0	N.D.			
22) Benzo[k]fluoranthene	24.73	252	1073092	2170.60	ug/kg	96	
23) Benzo(j)fluoranthene	24.73	252	1088009	2470.59	ug/kg	99	98.80%
24) Benzo[e]pyrene	25.79	252	711	1.51	ug/kg	85	
25) Benzo[a]pyrene	25.96	252	776	1.61	ug/kg	86	
26) Dibenz[a,h]anthracene	29.54	278	674	1.53	ug/kg	97	
27) Indeno[1,2,3-cd]pyrene	29.55	276	905	1.73	ug/kg	91	
28) Benzo[g,h,i]perylene	30.62	276	929	2.27	ug/kg	94	

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042112.D Vial: 12
Acq On : 21 Apr 2016 8:30 pm Operator:
Sample : PSSCV-160421 (2500 ppb) Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\160421\16042113.D Vial: 13
Acq On : 21 Apr 2016 9:10 pm Operator:
Sample : PSSCV-160421 (2500 ppb) Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Quant Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration
DataAcq Meth : PP160322

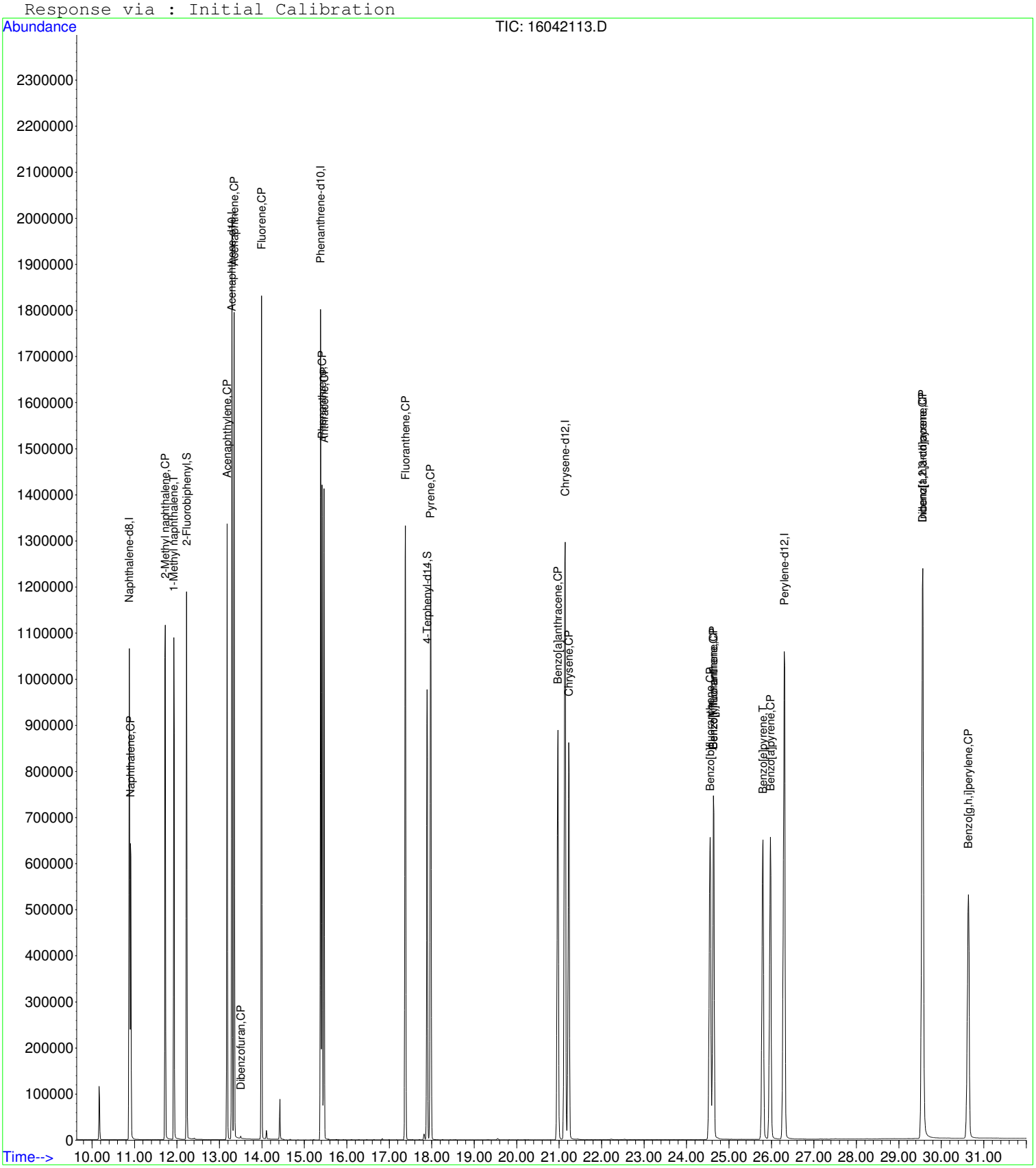
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Naphthalene-d8	10.88	136	1207407	4000.00	ug/kg	104
5) Acenaphthene-d10	13.29	164	1125201	4000.00	ug/kg	98
11) Phenanthrene-d10	15.38	188	2006052	4000.00	ug/kg	98
17) Chrysene-d12	21.14	240	2214439	4000.00	ug/kg	97
20) Perylene-d12	26.30	264	2022205	4000.00	ug/kg	98
System Monitoring Compounds						
7) 2-Fluorobiphenyl	12.23	172	865296	2636.25	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	65.91%		
16) 4-Terphenyl-d14	17.89	244	1276971	2460.44	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	61.51%		
Target Compounds						Qvalue
2) Naphthalene	10.90	128	700486	2319.36	ug/kg	99
3) 2-Methyl naphthalene	11.72	142	646154	2422.05	ug/kg	96
4) 1-Methyl naphthalene	11.93	142	589122	2411.14	ug/kg	93
6) ~~Dibenzofuran~~	~~13.50~~	~~168~~	~~4477~~	~~10.62~~	~~ug/kg~~	~~99~~
8) Acenaphthylene	13.18	152	1162279	2398.54	ug/kg	99
9) Acenaphthene	13.35	154	742241	2467.78	ug/kg	98
10) Fluorene	13.99	166	937451	2566.43	ug/kg	98
12) Phenanthrene	15.42	178	1224975	2321.97	ug/kg	100
13) Anthracene	15.46	178	1210391	2423.98	ug/kg	100
14) Fluoranthene	17.38	202	1343025	2460.06	ug/kg	99
15) Pyrene	17.98	202	1367241	2410.90	ug/kg	100
18) Benzo[a]anthracene	20.97	228	1320521	2545.39	ug/kg	100
19) Chrysene	21.23	228	1199457	2392.91	ug/kg	100
21) Benzo[b]fluoranthene	24.56	252	1332056	2499.24	ug/kg	100
22) Benzo[k]fluoranthene	24.63	252	1314395	2628.85	ug/kg	99
23) ~~Benzo(j)fluoranthene~~	~~24.63~~	~~252~~	~~1324210~~	~~2973.18~~	~~ug/kg~~	~~96~~
24) Benzo[e]pyrene	25.80	252	1256065	2631.51	ug/kg	99
25) Benzo[a]pyrene	25.98	252	1257772	2578.66	ug/kg	99
26) Dibenz[a,h]anthracene	29.56	278	1181135	2658.91	ug/kg	100
27) Indeno[1,2,3-cd]pyrene	29.56	276	1381760	2607.41	ug/kg	99
28) Benzo[g,h,i]perylene	30.64	276	1103924	2671.45	ug/kg	99

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\160421\16042113.D Vial: 13
Acq On : 21 Apr 2016 9:10 pm Operator:
Sample : PSSCV-160421 (2500 ppb) Inst : GC/MS #6
Misc : ICV Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 22 11:46 2016 Quant Results File: PP160421.RES

Method : C:\HPCHEM\1\METHODS\PP160421.M (RTE Integrator)
Title : PAH Calibration
Last Update : Fri Apr 22 11:43:43 2016
Response via : Initial Calibration



GCMS8
For

DHL Work Order
1605097

GCMS8_160513A
For

DHL Work Order
1605097

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Project Number(s): SEE RUN LOG.	**Run ID: GCMS8_160513A**
Batch Number(s): SEE RUN LOG.	**SOP:** ORGANICS-PAH-01
Matrix: SEE RUN LOG.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			X
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		X
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			X
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)		X		

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	X
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			X
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality	X			X
2. Are all corrective actions included?		X			
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?		X		X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___ LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	X High Levels of target analytes	___ Verify H2O/reagents are clean
X RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	X Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	X Other (describe below)	___ Accept data
___ Other (describe below)		
		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: **All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.**

RPD out of limits for 9 analytes in batch MS/MSD (75101).

ICV3 functions as CCV for this analytical run. This run did not meet ICV criteria, the rest of the batch 75151 will be rerun

1605071-25AMSD: % RPD out of limits for 9 analytes due to matrix. Recoveries ok for all target analytes. RPD is very low for surrogates and analytes with low results in the sample.

Analyst: Karyn Lane Date: 5/16/2016 9:44

Second-Level Review: Date: ***REVIEWED/APPROVED*** **05/16/2016**

By Sherri Herschmann at 2:57:11 PM, 5/16/2016

DHL Analytical, Inc.

Run ID: GCMS8_160513A **Run No.:** 85824

Analytical Run Date: 5/13/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 658 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160510.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160513	1	PAH_LL_SDOD1	TUNE	R85824	5/13/2016 1:38:00 PM		
ICV-160513	1	PAH_LL_SDOD1	ICV	R85824	5/13/2016 2:14:00 PM		
LCS-75101	1	PAH_LL_SDOD1	LCS	75101	5/13/2016 2:52:00 PM		
MB-75101	1	PAH_LL_SDOD1	MBLK	75101	5/13/2016 3:29:00 PM		
1605071-24A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 4:06:00 PM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605071-25A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 4:43:00 PM		
1605071-26A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 5:20:00 PM		
1605071-27A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 5:57:00 PM		
1605071-30A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 6:33:00 PM		
1605071-40A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 7:10:00 PM		
1605071-41A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 7:47:00 PM		
1605071-42A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 8:24:00 PM		
1605071-43A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 9:00:00 PM		
1605071-44A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 9:37:00 PM		
1605071-45A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 10:13:00 PM		
1605071-46A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 10:50:00 PM		
1605071-25AMS	10	PAH_LL_SDOD1	MS	75101	5/13/2016 11:27:00 PM		
1605071-25AMSD	10	PAH_LL_SDOD1	MSD	75101	5/14/2016 12:03:00 AM		% RPD out of limits for 9 analytes due to matrix. Recoveries ok for all target analytes. RPD is very low for surrogates and analytes with low results in the sample.
DFTPP2-160513	1	PAH_LL_SDOD1	TUNE	R85824	5/14/2016 12:40:00 AM		
ICV2-160513	1	PAH_LL_SDOD1	ICV	R85824	5/14/2016 1:17:00 AM		
SBLK-160513	1	PAH_LL_SDOD1	SBLK	75101	5/14/2016 1:54:00 AM		
1605071-47A	10	PAH_LL_SDOD1	SAMP	75101	5/14/2016 2:31:00 AM		
1605071-48A	10	PAH_LL_SDOD1	SAMP	75101	5/14/2016 3:08:00 AM		
1605071-49A	10	PAH_LL_SDOD1	SAMP	75101	5/14/2016 3:45:00 AM		
LCS-75151	1	PAH_LL_SDOD1	LCS	75151	5/14/2016 4:22:00 AM		
MB-75151	1	PAH_LL_SDOD1	MBLK	75151	5/14/2016 5:00:00 AM		

REVIEWED/APPROVED

By Sherri Herschmann at 3:01:23 PM, 5/16/2016

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

DHL Analytical, Inc.

Run ID: GCMS8_160513A **Run No.:** 85824

1605097-21A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 5:36:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605097-23A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 6:13:00 AM		
1605098-31A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 6:51:00 AM		
1605098-34A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 7:28:00 AM		
1605098-37A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 8:05:00 AM		
1605096-23A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 8:43:00 AM		
1605096-24A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 9:20:00 AM		
1605096-14A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 9:57:00 AM		
1605096-14AMS	10	PAH_LL_SDOD1	MS	75151	5/14/2016 10:33:00 AM		
1605096-14AMSD	10	PAH_LL_SDOD1	MSD	75151	5/14/2016 11:10:00 AM		
DFTPP3-160513	1	PAH_LL_SDOD1	TUNE	R85824	5/14/2016 11:47:00 AM		
ICV3-160513	1	PAH_LL_SDOD1	CCV	R85824	5/14/2016 12:24:00 PM		Does not meet ICV criteria - imported as a CCV to close out the batch. The rest of batch 75151 will be rerun.

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

REVIEWED/APPROVED

By Sherri Herschmann at 3:01:48 PM, 5/16/2016

Sequence Name: C:\msdchem\1\sequence\160513.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160513\
Instrument Name: GCMS #8
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

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

Line			Sample Name/Misc Info		
1)	Sample	1	16051301	DFTPPPAH	DFTPP-160513
2)	Sample	2	16051302	PAH160510	ICV-160513
3)	Sample	1	16051303	PAH160510	SBLK
4)	Sample	2	16051304	DFTPPPAH	DFTPP-160513
5)	Sample	3	16051305	PAH160510	ICV-160513
6)	Sample	4	16051306	PAH160510	LCS-75101
7)	Sample	5	16051307	PAH160510	MB-75101
8)	Sample	6	16051308	PAH160510	1605071-24A
9)	Sample	7	16051309	PAH160510	1605071-25A
10)	Sample	8	16051310	PAH160510	1605071-26A
11)	Sample	9	16051311	PAH160510	1605071-27A
12)	Sample	10	16051312	PAH160510	1605071-30A
13)	Sample	11	16051313	PAH160510	1605071-40A
14)	Sample	12	16051314	PAH160510	1605171-41A
15)	Sample	13	16051315	PAH160510	1605071-42A
16)	Sample	14	16051316	PAH160510	1605071-43A
17)	Sample	15	16051317	PAH160510	1605071-44A
18)	Sample	16	16051318	PAH160510	1605071-45A
19)	Sample	17	16051319	PAH160510	1605071-46A
20)	Sample	18	16051320	PAH160510	1605071-25AMS
21)	Sample	19	16051321	PAH160510	1605071-25AMSD
22)	Sample	20	16051322	DFTPPPAH	DFTPP2-160513
23)	Sample	21	16051323	PAH160510	ICV2-160513
24)	Sample	22	16051324	PAH160510	SBLK-160513
25)	Sample	23	16051325	PAH160510	1605071-47A
26)	Sample	24	16051326	PAH160510	1605071-48A
27)	Sample	25	16051327	PAH160510	1605071-49A
28)	Sample	26	16051328	PAH160510	LCS-75151
29)	Sample	27	16051329	PAH160510	MB-75151
30)	Sample	28	16051330	PAH160510	1605097-21A
31)	Sample	29	16051331	PAH160510	1605097-23A
32)	Sample	30	16051332	PAH160510	1605098-31A
33)	Sample	31	16051333	PAH160510	1605098-34A
34)	Sample	32	16051334	PAH160510	1605098-37A
35)	Sample	33	16051335	PAH160510	1605096-23A
36)	Sample	34	16051336	PAH160510	1605096-24A
37)	Sample	35	16051337	PAH160510	1605096-14A
38)	Sample	36	16051338	PAH160510	1605096-14AMS
39)	Sample	37	16051339	PAH160510	1605096-14AMSD
40)	Sample	20	16051340	DFTPPPAH	DFTPP3-160513
41)	Sample	21	16051341	PAH160510	ICV3-160513
~~42)~~	~~Sample~~	~~22~~	~~16051342~~	~~PAH160510~~	~~SBLK-160513~~
~~43)~~	~~Sample~~	~~38~~	~~16051343~~	~~PAH160510~~	~~1605096-01A~~

Remainder of sequence will be rerun. ICV3 does not meet ICV specifications and if imported as a CCV.

Sequence Name: C:\msdchem\1\sequence\160513.S

Line	Type	Vial	DataFile	Method	Sample Name
44)	Sample	39	16051344	PAH160510	1605096-02A
45)	Sample	40	16051345	PAH160510	1605096-03A
46)	Sample	41	16051346	PAH160510	1605096-13A
47)	Sample	42	16051347	PAH160510	1605096-15A
48)	Sample	43	16051348	PAH160510	1605096-16A
49)	Sample	44	16051349	PAH160510	1605096-17A
50)	Sample	45	16051350	PAH160510	1605096-18A
51)	Sample	46	16051351	PAH160510	1605096-19A
52)	Sample	47	16051352	PAH160510	1605096-20A
53)	Sample	48	16051353	PAH160510	1605096-21A
54)	Sample	49	16051354	PAH160510	1605096-22A
55)	Sample	50	16051355	PAH160510	CCV-160513

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 10:10:34 AM**
Digestion:
Prep End Date: **5/13/2016 2:30:00 PM**

Prep Batch **75151** Prep Code: **3550_PAHDOD** Technician: **Alex Robbins**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-01A	Soil		10.05	10	0.995	1 of 1	
1605096-02A	Soil		10.05	10	0.995	1 of 1	
1605096-03A	Soil		10.04	10	0.996	1 of 1	
1605096-13A	Soil		10.24	10	0.977	1 of 1	
1605096-14A	Soil		10.07	10	0.993	1 of 3	
1605096-14AMS	Soil		10.23	10	0.978	1 of	
1605096-14AMSD	Soil		10.25	10	0.976	12 of	
1605096-15A	Soil		10	10	1.000	1 of 1	
1605096-16A	Soil		10.02	10	0.998	1 of 1	
1605096-17A	Soil		10.09	10	0.991	1 of 1	
1605096-18A	Soil		10.11	10	0.989	1 of 1	
1605096-19A	Soil		10.11	10	0.989	1 of 1	
1605096-20A	Soil		10.2	10	0.980	1 of 1	
1605096-21A	Soil		10.11	10	0.989	1 of 1	
1605096-22A	Soil		10.59	10	0.944	1 of 1	
1605096-23A	Soil		10.06	10	0.994	1 of 1	
1605096-24A	Soil		10.15	10	0.985	1 of 1	
1605097-21A	Soil		10.44	10	0.958	1 of 1	
1605097-23A	Soil		10.06	10	0.994	1 of 1	
1605098-31A	Soil		10.05	10	0.995	1 of 1	
1605098-34A	Soil		10.08	10	0.992	1 of 1	
1605098-37A	Soil		10.09	10	0.991	1 of 1	
LCS-75151	Soil		10	10	1.000	of	
MB-75151	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED/APPROVED

By Sherri Herschmann at 3:13:11 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 10:10:34 AM**
Digestion:
Prep End Date: 5/13/16 ~~12:24PM~~ 2:30PM

Prep Batch **75151** Prep Code: **3550_PAHDOD** Technician: **ADMIN**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-01A	Soil		10	10.05	1.000	1 of 1	
1605096-02A	Soil		10	10.05	1.000	1 of 1	
1605096-03A	Soil		10	10.04	1.000	1 of 1	
1605096-13A	Soil		10	10.24	1.000	1 of 1	
1605096-14A	Soil		10	10.07	1.000	1 of 3	
1605096-14AMS	Soil		10	10.23	1.000	1 of	
1605096-14AMSD	Soil		10	10.25	1.000	1,2 of	
1605096-15A	Soil		10	10.00	1.000	1 of 1	
1605096-16A	Soil		10	10.02	1.000	1 of 1	
1605096-17A	Soil		10	10.09	1.000	1 of 1	
1605096-18A	Soil		10	10.11	1.000	1 of 1	
1605096-19A	Soil		10	10.11	1.000	1 of 1	
1605096-20A	Soil		10	10.20	1.000	1 of 1	
1605096-21A	Soil		10	10.11	1.000	1 of 1	
1605096-22A	Soil		10	10.59	1.000	1 of 1	
1605096-23A	Soil		10	10.06	1.000	1 of 1	
1605096-24A	Soil		10	10.15	1.000	1 of 1	
1605097-21A	Soil		10	10.44	1.000	1 of 1	
1605097-23A	Soil		10	10.00	1.000	1 of 1	
1605098-31A	Soil		10	10.05	1.000	1 of 1	
1605098-34A	Soil		10	10.08	1.000	1 of 1	
1605098-37A	Soil		10	10.09	1.000	1 of 1	
LCS-75151	Soil		10	10	1.000	of	
MB-75151	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED/APPROVED
By Sherri Herschmann at 3:32:25 PM, 5/16/2016

5/13/16 AR 5/13/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 7:00:00 PM**
Digestion: **Start: 5/10/2016 8:00:00 PM / Stop: 5/12/2016 9:00:00 AM**
Prep End Date: **5/12/2016 1:11:38 PM**

Prep Batch **75083** Prep Code: **ISM250_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605096-01A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-02A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-03A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-13A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-14A	Soil		0	0	#Num!		of	3	
	Sample has grass in it								
1605096-15A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-38A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-39A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-40A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-41A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-42A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-43A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								

REVIEWED/APPROVED

By Sherri Herschmann at 3:13:42 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 7:00:00 PM**
Digestion: **Start: 5/10/2016 8:30:00 PM / Stop: 5/12/2016 9:00:00 AM**
Prep End Date: **5/12/2016 5:30:00 PM**

Prep Batch **75084** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605096-16A	Soil		0	0	#Num!	1	of	1	
1605096-17A	Soil		0	0	#Num!	1	of	1	
1605096-18A	Soil		0	0	#Num!	1	of	1	
1605096-19A	Soil		0	0	#Num!	1	of	1	
1605096-20A	Soil		0	0	#Num!	1	of	1	
1605096-21A	Soil		0	0	#Num!	1	of	1	
1605096-22A	Soil		0	0	#Num!	1	of	1	
1605096-23A	Soil		0	0	#Num!	1	of	1	
1605096-24A	Soil		0	0	#Num!	1	of	1	
1605096-25A	Soil		0	0	#Num!	1	of	1	
1605096-26A	Soil		0	0	#Num!	1	of	1	
1605096-27A	Soil		0	0	#Num!	1	of	1	
1605096-28A	Soil		0	0	#Num!	1	of	1	
1605096-29A	Soil		0	0	#Num!	1	of	1	
1605096-30A	Soil		0	0	#Num!	1	of	1	
1605096-45A	Soil		0	0	#Num!	1	of	1	
1605096-46A	Soil		0	0	#Num!	1	of	1	
1605096-47A	Soil		0	0	#Num!	1	of	1	
1605096-48A	Soil		0	0	#Num!	1	of	1	
1605096-49A	Soil		0	0	#Num!	1	of	1	
1605096-50A	Soil		0	0	#Num!	1	of	1	
1605096-51A	Soil		0	0	#Num!	1	of	1	
1605096-52A	Soil		0	0	#Num!		of	3	
1605096-53A	Soil		0	0	#Num!	1	of	1	
1605096-54A	Soil		0	0	#Num!	1	of	1	
1605096-55A	Soil		0	0	#Num!	1	of	1	
1605096-56A	Soil		0	0	#Num!	1	of	1	

REVIEWED/APPROVED

By Sherri Herschmann at 3:13:45 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 7:00:00 PM**
Digestion: **Start: 5/10/2016 8:30:00 PM / Stop: 5/12/2016 9:00:00 AM**
Prep End Date: **5/12/2016 5:30:00 PM**

Prep Factor Units: **mL/**

Prep Batch **75084** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-57A	Soil		0	0	#Num!	1 of 1	
1605096-58A	Soil		0	0	#Num!	1 of 1	
1605096-59A	Soil		0	0	#Num!	1 of 1	
1605096-60A	Soil		0	0	#Num!	1 of 1	
1605096-61A	Soil		0	0	#Num!	1 of 1	
1605096-62A	Soil		0	0	#Num!	1 of 1	
1605096-63A	Soil		0	0	#Num!	1 of 1	
1605096-64A	Soil		0	0	#Num!	1 of 1	
1605096-65A	Soil		0	0	#Num!	1 of 1	
1605096-66A	Soil		0	0	#Num!	1 of 1	
1605096-67A	Soil		0	0	#Num!	1 of 1	
1605096-68A	Soil		0	0	#Num!	1 of 1	
1605096-69A	Soil		0	0	#Num!	1 of 1	
1605096-70A	Soil		0	0	#Num!	1 of 1	
1605096-71A	Soil		0	0	#Num!	1 of 1	
1605096-72A	Soil		0	0	#Num!	1 of 1	
1605096-73A	Soil		0	0	#Num!	1 of 1	
1605096-74A	Soil		0	0	#Num!	1 of 1	

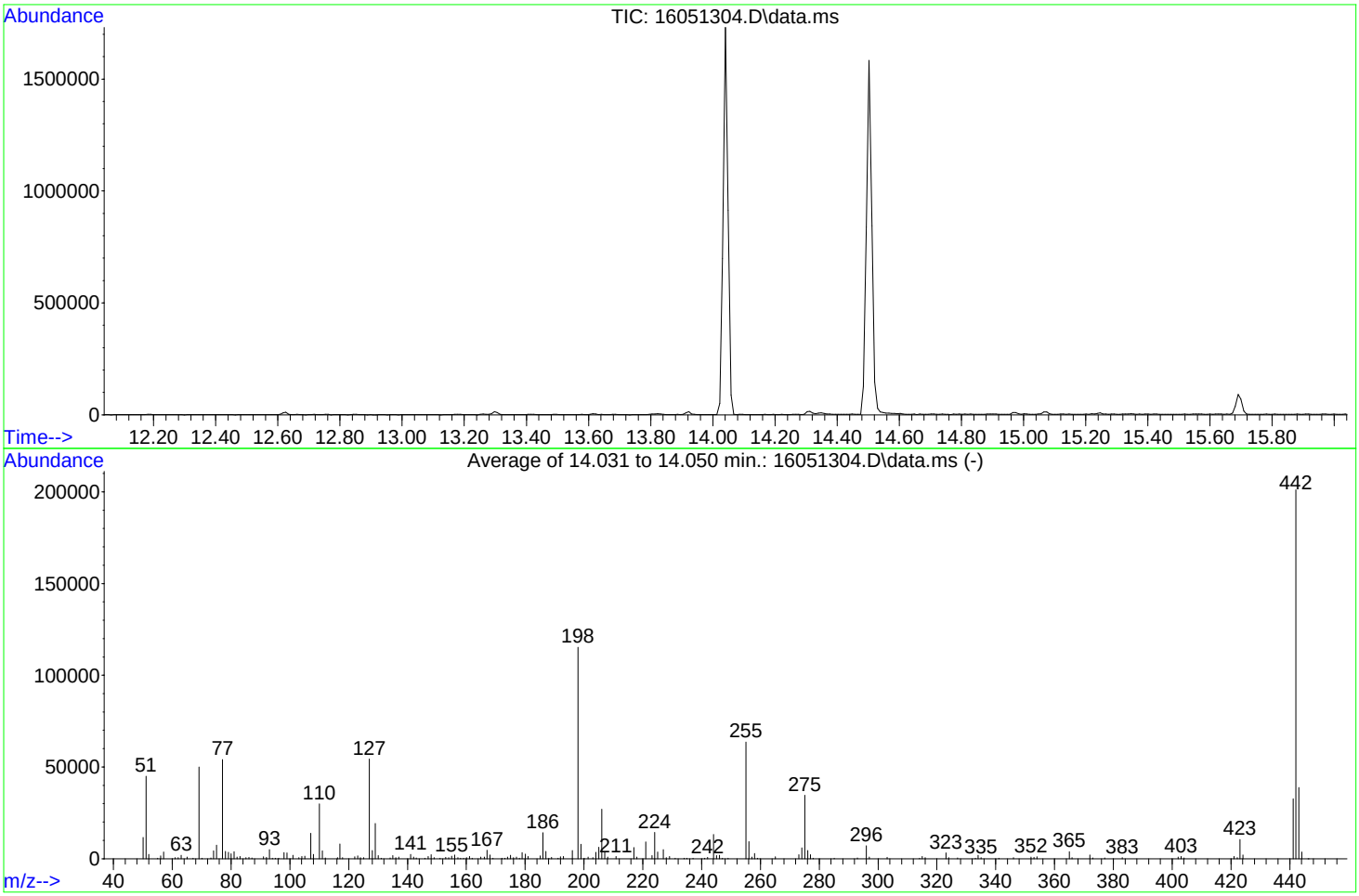
REVIEWED/APPROVED

By Sherri Herschmann at 3:13:47 PM, 5/16/2016

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051304.D
Acq On : 13 May 2016 1:38 pm
Operator :
Sample : DFTPP-160513
Misc : TUNE
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

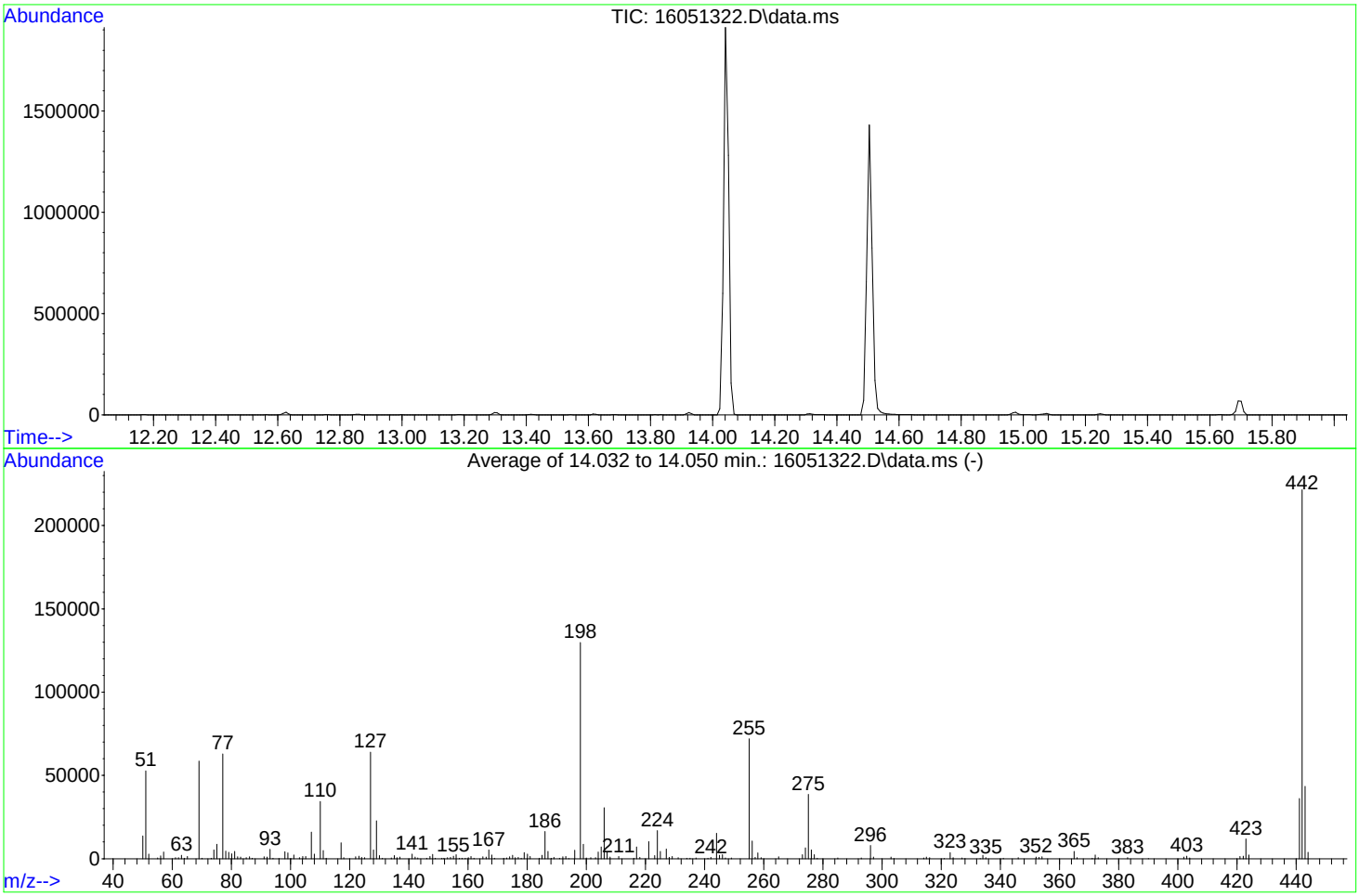
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	39.0	44991	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.4	50042	PASS
70	69	0.00	2	0.4	188	PASS
127	198	10	80	47.1	54384	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	115349	PASS
199	198	5	9	6.8	7870	PASS
275	198	10	60	29.9	34527	PASS
365	198	1	200	3.3	3797	PASS
441	442	0.01	24	16.2	32591	PASS
442	198	50	400	174.4	201200	PASS
443	442	15	24	19.3	38843	PASS

REVIEWED/APPROVED
By Sherri Herschmann at 3:14:07 PM, 5/16/2016

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051322.D
Acq On : 14 May 2016 12:40 am
Operator :
Sample : DFTPP2-160513
Misc : TUNE
ALS Vial : 20 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

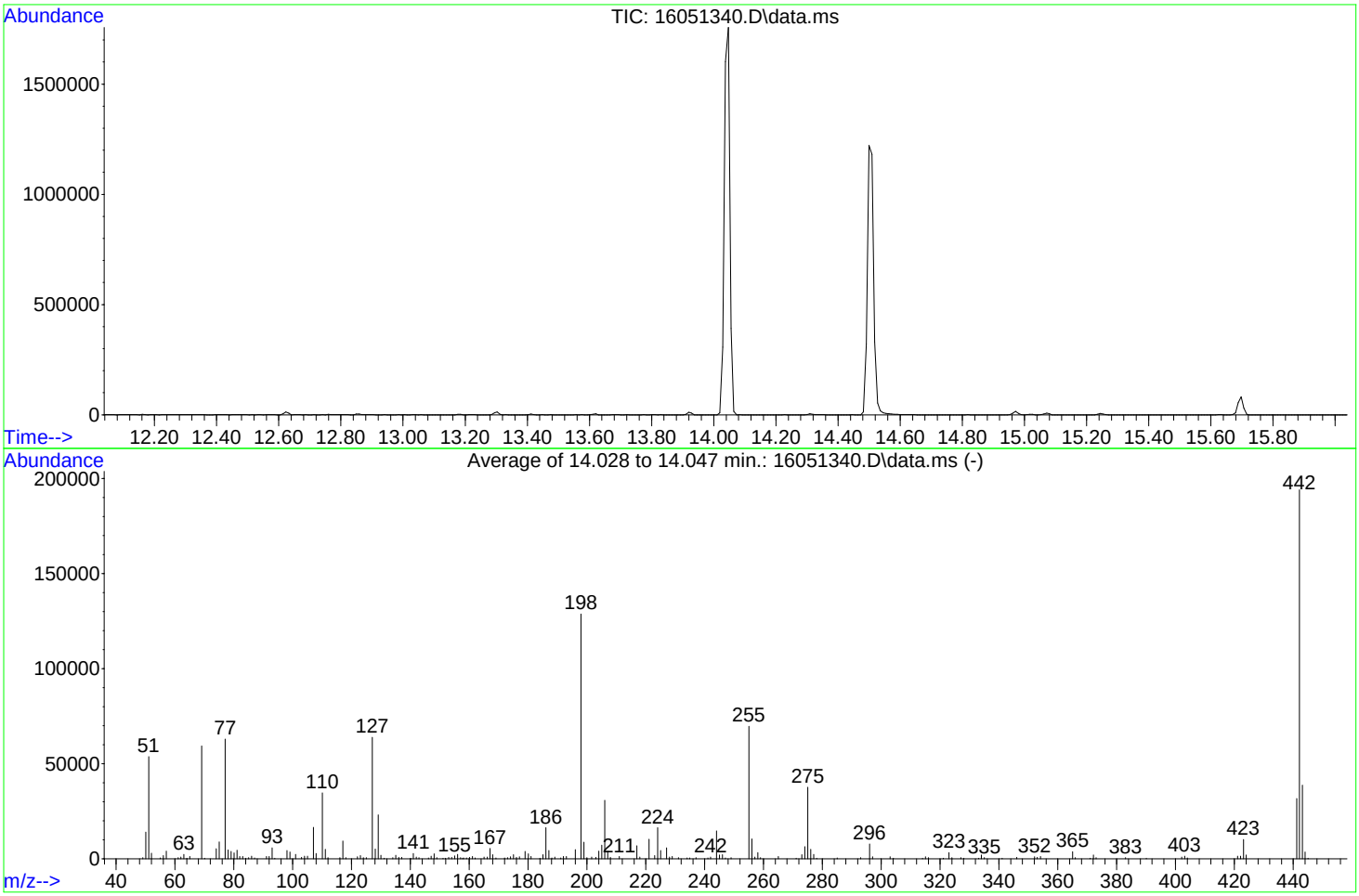
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	40.6	52696	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	45.2	58605	PASS
70	69	0.00	2	0.3	201	PASS
127	198	10	80	49.3	63933	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	129720	PASS
199	198	5	9	6.7	8696	PASS
275	198	10	60	29.7	38561	PASS
365	198	1	200	3.4	4400	PASS
441	442	0.01	24	16.3	36047	PASS
442	198	50	400	170.8	221517	PASS
443	442	15	24	19.6	43356	PASS

REVIEWED/APPROVED
By Sherri Herschmann at 3:14:17 PM, 5/16/2016

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051340.D
Acq On : 14 May 2016 11:47 am
Operator :
Sample : DFTPP3-160513
Misc : TUNE
ALS Vial : 20 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	41.8	53781	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	46.1	59410	PASS
70	69	0.00	2	0.3	200	PASS
127	198	10	80	49.6	63829	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	128749	PASS
199	198	5	9	6.7	8671	PASS
275	198	10	60	29.2	37557	PASS
365	198	1	200	2.9	3699	PASS
441	442	0.01	24	16.3	31612	PASS
442	198	50	400	150.8	194201	PASS
443	442	15	24	19.9	38648	PASS

REVIEWED/APPROVED
By Sherri Herschmann at 3:14:19 PM, 5/16/2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051305.D
Acq On : 13 May 2016 2:14 pm
Operator :
Sample : ICV-160513
Misc : ICV
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 16 09:01:34 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

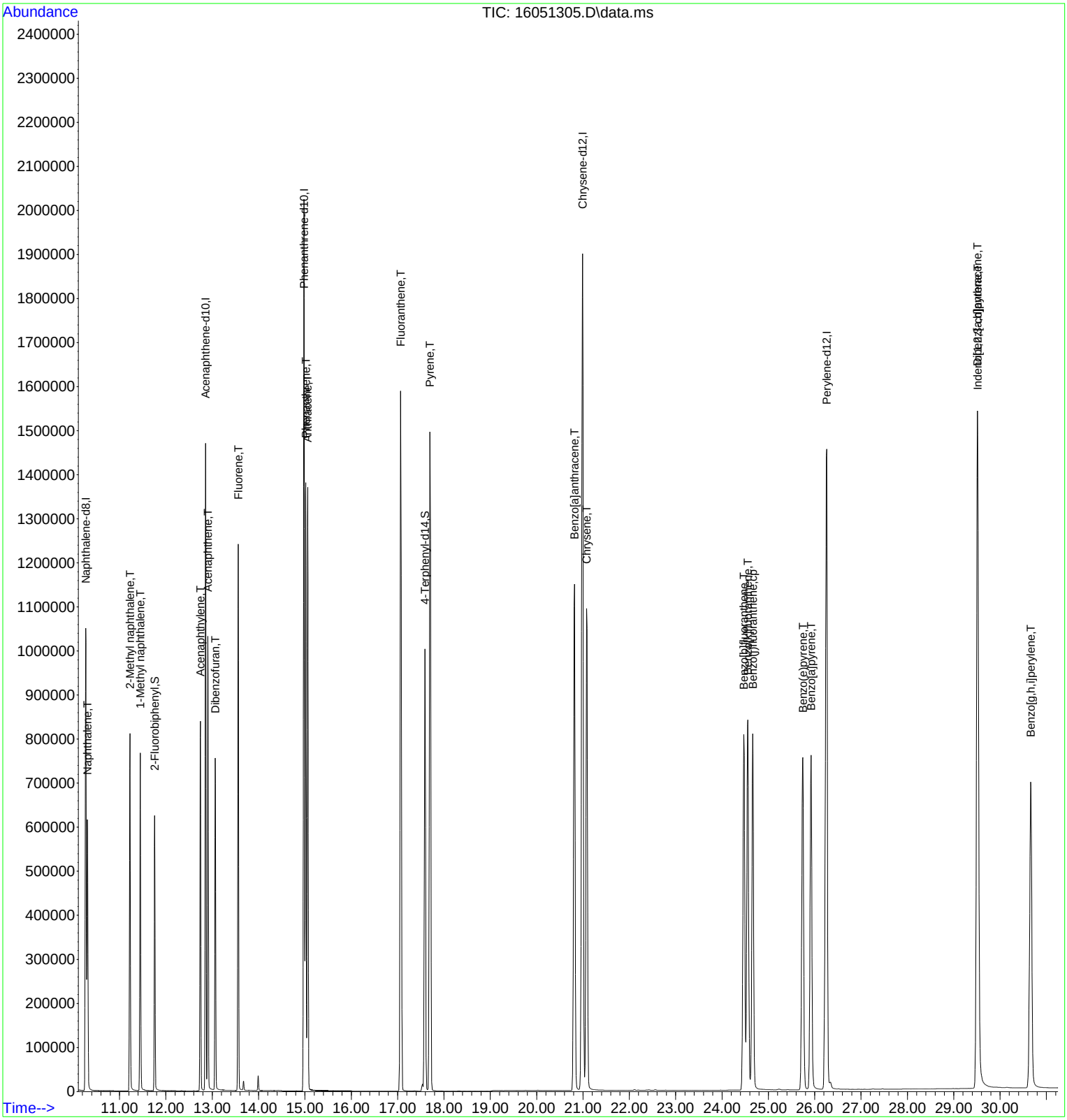
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1468119	4000.00	ug/kg	94
6) Acenaphthene-d10	12.857	164	854900	4000.00	ug/kg	87
11) Phenanthrene-d10	14.979	188	2439452	4000.00	ug/kg	79
16) Chrysene-d12	20.992	240	3300716	4000.00	ug/kg	94
20) Perylene-d12	26.259	264	2819826	4000.00	ug/kg	95
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	560276	1941.76	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 48.54%			
17) 4-Terphenyl-d14	17.589	244	1467513	1924.25	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 48.11%#			
Target Compounds						Qvalue
2) Naphthalene	10.306	128	704269	1979.40	ug/kg	100
3) 2-Methyl naphthalene	11.223	142	500668	2081.89	ug/kg	99
4) 1-Methyl naphthalene	11.445	142	455417	2039.72	ug/kg	98
7) Acenaphthylene	12.744	152	802733	1998.13	ug/kg	100
8) Acenaphthene	12.906	153	492723	1938.06	ug/kg	99
9) Dibenzofuran	13.064	168	717380	1747.35	ug/kg	88
10) Fluorene	13.560	166	662703	1716.45	ug/kg	99
12) Phenanthrene	15.017	178	1324260	1875.62	ug/kg	99
13) Anthracene	15.059	178	1378662	1802.32	ug/kg	99
14) Fluoranthene	17.066	202	1886532	2041.74	ug/kg	87
15) Pyrene	17.696	202	1920184	2071.94	ug/kg	91
18) Benzo[a]anthracene	20.816	228	1799412	1939.34	ug/kg	100
19) Chrysene	21.080	228	1648971	1941.39	ug/kg	100
21) Benzo[b]fluoranthene	24.471	252	1628703	2028.14	ug/kg	100
22) Benzo[k]fluoranthene	24.559	252	1482736	2302.03	ug/kg	98
23) Benzo(j)fluoranthene	24.662	252	1399385	2149.53	ug/kg	98
24) Benzo(e)pyrene	25.746	252	1492934	1936.92	ug/kg	98
25) Benzo[a]pyrene	25.922	252	1485885	2013.17	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.526	276	1689151	2065.73	ug/kg	94
27) Dibenz[a,h]anthracene	29.511	278	1426131	2139.30	ug/kg	98
28) Benzo[g,h,i]perylene	30.661	276	1444297	2024.19	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051305.D
Acq On : 13 May 2016 2:14 pm
Operator :
Sample : ICV-160513
Misc : ICV
ALS Vial : 3 Sample Multiplier: 1

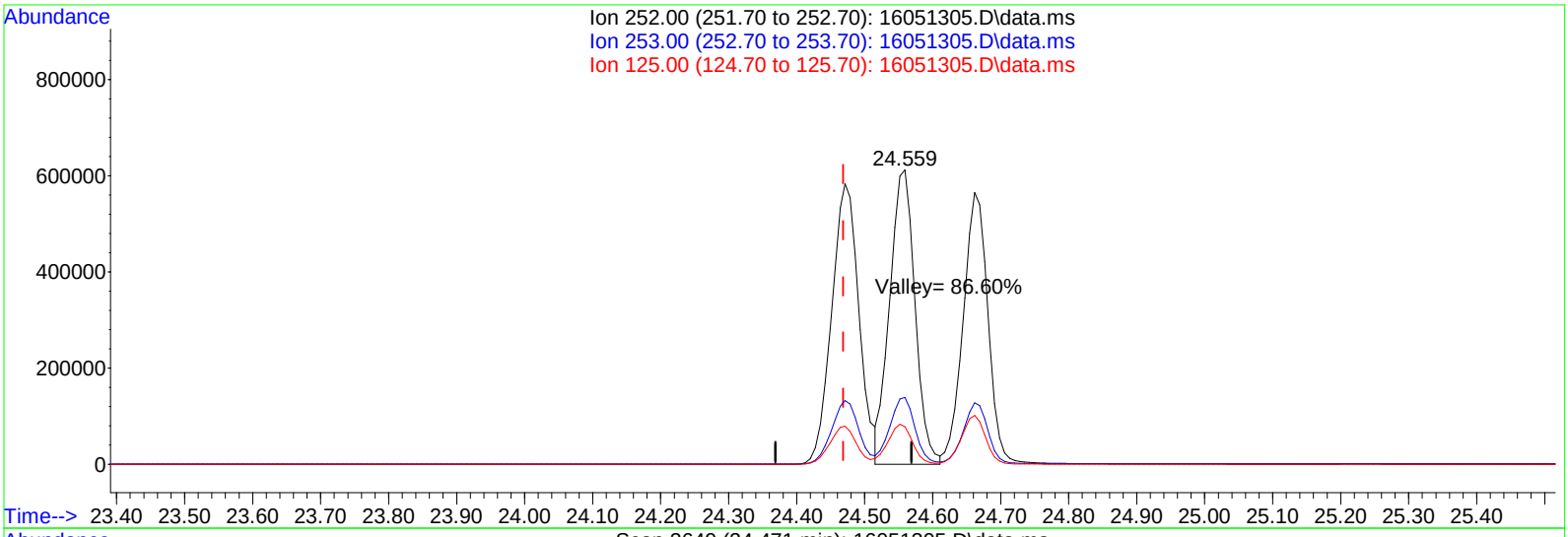
Quant Time: May 16 09:01:34 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

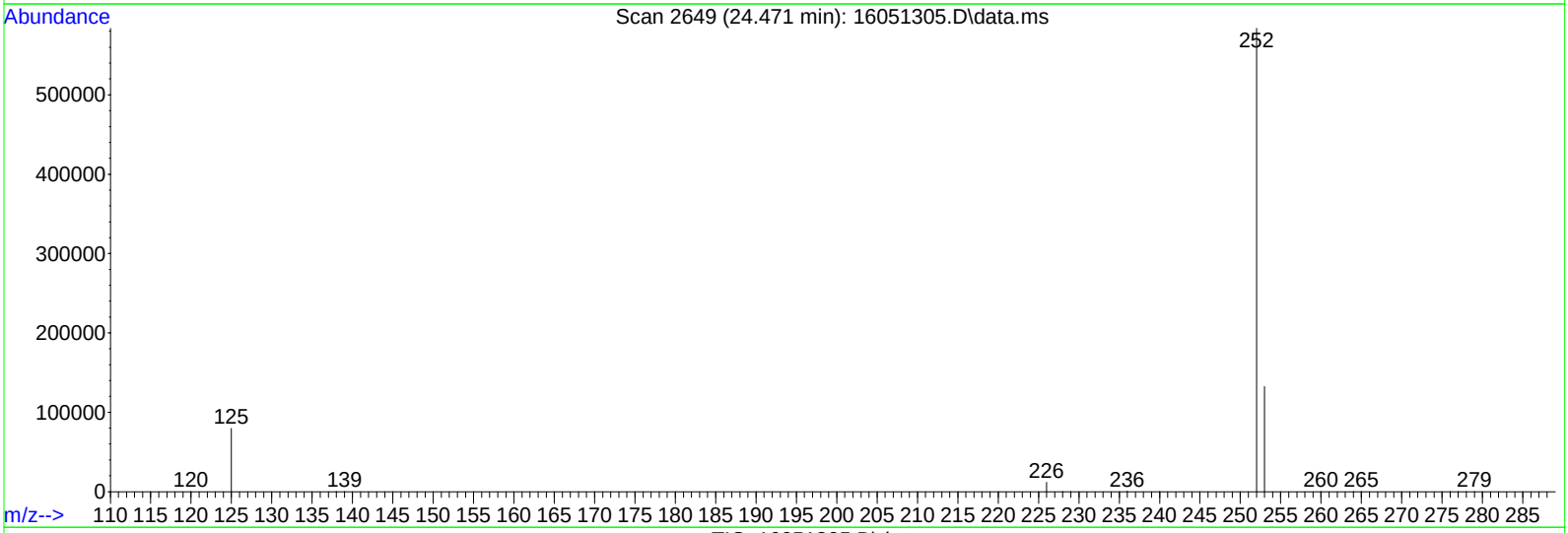


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051305.D
Acq On : 13 May 2016 2:14 pm
Operator :
Sample : ICV-160513
Misc : ICV
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 13 14:46:12 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration





TIC: 16051305.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.471min (+0.002) 2028.14ug/kg

response 1628703

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.54
125.00	13.80	13.61
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051306.D
Acq On : 13 May 2016 2:52 pm
Operator :
Sample : LCS-75101
Misc : LCS
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 16 09:01:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

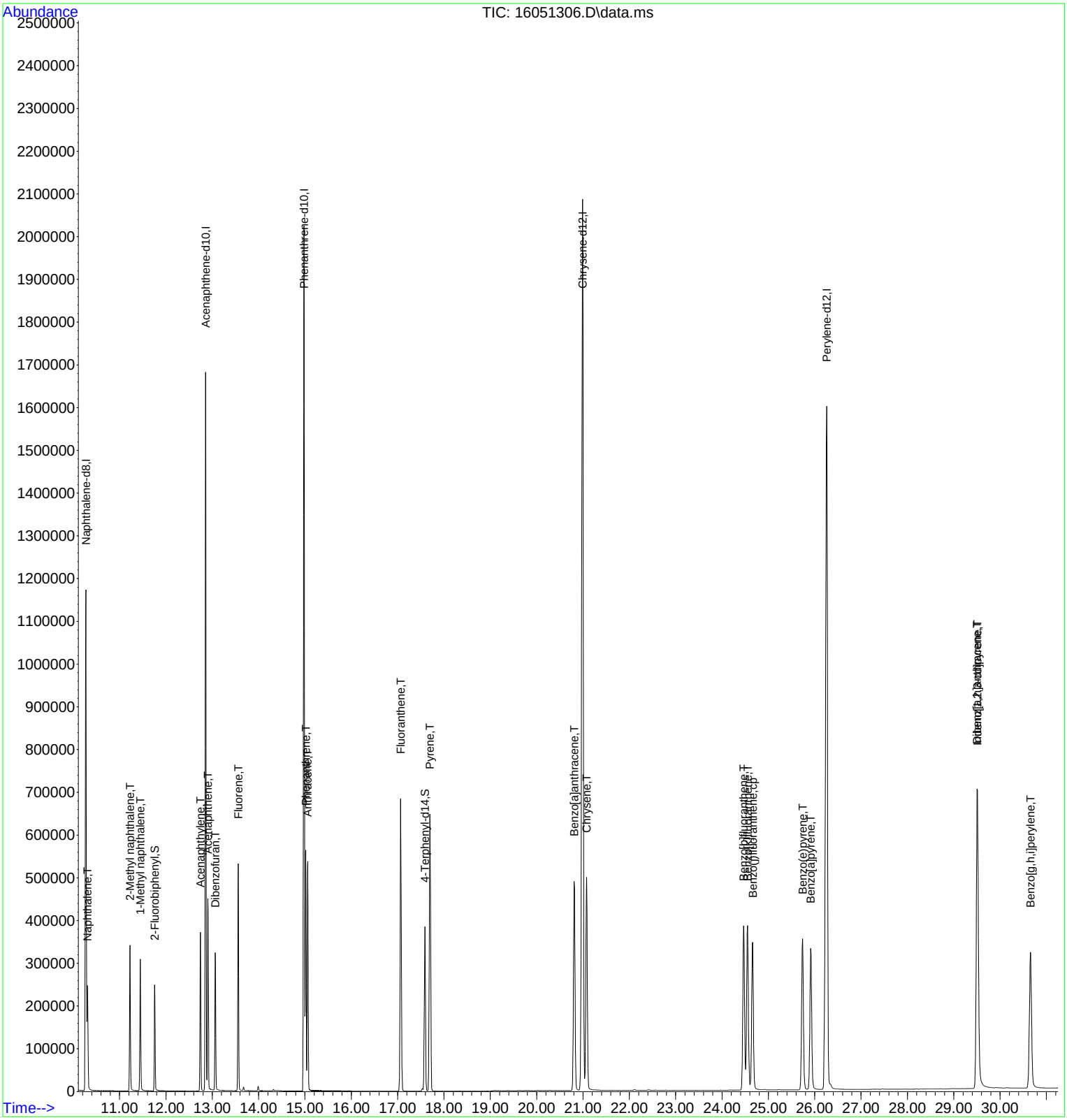
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1631796	4000.00	ug/kg	104
6) Acenaphthene-d10	12.857	164	996350	4000.00	ug/kg	102
11) Phenanthrene-d10	14.979	188	2406531	4000.00	ug/kg	78
16) Chrysene-d12	20.991	240	3501404	4000.00	ug/kg	100
20) Perylene-d12	26.258	264	3189331	4000.00	ug/kg	108
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	223623	697.28	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.43%#			
17) 4-Terphenyl-d14	17.589	244	540141	667.66	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 16.69%#			
Target Compounds						Qvalue
2) Naphthalene	10.305	128	271073	685.45	ug/kg	100
3) 2-Methyl naphthalene	11.222	142	206975	767.94	ug/kg	99
4) 1-Methyl naphthalene	11.449	142	189560	763.84	ug/kg	99
7) Acenaphthylene	12.744	152	351444	750.61	ug/kg	99
8) Acenaphthene	12.906	153	216450	730.51	ug/kg	99
9) Dibenzofuran	13.068	168	311681	651.40	ug/kg	93
10) Fluorene	13.559	166	284422	632.09	ug/kg	100
12) Phenanthrene	15.017	178	536030	769.60	ug/kg	98
13) Anthracene	15.059	178	534240	707.97	ug/kg	98
14) Fluoranthene	17.065	202	785210	861.44	ug/kg	93
15) Pyrene	17.696	202	792472	866.80	ug/kg	95
18) Benzo[a]anthracene	20.808	228	788304	800.91	ug/kg	99
19) Chrysene	21.079	228	730536	810.79	ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	747269	822.73	ug/kg	99
22) Benzo[k]fluoranthene	24.551	252	680817	934.55	ug/kg	97
23) Benzo(j)fluoranthene	24.661	252	624762	848.49	ug/kg	98
24) Benzo(e)pyrene	25.738	252	674235	773.40	ug/kg	98
25) Benzo[a]pyrene	25.914	252	652903	782.11	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.518	276	785880	849.74	ug/kg	92
27) Dibenz[a,h]anthracene	29.503	278	658520	873.38	ug/kg	97
28) Benzo[g,h,i]perylene	30.660	276	666820	826.28	ug/kg	95

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051306.D
Acq On : 13 May 2016 2:52 pm
Operator :
Sample : LCS-75101
Misc : LCS
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 16 09:01:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051307.D
Acq On : 13 May 2016 3:29 pm
Operator :
Sample : MB-75101
Misc : MBLK
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 16 09:01:39 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.274	136	1652863	4000.00	ug/kg	106
6) Acenaphthene-d10	12.857	164	1013401	4000.00	ug/kg	104
11) Phenanthrene-d10	14.979	188	2425991	4000.00	ug/kg	78
16) Chrysene-d12	20.991	240	3674535	4000.00	ug/kg	105
20) Perylene-d12	26.258	264	3217916	4000.00	ug/kg	108

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	205023	631.13	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 15.78%#			
17) 4-Terphenyl-d14	17.588	244	535570	630.81	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 15.77%#			

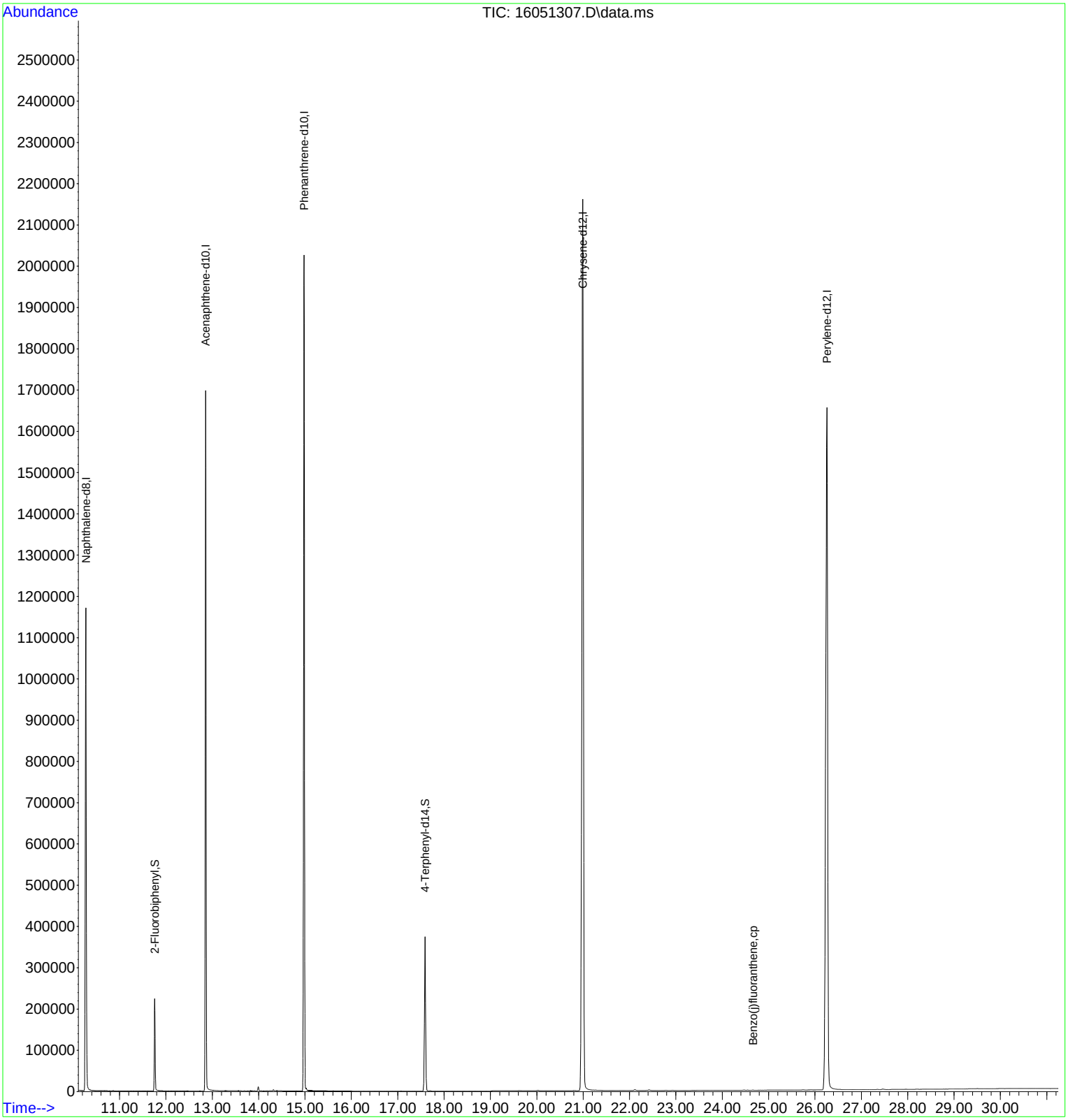
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.661	252	374	0.50	ug/kg#	71

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051307.D
Acq On : 13 May 2016 3:29 pm
Operator :
Sample : MB-75101
Misc : MBLK
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 16 09:01:39 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051320.D
Acq On : 13 May 2016 11:27 pm
Operator :
Sample : 1605071-25AMS
Misc : MS
ALS Vial : 18 Sample Multiplier: 10

Quant Time: May 16 09:01:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1478096	4000.00	ug/kg	95
6) Acenaphthene-d10	12.856	164	969820	4000.00	ug/kg	99
11) Phenanthrene-d10	14.982	188	2873755	4000.00	ug/kg	93
16) Chrysene-d12	20.990	240	3031059	4000.00	ug/kg	87
20) Perylene-d12	26.257	264	2628780	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	20399	70.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.76%#			
17) 4-Terphenyl-d14	17.588	244	52228	74.58	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.86%#			

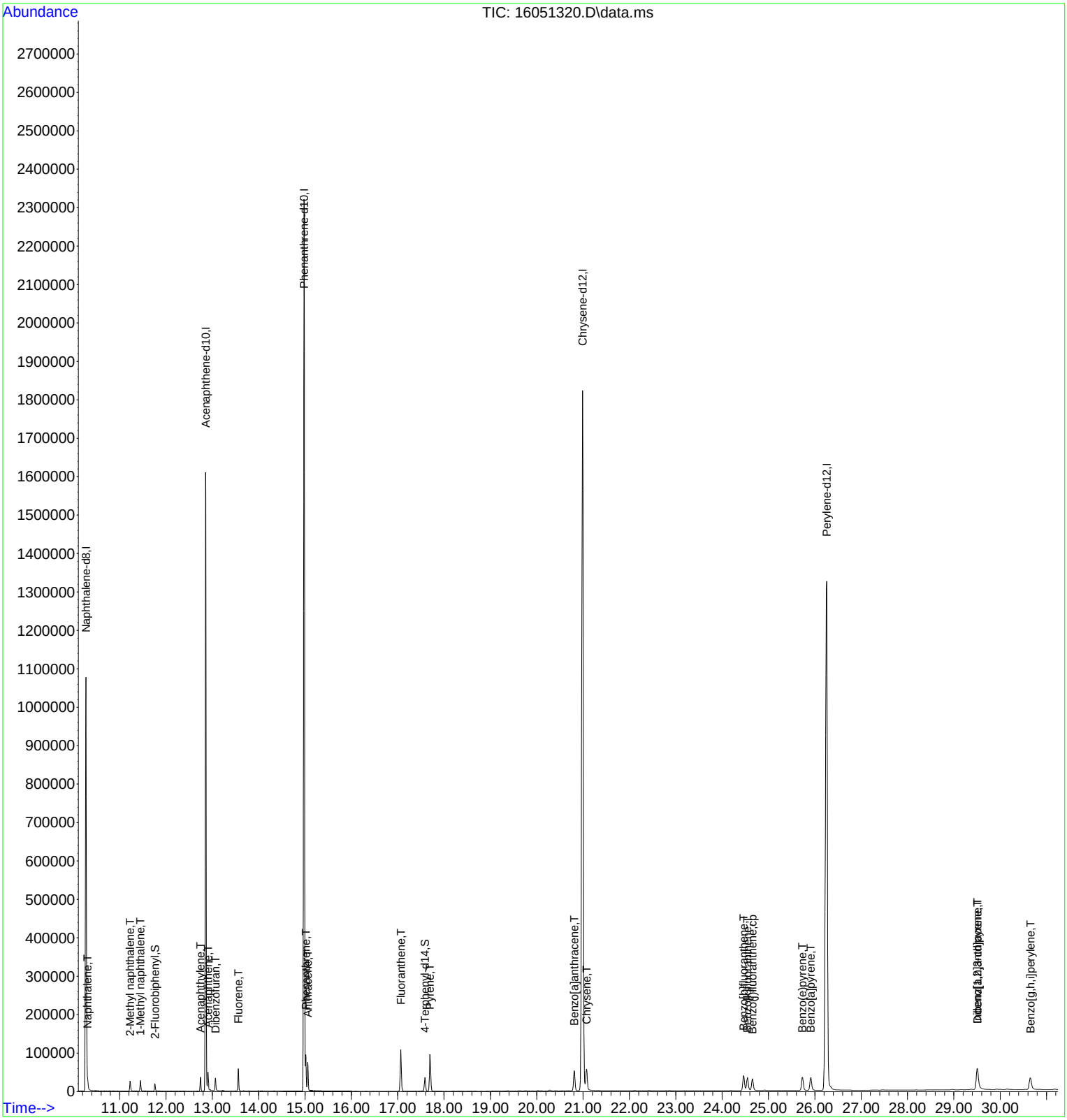
Target Compounds						Qvalue
2) Naphthalene	10.308	128	25928	72.38	ug/kg	100
3) 2-Methyl naphthalene	11.225	142	18410	78.07	ug/kg	98
4) 1-Methyl naphthalene	11.448	142	17567	78.15	ug/kg	99
7) Acenaphthylene	12.743	152	34710	76.16	ug/kg	99
8) Acenaphthene	12.910	153	21846	75.75	ug/kg	99
9) Dibenzofuran	13.067	168	33530	71.99	ug/kg	96
10) Fluorene	13.558	166	32479	74.15	ug/kg	99
12) Phenanthrene	15.018	178	82196	98.82	ug/kg	96
13) Anthracene	15.060	178	71515	79.36	ug/kg	97
14) Fluoranthene	17.065	202	125694	115.48	ug/kg	93
15) Pyrene	17.696	202	118019	108.10	ug/kg	96
18) Benzo[a]anthracene	20.807	228	83784	98.33	ug/kg	99
19) Chrysene	21.078	228	81153	104.04	ug/kg	98
21) Benzo[b]fluoranthene	24.462	252	76477	102.15	ug/kg	99
22) Benzo[k]fluoranthene	24.543	252	58968	98.20	ug/kg	97
23) Benzo(j)fluoranthene	24.653	252	57265	94.35	ug/kg	97
24) Benzo(e)pyrene	25.737	252	67855	94.43	ug/kg	97
25) Benzo[a]pyrene	25.913	252	71062	103.28	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.517	276	77915	102.21	ug/kg	91
27) Dibenz[a,h]anthracene	29.502	278	55047	88.58	ug/kg	96
28) Benzo[g,h,i]perylene	30.652	276	70315	105.71	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051320.D
Acq On : 13 May 2016 11:27 pm
Operator :
Sample : 1605071-25AMS
Misc : MS
ALS Vial : 18 Sample Multiplier: 10

Quant Time: May 16 09:01:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051321.D
Acq On : 14 May 2016 12:03 am
Operator :
Sample : 1605071-25AMSD
Misc : MSD
ALS Vial : 19 Sample Multiplier: 10

Quant Time: May 16 09:01:46 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1499453	4000.00	ug/kg	96
6) Acenaphthene-d10	12.857	164	997896	4000.00	ug/kg	102
11) Phenanthrene-d10	14.979	188	2914311	4000.00	ug/kg	94
16) Chrysene-d12	20.991	240	3027353	4000.00	ug/kg	87
20) Perylene-d12	26.258	264	2634762	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	20299	68.88	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.72%#			
17) 4-Terphenyl-d14	17.588	244	49891	71.33	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.78%#			

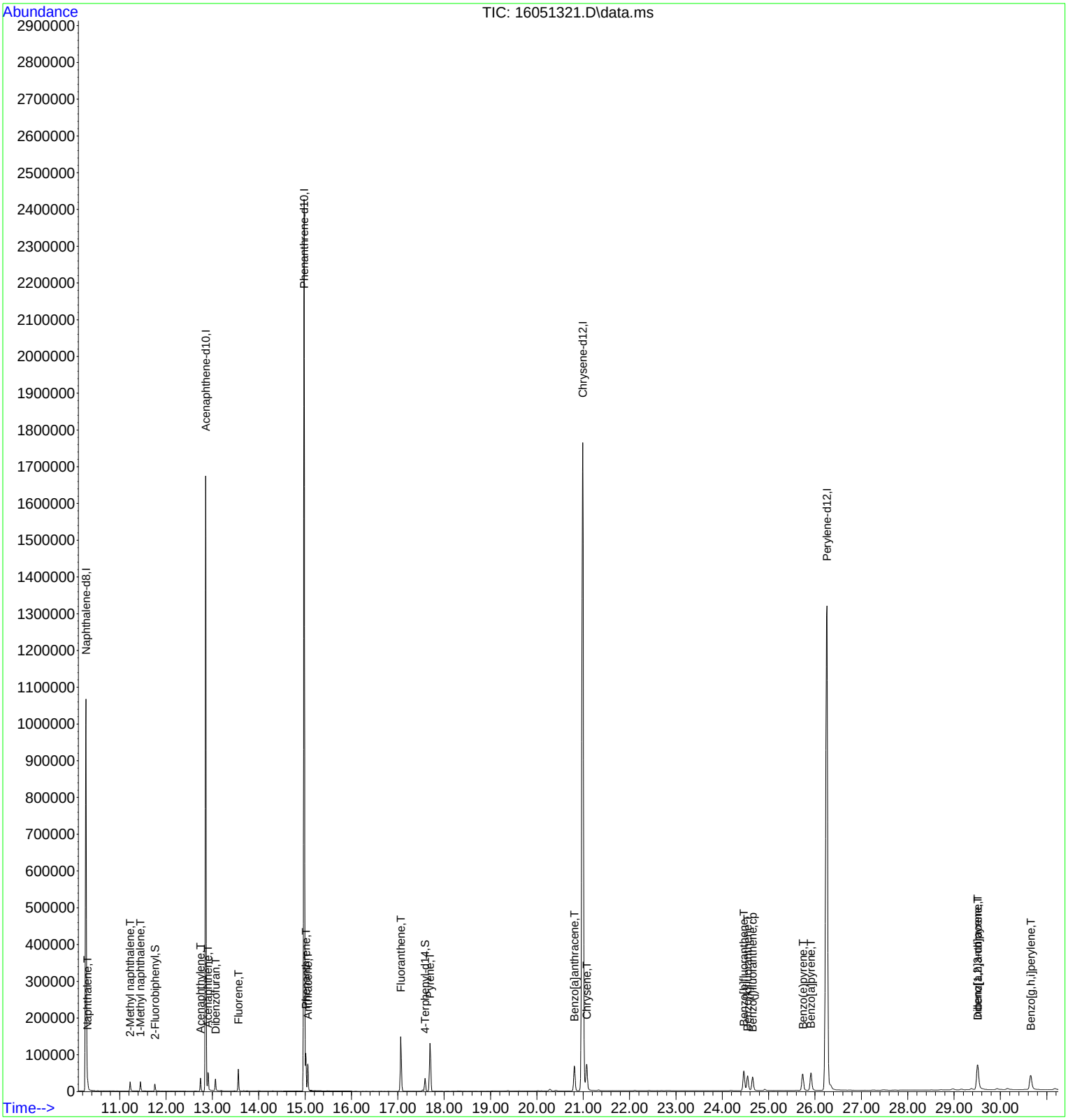
Target Compounds						Qvalue
2) Naphthalene	10.309	128	22697	62.46	ug/kg	99
3) 2-Methyl naphthalene	11.226	142	17149	71.96	ug/kg	98
4) 1-Methyl naphthalene	11.448	142	16368	71.78	ug/kg	99
7) Acenaphthylene	12.744	152	33763	72.00	ug/kg	99
8) Acenaphthene	12.906	153	21631	72.89	ug/kg	100
9) Dibenzofuran	13.068	168	33205	69.29	ug/kg	100
10) Fluorene	13.559	166	32399	71.89	ug/kg	99
12) Phenanthrene	15.017	178	89856	106.53	ug/kg	96
13) Anthracene	15.059	178	71032	77.73	ug/kg	97
14) Fluoranthene	17.065	202	170186	154.18	ug/kg	94
15) Pyrene	17.695	202	158340	143.02	ug/kg	97
18) Benzo[a]anthracene	20.808	228	107382	126.18	ug/kg	99
19) Chrysene	21.079	228	110560	141.92	ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	105022	139.96	ug/kg	99
22) Benzo[k]fluoranthene	24.544	252	70943	117.88	ug/kg	97
23) Benzo(j)fluoranthene	24.653	252	68086	111.93	ug/kg	96
24) Benzo(e)pyrene	25.738	252	88085	122.31	ug/kg	98
25) Benzo[a]pyrene	25.913	252	98131	142.29	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.510	276	97767	127.96	ug/kg	95
27) Dibenz[a,h]anthracene	29.503	278	59327	95.25	ug/kg	96
28) Benzo[g,h,i]perylene	30.653	276	88899	133.34	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051321.D
Acq On : 14 May 2016 12:03 am
Operator :
Sample : 1605071-25AMSD
Misc : MSD
ALS Vial : 19 Sample Multiplier: 10

Quant Time: May 16 09:01:46 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051323.D
Acq On : 14 May 2016 1:17 am
Operator :
Sample : ICV2-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 16 09:01:48 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

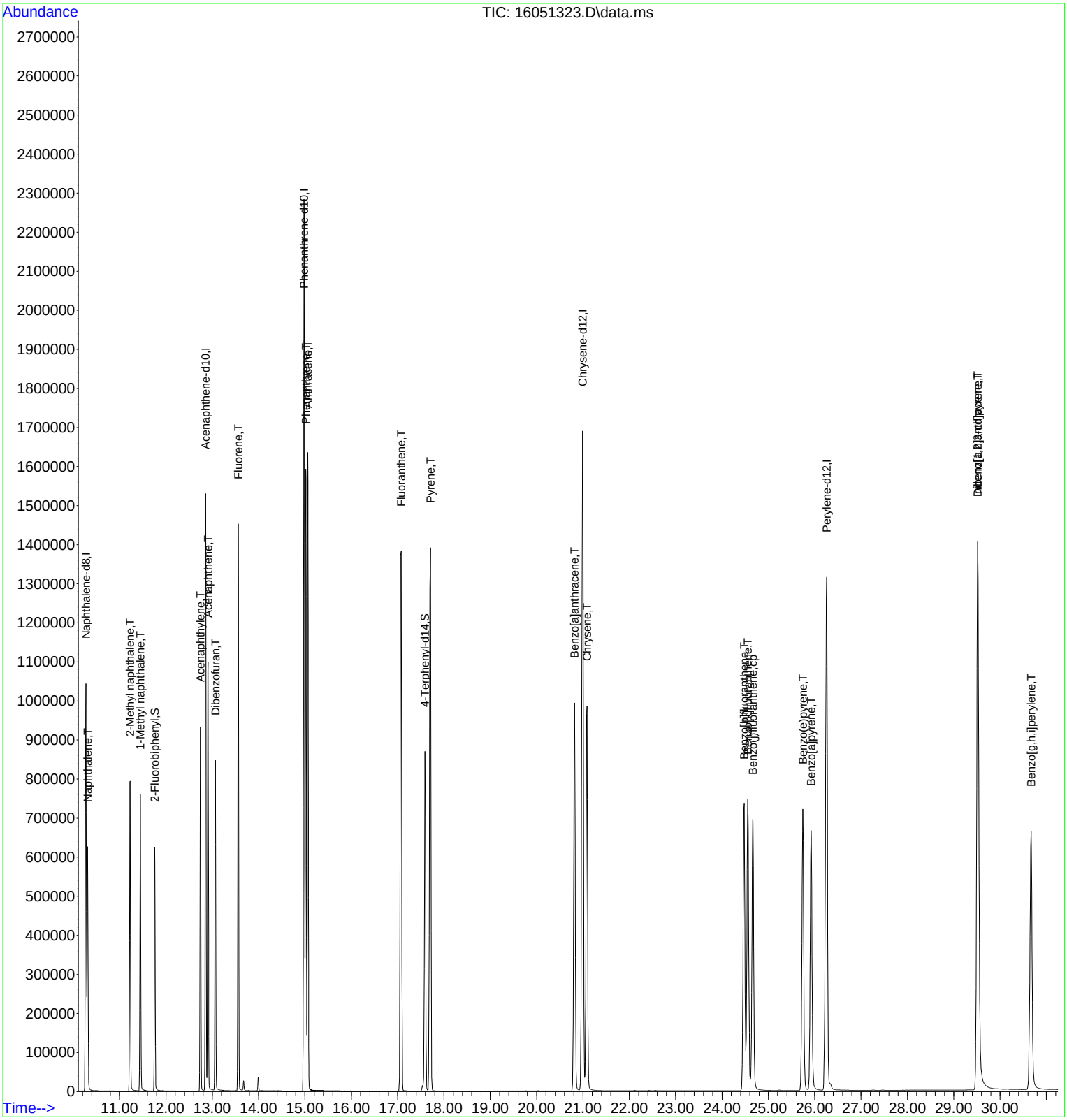
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1441846	4000.00	ug/kg	92
6) Acenaphthene-d10	12.856	164	912357	4000.00	ug/kg	93
11) Phenanthrene-d10	14.981	188	2775672	4000.00	ug/kg	89
16) Chrysene-d12	20.991	240	2907770	4000.00	ug/kg	83
20) Perylene-d12	26.258	264	2554349	4000.00	ug/kg	86
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	570857	2014.48	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	50.36%		
17) 4-Terphenyl-d14	17.587	244	1345289	2002.36	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	50.06%#		
Target Compounds						Qvalue
2) Naphthalene	10.309	128	698664	1999.43	ug/kg	100
3) 2-Methyl naphthalene	11.226	142	499170	2114.01	ug/kg	100
4) 1-Methyl naphthalene	11.448	142	455970	2079.41	ug/kg	100
7) Acenaphthylene	12.743	152	867089	2022.40	ug/kg	100
8) Acenaphthene	12.910	153	540524	1992.19	ug/kg	98
9) Dibenzofuran	13.068	168	814621	1859.25	ug/kg	99
10) Fluorene	13.559	166	780831	1895.04	ug/kg	100
12) Phenanthrene	15.019	178	1540126	1917.14	ug/kg	100
13) Anthracene	15.063	178	1585191	1821.30	ug/kg	100
14) Fluoranthene	17.077	202	1844784	1754.71	ug/kg	96
15) Pyrene	17.708	202	1831925	1737.27	ug/kg	93
18) Benzo[a]anthracene	20.815	228	1582135	1935.59	ug/kg	99
19) Chrysene	21.086	228	1464810	1957.62	ug/kg	99
21) Benzo[b]fluoranthene	24.478	252	1448333	1990.98	ug/kg	99
22) Benzo[k]fluoranthene	24.558	252	1306896	2239.91	ug/kg	98
23) Benzo(j)fluoranthene	24.668	252	1252205	2123.36	ug/kg	99
24) Benzo(e)pyrene	25.745	252	1345392	1926.91	ug/kg	99
25) Benzo[a]pyrene	25.921	252	1330830	1990.49	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.525	276	1584981	2139.80	ug/kg	99
27) Dibenz[a,h]anthracene	29.517	278	1323884	2192.32	ug/kg	97
28) Benzo[g,h,i]perylene	30.667	276	1362420	2107.88	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051323.D
Acq On : 14 May 2016 1:17 am
Operator :
Sample : ICV2-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

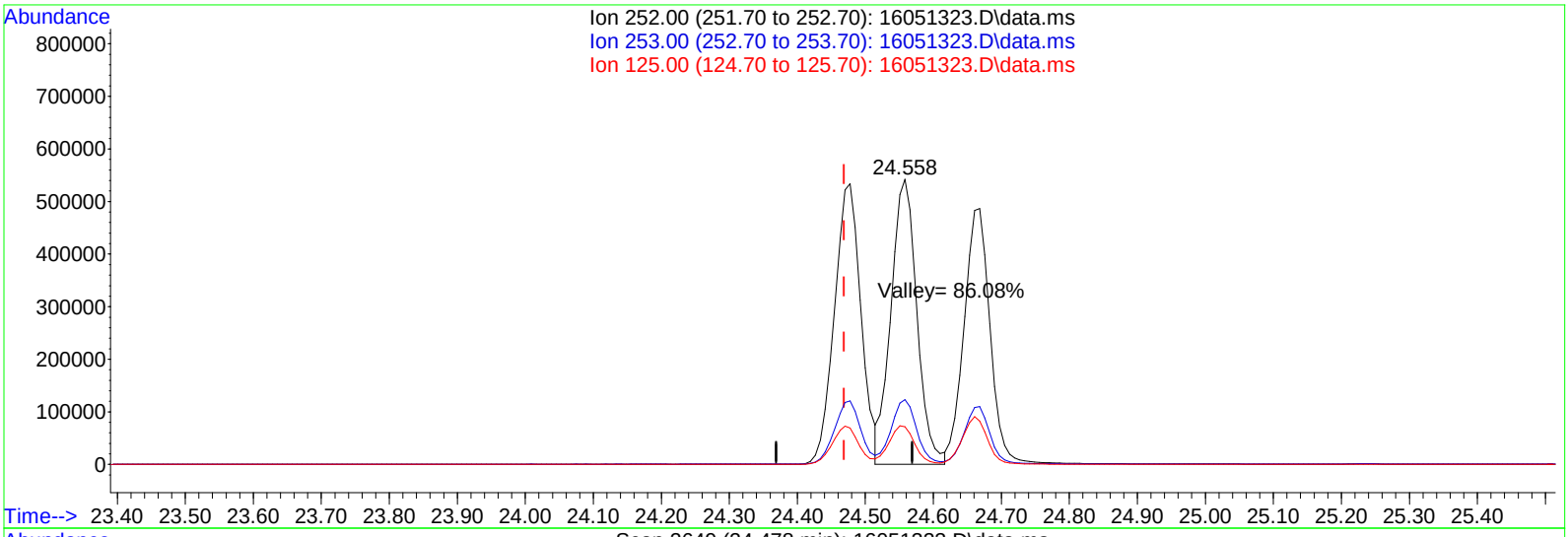
Quant Time: May 16 09:01:48 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

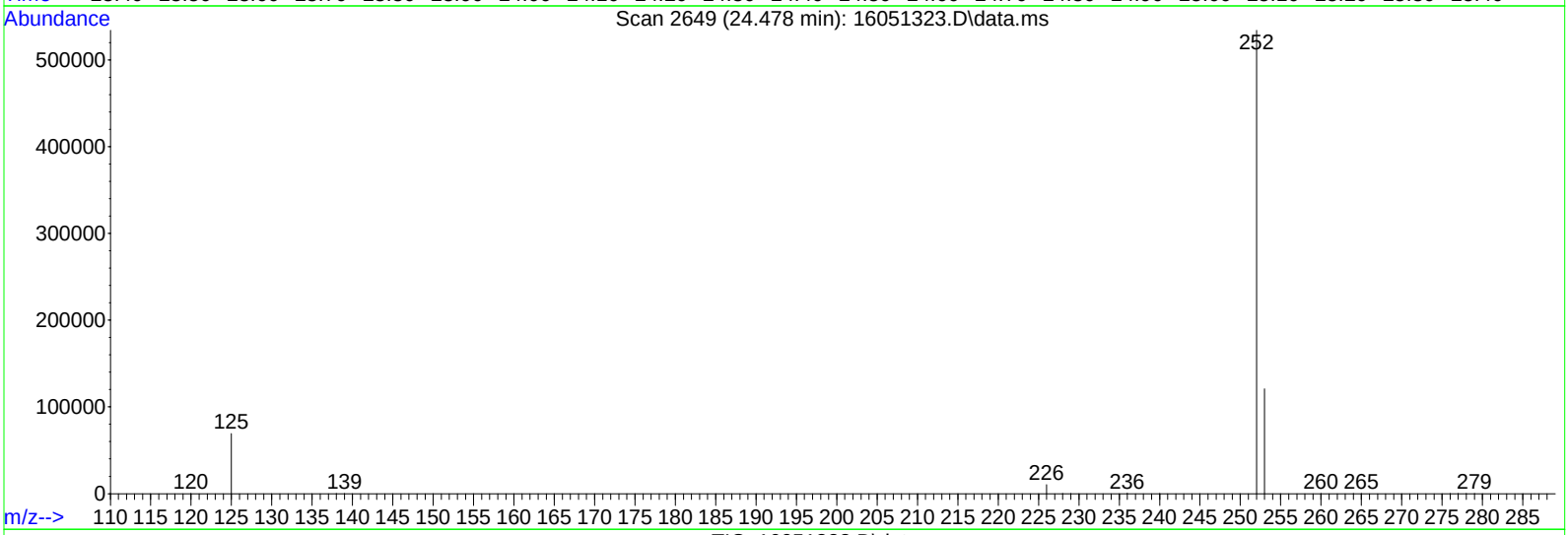


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051323.D
Acq On : 14 May 2016 1:17 am
Operator :
Sample : ICV2-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 14 01:48:59 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration





TIC: 16051323.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.478min (+0.009) 1990.98ug/kg

response 1448333

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.48
125.00	13.80	12.93
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051324.D
Acq On : 14 May 2016 1:54 am
Operator :
Sample : SBLK-160513
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 16 09:01:52 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1437759	4000.00	ug/kg	92
6) Acenaphthene-d10	12.861	164	963036	4000.00	ug/kg	99
11) Phenanthrene-d10	14.982	188	2871913	4000.00	ug/kg	92
16) Chrysene-d12	20.990	240	2820304	4000.00	ug/kg	81
20) Perylene-d12	26.257	264	2437867	4000.00	ug/kg	82

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	36	0.13	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.00%#			
17) 4-Terphenyl-d14	17.602	244	445	0.68	ug/kg	0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.02%#			

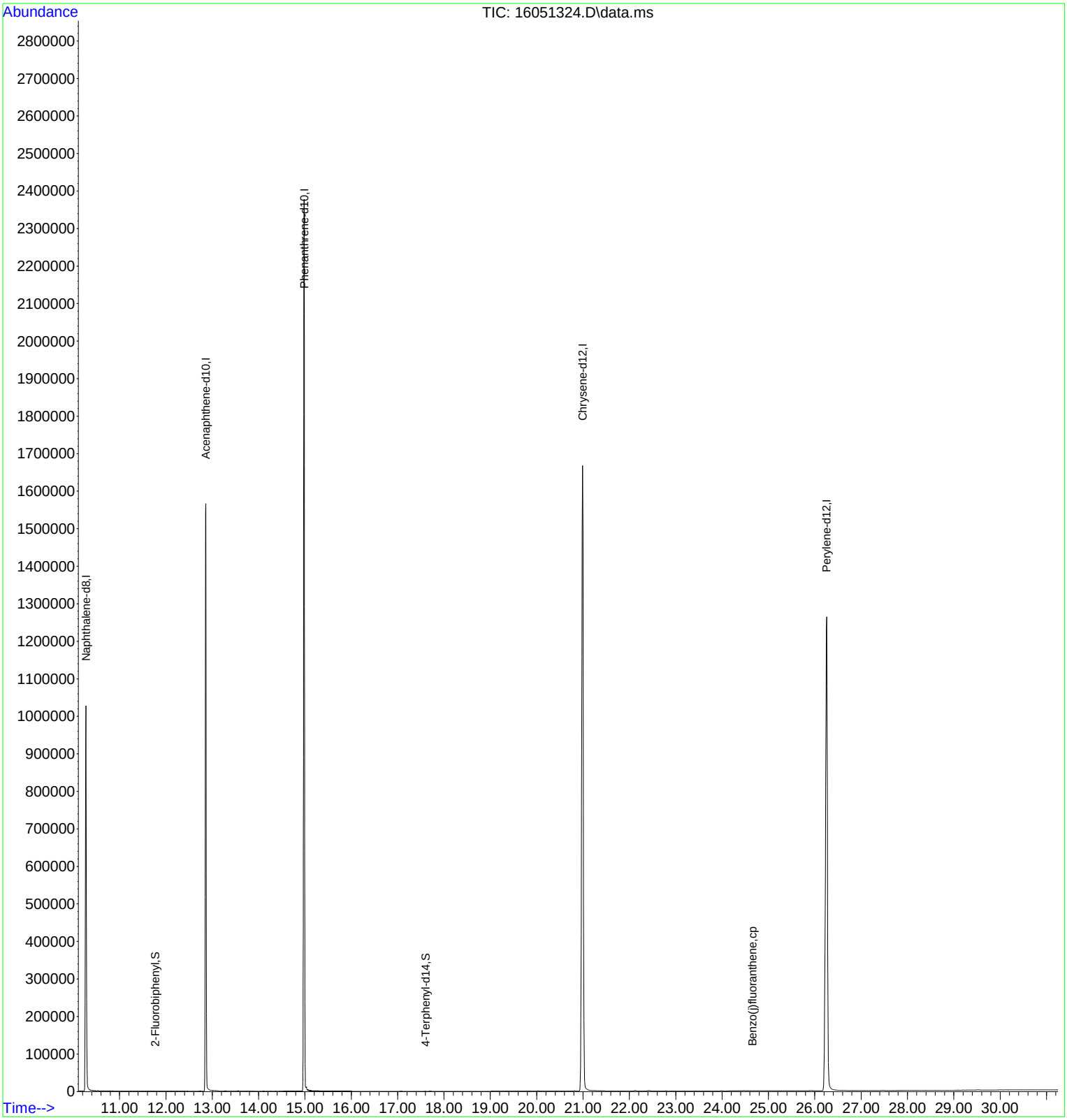
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.653	252	223	0.40	ug/kg	80

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051324.D
Acq On : 14 May 2016 1:54 am
Operator :
Sample : SBLK-160513
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 16 09:01:52 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051328.D
Acq On : 14 May 2016 4:22 am
Operator :
Sample : LCS-75151
Misc : LCS
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 16 09:01:55 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.274	136	1629610	4000.00	ug/kg	104
6) Acenaphthene-d10	12.857	164	994443	4000.00	ug/kg	102
11) Phenanthrene-d10	14.981	188	2502142	4000.00	ug/kg	81
16) Chrysene-d12	20.992	240	3035249	4000.00	ug/kg	87
20) Perylene-d12	26.258	264	2727872	4000.00	ug/kg	92

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	256294	800.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.01%#			
17) 4-Terphenyl-d14	17.589	244	561233	800.27	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 20.01%#			

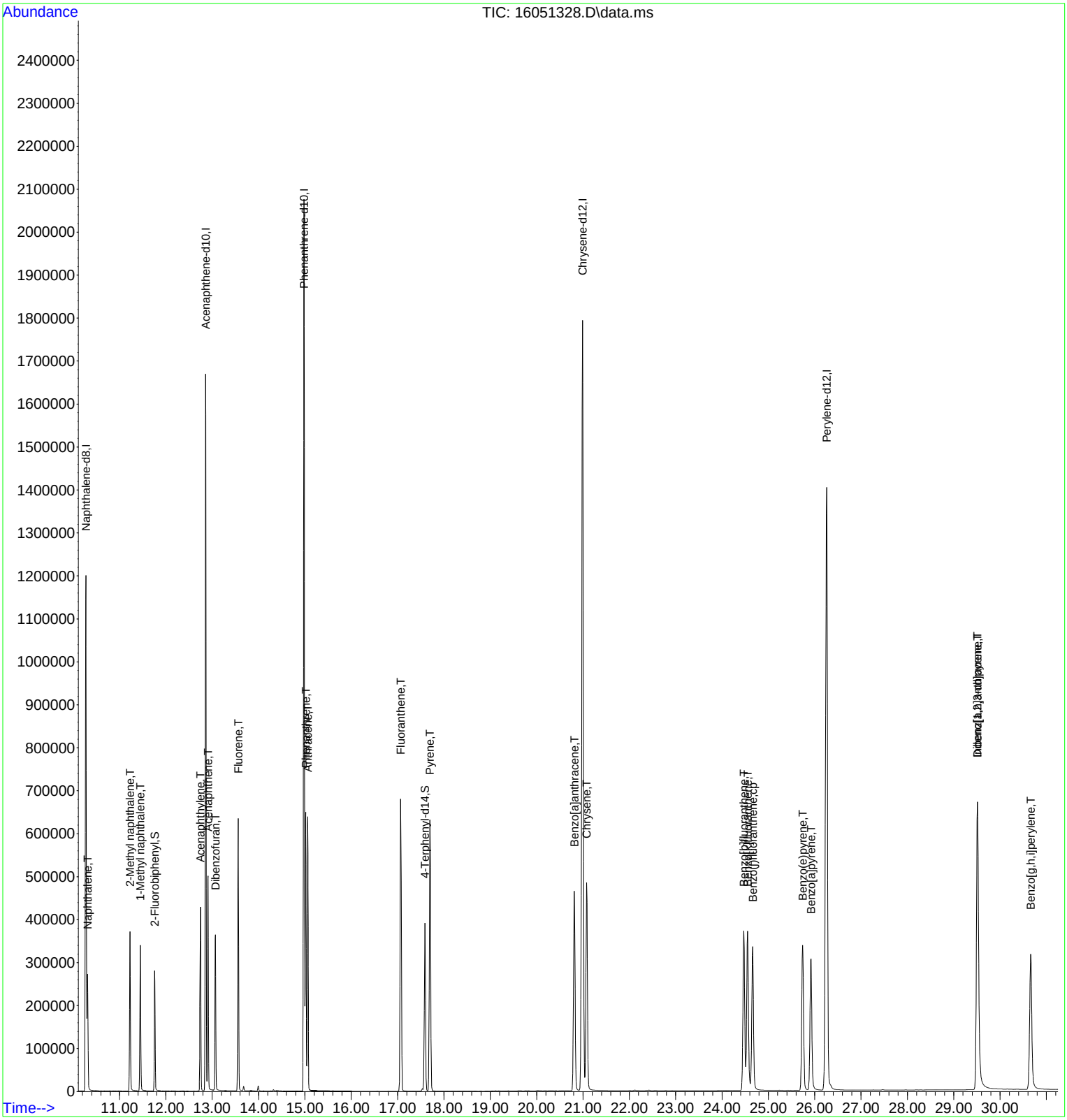
Target Compounds						Qvalue
2) Naphthalene	10.311	128	301940	764.53	ug/kg	99
3) 2-Methyl naphthalene	11.224	142	228727	850.01	ug/kg	97
4) 1-Methyl naphthalene	11.451	142	209606	845.75	ug/kg	99
7) Acenaphthylene	12.744	152	393069	841.12	ug/kg	99
8) Acenaphthene	12.911	153	243076	821.95	ug/kg	98
9) Dibenzofuran	13.069	168	355574	744.55	ug/kg	99
10) Fluorene	13.560	166	331368	737.83	ug/kg	100
12) Phenanthrene	15.017	178	620608	856.98	ug/kg	98
13) Anthracene	15.061	178	622427	793.31	ug/kg	98
14) Fluoranthene	17.066	202	806737	851.23	ug/kg	90
15) Pyrene	17.696	202	801977	843.68	ug/kg	92
18) Benzo[a]anthracene	20.816	228	756404	886.52	ug/kg	99
19) Chrysene	21.079	228	702605	899.55	ug/kg	99
21) Benzo[b]fluoranthene	24.471	252	707841	911.15	ug/kg	99
22) Benzo[k]fluoranthene	24.552	252	648477	1040.73	ug/kg	98
23) Benzo(j)fluoranthene	24.661	252	599026	951.15	ug/kg	98
24) Benzo(e)pyrene	25.738	252	656101	879.91	ug/kg	98
25) Benzo[a]pyrene	25.921	252	629330	881.40	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.518	276	779024	984.82	ug/kg	98
27) Dibenz[a,h]anthracene	29.503	278	648951	1006.29	ug/kg	98
28) Benzo[g,h,i]perylene	30.661	276	665477	964.11	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051328.D
Acq On : 14 May 2016 4:22 am
Operator :
Sample : LCS-75151
Misc : LCS
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 16 09:01:55 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051329.D
Acq On : 14 May 2016 5:00 am
Operator :
Sample : MB-75151
Misc : MBLK
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 16 09:01:58 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.273	136	1595656	4000.00	ug/kg	102
6) Acenaphthene-d10	12.861	164	981031	4000.00	ug/kg	100
11) Phenanthrene-d10	14.980	188	2451579	4000.00	ug/kg	79
16) Chrysene-d12	20.990	240	3103897	4000.00	ug/kg	89
20) Perylene-d12	26.257	264	2928373	4000.00	ug/kg	99

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	243825	777.49	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 19.44%#			
17) 4-Terphenyl-d14	17.589	244	553063	771.18	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 19.28%#			

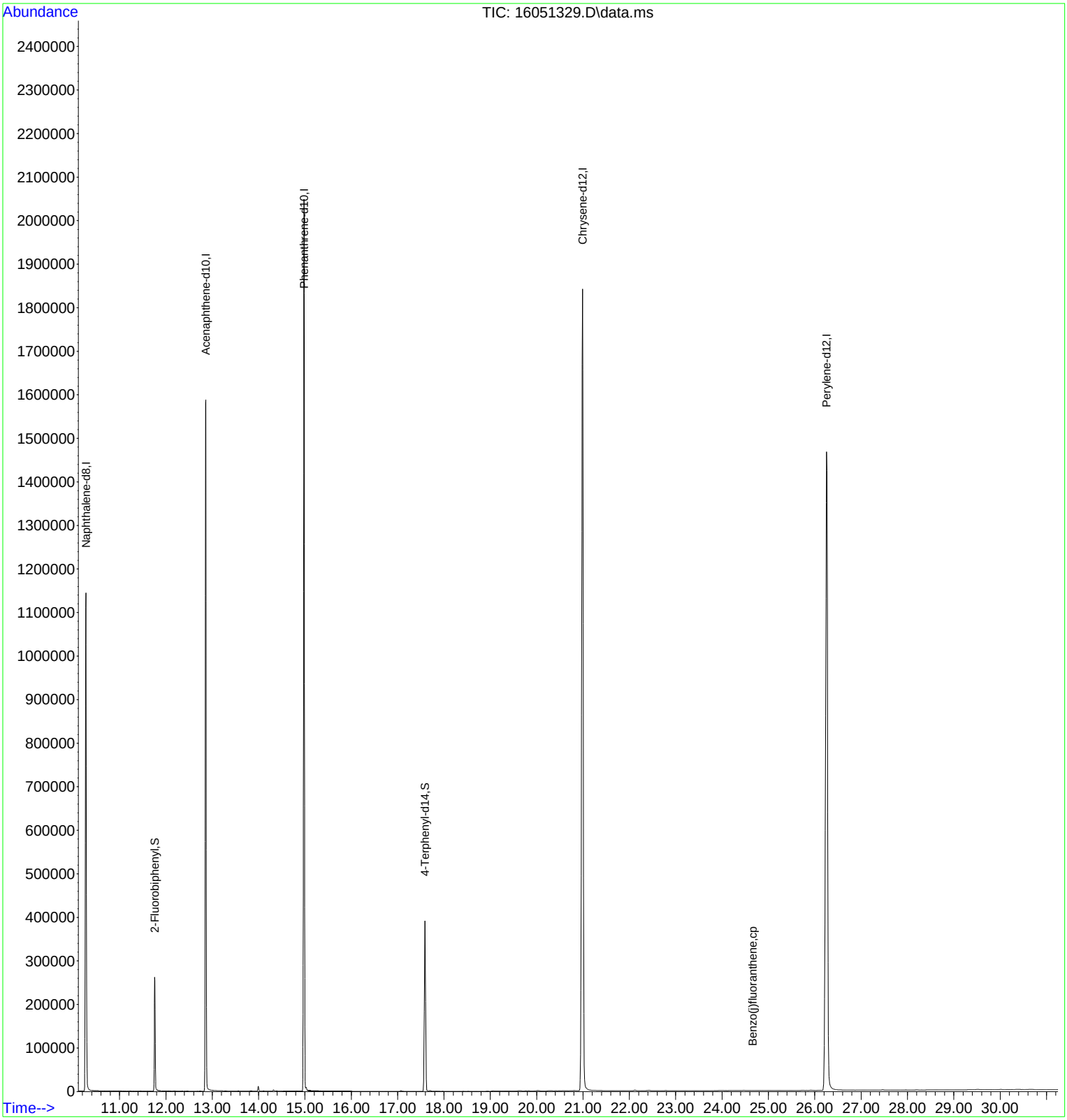
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.660	252	677	1.00	ug/kg	80

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051329.D
Acq On : 14 May 2016 5:00 am
Operator :
Sample : MB-75151
Misc : MBLK
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 16 09:01:58 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051330.D
Acq On : 14 May 2016 5:36 am
Operator :
Sample : 1605097-21A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 16 09:04:01 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1483461	4000.00	ug/kg	95
6) Acenaphthene-d10	12.856	164	986500	4000.00	ug/kg	101
11) Phenanthrene-d10	14.980	188	2854528	4000.00	ug/kg	92
16) Chrysene-d12	20.990	240	2969709	4000.00	ug/kg	85
20) Perylene-d12	26.249	264	2542354	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	24157	82.86	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.07%#			
17) 4-Terphenyl-d14	17.589	244	60162	87.68	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.19%#			

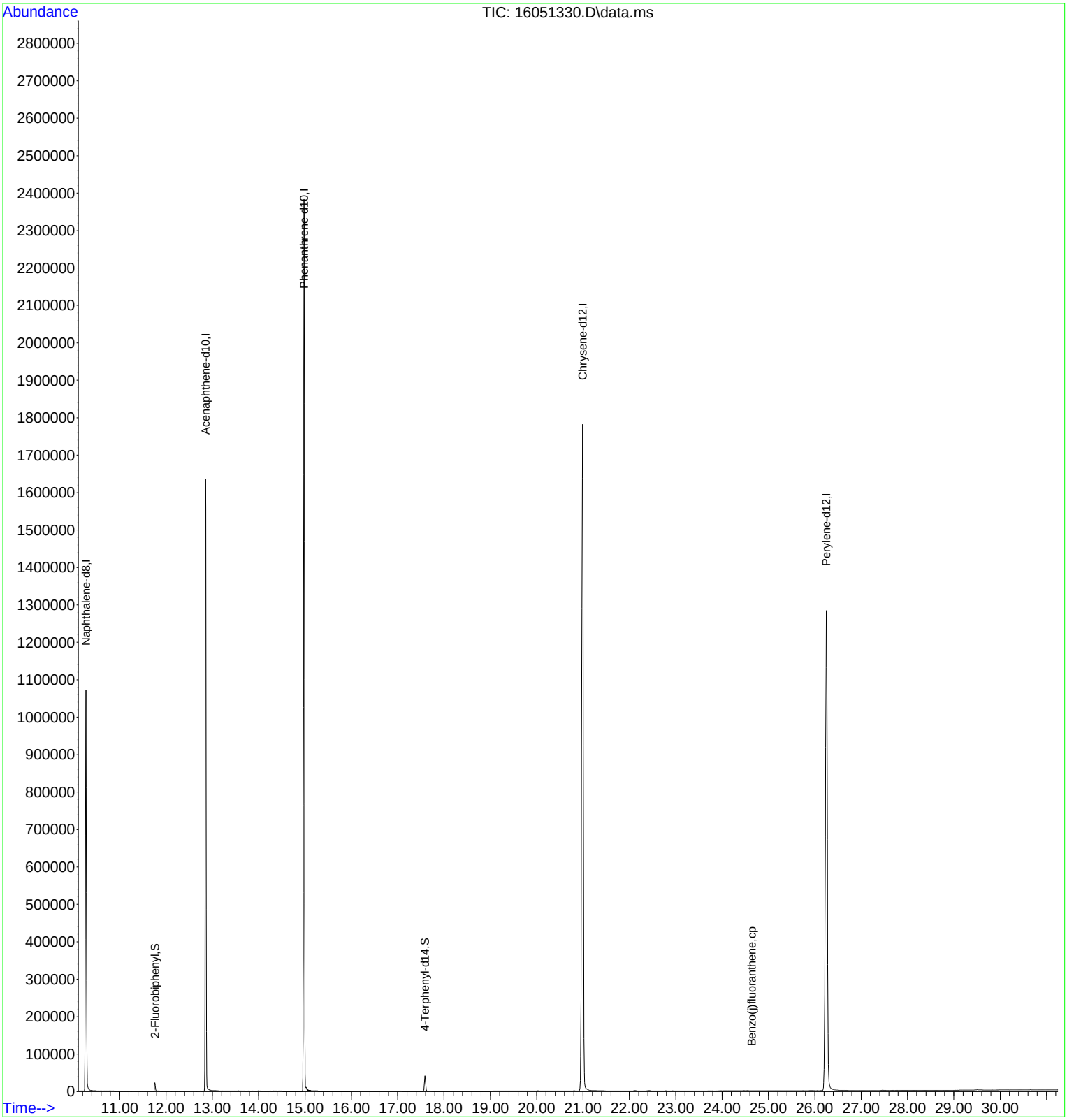
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.645	252	151	0.26	ug/kg	92

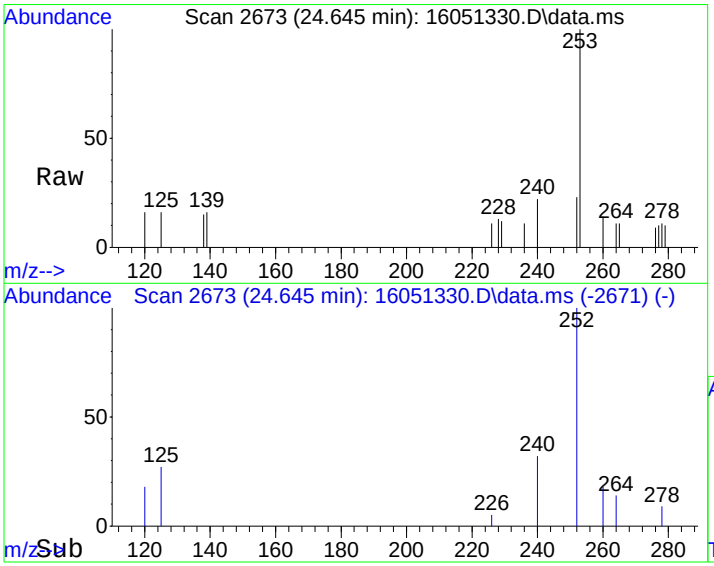
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051330.D
Acq On : 14 May 2016 5:36 am
Operator :
Sample : 1605097-21A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 16 09:04:01 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

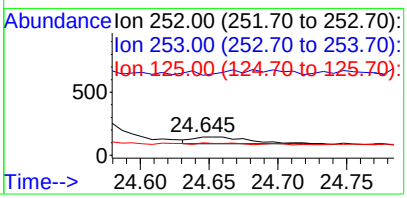




#23
Benzo(j)fluoranthene
Concen: 0.26 ug/kg
RT: 24.645 min Scan# 2673
Delta R.T. -0.014 min
Lab File: 16051330.D
Acq: 14 May 2016 5:36 am

Tgt Ion:252 Resp: 151

Ion	Ratio	Lower	Upper
252	100		
253	16.6	2.3	42.3
125	17.2	0.0	39.2



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051331.D
Acq On : 14 May 2016 6:13 am
Operator :
Sample : 1605097-23A
Misc : SAMP
ALS Vial : 29 Sample Multiplier: 10

Quant Time: May 16 09:04:05 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1504533	4000.00	ug/kg	96
6) Acenaphthene-d10	12.857	164	1020047	4000.00	ug/kg	104
11) Phenanthrene-d10	14.979	188	2942510	4000.00	ug/kg	95
16) Chrysene-d12	20.991	240	2912045	4000.00	ug/kg	83
20) Perylene-d12	26.250	264	2564595	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	24958	84.40	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.11%#			
17) 4-Terphenyl-d14	17.588	244	59370	88.24	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.21%#			

Target Compounds						Qvalue
14) Fluoranthene	17.065	202	8410	7.55	ug/kg	94
15) Pyrene	17.696	202	7775	6.96	ug/kg	97
18) Benzo[a]anthracene	20.808	228	4476	5.47	ug/kg	98
19) Chrysene	21.079	228	5215	6.96	ug/kg	97
21) Benzo[b]fluoranthene	24.463	252	4737	6.49	ug/kg	97
23) Benzo(j)fluoranthene	24.654	252	1708	2.88	ug/kg	86
25) Benzo[a]pyrene	25.913	252	4428	6.60	ug/kg	96
26) Indeno[1,2,3-cd]pyrene	29.510	276	3872	5.21	ug/kg	88
28) Benzo[g,h,i]perylene	30.653	276	4131	6.37	ug/kg	97

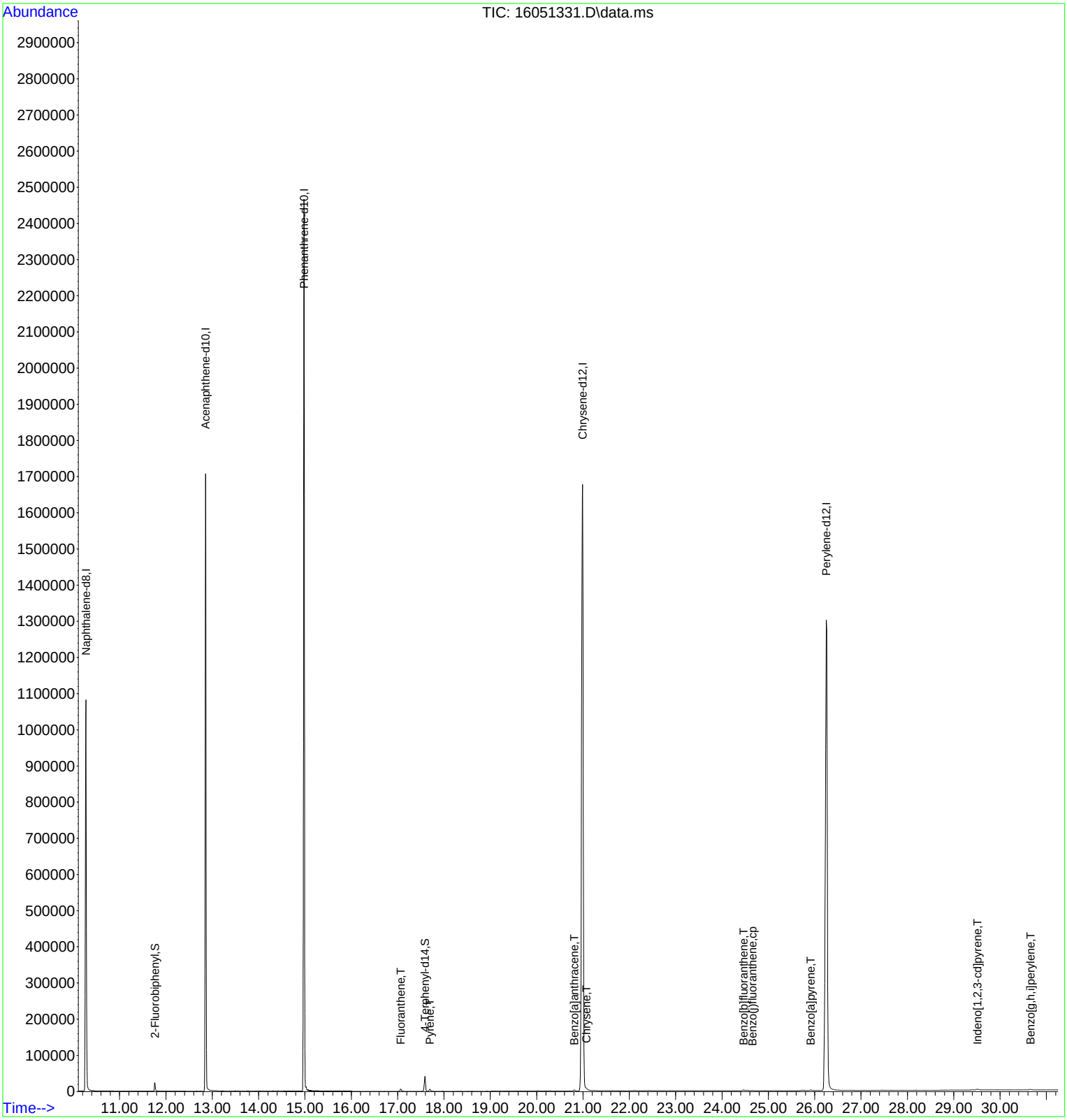
CONFIRMED
By Sherri Herschmann at 3:53:23 PM, 5/16/2016

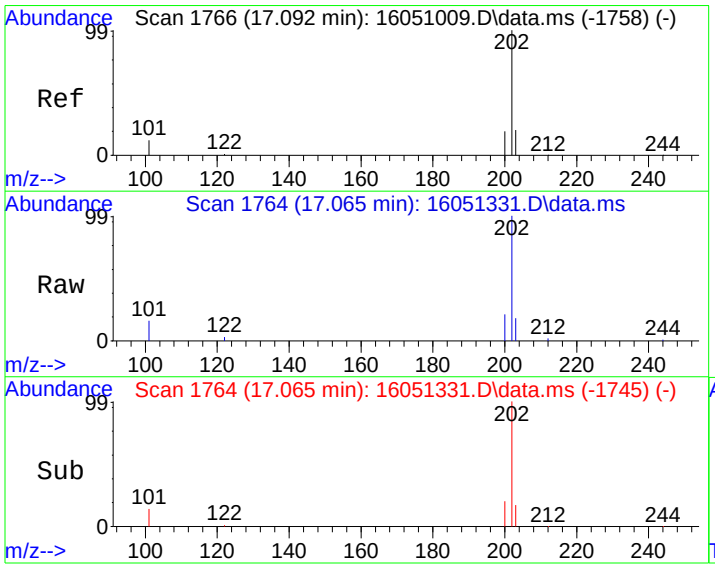
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051331.D
Acq On : 14 May 2016 6:13 am
Operator :
Sample : 1605097-23A
Misc : SAMP
ALS Vial : 29 Sample Multiplier: 10

Quant Time: May 16 09:04:05 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

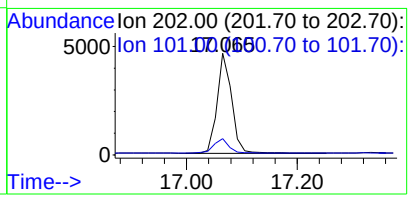


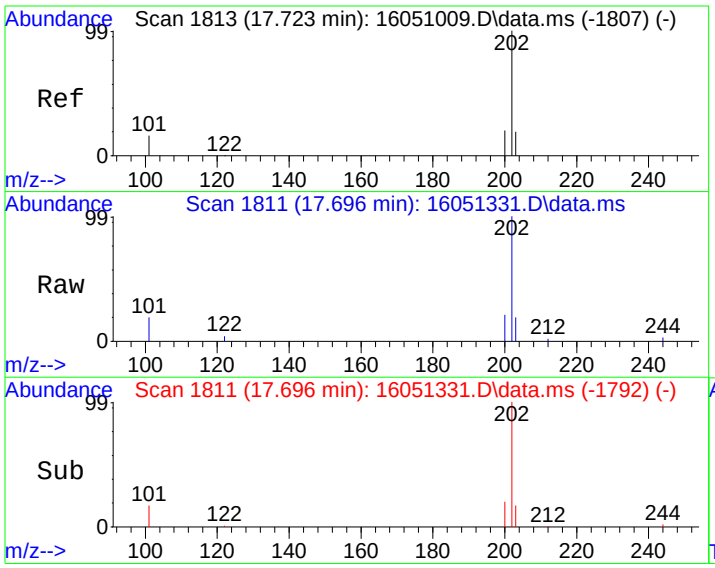


#14
Fluoranthene
Concen: 7.55 ug/kg
RT: 17.065 min Scan# 1764
Delta R.T. -0.000 min
Lab File: 16051331.D
Acq: 14 May 2016 6:13 am

Tgt Ion:202 Resp: 8410

Ion	Ratio	Lower	Upper
202	100		
101	14.5	0.0	32.0

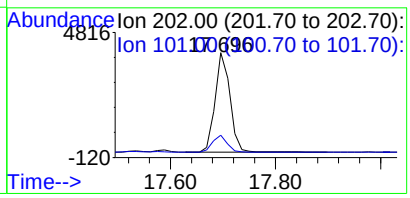


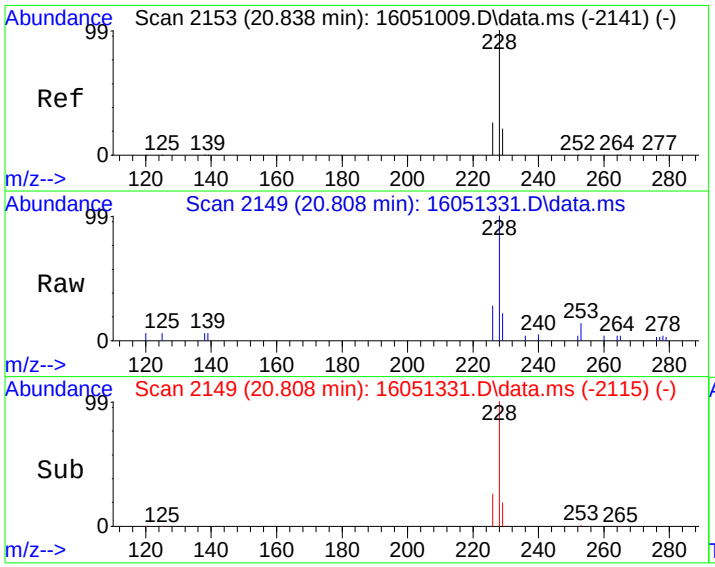


#15
Pyrene
Concen: 6.96 ug/kg
RT: 17.696 min Scan# 1811
Delta R.T. -0.000 min
Lab File: 16051331.D
Acq: 14 May 2016 6:13 am

Tgt Ion:202 Resp: 7775

Ion	Ratio	Lower	Upper
202	100		
101	17.2	0.0	35.9

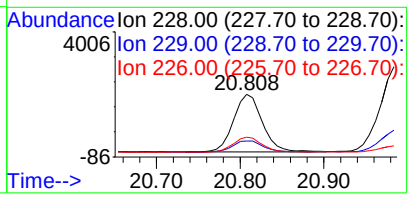


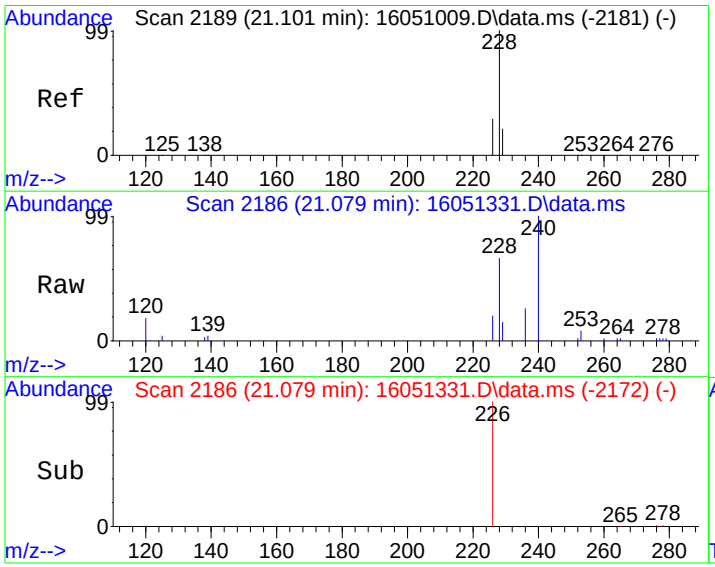


#18
Benzo[a]anthracene
Concen: 5.47 ug/kg
RT: 20.808 min Scan# 2149
Delta R.T. 0.002 min
Lab File: 16051331.D
Acq: 14 May 2016 6:13 am

Tgt Ion:228 Resp: 4476

Ion	Ratio	Lower	Upper
228	100		
229	18.8	0.7	40.7
226	25.8	5.9	45.9

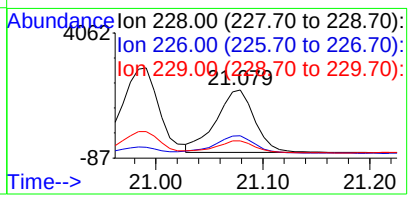


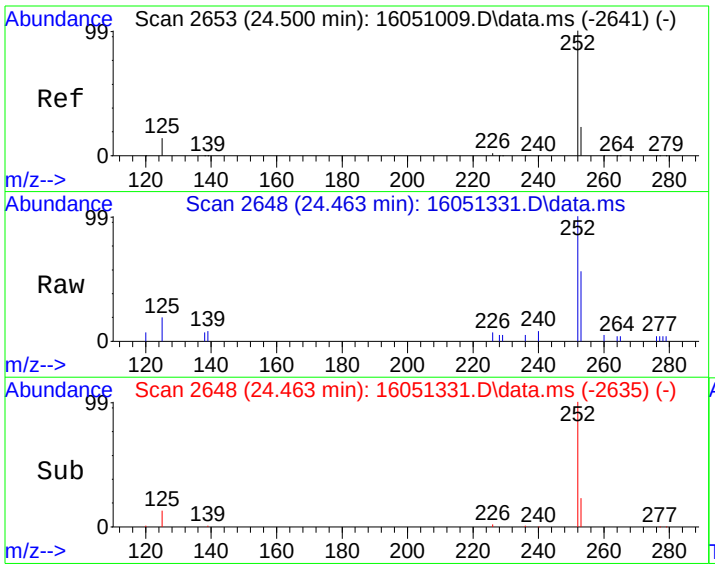


#19
Chrysene
Concen: 6.96 ug/kg
RT: 21.079 min Scan# 2186
Delta R.T. 0.002 min
Lab File: 16051331.D
Acq: 14 May 2016 6:13 am

Tgt Ion:228 Resp: 5215

Ion	Ratio	Lower	Upper
228	100		
226	27.4	8.8	48.8
229	19.2	0.5	40.5

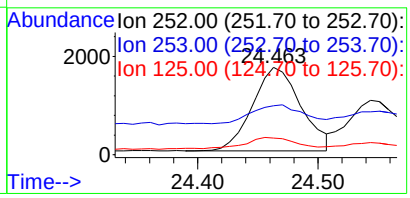


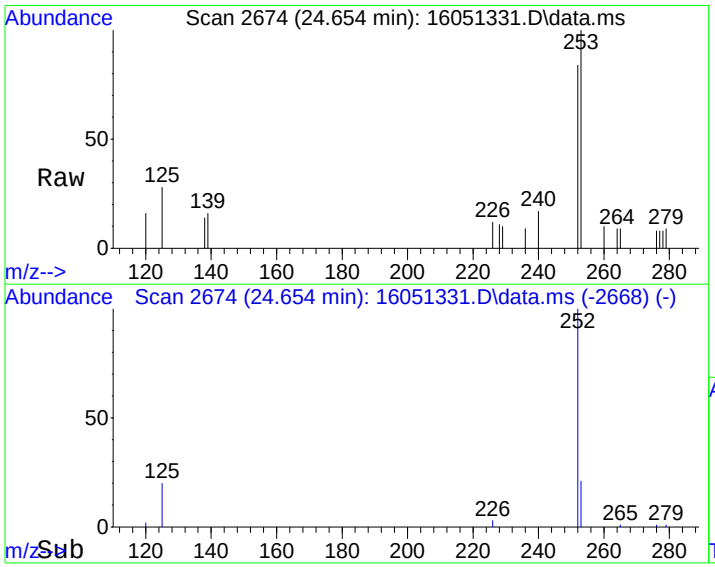


#21
Benzo[b]fluoranthene
Concen: 6.49 ug/kg
RT: 24.463 min Scan# 2648
Delta R.T. -0.006 min
Lab File: 16051331.D
Acq: 14 May 2016 6:13 am

Tgt Ion:252 Resp: 4737

Ion	Ratio	Lower	Upper
252	100		
253	21.4	2.6	42.6
125	12.4	0.0	33.8

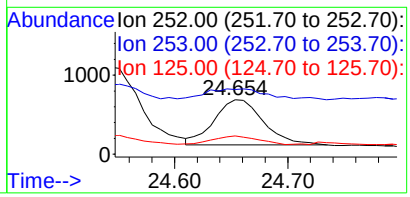


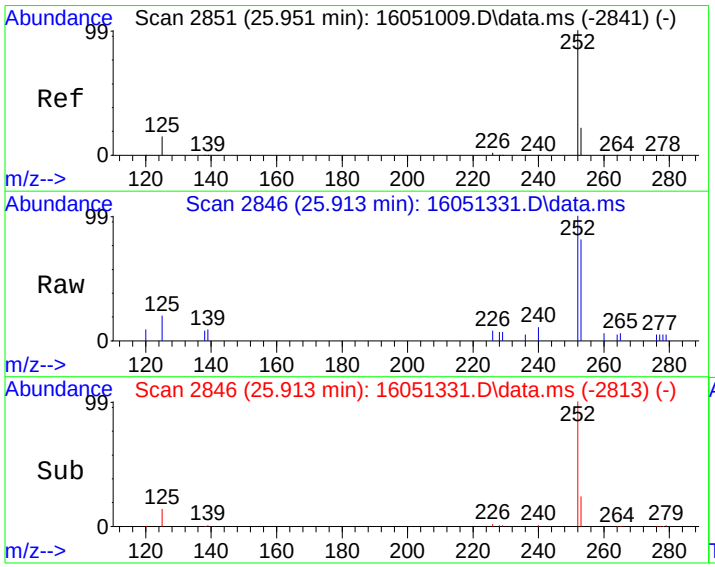


#23
Benzo(j)fluoranthene
Concen: 2.88 ug/kg
RT: 24.654 min Scan# 2674
Delta R.T. -0.006 min
Lab File: 16051331.D
Acq: 14 May 2016 6:13 am

Tgt Ion:252 Resp: 1708

Ion	Ratio	Lower	Upper
252	100		
253	31.5	2.3	42.3
125	16.0	0.0	39.2

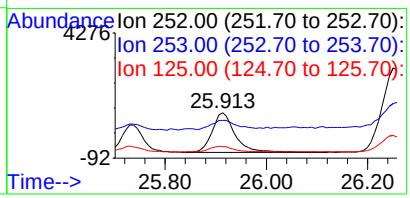


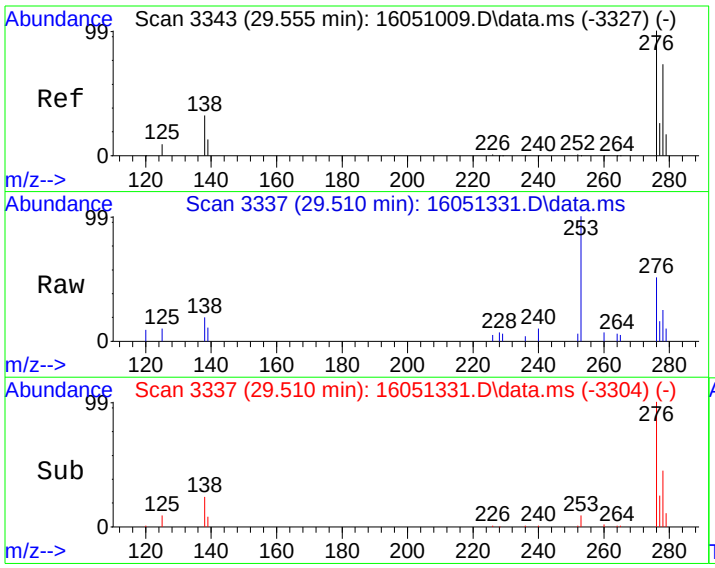


#25
Benzo[a]pyrene
Concen: 6.60 ug/kg
RT: 25.913 min Scan# 2846
Delta R.T. -0.006 min
Lab File: 16051331.D
Acq: 14 May 2016 6:13 am

Tgt Ion:252 Resp: 4428

Ion	Ratio	Lower	Upper
252	100		
253	20.9	2.5	42.5
125	13.0	0.0	35.5

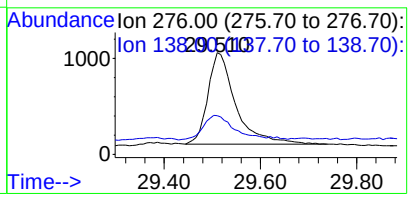


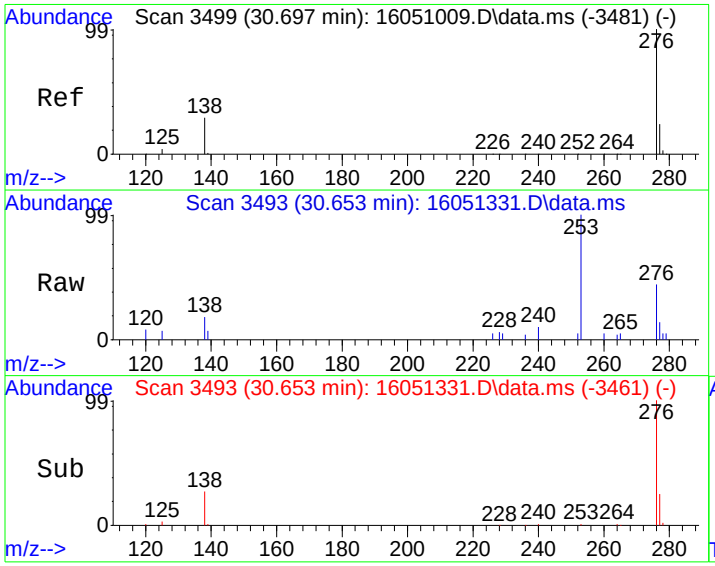


#26
Indeno[1,2,3-cd]pyrene
Concen: 5.21 ug/kg
RT: 29.510 min Scan# 3337
Delta R.T. -0.006 min
Lab File: 16051331.D
Acq: 14 May 2016 6:13 am

Tgt Ion:276 Resp: 3872

Ion	Ratio	Lower	Upper
276	100		
138	25.5	12.0	52.0

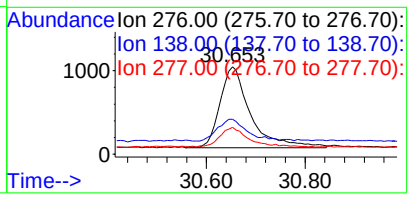




#28
Benzo[g,h,i]perylene
Concen: 6.37 ug/kg
RT: 30.653 min Scan# 3493
Delta R.T. -0.013 min
Lab File: 16051331.D
Acq: 14 May 2016 6:13 am

Tgt Ion:276 Resp: 4131

Ion	Ratio	Lower	Upper
276	100		
138	26.6	9.3	49.3
277	24.5	4.3	44.3



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051338.D
Acq On : 14 May 2016 10:33 am
Operator :
Sample : 1605096-14AMS
Misc : MS
ALS Vial : 36 Sample Multiplier: 10

Quant Time: May 16 09:02:01 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1507603	4000.00	ug/kg	96
6) Acenaphthene-d10	12.856	164	1100755	4000.00	ug/kg	113
11) Phenanthrene-d10	14.979	188	2986740	4000.00	ug/kg	96
16) Chrysene-d12	20.984	240	2783605	4000.00	ug/kg	80
20) Perylene-d12	26.250	264	2511903	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	26210	88.46	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.21%#			
17) 4-Terphenyl-d14	17.587	244	57816	89.89	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.25%#			

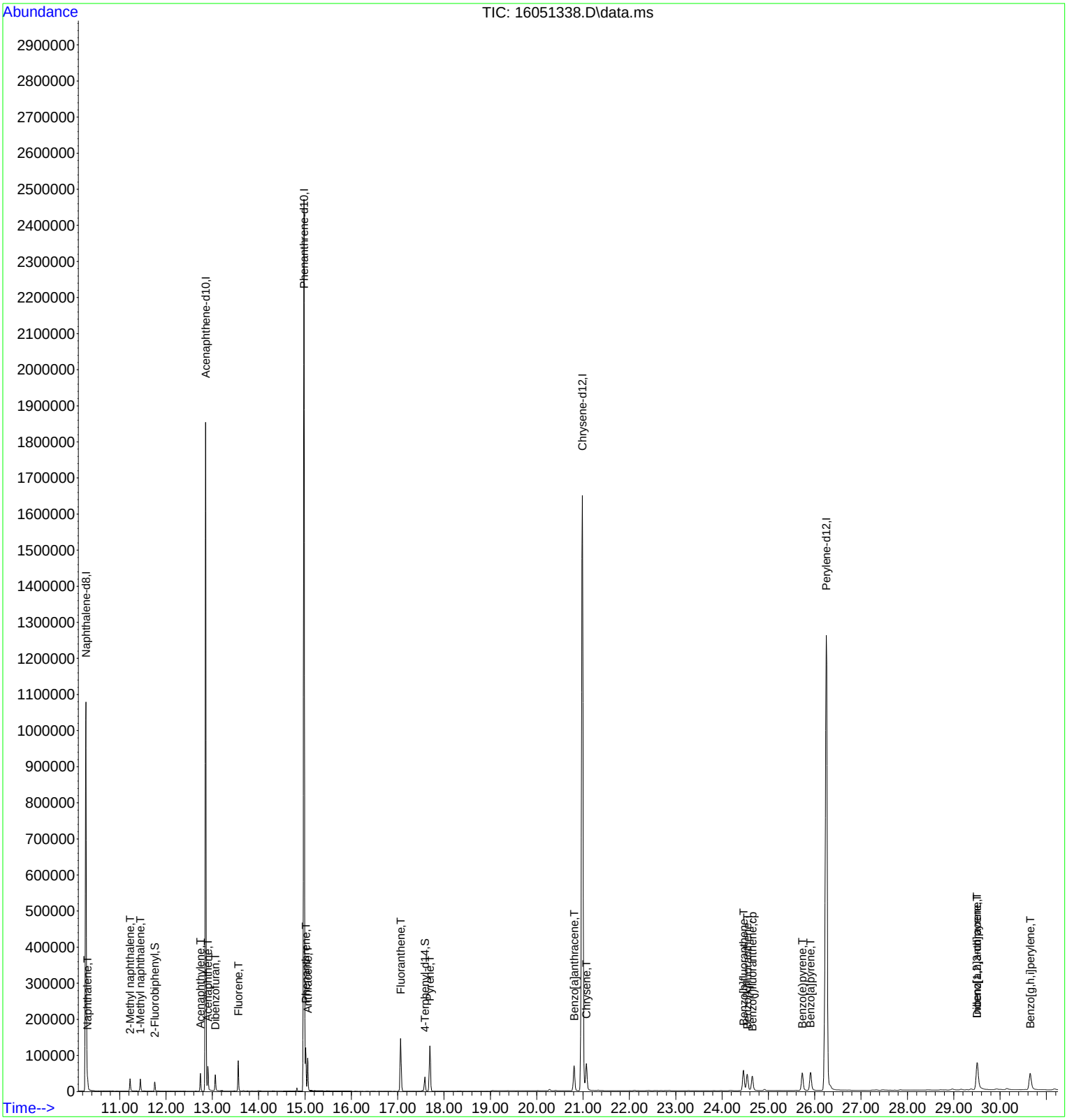
Target Compounds						Qvalue
2) Naphthalene	10.308	128	30719	84.08	ug/kg	99
3) 2-Methyl naphthalene	11.226	142	23312	96.11	ug/kg	99
4) 1-Methyl naphthalene	11.448	142	21853	95.31	ug/kg	99
7) Acenaphthylene	12.743	152	47350	91.54	ug/kg	99
8) Acenaphthene	12.906	153	30141	92.08	ug/kg	99
9) Dibenzofuran	13.068	168	46634	88.22	ug/kg	96
10) Fluorene	13.559	166	45390	91.31	ug/kg	99
12) Phenanthrene	15.015	178	105311	121.83	ug/kg	97
13) Anthracene	15.059	178	87323	93.24	ug/kg	97
14) Fluoranthene	17.064	202	166339	147.04	ug/kg	97
15) Pyrene	17.695	202	152768	134.64	ug/kg	98
18) Benzo[a]anthracene	20.808	228	110528	141.25	ug/kg	99
19) Chrysene	21.072	228	110606	154.41	ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	113090	158.09	ug/kg	98
22) Benzo[k]fluoranthene	24.544	252	78525	136.86	ug/kg	96
23) Benzo(j)fluoranthene	24.654	252	74257	128.05	ug/kg	97
24) Benzo(e)pyrene	25.730	252	94991	138.35	ug/kg	97
25) Benzo[a]pyrene	25.913	252	104882	159.52	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.510	276	111060	152.47	ug/kg	93
27) Dibenz[a,h]anthracene	29.495	278	70099	118.04	ug/kg	98
28) Benzo[g,h,i]perylene	30.653	276	102832	161.79	ug/kg	96

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051338.D
Acq On : 14 May 2016 10:33 am
Operator :
Sample : 1605096-14AMS
Misc : MS
ALS Vial : 36 Sample Multiplier: 10

Quant Time: May 16 09:02:01 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051339.D
Acq On : 14 May 2016 11:10 am
Operator :
Sample : 1605096-14AMSD
Misc : MSD
ALS Vial : 37 Sample Multiplier: 10

Quant Time: May 16 09:02:04 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1529462	4000.00	ug/kg	98
6) Acenaphthene-d10	12.857	164	1118986	4000.00	ug/kg	115
11) Phenanthrene-d10	14.979	188	2989296	4000.00	ug/kg	96
16) Chrysene-d12	20.984	240	2817619	4000.00	ug/kg	81
20) Perylene-d12	26.250	264	2541193	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	26820	89.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.23%#			
17) 4-Terphenyl-d14	17.588	244	57456	88.26	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.21%#			

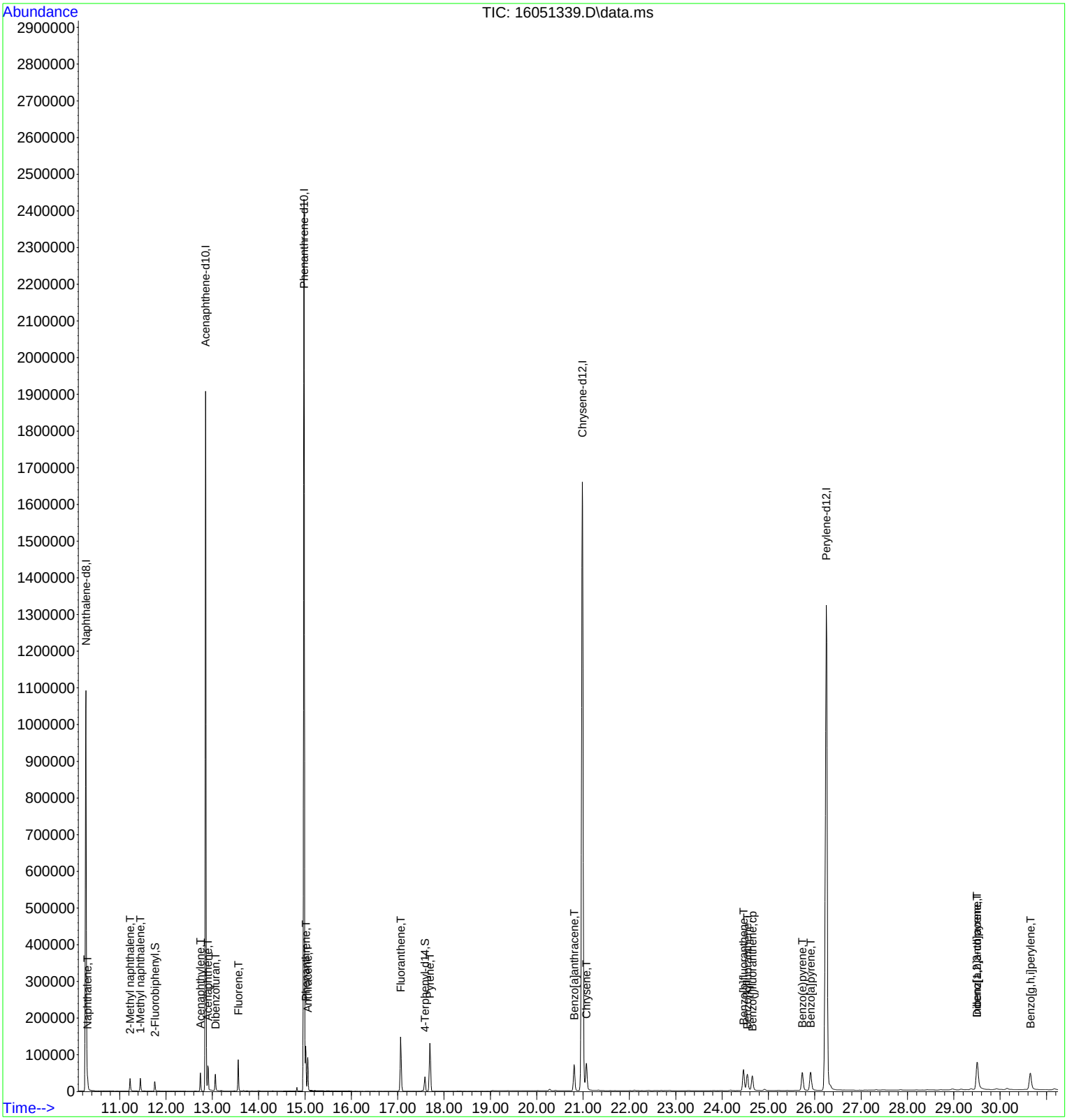
Target Compounds						Qvalue
2) Naphthalene	10.308	128	31040	83.74	ug/kg	99
3) 2-Methyl naphthalene	11.226	142	23489	95.47	ug/kg	99
4) 1-Methyl naphthalene	11.448	142	21942	94.33	ug/kg	99
7) Acenaphthylene	12.744	152	47794	90.89	ug/kg	99
8) Acenaphthene	12.906	153	30317	91.11	ug/kg	99
9) Dibenzofuran	13.068	168	46427	86.40	ug/kg	97
10) Fluorene	13.559	166	45263	89.57	ug/kg	99
12) Phenanthrene	15.016	178	106392	122.97	ug/kg	96
13) Anthracene	15.059	178	86586	92.37	ug/kg	98
14) Fluoranthene	17.065	202	170530	150.61	ug/kg	94
15) Pyrene	17.695	202	157001	138.25	ug/kg	97
18) Benzo[a]anthracene	20.808	228	111552	140.84	ug/kg	98
19) Chrysene	21.072	228	112802	155.58	ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	113007	156.15	ug/kg	98
22) Benzo[k]fluoranthene	24.544	252	78601	135.41	ug/kg	97
23) Benzo(j)fluoranthene	24.653	252	74653	127.24	ug/kg	96
24) Benzo(e)pyrene	25.730	252	94798	136.48	ug/kg	97
25) Benzo[a]pyrene	25.913	252	105067	157.96	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.510	276	110154	149.48	ug/kg	94
27) Dibenz[a,h]anthracene	29.495	278	69559	115.78	ug/kg	97
28) Benzo[g,h,i]perylene	30.653	276	101816	158.34	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051339.D
Acq On : 14 May 2016 11:10 am
Operator :
Sample : 1605096-14AMSD
Misc : MSD
ALS Vial : 37 Sample Multiplier: 10

Quant Time: May 16 09:02:04 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051341.D
Acq On : 14 May 2016 12:24 pm
Operator :
Sample : ICV3-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 16 09:02:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

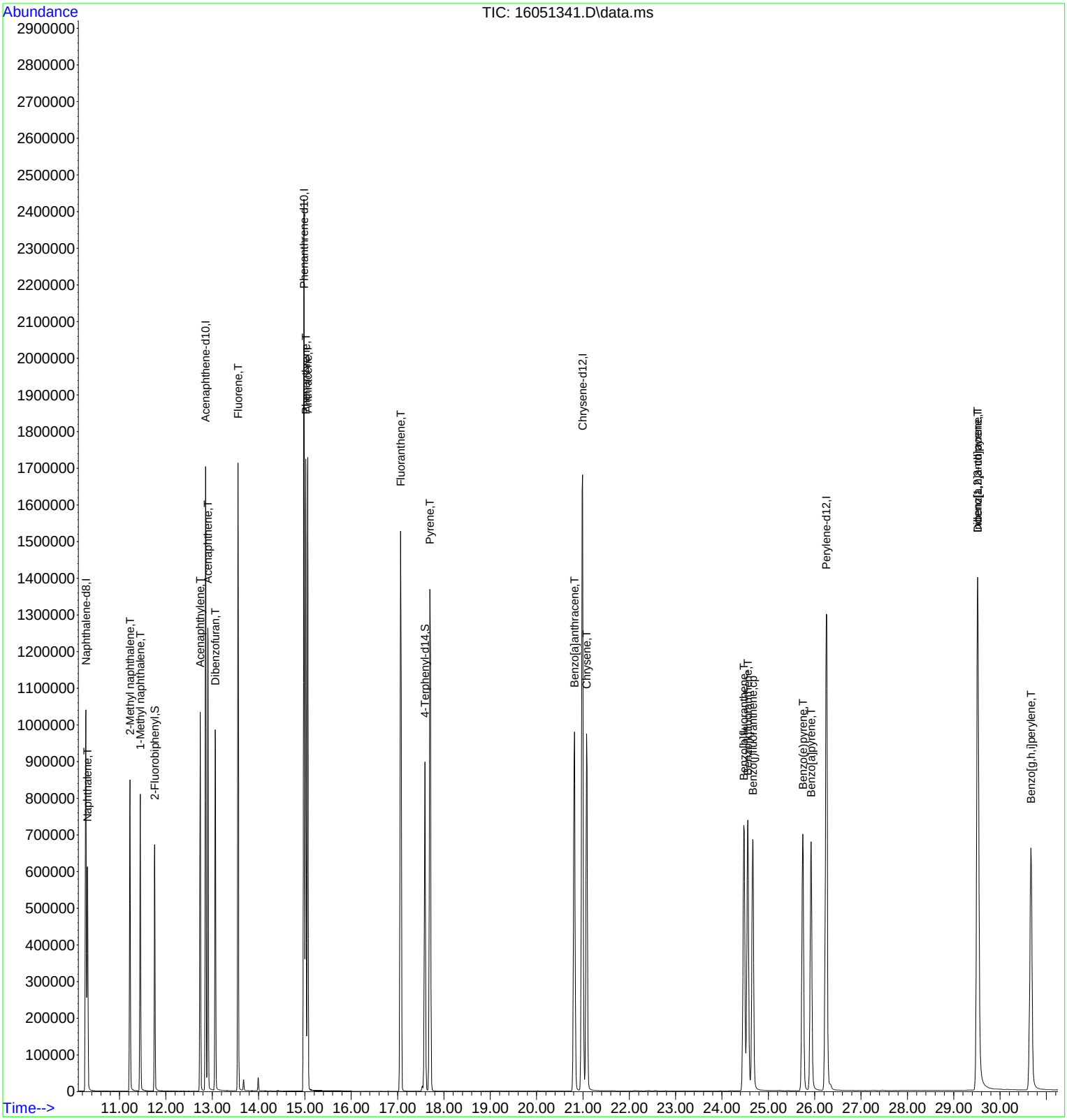
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.274	136	1450577	4000.00	ug/kg	93
6) Acenaphthene-d10	12.856	164	1026002	4000.00	ug/kg	105
11) Phenanthrene-d10	14.980	188	2972526	4000.00	ug/kg	96
16) Chrysene-d12	20.991	240	2832657	4000.00	ug/kg	81
20) Perylene-d12	26.258	264	2537523	4000.00	ug/kg	86
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	604792	2121.38	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	53.03%		
17) 4-Terphenyl-d14	17.588	244	1311494	2003.82	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	50.10%#		
Target Compounds						Qvalue
2) Naphthalene	10.311	128	708132	2014.33	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	515155	2169.51	ug/kg	98
4) 1-Methyl naphthalene	11.446	142	478801	2170.39	ug/kg	99
7) Acenaphthylene	12.743	152	973810	2019.73	ug/kg	100
8) Acenaphthene	12.905	153	613130	2009.49	ug/kg	99
9) Dibenzofuran	13.067	168	940579	1908.95	ug/kg	96
10) Fluorene	13.559	166	901263	1945.05	ug/kg	99
12) Phenanthrene	15.018	178	1658855	1928.18	ug/kg	100
13) Anthracene	15.060	178	1677822	1800.06	ug/kg	100
14) Fluoranthene	17.065	202	1810671	1608.21	ug/kg	87
15) Pyrene	17.695	202	1770337	1567.68	ug/kg	89
18) Benzo[a]anthracene	20.815	228	1553445	1950.89	ug/kg	100
19) Chrysene	21.079	228	1433597	1966.71	ug/kg	100
21) Benzo[b]fluoranthene	24.470	252	1443152	1997.01	ug/kg	100
22) Benzo[k]fluoranthene	24.558	252	1293627	2231.87	ug/kg	98
23) Benzo(j)fluoranthene	24.668	252	1238229	2113.59	ug/kg	99
24) Benzo(e)pyrene	25.745	252	1351056	1947.86	ug/kg	99
25) Benzo[a]pyrene	25.921	252	1330941	2003.86	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.525	276	1615795	2195.86	ug/kg	98
27) Dibenz[a,h]anthracene	29.510	278	1345426	2242.77	ug/kg	99
28) Benzo[g,h,i]perylene	30.667	276	1391591	2167.29	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051341.D
Acq On : 14 May 2016 12:24 pm
Operator :
Sample : ICV3-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

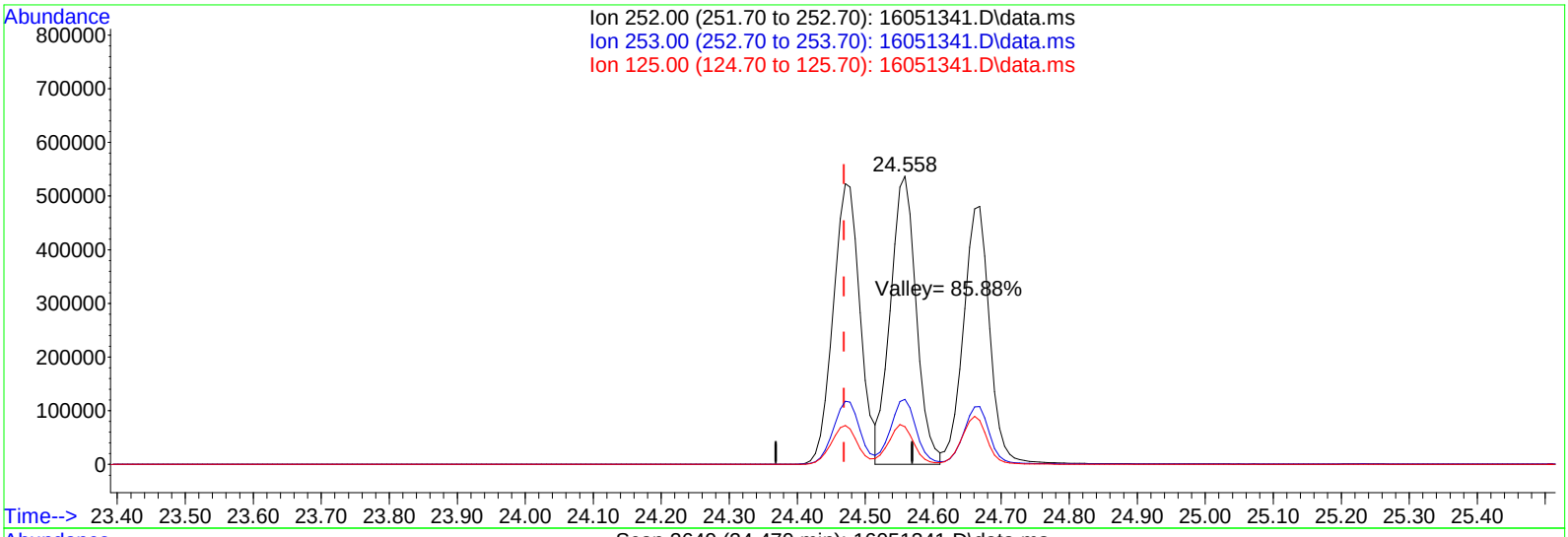
Quant Time: May 16 09:02:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

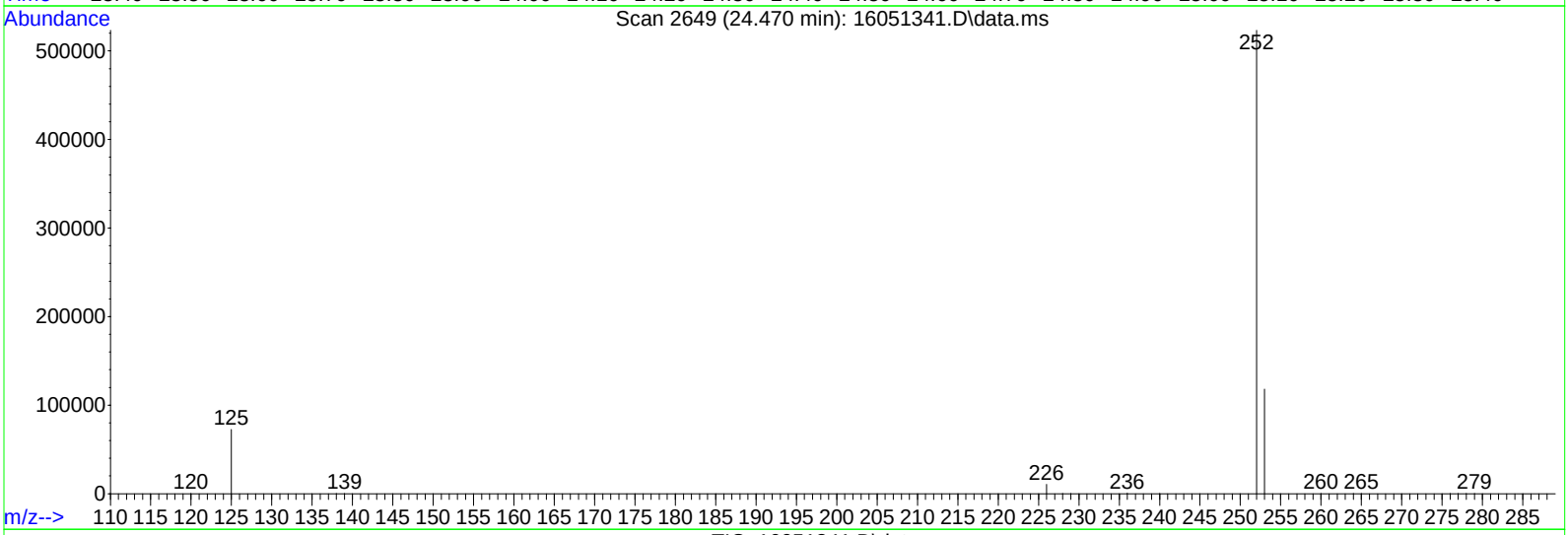


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051341.D
Acq On : 14 May 2016 12:24 pm
Operator :
Sample : ICV3-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 14 12:55:38 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration





TIC: 16051341.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.470min (+0.002) 1997.01ug/kg

response 1443152

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.45
125.00	13.80	13.86
0.00	0.00	0.00

GCMS8_160518B
For

DHL Work Order
1605097

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS8_160518B
Batch Number(s): See Run Log. Matrix: See Run Log.	SOP: ORGANICS-PAH-01

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			X
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		X
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			X
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS			X	
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS			X	
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)			X	

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	7 days (Aq) - extraction	X			X
	14 days (Soil) - extraction			X	
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard			X	
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			X
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality			X	X
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS __LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	X Flag data / Case narrative
X Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	X Other (describe below)	___ Accept data
___ Other (describe below)		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: **See Run Log.**

Equipment blanks - LCS and MB is only QC requirement.

Analyst: Karyn Lane Date: ***REVIEWED/APPROVED*** 5/19/2016

Second-Level Review: Date: ***By Sherri Herschmann at 4:06:35 PM, 5/23/2016*** **05/23/2016**

DHL Analytical, Inc.

Run ID: GCMS8_160518B **Run No.:** 85875

Analytical Run Date: 5/18/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 660 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160517.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160518	1	PAH_LL_WDOD1	TUNE	R85875	5/18/2016 8:58:00 AM		
ICV-160518	1	PAH_LL_WDOD1	ICV	R85875	5/18/2016 9:35:00 AM		Use DCS/LQV from GCMS8_160518A.
LCS-75146	1	PAH_LL_WDOD1	LCS	75146	5/18/2016 2:03:00 PM		Equipment blanks - LCS and MB is only QC requirement.
MB-75146	1	PAH_LL_WDOD1	MBLK	75146	5/18/2016 2:40:00 PM		
1605074-33B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 3:17:00 PM		
1605074-34B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 3:53:00 PM		
1605074-35B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 4:30:00 PM		
1605096-36B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 5:07:00 PM		
1605096-37B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 5:44:00 PM		
1605096-44B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 6:21:00 PM		
1605097-27B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 6:58:00 PM		
1605097-30B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 7:34:00 PM		
DFTPP2-160518	1	PAH_LL_WDOD1	TUNE	R85875	5/18/2016 8:11:00 PM		
ICV2-160518	1	PAH_LL_WDOD1	ICV	R85875	5/18/2016 8:49:00 PM		
SBLK-160518	1	PAH_LL_WDOD1	SBLK	75146	5/18/2016 10:03:00 PM		
1605098-42B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 10:40:00 PM		
1605121-46B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 11:17:00 PM		
1605121-47B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 11:54:00 PM		
1605135-46B	1	PAH_LL_WDOD1	SAMP	75146	5/19/2016 12:31:00 AM		
1605144-16B	1	PAH_LL_WDOD1	SAMP	75146	5/19/2016 1:08:00 AM		
CCV-160520	1	PAH_LL_WDOD1	CCV	R85875	5/19/2016 2:59:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

REVIEWED/APPROVED

By Sherri Herschmann at 4:07:08 PM, 5/23/2016

Sequence Name: C:\msdchem\1\sequence\160518.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160518\
Instrument Name: GCMS #8
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

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

Line			Sample Name/Misc Info		
1)	Sample	1	16051801	DFTPPPAH	DFTPP-160518
2)	Sample	2	16051802	PAH160517	ICV-160518
3)	Sample	3	16051803	PAH160517	DCS-75209
4)	Sample	4	16051804	PAH160517	LQV-75209
5)	Sample	5	16051805	PAH160517	LCS-75209
6)	Sample	6	16051806	PAH160517	LCSD-75209
7)	Sample	7	16051807	PAH160517	MB-75209
8)	Sample	8	16051808	PAH160517	1605142-01E
9)	Sample	9	16051809	PAH160517	LCS-75146
10)	Sample	10	16051810	PAH160517	MB-75146
11)	Sample	11	16051811	PAH160517	1605074-33B
12)	Sample	12	16051812	PAH160517	1605074-34B
13)	Sample	13	16051813	PAH160517	1605074-35B
14)	Sample	14	16051814	PAH160517	1605096-36B
15)	Sample	15	16051815	PAH160517	1605096-37B
16)	Sample	16	16051816	PAH160517	1605096-44B
17)	Sample	17	16051817	PAH160517	1605097-27B
18)	Sample	18	16051818	PAH160517	1605097-30B
19)	Sample	19	16051819	DFTPPPAH	DFTPP2-160518
20)	Sample	20	16051820	PAH160517	ICV2-160518
21)	Sample	21	16051821	PAH160517	SBLK
22)	Sample	22	16051822	PAH160517	SBLK-160518
23)	Sample	23	16051823	PAH160517	1605098-42B
24)	Sample	24	16051824	PAH160517	1605121-46B
25)	Sample	25	16051825	PAH160517	1605121-47B
26)	Sample	26	16051826	PAH160517	1605135-46B
27)	Sample	27	16051827	PAH160517	1605144-16B
28)	Sample	28	16051828	PAH160517	1605071-38A
29)	Sample	29	16051829	PAH160517	1605071-32A
30)	Sample	30	16051830	PAH160517	CCV-160520

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 8:48:47 AM**
Digestion:
Prep End Date: 5/13/16 11:35AM

Prep Batch **75146** Prep Code: **3510_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/mL**

Equipment List
Turbo-Vap #1,2,3
Balance # 25, 29

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-33B	Equip Blank	6	500	1	0.002	1 of 1	532.2 - 212.6 = 319.6
1605074-34B	Equip Blank		500	1	0.002	1 of 1	535.8 - 213.4 = 322.4
1605074-35B	Equip Blank		500	1	0.002	1 of 1	~~358.0~~ 538.0 - 214.4 = 323.6
1605096-36B	Equip Blank		500	1	0.002	1 of	543.3 - 213.4 = 329.9
1605096-37B	Equip Blank		500	1	0.002	1 of 1	538.9 - 213.6 = 318.4
1605096-44B	Equip Blank		500	1	0.002	1 of 1	531.6 - 212.5 = 319.1
1605097-27B	Equip Blank		500	1	0.002	1 of 1	536.8 - 212.2 = 324.6
1605097-30B	Equip Blank		500	1	0.002	1 of 1	537.3 - 213.3 = 324.0
1605098-42B	Equip Blank		500	1	0.002	1 of 1	537.9 - 212.9 = ~~315.1~~ 325
1605121-46B	Equip Blank		500	1	0.002	1 of 1	526.8 - 213.4 = 313.4
1605121-47B	Equip Blank		500	1	0.002	1 of 1	528.7 - 212.3 = ~~308.7~~ 316.4
1605135-46B	Equip Blank		500	1	0.002	1 of 1	534.2 - 212.8 = 321.4
LCS-75146	Aqueous		500	1	0.002	of	738.3 - 238.3 = 500.0
~~LCSD-75146~~ 5/13/16	Aqueous		500	1	0.002	of	Insufficient Sample for MS/D 5/13/16
MB-75146	Aqueous		500	1	0.002	of	777.4 - 277.4 = 500.0

1605144-16B 6

536.0 - 214.7 = 321.3

Added @ 1:00PM 5/13/16.

REVIEWED/APPROVED
By Sherri Herschmann at 4:12:07 PM, 5/23/2016

Number	Reagent Name	Amt	Units	Exp. Da
7509	pH paper 0-14	1	paper	10/15/2025
9927	Purified Sodium Sulfate	10	g	07/04/2016
10169	Methylene Chloride	120	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/LCSD	0.01	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.1	08/08/2016

5/13/16 AR 5/13/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 8:48:47 AM**
Digestion:
Prep End Date: **5/13/2016 2:10:17 PM**

Prep Batch **75146** Prep Code: **3510_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/mL**

Equipment List

Turbo-Vap #1,2,3
Balance # 25, 29

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-33B	Equip Blank	6	319.6	1	0.003	1 of 1	
1605074-34B	Equip Blank	6	322.4	1	0.003	1 of 1	
1605074-35B	Equip Blank	6	323.6	1	0.003	1 of 1	
1605096-36B	Equip Blank	6	329.9	1	0.003	1 of 1	
1605096-37B	Equip Blank	6	318.4	1	0.003	1 of 1	
1605096-44B	Equip Blank	6	319.1	1	0.003	1 of 1	
1605097-27B	Equip Blank	6	324.6	1	0.003	1 of 1	
1605097-30B	Equip Blank	6	324	1	0.003	1 of 1	
1605098-42B	Equip Blank	6	~~315.1~~ **325**	1	0.003	1 of 1	
1605121-46B	Equip Blank	6	313.4	1	0.003	1 of 1	
1605121-47B	Equip Blank	6	~~308.7~~ **316.4**	1	0.003	1 of 1	
1605135-46B	Equip Blank	6	321.4	1	0.003	1 of 1	
1605144-16B	Equip Blank	6	321.3	1	0.003	1 of 1	
LCS-75146	Aqueous	6	500	1	0.002	of	
MB-75146	Aqueous	6	500	1	0.002	of	

REVIEWED/APPROVED

By Sherri Herschmann at 4:15:47 PM, 5/23/2016

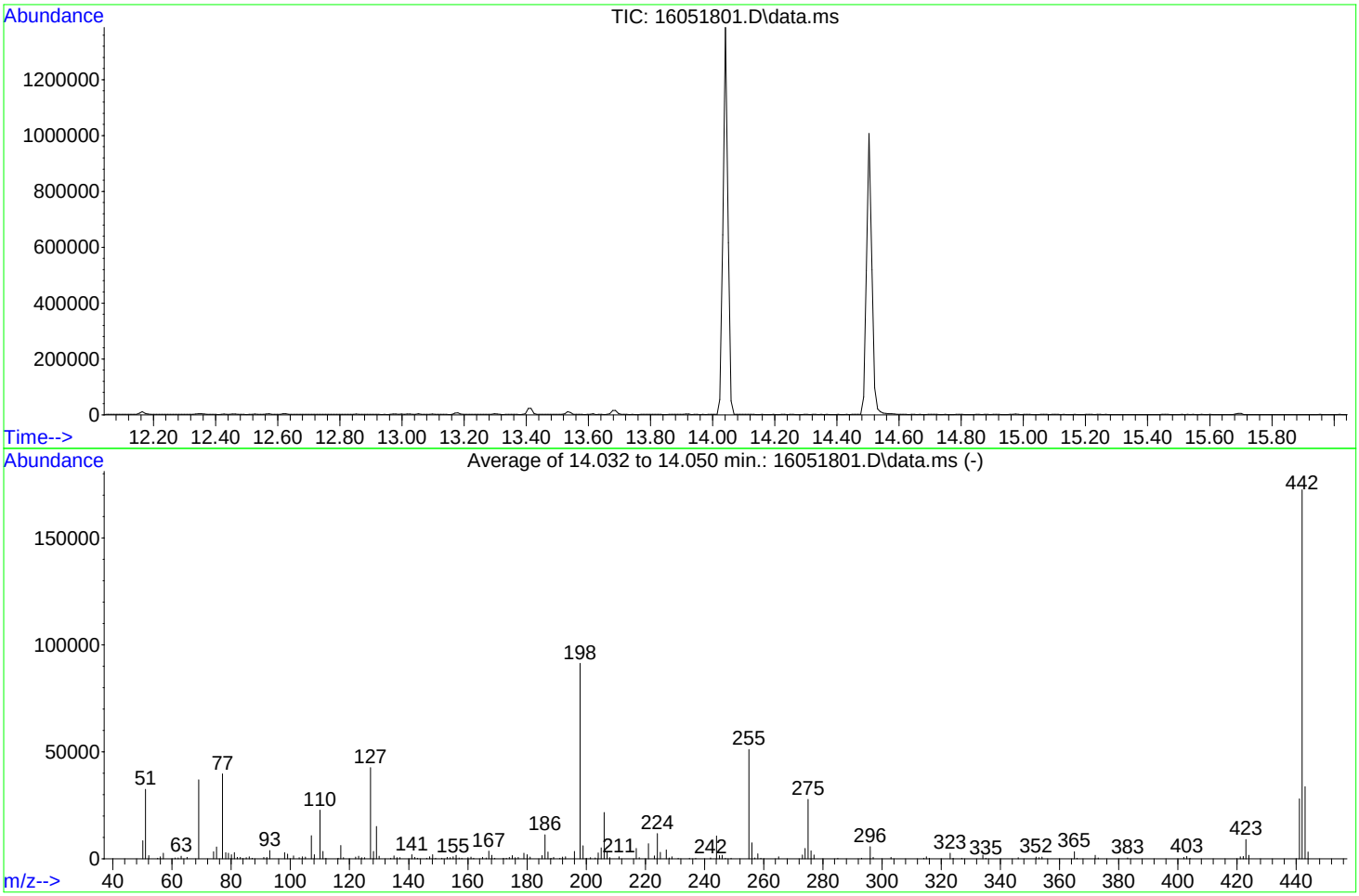
Number	Reagent Name	Amt	Units	Exp. Da
7509	pH paper 0-14	1	paper	10/15/2025
9927	Purified Sodium Sulfate	10	g	07/04/2016
10169	Methylene Chloride	120	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/LCSD	0.01	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.1	08/08/2016

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051801.D
Acq On : 18 May 2016 8:58 am
Operator :
Sample : DFTPP-160518
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

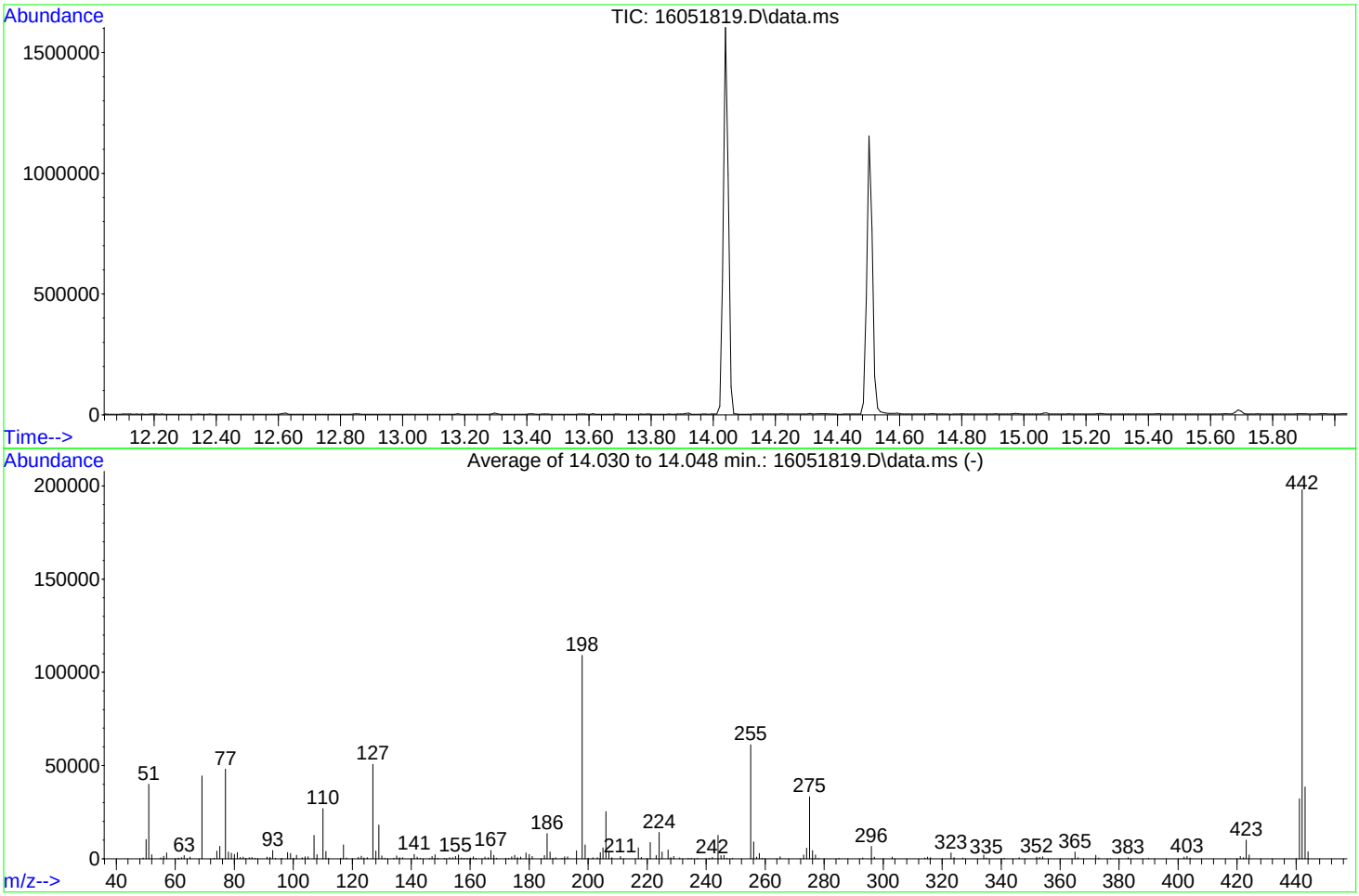
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	35.6	32471	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.5	36940	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.7	42606	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	91320	PASS
199	198	5	9	6.7	6088	PASS
275	198	10	60	30.3	27688	PASS
365	198	1	200	3.6	3268	PASS
441	442	0.01	24	16.3	28059	PASS
442	198	50	400	189.0	172605	PASS
443	442	15	24	19.6	33763	PASS

REVIEWED BY
By Janice Whitt at 2:34:46 PM, 5/19/2016

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051819.D
Acq On : 18 May 2016 8:11 pm
Operator :
Sample : DFTPP2-160518
Misc : TUNE
ALS Vial : 19 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	36.6	39974	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.8	44482	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.4	50616	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	109152	PASS
199	198	5	9	6.8	7381	PASS
275	198	10	60	30.5	33283	PASS
365	198	1	200	3.4	3666	PASS
441	442	0.01	24	16.2	32122	PASS
442	198	50	400	181.4	197986	PASS
443	442	15	24	19.5	38521	PASS

REVIEWED BY
By Janice Whitt at 12:56:17 PM, 5/23/2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051802.D
Acq On : 18 May 2016 9:35 am
Operator :
Sample : ICV-160518
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 18 11:42:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

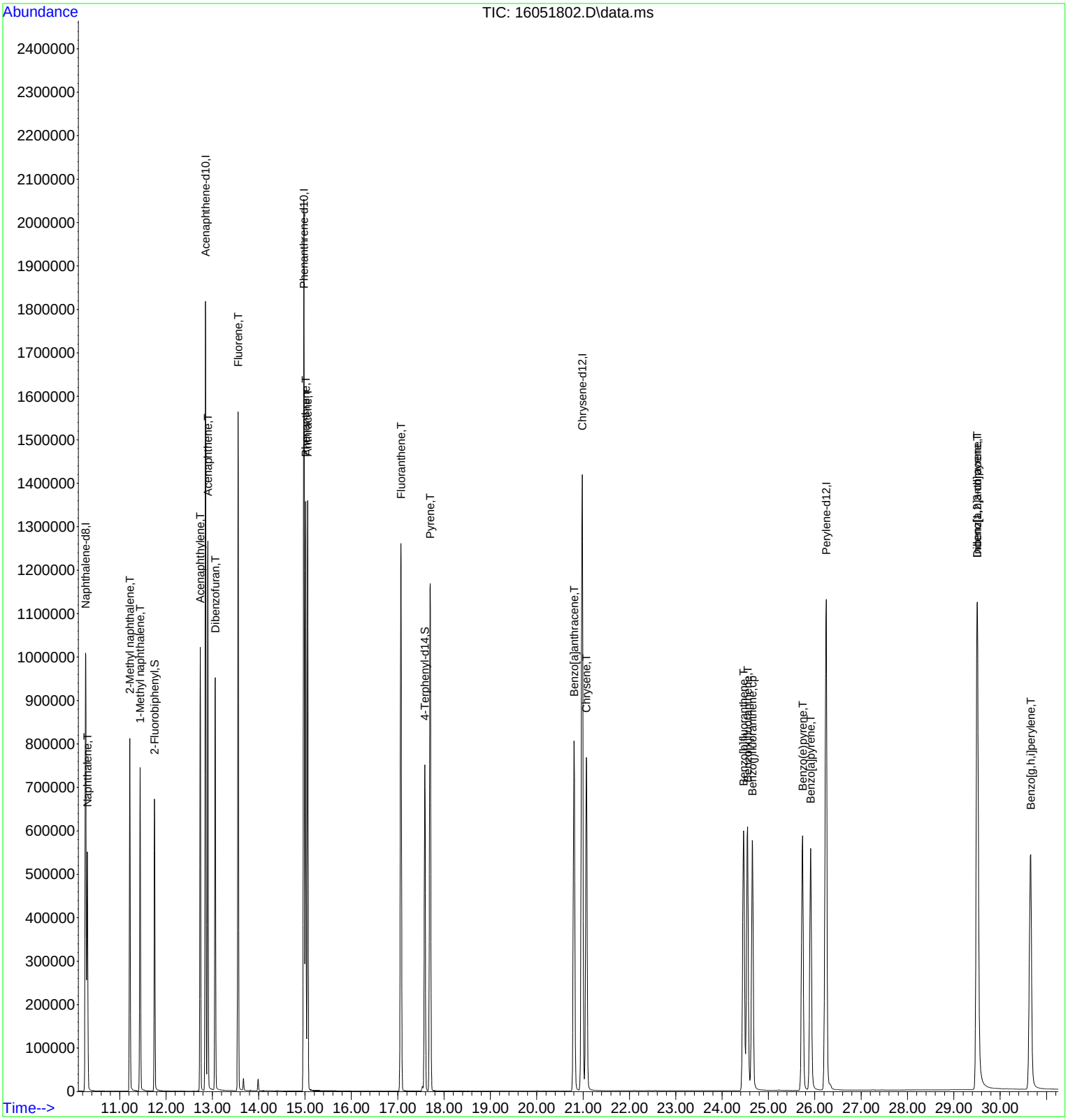
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.263	136	1439270	4000.00	ug/kg	88
6) Acenaphthene-d10	12.851	164	1096742	4000.00	ug/kg	87
11) Phenanthrene-d10	14.976	188	2537779	4000.00	ug/kg	87
16) Chrysene-d12	20.981	240	2403266	4000.00	ug/kg	89
20) Perylene-d12	26.247	264	2183143	4000.00	ug/kg	88
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.752	172	613046	1913.04	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 47.83%			
17) 4-Terphenyl-d14	17.584	244	1035464	2035.60	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 50.89%#			
Target Compounds						Qvalue
2) Naphthalene	10.300	128	645598	2002.26	ug/kg	100
3) 2-Methyl naphthalene	11.217	142	500194	1995.54	ug/kg	98
4) 1-Methyl naphthalene	11.444	142	460727	1942.42	ug/kg	99
7) Acenaphthylene	12.738	152	964211	2011.33	ug/kg	100
8) Acenaphthene	12.905	153	609340	2014.36	ug/kg	100
9) Dibenzofuran	13.062	168	927693	2013.19	ug/kg	99
10) Fluorene	13.553	166	845853	2023.03	ug/kg	100
12) Phenanthrene	15.014	178	1313221	1880.65	ug/kg	100
13) Anthracene	15.056	178	1326462	1877.33	ug/kg	100
14) Fluoranthene	17.068	202	1419444	2135.93	ug/kg	100
15) Pyrene	17.701	202	1398615	2140.87	ug/kg	99
18) Benzo[a]anthracene	20.805	228	1261556	2123.30	ug/kg	100
19) Chrysene	21.069	228	1160852	2112.58	ug/kg	100
21) Benzo[b]fluoranthene	24.460	252	1189531	2127.79	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	1074594	2120.12	ug/kg	100
23) Benzo(j)fluoranthene	24.651	252	1026600	2124.35	ug/kg	100
24) Benzo(e)pyrene	25.735	252	1119451	2121.93	ug/kg	100
25) Benzo[a]pyrene	25.910	252	1107058	2114.72	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.514	276	1344214	2098.92	ug/kg	99
27) Dibenz[a,h]anthracene	29.500	278	1122117	2109.02	ug/kg	99
28) Benzo[g,h,i]perylene	30.657	276	1164995	2108.28	ug/kg	100

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051802.D
Acq On : 18 May 2016 9:35 am
Operator :
Sample : ICV-160518
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

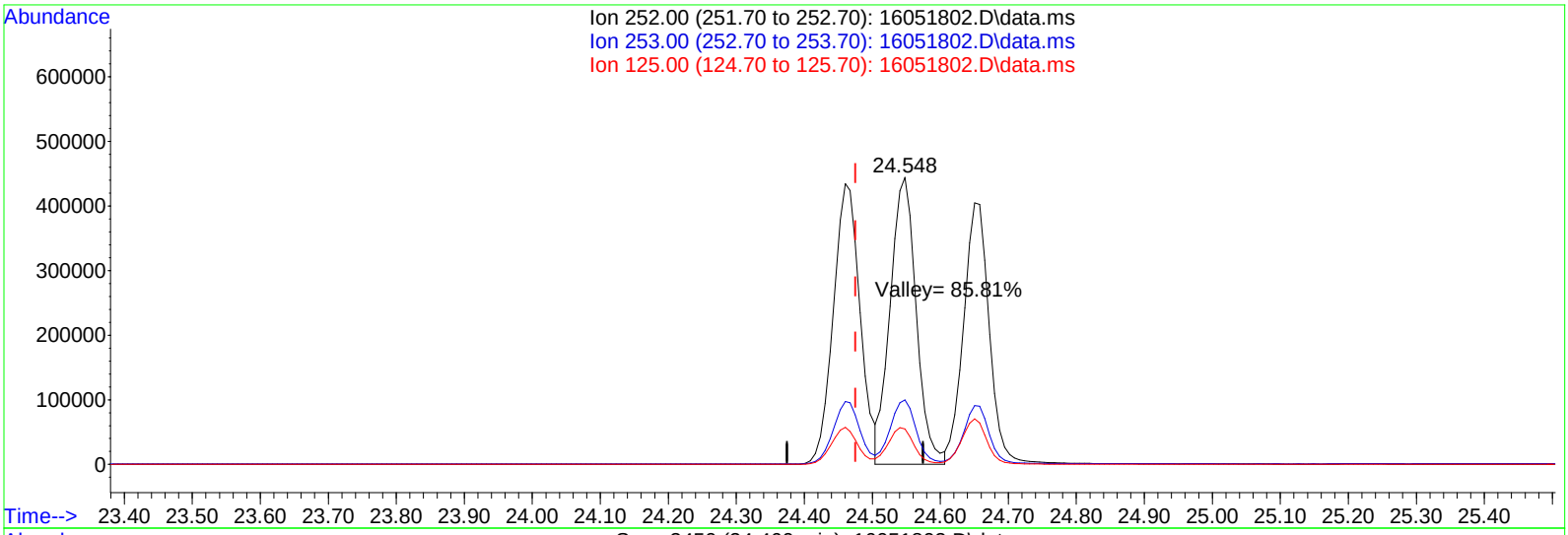
Quant Time: May 18 11:42:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

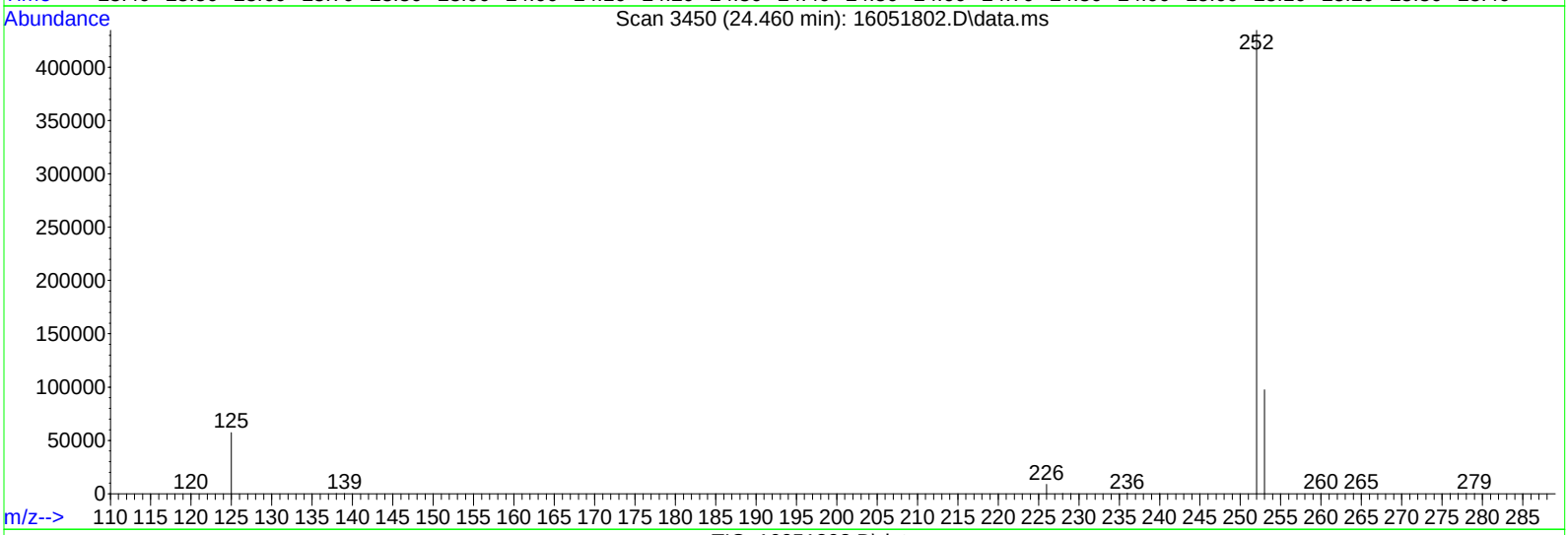


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051802.D
Acq On : 18 May 2016 9:35 am
Operator :
Sample : ICV-160518
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 18 11:42:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16051802.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.460min (-0.015) 2127.79ug/kg

response 1189531

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.26
125.00	12.20	13.16
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051809.D
Acq On : 18 May 2016 2:03 pm
Operator :
Sample : LCS-75146
Misc : LCS
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 09:16:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

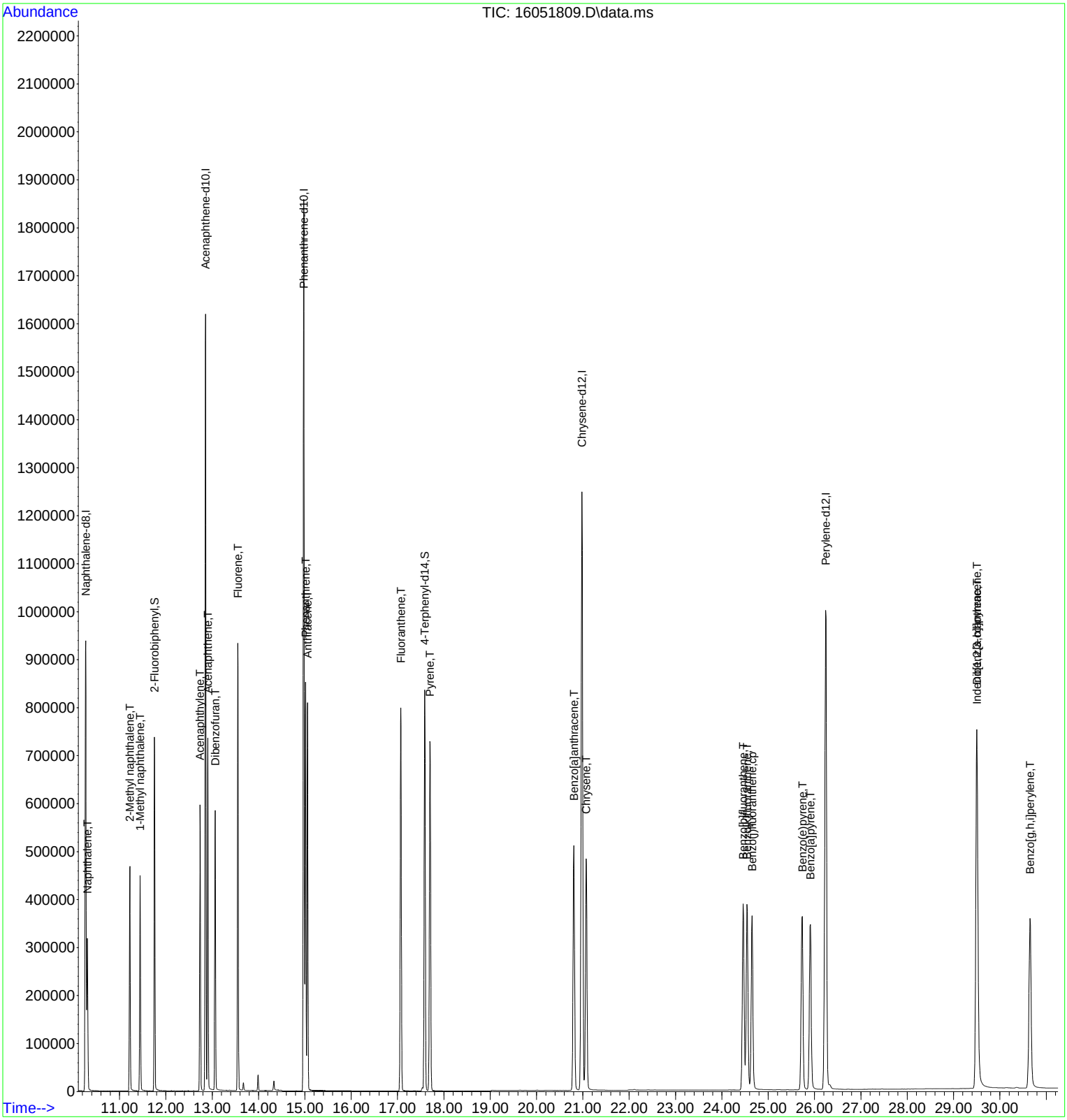
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1319910	4000.00	ug/kg	81
6) Acenaphthene-d10	12.857	164	979132	4000.00	ug/kg	78
11) Phenanthrene-d10	14.977	188	2285148	4000.00	ug/kg	78
16) Chrysene-d12	20.981	240	2110098	4000.00	ug/kg	78
20) Perylene-d12	26.241	264	1904087	4000.00	ug/kg	77
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.754	172	657780	2238.26	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 55.96%			
17) 4-Terphenyl-d14	17.586	244	1177981	2637.52	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 65.94%			
Target Compounds						Qvalue
2) Naphthalene	10.306	128	366938	1240.93	ug/kg	99
3) 2-Methyl naphthalene	11.224	142	288325	1254.30	ug/kg	99
4) 1-Methyl naphthalene	11.446	142	267309	1228.89	ug/kg	99
7) Acenaphthylene	12.739	152	559567	1307.45	ug/kg	99
8) Acenaphthene	12.906	153	353590	1309.30	ug/kg	99
9) Dibenzofuran	13.063	168	539351	1311.04	ug/kg	99
10) Fluorene	13.554	166	507450	1359.45	ug/kg	100
12) Phenanthrene	15.015	178	815126	1296.39	ug/kg	99
13) Anthracene	15.057	178	785637	1234.83	ug/kg	99
14) Fluoranthene	17.070	202	887651	1454.69	ug/kg	99
15) Pyrene	17.700	202	872881	1459.82	ug/kg	98
18) Benzo[a]anthracene	20.805	228	787235	1485.78	ug/kg	100
19) Chrysene	21.069	228	729981	1491.09	ug/kg	100
21) Benzo[b]fluoranthene	24.461	252	762202	1545.20	ug/kg	99
22) Benzo[k]fluoranthene	24.541	252	688207	1542.68	ug/kg	99
23) Benzo(j)fluoranthene	24.651	252	630685	1475.70	ug/kg	100
24) Benzo(e)pyrene	25.735	252	687368	1472.95	ug/kg	100
25) Benzo[a]pyrene	25.911	252	693028	1503.32	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.515	276	848810	1500.32	ug/kg	98
27) Dibenz[a,h]anthracene	29.500	278	709881	1508.82	ug/kg	99
28) Benzo[g,h,i]perylene	30.650	276	731582	1498.98	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051809.D
Acq On : 18 May 2016 2:03 pm
Operator :
Sample : LCS-75146
Misc : LCS
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 09:16:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051810.D
Acq On : 18 May 2016 2:40 pm
Operator :
Sample : MB-75146
Misc : MBLK
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 09:16:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1390449	4000.00	ug/kg	85
6) Acenaphthene-d10	12.857	164	1037657	4000.00	ug/kg	83
11) Phenanthrene-d10	14.977	188	2466155	4000.00	ug/kg	84
16) Chrysene-d12	20.981	240	2313139	4000.00	ug/kg	85
20) Perylene-d12	26.248	264	2116938	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	713716	2305.39	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	57.63%		
17) 4-Terphenyl-d14	17.590	244	1305557	2666.57	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	66.66%		

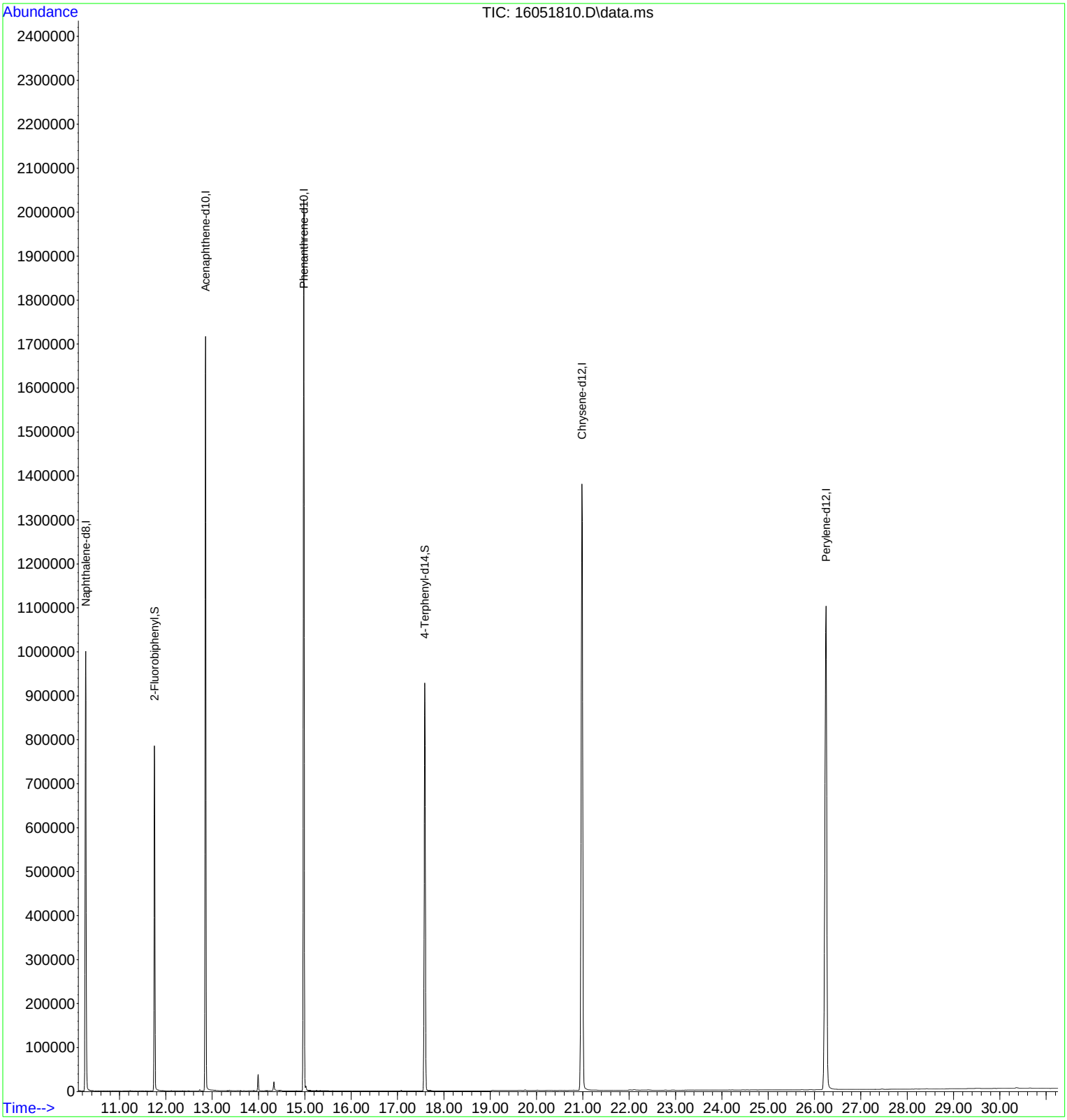
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051810.D
Acq On : 18 May 2016 2:40 pm
Operator :
Sample : MB-75146
Misc : MBLK
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 09:16:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051817.D
Acq On : 18 May 2016 6:58 pm
Operator :
Sample : 1605097-27B
Misc : SAMP
ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 19 09:18:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1520474	4000.00	ug/kg	93
6) Acenaphthene-d10	12.857	164	1158653	4000.00	ug/kg	92
11) Phenanthrene-d10	14.977	188	2619576	4000.00	ug/kg	90
16) Chrysene-d12	20.988	240	2576592	4000.00	ug/kg	95
20) Perylene-d12	26.248	264	2328428	4000.00	ug/kg	94

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	810540	2394.25	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 59.86%			
17) 4-Terphenyl-d14	17.590	244	1412512	2590.04	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 64.75%			

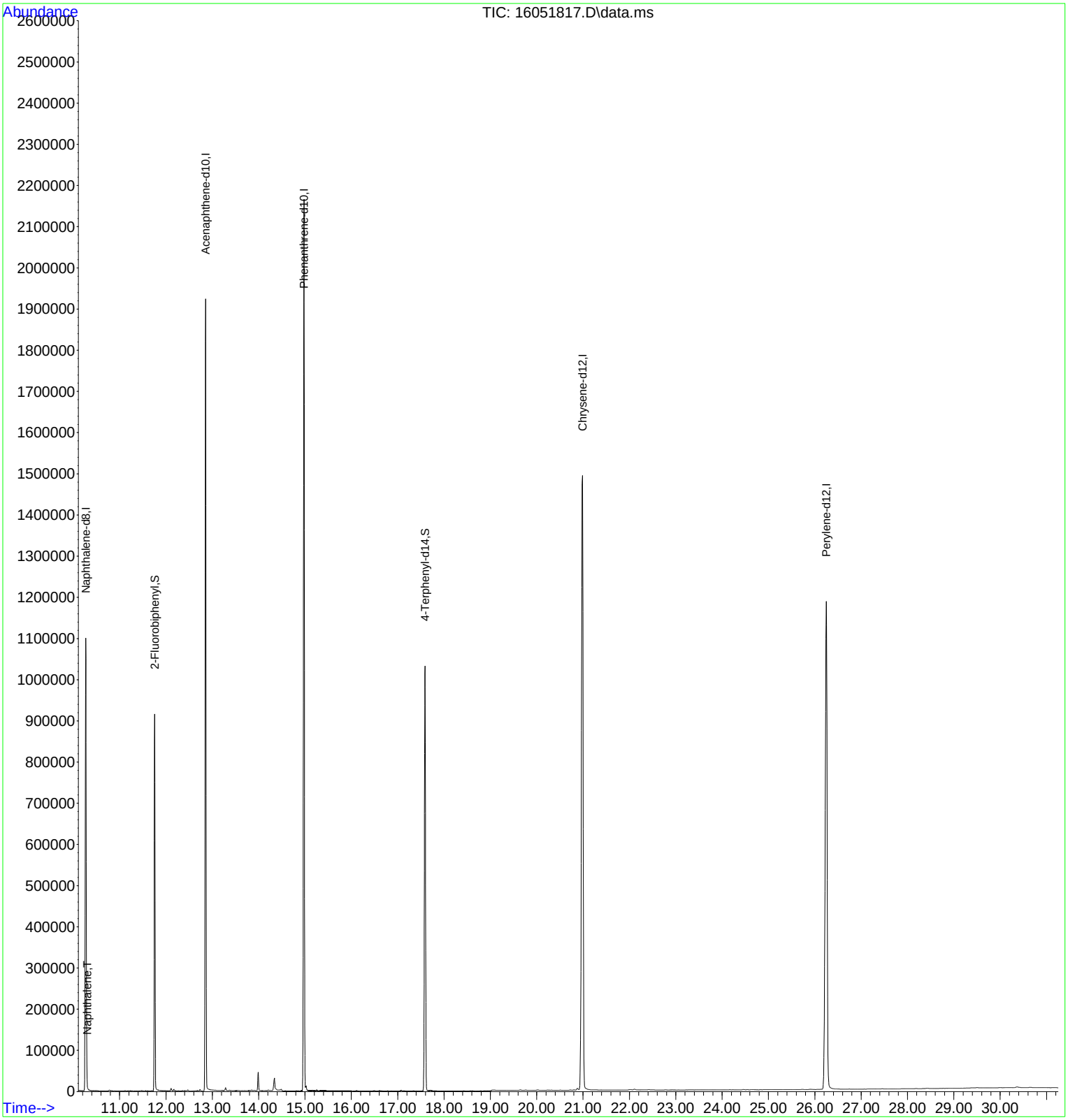
Target Compounds						Qvalue
2) Naphthalene	10.305	128	2890	8.48	ug/kg	92

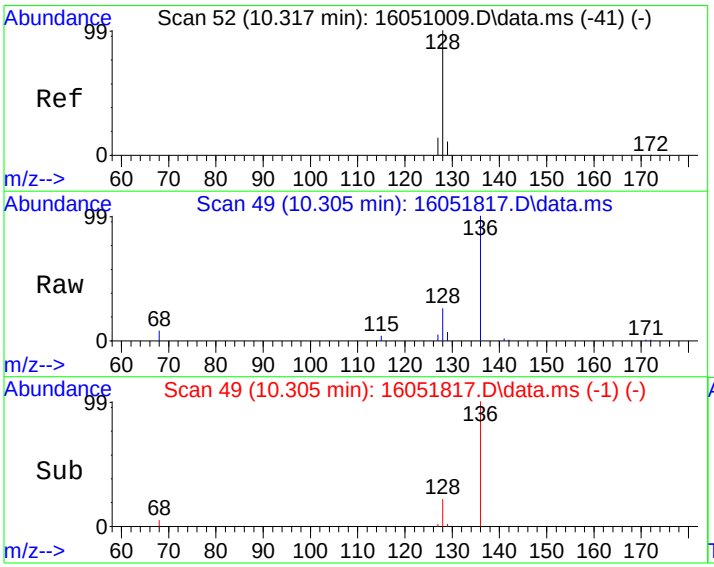
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051817.D
Acq On : 18 May 2016 6:58 pm
Operator :
Sample : 1605097-27B
Misc : SAMP
ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 19 09:18:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

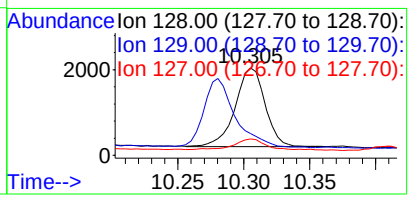




#2
Naphthalene
Concen: 8.48 ug/kg
RT: 10.305 min Scan# 49
Delta R.T. -0.004 min
Lab File: 16051817.D
Acq: 18 May 2016 6:58 pm

Tgt Ion:128 Resp: 2890

Ion	Ratio	Lower	Upper
128	100		
129	17.0	0.0	31.3
127	14.2	0.0	33.6



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051818.D
Acq On : 18 May 2016 7:34 pm
Operator :
Sample : 1605097-30B
Misc : SAMP
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 19 09:18:29 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1552664	4000.00	ug/kg	95
6) Acenaphthene-d10	12.857	164	1172018	4000.00	ug/kg	93
11) Phenanthrene-d10	14.979	188	2666916	4000.00	ug/kg	91
16) Chrysene-d12	20.987	240	2543680	4000.00	ug/kg	94
20) Perylene-d12	26.247	264	2324496	4000.00	ug/kg	94

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	893727	2585.24	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	64.63%		
17) 4-Terphenyl-d14	17.589	244	1477325	2743.93	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	68.60%		

Target Compounds						Qvalue
2) Naphthalene	10.307	128	3413	9.81	ug/kg	94
14) Fluoranthene	17.071	202	11564	13.59	ug/kg	97
15) Pyrene	17.703	202	10483	12.30	ug/kg	96
18) Benzo[a]anthracene	20.804	228	12363	16.93	ug/kg	99
19) Chrysene	21.068	228	16677	24.67	ug/kg	99
21) Benzo[b]fluoranthene	24.459	252	22383	34.45	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	10543	17.82	ug/kg	99
23) Benzo(j)fluoranthene	24.650	252	9280	14.13	ug/kg	93
24) Benzo(e)pyrene	25.727	252	16454	25.60	ug/kg	95
25) Benzo[a]pyrene	25.910	252	20577	33.70	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.506	276	20029	25.35	ug/kg	95
28) Benzo[g,h,i]perylene	30.649	276	19940	29.57	ug/kg	99

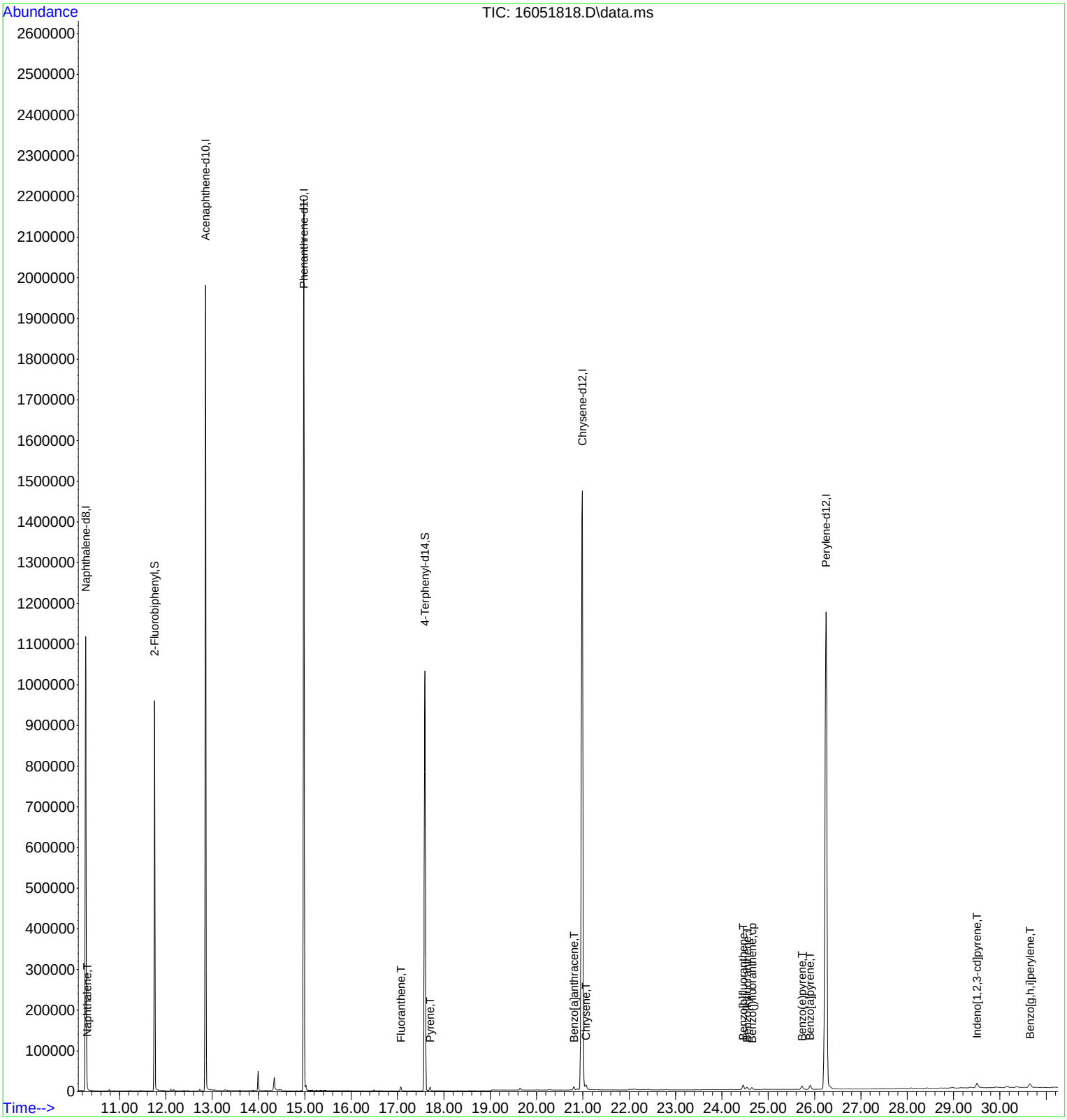
CONFIRMED
By Sherri Herschmann at 4:19:29 PM, 5/23/2016

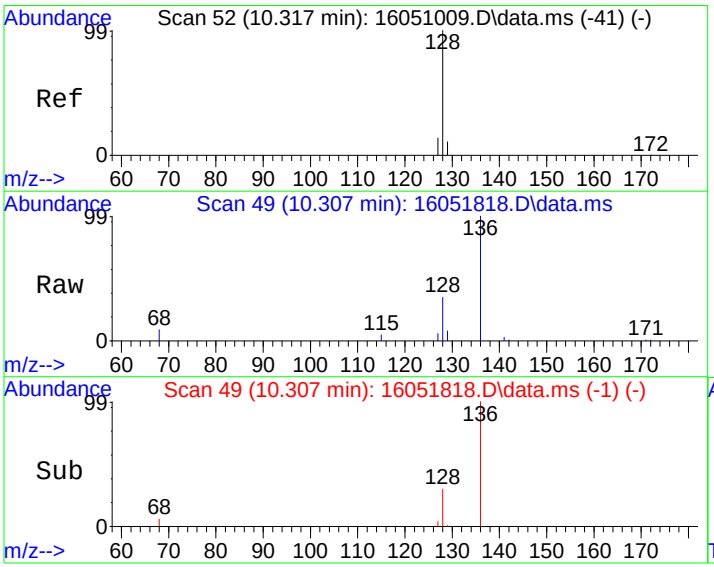
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051818.D
Acq On : 18 May 2016 7:34 pm
Operator :
Sample : 1605097-30B
Misc : SAMP
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 19 09:18:29 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

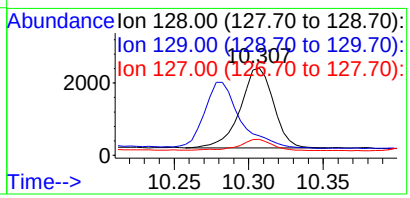


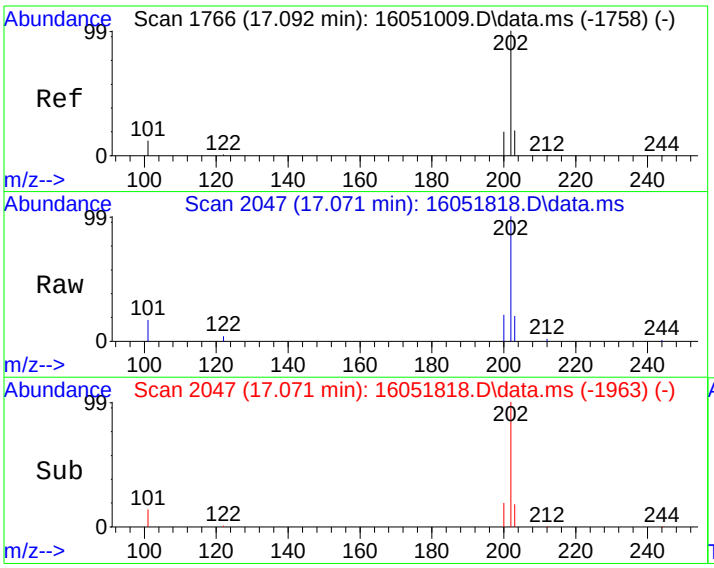


#2
Naphthalene
Concen: 9.81 ug/kg
RT: 10.307 min Scan# 49
Delta R.T. -0.003 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:128 Resp: 3413

Ion	Ratio	Lower	Upper
128	100		
129	15.3	0.0	31.3
127	14.3	0.0	33.6

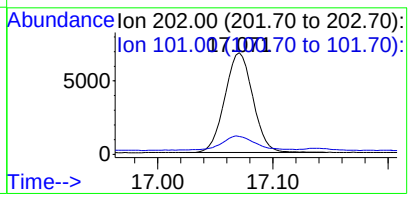


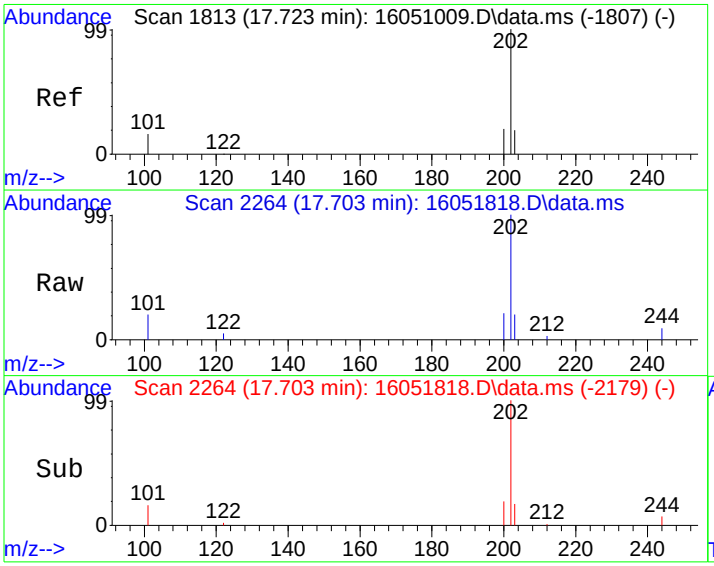


#14
Fluoranthene
Concen: 13.59 ug/kg
RT: 17.071 min Scan# 2047
Delta R.T. -0.005 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:202 Resp: 11564

Ion	Ratio	Lower	Upper
202	100		
101	13.4	0.0	34.4

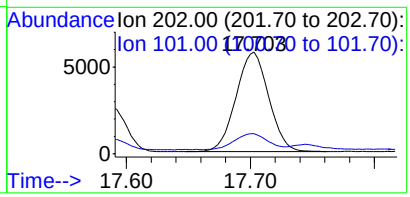


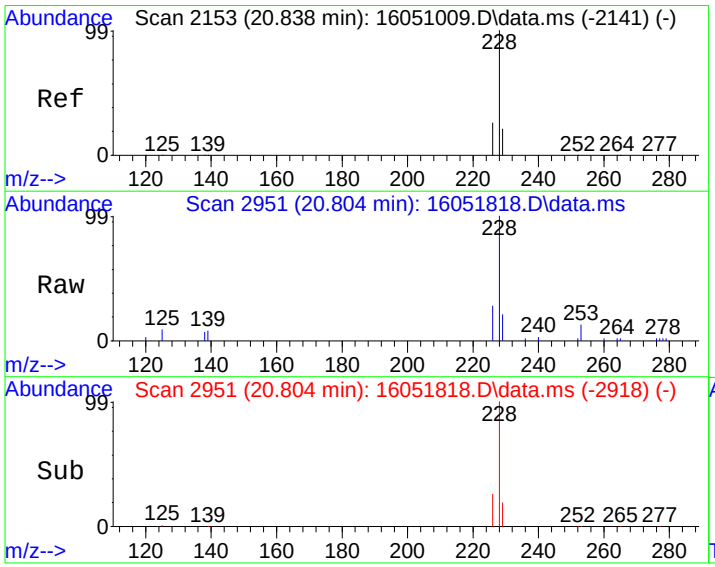


#15
Pyrene
Concen: 12.30 ug/kg
RT: 17.703 min Scan# 2264
Delta R.T. -0.003 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:202 Resp: 10483

Ion	Ratio	Lower	Upper
202	100		
101	15.7	0.0	37.3

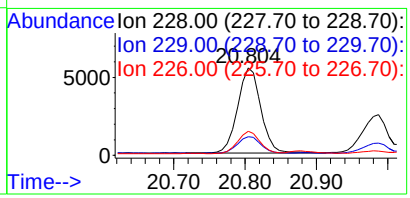


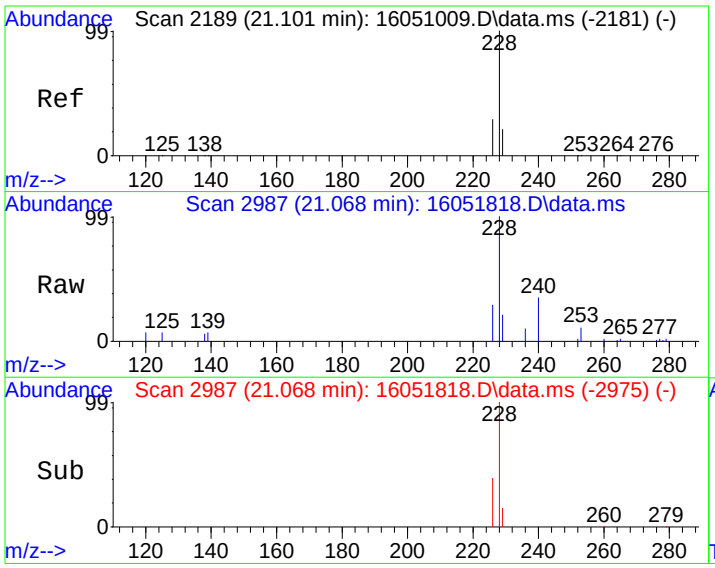


#18
Benzo[a]anthracene
Concen: 16.93 ug/kg
RT: 20.804 min Scan# 2951
Delta R.T. -0.008 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:228 Resp: 12363

Ion	Ratio	Lower	Upper
228	100		
229	19.4	0.3	40.3
226	26.1	5.7	45.7

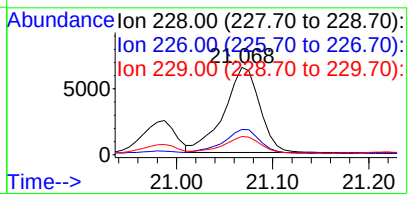


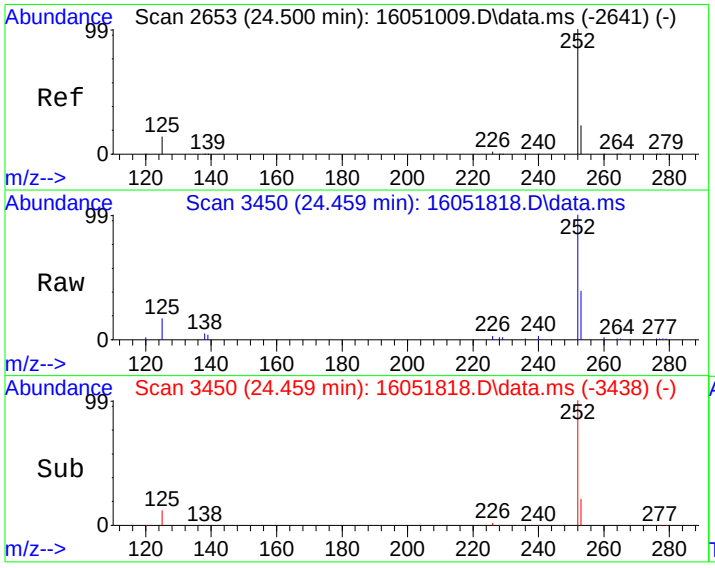


#19
Chrysene
Concen: 24.67 ug/kg
RT: 21.068 min Scan# 2987
Delta R.T. -0.015 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:228 Resp: 16677

Ion	Ratio	Lower	Upper
228	100		
226	28.0	8.2	48.2
229	19.6	0.3	40.3

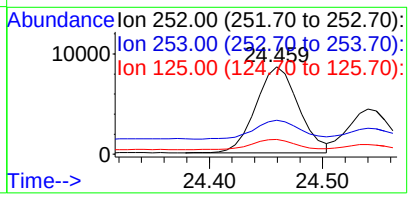


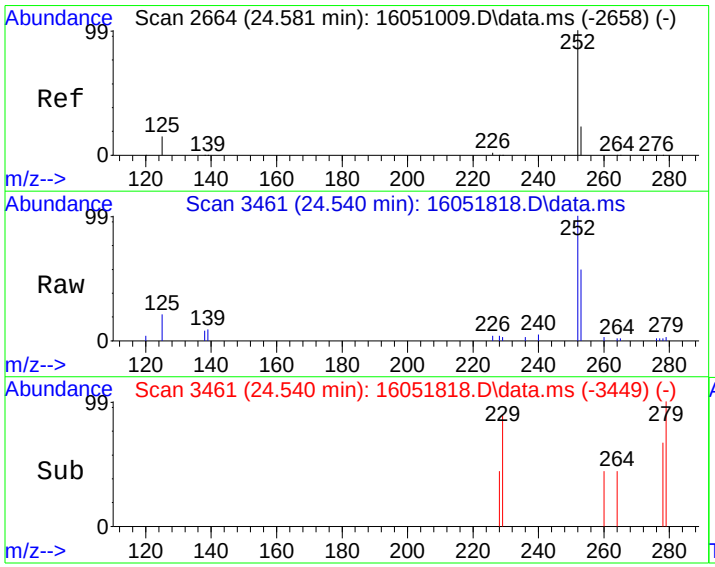


#21
Benzo[b]fluoranthene
Concen: 34.45 ug/kg
RT: 24.459 min Scan# 3450
Delta R.T. -0.016 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:252 Resp: 22383

Ion	Ratio	Lower	Upper
252	100		
253	21.6	2.3	42.3
125	11.6	0.0	32.2

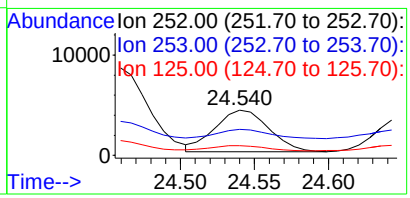


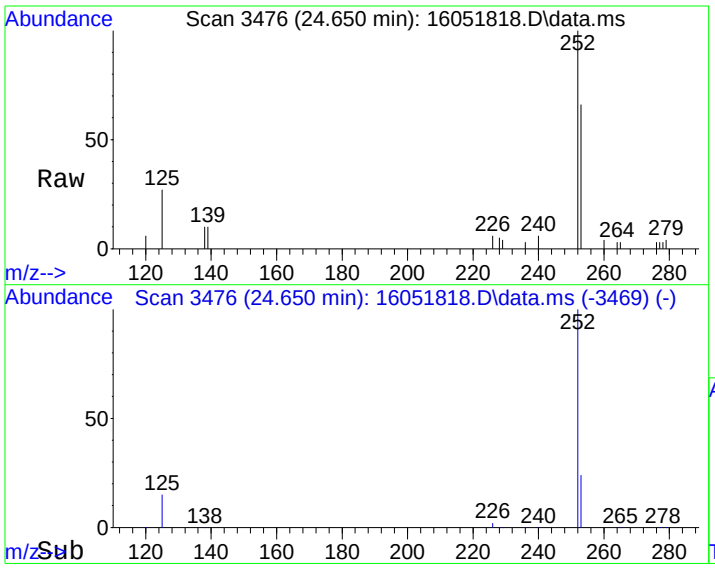


#22
Benzo[k]fluoranthene
Concen: 17.82 ug/kg
RT: 24.540 min Scan# 3461
Delta R.T. -0.015 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:252 Resp: 10543

Ion	Ratio	Lower	Upper
252	100		
253	22.6	2.5	42.5
125	11.5	0.0	32.6

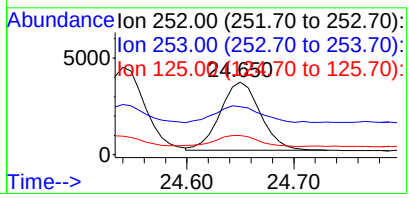


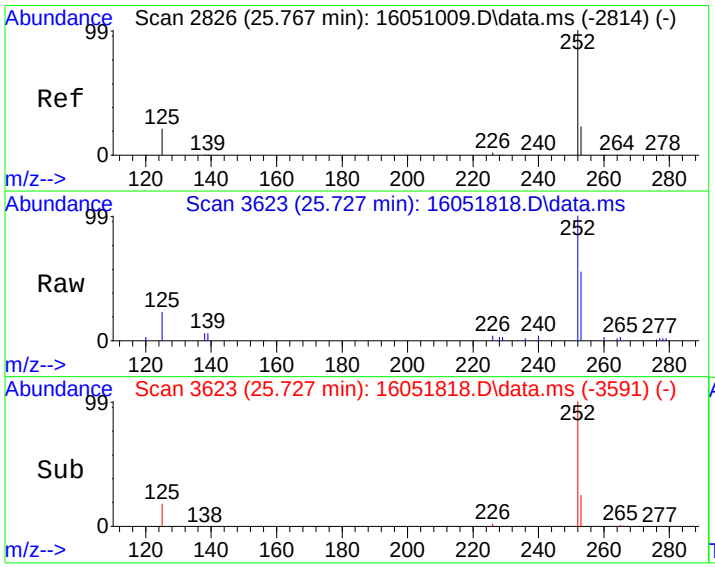


#23
Benzo(j)fluoranthene
Concen: 14.13 ug/kg
RT: 24.650 min Scan# 3476
Delta R.T. -0.015 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:252 Resp: 9280

Ion	Ratio	Lower	Upper
252	100		
253	27.7	2.2	42.2
125	16.9	0.0	37.3

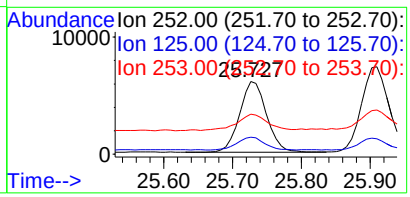


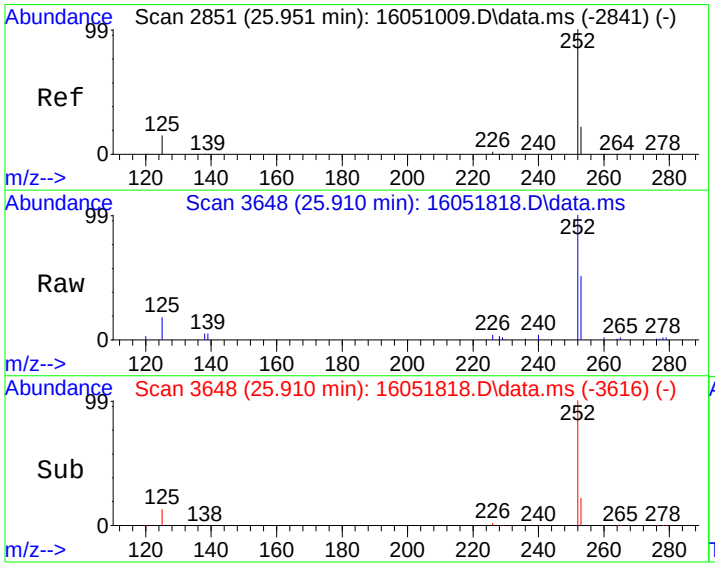


#24
Benzo(e)pyrene
Concen: 25.60 ug/kg
RT: 25.727 min Scan# 3623
Delta R.T. -0.015 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:252 Resp: 16454

Ion	Ratio	Lower	Upper
252	100		
125	17.9	0.0	38.7
253	26.3	2.3	42.3

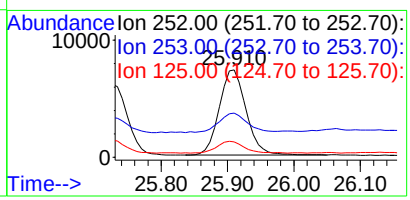


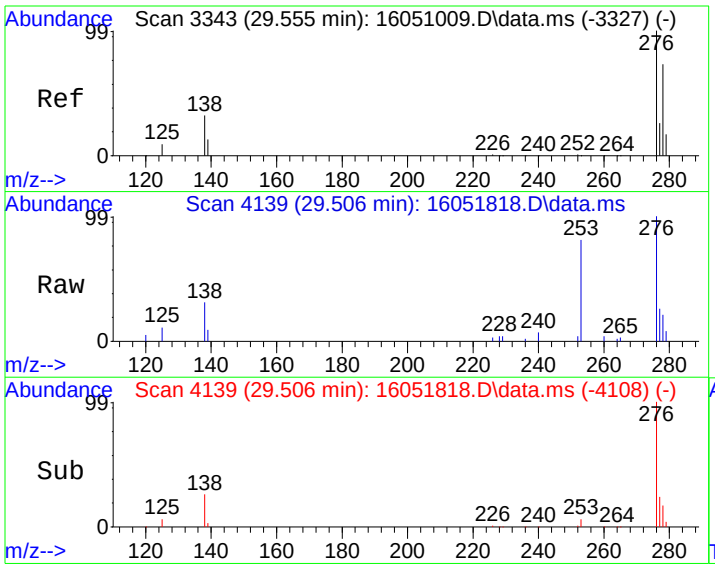


#25
Benzo[a]pyrene
Concen: 33.70 ug/kg
RT: 25.910 min Scan# 3648
Delta R.T. -0.015 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:252 Resp: 20577

Ion	Ratio	Lower	Upper
252	100		
253	22.8	2.3	42.3
125	12.9	0.0	33.5

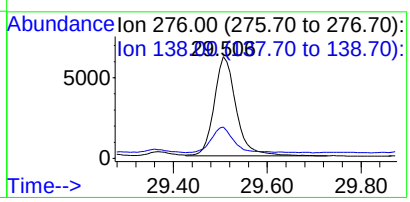


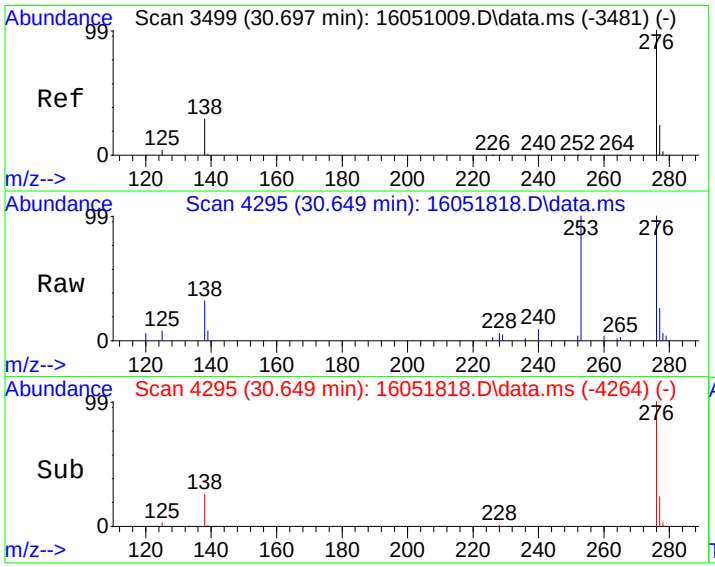


#26
Indeno[1,2,3-cd]pyrene
Concen: 25.35 ug/kg
RT: 29.506 min Scan# 4139
Delta R.T. -0.023 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:276 Resp: 20029

Ion	Ratio	Lower	Upper
276	100		
138	25.7	8.3	48.3

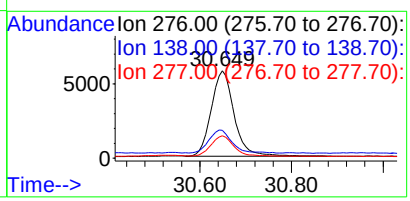




#28
Benzo[g,h,i]perylene
Concen: 29.57 ug/kg
RT: 30.649 min Scan# 4295
Delta R.T. -0.023 min
Lab File: 16051818.D
Acq: 18 May 2016 7:34 pm

Tgt Ion:276 Resp: 19940

Ion	Ratio	Lower	Upper
276	100		
138	26.8	5.8	45.8
277	24.0	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051820.D
Acq On : 18 May 2016 8:49 pm
Operator :
Sample : ICV2-160518
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 19 09:16:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1541947	4000.00	ug/kg	95
6) Acenaphthene-d10	12.857	164	1207997	4000.00	ug/kg	96
11) Phenanthrene-d10	14.979	188	2731012	4000.00	ug/kg	93
16) Chrysene-d12	20.989	240	2535151	4000.00	ug/kg	94
20) Perylene-d12	26.248	264	2319324	4000.00	ug/kg	93

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	660318	1923.35	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 48.08%			
17) 4-Terphenyl-d14	17.587	244	1090974	2033.15	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 50.83%#			

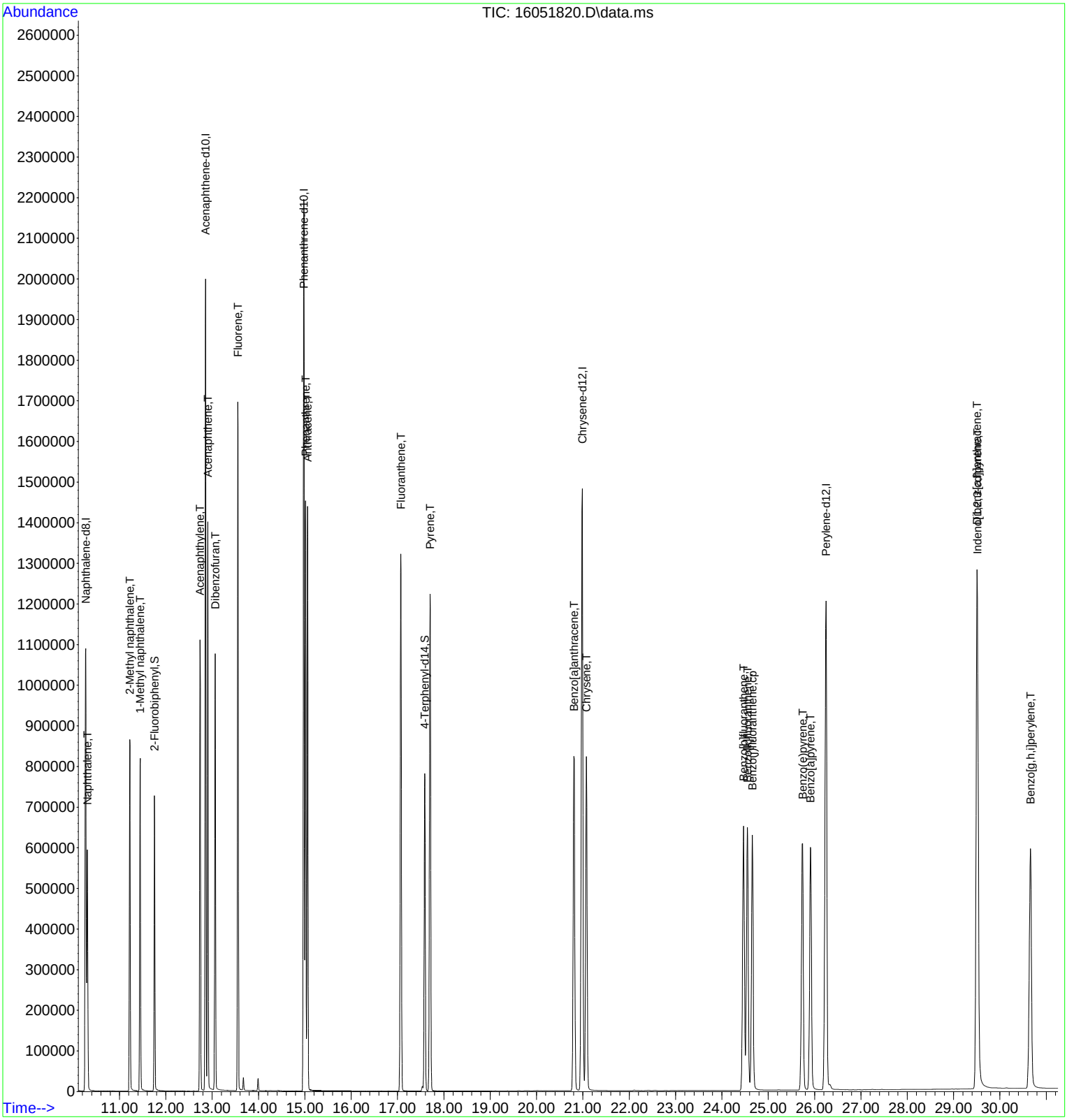
Target Compounds						Qvalue
2) Naphthalene	10.303	128	692653	2005.15	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	543376	2023.46	ug/kg	99
4) 1-Methyl naphthalene	11.446	142	498034	1959.89	ug/kg	99
7) Acenaphthylene	12.739	152	1052817	1993.89	ug/kg	100
8) Acenaphthene	12.906	153	669198	2008.49	ug/kg	100
9) Dibenzofuran	13.064	168	1014806	1999.41	ug/kg	98
10) Fluorene	13.555	166	927758	2014.57	ug/kg	100
12) Phenanthrene	15.015	178	1399624	1862.57	ug/kg	100
13) Anthracene	15.059	178	1414791	1860.66	ug/kg	99
14) Fluoranthene	17.071	202	1484668	2072.21	ug/kg	99
15) Pyrene	17.704	202	1458241	2070.73	ug/kg	99
18) Benzo[a]anthracene	20.805	228	1322898	2110.03	ug/kg	100
19) Chrysene	21.076	228	1217225	2099.27	ug/kg	100
21) Benzo[b]fluoranthene	24.468	252	1259735	2120.76	ug/kg	100
22) Benzo[k]fluoranthene	24.549	252	1175849	2185.94	ug/kg	99
23) Benzo(j)fluoranthene	24.658	252	1091106	2125.31	ug/kg	100
24) Benzo(e)pyrene	25.742	252	1183382	2110.90	ug/kg	100
25) Benzo[a]pyrene	25.918	252	1185414	2132.02	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.522	276	1433865	2107.85	ug/kg	98
27) Dibenz[a,h]anthracene	29.508	278	1204388	2131.84	ug/kg	99
28) Benzo[g,h,i]perylene	30.658	276	1254977	2139.12	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051820.D
Acq On : 18 May 2016 8:49 pm
Operator :
Sample : ICV2-160518
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

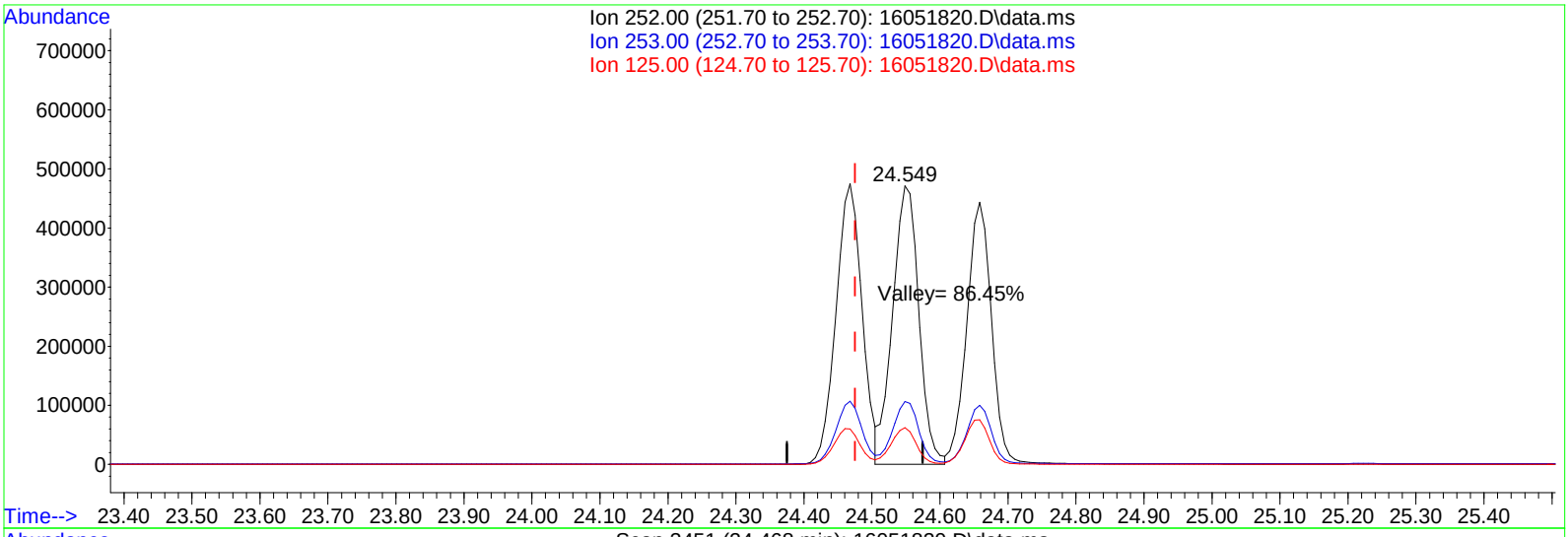
Quant Time: May 19 09:16:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

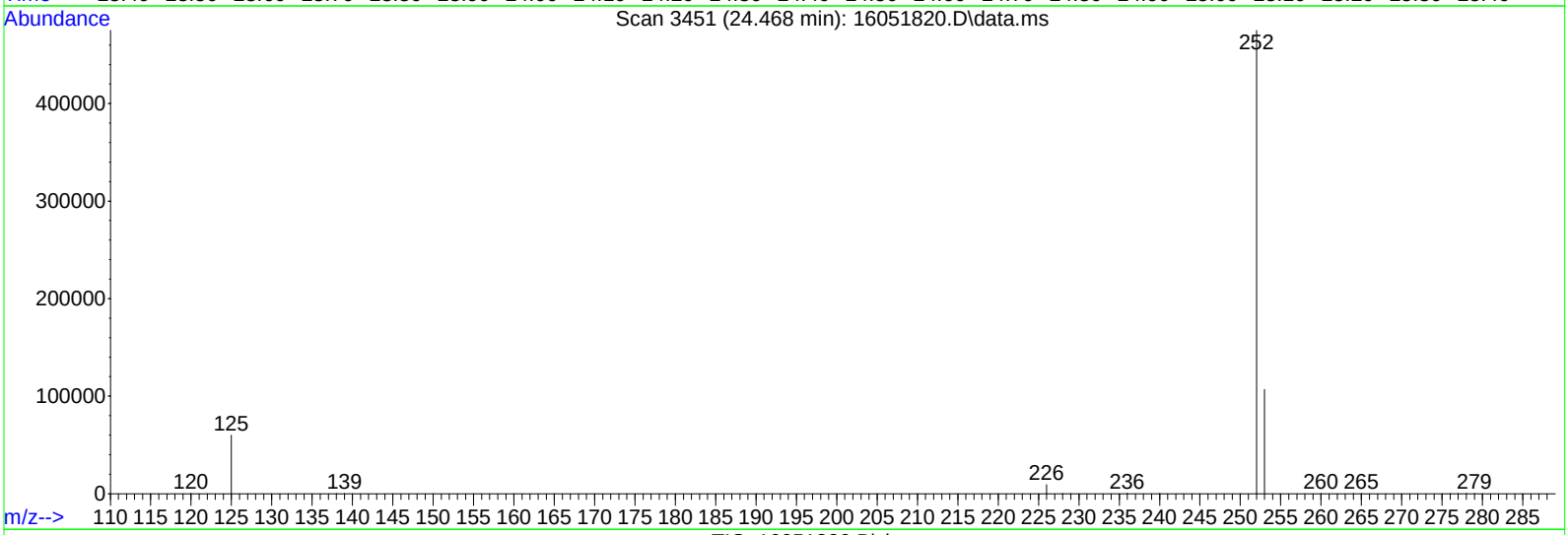


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051820.D
Acq On : 18 May 2016 8:49 pm
Operator :
Sample : ICV2-160518
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 18 21:20:24 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16051820.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.468min (-0.007) 2120.76ug/kg

response 1259735

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.27
125.00	12.20	12.57
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051822.D
Acq On : 18 May 2016 10:03 pm
Operator :
Sample : SBLK-160518
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 19 09:16:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1648675	4000.00	ug/kg	101
6) Acenaphthene-d10	12.857	164	1399121	4000.00	ug/kg	112
11) Phenanthrene-d10	14.977	188	2780441	4000.00	ug/kg	95
16) Chrysene-d12	20.980	240	2664039	4000.00	ug/kg	98
20) Perylene-d12	26.247	264	2504352	4000.00	ug/kg	101

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	70	0.19	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.00%#			
17) 4-Terphenyl-d14	17.592	244	276	0.49	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.01%#			

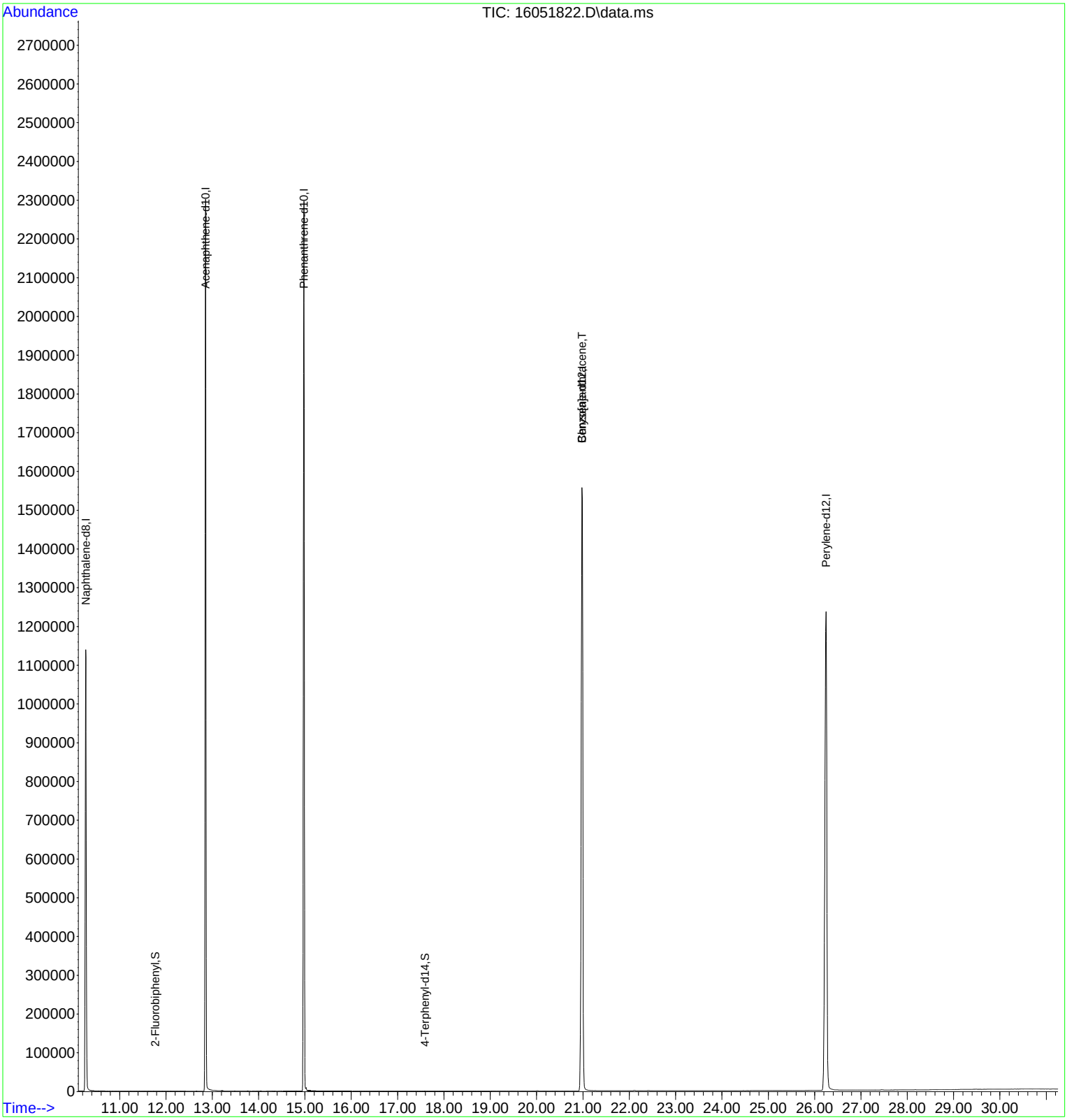
Target Compounds						Qvalue
18) Benzo[a]anthracene	20.980	228	6062	6.97	ug/kg	77

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051822.D
Acq On : 18 May 2016 10:03 pm
Operator :
Sample : SBLK-160518
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 19 09:16:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051830.D
Acq On : 19 May 2016 2:59 am
Operator :
Sample : CCV-160520
Misc : CCV
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 19 09:16:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1631750	4000.00	ug/kg	100
6) Acenaphthene-d10	12.857	164	1319311	4000.00	ug/kg	105
11) Phenanthrene-d10	14.979	188	2784459	4000.00	ug/kg	95
16) Chrysene-d12	20.987	240	2573498	4000.00	ug/kg	95
20) Perylene-d12	26.254	264	2394128	4000.00	ug/kg	96

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	363303	999.98	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 25.00%#			
17) 4-Terphenyl-d14	17.589	244	544298	999.25	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.98%#			

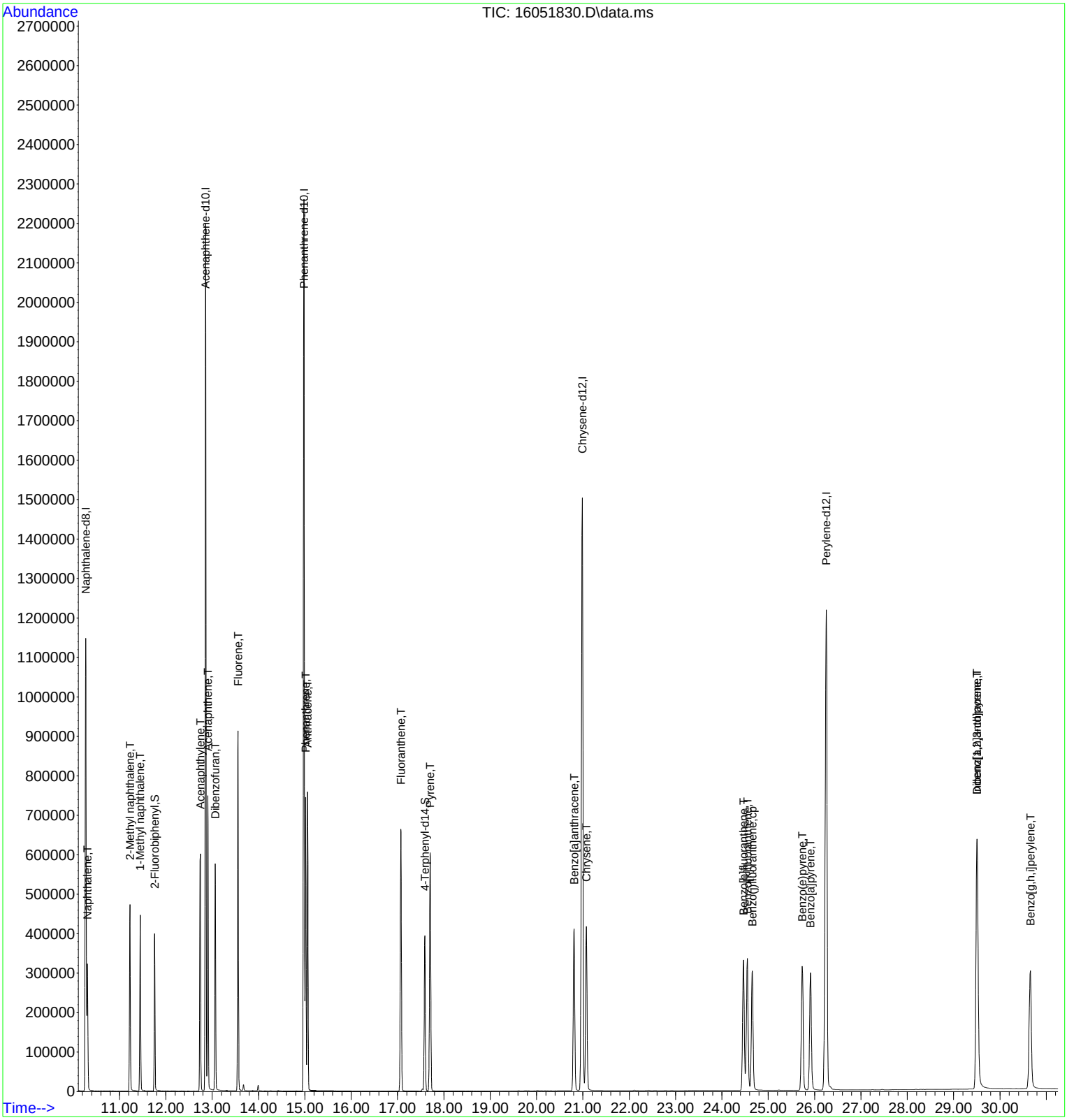
Target Compounds						Qvalue
2) Naphthalene	10.307	128	357903	979.07	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	290768	1023.19	ug/kg	100
4) 1-Methyl naphthalene	11.446	142	267657	995.33	ug/kg	100
7) Acenaphthylene	12.744	152	575333	997.67	ug/kg	99
8) Acenaphthene	12.906	153	360034	989.41	ug/kg	98
9) Dibenzofuran	13.063	168	545327	983.77	ug/kg	91
10) Fluorene	13.559	166	492027	978.26	ug/kg	100
12) Phenanthrene	15.015	178	720203	940.02	ug/kg	99
13) Anthracene	15.059	178	727233	938.06	ug/kg	99
14) Fluoranthene	17.071	202	741258	983.41	ug/kg	100
15) Pyrene	17.703	202	725670	984.46	ug/kg	98
18) Benzo[a]anthracene	20.811	228	655624	1002.53	ug/kg	99
19) Chrysene	21.075	228	607054	1004.84	ug/kg	100
21) Benzo[b]fluoranthene	24.466	252	630356	1005.29	ug/kg	100
22) Benzo[k]fluoranthene	24.547	252	586004	1036.28	ug/kg	99
23) Benzo(j)fluoranthene	24.657	252	547475	1008.23	ug/kg	99
24) Benzo(e)pyrene	25.734	252	600311	1012.62	ug/kg	99
25) Benzo[a]pyrene	25.909	252	592256	1013.62	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.513	276	732052	1018.20	ug/kg	99
27) Dibenz[a,h]anthracene	29.499	278	612851	1023.88	ug/kg	100
28) Benzo[g,h,i]perylene	30.656	276	630506	1016.87	ug/kg	100

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051830.D
Acq On : 19 May 2016 2:59 am
Operator :
Sample : CCV-160520
Misc : CCV
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 19 09:16:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



GCMS8_160520A
For

DHL Work Order
1605097

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Project Number(s): SEE RUN LOG.	**Run ID: GCMS8_160520A**
Batch Number(s): SEE RUN LOG.	**SOP:** ORGANICS-PAH-01
Matrix: SEE RUN LOG.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			X
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		X
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			X
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS		X		
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS		X		
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)		X		

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	X
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			X
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality	X			X
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___ LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
x MS x MSD out of control (See LIMS)	x High Levels of target analytes	___ Verify H2O/reagents are clean
x RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	x Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	x Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)		
		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: See run log.

All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.

1605098-17AMS: 7 analytes low

1605098-17AMSD: 11 analytes high. 14 analytes fail RPD. Parent sample has high concentration of target hydrocarbons - matrix interference.

Analyst: Karyn Lane Date: ***REVIEWED/APPROVED*** 5/23/2016 12:11

Second-Level Review: Sherri Herschmann Date: *By Sherri Herschmann at 9:12:32 AM, 5/24/2016* **05/24/2016**

DHL Analytical, Inc.

Run ID: GCMS8_160520A **Run No.:** 85908

Analytical Run Date: 5/20/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 660 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160517.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160520	1	PAH_LL_SDOD1	TUNE	R85908	5/20/2016 8:37:00 AM		
ICV-160520	1	PAH_LL_SDOD1	ICV	R85908	5/20/2016 9:14:00 AM		
LCS-75192	1	PAH_LL_SDOD1	LCS	75192	5/20/2016 9:50:00 AM		
MB-75192	1	PAH_LL_SDOD1	MBLK	75192	5/20/2016 10:28:00 AM		
1605097-16A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 12:57:00 PM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605097-17A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 1:34:00 PM		
1605097-18A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 2:11:00 PM		
1605097-19A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 2:48:00 PM		
1605097-20A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 3:24:00 PM		
1605097-26A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 4:02:00 PM		
1605097-44A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 4:38:00 PM		
1605097-45A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 5:16:00 PM		
1605098-01A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 5:53:00 PM		
DFTPP2-160520	1	PAH_LL_SDOD1	TUNE	R85908	5/20/2016 6:30:00 PM		
ICV2-160520	1	PAH_LL_SDOD1	ICV	R85908	5/20/2016 7:07:00 PM		
SBLK2-160520	1	PAH_LL_SDOD1	SBLK	75192	5/20/2016 8:22:00 PM		
1605098-02A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 9:00:00 PM		
1605098-03A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 9:37:00 PM		
1605098-04A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 10:14:00 PM		
1605098-05A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 10:52:00 PM		
1605098-06A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 11:29:00 PM		
1605098-07A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 12:07:00 AM		
1605098-08A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 12:44:00 AM		
1605098-09A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 1:21:00 AM		
1605098-10A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 1:58:00 AM		
1605098-11A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 2:36:00 AM		
1605098-17A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 3:13:00 AM		
1605098-17AMS	10	PAH_LL_SDOD1	MS	75192	5/21/2016 3:50:00 AM		7 analytes low.

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

DHL Analytical, Inc.

Run ID: GCMS8_160520A **Run No.:** 85908

1605098-17AMSD	10	PAH_LL_SDOD1	MSD	75192	5/21/2016 4:27:00 AM		11 analytes high. 14 analytes fail RPD. Parent sample has high concentration of target hydrocarbons - matrix interference.
CCV-160520	1	PAH_LL_SDOD1	CCV	R85908	5/21/2016 5:05:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

REVIEWED/APPROVED

By Sherri Herschmann at 9:12:35 AM, 5/24/2016

Sequence Name: C:\msdchem\1\sequence\160520.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160520\
Instrument Name: GCMS #8
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

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

Line			Sample Name/Misc Info	
1)	Sample	1	16052001 DFTPPPAH	DFTPP-160520
2)	Sample	2	16052002 PAH160517	ICV-160520
3)	Sample	3	16052003 PAH160517	LCS-75192
4)	Sample	4	16052004 PAH160517	MB-75192
5)	Sample	5	16052005 PAH160517	1605121-01A
6)	Sample	6	16052006 PAH160517	1605121-01AMS
7)	Sample	7	16052007 PAH160517	1605121-01AMSD

Sequence Name: C:\msdchem\1\sequence\160520.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160520\
Instrument Name: GCMS #8
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

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

Line		Sample Name/Misc Info		
1)	Sample	1	16052001 DFTPPPAH	DFTPP-160520
2)	Sample	2	16052002 PAH160517	ICV-160520
3)	Sample	3	16052003 PAH160517	LCS-75192
4)	Sample	4	16052004 PAH160517	MB-75192
5)	Sample	5	16052005 PAH160517	1605121-01A
6)	Sample	6	16052006 PAH160517	1605121-01AMS
7)	Sample	7	16052007 PAH160517	1605121-01AMSD
8)	Sample	8	16052008 PAH160517	1605097-16A
9)	Sample	9	16052009 PAH160517	1605097-17A
10)	Sample	10	16052010 PAH160517	1605097-18A
11)	Sample	11	16052011 PAH160517	1605097-19A
12)	Sample	12	16052012 PAH160517	1605097-20A
13)	Sample	13	16052013 PAH160517	1605097-26A
14)	Sample	14	16052014 PAH160517	1605097-44A
15)	Sample	15	16052015 PAH160517	1605097-45A
16)	Sample	16	16052016 PAH160517	1605098-01A
17)	Sample	17	16052017 DFTPPPAH	DFTPP2-160520
18)	Sample	18	16052018 PAH160517	ICV2-160520
19)	Sample	19	16052019 PAH160517	SBLK
20)	Sample	20	16052020 PAH160517	SBLK2-160520
21)	Sample	21	16052021 PAH160517	1605098-02A
22)	Sample	22	16052022 PAH160517	1605098-03A
23)	Sample	23	16052023 PAH160517	1605098-04A
24)	Sample	24	16052024 PAH160517	1605098-05A
25)	Sample	25	16052025 PAH160517	1605098-06A
26)	Sample	26	16052026 PAH160517	1605098-07A
27)	Sample	27	16052027 PAH160517	1605098-08A
28)	Sample	28	16052028 PAH160517	1605098-09A
29)	Sample	29	16052029 PAH160517	1605098-10A
30)	Sample	30	16052030 PAH160517	1605098-11A
31)	Sample	31	16052031 PAH160517	1605098-17A
32)	Sample	32	16052032 PAH160517	1605098-17AMS
33)	Sample	33	16052033 PAH160517	1605098-17AMSD
34)	Sample	34	16052034 PAH160517	CCV-160520

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 8:34:31 AM**
Digestion:
Prep End Date: **5/17/2016 1:23:00 PM**

Prep Batch **75192** Prep Code: **3550_PAHDOD** Technician: **Lauren Garcia**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-16A	Soil		10.53	10	0.950	1 of 1	
1605097-17A	Soil		10.84	10	0.923	1 of 1	
1605097-18A	Soil		10.54	10	0.949	1 of 1	
1605097-19A	Soil		10.01	10	0.999	1 of 1	
1605097-20A	Soil		10.23	10	0.978	1 of 1	
1605097-26A	Soil		10.49	10	0.953	1 of 1	
1605097-44A	Soil		10.03	10	0.997	1 of 1	
1605097-45A	Soil		10.26	10	0.975	1 of 1	
1605098-01A	Soil		10.19	10	0.981	1 of 1	
1605098-02A	Soil		10.43	10	0.959	1 of 1	
1605098-03A	Soil		10.35	10	0.966	1 of 1	
1605098-04A	Soil		10.12	10	0.988	1 of 1	
1605098-05A	Soil		10.45	10	0.957	1 of 1	
1605098-06A	Soil		10.01	10	0.999	1 of 1	
1605098-07A	Soil		10.74	10	0.931	1 of 1	
1605098-08A	Soil		10.54	10	0.949	1 of 1	
1605098-09A	Soil		10.04	10	0.996	1 of 1	
1605098-10A	Soil		10.45	10	0.957	1 of 1	
1605098-11A	Soil		10.03	10	0.997	1 of 1	
1605098-17A	Soil		10.2	10	0.980	1 of 1	
1605098-17AMS	Soil		10.51	10	0.951	of	
1605098-17AMSD	Soil		10.48	10	0.954	of	
LCS-75192	Soil		10	10	1.000	of	
MB-75192	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10169	Methylene Chloride	8	ml	03/15/2026
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED/APPROVED

By Sherri Herschmann at 9:15:47 AM, 5/24/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 8:34:31 AM**
Digestion:
Prep End Date: 5/17/2016 1:23 PM

Prep Batch **75192** Prep Code: **3550_PAHDOD** Technician: **Lauren Garcia**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-16A	Soil		10.53	10	1.000	1 of 1	
1605097-17A	Soil		10.84	10	1.000	1 of 1	
1605097-18A	Soil		10.54	10	1.000	1 of 1	
1605097-19A	Soil		10.01	10	1.000	1 of 1	
1605097-20A	Soil		10.23	10	1.000	1 of 1	
1605097-26A	Soil		10.49	10	1.000	1 of 1	
1605097-44A	Soil		10.03	10	1.000	1 of 1	
1605097-45A	Soil		10.26	10	1.000	1 of 1	
1605098-01A	Soil		10.19	10	1.000	1 of 1	
1605098-02A	Soil		10.43	10	1.000	1 of 1	
1605098-03A	Soil		10.35	10	1.000	1 of 1	
1605098-04A	Soil		10.12	10	1.000	1 of 1	
1605098-05A	Soil		10.45	10	1.000	1 of 1	
1605098-06A	Soil		10.01	10	1.000	1 of 1	
1605098-07A	Soil		10.74	10	1.000	1 of 1	
1605098-08A	Soil		10.54	10	1.000	1 of 1	
1605098-09A	Soil		10.04	10	1.000	1 of 1	
1605098-10A	Soil		10.45	10	1.000	1 of 1	
1605098-11A	Soil		10.03	10	1.000	1 of 1	
1605098-17A	Soil		10.20	10	1.000	1 of 1	
1605098-17AMS	Soil		10.51	10	1.000	of	
1605098-17AMSD	Soil		10.48	10	1.000	of	
LCS-75192	Soil		10	10	1.000	of	
MB-75192	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10169	Methylene Chloride	8	ml	03/15/2026
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED/APPROVED
By Sherri Herschmann at 9:15:42 AM, 5/24/2016

5/17/16

5/17/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 2:10:55 PM**
Digestion: **Start: 5/12/2016 3:00:00 PM / Stop: 5/16/2016 8:30:00 AM**
Prep End Date:

Prep Batch **75141** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-36A	Soil		0	0	#Num!	1 of 1	
1605097-37A	Soil		0	0	#Num!	1 of 1	
1605097-38A	Soil		0	0	#Num!	1 of 1	
1605097-39A	Soil		0	0	#Num!	of 3	
1605097-40A	Soil		0	0	#Num!	1 of 1	
1605097-41A	Soil		0	0	#Num!	1 of 1	
1605097-42A	Soil		0	0	#Num!	1 of 1	
1605097-43A	Soil		0	0	#Num!	1 of 1	
1605097-44A	Soil		0	0	#Num!	1 of 1	
1605097-45A	Soil		0	0	#Num!	1 of 1	
1605098-01A	Soil		0	0	#Num!	1 of 1	
1605098-02A	Soil		0	0	#Num!	1 of 1	
1605098-03A	Soil		0	0	#Num!	1 of 1	
1605098-04A	Soil		0	0	#Num!	1 of 1	
1605098-05A	Soil		0	0	#Num!	1 of 1	
1605098-06A	Soil		0	0	#Num!	1 of 1	
1605098-07A	Soil		0	0	#Num!	1 of 1	
1605098-08A	Soil		0	0	#Num!	1 of 1	
1605098-09A	Soil		0	0	#Num!	1 of 1	
1605098-10A	Soil		0	0	#Num!	1 of 1	

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 5:00:00 PM**
Digestion: **Start: 5/12/2015 5:15:00 PM / Stop: 5/16/2016 8:30:00 AM**
Prep End Date:

Prep Batch **75144** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

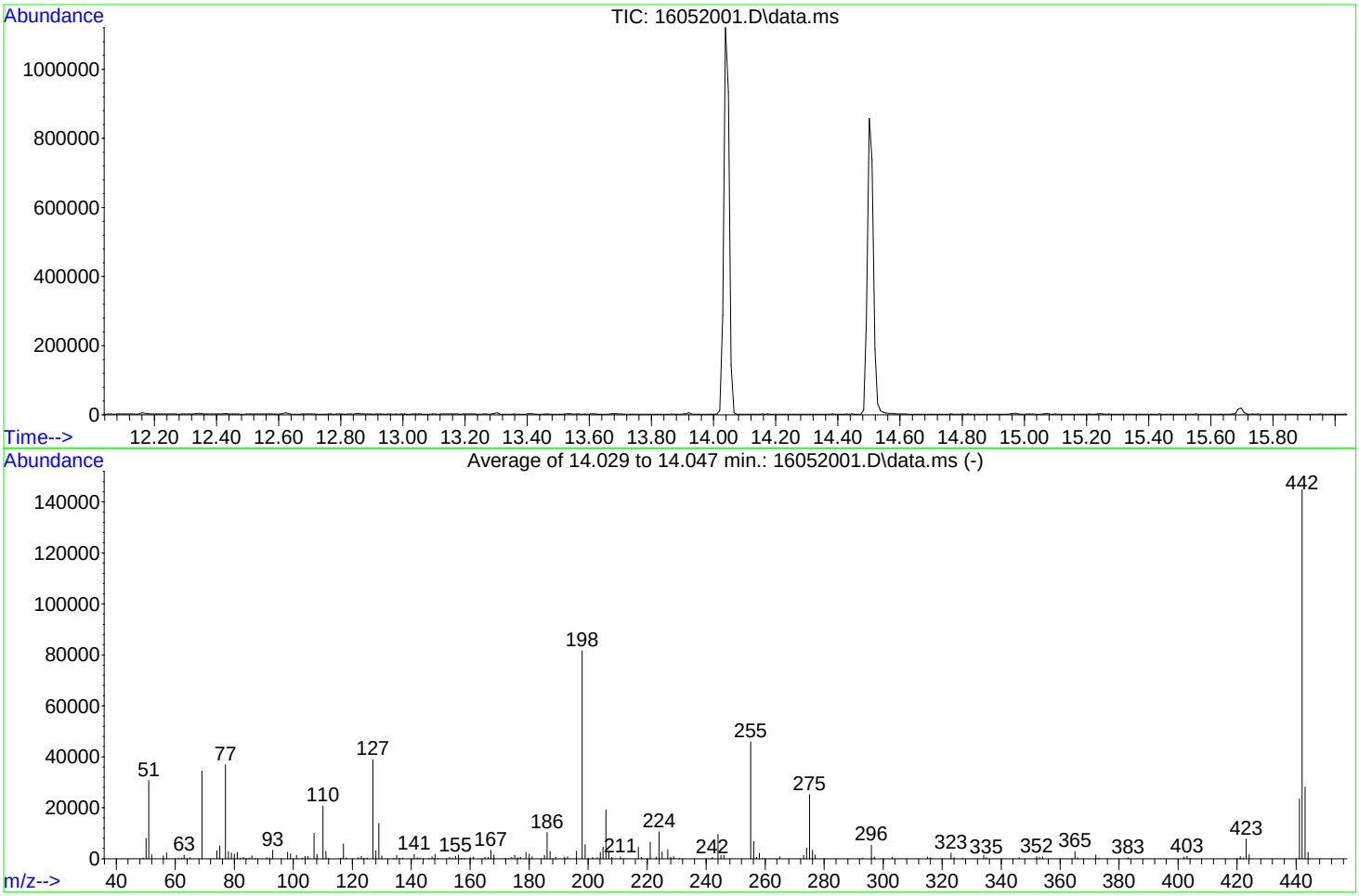
Prep Factor Units: mL/

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-11A	Soil		0	0	#Num!	1 of 1	
1605098-12A	Soil		0	0	#Num!	1 of 1	
1605098-13A	Soil		0	0	#Num!	1 of 1	
1605098-14A	Soil		0	0	#Num!	1 of 1	
1605098-15A	Soil		0	0	#Num!	1 of 1	
1605098-16A	Soil		0	0	#Num!	1 of 1	
1605098-17A	Soil		0	0	#Num!	1 of 1	
1605098-18A	Soil		0	0	#Num!	1 of 1	
1605098-19A	Soil		0	0	#Num!	1 of 1	
1605098-20A	Soil		0	0	#Num!	1 of 1	
1605098-21A	Soil		0	0	#Num!	1 of 1	
1605098-22A	Soil		0	0	#Num!	1 of 1	
1605098-23A	Soil		0	0	#Num!	1 of 1	
1605098-24A	Soil		0	0	#Num!	1 of 1	
1605098-25A	Soil		0	0	#Num!	1 of 1	
1605098-26A	Soil		0	0	#Num!	1 of 1	
1605098-27A	Soil		0	0	#Num!	1 of 1	
1605098-28A	Soil		0	0	#Num!	1 of 1	
1605098-29A	Soil		0	0	#Num!	1 of 1	
1605098-30A	Soil		0	0	#Num!	1 of 1	

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052001.D
Acq On : 20 May 2016 8:37 am
Operator :
Sample : DFTPP-160520
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

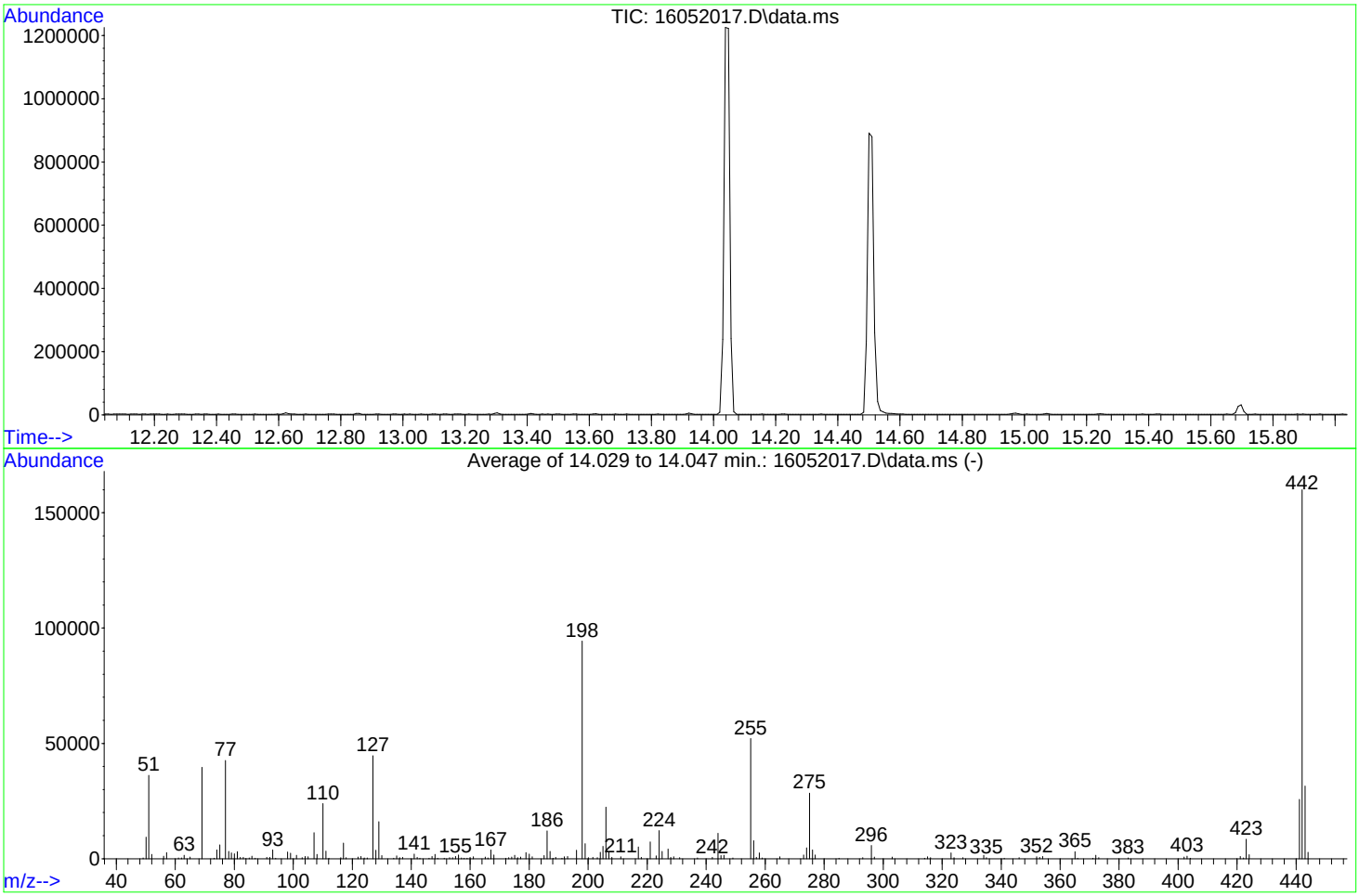
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	37.6	30736	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	42.2	34482	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	47.6	38869	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	81637	PASS
199	198	5	9	6.8	5532	PASS
275	198	10	60	30.7	25087	PASS
365	198	1	200	3.3	2702	PASS
441	442	0.01	24	16.1	23363	PASS
442	198	50	400	177.4	144840	PASS
443	442	15	24	19.4	28121	PASS

REVIEWED BY
By Janice Whitt at 1:25:25 PM, 5/23/2016

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052017.D
Acq On : 20 May 2016 6:30 pm
Operator :
Sample : DFTPP2-160520
Misc : TUNE
ALS Vial : 17 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	38.3	36152	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	41.9	39578	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	47.4	44704	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	94354	PASS
199	198	5	9	6.9	6518	PASS
275	198	10	60	30.2	28450	PASS
365	198	1	200	3.2	2989	PASS
441	442	0.01	24	16.1	25756	PASS
442	198	50	400	169.6	160034	PASS
443	442	15	24	19.7	31508	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052002.D
Acq On : 20 May 2016 9:14 am
Operator :
Sample : ICV-160520
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 20 13:07:10 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

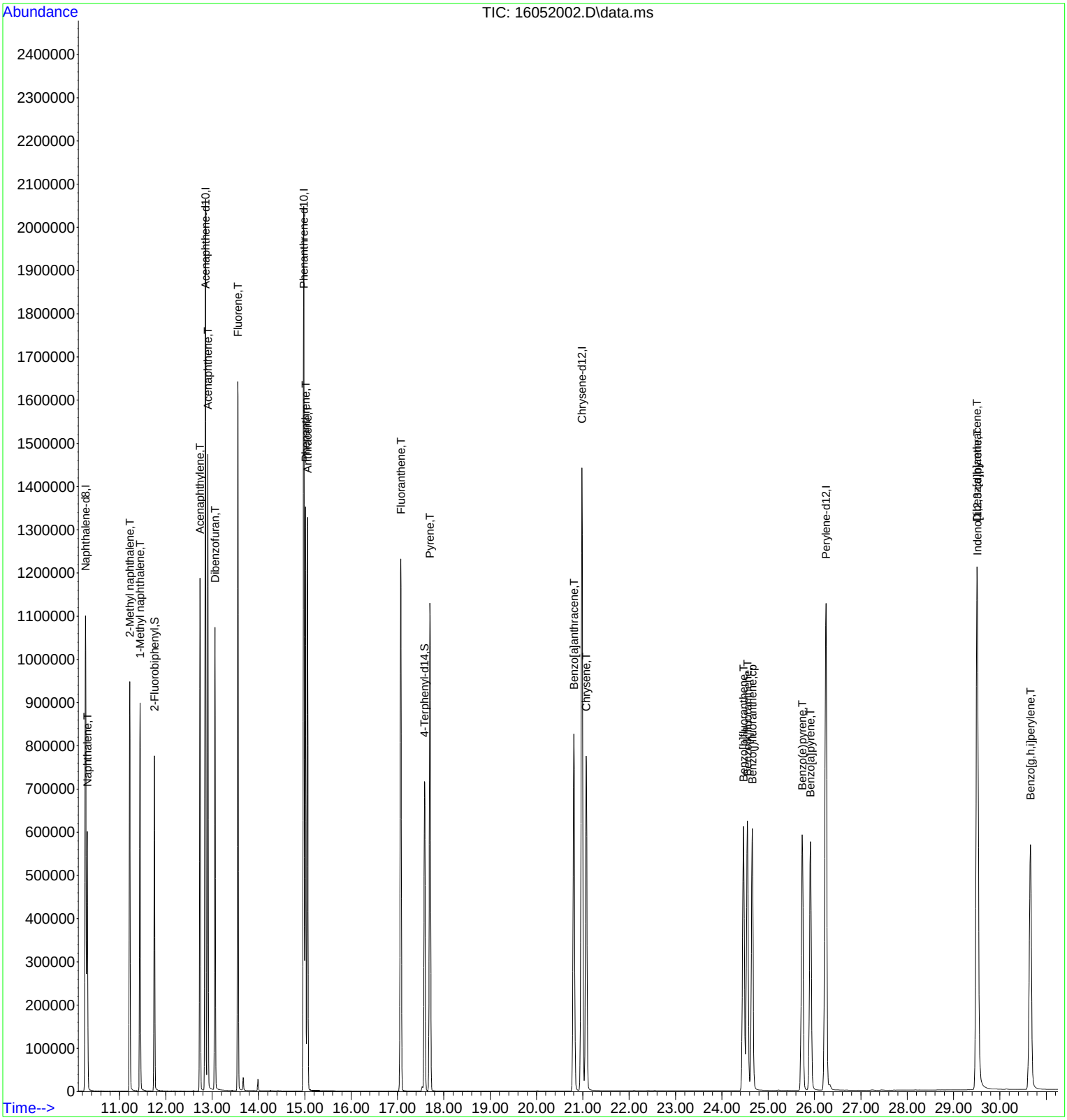
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.266	136	1547153	4000.00	ug/kg	95
6) Acenaphthene-d10	12.856	164	1247032	4000.00	ug/kg	99
11) Phenanthrene-d10	14.976	188	2509434	4000.00	ug/kg	86
16) Chrysene-d12	20.981	240	2390872	4000.00	ug/kg	88
20) Perylene-d12	26.248	264	2231698	4000.00	ug/kg	90
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	709214	2058.82	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	51.47%		
17) 4-Terphenyl-d14	17.587	244	1015188	2006.09	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	50.15%#		
Target Compounds						Qvalue
2) Naphthalene	10.303	128	698696	2015.83	ug/kg	100
3) 2-Methyl naphthalene	11.221	142	572699	2125.48	ug/kg	99
4) 1-Methyl naphthalene	11.443	142	529187	2075.48	ug/kg	99
7) Acenaphthylene	12.738	152	1111364	2038.89	ug/kg	100
8) Acenaphthene	12.905	153	693530	2016.37	ug/kg	99
9) Dibenzofuran	13.062	168	1026850	1959.81	ug/kg	95
10) Fluorene	13.558	166	903846	1901.21	ug/kg	99
12) Phenanthrene	15.014	178	1287796	1865.07	ug/kg	100
13) Anthracene	15.058	178	1302404	1864.10	ug/kg	100
14) Fluoranthene	17.071	202	1369440	2080.66	ug/kg	100
15) Pyrene	17.700	202	1356149	2097.12	ug/kg	99
18) Benzo[a]anthracene	20.806	228	1269123	2148.43	ug/kg	100
19) Chrysene	21.069	228	1164874	2131.85	ug/kg	100
21) Benzo[b]fluoranthene	24.468	252	1227085	2148.07	ug/kg	100
22) Benzo[k]fluoranthene	24.549	252	1117252	2157.59	ug/kg	99
23) Benzo(j)fluoranthene	24.659	252	1061744	2150.47	ug/kg	100
24) Benzo(e)pyrene	25.735	252	1146281	2125.69	ug/kg	100
25) Benzo[a]pyrene	25.911	252	1132855	2116.99	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.523	276	1395443	2133.05	ug/kg	98
27) Dibenz[a,h]anthracene	29.508	278	1170086	2153.50	ug/kg	99
28) Benzo[g,h,i]perylene	30.658	276	1203641	2131.86	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052002.D
Acq On : 20 May 2016 9:14 am
Operator :
Sample : ICV-160520
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

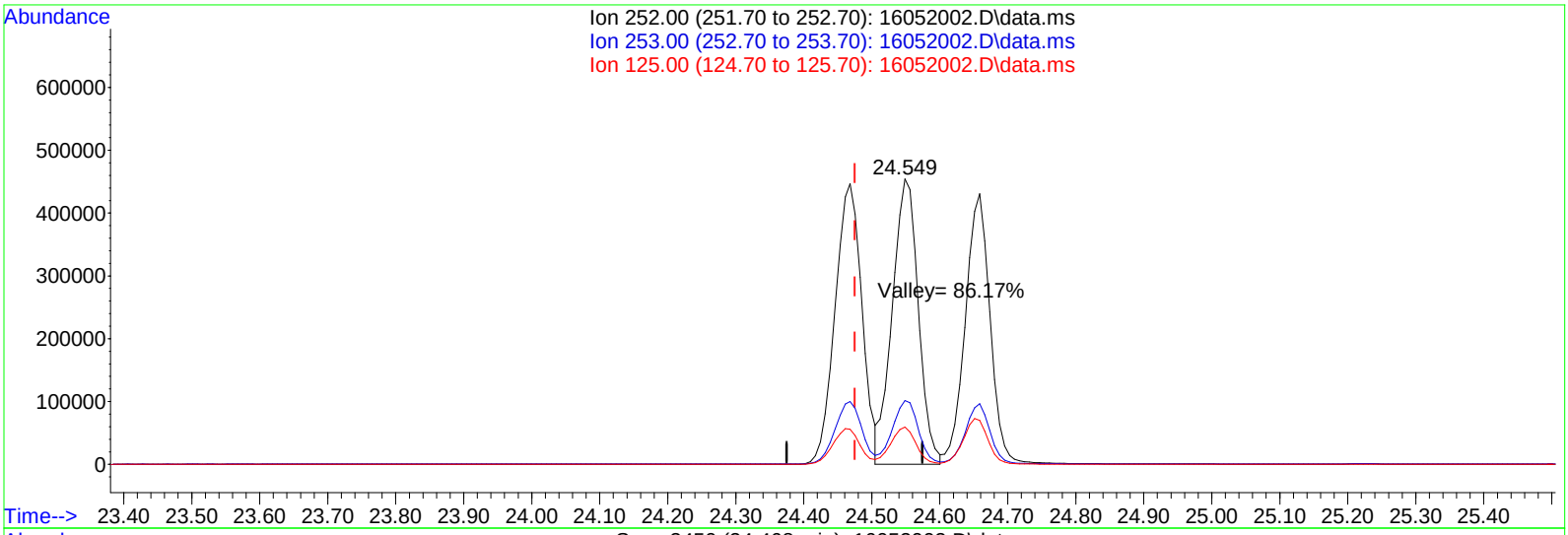
Quant Time: May 20 13:07:10 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

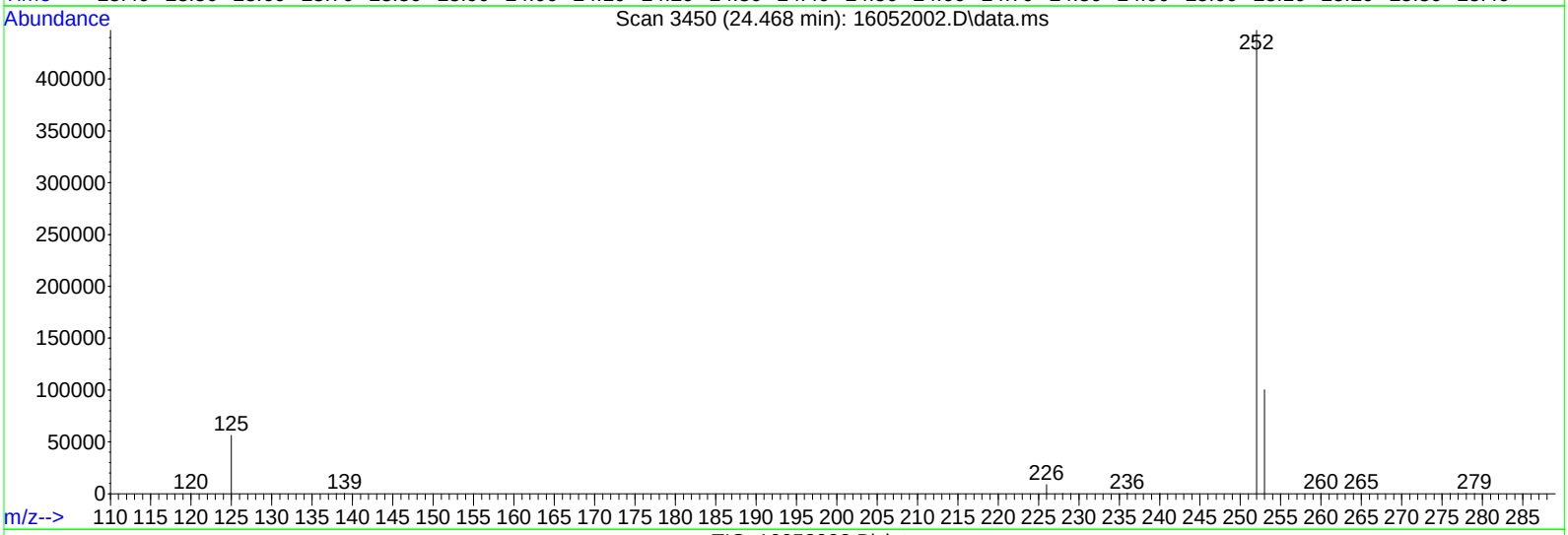


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052002.D
Acq On : 20 May 2016 9:14 am
Operator :
Sample : ICV-160520
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 20 12:29:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052002.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.468min (-0.007) 2148.07ug/kg

response 1227085

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.27
125.00	12.20	12.52
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052003.D
Acq On : 20 May 2016 9:50 am
Operator :
Sample : LCS-75192
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 20 12:29:34 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

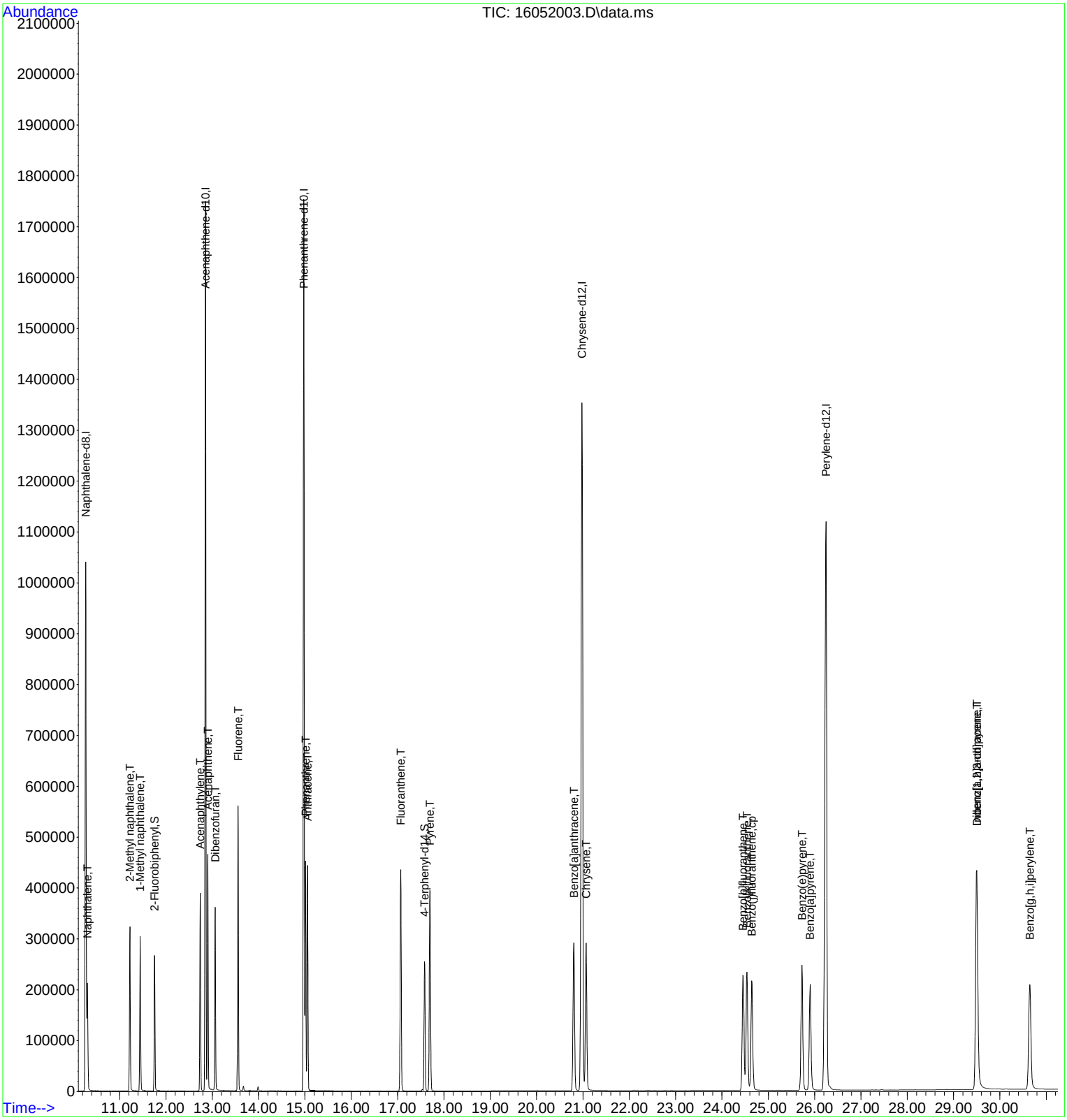
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1456833	4000.00	ug/kg	89
6) Acenaphthene-d10	12.856	164	1082331	4000.00	ug/kg	86
11) Phenanthrene-d10	14.974	188	2157034	4000.00	ug/kg	74
16) Chrysene-d12	20.980	240	2313733	4000.00	ug/kg	85
20) Perylene-d12	26.247	264	2219862	4000.00	ug/kg	89
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	242326	747.07	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.68%#			
17) 4-Terphenyl-d14	17.582	244	347948	710.49	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 17.76%#			
Target Compounds						Qvalue
2) Naphthalene	10.304	128	238989	732.26	ug/kg	100
3) 2-Methyl naphthalene	11.222	142	193674	763.35	ug/kg	99
4) 1-Methyl naphthalene	11.444	142	178170	742.11	ug/kg	100
7) Acenaphthylene	12.739	152	361127	763.33	ug/kg	99
8) Acenaphthene	12.905	153	224499	752.03	ug/kg	99
9) Dibenzofuran	13.063	168	339139	745.77	ug/kg	100
10) Fluorene	13.554	166	295103	715.20	ug/kg	99
12) Phenanthrene	15.012	178	428789	722.46	ug/kg	98
13) Anthracene	15.055	178	431671	718.78	ug/kg	98
14) Fluoranthene	17.067	202	475943	810.90	ug/kg	99
15) Pyrene	17.696	202	468157	816.33	ug/kg	98
18) Benzo[a]anthracene	20.804	228	446866	755.21	ug/kg	99
19) Chrysene	21.068	228	413535	756.51	ug/kg	99
21) Benzo[b]fluoranthene	24.452	252	442861	757.72	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	404292	767.64	ug/kg	99
23) Benzo(j)fluoranthene	24.642	252	392018	774.23	ug/kg	99
24) Benzo(e)pyrene	25.727	252	457025	827.84	ug/kg	99
25) Benzo[a]pyrene	25.902	252	402355	739.07	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.506	276	517001	771.01	ug/kg	100
27) Dibenz[a,h]anthracene	29.492	278	430909	771.19	ug/kg	99
28) Benzo[g,h,i]perylene	30.649	276	440888	762.35	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052003.D
Acq On : 20 May 2016 9:50 am
Operator :
Sample : LCS-75192
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 20 12:29:34 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052004.D
Acq On : 20 May 2016 10:28 am
Operator :
Sample : MB-75192
Misc : MBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 20 12:29:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1447548	4000.00	ug/kg	89
6) Acenaphthene-d10	12.852	164	1094738	4000.00	ug/kg	87
11) Phenanthrene-d10	14.975	188	2117575	4000.00	ug/kg	72
16) Chrysene-d12	20.980	240	2240420	4000.00	ug/kg	83
20) Perylene-d12	26.247	264	2132137	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.753	172	243872	756.66	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.92%#			
17) 4-Terphenyl-d14	17.583	244	344106	725.64	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 18.14%#			

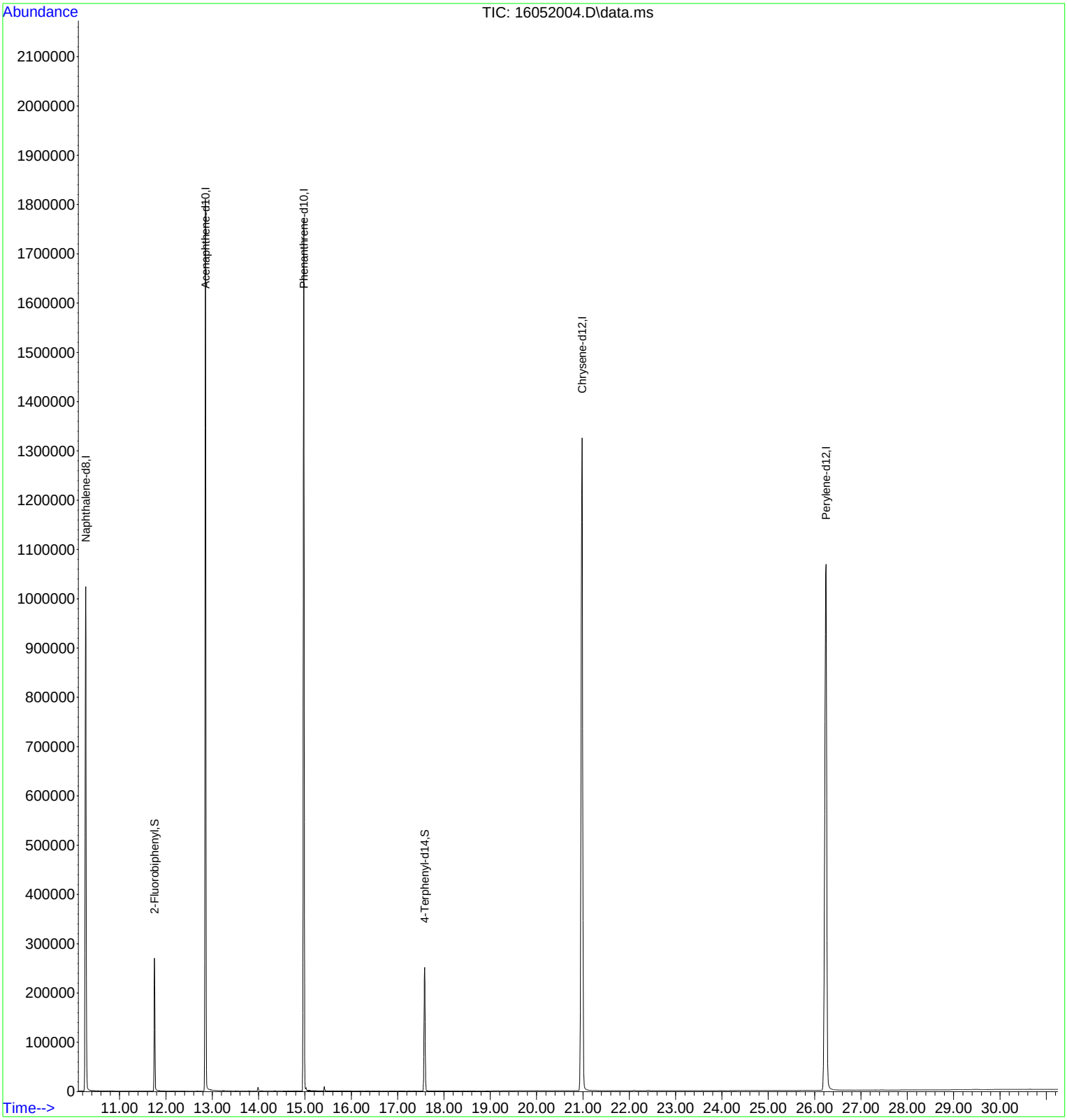
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052004.D
Acq On : 20 May 2016 10:28 am
Operator :
Sample : MB-75192
Misc : MBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 20 12:29:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052008.D
Acq On : 20 May 2016 12:57 pm
Operator :
Sample : 1605097-16A
Misc : SAMP
ALS Vial : 8 Sample Multiplier: 10

Quant Time: May 23 10:00:23 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1529151	4000.00	ug/kg	94
6) Acenaphthene-d10	12.856	164	1208864	4000.00	ug/kg	96
11) Phenanthrene-d10	14.976	188	2247211	4000.00	ug/kg	77
16) Chrysene-d12	20.980	240	2304052	4000.00	ug/kg	85
20) Perylene-d12	26.247	264	2176988	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	28705	84.31	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.11%#			
17) 4-Terphenyl-d14	17.584	244	35729	73.26	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.83%#			

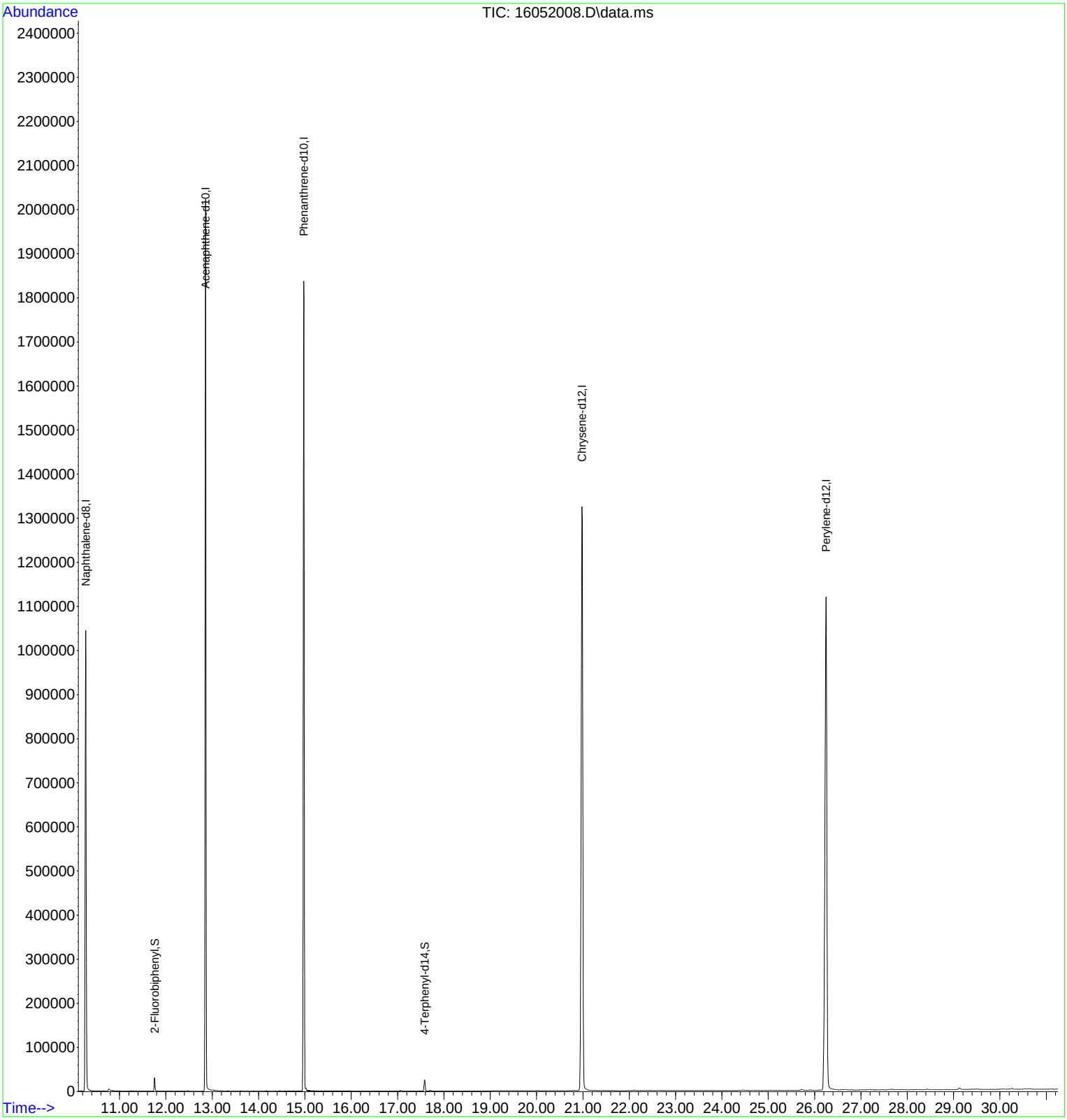
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052008.D
Acq On : 20 May 2016 12:57 pm
Operator :
Sample : 1605097-16A
Misc : SAMP
ALS Vial : 8 Sample Multiplier: 10

Quant Time: May 23 10:00:23 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052009.D
Acq On : 20 May 2016 1:34 pm
Operator :
Sample : 1605097-17A
Misc : SAMP
ALS Vial : 9 Sample Multiplier: 10

Quant Time: May 23 10:00:27 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1532868	4000.00	ug/kg	94
6) Acenaphthene-d10	12.857	164	1240781	4000.00	ug/kg	99
11) Phenanthrene-d10	14.978	188	2302231	4000.00	ug/kg	79
16) Chrysene-d12	20.981	240	2310433	4000.00	ug/kg	85
20) Perylene-d12	26.247	264	2175494	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	29535	86.54	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.16%#			
17) 4-Terphenyl-d14	17.584	244	38150	78.01	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.95%#			

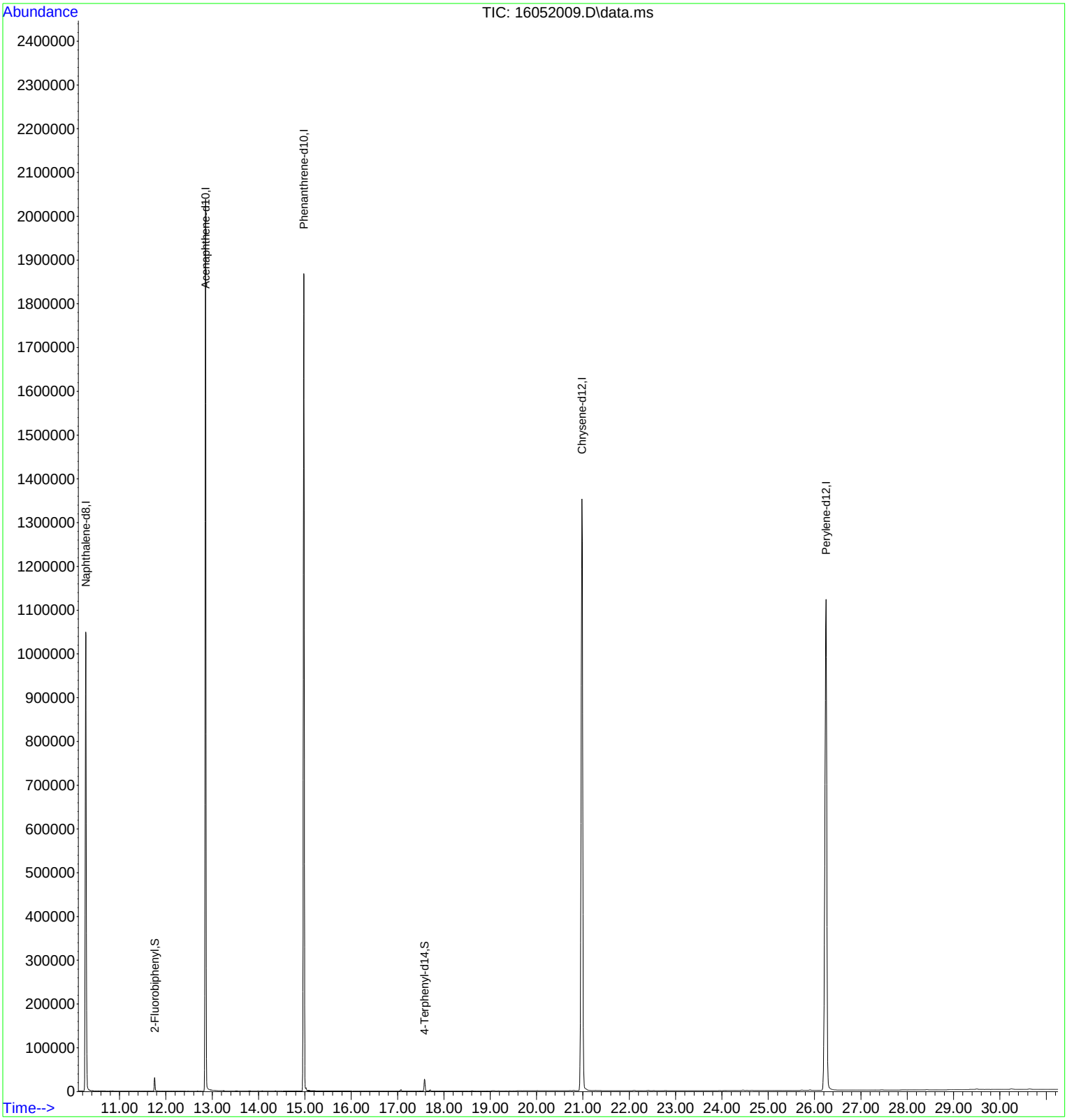
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052009.D
Acq On : 20 May 2016 1:34 pm
Operator :
Sample : 1605097-17A
Misc : SAMP
ALS Vial : 9 Sample Multiplier: 10

Quant Time: May 23 10:00:27 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052010.D
Acq On : 20 May 2016 2:11 pm
Operator :
Sample : 1605097-18A
Misc : SAMP
ALS Vial : 10 Sample Multiplier: 10

Quant Time: May 23 10:00:30 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1557208	4000.00	ug/kg	96
6) Acenaphthene-d10	12.857	164	1231583	4000.00	ug/kg	98
11) Phenanthrene-d10	14.977	188	2261006	4000.00	ug/kg	77
16) Chrysene-d12	20.980	240	2296115	4000.00	ug/kg	85
20) Perylene-d12	26.247	264	2187109	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	29806	85.97	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.15%#			
17) 4-Terphenyl-d14	17.583	244	36737	75.59	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.89%#			

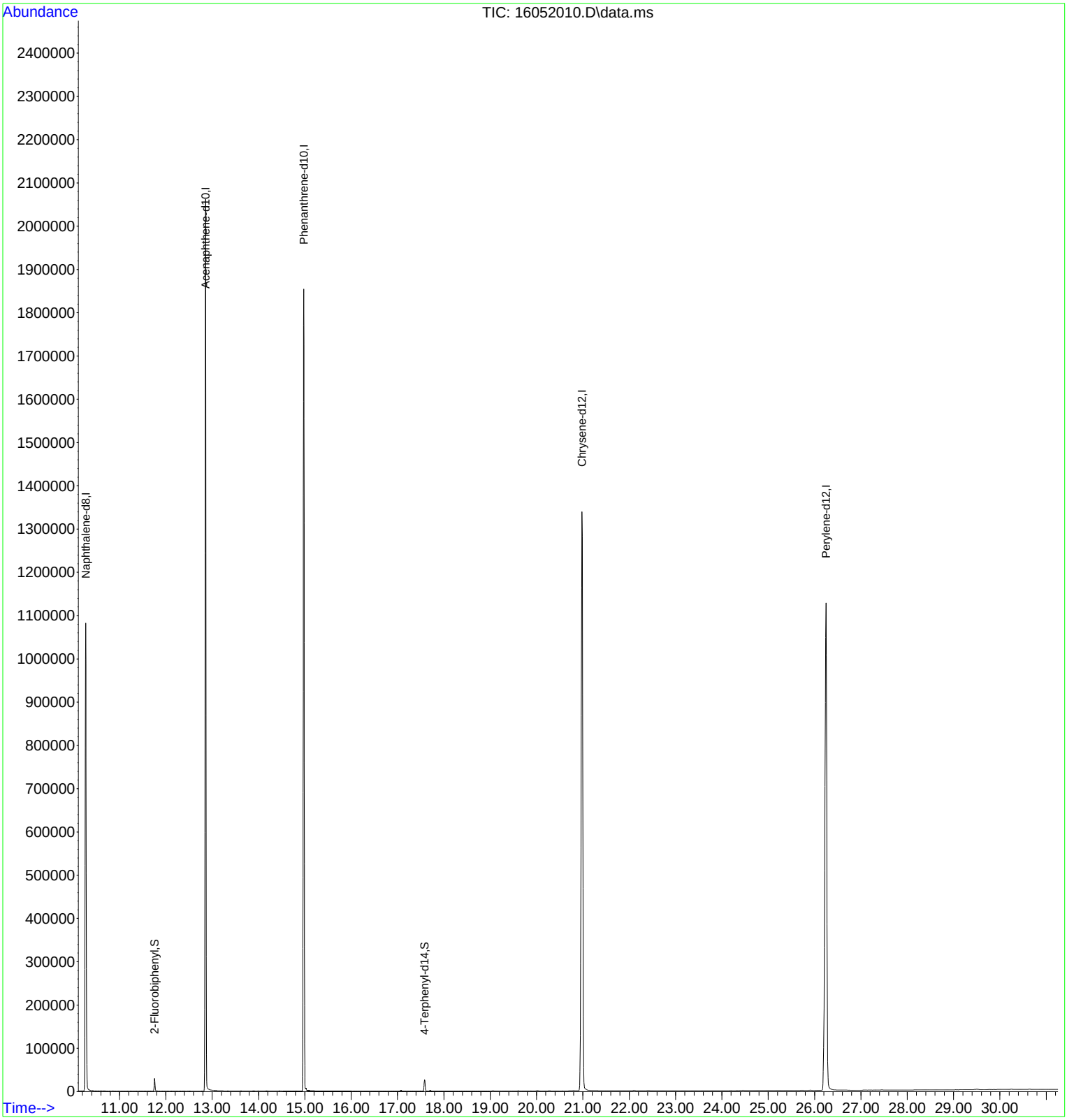
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052010.D
Acq On : 20 May 2016 2:11 pm
Operator :
Sample : 1605097-18A
Misc : SAMP
ALS Vial : 10 Sample Multiplier: 10

Quant Time: May 23 10:00:30 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052011.D
Acq On : 20 May 2016 2:48 pm
Operator :
Sample : 1605097-19A
Misc : SAMP
ALS Vial : 11 Sample Multiplier: 10

Quant Time: May 23 10:00:33 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1527565	4000.00	ug/kg	94
6) Acenaphthene-d10	12.856	164	1219179	4000.00	ug/kg	97
11) Phenanthrene-d10	14.978	188	2223859	4000.00	ug/kg	76
16) Chrysene-d12	20.981	240	2312605	4000.00	ug/kg	85
20) Perylene-d12	26.247	264	2148429	4000.00	ug/kg	87

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	29719	87.38	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.18%#			
17) 4-Terphenyl-d14	17.587	244	36795	75.17	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.88%#			

Target Compounds						Qvalue
14) Fluoranthene	17.071	202	5154	6.31	ug/kg	98
15) Pyrene	17.700	202	4802	5.73	ug/kg	98
21) Benzo[b]fluoranthene	24.460	252	4204	5.63	ug/kg	97
23) Benzo(j)fluoranthene	24.651	252	1771	0.39	ug/kg	88

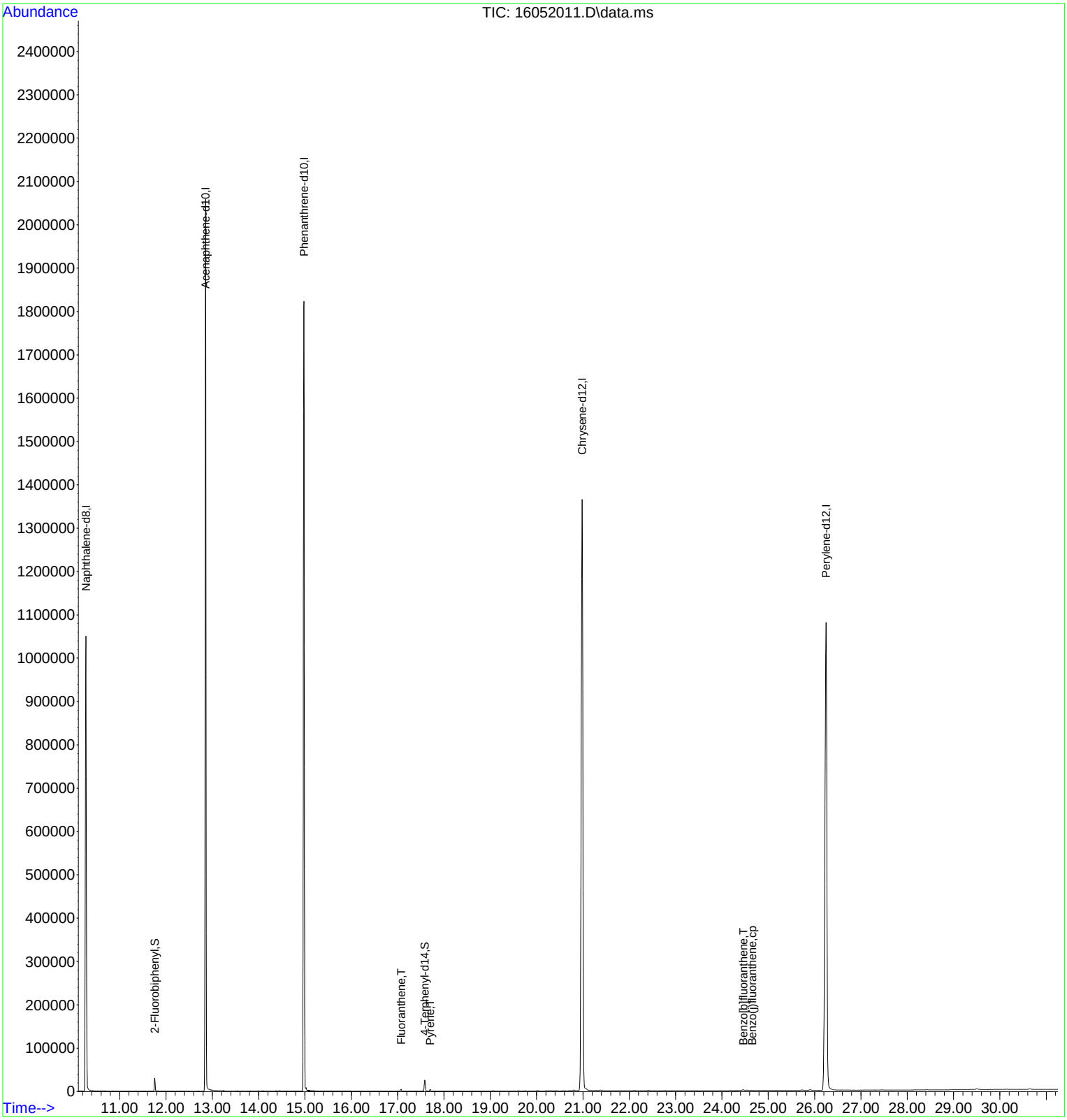
CONFIRMED
By Sherri Herschmann at 9:23:09 AM, 5/24/2016

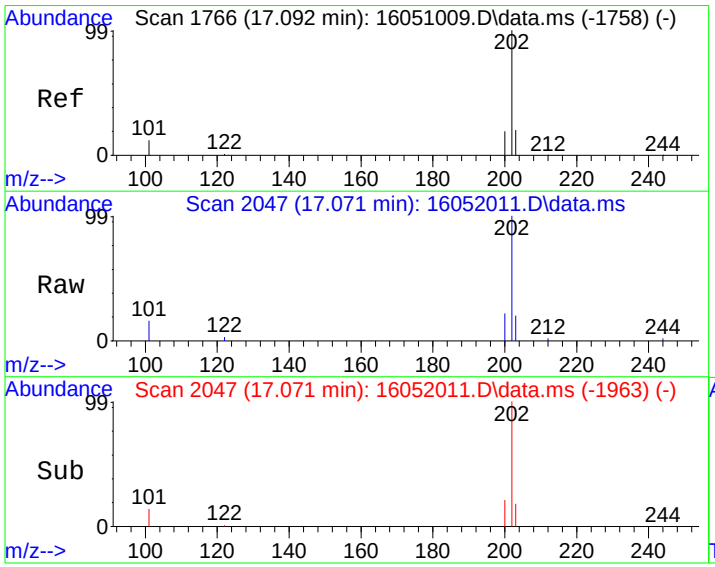
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052011.D
Acq On : 20 May 2016 2:48 pm
Operator :
Sample : 1605097-19A
Misc : SAMP
ALS Vial : 11 Sample Multiplier: 10

Quant Time: May 23 10:00:33 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

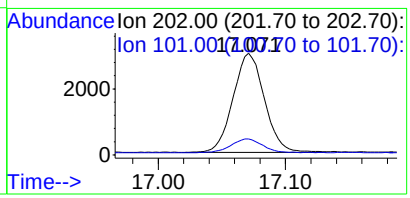


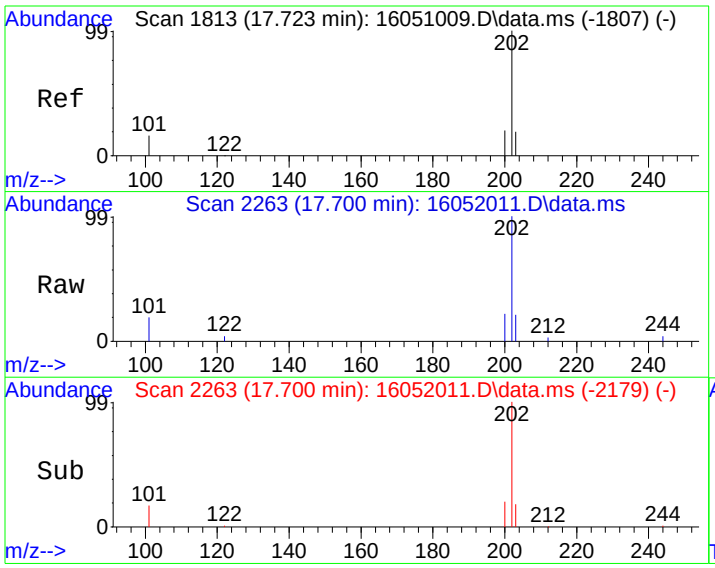


#14
Fluoranthene
Concen: 6.31 ug/kg
RT: 17.071 min Scan# 2047
Delta R.T. -0.005 min
Lab File: 16052011.D
Acq: 20 May 2016 2:48 pm

Tgt Ion:202 Resp: 5154

Ion	Ratio	Lower	Upper
202	100		
101	13.7	0.0	34.4

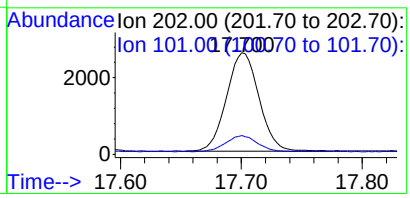


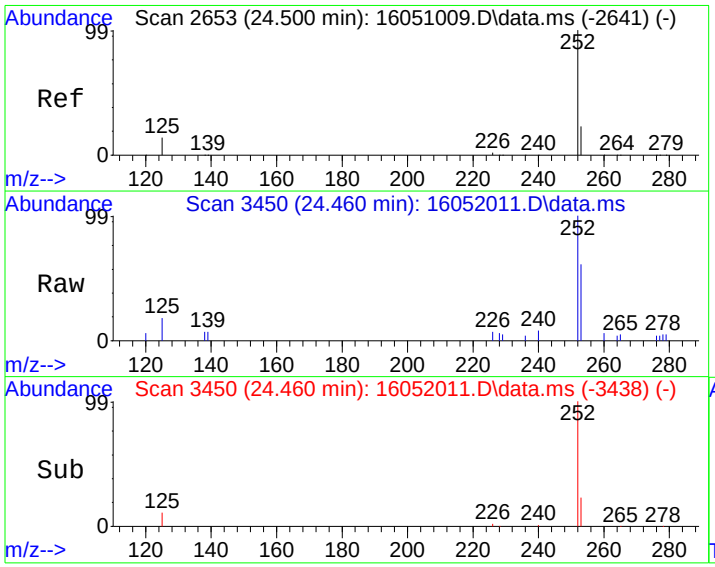


#15
Pyrene
Concen: 5.73 ug/kg
RT: 17.700 min Scan# 2263
Delta R.T. -0.006 min
Lab File: 16052011.D
Acq: 20 May 2016 2:48 pm

Tgt Ion:202 Resp: 4802

Ion	Ratio	Lower	Upper
202	100		
101	16.5	0.0	37.3

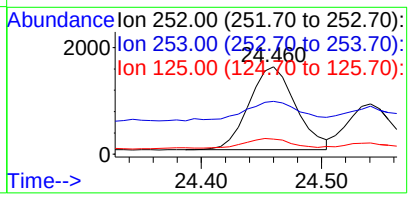


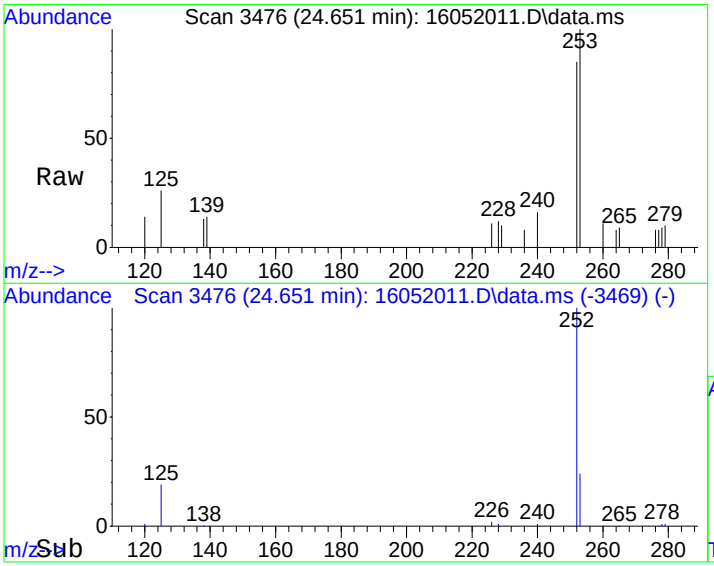


#21
Benzo[b]fluoranthene
Concen: 5.63 ug/kg
RT: 24.460 min Scan# 3450
Delta R.T. -0.015 min
Lab File: 16052011.D
Acq: 20 May 2016 2:48 pm

Tgt Ion:252 Resp: 4204

Ion	Ratio	Lower	Upper
252	100		
253	23.5	2.3	42.3
125	10.5	0.0	32.2

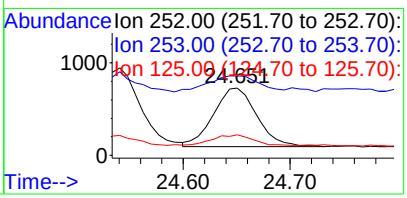




#23
Benzo(j)fluoranthene
Concen: 0.39 ug/kg
RT: 24.651 min Scan# 3476
Delta R.T. -0.014 min
Lab File: 16052011.D
Acq: 20 May 2016 2:48 pm

Tgt Ion:252 Resp: 1771

Ion	Ratio	Lower	Upper
252	100		
253	32.2	2.2	42.2
125	17.2	0.0	37.3



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052012.D
Acq On : 20 May 2016 3:24 pm
Operator :
Sample : 1605097-20A
Misc : SAMP
ALS Vial : 12 Sample Multiplier: 10

Quant Time: May 23 10:00:38 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1578976	4000.00	ug/kg	97
6) Acenaphthene-d10	12.856	164	1273425	4000.00	ug/kg	102
11) Phenanthrene-d10	14.978	188	2371963	4000.00	ug/kg	81
16) Chrysene-d12	20.987	240	2275978	4000.00	ug/kg	84
20) Perylene-d12	26.247	264	2157821	4000.00	ug/kg	87

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	30490	86.73	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.17%#			
17) 4-Terphenyl-d14	17.587	244	37200	77.22	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.93%#			

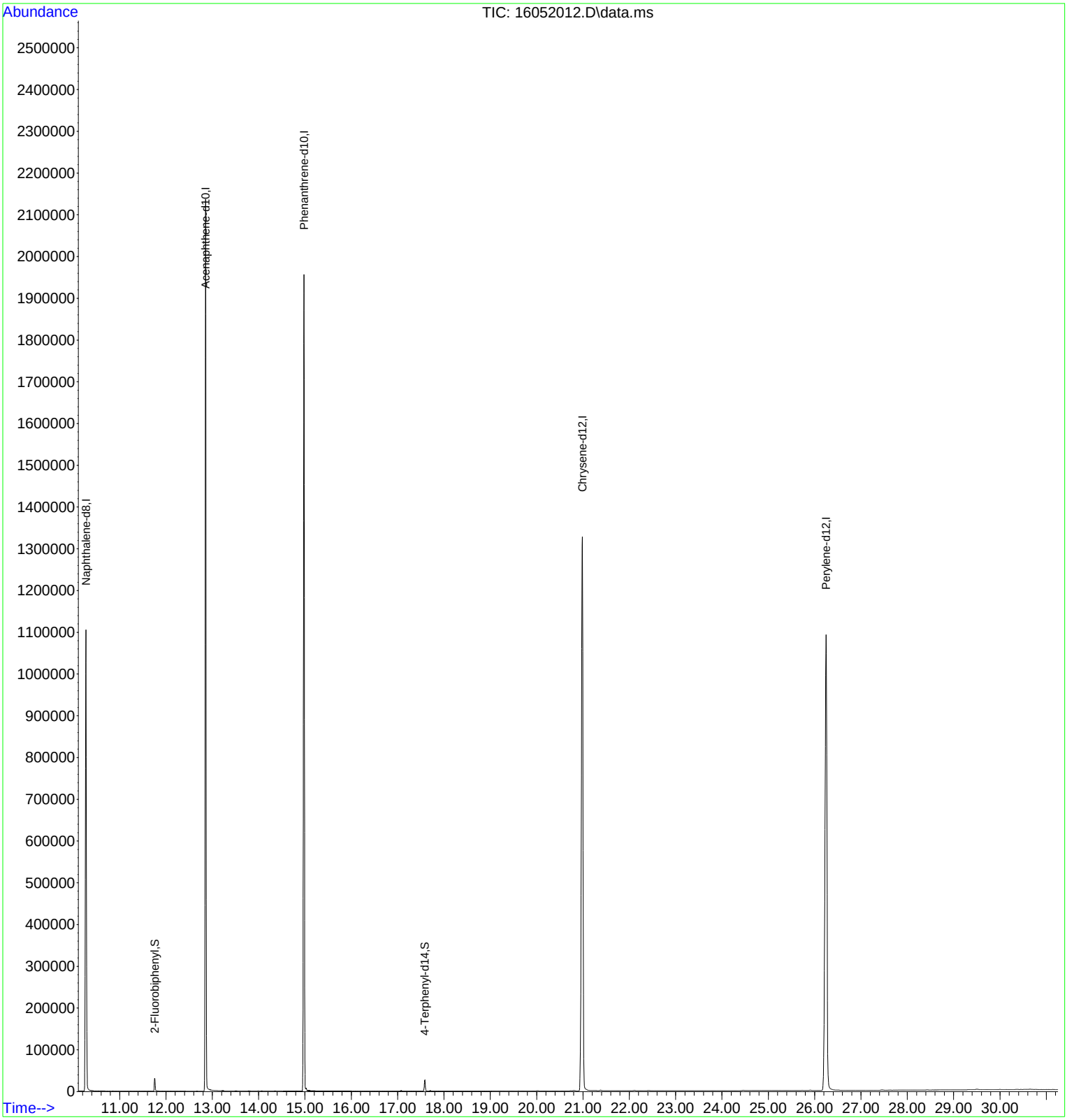
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052012.D
Acq On : 20 May 2016 3:24 pm
Operator :
Sample : 1605097-20A
Misc : SAMP
ALS Vial : 12 Sample Multiplier: 10

Quant Time: May 23 10:00:38 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052013.D
Acq On : 20 May 2016 4:02 pm
Operator :
Sample : 1605097-26A
Misc : SAMP
ALS Vial : 13 Sample Multiplier: 10

Quant Time: May 23 10:00:41 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.273	136	1558399	4000.00	ug/kg	96
6) Acenaphthene-d10	12.856	164	1253925	4000.00	ug/kg	100
11) Phenanthrene-d10	14.978	188	2261010	4000.00	ug/kg	77
16) Chrysene-d12	20.988	240	2287166	4000.00	ug/kg	84
20) Perylene-d12	26.247	264	2148436	4000.00	ug/kg	87

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	28870	83.20	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.08%#			
17) 4-Terphenyl-d14	17.587	244	35820	73.99	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.85%#			

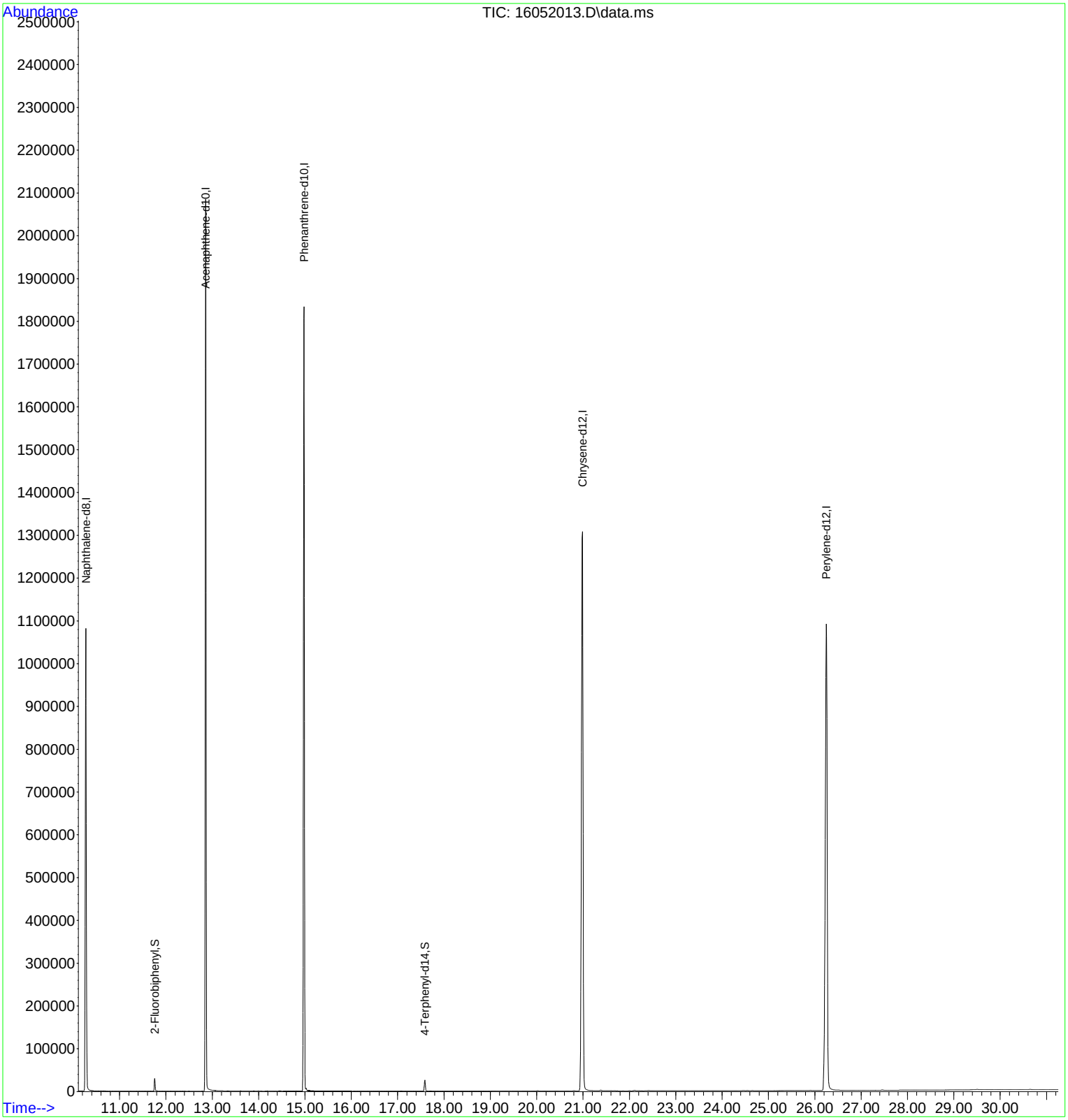
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052013.D
Acq On : 20 May 2016 4:02 pm
Operator :
Sample : 1605097-26A
Misc : SAMP
ALS Vial : 13 Sample Multiplier: 10

Quant Time: May 23 10:00:41 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052014.D
Acq On : 20 May 2016 4:38 pm
Operator :
Sample : 1605097-44A
Misc : SAMP
ALS Vial : 14 Sample Multiplier: 10

Quant Time: May 23 10:00:44 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1557884	4000.00	ug/kg	96
6) Acenaphthene-d10	12.857	164	1272065	4000.00	ug/kg	101
11) Phenanthrene-d10	14.979	188	2318272	4000.00	ug/kg	79
16) Chrysene-d12	20.988	240	2235815	4000.00	ug/kg	82
20) Perylene-d12	26.247	264	2114483	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	30414	87.68	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.19%#			
17) 4-Terphenyl-d14	17.589	244	36497	77.12	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.93%#			

Target Compounds						Qvalue
12) Phenanthrene	15.015	178	4268	6.69	ug/kg	97
14) Fluoranthene	17.071	202	7998	10.39	ug/kg	97
15) Pyrene	17.703	202	6516	8.15	ug/kg	95
18) Benzo[a]anthracene	20.805	228	3993	5.08	ug/kg	99
21) Benzo[b]fluoranthene	24.460	252	3966	5.33	ug/kg	98
23) Benzo(j)fluoranthene	24.650	252	1624	0.15	ug/kg	97

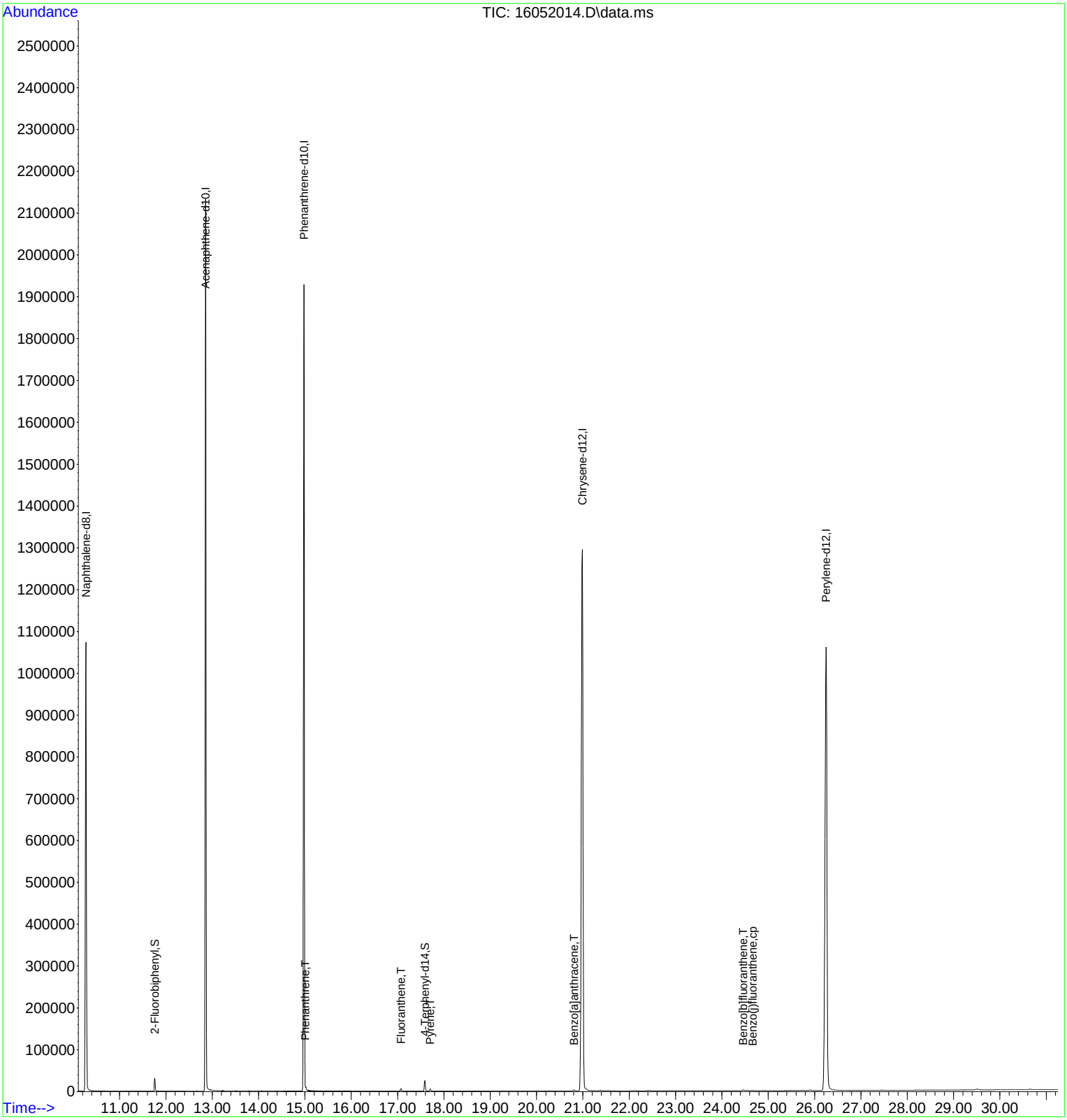
CONFIRMED
By Sherri Herschmann at 9:23:37 AM, 5/24/2016

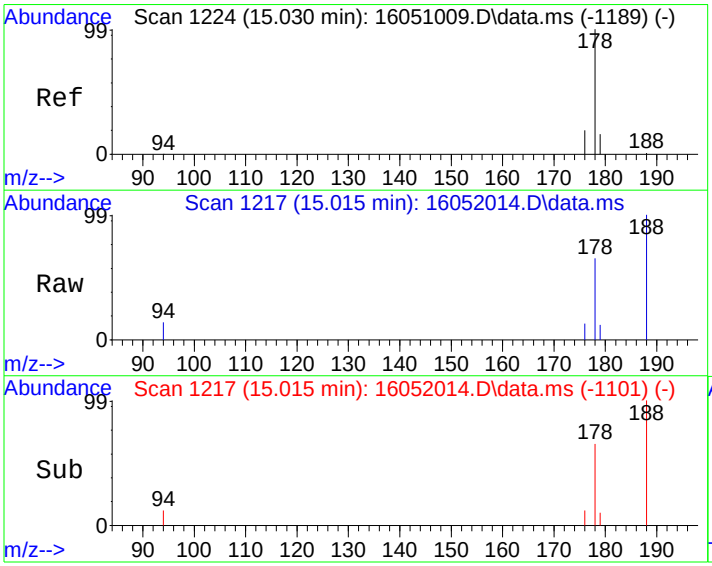
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052014.D
Acq On : 20 May 2016 4:38 pm
Operator :
Sample : 1605097-44A
Misc : SAMP
ALS Vial : 14 Sample Multiplier: 10

Quant Time: May 23 10:00:44 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

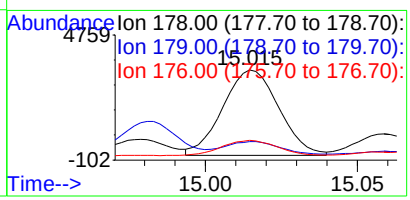


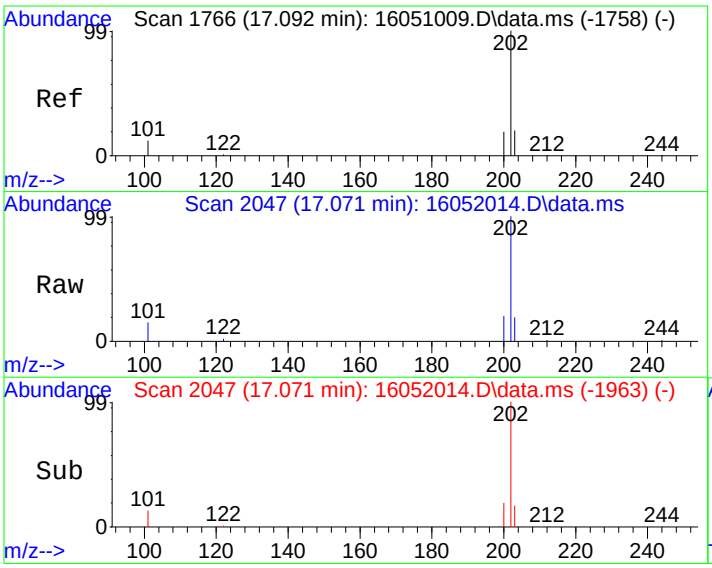


#12
Phenanthrene
Concen: 6.69 ug/kg
RT: 15.015 min Scan# 1217
Delta R.T. -0.005 min
Lab File: 16052014.D
Acq: 20 May 2016 4:38 pm

Tgt Ion:178 Resp: 4268

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	18.1	0.0	39.0

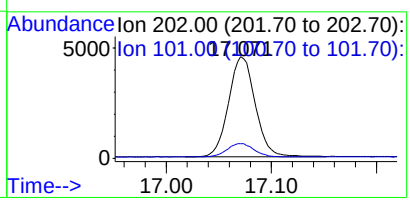


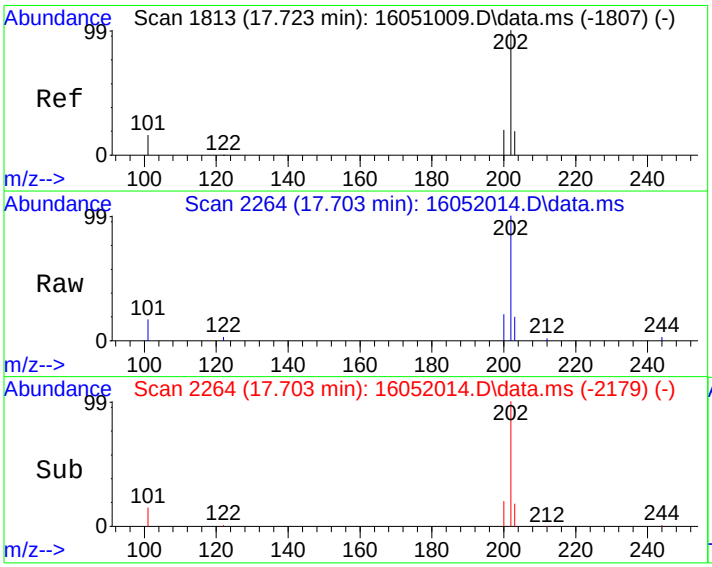


#14
Fluoranthene
Concen: 10.39 ug/kg
RT: 17.071 min Scan# 2047
Delta R.T. -0.005 min
Lab File: 16052014.D
Acq: 20 May 2016 4:38 pm

Tgt Ion:202 Resp: 7998

Ion	Ratio	Lower	Upper
202	100		
101	13.3	0.0	34.4

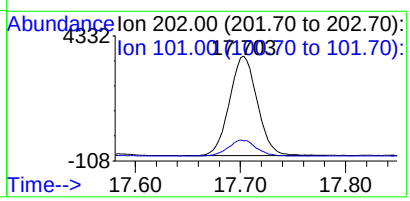


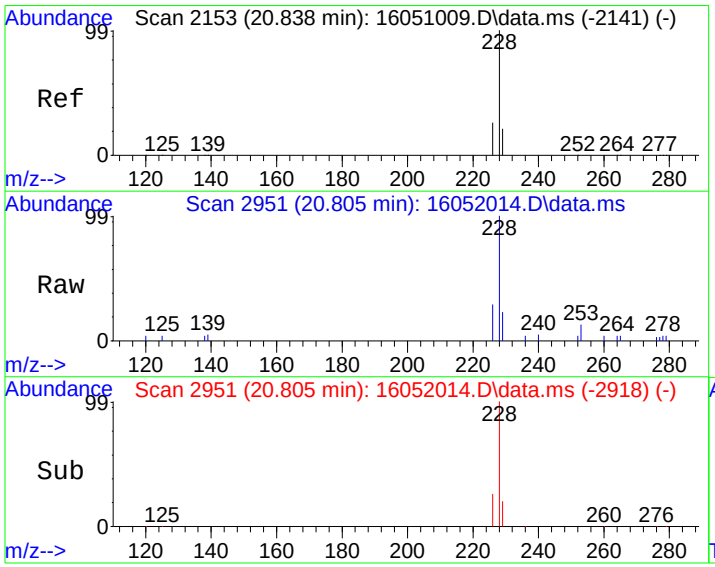


#15
Pyrene
Concen: 8.15 ug/kg
RT: 17.703 min Scan# 2264
Delta R.T. -0.003 min
Lab File: 16052014.D
Acq: 20 May 2016 4:38 pm

Tgt Ion:202 Resp: 6516

Ion	Ratio	Lower	Upper
202	100		
101	15.3	0.0	37.3

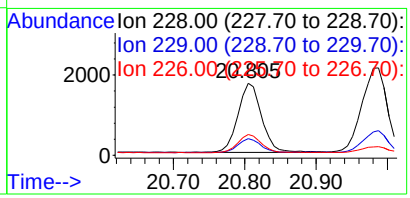


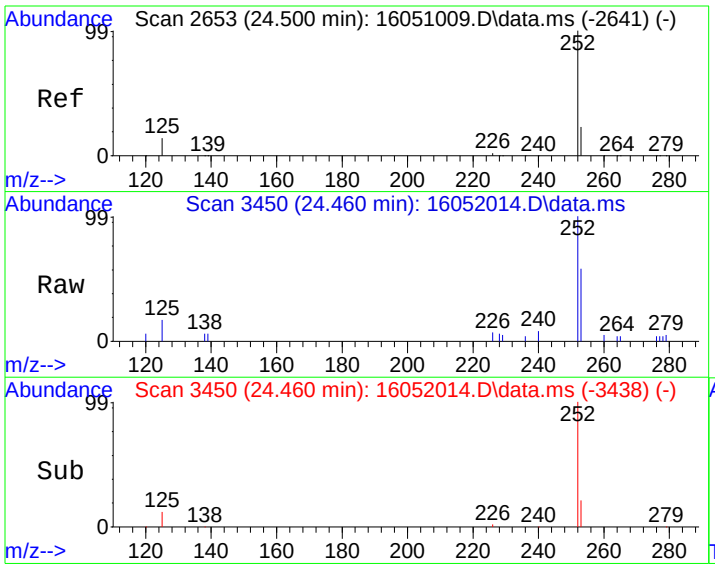


#18
Benzo[a]anthracene
Concen: 5.08 ug/kg
RT: 20.805 min Scan# 2951
Delta R.T. -0.007 min
Lab File: 16052014.D
Acq: 20 May 2016 4:38 pm

Tgt Ion:228 Resp: 3993

Ion	Ratio	Lower	Upper
228	100		
229	20.0	0.3	40.3
226	26.4	5.7	45.7

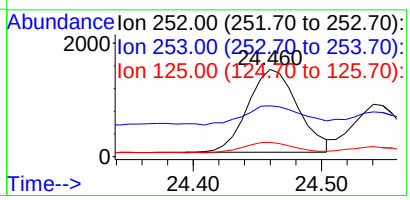


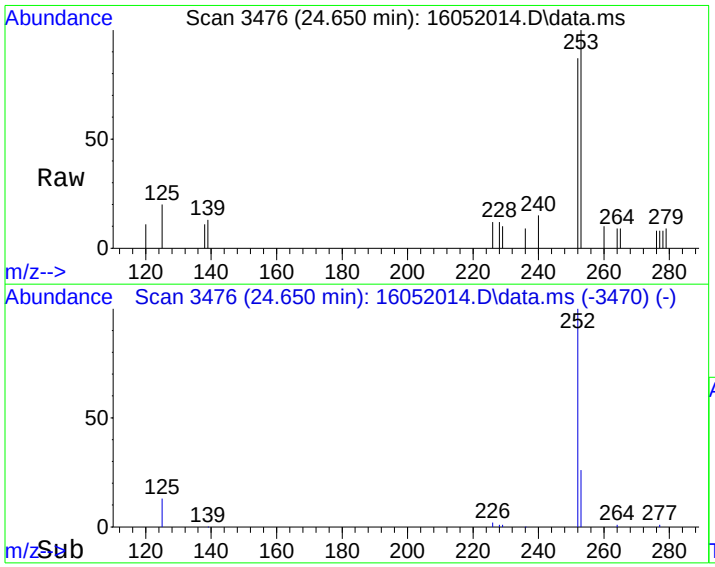


#21
Benzo[b]fluoranthene
Concen: 5.33 ug/kg
RT: 24.460 min Scan# 3450
Delta R.T. -0.015 min
Lab File: 16052014.D
Acq: 20 May 2016 4:38 pm

Tgt Ion:252 Resp: 3966

Ion	Ratio	Lower	Upper
252	100		
253	21.3	2.3	42.3
125	12.8	0.0	32.2

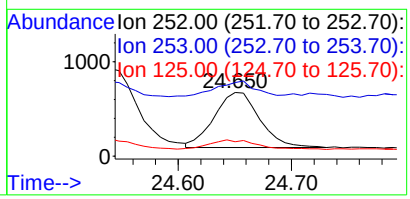




#23
Benzo(j)fluoranthene
Concen: 0.15 ug/kg
RT: 24.650 min Scan# 3476
Delta R.T. -0.015 min
Lab File: 16052014.D
Acq: 20 May 2016 4:38 pm

Tgt Ion:252 Resp: 1624

Ion	Ratio	Lower	Upper
252	100		
253	24.3	2.2	42.2
125	17.9	0.0	37.3



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052015.D
Acq On : 20 May 2016 5:16 pm
Operator :
Sample : 1605097-45A
Misc : SAMP
ALS Vial : 15 Sample Multiplier: 10

Quant Time: May 23 10:00:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1592279	4000.00	ug/kg	98
6) Acenaphthene-d10	12.856	164	1276371	4000.00	ug/kg	102
11) Phenanthrene-d10	14.979	188	2314171	4000.00	ug/kg	79
16) Chrysene-d12	20.988	240	2327179	4000.00	ug/kg	86
20) Perylene-d12	26.254	264	2174267	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	31455	88.72	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.22%#			
17) 4-Terphenyl-d14	17.587	244	38424	78.01	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.95%#			

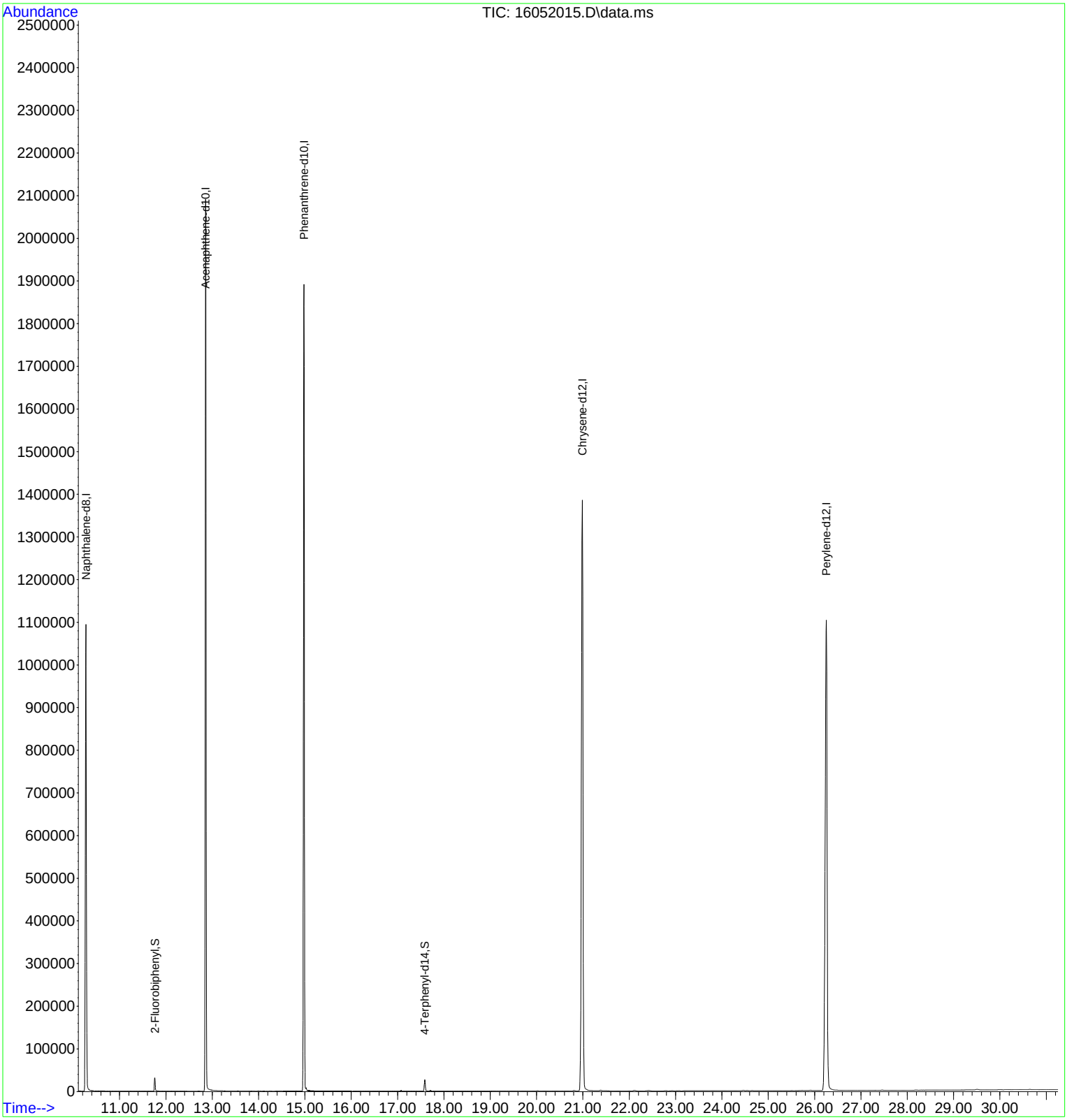
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052015.D
Acq On : 20 May 2016 5:16 pm
Operator :
Sample : 1605097-45A
Misc : SAMP
ALS Vial : 15 Sample Multiplier: 10

Quant Time: May 23 10:00:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052018.D
Acq On : 20 May 2016 7:07 pm
Operator :
Sample : ICV2-160520
Misc : ICV
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 23 09:59:20 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

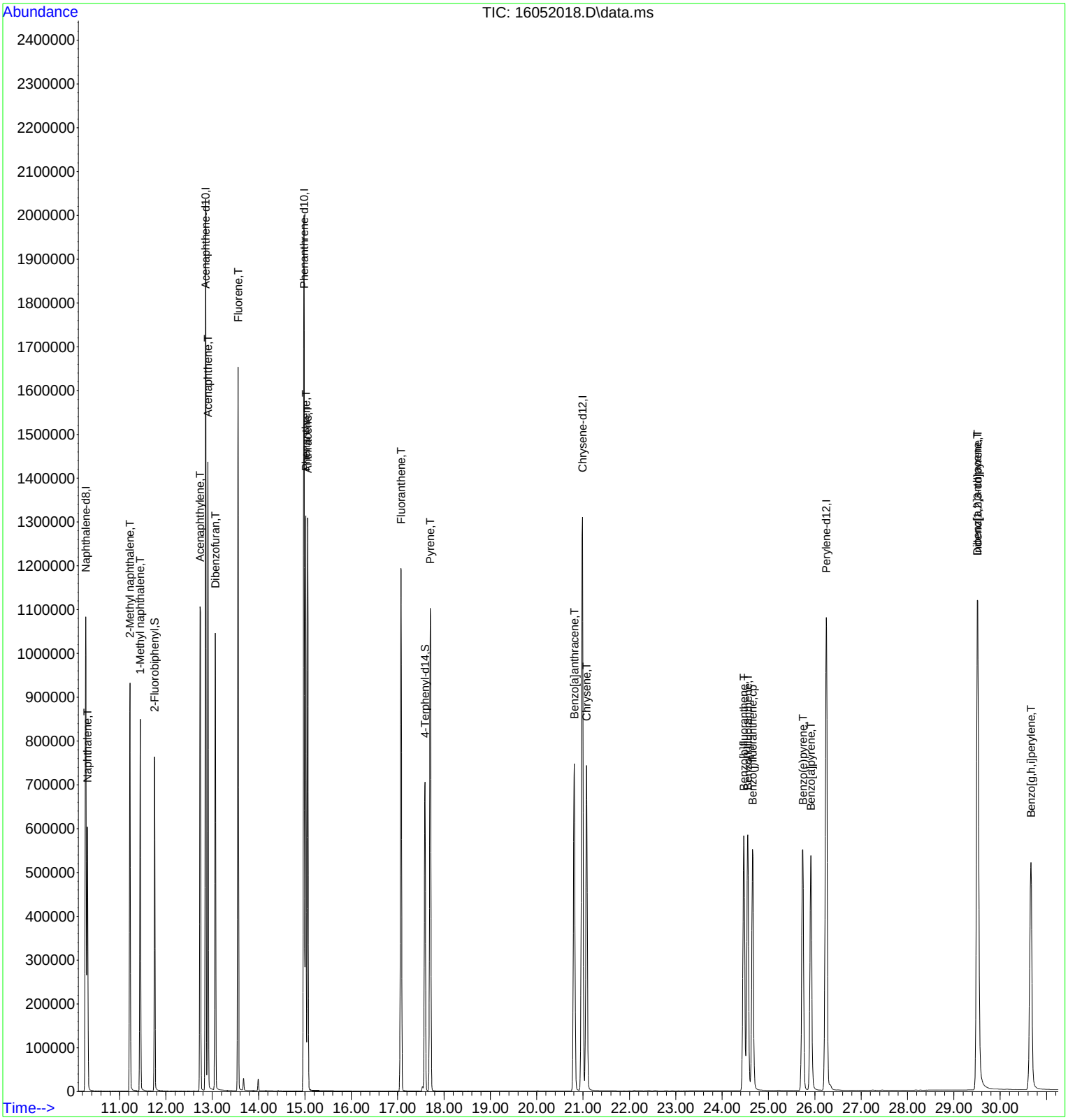
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1532151	4000.00	ug/kg	94
6) Acenaphthene-d10	12.857	164	1204470	4000.00	ug/kg	96
11) Phenanthrene-d10	14.979	188	2477706	4000.00	ug/kg	85
16) Chrysene-d12	20.988	240	2269640	4000.00	ug/kg	84
20) Perylene-d12	26.247	264	2105420	4000.00	ug/kg	85
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	688746	2018.98	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 50.47%			
17) 4-Terphenyl-d14	17.590	244	987579	2055.77	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 51.39%			
Target Compounds						Qvalue
2) Naphthalene	10.307	128	692924	2018.76	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	558282	2092.26	ug/kg	99
4) 1-Methyl naphthalene	11.446	142	511902	2027.34	ug/kg	100
7) Acenaphthylene	12.739	152	1073973	2039.92	ug/kg	100
8) Acenaphthene	12.906	153	671773	2022.13	ug/kg	98
9) Dibenzofuran	13.063	168	1000445	1976.89	ug/kg	89
10) Fluorene	13.559	166	890108	1938.47	ug/kg	100
12) Phenanthrene	15.017	178	1281253	1879.36	ug/kg	100
13) Anthracene	15.059	178	1273055	1845.43	ug/kg	100
14) Fluoranthene	17.071	202	1350402	2077.84	ug/kg	100
15) Pyrene	17.704	202	1324197	2072.72	ug/kg	99
18) Benzo[a]anthracene	20.812	228	1196044	2132.01	ug/kg	100
19) Chrysene	21.076	228	1105063	2130.33	ug/kg	100
21) Benzo[b]fluoranthene	24.467	252	1156713	2146.25	ug/kg	99
22) Benzo[k]fluoranthene	24.555	252	1038548	2124.80	ug/kg	100
23) Benzo(j)fluoranthene	24.658	252	982696	2107.83	ug/kg	100
24) Benzo(e)pyrene	25.742	252	1079577	2121.89	ug/kg	100
25) Benzo[a]pyrene	25.918	252	1065084	2109.47	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.522	276	1319070	2137.44	ug/kg	99
27) Dibenz[a,h]anthracene	29.507	278	1101978	2149.60	ug/kg	100
28) Benzo[g,h,i]perylene	30.664	276	1125638	2112.44	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052018.D
Acq On : 20 May 2016 7:07 pm
Operator :
Sample : ICV2-160520
Misc : ICV
ALS Vial : 18 Sample Multiplier: 1

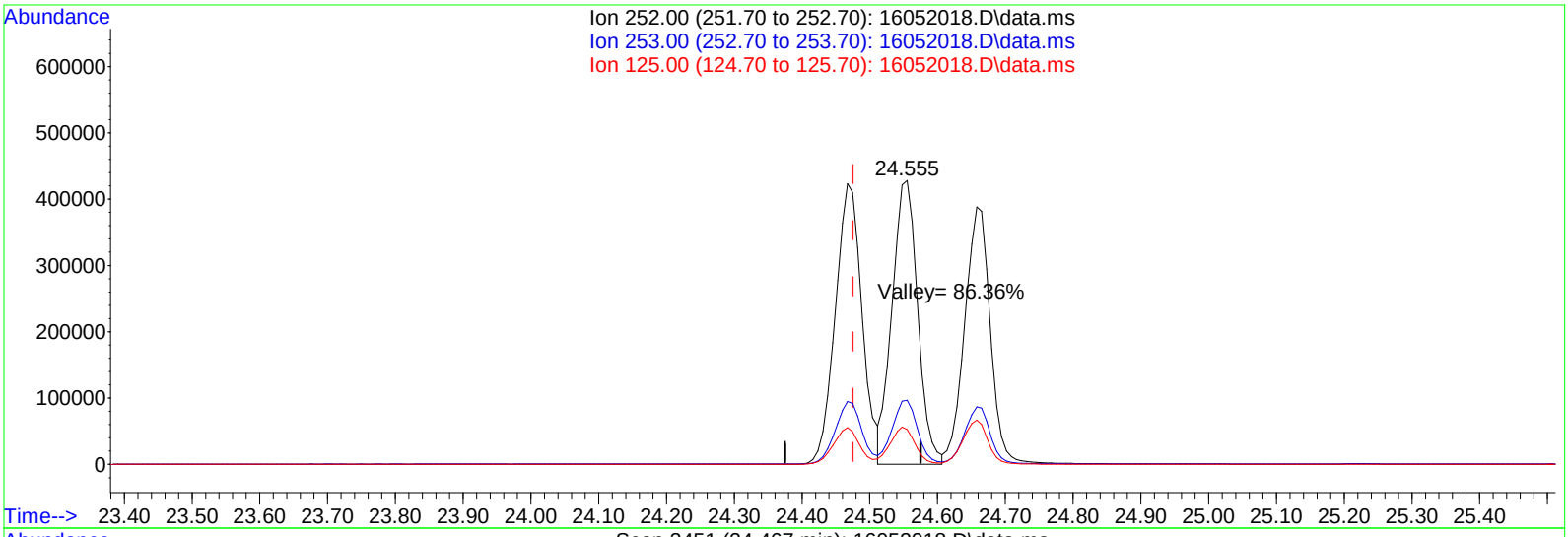
Quant Time: May 23 09:59:20 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

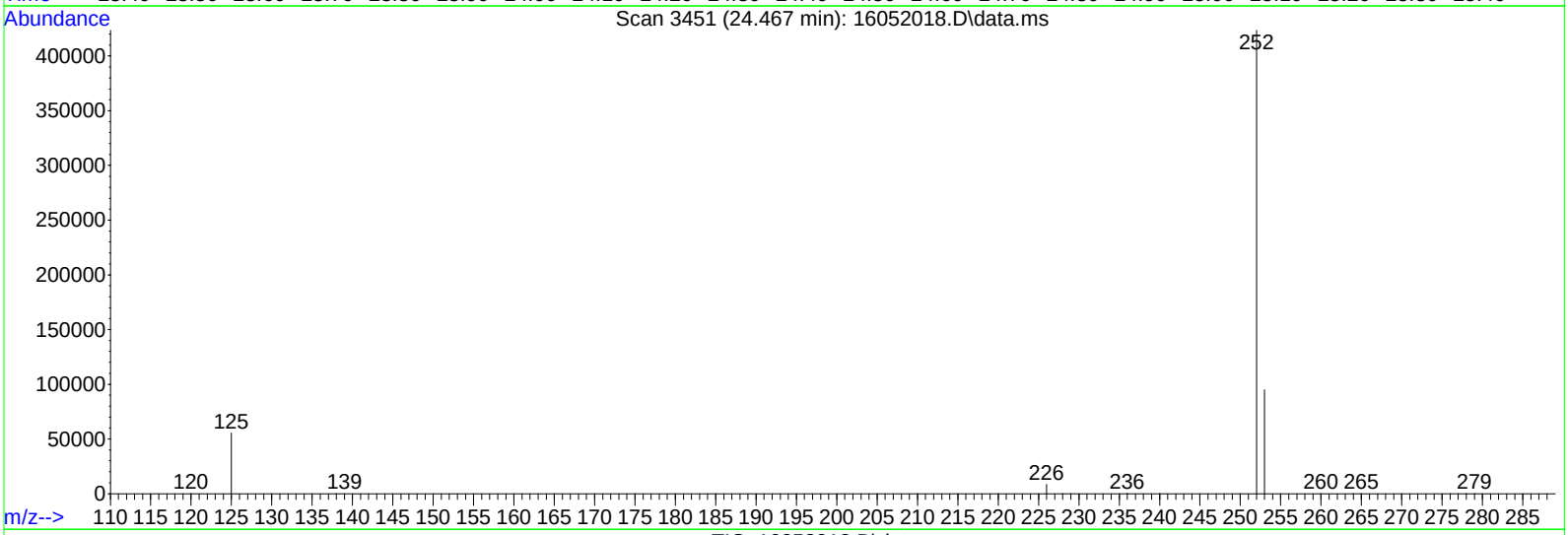


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052018.D
Acq On : 20 May 2016 7:07 pm
Operator :
Sample : ICV2-160520
Misc : ICV
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 20 19:38:35 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052018.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.467min (-0.008) 2146.25ug/kg

response 1156713

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.30
125.00	12.20	13.05
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052020.D
Acq On : 20 May 2016 8:22 pm
Operator :
Sample : SBLK2-160520
Misc : SBLK
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 23 09:59:23 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1753702	4000.00	ug/kg	108
6) Acenaphthene-d10	12.856	164	1450193	4000.00	ug/kg	116
11) Phenanthrene-d10	14.978	188	2595626	4000.00	ug/kg	89
16) Chrysene-d12	20.987	240	2589669	4000.00	ug/kg	96
20) Perylene-d12	26.254	264	2415221	4000.00	ug/kg	97

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	99	0.25	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.01%#			
17) 4-Terphenyl-d14	17.590	244	290	0.53	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.01%#			

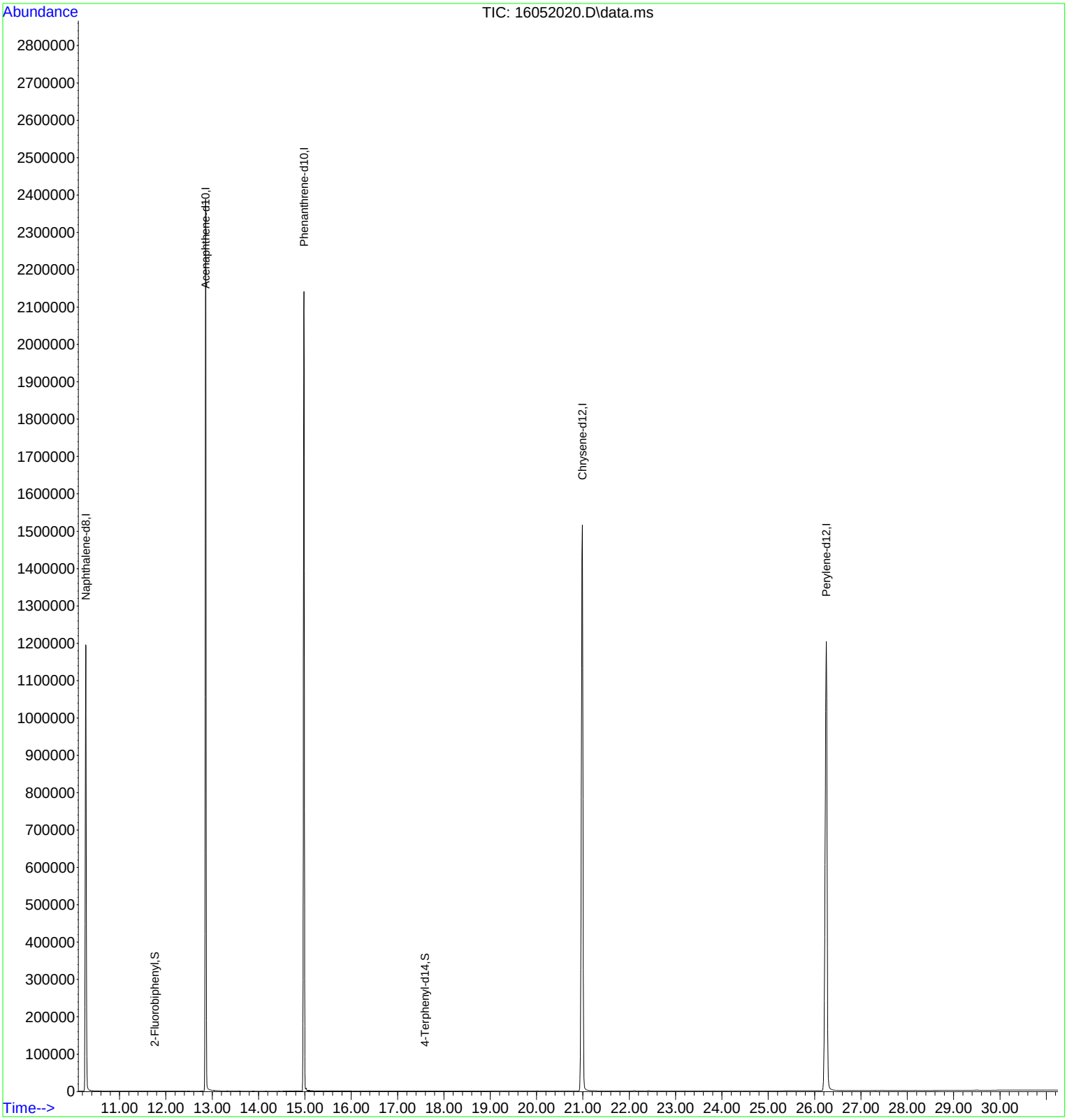
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052020.D
Acq On : 20 May 2016 8:22 pm
Operator :
Sample : SBLK2-160520
Misc : SBLK
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 23 09:59:23 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052032.D
Acq On : 21 May 2016 3:50 am
Operator :
Sample : 1605098-17AMS
Misc : MS
ALS Vial : 32 Sample Multiplier: 10

Quant Time: May 23 09:59:26 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1546708	4000.00	ug/kg	95
6) Acenaphthene-d10	12.856	164	1243908	4000.00	ug/kg	99
11) Phenanthrene-d10	14.974	188	2322328	4000.00	ug/kg	79
16) Chrysene-d12	20.980	240	2325282	4000.00	ug/kg	86
20) Perylene-d12	26.247	264	2202187	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	29466	85.56	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.14%#			
17) 4-Terphenyl-d14	17.584	244	35809	72.76	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.82%#			

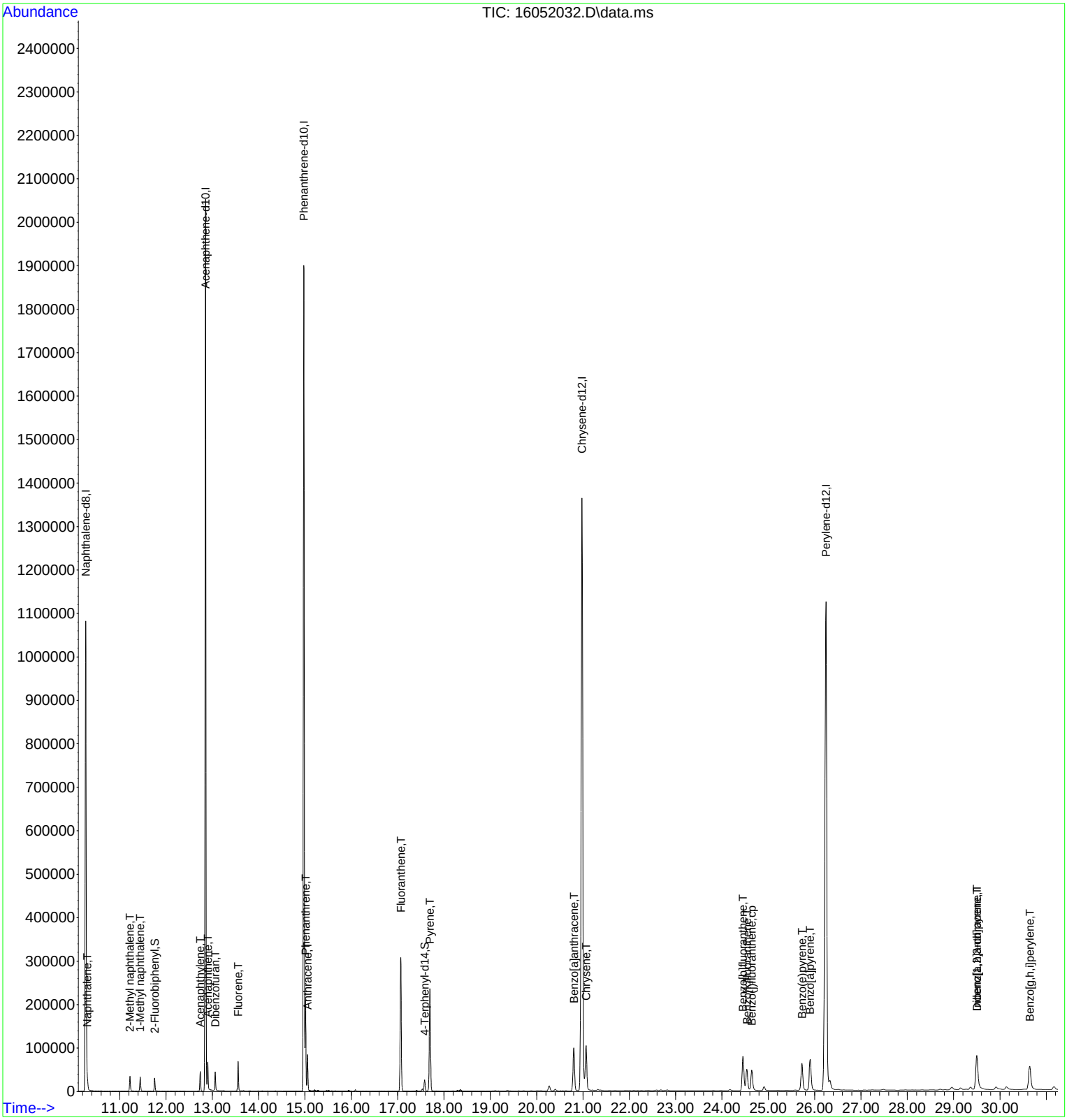
Target Compounds						Qvalue
2) Naphthalene	10.304	128	26915	77.68	ug/kg	100
3) 2-Methyl naphthalene	11.221	142	22607	83.93	ug/kg	98
4) 1-Methyl naphthalene	11.443	142	20915	82.05	ug/kg	99
7) Acenaphthylene	12.738	152	42776	78.67	ug/kg	98
8) Acenaphthene	12.905	153	29964	87.34	ug/kg	99
9) Dibenzofuran	13.062	168	42464	81.25	ug/kg	98
10) Fluorene	13.553	166	38056	80.25	ug/kg	98
12) Phenanthrene	15.012	178	192963	301.98	ug/kg	97
13) Anthracene	15.054	178	79911	123.59	ug/kg	98
14) Fluoranthene	17.068	202	337707	529.65	ug/kg	98
15) Pyrene	17.697	202	280637	449.75	ug/kg	97
18) Benzo[a]anthracene	20.804	228	160555	265.79	ug/kg	99
19) Chrysene	21.068	228	165888	297.27	ug/kg	99
21) Benzo[b]fluoranthene	24.452	252	151027	256.90	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	89162	168.25	ug/kg	98
23) Benzo(j)fluoranthene	24.642	252	87339	169.33	ug/kg	94
24) Benzo(e)pyrene	25.727	252	123176	220.32	ug/kg	98
25) Benzo[a]pyrene	25.902	252	150645	275.70	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.506	276	128417	188.67	ug/kg	94
27) Dibenz[a,h]anthracene	29.492	278	52258	88.98	ug/kg	98
28) Benzo[g,h,i]perylene	30.642	276	121876	207.99	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052032.D
Acq On : 21 May 2016 3:50 am
Operator :
Sample : 1605098-17AMS
Misc : MS
ALS Vial : 32 Sample Multiplier: 10

Quant Time: May 23 09:59:26 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052033.D
Acq On : 21 May 2016 4:27 am
Operator :
Sample : 1605098-17AMSD
Misc : MSD
ALS Vial : 33 Sample Multiplier: 10

Quant Time: May 23 09:59:29 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

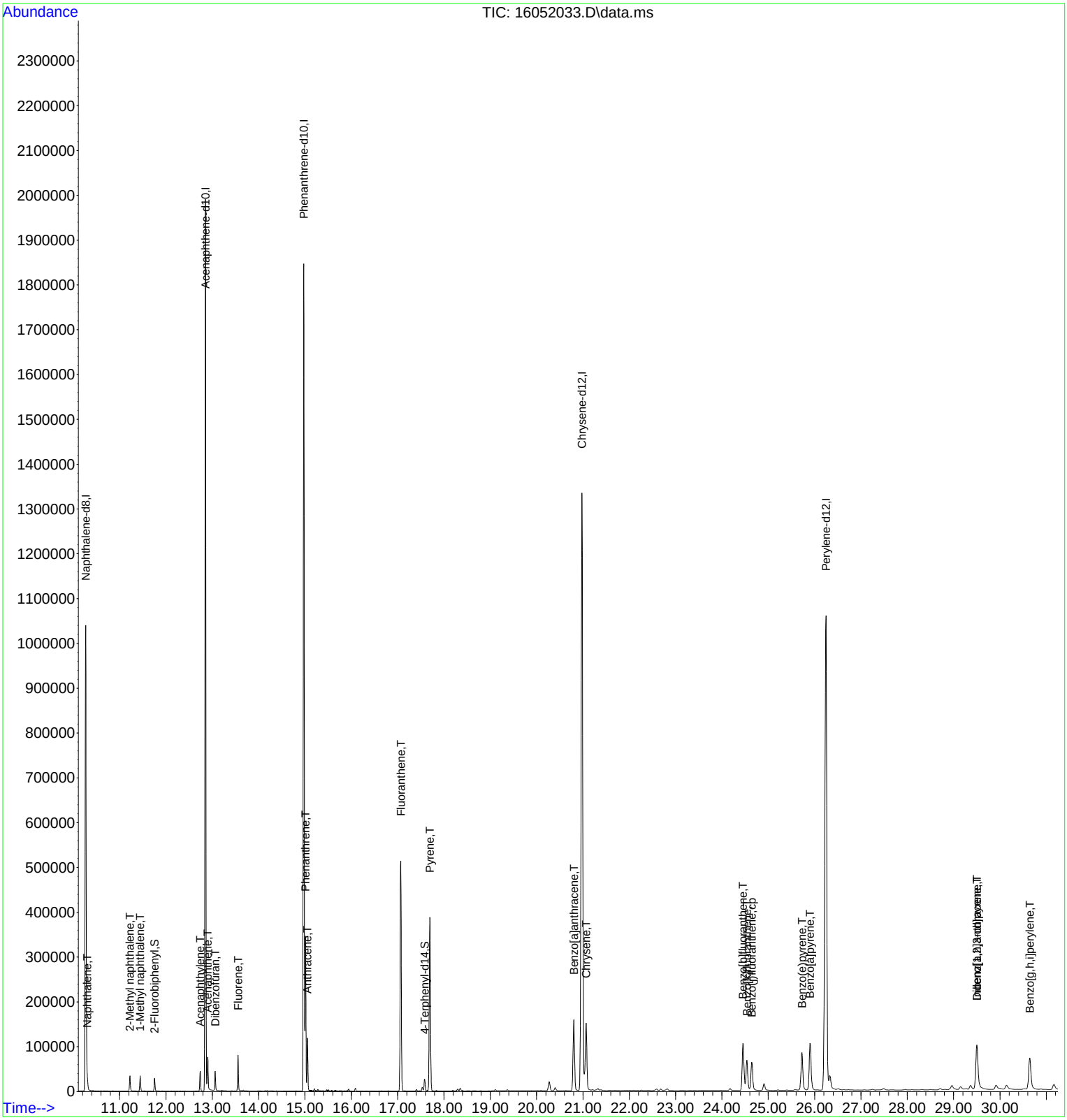
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1502845	4000.00	ug/kg	92
6) Acenaphthene-d10	12.853	164	1197935	4000.00	ug/kg	96
11) Phenanthrene-d10	14.974	188	2240110	4000.00	ug/kg	77
16) Chrysene-d12	20.980	240	2241694	4000.00	ug/kg	83
20) Perylene-d12	26.246	264	2085790	4000.00	ug/kg	84
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.753	172	28683	85.72	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.14%#			
17) 4-Terphenyl-d14	17.583	244	36186	76.26	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.91%#			
Target Compounds						Qvalue
2) Naphthalene	10.305	128	27791	82.54	ug/kg	99
3) 2-Methyl naphthalene	11.222	142	22904	87.51	ug/kg	99
4) 1-Methyl naphthalene	11.444	142	21260	85.84	ug/kg	100
7) Acenaphthylene	12.740	152	42730	81.60	ug/kg	98
8) Acenaphthene	12.902	153	32795	99.26	ug/kg	97
9) Dibenzofuran	13.064	168	43975	87.37	ug/kg	96
10) Fluorene	13.555	166	42598	93.28	ug/kg	99
12) Phenanthrene	15.010	178	328245	532.54	ug/kg	98
13) Anthracene	15.054	178	114112	182.96	ug/kg	98
14) Fluoranthene	17.068	202	564920	930.12	ug/kg	98
15) Pyrene	17.697	202	456878	766.10	ug/kg	97
18) Benzo[a]anthracene	20.804	228	243287	420.30	ug/kg	99
19) Chrysene	21.068	228	247093	462.48	ug/kg	100
21) Benzo[b]fluoranthene	24.459	252	213385	384.99	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	114565	228.85	ug/kg	98
23) Benzo(j)fluoranthene	24.642	252	116524	240.16	ug/kg	94
24) Benzo(e)pyrene	25.726	252	163006	309.39	ug/kg	98
25) Benzo[a]pyrene	25.902	252	214363	416.14	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.506	276	165353	257.88	ug/kg	94
27) Dibenz[a,h]anthracene	29.491	278	67722	123.50	ug/kg	99
28) Benzo[g,h,i]perylene	30.641	276	155786	282.16	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052033.D
Acq On : 21 May 2016 4:27 am
Operator :
Sample : 1605098-17AMSD
Misc : MSD
ALS Vial : 33 Sample Multiplier: 10

Quant Time: May 23 09:59:29 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052034.D
Acq On : 21 May 2016 5:05 am
Operator :
Sample : CCV-160520
Misc : CCV
ALS Vial : 34 Sample Multiplier: 1

Quant Time: May 23 09:59:32 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1657807	4000.00	ug/kg	102
6) Acenaphthene-d10	12.856	164	1340814	4000.00	ug/kg	107
11) Phenanthrene-d10	14.976	188	2555147	4000.00	ug/kg	87
16) Chrysene-d12	20.980	240	2371328	4000.00	ug/kg	87
20) Perylene-d12	26.247	264	2202301	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.752	172	388553	1052.66	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 26.32%#			
17) 4-Terphenyl-d14	17.584	244	499968	996.12	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.90%#			

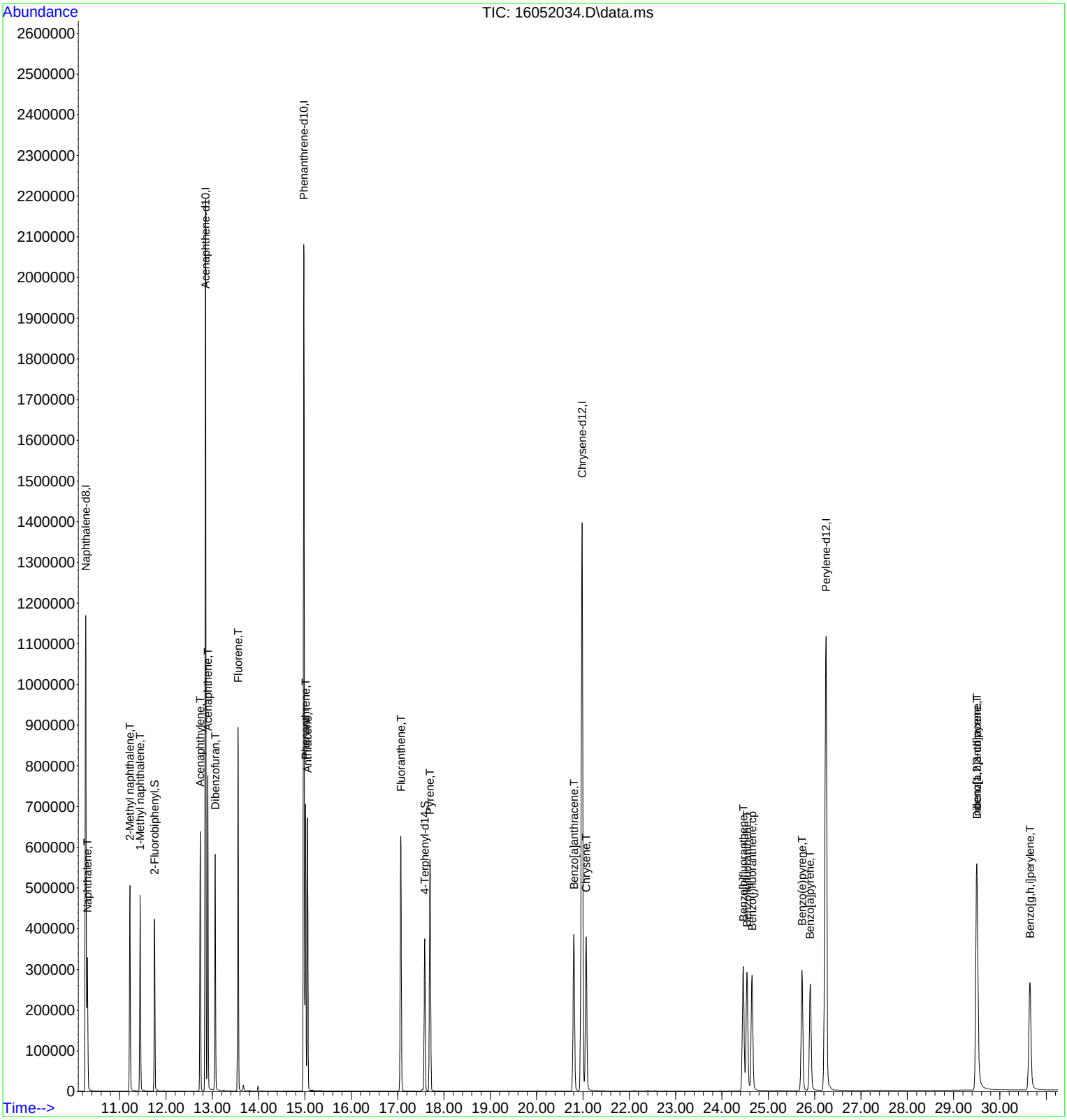
Target Compounds						Qvalue
2) Naphthalene	10.304	128	369727	995.51	ug/kg	99
3) 2-Methyl naphthalene	11.221	142	308302	1067.84	ug/kg	99
4) 1-Methyl naphthalene	11.444	142	285377	1044.55	ug/kg	100
7) Acenaphthylene	12.738	152	596469	1017.73	ug/kg	99
8) Acenaphthene	12.905	153	369365	998.78	ug/kg	100
9) Dibenzofuran	13.062	168	545114	967.62	ug/kg	99
10) Fluorene	13.553	166	475527	930.29	ug/kg	99
12) Phenanthrene	15.012	178	663788	944.14	ug/kg	99
13) Anthracene	15.056	178	657119	923.69	ug/kg	99
14) Fluoranthene	17.069	202	689199	996.80	ug/kg	99
15) Pyrene	17.698	202	674017	996.75	ug/kg	98
18) Benzo[a]anthracene	20.805	228	606814	1007.11	ug/kg	99
19) Chrysene	21.068	228	562257	1010.17	ug/kg	100
21) Benzo[b]fluoranthene	24.460	252	573845	994.66	ug/kg	100
22) Benzo[k]fluoranthene	24.540	252	525453	1009.70	ug/kg	99
23) Benzo(j)fluoranthene	24.650	252	498879	998.53	ug/kg	99
24) Benzo(e)pyrene	25.727	252	546890	1002.63	ug/kg	99
25) Benzo[a]pyrene	25.910	252	536193	997.33	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.507	276	665259	1005.60	ug/kg	96
27) Dibenz[a,h]anthracene	29.492	278	552815	1003.51	ug/kg	99
28) Benzo[g,h,i]perylene	30.650	276	570903	1000.58	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052034.D
Acq On : 21 May 2016 5:05 am
Operator :
Sample : CCV-160520
Misc : CCV
ALS Vial : 34 Sample Multiplier: 1

Quant Time: May 23 09:59:32 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



GCMS8
Calibration Curve
For

DHL Work Order
1605097

CAL ID: 658

Method 8270 PAH Calibration Curve Sheet

Instrument ID: GCMS #8 **Calibration File Name:** PP160510.CAL

Target Concentration	Solvent Amount mL	Standard Preparation Stocks and Surrogate (µL/mL)	Final Volume mL
5 ppb	0.999	0.001 mL of 5000 ppb	1
10 ppb	0.998	0.002 mL of 5000 ppb	1
50 ppb	0.990	0.01 mL of 5000 ppb	1
100 ppb	0.980	0.02 mL of 5000 ppb	1
500 ppb	0.900	0.10 mL of 5000 ppb	1
1000 ppb	0.800	0.20 mL of 5000 ppb	1
2000 ppb	0.600	0.40 mL of 5000 ppb	1
5000 ppb	----	PAHCAL160510	10
SSCV 2500 ppb	0.500	0.50 mL of PAHSSCV160510-1	1
SSCV 2500 ppb	----	PAHSSCV160510-2	1

Standards Used for the Calibration Curve

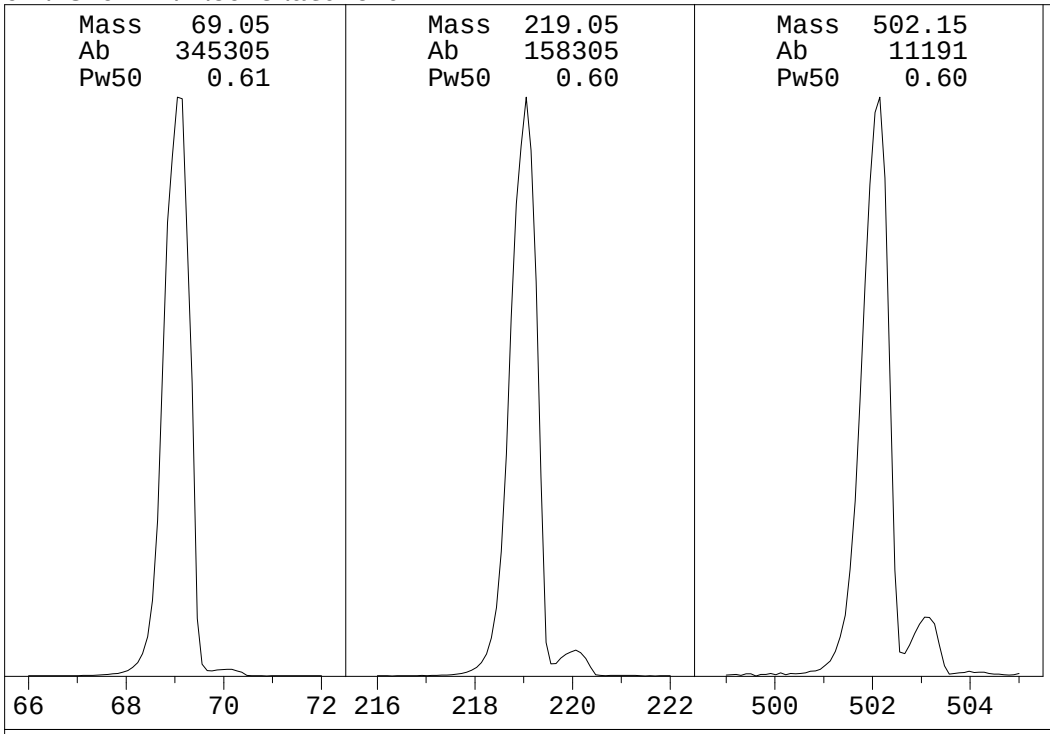
Primary Stock STDs	DHL Standard ID	Second Source (SS) Stock STDs	DHL Standard ID
5 PPM (5000 PPB) PAH CAL STD	**PAHCAL160510**	5PPM (5000PPB) PAH SSCV STD	**PAHSSCV160510-1**
		5PPM (5000PPB) PAH SSCV STD	**PAHSSCV160510-2**

Review Item	Acceptance Criteria	Yes	No	N/A	2nd Level Review
1. Are all standards within expiration dates?	Primary Stocks = 1 year Intermediate Standards = 6 months	X			x
2. Are all manual integrations listed on MI tracking form? **(DoD Projects only)**	Manual Integration Tracking Form			X	x
3. Does the tune and resolution check meet criteria?	Benzo(b) / Benzo(k)phenanthrene Valley > 50% See Tune Eval Report	X			x
4. Does the ICAL curve meet criteria? Use average CF only if %RSD < 15%	%RSD < 15% COD ≥ 0.990	X			x
5. Has the low point been reprocessed under the new ICAL curve and meets criteria?	70-130% recovery	X			x
6. Has the SSCV been analyzed and meets criteria?	80-120% recovery	X			x

Analyst: Don Winston Date: 05/11/16

Second-Level Review: Date: 05/13/16

Tue May 10 17:43:08 2016 Instrument: GCMS #8
C:\MSDCHEM\1\5973\atune.u

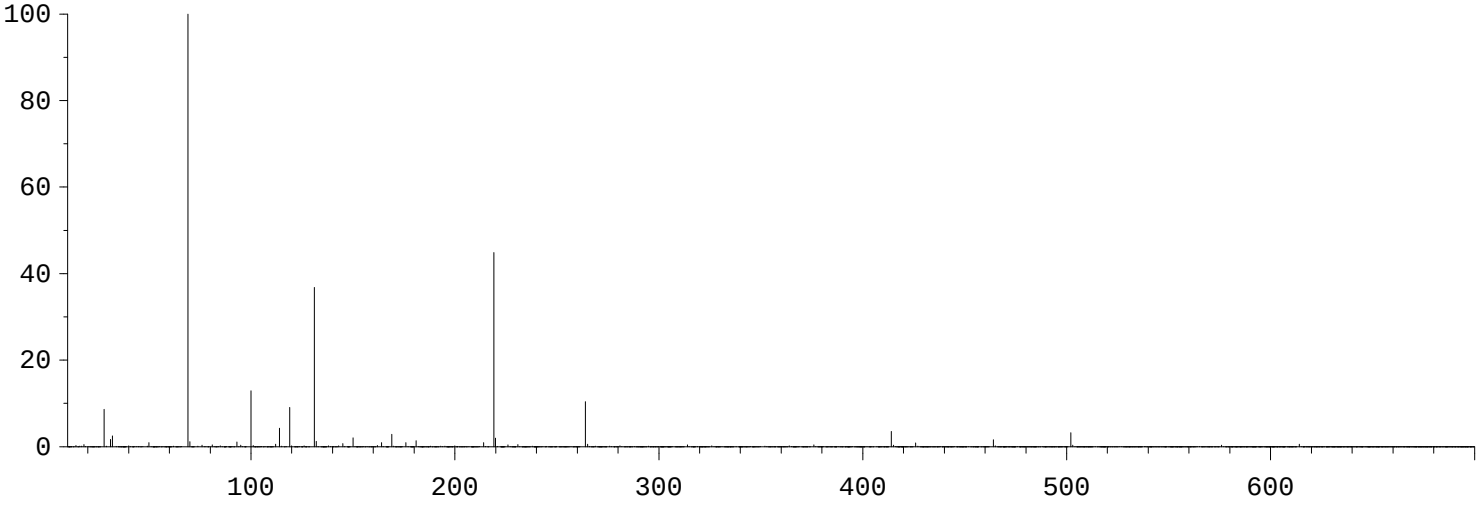


Ion Pol	POS	MassGain	48
		MassOffs	-11
Emission	34.6	AmuGain	2098
EIEnrgy	69.9	AmuOffs	132
Filament	2	Wid219	-0.001
		DC Pol	NEG
Repeller	37.83		
IonFcus	95.9	HEDEnab	ON
EntLens	12.0	EMVolts	1129
EntOffs	19.33		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10

Zones:

MS Source	230	Foreline	42
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 0 Step: 0.10
1104 peaks Base: 69.05 Abundance: 313856



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	313856	100.00	70.05	3636	1.16
219.05	140864	44.88	219.95	6244	4.43
502.05	10193	3.25	503.05	1021	10.02

Air/Water Check: H20~0.52% N2~8.62% O2~2.46% CO2~0.08% N2/H2O~1654.80%

Column Flow: Front: 0 Back: 1.887 ml/min. Interface Temp: 310

Ramp Criteria:
Ion Focus Maximum 125 volts using ion 219; EM Gain 4120
Repeller Maximum 38 volts using ion 502;

MassGain Values @Samples: 45@3 45@2 45@1 45@0 48@FS

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	132.0	132.0	132.0	132.0	132.0	132.0	132.0
Entrance Lens Offset:	19.3	19.3	19.3	19.3	19.3	19.3	19.3

Response Factor Report GCMS #8

Method Path : C:\msdchem\1\METHODS\
Method File : PAH160510.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Wed May 11 10:43:33 2016
Response Via : Initial Calibration

Calibration Files
1 =16051003.D 2 =16051004.D 3 =16051005.D 4 =16051006.D 5 =16051007.D 6 =16051008.D 7 =16051009.D
8 =16051010.D

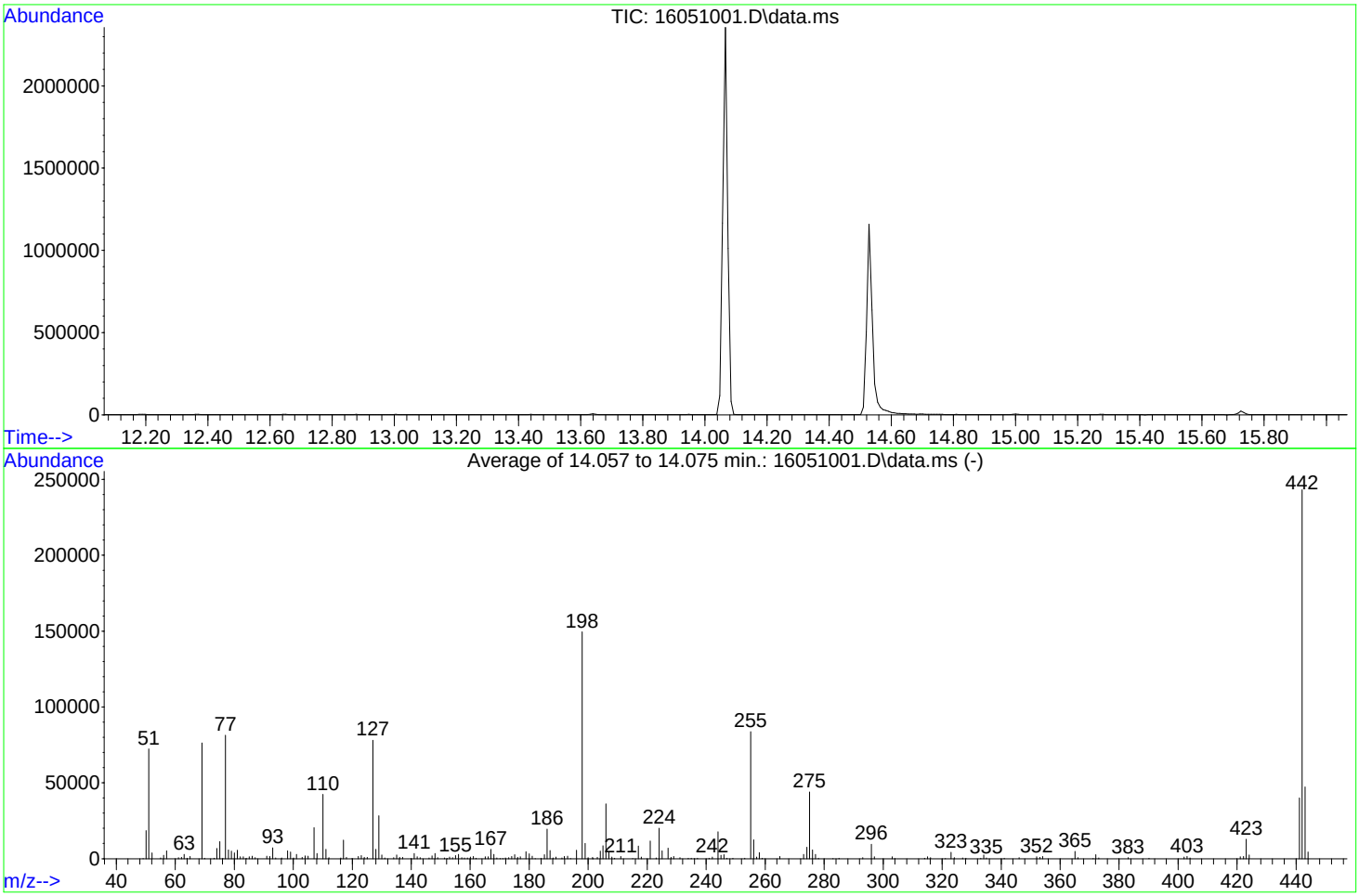
		Compound	1	2	3	4	5	6	7	8	Avg	%RSD	Fit	RSD/CF	Constant	Linear	Quad
1)	I	Naphthalene-d8	----------ISTD----------														
2)	T	Naphthalene	0.990	0.957	0.981	0.991	0.980	0.983	0.972	0.901	0.969	3.05	A	0.0305	0.0000	0.9694	0.0000
3)	T	2-Methyl napht...	0.422	0.448	0.511	0.539	0.631	0.672	0.671	0.637	0.566	17.63	*Q	0.9991	-0.0006	0.6679	-0.0223
4)	T	1-Methyl napht...	0.579	0.555	0.575	0.595	0.665	0.661	0.642	0.594	0.608	6.89	A	0.0689	0.0000	0.6083	0.0000
5)	S	2-Fluorobiphenyl	0.801	0.710	0.768	0.789	0.820	0.840	0.809	0.752	0.786	5.28	A	0.0528	0.0000	0.7862	0.0000
6)	I	Acenaphthene-d10	----------ISTD----------														
7)	T	Acenaphthylene	1.977	1.879	1.907	1.925	1.894	1.889	1.874	1.694	1.880	4.37	A	0.0437	0.0000	1.8797	0.0000
8)	T	Acenaphthene	1.251	1.184	1.210	1.217	1.191	1.200	1.179	1.085	1.190	4.04	A	0.0404	0.0000	1.1895	0.0000
9)	T	Dibenzofuran	2.007	1.939	1.988	1.985	1.943	1.925	1.867	1.713	1.921	4.94	A	0.0494	0.0000	1.9209	0.0000
10)	T	Fluorene	1.915	1.810	1.845	1.817	1.805	1.821	1.760	1.680	1.806	3.73	A	0.0373	0.0000	1.8065	0.0000
11)	I	Phenanthrene-d10	----------ISTD----------														
12)	T	Phenanthrene	1.345	1.221	1.191	1.165	1.134	1.129	1.104	0.971	1.158	9.20	A	0.0920	0.0000	1.1577	0.0000
13)	T	Anthracene	1.456	1.302	1.300	1.290	1.248	1.211	1.197	1.032	1.254	9.57	A	0.0957	0.0000	1.2543	0.0000
14)	T	Fluoranthene	1.832	1.581	1.558	1.594	1.510	1.453	1.427	1.165	1.515	12.40	A	0.1240	0.0000	1.5151	0.0000
15)	T	Pyrene	1.863	1.601	1.565	1.586	1.498	1.446	1.422	1.176	1.520	12.79	A	0.1279	0.0000	1.5196	0.0000
16)	I	Chrysene-d12	----------ISTD----------														
17)	S	4-Terphenyl-d14	1.049	0.947	0.949	0.924	0.908	0.894	0.798	0.924	8.11	A	0.0811	0.0000	0.9242	0.0000	
18)	T	Benzo[a]anthra...	1.301	1.142	1.093	1.121	1.113	1.121	1.111	0.994	1.124	7.50	A	0.0750	0.0000	1.1244	0.0000
19)	T	Chrysene	1.199	1.032	1.009	1.027	1.021	1.020	1.013	0.913	1.029	7.60	A	0.0760	0.0000	1.0293	0.0000
20)	I	Perylene-d12	----------ISTD----------														
21)	T	Benzo[b]fluora...	1.383	1.128	1.060	1.095	1.118	1.152	1.129	1.048	1.139	9.20	A	0.0920	0.0000	1.1392	0.0000
22)	T	Benzo[k]fluora...	0.881	0.783	0.823	0.900	0.988	1.003	1.014	0.917	0.914	9.26	A	0.0926	0.0000	0.9137	0.0000
23)	cp	Benzo(j)fluora...	0.888	0.814	0.891	0.945	0.980	0.988	0.984	0.897	0.923	6.69	A	0.0669	0.0000	0.9235	0.0000
24)	T	Benzo(e)pyrene	1.226	1.103	1.074	1.100	1.096	1.095	1.071	0.982	1.093	6.08	A	0.0608	0.0000	1.0934	0.0000
25)	T	Benzo[a]pyrene	1.183	1.057	1.005	1.025	1.036	1.053	1.045	0.972	1.047	5.91	A	0.0591	0.0000	1.0470	0.0000
26)	T	Indeno[1,2,3-c...	1.307	1.133	1.106	1.126	1.150	1.176	1.172	1.108	1.160	5.60	A	0.0560	0.0000	1.1599	0.0000
27)	T	Dibenz[a,h]ant...	0.964	1.011	0.896	0.907	0.935	0.968	0.973	0.911	0.946	4.23	A	0.0423	0.0000	0.9456	0.0000
28)	T	Benzo[g,h,i]pe...	1.171	1.003	0.975	0.985	0.988	1.008	1.006	0.962	1.012	6.54	A	0.0654	0.0000	1.0121	0.0000

(#) = Out of Range

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051001.D
Acq On : 10 May 2016 6:03 pm
Operator :
Sample : DFTPP-160510
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



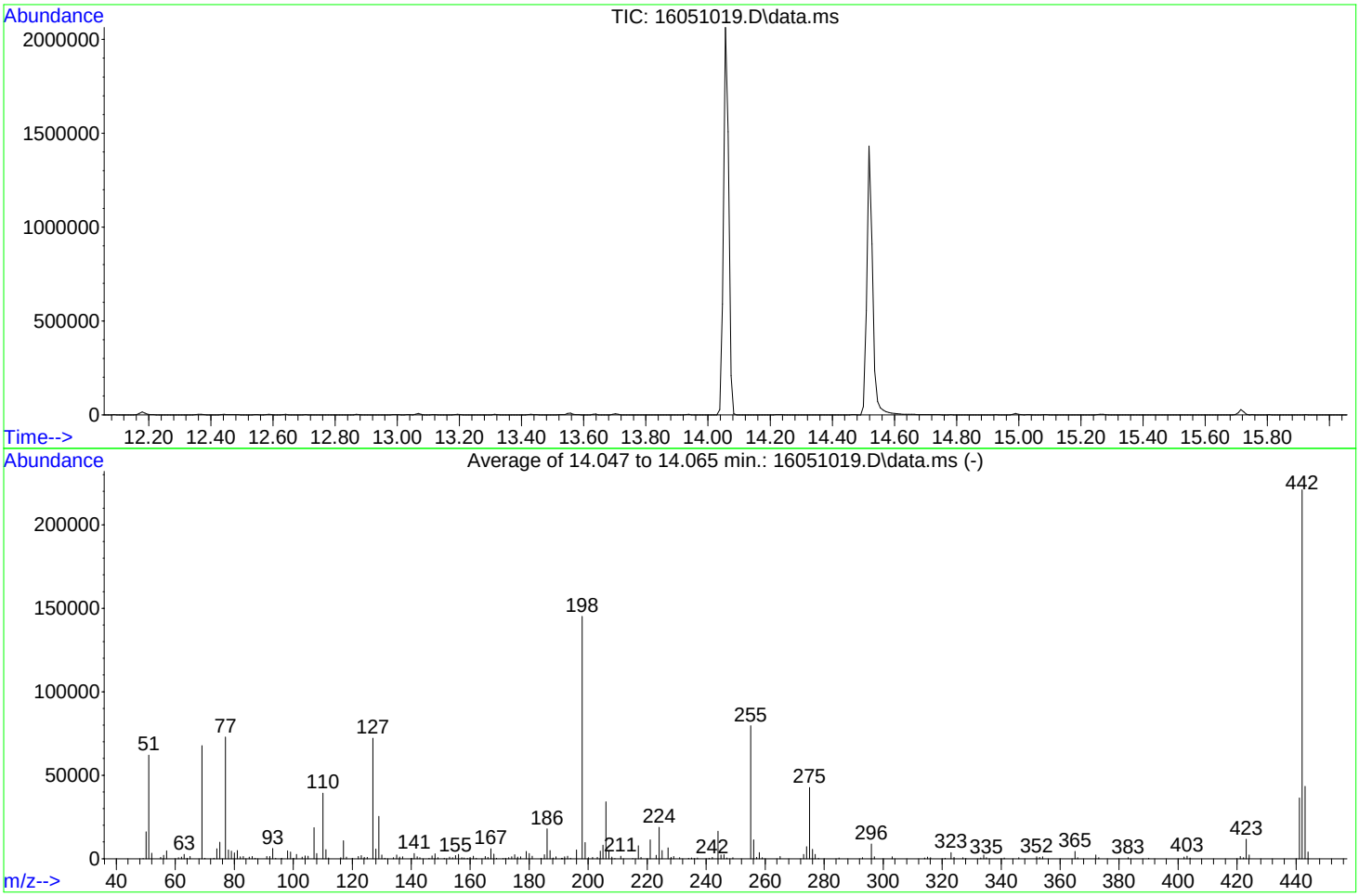
AutoFind: Scans 438, 439, 440; Background Corrected with Scan 434

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	48.3	72280	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	50.9	76210	PASS
70	69	0.00	2	0.3	215	PASS
127	198	10	80	52.2	78125	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	149602	PASS
199	198	5	9	6.7	10041	PASS
275	198	10	60	29.4	43976	PASS
365	198	1	200	3.3	4880	PASS
441	442	0.01	24	16.5	40030	PASS
442	198	50	400	162.6	243242	PASS
443	442	15	24	19.5	47348	PASS

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051019.D
Acq On : 11 May 2016 8:41 am
Operator :
Sample : DFTPP-160511
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 437, 438, 439; Background Corrected with Scan 433

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	42.7	61954	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	46.7	67805	PASS
70	69	0.00	2	0.3	205	PASS
127	198	10	80	49.8	72253	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	145138	PASS
199	198	5	9	6.6	9630	PASS
275	198	10	60	29.3	42553	PASS
365	198	1	200	3.0	4358	PASS
441	442	0.01	24	16.4	36333	PASS
442	198	50	400	152.3	221042	PASS
443	442	15	24	19.6	43414	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051003.D
Acq On : 10 May 2016 7:16 pm
Operator :
Sample : PAH1-160510 5ppb
Misc : CAL1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 11 10:44:59 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.293	136	1579654	4000.00	ug/kg	98
6) Acenaphthene-d10	12.876	164	1063753	4000.00	ug/kg	102
11) Phenanthrene-d10	15.002	188	3341261	4000.00	ug/kg	99
16) Chrysene-d12	21.028	240	3890154	4000.00	ug/kg	104
20) Perylene-d12	26.302	264	3253488	4000.00	ug/kg	103

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.786	172	1581	5.09	ug/kg	0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.13%#			
17) 4-Terphenyl-d14	17.628	244	6680	7.43	ug/kg	0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.19%#			

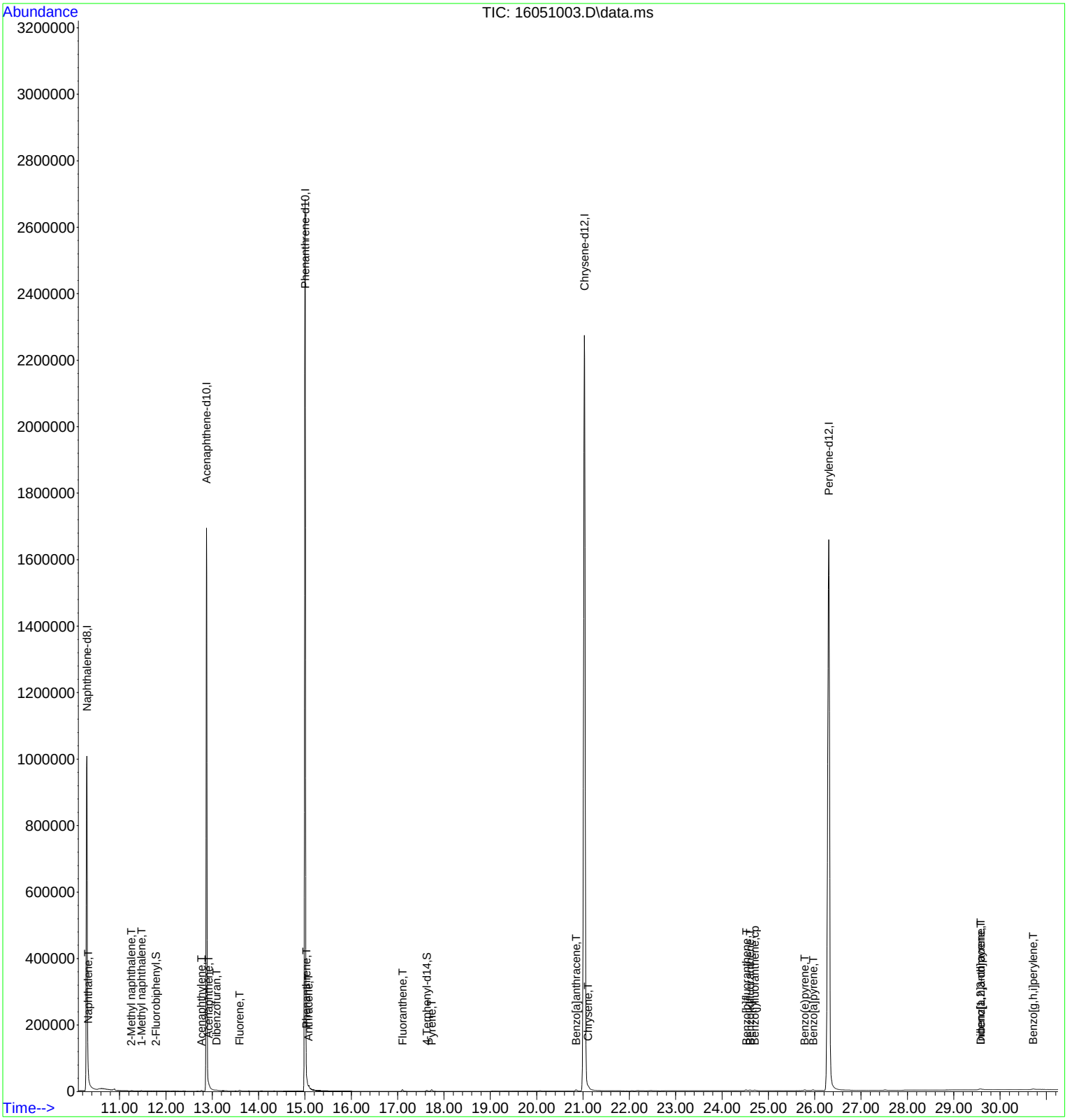
Target Compounds						Qvalue
2) Naphthalene	10.330	128	1955	5.11	ug/kg	98
3) 2-Methyl naphthalene	11.251	142	834	6.59	ug/kg	93
4) 1-Methyl naphthalene	11.469	142	1143	4.76	ug/kg	93
7) Acenaphthylene	12.763	152	2629	5.26	ug/kg	98
8) Acenaphthene	12.930	153	1663	5.26	ug/kg	98
9) Dibenzofuran	13.097	168	2669	5.22	ug/kg	94
10) Fluorene	13.588	166	2546	5.30	ug/kg	99
12) Phenanthrene	15.040	178	5619	5.81	ug/kg	98
13) Anthracene	15.084	178	6080	5.80	ug/kg	95
14) Fluoranthene	17.105	202	7652	6.05	ug/kg	97
15) Pyrene	17.736	202	7780	6.13	ug/kg	99
18) Benzo[a]anthracene	20.852	228	6326	5.78	ug/kg	99
19) Chrysene	21.116	228	5828	5.82	ug/kg	97
21) Benzo[b]fluoranthene	24.522	252	5625	6.07	ug/kg	97
22) Benzo[k]fluoranthene	24.603	252	3581	4.82	ug/kg	98
23) Benzo(j)fluoranthene	24.705	252	3612	4.81	ug/kg	97
24) Benzo(e)pyrene	25.782	252	4985	5.61	ug/kg	90
25) Benzo[a]pyrene	25.965	252	4812	5.65	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.576	276	5315	5.63	ug/kg	95
27) Dibenz[a,h]anthracene	29.569	278	3919	5.10	ug/kg	99
28) Benzo[g,h,i]perylene	30.719	276	4763	5.79	ug/kg	93

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051003.D
Acq On : 10 May 2016 7:16 pm
Operator :
Sample : PAH1-160510 5ppb
Misc : CAL1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 11 10:44:59 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051004.D
Acq On : 10 May 2016 7:53 pm
Operator :
Sample : PAH2-160510 10ppb
Misc : CAL
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 11 10:45:02 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

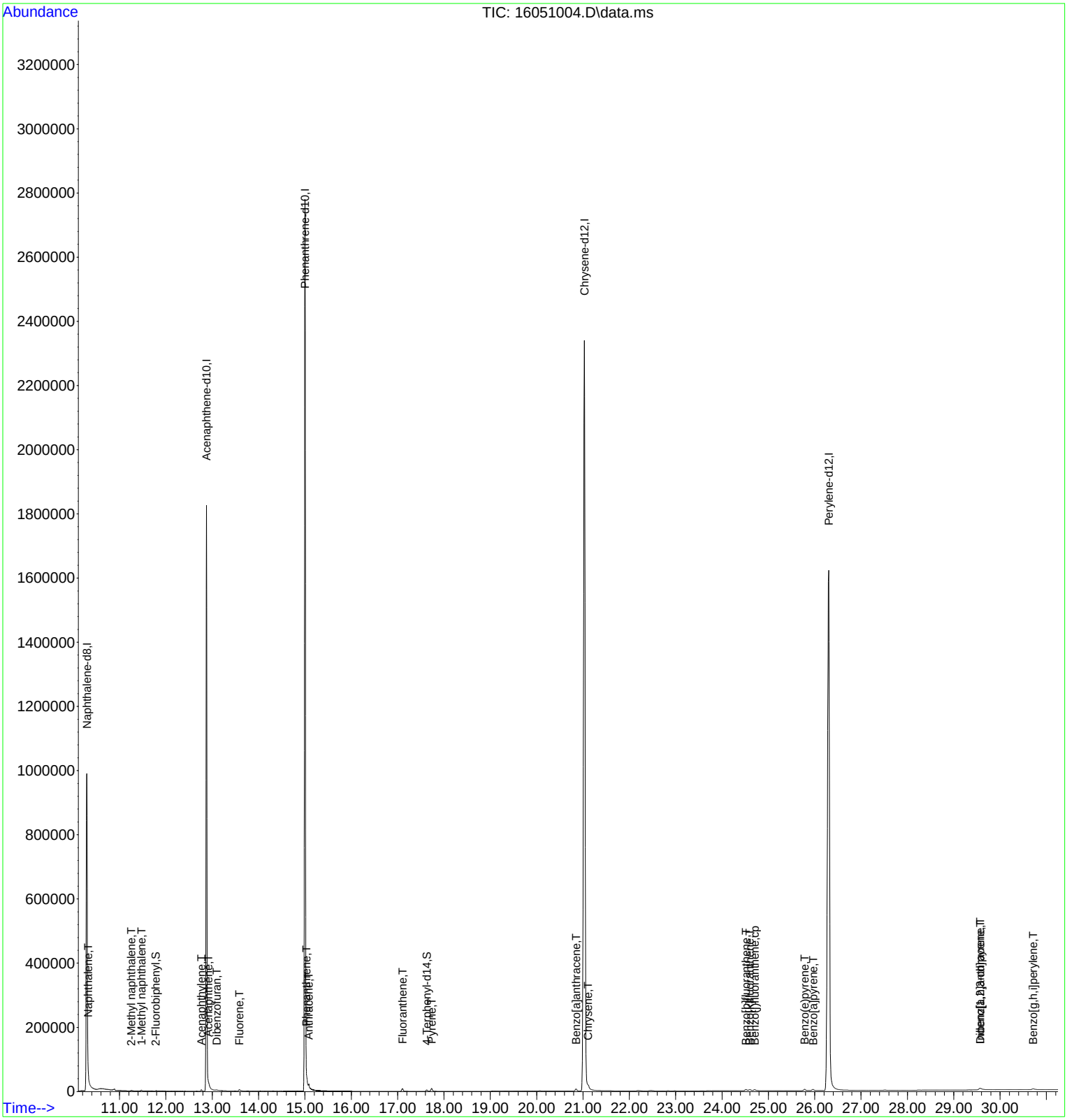
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.293	136	1604398	4000.00	ug/kg	100
6) Acenaphthene-d10	12.877	164	1120203	4000.00	ug/kg	107
11) Phenanthrene-d10	15.002	188	3513300	4000.00	ug/kg	104
16) Chrysene-d12	21.028	240	3960265	4000.00	ug/kg	105
20) Perylene-d12	26.302	264	3295886	4000.00	ug/kg	104
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.782	172	2849	9.04	ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.23%#			
17) 4-Terphenyl-d14	17.629	244	10384	11.35	ug/kg	0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.28%#			
Target Compounds						Qvalue
2) Naphthalene	10.326	128	3839	9.87	ug/kg	99
3) 2-Methyl naphthalene	11.247	142	1798	10.14	ug/kg	97
4) 1-Methyl naphthalene	11.469	142	2228	9.13	ug/kg	99
7) Acenaphthylene	12.764	152	5262	10.00	ug/kg	98
8) Acenaphthene	12.926	153	3315	9.95	ug/kg	95
9) Dibenzofuran	13.093	168	5430	10.09	ug/kg	91
10) Fluorene	13.584	166	5068	10.02	ug/kg	97
12) Phenanthrene	15.038	178	10725	10.55	ug/kg	96
13) Anthracene	15.083	178	11433	10.38	ug/kg	98
14) Fluoranthene	17.106	202	13885	10.43	ug/kg	98
15) Pyrene	17.737	202	14059	10.53	ug/kg	97
18) Benzo[a]anthracene	20.852	228	11307	10.16	ug/kg	99
19) Chrysene	21.116	228	10216	10.02	ug/kg	99
21) Benzo[b]fluoranthene	24.515	252	9296	9.90	ug/kg	99
22) Benzo[k]fluoranthene	24.596	252	6454	8.57	ug/kg	97
23) Benzo(j)fluoranthene	24.705	252	6705	8.81	ug/kg	98
24) Benzo(e)pyrene	25.782	252	9085	10.08	ug/kg	95
25) Benzo[a]pyrene	25.965	252	8709	10.10	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.577	276	9338	9.77	ug/kg	96
27) Dibenz[a,h]anthracene	29.569	278	8277	10.62	ug/kg	95
28) Benzo[g,h,i]perylene	30.712	276	8261	9.91	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051004.D
Acq On : 10 May 2016 7:53 pm
Operator :
Sample : PAH2-160510 10ppb
Misc : CAL
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 11 10:45:02 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051005.D
Acq On : 10 May 2016 8:30 pm
Operator :
Sample : PAH3-160510 50ppb
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 11 10:45:05 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.290	136	1587879	4000.00	ug/kg	99
6) Acenaphthene-d10	12.876	164	1079979	4000.00	ug/kg	103
11) Phenanthrene-d10	15.000	188	3384980	4000.00	ug/kg	101
16) Chrysene-d12	21.027	240	3907046	4000.00	ug/kg	104
20) Perylene-d12	26.302	264	3287870	4000.00	ug/kg	104

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.779	172	15251	48.87	ug/kg	0.01
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.22%#			
17) 4-Terphenyl-d14	17.628	244	46251	51.23	ug/kg	0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.28%#			

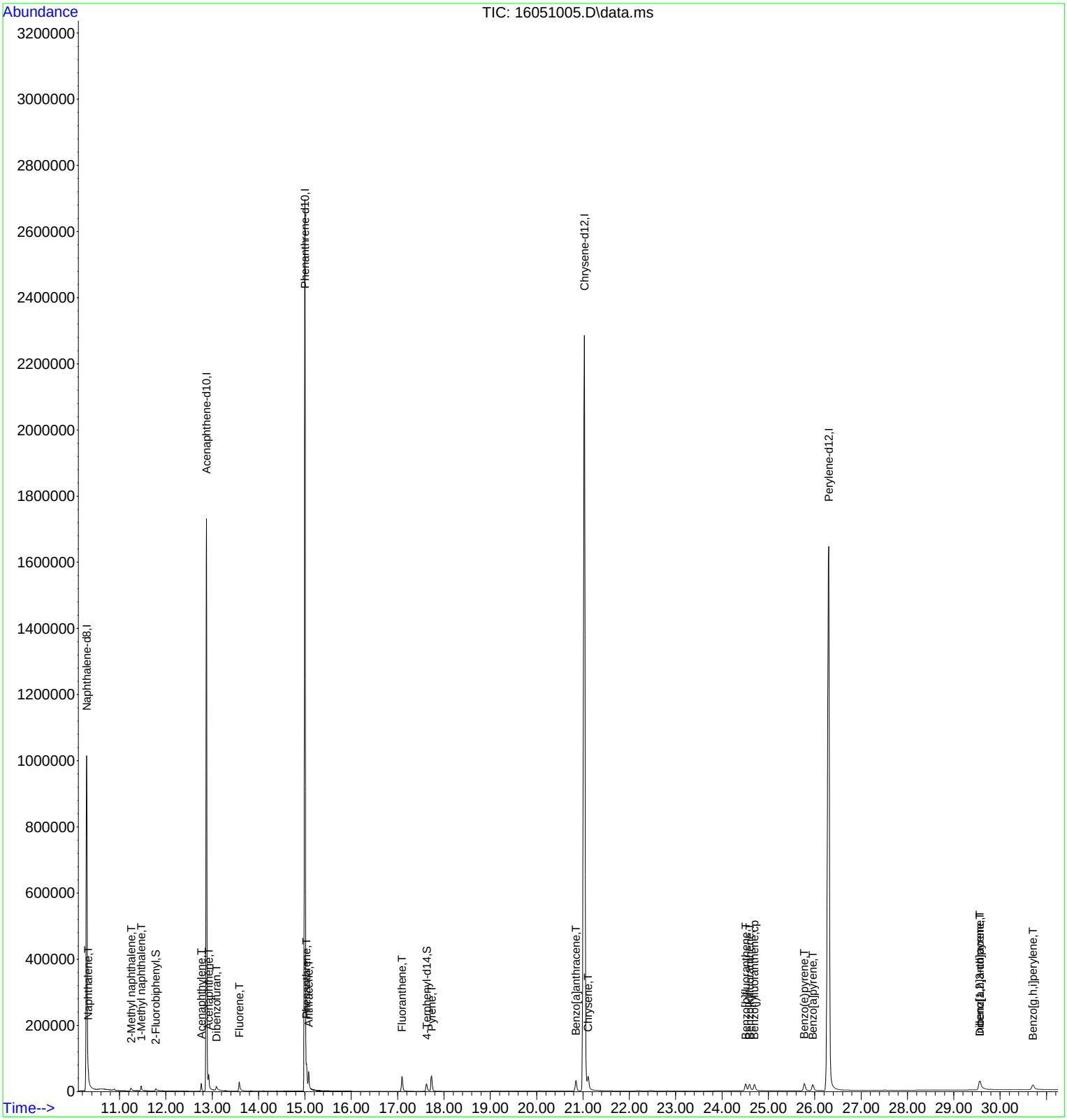
Target Compounds						Qvalue
2) Naphthalene	10.327	128	19480	50.62	ug/kg	99
3) 2-Methyl naphthalene	11.248	142	10141	41.69	ug/kg	98
4) 1-Methyl naphthalene	11.466	142	11421	47.29	ug/kg	98
7) Acenaphthylene	12.763	152	25743	50.72	ug/kg	98
8) Acenaphthene	12.925	153	16337	50.87	ug/kg	99
9) Dibenzofuran	13.088	168	26835	51.74	ug/kg	91
10) Fluorene	13.584	166	24907	51.07	ug/kg	99
12) Phenanthrene	15.036	178	50392	51.44	ug/kg	97
13) Anthracene	15.080	178	54990	51.81	ug/kg	98
14) Fluoranthene	17.091	202	65928	51.42	ug/kg	85
15) Pyrene	17.735	202	66234	51.51	ug/kg	96
18) Benzo[a]anthracene	20.844	228	53356	48.58	ug/kg	98
19) Chrysene	21.115	228	49286	49.02	ug/kg	98
21) Benzo[b]fluoranthene	24.507	252	43553	46.51	ug/kg	99
22) Benzo[k]fluoranthene	24.595	252	33838	45.06	ug/kg	98
23) Benzo(j)fluoranthene	24.697	252	36600	48.22	ug/kg	99
24) Benzo(e)pyrene	25.774	252	44132	49.11	ug/kg	100
25) Benzo[a]pyrene	25.957	252	41286	47.97	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.569	276	45459	47.68	ug/kg	99
27) Dibenz[a,h]anthracene	29.561	278	36685	47.20	ug/kg	98
28) Benzo[g,h,i]perylene	30.704	276	40076	48.17	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051005.D
Acq On : 10 May 2016 8:30 pm
Operator :
Sample : PAH3-160510 50ppb
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 11 10:45:05 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051006.D
Acq On : 10 May 2016 9:07 pm
Operator :
Sample : PAH4-160510 100ppb
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 11 10:45:08 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.288	136	1574320	4000.00	ug/kg	98
6) Acenaphthene-d10	12.871	164	1055323	4000.00	ug/kg	101
11) Phenanthrene-d10	14.998	188	3251486	4000.00	ug/kg	97
16) Chrysene-d12	21.020	240	3827236	4000.00	ug/kg	102
20) Perylene-d12	26.294	264	3182996	4000.00	ug/kg	100

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.777	172	31039	100.32	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.51%#		
17) 4-Terphenyl-d14	17.615	244	90784	102.66	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	2.57%#		

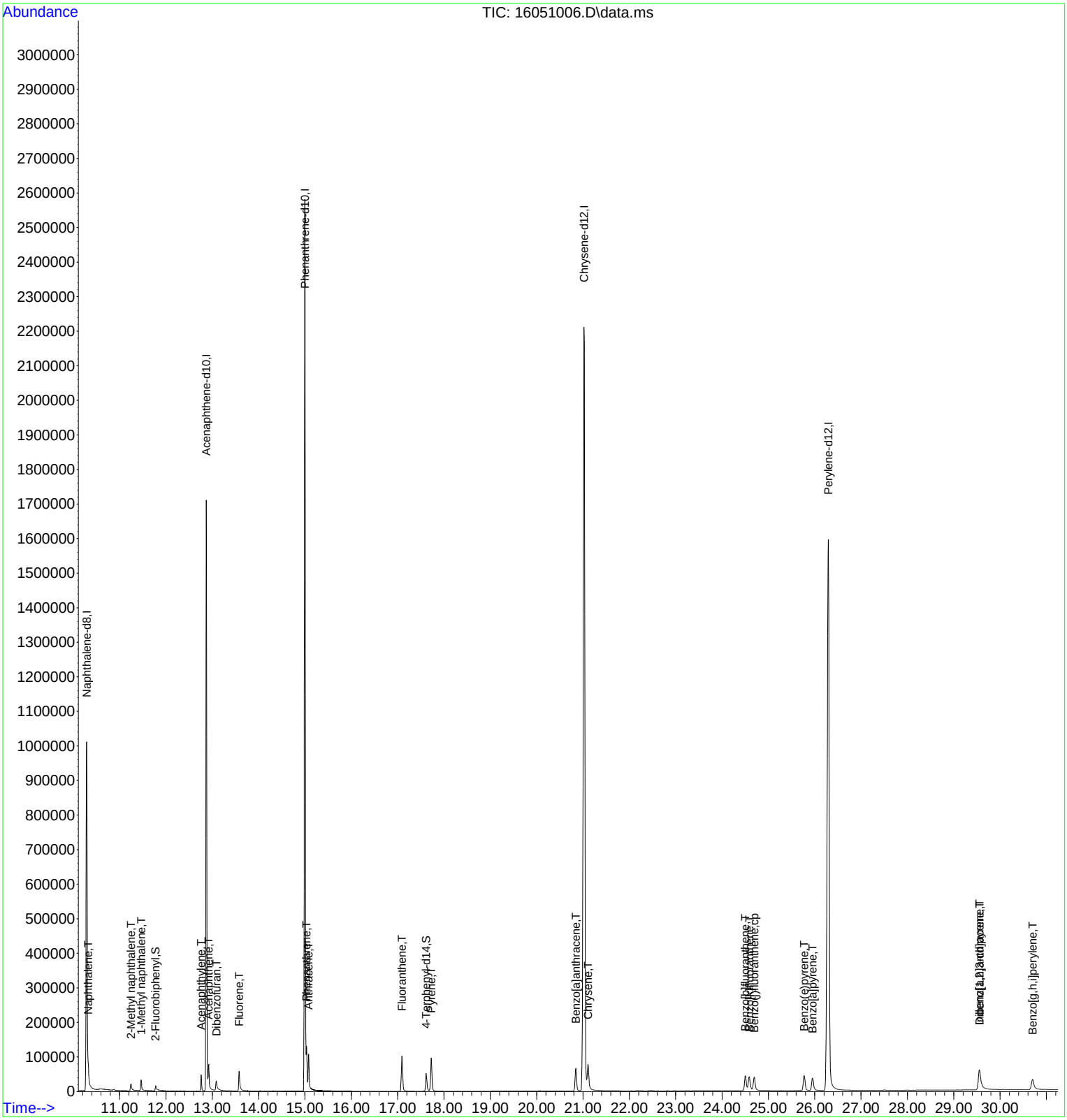
Target Compounds						Qvalue
2) Naphthalene	10.325	128	39007	102.24	ug/kg	99
3) 2-Methyl naphthalene	11.243	142	21207	84.16	ug/kg	98
4) 1-Methyl naphthalene	11.465	142	23413	97.79	ug/kg	99
7) Acenaphthylene	12.759	152	50778	102.39	ug/kg	99
8) Acenaphthene	12.925	153	32099	102.28	ug/kg	99
9) Dibenzofuran	13.088	168	52376	103.35	ug/kg	98
10) Fluorene	13.579	166	47934	100.57	ug/kg	99
12) Phenanthrene	15.034	178	94723	100.66	ug/kg	97
13) Anthracene	15.078	178	104836	102.82	ug/kg	98
14) Fluoranthene	17.092	202	129587	105.22	ug/kg	93
15) Pyrene	17.722	202	128916	104.36	ug/kg	93
18) Benzo[a]anthracene	20.844	228	107249	99.69	ug/kg	98
19) Chrysene	21.108	228	98309	99.82	ug/kg	99
21) Benzo[b]fluoranthene	24.500	252	87156	96.15	ug/kg	99
22) Benzo[k]fluoranthene	24.588	252	71623	98.51	ug/kg	98
23) Benzo(j)fluoranthene	24.697	252	73967	100.65	ug/kg	99
24) Benzo(e)pyrene	25.774	252	87538	100.61	ug/kg	99
25) Benzo[a]pyrene	25.950	252	81560	97.89	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.561	276	89633	97.11	ug/kg	99
27) Dibenz[a,h]anthracene	29.547	278	72155	95.89	ug/kg	98
28) Benzo[g,h,i]perylene	30.704	276	78373	97.31	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051006.D
Acq On : 10 May 2016 9:07 pm
Operator :
Sample : PAH4-160510 100ppb
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 11 10:45:08 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051007.D
Acq On : 10 May 2016 9:44 pm
Operator :
Sample : PAH5-160510 500ppb
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 11 10:45:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

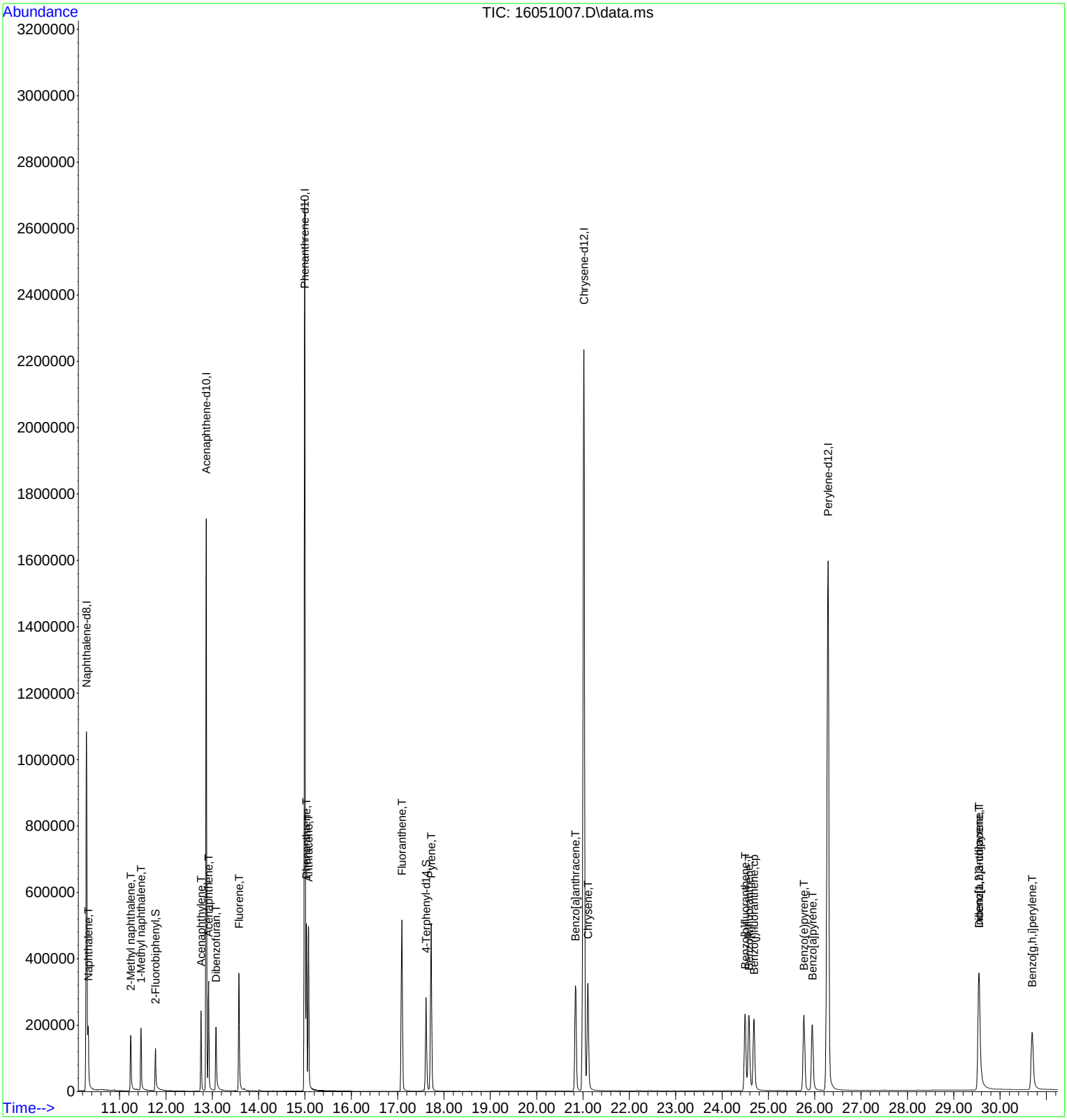
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.284	136	1616531	4000.00	ug/kg	100
6) Acenaphthene-d10	12.871	164	1052604	4000.00	ug/kg	101
11) Phenanthrene-d10	14.996	188	3326988	4000.00	ug/kg	99
16) Chrysene-d12	21.020	240	3820943	4000.00	ug/kg	102
20) Perylene-d12	26.287	264	3197705	4000.00	ug/kg	101
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.773	172	165670	521.45	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 13.04%#			
17) 4-Terphenyl-d14	17.615	244	441296	499.86	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 12.50%#			
Target Compounds						Qvalue
2) Naphthalene	10.321	128	197925	505.21	ug/kg	100
3) 2-Methyl naphthalene	11.239	142	127484	477.61	ug/kg	99
4) 1-Methyl naphthalene	11.461	142	134372	546.57	ug/kg	99
7) Acenaphthylene	12.759	152	249148	503.69	ug/kg	99
8) Acenaphthene	12.921	153	156678	500.52	ug/kg	99
9) Dibenzofuran	13.083	168	255650	505.74	ug/kg	98
10) Fluorene	13.574	166	237488	499.58	ug/kg	100
12) Phenanthrene	15.032	178	471774	489.95	ug/kg	98
13) Anthracene	15.076	178	518768	497.27	ug/kg	98
14) Fluoranthene	17.092	202	627904	498.28	ug/kg	98
15) Pyrene	17.722	202	622926	492.85	ug/kg	98
18) Benzo[a]anthracene	20.837	228	531791	495.11	ug/kg	99
19) Chrysene	21.108	228	487688	496.00	ug/kg	98
21) Benzo[b]fluoranthene	24.500	252	446872	490.71	ug/kg	99
22) Benzo[k]fluoranthene	24.580	252	394934	540.70	ug/kg	98
23) Benzo(j)fluoranthene	24.690	252	391806	530.72	ug/kg	99
24) Benzo(e)pyrene	25.767	252	438198	501.33	ug/kg	99
25) Benzo[a]pyrene	25.950	252	414276	494.96	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.547	276	459506	495.54	ug/kg	97
27) Dibenz[a,h]anthracene	29.539	278	373713	494.35	ug/kg	98
28) Benzo[g,h,i]perylene	30.689	276	394763	487.88	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051007.D
Acq On : 10 May 2016 9:44 pm
Operator :
Sample : PAH5-160510 500ppb
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 11 10:45:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051008.D
Acq On : 10 May 2016 10:21 pm
Operator :
Sample : PAH6-160510 1000ppb
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 11 10:45:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.281	136	1609199	4000.00	ug/kg	100
6) Acenaphthene-d10	12.866	164	1043592	4000.00	ug/kg	100
11) Phenanthrene-d10	14.993	188	3366458	4000.00	ug/kg	100
16) Chrysene-d12	21.013	240	3758565	4000.00	ug/kg	100
20) Perylene-d12	26.280	264	3167827	4000.00	ug/kg	100

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.771	172	338103	1069.04	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 26.73%#			
17) 4-Terphenyl-d14	17.615	244	853490	982.80	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.57%#			

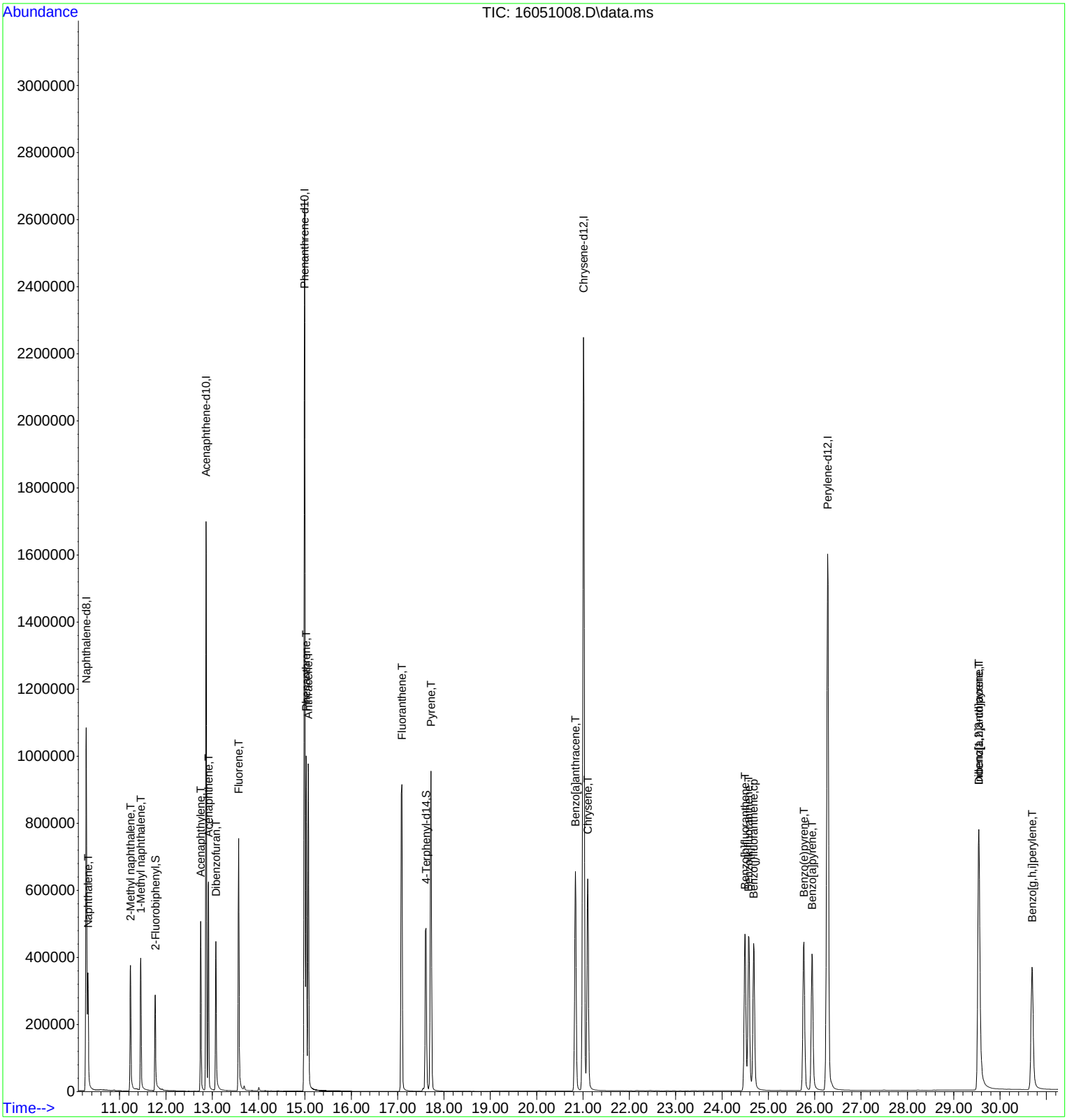
Target Compounds						Qvalue
2) Naphthalene	10.319	128	395299	1013.61	ug/kg	100
3) 2-Methyl naphthalene	11.236	142	270515	1018.82	ug/kg	99
4) 1-Methyl naphthalene	11.458	142	265900	1086.50	ug/kg	100
7) Acenaphthylene	12.753	152	492825	1004.92	ug/kg	99
8) Acenaphthene	12.920	153	313128	1008.96	ug/kg	99
9) Dibenzofuran	13.077	168	502264	1002.18	ug/kg	96
10) Fluorene	13.573	166	475116	1008.08	ug/kg	98
12) Phenanthrene	15.029	178	950311	975.34	ug/kg	99
13) Anthracene	15.073	178	1019159	965.46	ug/kg	99
14) Fluoranthene	17.092	202	1223282	959.36	ug/kg	98
15) Pyrene	17.723	202	1217297	951.81	ug/kg	98
18) Benzo[a]anthracene	20.837	228	1052978	996.62	ug/kg	99
19) Chrysene	21.101	228	958443	990.95	ug/kg	99
21) Benzo[b]fluoranthene	24.500	252	912278	1011.22	ug/kg	99
22) Benzo[k]fluoranthene	24.580	252	794172	1097.55	ug/kg	99
23) Benzo(j)fluoranthene	24.683	252	782779	1070.30	ug/kg	99
24) Benzo(e)pyrene	25.767	252	867399	1001.73	ug/kg	99
25) Benzo[a]pyrene	25.943	252	834302	1006.19	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.547	276	931689	1014.23	ug/kg	99
27) Dibenz[a,h]anthracene	29.539	278	766967	1024.12	ug/kg	98
28) Benzo[g,h,i]perylene	30.690	276	797908	995.42	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051008.D
Acq On : 10 May 2016 10:21 pm
Operator :
Sample : PAH6-160510 1000ppb
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 11 10:45:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051009.D
Acq On : 10 May 2016 10:58 pm
Operator :
Sample : PAH7-160510 2000ppb
Misc : CAL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 11 10:45:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

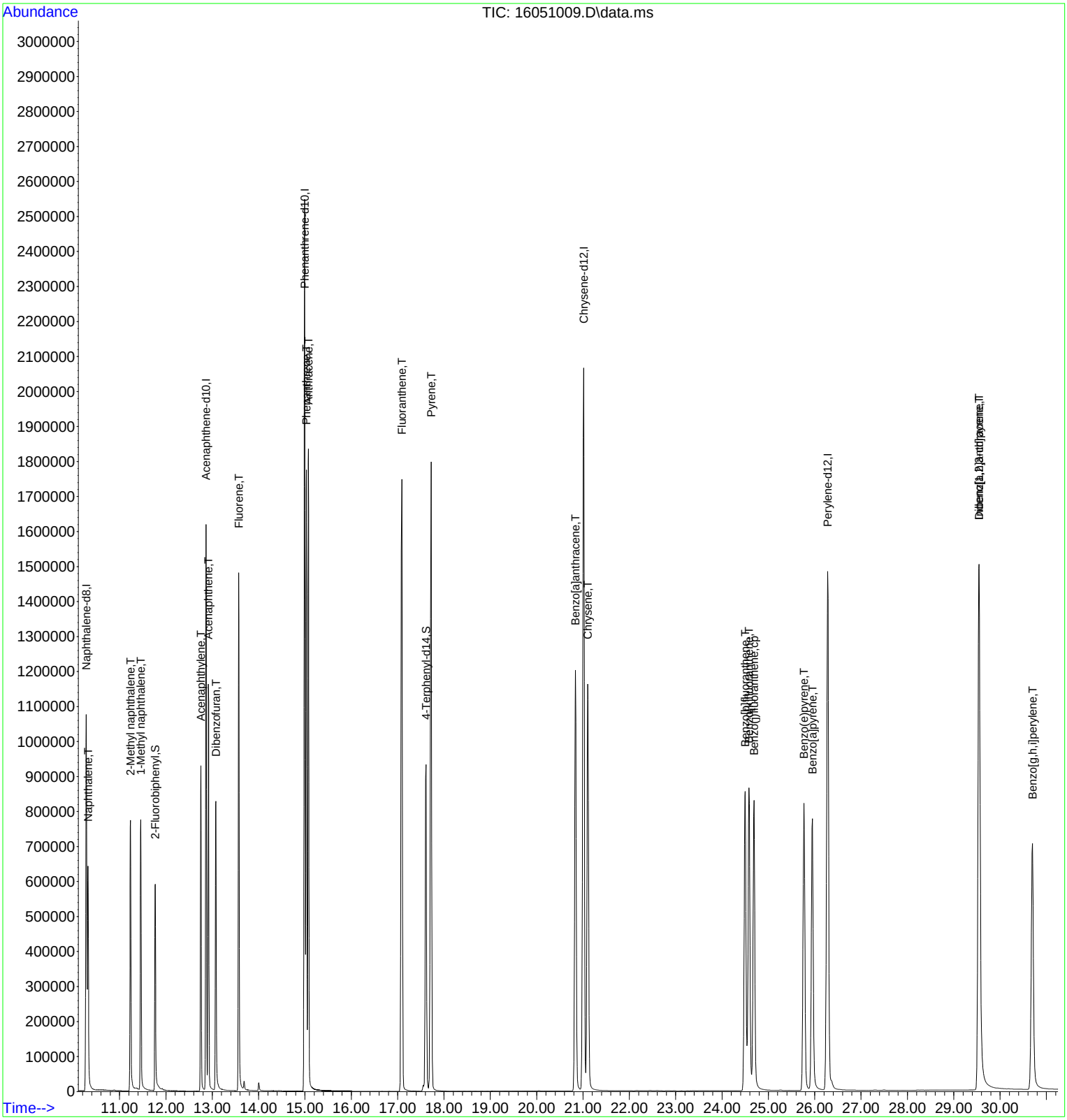
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.280	136	1562362	4000.00	ug/kg	97
6) Acenaphthene-d10	12.867	164	977263	4000.00	ug/kg	94
11) Phenanthrene-d10	14.992	188	3104845	4000.00	ug/kg	92
16) Chrysene-d12	21.013	240	3495950	4000.00	ug/kg	93
20) Perylene-d12	26.280	264	2966012	4000.00	ug/kg	94
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.769	172	632072	2058.44	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	51.46%		
17) 4-Terphenyl-d14	17.615	244	1563267	1935.33	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	48.38%#		
Target Compounds						Qvalue
2) Naphthalene	10.317	128	759401	2005.61	ug/kg	100
3) 2-Methyl naphthalene	11.235	142	523991	2046.89	ug/kg	100
4) 1-Methyl naphthalene	11.457	142	501831	2112.02	ug/kg	100
7) Acenaphthylene	12.754	152	915681	1993.89	ug/kg	100
8) Acenaphthene	12.916	153	576336	1983.10	ug/kg	100
9) Dibenzofuran	13.078	168	912453	1944.22	ug/kg	100
10) Fluorene	13.569	166	859915	1948.37	ug/kg	100
12) Phenanthrene	15.030	178	1714290	1907.70	ug/kg	100
13) Anthracene	15.074	178	1858022	1908.44	ug/kg	100
14) Fluoranthene	17.092	202	2215471	1883.89	ug/kg	100
15) Pyrene	17.723	202	2207662	1871.63	ug/kg	100
18) Benzo[a]anthracene	20.838	228	1941914	1976.04	ug/kg	100
19) Chrysene	21.101	228	1770777	1968.37	ug/kg	100
21) Benzo[b]fluoranthene	24.500	252	1673798	1981.57	ug/kg	100
22) Benzo[k]fluoranthene	24.581	252	1504300	2220.40	ug/kg	100
23) Benzo(j)fluoranthene	24.691	252	1459957	2132.04	ug/kg	100
24) Benzo(e)pyrene	25.767	252	1588413	1959.22	ug/kg	100
25) Benzo[a]pyrene	25.951	252	1549020	1995.27	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.555	276	1738697	2021.53	ug/kg	100
27) Dibenz[a,h]anthracene	29.540	278	1443267	2058.30	ug/kg	100
28) Benzo[g,h,i]perylene	30.697	276	1492122	1988.14	ug/kg	100

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051009.D
Acq On : 10 May 2016 10:58 pm
Operator :
Sample : PAH7-160510 2000ppb
Misc : CAL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 11 10:45:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051010.D
Acq On : 10 May 2016 11:34 pm
Operator :
Sample : PAH8-160510 5000ppb
Misc : CAL
ALS Vial : 10 Sample Multiplier: 1

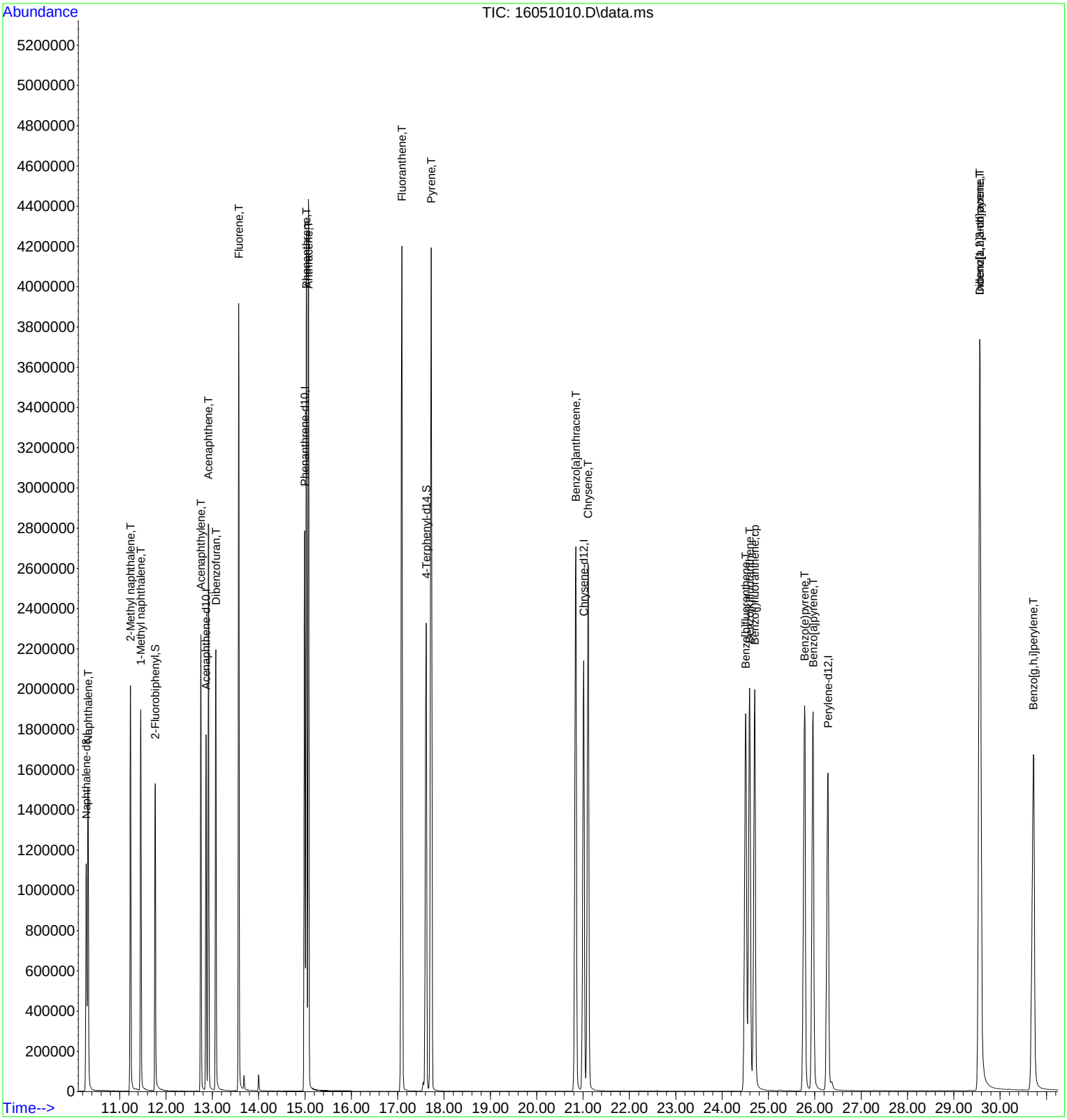
Quant Time: May 11 10:45:21 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.279	136	1607500	4000.00	ug/kg	100
6) Acenaphthene-d10	12.866	164	1048910	4000.00	ug/kg	101
11) Phenanthrene-d10	14.991	188	3489646	4000.00	ug/kg	104
16) Chrysene-d12	21.012	240	3642647	4000.00	ug/kg	97
20) Perylene-d12	26.286	264	3135775	4000.00	ug/kg	99
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.769	172	1510643	4781.51	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 119.54%			
17) 4-Terphenyl-d14	17.616	244	3633740	4317.42	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 107.94%			
Target Compounds						Qvalue
2) Naphthalene	10.317	128	1810982	4648.57	ug/kg	99
3) 2-Methyl naphthalene	11.234	142	1280055	4979.05	ug/kg	99
4) 1-Methyl naphthalene	11.456	142	1192892	4879.47	ug/kg	99
7) Acenaphthylene	12.753	152	2220480	4504.81	ug/kg	98
8) Acenaphthene	12.915	153	1422129	4559.13	ug/kg	99
9) Dibenzofuran	13.077	168	2245752	4458.31	ug/kg	98
10) Fluorene	13.568	166	2202341	4649.14	ug/kg	99
12) Phenanthrene	15.031	178	4235828	4193.94	ug/kg	96
13) Anthracene	15.075	178	4500062	4112.49	ug/kg	96
14) Fluoranthene	17.093	202	5080861	3844.01	ug/kg	94
15) Pyrene	17.723	202	5128610	3868.52	ug/kg	90
18) Benzo[a]anthracene	20.844	228	4526014	4420.07	ug/kg	97
19) Chrysene	21.107	228	4159232	4437.15	ug/kg	98
21) Benzo[b]fluoranthene	24.513	252	4109167	4601.37	ug/kg	98
22) Benzo[k]fluoranthene	24.594	252	3594211	5017.97	ug/kg	98
23) Benzo(j)fluoranthene	24.704	252	3516896	4857.85	ug/kg	98
24) Benzo(e)pyrene	25.781	252	3849551	4491.16	ug/kg	98
25) Benzo[a]pyrene	25.964	252	3809209	4640.96	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.568	276	4344207	4777.43	ug/kg	88
27) Dibenz[a,h]anthracene	29.560	278	3568930	4814.24	ug/kg	97
28) Benzo[g,h,i]perylene	30.725	276	3771267	4752.90	ug/kg	99

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

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051010.D
Acq On : 10 May 2016 11:34 pm
Operator :
Sample : PAH8-160510 5000ppb
Misc : CAL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 11 10:45:21 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051012.D
Acq On : 11 May 2016 12:49 am
Operator :
Sample : SSCV-160510 2500ppb
Misc : ICV
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 11 10:45:24 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.280	136	1855821	4000.00	ug/kg	115
6) Acenaphthene-d10	12.867	164	1123330	4000.00	ug/kg	108
11) Phenanthrene-d10	14.987	188	2598636	4000.00	ug/kg	77
16) Chrysene-d12	21.006	240	3825814	4000.00	ug/kg	102
20) Perylene-d12	26.280	264	3299401	4000.00	ug/kg	104

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	1675854	4594.67	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 114.87%			
17) 4-Terphenyl-d14	17.615	244	3374351	3817.28	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 95.43%			

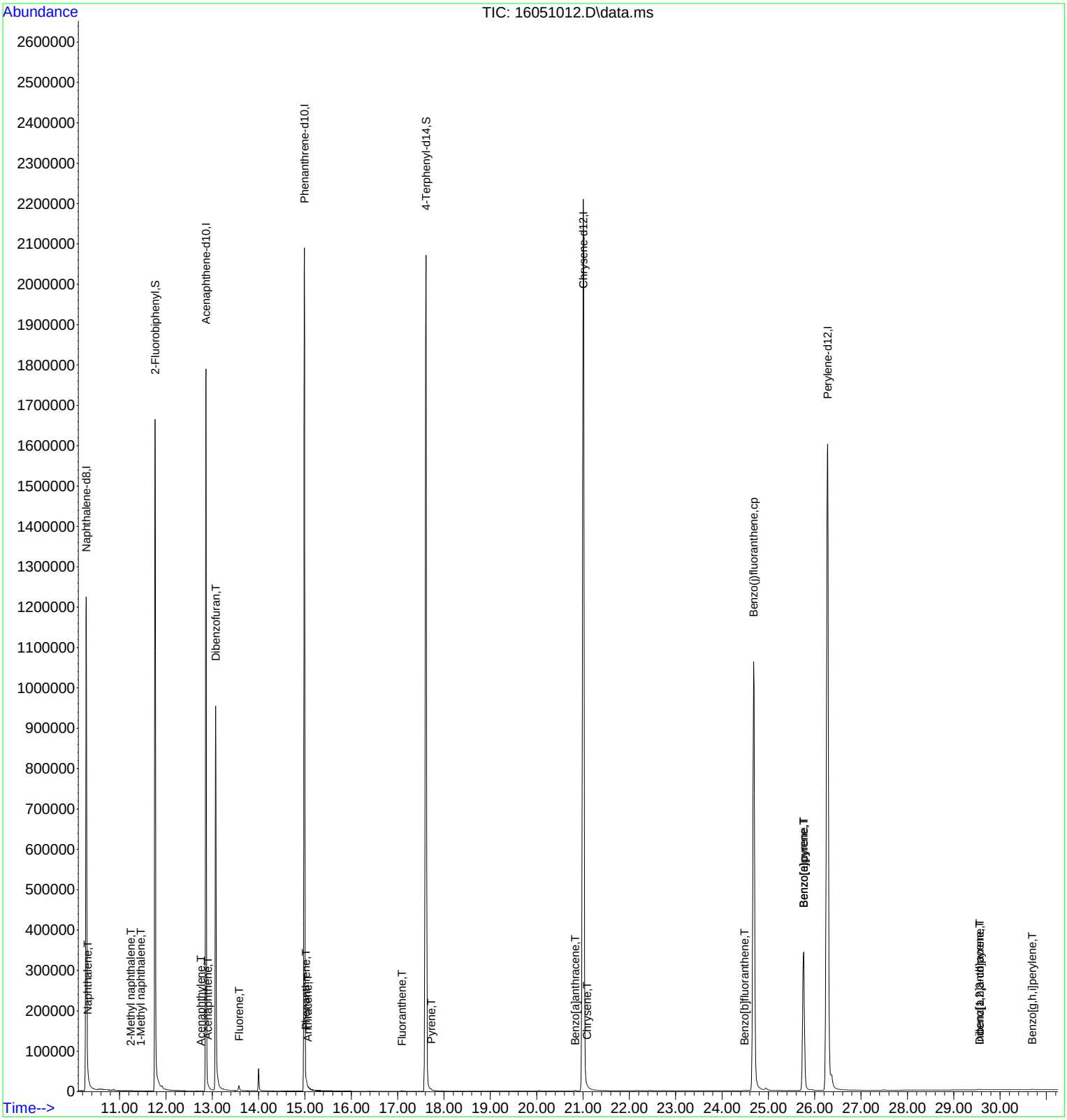
Target Compounds						Qvalue	
2) Naphthalene	10.317	128	953	2.12	ug/kg	76	
3) 2-Methyl naphthalene	11.239	142	531	5.14	ug/kg	93	
4) 1-Methyl naphthalene	11.457	142	562	1.99	ug/kg	95	
7) Acenaphthylene	12.754	152	1045	1.98	ug/kg	96	
8) Acenaphthene	12.916	153	751	2.25	ug/kg	97	
9) Dibenzofuran	13.073	168	1056592	1958.60	ug/kg	93	See rerun for dibenzofuran.
10) Fluorene	13.574	166	10421	20.54	ug/kg	99	
12) Phenanthrene	15.025	178	1893	2.52	ug/kg	97	
13) Anthracene	15.070	178	1817	2.23	ug/kg	100	
14) Fluoranthene	17.092	202	2752	2.80	ug/kg	99	
15) Pyrene	17.723	202	3178	3.22	ug/kg	96	
18) Benzo[a]anthracene	20.830	228	3027	2.81	ug/kg	99	
19) Chrysene	21.094	228	2819	2.86	ug/kg	97	
21) Benzo[b]fluoranthene	24.493	252	2910	3.10	ug/kg	100	
22) Benzo[k]fluoranthene	0.000	252	0	N.D.			
23) Benzo(j)fluoranthene	24.683	252	1990617	2613.26	ug/kg	100	
24) Benzo(e)pyrene	25.760	252	664023	736.28	ug/kg	99	
25) Benzo[a]pyrene	25.760	252	641359	742.65	ug/kg	95	
26) Indeno[1,2,3-cd]pyrene	29.562	276	2706	2.83	ug/kg	98	
27) Dibenz[a,h]anthracene	29.547	278	2621	3.36	ug/kg	95	
28) Benzo[g,h,i]perylene	30.682	276	2447	2.93	ug/kg	96	

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051012.D
Acq On : 11 May 2016 12:49 am
Operator :
Sample : SSCV-160510 2500ppb
Misc : ICV
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 11 10:45:24 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051013.D
Acq On : 11 May 2016 1:26 am
Operator :
Sample : SSCV-160510 2500ppb
Misc : ICV
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 11 10:45:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

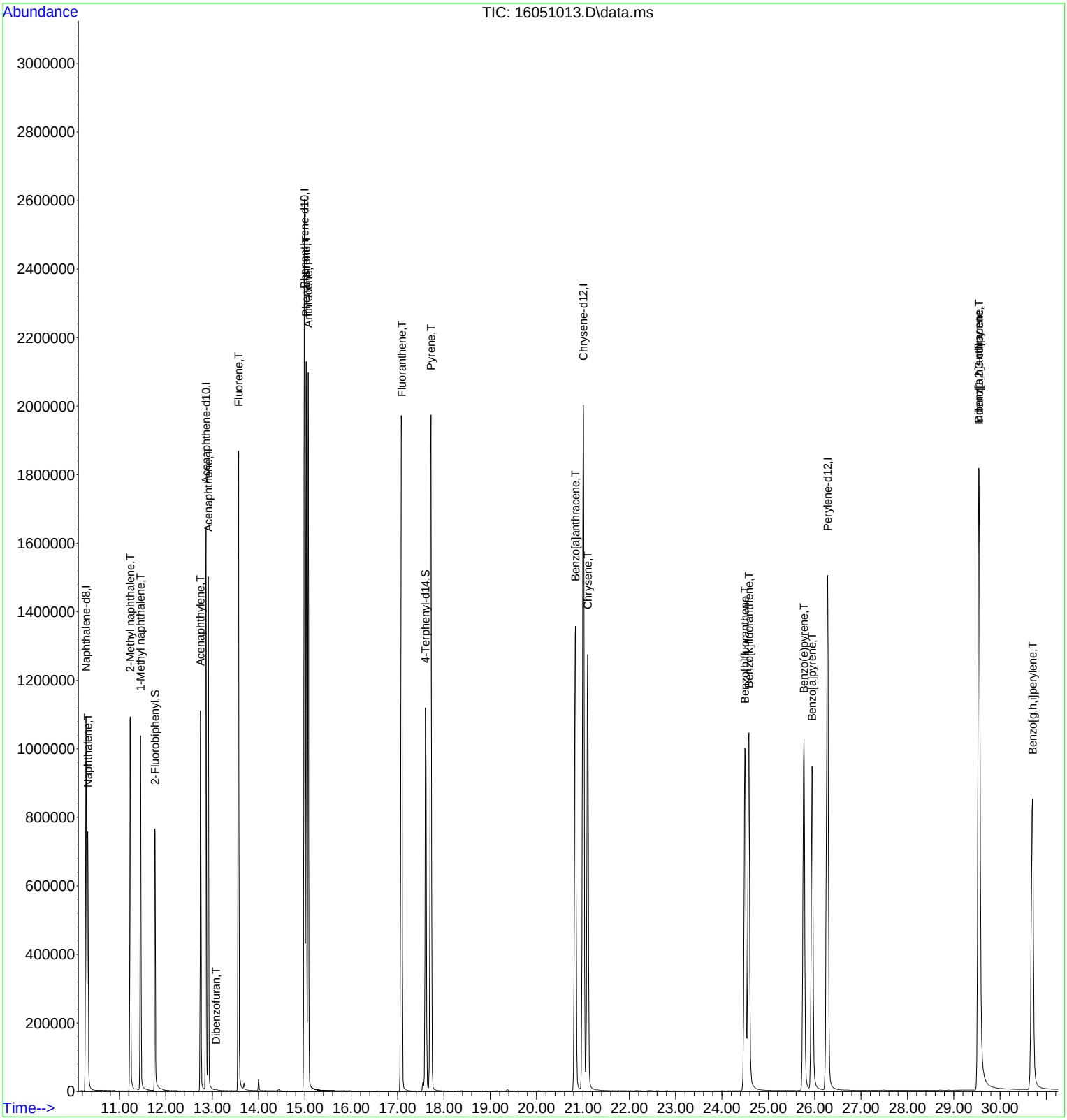
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.278	136	1554639	4000.00	ug/kg	97
6) Acenaphthene-d10	12.866	164	1006608	4000.00	ug/kg	96
11) Phenanthrene-d10	14.989	188	3157008	4000.00	ug/kg	94
16) Chrysene-d12	21.006	240	3463869	4000.00	ug/kg	92
20) Perylene-d12	26.280	264	2950519	4000.00	ug/kg	93
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.763	172	779363	2550.73	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	63.77%		
17) 4-Terphenyl-d14	17.602	244	1768654	2209.88	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery =	55.25%		
Target Compounds						Qvalue
2) Naphthalene	10.315	128	894398	2373.87	ug/kg	100
3) 2-Methyl naphthalene	11.232	142	717289	2833.51	ug/kg	100
4) 1-Methyl naphthalene	11.454	142	656912	2778.44	ug/kg	100
7) Acenaphthylene	12.748	152	1098072	2321.34	ug/kg	100
8) Acenaphthene	12.915	153	729094	2435.59	ug/kg	99
9) Dibenzofuran	13.082	168	3308	6.84	ug/kg	93
10) Fluorene	13.568	166	1095429	2409.63	ug/kg	98
12) Phenanthrene	15.027	178	2064186	2259.11	ug/kg	99
13) Anthracene	15.071	178	2115711	2137.21	ug/kg	99
14) Fluoranthene	17.092	202	2598569	2173.14	ug/kg	97
15) Pyrene	17.722	202	2593276	2162.22	ug/kg	97
18) Benzo[a]anthracene	20.837	228	2215618	2275.43	ug/kg	100
19) Chrysene	21.101	228	1891125	2121.62	ug/kg	100
21) Benzo[b]fluoranthene	24.493	252	1991808	2370.43	ug/kg	99
22) Benzo[k]fluoranthene	24.581	252	1882427	2793.12	ug/kg	99
23) Benzo(j)fluoranthene	0.000	252	0	N.D.		
24) Benzo(e)pyrene	25.767	252	1976951	2451.27	ug/kg	100
25) Benzo[a]pyrene	25.943	252	1884992	2440.78	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.554	276	2091753	2444.78	ug/kg	100
27) Dibenz[a,h]anthracene	29.540	278	1738477	2492.33	ug/kg	100
28) Benzo[g,h,i]perylene	30.697	276	1798976	2409.59	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051013.D
Acq On : 11 May 2016 1:26 am
Operator :
Sample : SSCV-160510 2500ppb
Misc : ICV
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 11 10:45:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051020.D
Acq On : 11 May 2016 9:18 am
Operator :
Sample : SSCV-160511
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 11 10:45:44 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration

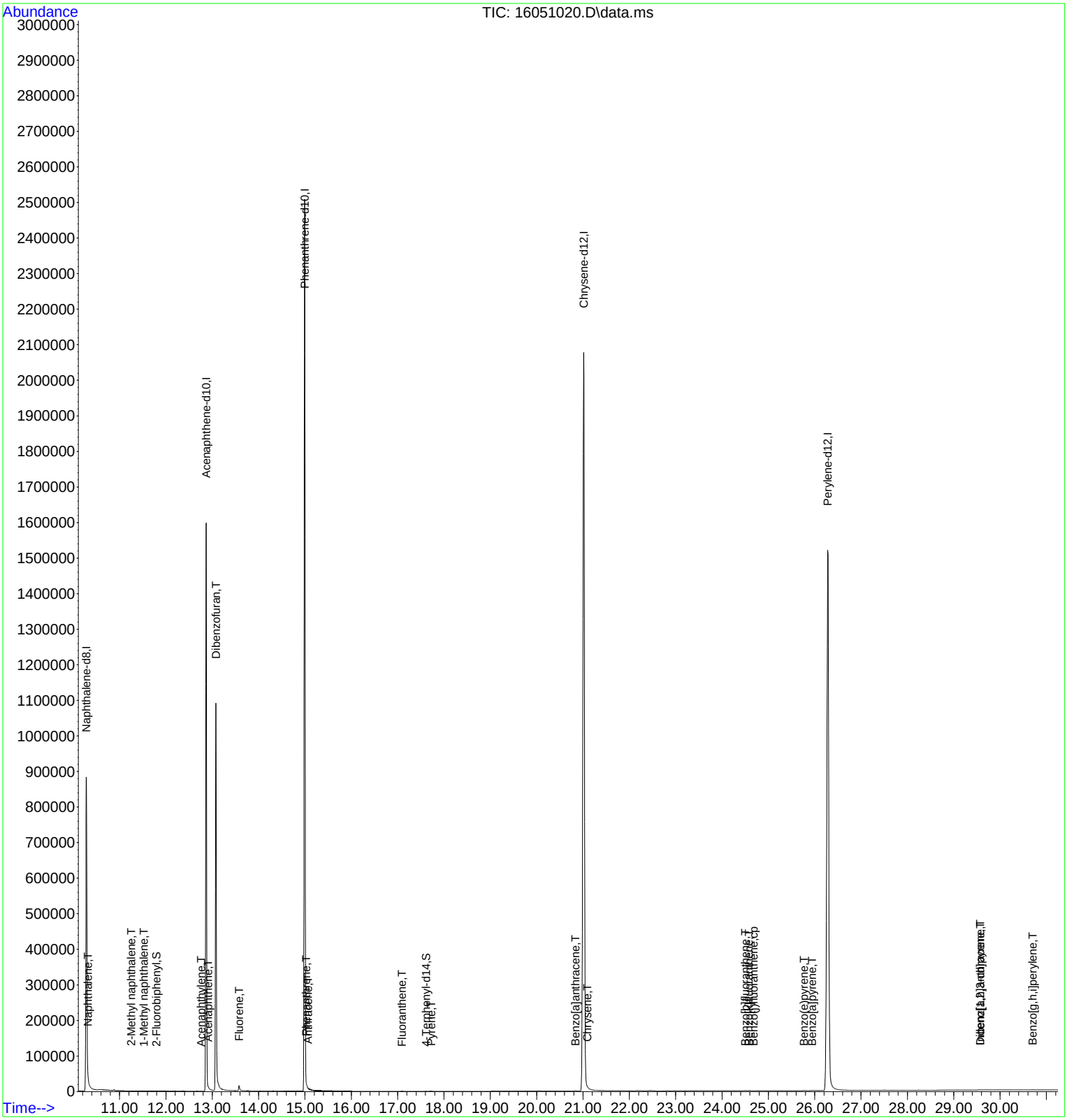
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.280	136	1399599	4000.00	ug/kg	87
6) Acenaphthene-d10	12.872	164	1004361	4000.00	ug/kg	96
11) Phenanthrene-d10	14.994	188	3100424	4000.00	ug/kg	92
16) Chrysene-d12	21.013	240	3551246	4000.00	ug/kg	94
20) Perylene-d12	26.280	264	2998619	4000.00	ug/kg	95
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.790	172	161	0.59	ug/kg	0.02
Spiked Amount 4000.000	Range 40 - 140		Recovery =	0.01%#		
17) 4-Terphenyl-d14	17.615	244	1074	1.31	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	0.03%#		
Target Compounds						Qvalue
2) Naphthalene	10.321	128	189	0.56	ug/kg	80
3) 2-Methyl naphthalene	11.243	142	73	3.74	ug/kg#	71
4) 1-Methyl naphthalene	11.527	142	17	0.08	ug/kg	96
7) Acenaphthylene	12.759	152	258	0.55	ug/kg	97
8) Acenaphthene	12.921	153	264	0.88	ug/kg	90
9) Dibenzofuran	13.078	168	1144093	2372.02	ug/kg	92
10) Fluorene	13.579	166	11574	25.52	ug/kg	99
12) Phenanthrene	15.032	178	1088	1.21	ug/kg	98
13) Anthracene	15.076	178	957	0.98	ug/kg	96
14) Fluoranthene	17.092	202	1237	1.05	ug/kg	91
15) Pyrene	17.722	202	1577	1.34	ug/kg	95
18) Benzo[a]anthracene	20.838	228	1390	1.39	ug/kg	97
19) Chrysene	21.101	228	1149	1.26	ug/kg	97
21) Benzo[b]fluoranthene	24.500	252	1334	1.56	ug/kg	97
22) Benzo[k]fluoranthene	24.581	252	806	1.18	ug/kg	99
23) Benzo(j)fluoranthene	24.683	252	177	0.26	ug/kg	72
24) Benzo(e)pyrene	25.767	252	510	0.62	ug/kg	94
25) Benzo[a]pyrene	25.943	252	1108	1.41	ug/kg	93
26) Indeno[1,2,3-cd]pyrene	29.569	276	1222	1.41	ug/kg	95
27) Dibenz[a,h]anthracene	29.576	278	1493	2.11	ug/kg	90
28) Benzo[g,h,i]perylene	30.704	276	997	1.31	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160510\
Data File : 16051020.D
Acq On : 11 May 2016 9:18 am
Operator :
Sample : SSCV-160511
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 11 10:45:44 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 11 10:43:33 2016
Response via : Initial Calibration



CAL ID: 660

Method 8270 PAH Calibration Curve Sheet

Instrument ID: GCMS #8 **Calibration File Name:** PP160517.CAL

Target Concentration	Solvent Amount mL	Standard Preparation Stocks and Surrogate (µL/mL)	Final Volume mL
5 ppb	0.999	0.001 mL of 5000 ppb	1
10 ppb	0.998	0.002 mL of 5000 ppb	1
50 ppb	0.990	0.01 mL of 5000 ppb	1
100 ppb	0.980	0.02 mL of 5000 ppb	1
500 ppb	0.900	0.10 mL of 5000 ppb	1
1000 ppb	0.800	0.20 mL of 5000 ppb	1
2000 ppb	0.600	0.40 mL of 5000 ppb	1
5000 ppb	----	PAHCAL160510	10
SSCV 2500 ppb	0.500	0.50 mL of PAHSSCV160510-1	1
SSCV 2500 ppb	----	PAHSSCV160510-2	1

Standards Used for the Calibration Curve

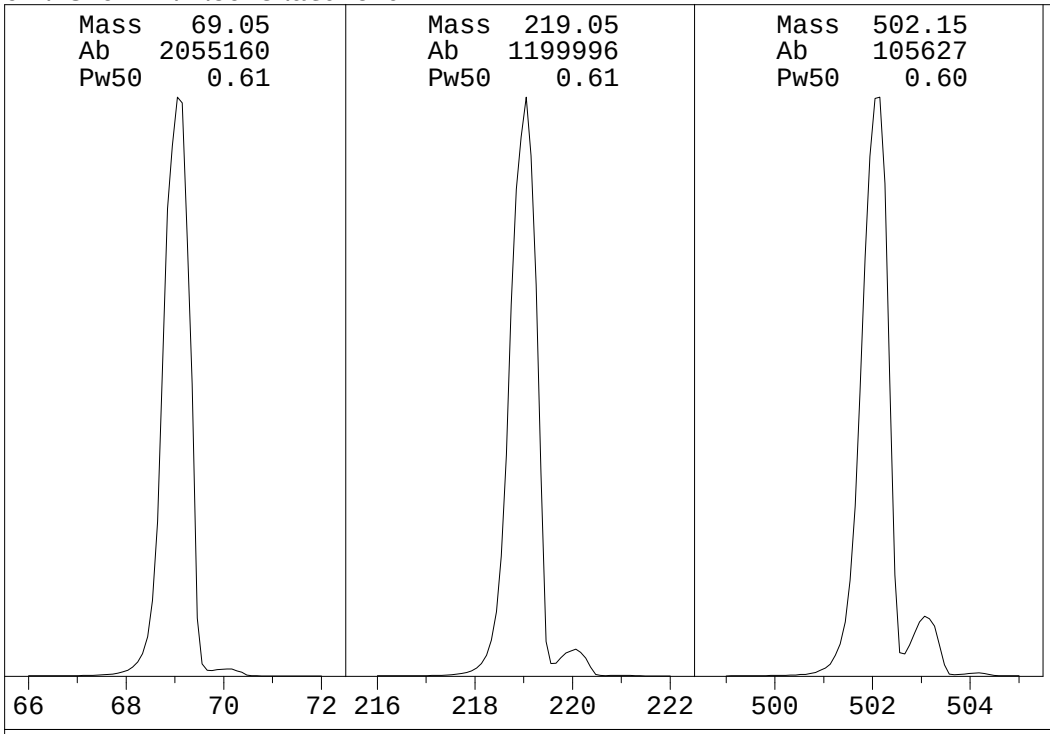
Primary Stock STDs	DHL Standard ID	Second Source (SS) Stock STDs	DHL Standard ID
5 PPM (5000 PPB) PAH CAL STD	**PAHCAL160510**	5PPM (5000PPB) PAH SSCV STD	**PAHSSCV160510-1**
		5PPM (5000PPB) PAH SSCV STD	**PAHSSCV160510-2**

Review Item	Acceptance Criteria	Yes	No	N/A	2nd Level Review
1. Are all standards within expiration dates?	Primary Stocks = 1 year Intermediate Standards = 6 months	X			X
2. Are all manual integrations listed on MI tracking form? **(DoD Projects only)**	Manual Integration Tracking Form			X	X
3. Does the tune and resolution check meet criteria?	Benzo(b) / Benzo(k)phenanthrene Valley > 50% See Tune Eval Report	X			X
4. Does the ICAL curve meet criteria? Use average CF only if %RSD < 15%	%RSD < 15% COD ≥ 0.990	X			X
5. Has the low point been reprocessed under the new ICAL curve and meets criteria?	70-130% recovery	X			X
6. Has the SSCV been analyzed and meets criteria?	80-120% recovery	X			X

Analyst: Karyn Lane Date: 05/18/16

Second-Level Review: Date: 05/19/2016

Tue May 17 15:37:19 2016 Instrument: GCMS #8
C:\MSDCHEM\1\5973\atune.u

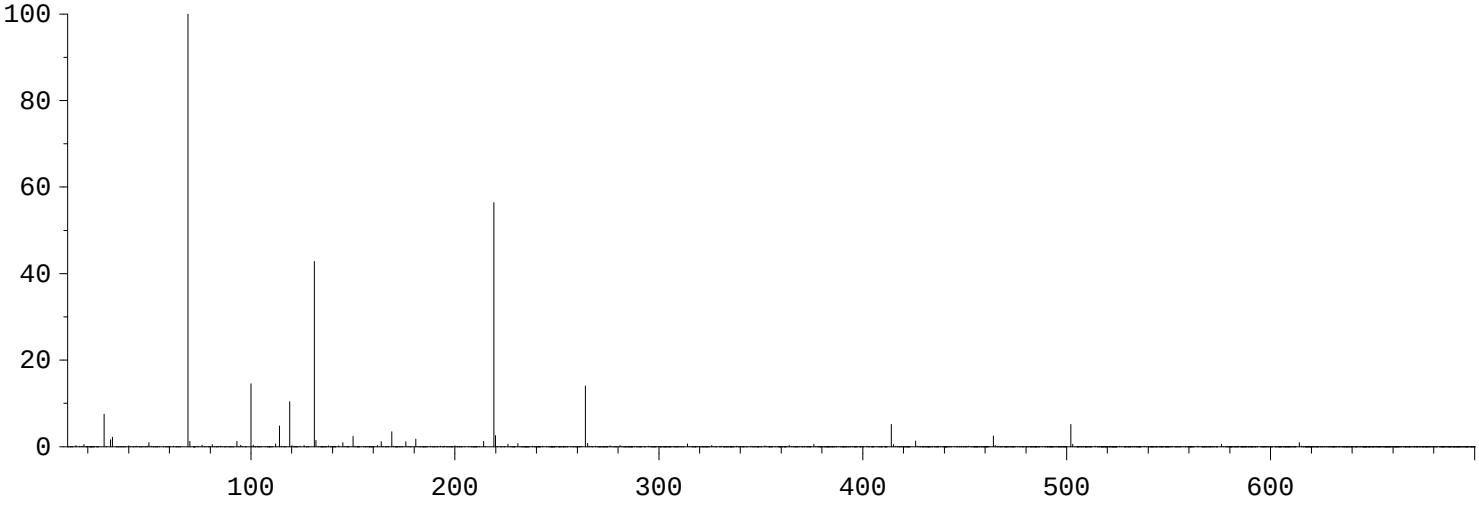


Ion Pol	POS	MassGain	48
		MassOffs	-11
Emission	34.6	AmuGain	2098
EIEnrgy	69.9	AmuOffs	132
Filament	2	Wid219	-0.001
		DC Pol	NEG
Repeller	37.83		
IonFcus	95.9	HEDEnab	ON
EntLens	12.0	EMVolts	1506
EntOffs	19.33		
		Samples	8
PFTBA	OPEN	Averages	3
		Stepsize	0.10

Zones:

MS Source	230	Foreline	41
MS Quad	150		

Scan: 10.00 - 700.00 Samples: 8 Thresh: 0 Step: 0.10
862 peaks Base: 69.05 Abundance: 1927168



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	1927168	100.00	70.05	23616	1.23
219.05	1086464	56.38	219.95	49704	4.57
502.05	98928	5.13	503.05	10766	10.88

Air/Water Check: H20~0.48% N2~7.48% O2~2.21% CO2~0.12% N2/H2O~1565.94%

Column Flow: Front: 0 Back: 1.887 ml/min. Interface Temp: 310

Ramp Criteria:
Ion Focus Maximum 125 volts using ion 219; EM Gain 34065
Repeller Maximum 38 volts using ion 502;

MassGain Values @Samples: 45@3 45@2 45@1 45@0 48@FS

TARGET MASS:	50	69	131	219	414	502	800
Amu Offset:	132.0	132.0	132.0	132.0	132.0	132.0	132.0
Entrance Lens Offset:	19.3	19.3	19.3	19.3	19.3	19.3	19.3

Response Factor Report GCMS #8

Method Path : C:\msdchem\1\METHODS\
Method File : PAH160517.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Wed May 18 08:55:04 2016
Response Via : Initial Calibration

Calibration Files
1 =16051715.D 2 =16051716.D 3 =16051717.D 4 =16051718.D 5 =16051719.D 6 =16051720.D 7 =16051721.D
8 =16051722.D

		Compound	1	2	3	4	5	6	7	8	Avg	%RSD	Fit	RSD/CF	Constant	Linear	Quad
1)	I	Naphthalene-d8	----------ISTD----------														
2)	T	Naphthalene	0.971	0.931	0.909	0.923	0.896	0.882	0.854	0.803	0.896	5.70	A	0.0570	0.0000	0.8961	0.0000
3)	T	2-Methyl napht...	0.668	0.737	0.723	0.752	0.728	0.704	0.661	0.601	0.697	7.19	A	0.0719	0.0000	0.6966	0.0000
4)	T	1-Methyl napht...	0.697	0.702	0.687	0.699	0.676	0.648	0.610	0.555	0.659	7.98	A	0.0798	0.0000	0.6592	0.0000
5)	S	2-Fluorobiphenyl	0.930	0.951	0.942	0.982	0.925	0.877	0.808	0.711	0.891	10.09	A	0.1009	0.0000	0.8906	0.0000
6)	I	Acenaphthene-d10	----------ISTD----------														
7)	T	Acenaphthylene	1.873	1.811	1.779	1.812	1.778	1.749	1.659	1.526	1.748	6.23	A	0.0623	0.0000	1.7484	0.0000
8)	T	Acenaphthene	1.167	1.152	1.126	1.146	1.113	1.099	1.051	0.972	1.103	5.81	A	0.0581	0.0000	1.1033	0.0000
9)	T	Dibenzofuran	1.723	1.773	1.714	1.766	1.706	1.690	1.606	1.468	1.681	5.96	A	0.0596	0.0000	1.6806	0.0000
10)	T	Fluorene	1.574	1.580	1.544	1.570	1.557	1.539	1.475	1.360	1.525	4.88	A	0.0488	0.0000	1.5249	0.0000
11)	I	Phenanthrene-d10	----------ISTD----------														
12)	T	Phenanthrene	1.343	1.225	1.137	1.093	1.075	1.049	0.987	0.896	1.101	12.58	A	0.1258	0.0000	1.1006	0.0000
13)	T	Anthracene	1.350	1.221	1.143	1.125	1.092	1.066	1.009	0.903	1.114	12.07	A	0.1207	0.0000	1.1137	0.0000
14)	T	Fluoranthene	1.583	1.275	1.196	1.123	1.107	1.088	1.044	0.963	1.172	16.25	*Q	1.0000	0.0006	1.1096	-0.1184
15)	T	Pyrene	1.586	1.256	1.180	1.100	1.074	1.064	1.028	0.961	1.156	16.94	*Q	1.0000	0.0006	1.0802	-0.0964
16)	I	Chrysene-d12	----------ISTD----------														
17)	S	4-Terphenyl-d14	0.872	0.888	0.864	0.856	0.860	0.858	0.821	0.754	0.847	4.97	A	0.0497	0.0000	0.8466	0.0000
18)	T	Benzo[a]anthra...	1.506	1.204	1.026	1.022	1.027	1.032	0.987	0.920	1.091	17.03	*Q	0.9999	0.0005	1.0384	-0.0949
19)	T	Chrysene	1.521	1.202	0.989	0.969	0.955	0.951	0.910	0.854	1.044	20.85	*Q	1.0000	0.0007	0.9573	-0.0833
20)	I	Perylene-d12	----------ISTD----------														
21)	T	Benzo[b]fluora...	1.525	1.225	1.056	1.050	1.055	1.058	1.026	0.966	1.120	15.99	*Q	1.0000	0.0005	1.0659	-0.0797
22)	T	Benzo[k]fluora...	1.318	1.047	0.912	0.909	0.937	0.953	0.939	0.886	0.987	14.39	*Q	0.9999	0.0003	0.9587	-0.0575
23)	cp	Benzo(j)fluora...	1.597	1.138	0.982	0.939	0.908	0.923	0.883	0.833	1.025	24.19#	*Q	0.9999	0.0007	0.9226	-0.0727
24)	T	Benzo(e)pyrene	1.554	1.244	1.042	1.019	0.993	1.003	0.966	0.907	1.091	19.34	*Q	1.0000	0.0006	1.0086	-0.0814
25)	T	Benzo[a]pyrene	1.491	1.168	1.005	0.982	0.978	0.983	0.962	0.916	1.061	17.79	*Q	1.0000	0.0005	0.9888	-0.0580
26)	T	Indeno[1,2,3-c...	1.996	1.545	1.257	1.238	1.216	1.208	1.175	1.102	1.342	21.92	*Q	1.0000	0.0009	1.2223	-0.0964
27)	T	Dibenz[a,h]ant...	2.036	1.480	1.029	1.030	1.006	1.007	0.982	0.912	1.185	32.52	*Q	0.9999	0.0011	1.0172	-0.0844
28)	T	Benzo[g,h,i]pe...	1.728	1.360	1.090	1.080	1.051	1.040	1.013	0.954	1.164	22.12	*Q	1.0000	0.0008	1.0532	-0.0802

(#) = Out of Range

Sequence Name: C:\msdchem\1\sequence\160517.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160517\
Instrument Name: GCMS #8
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

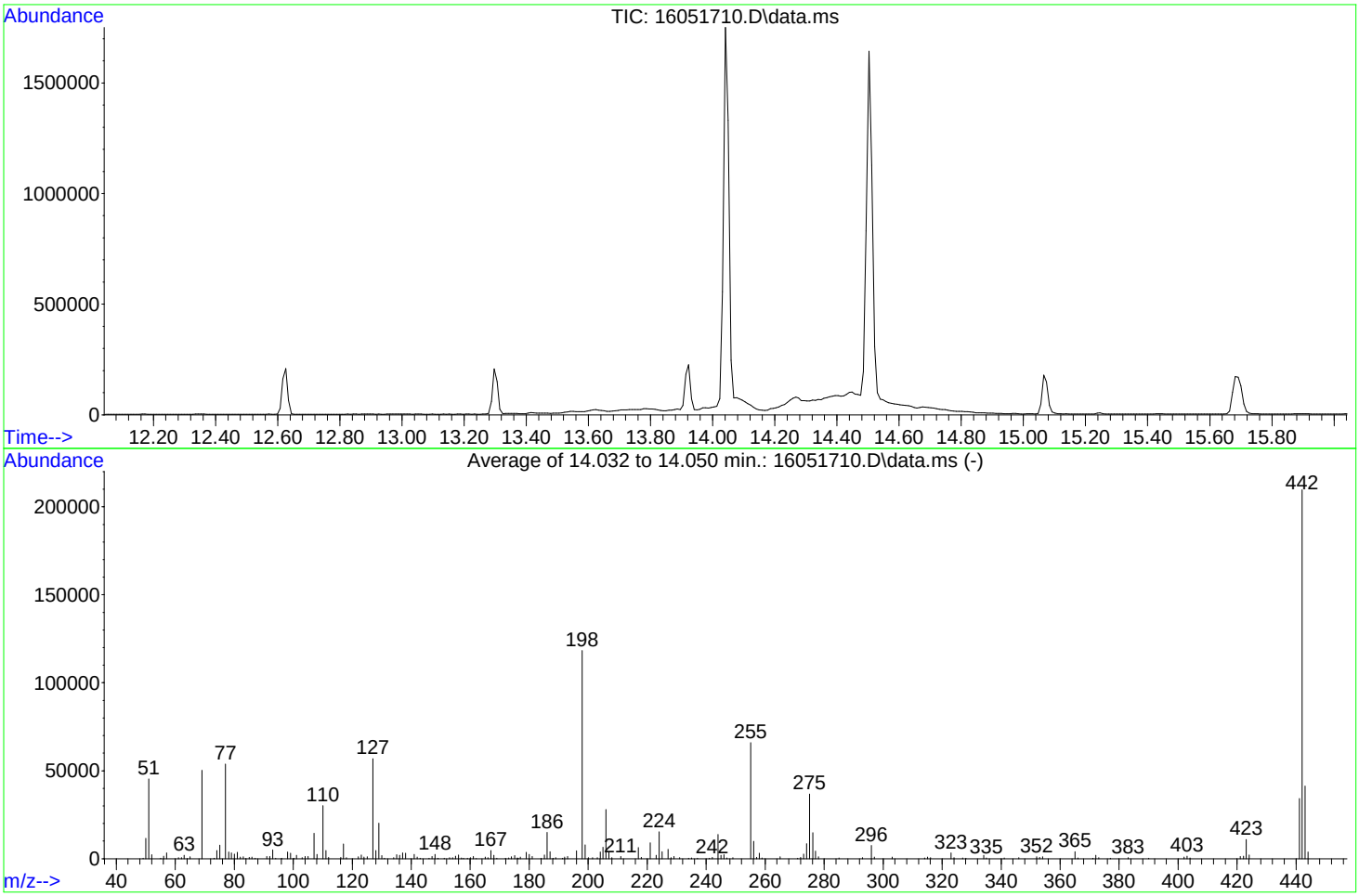
On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line		Sample Name/Misc Info		
1)	Sample	1	16051601 DFTPPPCB	DFTPP-160517
2)	Sample	2	16051602 1660-160511	ICV-160517
3)	Sample	3	16051703 1660-160511	LCS-75186
4)	Sample	4	16051704 1660-160511	LCSD-75186
5)	Sample	5	16051705 1660-160511	MB-75186
6)	Sample	6	16051706 1660-160511	1605115-01B
7)	Sample	7	16051707 1660-160511	1605115-02B
8)	Sample	1	16051708 DFTPPPAH	DFTPP-160517
9)	Sample	2	16051709 PAH160510	ICV-160517
10)	Sample	1	16051710 DFTPPPAH	DFTPP-160517
11)	Sample	2	16051711 PAH160510	ICV-160517
12)	Sample	3	16051712 PAH160510	SBLK
13)	Sample	3	16051713 PAH160510	SBLK
14)	Sample	3	16051714 PAH160510	SBLK
15)	Sample	4	16051715 PAH160510	P1-160517 5
16)	Sample	5	16051716 PAH160510	P2-160517 10
17)	Sample	6	16051717 PAH160510	P3-160517 50
18)	Sample	7	16051718 PAH160510	P4-160517 100
19)	Sample	8	16051719 PAH160510	P5-160517 500
20)	Sample	9	16051720 PAH160510	P6-160517 1000
21)	Sample	10	16051721 PAH160510	P7-160517 2000
22)	Sample	11	16051722 PAH160510	P8-160517 5000
23)	Sample	12	16051723 PAH160510	SSCV-160517
24)	Sample	13	16051724 PAH160510	SSCV-160517

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051710.D
Acq On : 17 May 2016 1:34 pm
Operator :
Sample : DFTPP-160517
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	38.3	45352	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	42.4	50218	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.0	56837	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	118309	PASS
199	198	5	9	6.7	7917	PASS
275	198	10	60	31.0	36677	PASS
365	198	1	200	3.4	4059	PASS
441	442	0.01	24	16.3	34164	PASS
442	198	50	400	177.3	209768	PASS
443	442	15	24	19.7	41255	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051715.D
Acq On : 17 May 2016 4:58 pm
Operator :
Sample : P1-160517 5
Misc : CAL1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 14:55:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1615408	4000.00	ug/kg	99
6) Acenaphthene-d10	12.862	164	1299470	4000.00	ug/kg	104
11) Phenanthrene-d10	14.983	188	2692201	4000.00	ug/kg	92
16) Chrysene-d12	20.996	240	2729963	4000.00	ug/kg	101
20) Perylene-d12	26.262	264	2530056	4000.00	ug/kg	102

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	1877	5.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.13%#			
17) 4-Terphenyl-d14	17.598	244	2976	5.15	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.13%#			

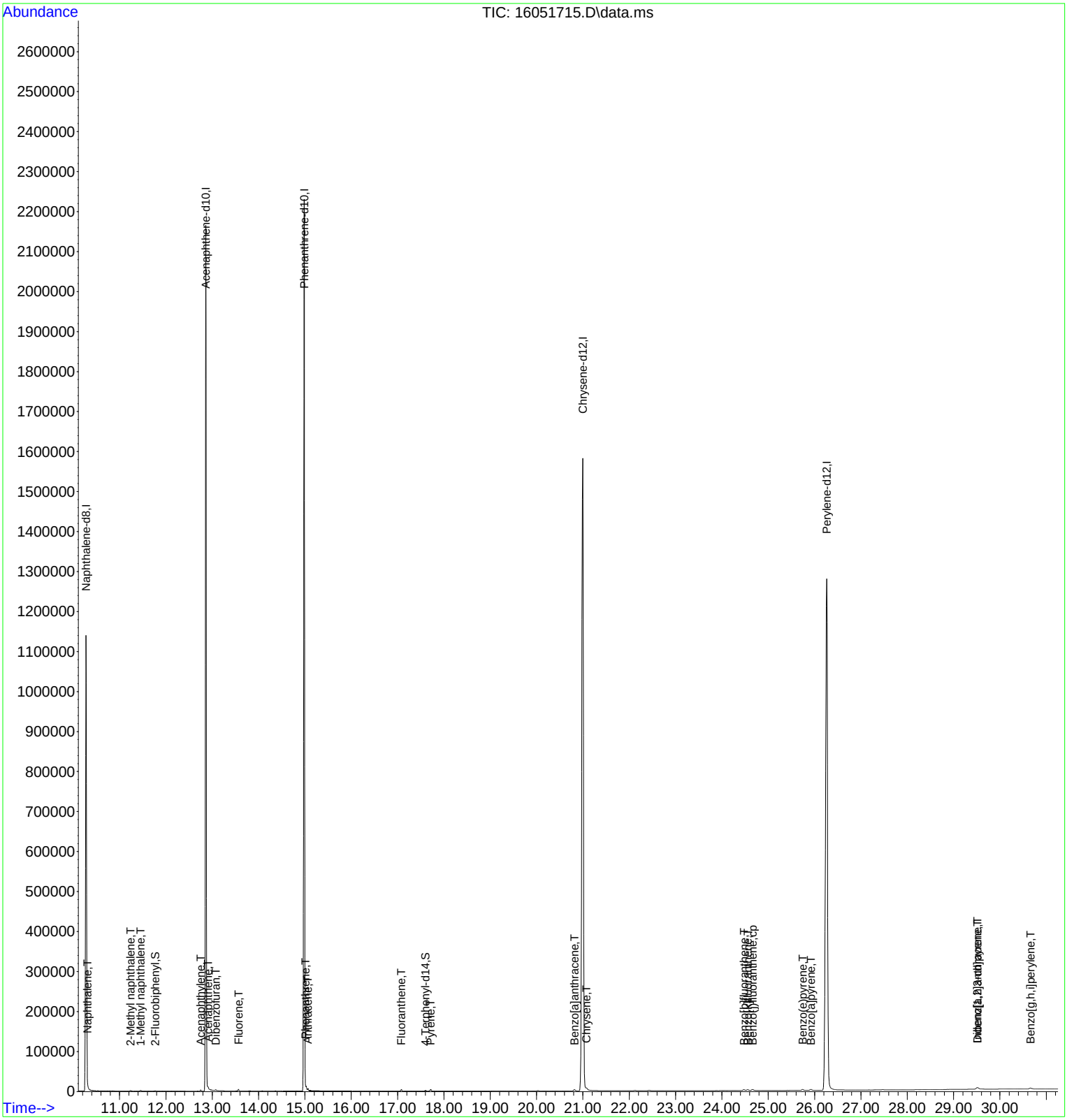
Target Compounds						Qvalue
2) Naphthalene	10.313	128	1960	5.42	ug/kg	99
3) 2-Methyl naphthalene	11.234	142	1349	4.80	ug/kg	100
4) 1-Methyl naphthalene	11.457	142	1407	5.29	ug/kg	95
7) Acenaphthylene	12.749	152	3043	5.36	ug/kg	98
8) Acenaphthene	12.911	153	1895	5.29	ug/kg	96
9) Dibenzofuran	13.073	168	2799	5.13	ug/kg	93
10) Fluorene	13.564	166	2556	5.16	ug/kg	99
12) Phenanthrene	15.019	178	4521	6.10	ug/kg	97
13) Anthracene	15.063	178	4542	6.06	ug/kg	98
14) Fluoranthene	17.079	202	5328	5.09	ug/kg	100
15) Pyrene	17.709	202	5338	5.08	ug/kg	96
18) Benzo[a]anthracene	20.812	228	5140	5.45	ug/kg	99
19) Chrysene	21.083	228	5190	5.21	ug/kg	98
21) Benzo[b]fluoranthene	24.475	252	4824	5.45	ug/kg	98
22) Benzo[k]fluoranthene	24.556	252	4169	5.77	ug/kg	98
23) Benzo(j)fluoranthene	24.665	252	5051	5.48	ug/kg	98
24) Benzo(e)pyrene	25.742	252	4914	5.22	ug/kg	97
25) Benzo[a]pyrene	25.918	252	4715	5.41	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.522	276	6312	5.30	ug/kg	97
27) Dibenz[a,h]anthracene	29.507	278	6440	5.51	ug/kg	98
28) Benzo[g,h,i]perylene	30.657	276	5466	5.18	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051715.D
Acq On : 17 May 2016 4:58 pm
Operator :
Sample : P1-160517 5
Misc : CAL1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 14:55:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051716.D
Acq On : 17 May 2016 5:34 pm
Operator :
Sample : P2-160517 10
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 14:21:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.277	136	1669821	4000.00	ug/kg	102
6) Acenaphthene-d10	12.862	164	1410989	4000.00	ug/kg	113
11) Phenanthrene-d10	14.983	188	2926710	4000.00	ug/kg	100
16) Chrysene-d12	20.995	240	2655348	4000.00	ug/kg	98
20) Perylene-d12	26.262	264	2418020	4000.00	ug/kg	97

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.766	172	3970	10.68	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.27%#			
17) 4-Terphenyl-d14	17.595	244	5897	10.49	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.26%#			

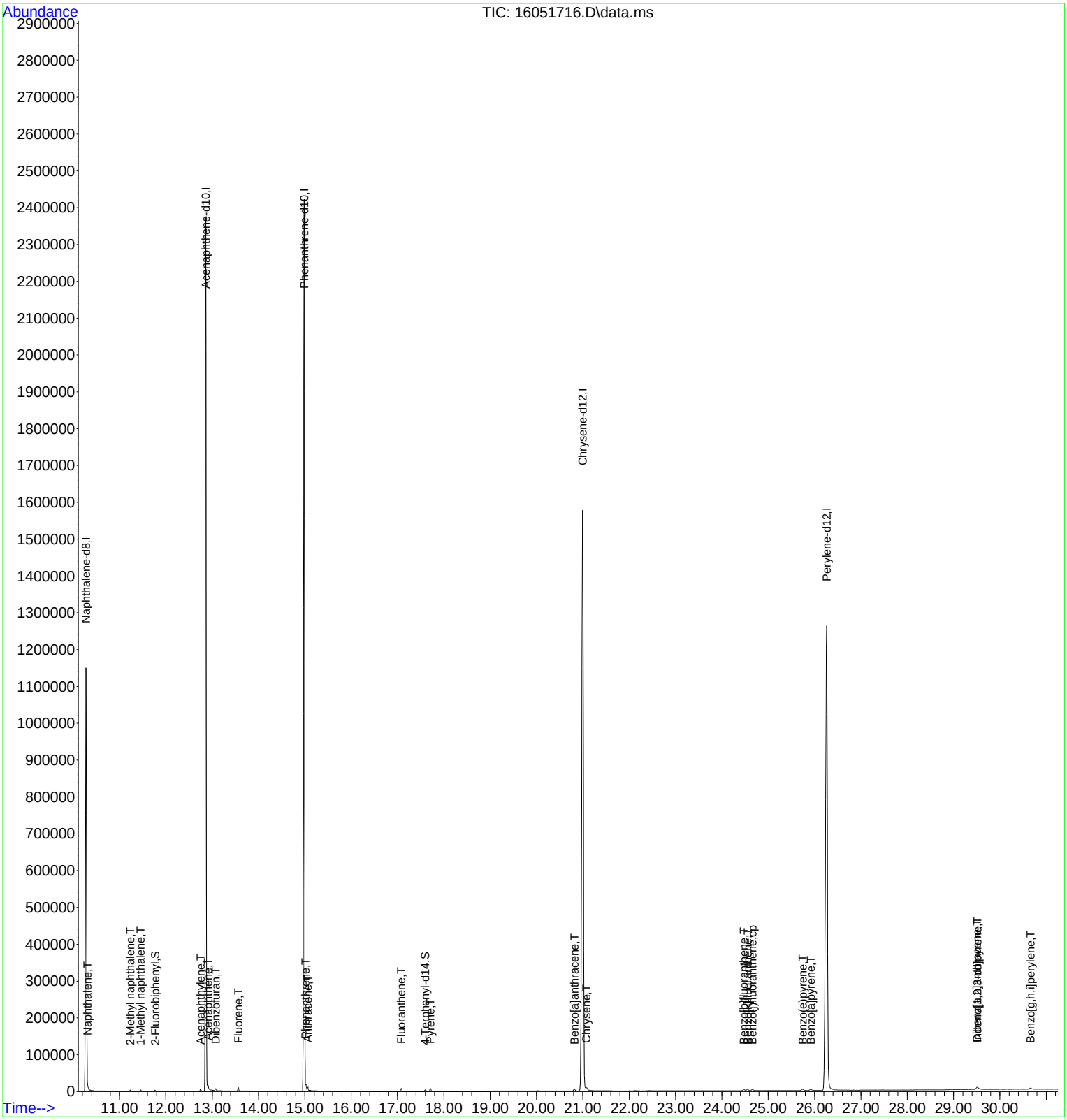
Target Compounds						Qvalue
2) Naphthalene	10.314	128	3887	10.39	ug/kg	99
3) 2-Methyl naphthalene	11.231	142	3075	10.57	ug/kg	100
4) 1-Methyl naphthalene	11.453	142	2932	10.65	ug/kg	98
7) Acenaphthylene	12.749	152	6390	10.36	ug/kg	98
8) Acenaphthene	12.911	153	4063	10.44	ug/kg	98
9) Dibenzofuran	13.073	168	6254	10.55	ug/kg	99
10) Fluorene	13.564	166	5573	10.36	ug/kg	99
12) Phenanthrene	15.019	178	8966	11.13	ug/kg	98
13) Anthracene	15.063	178	8936	10.97	ug/kg	98
14) Fluoranthene	17.079	202	9332	9.45	ug/kg	98
15) Pyrene	17.708	202	9188	9.36	ug/kg	98
18) Benzo[a]anthracene	20.820	228	7990	9.79	ug/kg	98
19) Chrysene	21.083	228	7982	9.83	ug/kg	98
21) Benzo[b]fluoranthene	24.475	252	7404	9.78	ug/kg	99
22) Benzo[k]fluoranthene	24.555	252	6327	9.81	ug/kg	96
23) Benzo(j)fluoranthene	24.658	252	6882	9.16	ug/kg	99
24) Benzo(e)pyrene	25.742	252	7518	9.85	ug/kg	95
25) Benzo[a]pyrene	25.918	252	7061	9.69	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.522	276	9340	9.78	ug/kg	99
27) Dibenz[a,h]anthracene	29.507	278	8949	10.05	ug/kg	98
28) Benzo[g,h,i]perylene	30.657	276	8222	9.89	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051716.D
Acq On : 17 May 2016 5:34 pm
Operator :
Sample : P2-160517 10
Misc : CAL
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 14:21:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051717.D
Acq On : 17 May 2016 6:12 pm
Operator :
Sample : P3-160517 50
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 14:21:53 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

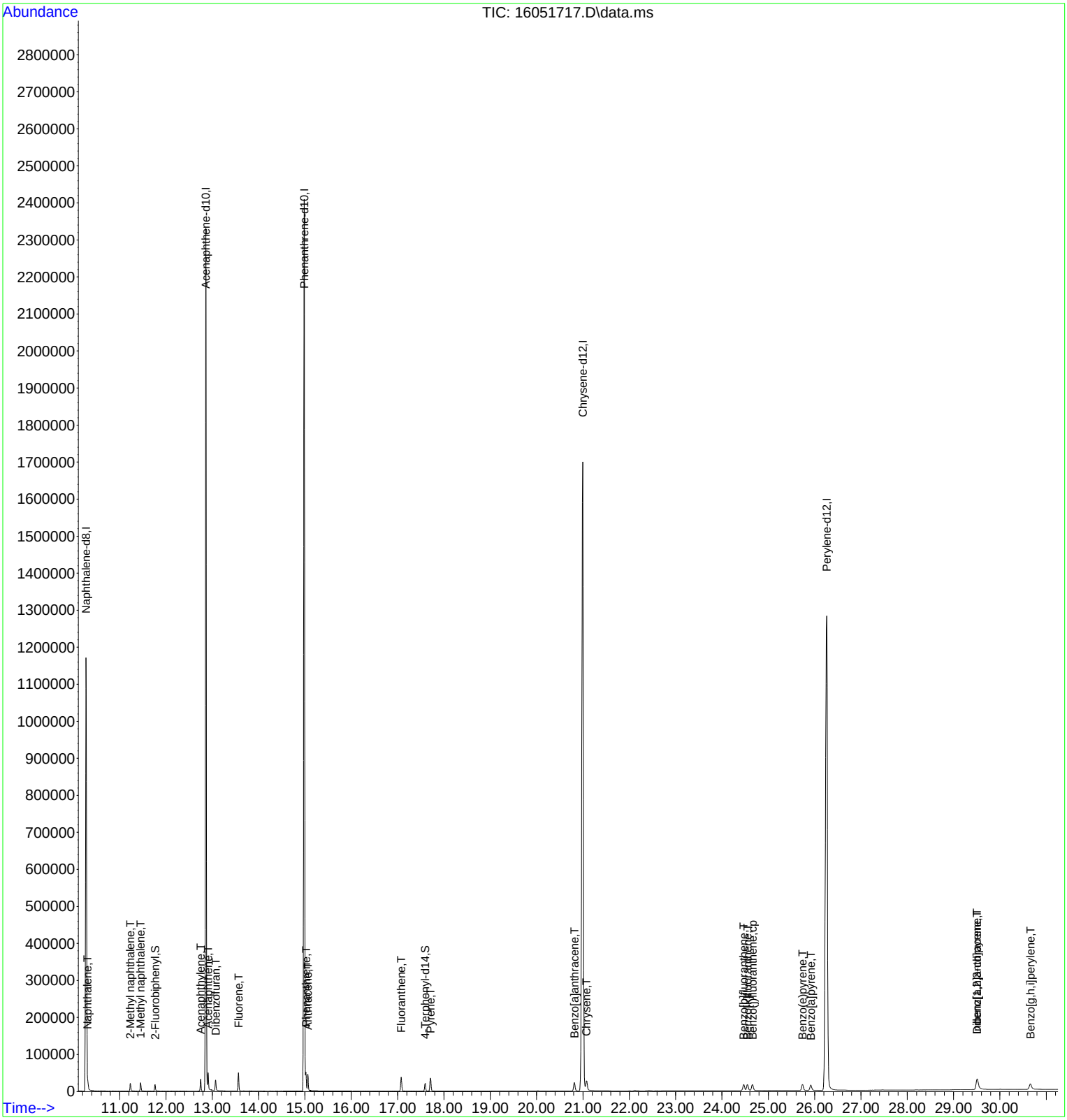
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.275	136	1691963	4000.00	ug/kg	104
6) Acenaphthene-d10	12.861	164	1420682	4000.00	ug/kg	113
11) Phenanthrene-d10	14.984	188	2974690	4000.00	ug/kg	102
16) Chrysene-d12	20.995	240	2826915	4000.00	ug/kg	104
20) Perylene-d12	26.262	264	2545051	4000.00	ug/kg	102
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	19916	52.87	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.32%#			
17) 4-Terphenyl-d14	17.596	244	30536	51.03	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.28%#			
Target Compounds						Qvalue
2) Naphthalene	10.313	128	19225	50.72	ug/kg	100
3) 2-Methyl naphthalene	11.230	142	15281	51.86	ug/kg	98
4) 1-Methyl naphthalene	11.452	142	14530	52.11	ug/kg	98
7) Acenaphthylene	12.748	152	31599	50.89	ug/kg	98
8) Acenaphthene	12.910	153	20004	51.05	ug/kg	97
9) Dibenzofuran	13.072	168	30435	50.99	ug/kg	97
10) Fluorene	13.563	166	27428	50.64	ug/kg	100
12) Phenanthrene	15.020	178	42270	51.64	ug/kg	97
13) Anthracene	15.062	178	42517	51.34	ug/kg	98
14) Fluoranthene	17.077	202	44464	51.91	ug/kg	98
15) Pyrene	17.709	202	43861	52.40	ug/kg	97
18) Benzo[a]anthracene	20.812	228	36261	47.66	ug/kg	98
19) Chrysene	21.083	228	34959	48.99	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	33604	47.88	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	29005	46.47	ug/kg	98
23) Benzo(j)fluoranthene	24.658	252	31228	50.07	ug/kg	99
24) Benzo(e)pyrene	25.742	252	33142	49.21	ug/kg	99
25) Benzo[a]pyrene	25.918	252	31972	48.73	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.514	276	39995	48.61	ug/kg	99
27) Dibenz[a,h]anthracene	29.500	278	32742	46.13	ug/kg	99
28) Benzo[g,h,i]perylene	30.657	276	34676	48.76	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051717.D
Acq On : 17 May 2016 6:12 pm
Operator :
Sample : P3-160517 50
Misc : CAL
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 14:21:53 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051718.D
Acq On : 17 May 2016 6:49 pm
Operator :
Sample : P4-160517 100
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 14:21:56 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

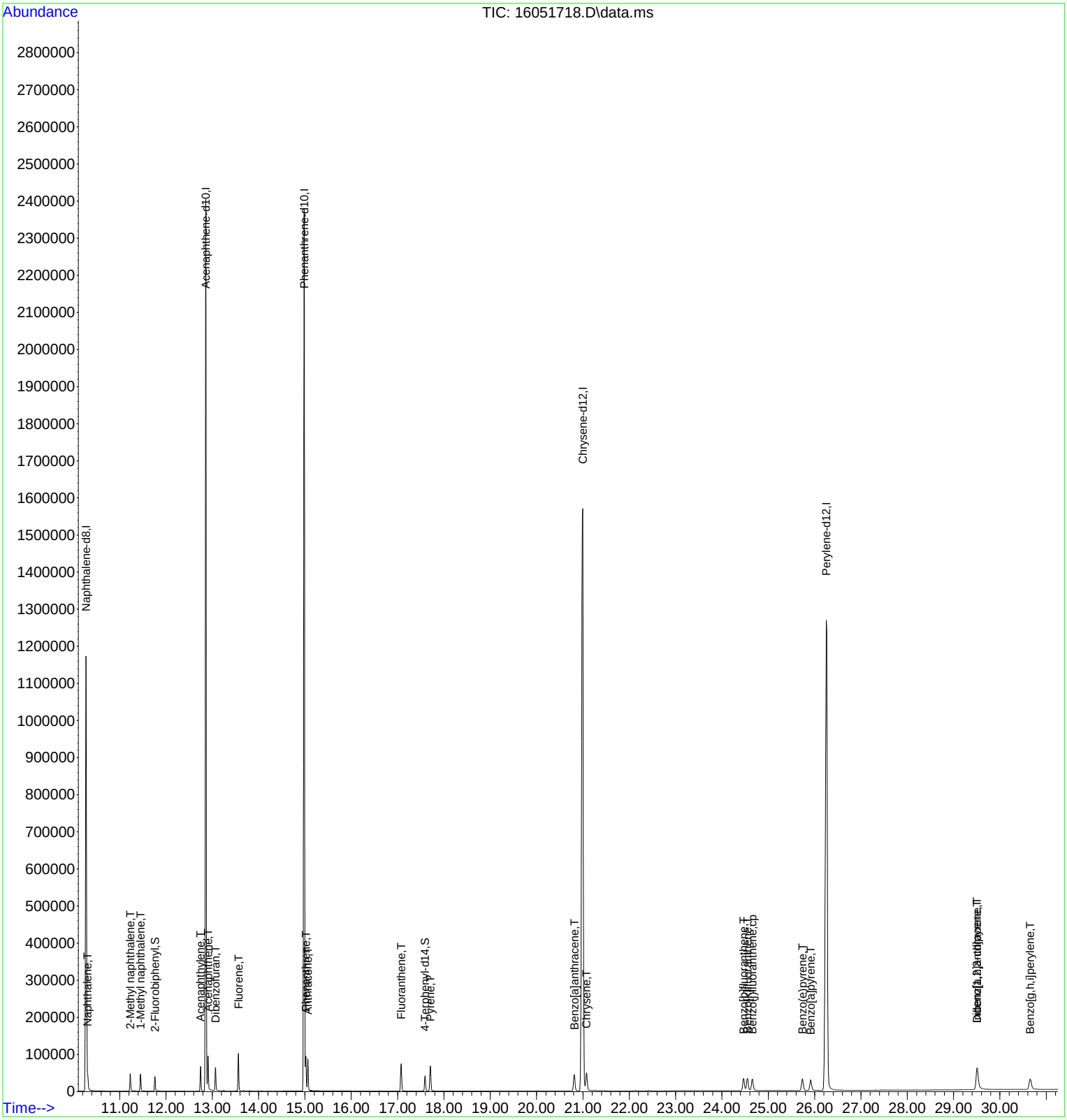
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1693906	4000.00	ug/kg	104
6) Acenaphthene-d10	12.861	164	1440728	4000.00	ug/kg	115
11) Phenanthrene-d10	14.983	188	2966427	4000.00	ug/kg	101
16) Chrysene-d12	20.994	240	2706021	4000.00	ug/kg	100
20) Perylene-d12	26.254	264	2498423	4000.00	ug/kg	101
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	41597	110.29	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.76%#			
17) 4-Terphenyl-d14	17.592	244	57884	101.06	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.53%#			
Target Compounds						Qvalue
2) Naphthalene	10.313	128	39101	103.04	ug/kg	100
3) 2-Methyl naphthalene	11.230	142	31845	107.95	ug/kg	99
4) 1-Methyl naphthalene	11.452	142	29622	106.11	ug/kg	99
7) Acenaphthylene	12.743	152	65260	103.63	ug/kg	99
8) Acenaphthene	12.910	153	41268	103.85	ug/kg	98
9) Dibenzofuran	13.067	168	63596	105.06	ug/kg	94
10) Fluorene	13.563	166	56542	102.94	ug/kg	100
12) Phenanthrene	15.019	178	81029	99.27	ug/kg	97
13) Anthracene	15.061	178	83432	101.02	ug/kg	98
14) Fluoranthene	17.076	202	83259	99.39	ug/kg	99
15) Pyrene	17.705	202	81588	99.81	ug/kg	98
18) Benzo[a]anthracene	20.811	228	69165	96.87	ug/kg	99
19) Chrysene	21.075	228	65585	98.75	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	65590	96.99	ug/kg	99
22) Benzo[k]fluoranthene	24.547	252	56746	93.79	ug/kg	100
23) Benzo(j)fluoranthene	24.657	252	58663	98.81	ug/kg	99
24) Benzo(e)pyrene	25.734	252	63628	98.71	ug/kg	99
25) Benzo[a]pyrene	25.917	252	61356	97.35	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.514	276	77335	98.62	ug/kg	99
27) Dibenz[a,h]anthracene	29.499	278	64324	96.94	ug/kg	99
28) Benzo[g,h,i]perylene	30.656	276	67436	99.67	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051718.D
Acq On : 17 May 2016 6:49 pm
Operator :
Sample : P4-160517 100
Misc : CAL
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 14:21:56 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051719.D
Acq On : 17 May 2016 7:26 pm
Operator :
Sample : P5-160517 500
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 18 14:22:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

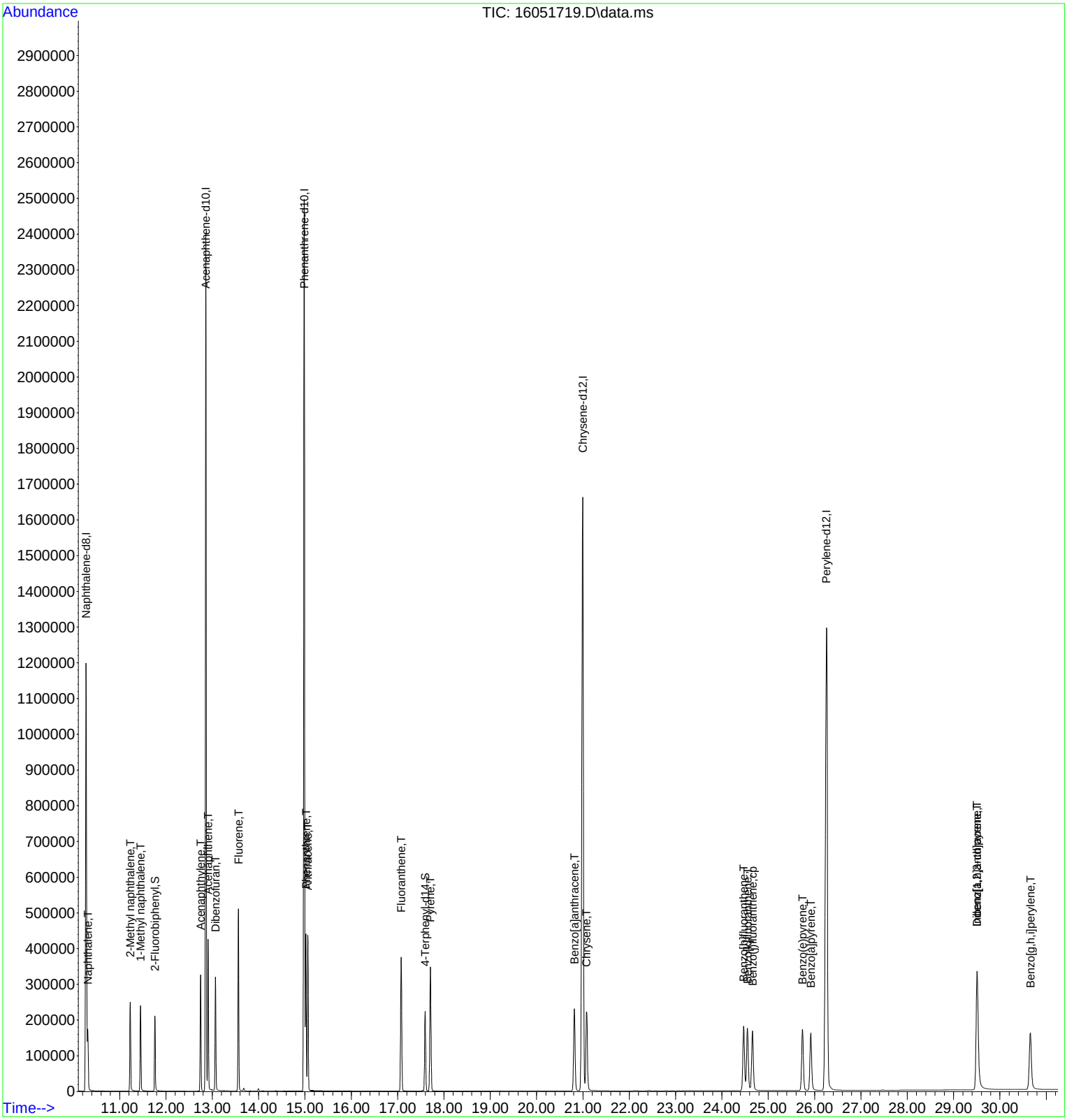
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.275	136	1716888	4000.00	ug/kg	105
6) Acenaphthene-d10	12.861	164	1420427	4000.00	ug/kg	113
11) Phenanthrene-d10	14.984	188	3065132	4000.00	ug/kg	105
16) Chrysene-d12	20.996	240	2806740	4000.00	ug/kg	104
20) Perylene-d12	26.255	264	2612071	4000.00	ug/kg	105
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	198425	519.07	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 12.98%#			
17) 4-Terphenyl-d14	17.593	244	301886	508.16	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 12.70%#			
Target Compounds						Qvalue
2) Naphthalene	10.312	128	192186	499.67	ug/kg	100
3) 2-Methyl naphthalene	11.229	142	156202	522.41	ug/kg	99
4) 1-Methyl naphthalene	11.451	142	144981	512.40	ug/kg	99
7) Acenaphthylene	12.748	152	315668	508.42	ug/kg	99
8) Acenaphthene	12.910	153	197655	504.51	ug/kg	98
9) Dibenzofuran	13.067	168	302969	507.65	ug/kg	91
10) Fluorene	13.563	166	276455	510.53	ug/kg	99
12) Phenanthrene	15.020	178	411797	488.27	ug/kg	98
13) Anthracene	15.062	178	418563	490.47	ug/kg	98
14) Fluoranthene	17.077	202	424180	503.59	ug/kg	99
15) Pyrene	17.709	202	411312	500.25	ug/kg	97
18) Benzo[a]anthracene	20.812	228	360174	498.19	ug/kg	99
19) Chrysene	21.076	228	335004	501.45	ug/kg	99
21) Benzo[b]fluoranthene	24.468	252	344489	497.86	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	306053	491.39	ug/kg	99
23) Benzo(j)fluoranthene	24.658	252	296427	493.61	ug/kg	99
24) Benzo(e)pyrene	25.735	252	324231	494.73	ug/kg	99
25) Benzo[a]pyrene	25.918	252	319375	496.08	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.515	276	396879	499.27	ug/kg	98
27) Dibenz[a,h]anthracene	29.500	278	328543	495.21	ug/kg	99
28) Benzo[g,h,i]perylene	30.657	276	343154	500.70	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051719.D
Acq On : 17 May 2016 7:26 pm
Operator :
Sample : P5-160517 500
Misc : CAL
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 18 14:22:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051720.D
Acq On : 17 May 2016 8:03 pm
Operator :
Sample : P6-160517 1000
Misc : CAL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 18 14:22:03 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

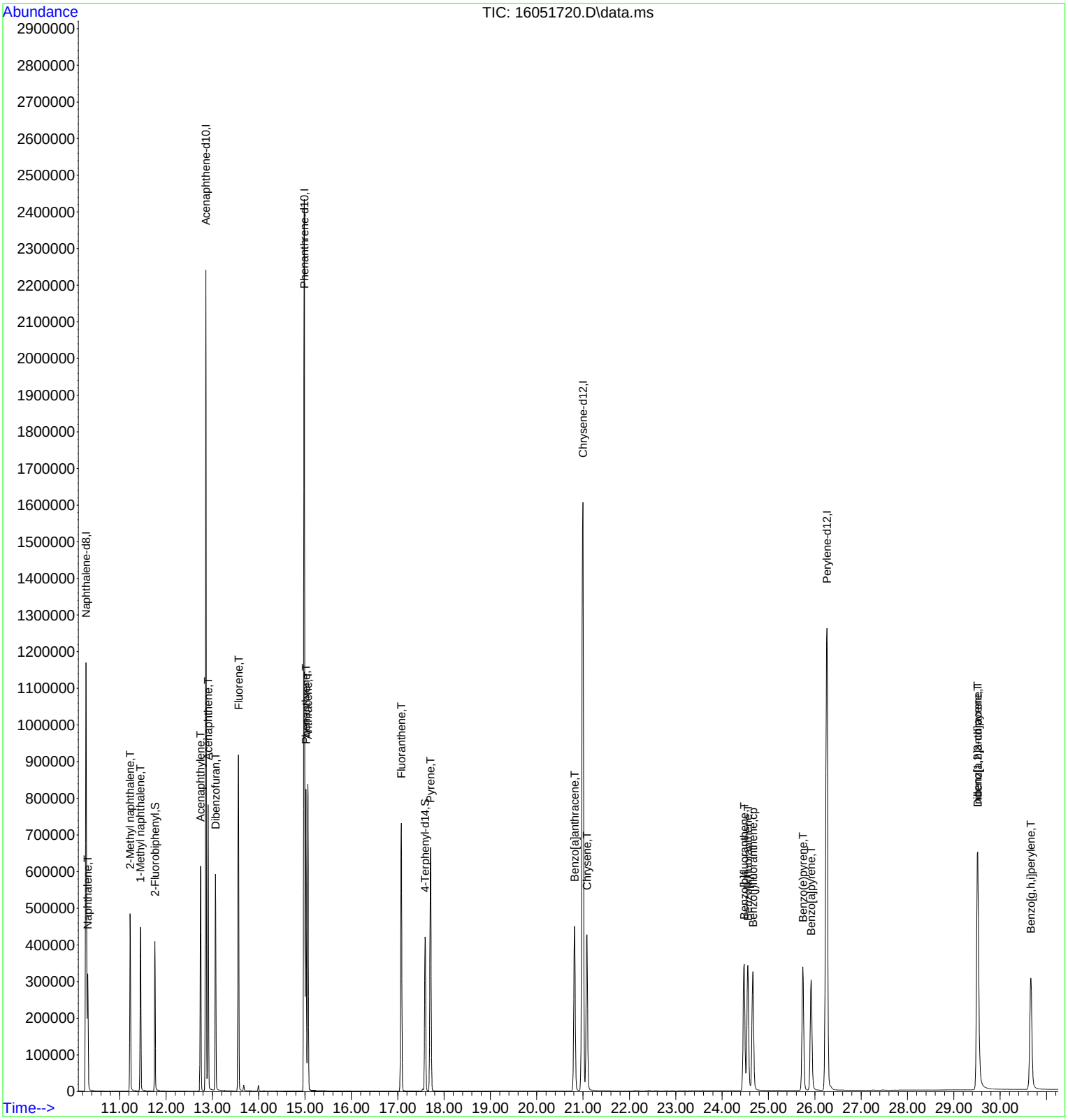
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1672746	4000.00	ug/kg	103
6) Acenaphthene-d10	12.862	164	1335900	4000.00	ug/kg	107
11) Phenanthrene-d10	14.983	188	3005081	4000.00	ug/kg	103
16) Chrysene-d12	20.996	240	2748497	4000.00	ug/kg	101
20) Perylene-d12	26.263	264	2515463	4000.00	ug/kg	101
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	366689	984.56	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 24.61%#			
17) 4-Terphenyl-d14	17.592	244	589485	1013.30	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 25.33%#			
Target Compounds						Qvalue
2) Naphthalene	10.313	128	368948	984.54	ug/kg	100
3) 2-Methyl naphthalene	11.227	142	294264	1010.11	ug/kg	99
4) 1-Methyl naphthalene	11.449	142	270777	982.25	ug/kg	98
7) Acenaphthylene	12.744	152	584017	1000.15	ug/kg	99
8) Acenaphthene	12.911	153	367052	996.17	ug/kg	99
9) Dibenzofuran	13.068	168	564260	1005.29	ug/kg	95
10) Fluorene	13.564	166	514152	1009.56	ug/kg	99
12) Phenanthrene	15.019	178	788028	953.04	ug/kg	99
13) Anthracene	15.063	178	800602	956.88	ug/kg	99
14) Fluoranthene	17.076	202	817359	1005.41	ug/kg	99
15) Pyrene	17.709	202	799661	1005.73	ug/kg	98
18) Benzo[a]anthracene	20.813	228	709426	1016.07	ug/kg	100
19) Chrysene	21.084	228	653281	1012.70	ug/kg	99
21) Benzo[b]fluoranthene	24.475	252	665603	1010.40	ug/kg	100
22) Benzo[k]fluoranthene	24.556	252	599301	1008.21	ug/kg	99
23) Benzo(j)fluoranthene	24.666	252	580263	1017.28	ug/kg	99
24) Benzo(e)pyrene	25.743	252	630968	1013.00	ug/kg	100
25) Benzo[a]pyrene	25.918	252	618328	1007.08	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.522	276	759719	1005.42	ug/kg	99
27) Dibenz[a,h]anthracene	29.508	278	633064	1006.18	ug/kg	100
28) Benzo[g,h,i]perylene	30.665	276	654258	1003.99	ug/kg	100

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051720.D
Acq On : 17 May 2016 8:03 pm
Operator :
Sample : P6-160517 1000
Misc : CAL
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 18 14:22:03 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051721.D
Acq On : 17 May 2016 8:40 pm
Operator :
Sample : P7-160517 2000
Misc : CAL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 18 14:22:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.273	136	1630045	4000.00	ug/kg	100
6) Acenaphthene-d10	12.862	164	1254060	4000.00	ug/kg	100
11) Phenanthrene-d10	14.981	188	2926310	4000.00	ug/kg	100
16) Chrysene-d12	20.989	240	2710742	4000.00	ug/kg	100
20) Perylene-d12	26.255	264	2483020	4000.00	ug/kg	100

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.762	172	658153	1813.43	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 45.34%			
17) 4-Terphenyl-d14	17.593	244	1112679	1939.28	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 48.48%#			

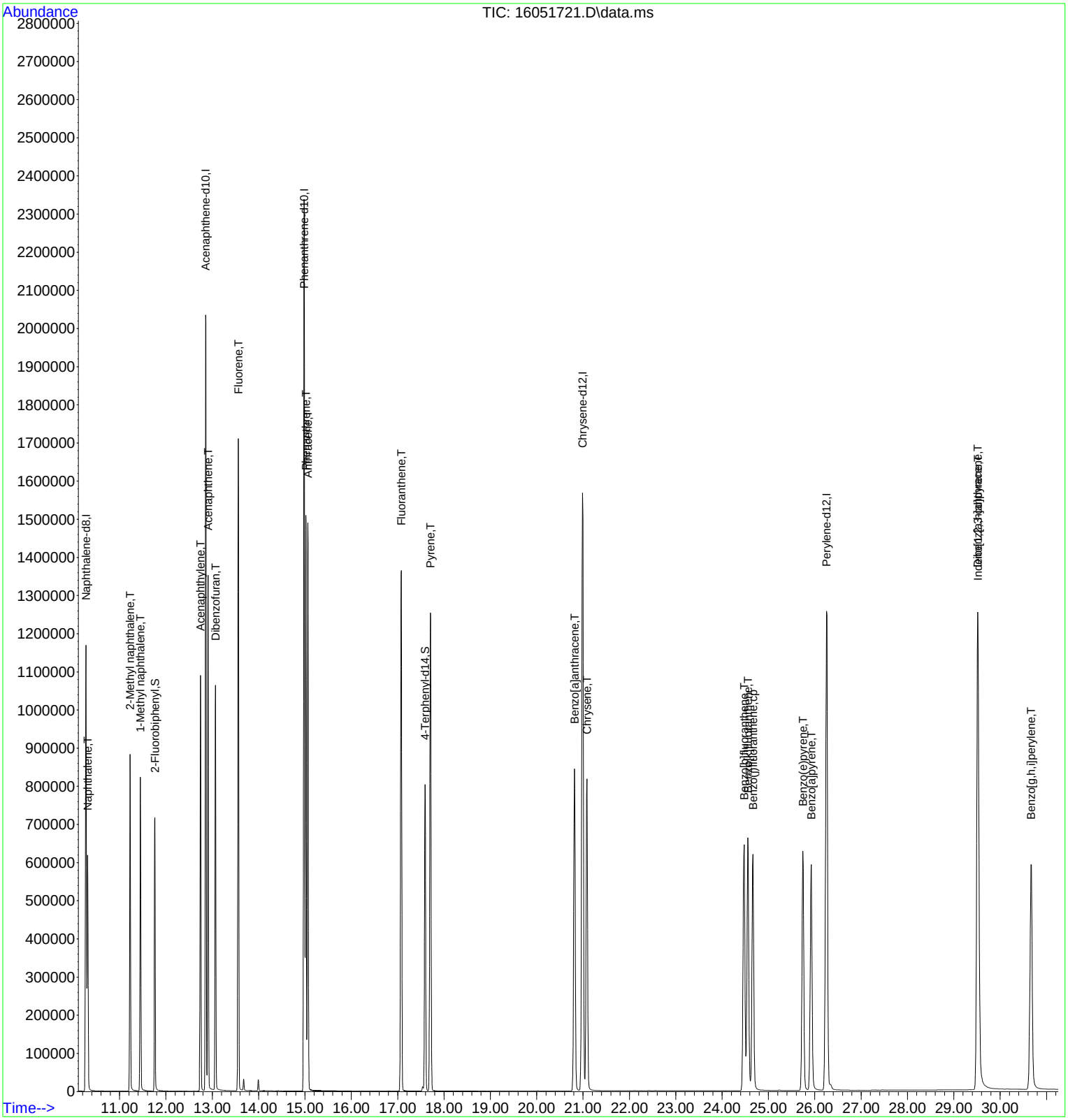
Target Compounds						Qvalue
2) Naphthalene	10.310	128	695769	1905.31	ug/kg	100
3) 2-Methyl naphthalene	11.227	142	538753	1897.81	ug/kg	100
4) 1-Methyl naphthalene	11.449	142	497158	1850.70	ug/kg	100
7) Acenaphthylene	12.744	152	1039945	1897.17	ug/kg	100
8) Acenaphthene	12.911	153	659005	1905.25	ug/kg	100
9) Dibenzofuran	13.068	168	1007003	1911.16	ug/kg	100
10) Fluorene	13.559	166	925041	1934.89	ug/kg	100
12) Phenanthrene	15.019	178	1444658	1794.20	ug/kg	100
13) Anthracene	15.061	178	1476119	1811.76	ug/kg	100
14) Fluoranthene	17.077	202	1527667	1984.95	ug/kg	100
15) Pyrene	17.706	202	1503502	1988.60	ug/kg	100
18) Benzo[a]anthracene	20.813	228	1337835	1989.79	ug/kg	100
19) Chrysene	21.084	228	1233351	1983.94	ug/kg	100
21) Benzo[b]fluoranthene	24.475	252	1273446	1997.62	ug/kg	100
22) Benzo[k]fluoranthene	24.556	252	1165290	2018.15	ug/kg	100
23) Benzo(j)fluoranthene	24.666	252	1096280	1988.83	ug/kg	100
24) Benzo(e)pyrene	25.742	252	1199708	1993.89	ug/kg	100
25) Benzo[a]pyrene	25.926	252	1194718	2003.05	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.530	276	1458740	1998.39	ug/kg	100
27) Dibenz[a,h]anthracene	29.515	278	1219313	2010.42	ug/kg	100
28) Benzo[g,h,i]perylene	30.672	276	1257350	1996.01	ug/kg	100

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051721.D
Acq On : 17 May 2016 8:40 pm
Operator :
Sample : P7-160517 2000
Misc : CAL
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 18 14:22:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051722.D
Acq On : 17 May 2016 9:17 pm
Operator :
Sample : P8-160517 5000
Misc : CAL
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 18 14:22:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

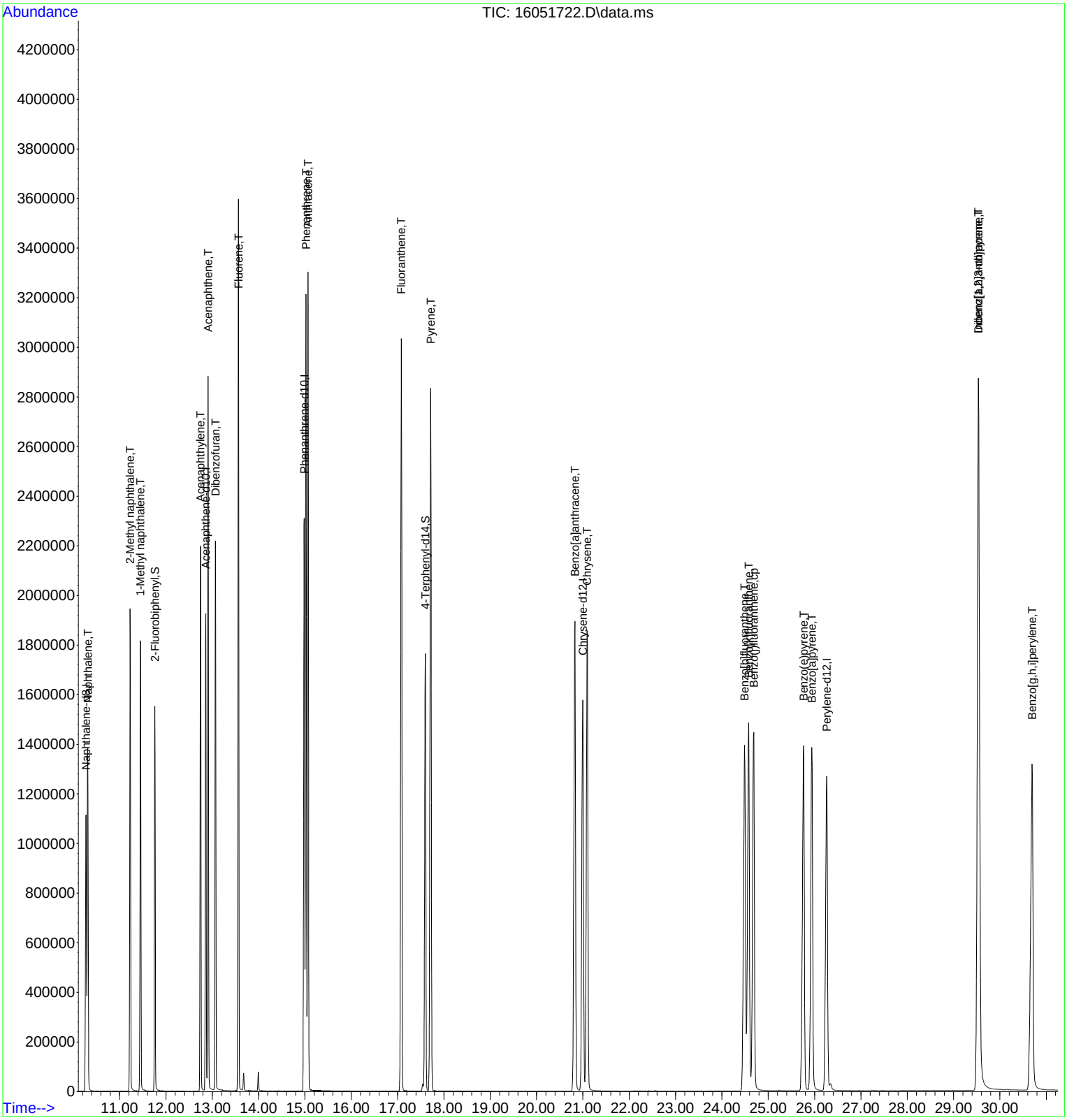
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1589455	4000.00	ug/kg	98
6) Acenaphthene-d10	12.862	164	1157466	4000.00	ug/kg	92
11) Phenanthrene-d10	14.984	188	2872086	4000.00	ug/kg	98
16) Chrysene-d12	20.995	240	2715512	4000.00	ug/kg	100
20) Perylene-d12	26.262	264	2467636	4000.00	ug/kg	99
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	1413417	3993.89	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 99.85%			
17) 4-Terphenyl-d14	17.598	244	2558145	4450.75	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 111.27%			
Target Compounds						Qvalue
2) Naphthalene	10.313	128	1596025	4482.20	ug/kg	99
3) 2-Methyl naphthalene	11.226	142	1194581	4315.50	ug/kg	98
4) 1-Methyl naphthalene	11.453	142	1102506	4208.96	ug/kg	98
7) Acenaphthylene	12.749	152	2208060	4364.33	ug/kg	99
8) Acenaphthene	12.911	153	1406596	4405.99	ug/kg	99
9) Dibenzofuran	13.068	168	2123466	4366.39	ug/kg	87
10) Fluorene	13.564	166	1967421	4458.63	ug/kg	100
12) Phenanthrene	15.024	178	3215270	4068.60	ug/kg	97
13) Anthracene	15.068	178	3242032	4054.33	ug/kg	97
14) Fluoranthene	17.080	202	3457212	5005.46	ug/kg	96
15) Pyrene	17.715	202	3449381	5003.88	ug/kg	97
18) Benzo[a]anthracene	20.827	228	3123986	5001.18	ug/kg	98
19) Chrysene	21.090	228	2900176	5004.26	ug/kg	98
21) Benzo[b]fluoranthene	24.489	252	2980787	4998.98	ug/kg	98
22) Benzo[k]fluoranthene	24.577	252	2731461	4991.28	ug/kg	98
23) Benzo(j)fluoranthene	24.687	252	2544105	4948.79	ug/kg	98
24) Benzo(e)pyrene	25.764	252	2799050	5000.38	ug/kg	99
25) Benzo[a]pyrene	25.940	252	2826486	4997.57	ug/kg	97
26) Indeno[1,2,3-cd]pyrene	29.544	276	3400603	4999.58	ug/kg	88
27) Dibenz[a,h]anthracene	29.536	278	2812177	4994.40	ug/kg	97
28) Benzo[g,h,i]perylene	30.694	276	2941935	5000.81	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051722.D
Acq On : 17 May 2016 9:17 pm
Operator :
Sample : P8-160517 5000
Misc : CAL
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 18 14:22:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051723.D
Acq On : 17 May 2016 9:54 pm
Operator :
Sample : SSCV-160517
Misc : ICV
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 18 14:22:14 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.273	136	1550711	4000.00	ug/kg	95
6) Acenaphthene-d10	12.856	164	1014776	4000.00	ug/kg	81
11) Phenanthrene-d10	14.978	188	2298444	4000.00	ug/kg	79
16) Chrysene-d12	20.987	240	2487435	4000.00	ug/kg	92
20) Perylene-d12	26.254	264	2286057	4000.00	ug/kg	92

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.762	172	122	0.35	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.01%#			
17) 4-Terphenyl-d14	17.592	244	528	1.00	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.03%#			

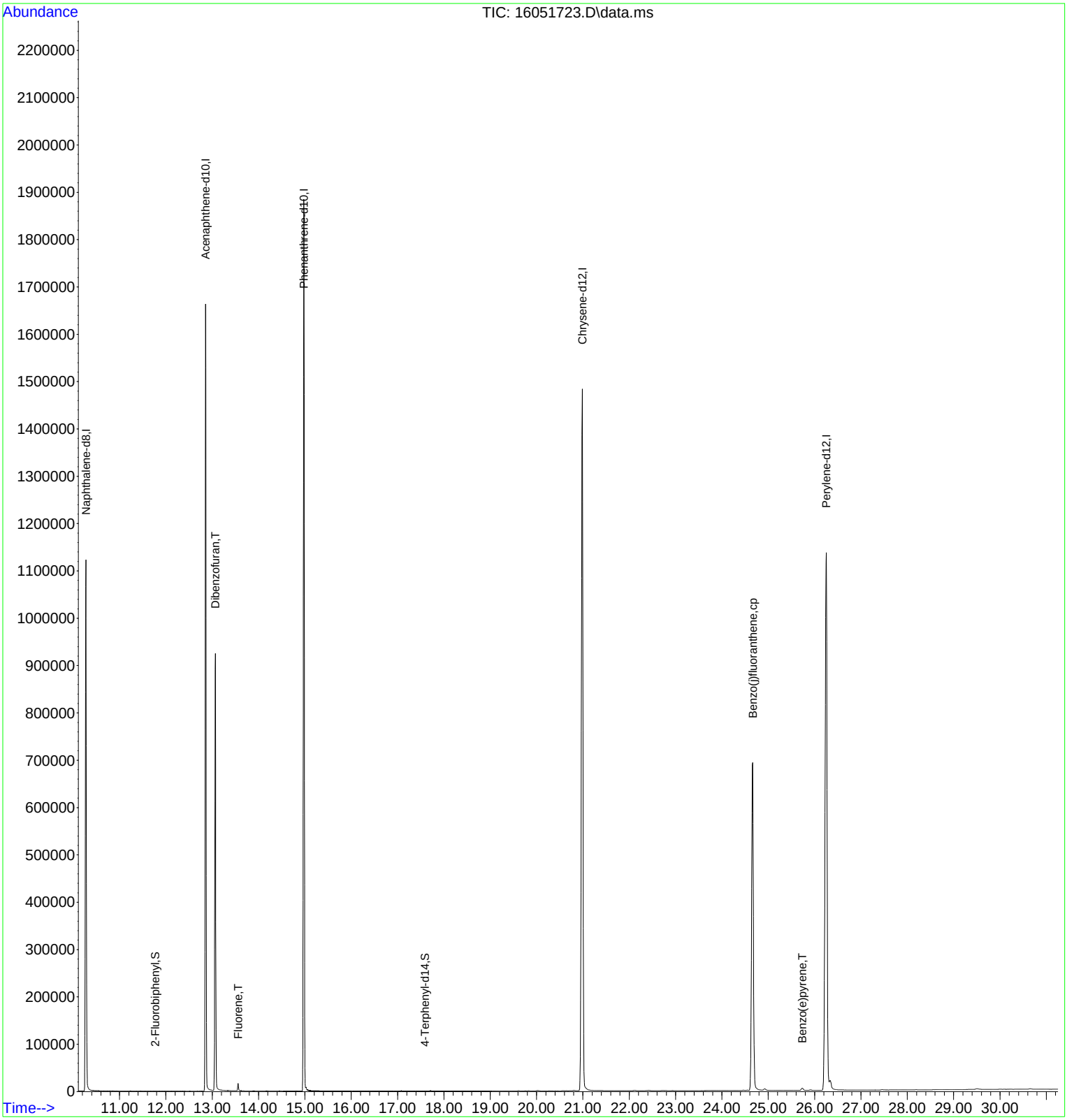
Target Compounds						Qvalue
9) Dibenzofuran	13.067	168	911536	2137.91	ug/kg	99
10) Fluorene	13.558	166	9200	23.78	ug/kg	98
23) Benzo(j)fluoranthene	24.664	252	1314135	2624.66	ug/kg	100
24) Benzo(e)pyrene	25.734	252	9708	14.36	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051723.D
Acq On : 17 May 2016 9:54 pm
Operator :
Sample : SSCV-160517
Misc : ICV
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 18 14:22:14 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051724.D
Acq On : 17 May 2016 10:30 pm
Operator :
Sample : SSCV-160517
Misc : ICV
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 18 14:22:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1465767	4000.00	ug/kg	90
6) Acenaphthene-d10	12.857	164	1139119	4000.00	ug/kg	91
11) Phenanthrene-d10	14.979	188	2615766	4000.00	ug/kg	89
16) Chrysene-d12	20.988	240	2355864	4000.00	ug/kg	87
20) Perylene-d12	26.254	264	2172980	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	752192	2304.82	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 57.62%			
17) 4-Terphenyl-d14	17.590	244	1171361	2349.09	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 58.73%			

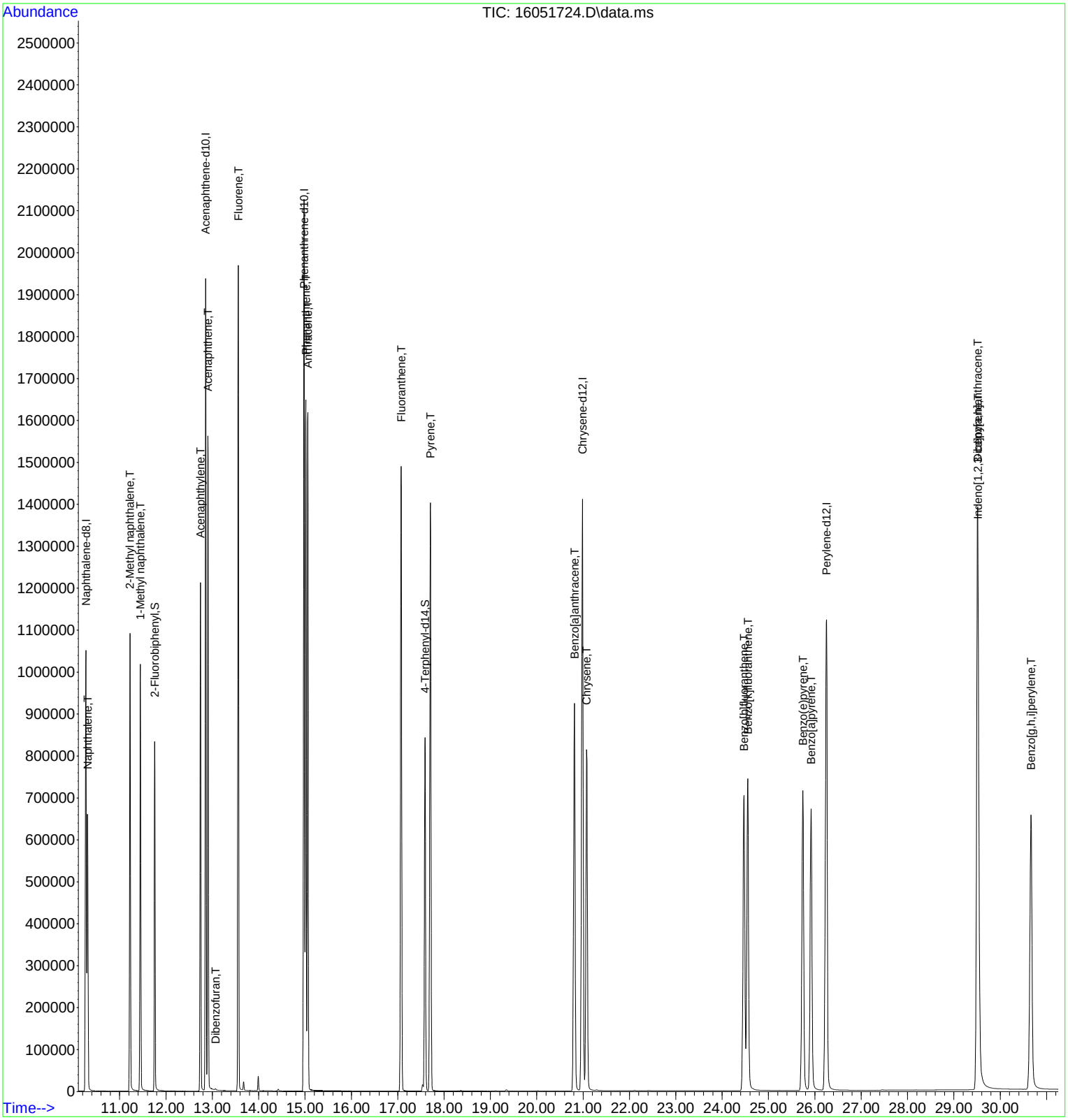
Target Compounds						Qvalue
2) Naphthalene	10.309	128	777437	2367.56	ug/kg	100
3) 2-Methyl naphthalene	11.226	142	679588	2662.22	ug/kg	99
4) 1-Methyl naphthalene	11.449	142	612646	2536.22	ug/kg	99
7) Acenaphthylene	12.744	152	1159951	2329.62	ug/kg	100
8) Acenaphthene	12.906	153	767350	2442.34	ug/kg	98
9) Dibenzofuran	13.068	168	3474	7.26	ug/kg	96
10) Fluorene	13.559	166	1054874	2429.09	ug/kg	99
12) Phenanthrene	15.017	178	1585495	2202.88	ug/kg	100
13) Anthracene	15.061	178	1575915	2163.88	ug/kg	100
14) Fluoranthene	17.074	202	1676150	2470.73	ug/kg	99
15) Pyrene	17.706	202	1652248	2473.32	ug/kg	99
18) Benzo[a]anthracene	20.812	228	1439635	2494.31	ug/kg	100
19) Chrysene	21.075	228	1238892	2310.65	ug/kg	100
21) Benzo[b]fluoranthene	24.474	252	1404261	2544.63	ug/kg	100
22) Benzo[k]fluoranthene	24.555	252	1350774	2702.15	ug/kg	100
24) Benzo(e)pyrene	25.741	252	1385526	2670.03	ug/kg	100
25) Benzo[a]pyrene	25.917	252	1334073	2578.87	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.529	276	1609547	2549.19	ug/kg	98
27) Dibenz[a,h]anthracene	29.507	278	1345063	2566.28	ug/kg	98
28) Benzo[g,h,i]perylene	30.664	276	1389147	2548.55	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160517\
Data File : 16051724.D
Acq On : 17 May 2016 10:30 pm
Operator :
Sample : SSCV-160517
Misc : ICV
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 18 14:22:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



ICP-MS3
For

DHL Work Order
1605097

ICP-MS3_160519A
For

DHL Work Order
1605097

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG	Run ID: ICP-MS3_160519A SOP: Metals-ICP-MS-01			
Review Item	**Yes**	**No**	**N/A**	**2nd Level Review**
Data Folder Contents 1. Is the Prep Batch Report included? ***Check the Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**		2nd Level Review
Tune	Before ICAL	RSD ≤ 5% / Peak Width@10% <0.9amu	X			x
P/A Factor	Before ICAL	Increasing trend	X			
Initial Calibration Curve (ICAL) (Blank + 4 Standards)	Prior to samples and when ICV fails	R ≥ 0.995 (DoD) R ≥ 0.998 (6020A)	X			
Review Item	**Frequency**	**Limits**	**Pass**	**Fail**	**N/A**	**Review**
ICSA (N/A for Method 200.8+U)	After calibration & every 12 hours	< RL (except Mn & Zn)	X			x
ICSAB (N/A for Method 200.8+U)	After calibration & every 12 hours	80-120% (correct for ICSA result)	X			
Note: LCVLs and ICSA/ICSAB are N/A for Method 200.8 or project-specific exceptions						
ICV (Second Source Verification)	After ICAL	90-110%	X			x
ICB	After calibration	< MDL	X			
CCV	Every 10 samples	90-110%	X			
CCB	Every 10 samples	< MDL (ALL + DoD)	X			
Internal Standards	Every sample and QC sample	> 70% (6020A) 60-125% (200.8) 30-120% (DoD)	X			
LCVL (6020A test code)	After ICAL, every 10 samples and end of run	70-130%			X	
LCVL (All metals test codes except 200.8/6020A)	After ICAL and end of run	70-130%	X			
Method Blank (MB)	Every Batch	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			
Filter/TCLP/SPLP Blank	Filter-Dissolved only TCLP / SPLP	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit			X	
Lab Control Sample (LCS)	Every Batch	80-120%	X			
Lab Control Sample Dup (LCSD)	Every Batch	80-120%	X			
LCSD - RPD	Every LCS/LCSD	15 (H2O) / 20 (Soil)	X			
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Every Batch	80-120%	X	x		
MSD - RPD	Every MS/MSD	15 (H2O) / 20 (Soil)	X			
Dilution Test (SD) - RPD	Every Batch	10	X			
Post Digestion Spike (PDS)	Every Batch	75-125/80-120 (6020A)	X			

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	6 months	X			x
2. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	All results > high point of ICAL must be diluted	X			
3. Are ALL reported analytes and reported results > MDL highlighted by the analyst?		X	**Confirm with analyst if LIMS result does not match Labcore**		

VARIANCE REPORT

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.

NON-CONFORMANCES / VARIANCE	Criteria	Yes	No	N/A	2nd Level
1. Are all non-conformances and corrective actions included and noted?	All deviations from the method and SOP that affect data quality	X			x
2. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

TECHNICAL DIRECTOR / QA MANAGER APPROVAL
SIGNATURE AND DATE STAMP:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
__ CCV out of control (± 10%)	__ Carryover from previous run	__ Reanalyze QC to confirm
__ CCB out of control (> MDL / >½ RL)	__ Cross contamination	__ Recalibrate
__ MB out of control (> RL / >½ RL)	__ Lab Artifact	__ Reprep/Reanalyze sample
__ LCS __ LCSD out of control (± 20%)	__ Prep Spike error (describe)	__ Reprep/Reanalyze Batch
__ MS __ MSD out of control (± 20%)	__ Matrix Effect	__ Reanalyze Batch/Sample/QC
__ RPD out of control for MS/MSD (15/25)	__ High Levels of Target Metals	__ Verify reagents are clean
__ Internal Standard(s) out of control (see Method)	__ Insufficient sample for QC	__ Reanalyze sample to confirm
__ No MS/MSD prepared - LCS/LCSD used instead	__ Digestion/Prep Error	__ Sample results ND w/ dilution
__ Missing QC (other than MS/MSD)	__ Analytical Error	__ Client notified and approved
__ QC sample(s) was mis-spiked	__ Client Request	__ Flag data / Case narrative
__ ICSA/ICSAB missing or out of control (± 20%)		__ Accept data
__ LCVL out of control (± 30%)		__ Cal Std high and sample ND
__ Other (describe below)	__ Other (describe below)	__ Other (describe below)

General Comments and Impact on Data:

Analyst: Karyn Lane Date of Completion: 05/20/2016

Second-Level Review: Janice Whitt Date Stamp: 5/26/2016

REVIEWED BY
By Janice Whitt at 1:08:06 PM, 5/26/2016

DHL Analytical, Inc.

Run ID: **ICP-MS3_160519A** **Run No.:** 85905

Analytical Run Date: 5/19/2016 **InstrumentID:** ICP-MS3

Analyst: Karyn Lane

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R85905	5/19/2016 11:40:00 AM		
L2-160519	1	ICPMS_TWDOD	CAL	R85905	5/19/2016 11:46:00 AM		
L-160519	1	ICPMS_TWDOD	CAL	R85905	5/19/2016 11:52:00 AM		
10X-160519	1	ICPMS_TWDOD	CAL	R85905	5/19/2016 11:58:00 AM		
5X-160519	1	ICPMS_TWDOD	CAL	R85905	5/19/2016 12:05:00 PM		
2X-160519	1	ICPMS_TWDOD	CAL	R85905	5/19/2016 12:11:00 PM		
H-160519	1	ICPMS_TWDOD	CAL	R85905	5/19/2016 12:16:00 PM		
H2-160519	1	ICPMS_TWDOD	CAL	R85905	5/19/2016 12:22:00 PM		
ICSA-160519	1	ICPMS_TWDOD	ICSA	R85905	5/19/2016 12:40:00 PM		
ICSAB-160519	1	ICPMS_TWDOD	ICSB	R85905	5/19/2016 12:46:00 PM		
ICV1-160519	1	ICPMS_TWDOD	ICV	R85905	5/19/2016 1:04:00 PM		
ILCVL-160519	1	ICPMS_TWDOD	LCVL	R85905	5/19/2016 1:16:00 PM		
ICB1-160519	1	ICPMS_TWDOD	ICB	R85905	5/19/2016 1:22:00 PM		
MB-75132	5	ICPMS_TSDOD1	MBLK	75132	5/19/2016 1:28:00 PM		
LCS-75132	5	ICPMS_TSDOD1	LCS	75132	5/19/2016 1:35:00 PM		
LCSD-75132	5	ICPMS_TSDOD1	LCSD	75132	5/19/2016 1:40:00 PM		
1605074-39A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 1:53:00 PM		
1605074-39A SD	25	ICPMS_TSDOD1	SD	75132	5/19/2016 1:59:00 PM		
1605074-25A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 2:05:00 PM		
1605074-26A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 2:11:00 PM		
1605074-27A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 2:16:00 PM		
1605074-28A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 2:22:00 PM		
1605074-29A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 2:28:00 PM		
1605074-30A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 2:34:00 PM		
1605074-31A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 2:40:00 PM		
1605074-32A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 2:46:00 PM		
1605074-36A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 2:52:00 PM		
1605074-39A PDS	5	ICPMS_TSDOD1	PDS	75132	5/19/2016 2:58:00 PM		
1605074-39A MS	5	ICPMS_TSDOD1	MS	75132	5/19/2016 3:04:00 PM		
1605074-39A MSD	5	ICPMS_TSDOD1	MSD	75132	5/19/2016 3:10:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

Run ID: ICP-MS3_160519A **Run No.:** 85905

CCV1-160519	1	ICPMS_TWDOD	CCV	R85905	5/19/2016 3:16:00 PM		
CCB1-160519	1	ICPMS_TWDOD	CCB	R85905	5/19/2016 3:22:00 PM		
LCVL1-160519	1	ICPMS_TWDOD	LCVL	R85905	5/19/2016 3:28:00 PM		
1605074-37A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 3:34:00 PM		
1605074-38A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 3:40:00 PM		
1605074-42A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 3:46:00 PM		
1605074-43A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 3:52:00 PM		
1605074-44A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 3:58:00 PM		
1605074-45A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 4:04:00 PM		
1605074-46A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 4:10:00 PM		
1605074-47A	5	ICPMS_TSDOD1	SAMP	75132	5/19/2016 4:16:00 PM		
CCV2-160519	1	ICPMS_TWDOD	CCV	R85905	5/19/2016 4:22:00 PM		
CCB2-160519	1	ICPMS_TWDOD	CCB	R85905	5/19/2016 4:28:00 PM		
LCVL2-160519	1	ICPMS_TWDOD	LCVL	R85905	5/19/2016 4:34:00 PM		
MB-75169	5	ICPMS_TSDOD1	MBLK	75169	5/19/2016 4:40:00 PM		
LCSD-75169	5	ICPMS_TSDOD1	LCSD	75169	5/19/2016 4:52:00 PM		
LCS-75169	5	ICPMS_TSDOD1	LCS	75169	5/19/2016 5:04:00 PM		
1605096-70A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 5:10:00 PM		
1605096-70A SD	25	ICPMS_TSDOD1	SD	75169	5/19/2016 5:16:00 PM		
1605096-62A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 5:22:00 PM		
1605096-63A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 5:28:00 PM		
1605096-64A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 5:34:00 PM		
1605096-65A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 5:40:00 PM		
1605096-66A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 5:46:00 PM		
1605096-67A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 5:52:00 PM		
1605096-68A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 5:58:00 PM		
1605096-69A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 6:04:00 PM		
1605096-71A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 6:10:00 PM		
1605096-70A PDS	5	ICPMS_TSDOD1	PDS	75169	5/19/2016 6:15:00 PM		
1605096-70A MS	5	ICPMS_TSDOD1	MS	75169	5/19/2016 6:21:00 PM		
1605096-70A MSD	5	ICPMS_TSDOD1	MSD	75169	5/19/2016 6:27:00 PM		Pb low. RPD ok.
CCV3-160519	1	ICPMS_TWDOD	CCV	R85905	5/19/2016 6:39:00 PM		
LCVL3-160519	1	ICPMS_TWDOD	LCVL	R85905	5/19/2016 6:57:00 PM		
CCB3-160519	1	ICPMS_TWDOD	CCB	R85905	5/19/2016 7:04:00 PM		
1605096-72A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 7:10:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

Run ID: ICP-MS3_160519A **Run No.:** 85905

1605096-73A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 7:16:00 PM		
1605096-74A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 7:22:00 PM		
1605097-01A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 7:28:00 PM		
1605097-02A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 7:33:00 PM		
1605097-03A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 7:39:00 PM		
1605097-04A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 7:45:00 PM		
1605097-05A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 7:51:00 PM		
1605097-06A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 7:57:00 PM		
1605097-07A	5	ICPMS_TSDOD1	SAMP	75169	5/19/2016 8:03:00 PM		
CCV4-160519	1	ICPMS_TWDOD	CCV	R85905	5/19/2016 8:09:00 PM		
LCVL4-160519	1	ICPMS_TWDOD	LCVL	R85905	5/19/2016 8:21:00 PM		
CCB4-160519	1	ICPMS_TWDOD	CCB	R85905	5/19/2016 8:28:00 PM		
MB-75168	5	ICPMS_TSDOD1	MBLK	75168	5/19/2016 8:34:00 PM		
LCS-75168	5	ICPMS_TSDOD1	LCS	75168	5/19/2016 8:40:00 PM		
LCSD-75168	5	ICPMS_TSDOD1	LCSD	75168	5/19/2016 8:46:00 PM		
1605096-42A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 8:58:00 PM		
1605096-42A SD	25	ICPMS_TSDOD1	SD	75168	5/19/2016 9:04:00 PM		
1605096-41A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 9:10:00 PM		
1605096-43A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 9:16:00 PM		
1605096-45A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 9:22:00 PM		
1605096-46A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 9:28:00 PM		
1605096-47A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 9:34:00 PM		
1605096-48A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 9:40:00 PM		
1605096-49A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 9:46:00 PM		
1605096-50A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 9:52:00 PM		
1605096-51A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 9:58:00 PM		
1605096-42A PDS	5	ICPMS_TSDOD1	PDS	75168	5/19/2016 10:04:00 PM		
1605096-42A MS	5	ICPMS_TSDOD1	MS	75168	5/19/2016 10:10:00 PM		
1605096-42A MSD	5	ICPMS_TSDOD1	MSD	75168	5/19/2016 10:16:00 PM		
CCV5-160519	1	ICPMS_TWDOD	CCV	R85905	5/19/2016 10:28:00 PM		
LCVL5-160519	1	ICPMS_TWDOD	LCVL	R85905	5/19/2016 10:40:00 PM		
CCB5-160519	1	ICPMS_TWDOD	CCB	R85905	5/19/2016 10:46:00 PM		
1605096-52A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 10:52:00 PM		
1605096-53A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 10:58:00 PM		
1605096-54A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 11:04:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

DHL Analytical, Inc.

Run ID: ICP-MS3_160519A **Run No.:** 85905

1605096-55A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 11:10:00 PM		
1605096-56A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 11:16:00 PM		
1605096-57A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 11:22:00 PM		
1605096-58A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 11:28:00 PM		
1605096-59A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 11:34:00 PM		
1605096-60A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 11:40:00 PM		
1605096-61A	5	ICPMS_TSDOD1	SAMP	75168	5/19/2016 11:46:00 PM		
CCV6-160519	1	ICPMS_TWDOD	CCV	R85905	5/19/2016 11:52:00 PM		
LCVL6-160519	1	ICPMS_TWDOD	LCVL	R85905	5/20/2016 12:04:00 AM		
CCB6-160519	1	ICPMS_TWDOD	CCB	R85905	5/20/2016 12:10:00 AM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	RO	**BALANCE #:**	30
TEST DATE:	05/19/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**	
PIPETTER LAB ID:	See Below	**WATER TEMP (°C):**	**21-23°C**
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998** **(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.
4) DETERMINE TOTAL WT.
5) CALCULATE VOLUME OF H2O AT °C (in mL)

% TEST VOL = Volume of H2O at °C/Test Volume * 100

%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100

VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY

					BIAS	PRECISION
PIPETTE ID: P-31	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	**4.00**	3.9903	3.9823	**99.56**	**PASS**	**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2		3.9934	3.9854	**99.64**		
3		3.9972	3.9892	**99.73**		
AVERAGE (MEAN)		**3.994**	**3.986**	**99.64**		**0.087**
						PASS

PIPETTE ID: P-21	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	**1.00**	0.9982	0.9962	**99.62**	**PASS**	**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2		0.9987	0.9967	**99.67**		
3		0.9992	0.9972	**99.72**		
AVERAGE (MEAN)		**0.999**	**0.997**	**99.67**		**0.050**
						PASS

PIPETTE ID: P-39	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	**0.500**	0.4983	0.4973	**99.46**	**PASS**	**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2		0.4994	0.4984	**99.68**		
3		0.5007	0.4997	**99.94**		
AVERAGE (MEAN)		**0.499**	**0.498**	**99.69**		**0.241**
						PASS

Karyn Lane 5/20/2016

Analyst / Date

REVIEWED BY
By Janice Whitt at 12:36:19 PM, 5/26/2016

Review and Approved / Date

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		CALBEG	Start of CALIB						
2	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		BLANK	CAL ICPMS_TW	1.000				
3	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1102		BLANK	CAL ICPMS_TW	1.000				
4	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		BLANK	CAL ICPMS_TW	1.000				
5	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		BLANK	CAL ICPMS_TW	1.000				
6	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		BLANK	CAL ICPMS_TW	1.000				
7	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalBlk	2101		BLANK STD 1	CAL ICPMS_TW	Level 1				
8	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2102		L2-160519	CAL ICPMS_TW	Level 2				
9	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2103		L-160519	CAL ICPMS_TW	Level 3				
10	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2104		10X-160519	CAL ICPMS_TW	Level 4				
11	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2105		5X-160519	CAL ICPMS_TW	Level 5				
12	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2106		2X-160519	CAL ICPMS_TW	Level 6				
13	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2107		H-160519	CAL ICPMS_TW	Level 7				
14	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2108		H2-160519	CAL ICPMS_TW	Level 8				
15	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		BLANK	CAL ICPMS_TW	1.000				
16	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		BLANK	CAL ICPMS_TW	1.000				
17		Keyword		CALEND	End of CALIB						
18		Keyword		ICSBEG	Start of ICS						
19	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICS-A	2109		ICSA-160519	ICSAICPMS_TW	1.000				
20	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICS-AB	2110		ICSAB-160519	ICSBICPMS_TW	1.000				
21	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CAL ICPMS_TW	1.000				
22	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		RINSE	CAL ICPMS_TW	1.000				
23		Keyword		ICSEND	End of ICS						
24		Keyword		SMPLBEG	Start of SMPL						
25	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICV	2111		ICV1-160519	ICV ICPMS_TW	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
26	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICB	1104		ICB1-160519	ICB ICPMS_TW	1.000				
27	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2112		ILCVL-160519	LCVLICPMS_TW	1.000				
28	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICB	1105		ICB1-160519	ICB ICPMS_TW	1.000				
29	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PB	2201		MB-75132	MBLKICPMS_TSDOD	5.000				
30	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	2202		LCS-75132	LCS ICPMS_TSDOD	5.000				
31	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	2203		LCSD-75132	LCSDICPMS_TSDOD	5.000				
32	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
33	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	AllRef	2204		1605074-39A	SAMPICPMS_TSDOD	5.000				
34	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	DT	2205		1605074-39A SD	SD ICPMS_TSDOD	25.00				
35	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2206		1605074-25A	SAMPICPMS_TSDOD	5.000				
36	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2207		1605074-26A	SAMPICPMS_TSDOD	5.000				
37	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2208		1605074-27A	SAMPICPMS_TSDOD	5.000				
38	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2209		1605074-28A	SAMPICPMS_TSDOD	5.000				
39	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2210		1605074-29A	SAMPICPMS_TSDOD	5.000				
40	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2211		1605074-30A	SAMPICPMS_TSDOD	5.000				
41	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2212		1605074-31A	SAMPICPMS_TSDOD	5.000				
42	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2301		1605074-32A	SAMPICPMS_TSDOD1	5.000				
43	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2302		1605074-36A	SAMPICPMS_TSDOD1	5.000				
44	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PDS	2303		1605074-39A PDS	PDS ICPMS_TSDOD1	5.000				
45	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	2304		1605074-39A MS	MS ICPMS_TSDOD1	5.000				
46	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	2305		1605074-39A MSD	MSD ICPMS_TSDOD1	5.000				
47	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV1-160519	CCV ICPMS_TW	1.000				
48	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB1-160519	CCB ICPMS_TW	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
49	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2512		LCVL1-160519	LCVLICPMS_TW	1.000				
50	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2401		1605074-37A	SAMPICPMS_TSDOD1	5.000				
51	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2402		1605074-38A	SAMPICPMS_TSDOD1	5.000				
52	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2403		1605074-42A	SAMPICPMS_TSDOD1	5.000				
53	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2404		1605074-43A	SAMPICPMS_TSDOD1	5.000				
54	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2405		1605074-44A	SAMPICPMS_TSDOD1	5.000				
55	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2406		1605074-45A	SAMPICPMS_TSDOD1	5.000				
56	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2407		1605074-46A	SAMPICPMS_TSDOD1	5.000				
57	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2408		1605074-47A	SAMPICPMS_TSDOD1	5.000				
58	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV2-160519	CCV ICPMS_TW	1.000				
59	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB2-160519	CCB ICPMS_TW	1.000				
60	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2511		LCVL2-160519	LCVLICPMS_TW	1.000				
61	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PB	3101		MB-75169	MBLKICPMS_TSDOD1	5.000				
62	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3102		LCS-75169	LCS ICPMS_TSDOD1	5.000				
63	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3103		LCSD-75169	LCSDICPMS_TSDOD1	5.000				
64	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
65	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	2501		LCS-75169	LCS ICPMS_TSDOD1	5.000				
66	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	AllRef	3104		1605096-70A	SAMPICPMS_TSDOD1	5.000				
67	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	DT	3105		1605096-70A SD	SD ICPMS_TSDOD1	25.00				
68	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3106		1605096-62A	SAMPICPMS_TSDOD1	5.000				
69	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3107		1605096-63A	SAMPICPMS_TSDOD1	5.000				
70	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3108		1605096-64A	SAMPICPMS_TSDOD1	5.000				
71	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3109		1605096-65A	SAMPICPMS_TSDOD1	5.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
72	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3110		1605096-66A	SAMPICPMS_TSDOD1	5.000				
73	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3111		1605096-67A	SAMPICPMS_TSDOD1	5.000				
74	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3112		1605096-68A	SAMPICPMS_TSDOD1	5.000				
75	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3201		1605096-69A	SAMPICPMS_TSDOD1	5.000				
76	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3202		1605096-71A	SAMPICPMS_TSDOD1	5.000				
77	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PDS	3203		1605096-70A PDS	PDS ICPMS_TSDOD1	5.000				
78	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3204		1605096-70A MS	MS_ICPMS_TSDOD1	5.000				
79	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3205		1605096-70A MSD	MSD ICPMS_TSDOD1	5.000				
80	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CCB ICPMS_TW	1.000				
81	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV3-160519	CCV ICPMS_TW	1.000				
82	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		CCB3-160519	CCB ICPMS_TW	1.000				
83	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB3-160519	CCB ICPMS_TW	1.000				
84	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2512		LCVL3-160519	LCVLICPMS_TW	1.000				
85	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB3-160519	CCB ICPMS_TW	1.000				
86	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3301		1605096-72A	SAMPICPMS_TSDOD1	5.000				
87	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3302		1605096-73A	SAMPICPMS_TSDOD1	5.000				
88	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3303		1605096-74A	SAMPICPMS_TSDOD1	5.000				
89	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3304		1605097-01A	SAMPICPMS_TSDOD1	5.000				
90	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3305		1605097-02A	SAMPICPMS_TSDOD1	5.000				
91	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3306		1605097-03A	SAMPICPMS_TSDOD1	5.000				
92	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3307		1605097-04A	SAMPICPMS_TSDOD1	5.000				
93	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3308		1605097-05A	SAMPICPMS_TSDOD1	5.000				
94	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3309		1605097-06A	SAMPICPMS_TSDOD1	5.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
95	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3310		1605097-07A	SAMPICPMS_TSDOD1	5.000				
96	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV4-160519	CCV ICPMS_TW	1.000				
97	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		CCB4-160519	CCB ICPMS_TW	1.000				
98	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2112		LCVL4-160519	LCVLICPMS_TW	1.000				
99	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB4-160519	CCB ICPMS_TW	1.000				
100	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PB	3401		MB-75168	MBLKICPMS_TSDOD1	5.000				
101	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3402		LCS-75168	LCS ICPMS_TSDOD1	5.000				
102	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3403		LCSD-75168	LCSDICPMS_TSDOD1	5.000				
103	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
104	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	AllRef	3404		1605096-42A	SAMPICPMS_TSDOD1	5.000				
105	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	DT	3405		1605096-42A SD	SD ICPMS_TSDOD1	25.00				
106	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3406		1605096-41A	SAMPICPMS_TSDOD1	5.000				
107	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3407		1605096-43A	SAMPICPMS_TSDOD1	5.000				
108	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3408		1605096-45A	SAMPICPMS_TSDOD1	5.000				
109	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3409		1605096-46A	SAMPICPMS_TSDOD1	5.000				
110	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3410		1605096-47A	SAMPICPMS_TSDOD1	5.000				
111	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3411		1605096-48A	SAMPICPMS_TSDOD1	5.000				
112	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3412		1605096-49A	SAMPICPMS_TSDOD1	5.000				
113	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3501		1605096-50A	SAMPICPMS_TSDOD1	5.000				
114	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3502		1605096-51A	SAMPICPMS_TSDOD1	5.000				
115	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PDS	3503		1605096-42A PDS	PDS ICPMS_TSDOD1	5.000				
116	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3504		1605096-42A MS	MS ICPMS_TSDOD1	5.000				
117	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3505		1605096-42A MSD	MSD ICPMS_TSDOD1	5.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
118	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
119	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV5-160519	CCV ICPMS_TW	1.000				
120	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		CCB5-160519	CCB ICPMS_TW	1.000				
121	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2511		LCVL5-160519	LCVLICPMS_TW	1.000				
122	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB5-160519	CCB ICPMS_TW	1.000				
123	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4101		1605096-52A	SAMPICPMS_TSDOD1	5.000				
124	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4102		1605096-53A	SAMPICPMS_TSDOD1	5.000				
125	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4103		1605096-54A	SAMPICPMS_TSDOD1	5.000				
126	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4104		1605096-55A	SAMPICPMS_TSDOD1	5.000				
127	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4105		1605096-56A	SAMPICPMS_TSDOD1	5.000				
128	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4106		1605096-57A	SAMPICPMS_TSDOD1	5.000				
129	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4107		1605096-58A	SAMPICPMS_TSDOD1	5.000				
130	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4108		1605096-59A	SAMPICPMS_TSDOD1	5.000				
131	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4109		1605096-60A	SAMPICPMS_TSDOD1	5.000				
132	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4110		1605096-61A	SAMPICPMS_TSDOD1	5.000				
133	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV6-160519	CCV ICPMS_TW	1.000				
134	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB6-160519	CCB ICPMS_TW	1.000				
135	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2112		LCVL6-160519	LCVLICPMS_TW	1.000				
136	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB6-160519	CCB ICPMS_TW	1.000				
137	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
138	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1102		RINSE	CCB ICPMS_TW	1.000				
139	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CCB ICPMS_TW	1.000				
140	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		RINSE	CCB ICPMS_TW	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
141	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		RINSE	CCB ICPMS_TW	1.000				
142	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
143	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1102		RINSE	CCB ICPMS_TW	1.000				
144	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CCB ICPMS_TW	1.000				
145		Keyword		StandBy							
146		Keyword		SMPLEND	End of SMPL						
147		Keyword		End	End of Sequence						
148		Keyword		CCVBEG	Start of CCV						
149		Keyword		CCVEND	End of CCV						
150		Keyword		BLKBEG	Start of BLANK						
151		Keyword		BLKEND	End of BLANK						
152		Keyword		ERRBEG	Start of ERRTERM						
153		Keyword		ERREND	End of ERRTERM						

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/16/2016 9:01:32 AM**
Digestion:
Prep End Date:

Prep Batch **75169** Prep Code: **3050_IDOD** Technician: **Will Boston** Prep Factor Units: **mL/g**

Equipment List
Hot Block #3
Thermometer #71
Balance #23
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-62A	Soil		1.10	50	50.000	1 of 1	
1605096-63A	Soil		1.11	50	50.000	1 of 1	
1605096-64A	Soil		1.03	50	50.000	1 of 1	
1605096-65A	Soil		1.05	50	50.000	1 of 1	
1605096-66A	Soil		1.17	50	50.000	1 of 1	
1605096-67A	Soil		1.12	50	50.000	1 of 1	
1605096-68A	Soil		1.03	50	50.000	1 of 1	
1605096-69A	Soil		1.04	50	50.000	1 of 1	
1605096-70A	Soil		1.08	50	50.000	1 of 1	
1605096-71A	Soil		1.04	50	50.000	1 of 1	
1605096-72A	Soil		1.08	50	50.000	1 of 1	
1605096-73A	Soil		1.08	50	50.000	1 of 1	
1605096-74A	Soil		1.06	50	50.000	1 of 1	
1605097-01A	Soil		1.12	50	50.000	1 of 1	
1605097-02A	Soil		1.05	50	50.000	1 of 1	
1605097-03A	Soil		1.04	50	50.000	2 of 3	
1605097-04A	Soil		1.10	50	50.000	1 of 1	
1605097-05A	Soil		1.04	50	50.000	1 of 1	
1605097-06A	Soil		1.13	50	50.000	1 of 1	
1605097-07A	Soil		1.16	50	50.000	1 of 1	
LCS-75169	Soil		1	50	50.000	of	
LCSD-75169	Soil		1	50	50.000	of	
MB-75169	Soil		1	50	50.000	of	
MS 1605096-70			1.10				
MSD 1605096-70			1.03				

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	10/29/2016

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/09/2016

11:02 - 11:12
11:34 - 13:34
14:00 - 16:00
16:21 - 16:36

REVIEWED BY
By Janice Whitt at 12:49:38 PM, 5/26/2016

05/16/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 7:00:00 PM**
Digestion: **Start: 5/10/2016 8:30:00 PM / Stop: 5/12/2016 9:00:00 AM**
Prep End Date: **5/12/2016 5:30:00 PM**

Prep Batch **75084** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: mL/

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-16A	Soil		0	0	#Num!	1 of 1	
1605096-17A	Soil		0	0	#Num!	1 of 1	
1605096-18A	Soil		0	0	#Num!	1 of 1	
1605096-19A	Soil		0	0	#Num!	1 of 1	
Sieved only - no subsampling hard clay							
1605096-20A	Soil		0	0	#Num!	1 of 1	
1605096-21A	Soil		0	0	#Num!	1 of 1	
1605096-22A	Soil		0	0	#Num!	1 of 1	
1605096-23A	Soil		0	0	#Num!	1 of 1	
1605096-24A	Soil		0	0	#Num!	1 of 1	
1605096-25A	Soil		0	0	#Num!	1 of 1	
1605096-26A	Soil		0	0	#Num!	1 of 1	
1605096-27A	Soil		0	0	#Num!	1 of 1	
1605096-28A	Soil		0	0	#Num!	1 of 1	
1605096-29A	Soil		0	0	#Num!	1 of 1	
1605096-30A	Soil		0	0	#Num!	1 of 1	
1605096-45A	Soil		0	0	#Num!	1 of 1	
1605096-46A	Soil		0	0	#Num!	1 of 1	
1605096-47A	Soil		0	0	#Num!	1 of 1	
1605096-48A	Soil		0	0	#Num!	1 of 1	
1605096-49A	Soil		0	0	#Num!	1 of 1	
1605096-50A	Soil		0	0	#Num!	1 of 1	
1605096-51A	Soil		0	0	#Num!	1 of 1	
1605096-52A	Soil		0	0	#Num!	of 3	
1605096-53A	Soil		0	0	#Num!	1 of 1	
1605096-54A	Soil		0	0	#Num!	1 of 1	
1605096-55A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 12:42:37 PM, 5/26/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 7:00:00 PM**
Digestion: **Start: 5/10/2016 8:30:00 PM / Stop: 5/12/2016 9:00:00 AM**
Prep End Date: **5/12/2016 5:30:00 PM**

Prep Batch **75084** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-56A	Soil		0	0	#Num!	1 of 1	
1605096-57A	Soil		0	0	#Num!	1 of 1	
1605096-58A	Soil		0	0	#Num!	1 of 1	
1605096-59A	Soil		0	0	#Num!	1 of 1	
1605096-60A	Soil		0	0	#Num!	1 of 1	
1605096-61A	Soil		0	0	#Num!	1 of 1	
1605096-62A	Soil		0	0	#Num!	1 of 1	
1605096-63A	Soil		0	0	#Num!	1 of 1	
1605096-64A	Soil		0	0	#Num!	1 of 1	
1605096-65A	Soil		0	0	#Num!	1 of 1	
1605096-66A	Soil		0	0	#Num!	1 of 1	
1605096-67A	Soil		0	0	#Num!	1 of 1	
1605096-68A	Soil		0	0	#Num!	1 of 1	
1605096-69A	Soil		0	0	#Num!	1 of 1	
1605096-70A	Soil		0	0	#Num!	1 of 1	
1605096-71A	Soil		0	0	#Num!	1 of 1	
1605096-72A	Soil		0	0	#Num!	1 of 1	
1605096-73A	Soil		0	0	#Num!	1 of 1	
1605096-74A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 12:42:39 PM, 5/26/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 2:00:20 PM**
Digestion: **Start: 5/11/2016 2:30:00 PM / Stop: 5/13/2016 11:00:00 AM**
Prep End Date: **5/13/2016 3:00:00 PM**

Prep Batch **75116** Prep Code: **ISM2MM_PREP** Technician: **Scott Schroeder**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-01A	Soil		0	0	#Num!	1 of 1	
1605097-02A	Soil		0	0	#Num!	1 of 1	
1605097-03A	Soil		0	0	#Num!	of 3	
	Extra sub sampled for MS/MSD						
1605097-04A	Soil		0	0	#Num!	1 of 1	
1605097-05A	Soil		0	0	#Num!	1 of 1	
1605097-06A	Soil		0	0	#Num!	1 of 1	
1605097-07A	Soil		0	0	#Num!	1 of 1	
1605097-08A	Soil		0	0	#Num!	1 of 1	
1605097-09A	Soil		0	0	#Num!	1 of 1	
1605097-10A	Soil		0	0	#Num!	1 of 1	
1605097-11A	Soil		0	0	#Num!	1 of 1	
1605097-12A	Soil		0	0	#Num!	1 of 1	
1605097-13A	Soil		0	0	#Num!	1 of 1	
1605097-14A	Soil		0	0	#Num!	1 of 1	
1605097-15A	Soil		0	0	#Num!	1 of 1	
1605097-31A	Soil		0	0	#Num!	1 of 1	
1605097-32A	Soil		0	0	#Num!	1 of 1	
1605097-33A	Soil		0	0	#Num!	1 of 1	
1605097-34A	Soil		0	0	#Num!	1 of 1	
1605097-35A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 12:43:14 PM, 5/26/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/16/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

					BIAS	PRECISION
PIPETTE ID: P-01	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	5.00	5.0017	4.9917	99.83	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		5.0020	4.9920	99.84		
3		5.0029	4.9929	99.86		
AVERAGE (MEAN)		**5.002**	**4.992**	**99.84**		**0.012**
						PASS

PIPETTE ID: P-09	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	0.20	0.2015	0.2011	100.55	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2017	0.2013	100.65		
3		0.2015	0.2011	100.55		
AVERAGE (MEAN)		**0.202**	**0.201**	**100.58**		**0.057**
						PASS

PIPETTE ID:	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

CVD 5/16/16
Analyst / Date

REVIEWED BY
By Janice Whitt at 12:43:17 PM, 5/26/2016
Review and Approved / Date

Calibration Summary Report

Instrument: ICPMS3
Current Method: C:\ICPCHEM\1\METHODS\DHL_3Fe.M
Calibration: C:\ICPCHEM\1\CALIB\DHL_3Fe.C
Last Update: May 19 2016 02:38 pm
Cal Type: Y=aX+[blank]

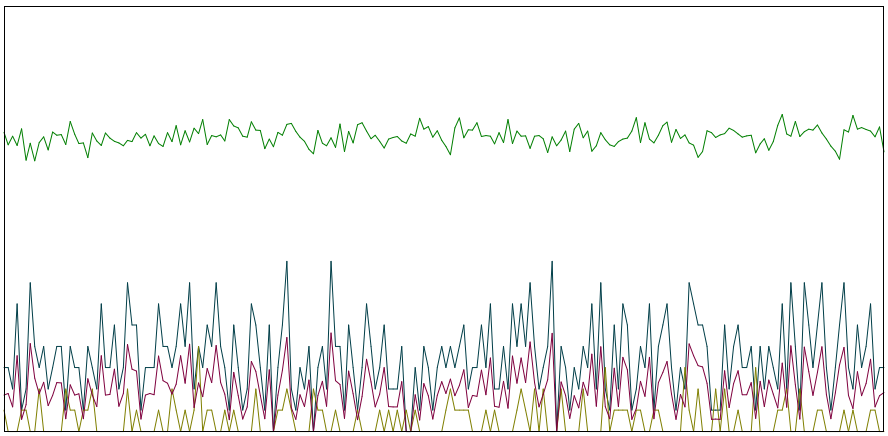
Standard	Date Acquired	File
BLANK STD 1	May 19 2016 11:40 am	c:\icpchem\1\data\16e19l00.b\006calb.d\
L2-160519	May 19 2016 11:46 am	c:\icpchem\1\data\16e19l00.b\007cals.d\
L-160519	May 19 2016 11:52 am	c:\icpchem\1\data\16e19l00.b\008cals.d\
10X-160519	May 19 2016 11:58 am	c:\icpchem\1\data\16e19l00.b\009cals.d\
5X-160519	May 19 2016 12:05 pm	c:\icpchem\1\data\16e19l00.b\010cals.d\
2X-160519	May 19 2016 12:11 pm	c:\icpchem\1\data\16e19l00.b\011cals.d\

Element Name	Corr Coef	Coef A	Coef B	Lvl 2	Lvl 6	Lvl 7	L7 %R	Lvl 8	L8 %R
Li	1.0000	0.4454	0.02551	1.05	257	514		1995	
Be	0.9998	0.1135	0.0005782	1.03	256	496	99%	--------	######
B	0.9999	0.09747	0.1508	0.71	257	531	106%	1,991	100%
Na	0.9999	0.3258	5.606	21.32	5,248	10,290	103%	24,830	99%
Mg	0.9998	0.1457	0.2757	20.95	5,055	10,440	104%	24,810	99%
Al	1.0000	0.03283	0.1165	19.99	4,929	10,030	100%	--------	######
K	1.0000	0.06764	2.424	16.91	4,878	9,810	98%	25,100	100%
Ca	0.9999	0.008613	0.1366	19.41	4,853	10,340	103%	24,900	100%
Ti	1.0000	0.02952	0.002394	0.75	244	499	100%	2,001	100%
V	1.0000	1.317	0.09675	1.03	248	498	100%	2,001	100%
Cr	1.0000	1.784	0.138	1.06	255	511	102%	1,996	100%
Mn	1.0000	0.6597	0.08752	0.97	244	491	98%	2,003	100%
Fe	1.0000	2.331	4.064	20.15	4,979	9,994	100%	--------	######
Co	0.9999	5.769	0.1508	1.01	256	521	104%	1,994	100%
Ni	1.0000	1.753	0.2109	1.01	250	494	99%	2,001	100%
Cu	0.9999	4.789	0.5514	1.09	261	529	106%	1,991	100%
Zn	1.0000	0.4321	0.1889	1.08	261	509	102%	1,996	100%
As	1.0000	0.2198	0.01329	1.02	252	501	100%	2,000	100%
Se	1.0000	0.0109	0.003273	1.09	253	501	100%	1,999	100%
Sr	1.0000	0.279	0.01352	1.01	254	505	101%	1,998	100%
Mo	0.9999	0.05561	0.001281	0.96	233	481	96%	2,007	100%
Ag	0.9999	0.1575	0.0006788	1.03	243	503	101%	--------	######
Cd	0.9999	0.03464	3.73E-006	1.00	239	481	96%	2,006	100%
Sn	1.0000	0.09328	0.007928	0.97	239	513	103%	1,998	100%
Sb	0.9996	0.113	0.003021	1.02	238	507	101%	--------	######
Ba	0.9999	0.04313	0.001018	0.93	233	476	95%	2,008	100%
Tl	1.0000	0.3323	0.003012	0.97	248	498	100%	2,001	100%
Pb	1.0000	0.4481	0.008759	0.97	246	510	102%	1,998	100%

REVIEWED BY
By Janice Whitt at 12:43:22 PM, 5/26/2016

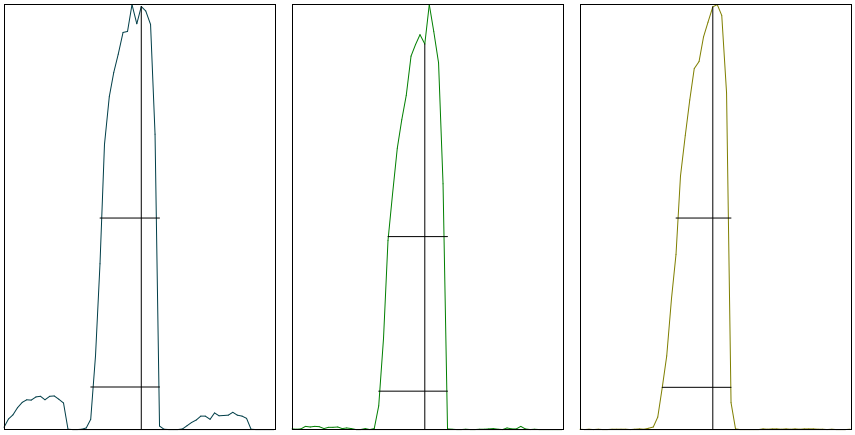
Tune Report

Tune File : He.U
Comment :



Integration Time: 0.1000 sec
Sampling Period: 0.3100 sec
n: 200
Oxide: 156/140 0.278%
Doubly Charged: 70/140 3.268%

m/z	Range	Count	Mean	RSD%	Background
51	20	3.0	3.5	51.40	0.60
59	5,000	3288.0	3466.5	3.07	0.60
75	20	0.0	0.5	145.18	0.80
51/59	1	0.091%	0.101%	51.61	



m/z:	59	89	205
Height:	3,541	1,199	3,827
Axis:	59.05	89.00	205.00
W-50%:	0.65	0.65	0.60
W-10%:	0.7500	0.7500	0.7500

Integration Time: 0.1000 sec
Acquisition Time: 22.5600 sec

Y axis : Linear

Generated : May 19, 2016 10:51:25
Printed : May 19, 2016 10:51:27

Tune Report

Tune File : He.U
Comment :

Tuning Parameters

===Plasma Condition===				===Ion Lenses===				===Q-Pole Parameters===		
RF Power	:	1600	W	Extract 1	:	0	V	AMU Gain	:	121
RF Matching	:	1.6	V	Extract 2	:	-120	V	AMU Offset	:	121
Smpl Depth	:	9	mm	Omega Bias-ce	:	-24	V	Axis Gain	:	0.9993
Torch-H	:	-0.1	mm	Omega Lens-ce	:	-2	V	Axis Offset	:	-0.03
Torch-V	:	0.5	mm	Cell Entrance	:	-40	V	QP Bias	:	-15 V
Carrier Gas	:	1.2	L/min	QP Focus	:	-10	V			
Makeup Gas	:	0	L/min	Cell Exit	:	-40	V	===Detector Parameters===		
Optional Gas	:	---	%					Discriminator	:	8 mV
Nebulizer Pump	:	0.1	rps	===Octopole Parameters===				Analog HV	:	1740 V
Sample Pump	:	---	rps	OctP RF	:	170	V	Pulse HV	:	1460 V
S/C Temp	:	2	degC	OctP Bias	:	-18	V			

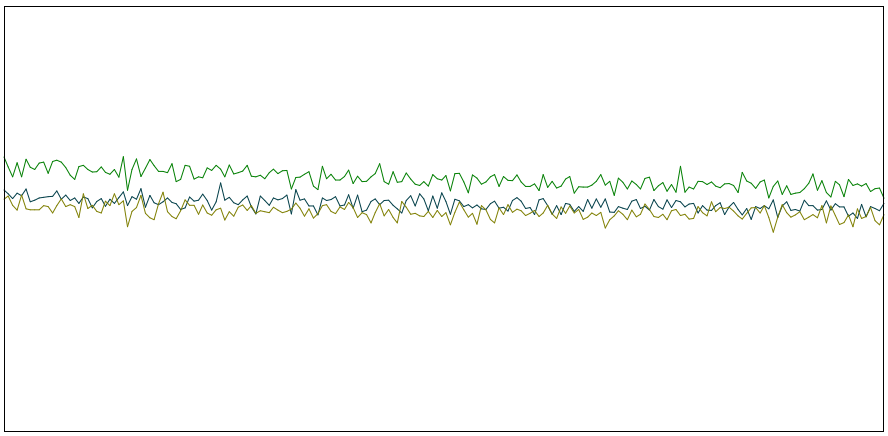
===Reaction Cell===

Reaction Mode	:	ON								
H2 Gas	:	0	mL/min	He Gas	:	5	mL/min	Optional Gas	:	--- %

Generated : May 19, 2016 10:51:25
Printed : May 19, 2016 10:51:29

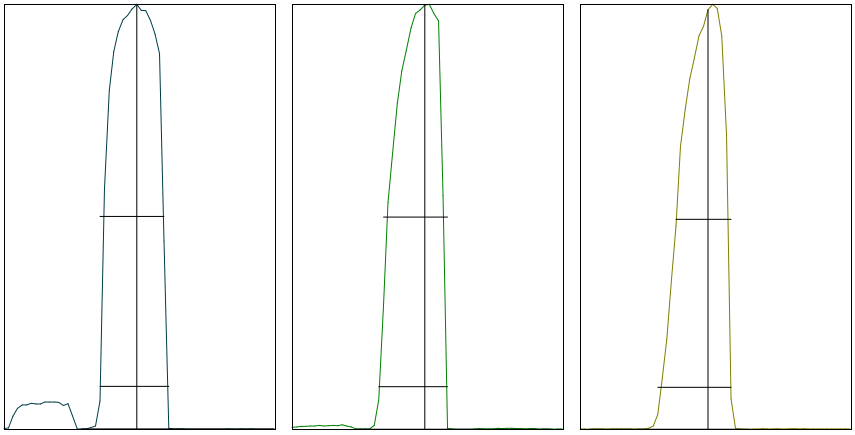
Tune Report

Tune File : nogas.u
Comment :



Integration Time:	0.1000 sec	
Sampling Period:	0.8200 sec	
n:	200	
Oxide:	156/140	0.970%
Doubly Charged:	70/140	1.213%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	10732.0	10715.3	2.80	1.80
89	20,000	10966.0	11886.5	3.57	4.30
205	20,000	10200.0	10338.2	3.03	10.70
156/140	2	0.750%	0.897%	12.37	
70/140	2	0.809%	0.985%	12.72	
63	500	215.0	249.4	8.02	2.90
23	20,000	16964.0	17972.9	3.37	1.40



m/z:	7	89	205
Height:	10,458	11,384	9,926
Axis:	7.00	89.00	204.95
W-50%:	0.70	0.70	0.60
W-10%:	0.7500	0.7500	0.800

Integration Time:	0.1000 sec
Acquisition Time:	22.7600 sec

Y axis : Linear

Generated : May 19, 2016 10:44:13
Printed : May 19, 2016 10:44:15

Tune Report

Tune File : nogas.u
Comment :

Tuning Parameters

===Plasma Condition===				===Ion Lenses===				===Q-Pole Parameters===			
RF Power	:	1600	W	Extract 1	:	0	V	AMU Gain	:	121	
RF Matching	:	1.6	V	Extract 2	:	-120	V	AMU Offset	:	121	
Smpl Depth	:	9	mm	Omega Bias-ce	:	-18	V	Axis Gain	:	0.9993	
Torch-H	:	-0.1	mm	Omega Lens-ce	:	-1	V	Axis Offset	:	-0.03	
Torch-V	:	0.5	mm	Cell Entrance	:	-30	V	QP Bias	:	-1	V
Carrier Gas	:	1.2	L/min	QP Focus	:	4	V				
Makeup Gas	:	0	L/min	Cell Exit	:	-40	V	===Detector Parameters===			
Optional Gas	:	---	%					Discriminator	:	8	mV
Nebulizer Pump	:	0.1	rps	===Octopole Parameters===				Analog HV	:	1740	V
Sample Pump	:	---	rps	OctP RF	:	170	V	Pulse HV	:	1460	V
S/C Temp	:	2	degC	OctP Bias	:	-6	V				

===Reaction Cell===

Reaction Mode	:	OFF									
H2 Gas	:	0	mL/min	He Gas	:	0	mL/min	Optional Gas	:	---	%

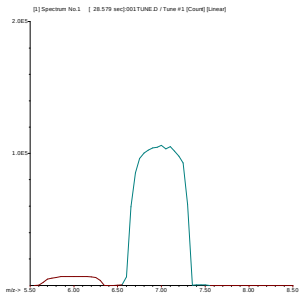
Generated : May 19, 2016 10:44:13
Printed : May 19, 2016 10:44:18

6020 QC Tune Report

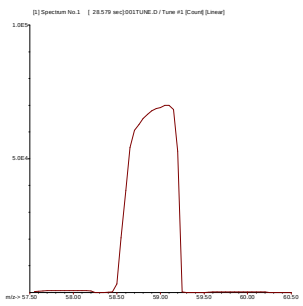
Data File: C:\ICPCHEM\1\DATA\16E19k00.B\001TUNE.D
Date Acquired: May 19 2016 10:59 am
Acq. Method: TN6020.M
Operator: KL
Sample Name: TUNE CHECK
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\TN6020.M

RSD (%)

Element	Actual	Required	Flag
7 Li	2.16	5.00	
59 Co	4.96	5.00	
115 In	3.33	5.00	
205 Tl	1.42	5.00	

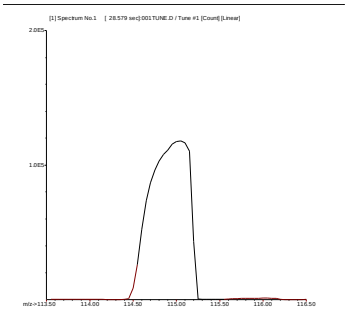


7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

REVIEWED BY
By Janice Whitt at 12:43:39 PM, 5/26/2016



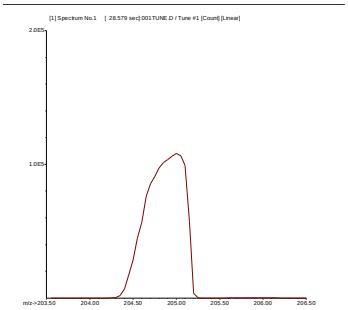
115 In

Mass Calib.

Actual:	115.00	
Required:	114.90 -	115.10
Flag:		

Peak Width

Actual:	0.65
Required:	0.90
Flag:	



205 Tl

Mass Calib.

Actual:	204.95	
Required:	204.90 -	205.10
Flag:		

Peak Width

Actual:	0.60
Required:	0.90
Flag:	

REVIEWED BY
By Janice Whitt at 12:43:44 PM, 5/26/2016

P/A Factor Tuning Report

Acquired:May 19 2016 10:56 am

Mass[amu]	Element	P/A Factor
6	Li	0.073200
23	Na	0.089186
24	Mg	0.093944
27	Al	0.097741
39	K	0.098985
44	Ca	Sensitivity too low
45	Sc	0.099490
47	Ti	Sensitivity too low
51	V	0.102517
52	Cr	0.105648
55	Mn	0.107129
59	Co	0.111371
60	Ni	0.114387
63	Cu	0.116786
66	Zn	0.115916
72	Ge	0.114615
75	As	0.113650
78	Se	Sensitivity too low
88	Sr	0.114659
95	Mo	0.113429
106	(Cd)	0.121228
107	Ag	Sensitivity too low
108	(Cd)	0.121584
111	Cd	0.123186
115	In	0.122271
118	Sn	0.122032
121	Sb	0.121669
137	Ba	Sensitivity too low
205	Tl	0.133360
206	(Pb)	0.133130
207	(Pb)	0.133347
208	Pb	0.133532
209	Bi	0.133174
238		0.132412

===Detector Parameters===
Discriminator: 8.0 mV
Analog HV: 1740 V
Pulse HV: 1460 V

REVIEWED BY
By Janice Whitt at 12:43:59 PM, 5/26/2016

Calibration Blank QC Report

Acq. Method: DHL_3Fe.M Sample Name: BLANK STD 1
Operator: KL Instrument: ICPMS3
Last Cal. Update: May 19 2016 11:44 am
Date Acquired: May 19 2016 11:40 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)
6	Li	2	---	50.17	P	7.35	14.66
7	Li	2	45	540.03	P	21.86	4.05
9	Be	2	45	12.22	P	3.85	31.49
11	B	2	45	3192.76	P	33.40	1.05
23	Na	1	45	5175.71	P	116.50	2.25
24	Mg	1	45	254.46	P	47.18	18.54
27	Al	1	45	107.56	P	9.83	9.14
39	K	1	45	2238.08	P	51.04	2.28
44	Ca	2	45	2891.56	P	42.21	1.46
45	Sc	1	---	184662.30	P	1795.00	0.97
45	Sc	2	---	4233596.00	A	28910.00	0.68
47	Ti	1	45	2.22	P	2.04	91.66
51	V	1	45	89.34	P	2.31	2.58
51	V	2	---		P		
52	Cr	1	45	127.56	P	21.68	17.00
55	Mn	1	45	80.89	P	13.88	17.16
56	Fe	1	72	2254.47	P	93.89	4.16
59	Co	1	72	83.56	P	6.84	8.19
60	Ni	1	72	116.90	P	25.53	21.84
60	Ni	2	---		P		
63	Cu	1	72	305.79	P	16.78	5.49
63	Cu	2	---		P		
66	Zn	1	72	104.89	P	20.67	19.71
66	Zn	2	---		P		
72	Ge	1	---	110938.60	P	1536.00	1.38
72	Ge	2	---		P		
75	As	1	72	7.37	P	0.46	6.28
78	Se	1	72	1.81	P	0.06	3.53
88	Sr	2	###	397.80	P	28.35	7.13
95	Mo	2	###	37.78	P	10.72	28.38
107	Ag	2	###	20.00	P	3.33	16.66
111	Cd	2	###	0.00	P	17.70	5100400.00
115	In	2	---	5887647.00	A	55270.00	0.94
118	Sn	2	###	233.35	P	33.83	14.50
121	Sb	2	###	88.89	P	18.36	20.65
137	Ba	2	###	30.00	P	6.67	22.22
205	Tl	2	###	94.45	P	10.71	11.34
208	Pb	2	###	274.46	P	22.19	8.09
209	Bi	2	---	6267449.00	A	49990.00	0.80

Calibration Standard QC Report

Acq. Method:	DHL_3Fe.M	Sample Name:	L2-160519
Operator:	KL	Instrument:	ICPMS3
Date Acquired:	May 19 2016 11:46 am		
Last Cal. Update:	May 19 2016 11:44 am		

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-367.23	P	30.78	8.38	ISFail
7	Li	2	45	10400.21	P	200.00	1.92	
9	Be	2	45	2472.56	P	50.49	2.04	
11	B	2	45	4629.92	P	60.05	1.30	
23	Na	1	45	11415.64	P	172.00	1.51	
24	Mg	1	45	3026.04	P	61.70	2.04	
27	Al	1	45	702.70	P	28.88	4.11	
39	K	1	45	3243.90	P	53.67	1.65	
44	Ca	2	45	6381.90	P	278.90	4.37	
45	Sc	1	---	181860.41	P	635.50	0.35	
45	Sc	2	---	4201410.00	A	51230.00	1.22	
47	Ti	1	45	22.22	P	8.57	38.57	
51	V	1	45	1316.09	P	38.12	2.90	
51	V	2	---		P			
52	Cr	1	45	1837.06	P	24.67	1.34	
55	Mn	1	45	660.92	P	10.01	1.51	
56	Fe	1	72	27899.27	P	334.90	1.20	
59	Co	1	72	3256.93	P	147.40	4.53	
60	Ni	1	72	1084.06	P	15.03	1.39	
60	Ni	2	---		P			
63	Cu	1	72	3144.54	P	163.00	5.18	
63	Cu	2	---		P			
66	Zn	1	72	357.34	P	7.42	2.08	
66	Zn	2	---		P			
72	Ge	1	---	109335.30	P	854.00	0.78	
72	Ge	2	---		P			
75	As	1	72	130.22	P	1.84	1.41	
78	Se	1	72	8.30	P	0.23	2.79	
88	Sr	2	115	8672.36	P	160.90	1.86	
95	Mo	2	115	1602.39	P	51.90	3.24	
107	Ag	2	115	4780.05	P	70.28	1.47	
111	Cd	2	115	1015.01	P	40.09	3.95	
115	In	2	---	5860602.00	A	94410.00	1.61	
118	Sn	2	115	2891.59	P	67.71	2.34	
121	Sb	2	115	3450.64	P	181.50	5.26	
137	Ba	2	115	1202.33	P	18.96	1.58	
205	Tl	2	209	10137.17	P	95.32	0.94	
208	Pb	2	209	13741.63	P	182.00	1.32	
209	Bi	2	---	6215751.00	A	22810.00	0.37	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-367.23	8.38	50.17	-732.0	70 - 120	ISFail
45	Sc	1	181860.44	0.35	184662.30	98.5	70 - 120	
45	Sc	2	4201409.50	1.22	4233596.00	99.2	70 - 120	
72	Ge	1	109335.28	0.78	110938.56	98.6	70 - 120	
115	In	2	5860602.00	1.61	5887647.50	99.5	70 - 120	
209	Bi	2	6215751.50	0.37	6267448.50	99.2	70 - 120	

Calibration Standard QC Report

Acq. Method:	DHL_3Fe.M	Sample Name:	L-160519
Operator:	KL	Instrument:	ICPMS3
Date Acquired:	May 19 2016 11:52 am		
Last Cal. Update:	May 19 2016 11:50 am		

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-3795.22	P	199.70	5.26	ISFail
7	Li	2	45	98827.93	P	1416.00	1.43	Fail
9	Be	2	45	24347.53	P	563.30	2.31	Fail
11	B	2	45	23411.44	P	580.30	2.48	Fail
23	Na	1	45	67085.26	P	1585.00	2.36	Fail
24	Mg	1	45	27143.60	P	260.80	0.96	Fail
27	Al	1	45	6050.89	P	82.35	1.36	Fail
39	K	1	45	14176.37	P	294.30	2.08	Fail
44	Ca	2	45	38515.23	P	643.60	1.67	Fail
45	Sc	1	---	182811.70	P	1655.00	0.91	
45	Sc	2	---	4237054.00	A	80980.00	1.91	
47	Ti	1	45	291.56	P	20.24	6.94	Fail
51	V	1	45	11920.13	P	267.10	2.24	Fail
51	V	2	---		P			
52	Cr	1	45	17023.47	P	182.70	1.07	Fail
55	Mn	1	45	6083.83	P	92.73	1.52	Fail
56	Fe	1	72	256728.80	P	1409.00	0.55	Fail
59	Co	1	72	32007.61	P	300.00	0.94	Fail
60	Ni	1	72	9722.21	P	134.40	1.38	Fail
60	Ni	2	---		P			
63	Cu	1	72	27512.81	P	60.12	0.22	Fail
63	Cu	2	---		P			
66	Zn	1	72	2614.54	P	26.95	1.03	Fail
66	Zn	2	---		P			
72	Ge	1	---	109647.70	P	477.00	0.44	
72	Ge	2	---		P			
75	As	1	72	1220.62	P	13.77	1.13	Fail
78	Se	1	72	67.00	P	0.59	0.88	Fail
88	Sr	2	115	81022.56	P	1044.00	1.29	Fail
95	Mo	2	115	15416.02	P	145.70	0.95	Fail
107	Ag	2	115	45628.22	P	862.60	1.89	Fail
111	Cd	2	115	9841.50	P	190.30	1.93	
115	In	2	---	5868897.00	A	100400.00	1.71	
118	Sn	2	115	26287.75	P	414.20	1.58	Fail
121	Sb	2	115	32087.59	P	463.30	1.44	Fail
137	Ba	2	115	11828.63	P	320.60	2.71	Fail
205	Tl	2	209	97101.83	P	2597.00	2.67	Fail
208	Pb	2	209	133260.50	P	1357.00	1.02	Fail
209	Bi	2	---	6205193.00	A	20610.00	0.33	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-3795.22	5.26	50.17	-7565.3	70 - 120	ISFail
45	Sc	1	182811.70	0.91	184662.30	99.0	70 - 120	
45	Sc	2	4237053.50	1.91	4233596.00	100.1	70 - 120	
72	Ge	1	109647.71	0.44	110938.56	98.8	70 - 120	
115	In	2	5868897.00	1.71	5887647.50	99.7	70 - 120	
209	Bi	2	6205193.00	0.33	6267448.50	99.0	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: 10X-160519
Operator: KL Instrument: ICPMS3
Date Acquired: May 19 2016 11:58 am
Last Cal. Update: May 19 2016 11:56 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-19640.14	P	250.10	1.27	ISFail
7	Li	2	45	491327.19	P	7715.00	1.57	Fail
9	Be	2	45	121091.90	P	1922.00	1.59	Fail
11	B	2	45	105045.30	P	2272.00	2.16	Fail
23	Na	1	45	315007.09	P	3805.00	1.21	Fail
24	Mg	1	45	137256.50	P	1406.00	1.02	Fail
27	Al	1	45	30511.52	P	520.60	1.71	Fail
39	K	1	45	63259.75	P	630.20	1.00	Fail
44	Ca	2	45	177127.30	P	2949.00	1.66	Fail
45	Sc	1	---	184557.41	P	971.30	0.53	
45	Sc	2	---	4190687.00	A	64930.00	1.55	
47	Ti	1	45	1381.43	P	20.18	1.46	Fail
51	V	1	45	59826.46	P	1042.00	1.74	Fail
51	V	2	---		P			
52	Cr	1	45	83605.37	P	1465.00	1.75	Fail
55	Mn	1	45	30282.71	P	82.63	0.27	Fail
56	Fe	1	72	1317320.00	A	12690.00	0.96	
59	Co	1	72	159989.70	P	772.10	0.48	
60	Ni	1	72	48115.69	P	179.80	0.37	Fail
60	Ni	2	---		P			
63	Cu	1	72	135726.09	P	1504.00	1.11	Fail
63	Cu	2	---		P			
66	Zn	1	72	12571.05	P	208.90	1.66	Fail
66	Zn	2	---		P			
72	Ge	1	---	108838.00	P	638.50	0.59	
72	Ge	2	---		P			
75	As	1	72	6075.65	P	20.88	0.34	
78	Se	1	72	306.08	P	4.08	1.33	Fail
88	Sr	2	115	397010.81	P	6170.00	1.55	Fail
95	Mo	2	115	75844.34	P	1285.00	1.69	Fail
107	Ag	2	115	225042.70	P	4897.00	2.18	Fail
111	Cd	2	115	48289.60	P	813.00	1.68	
115	In	2	---	5816359.00	A	111700.00	1.92	
118	Sn	2	115	129883.80	P	1907.00	1.47	Fail
121	Sb	2	115	158420.59	P	2852.00	1.80	Fail
137	Ba	2	115	58865.62	P	1305.00	2.22	Fail
205	Tl	2	209	485109.91	P	5938.00	1.22	Fail
208	Pb	2	209	658999.13	P	13210.00	2.00	Fail
209	Bi	2	---	6107293.00	A	106700.00	1.75	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-19640.15	1.27	50.17	-39150.3	70 - 120	ISFail
45	Sc	1	184557.36	0.53	184662.30	99.9	70 - 120	
45	Sc	2	4190687.00	1.55	4233596.00	99.0	70 - 120	
72	Ge	1	108837.99	0.59	110938.56	98.1	70 - 120	
115	In	2	5816358.50	1.92	5887647.50	98.8	70 - 120	
209	Bi	2	6107293.00	1.75	6267448.50	97.4	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: 5X-160519
Operator: KL Instrument: ICPMS3
Date Acquired: May 19 2016 12:05 pm
Last Cal. Update: May 19 2016 12:02 pm

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-41728.60	P	1301.00	3.12	ISFail
7	Li	2	45	1032837.00	A	14410.00	1.40	Fail
9	Be	2	45	254560.50	P	6231.00	2.45	Fail
11	B	2	45	225505.00	P	4050.00	1.80	Fail
23	Na	1	45	654517.31	P	5495.00	0.84	Fail
24	Mg	1	45	289008.09	P	2416.00	0.84	
27	Al	1	45	64230.26	P	604.90	0.94	Fail
39	K	1	45	131741.30	P	856.00	0.65	Fail
44	Ca	2	45	367856.59	P	7316.00	1.99	Fail
45	Sc	1	---	191011.59	P	1022.00	0.54	
45	Sc	2	---	4289797.00	A	38500.00	0.90	
47	Ti	1	45	2747.02	P	60.99	2.22	
51	V	1	45	125351.50	P	672.90	0.54	
51	V	2	---		P			
52	Cr	1	45	175475.80	P	2113.00	1.20	
55	Mn	1	45	62844.83	P	664.50	1.06	Fail
56	Fe	1	72	2713470.00	A	29000.00	1.07	
59	Co	1	72	334495.31	P	1532.00	0.46	
60	Ni	1	72	99644.73	P	785.70	0.79	
60	Ni	2	---		P			
63	Cu	1	72	284655.31	P	302.20	0.11	
63	Cu	2	---		P			
66	Zn	1	72	25871.44	P	211.10	0.82	Fail
66	Zn	2	---		P			
72	Ge	1	---	112617.60	P	177.30	0.16	
72	Ge	2	---		P			
75	As	1	72	12564.75	P	27.79	0.22	
78	Se	1	72	639.54	P	7.67	1.20	Fail
88	Sr	2	115	821127.88	P	19650.00	2.39	Fail
95	Mo	2	115	156934.59	P	3320.00	2.12	Fail
107	Ag	2	115	470237.41	P	11560.00	2.46	Fail
111	Cd	2	115	101013.20	P	2493.00	2.47	
115	In	2	---	5926274.00	A	79950.00	1.35	
118	Sn	2	115	268088.91	P	4804.00	1.79	Fail
121	Sb	2	115	324893.31	P	8114.00	2.50	Fail
137	Ba	2	115	121508.00	P	3090.00	2.54	Fail
205	Tl	2	209	1023104.00	P	18570.00	1.82	Fail
208	Pb	2	209	1387943.00	P	21320.00	1.54	Fail
209	Bi	2	---	6376738.00	A	57880.00	0.91	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-41728.61	3.12	50.17	-83181.0	70 - 120	ISFail
45	Sc	1	191011.64	0.54	184662.30	103.4	70 - 120	
45	Sc	2	4289796.50	0.90	4233596.00	101.3	70 - 120	
72	Ge	1	112617.56	0.16	110938.56	101.5	70 - 120	
115	In	2	5926273.50	1.35	5887647.50	100.7	70 - 120	
209	Bi	2	6376738.00	0.91	6267448.50	101.7	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: 2X-160519
Operator: KL Instrument: ICPMS3
Date Acquired: May 19 2016 12:11 pm
Last Cal. Update: May 19 2016 12:08 pm

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-91462.32	P	1912.00	2.09	ISFail
7	Li	2	45	2346925.00	A	27090.00	1.15	Fail
9	Be	2	45	596099.63	P	6352.00	1.07	
11	B	2	45	515258.09	P	14920.00	2.90	Fail
23	Na	1	45	1530312.00	A	3394.00	0.22	Fail
24	Mg	1	45	657384.63	P	8044.00	1.22	
27	Al	1	45	144473.80	P	2263.00	1.57	
39	K	1	45	296487.91	P	2560.00	0.86	Fail
44	Ca	2	45	858975.38	P	17330.00	2.02	Fail
45	Sc	1	---	178423.09	P	192.90	0.11	
45	Sc	2	---	4096621.00	A	81360.00	1.99	
47	Ti	1	45	6440.44	P	37.82	0.59	
51	V	1	45	290848.41	P	2373.00	0.82	
51	V	2	---		A			
52	Cr	1	45	406324.19	P	2661.00	0.65	
55	Mn	1	45	143836.80	P	1259.00	0.88	
56	Fe	1	72	6101551.00	A	90000.00	1.48	
59	Co	1	72	774466.88	P	10960.00	1.42	
60	Ni	1	72	230510.30	P	2182.00	0.95	
60	Ni	2	---		P			
63	Cu	1	72	657424.88	P	3596.00	0.55	
63	Cu	2	---		P			
66	Zn	1	72	59244.68	P	578.20	0.98	
66	Zn	2	---		P			
72	Ge	1	---	105080.00	P	95.26	0.09	
72	Ge	2	---		P			
75	As	1	72	29065.41	P	111.10	0.38	
78	Se	1	72	1448.01	P	18.34	1.27	
88	Sr	2	115	2018750.00	A	47330.00	2.34	Fail
95	Mo	2	115	370505.81	P	7668.00	2.07	Fail
107	Ag	2	115	1092935.00	M	31350.00	2.87	
111	Cd	2	115	236263.30	P	6006.00	2.54	
115	In	2	---	5707549.00	A	101900.00	1.79	
118	Sn	2	115	636472.00	P	17090.00	2.69	Fail
121	Sb	2	115	768790.19	P	15180.00	1.97	Fail
137	Ba	2	115	286479.00	P	6286.00	2.19	Fail
205	Tl	2	209	2487613.00	A	44480.00	1.79	Fail
208	Pb	2	209	3316910.00	A	74990.00	2.26	Fail
209	Bi	2	---	6030239.00	A	89860.00	1.49	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-91462.33	2.09	50.17	-182319.3	70 - 120	ISFail
45	Sc	1	178423.13	0.11	184662.30	96.6	70 - 120	
45	Sc	2	4096621.30	1.99	4233596.00	96.8	70 - 120	
72	Ge	1	105079.96	0.09	110938.56	94.7	70 - 120	
115	In	2	5707548.50	1.79	5887647.50	96.9	70 - 120	
209	Bi	2	6030238.50	1.49	6267448.50	96.2	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: H-160519
Operator: KL Instrument: ICPMS3
Date Acquired: May 19 2016 12:16 pm
Last Cal. Update: May 19 2016 12:14 pm

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-176333.80	P	779.80	0.44	ISFail
7	Li	2	45	4575132.00	A	18150.00	0.40	Fail
9	Be	2	45	1124346.00	A	11730.00	1.04	
11	B	2	45	1036106.00	A	10050.00	0.97	Fail
23	Na	1	45	2955688.00	A	27900.00	0.94	Fail
24	Mg	1	45	1339387.00	A	11910.00	0.89	
27	Al	1	45	289882.50	P	4438.00	1.53	
39	K	1	45	586304.50	P	5369.00	0.92	Fail
44	Ca	2	45	1780991.00	A	27640.00	1.55	Fail
45	Sc	1	---	176072.00	P	979.70	0.56	
45	Sc	2	---	3994192.00	A	42480.00	1.06	
47	Ti	1	45	12960.73	P	139.80	1.08	
51	V	1	45	576946.00	P	5424.00	0.94	
51	V	2	---		A			
52	Cr	1	45	803267.69	P	8291.00	1.03	
55	Mn	1	45	285432.41	P	2043.00	0.72	
56	Fe	1	72	12016680.00	A	148500.00	1.24	
59	Co	1	72	1549085.00	A	13560.00	0.88	
60	Ni	1	72	447071.81	P	183.80	0.04	
60	Ni	2	---		P			
63	Cu	1	72	1305925.00	A	4474.00	0.34	
63	Cu	2	---		A			
66	Zn	1	72	113454.30	P	1410.00	1.24	
66	Zn	2	---		P			
72	Ge	1	---	103130.30	P	552.80	0.54	
72	Ge	2	---		P			
75	As	1	72	56725.41	P	250.40	0.44	
78	Se	1	72	2816.85	P	13.35	0.47	
88	Sr	2	115	3900043.00	A	40860.00	1.05	Fail
95	Mo	2	115	739748.81	P	11950.00	1.62	Fail
107	Ag	2	115	2192262.00	A	39230.00	1.79	
111	Cd	2	115	460458.91	P	5517.00	1.20	
115	In	2	---	5532077.00	A	78810.00	1.42	
118	Sn	2	115	1324473.00	A	17330.00	1.31	Fail
121	Sb	2	115	1583755.00	A	25910.00	1.64	Fail
137	Ba	2	115	567883.88	P	12800.00	2.25	Fail
205	Tl	2	209	4780758.00	A	52190.00	1.09	
208	Pb	2	209	6604395.00	A	15600.00	0.24	Fail
209	Bi	2	---	5779166.00	A	24330.00	0.42	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-176333.84	0.44	50.17	-351500.6	70 - 120	ISFail
45	Sc	1	176071.95	0.56	184662.30	95.3	70 - 120	
45	Sc	2	3994191.80	1.06	4233596.00	94.3	70 - 120	
72	Ge	1	103130.26	0.54	110938.56	93.0	70 - 120	
115	In	2	5532077.50	1.42	5887647.50	94.0	70 - 120	
209	Bi	2	5779166.00	0.42	6267448.50	92.2	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: H2-160519
Operator: KL Instrument: ICPMS3
Date Acquired: May 19 2016 12:22 pm
Last Cal. Update: May 19 2016 12:20 pm

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-657717.50	A	21210.00	3.22	ISFail
7	Li	2	45	18014540.00	A	218000.00	1.21	
9	Be	2	45	4302085.00	A	34700.00	0.81	
11	B	2	45	3937437.00	A	65840.00	1.67	Fail
23	Na	1	45	7336196.00	A	144600.00	1.97	
24	Mg	1	45	3276086.00	A	79340.00	2.42	
27	Al	1	45	496.46	P	18.68	3.76	Fail
39	K	1	45	1540788.00	A	25360.00	1.65	Fail
44	Ca	2	45	4349529.00	A	39710.00	0.91	Fail
45	Sc	1	---	181248.70	P	3254.00	1.80	
45	Sc	2	---	4054037.00	A	18120.00	0.45	
47	Ti	1	45	53547.43	P	1019.00	1.90	
51	V	1	45	2388427.00	A	49770.00	2.08	
51	V	2	---		A			
52	Cr	1	45	3228333.00	A	76100.00	2.36	
55	Mn	1	45	1197536.00	A	25010.00	2.09	
56	Fe	1	72	15055.53	P	595.80	3.96	Fail
59	Co	1	72	5991754.00	A	146200.00	2.44	
60	Ni	1	72	1828119.00	A	45910.00	2.51	
60	Ni	2	---		A			
63	Cu	1	72	4967561.00	A	132300.00	2.66	
63	Cu	2	---		A			
66	Zn	1	72	449376.41	P	9863.00	2.19	
66	Zn	2	---		A			
72	Ge	1	---	104176.10	P	1352.00	1.30	
72	Ge	2	---		P			
75	As	1	72	228925.50	P	3747.00	1.64	
78	Se	1	72	11349.06	P	197.70	1.74	
88	Sr	2	115	15583430.00	A	126400.00	0.81	
95	Mo	2	115	3119907.00	A	48490.00	1.55	
107	Ag	2	115	1704.70	P	520.60	30.54	Fail
111	Cd	2	115	1942370.00	A	9783.00	0.50	
115	In	2	---	5589848.00	A	4621.00	0.08	
118	Sn	2	115	5210208.00	A	34670.00	0.67	Fail
121	Sb	2	115	1966.95	P	495.30	25.18	Fail
137	Ba	2	115	2420938.00	A	21450.00	0.89	
205	Tl	2	209	19088950.00	A	108500.00	0.57	
208	Pb	2	209	25704420.00	A	239500.00	0.93	
209	Bi	2	---	5741174.00	A	28170.00	0.49	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-657717.63	3.22	50.17	#########	70 - 120	ISFail
45	Sc	1	181248.73	1.80	184662.30	98.2	70 - 120	
45	Sc	2	4054037.00	0.45	4233596.00	95.8	70 - 120	
72	Ge	1	104176.09	1.30	110938.56	93.9	70 - 120	
115	In	2	5589848.50	0.08	5887647.50	94.9	70 - 120	
209	Bi	2	5741174.50	0.49	6267448.50	91.6	70 - 120	

ICSA QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\016ICSA.D\016ICSA.D#

Date Acquired:	May 19 2016 12:40 pm	Sample Name:	**ICSA-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICSAICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	RL S	RL Aq	Flag
7	Li	2	45	0.601	ppb	6.11	8.00	5.00	
9	Be	2	45	0.315	ppb	14.36	0.32	0.80	
11	B	2	45	10.170	ppb	4.01	30.00	30.00	
23	Na	1	45	99850.000	ppb	0.92	#######	#######	
24	Mg	1	45	96120.000	ppb	0.96	#######	#######	
27	Al	1	45	102000.000	ppb	1.64	#######	#######	
39	K	1	45	97330.000	ppb	0.88	#######	#######	
44	Ca	2	45	94590.000	ppb	4.94	#######	#######	
47	Ti	1	45	2058.000	ppb	0.88	10.00	10.00	
51	V	1	45	0.276	ppb	11.93	10.00	10.00	
52	Cr	1	45	0.673	ppb	0.71	8.00	5.00	
55	Mn	1	45	1.700	ppb	2.76	8.00	10.00	
56	Fe	1	72	98240.000	ppb	1.92	#######	#######	
59	Co	1	72	0.805	ppb	2.73	8.00	10.00	
60	Ni	1	72	0.674	ppb	5.85	8.00	10.00	
63	Cu	1	72	0.756	ppb	2.13	8.00	10.00	
66	Zn	1	72	1.587	ppb	4.79	10.00	5.00	
75	As	1	72	0.964	ppb	2.74	4.00	5.00	
78	Se	1	72	0.523	ppb	14.25	2.00	5.00	
88	Sr	2	115	1.767	ppb	2.88	10.00	10.00	
95	Mo	2	115	1978.000	ppb	4.12	8.00	5.00	
107	Ag	2	115	0.190	ppb	4.64	0.80	2.00	
111	Cd	2	115	0.570	ppb	9.08	1.20	1.00	
118	Sn	2	115	0.794	ppb	9.44	10.00	10.00	
121	Sb	2	115	0.431	ppb	5.80	4.00	2.50	
137	Ba	2	115	0.703	ppb	6.64	8.00	10.00	
205	Tl	2	209	0.476	ppb	5.03	4.00	1.50	
208	Pb	2	209	0.646	ppb	4.00	1.20	1.00	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-123.80	29.07	50.17	-246.8	70 - 120	ISFail
45	Sc	1	168177.30	0.17	184662.30	91.1	70 - 120	
45	Sc	2	3644262.30	2.20	4233596.00	86.1	70 - 120	
72	Ge	1	95825.34	0.34	110938.56	86.4	70 - 120	
115	In	2	5029298.00	2.11	5887647.50	85.4	70 - 120	
209	Bi	2	5005062.00	0.51	6267448.50	79.9	70 - 120	

ICS-AB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\017ICSB.D\017ICSB.D#

Date Acquired:	May 19 2016 12:46 pm	Sample Name:	**ICSAB-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICSBICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)			Flag
7	Li	2	45	0.42	ppb	2.50	---	80 -		120	
9	Be	2	45	0.11	ppb	13.11	---	80 -		120	
11	B	2	45	6.57	ppb	6.50	---	80 -		120	
23	Na	1	45	101400.00	ppb	1.33	100000.00	80 -		120	
24	Mg	1	45	95940.00	ppb	1.20	100000.00	80 -		120	
27	Al	1	45	101700.00	ppb	0.66	100000.00	80 -		120	
39	K	1	45	97540.00	ppb	0.82	100000.00	80 -		120	
44	Ca	2	45	95590.00	ppb	4.53	100000.00	80 -		120	
47	Ti	1	45	2065.00	ppb	0.14	---	80 -		120	
51	V	1	45	41.87	ppb	1.16	40.00	80 -		120	
52	Cr	1	45	22.30	ppb	0.74	20.00	80 -		120	
55	Mn	1	45	21.14	ppb	1.34	20.00	80 -		120	
56	Fe	1	72	98290.00	ppb	0.28	100000.00	80 -		120	
59	Co	1	72	42.59	ppb	0.92	40.00	80 -		120	
60	Ni	1	72	38.38	ppb	1.11	40.00	80 -		120	
63	Cu	1	72	22.20	ppb	1.74	20.00	80 -		120	
66	Zn	1	72	19.71	ppb	1.65	20.00	80 -		120	
75	As	1	72	20.61	ppb	0.66	20.00	80 -		120	
78	Se	1	72	19.11	ppb	1.16	20.00	80 -		120	
88	Sr	2	115	1.16	ppb	2.43	---	80 -		120	
95	Mo	2	115	1964.00	ppb	2.98	---	80 -		120	
107	Ag	2	115	17.48	ppb	3.39	20.00	80 -		120	
111	Cd	2	115	9.36	ppb	0.83	10.00	80 -		120	
118	Sn	2	115	0.69	ppb	8.25	---	80 -		120	
121	Sb	2	115	0.06	ppb	7.26	---	80 -		120	
137	Ba	2	115	0.55	ppb	1.24	---	80 -		120	
205	Tl	2	209	0.17	ppb	6.07	---	80 -		120	
208	Pb	2	209	0.36	ppb	3.54	---	80 -		120	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-24.37	92.66	50.17	-48.6	70 -		120	ISFail
45	Sc	1	161569.11	0.65	184662.30	87.5	70 -		120	
45	Sc	2	3077160.30	3.79	4233596.00	72.7	70 -		120	
72	Ge	1	92298.93	0.20	110938.56	83.2	70 -		120	
115	In	2	4539527.00	2.78	5887647.50	77.1	70 -		120	
209	Bi	2	4786043.50	1.33	6267448.50	76.4	70 -		120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\020ICV.D\020ICV.D#

Date Acquired:	May 19 2016 01:04 pm	Sample Name:	**ICV1-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	145.20	ppb	1.57	100.00	90 -	110	145.2	Fail
9	Be	2	45	126.10	ppb	2.48	100.00	90 -	110	126.1	Fail
11	B	2	45	118.10	ppb	2.08	100.00	90 -	110	118.1	Fail
23	Na	1	45	2790.00	ppb	0.19	2500.00	90 -	110	111.6	Fail
24	Mg	1	45	2688.00	ppb	1.24	2500.00	90 -	110	107.5	
27	Al	1	45	2475.00	ppb	0.98	2500.00	90 -	110	99.0	
39	K	1	45	2513.00	ppb	1.58	2500.00	90 -	110	100.5	
44	Ca	2	45	2399.00	ppb	2.10	2500.00	90 -	110	96.0	
47	Ti	1	45	101.30	ppb	1.53	100.00	90 -	110	101.3	
51	V	1	45	105.00	ppb	0.62	100.00	90 -	110	105.0	
52	Cr	1	45	110.20	ppb	1.23	100.00	90 -	110	110.2	Fail
55	Mn	1	45	96.60	ppb	1.05	100.00	90 -	110	96.6	
56	Fe	1	72	2569.00	ppb	0.70	2500.00	90 -	110	102.8	
59	Co	1	72	108.10	ppb	0.96	100.00	90 -	110	108.1	
60	Ni	1	72	105.30	ppb	0.49	100.00	90 -	110	105.3	
63	Cu	1	72	107.60	ppb	0.58	100.00	90 -	110	107.6	
66	Zn	1	72	103.50	ppb	1.42	100.00	90 -	110	103.5	
75	As	1	72	101.40	ppb	0.79	100.00	90 -	110	101.4	
78	Se	1	72	98.23	ppb	1.55	100.00	90 -	110	98.2	
88	Sr	2	115	96.83	ppb	2.12	100.00	90 -	110	96.8	
95	Mo	2	115	90.43	ppb	3.01	100.00	90 -	110	90.4	
107	Ag	2	115	93.79	ppb	1.28	100.00	90 -	110	93.8	
111	Cd	2	115	95.30	ppb	2.03	100.00	90 -	110	95.3	
118	Sn	2	115	100.90	ppb	1.88	100.00	90 -	110	100.9	
121	Sb	2	115	97.60	ppb	1.93	100.00	90 -	110	97.6	
137	Ba	2	115	97.25	ppb	2.64	100.00	90 -	110	97.3	
205	Tl	2	209	96.68	ppb	1.24	100.00	90 -	110	96.7	
208	Pb	2	209	98.43	ppb	1.77	100.00	90 -	110	98.4	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-16445.44	4.77	50.17	-32782.0	70 -	120		ISFail
45	Sc	1	167136.28	0.11	184662.30	90.5	70 -	120		
45	Sc	2	2842477.00	1.69	4233596.00	67.1	70 -	120		ISFail
72	Ge	1	98968.03	0.16	110938.56	89.2	70 -	120		
115	In	2	4588444.50	1.80	5887647.50	77.9	70 -	120		
209	Bi	2	5511763.50	0.79	6267448.50	87.9	70 -	120		

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\022LCVL.D\022LCVL.D#

Date Acquired:	May 19 2016 01:16 pm	Sample Name:	**ILCVL-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	14.56	ppb	0.48	5.00	70 -	130	291.2	Fail
9	Be	2	45	1.33	ppb	5.74	1.00	70 -	130	133.0	Fail
11	B	2	45	24.37	ppb	2.40	20.00	70 -	130	121.9	
23	Na	1	45	114.10	ppb	1.10	100.00	70 -	130	114.1	
24	Mg	1	45	107.70	ppb	1.96	100.00	70 -	130	107.7	
27	Al	1	45	103.00	ppb	1.26	100.00	70 -	130	103.0	
39	K	1	45	100.90	ppb	5.05	100.00	70 -	130	100.9	
44	Ca	2	45	95.23	ppb	3.16	100.00	70 -	130	95.2	
47	Ti	1	45	5.02	ppb	7.43	5.00	70 -	130	100.4	
51	V	1	45	1.00	ppb	0.35	1.00	70 -	130	99.7	
52	Cr	1	45	5.45	ppb	2.21	5.00	70 -	130	108.9	
55	Mn	1	45	4.92	ppb	2.42	5.00	70 -	130	98.4	
56	Fe	1	72	104.00	ppb	1.37	100.00	70 -	130	104.0	
59	Co	1	72	5.27	ppb	1.51	5.00	70 -	130	105.3	
60	Ni	1	72	5.73	ppb	2.79	5.00	70 -	130	114.6	
63	Cu	1	72	5.46	ppb	0.20	5.00	70 -	130	109.3	
66	Zn	1	72	5.32	ppb	4.50	5.00	70 -	130	106.5	
75	As	1	72	5.06	ppb	0.95	5.00	70 -	130	101.2	
78	Se	1	72	5.01	ppb	11.11	5.00	70 -	130	100.2	
88	Sr	2	115	4.76	ppb	2.48	5.00	70 -	130	95.1	
95	Mo	2	115	4.57	ppb	2.41	5.00	70 -	130	91.4	
107	Ag	2	115	1.87	ppb	3.28	2.00	70 -	130	93.5	
111	Cd	2	115	0.91	ppb	17.54	1.00	70 -	130	90.8	
118	Sn	2	115	4.93	ppb	3.64	5.00	70 -	130	98.7	
121	Sb	2	115	1.94	ppb	4.54	2.00	70 -	130	96.8	
137	Ba	2	115	4.78	ppb	3.83	5.00	70 -	130	95.6	
205	Tl	2	209	0.99	ppb	0.84	1.00	70 -	130	98.9	
208	Pb	2	209	0.99	ppb	1.10	1.00	70 -	130	99.3	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigl	-1481.13	10.01	50.17	-2952.5	70 -	120	ISFail
45	Sc	1		171717.02	1.16	184662.30	93.0	70 -	120	
45	Sc	2		2912580.80	1.37	4233596.00	68.8	70 -	120	ISFail
72	Ge	1		103580.53	0.25	110938.56	93.4	70 -	120	
115	In	2		4682498.50	1.94	5887647.50	79.5	70 -	120	
209	Bi	2		5652002.50	0.97	6267448.50	90.2	70 -	120	

ICB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\023_ICB.D\023_ICB.D#

Date Acquired:	May 19 2016 01:22 pm	Sample Name:	**ICB1-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm	Instrument:	ICPMS3

QC Elements

Element	Conc.	RSD(%)	High Limit	Flag
7 Li 2 45	0.17 ppb	7.18	2.00	
9 Be 2 45	0.03 ppb	9.17	0.40	
11 B 2 45	1.56 ppb	2.89	10.00	
23 Na 1 45	5.57 ppb	1.52	50.00	
24 Mg 1 45	0.86 ppb	24.87	50.00	
27 Al 1 45	2.57 ppb	7.05	50.00	
39 K 1 45	1.99 ppb	2.89	50.00	
44 Ca 2 45	1.33 ppb	0.63	50.00	
47 Ti 1 45	0.08 ppb	66.67	4.00	
51 V 1 45	0.03 ppb	16.55	4.00	
52 Cr 1 45	0.04 ppb	10.72	2.00	
55 Mn 1 45	-0.02 ppb	2.34	2.00	
56 Fe 1 72	2.28 ppb	3.86	50.00	
59 Co 1 72	0.01 ppb	18.36	2.00	
60 Ni 1 72	-0.02 ppb	8.92	2.00	
63 Cu 1 72	0.06 ppb	3.32	2.00	
66 Zn 1 72	1.21 ppb	10.23	4.00	
75 As 1 72	0.04 ppb	2.39	2.00	
78 Se 1 72	0.05 ppb	29.05	0.60	
88 Sr 2 115	0.03 ppb	14.58	4.00	
95 Mo 2 115	0.09 ppb	8.74	2.00	
107 Ag 2 115	0.02 ppb	18.90	0.40	
111 Cd 2 115	0.02 ppb	13.04	0.40	
118 Sn 2 115	0.15 ppb	3.20	20.00	
121 Sb 2 115	0.01 ppb	9.35	2.00	
137 Ba 2 115	0.05 ppb	20.76	2.00	
205 Tl 2 209	0.05 ppb	13.63	2.00	
208 Pb 2 209	0.04 ppb	8.15	0.40	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li 2 RHig	9.65	######	50.17	19.2	70 - 120	ISFail
45 Sc 1	172613.33	0.09	184662.30	93.5	70 - 120	
45 Sc 2	2957685.80	0.93	4233596.00	69.9	70 - 120	ISFail
72 Ge 1	103479.73	0.36	110938.56	93.3	70 - 120	
115 In 2	4707830.00	0.54	5887647.50	80.0	70 - 120	
209 Bi 2	5641473.00	0.49	6267448.50	90.0	70 - 120	

PB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\024__PB.D\024__PB.D#

Date Acquired:	May 19 2016 01:28 pm	Sample Name:	**MB-75132**
Acq. Method:	DHL_3Fe.M	Misc Info:	MBLKICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	MDL	RL	Flag
7	Li	2	45	0.117	ppb	4.38	2.0	8.00	
9	Be	2	45	0.010	ppb	41.91	0.4	1.20	
11	B	2	45	1.835	ppb	5.44	10.0	30.00	
23	Na	1	45	9.447	ppb	1.33	50.0	#####	
24	Mg	1	45	2.590	ppb	7.92	50.0	#####	
27	Al	1	45	5.686	ppb	6.64	50.0	#####	
39	K	1	45	6.905	ppb	1.24	50.0	#####	
44	Ca	2	45	35.240	ppb	2.41	50.0	#####	
47	Ti	1	45	0.133	ppb	48.05	4.0	10.00	
51	V	1	45	0.010	ppb	13.50	4.0	10.00	
52	Cr	1	45	0.188	ppb	6.03	2.0	8.00	
55	Mn	1	45	0.041	ppb	12.86	2.0	8.00	
56	Fe	1	72	22.860	ppb	1.51	50.0	#####	
59	Co	1	72	-0.001	ppb	25.10	2.0	8.00	
60	Ni	1	72	0.150	ppb	1.56	2.0	8.00	
63	Cu	1	72	0.122	ppb	1.63	2.0	8.00	
66	Zn	1	72	1.714	ppb	4.65	4.0	10.00	
75	As	1	72	0.031	ppb	8.90	2.0	4.00	
78	Se	1	72	-0.012	ppb	48.95	0.6	2.00	
88	Sr	2	115	0.081	ppb	8.76	4.0	10.00	
95	Mo	2	115	0.097	ppb	15.41	2.0	8.00	
107	Ag	2	115	0.006	ppb	33.32	0.4	0.80	
111	Cd	2	115	0.022	ppb	87.80	0.4	1.20	
118	Sn	2	115	4.367	ppb	1.39	20.0	40.00	
121	Sb	2	115	0.000	ppb	27.65	2.0	4.00	
137	Ba	2	115	0.059	ppb	3.85	2.0	8.00	
205	Tl	2	209	0.034	ppb	5.86	2.0	4.00	
208	Pb	2	209	0.058	ppb	2.77	0.4	1.20	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	20.76	45.17	50.17	41.4	70 - 120	ISFail
45	Sc	1		182682.58	0.82	184662.30	98.9	70 - 120	
45	Sc	2		3089697.30	1.41	4233596.00	73.0	70 - 120	
72	Ge	1		108196.10	1.03	110938.56	97.5	70 - 120	
115	In	2		4879067.50	0.24	5887647.50	82.9	70 - 120	
209	Bi	2		5754028.00	1.02	6267448.50	91.8	70 - 120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\025_LCS.D\025_LCS.D#

Date Acquired:	May 19 2016 01:35 pm	Sample Name:	**LCS-75132**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCS ICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	284.80	ppb	0.86	200.00	80 -	120	142.4	Fail
9	Be	2	45	241.60	ppb	0.77	200.00	80 -	120	120.8	Fail
11	B	2	45	233.50	ppb	1.32	200.00	80 -	120	116.8	
23	Na	1	45	5662.00	ppb	0.39	1000.00	80 -	120	566.2	Fail
24	Mg	1	45	5415.00	ppb	0.73	1000.00	80 -	120	541.5	Fail
27	Al	1	45	1018.00	ppb	1.03	1000.00	80 -	120	101.8	
39	K	1	45	5158.00	ppb	0.96	1000.00	80 -	120	515.8	Fail
44	Ca	2	45	4947.00	ppb	1.41	1000.00	80 -	120	494.7	Fail
47	Ti	1	45	200.50	ppb	2.46	200.00	80 -	120	100.3	
51	V	1	45	205.40	ppb	1.17	200.00	80 -	120	102.7	
52	Cr	1	45	210.60	ppb	0.49	200.00	80 -	120	105.3	
55	Mn	1	45	196.00	ppb	0.79	200.00	80 -	120	98.0	
56	Fe	1	72	1070.00	ppb	1.31	1000.00	80 -	120	107.0	
59	Co	1	72	212.60	ppb	1.19	200.00	80 -	120	106.3	
60	Ni	1	72	206.60	ppb	0.68	200.00	80 -	120	103.3	
63	Cu	1	72	212.70	ppb	0.34	200.00	80 -	120	106.4	
66	Zn	1	72	197.80	ppb	0.86	200.00	80 -	120	98.9	
75	As	1	72	196.10	ppb	0.48	200.00	80 -	120	98.1	
78	Se	1	72	186.20	ppb	0.72	200.00	80 -	120	93.1	
88	Sr	2	115	205.00	ppb	2.94	200.00	80 -	120	102.5	
95	Mo	2	115	186.50	ppb	1.62	200.00	80 -	120	93.3	
107	Ag	2	115	196.00	ppb	1.52	200.00	80 -	120	98.0	
111	Cd	2	115	190.50	ppb	2.25	200.00	80 -	120	95.3	
118	Sn	2	115	204.50	ppb	2.02	200.00	80 -	120	102.3	
121	Sb	2	115	193.40	ppb	1.36	200.00	80 -	120	96.7	
137	Ba	2	115	195.80	ppb	1.89	200.00	80 -	120	97.9	
205	Tl	2	209	209.00	ppb	2.05	200.00	80 -	120	104.5	
208	Pb	2	209	205.60	ppb	0.77	200.00	80 -	120	102.8	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-72847.74	1.58	50.17	-145213.3	70 -	120	ISFail
45	Sc	1	184134.67	0.23	184662.30	99.7	70 -	120	
45	Sc	2	3040653.30	1.11	4233596.00	71.8	70 -	120	
72	Ge	1	107297.72	0.57	110938.56	96.7	70 -	120	
115	In	2	4715236.00	1.75	5887647.50	80.1	70 -	120	
209	Bi	2	5539503.50	0.96	6267448.50	88.4	70 -	120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\026_LCS.D\026_LCS.D#

Date Acquired:	May 19 2016 01:40 pm	Sample Name:	**LCSD-75132**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCSDICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	283.30	ppb	1.89	200.00	80 -	120	141.7	Fail
9	Be	2	45	239.10	ppb	1.21	200.00	80 -	120	119.6	
11	B	2	45	233.60	ppb	1.03	200.00	80 -	120	116.8	
23	Na	1	45	5685.00	ppb	1.14	1000.00	80 -	120	568.5	Fail
24	Mg	1	45	5378.00	ppb	0.40	1000.00	80 -	120	537.8	Fail
27	Al	1	45	1017.00	ppb	0.32	1000.00	80 -	120	101.7	
39	K	1	45	5152.00	ppb	1.28	1000.00	80 -	120	515.2	Fail
44	Ca	2	45	4979.00	ppb	1.94	1000.00	80 -	120	497.9	Fail
47	Ti	1	45	203.40	ppb	1.79	200.00	80 -	120	101.7	
51	V	1	45	206.10	ppb	1.40	200.00	80 -	120	103.1	
52	Cr	1	45	213.10	ppb	1.21	200.00	80 -	120	106.6	
55	Mn	1	45	197.60	ppb	0.33	200.00	80 -	120	98.8	
56	Fe	1	72	1068.00	ppb	0.24	1000.00	80 -	120	106.8	
59	Co	1	72	215.20	ppb	0.97	200.00	80 -	120	107.6	
60	Ni	1	72	208.60	ppb	0.63	200.00	80 -	120	104.3	
63	Cu	1	72	215.80	ppb	0.36	200.00	80 -	120	107.9	
66	Zn	1	72	198.80	ppb	0.51	200.00	80 -	120	99.4	
75	As	1	72	196.00	ppb	0.16	200.00	80 -	120	98.0	
78	Se	1	72	184.90	ppb	1.00	200.00	80 -	120	92.5	
88	Sr	2	115	204.40	ppb	1.33	200.00	80 -	120	102.2	
95	Mo	2	115	185.50	ppb	1.31	200.00	80 -	120	92.8	
107	Ag	2	115	194.60	ppb	1.86	200.00	80 -	120	97.3	
111	Cd	2	115	187.80	ppb	1.73	200.00	80 -	120	93.9	
118	Sn	2	115	202.90	ppb	1.21	200.00	80 -	120	101.5	
121	Sb	2	115	191.70	ppb	1.76	200.00	80 -	120	95.9	
137	Ba	2	115	194.20	ppb	2.44	200.00	80 -	120	97.1	
205	Tl	2	209	207.50	ppb	1.52	200.00	80 -	120	103.8	
208	Pb	2	209	203.10	ppb	1.23	200.00	80 -	120	101.6	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-76038.02	2.25	50.17	-151572.8	70 -	120	ISFail
45	Sc	1	184124.63	0.23	184662.30	99.7	70 -	120	
45	Sc	2	3151463.00	1.28	4233596.00	74.4	70 -	120	
72	Ge	1	107167.97	0.07	110938.56	96.6	70 -	120	
115	In	2	4913403.50	0.31	5887647.50	83.5	70 -	120	
209	Bi	2	5710293.00	0.39	6267448.50	91.1	70 -	120	

DT QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\029DT1.D\029DT1.D#

Date Acquired:	May 19 2016 01:59 pm	Sample Name:	**1605074-39A SD**
Acq. Method:	DHL_3Fe.M	Misc Info:	SD ICPMS_TSDOD
Operator:	KL	Bench Diln:	25.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	25.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	25.48	ppb	1.75	-1576.62	90 - 110	-8.1	
9	Be	2	45	0.82	ppb	5.46	3.67	90 - 110	111.8	
11	B	2	45	36.25	ppb	1.13	153.30	90 - 110	118.2	
23	Na	1	45	1272.00	ppb	0.50	6011.00	90 - 110	105.8	GOOD
24	Mg	1	45	3441.00	ppb	1.01	16180.00	90 - 110	106.3	GOOD
27	Al	1	45	11470.00	ppb	1.41	55860.00	90 - 110	102.7	GOOD
39	K	1	45	3825.00	ppb	0.33	19050.00	90 - 110	100.4	GOOD
44	Ca	2	45	40520.00	ppb	1.58	191300.00	90 - 110	105.9	GOOD
47	Ti	1	45	51.61	ppb	1.16	238.30	90 - 110	108.3	GOOD
51	V	1	45	16.70	ppb	1.29	79.18	90 - 110	105.5	GOOD
52	Cr	1	45	15.71	ppb	1.94	74.86	90 - 110	104.9	GOOD
55	Mn	1	45	44.67	ppb	0.35	209.70	90 - 110	106.5	GOOD
56	Fe	1	72	17100.00	ppb	1.07	81770.00	90 - 110	104.6	GOOD
59	Co	1	72	5.60	ppb	0.92	26.58	90 - 110	105.3	GOOD
60	Ni	1	72	8.36	ppb	2.85	42.03	90 - 110	99.5	GOOD
63	Cu	1	72	1.63	ppb	1.42	7.46	90 - 110	109.3	GOOD
66	Zn	1	72	47.56	ppb	2.20	214.00	90 - 110	111.1	
75	As	1	72	4.54	ppb	2.27	20.28	90 - 110	111.9	
78	Se	1	72	4.82	ppb	5.81	22.34	90 - 110	107.9	GOOD
88	Sr	2	115	558.30	ppb	1.37	2725.00	90 - 110	102.4	GOOD
95	Mo	2	115	0.39	ppb	4.28	2.10	90 - 110	92.5	GOOD
107	Ag	2	115	0.04	ppb	4.90	0.16	90 - 110	138.5	
111	Cd	2	115	0.13	ppb	12.17	0.52	90 - 110	126.1	
118	Sn	2	115	1.22	ppb	1.81	5.67	90 - 110	107.9	GOOD
121	Sb	2	115	0.06	ppb	16.95	0.25	90 - 110	119.9	
137	Ba	2	115	21.37	ppb	1.47	104.20	90 - 110	102.5	GOOD
205	Tl	2	209	0.11	ppb	2.28	0.42	90 - 110	134.9	
208	Pb	2	209	4.11	ppb	0.91	20.54	90 - 110	100.0	GOOD

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHig	-1576.62	25.82	50.17	-3142.8	70 -	120	ISFail
45	Sc	1		176203.27	0.55	184662.30	95.4	70 -	120	
45	Sc	2		2858255.00	0.69	4233596.00	67.5	70 -	120	ISFail
72	Ge	1		104591.41	0.19	110938.56	94.3	70 -	120	
115	In	2		4547017.50	1.24	5887647.50	77.2	70 -	120	
209	Bi	2		5466515.00	0.57	6267448.50	87.2	70 -	120	

PDS QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\039_PDS.D\039_PDS.D#

Date Acquired:	May 19 2016 02:58 pm	Sample Name:	**1605074-39A PDS**
Acq. Method:	DHL_3Fe.M	Misc Info:	PDS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	378.20	ppb	0.28	-33588.88	200	75-125	######	Fail
9	Be	2	45	222.20	ppb	0.81	3.67	200	75-125	109.3	
11	B	2	45	349.00	ppb	1.51	153.30	200	75-125	97.9	
23	Na	1	45	11360.00	ppb	1.57	6011.00	5000	75-125	107.0	
24	Mg	1	45	21390.00	ppb	1.18	16180.00	5000	75-125	104.2	
27	Al	1	45	61390.00	ppb	2.49	55860.00	5000	75-125	110.6	
39	K	1	45	24380.00	ppb	1.86	19050.00	5000	75-125	106.6	
44	Ca	2	45	199800.00	ppb	1.03	191300.00	5000	75-125	170.0	Fail
47	Ti	1	45	446.60	ppb	2.93	238.30	200	75-125	104.2	
51	V	1	45	283.60	ppb	0.90	79.18	200	75-125	102.2	
52	Cr	1	45	277.00	ppb	1.42	74.86	200	75-125	101.1	
55	Mn	1	45	405.40	ppb	1.19	209.70	200	75-125	97.9	
56	Fe	1	72	90130.00	ppb	0.87	81770.00	5000	75-125	167.2	Fail
59	Co	1	72	232.30	ppb	1.09	26.58	200	75-125	102.9	
60	Ni	1	72	226.70	ppb	1.02	42.03	200	75-125	92.3	
63	Cu	1	72	200.50	ppb	0.69	7.46	200	75-125	96.5	
66	Zn	1	72	357.40	ppb	0.70	214.00	200	75-125	71.7	Fail
75	As	1	72	220.40	ppb	0.59	20.28	200	75-125	100.1	
78	Se	1	72	211.50	ppb	1.15	22.34	200	75-125	94.6	
88	Sr	2	115	2955.00	ppb	0.76	2725.00	200	75-125	115.0	
95	Mo	2	115	185.10	ppb	1.09	2.10	200	75-125	91.5	
107	Ag	2	115	164.30	ppb	0.92	0.16	200	75-125	82.1	
111	Cd	2	115	179.70	ppb	1.01	0.52	200	75-125	89.6	
118	Sn	2	115	208.80	ppb	0.75	5.67	200	75-125	101.6	
121	Sb	2	115	194.50	ppb	0.71	0.25	200	75-125	97.1	
137	Ba	2	115	306.20	ppb	0.82	104.20	200	75-125	101.0	
205	Tl	2	209	213.50	ppb	0.75	0.42	200	75-125	106.5	
208	Pb	2	209	229.00	ppb	0.41	20.54	200	75-125	104.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-33588.88	2.95	50.17	-66955.4	70 - 120	ISFail
45	Sc	1	170831.47	1.25	184662.30	92.5	70 - 120	
45	Sc	2	2728591.80	1.40	4233596.00	64.5	70 - 120	ISFail
72	Ge	1	97168.71	0.51	110938.56	87.6	70 - 120	
115	In	2	4400645.50	0.87	5887647.50	74.7	70 - 120	
209	Bi	2	4909842.00	0.36	6267448.50	78.3	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\040_MS.D\040_MS.D#

Date Acquired:	May 19 2016 03:04 pm	Sample Name:	**1605074-39A MS**
Acq. Method:	DHL_3Fe.M	Misc Info:	MS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	394.30	ppb	1.45	########	200	80-120	######	Fail
9	Be	2	45	224.50	ppb	2.14	3.67	200	80-120	110.4	
11	B	2	45	355.20	ppb	2.75	153.30	200	80-120	101.0	
23	Na	1	45	11290.00	ppb	2.51	6011.00	1000	80-120	527.9	Fail
24	Mg	1	45	21860.00	ppb	3.24	16180.00	1000	80-120	568.0	Fail
27	Al	1	45	60560.00	ppb	2.82	55860.00	1000	80-120	470.0	Fail
39	K	1	45	25550.00	ppb	2.96	19050.00	1000	80-120	650.0	Fail
44	Ca	2	45	196200.00	ppb	2.99	########	1000	80-120	490.0	Fail
47	Ti	1	45	453.70	ppb	4.48	238.30	200	80-120	107.7	
51	V	1	45	285.10	ppb	2.64	79.18	200	80-120	103.0	
52	Cr	1	45	274.60	ppb	3.80	74.86	200	80-120	99.9	
55	Mn	1	45	397.60	ppb	3.88	209.70	200	80-120	94.0	
56	Fe	1	72	86530.00	ppb	2.50	81770.00	1000	80-120	476.0	Fail
59	Co	1	72	227.10	ppb	2.50	26.58	200	80-120	100.3	
60	Ni	1	72	225.80	ppb	2.46	42.03	200	80-120	91.9	
63	Cu	1	72	198.10	ppb	3.41	7.46	200	80-120	95.3	
66	Zn	1	72	351.60	ppb	2.11	214.00	200	80-120	68.8	Fail
75	As	1	72	215.30	ppb	2.78	20.28	200	80-120	97.5	
78	Se	1	72	203.60	ppb	2.46	22.34	200	80-120	90.6	
88	Sr	2	115	3137.00	ppb	1.68	2725.00	200	80-120	206.0	Fail
95	Mo	2	115	177.00	ppb	2.23	2.10	200	80-120	87.5	
107	Ag	2	115	172.30	ppb	1.88	0.16	200	80-120	86.1	
111	Cd	2	115	178.80	ppb	2.21	0.52	200	80-120	89.1	
118	Sn	2	115	200.10	ppb	2.40	5.67	200	80-120	97.2	
121	Sb	2	115	59.39	ppb	2.62	0.25	200	80-120	29.6	Fail
137	Ba	2	115	339.70	ppb	2.63	104.20	200	80-120	117.8	
205	Tl	2	209	212.40	ppb	1.62	0.42	200	80-120	106.0	
208	Pb	2	209	228.50	ppb	1.64	20.54	200	80-120	104.0	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-67191.34	2.11	50.17	########	70	-	120	ISFail
45	Sc	1	168291.80	2.97	184662.30	91.1	70	-	120	
45	Sc	2	2703767.50	2.27	4233596.00	63.9	70	-	120	ISFail
72	Ge	1	96489.41	2.45	110938.56	87.0	70	-	120	
115	In	2	4500477.50	2.27	5887647.50	76.4	70	-	120	
209	Bi	2	5059484.50	2.03	6267448.50	80.7	70	-	120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\041_MS.D\041_MS.D#

Date Acquired:	May 19 2016 03:10 pm	Sample Name:	**1605074-39A MSD**
Acq. Method:	DHL_3Fe.M	Misc Info:	MSD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	416.10	ppb	1.76	########	200	80-120	######	Fail
9	Be	2	45	226.30	ppb	2.77	3.67	200	80-120	111.3	
11	B	2	45	365.40	ppb	3.57	153.30	200	80-120	106.1	
23	Na	1	45	11260.00	ppb	2.55	6011.00	1000	80-120	524.9	Fail
24	Mg	1	45	21490.00	ppb	1.68	16180.00	1000	80-120	531.0	Fail
27	Al	1	45	60330.00	ppb	2.25	55860.00	1000	80-120	447.0	Fail
39	K	1	45	25180.00	ppb	0.88	19050.00	1000	80-120	613.0	Fail
44	Ca	2	45	212000.00	ppb	4.34	########	1000	80-120	2070.0	Fail
47	Ti	1	45	459.30	ppb	2.28	238.30	200	80-120	110.5	
51	V	1	45	276.00	ppb	2.71	79.18	200	80-120	98.4	
52	Cr	1	45	265.30	ppb	2.90	74.86	200	80-120	95.2	
55	Mn	1	45	380.10	ppb	1.87	209.70	200	80-120	85.2	
56	Fe	1	72	87410.00	ppb	1.51	81770.00	1000	80-120	564.0	Fail
59	Co	1	72	221.90	ppb	1.94	26.58	200	80-120	97.7	
60	Ni	1	72	221.00	ppb	2.64	42.03	200	80-120	89.5	
63	Cu	1	72	193.70	ppb	1.70	7.46	200	80-120	93.1	
66	Zn	1	72	348.60	ppb	1.13	214.00	200	80-120	67.3	Fail
75	As	1	72	210.80	ppb	1.59	20.28	200	80-120	95.3	
78	Se	1	72	201.40	ppb	2.22	22.34	200	80-120	89.5	
88	Sr	2	115	2946.00	ppb	3.23	2725.00	200	80-120	110.5	
95	Mo	2	115	173.30	ppb	3.34	2.10	200	80-120	85.6	
107	Ag	2	115	171.10	ppb	2.46	0.16	200	80-120	85.5	
111	Cd	2	115	175.30	ppb	2.43	0.52	200	80-120	87.4	
118	Sn	2	115	197.40	ppb	3.15	5.67	200	80-120	95.9	
121	Sb	2	115	59.84	ppb	3.27	0.25	200	80-120	29.8	Fail
137	Ba	2	115	301.40	ppb	3.43	104.20	200	80-120	98.6	
205	Tl	2	209	209.40	ppb	1.72	0.42	200	80-120	104.5	
208	Pb	2	209	223.80	ppb	2.12	20.54	200	80-120	101.6	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-72427.56	1.99	50.17	########	70 - 120	ISFail
45	Sc	1	185174.14	1.32	184662.30	100.3	70 - 120	
45	Sc	2	2722951.50	3.72	4233596.00	64.3	70 - 120	ISFail
72	Ge	1	103516.91	1.50	110938.56	93.3	70 - 120	
115	In	2	4675707.00	3.20	5887647.50	79.4	70 - 120	
209	Bi	2	5291683.00	2.61	6267448.50	84.4	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\042CCV1.D\042CCV1.D#

Date Acquired:	May 19 2016 03:16 pm	Sample Name:	**CCV1-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	301.00	ppb	1.22	200.00	90 -	110	150.5	Fail
9	Be	2	45	254.70	ppb	0.79	200.00	90 -	110	127.4	Fail
11	B	2	45	231.00	ppb	1.43	200.00	90 -	110	115.5	Fail
23	Na	1	45	5595.00	ppb	0.45	5000.00	90 -	110	111.9	Fail
24	Mg	1	45	5258.00	ppb	0.54	5000.00	90 -	110	105.2	
27	Al	1	45	4959.00	ppb	1.18	5000.00	90 -	110	99.2	
39	K	1	45	5122.00	ppb	1.65	5000.00	90 -	110	102.4	
44	Ca	2	45	5029.00	ppb	1.81	5000.00	90 -	110	100.6	
47	Ti	1	45	196.40	ppb	0.85	200.00	90 -	110	98.2	
51	V	1	45	205.50	ppb	0.88	200.00	90 -	110	102.8	
52	Cr	1	45	210.80	ppb	0.67	200.00	90 -	110	105.4	
55	Mn	1	45	196.10	ppb	1.21	200.00	90 -	110	98.1	
56	Fe	1	72	4987.00	ppb	0.51	5000.00	90 -	110	99.7	
59	Co	1	72	207.90	ppb	1.07	200.00	90 -	110	104.0	
60	Ni	1	72	203.40	ppb	1.45	200.00	90 -	110	101.7	
63	Cu	1	72	210.10	ppb	0.74	200.00	90 -	110	105.1	
66	Zn	1	72	205.70	ppb	1.30	200.00	90 -	110	102.9	
75	As	1	72	205.30	ppb	0.42	200.00	90 -	110	102.7	
78	Se	1	72	200.30	ppb	1.15	200.00	90 -	110	100.2	
88	Sr	2	115	201.80	ppb	2.08	200.00	90 -	110	100.9	
95	Mo	2	115	180.20	ppb	1.18	200.00	90 -	110	90.1	
107	Ag	2	115	188.80	ppb	1.87	200.00	90 -	110	94.4	
111	Cd	2	115	191.40	ppb	1.36	200.00	90 -	110	95.7	
118	Sn	2	115	194.30	ppb	1.66	200.00	90 -	110	97.2	
121	Sb	2	115	195.40	ppb	1.41	200.00	90 -	110	97.7	
137	Ba	2	115	194.40	ppb	0.97	200.00	90 -	110	97.2	
205	Tl	2	209	204.40	ppb	1.37	200.00	90 -	110	102.2	
208	Pb	2	209	200.20	ppb	1.66	200.00	90 -	110	100.1	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-69885.38	0.45	50.17	-139308.2	70 -	120		ISFail
45	Sc	1	174437.52	0.84	184662.30	94.5	70 -	120		
45	Sc	2	2734995.80	0.40	4233596.00	64.6	70 -	120		ISFail
72	Ge	1	104646.07	0.14	110938.56	94.3	70 -	120		
115	In	2	4635323.00	1.22	5887647.50	78.7	70 -	120		
209	Bi	2	5593313.00	1.29	6267448.50	89.2	70 -	120		

CCB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\043_CCB.D\043_CCB.D#

Date Acquired:	May 19 2016 03:22 pm	Sample Name:	**CCB1-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.564	ppb	7.58	2.00	2.00	
9	Be	2	45	0.243	ppb	12.10	0.40	0.30	
11	B	2	45	5.786	ppb	2.71	10.00	10.00	
23	Na	1	45	11.850	ppb	7.81	50.00	#####	
24	Mg	1	45	12.320	ppb	22.36	50.00	#####	
27	Al	1	45	32.300	ppb	19.26	50.00	10.00	FailAq
39	K	1	45	14.740	ppb	7.89	50.00	#####	
44	Ca	2	45	82.850	ppb	14.32	50.00	#####	Failsoil
47	Ti	1	45	0.225	ppb	16.66	4.00	3.00	
51	V	1	45	0.280	ppb	26.13	4.00	3.00	
52	Cr	1	45	0.285	ppb	22.57	2.00	2.00	
55	Mn	1	45	0.303	ppb	26.78	2.00	3.00	
56	Fe	1	72	43.930	ppb	22.08	50.00	30.00	FailAq
59	Co	1	72	0.243	ppb	28.03	2.00	3.00	
60	Ni	1	72	0.208	ppb	11.93	2.00	3.00	
63	Cu	1	72	0.285	ppb	15.33	2.00	2.00	
66	Zn	1	72	1.411	ppb	4.99	4.00	2.00	
75	As	1	72	0.317	ppb	20.57	2.00	2.00	
78	Se	1	72	0.343	ppb	3.36	0.60	2.00	
88	Sr	2	115	1.186	ppb	11.91	4.00	3.00	
95	Mo	2	115	0.263	ppb	10.42	2.00	2.00	
107	Ag	2	115	0.199	ppb	14.15	0.40	1.00	
111	Cd	2	115	0.187	ppb	28.05	0.40	0.30	
118	Sn	2	115	0.350	ppb	13.08	20.00	3.00	
121	Sb	2	115	0.223	ppb	10.43	2.00	0.80	
137	Ba	2	115	0.270	ppb	16.01	2.00	3.00	
205	Tl	2	209	0.360	ppb	3.56	2.00	0.50	
208	Pb	2	209	0.266	ppb	13.42	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-85.56	10.26	50.17	-170.6	70 - 120	ISFail
45	Sc	1		176984.11	1.72	184662.30	95.8	70 - 120	
45	Sc	2		2940879.30	1.17	4233596.00	69.5	70 - 120	ISFail
72	Ge	1		108754.74	0.69	110938.56	98.0	70 - 120	
115	In	2		4845043.00	0.51	5887647.50	82.3	70 - 120	
209	Bi	2		5782553.00	0.91	6267448.50	92.3	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\044LCVL.D\044LCVL.D#

Date Acquired:	May 19 2016 03:28 pm	Sample Name:	**LCVL1-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	13.83	ppb	1.69	5.00	70 -	130	276.6	Fail
9	Be	2	45	1.32	ppb	5.48	1.00	70 -	130	131.5	Fail
11	B	2	45	24.02	ppb	2.65	20.00	70 -	130	120.1	
23	Na	1	45	108.30	ppb	0.53	100.00	70 -	130	108.3	
24	Mg	1	45	107.80	ppb	2.13	100.00	70 -	130	107.8	
27	Al	1	45	113.80	ppb	1.32	100.00	70 -	130	113.8	
39	K	1	45	103.10	ppb	2.54	100.00	70 -	130	103.1	
44	Ca	2	45	133.80	ppb	7.53	100.00	70 -	130	133.8	Fail
47	Ti	1	45	5.62	ppb	6.25	5.00	70 -	130	112.3	
51	V	1	45	1.12	ppb	5.24	1.00	70 -	130	111.8	
52	Cr	1	45	5.36	ppb	0.19	5.00	70 -	130	107.1	
55	Mn	1	45	4.99	ppb	1.11	5.00	70 -	130	99.7	
56	Fe	1	72	118.50	ppb	1.83	100.00	70 -	130	118.5	
59	Co	1	72	5.07	ppb	0.86	5.00	70 -	130	101.4	
60	Ni	1	72	4.95	ppb	3.95	5.00	70 -	130	99.0	
63	Cu	1	72	5.22	ppb	1.44	5.00	70 -	130	104.4	
66	Zn	1	72	5.38	ppb	2.58	5.00	70 -	130	107.5	
75	As	1	72	5.22	ppb	1.96	5.00	70 -	130	104.5	
78	Se	1	72	5.34	ppb	11.32	5.00	70 -	130	106.8	
88	Sr	2	115	5.34	ppb	1.78	5.00	70 -	130	106.7	
95	Mo	2	115	4.44	ppb	0.74	5.00	70 -	130	88.7	
107	Ag	2	115	1.94	ppb	1.39	2.00	70 -	130	97.0	
111	Cd	2	115	1.04	ppb	12.41	1.00	70 -	130	104.4	
118	Sn	2	115	5.01	ppb	1.53	5.00	70 -	130	100.1	
121	Sb	2	115	1.96	ppb	3.39	2.00	70 -	130	98.1	
137	Ba	2	115	4.94	ppb	1.93	5.00	70 -	130	98.8	
205	Tl	2	209	1.07	ppb	3.52	1.00	70 -	130	106.9	
208	Pb	2	209	1.08	ppb	1.64	1.00	70 -	130	107.7	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigl	-1779.51	11.01	50.17	-3547.2	70 -	120	ISFail
45	Sc	1		183403.61	0.31	184662.30	99.3	70 -	120	
45	Sc	2		2993362.00	0.82	4233596.00	70.7	70 -	120	
72	Ge	1		111122.15	1.34	110938.56	100.2	70 -	120	
115	In	2		4852341.50	1.51	5887647.50	82.4	70 -	120	
209	Bi	2		5803227.50	1.03	6267448.50	92.6	70 -	120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\053CCV1.D\053CCV1.D#

Date Acquired:	May 19 2016 04:22 pm	Sample Name:	**CCV2-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	264.10	ppb	0.47	200.00	90 -	110	132.1	Fail
9	Be	2	45	236.00	ppb	1.14	200.00	90 -	110	118.0	Fail
11	B	2	45	214.70	ppb	0.97	200.00	90 -	110	107.4	
23	Na	1	45	5454.00	ppb	0.35	5000.00	90 -	110	109.1	
24	Mg	1	45	5158.00	ppb	0.77	5000.00	90 -	110	103.2	
27	Al	1	45	5012.00	ppb	2.05	5000.00	90 -	110	100.2	
39	K	1	45	5134.00	ppb	0.20	5000.00	90 -	110	102.7	
44	Ca	2	45	4995.00	ppb	2.11	5000.00	90 -	110	99.9	
47	Ti	1	45	198.40	ppb	1.75	200.00	90 -	110	99.2	
51	V	1	45	203.20	ppb	0.84	200.00	90 -	110	101.6	
52	Cr	1	45	208.80	ppb	0.73	200.00	90 -	110	104.4	
55	Mn	1	45	195.50	ppb	1.09	200.00	90 -	110	97.8	
56	Fe	1	72	5040.00	ppb	1.04	5000.00	90 -	110	100.8	
59	Co	1	72	203.80	ppb	0.51	200.00	90 -	110	101.9	
60	Ni	1	72	199.00	ppb	0.93	200.00	90 -	110	99.5	
63	Cu	1	72	205.00	ppb	0.43	200.00	90 -	110	102.5	
66	Zn	1	72	203.90	ppb	1.39	200.00	90 -	110	102.0	
75	As	1	72	204.90	ppb	0.45	200.00	90 -	110	102.5	
78	Se	1	72	201.10	ppb	1.01	200.00	90 -	110	100.6	
88	Sr	2	115	202.50	ppb	1.67	200.00	90 -	110	101.3	
95	Mo	2	115	182.70	ppb	1.57	200.00	90 -	110	91.4	
107	Ag	2	115	191.60	ppb	1.44	200.00	90 -	110	95.8	
111	Cd	2	115	190.50	ppb	1.65	200.00	90 -	110	95.3	
118	Sn	2	115	196.10	ppb	1.58	200.00	90 -	110	98.1	
121	Sb	2	115	195.30	ppb	1.73	200.00	90 -	110	97.7	
137	Ba	2	115	196.20	ppb	2.12	200.00	90 -	110	98.1	
205	Tl	2	209	202.00	ppb	0.67	200.00	90 -	110	101.0	
208	Pb	2	209	199.80	ppb	0.69	200.00	90 -	110	99.9	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-68986.17	1.12	50.17	-137515.7	70 -	120		ISFail
45	Sc	1	176986.88	0.62	184662.30	95.8	70 -	120		
45	Sc	2	3045267.30	0.77	4233596.00	71.9	70 -	120		
72	Ge	1	106523.80	0.45	110938.56	96.0	70 -	120		
115	In	2	4934320.00	1.08	5887647.50	83.8	70 -	120		
209	Bi	2	5866481.00	0.40	6267448.50	93.6	70 -	120		

CCB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\054_CCB.D\054_CCB.D#

Date Acquired:	May 19 2016 04:28 pm	Sample Name:	**CCB2-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.410	ppb	10.80	2.00	2.00	
9	Be	2	45	0.176	ppb	11.96	0.40	0.30	
11	B	2	45	2.582	ppb	1.08	10.00	10.00	
23	Na	1	45	11.540	ppb	6.95	50.00	#####	
24	Mg	1	45	14.100	ppb	14.20	50.00	#####	
27	Al	1	45	43.140	ppb	12.15	50.00	10.00	FailAq
39	K	1	45	14.470	ppb	4.27	50.00	#####	
44	Ca	2	45	75.210	ppb	14.02	50.00	#####	Failsoil
47	Ti	1	45	0.450	ppb	55.03	4.00	3.00	
51	V	1	45	0.256	ppb	9.72	4.00	3.00	
52	Cr	1	45	0.224	ppb	14.50	2.00	2.00	
55	Mn	1	45	0.361	ppb	16.43	2.00	3.00	
56	Fe	1	72	50.430	ppb	12.10	50.00	30.00	Failsoil
59	Co	1	72	0.200	ppb	13.80	2.00	3.00	
60	Ni	1	72	0.169	ppb	6.70	2.00	3.00	
63	Cu	1	72	0.222	ppb	11.25	2.00	2.00	
66	Zn	1	72	1.292	ppb	7.71	4.00	2.00	
75	As	1	72	0.244	ppb	10.68	2.00	2.00	
78	Se	1	72	0.240	ppb	27.41	0.60	2.00	
88	Sr	2	115	0.435	ppb	12.20	4.00	3.00	
95	Mo	2	115	0.193	ppb	21.05	2.00	2.00	
107	Ag	2	115	0.142	ppb	17.93	0.40	1.00	
111	Cd	2	115	0.152	ppb	34.83	0.40	0.30	
118	Sn	2	115	0.218	ppb	12.05	20.00	3.00	
121	Sb	2	115	0.178	ppb	3.09	2.00	0.80	
137	Ba	2	115	0.399	ppb	13.08	2.00	3.00	
205	Tl	2	209	0.250	ppb	5.67	2.00	0.50	
208	Pb	2	209	0.182	ppb	14.14	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-66.86	24.60	50.17	-133.3	70 - 120	ISFail
45	Sc	1		175235.83	1.57	184662.30	94.9	70 - 120	
45	Sc	2		3086383.00	0.44	4233596.00	72.9	70 - 120	
72	Ge	1		106955.59	0.43	110938.56	96.4	70 - 120	
115	In	2		4930620.00	0.95	5887647.50	83.7	70 - 120	
209	Bi	2		5957716.00	0.95	6267448.50	95.1	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\055LCVL.D\055LCVL.D#

Date Acquired:	May 19 2016 04:34 pm	Sample Name:	**LCVL2-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	12.83	ppb	1.43	5.00	70 -	130	256.6	Fail
9	Be	2	45	1.22	ppb	2.82	1.00	70 -	130	122.1	
11	B	2	45	22.88	ppb	3.05	20.00	70 -	130	114.4	
23	Na	1	45	108.70	ppb	0.93	100.00	70 -	130	108.7	
24	Mg	1	45	109.30	ppb	2.73	100.00	70 -	130	109.3	
27	Al	1	45	120.10	ppb	2.58	100.00	70 -	130	120.1	
39	K	1	45	108.70	ppb	1.15	100.00	70 -	130	108.7	
44	Ca	2	45	137.80	ppb	8.98	100.00	70 -	130	137.8	Fail
47	Ti	1	45	5.36	ppb	9.38	5.00	70 -	130	107.2	
51	V	1	45	1.13	ppb	4.98	1.00	70 -	130	112.8	
52	Cr	1	45	5.49	ppb	1.59	5.00	70 -	130	109.8	
55	Mn	1	45	5.06	ppb	3.96	5.00	70 -	130	101.1	
56	Fe	1	72	124.00	ppb	1.93	100.00	70 -	130	124.0	
59	Co	1	72	5.22	ppb	1.49	5.00	70 -	130	104.3	
60	Ni	1	72	5.10	ppb	2.06	5.00	70 -	130	102.0	
63	Cu	1	72	5.24	ppb	0.94	5.00	70 -	130	104.8	
66	Zn	1	72	5.32	ppb	0.76	5.00	70 -	130	106.3	
75	As	1	72	5.17	ppb	0.40	5.00	70 -	130	103.3	
78	Se	1	72	5.08	ppb	5.48	5.00	70 -	130	101.6	
88	Sr	2	115	5.08	ppb	1.51	5.00	70 -	130	101.6	
95	Mo	2	115	4.55	ppb	5.03	5.00	70 -	130	90.9	
107	Ag	2	115	2.01	ppb	0.64	2.00	70 -	130	100.7	
111	Cd	2	115	1.07	ppb	2.41	1.00	70 -	130	107.3	
118	Sn	2	115	5.01	ppb	1.49	5.00	70 -	130	100.1	
121	Sb	2	115	1.97	ppb	2.69	2.00	70 -	130	98.5	
137	Ba	2	115	5.23	ppb	3.02	5.00	70 -	130	104.7	
205	Tl	2	209	1.06	ppb	4.29	1.00	70 -	130	106.0	
208	Pb	2	209	1.01	ppb	4.30	1.00	70 -	130	101.4	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-1530.75	4.60	50.17	-3051.4	70 -	120	ISFail
45	Sc	1	174175.00	1.56	184662.30	94.3	70 -	120	
45	Sc	2	3143310.30	1.20	4233596.00	74.2	70 -	120	
72	Ge	1	106445.65	0.82	110938.56	96.0	70 -	120	
115	In	2	5019650.00	1.21	5887647.50	85.3	70 -	120	
209	Bi	2	5985461.50	0.93	6267448.50	95.5	70 -	120	

PB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\056__PB.D\056__PB.D#

Date Acquired:	May 19 2016 04:40 pm	Sample Name:	MB-75169
Acq. Method:	DHL_3Fe.M	Misc Info:	MBLKICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	MDL	RL	Flag
7	Li	2	45	0.128	ppb	6.64	2.0	8.00	
9	Be	2	45	0.022	ppb	3.77	0.4	1.20	
11	B	2	45	1.919	ppb	3.53	10.0	30.00	
23	Na	1	45	14.020	ppb	0.85	50.0	#####	
24	Mg	1	45	5.820	ppb	10.66	50.0	#####	
27	Al	1	45	23.360	ppb	4.94	50.0	#####	
39	K	1	45	11.570	ppb	1.71	50.0	#####	
44	Ca	2	45	63.980	ppb	1.92	50.0	#####	J
47	Ti	1	45	0.001	ppb	34.64	4.0	10.00	
51	V	1	45	0.043	ppb	15.18	4.0	10.00	
52	Cr	1	45	0.196	ppb	0.45	2.0	8.00	
55	Mn	1	45	0.480	ppb	2.10	2.0	8.00	
56	Fe	1	72	17.950	ppb	3.60	50.0	#####	
59	Co	1	72	0.015	ppb	8.17	2.0	8.00	
60	Ni	1	72	0.156	ppb	5.21	2.0	8.00	
63	Cu	1	72	0.206	ppb	2.74	2.0	8.00	
66	Zn	1	72	8.267	ppb	2.72	4.0	10.00	J
75	As	1	72	0.045	ppb	9.07	2.0	4.00	
78	Se	1	72	0.053	ppb	55.71	0.6	2.00	
88	Sr	2	115	0.214	ppb	4.99	4.0	10.00	
95	Mo	2	115	0.059	ppb	18.67	2.0	8.00	
107	Ag	2	115	0.031	ppb	25.16	0.4	0.80	
111	Cd	2	115	0.040	ppb	42.36	0.4	1.20	
118	Sn	2	115	3.862	ppb	2.70	20.0	40.00	
121	Sb	2	115	0.019	ppb	9.94	2.0	4.00	
137	Ba	2	115	0.145	ppb	9.28	2.0	8.00	
205	Tl	2	209	0.057	ppb	0.29	2.0	4.00	
208	Pb	2	209	0.077	ppb	6.59	0.4	1.20	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	13.58	57.57	50.17	27.1	70 - 120	ISFail
45	Sc	1		183828.89	0.89	184662.30	99.5	70 - 120	
45	Sc	2		3315618.30	1.65	4233596.00	78.3	70 - 120	
72	Ge	1		109899.66	0.95	110938.56	99.1	70 - 120	
115	In	2		5221821.00	1.49	5887647.50	88.7	70 - 120	
209	Bi	2		6147371.00	0.38	6267448.50	98.1	70 - 120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\058_LCS.D\058_LCS.D#

Date Acquired:	May 19 2016 04:52 pm	Sample Name:	**LCSD-75169**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCSDICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	240.40	ppb	2.31	200.00	80 -	120	120.2	Fail
9	Be	2	45	211.30	ppb	1.12	200.00	80 -	120	105.7	
11	B	2	45	203.30	ppb	1.38	200.00	80 -	120	101.7	
23	Na	1	45	5317.00	ppb	1.25	1000.00	80 -	120	531.7	Fail
24	Mg	1	45	5038.00	ppb	0.50	1000.00	80 -	120	503.8	Fail
27	Al	1	45	1004.00	ppb	1.87	1000.00	80 -	120	100.4	
39	K	1	45	4988.00	ppb	0.27	1000.00	80 -	120	498.8	Fail
44	Ca	2	45	4816.00	ppb	1.67	1000.00	80 -	120	481.6	Fail
47	Ti	1	45	196.60	ppb	2.29	200.00	80 -	120	98.3	
51	V	1	45	196.60	ppb	1.36	200.00	80 -	120	98.3	
52	Cr	1	45	202.30	ppb	0.93	200.00	80 -	120	101.2	
55	Mn	1	45	191.50	ppb	0.62	200.00	80 -	120	95.8	
56	Fe	1	72	1034.00	ppb	1.46	1000.00	80 -	120	103.4	
59	Co	1	72	199.30	ppb	1.87	200.00	80 -	120	99.7	
60	Ni	1	72	193.90	ppb	0.98	200.00	80 -	120	97.0	
63	Cu	1	72	199.70	ppb	1.20	200.00	80 -	120	99.9	
66	Zn	1	72	190.40	ppb	1.75	200.00	80 -	120	95.2	
75	As	1	72	190.40	ppb	0.79	200.00	80 -	120	95.2	
78	Se	1	72	184.00	ppb	0.88	200.00	80 -	120	92.0	
88	Sr	2	115	198.30	ppb	2.05	200.00	80 -	120	99.2	
95	Mo	2	115	178.80	ppb	1.28	200.00	80 -	120	89.4	
107	Ag	2	115	188.20	ppb	1.35	200.00	80 -	120	94.1	
111	Cd	2	115	181.00	ppb	0.96	200.00	80 -	120	90.5	
118	Sn	2	115	195.30	ppb	2.12	200.00	80 -	120	97.7	
121	Sb	2	115	186.20	ppb	1.55	200.00	80 -	120	93.1	
137	Ba	2	115	189.50	ppb	1.71	200.00	80 -	120	94.8	
205	Tl	2	209	200.60	ppb	0.97	200.00	80 -	120	100.3	
208	Pb	2	209	198.20	ppb	1.40	200.00	80 -	120	99.1	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-66724.61	3.15	50.17	-133007.6	70 -	120	ISFail
45	Sc	1	171354.58	0.15	184662.30	92.8	70 -	120	
45	Sc	2	3181297.00	0.69	4233596.00	75.1	70 -	120	
72	Ge	1	102165.18	0.33	110938.56	92.1	70 -	120	
115	In	2	4942036.00	1.58	5887647.50	83.9	70 -	120	
209	Bi	2	5653811.00	1.32	6267448.50	90.2	70 -	120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\060_LCS.D\060_LCS.D#

Date Acquired:	May 19 2016 05:04 pm	Sample Name:	**LCS-75169**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	241.00	ppb	0.80	200.00	80 -	120	120.5	Fail
9	Be	2	45	211.30	ppb	1.01	200.00	80 -	120	105.7	
11	B	2	45	203.80	ppb	1.37	200.00	80 -	120	101.9	
23	Na	1	45	5295.00	ppb	1.14	1000.00	80 -	120	529.5	Fail
24	Mg	1	45	5047.00	ppb	1.33	1000.00	80 -	120	504.7	Fail
27	Al	1	45	1002.00	ppb	1.00	1000.00	80 -	120	100.2	
39	K	1	45	5081.00	ppb	0.74	1000.00	80 -	120	508.1	Fail
44	Ca	2	45	4875.00	ppb	1.54	1000.00	80 -	120	487.5	Fail
47	Ti	1	45	193.50	ppb	1.66	200.00	80 -	120	96.8	
51	V	1	45	196.90	ppb	0.41	200.00	80 -	120	98.5	
52	Cr	1	45	200.30	ppb	1.35	200.00	80 -	120	100.2	
55	Mn	1	45	192.90	ppb	2.00	200.00	80 -	120	96.5	
56	Fe	1	72	1025.00	ppb	0.99	1000.00	80 -	120	102.5	
59	Co	1	72	195.50	ppb	0.34	200.00	80 -	120	97.8	
60	Ni	1	72	190.80	ppb	0.59	200.00	80 -	120	95.4	
63	Cu	1	72	197.00	ppb	0.77	200.00	80 -	120	98.5	
66	Zn	1	72	191.50	ppb	0.74	200.00	80 -	120	95.8	
75	As	1	72	189.50	ppb	0.10	200.00	80 -	120	94.8	
78	Se	1	72	184.30	ppb	1.40	200.00	80 -	120	92.2	
88	Sr	2	115	201.00	ppb	0.82	200.00	80 -	120	100.5	
95	Mo	2	115	182.30	ppb	1.90	200.00	80 -	120	91.2	
107	Ag	2	115	193.30	ppb	1.79	200.00	80 -	120	96.7	
111	Cd	2	115	182.70	ppb	1.61	200.00	80 -	120	91.4	
118	Sn	2	115	197.10	ppb	1.87	200.00	80 -	120	98.6	
121	Sb	2	115	190.20	ppb	0.95	200.00	80 -	120	95.1	
137	Ba	2	115	191.80	ppb	1.57	200.00	80 -	120	95.9	
205	Tl	2	209	200.50	ppb	1.56	200.00	80 -	120	100.3	
208	Pb	2	209	195.80	ppb	0.98	200.00	80 -	120	97.9	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-69869.54	1.14	50.17	-139276.6	70 -	120	ISFail
45	Sc	1	178983.88	0.32	184662.30	96.9	70 -	120	
45	Sc	2	3248231.80	1.40	4233596.00	76.7	70 -	120	
72	Ge	1	106720.27	0.51	110938.56	96.2	70 -	120	
115	In	2	4961031.00	2.32	5887647.50	84.3	70 -	120	
209	Bi	2	5753684.00	1.17	6267448.50	91.8	70 -	120	

DT QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\062DT1.D\062DT1.D#

Date Acquired:	May 19 2016 05:16 pm	Sample Name:	**1605096-70A SD**
Acq. Method:	DHL_3Fe.M	Misc Info:	SD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	25.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	25.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	13.56	ppb	1.02	-1479.80	90 - 110	-4.6	
9	Be	2	45	0.56	ppb	5.60	2.74	90 - 110	102.5	GOOD
11	B	2	45	15.76	ppb	1.78	67.89	90 - 110	116.1	
23	Na	1	45	180.30	ppb	0.88	878.90	90 - 110	102.6	GOOD
24	Mg	1	45	2310.00	ppb	1.55	11660.00	90 - 110	99.1	GOOD
27	Al	1	45	11690.00	ppb	1.20	59430.00	90 - 110	98.4	GOOD
39	K	1	45	2647.00	ppb	0.49	13160.00	90 - 110	100.6	GOOD
44	Ca	2	45	8770.00	ppb	2.66	41470.00	90 - 110	105.7	GOOD
47	Ti	1	45	31.28	ppb	8.23	158.30	90 - 110	98.8	GOOD
51	V	1	45	18.85	ppb	1.29	92.36	90 - 110	102.0	GOOD
52	Cr	1	45	13.00	ppb	1.09	63.49	90 - 110	102.4	GOOD
55	Mn	1	45	112.30	ppb	0.80	552.20	90 - 110	101.7	GOOD
56	Fe	1	72	12210.00	ppb	1.53	60210.00	90 - 110	101.4	GOOD
59	Co	1	72	5.38	ppb	1.20	26.09	90 - 110	103.0	GOOD
60	Ni	1	72	7.44	ppb	1.85	35.69	90 - 110	104.2	GOOD
63	Cu	1	72	3.24	ppb	2.89	15.10	90 - 110	107.2	GOOD
66	Zn	1	72	45.98	ppb	1.71	203.00	90 - 110	113.3	
75	As	1	72	6.12	ppb	0.81	28.43	90 - 110	107.5	GOOD
78	Se	1	72	4.18	ppb	1.59	21.43	90 - 110	97.6	GOOD
88	Sr	2	115	36.95	ppb	2.35	196.60	90 - 110	94.0	GOOD
95	Mo	2	115	0.30	ppb	7.75	1.30	90 - 110	115.0	
107	Ag	2	115	0.10	ppb	15.97	0.32	90 - 110	151.4	
111	Cd	2	115	0.21	ppb	16.33	0.82	90 - 110	128.5	
118	Sn	2	115	1.26	ppb	1.96	6.33	90 - 110	99.8	GOOD
121	Sb	2	115	2.13	ppb	1.88	10.21	90 - 110	104.5	GOOD
137	Ba	2	115	65.33	ppb	2.33	327.90	90 - 110	99.6	GOOD
205	Tl	2	209	0.22	ppb	8.15	0.82	90 - 110	132.3	
208	Pb	2	209	156.50	ppb	1.52	822.40	90 - 110	95.1	GOOD

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHig	-1479.80	7.63	50.17	-2949.8	70 -	120	ISFail
45	Sc	1		178728.13	0.73	184662.30	96.8	70 -	120	
45	Sc	2		3534918.80	2.30	4233596.00	83.5	70 -	120	
72	Ge	1		108152.66	0.61	110938.56	97.5	70 -	120	
115	In	2		5314552.00	1.75	5887647.50	90.3	70 -	120	
209	Bi	2		5953641.50	1.13	6267448.50	95.0	70 -	120	

PDS QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\072_PDS.D\072_PDS.D#

Date Acquired:	May 19 2016 06:15 pm	Sample Name:	**1605096-70A PDS**
Acq. Method:	DHL_3Fe.M	Misc Info:	PDS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	297.10	ppb	1.34	-33519.40	200	75-125	######	Fail
9	Be	2	45	205.50	ppb	1.56	2.74	200	75-125	101.4	
11	B	2	45	249.40	ppb	2.40	67.89	200	75-125	90.8	
23	Na	1	45	6107.00	ppb	0.60	878.90	5000	75-125	104.6	
24	Mg	1	45	16670.00	ppb	1.75	11660.00	5000	75-125	100.2	
27	Al	1	45	63370.00	ppb	0.98	59430.00	5000	75-125	78.8	
39	K	1	45	18380.00	ppb	2.50	13160.00	5000	75-125	104.4	
44	Ca	2	45	46150.00	ppb	2.08	41470.00	5000	75-125	93.6	
47	Ti	1	45	357.40	ppb	1.58	158.30	200	75-125	99.6	
51	V	1	45	294.40	ppb	1.03	92.36	200	75-125	101.0	
52	Cr	1	45	268.50	ppb	0.54	63.49	200	75-125	102.5	
55	Mn	1	45	731.40	ppb	1.17	552.20	200	75-125	89.6	
56	Fe	1	72	65670.00	ppb	1.69	60210.00	5000	75-125	109.2	
59	Co	1	72	225.20	ppb	0.50	26.09	200	75-125	99.6	
60	Ni	1	72	223.70	ppb	0.19	35.69	200	75-125	94.0	
63	Cu	1	72	204.80	ppb	1.02	15.10	200	75-125	94.9	
66	Zn	1	72	388.50	ppb	1.09	203.00	200	75-125	92.8	
75	As	1	72	222.00	ppb	0.84	28.43	200	75-125	96.8	
78	Se	1	72	202.30	ppb	1.76	21.43	200	75-125	90.4	
88	Sr	2	115	395.00	ppb	1.75	196.60	200	75-125	99.2	
95	Mo	2	115	183.10	ppb	1.93	1.30	200	75-125	90.9	
107	Ag	2	115	168.00	ppb	2.04	0.32	200	75-125	83.8	
111	Cd	2	115	177.90	ppb	1.80	0.82	200	75-125	88.5	
118	Sn	2	115	203.10	ppb	2.15	6.33	200	75-125	98.4	
121	Sb	2	115	202.30	ppb	1.71	10.21	200	75-125	96.0	
137	Ba	2	115	521.60	ppb	2.45	327.90	200	75-125	96.9	
205	Tl	2	209	205.90	ppb	1.84	0.82	200	75-125	102.5	
208	Pb	2	209	1033.00	ppb	1.63	822.40	200	75-125	105.3	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-33519.40	2.20	50.17	-66816.9	70 - 120	ISFail
45	Sc	1	153333.86	0.14	184662.30	83.0	70 - 120	
45	Sc	2	2906345.00	1.84	4233596.00	68.6	70 - 120	ISFail
72	Ge	1	91035.56	0.46	110938.56	82.1	70 - 120	
115	In	2	4522422.00	2.24	5887647.50	76.8	70 - 120	
209	Bi	2	4993793.00	0.76	6267448.50	79.7	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\073_MS.D\073_MS.D#

Date Acquired:	May 19 2016 06:21 pm	Sample Name:	**1605096-70A MS**
Acq. Method:	DHL_3Fe.M	Misc Info:	MS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	284.60	ppb	1.43	########	200	80-120	######	Fail
9	Be	2	45	190.00	ppb	1.51	2.74	200	80-120	93.6	
11	B	2	45	239.50	ppb	1.55	67.89	200	80-120	85.8	
23	Na	1	45	5772.00	ppb	0.50	878.90	1000	80-120	489.3	Fail
24	Mg	1	45	16960.00	ppb	1.39	11660.00	1000	80-120	530.0	Fail
27	Al	1	45	67290.00	ppb	1.82	59430.00	1000	80-120	786.0	Fail
39	K	1	45	19610.00	ppb	2.01	13160.00	1000	80-120	645.0	Fail
44	Ca	2	45	52570.00	ppb	1.62	41470.00	1000	80-120	1110.0	Fail
47	Ti	1	45	326.80	ppb	2.02	158.30	200	80-120	84.3	
51	V	1	45	289.30	ppb	1.10	92.36	200	80-120	98.5	
52	Cr	1	45	255.90	ppb	1.40	63.49	200	80-120	96.2	
55	Mn	1	45	800.00	ppb	1.35	552.20	200	80-120	123.9	Fail
56	Fe	1	72	70240.00	ppb	1.24	60210.00	1000	80-120	1003.0	Fail
59	Co	1	72	210.20	ppb	0.92	26.09	200	80-120	92.1	
60	Ni	1	72	212.80	ppb	1.15	35.69	200	80-120	88.6	
63	Cu	1	72	194.90	ppb	0.39	15.10	200	80-120	89.9	
66	Zn	1	72	390.80	ppb	0.74	203.00	200	80-120	93.9	
75	As	1	72	209.20	ppb	0.32	28.43	200	80-120	90.4	
78	Se	1	72	189.40	ppb	0.57	21.43	200	80-120	84.0	
88	Sr	2	115	402.40	ppb	1.67	196.60	200	80-120	102.9	
95	Mo	2	115	163.70	ppb	1.71	1.30	200	80-120	81.2	
107	Ag	2	115	175.10	ppb	2.10	0.32	200	80-120	87.4	
111	Cd	2	115	171.00	ppb	1.65	0.82	200	80-120	85.1	
118	Sn	2	115	185.60	ppb	1.73	6.33	200	80-120	89.6	
121	Sb	2	115	74.29	ppb	1.68	10.21	200	80-120	32.0	Fail
137	Ba	2	115	577.40	ppb	1.76	327.90	200	80-120	124.8	Fail
205	Tl	2	209	196.90	ppb	1.35	0.82	200	80-120	98.0	
208	Pb	2	209	1024.00	ppb	0.58	822.40	200	80-120	100.8	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-59967.92	3.29	50.17	########	70 - 120	ISFail
45	Sc	1	157312.41	0.32	184662.30	85.2	70 - 120	
45	Sc	2	2966361.30	1.87	4233596.00	70.1	70 - 120	
72	Ge	1	92973.45	0.56	110938.56	83.8	70 - 120	
115	In	2	4556903.50	1.83	5887647.50	77.4	70 - 120	
209	Bi	2	5063612.00	0.50	6267448.50	80.8	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\074_MS.D\074_MS.D#

Date Acquired:	May 19 2016 06:27 pm	Sample Name:	**1605096-70A MSD**
Acq. Method:	DHL_3Fe.M	Misc Info:	MSD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	242.50	ppb	1.16	########	200	80-120	######	Fail
9	Be	2	45	161.90	ppb	1.26	2.74	200	80-120	79.6	Fail
11	B	2	45	212.40	ppb	1.38	67.89	200	80-120	72.3	Fail
23	Na	1	45	4846.00	ppb	1.17	878.90	1000	80-120	396.7	Fail
24	Mg	1	45	13230.00	ppb	0.99	11660.00	1000	80-120	157.0	Fail
27	Al	1	45	51340.00	ppb	0.81	59430.00	1000	80-120	-809.0	Fail
39	K	1	45	14840.00	ppb	0.73	13160.00	1000	80-120	168.0	Fail
44	Ca	2	45	37690.00	ppb	1.45	41470.00	1000	80-120	-378.0	Fail
47	Ti	1	45	263.90	ppb	2.04	158.30	200	80-120	52.8	Fail
51	V	1	45	233.20	ppb	0.96	92.36	200	80-120	70.4	Fail
52	Cr	1	45	210.50	ppb	0.68	63.49	200	80-120	73.5	Fail
55	Mn	1	45	607.10	ppb	0.93	552.20	200	80-120	27.4	Fail
56	Fe	1	72	52430.00	ppb	1.59	60210.00	1000	80-120	-778.0	Fail
59	Co	1	72	175.20	ppb	0.90	26.09	200	80-120	74.6	Fail
60	Ni	1	72	175.00	ppb	0.83	35.69	200	80-120	69.7	Fail
63	Cu	1	72	164.90	ppb	0.88	15.10	200	80-120	74.9	Fail
66	Zn	1	72	336.80	ppb	0.41	203.00	200	80-120	66.9	Fail
75	As	1	72	178.30	ppb	0.44	28.43	200	80-120	74.9	Fail
78	Se	1	72	167.80	ppb	1.43	21.43	200	80-120	73.2	Fail
88	Sr	2	115	323.90	ppb	0.96	196.60	200	80-120	63.6	Fail
95	Mo	2	115	139.80	ppb	2.18	1.30	200	80-120	69.3	Fail
107	Ag	2	115	168.40	ppb	1.63	0.32	200	80-120	84.0	
111	Cd	2	115	156.40	ppb	1.38	0.82	200	80-120	77.8	Fail
118	Sn	2	115	161.40	ppb	1.46	6.33	200	80-120	77.5	Fail
121	Sb	2	115	61.84	ppb	1.89	10.21	200	80-120	25.8	Fail
137	Ba	2	115	421.30	ppb	1.57	327.90	200	80-120	46.7	Fail
205	Tl	2	209	180.50	ppb	1.11	0.82	200	80-120	89.8	
208	Pb	2	209	889.80	ppb	0.77	822.40	200	80-120	33.7	Fail

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-52682.23	1.57	50.17	########	70	-	120	ISFail
45	Sc	1	162591.61	0.17	184662.30	88.0	70	-	120	
45	Sc	2	2960449.00	2.05	4233596.00	69.9	70	-	120	ISFail
72	Ge	1	96623.24	0.35	110938.56	87.1	70	-	120	
115	In	2	4565721.00	1.11	5887647.50	77.5	70	-	120	
209	Bi	2	5189462.00	1.36	6267448.50	82.8	70	-	120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\076CCV1.D\076CCV1.D#

Date Acquired:	May 19 2016 06:39 pm	Sample Name:	**CCV3-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	233.30	ppb	0.89	200.00	90 -	110	116.7	Fail
9	Be	2	45	217.80	ppb	0.54	200.00	90 -	110	108.9	
11	B	2	45	199.60	ppb	0.98	200.00	90 -	110	99.8	
23	Na	1	45	5350.00	ppb	1.52	5000.00	90 -	110	107.0	
24	Mg	1	45	5099.00	ppb	1.23	5000.00	90 -	110	102.0	
27	Al	1	45	4960.00	ppb	1.24	5000.00	90 -	110	99.2	
39	K	1	45	5135.00	ppb	1.51	5000.00	90 -	110	102.7	
44	Ca	2	45	4931.00	ppb	1.22	5000.00	90 -	110	98.6	
47	Ti	1	45	199.60	ppb	0.78	200.00	90 -	110	99.8	
51	V	1	45	204.10	ppb	0.93	200.00	90 -	110	102.1	
52	Cr	1	45	208.90	ppb	1.65	200.00	90 -	110	104.5	
55	Mn	1	45	196.50	ppb	1.37	200.00	90 -	110	98.3	
56	Fe	1	72	4893.00	ppb	1.68	5000.00	90 -	110	97.9	
59	Co	1	72	201.00	ppb	1.04	200.00	90 -	110	100.5	
60	Ni	1	72	195.60	ppb	1.40	200.00	90 -	110	97.8	
63	Cu	1	72	203.60	ppb	0.53	200.00	90 -	110	101.8	
66	Zn	1	72	204.00	ppb	1.75	200.00	90 -	110	102.0	
75	As	1	72	207.50	ppb	0.40	200.00	90 -	110	103.8	
78	Se	1	72	203.70	ppb	0.69	200.00	90 -	110	101.9	
88	Sr	2	115	203.80	ppb	1.78	200.00	90 -	110	101.9	
95	Mo	2	115	185.70	ppb	1.34	200.00	90 -	110	92.9	
107	Ag	2	115	193.00	ppb	1.95	200.00	90 -	110	96.5	
111	Cd	2	115	191.80	ppb	1.71	200.00	90 -	110	95.9	
118	Sn	2	115	195.00	ppb	1.79	200.00	90 -	110	97.5	
121	Sb	2	115	198.40	ppb	1.20	200.00	90 -	110	99.2	
137	Ba	2	115	196.50	ppb	1.91	200.00	90 -	110	98.3	
205	Tl	2	209	204.10	ppb	1.14	200.00	90 -	110	102.1	
208	Pb	2	209	201.10	ppb	1.65	200.00	90 -	110	100.6	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-60538.34	2.49	50.17	-120676.0	70 -	120		ISFail
45	Sc	1	153920.53	0.52	184662.30	83.4	70 -	120		
45	Sc	2	2940847.00	1.40	4233596.00	69.5	70 -	120		ISFail
72	Ge	1	94096.41	0.12	110938.56	84.8	70 -	120		
115	In	2	4598399.00	0.90	5887647.50	78.1	70 -	120		
209	Bi	2	5330522.50	0.85	6267448.50	85.1	70 -	120		

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\079LCVL.D\079LCVL.D#

Date Acquired:	May 19 2016 06:57 pm	Sample Name:	**LCVL3-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	11.02	ppb	2.12	5.00	70 -	130	220.4	Fail
9	Be	2	45	1.11	ppb	1.78	1.00	70 -	130	110.5	
11	B	2	45	19.68	ppb	1.31	20.00	70 -	130	98.4	
23	Na	1	45	103.50	ppb	2.45	100.00	70 -	130	103.5	
24	Mg	1	45	101.70	ppb	1.89	100.00	70 -	130	101.7	
27	Al	1	45	100.80	ppb	3.06	100.00	70 -	130	100.8	
39	K	1	45	99.02	ppb	3.20	100.00	70 -	130	99.0	
44	Ca	2	45	95.06	ppb	3.03	100.00	70 -	130	95.1	
47	Ti	1	45	5.07	ppb	16.02	5.00	70 -	130	101.5	
51	V	1	45	1.07	ppb	1.09	1.00	70 -	130	106.6	
52	Cr	1	45	5.27	ppb	1.49	5.00	70 -	130	105.5	
55	Mn	1	45	4.81	ppb	2.27	5.00	70 -	130	96.3	
56	Fe	1	72	99.37	ppb	0.87	100.00	70 -	130	99.4	
59	Co	1	72	4.93	ppb	0.79	5.00	70 -	130	98.7	
60	Ni	1	72	4.82	ppb	1.35	5.00	70 -	130	96.5	
63	Cu	1	72	5.02	ppb	0.44	5.00	70 -	130	100.4	
66	Zn	1	72	5.09	ppb	3.97	5.00	70 -	130	101.8	
75	As	1	72	5.06	ppb	1.74	5.00	70 -	130	101.2	
78	Se	1	72	5.08	ppb	11.99	5.00	70 -	130	101.5	
88	Sr	2	115	4.76	ppb	3.17	5.00	70 -	130	95.2	
95	Mo	2	115	4.52	ppb	4.17	5.00	70 -	130	90.5	
107	Ag	2	115	1.84	ppb	1.32	2.00	70 -	130	92.2	
111	Cd	2	115	0.98	ppb	8.52	1.00	70 -	130	97.8	
118	Sn	2	115	4.83	ppb	1.33	5.00	70 -	130	96.5	
121	Sb	2	115	1.92	ppb	2.25	2.00	70 -	130	95.8	
137	Ba	2	115	4.81	ppb	3.30	5.00	70 -	130	96.2	
205	Tl	2	209	1.01	ppb	0.37	1.00	70 -	130	101.3	
208	Pb	2	209	1.02	ppb	2.21	1.00	70 -	130	102.3	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-1379.12	4.08	50.17	-2749.1	70 -	120		ISFail
45	Sc	1	158255.47	1.48	184662.30	85.7	70 -	120		
45	Sc	2	3171996.80	0.78	4233596.00	74.9	70 -	120		
72	Ge	1	97767.57	0.23	110938.56	88.1	70 -	120		
115	In	2	4914418.50	1.14	5887647.50	83.5	70 -	120		
209	Bi	2	5610710.00	0.40	6267448.50	89.5	70 -	120		

CCB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\080_CCB.D\080_CCB.D#

Date Acquired:	May 19 2016 07:04 pm	Sample Name:	**CCB3-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.145	ppb	8.92	2.00	2.00	
9	Be	2	45	0.036	ppb	31.45	0.40	0.30	
11	B	2	45	0.975	ppb	4.34	10.00	10.00	
23	Na	1	45	3.276	ppb	2.68	50.00	#####	
24	Mg	1	45	0.200	ppb	15.23	50.00	#####	
27	Al	1	45	3.169	ppb	4.54	50.00	10.00	
39	K	1	45	4.515	ppb	6.23	50.00	#####	
44	Ca	2	45	3.246	ppb	1.08	50.00	#####	
47	Ti	1	45	-0.007	ppb	43.30	4.00	3.00	
51	V	1	45	0.046	ppb	6.32	4.00	3.00	
52	Cr	1	45	0.022	ppb	20.61	2.00	2.00	
55	Mn	1	45	-0.008	ppb	15.62	2.00	3.00	
56	Fe	1	72	3.061	ppb	4.90	50.00	30.00	
59	Co	1	72	0.019	ppb	7.97	2.00	3.00	
60	Ni	1	72	-0.005	ppb	21.18	2.00	3.00	
63	Cu	1	72	0.026	ppb	9.63	2.00	2.00	
66	Zn	1	72	1.042	ppb	8.63	4.00	2.00	
75	As	1	72	0.056	ppb	14.50	2.00	2.00	
78	Se	1	72	0.047	ppb	36.74	0.60	2.00	
88	Sr	2	115	0.065	ppb	6.84	4.00	3.00	
95	Mo	2	115	0.042	ppb	25.29	2.00	2.00	
107	Ag	2	115	0.037	ppb	23.37	0.40	1.00	
111	Cd	2	115	0.033	ppb	58.71	0.40	0.30	
118	Sn	2	115	0.062	ppb	11.89	20.00	3.00	
121	Sb	2	115	0.046	ppb	5.82	2.00	0.80	
137	Ba	2	115	0.071	ppb	10.29	2.00	3.00	
205	Tl	2	209	0.066	ppb	1.19	2.00	0.50	
208	Pb	2	209	0.074	ppb	6.15	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-8.09	293.57	50.17	-16.1	70 - 120	ISFail
45	Sc	1		162063.92	1.48	184662.30	87.8	70 - 120	
45	Sc	2		3197345.80	1.74	4233596.00	75.5	70 - 120	
72	Ge	1		99819.97	0.93	110938.56	90.0	70 - 120	
115	In	2		4864909.50	0.99	5887647.50	82.6	70 - 120	
209	Bi	2		5670500.50	1.77	6267448.50	90.5	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\084SMPL.D\084SMPL.D#

Date Acquired:	May 19 2016 07:28 pm	Sample Name:	**1605097-01A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	95.690	ppb	#REF!	0.54	2000.00	>RL
9	Be	2	45	2.774	ppb	#REF!	0.76	2000.00	>RL
11	B	2	45	89.690	ppb	#REF!	2.03	2000.00	>RL
23	Na	1	45	1190.000	ppb	#REF!	1.55	25000.00	>RL
24	Mg	1	45	12410.000	ppb	#REF!	1.03	25000.00	>RL
27	Al	1	45	66600.000	ppb	#REF!	2.18	10000.00	OUTCAL
39	K	1	45	13330.000	ppb	#REF!	1.01	25000.00	>RL
44	Ca	2	45	152900.000	ppb	#REF!	1.62	25000.00	OUTCAL
47	Ti	1	45	157.300	ppb	#REF!	1.56	2000.00	>RL
51	V	1	45	101.600	ppb	#REF!	0.76	2000.00	>RL
52	Cr	1	45	63.820	ppb	#REF!	1.15	2000.00	>RL
55	Mn	1	45	493.400	ppb	#REF!	0.54	2000.00	>RL
56	Fe	1	72	74150.000	ppb	#REF!	0.97	10000.00	OUTCAL
59	Co	1	72	25.660	ppb	#REF!	0.78	2000.00	>RL
60	Ni	1	72	35.410	ppb	#REF!	1.00	2000.00	>RL
63	Cu	1	72	18.780	ppb	#REF!	1.00	2000.00	>RL
66	Zn	1	72	202.200	ppb	#REF!	0.77	2000.00	>RL
75	As	1	72	26.350	ppb	#REF!	0.36	2000.00	>RL
78	Se	1	72	19.400	ppb	#REF!	3.42	2000.00	>RL
88	Sr	2	115	2726.000	ppb	#REF!	1.18	2000.00	OUTCAL
95	Mo	2	115	2.251	ppb	#REF!	3.59	2000.00	J
107	Ag	2	115	0.101	ppb	#REF!	9.35	500.00	ND
111	Cd	2	115	0.695	ppb	#REF!	8.45	2000.00	J
118	Sn	2	115	5.534	ppb	#REF!	0.88	2000.00	ND
121	Sb	2	115	2.826	ppb	#REF!	3.28	500.00	J
137	Ba	2	115	405.100	ppb	#REF!	0.49	2000.00	>RL
205	Tl	2	209	0.537	ppb	#REF!	2.22	2000.00	ND
208	Pb	2	209	63.460	ppb	#REF!	0.27	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-7257.91	1.30	50.17	-14467.8	70 - 120	ISFail
45	Sc	1	136739.56	0.77	184662.30	74.0	70 - 120	
45	Sc	2	2537230.30	0.82	4233596.00	59.9	70 - 120	ISFail
72	Ge	1	82301.79	0.41	110938.56	74.2	70 - 120	
115	In	2	4114554.50	0.59	5887647.50	69.9	70 - 120	ISFail
209	Bi	2	4710677.50	0.05	6267448.50	75.2	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\085SMPL.D\085SMPL.D#

Date Acquired:	May 19 2016 07:33 pm	Sample Name:	**1605097-02A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	188.800	ppb	#REF!	2.12	2000.00	>RL
9	Be	2	45	6.209	ppb	#REF!	4.11	2000.00	>RL
11	B	2	45	141.500	ppb	#REF!	2.08	2000.00	>RL
23	Na	1	45	2842.000	ppb	#REF!	0.12	25000.00	>RL
24	Mg	1	45	17080.000	ppb	#REF!	1.37	25000.00	>RL
27	Al	1	45	75210.000	ppb	#REF!	1.53	10000.00	OUTCAL
39	K	1	45	19150.000	ppb	#REF!	0.46	25000.00	>RL
44	Ca	2	45	144600.000	ppb	#REF!	2.24	25000.00	OUTCAL
47	Ti	1	45	141.600	ppb	#REF!	3.81	2000.00	>RL
51	V	1	45	113.900	ppb	#REF!	1.07	2000.00	>RL
52	Cr	1	45	75.100	ppb	#REF!	0.64	2000.00	>RL
55	Mn	1	45	1936.000	ppb	#REF!	0.05	2000.00	>RL
56	Fe	1	72	106400.000	ppb	#REF!	0.60	10000.00	OUTCAL
59	Co	1	72	96.520	ppb	#REF!	0.46	2000.00	>RL
60	Ni	1	72	140.800	ppb	#REF!	0.46	2000.00	>RL
63	Cu	1	72	13.240	ppb	#REF!	0.52	2000.00	>RL
66	Zn	1	72	494.600	ppb	#REF!	0.86	2000.00	>RL
75	As	1	72	38.170	ppb	#REF!	0.27	2000.00	>RL
78	Se	1	72	54.930	ppb	#REF!	2.97	2000.00	>RL
88	Sr	2	115	2623.000	ppb	#REF!	2.38	2000.00	OUTCAL
95	Mo	2	115	4.060	ppb	#REF!	5.96	2000.00	J
107	Ag	2	115	0.076	ppb	#REF!	10.50	500.00	ND
111	Cd	2	115	1.053	ppb	#REF!	4.74	2000.00	J
118	Sn	2	115	5.462	ppb	#REF!	1.69	2000.00	ND
121	Sb	2	115	0.524	ppb	#REF!	3.45	500.00	ND
137	Ba	2	115	208.100	ppb	#REF!	1.77	2000.00	>RL
205	Tl	2	209	1.043	ppb	#REF!	1.64	2000.00	ND
208	Pb	2	209	47.570	ppb	#REF!	1.55	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-15438.51	4.56	50.17	-30774.8	70 - 120	ISFail
45	Sc	1	154266.33	0.56	184662.30	83.5	70 - 120	
45	Sc	2	2657687.80	2.41	4233596.00	62.8	70 - 120	ISFail
72	Ge	1	92856.91	0.37	110938.56	83.7	70 - 120	
115	In	2	4364071.00	2.30	5887647.50	74.1	70 - 120	
209	Bi	2	4882418.50	1.02	6267448.50	77.9	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\086SMPL.D\086SMPL.D#

Date Acquired:	May 19 2016 07:39 pm	Sample Name:	**1605097-03A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	139.900	ppb	#REF!	0.51	2000.00	>RL
9	Be	2	45	3.458	ppb	#REF!	1.32	2000.00	>RL
11	B	2	45	120.900	ppb	#REF!	0.25	2000.00	>RL
23	Na	1	45	2469.000	ppb	#REF!	1.19	25000.00	>RL
24	Mg	1	45	16110.000	ppb	#REF!	1.52	25000.00	>RL
27	Al	1	45	62550.000	ppb	#REF!	1.21	10000.00	OUTCAL
39	K	1	45	15160.000	ppb	#REF!	1.64	25000.00	>RL
44	Ca	2	45	81750.000	ppb	#REF!	1.79	25000.00	OUTCAL
47	Ti	1	45	144.000	ppb	#REF!	2.54	2000.00	>RL
51	V	1	45	102.900	ppb	#REF!	0.99	2000.00	>RL
52	Cr	1	45	71.360	ppb	#REF!	1.08	2000.00	>RL
55	Mn	1	45	1013.000	ppb	#REF!	0.50	2000.00	>RL
56	Fe	1	72	93170.000	ppb	#REF!	0.45	10000.00	OUTCAL
59	Co	1	72	42.890	ppb	#REF!	0.40	2000.00	>RL
60	Ni	1	72	61.350	ppb	#REF!	0.18	2000.00	>RL
63	Cu	1	72	12.170	ppb	#REF!	0.64	2000.00	>RL
66	Zn	1	72	261.300	ppb	#REF!	1.19	2000.00	>RL
75	As	1	72	26.660	ppb	#REF!	1.53	2000.00	>RL
78	Se	1	72	26.750	ppb	#REF!	2.44	2000.00	>RL
88	Sr	2	115	1012.000	ppb	#REF!	0.90	2000.00	>RL
95	Mo	2	115	1.270	ppb	#REF!	3.47	2000.00	ND
107	Ag	2	115	0.078	ppb	#REF!	6.51	500.00	ND
111	Cd	2	115	0.726	ppb	#REF!	4.54	2000.00	J
118	Sn	2	115	5.409	ppb	#REF!	3.23	2000.00	ND
121	Sb	2	115	0.284	ppb	#REF!	2.45	500.00	ND
137	Ba	2	115	133.600	ppb	#REF!	1.81	2000.00	>RL
205	Tl	2	209	0.623	ppb	#REF!	3.22	2000.00	ND
208	Pb	2	209	38.330	ppb	#REF!	0.63	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-12473.40	4.60	50.17	-24864.2	70 - 120	ISFail
45	Sc	1	159266.77	1.59	184662.30	86.2	70 - 120	
45	Sc	2	2828760.80	0.77	4233596.00	66.8	70 - 120	ISFail
72	Ge	1	94724.88	1.91	110938.56	85.4	70 - 120	
115	In	2	4549508.50	0.98	5887647.50	77.3	70 - 120	
209	Bi	2	5123160.00	0.31	6267448.50	81.7	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\087SMPL.D\087SMPL.D#

Date Acquired:	May 19 2016 07:45 pm	Sample Name:	**1605097-04A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	137.100	ppb	#REF!	0.57	2000.00	>RL
9	Be	2	45	3.674	ppb	#REF!	4.37	2000.00	>RL
11	B	2	45	136.100	ppb	#REF!	0.83	2000.00	>RL
23	Na	1	45	5649.000	ppb	#REF!	0.93	25000.00	>RL
24	Mg	1	45	16190.000	ppb	#REF!	0.17	25000.00	>RL
27	Al	1	45	69300.000	ppb	#REF!	0.07	10000.00	OUTCAL
39	K	1	45	15720.000	ppb	#REF!	0.14	25000.00	>RL
44	Ca	2	45	21340.000	ppb	#REF!	0.86	25000.00	>RL
47	Ti	1	45	121.700	ppb	#REF!	2.20	2000.00	>RL
51	V	1	45	124.100	ppb	#REF!	0.64	2000.00	>RL
52	Cr	1	45	83.610	ppb	#REF!	0.72	2000.00	>RL
55	Mn	1	45	201.500	ppb	#REF!	0.48	2000.00	>RL
56	Fe	1	72	110300.000	ppb	#REF!	0.44	10000.00	OUTCAL
59	Co	1	72	24.840	ppb	#REF!	0.61	2000.00	>RL
60	Ni	1	72	39.090	ppb	#REF!	0.42	2000.00	>RL
63	Cu	1	72	15.270	ppb	#REF!	0.66	2000.00	>RL
66	Zn	1	72	262.300	ppb	#REF!	1.00	2000.00	>RL
75	As	1	72	30.260	ppb	#REF!	0.89	2000.00	>RL
78	Se	1	72	23.620	ppb	#REF!	4.51	2000.00	>RL
88	Sr	2	115	554.600	ppb	#REF!	0.27	2000.00	>RL
95	Mo	2	115	0.815	ppb	#REF!	7.69	2000.00	ND
107	Ag	2	115	0.068	ppb	#REF!	10.19	500.00	ND
111	Cd	2	115	0.514	ppb	#REF!	7.82	2000.00	J
118	Sn	2	115	5.316	ppb	#REF!	0.66	2000.00	ND
121	Sb	2	115	0.139	ppb	#REF!	4.48	500.00	ND
137	Ba	2	115	107.100	ppb	#REF!	0.61	2000.00	>RL
205	Tl	2	209	0.399	ppb	#REF!	2.47	2000.00	ND
208	Pb	2	209	38.720	ppb	#REF!	0.64	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-13034.46	5.87	RHigh	50.17	-25982.6	70 - 120	ISFail
45	Sc	1	156228.39	0.66		184662.30	84.6	70 - 120	
45	Sc	2	3056096.30	0.83		4233596.00	72.2	70 - 120	
72	Ge	1	93416.35	1.26		110938.56	84.2	70 - 120	
115	In	2	4652740.50	0.30		5887647.50	79.0	70 - 120	
209	Bi	2	5126298.50	1.51		6267448.50	81.8	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\088SMPL.D\088SMPL.D#

Date Acquired:	May 19 2016 07:51 pm	Sample Name:	**1605097-05A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	127.300	ppb	#REF!	1.41	2000.00	>RL
9	Be	2	45	3.709	ppb	#REF!	0.61	2000.00	>RL
11	B	2	45	126.400	ppb	#REF!	2.96	2000.00	>RL
23	Na	1	45	6200.000	ppb	#REF!	0.23	25000.00	>RL
24	Mg	1	45	14860.000	ppb	#REF!	1.41	25000.00	>RL
27	Al	1	45	67300.000	ppb	#REF!	2.16	10000.00	OUTCAL
39	K	1	45	15430.000	ppb	#REF!	0.56	25000.00	>RL
44	Ca	2	45	29540.000	ppb	#REF!	2.07	25000.00	OUTCAL
47	Ti	1	45	140.300	ppb	#REF!	2.18	2000.00	>RL
51	V	1	45	116.800	ppb	#REF!	1.02	2000.00	>RL
52	Cr	1	45	78.030	ppb	#REF!	1.11	2000.00	>RL
55	Mn	1	45	400.900	ppb	#REF!	0.55	2000.00	>RL
56	Fe	1	72	96540.000	ppb	#REF!	1.09	10000.00	OUTCAL
59	Co	1	72	38.700	ppb	#REF!	0.44	2000.00	>RL
60	Ni	1	72	50.480	ppb	#REF!	1.24	2000.00	>RL
63	Cu	1	72	14.650	ppb	#REF!	1.28	2000.00	>RL
66	Zn	1	72	272.900	ppb	#REF!	0.32	2000.00	>RL
75	As	1	72	27.390	ppb	#REF!	1.03	2000.00	>RL
78	Se	1	72	24.040	ppb	#REF!	4.69	2000.00	>RL
88	Sr	2	115	177.100	ppb	#REF!	2.59	2000.00	>RL
95	Mo	2	115	1.146	ppb	#REF!	3.98	2000.00	ND
107	Ag	2	115	0.073	ppb	#REF!	13.05	500.00	ND
111	Cd	2	115	0.571	ppb	#REF!	9.81	2000.00	J
118	Sn	2	115	5.779	ppb	#REF!	6.00	2000.00	ND
121	Sb	2	115	0.258	ppb	#REF!	3.95	500.00	ND
137	Ba	2	115	97.950	ppb	#REF!	2.48	2000.00	>RL
205	Tl	2	209	0.371	ppb	#REF!	2.58	2000.00	ND
208	Pb	2	209	37.600	ppb	#REF!	0.96	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-13688.24	7.74	RHigh	50.17	-27285.9	70 - 120	ISFail
45	Sc	1	161139.05	0.69		184662.30	87.3	70 - 120	
45	Sc	2	3135005.30	1.45		4233596.00	74.1	70 - 120	
72	Ge	1	96166.51	0.10		110938.56	86.7	70 - 120	
115	In	2	4763636.00	1.90		5887647.50	80.9	70 - 120	
209	Bi	2	5268242.50	0.17		6267448.50	84.1	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\089SMPL.D\089SMPL.D#

Date Acquired:	May 19 2016 07:57 pm	Sample Name:	**1605097-06A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	85.850	ppb	#REF!	0.91	2000.00	>RL
9	Be	2	45	2.479	ppb	#REF!	1.99	2000.00	>RL
11	B	2	45	87.650	ppb	#REF!	3.20	2000.00	>RL
23	Na	1	45	1018.000	ppb	#REF!	1.39	25000.00	>RL
24	Mg	1	45	11320.000	ppb	#REF!	2.64	25000.00	>RL
27	Al	1	45	63860.000	ppb	#REF!	3.14	10000.00	OUTCAL
39	K	1	45	11510.000	ppb	#REF!	2.14	25000.00	>RL
44	Ca	2	45	189700.000	ppb	#REF!	2.31	25000.00	OUTCAL
47	Ti	1	45	143.600	ppb	#REF!	2.00	2000.00	>RL
51	V	1	45	93.550	ppb	#REF!	2.52	2000.00	>RL
52	Cr	1	45	59.550	ppb	#REF!	2.16	2000.00	>RL
55	Mn	1	45	391.400	ppb	#REF!	2.48	2000.00	>RL
56	Fe	1	72	67940.000	ppb	#REF!	2.44	10000.00	OUTCAL
59	Co	1	72	22.970	ppb	#REF!	1.47	2000.00	>RL
60	Ni	1	72	32.880	ppb	#REF!	2.30	2000.00	>RL
63	Cu	1	72	17.770	ppb	#REF!	1.83	2000.00	>RL
66	Zn	1	72	176.500	ppb	#REF!	2.92	2000.00	>RL
75	As	1	72	25.200	ppb	#REF!	2.47	2000.00	>RL
78	Se	1	72	17.750	ppb	#REF!	5.84	2000.00	>RL
88	Sr	2	115	1049.000	ppb	#REF!	2.94	2000.00	>RL
95	Mo	2	115	2.692	ppb	#REF!	3.71	2000.00	J
107	Ag	2	115	0.115	ppb	#REF!	12.40	500.00	ND
111	Cd	2	115	0.583	ppb	#REF!	8.82	2000.00	J
118	Sn	2	115	5.423	ppb	#REF!	4.12	2000.00	ND
121	Sb	2	115	1.733	ppb	#REF!	1.88	500.00	ND
137	Ba	2	115	263.100	ppb	#REF!	2.63	2000.00	>RL
205	Tl	2	209	0.487	ppb	#REF!	2.49	2000.00	ND
208	Pb	2	209	57.530	ppb	#REF!	1.66	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-6740.55	8.49	RHigh	50.17	-13436.5	70 - 120	ISFail
45	Sc	1	156831.59	1.86		184662.30	84.9	70 - 120	
45	Sc	2	2785329.80	1.86		4233596.00	65.8	70 - 120	ISFail
72	Ge	1	92287.52	1.66		110938.56	83.2	70 - 120	
115	In	2	4449343.50	2.60		5887647.50	75.6	70 - 120	
209	Bi	2	5040473.50	1.08		6267448.50	80.4	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\090SMPL.D\090SMPL.D#

Date Acquired:	May 19 2016 08:03 pm	Sample Name:	**1605097-07A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	226.300	ppb	#REF!	0.55	2000.00	>RL
9	Be	2	45	7.107	ppb	#REF!	2.27	2000.00	>RL
11	B	2	45	157.200	ppb	#REF!	2.70	2000.00	>RL
23	Na	1	45	3546.000	ppb	#REF!	3.59	25000.00	>RL
24	Mg	1	45	19690.000	ppb	#REF!	2.34	25000.00	>RL
27	Al	1	45	83210.000	ppb	#REF!	2.85	10000.00	OUTCAL
39	K	1	45	21440.000	ppb	#REF!	2.71	25000.00	>RL
44	Ca	2	45	154500.000	ppb	#REF!	2.77	25000.00	OUTCAL
47	Ti	1	45	119.400	ppb	#REF!	2.77	2000.00	>RL
51	V	1	45	131.300	ppb	#REF!	2.83	2000.00	>RL
52	Cr	1	45	92.120	ppb	#REF!	3.38	2000.00	>RL
55	Mn	1	45	1749.000	ppb	#REF!	3.65	2000.00	>RL
56	Fe	1	72	123800.000	ppb	#REF!	2.49	10000.00	OUTCAL
59	Co	1	72	129.800	ppb	#REF!	2.85	2000.00	>RL
60	Ni	1	72	184.800	ppb	#REF!	3.87	2000.00	>RL
63	Cu	1	72	14.750	ppb	#REF!	3.12	2000.00	>RL
66	Zn	1	72	656.700	ppb	#REF!	2.76	2000.00	>RL
75	As	1	72	47.360	ppb	#REF!	3.26	2000.00	>RL
78	Se	1	72	69.420	ppb	#REF!	2.86	2000.00	>RL
88	Sr	2	115	1830.000	ppb	#REF!	2.82	2000.00	>RL
95	Mo	2	115	5.176	ppb	#REF!	2.87	2000.00	J
107	Ag	2	115	0.093	ppb	#REF!	7.91	500.00	ND
111	Cd	2	115	1.182	ppb	#REF!	12.50	2000.00	J
118	Sn	2	115	5.874	ppb	#REF!	1.61	2000.00	ND
121	Sb	2	115	0.433	ppb	#REF!	2.35	500.00	ND
137	Ba	2	115	196.400	ppb	#REF!	2.29	2000.00	>RL
205	Tl	2	209	0.990	ppb	#REF!	1.18	2000.00	ND
208	Pb	2	209	47.210	ppb	#REF!	1.55	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-18231.75	7.85	RHigh	50.17	-36342.8	70 - 120	ISFail
45	Sc	1	149198.28	4.18		184662.30	80.8	70 - 120	
45	Sc	2	2808954.80	2.23		4233596.00	66.3	70 - 120	ISFail
72	Ge	1	90237.19	4.12		110938.56	81.3	70 - 120	
115	In	2	4571271.00	2.84		5887647.50	77.6	70 - 120	
209	Bi	2	5156264.00	1.12		6267448.50	82.3	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\091CCV1.D\091CCV1.D#

Date Acquired:	May 19 2016 08:09 pm	Sample Name:	**CCV4-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	241.90	ppb	1.87	200.00	90 -	110	121.0	Fail
9	Be	2	45	219.20	ppb	1.89	200.00	90 -	110	109.6	
11	B	2	45	192.60	ppb	1.95	200.00	90 -	110	96.3	
23	Na	1	45	5348.00	ppb	1.56	5000.00	90 -	110	107.0	
24	Mg	1	45	5055.00	ppb	2.59	5000.00	90 -	110	101.1	
27	Al	1	45	4895.00	ppb	1.82	5000.00	90 -	110	97.9	
39	K	1	45	5099.00	ppb	1.16	5000.00	90 -	110	102.0	
44	Ca	2	45	4936.00	ppb	2.09	5000.00	90 -	110	98.7	
47	Ti	1	45	201.90	ppb	1.77	200.00	90 -	110	101.0	
51	V	1	45	205.60	ppb	1.87	200.00	90 -	110	102.8	
52	Cr	1	45	209.80	ppb	2.12	200.00	90 -	110	104.9	
55	Mn	1	45	196.80	ppb	1.65	200.00	90 -	110	98.4	
56	Fe	1	72	4938.00	ppb	1.73	5000.00	90 -	110	98.8	
59	Co	1	72	200.10	ppb	1.58	200.00	90 -	110	100.1	
60	Ni	1	72	195.40	ppb	2.05	200.00	90 -	110	97.7	
63	Cu	1	72	202.80	ppb	1.20	200.00	90 -	110	101.4	
66	Zn	1	72	204.30	ppb	2.21	200.00	90 -	110	102.2	
75	As	1	72	206.50	ppb	1.63	200.00	90 -	110	103.3	
78	Se	1	72	194.50	ppb	1.32	200.00	90 -	110	97.3	
88	Sr	2	115	201.80	ppb	2.63	200.00	90 -	110	100.9	
95	Mo	2	115	182.70	ppb	2.50	200.00	90 -	110	91.4	
107	Ag	2	115	188.80	ppb	1.80	200.00	90 -	110	94.4	
111	Cd	2	115	187.20	ppb	2.44	200.00	90 -	110	93.6	
118	Sn	2	115	193.10	ppb	2.03	200.00	90 -	110	96.6	
121	Sb	2	115	197.30	ppb	1.82	200.00	90 -	110	98.7	
137	Ba	2	115	197.10	ppb	2.23	200.00	90 -	110	98.6	
205	Tl	2	209	200.40	ppb	2.34	200.00	90 -	110	100.2	
208	Pb	2	209	191.50	ppb	2.42	200.00	90 -	110	95.8	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-54111.14	2.17	50.17	-107864.1	70 -	120		ISFail
45	Sc	1	140373.03	1.09	184662.30	76.0	70 -	120		
45	Sc	2	2584627.50	1.06	4233596.00	61.1	70 -	120		ISFail
72	Ge	1	87019.67	0.99	110938.56	78.4	70 -	120		
115	In	2	4212062.00	2.08	5887647.50	71.5	70 -	120		
209	Bi	2	5036638.00	1.69	6267448.50	80.4	70 -	120		

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\093LCVL.D\093LCVL.D#

Date Acquired:	May 19 2016 08:21 pm	Sample Name:	**LCVL4-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	11.18	ppb	2.17	5.00	70 -	130	223.6	Fail
9	Be	2	45	1.13	ppb	4.98	1.00	70 -	130	113.2	
11	B	2	45	19.91	ppb	0.90	20.00	70 -	130	99.6	
23	Na	1	45	104.10	ppb	1.00	100.00	70 -	130	104.1	
24	Mg	1	45	100.90	ppb	2.06	100.00	70 -	130	100.9	
27	Al	1	45	113.10	ppb	3.39	100.00	70 -	130	113.1	
39	K	1	45	108.60	ppb	2.63	100.00	70 -	130	108.6	
44	Ca	2	45	119.40	ppb	9.61	100.00	70 -	130	119.4	
47	Ti	1	45	5.21	ppb	10.36	5.00	70 -	130	104.1	
51	V	1	45	1.08	ppb	3.00	1.00	70 -	130	107.7	
52	Cr	1	45	5.22	ppb	3.44	5.00	70 -	130	104.5	
55	Mn	1	45	5.63	ppb	3.98	5.00	70 -	130	112.7	
56	Fe	1	72	132.40	ppb	3.15	100.00	70 -	130	132.4	Fail
59	Co	1	72	4.86	ppb	3.98	5.00	70 -	130	97.2	
60	Ni	1	72	5.26	ppb	1.20	5.00	70 -	130	105.3	
63	Cu	1	72	5.23	ppb	1.49	5.00	70 -	130	104.5	
66	Zn	1	72	5.08	ppb	5.13	5.00	70 -	130	101.6	
75	As	1	72	5.16	ppb	1.80	5.00	70 -	130	103.1	
78	Se	1	72	5.16	ppb	4.95	5.00	70 -	130	103.2	
88	Sr	2	115	4.92	ppb	3.36	5.00	70 -	130	98.4	
95	Mo	2	115	4.42	ppb	3.34	5.00	70 -	130	88.3	
107	Ag	2	115	1.89	ppb	2.03	2.00	70 -	130	94.5	
111	Cd	2	115	0.95	ppb	8.18	1.00	70 -	130	95.2	
118	Sn	2	115	5.53	ppb	4.95	5.00	70 -	130	110.7	
121	Sb	2	115	1.91	ppb	3.34	2.00	70 -	130	95.4	
137	Ba	2	115	4.96	ppb	2.46	5.00	70 -	130	99.2	
205	Tl	2	209	0.99	ppb	3.42	1.00	70 -	130	98.8	
208	Pb	2	209	1.00	ppb	1.37	1.00	70 -	130	100.0	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2 RHigl	-1172.31	12.63	50.17	-2336.9	70 -	120	ISFail
45	Sc	1	144101.22	1.02	184662.30	78.0	70 -	120	
45	Sc	2	2742480.50	0.98	4233596.00	64.8	70 -	120	ISFail
72	Ge	1	89452.73	1.57	110938.56	80.6	70 -	120	
115	In	2	4343227.00	1.58	5887647.50	73.8	70 -	120	
209	Bi	2	5166432.00	0.69	6267448.50	82.4	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\094_CCB.D\094_CCB.D#

Date Acquired:	May 19 2016 08:28 pm	Sample Name:	**CCB4-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.193	ppb	10.90	2.00	2.00	
9	Be	2	45	0.030	ppb	24.99	0.40	0.30	
11	B	2	45	1.072	ppb	1.38	10.00	10.00	
23	Na	1	45	5.902	ppb	3.05	50.00	#####	
24	Mg	1	45	2.114	ppb	15.86	50.00	#####	
27	Al	1	45	10.880	ppb	15.69	50.00	10.00	FailAq
39	K	1	45	6.973	ppb	2.17	50.00	#####	
44	Ca	2	45	13.900	ppb	12.01	50.00	#####	
47	Ti	1	45	0.094	ppb	94.39	4.00	3.00	
51	V	1	45	0.069	ppb	8.44	4.00	3.00	
52	Cr	1	45	0.051	ppb	6.72	2.00	2.00	
55	Mn	1	45	0.125	ppb	11.43	2.00	3.00	
56	Fe	1	72	14.390	ppb	11.49	50.00	30.00	
59	Co	1	72	0.043	ppb	17.78	2.00	3.00	
60	Ni	1	72	0.015	ppb	13.56	2.00	3.00	
63	Cu	1	72	0.050	ppb	11.71	2.00	2.00	
66	Zn	1	72	1.189	ppb	15.17	4.00	2.00	
75	As	1	72	0.087	ppb	6.92	2.00	2.00	
78	Se	1	72	0.132	ppb	8.33	0.60	2.00	
88	Sr	2	115	0.176	ppb	21.38	4.00	3.00	
95	Mo	2	115	0.046	ppb	11.03	2.00	2.00	
107	Ag	2	115	0.032	ppb	5.89	0.40	1.00	
111	Cd	2	115	0.056	ppb	2.57	0.40	0.30	
118	Sn	2	115	0.044	ppb	8.71	20.00	3.00	
121	Sb	2	115	0.042	ppb	25.26	2.00	0.80	
137	Ba	2	115	0.066	ppb	4.17	2.00	3.00	
205	Tl	2	209	0.059	ppb	4.00	2.00	0.50	
208	Pb	2	209	0.055	ppb	5.32	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	6.78	181.23	50.17	13.5	70 - 120	ISFail
45	Sc	1		137767.69	0.64	184662.30	74.6	70 - 120	
45	Sc	2		2656546.80	2.11	4233596.00	62.7	70 - 120	ISFail
72	Ge	1		86469.39	0.70	110938.56	77.9	70 - 120	
115	In	2		4135811.50	1.26	5887647.50	70.2	70 - 120	
209	Bi	2		4906259.50	0.73	6267448.50	78.3	70 - 120	

PB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\095__PB.D\095__PB.D#

Date Acquired:	May 19 2016 08:34 pm	Sample Name:	MB-75168
Acq. Method:	DHL_3Fe.M	Misc Info:	MBLKICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	MDL	RL	Flag
7	Li	2	45	0.123	ppb	2.25	2.0	8.00	
9	Be	2	45	0.008	ppb	16.66	0.4	1.20	
11	B	2	45	1.415	ppb	2.82	10.0	30.00	
23	Na	1	45	16.300	ppb	1.09	50.0	#####	
24	Mg	1	45	3.893	ppb	11.76	50.0	#####	
27	Al	1	45	10.960	ppb	12.34	50.0	#####	
39	K	1	45	14.990	ppb	4.68	50.0	#####	
44	Ca	2	45	37.330	ppb	8.58	50.0	#####	
47	Ti	1	45	0.073	ppb	49.50	4.0	10.00	
51	V	1	45	0.015	ppb	17.55	4.0	10.00	
52	Cr	1	45	0.383	ppb	2.03	2.0	8.00	
55	Mn	1	45	0.140	ppb	10.87	2.0	8.00	
56	Fe	1	72	11.080	ppb	15.32	50.0	#####	
59	Co	1	72	0.003	ppb	6.80	2.0	8.00	
60	Ni	1	72	0.348	ppb	6.54	2.0	8.00	
63	Cu	1	72	0.126	ppb	7.10	2.0	8.00	
66	Zn	1	72	3.610	ppb	2.82	4.0	10.00	
75	As	1	72	0.035	ppb	1.90	2.0	4.00	
78	Se	1	72	0.113	ppb	23.31	0.6	2.00	
88	Sr	2	115	0.190	ppb	9.52	4.0	10.00	
95	Mo	2	115	0.012	ppb	29.89	2.0	8.00	
107	Ag	2	115	0.018	ppb	16.95	0.4	0.80	
111	Cd	2	115	0.017	ppb	16.33	0.4	1.20	
118	Sn	2	115	4.019	ppb	1.76	20.0	40.00	
121	Sb	2	115	0.005	ppb	44.12	2.0	4.00	
137	Ba	2	115	0.077	ppb	25.00	2.0	8.00	
205	Tl	2	209	0.027	ppb	11.07	2.0	4.00	
208	Pb	2	209	0.052	ppb	12.53	0.4	1.20	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	-2.03	688.02	50.17	-4.0	70 - 120	ISFail
45	Sc	1		136253.06	1.08	184662.30	73.8	70 - 120	
45	Sc	2		2792198.00	0.48	4233596.00	66.0	70 - 120	ISFail
72	Ge	1		85496.91	0.98	110938.56	77.1	70 - 120	
115	In	2		4301248.00	1.30	5887647.50	73.1	70 - 120	
209	Bi	2		4990732.00	0.54	6267448.50	79.6	70 - 120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\096_LCS.D\096_LCS.D#

Date Acquired:	May 19 2016 08:40 pm	Sample Name:	**LCS-75168**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	215.50	ppb	0.44	200.00	80 -	120	107.8	
9	Be	2	45	196.70	ppb	1.55	200.00	80 -	120	98.4	
11	B	2	45	182.30	ppb	2.27	200.00	80 -	120	91.2	
23	Na	1	45	5264.00	ppb	1.18	1000.00	80 -	120	526.4	Fail
24	Mg	1	45	5053.00	ppb	1.10	1000.00	80 -	120	505.3	Fail
27	Al	1	45	1001.00	ppb	0.49	1000.00	80 -	120	100.1	
39	K	1	45	5134.00	ppb	0.22	1000.00	80 -	120	513.4	Fail
44	Ca	2	45	4846.00	ppb	1.70	1000.00	80 -	120	484.6	Fail
47	Ti	1	45	201.10	ppb	0.59	200.00	80 -	120	100.6	
51	V	1	45	202.30	ppb	1.76	200.00	80 -	120	101.2	
52	Cr	1	45	206.00	ppb	1.61	200.00	80 -	120	103.0	
55	Mn	1	45	197.60	ppb	1.77	200.00	80 -	120	98.8	
56	Fe	1	72	974.00	ppb	1.97	1000.00	80 -	120	97.4	
59	Co	1	72	195.70	ppb	1.60	200.00	80 -	120	97.9	
60	Ni	1	72	189.50	ppb	1.98	200.00	80 -	120	94.8	
63	Cu	1	72	196.20	ppb	0.95	200.00	80 -	120	98.1	
66	Zn	1	72	193.60	ppb	2.21	200.00	80 -	120	96.8	
75	As	1	72	195.90	ppb	0.95	200.00	80 -	120	98.0	
78	Se	1	72	185.70	ppb	1.48	200.00	80 -	120	92.9	
88	Sr	2	115	203.00	ppb	1.56	200.00	80 -	120	101.5	
95	Mo	2	115	185.30	ppb	1.49	200.00	80 -	120	92.7	
107	Ag	2	115	187.20	ppb	1.25	200.00	80 -	120	93.6	
111	Cd	2	115	182.50	ppb	1.37	200.00	80 -	120	91.3	
118	Sn	2	115	196.30	ppb	2.01	200.00	80 -	120	98.2	
121	Sb	2	115	190.70	ppb	1.94	200.00	80 -	120	95.4	
137	Ba	2	115	194.10	ppb	2.03	200.00	80 -	120	97.1	
205	Tl	2	209	201.10	ppb	1.06	200.00	80 -	120	100.6	
208	Pb	2	209	189.90	ppb	1.44	200.00	80 -	120	95.0	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-53945.87	2.87	50.17	-107534.7	70 -	120	ISFail
45	Sc	1	137462.33	0.80	184662.30	74.4	70 -	120	
45	Sc	2	2807708.80	1.09	4233596.00	66.3	70 -	120	ISFail
72	Ge	1	84704.94	1.20	110938.56	76.4	70 -	120	
115	In	2	4302853.50	0.55	5887647.50	73.1	70 -	120	
209	Bi	2	4885738.50	0.29	6267448.50	78.0	70 -	120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\097_LCS.D\097_LCS.D#

Date Acquired:	May 19 2016 08:46 pm	Sample Name:	**LCSD-75168**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCSDICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	216.20	ppb	1.36	200.00	80 -	120	108.1	
9	Be	2	45	195.90	ppb	1.79	200.00	80 -	120	98.0	
11	B	2	45	185.40	ppb	1.50	200.00	80 -	120	92.7	
23	Na	1	45	5177.00	ppb	1.82	1000.00	80 -	120	517.7	Fail
24	Mg	1	45	4985.00	ppb	1.82	1000.00	80 -	120	498.5	Fail
27	Al	1	45	1002.00	ppb	1.62	1000.00	80 -	120	100.2	
39	K	1	45	5128.00	ppb	1.42	1000.00	80 -	120	512.8	Fail
44	Ca	2	45	4895.00	ppb	2.57	1000.00	80 -	120	489.5	Fail
47	Ti	1	45	200.40	ppb	0.18	200.00	80 -	120	100.2	
51	V	1	45	199.60	ppb	1.26	200.00	80 -	120	99.8	
52	Cr	1	45	203.30	ppb	1.97	200.00	80 -	120	101.7	
55	Mn	1	45	196.90	ppb	1.14	200.00	80 -	120	98.5	
56	Fe	1	72	980.60	ppb	2.24	1000.00	80 -	120	98.1	
59	Co	1	72	194.90	ppb	0.95	200.00	80 -	120	97.5	
60	Ni	1	72	188.30	ppb	1.12	200.00	80 -	120	94.2	
63	Cu	1	72	195.10	ppb	0.14	200.00	80 -	120	97.6	
66	Zn	1	72	192.60	ppb	0.16	200.00	80 -	120	96.3	
75	As	1	72	195.60	ppb	0.63	200.00	80 -	120	97.8	
78	Se	1	72	188.40	ppb	0.77	200.00	80 -	120	94.2	
88	Sr	2	115	204.20	ppb	1.62	200.00	80 -	120	102.1	
95	Mo	2	115	185.70	ppb	1.54	200.00	80 -	120	92.9	
107	Ag	2	115	188.60	ppb	2.28	200.00	80 -	120	94.3	
111	Cd	2	115	180.90	ppb	1.94	200.00	80 -	120	90.5	
118	Sn	2	115	198.10	ppb	1.92	200.00	80 -	120	99.1	
121	Sb	2	115	190.80	ppb	1.74	200.00	80 -	120	95.4	
137	Ba	2	115	194.40	ppb	1.48	200.00	80 -	120	97.2	
205	Tl	2	209	204.40	ppb	2.02	200.00	80 -	120	102.2	
208	Pb	2	209	192.30	ppb	1.56	200.00	80 -	120	96.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-54686.41	1.35	50.17	-109010.9	70 -	120	ISFail
45	Sc	1	141475.58	0.44	184662.30	76.6	70 -	120	
45	Sc	2	2823139.00	1.42	4233596.00	66.7	70 -	120	ISFail
72	Ge	1	86514.12	0.51	110938.56	78.0	70 -	120	
115	In	2	4329598.00	0.43	5887647.50	73.5	70 -	120	
209	Bi	2	4880613.50	0.59	6267448.50	77.9	70 -	120	

DT QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\100DT1.D\100DT1.D#

Date Acquired:	May 19 2016 09:04 pm	Sample Name:	**1605096-42A SD**
Acq. Method:	DHL_3Fe.M	Misc Info:	SD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	25.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	25.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	9.43	ppb	0.88	-803.23	90 - 110	-5.9	
9	Be	2	45	0.35	ppb	5.38	1.70	90 - 110	103.7	GOOD
11	B	2	45	13.99	ppb	3.86	61.25	90 - 110	114.2	
23	Na	1	45	129.70	ppb	0.89	616.80	90 - 110	105.1	GOOD
24	Mg	1	45	1927.00	ppb	0.60	9844.00	90 - 110	97.9	GOOD
27	Al	1	45	8423.00	ppb	0.99	43690.00	90 - 110	96.4	GOOD
39	K	1	45	2708.00	ppb	1.16	13360.00	90 - 110	101.3	GOOD
44	Ca	2	45	10370.00	ppb	1.57	48780.00	90 - 110	106.3	GOOD
47	Ti	1	45	29.09	ppb	2.36	148.40	90 - 110	98.0	GOOD
51	V	1	45	14.06	ppb	2.15	68.57	90 - 110	102.5	GOOD
52	Cr	1	45	9.76	ppb	2.31	47.79	90 - 110	102.1	GOOD
55	Mn	1	45	96.26	ppb	0.79	473.80	90 - 110	101.6	GOOD
56	Fe	1	72	8615.00	ppb	1.76	42400.00	90 - 110	101.6	GOOD
59	Co	1	72	3.17	ppb	1.43	15.61	90 - 110	101.5	GOOD
60	Ni	1	72	5.29	ppb	3.49	24.99	90 - 110	105.8	GOOD
63	Cu	1	72	4.54	ppb	1.81	21.48	90 - 110	105.6	GOOD
66	Zn	1	72	44.14	ppb	1.90	199.30	90 - 110	110.7	
75	As	1	72	4.28	ppb	2.46	20.09	90 - 110	106.4	GOOD
78	Se	1	72	3.02	ppb	3.14	16.12	90 - 110	93.6	GOOD
88	Sr	2	115	41.81	ppb	0.96	219.90	90 - 110	95.1	GOOD
95	Mo	2	115	0.25	ppb	4.19	1.07	90 - 110	116.9	
107	Ag	2	115	0.06	ppb	15.10	0.17	90 - 110	165.4	
111	Cd	2	115	0.17	ppb	15.02	0.60	90 - 110	142.5	
118	Sn	2	115	0.88	ppb	7.76	4.28	90 - 110	102.5	GOOD
121	Sb	2	115	0.46	ppb	6.02	2.25	90 - 110	101.9	GOOD
137	Ba	2	115	61.48	ppb	2.54	306.50	90 - 110	100.3	GOOD
205	Tl	2	209	0.13	ppb	9.85	0.46	90 - 110	146.2	
208	Pb	2	209	24.55	ppb	1.17	123.00	90 - 110	99.8	GOOD

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHig	-803.23	19.27	50.17	-1601.1	70 -	120	ISFail
45	Sc	1		144501.66	1.00	184662.30	78.3	70 -	120	
45	Sc	2		3056931.00	0.69	4233596.00	72.2	70 -	120	
72	Ge	1		89716.13	0.88	110938.56	80.9	70 -	120	
115	In	2		4573493.50	0.88	5887647.50	77.7	70 -	120	
209	Bi	2		5162660.50	0.47	6267448.50	82.4	70 -	120	

PDS QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\110_PDS.D\110_PDS.D#

Date Acquired:	May 19 2016 10:04 pm	Sample Name:	**1605096-42A PDS**
Acq. Method:	DHL_3Fe.M	Misc Info:	PDS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	252.40	ppb	0.94	-28887.75	200	75-125	######	Fail
9	Be	2	45	192.70	ppb	1.15	1.70	200	75-125	95.5	
11	B	2	45	234.20	ppb	1.82	61.25	200	75-125	86.5	
23	Na	1	45	5669.00	ppb	0.70	616.80	5000	75-125	101.0	
24	Mg	1	45	14560.00	ppb	2.07	9844.00	5000	75-125	94.3	
27	Al	1	45	46680.00	ppb	2.72	43690.00	5000	75-125	59.8	Fail
39	K	1	45	18080.00	ppb	1.71	13360.00	5000	75-125	94.4	
44	Ca	2	45	53090.00	ppb	1.32	48780.00	5000	75-125	86.2	
47	Ti	1	45	340.80	ppb	1.66	148.40	200	75-125	96.2	
51	V	1	45	267.20	ppb	0.77	68.57	200	75-125	99.3	
52	Cr	1	45	249.30	ppb	1.03	47.79	200	75-125	100.8	
55	Mn	1	45	647.60	ppb	2.10	473.80	200	75-125	86.9	
56	Fe	1	72	46680.00	ppb	0.62	42400.00	5000	75-125	85.6	
59	Co	1	72	206.20	ppb	0.59	15.61	200	75-125	95.3	
60	Ni	1	72	205.70	ppb	1.30	24.99	200	75-125	90.4	
63	Cu	1	72	205.10	ppb	1.21	21.48	200	75-125	91.8	
66	Zn	1	72	374.10	ppb	1.14	199.30	200	75-125	87.4	
75	As	1	72	213.70	ppb	0.81	20.09	200	75-125	96.8	
78	Se	1	72	200.60	ppb	0.60	16.12	200	75-125	92.2	
88	Sr	2	115	411.80	ppb	0.74	219.90	200	75-125	96.0	
95	Mo	2	115	179.90	ppb	1.39	1.07	200	75-125	89.4	
107	Ag	2	115	166.70	ppb	2.03	0.17	200	75-125	83.3	
111	Cd	2	115	175.10	ppb	1.73	0.60	200	75-125	87.2	
118	Sn	2	115	200.10	ppb	2.28	4.28	200	75-125	97.9	
121	Sb	2	115	195.90	ppb	2.13	2.25	200	75-125	96.8	
137	Ba	2	115	497.10	ppb	1.82	306.50	200	75-125	95.3	
205	Tl	2	209	201.60	ppb	1.29	0.46	200	75-125	100.6	
208	Pb	2	209	322.70	ppb	1.28	123.00	200	75-125	99.9	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-28887.75	1.98	50.17	-57584.3	70 - 120	ISFail
45	Sc	1	145720.95	0.35	184662.30	78.9	70 - 120	
45	Sc	2	2855506.80	1.41	4233596.00	67.4	70 - 120	ISFail
72	Ge	1	88283.45	0.70	110938.56	79.6	70 - 120	
115	In	2	4435971.00	1.29	5887647.50	75.3	70 - 120	
209	Bi	2	5005928.50	1.22	6267448.50	79.9	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\111_MS.D\111_MS.D#

Date Acquired:	May 19 2016 10:10 pm	Sample Name:	**1605096-42A MS**
Acq. Method:	DHL_3Fe.M	Misc Info:	MS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	243.00	ppb	1.40	########	200	80-120	######	Fail
9	Be	2	45	173.00	ppb	1.87	1.70	200	80-120	85.7	
11	B	2	45	223.00	ppb	1.75	61.25	200	80-120	80.9	
23	Na	1	45	5307.00	ppb	0.86	616.80	1000	80-120	469.0	Fail
24	Mg	1	45	14850.00	ppb	1.09	9844.00	1000	80-120	500.6	Fail
27	Al	1	45	50180.00	ppb	2.26	43690.00	1000	80-120	649.0	Fail
39	K	1	45	19640.00	ppb	0.80	13360.00	1000	80-120	628.0	Fail
44	Ca	2	45	54820.00	ppb	1.75	48780.00	1000	80-120	604.0	Fail
47	Ti	1	45	349.80	ppb	1.09	148.40	200	80-120	100.7	
51	V	1	45	252.00	ppb	1.09	68.57	200	80-120	91.7	
52	Cr	1	45	229.40	ppb	0.95	47.79	200	80-120	90.8	
55	Mn	1	45	661.80	ppb	0.49	473.80	200	80-120	94.0	
56	Fe	1	72	46300.00	ppb	0.53	42400.00	1000	80-120	390.0	Fail
59	Co	1	72	185.50	ppb	0.58	15.61	200	80-120	84.9	
60	Ni	1	72	188.80	ppb	1.08	24.99	200	80-120	81.9	
63	Cu	1	72	191.70	ppb	0.24	21.48	200	80-120	85.1	
66	Zn	1	72	372.80	ppb	0.36	199.30	200	80-120	86.8	
75	As	1	72	194.90	ppb	0.67	20.09	200	80-120	87.4	
78	Se	1	72	180.60	ppb	3.03	16.12	200	80-120	82.2	
88	Sr	2	115	406.70	ppb	2.66	219.90	200	80-120	93.4	
95	Mo	2	115	160.20	ppb	1.65	1.07	200	80-120	79.6	Fail
107	Ag	2	115	172.20	ppb	1.88	0.17	200	80-120	86.0	
111	Cd	2	115	165.00	ppb	2.11	0.60	200	80-120	82.2	
118	Sn	2	115	178.30	ppb	2.66	4.28	200	80-120	87.0	
121	Sb	2	115	68.10	ppb	1.53	2.25	200	80-120	32.9	Fail
137	Ba	2	115	517.20	ppb	2.11	306.50	200	80-120	105.4	
205	Tl	2	209	191.10	ppb	1.07	0.46	200	80-120	95.3	
208	Pb	2	209	313.80	ppb	1.80	123.00	200	80-120	95.4	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-52280.91	1.20	50.17	########	70	-	120	ISFail
45	Sc	1	146152.11	0.27	184662.30	79.1	70	-	120	
45	Sc	2	2823832.30	1.18	4233596.00	66.7	70	-	120	ISFail
72	Ge	1	88063.51	0.82	110938.56	79.4	70	-	120	
115	In	2	4370260.00	2.10	5887647.50	74.2	70	-	120	
209	Bi	2	4930649.50	0.97	6267448.50	78.7	70	-	120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\112_MS.D\112_MS.D#

Date Acquired:	May 19 2016 10:16 pm	Sample Name:	**1605096-42A MSD**
Acq. Method:	DHL_3Fe.M	Misc Info:	MSD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 19 2016 12:25 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	252.10	ppb	0.59	########	200	80-120	######	Fail
9	Be	2	45	181.00	ppb	1.24	1.70	200	80-120	89.7	
11	B	2	45	231.70	ppb	1.87	61.25	200	80-120	85.2	
23	Na	1	45	5496.00	ppb	0.86	616.80	1000	80-120	487.9	Fail
24	Mg	1	45	15320.00	ppb	1.78	9844.00	1000	80-120	547.6	Fail
27	Al	1	45	51210.00	ppb	1.34	43690.00	1000	80-120	752.0	Fail
39	K	1	45	19960.00	ppb	1.73	13360.00	1000	80-120	660.0	Fail
44	Ca	2	45	55420.00	ppb	1.87	48780.00	1000	80-120	664.0	Fail
47	Ti	1	45	350.80	ppb	1.42	148.40	200	80-120	101.2	
51	V	1	45	261.00	ppb	0.60	68.57	200	80-120	96.2	
52	Cr	1	45	238.00	ppb	1.47	47.79	200	80-120	95.1	
55	Mn	1	45	673.50	ppb	1.04	473.80	200	80-120	99.9	
56	Fe	1	72	46750.00	ppb	1.73	42400.00	1000	80-120	435.0	Fail
59	Co	1	72	194.00	ppb	1.19	15.61	200	80-120	89.2	
60	Ni	1	72	196.40	ppb	0.97	24.99	200	80-120	85.7	
63	Cu	1	72	195.60	ppb	0.64	21.48	200	80-120	87.1	
66	Zn	1	72	378.20	ppb	1.30	199.30	200	80-120	89.5	
75	As	1	72	200.20	ppb	0.58	20.09	200	80-120	90.1	
78	Se	1	72	189.20	ppb	1.08	16.12	200	80-120	86.5	
88	Sr	2	115	416.00	ppb	1.09	219.90	200	80-120	98.1	
95	Mo	2	115	166.20	ppb	1.73	1.07	200	80-120	82.6	
107	Ag	2	115	175.20	ppb	2.00	0.17	200	80-120	87.5	
111	Cd	2	115	171.80	ppb	1.66	0.60	200	80-120	85.6	
118	Sn	2	115	186.00	ppb	1.48	4.28	200	80-120	90.9	
121	Sb	2	115	69.74	ppb	1.94	2.25	200	80-120	33.7	Fail
137	Ba	2	115	504.20	ppb	1.23	306.50	200	80-120	98.9	
205	Tl	2	209	197.70	ppb	1.05	0.46	200	80-120	98.6	
208	Pb	2	209	320.90	ppb	1.29	123.00	200	80-120	99.0	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-55251.08	3.15	50.17	########	70	-	120	ISFail
45	Sc	1	145649.14	0.33	184662.30	78.9	70	-	120	
45	Sc	2	2824383.00	1.55	4233596.00	66.7	70	-	120	ISFail
72	Ge	1	87906.75	0.46	110938.56	79.2	70	-	120	
115	In	2	4355616.50	1.34	5887647.50	74.0	70	-	120	
209	Bi	2	4926423.50	0.86	6267448.50	78.6	70	-	120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\114CCV1.D\114CCV1.D#

Date Acquired:	May 19 2016 10:28 pm	Sample Name:	CCV5-160519
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	217.40	ppb	1.09	200.00	90 -	110	108.7	
9	Be	2	45	204.90	ppb	1.13	200.00	90 -	110	102.5	
11	B	2	45	185.40	ppb	2.36	200.00	90 -	110	92.7	
23	Na	1	45	5277.00	ppb	1.79	5000.00	90 -	110	105.5	
24	Mg	1	45	4958.00	ppb	1.06	5000.00	90 -	110	99.2	
27	Al	1	45	4891.00	ppb	1.58	5000.00	90 -	110	97.8	
39	K	1	45	5086.00	ppb	0.41	5000.00	90 -	110	101.7	
44	Ca	2	45	4872.00	ppb	1.29	5000.00	90 -	110	97.4	
47	Ti	1	45	199.10	ppb	0.47	200.00	90 -	110	99.6	
51	V	1	45	201.90	ppb	0.49	200.00	90 -	110	101.0	
52	Cr	1	45	205.50	ppb	1.65	200.00	90 -	110	102.8	
55	Mn	1	45	196.80	ppb	0.66	200.00	90 -	110	98.4	
56	Fe	1	72	4762.00	ppb	1.07	5000.00	90 -	110	95.2	
59	Co	1	72	194.90	ppb	0.96	200.00	90 -	110	97.5	
60	Ni	1	72	190.20	ppb	1.08	200.00	90 -	110	95.1	
63	Cu	1	72	196.80	ppb	0.74	200.00	90 -	110	98.4	
66	Zn	1	72	201.00	ppb	1.33	200.00	90 -	110	100.5	
75	As	1	72	205.50	ppb	0.47	200.00	90 -	110	102.8	
78	Se	1	72	203.50	ppb	1.25	200.00	90 -	110	101.8	
88	Sr	2	115	205.20	ppb	1.38	200.00	90 -	110	102.6	
95	Mo	2	115	184.70	ppb	1.88	200.00	90 -	110	92.4	
107	Ag	2	115	191.70	ppb	1.12	200.00	90 -	110	95.9	
111	Cd	2	115	188.70	ppb	1.77	200.00	90 -	110	94.4	
118	Sn	2	115	194.00	ppb	1.55	200.00	90 -	110	97.0	
121	Sb	2	115	198.20	ppb	1.01	200.00	90 -	110	99.1	
137	Ba	2	115	199.40	ppb	1.53	200.00	90 -	110	99.7	
205	Tl	2	209	202.00	ppb	0.83	200.00	90 -	110	101.0	
208	Pb	2	209	190.50	ppb	0.96	200.00	90 -	110	95.3	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-54427.40	1.72	50.17	-108494.6	70 -	120		ISFail
45	Sc	1	138308.77	0.72	184662.30	74.9	70 -	120		
45	Sc	2	2786980.30	0.18	4233596.00	65.8	70 -	120		ISFail
72	Ge	1	85937.93	0.21	110938.56	77.5	70 -	120		
115	In	2	4326333.50	0.95	5887647.50	73.5	70 -	120		
209	Bi	2	5065979.00	0.62	6267448.50	80.8	70 -	120		

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\116LCVL.D\116LCVL.D#

Date Acquired:	May 19 2016 10:40 pm	Sample Name:	**LCVL5-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	10.65	ppb	0.51	5.00	70 -	130	213.0	Fail
9	Be	2	45	1.09	ppb	2.25	1.00	70 -	130	109.4	
11	B	2	45	19.79	ppb	1.75	20.00	70 -	130	99.0	
23	Na	1	45	103.70	ppb	0.47	100.00	70 -	130	103.7	
24	Mg	1	45	101.40	ppb	0.62	100.00	70 -	130	101.4	
27	Al	1	45	110.40	ppb	2.97	100.00	70 -	130	110.4	
39	K	1	45	104.10	ppb	0.86	100.00	70 -	130	104.1	
44	Ca	2	45	101.40	ppb	1.01	100.00	70 -	130	101.4	
47	Ti	1	45	5.23	ppb	3.41	5.00	70 -	130	104.6	
51	V	1	45	1.08	ppb	4.72	1.00	70 -	130	107.5	
52	Cr	1	45	5.32	ppb	2.19	5.00	70 -	130	106.4	
55	Mn	1	45	4.90	ppb	3.52	5.00	70 -	130	98.1	
56	Fe	1	72	102.50	ppb	1.85	100.00	70 -	130	102.5	
59	Co	1	72	4.98	ppb	1.65	5.00	70 -	130	99.7	
60	Ni	1	72	4.82	ppb	1.82	5.00	70 -	130	96.5	
63	Cu	1	72	4.91	ppb	0.65	5.00	70 -	130	98.3	
66	Zn	1	72	4.87	ppb	3.22	5.00	70 -	130	97.4	
75	As	1	72	5.21	ppb	1.57	5.00	70 -	130	104.2	
78	Se	1	72	5.58	ppb	6.36	5.00	70 -	130	111.6	
88	Sr	2	115	4.97	ppb	1.97	5.00	70 -	130	99.3	
95	Mo	2	115	4.63	ppb	1.49	5.00	70 -	130	92.7	
107	Ag	2	115	1.94	ppb	2.62	2.00	70 -	130	96.9	
111	Cd	2	115	0.90	ppb	5.25	1.00	70 -	130	90.3	
118	Sn	2	115	5.01	ppb	2.82	5.00	70 -	130	100.3	
121	Sb	2	115	2.08	ppb	3.32	2.00	70 -	130	104.1	
137	Ba	2	115	5.09	ppb	2.21	5.00	70 -	130	101.8	
205	Tl	2	209	1.06	ppb	2.10	1.00	70 -	130	105.8	
208	Pb	2	209	1.04	ppb	2.02	1.00	70 -	130	104.1	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-1316.12	3.31	50.17	-2623.5	70 -	120		ISFail
45	Sc	1	143933.95	0.50	184662.30	77.9	70 -	120		
45	Sc	2	2852097.80	0.74	4233596.00	67.4	70 -	120		ISFail
72	Ge	1	90296.59	0.71	110938.56	81.4	70 -	120		
115	In	2	4453686.00	0.58	5887647.50	75.6	70 -	120		
209	Bi	2	5221460.50	0.85	6267448.50	83.3	70 -	120		

CCB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\117_CCB.D\117_CCB.D#

Date Acquired:	May 19 2016 10:46 pm	Sample Name:	**CCB5-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.175	ppb	8.00	2.00	2.00	
9	Be	2	45	0.041	ppb	9.18	0.40	0.30	
11	B	2	45	0.883	ppb	0.59	10.00	10.00	
23	Na	1	45	4.200	ppb	2.00	50.00	#####	
24	Mg	1	45	0.947	ppb	2.38	50.00	#####	
27	Al	1	45	5.382	ppb	2.68	50.00	10.00	
39	K	1	45	4.648	ppb	1.96	50.00	#####	
44	Ca	2	45	3.986	ppb	4.28	50.00	#####	
47	Ti	1	45	0.047	ppb	49.99	4.00	3.00	
51	V	1	45	0.059	ppb	19.31	4.00	3.00	
52	Cr	1	45	0.065	ppb	2.81	2.00	2.00	
55	Mn	1	45	0.040	ppb	17.42	2.00	3.00	
56	Fe	1	72	4.156	ppb	12.91	50.00	30.00	
59	Co	1	72	0.040	ppb	11.60	2.00	3.00	
60	Ni	1	72	-0.004	ppb	18.69	2.00	3.00	
63	Cu	1	72	0.044	ppb	11.53	2.00	2.00	
66	Zn	1	72	0.987	ppb	5.43	4.00	2.00	
75	As	1	72	0.081	ppb	11.63	2.00	2.00	
78	Se	1	72	0.107	ppb	25.52	0.60	2.00	
88	Sr	2	115	0.082	ppb	3.47	4.00	3.00	
95	Mo	2	115	0.053	ppb	28.75	2.00	2.00	
107	Ag	2	115	0.055	ppb	6.45	0.40	1.00	
111	Cd	2	115	0.026	ppb	14.44	0.40	0.30	
118	Sn	2	115	0.077	ppb	6.40	20.00	3.00	
121	Sb	2	115	0.029	ppb	30.83	2.00	0.80	
137	Ba	2	115	0.095	ppb	9.36	2.00	3.00	
205	Tl	2	209	0.074	ppb	9.60	2.00	0.50	
208	Pb	2	209	0.066	ppb	5.49	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-8.03	23.08	50.17	-16.0	70 - 120	ISFail
45	Sc	1		141314.92	0.56	184662.30	76.5	70 - 120	
45	Sc	2		2862680.00	0.67	4233596.00	67.6	70 - 120	ISFail
72	Ge	1		88302.31	1.11	110938.56	79.6	70 - 120	
115	In	2		4493180.50	0.97	5887647.50	76.3	70 - 120	
209	Bi	2		5209427.00	1.04	6267448.50	83.1	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\128CCV1.D\128CCV1.D#

Date Acquired:	May 19 2016 11:52 pm	Sample Name:	**CCV6-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	216.50	ppb	0.68	200.00	90 -	110	108.3	
9	Be	2	45	202.30	ppb	1.21	200.00	90 -	110	101.2	
11	B	2	45	179.30	ppb	1.34	200.00	90 -	110	89.7	Fail
23	Na	1	45	5304.00	ppb	0.88	5000.00	90 -	110	106.1	
24	Mg	1	45	4978.00	ppb	1.67	5000.00	90 -	110	99.6	
27	Al	1	45	4908.00	ppb	1.62	5000.00	90 -	110	98.2	
39	K	1	45	5131.00	ppb	0.95	5000.00	90 -	110	102.6	
44	Ca	2	45	4896.00	ppb	1.46	5000.00	90 -	110	97.9	
47	Ti	1	45	197.60	ppb	0.75	200.00	90 -	110	98.8	
51	V	1	45	203.50	ppb	1.25	200.00	90 -	110	101.8	
52	Cr	1	45	207.10	ppb	1.75	200.00	90 -	110	103.6	
55	Mn	1	45	198.50	ppb	1.10	200.00	90 -	110	99.3	
56	Fe	1	72	4811.00	ppb	0.78	5000.00	90 -	110	96.2	
59	Co	1	72	195.00	ppb	1.16	200.00	90 -	110	97.5	
60	Ni	1	72	189.40	ppb	0.57	200.00	90 -	110	94.7	
63	Cu	1	72	197.60	ppb	0.76	200.00	90 -	110	98.8	
66	Zn	1	72	198.90	ppb	0.66	200.00	90 -	110	99.5	
75	As	1	72	206.30	ppb	1.63	200.00	90 -	110	103.2	
78	Se	1	72	202.60	ppb	2.75	200.00	90 -	110	101.3	
88	Sr	2	115	204.20	ppb	0.60	200.00	90 -	110	102.1	
95	Mo	2	115	182.20	ppb	1.54	200.00	90 -	110	91.1	
107	Ag	2	115	187.80	ppb	1.36	200.00	90 -	110	93.9	
111	Cd	2	115	185.50	ppb	1.93	200.00	90 -	110	92.8	
118	Sn	2	115	191.10	ppb	1.85	200.00	90 -	110	95.6	
121	Sb	2	115	195.20	ppb	1.58	200.00	90 -	110	97.6	
137	Ba	2	115	196.20	ppb	1.26	200.00	90 -	110	98.1	
205	Tl	2	209	203.50	ppb	0.57	200.00	90 -	110	101.8	
208	Pb	2	209	192.30	ppb	2.39	200.00	90 -	110	96.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-53341.95	0.34	50.17	-106330.8	70 -	120		ISFail
45	Sc	1	135540.59	1.12	184662.30	73.4	70 -	120		
45	Sc	2	2759852.50	0.96	4233596.00	65.2	70 -	120		ISFail
72	Ge	1	84950.10	0.21	110938.56	76.6	70 -	120		
115	In	2	4384624.50	1.17	5887647.50	74.5	70 -	120		
209	Bi	2	5071868.50	1.10	6267448.50	80.9	70 -	120		

CCV QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\130LCVL.D\130LCVL.D#

Date Acquired:	May 20 2016 12:04 am	Sample Name:	**LCVL6-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	10.07	ppb	1.16	5.00	70 -	130	201.4	Fail
9	Be	2	45	1.03	ppb	7.74	1.00	70 -	130	102.9	
11	B	2	45	18.61	ppb	2.10	20.00	70 -	130	93.1	
23	Na	1	45	101.60	ppb	0.87	100.00	70 -	130	101.6	
24	Mg	1	45	98.92	ppb	1.53	100.00	70 -	130	98.9	
27	Al	1	45	112.50	ppb	0.68	100.00	70 -	130	112.5	
39	K	1	45	105.20	ppb	1.85	100.00	70 -	130	105.2	
44	Ca	2	45	118.20	ppb	2.03	100.00	70 -	130	118.2	
47	Ti	1	45	4.16	ppb	17.06	5.00	70 -	130	83.1	
51	V	1	45	1.05	ppb	4.67	1.00	70 -	130	105.4	
52	Cr	1	45	5.10	ppb	0.46	5.00	70 -	130	101.9	
55	Mn	1	45	5.36	ppb	2.06	5.00	70 -	130	107.2	
56	Fe	1	72	130.50	ppb	1.55	100.00	70 -	130	130.5	Fail
59	Co	1	72	4.71	ppb	3.39	5.00	70 -	130	94.3	
60	Ni	1	72	5.23	ppb	1.63	5.00	70 -	130	104.5	
63	Cu	1	72	5.16	ppb	2.24	5.00	70 -	130	103.1	
66	Zn	1	72	4.86	ppb	5.34	5.00	70 -	130	97.2	
75	As	1	72	5.09	ppb	2.33	5.00	70 -	130	101.7	
78	Se	1	72	5.45	ppb	4.63	5.00	70 -	130	109.1	
88	Sr	2	115	4.97	ppb	0.98	5.00	70 -	130	99.4	
95	Mo	2	115	4.51	ppb	3.99	5.00	70 -	130	90.2	
107	Ag	2	115	1.85	ppb	2.49	2.00	70 -	130	92.4	
111	Cd	2	115	0.89	ppb	9.61	1.00	70 -	130	89.0	
118	Sn	2	115	5.67	ppb	0.20	5.00	70 -	130	113.4	
121	Sb	2	115	1.91	ppb	0.87	2.00	70 -	130	95.3	
137	Ba	2	115	4.88	ppb	1.72	5.00	70 -	130	97.6	
205	Tl	2	209	0.97	ppb	2.19	1.00	70 -	130	97.4	
208	Pb	2	209	1.07	ppb	0.42	1.00	70 -	130	106.5	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigh	-1254.78	10.93	50.17	-2501.2	70 -	120	ISFail
45	Sc	1		150456.14	1.25	184662.30	81.5	70 -	120	
45	Sc	2		3032150.80	1.07	4233596.00	71.6	70 -	120	
72	Ge	1		94466.43	1.59	110938.56	85.2	70 -	120	
115	In	2		4788933.50	0.84	5887647.50	81.3	70 -	120	
209	Bi	2		5560428.00	0.36	6267448.50	88.7	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E19l00.B\131_CCB.D\131_CCB.D#

Date Acquired:	May 20 2016 12:10 am	Sample Name:	**CCB6-160519**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 19 2016 12:25 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.146	ppb	12.77	2.00	2.00	
9	Be	2	45	0.034	ppb	14.20	0.40	0.30	
11	B	2	45	0.701	ppb	10.39	10.00	10.00	
23	Na	1	45	3.600	ppb	1.22	50.00	#####	
24	Mg	1	45	1.658	ppb	9.19	50.00	#####	
27	Al	1	45	10.490	ppb	13.70	50.00	10.00	FailAq
39	K	1	45	4.396	ppb	2.08	50.00	#####	
44	Ca	2	45	13.280	ppb	12.76	50.00	#####	
47	Ti	1	45	0.038	ppb	100.01	4.00	3.00	
51	V	1	45	0.083	ppb	3.95	4.00	3.00	
52	Cr	1	45	0.044	ppb	16.68	2.00	2.00	
55	Mn	1	45	0.059	ppb	4.88	2.00	3.00	
56	Fe	1	72	9.474	ppb	12.39	50.00	30.00	
59	Co	1	72	0.033	ppb	6.01	2.00	3.00	
60	Ni	1	72	0.015	ppb	17.34	2.00	3.00	
63	Cu	1	72	0.050	ppb	6.91	2.00	2.00	
66	Zn	1	72	1.110	ppb	6.38	4.00	2.00	
75	As	1	72	0.076	ppb	11.75	2.00	2.00	
78	Se	1	72	0.033	ppb	33.47	0.60	2.00	
88	Sr	2	115	0.179	ppb	12.40	4.00	3.00	
95	Mo	2	115	0.045	ppb	2.11	2.00	2.00	
107	Ag	2	115	0.037	ppb	22.20	0.40	1.00	
111	Cd	2	115	0.038	ppb	70.02	0.40	0.30	
118	Sn	2	115	0.054	ppb	18.99	20.00	3.00	
121	Sb	2	115	0.040	ppb	24.56	2.00	0.80	
137	Ba	2	115	0.084	ppb	3.46	2.00	3.00	
205	Tl	2	209	0.057	ppb	3.04	2.00	0.50	
208	Pb	2	209	0.099	ppb	15.11	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-12.33	136.76	50.17	-24.6	70 - 120	ISFail
45	Sc	1		149838.34	1.54	184662.30	81.1	70 - 120	
45	Sc	2		3058898.30	0.28	4233596.00	72.3	70 - 120	
72	Ge	1		93800.49	1.27	110938.56	84.6	70 - 120	
115	In	2		4797721.00	0.79	5887647.50	81.5	70 - 120	
209	Bi	2		5520477.00	0.74	6267448.50	88.1	70 - 120	

ICP-MS3_160525A
For

DHL Work Order
1605097

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG	Run ID: ICP-MS3_160525A SOP: Metals-ICP-MS-01			
Review Item	**Yes**	**No**	**N/A**	**2nd Level Review**
Data Folder Contents 1. Is the Prep Batch Report included? ***Check the Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**		2nd Level Review
Tune	Before ICAL	RSD ≤ 5% / Peak Width@10% <0.9amu	X			x
P/A Factor	Before ICAL	Increasing trend	X			
Initial Calibration Curve (ICAL) (Blank + 4 Standards)	Prior to samples and when ICV fails	R ≥ 0.995 (DoD) R ≥ 0.998 (6020A)	X			
Review Item	**Frequency**	**Limits**	**Pass**	**Fail**	**N/A**	**Review**
ICSA (N/A for Method 200.8+U)	After calibration & every 12 hours	< RL (except Mn & Zn)	X			x
ICSAB (N/A for Method 200.8+U)	After calibration & every 12 hours	80-120% (correct for ICSA result)	X			
Note: LCVLs and ICSA/ICSAB are N/A for Method 200.8 or project-specific exceptions						
ICV (Second Source Verification)	After ICAL	90-110%	X			x
ICB	After calibration	< MDL	X			
CCV	Every 10 samples	90-110%	X			
CCB	Every 10 samples	< MDL (ALL + DoD)	X			
Internal Standards	Every sample and QC sample	> 70% (6020A) 60-125% (200.8) 30-120% (DoD)	X			
LCVL (6020A test code)	After ICAL, every 10 samples and end of run	70-130%			X	
LCVL (All metals test codes except 200.8/6020A)	After ICAL and end of run	70-130%	X			
Method Blank (MB)	Every Batch	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			
Filter/TCLP/SPLP Blank	Filter-Dissolved only TCLP / SPLP	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit			X	
Lab Control Sample (LCS)	Every Batch	80-120%	X			
Lab Control Sample Dup (LCSD)	Every Batch	80-120%	X			
LCSD - RPD	Every LCS/LCSD	15 (H2O) / 20 (Soil)	X			
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Every Batch	80-120%	X			
MSD - RPD	Every MS/MSD	15 (H2O) / 20 (Soil)	X			
Dilution Test (SD) - RPD	Every Batch	10	X	X		
Post Digestion Spike (PDS)	Every Batch	75-125 / 80-120 (6020A)	X			

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	6 months	X			x
2. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	All results > high point of ICAL must be diluted	X			
3. Are ALL reported analytes and reported results > MDL highlighted by the analyst?		X	**Confirm with analyst if LIMS result does not match Labcore**		

VARIANCE REPORT

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.

NON-CONFORMANCES / VARIANCE	Criteria	Yes	No	N/A	2nd Level
1. Are all non-conformances and corrective actions included and noted?	All deviations from the method and SOP that affect data quality	X			x
2. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

TECHNICAL DIRECTOR / QA MANAGER APPROVAL
SIGNATURE AND DATE STAMP:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
__ CCV out of control (± 10%)	__ Carryover from previous run	__ Reanalyze QC to confirm
__ CCB out of control (> MDL / >½ RL)	__ Cross contamination	__ Recalibrate
__ MB out of control (> RL / >½ RL)	__ Lab Artifact	__ Reprep/Reanalyze sample
__ LCS __ LCSD out of control (± 20%)	__ Prep Spike error (describe)	__ Reprep/Reanalyze Batch
__ MS __ MSD out of control (± 20%)	__ Matrix Effect	__ Reanalyze Batch/Sample/QC
__ RPD out of control for MS/MSD (15/25)	__ High Levels of Target Metals	__ Verify reagents are clean
__ Internal Standard(s) out of control (see Method)	__ Insufficient sample for QC	__ Reanalyze sample to confirm
__ No MS/MSD prepared - LCS/LCSD used instead	__ Digestion/Prep Error	__ Sample results ND w/ dilution
__ Missing QC (other than MS/MSD)	__ Analytical Error	__ Client notified and approved
__ QC sample(s) was mis-spiked	__ Client Request	__ Flag data / Case narrative
__ ICSA/ICSAB missing or out of control (± 20%)		__ Accept data
__ LCVL out of control (± 30%)		__ Cal Std high and sample ND
__ Other (describe below)	__ Other (describe below)	__ Other (describe below)

General Comments and Impact on Data:

See run log.

Analyst: Karyn Lane Date of Completion: 05/26/2016

Second-Level Review: Janice Whitt Date Stamp: 5/27/2016

REVIEWED BY
By Janice Whitt at 1:26:06 PM, 5/27/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	KL	**BALANCE #:**	26
TEST DATE:	05/25/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**	
PIPETTER LAB ID:	See Below	**WATER TEMP (°C):**	**21-23°C**
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998** **(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.
4) DETERMINE TOTAL WT.
5) CALCULATE VOLUME OF H2O AT °C (in mL)

% TEST VOL = Volume of H2O at °C/Test Volume * 100

%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100

VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY

					BIAS	PRECISION
PIPETTE ID: P-31	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	**4.00**	3.9822	3.9742	**99.36**	**PASS**	**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2		3.9723	3.9644	**99.11**		
3		3.9751	3.9671	**99.18**		
AVERAGE (MEAN)		**3.977**	**3.969**	**99.21**		**0.128**
						PASS

PIPETTE ID: P-21	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	**0.50**	0.5007	0.4997	**99.94**	**PASS**	**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2		0.4996	0.4986	**99.72**		
3		0.4975	0.4965	**99.30**		
AVERAGE (MEAN)		**0.499**	**0.498**	**99.65**		**0.326**
						PASS

PIPETTE ID: P-39	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	**0.200**	0.2009	0.2005	**100.25**	**PASS**	**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2		0.1995	0.1991	**99.55**		
3		0.1995	0.1991	**99.55**		
AVERAGE (MEAN)		**0.200**	**0.200**	**99.78**		**0.404**
						PASS

Karyn Lane 5-26-16

Analyst / Date

REVIEWED BY
By Janice Whitt at 8:41:19 AM, 5/27/2016

Review and Approved / Date

DHL Analytical, Inc.

Run ID: **ICP-MS3_160525A** **Run No.:** 86019

Analytical Run Date: 5/25/2016 **InstrumentID:** ICP-MS3

Analyst: Karyn Lane

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R86019	5/25/2016 11:28:00 AM		
L2-160525	1	ICPMS_TWDOD	CAL	R86019	5/25/2016 11:34:00 AM		
L-160525	1	ICPMS_TWDOD	CAL	R86019	5/25/2016 11:40:00 AM		
10X-160525	1	ICPMS_TWDOD	CAL	R86019	5/25/2016 11:47:00 AM		
5X-160525	1	ICPMS_TWDOD	CAL	R86019	5/25/2016 11:53:00 AM		
2X-160525	1	ICPMS_TWDOD	CAL	R86019	5/25/2016 11:59:00 AM		
H-160525	1	ICPMS_TWDOD	CAL	R86019	5/25/2016 12:05:00 PM		
H2-160525	1	ICPMS_TWDOD	CAL	R86019	5/25/2016 12:10:00 PM		
ICSA-160525	1	ICPMS_TWDOD	ICSA	R86019	5/25/2016 12:28:00 PM		
ICSAB-160525	1	ICPMS_TWDOD	ICSB	R86019	5/25/2016 12:34:00 PM		
ICV1-160525	1	ICPMS_TWDOD	ICV	R86019	5/25/2016 12:52:00 PM		
ICB1-160525	1	ICPMS_TWDOD	ICB	R86019	5/25/2016 12:58:00 PM		
ILCVL-160525	1	ICPMS_TWDOD	LCVL	R86019	5/25/2016 1:04:00 PM		
MB-75167	5	ICPMS_TSDOD1	MBLK	75167	5/25/2016 1:13:00 PM		
LCS-75167	5	ICPMS_TSDOD1	LCS	75167	5/25/2016 1:19:00 PM		
LCSD-75167	5	ICPMS_TSDOD1	LCSD	75167	5/25/2016 1:25:00 PM		
1605096-25A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 1:37:00 PM		
1605096-25A SD	25	ICPMS_TSDOD1	SD	75167	5/25/2016 1:43:00 PM		
1605096-19A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 1:49:00 PM		
1605096-20A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 1:55:00 PM		
1605096-21A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 2:01:00 PM		
1605096-22A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 2:07:00 PM		
1605096-23A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 2:12:00 PM		
1605096-24A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 2:18:00 PM		
1605096-26A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 2:24:00 PM		
1605096-27A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 2:30:00 PM		
1605096-28A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 2:36:00 PM		
1605096-25A PDS	5	ICPMS_TSDOD1	PDS	75167	5/25/2016 2:42:00 PM		
1605096-25A MS	5	ICPMS_TSDOD1	MS	75167	5/25/2016 2:48:00 PM		
1605096-25A MSD	5	ICPMS_TSDOD1	MSD	75167	5/25/2016 2:54:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

Run ID: ICP-MS3_160525A **Run No.:** 86019

CCV1-160525	1	ICPMS_TWDOD	CCV	R86019	5/25/2016 3:00:00 PM		
CCB1-160525	1	ICPMS_TWDOD	CCB	R86019	5/25/2016 3:06:00 PM		
LCVL1-160525	1	ICPMS_TWDOD	LCVL	R86019	5/25/2016 3:12:00 PM		
1605096-29A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 3:18:00 PM		
1605096-30A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 3:24:00 PM		
1605096-31A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 3:30:00 PM		
1605096-32A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 3:36:00 PM		
1605096-33A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 3:42:00 PM		
1605096-34A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 3:48:00 PM		
1605096-35A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 3:54:00 PM		
1605096-38A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 4:00:00 PM		
1605096-39A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 4:06:00 PM		
1605096-40A	5	ICPMS_TSDOD1	SAMP	75167	5/25/2016 4:12:00 PM		
CCV2-160525	1	ICPMS_TWDOD	CCV	R86019	5/25/2016 4:18:00 PM		
LCVL2-160525	1	ICPMS_TWDOD	LCVL	R86019	5/25/2016 4:30:00 PM		
CCB2-160525	1	ICPMS_TWDOD	CCB	R86019	5/25/2016 4:36:00 PM		
MB-75203	5	ICPMS_TSDOD1	MBLK	75203	5/25/2016 4:42:00 PM		
LCS-75203	5	ICPMS_TSDOD1	LCS	75203	5/25/2016 4:48:00 PM		
LCSD-75203	5	ICPMS_TSDOD1	LCSD	75203	5/25/2016 4:54:00 PM		
1605097-28A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 5:06:00 PM		
1605097-28A SD	25	ICPMS_TSDOD1	SD	75203	5/25/2016 5:12:00 PM		
1605097-08A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 5:18:00 PM		
1605097-09A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 5:24:00 PM		
1605097-10A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 5:30:00 PM		
1605097-11A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 5:36:00 PM		
1605097-12A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 5:42:00 PM		
1605097-13A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 5:48:00 PM		
1605097-14A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 5:54:00 PM		
1605097-15A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 6:00:00 PM		
1605097-16A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 6:06:00 PM		
1605097-28A PDS	5	ICPMS_TSDOD1	PDS	75203	5/25/2016 6:12:00 PM		
1605097-28A MS	5	ICPMS_TSDOD1	MS	75203	5/25/2016 6:18:00 PM		
1605097-28A MSD	5	ICPMS_TSDOD1	MSD	75203	5/25/2016 6:23:00 PM		
CCV3-160525	1	ICPMS_TWDOD	CCV	R86019	5/25/2016 6:35:00 PM		
LCVL3-160525	1	ICPMS_TWDOD	LCVL	R86019	5/25/2016 6:48:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

Run ID: ICP-MS3_160525A **Run No.:** 86019

CCB3-160525	1	ICPMS_TWDOD	CCB	R86019	5/25/2016 6:54:00 PM		
1605097-17A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 7:00:00 PM		
1605097-18A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 7:06:00 PM		
1605097-19A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 7:12:00 PM		
1605097-29A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 7:18:00 PM		
1605097-31A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 7:24:00 PM		
1605097-32A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 7:30:00 PM		
1605097-33A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 7:36:00 PM		
1605097-34A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 7:42:00 PM		
1605097-35A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 7:48:00 PM		
1605097-36A	5	ICPMS_TSDOD1	SAMP	75203	5/25/2016 7:54:00 PM		
CCV4-160525	1	ICPMS_TWDOD	CCV	R86019	5/25/2016 8:00:00 PM		
LCVL4-160525	1	ICPMS_TWDOD	LCVL	R86019	5/25/2016 8:12:00 PM		
CCB4-160525	1	ICPMS_TWDOD	CCB	R86019	5/25/2016 8:18:00 PM		
MB-75216	5	ICPMS_TSDOD1	MBLK	75216	5/25/2016 8:24:00 PM		
LCS-75216	5	ICPMS_TSDOD1	LCS	75216	5/25/2016 8:30:00 PM		
LCSD-75216	5	ICPMS_TSDOD1	LCSD	75216	5/25/2016 8:36:00 PM		
1605097-41A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 8:48:00 PM		
1605097-41A SD	25	ICPMS_TSDOD1	SD	75216	5/25/2016 8:54:00 PM		SD RPD fails by <1%. PDS ok.
1605097-37A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 9:00:00 PM		
1605097-38A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 9:06:00 PM		
1605097-39A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 9:12:00 PM		
1605097-40A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 9:18:00 PM		
1605097-42A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 9:24:00 PM		
1605097-43A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 9:30:00 PM		
1605097-44A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 9:36:00 PM		
1605097-45A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 9:42:00 PM		
1605098-01A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 9:48:00 PM		
1605097-41A PDS	5	ICPMS_TSDOD1	PDS	75216	5/25/2016 9:54:00 PM		
1605097-41A MS	5	ICPMS_TSDOD1	MS	75216	5/25/2016 10:00:00 PM		
1605097-41A MSD	5	ICPMS_TSDOD1	MSD	75216	5/25/2016 10:06:00 PM		
CCV5-160525	1	ICPMS_TWDOD	CCV	R86019	5/25/2016 10:18:00 PM		
LCVL5-160525	1	ICPMS_TWDOD	LCVL	R86019	5/25/2016 10:30:00 PM		
CCB5-160525	1	ICPMS_TWDOD	CCB	R86019	5/25/2016 10:36:00 PM		
1605098-02A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 10:42:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

DHL Analytical, Inc.

Run ID: ICP-MS3_160525A **Run No.:** 86019

1605098-03A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 10:48:00 PM		
1605098-04A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 10:54:00 PM		
1605098-05A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 11:00:00 PM		
1605098-06A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 11:06:00 PM		
1605098-07A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 11:12:00 PM		
1605098-08A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 11:18:00 PM		
1605098-09A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 11:24:00 PM		
1605098-10A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 11:30:00 PM		
1605098-11A	5	ICPMS_TSDOD1	SAMP	75216	5/25/2016 11:36:00 PM		
CCV6-160525	1	ICPMS_TWDOD	CCV	R86019	5/25/2016 11:42:00 PM		
LCVL6-160525	1	ICPMS_TWDOD	LCVL	R86019	5/25/2016 11:54:00 PM		
CCB6-160525	1	ICPMS_TWDOD	CCB	R86019	5/26/2016		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		CALBEG	Start of CALIB						
2	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		BLANK	CAL ICPMS_TW	1.000				
3	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1102		BLANK	CAL ICPMS_TW	1.000				
4	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		BLANK	CAL ICPMS_TW	1.000				
5	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		BLANK	CAL ICPMS_TW	1.000				
6	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		BLANK	CAL ICPMS_TW	1.000				
7	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalBlk	2101		BLANK STD 1	CAL ICPMS_TW	Level 1				
8	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2102		L2-160525	CAL ICPMS_TW	Level 2				
9	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2103		L-160525	CAL ICPMS_TW	Level 3				
10	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2104		10X-160525	CAL ICPMS_TW	Level 4				
11	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2105		5X-160525	CAL ICPMS_TW	Level 5				
12	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2106		2X-160525	CAL ICPMS_TW	Level 6				
13	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2107		H-160525	CAL ICPMS_TW	Level 7				
14	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CalStd	2108		H2-160525	CAL ICPMS_TW	Level 8				
15	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		BLANK	CAL ICPMS_TW	1.000				
16	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		BLANK	CAL ICPMS_TW	1.000				
17		Keyword		CALEND	End of CALIB						
18		Keyword		ICSBEG	Start of ICS						
19	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICS-A	2109		ICSA-160525	ICSAICPMS_TW	1.000				
20	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICS-AB	2110		ICSAB-160525	ICSBICPMS_TW	1.000				
21	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CAL ICPMS_TW	1.000				
22	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		RINSE	CAL ICPMS_TW	1.000				
23		Keyword		ICSEND	End of ICS						
24		Keyword		SMPLBEG	Start of SMPL						
25	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICV	2111		ICV1-160525	ICV ICPMS_TW	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
26	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	ICB	1104		ICB1-160525	ICB ICPMS_TW	1.000				
27	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2112		ILCVL-160525	LCVLICPMS_TW	1.000				
28	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PB	2201		MB-75167	MBLKICPMS_TSDOD1	5.000				
29	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	2202		LCS-75167	LCS ICPMS_TSDOD1	5.000				
30	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	2203		LCSD-75167	LCSDICPMS_TSDOD1	5.000				
31	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
32	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	AllRef	2204		1605096-25A	SAMPICPMS_TSDOD1	5.000				
33	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	DT	2205		1605096-25A SD	SD ICPMS_TSDOD1	25.00				
34	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2206		1605096-19A	SAMPICPMS_TSDOD1	5.000				
35	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2207		1605096-20A	SAMPICPMS_TSDOD1	5.000				
36	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2208		1605096-21A	SAMPICPMS_TSDOD1	5.000				
37	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2209		1605096-22A	SAMPICPMS_TSDOD1	5.000				
38	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2210		1605096-23A	SAMPICPMS_TSDOD1	5.000				
39	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2211		1605096-24A	SAMPICPMS_TSDOD1	5.000				
40	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2212		1605096-26A	SAMPICPMS_TSDOD1	5.000				
41	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2301		1605096-27A	SAMPICPMS_TSDOD1	5.000				
42	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2302		1605096-28A	SAMPICPMS_TSDOD1	5.000				
43	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PDS	2303		1605096-25A PDS	PDS ICPMS_TSDOD1	5.000				
44	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	2304		1605096-25A MS	MS ICPMS_TSDOD1	5.000				
45	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	2305		1605096-25A MSD	MSD ICPMS_TSDOD1	5.000				
46	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV1-160525	CCV ICPMS_TW	1.000				
47	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB1-160525	CCB ICPMS_TW	1.000				
48	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2512		LCVL1-160525	LCVLICPMS_TW	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
49	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2401		1605096-29A	SAMPICPMS_TSDOD1	5.000				
50	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2402		1605096-30A	SAMPICPMS_TSDOD1	5.000				
51	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2403		1605096-31A	SAMPICPMS_TSDOD1	5.000				
52	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2404		1605096-32A	SAMPICPMS_TSDOD1	5.000				
53	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2405		1605096-33A	SAMPICPMS_TSDOD1	5.000				
54	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2406		1605096-34A	SAMPICPMS_TSDOD1	5.000				
55	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2407		1605096-35A	SAMPICPMS_TSDOD1	5.000				
56	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2408		1605096-38A	SAMPICPMS_TSDOD1	5.000				
57	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2409		1605096-39A	SAMPICPMS_TSDOD1	5.000				
58	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	2410		1605096-40A	SAMPICPMS_TSDOD1	5.000				
59	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV2-160525	CCV ICPMS_TW	1.000				
60	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB2-160525	CCB ICPMS_TW	1.000				
61	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2511		LCVL2-160525	LCVLICPMS_TW	1.000				
62	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB2-160525	CCB ICPMS_TW	1.000				
63	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PB	3101		MB-75203	MBLKICPMS_TSDOD1	5.000				
64	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3102		LCS-75203	LCS ICPMS_TSDOD1	5.000				
65	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3103		LCSD-75203	LCSDICPMS_TSDOD1	5.000				
66	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
67	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	AllRef	3104		1605097-28A	SAMPICPMS_TSDOD1	5.000				
68	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	DT	3105		1605097-28A SD	SD ICPMS_TSDOD1	25.00				
69	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3106		1605097-08A	SAMPICPMS_TSDOD1	5.000				
70	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3107		1605097-09A	SAMPICPMS_TSDOD1	5.000				
71	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3108		1605097-10A	SAMPICPMS_TSDOD1	5.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
72	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3109		1605097-11A	SAMPICPMS_TSDOD1	5.000				
73	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3110		1605097-12A	SAMPICPMS_TSDOD1	5.000				
74	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3111		1605097-13A	SAMPICPMS_TSDOD1	5.000				
75	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3112		1605097-14A	SAMPICPMS_TSDOD1	5.000				
76	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3201		1605097-15A	SAMPICPMS_TSDOD1	5.000				
77	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3202		1605097-16A	SAMPICPMS_TSDOD1	5.000				
78	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PDS	3203		1605097-28A PDS	PDS ICPMS_TSDOD1	5.000				
79	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3204		1605097-28A MS	MS_ICPMS_TSDOD1	5.000				
80	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3205		1605097-28A MSD	MSD ICPMS_TSDOD1	5.000				
81	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CCB ICPMS_TW	1.000				
82	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV3-160525	CCV ICPMS_TW	1.000				
83	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		CCB3-160525	CCB ICPMS_TW	1.000				
84	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2512		LCVL3-160525	LCVLICPMS_TW	1.000				
85	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB3-160525	CCB ICPMS_TW	1.000				
86	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3301		1605097-17A	SAMPICPMS_TSDOD1	5.000				
87	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3302		1605097-18A	SAMPICPMS_TSDOD1	5.000				
88	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3303		1605097-19A	SAMPICPMS_TSDOD1	5.000				
89	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3304		1605097-29A	SAMPICPMS_TSDOD1	5.000				
90	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3305		1605097-31A	SAMPICPMS_TSDOD1	5.000				
91	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3306		1605097-32A	SAMPICPMS_TSDOD1	5.000				
92	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3307		1605097-33A	SAMPICPMS_TSDOD1	5.000				
93	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3308		1605097-34A	SAMPICPMS_TSDOD1	5.000				
94	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3309		1605097-35A	SAMPICPMS_TSDOD1	5.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
95	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3310		1605097-36A	SAMPICPMS_TSDOD1	5.000				
96	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV4-160525	CCV ICPMS_TW	1.000				
97	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		CCB4-160525	CCB ICPMS_TW	1.000				
98	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2112		LCVL4-160525	LCVLICPMS_TW	1.000				
99	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB4-160525	CCB ICPMS_TW	1.000				
100	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PB	3401		MB-75216	MBLKICPMS_TSDOD1	5.000				
101	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3402		LCS-75216	LCS ICPMS_TSDOD1	5.000				
102	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCS	3403		LCSD-75216	LCSDICPMS_TSDOD1	5.000				
103	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
104	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	AllRef	3404		1605097-41A	SAMPICPMS_TSDOD1	5.000				
105	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	DT	3405		1605097-41A SD	SD ICPMS_TSDOD1	25.00				
106	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3406		1605097-37A	SAMPICPMS_TSDOD1	5.000				
107	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3407		1605097-38A	SAMPICPMS_TSDOD1	5.000				
108	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3408		1605097-39A	SAMPICPMS_TSDOD1	5.000				
109	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3409		1605097-40A	SAMPICPMS_TSDOD1	5.000				
110	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3410		1605097-42A	SAMPICPMS_TSDOD1	5.000				
111	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3411		1605097-43A	SAMPICPMS_TSDOD1	5.000				
112	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3412		1605097-44A	SAMPICPMS_TSDOD1	5.000				
113	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3501		1605097-45A	SAMPICPMS_TSDOD1	5.000				
114	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	3502		1605098-01A	SAMPICPMS_TSDOD1	5.000				
115	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	PDS	3503		1605097-41A PDS	PDS ICPMS_TSDOD1	5.000				
116	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3504		1605097-41A MS	MS ICPMS_TSDOD1	5.000				
117	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	MS_S	3505		1605097-41A MSD	MSD ICPMS_TSDOD1	5.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
118	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
119	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV5-160525	CCV ICPMS_TW	1.000				
120	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		CCB5-160525	CCB ICPMS_TW	1.000				
121	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2511		LCVL5-160525	LCVLICPMS_TW	1.000				
122	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB5-160525	CCB ICPMS_TW	1.000				
123	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4101		1605098-02A	SAMPICPMS_TSDOD1	5.000				
124	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4102		1605098-03A	SAMPICPMS_TSDOD1	5.000				
125	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4103		1605098-04A	SAMPICPMS_TSDOD1	5.000				
126	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4104		1605098-05A	SAMPICPMS_TSDOD1	5.000				
127	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4105		1605098-06A	SAMPICPMS_TSDOD1	5.000				
128	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4106		1605098-07A	SAMPICPMS_TSDOD1	5.000				
129	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4107		1605098-08A	SAMPICPMS_TSDOD1	5.000				
130	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4108		1605098-09A	SAMPICPMS_TSDOD1	5.000				
131	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4109		1605098-10A	SAMPICPMS_TSDOD1	5.000				
132	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	SampleS	4110		1605098-11A	SAMPICPMS_TSDOD1	5.000				
133	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCV1	1307		CCV6-160525	CCV ICPMS_TW	1.000				
134	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB6-160525	CCB ICPMS_TW	1.000				
135	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	LCVL5	2112		LCVL6-160525	LCVLICPMS_TW	1.000				
136	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		CCB6-160525	CCB ICPMS_TW	1.000				
137	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
138	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1102		RINSE	CCB ICPMS_TW	1.000				
139	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CCB ICPMS_TW	1.000				
140	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1104		RINSE	CCB ICPMS_TW	1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
141	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1105		RINSE	CCB ICPMS_TW	1.000				
142	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1101		RINSE	CCB ICPMS_TW	1.000				
143	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1102		RINSE	CCB ICPMS_TW	1.000				
144	C:\ICPCHEM\1\METHODS\DHL_3Fe.M	CCB	1103		RINSE	CCB ICPMS_TW	1.000				
145		Keyword		StandBy							
146		Keyword		SMPLEND	End of SMPL						
147		Keyword		End	End of Sequence						
148		Keyword		CCVBEG	Start of CCV						
149		Keyword		CCVEND	End of CCV						
150		Keyword		BLKBEG	Start of BLANK						
151		Keyword		BLKEND	End of BLANK						
152		Keyword		ERRBEG	Start of ERRTERM						
153		Keyword		ERREND	End of ERRTERM						

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 11:13:07 AM**
Digestion:
Prep End Date:

Prep Batch **75203** Prep Code: **3050_IDOD** Technician: **Will Boston** Prep Factor Units: **mL/g**

Equipment List
Hot Block #3
Thermometer #71
Balance #23
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-08A	Soil		1.13	50	50.000	1 of 1	
1605097-09A	Soil		1.02	50	50.000	1 of 1	
1605097-10A	Soil		1.02	50	50.000	1 of 1	
1605097-11A	Soil		1.13	50	50.000	1 of 1	
1605097-12A	Soil		1.06	50	50.000	1 of 1	
1605097-13A	Soil		1.03	50	50.000	1 of 1	
1605097-14A	Soil		1.16	50	50.000	1 of 1	
1605097-15A	Soil		1.05	50	50.000	1 of 1	
1605097-16A	Soil		1.17	50	50.000	1 of 1	
1605097-17A	Soil		1.06	50	50.000	1 of 1	
1605097-18A	Soil		1.02	50	50.000	1 of 1	
1605097-19A	Soil		1.19	50	50.000	1 of 1	
1605097-28A	Soil		1.08	50	50.000	1 of 1	
1605097-29A	Soil		1.16	50	50.000	1 of 1	
1605097-31A	Soil		1.02	50	50.000	1 of 1	
1605097-32A	Soil		1.05	50	50.000	1 of 1	
1605097-33A	Soil		1.01	50	50.000	1 of 1	
1605097-34A	Soil		1.11	50	50.000	1 of 1	
1605097-35A	Soil		1.05	50	50.000	1 of 1	
1605097-36A	Soil		1.18	50	50.000	1 of 1	
LCS-75203	Soil		1	50	50.000	of	
LCSD-75203	Soil		1	50	50.000	of	
MB-75203	Soil		1	50	50.000	of	
MS - 1605097-28A			1.08				
MSD - 1605097-28A			1.04				

Number	Reagent Name	Amt	Units	Exp. D
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	10/29/2016

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/09/2016

09:56-10:06
10:23-12:23
13:52-15:52
16:42-16:57

5-18-16

REVIEWED BY
By Janice Whitt at 9:38:29 AM, 5/27/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 2:00:20 PM**
Digestion: **Start: 5/11/2016 2:30:00 PM / Stop: 5/13/2016 11:00:00 AM**
Prep End Date: **5/13/2016 3:00:00 PM**

Prep Batch **75116** Prep Code: **ISM2MM_PREP** Technician: **Scott Schroeder** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-01A	Soil		0	0	#Num!	1 of 1	
1605097-02A	Soil		0	0	#Num!	1 of 1	
1605097-03A	Soil		0	0	#Num!	of 3	
Extra sub sampled for MS/MSD							
1605097-04A	Soil		0	0	#Num!	1 of 1	
1605097-05A	Soil		0	0	#Num!	1 of 1	
1605097-06A	Soil		0	0	#Num!	1 of 1	
1605097-07A	Soil		0	0	#Num!	1 of 1	
1605097-08A	Soil		0	0	#Num!	1 of 1	
1605097-09A	Soil		0	0	#Num!	1 of 1	
1605097-10A	Soil		0	0	#Num!	1 of 1	
1605097-11A	Soil		0	0	#Num!	1 of 1	
1605097-12A	Soil		0	0	#Num!	1 of 1	
1605097-13A	Soil		0	0	#Num!	1 of 1	
1605097-14A	Soil		0	0	#Num!	1 of 1	
1605097-15A	Soil		0	0	#Num!	1 of 1	
1605097-31A	Soil		0	0	#Num!	1 of 1	
1605097-32A	Soil		0	0	#Num!	1 of 1	
1605097-33A	Soil		0	0	#Num!	1 of 1	
1605097-34A	Soil		0	0	#Num!	1 of 1	
1605097-35A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 9:38:32 AM, 5/27/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 3:30:00 PM**
Digestion: **Start: 5/11/2016 3:45:00 PM / Stop: 5/12/2016 1:00:00 PM**
Prep End Date: **5/12/2016 1:10:00 PM**

Prep Batch **75117** Prep Code: **ISM250_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-28A	Soil		0	0	#Num!	1 of 1	
1605097-29A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 9:38:37 AM, 5/27/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 2:10:55 PM**
Digestion: **Start: 5/12/2016 3:00:00 PM / Stop: 5/16/2016 8:30:00 AM**
Prep End Date: **5/16/2016 1:30:00 PM**

Prep Batch **75141** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-36A	Soil		0	0	#Num!	1 of 1	
1605097-37A	Soil		0	0	#Num!	1 of 1	
1605097-38A	Soil		0	0	#Num!	1 of 1	
1605097-39A	Soil		0	0	#Num!	of 3	
	Extra sample sub sampled for MS/MSD						
1605097-40A	Soil		0	0	#Num!	1 of 1	
1605097-41A	Soil		0	0	#Num!	1 of 1	
1605097-42A	Soil		0	0	#Num!	1 of 1	
1605097-43A	Soil		0	0	#Num!	1 of 1	
1605097-44A	Soil		0	0	#Num!	1 of 1	
1605097-45A	Soil		0	0	#Num!	1 of 1	
1605098-01A	Soil		0	0	#Num!	1 of 1	
1605098-02A	Soil		0	0	#Num!	1 of 1	
1605098-03A	Soil		0	0	#Num!	1 of 1	
1605098-04A	Soil		0	0	#Num!	1 of 1	
1605098-05A	Soil		0	0	#Num!	1 of 1	
1605098-06A	Soil		0	0	#Num!	1 of 1	
1605098-07A	Soil		0	0	#Num!	1 of 1	
1605098-08A	Soil		0	0	#Num!	1 of 1	
1605098-09A	Soil		0	0	#Num!	1 of 1	
1605098-10A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 9:44:39 AM, 5/27/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/18/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

					BIAS	PRECISION
PIPETTE ID: P-01	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	**5.00**	5.0000	4.9900	**99.80**	**PASS**	**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2		5.0004	4.9904	**99.81**		
3		5.0020	4.9920	**99.84**		
AVERAGE (MEAN)		**5.001**	**4.991**	**99.82**		**0.021**
						PASS

PIPETTE ID: P-09	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	**0.20**	0.2008	0.2004	**100.20**	**PASS**	**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2		0.2007	0.2003	**100.15**		
3		0.2014	0.2010	**100.50**		
AVERAGE (MEAN)		**0.201**	**0.201**	**100.28**		**0.188**
						PASS

PIPETTE ID:	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1						**RSD MUST BE ≤ 1% OF TEST VOLUME VALUE**
2						
3						
AVERAGE (MEAN)						

L V. Gk 5/18/16
Analyst / Date

REVIEWED BY
By Janice Whitt at 9:45:52 AM, 5/27/2016
Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/18/2016 8:30:00 AM**
Digestion: **Start: 5/~~17~~18/2016 9:56:00 AM / Stop: 5/~~17~~18/2016 4:57:00 PM** jw 5/27/2016
Prep End Date: **5/18/2016 5:48:48 PM**

Prep Batch **75203** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

- Hot Block #3
- Thermometer #71
- Balance #23
- Pipette #P-01
- Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605097-08A	Soil		1.13	50	44.248	1	of	1	
1605097-09A	Soil		1.02	50	49.020	1	of	1	
1605097-10A	Soil		1.02	50	49.020	1	of	1	
1605097-11A	Soil		1.13	50	44.248	1	of	1	
1605097-12A	Soil		1.06	50	47.170	1	of	1	
1605097-13A	Soil		1.03	50	48.544	1	of	1	
1605097-14A	Soil		1.16	50	43.103	1	of	1	
1605097-15A	Soil		1.05	50	47.619	1	of	1	
1605097-16A	Soil		1.12	50	44.643	1	of	1	
1605097-17A	Soil		1.06	50	47.170	1	of	1	
1605097-18A	Soil		1.02	50	49.020	1	of	1	
1605097-19A	Soil		1.19	50	42.017	1	of	1	
1605097-28A	Soil		1.08	50	46.296	1	of	1	
1605097-28A MS	Soil		1.08	50	46.296		of		
1605097-28A MSD	Soil		1.04	50	48.077		of		
1605097-28A PDS	Soil		1.08	50	46.296		of		
1605097-28A SD	Soil		1.08	50	46.296		of		
1605097-29A	Soil		1.16	50	43.103	1	of	1	
1605097-31A	Soil		1.02	50	49.020	1	of	1	
1605097-32A	Soil		1.05	50	47.619	1	of	1	
1605097-33A	Soil		1.01	50	49.505	1	of	1	
1605097-34A	Soil		1.11	50	45.045	1	of	1	
1605097-35A	Soil		1.05	50	47.619	1	of	1	
1605097-36A	Soil		1.18	50	42.373	1	of	1	
LCS-75203	Soil		1	50	50.000		of		
LCSD-75203	Soil		1	50	50.000		of		
MB-75203	Soil		1	50	50.000		of		

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	11/30/2017

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/09/2016

REVIEWED BY
By Janice Whitt at 9:46:34 AM, 5/27/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 4:29:01 PM**
Digestion:
Prep End Date:

Prep Batch **75216** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List
Hot Block #3
Thermometer #71
Balance #20
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-37A	Soil		1.08	50	50.000	1 of 1	
1605097-38A	Soil		1.16	50	50.000	1 of 1	
1605097-39A	Soil		1.18	50	50.000	of 3	
1605097-40A	Soil		1.16	50	50.000	1 of 1	
1605097-41A	Soil		1.08	50	50.000	1 of 1	MS+MSD
1605097-42A	Soil		1.16	50	50.000	1 of 1	
1605097-43A	Soil		1.15	50	50.000	1 of 1	
1605097-44A	Soil		1.06	50	50.000	1 of 1	
1605097-45A	Soil		1.12	50	50.000	1 of 1	
1605098-01A	Soil		1.10	50	50.000	1 of 1	
1605098-02A	Soil		1.12	50	50.000	1 of 1	
1605098-03A	Soil		1.19	50	50.000	1 of 1	
1605098-04A	Soil		1.18	50	50.000	1 of 1	
1605098-05A	Soil		1.15	50	50.000	1 of 1	
1605098-06A	Soil		1.08	50	50.000	1 of 1	
1605098-07A	Soil		1.12	50	50.000	1 of 1	
1605098-08A	Soil		1.04	50	50.000	1 of 1	
1605098-09A	Soil		1.12	50	50.000	1 of 1	
1605098-10A	Soil		1.11	50	50.000	1 of 1	
1605098-11A	Soil		1.07	50	50.000	1 of 1	
LCS-75216	Soil		1	50	50.000	of	
LCSD-75216	Soil		1	50	50.000	of	
MB-75216	Soil		1	50	50.000	of	
MS 1605097-41A			1.11				
MSD 1605097-41A			1.08				

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	10/29/2016

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/09/2016

09:56 - 10:06
10:23 - 12:23
13:52 - 15:52
16:42 - 16:57

WBoston 5-18-16

REVIEWED BY
By Janice Whitt at 9:50:17 AM, 5/27/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 2:10:55 PM**
Digestion: **Start: 5/12/2016 3:00:00 PM / Stop: 5/16/2016 8:30:00 AM**
Prep End Date: **5/16/2016 1:30:00 PM**

Prep Batch **75141** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-36A	Soil		0	0	#Num!	1 of 1	
1605097-37A	Soil		0	0	#Num!	1 of 1	
1605097-38A	Soil		0	0	#Num!	1 of 1	
1605097-39A	Soil		0	0	#Num!	of 3	
	Extra sample sub sampled for MS/MSD						
1605097-40A	Soil		0	0	#Num!	1 of 1	
1605097-41A	Soil		0	0	#Num!	1 of 1	
1605097-42A	Soil		0	0	#Num!	1 of 1	
1605097-43A	Soil		0	0	#Num!	1 of 1	
1605097-44A	Soil		0	0	#Num!	1 of 1	
1605097-45A	Soil		0	0	#Num!	1 of 1	
1605098-01A	Soil		0	0	#Num!	1 of 1	
1605098-02A	Soil		0	0	#Num!	1 of 1	
1605098-03A	Soil		0	0	#Num!	1 of 1	
1605098-04A	Soil		0	0	#Num!	1 of 1	
1605098-05A	Soil		0	0	#Num!	1 of 1	
1605098-06A	Soil		0	0	#Num!	1 of 1	
1605098-07A	Soil		0	0	#Num!	1 of 1	
1605098-08A	Soil		0	0	#Num!	1 of 1	
1605098-09A	Soil		0	0	#Num!	1 of 1	
1605098-10A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 9:50:20 AM, 5/27/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 5:00:00 PM**
Digestion: **Start: 5/12/2015 5:15:00 PM / Stop: 5/16/2016 8:30:00 AM**
Prep End Date: **5/16/2016 3:30:00 PM**

Prep Batch **75144** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker** Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-11A	Soil		0	0	#Num!	1 of 1	
1605098-12A	Soil		0	0	#Num!	1 of 1	
1605098-13A	Soil		0	0	#Num!	1 of 1	
1605098-14A	Soil		0	0	#Num!	1 of 1	
1605098-15A	Soil		0	0	#Num!	1 of 1	
1605098-16A	Soil		0	0	#Num!	1 of 1	
1605098-17A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling - hard clay enough for MS/MSD						
1605098-18A	Soil		0	0	#Num!	1 of 1	
1605098-19A	Soil		0	0	#Num!	1 of 1	
1605098-20A	Soil		0	0	#Num!	1 of 1	
1605098-21A	Soil		0	0	#Num!	1 of 1	
1605098-22A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling- hard copy						
1605098-23A	Soil		0	0	#Num!	1 of 1	
1605098-24A	Soil		0	0	#Num!	1 of 1	
1605098-25A	Soil		0	0	#Num!	1 of 1	
1605098-26A	Soil		0	0	#Num!	1 of 1	
1605098-27A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605098-28A	Soil		0	0	#Num!	1 of 1	
1605098-29A	Soil		0	0	#Num!	1 of 1	
1605098-30A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 9:52:38 AM, 5/27/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/18/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	21-23°C	
TEST VOLUME:	See Below	**WATER DENSITY:**	0.998	(0.9980-0.9976)

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

					BIAS	PRECISION
PIPETTE ID: P-01	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	5.00	5.0000	4.9900	99.80	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		5.0004	4.9904	99.81		
3		5.0020	4.9920	99.84		
AVERAGE (MEAN)		5.001	4.991	99.82		0.021
						PASS

PIPETTE ID: P-09	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	0.20	0.2008	0.2004	100.20	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2007	0.2003	100.15		
3		0.2014	0.2010	100.50		
AVERAGE (MEAN)		0.201	0.201	100.28		0.188
						PASS

PIPETTE ID:	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

5/18/16

Analyst / Date

REVIEWED BY
By Janice Whitt at 9:52:43 AM, 5/27/2016

Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/18/2016 8:30:00 AM**
Digestion: **Start: 5/18/2016 9:56:00 AM / Stop: 5/18/2016 4:57:00 PM**
Prep End Date: **5/18/2016 5:46:35 PM**

Prep Batch **75216** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

- Hot Block #3
- Thermometer #71
- Balance #20
- Pipette #P-01
- Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-37A	Soil		1.08	50	46.296	1 of 1	
1605097-38A	Soil		1.16	50	43.103	1 of 1	
1605097-39A	Soil		1.18	50	42.373	of 3	
1605097-40A	Soil		1.16	50	43.103	1 of 1	
1605097-41A	Soil		1.08	50	46.296	1 of 1	
1605097-41A MS	Soil		1.11	50	45.045	of	
1605097-41A MSD	Soil		1.08	50	46.296	of	
1605097-41A PDS	Soil		1.08	50	46.296	of	
1605097-41A SD	Soil		1.08	50	46.296	of	
1605097-42A	Soil		1.16	50	43.103	1 of 1	
1605097-43A	Soil		1.15	50	43.478	1 of 1	
1605097-44A	Soil		1.06	50	47.170	1 of 1	
1605097-45A	Soil		1.12	50	44.643	1 of 1	
1605098-01A	Soil		1.1	50	45.455	1 of 1	
1605098-02A	Soil		1.12	50	44.643	1 of 1	
1605098-03A	Soil		1.19	50	42.017	1 of 1	
1605098-04A	Soil		1.18	50	42.373	1 of 1	
1605098-05A	Soil		1.15	50	43.478	1 of 1	
1605098-06A	Soil		1.08	50	46.296	1 of 1	
1605098-07A	Soil		1.12	50	44.643	1 of 1	
1605098-08A	Soil		1.04	50	48.077	1 of 1	
1605098-09A	Soil		1.12	50	44.643	1 of 1	
1605098-10A	Soil		1.11	50	45.045	1 of 1	
1605098-11A	Soil		1.07	50	46.729	1 of 1	
LCS-75216	Soil		1	50	50.000	of	
LCSD-75216	Soil		1	50	50.000	of	
MB-75216	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026
10318	Hydrogen Peroxide, 30%	3	ml	11/30/2017

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/09/2016

REVIEWED BY
By Janice Whitt at 9:52:51 AM, 5/27/2016

Calibration Summary Report

Instrument: ICPMS3
Current Method: C:\ICPCHEM\1\METHODS\DHL_3Fe.M
Calibration: C:\ICPCHEM\1\CALIB\DHL_3Fe.C
Last Update: May 25 2016 12:14 pm
Cal Type: Y=aX+[blank]

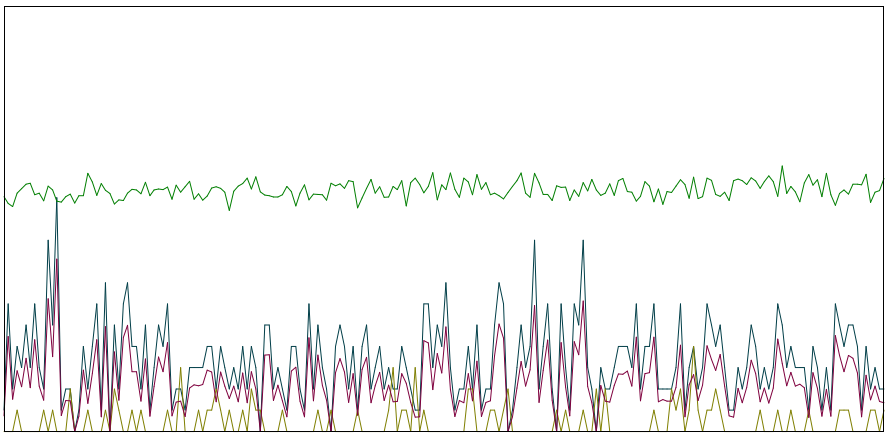
Standard	Date Acquired	File
BLANK STD 1	May 25 2016 11:28 am	c:\icpchem\1\data\16e25k02.b\006calb.d\
L2-160525	May 25 2016 11:34 am	c:\icpchem\1\data\16e25k02.b\007cals.d\
L-160525	May 25 2016 11:40 am	c:\icpchem\1\data\16e25k02.b\008cals.d\
10X-160525	May 25 2016 11:47 am	c:\icpchem\1\data\16e25k02.b\009cals.d\
5X-160525	May 25 2016 11:53 am	c:\icpchem\1\data\16e25k02.b\010cals.d\
2X-160525	May 25 2016 11:59 am	c:\icpchem\1\data\16e25k02.b\011cals.d\

Element Name	Corr Coef	Coef A	Coef B	Lvl 2	Lvl 6	Lvl 7	L7 %R	Lvl 8	L8 %R
Li	1.0000	0.366	0.03074	1.07	264	513		1995	
Be	0.9995	0.09676	0.001065	1.07	263	493	99%	--------	######
B	0.9998	0.08331	0.128	1.13	265	537	107%	1,989	99%
Na	0.9999	0.321	3.721	20.01	5,191	10,240	102%	24,860	99%
Mg	0.9999	0.1438	0.2978	21.26	5,057	10,270	103%	24,880	100%
Al	1.0000	0.03287	0.2196	20.44	4,996	10,010	100%	--------	######
K	1.0000	0.0687	2.178	22.79	5,023	9,990	100%	25,000	100%
Ca	0.9999	0.008753	0.1812	19.96	5,049	10,220	102%	24,910	100%
Ti	1.0000	0.02966	0	1.09	255	510	102%	1,997	100%
V	1.0000	1.348	0.1088	0.97	245	492	98%	2,003	100%
Cr	1.0000	1.836	0.07661	1.03	246	497	99%	2,001	100%
Mn	1.0000	0.6516	0.04509	1.00	256	513	103%	1,996	100%
Fe	1.0000	2.22	2.739	20.37	5,010	9,979	100%	--------	######
Co	1.0000	5.603	0.108	1.00	251	514	103%	1,996	100%
Ni	1.0000	1.688	0.08941	0.96	246	495	99%	2,002	100%
Cu	1.0000	4.655	0.3349	1.05	254	512	102%	1,996	100%
Zn	1.0000	0.4193	0.3111	1.30	261	514	103%	1,995	100%
As	1.0000	0.2238	0.01653	1.04	254	504	101%	1,998	100%
Se	0.9999	0.01122	0.002569	1.24	264	518	104%	1,994	100%
Sr	1.0000	0.2943	0.03535	0.99	258	507	101%	1,997	100%
Mo	1.0000	0.05592	0.001364	0.92	240	489	98%	2,004	100%
Ag	1.0000	0.158	0.0008843	1.04	251	500	100%	--------	######
Cd	1.0000	0.03364	0.000287	0.96	248	490	98%	2,003	100%
Sn	1.0000	0.09237	0.0124	0.96	248	517	103%	1,996	100%
Sb	0.9999	0.1113	0.005023	0.98	245	503	101%	--------	######
Ba	1.0000	0.04352	0.001615	0.96	242	489	98%	2,004	100%
Tl	1.0000	0.3323	0.003701	0.96	258	507	101%	1,997	100%
Pb	1.0000	0.4487	0.008497	0.99	251	512	102%	1,997	100%

REVIEWED BY
By Janice Whitt at 9:52:56 AM, 5/27/2016

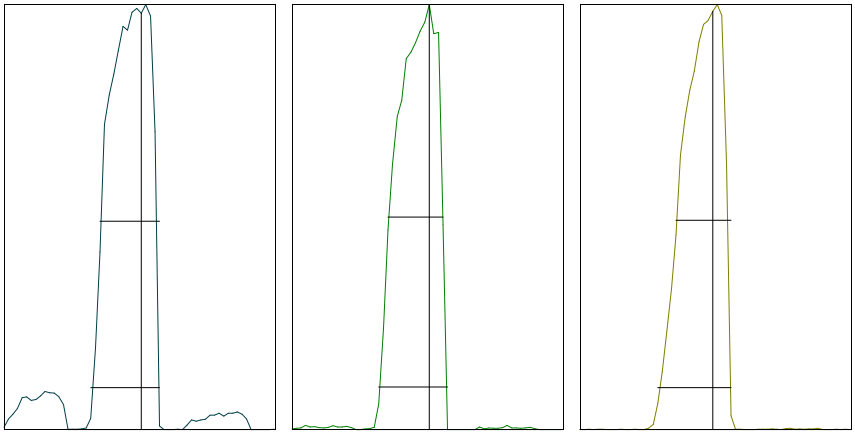
Tune Report

Tune File : He.U
Comment :



Integration Time:	0.1000 sec	
Sampling Period:	0.3100 sec	
n:	200	
Oxide:	156/140	0.383%
Doubly Charged:	70/140	3.259%

m/z	Range	Count	Mean	RSD%	Background
51	20	2.0	3.3	56.70	0.30
59	5,000	2978.0	2842.2	3.43	0.10
75	20	1.0	0.4	169.18	0.40
51/59	1	0.067%	0.117%	56.99	



m/z:	59	89	205
Height:	2,818	1,202	3,098
Axis:	59.05	89.05	205.00
W-50%:	0.65	0.60	0.60
W-10%:	0.7500	0.7500	0.800

Integration Time:	0.1000 sec
Acquisition Time:	22.5600 sec

Y axis : Linear

Generated : May 25, 2016 10:34:20
Printed : May 25, 2016 10:34:22

Tune Report

Tune File : He.U
Comment :

Tuning Parameters

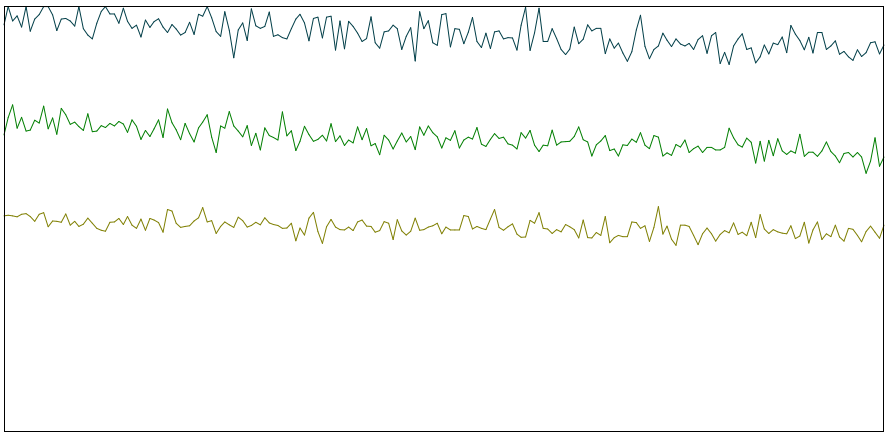
===Plasma Condition===				===Ion Lenses===				===Q-Pole Parameters===			
RF Power	:	1600	W	Extract 1	:	0	V	AMU Gain	:	121	
RF Matching	:	1.6	V	Extract 2	:	-110	V	AMU Offset	:	121	
Smpl Depth	:	9	mm	Omega Bias-ce	:	-24	V	Axis Gain	:	0.9993	
Torch-H	:	0	mm	Omega Lens-ce	:	-2	V	Axis Offset	:	-0.03	
Torch-V	:	0.7	mm	Cell Entrance	:	-40	V	QP Bias	:	-15	V
Carrier Gas	:	1.2	L/min	QP Focus	:	-10	V				
Makeup Gas	:	0	L/min	Cell Exit	:	-40	V	===Detector Parameters===			
Optional Gas	:	---	%					Discriminator	:	8	mV
Nebulizer Pump	:	0.1	rps	===Octopole Parameters===				Analog HV	:	1740	V
Sample Pump	:	---	rps	OctP RF	:	170	V	Pulse HV	:	1460	V
S/C Temp	:	2	degC	OctP Bias	:	-18	V				

===Reaction Cell===

Reaction Mode	:	ON									
H2 Gas	:	0	mL/min	He Gas	:	5	mL/min	Optional Gas	:	---	%

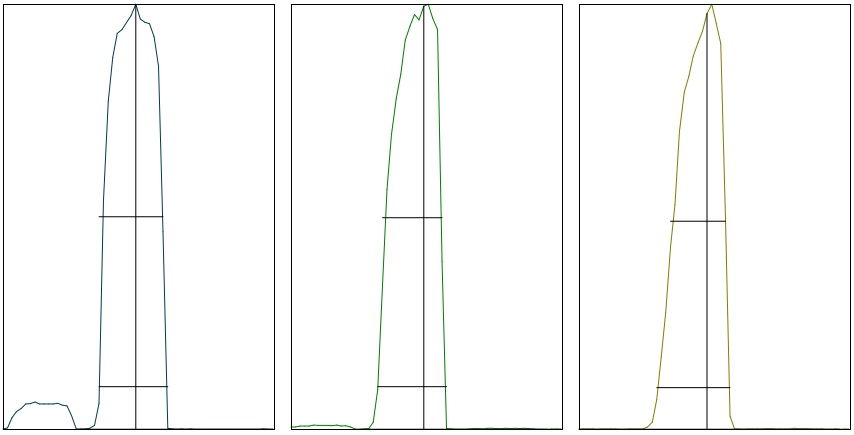
Tune Report

Tune File : nogas.u
Comment :



Integration Time:	0.1000 sec	
Sampling Period:	0.8200 sec	
n:	200	
Oxide:	156/140	1.016%
Doubly Charged:	70/140	1.495%

m/z	Range	Count	Mean	RSD%	Background
7	10,000	9090.0	9354.8	3.64	1.70
89	20,000	12913.0	13784.7	4.18	3.20
205	20,000	9711.0	9616.0	3.81	10.10
156/140	2	0.845%	0.985%	11.71	
70/140	2	0.993%	1.247%	10.16	
63	1,000	509.0	528.5	6.08	2.20
23	50,000	21417.0	22985.0	4.66	1.90



m/z:	7	89	205
Height:	9,135	13,017	9,243
Axis:	7.00	89.00	204.95
W-50%:	0.70	0.65	0.60
W-10%:	0.7500	0.7500	0.800

Integration Time:	0.1000 sec
Acquisition Time:	22.7600 sec

Y axis : Linear

Generated : May 25, 2016 10:30:58
Printed : May 25, 2016 10:31:00

Tune File : nogas.u
Comment :

Tuning Parameters

===Plasma Condition===				===Ion Lenses===				===Q-Pole Parameters===			
RF Power	:	1600	W	Extract 1	:	0	V	AMU Gain	:	121	
RF Matching	:	1.6	V	Extract 2	:	-110	V	AMU Offset	:	121	
Smpl Depth	:	9	mm	Omega Bias-ce	:	-18	V	Axis Gain	:	0.9993	
Torch-H	:	0	mm	Omega Lens-ce	:	-1	V	Axis Offset	:	-0.03	
Torch-V	:	0.7	mm	Cell Entrance	:	-30	V	QP Bias	:	-1	V
Carrier Gas	:	1.2	L/min	QP Focus	:	4	V				
Makeup Gas	:	0	L/min	Cell Exit	:	-40	V	===Detector Parameters===			
Optional Gas	:	---	%					Discriminator	:	8	mV
Nebulizer Pump	:	0.1	rps	===Octopole Parameters===				Analog HV	:	1740	V
Sample Pump	:	---	rps	OctP RF	:	170	V	Pulse HV	:	1460	V
S/C Temp	:	2	degC	OctP Bias	:	-6	V				

===Reaction Cell===											
Reaction Mode	:	OFF									
H2 Gas	:	0	mL/min	He Gas	:	0	mL/min	Optional Gas	:	---	%

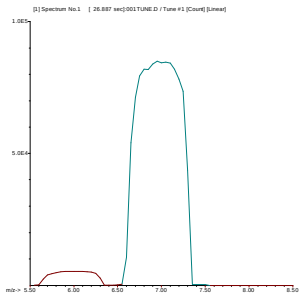
Generated : May 25, 2016 10:30:58
Printed : May 25, 2016 10:31:02

6020 QC Tune Report

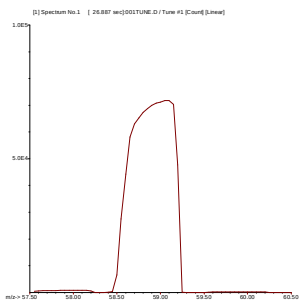
Data File: C:\ICPCHEM\1\DATA\16E25k01.B\001TUNE.D
Date Acquired: May 25 2016 10:48 am
Acq. Method: TN6020.M
Operator: KL
Sample Name: TUNE CHECK
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\TN6020.M

RSD (%)

Element	Actual	Required	Flag
7 Li	2.47	5.00	
59 Co	3.32	5.00	
115 In	3.74	5.00	
205 Tl	1.43	5.00	

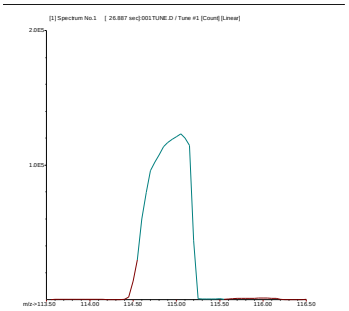


7 Li
Mass Calib.
Actual: 7.00
Required: 6.90 - 7.10
Flag:
Peak Width
Actual: 0.70
Required: 0.90
Flag:



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width
Actual: 0.65
Required: 0.90
Flag:

REVIEWED BY
By Janice Whitt at 9:53:03 AM, 5/27/2016



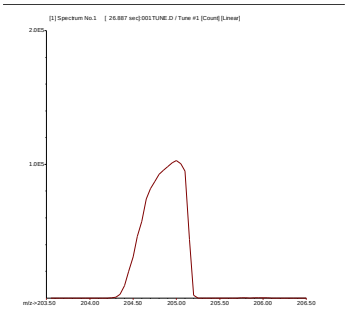
115 In

Mass Calib.

Actual:	115.00	
Required:	114.90 -	115.10
Flag:		

Peak Width

Actual:	0.65
Required:	0.90
Flag:	



205 Tl

Mass Calib.

Actual:	204.95	
Required:	204.90 -	205.10
Flag:		

Peak Width

Actual:	0.60
Required:	0.90
Flag:	

REVIEWED BY
By Janice Whitt at 9:53:08 AM, 5/27/2016

P/A Factor Tuning Report

Acquired:May 25 2016 10:37 am

Mass[amu]	Element	P/A Factor
6	Li	0.072231
23	Na	0.088049
24	Mg	0.092570
27	Al	0.096143
39	K	0.097086
44	Ca	Sensitivity too low
45	Sc	0.097844
47	Ti	Sensitivity too low
51	V	0.100513
52	Cr	0.103528
55	Mn	0.105065
59	Co	0.109030
60	Ni	0.111564
63	Cu	0.113829
66	Zn	0.112970
72	Ge	0.111909
75	As	0.111226
78	Se	Sensitivity too low
88	Sr	0.112101
95	Mo	0.110617
106	(Cd)	0.117821
107	Ag	Sensitivity too low
108	(Cd)	0.118228
111	Cd	0.119577
115	In	0.119323
118	Sn	0.118698
121	Sb	0.118213
137	Ba	Sensitivity too low
205	Tl	0.129465
206	(Pb)	0.128942
207	(Pb)	0.129311
208	Pb	0.129558
209	Bi	0.129136
238		0.128564

===Detector Parameters===
  Discriminator: 8.0 mV
      Analog HV: 1740 V
       Pulse HV: 1460 V

REVIEWED BY
By Janice Whitt at 9:53:10 AM, 5/27/2016

Calibration Blank QC Report

Acq. Method: DHL_3Fe.M Sample Name: BLANK STD 1
Operator: KL Instrument: ICPMS3
Last Cal. Update: May 25 2016 11:32 am
Date Acquired: May 25 2016 11:28 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)
6	Li	2	---	35.48	P	14.91	42.02
7	Li	2	45	637.82	P	64.33	10.09
9	Be	2	45	22.22	P	10.18	45.81
11	B	2	45	2658.16	P	10.19	0.38
23	Na	1	45	2568.14	P	60.60	2.36
24	Mg	1	45	205.57	P	18.36	8.93
27	Al	1	45	151.56	P	18.00	11.88
39	K	1	45	1503.48	P	87.38	5.81
44	Ca	2	45	3760.71	P	135.50	3.60
45	Sc	1	---	138057.41	P	627.20	0.45
45	Sc	2	---	4152726.00	A	66850.00	1.61
47	Ti	1	45	0.00	P	0.00	0.00
51	V	1	45	75.11	P	6.30	8.39
51	V	2	---		P		
52	Cr	1	45	52.89	P	2.04	3.85
55	Mn	1	45	31.11	P	5.39	17.32
56	Fe	1	72	1183.63	P	96.32	8.14
59	Co	1	72	46.67	P	4.81	10.30
60	Ni	1	72	38.67	P	2.31	5.97
60	Ni	2	---		P		
63	Cu	1	72	144.89	P	20.06	13.85
63	Cu	2	---		P		
66	Zn	1	72	134.67	P	27.75	20.61
66	Zn	2	---		P		
72	Ge	1	---	86466.48	P	825.70	0.95
72	Ge	2	---		P		
75	As	1	72	7.15	P	0.17	2.37
78	Se	1	72	1.11	P	0.11	10.00
88	Sr	2	###	1070.09	P	42.57	3.98
95	Mo	2	###	41.11	P	19.53	47.50
107	Ag	2	###	26.67	P	8.82	33.07
111	Cd	2	###	8.87	P	18.30	206.32
115	In	2	---	6053544.00	A	97360.00	1.61
118	Sn	2	###	375.58	P	38.64	10.29
121	Sb	2	###	152.23	P	31.68	20.81
137	Ba	2	###	48.89	P	1.93	3.94
205	Tl	2	###	101.12	P	5.09	5.04
208	Pb	2	###	232.23	P	24.12	10.39
209	Bi	2	---	5465339.00	A	35910.00	0.66

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: L2-160525
Operator: KL Instrument: ICPMS3
Date Acquired: May 25 2016 11:34 am
Last Cal. Update: May 25 2016 11:32 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-272.88	P	43.39	15.90	ISFail
7	Li	2	45	8721.12	P	217.90	2.50	
9	Be	2	45	2156.94	P	56.98	2.64	
11	B	2	45	4596.57	P	58.25	1.27	
23	Na	1	45	7215.69	P	210.90	2.92	
24	Mg	1	45	2385.88	P	159.10	6.67	
27	Al	1	45	634.25	P	29.59	4.67	
39	K	1	45	2662.63	P	49.17	1.85	
44	Ca	2	45	7365.79	P	40.42	0.55	
45	Sc	1	---	142269.80	P	1494.00	1.05	
45	Sc	2	---	4140339.00	A	56330.00	1.36	
47	Ti	1	45	23.11	P	7.34	31.78	
51	V	1	45	1012.06	P	70.47	6.96	
51	V	2	---		P			
52	Cr	1	45	1404.10	P	31.44	2.24	
55	Mn	1	45	496.02	P	3.53	0.71	
56	Fe	1	72	21155.66	P	319.20	1.51	
59	Co	1	72	2522.07	P	39.66	1.57	
60	Ni	1	72	756.48	P	32.04	4.24	
60	Ni	2	---		P			
63	Cu	1	72	2304.70	P	66.10	2.87	
63	Cu	2	---		P			
66	Zn	1	72	377.79	P	37.39	9.90	
66	Zn	2	---		P			
72	Ge	1	---	88235.95	P	566.30	0.64	
72	Ge	2	---		P			
75	As	1	72	109.89	P	0.48	0.44	
78	Se	1	72	7.26	P	0.93	12.84	
88	Sr	2	115	9914.45	P	341.40	3.44	
95	Mo	2	115	1594.62	P	79.55	4.99	
107	Ag	2	115	4991.26	P	70.99	1.42	
111	Cd	2	115	986.01	P	121.80	12.35	
115	In	2	---	6056323.00	A	74220.00	1.23	
118	Sn	2	115	3058.30	P	104.60	3.42	
121	Sb	2	115	3450.66	P	114.00	3.30	
137	Ba	2	115	1320.13	P	33.84	2.56	
205	Tl	2	209	8724.86	P	91.61	1.05	
208	Pb	2	209	12252.01	P	155.30	1.27	
209	Bi	2	---	5434789.00	A	36290.00	0.67	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-272.88	15.90	35.48	-769.1	70 - 120	ISFail
45	Sc	1	142269.81	1.05	138057.45	103.1	70 - 120	
45	Sc	2	4140339.30	1.36	4152726.00	99.7	70 - 120	
72	Ge	1	88235.95	0.64	86466.48	102.0	70 - 120	
115	In	2	6056323.00	1.23	6053544.50	100.0	70 - 120	
209	Bi	2	5434789.50	0.67	5465338.50	99.4	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: L-160525
Operator: KL Instrument: ICPMS3
Date Acquired: May 25 2016 11:40 am
Last Cal. Update: May 25 2016 11:38 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-3158.91	P	124.40	3.94	ISFail
7	Li	2	45	81444.23	P	803.40	0.99	Fail
9	Be	2	45	20927.95	P	469.40	2.24	Fail
11	B	2	45	20744.39	P	193.80	0.93	Fail
23	Na	1	45	49294.59	P	1168.00	2.37	Fail
24	Mg	1	45	21165.25	P	774.90	3.66	Fail
27	Al	1	45	4839.68	P	57.26	1.18	Fail
39	K	1	45	11641.46	P	10.69	0.09	Fail
44	Ca	2	45	39659.92	P	629.10	1.59	Fail
45	Sc	1	---	143278.80	P	1156.00	0.81	
45	Sc	2	---	4120153.00	A	49370.00	1.20	
47	Ti	1	45	231.12	P	25.17	10.89	
51	V	1	45	9449.51	P	199.80	2.11	Fail
51	V	2	---		P			
52	Cr	1	45	13242.36	P	373.10	2.82	Fail
55	Mn	1	45	4834.80	P	159.30	3.29	Fail
56	Fe	1	72	201192.91	P	3702.00	1.84	Fail
59	Co	1	72	25259.91	P	174.60	0.69	
60	Ni	1	72	7550.88	P	72.09	0.95	Fail
60	Ni	2	---		P			
63	Cu	1	72	21661.08	P	196.60	0.91	Fail
63	Cu	2	---		P			
66	Zn	1	72	2069.54	P	60.69	2.93	Fail
66	Zn	2	---		P			
72	Ge	1	---	88696.46	P	237.30	0.27	
72	Ge	2	---		P			
75	As	1	72	1024.90	P	18.54	1.81	Fail
78	Se	1	72	53.78	P	4.01	7.46	Fail
88	Sr	2	115	89335.27	P	1407.00	1.58	Fail
95	Mo	2	115	16308.35	P	287.20	1.76	Fail
107	Ag	2	115	47737.28	P	786.40	1.65	Fail
111	Cd	2	115	10398.60	P	459.80	4.42	Fail
115	In	2	---	6075602.00	A	104300.00	1.72	
118	Sn	2	115	27836.89	P	477.40	1.72	Fail
121	Sb	2	115	33005.69	P	1040.00	3.15	Fail
137	Ba	2	115	12649.50	P	345.50	2.73	Fail
205	Tl	2	209	87908.60	P	1714.00	1.95	Fail
208	Pb	2	209	120260.00	P	1447.00	1.20	Fail
209	Bi	2	---	5493697.00	A	55050.00	1.00	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-3158.91	3.94	35.48	-8903.2	70 - 120	ISFail
45	Sc	1	143278.77	0.81	138057.45	103.8	70 - 120	
45	Sc	2	4120152.80	1.20	4152726.00	99.2	70 - 120	
72	Ge	1	88696.46	0.27	86466.48	102.6	70 - 120	
115	In	2	6075602.00	1.72	6053544.50	100.4	70 - 120	
209	Bi	2	5493697.00	1.00	5465338.50	100.5	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: 10X-160525
Operator: KL Instrument: ICPMS3
Date Acquired: May 25 2016 11:47 am
Last Cal. Update: May 25 2016 11:44 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-16288.08	P	511.60	3.14	ISFail
7	Li	2	45	402368.41	P	3309.00	0.82	Fail
9	Be	2	45	104423.40	P	1276.00	1.22	Fail
11	B	2	45	92644.22	P	1964.00	2.12	Fail
23	Na	1	45	231656.30	P	1302.00	0.56	Fail
24	Mg	1	45	102192.30	P	1498.00	1.47	Fail
27	Al	1	45	23101.92	P	581.50	2.52	Fail
39	K	1	45	50040.59	P	194.10	0.39	Fail
44	Ca	2	45	182260.41	P	3542.00	1.94	Fail
45	Sc	1	---	141135.50	P	450.30	0.32	
45	Sc	2	---	4138519.00	A	72340.00	1.75	
47	Ti	1	45	1055.62	P	23.90	2.26	
51	V	1	45	46600.53	P	455.10	0.98	Fail
51	V	2	---		P			
52	Cr	1	45	64822.04	P	589.70	0.91	
55	Mn	1	45	23763.53	P	163.10	0.69	
56	Fe	1	72	990195.63	P	9009.00	0.91	
59	Co	1	72	125218.50	P	1935.00	1.55	
60	Ni	1	72	37202.06	P	408.50	1.10	
60	Ni	2	---		P			
63	Cu	1	72	105463.50	P	708.10	0.67	
63	Cu	2	---		P			
66	Zn	1	72	9840.09	P	193.30	1.96	Fail
66	Zn	2	---		P			
72	Ge	1	---	86932.00	P	754.00	0.87	
72	Ge	2	---		P			
75	As	1	72	4967.45	P	37.52	0.76	
78	Se	1	72	258.45	P	6.20	2.40	Fail
88	Sr	2	115	443033.31	P	10500.00	2.37	Fail
95	Mo	2	115	81078.38	P	1037.00	1.28	Fail
107	Ag	2	115	237582.70	P	4252.00	1.79	Fail
111	Cd	2	115	50820.08	P	893.70	1.76	Fail
115	In	2	---	6043849.00	A	33930.00	0.56	
118	Sn	2	115	138084.59	P	2546.00	1.84	Fail
121	Sb	2	115	163930.30	P	2776.00	1.69	Fail
137	Ba	2	115	63381.75	P	2040.00	3.22	Fail
205	Tl	2	209	442037.59	P	4299.00	0.97	Fail
208	Pb	2	209	598058.88	P	9443.00	1.58	Fail
209	Bi	2	---	5504946.00	A	49270.00	0.90	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-16288.08	3.14	35.48	-45907.1	70 - 120	ISFail
45	Sc	1	141135.45	0.32	138057.45	102.2	70 - 120	
45	Sc	2	4138519.00	1.75	4152726.00	99.7	70 - 120	
72	Ge	1	86932.01	0.87	86466.48	100.5	70 - 120	
115	In	2	6043848.50	0.56	6053544.50	99.8	70 - 120	
209	Bi	2	5504946.00	0.90	5465338.50	100.7	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: 5X-160525
Operator: KL Instrument: ICPMS3
Date Acquired: May 25 2016 11:53 am
Last Cal. Update: May 25 2016 11:50 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-32300.18	P	989.90	3.06	ISFail
7	Li	2	45	792643.88	A	12330.00	1.56	Fail
9	Be	2	45	206314.00	P	2797.00	1.36	Fail
11	B	2	45	179068.41	P	3589.00	2.00	Fail
23	Na	1	45	456671.19	P	2489.00	0.55	Fail
24	Mg	1	45	202978.70	P	1794.00	0.88	
27	Al	1	45	45805.44	P	528.80	1.15	Fail
39	K	1	45	97811.58	P	804.40	0.82	Fail
44	Ca	2	45	356890.41	P	7614.00	2.13	Fail
45	Sc	1	---	139844.59	P	317.00	0.23	
45	Sc	2	---	4139387.00	A	61320.00	1.48	
47	Ti	1	45	2048.65	P	54.40	2.66	
51	V	1	45	93011.17	P	1117.00	1.20	
51	V	2	---		P			
52	Cr	1	45	128337.30	P	2310.00	1.80	
55	Mn	1	45	46816.77	P	651.40	1.39	
56	Fe	1	72	1983262.00	A	31950.00	1.61	
59	Co	1	72	246793.00	P	3136.00	1.27	
60	Ni	1	72	73832.64	P	1291.00	1.75	
60	Ni	2	---		P			
63	Cu	1	72	210109.20	P	2059.00	0.98	
63	Cu	2	---		P			
66	Zn	1	72	19530.82	P	53.99	0.28	Fail
66	Zn	2	---		P			
72	Ge	1	---	86387.22	P	767.70	0.89	
72	Ge	2	---		P			
75	As	1	72	9879.90	P	120.10	1.22	
78	Se	1	72	512.05	P	5.95	1.16	
88	Sr	2	115	874582.69	P	19150.00	2.19	Fail
95	Mo	2	115	161433.59	P	2303.00	1.43	Fail
107	Ag	2	115	468556.91	P	7907.00	1.69	Fail
111	Cd	2	115	100303.20	P	1203.00	1.20	Fail
115	In	2	---	6004016.00	A	51360.00	0.86	
118	Sn	2	115	273339.91	P	5241.00	1.92	Fail
121	Sb	2	115	326281.69	P	7200.00	2.21	Fail
137	Ba	2	115	126337.80	P	3084.00	2.44	Fail
205	Tl	2	209	871072.00	P	9232.00	1.06	Fail
208	Pb	2	209	1173651.00	P	20530.00	1.75	Fail
209	Bi	2	---	5392675.00	A	32210.00	0.60	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-32300.18	3.06	35.48	-91036.3	70 - 120	ISFail
45	Sc	1	139844.64	0.23	138057.45	101.3	70 - 120	
45	Sc	2	4139386.80	1.48	4152726.00	99.7	70 - 120	
72	Ge	1	86387.23	0.89	86466.48	99.9	70 - 120	
115	In	2	6004016.00	0.86	6053544.50	99.2	70 - 120	
209	Bi	2	5392675.00	0.60	5465338.50	98.7	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: 2X-160525
Operator: KL Instrument: ICPMS3
Date Acquired: May 25 2016 11:59 am
Last Cal. Update: May 25 2016 11:56 am

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-76509.99	P	180.40	0.24	ISFail
7	Li	2	45	1933272.00	A	9283.00	0.48	Fail
9	Be	2	45	508742.19	P	4856.00	0.95	
11	B	2	45	444105.91	P	5067.00	1.14	Fail
23	Na	1	45	1184068.00	A	9137.00	0.77	Fail
24	Mg	1	45	515642.91	P	3636.00	0.71	
27	Al	1	45	116586.70	P	2038.00	1.75	
39	K	1	45	246218.80	P	1321.00	0.54	Fail
44	Ca	2	45	888133.38	M	34470.00	3.88	Fail
45	Sc	1	---	141806.09	P	185.10	0.13	
45	Sc	2	---	4001920.00	A	40540.00	1.01	
47	Ti	1	45	5365.24	P	120.50	2.25	
51	V	1	45	233931.20	P	2388.00	1.02	
51	V	2	---		A			
52	Cr	1	45	320402.50	P	2792.00	0.87	
55	Mn	1	45	118084.30	P	877.90	0.74	
56	Fe	1	72	4840338.00	A	43880.00	0.91	
59	Co	1	72	612208.31	P	2883.00	0.47	
60	Ni	1	72	180786.41	P	979.70	0.54	
60	Ni	2	---		P			
63	Cu	1	72	514813.41	P	4742.00	0.92	
63	Cu	2	---		P			
66	Zn	1	72	47653.65	P	313.90	0.66	Fail
66	Zn	2	---		P			
72	Ge	1	---	87029.36	P	440.30	0.51	
72	Ge	2	---		P			
75	As	1	72	24700.86	P	129.60	0.52	
78	Se	1	72	1287.77	P	6.35	0.49	
88	Sr	2	115	2245274.00	A	48870.00	2.18	Fail
95	Mo	2	115	397199.50	P	8239.00	2.07	Fail
107	Ag	2	115	1173027.00	A	14630.00	1.25	
111	Cd	2	115	246356.91	P	3214.00	1.30	Fail
115	In	2	---	5918027.00	A	76490.00	1.29	
118	Sn	2	115	678109.69	P	11900.00	1.75	Fail
121	Sb	2	115	805410.50	P	14660.00	1.82	Fail
137	Ba	2	115	311737.31	P	5636.00	1.81	Fail
205	Tl	2	209	2257746.00	A	24770.00	1.10	Fail
208	Pb	2	209	2976292.00	A	34430.00	1.16	Fail
209	Bi	2	---	5277858.00	A	82480.00	1.56	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-76509.99	0.24	35.48	-215639.2	70 - 120	ISFail
45	Sc	1	141806.06	0.13	138057.45	102.7	70 - 120	
45	Sc	2	4001920.30	1.01	4152726.00	96.4	70 - 120	
72	Ge	1	87029.36	0.51	86466.48	100.7	70 - 120	
115	In	2	5918027.00	1.29	6053544.50	97.8	70 - 120	
209	Bi	2	5277858.00	1.56	5465338.50	96.6	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: H-160525
Operator: KL Instrument: ICPMS3
Date Acquired: May 25 2016 12:05 pm
Last Cal. Update: May 25 2016 12:02 pm

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-146565.41	P	2970.00	2.03	ISFail
7	Li	2	45	3764275.00	A	31320.00	0.83	Fail
9	Be	2	45	955968.63	A	9887.00	1.03	
11	B	2	45	899463.81	A	18700.00	2.08	Fail
23	Na	1	45	2271337.00	A	18240.00	0.80	
24	Mg	1	45	1018896.00	A	3994.00	0.39	
27	Al	1	45	227150.80	P	2005.00	0.88	
39	K	1	45	475184.69	P	2528.00	0.53	Fail
44	Ca	2	45	1796926.00	A	23300.00	1.30	Fail
45	Sc	1	---	138027.09	P	383.10	0.28	
45	Sc	2	---	4009804.00	A	53030.00	1.32	
47	Ti	1	45	10433.44	P	219.50	2.10	
51	V	1	45	457795.69	P	2519.00	0.55	
51	V	2	---		A			
52	Cr	1	45	630315.63	P	7160.00	1.14	
55	Mn	1	45	230678.30	P	2283.00	0.99	
56	Fe	1	72	9324059.00	A	98460.00	1.06	
59	Co	1	72	1212203.00	A	6805.00	0.56	
60	Ni	1	72	351711.59	P	2177.00	0.62	
60	Ni	2	---		P			
63	Cu	1	72	1002285.00	P	6545.00	0.65	
63	Cu	2	---		A			
66	Zn	1	72	90796.41	P	911.50	1.00	
66	Zn	2	---		P			
72	Ge	1	---	84174.54	P	218.10	0.26	
72	Ge	2	---		P			
75	As	1	72	47505.14	P	146.90	0.31	
78	Se	1	72	2446.17	P	5.81	0.24	
88	Sr	2	115	4329264.00	A	16510.00	0.38	Fail
95	Mo	2	115	793385.38	P	7041.00	0.89	Fail
107	Ag	2	115	2292808.00	A	18450.00	0.80	
111	Cd	2	115	478300.81	P	4761.00	1.00	
115	In	2	---	5806672.00	A	83470.00	1.44	
118	Sn	2	115	1385374.00	A	13700.00	0.99	Fail
121	Sb	2	115	1626515.00	A	11050.00	0.68	Fail
137	Ba	2	115	617755.13	P	5973.00	0.97	Fail
205	Tl	2	209	4418658.00	A	26460.00	0.60	
208	Pb	2	209	6017113.00	A	44660.00	0.74	Fail
209	Bi	2	---	5242206.00	A	62730.00	1.20	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-146565.48	2.03	35.48	-413086.7	70 - 120	ISFail
45	Sc	1	138027.08	0.28	138057.45	100.0	70 - 120	
45	Sc	2	4009804.30	1.32	4152726.00	96.6	70 - 120	
72	Ge	1	84174.54	0.26	86466.48	97.3	70 - 120	
115	In	2	5806672.50	1.44	6053544.50	95.9	70 - 120	
209	Bi	2	5242206.00	1.20	5465338.50	95.9	70 - 120	

Calibration Standard QC Report

Acq. Method: DHL_3Fe.M Sample Name: H2-160525
Operator: KL Instrument: ICPMS3
Date Acquired: May 25 2016 12:10 pm
Last Cal. Update: May 25 2016 12:08 pm

QC&ISTD Elements

Element				CPS Mean		SD	RSD(%)	Flag
6	Li	2	---	-543714.13	P	4760.00	0.88	ISFail
7	Li	2	45	13999000.00	A	104800.00	0.75	
9	Be	2	45	3510109.00	A	25700.00	0.73	
11	B	2	45	3178960.00	A	4170.00	0.13	Fail
23	Na	1	45	5270676.00	A	18920.00	0.36	
24	Mg	1	45	2361325.00	A	20340.00	0.86	
27	Al	1	45	368.46	P	54.72	14.85	Fail
39	K	1	45	1135242.00	A	6457.00	0.57	
44	Ca	2	45	4183497.00	A	54710.00	1.31	Fail
45	Sc	1	---	132029.09	P	725.00	0.55	
45	Sc	2	---	3834505.00	A	36720.00	0.96	
47	Ti	1	45	39105.30	P	320.50	0.82	
51	V	1	45	1782271.00	A	19030.00	1.07	
51	V	2	---		A			
52	Cr	1	45	2425389.00	A	36400.00	1.50	
55	Mn	1	45	858525.19	P	5048.00	0.59	
56	Fe	1	72	11330.67	P	1452.00	12.82	Fail
59	Co	1	72	4495479.00	A	60820.00	1.35	
60	Ni	1	72	1357582.00	A	6819.00	0.50	
60	Ni	2	---		A			
63	Cu	1	72	3734901.00	A	23670.00	0.63	
63	Cu	2	---		A			
66	Zn	1	72	336265.00	P	1247.00	0.37	
66	Zn	2	---		A			
72	Ge	1	---	80382.26	P	523.60	0.65	
72	Ge	2	---		P			
75	As	1	72	179718.50	P	1054.00	0.59	
78	Se	1	72	8990.15	P	2.06	0.02	
88	Sr	2	115	16507970.00	A	174800.00	1.06	Fail
95	Mo	2	115	3146588.00	A	6099.00	0.19	
107	Ag	2	115	1749.15	P	336.90	19.26	Fail
111	Cd	2	115	1891356.00	A	23860.00	1.26	
115	In	2	---	5615400.00	A	91620.00	1.63	
118	Sn	2	115	5176959.00	A	52390.00	1.01	Fail
121	Sb	2	115	1920.27	P	297.10	15.47	Fail
137	Ba	2	115	2448660.00	A	37150.00	1.52	
205	Tl	2	209	16400440.00	A	215200.00	1.31	
208	Pb	2	209	22141960.00	A	91540.00	0.41	
209	Bi	2	---	4941974.00	A	1275.00	0.03	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-543714.13	0.88	35.48	#########	70 - 120	ISFail
45	Sc	1	132029.14	0.55	138057.45	95.6	70 - 120	
45	Sc	2	3834505.00	0.96	4152726.00	92.3	70 - 120	
72	Ge	1	80382.26	0.65	86466.48	93.0	70 - 120	
115	In	2	5615400.50	1.63	6053544.50	92.8	70 - 120	
209	Bi	2	4941974.50	0.03	5465338.50	90.4	70 - 120	

ICSA QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\016ICSA.D\016ICSA.D#

Date Acquired:	May 25 2016 12:28 pm	Sample Name:	**ICSA-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICSAICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	RL S	RL Aq	Flag
7	Li	2	45	0.475	ppb	15.90	8.00	5.00	
9	Be	2	45	0.187	ppb	36.11	0.32	0.80	
11	B	2	45	7.836	ppb	4.39	30.00	30.00	
23	Na	1	45	97600.000	ppb	0.93	#######	#######	
24	Mg	1	45	93480.000	ppb	0.64	#######	#######	
27	Al	1	45	99390.000	ppb	1.42	#######	#######	
39	K	1	45	97760.000	ppb	0.48	#######	#######	
44	Ca	2	45	95500.000	ppb	2.91	#######	#######	
47	Ti	1	45	2037.000	ppb	1.10	10.00	10.00	
51	V	1	45	0.265	ppb	5.72	10.00	10.00	
52	Cr	1	45	0.601	ppb	2.34	8.00	5.00	
55	Mn	1	45	1.827	ppb	6.34	8.00	10.00	
56	Fe	1	72	97930.000	ppb	1.47	#######	#######	
59	Co	1	72	0.798	ppb	4.18	8.00	10.00	
60	Ni	1	72	0.656	ppb	6.55	8.00	10.00	
63	Cu	1	72	0.742	ppb	6.34	8.00	10.00	
66	Zn	1	72	1.321	ppb	9.19	10.00	5.00	
75	As	1	72	0.944	ppb	6.96	4.00	5.00	
78	Se	1	72	0.496	ppb	12.40	2.00	5.00	
88	Sr	2	115	1.643	ppb	6.86	10.00	10.00	
95	Mo	2	115	2009.000	ppb	3.32	8.00	5.00	
107	Ag	2	115	0.164	ppb	15.22	0.80	2.00	
111	Cd	2	115	0.427	ppb	25.76	1.20	1.00	
118	Sn	2	115	0.719	ppb	10.57	10.00	10.00	
121	Sb	2	115	0.415	ppb	8.04	4.00	2.50	
137	Ba	2	115	0.539	ppb	17.01	8.00	10.00	
205	Tl	2	209	0.322	ppb	24.92	4.00	1.50	
208	Pb	2	209	0.595	ppb	15.61	1.20	1.00	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-42.17	117.78	35.48	-118.9	70 -	120	ISFail
45	Sc	1	130375.06	0.20	138057.45	94.4	70 -	120	
45	Sc	2	3593776.00	3.03	4152726.00	86.5	70 -	120	
72	Ge	1	77350.31	1.04	86466.48	89.5	70 -	120	
115	In	2	5162998.50	2.55	6053544.50	85.3	70 -	120	
209	Bi	2	4403426.00	1.15	5465338.50	80.6	70 -	120	

ICS-AB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\017ICSB.D\017ICSB.D#

Date Acquired:	May 25 2016 12:34 pm	Sample Name:	**ICSAB-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICSBICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)			Flag
7	Li	2	45	0.34	ppb	7.12	---	80 -		120	
9	Be	2	45	0.09	ppb	35.35	---	80 -		120	
11	B	2	45	6.13	ppb	2.70	---	80 -		120	
23	Na	1	45	99590.00	ppb	0.36	100000.00	80 -		120	
24	Mg	1	45	93100.00	ppb	1.26	100000.00	80 -		120	
27	Al	1	45	97260.00	ppb	2.05	100000.00	80 -		120	
39	K	1	45	96130.00	ppb	1.29	100000.00	80 -		120	
44	Ca	2	45	95850.00	ppb	2.32	100000.00	80 -		120	
47	Ti	1	45	2010.00	ppb	0.85	---	80 -		120	
51	V	1	45	40.76	ppb	1.39	40.00	80 -		120	
52	Cr	1	45	21.45	ppb	1.50	20.00	80 -		120	
55	Mn	1	45	19.86	ppb	1.45	20.00	80 -		120	
56	Fe	1	72	96600.00	ppb	0.32	100000.00	80 -		120	
59	Co	1	72	42.31	ppb	2.15	40.00	80 -		120	
60	Ni	1	72	38.36	ppb	2.21	40.00	80 -		120	
63	Cu	1	72	20.81	ppb	0.59	20.00	80 -		120	
66	Zn	1	72	19.26	ppb	2.18	20.00	80 -		120	
75	As	1	72	20.12	ppb	0.97	20.00	80 -		120	
78	Se	1	72	19.07	ppb	4.07	20.00	80 -		120	
88	Sr	2	115	1.14	ppb	2.68	---	80 -		120	
95	Mo	2	115	2038.00	ppb	2.92	---	80 -		120	
107	Ag	2	115	17.93	ppb	2.43	20.00	80 -		120	
111	Cd	2	115	9.47	ppb	2.98	10.00	80 -		120	
118	Sn	2	115	0.64	ppb	4.29	---	80 -		120	
121	Sb	2	115	0.07	ppb	19.08	---	80 -		120	
137	Ba	2	115	0.56	ppb	4.44	---	80 -		120	
205	Tl	2	209	0.15	ppb	18.24	---	80 -		120	
208	Pb	2	209	0.38	ppb	4.51	---	80 -		120	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-19.38	119.38	35.48	-54.6	70 -		120	ISFail
45	Sc	1	126240.23	0.47	138057.45	91.4	70 -		120	
45	Sc	2	3338833.80	2.89	4152726.00	80.4	70 -		120	
72	Ge	1	75409.73	0.27	86466.48	87.2	70 -		120	
115	In	2	4891670.50	2.18	6053544.50	80.8	70 -		120	
209	Bi	2	4364433.50	0.75	5465338.50	79.9	70 -		120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\020ICV.D\020ICV.D#

Date Acquired:	May 25 2016 12:52 pm	Sample Name:	**ICV1-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	132.70	ppb	0.90	100.00	90 -	110	132.7	Fail
9	Be	2	45	117.60	ppb	1.73	100.00	90 -	110	117.6	Fail
11	B	2	45	113.80	ppb	0.81	100.00	90 -	110	113.8	Fail
23	Na	1	45	2726.00	ppb	0.62	2500.00	90 -	110	109.0	
24	Mg	1	45	2647.00	ppb	1.23	2500.00	90 -	110	105.9	
27	Al	1	45	2410.00	ppb	1.04	2500.00	90 -	110	96.4	
39	K	1	45	2505.00	ppb	0.30	2500.00	90 -	110	100.2	
44	Ca	2	45	2412.00	ppb	1.49	2500.00	90 -	110	96.5	
47	Ti	1	45	101.30	ppb	4.66	100.00	90 -	110	101.3	
51	V	1	45	103.90	ppb	0.67	100.00	90 -	110	103.9	
52	Cr	1	45	107.10	ppb	0.93	100.00	90 -	110	107.1	
55	Mn	1	45	99.41	ppb	1.56	100.00	90 -	110	99.4	
56	Fe	1	72	2613.00	ppb	1.97	2500.00	90 -	110	104.5	
59	Co	1	72	108.40	ppb	1.44	100.00	90 -	110	108.4	
60	Ni	1	72	105.80	ppb	1.03	100.00	90 -	110	105.8	
63	Cu	1	72	107.10	ppb	0.88	100.00	90 -	110	107.1	
66	Zn	1	72	106.60	ppb	0.99	100.00	90 -	110	106.6	
75	As	1	72	101.80	ppb	0.93	100.00	90 -	110	101.8	
78	Se	1	72	99.33	ppb	1.67	100.00	90 -	110	99.3	
88	Sr	2	115	98.82	ppb	1.44	100.00	90 -	110	98.8	
95	Mo	2	115	94.32	ppb	1.06	100.00	90 -	110	94.3	
107	Ag	2	115	97.23	ppb	1.35	100.00	90 -	110	97.2	
111	Cd	2	115	98.36	ppb	1.56	100.00	90 -	110	98.4	
118	Sn	2	115	102.30	ppb	1.81	100.00	90 -	110	102.3	
121	Sb	2	115	97.97	ppb	2.15	100.00	90 -	110	98.0	
137	Ba	2	115	98.20	ppb	0.51	100.00	90 -	110	98.2	
205	Tl	2	209	97.27	ppb	2.15	100.00	90 -	110	97.3	
208	Pb	2	209	99.60	ppb	1.33	100.00	90 -	110	99.6	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-14810.84	0.66	35.48	-41743.5	70 -	120		ISFail
45	Sc	1	131446.92	1.04	138057.45	95.2	70 -	120		
45	Sc	2	3243742.30	1.16	4152726.00	78.1	70 -	120		
72	Ge	1	81329.92	0.15	86466.48	94.1	70 -	120		
115	In	2	5054618.50	1.10	6053544.50	83.5	70 -	120		
209	Bi	2	5021154.00	0.93	5465338.50	91.9	70 -	120		

ICB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\021_ICB.D\021_ICB.D#

Date Acquired:	May 25 2016 12:58 pm	Sample Name:	**ICB1-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	ICB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm	Instrument:	ICPMS3

QC Elements

Element				Conc.		RSD(%)	High Limit	Flag
7	Li	2	45	0.21	ppb	11.50	2.00	
9	Be	2	45	0.07	ppb	30.93	0.40	
11	B	2	45	5.79	ppb	2.54	10.00	
23	Na	1	45	17.37	ppb	3.84	50.00	
24	Mg	1	45	9.39	ppb	12.93	50.00	
27	Al	1	45	19.04	ppb	10.83	50.00	Failaq
39	K	1	45	14.47	ppb	9.67	50.00	
44	Ca	2	45	30.65	ppb	6.42	50.00	
47	Ti	1	45	0.50	ppb	41.66	4.00	
51	V	1	45	0.09	ppb	18.61	4.00	
52	Cr	1	45	0.10	ppb	9.68	2.00	
55	Mn	1	45	0.11	ppb	12.43	2.00	
56	Fe	1	72	9.60	ppb	15.76	50.00	
59	Co	1	72	0.09	ppb	17.22	2.00	
60	Ni	1	72	0.13	ppb	3.23	2.00	
63	Cu	1	72	0.16	ppb	7.81	2.00	
66	Zn	1	72	0.32	ppb	13.44	4.00	
75	As	1	72	0.11	ppb	9.69	2.00	
78	Se	1	72	0.17	ppb	39.95	0.60	
88	Sr	2	115	0.19	ppb	6.69	4.00	
95	Mo	2	115	0.29	ppb	7.31	2.00	
107	Ag	2	115	0.06	ppb	3.62	0.40	
111	Cd	2	115	0.06	ppb	9.17	0.40	
118	Sn	2	115	0.26	ppb	1.17	20.00	
121	Sb	2	115	0.07	ppb	20.81	2.00	
137	Ba	2	115	0.08	ppb	29.87	2.00	
205	Tl	2	209	0.16	ppb	10.66	2.00	
208	Pb	2	209	0.11	ppb	9.75	0.40	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2 RHig	-9.17	######	35.48	-25.9	70 - 120	ISFail
45	Sc	1	131168.02	0.78	138057.45	95.0	70 - 120	
45	Sc	2	3224747.80	0.64	4152726.00	77.7	70 - 120	
72	Ge	1	82581.35	0.67	86466.48	95.5	70 - 120	
115	In	2	5056024.00	0.99	6053544.50	83.5	70 - 120	
209	Bi	2	5057645.00	0.63	5465338.50	92.5	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\022LCVL.D\022LCVL.D#

Date Acquired:	May 25 2016 01:04 pm	Sample Name:	**ILCVL-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	13.42	ppb	0.73	5.00	70 -	130	268.4	Fail
9	Be	2	45	1.19	ppb	0.10	1.00	70 -	130	119.4	
11	B	2	45	24.22	ppb	1.70	20.00	70 -	130	121.1	
23	Na	1	45	114.50	ppb	2.61	100.00	70 -	130	114.5	
24	Mg	1	45	110.80	ppb	0.26	100.00	70 -	130	110.8	
27	Al	1	45	102.40	ppb	2.04	100.00	70 -	130	102.4	
39	K	1	45	106.90	ppb	0.62	100.00	70 -	130	106.9	
44	Ca	2	45	103.10	ppb	2.32	100.00	70 -	130	103.1	
47	Ti	1	45	4.82	ppb	3.46	5.00	70 -	130	96.4	
51	V	1	45	1.06	ppb	0.53	1.00	70 -	130	106.3	
52	Cr	1	45	5.23	ppb	2.32	5.00	70 -	130	104.7	
55	Mn	1	45	4.93	ppb	1.70	5.00	70 -	130	98.5	
56	Fe	1	72	108.20	ppb	1.54	100.00	70 -	130	108.2	
59	Co	1	72	5.27	ppb	2.71	5.00	70 -	130	105.4	
60	Ni	1	72	5.22	ppb	2.38	5.00	70 -	130	104.3	
63	Cu	1	72	5.43	ppb	0.54	5.00	70 -	130	108.6	
66	Zn	1	72	5.05	ppb	1.92	5.00	70 -	130	101.0	
75	As	1	72	5.20	ppb	1.53	5.00	70 -	130	104.0	
78	Se	1	72	5.14	ppb	0.67	5.00	70 -	130	102.8	
88	Sr	2	115	4.87	ppb	2.33	5.00	70 -	130	97.3	
95	Mo	2	115	4.85	ppb	3.97	5.00	70 -	130	97.1	
107	Ag	2	115	1.95	ppb	2.53	2.00	70 -	130	97.6	
111	Cd	2	115	1.01	ppb	7.83	1.00	70 -	130	100.9	
118	Sn	2	115	5.11	ppb	2.58	5.00	70 -	130	102.2	
121	Sb	2	115	1.92	ppb	0.54	2.00	70 -	130	95.9	
137	Ba	2	115	4.92	ppb	1.37	5.00	70 -	130	98.4	
205	Tl	2	209	1.02	ppb	1.68	1.00	70 -	130	101.6	
208	Pb	2	209	1.03	ppb	2.46	1.00	70 -	130	102.7	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2 RHigl	-1382.16	18.54	35.48	-3895.5	70 -	120	ISFail
45	Sc	1	135459.27	1.56	138057.45	98.1	70 -	120	
45	Sc	2	3244468.30	1.14	4152726.00	78.1	70 -	120	
72	Ge	1	84631.23	0.49	86466.48	97.9	70 -	120	
115	In	2	5076043.50	1.11	6053544.50	83.9	70 -	120	
209	Bi	2	5114711.50	0.82	5465338.50	93.6	70 -	120	

PB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\023__PB.D\023__PB.D#

Date Acquired:	May 25 2016 01:13 pm	Sample Name:	MB-75167
Acq. Method:	DHL_3Fe.M	Misc Info:	MBLKICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	MDL	RL	Flag
7	Li	2	45	0.114	ppb	5.59	2.0	8.00	
9	Be	2	45	0.009	ppb	11.95	0.4	1.20	
11	B	2	45	2.209	ppb	1.34	10.0	30.00	
23	Na	1	45	16.470	ppb	0.70	50.0	#####	
24	Mg	1	45	7.826	ppb	6.38	50.0	#####	
27	Al	1	45	10.940	ppb	2.16	50.0	#####	
39	K	1	45	14.880	ppb	1.74	50.0	#####	
44	Ca	2	45	26.420	ppb	2.15	50.0	#####	
47	Ti	1	45	0.411	ppb	72.93	4.0	10.00	
51	V	1	45	-0.004	ppb	18.75	4.0	10.00	
52	Cr	1	45	0.253	ppb	1.14	2.0	8.00	
55	Mn	1	45	0.106	ppb	8.48	2.0	8.00	
56	Fe	1	72	15.190	ppb	3.28	50.0	#####	
59	Co	1	72	0.021	ppb	7.22	2.0	8.00	
60	Ni	1	72	0.162	ppb	5.70	2.0	8.00	
63	Cu	1	72	0.177	ppb	4.90	2.0	8.00	
66	Zn	1	72	1.672	ppb	3.83	4.0	10.00	
75	As	1	72	0.006	ppb	19.89	2.0	4.00	
78	Se	1	72	0.115	ppb	14.19	0.6	2.00	
88	Sr	2	115	0.081	ppb	2.18	4.0	10.00	
95	Mo	2	115	0.139	ppb	12.49	2.0	8.00	
107	Ag	2	115	0.014	ppb	13.04	0.4	0.80	
111	Cd	2	115	0.047	ppb	25.25	0.4	1.20	
118	Sn	2	115	4.080	ppb	2.17	20.0	40.00	
121	Sb	2	115	-0.019	ppb	12.37	2.0	4.00	
137	Ba	2	115	0.024	ppb	2.71	2.0	8.00	
205	Tl	2	209	0.038	ppb	21.40	2.0	4.00	
208	Pb	2	209	0.099	ppb	1.24	0.4	1.20	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	15.24	66.41	35.48	42.9	70 - 120	ISFail
45	Sc	1		138950.08	1.31	138057.45	100.6	70 - 120	
45	Sc	2		3379711.00	0.13	4152726.00	81.4	70 - 120	
72	Ge	1		84587.71	0.44	86466.48	97.8	70 - 120	
115	In	2		5306128.00	1.08	6053544.50	87.7	70 - 120	
209	Bi	2		5285196.00	0.95	5465338.50	96.7	70 - 120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\024_LCS.D\024_LCS.D#

Date Acquired:	May 25 2016 01:19 pm	Sample Name:	**LCS-75167**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	265.50	ppb	1.39	200.00	80 -	120	132.8	Fail
9	Be	2	45	230.30	ppb	1.54	200.00	80 -	120	115.2	
11	B	2	45	218.10	ppb	2.50	200.00	80 -	120	109.1	
23	Na	1	45	5533.00	ppb	0.70	1000.00	80 -	120	553.3	Fail
24	Mg	1	45	5238.00	ppb	1.55	1000.00	80 -	120	523.8	Fail
27	Al	1	45	999.50	ppb	1.92	1000.00	80 -	120	100.0	
39	K	1	45	5086.00	ppb	0.67	1000.00	80 -	120	508.6	Fail
44	Ca	2	45	5038.00	ppb	2.31	1000.00	80 -	120	503.8	Fail
47	Ti	1	45	204.20	ppb	1.05	200.00	80 -	120	102.1	
51	V	1	45	206.00	ppb	0.91	200.00	80 -	120	103.0	
52	Cr	1	45	209.70	ppb	1.37	200.00	80 -	120	104.9	
55	Mn	1	45	204.20	ppb	0.91	200.00	80 -	120	102.1	
56	Fe	1	72	1051.00	ppb	0.49	1000.00	80 -	120	105.1	
59	Co	1	72	217.10	ppb	1.30	200.00	80 -	120	108.6	
60	Ni	1	72	211.20	ppb	0.77	200.00	80 -	120	105.6	
63	Cu	1	72	216.60	ppb	0.69	200.00	80 -	120	108.3	
66	Zn	1	72	201.20	ppb	0.78	200.00	80 -	120	100.6	
75	As	1	72	198.50	ppb	0.79	200.00	80 -	120	99.3	
78	Se	1	72	181.60	ppb	1.57	200.00	80 -	120	90.8	
88	Sr	2	115	207.20	ppb	0.25	200.00	80 -	120	103.6	
95	Mo	2	115	196.20	ppb	1.95	200.00	80 -	120	98.1	
107	Ag	2	115	201.00	ppb	1.97	200.00	80 -	120	100.5	
111	Cd	2	115	195.40	ppb	1.38	200.00	80 -	120	97.7	
118	Sn	2	115	207.70	ppb	2.03	200.00	80 -	120	103.9	
121	Sb	2	115	197.60	ppb	1.42	200.00	80 -	120	98.8	
137	Ba	2	115	201.00	ppb	1.13	200.00	80 -	120	100.5	
205	Tl	2	209	207.40	ppb	0.74	200.00	80 -	120	103.7	
208	Pb	2	209	202.10	ppb	1.58	200.00	80 -	120	101.1	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-63648.56	1.20	35.48	-179389.9	70 -	120	ISFail
45	Sc	1	135627.30	0.80	138057.45	98.2	70 -	120	
45	Sc	2	3333592.00	1.65	4152726.00	80.3	70 -	120	
72	Ge	1	82920.67	0.35	86466.48	95.9	70 -	120	
115	In	2	5124735.00	1.45	6053544.50	84.7	70 -	120	
209	Bi	2	4962097.00	0.47	5465338.50	90.8	70 -	120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\025_LCS.D\025_LCS.D#

Date Acquired:	May 25 2016 01:25 pm	Sample Name:	**LCSD-75167**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCSDICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	268.80	ppb	1.11	200.00	80 -	120	134.4	Fail
9	Be	2	45	229.90	ppb	0.99	200.00	80 -	120	115.0	
11	B	2	45	222.90	ppb	1.01	200.00	80 -	120	111.5	
23	Na	1	45	5547.00	ppb	1.01	1000.00	80 -	120	554.7	Fail
24	Mg	1	45	5263.00	ppb	0.63	1000.00	80 -	120	526.3	Fail
27	Al	1	45	1003.00	ppb	1.56	1000.00	80 -	120	100.3	
39	K	1	45	5171.00	ppb	0.48	1000.00	80 -	120	517.1	Fail
44	Ca	2	45	5040.00	ppb	1.79	1000.00	80 -	120	504.0	Fail
47	Ti	1	45	203.60	ppb	0.62	200.00	80 -	120	101.8	
51	V	1	45	203.30	ppb	0.89	200.00	80 -	120	101.7	
52	Cr	1	45	207.90	ppb	1.21	200.00	80 -	120	104.0	
55	Mn	1	45	204.40	ppb	1.72	200.00	80 -	120	102.2	
56	Fe	1	72	1067.00	ppb	0.76	1000.00	80 -	120	106.7	
59	Co	1	72	215.70	ppb	1.40	200.00	80 -	120	107.9	
60	Ni	1	72	211.90	ppb	0.78	200.00	80 -	120	106.0	
63	Cu	1	72	217.20	ppb	1.43	200.00	80 -	120	108.6	
66	Zn	1	72	200.20	ppb	0.69	200.00	80 -	120	100.1	
75	As	1	72	199.80	ppb	0.97	200.00	80 -	120	99.9	
78	Se	1	72	187.00	ppb	1.05	200.00	80 -	120	93.5	
88	Sr	2	115	206.70	ppb	0.81	200.00	80 -	120	103.4	
95	Mo	2	115	192.30	ppb	0.22	200.00	80 -	120	96.2	
107	Ag	2	115	198.10	ppb	0.71	200.00	80 -	120	99.1	
111	Cd	2	115	193.60	ppb	1.84	200.00	80 -	120	96.8	
118	Sn	2	115	207.00	ppb	1.61	200.00	80 -	120	103.5	
121	Sb	2	115	195.50	ppb	1.11	200.00	80 -	120	97.8	
137	Ba	2	115	198.90	ppb	0.63	200.00	80 -	120	99.5	
205	Tl	2	209	210.80	ppb	1.04	200.00	80 -	120	105.4	
208	Pb	2	209	204.60	ppb	1.39	200.00	80 -	120	102.3	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-64219.47	2.09	35.48	-180999.0	70 -	120	ISFail
45	Sc	1	140421.91	0.70	138057.45	101.7	70 -	120	
45	Sc	2	3352217.80	1.16	4152726.00	80.7	70 -	120	
72	Ge	1	84473.22	0.24	86466.48	97.7	70 -	120	
115	In	2	5205467.00	1.89	6053544.50	86.0	70 -	120	
209	Bi	2	5025508.50	0.46	5465338.50	92.0	70 -	120	

DT QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\028DT1.D\028DT1.D#

Date Acquired:	May 25 2016 01:43 pm	Sample Name:	**1605096-25A SD**
Acq. Method:	DHL_3Fe.M	Misc Info:	SD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	25.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	25.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	12.82	ppb	2.34	-848.41	90 - 110	-7.6	
9	Be	2	45	0.42	ppb	6.99	1.99	90 - 110	105.8	GOOD
11	B	2	45	36.98	ppb	3.50	164.00	90 - 110	112.7	
23	Na	1	45	2996.00	ppb	0.99	14910.00	90 - 110	100.5	GOOD
24	Mg	1	45	2335.00	ppb	1.43	11690.00	90 - 110	99.9	GOOD
27	Al	1	45	11360.00	ppb	2.04	58020.00	90 - 110	97.9	GOOD
39	K	1	45	2290.00	ppb	2.41	11410.00	90 - 110	100.4	GOOD
44	Ca	2	45	26400.00	ppb	1.42	128900.00	90 - 110	102.4	GOOD
47	Ti	1	45	41.07	ppb	5.37	191.20	90 - 110	107.4	GOOD
51	V	1	45	22.58	ppb	2.48	110.80	90 - 110	101.9	GOOD
52	Cr	1	45	13.60	ppb	1.68	66.46	90 - 110	102.3	GOOD
55	Mn	1	45	8.87	ppb	3.13	42.90	90 - 110	103.3	GOOD
56	Fe	1	72	15180.00	ppb	2.69	76410.00	90 - 110	99.3	GOOD
59	Co	1	72	1.18	ppb	3.95	5.72	90 - 110	103.2	GOOD
60	Ni	1	72	2.77	ppb	1.01	13.46	90 - 110	102.9	GOOD
63	Cu	1	72	2.49	ppb	1.04	11.45	90 - 110	108.7	GOOD
66	Zn	1	72	15.07	ppb	0.81	64.32	90 - 110	117.1	
75	As	1	72	7.56	ppb	0.47	36.30	90 - 110	104.2	GOOD
78	Se	1	72	3.61	ppb	7.98	19.12	90 - 110	94.5	GOOD
88	Sr	2	115	1005.00	ppb	2.71	5046.00	90 - 110	99.6	GOOD
95	Mo	2	115	0.43	ppb	8.73	2.03	90 - 110	105.4	GOOD
107	Ag	2	115	0.04	ppb	10.38	0.12	90 - 110	165.7	
111	Cd	2	115	0.13	ppb	30.79	0.39	90 - 110	165.4	
118	Sn	2	115	1.35	ppb	5.51	6.08	90 - 110	111.0	
121	Sb	2	115	0.04	ppb	7.48	0.16	90 - 110	121.8	
137	Ba	2	115	121.10	ppb	2.99	608.50	90 - 110	99.5	GOOD
205	Tl	2	209	0.14	ppb	3.28	0.53	90 - 110	137.3	
208	Pb	2	209	9.87	ppb	1.92	50.79	90 - 110	97.1	GOOD

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHig	-848.41	10.62	35.48	-2391.2	70 -	120	ISFail
45	Sc	1		129534.38	1.03	138057.45	93.8	70 -	120	
45	Sc	2		3098517.00	2.81	4152726.00	74.6	70 -	120	
72	Ge	1		80793.95	0.82	86466.48	93.4	70 -	120	
115	In	2		4839998.50	1.41	6053544.50	80.0	70 -	120	
209	Bi	2		4760438.50	1.01	5465338.50	87.1	70 -	120	

PDS QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\038_PDS.D\038_PDS.D#

Date Acquired:	May 25 2016 02:42 pm	Sample Name:	**1605096-25A PDS**
Acq. Method:	DHL_3Fe.M	Misc Info:	PDS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	292.20	ppb	1.09	-28273.46	200	75-125	######	Fail
9	Be	2	45	199.90	ppb	1.79	1.99	200	75-125	99.0	
11	B	2	45	329.70	ppb	1.97	164.00	200	75-125	82.9	
23	Na	1	45	19190.00	ppb	1.05	14910.00	5000	75-125	85.6	
24	Mg	1	45	16160.00	ppb	1.27	11690.00	5000	75-125	89.4	
27	Al	1	45	61090.00	ppb	1.96	58020.00	5000	75-125	61.4	Fail
39	K	1	45	16090.00	ppb	0.08	11410.00	5000	75-125	93.6	
44	Ca	2	45	131700.00	ppb	2.24	128900.00	5000	75-125	56.0	Fail
47	Ti	1	45	386.80	ppb	1.79	191.20	200	75-125	97.8	
51	V	1	45	308.20	ppb	1.34	110.80	200	75-125	98.7	
52	Cr	1	45	263.90	ppb	0.53	66.46	200	75-125	98.7	
55	Mn	1	45	229.00	ppb	0.80	42.90	200	75-125	93.0	
56	Fe	1	72	79690.00	ppb	1.38	76410.00	5000	75-125	65.6	Fail
59	Co	1	72	211.10	ppb	0.46	5.72	200	75-125	102.7	
60	Ni	1	72	208.40	ppb	0.31	13.46	200	75-125	97.5	
63	Cu	1	72	203.20	ppb	0.75	11.45	200	75-125	95.9	
66	Zn	1	72	243.00	ppb	0.87	64.32	200	75-125	89.3	
75	As	1	72	232.20	ppb	0.41	36.30	200	75-125	98.0	
78	Se	1	72	197.60	ppb	1.10	19.12	200	75-125	89.2	
88	Sr	2	115	5224.00	ppb	2.68	5046.00	200	75-125	89.0	
95	Mo	2	115	188.40	ppb	2.43	2.03	200	75-125	93.2	
107	Ag	2	115	177.20	ppb	2.18	0.12	200	75-125	88.5	
111	Cd	2	115	180.20	ppb	2.88	0.39	200	75-125	89.9	
118	Sn	2	115	204.90	ppb	2.35	6.08	200	75-125	99.4	
121	Sb	2	115	187.10	ppb	2.25	0.16	200	75-125	93.5	
137	Ba	2	115	807.10	ppb	2.41	608.50	200	75-125	99.3	
205	Tl	2	209	207.80	ppb	0.64	0.53	200	75-125	103.6	
208	Pb	2	209	251.80	ppb	1.22	50.79	200	75-125	100.5	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-28273.46	2.85	35.48	-79687.2	70 - 120	ISFail
45	Sc	1	138213.80	0.50	138057.45	100.1	70 - 120	
45	Sc	2	3186713.30	2.32	4152726.00	76.7	70 - 120	
72	Ge	1	81909.52	0.28	86466.48	94.7	70 - 120	
115	In	2	5124928.50	2.46	6053544.50	84.7	70 - 120	
209	Bi	2	4698154.00	1.31	5465338.50	86.0	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\039_MS.D\039_MS.D#

Date Acquired:	May 25 2016 02:48 pm	Sample Name:	**1605096-25A MS**
Acq. Method:	DHL_3Fe.M	Misc Info:	MS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	306.20	ppb	1.47	########	200	80-120	######	Fail
9	Be	2	45	204.90	ppb	1.98	1.99	200	80-120	101.5	
11	B	2	45	326.70	ppb	2.55	164.00	200	80-120	81.4	
23	Na	1	45	18670.00	ppb	3.14	14910.00	1000	80-120	376.0	Fail
24	Mg	1	45	17150.00	ppb	3.98	11690.00	1000	80-120	546.0	Fail
27	Al	1	45	67470.00	ppb	5.08	58020.00	1000	80-120	945.0	Fail
39	K	1	45	16470.00	ppb	4.12	11410.00	1000	80-120	506.0	Fail
44	Ca	2	45	125300.00	ppb	2.42	########	1000	80-120	-360.0	Fail
47	Ti	1	45	309.40	ppb	5.04	191.20	200	80-120	59.1	Fail
51	V	1	45	302.20	ppb	3.61	110.80	200	80-120	95.7	
52	Cr	1	45	265.30	ppb	4.31	66.46	200	80-120	99.4	
55	Mn	1	45	234.20	ppb	4.36	42.90	200	80-120	95.6	
56	Fe	1	72	53960.00	ppb	4.05	76410.00	1000	80-120	######	Fail
59	Co	1	72	212.20	ppb	3.24	5.72	200	80-120	103.2	
60	Ni	1	72	212.60	ppb	3.68	13.46	200	80-120	99.6	
63	Cu	1	72	208.00	ppb	3.43	11.45	200	80-120	98.3	
66	Zn	1	72	241.20	ppb	2.71	64.32	200	80-120	88.4	
75	As	1	72	215.60	ppb	3.22	36.30	200	80-120	89.7	
78	Se	1	72	197.10	ppb	1.90	19.12	200	80-120	89.0	
88	Sr	2	115	3848.00	ppb	2.62	5046.00	200	80-120	-599.0	Fail
95	Mo	2	115	171.20	ppb	1.58	2.03	200	80-120	84.6	
107	Ag	2	115	182.90	ppb	1.37	0.12	200	80-120	91.4	
111	Cd	2	115	187.10	ppb	1.71	0.39	200	80-120	93.4	
118	Sn	2	115	201.40	ppb	2.43	6.08	200	80-120	97.7	
121	Sb	2	115	42.99	ppb	2.08	0.16	200	80-120	21.4	Fail
137	Ba	2	115	786.90	ppb	2.15	608.50	200	80-120	89.2	
205	Tl	2	209	212.60	ppb	1.29	0.53	200	80-120	106.0	
208	Pb	2	209	253.70	ppb	1.54	50.79	200	80-120	101.5	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-60936.06	2.42	35.48	########	70 - 120	ISFail
45	Sc	1	147209.28	3.34	138057.45	106.6	70 - 120	
45	Sc	2	3330153.00	2.22	4152726.00	80.2	70 - 120	
72	Ge	1	86370.90	3.06	86466.48	99.9	70 - 120	
115	In	2	5348178.50	1.48	6053544.50	88.3	70 - 120	
209	Bi	2	4955914.50	1.00	5465338.50	90.7	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\040_MS.D\040_MS.D#

Date Acquired:	May 25 2016 02:54 pm	Sample Name:	**1605096-25A MSD**
Acq. Method:	DHL_3Fe.M	Misc Info:	MSD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	306.10	ppb	0.99	########	200	80-120	######	Fail
9	Be	2	45	202.40	ppb	1.24	1.99	200	80-120	100.2	
11	B	2	45	324.70	ppb	2.14	164.00	200	80-120	80.4	
23	Na	1	45	18310.00	ppb	3.15	14910.00	1000	80-120	340.0	Fail
24	Mg	1	45	16690.00	ppb	2.70	11690.00	1000	80-120	500.0	Fail
27	Al	1	45	65010.00	ppb	2.71	58020.00	1000	80-120	699.0	Fail
39	K	1	45	15950.00	ppb	1.27	11410.00	1000	80-120	454.0	Fail
44	Ca	2	45	135000.00	ppb	2.34	########	1000	80-120	610.0	Fail
47	Ti	1	45	289.50	ppb	2.94	191.20	200	80-120	49.2	Fail
51	V	1	45	301.00	ppb	2.08	110.80	200	80-120	95.1	
52	Cr	1	45	262.20	ppb	2.26	66.46	200	80-120	97.9	
55	Mn	1	45	233.50	ppb	2.50	42.90	200	80-120	95.3	
56	Fe	1	72	54240.00	ppb	3.62	76410.00	1000	80-120	######	Fail
59	Co	1	72	208.00	ppb	2.64	5.72	200	80-120	101.1	
60	Ni	1	72	208.00	ppb	1.78	13.46	200	80-120	97.3	
63	Cu	1	72	203.70	ppb	2.50	11.45	200	80-120	96.1	
66	Zn	1	72	234.90	ppb	1.53	64.32	200	80-120	85.3	
75	As	1	72	214.60	ppb	1.73	36.30	200	80-120	89.2	
78	Se	1	72	191.30	ppb	3.40	19.12	200	80-120	86.1	
88	Sr	2	115	3681.00	ppb	2.07	5046.00	200	80-120	-682.5	Fail
95	Mo	2	115	169.60	ppb	2.42	2.03	200	80-120	83.8	
107	Ag	2	115	182.90	ppb	1.79	0.12	200	80-120	91.4	
111	Cd	2	115	184.30	ppb	2.31	0.39	200	80-120	92.0	
118	Sn	2	115	197.80	ppb	1.58	6.08	200	80-120	95.9	
121	Sb	2	115	47.07	ppb	1.84	0.16	200	80-120	23.5	Fail
137	Ba	2	115	612.20	ppb	1.31	608.50	200	80-120	1.9	Fail
205	Tl	2	209	209.50	ppb	1.36	0.53	200	80-120	104.5	
208	Pb	2	209	249.20	ppb	0.56	50.79	200	80-120	99.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-57666.63	3.82	35.48	########	70 - 120	ISFail
45	Sc	1	135450.27	1.50	138057.45	98.1	70 - 120	
45	Sc	2	3119073.00	2.31	4152726.00	75.1	70 - 120	
72	Ge	1	80387.88	1.58	86466.48	93.0	70 - 120	
115	In	2	4999808.00	1.09	6053544.50	82.6	70 - 120	
209	Bi	2	4706235.00	0.48	5465338.50	86.1	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\041CCV1.D\041CCV1.D#

Date Acquired:	May 25 2016 03:00 pm	Sample Name:	**CCV1-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	257.50	ppb	0.45	200.00	90 -	110	128.8	Fail
9	Be	2	45	230.30	ppb	2.44	200.00	90 -	110	115.2	Fail
11	B	2	45	210.60	ppb	2.71	200.00	90 -	110	105.3	
23	Na	1	45	5402.00	ppb	0.74	5000.00	90 -	110	108.0	
24	Mg	1	45	5092.00	ppb	0.86	5000.00	90 -	110	101.8	
27	Al	1	45	4814.00	ppb	0.34	5000.00	90 -	110	96.3	
39	K	1	45	5125.00	ppb	0.59	5000.00	90 -	110	102.5	
44	Ca	2	45	5132.00	ppb	2.18	5000.00	90 -	110	102.6	
47	Ti	1	45	202.50	ppb	1.72	200.00	90 -	110	101.3	
51	V	1	45	203.10	ppb	0.39	200.00	90 -	110	101.6	
52	Cr	1	45	207.20	ppb	0.80	200.00	90 -	110	103.6	
55	Mn	1	45	202.50	ppb	0.33	200.00	90 -	110	101.3	
56	Fe	1	72	5141.00	ppb	1.27	5000.00	90 -	110	102.8	
59	Co	1	72	212.80	ppb	0.28	200.00	90 -	110	106.4	
60	Ni	1	72	210.40	ppb	0.29	200.00	90 -	110	105.2	
63	Cu	1	72	215.00	ppb	0.83	200.00	90 -	110	107.5	
66	Zn	1	72	212.10	ppb	1.31	200.00	90 -	110	106.1	
75	As	1	72	209.50	ppb	0.46	200.00	90 -	110	104.8	
78	Se	1	72	201.20	ppb	0.93	200.00	90 -	110	100.6	
88	Sr	2	115	208.70	ppb	2.12	200.00	90 -	110	104.4	
95	Mo	2	115	193.00	ppb	1.83	200.00	90 -	110	96.5	
107	Ag	2	115	199.50	ppb	1.62	200.00	90 -	110	99.8	
111	Cd	2	115	200.40	ppb	2.01	200.00	90 -	110	100.2	
118	Sn	2	115	202.00	ppb	2.09	200.00	90 -	110	101.0	
121	Sb	2	115	201.60	ppb	2.05	200.00	90 -	110	100.8	
137	Ba	2	115	203.20	ppb	2.52	200.00	90 -	110	101.6	
205	Tl	2	209	207.80	ppb	1.71	200.00	90 -	110	103.9	
208	Pb	2	209	202.90	ppb	2.08	200.00	90 -	110	101.5	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-58255.70	2.61	35.48	-164190.4	70 -	120		ISFail
45	Sc	1	139384.48	0.65	138057.45	101.0	70 -	120		
45	Sc	2	3205460.80	2.07	4152726.00	77.2	70 -	120		
72	Ge	1	85838.23	0.58	86466.48	99.3	70 -	120		
115	In	2	5231003.00	2.21	6053544.50	86.4	70 -	120		
209	Bi	2	5123227.00	1.40	5465338.50	93.7	70 -	120		

CCB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\042_CCB.D\042_CCB.D#

Date Acquired:	May 25 2016 03:06 pm	Sample Name:	CCB1-160525
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.433	ppb	10.59	2.00	2.00	
9	Be	2	45	0.210	ppb	6.78	0.40	0.30	
11	B	2	45	8.140	ppb	3.37	10.00	10.00	
23	Na	1	45	18.440	ppb	3.23	50.00	#####	
24	Mg	1	45	10.770	ppb	7.42	50.00	#####	
27	Al	1	45	42.930	ppb	4.75	50.00	10.00	FailAq
39	K	1	45	17.510	ppb	4.30	50.00	#####	
44	Ca	2	45	87.150	ppb	9.51	50.00	#####	Failsoil
47	Ti	1	45	0.409	ppb	24.12	4.00	3.00	
51	V	1	45	0.255	ppb	1.93	4.00	3.00	
52	Cr	1	45	0.271	ppb	4.16	2.00	2.00	
55	Mn	1	45	0.282	ppb	5.83	2.00	3.00	
56	Fe	1	72	32.540	ppb	5.08	50.00	30.00	FailAq
59	Co	1	72	0.248	ppb	5.48	2.00	3.00	
60	Ni	1	72	0.244	ppb	9.64	2.00	3.00	
63	Cu	1	72	0.283	ppb	6.39	2.00	2.00	
66	Zn	1	72	1.976	ppb	7.02	4.00	2.00	
75	As	1	72	0.298	ppb	4.53	2.00	2.00	
78	Se	1	72	0.390	ppb	27.96	0.60	2.00	
88	Sr	2	115	1.779	ppb	10.85	4.00	3.00	
95	Mo	2	115	0.269	ppb	5.92	2.00	2.00	
107	Ag	2	115	0.200	ppb	16.49	0.40	1.00	
111	Cd	2	115	0.165	ppb	4.08	0.40	0.30	
118	Sn	2	115	0.320	ppb	8.34	20.00	3.00	
121	Sb	2	115	0.214	ppb	1.57	2.00	0.80	
137	Ba	2	115	0.409	ppb	17.19	2.00	3.00	
205	Tl	2	209	0.363	ppb	9.75	2.00	0.50	
208	Pb	2	209	0.288	ppb	10.51	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-65.03	9.06	35.48	-183.3	70 - 120	ISFail
45	Sc	1		139664.42	1.41	138057.45	101.2	70 - 120	
45	Sc	2		3457188.00	1.46	4152726.00	83.3	70 - 120	
72	Ge	1		86696.27	1.74	86466.48	100.3	70 - 120	
115	In	2		5560422.00	1.08	6053544.50	91.9	70 - 120	
209	Bi	2		5387535.50	0.59	5465338.50	98.6	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\043LCVL.D\043LCVL.D#

Date Acquired:	May 25 2016 03:12 pm	Sample Name:	**LCVL1-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	12.40	ppb	2.28	5.00	70 -	130	248.0	Fail
9	Be	2	45	1.22	ppb	7.42	1.00	70 -	130	122.1	
11	B	2	45	23.03	ppb	3.21	20.00	70 -	130	115.2	
23	Na	1	45	111.10	ppb	2.30	100.00	70 -	130	111.1	
24	Mg	1	45	104.60	ppb	1.42	100.00	70 -	130	104.6	
27	Al	1	45	114.50	ppb	5.19	100.00	70 -	130	114.5	
39	K	1	45	106.70	ppb	2.79	100.00	70 -	130	106.7	
44	Ca	2	45	133.40	ppb	5.49	100.00	70 -	130	133.4	Fail
47	Ti	1	45	5.17	ppb	15.21	5.00	70 -	130	103.3	
51	V	1	45	1.10	ppb	7.94	1.00	70 -	130	109.8	
52	Cr	1	45	5.35	ppb	0.54	5.00	70 -	130	107.1	
55	Mn	1	45	5.06	ppb	3.50	5.00	70 -	130	101.3	
56	Fe	1	72	117.60	ppb	0.47	100.00	70 -	130	117.6	
59	Co	1	72	5.21	ppb	2.27	5.00	70 -	130	104.2	
60	Ni	1	72	5.31	ppb	1.44	5.00	70 -	130	106.2	
63	Cu	1	72	5.40	ppb	0.49	5.00	70 -	130	107.9	
66	Zn	1	72	6.15	ppb	6.56	5.00	70 -	130	123.1	
75	As	1	72	5.30	ppb	1.29	5.00	70 -	130	106.1	
78	Se	1	72	5.41	ppb	7.33	5.00	70 -	130	108.1	
88	Sr	2	115	5.90	ppb	4.12	5.00	70 -	130	118.0	
95	Mo	2	115	4.86	ppb	5.28	5.00	70 -	130	97.1	
107	Ag	2	115	1.99	ppb	1.99	2.00	70 -	130	99.7	
111	Cd	2	115	1.04	ppb	2.74	1.00	70 -	130	103.6	
118	Sn	2	115	5.06	ppb	2.31	5.00	70 -	130	101.3	
121	Sb	2	115	2.04	ppb	2.42	2.00	70 -	130	101.8	
137	Ba	2	115	5.12	ppb	3.57	5.00	70 -	130	102.5	
205	Tl	2	209	1.09	ppb	5.30	1.00	70 -	130	108.6	
208	Pb	2	209	1.13	ppb	4.50	1.00	70 -	130	112.8	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigh	-1497.45	11.42	35.48	-4220.5	70 -	120	ISFail
45	Sc	1		142045.39	1.34	138057.45	102.9	70 -	120	
45	Sc	2		3463241.30	1.23	4152726.00	83.4	70 -	120	
72	Ge	1		88739.16	0.94	86466.48	102.6	70 -	120	
115	In	2		5506156.00	0.93	6053544.50	91.0	70 -	120	
209	Bi	2		5359035.00	1.62	5465338.50	98.1	70 -	120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\054CCV1.D\054CCV1.D#

Date Acquired:	May 25 2016 04:18 pm	Sample Name:	CCV2-160525
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	225.40	ppb	0.21	200.00	90 -	110	112.7	Fail
9	Be	2	45	211.30	ppb	1.77	200.00	90 -	110	105.7	
11	B	2	45	198.60	ppb	2.38	200.00	90 -	110	99.3	
23	Na	1	45	5226.00	ppb	0.92	5000.00	90 -	110	104.5	
24	Mg	1	45	4977.00	ppb	1.10	5000.00	90 -	110	99.5	
27	Al	1	45	4873.00	ppb	1.46	5000.00	90 -	110	97.5	
39	K	1	45	5113.00	ppb	0.41	5000.00	90 -	110	102.3	
44	Ca	2	45	5051.00	ppb	1.81	5000.00	90 -	110	101.0	
47	Ti	1	45	201.50	ppb	1.99	200.00	90 -	110	100.8	
51	V	1	45	198.70	ppb	1.14	200.00	90 -	110	99.4	
52	Cr	1	45	200.70	ppb	0.78	200.00	90 -	110	100.4	
55	Mn	1	45	202.80	ppb	1.25	200.00	90 -	110	101.4	
56	Fe	1	72	5102.00	ppb	1.59	5000.00	90 -	110	102.0	
59	Co	1	72	209.40	ppb	0.87	200.00	90 -	110	104.7	
60	Ni	1	72	205.50	ppb	1.00	200.00	90 -	110	102.8	
63	Cu	1	72	211.20	ppb	1.15	200.00	90 -	110	105.6	
66	Zn	1	72	206.70	ppb	1.03	200.00	90 -	110	103.4	
75	As	1	72	207.30	ppb	0.29	200.00	90 -	110	103.7	
78	Se	1	72	207.90	ppb	1.46	200.00	90 -	110	104.0	
88	Sr	2	115	206.50	ppb	1.66	200.00	90 -	110	103.3	
95	Mo	2	115	192.20	ppb	1.18	200.00	90 -	110	96.1	
107	Ag	2	115	197.00	ppb	1.23	200.00	90 -	110	98.5	
111	Cd	2	115	197.40	ppb	2.02	200.00	90 -	110	98.7	
118	Sn	2	115	199.90	ppb	0.92	200.00	90 -	110	100.0	
121	Sb	2	115	197.90	ppb	1.46	200.00	90 -	110	99.0	
137	Ba	2	115	203.50	ppb	2.00	200.00	90 -	110	101.8	
205	Tl	2	209	209.70	ppb	1.11	200.00	90 -	110	104.9	
208	Pb	2	209	203.70	ppb	2.03	200.00	90 -	110	101.9	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-59303.85	1.51	35.48	-167144.6	70 -	120		ISFail
45	Sc	1	144873.81	0.12	138057.45	104.9	70 -	120		
45	Sc	2	3665770.80	1.24	4152726.00	88.3	70 -	120		
72	Ge	1	88156.38	0.14	86466.48	102.0	70 -	120		
115	In	2	5908646.50	1.34	6053544.50	97.6	70 -	120		
209	Bi	2	5578386.00	1.19	5465338.50	102.1	70 -	120		

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\056LCVL.D\056LCVL.D#

Date Acquired:	May 25 2016 04:30 pm	Sample Name:	**LCVL2-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	11.09	ppb	0.45	5.00	70 -	130	221.8	Fail
9	Be	2	45	1.10	ppb	6.50	1.00	70 -	130	109.7	
11	B	2	45	20.80	ppb	2.69	20.00	70 -	130	104.0	
23	Na	1	45	101.60	ppb	2.22	100.00	70 -	130	101.6	
24	Mg	1	45	103.60	ppb	1.50	100.00	70 -	130	103.6	
27	Al	1	45	116.40	ppb	2.81	100.00	70 -	130	116.4	
39	K	1	45	102.70	ppb	1.45	100.00	70 -	130	102.7	
44	Ca	2	45	119.00	ppb	1.99	100.00	70 -	130	119.0	
47	Ti	1	45	5.30	ppb	14.60	5.00	70 -	130	106.0	
51	V	1	45	1.07	ppb	6.47	1.00	70 -	130	106.7	
52	Cr	1	45	5.08	ppb	2.77	5.00	70 -	130	101.6	
55	Mn	1	45	5.16	ppb	1.97	5.00	70 -	130	103.3	
56	Fe	1	72	119.40	ppb	0.83	100.00	70 -	130	119.4	
59	Co	1	72	5.08	ppb	0.48	5.00	70 -	130	101.6	
60	Ni	1	72	5.09	ppb	3.22	5.00	70 -	130	101.8	
63	Cu	1	72	5.18	ppb	1.83	5.00	70 -	130	103.5	
66	Zn	1	72	5.26	ppb	4.09	5.00	70 -	130	105.2	
75	As	1	72	5.21	ppb	2.67	5.00	70 -	130	104.2	
78	Se	1	72	5.47	ppb	5.73	5.00	70 -	130	109.4	
88	Sr	2	115	4.94	ppb	2.79	5.00	70 -	130	98.7	
95	Mo	2	115	4.52	ppb	0.94	5.00	70 -	130	90.5	
107	Ag	2	115	1.93	ppb	1.90	2.00	70 -	130	96.4	
111	Cd	2	115	1.03	ppb	5.60	1.00	70 -	130	102.5	
118	Sn	2	115	4.85	ppb	4.00	5.00	70 -	130	96.9	
121	Sb	2	115	1.93	ppb	3.99	2.00	70 -	130	96.5	
137	Ba	2	115	5.09	ppb	1.65	5.00	70 -	130	101.8	
205	Tl	2	209	1.02	ppb	2.71	1.00	70 -	130	101.8	
208	Pb	2	209	1.13	ppb	3.93	1.00	70 -	130	112.7	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-1460.79	0.75	35.48	-4117.2	70 -	120	ISFail
45	Sc	1	150917.67	0.48	138057.45	109.3	70 -	120	
45	Sc	2	3788611.30	1.71	4152726.00	91.2	70 -	120	
72	Ge	1	93323.72	1.25	86466.48	107.9	70 -	120	
115	In	2	6153700.50	1.04	6053544.50	101.7	70 -	120	
209	Bi	2	5856716.50	1.29	5465338.50	107.2	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\057_CCB.D\057_CCB.D#

Date Acquired:	May 25 2016 04:36 pm	Sample Name:	**CCB2-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.114	ppb	8.83	2.00	2.00	
9	Be	2	45	0.026	ppb	15.55	0.40	0.30	
11	B	2	45	3.723	ppb	0.50	10.00	10.00	
23	Na	1	45	4.689	ppb	1.05	50.00	#####	
24	Mg	1	45	3.487	ppb	5.70	50.00	#####	
27	Al	1	45	23.370	ppb	4.47	50.00	10.00	FailAq
39	K	1	45	6.262	ppb	2.69	50.00	#####	
44	Ca	2	45	40.080	ppb	3.91	50.00	#####	
47	Ti	1	45	0.121	ppb	86.59	4.00	3.00	
51	V	1	45	0.057	ppb	2.01	4.00	3.00	
52	Cr	1	45	0.044	ppb	6.31	2.00	2.00	
55	Mn	1	45	0.196	ppb	16.30	2.00	3.00	
56	Fe	1	72	13.720	ppb	2.72	50.00	30.00	
59	Co	1	72	0.024	ppb	25.55	2.00	3.00	
60	Ni	1	72	0.064	ppb	10.29	2.00	3.00	
63	Cu	1	72	0.066	ppb	4.40	2.00	2.00	
66	Zn	1	72	0.107	ppb	8.21	4.00	2.00	
75	As	1	72	0.053	ppb	9.85	2.00	2.00	
78	Se	1	72	0.044	ppb	12.06	0.60	2.00	
88	Sr	2	115	0.283	ppb	2.14	4.00	3.00	
95	Mo	2	115	0.039	ppb	30.52	2.00	2.00	
107	Ag	2	115	0.036	ppb	18.90	0.40	1.00	
111	Cd	2	115	0.028	ppb	63.94	0.40	0.30	
118	Sn	2	115	0.062	ppb	7.28	20.00	3.00	
121	Sb	2	115	0.010	ppb	5.36	2.00	0.80	
137	Ba	2	115	0.139	ppb	9.14	2.00	3.00	
205	Tl	2	209	0.040	ppb	4.45	2.00	0.50	
208	Pb	2	209	0.117	ppb	10.66	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	18.42	181.11	35.48	51.9	70 - 120	ISFail
45	Sc	1		148528.41	0.64	138057.45	107.6	70 - 120	
45	Sc	2		3836923.00	1.21	4152726.00	92.4	70 - 120	
72	Ge	1		91909.60	0.57	86466.48	106.3	70 - 120	
115	In	2		6127724.50	0.47	6053544.50	101.2	70 - 120	
209	Bi	2		5867469.00	1.09	5465338.50	107.4	70 - 120	

PB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\058__PB.D\058__PB.D#

Date Acquired:	May 25 2016 04:42 pm	Sample Name:	MB-75203
Acq. Method:	DHL_3Fe.M	Misc Info:	MBLKICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	MDL	RL	Flag
7	Li	2	45	0.052	ppb	5.69	2.0	8.00	
9	Be	2	45	0.006	ppb	29.86	0.4	1.20	
11	B	2	45	1.222	ppb	2.33	10.0	30.00	
23	Na	1	45	7.187	ppb	3.90	50.0	#####	
24	Mg	1	45	2.873	ppb	6.86	50.0	#####	
27	Al	1	45	10.570	ppb	15.15	50.0	#####	
39	K	1	45	9.829	ppb	5.31	50.0	#####	
44	Ca	2	45	27.850	ppb	1.96	50.0	#####	
47	Ti	1	45	0.138	ppb	49.50	4.0	10.00	
51	V	1	45	0.027	ppb	10.18	4.0	10.00	
52	Cr	1	45	0.271	ppb	9.95	2.0	8.00	
55	Mn	1	45	0.187	ppb	7.19	2.0	8.00	
56	Fe	1	72	14.690	ppb	2.55	50.0	#####	
59	Co	1	72	0.016	ppb	13.28	2.0	8.00	
60	Ni	1	72	0.193	ppb	2.88	2.0	8.00	
63	Cu	1	72	0.121	ppb	1.58	2.0	8.00	
66	Zn	1	72	2.627	ppb	6.25	4.0	10.00	
75	As	1	72	0.011	ppb	24.64	2.0	4.00	
78	Se	1	72	0.070	ppb	18.90	0.6	2.00	
88	Sr	2	115	0.083	ppb	3.46	4.0	10.00	
95	Mo	2	115	0.026	ppb	5.73	2.0	8.00	
107	Ag	2	115	0.014	ppb	14.53	0.4	0.80	
111	Cd	2	115	0.024	ppb	51.24	0.4	1.20	
118	Sn	2	115	3.856	ppb	2.48	20.0	40.00	
121	Sb	2	115	-0.006	ppb	7.39	2.0	4.00	
137	Ba	2	115	0.100	ppb	8.00	2.0	8.00	
205	Tl	2	209	0.025	ppb	21.94	2.0	4.00	
208	Pb	2	209	0.094	ppb	3.41	0.4	1.20	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	-8.23	156.95	35.48	-23.2	70 - 120	ISFail
45	Sc	1		151404.89	1.26	138057.45	109.7	70 - 120	
45	Sc	2		3947981.80	2.19	4152726.00	95.1	70 - 120	
72	Ge	1		92794.41	0.92	86466.48	107.3	70 - 120	
115	In	2		6311580.00	0.89	6053544.50	104.3	70 - 120	
209	Bi	2		5844232.00	1.05	5465338.50	106.9	70 - 120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\059_LCS.D\059_LCS.D#

Date Acquired:	May 25 2016 04:48 pm	Sample Name:	**LCS-75203**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	221.40	ppb	1.68	200.00	80 -	120	110.7	
9	Be	2	45	198.60	ppb	1.74	200.00	80 -	120	99.3	
11	B	2	45	193.10	ppb	1.13	200.00	80 -	120	96.6	
23	Na	1	45	5242.00	ppb	0.82	1000.00	80 -	120	524.2	Fail
24	Mg	1	45	5010.00	ppb	1.14	1000.00	80 -	120	501.0	Fail
27	Al	1	45	1000.00	ppb	2.40	1000.00	80 -	120	100.0	
39	K	1	45	5160.00	ppb	0.99	1000.00	80 -	120	516.0	Fail
44	Ca	2	45	5092.00	ppb	3.30	1000.00	80 -	120	509.2	Fail
47	Ti	1	45	205.30	ppb	3.06	200.00	80 -	120	102.7	
51	V	1	45	195.60	ppb	1.09	200.00	80 -	120	97.8	
52	Cr	1	45	197.60	ppb	1.17	200.00	80 -	120	98.8	
55	Mn	1	45	202.50	ppb	0.88	200.00	80 -	120	101.3	
56	Fe	1	72	14.90	ppb	18.41	1000.00	80 -	120	1.5	Fail
59	Co	1	72	207.00	ppb	1.21	200.00	80 -	120	103.5	
60	Ni	1	72	202.70	ppb	1.39	200.00	80 -	120	101.4	
63	Cu	1	72	206.00	ppb	1.08	200.00	80 -	120	103.0	
66	Zn	1	72	192.30	ppb	1.08	200.00	80 -	120	96.2	
75	As	1	72	195.00	ppb	0.84	200.00	80 -	120	97.5	
78	Se	1	72	187.10	ppb	1.10	200.00	80 -	120	93.6	
88	Sr	2	115	206.20	ppb	2.35	200.00	80 -	120	103.1	
95	Mo	2	115	190.60	ppb	1.83	200.00	80 -	120	95.3	
107	Ag	2	115	195.30	ppb	1.81	200.00	80 -	120	97.7	
111	Cd	2	115	188.00	ppb	1.43	200.00	80 -	120	94.0	
118	Sn	2	115	201.50	ppb	2.31	200.00	80 -	120	100.8	
121	Sb	2	115	192.00	ppb	1.62	200.00	80 -	120	96.0	
137	Ba	2	115	198.80	ppb	1.76	200.00	80 -	120	99.4	
205	Tl	2	209	210.30	ppb	0.80	200.00	80 -	120	105.2	
208	Pb	2	209	202.40	ppb	1.32	200.00	80 -	120	101.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-63158.17	2.44	35.48	-178007.8	70 -	120	ISFail
45	Sc	1	153352.81	0.32	138057.45	111.1	70 -	120	
45	Sc	2	3881132.80	0.82	4152726.00	93.5	70 -	120	
72	Ge	1	92384.76	0.43	86466.48	106.8	70 -	120	
115	In	2	6182055.50	1.66	6053544.50	102.1	70 -	120	
209	Bi	2	5695322.50	0.68	5465338.50	104.2	70 -	120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\060_LCS.D\060_LCS.D#

Date Acquired:	May 25 2016 04:54 pm	Sample Name:	**LCSD-75203**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCSDICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	214.70	ppb	0.85	200.00	80 -	120	107.4	
9	Be	2	45	195.10	ppb	1.78	200.00	80 -	120	97.6	
11	B	2	45	192.40	ppb	0.96	200.00	80 -	120	96.2	
23	Na	1	45	5183.00	ppb	1.22	1000.00	80 -	120	518.3	Fail
24	Mg	1	45	4973.00	ppb	0.94	1000.00	80 -	120	497.3	Fail
27	Al	1	45	984.90	ppb	0.67	1000.00	80 -	120	98.5	
39	K	1	45	5084.00	ppb	0.66	1000.00	80 -	120	508.4	Fail
44	Ca	2	45	5039.00	ppb	3.08	1000.00	80 -	120	503.9	Fail
47	Ti	1	45	198.90	ppb	1.04	200.00	80 -	120	99.5	
51	V	1	45	195.20	ppb	0.90	200.00	80 -	120	97.6	
52	Cr	1	45	196.20	ppb	1.21	200.00	80 -	120	98.1	
55	Mn	1	45	200.40	ppb	0.58	200.00	80 -	120	100.2	
56	Fe	1	72	7.12	ppb	2.67	1000.00	80 -	120	0.7	Fail
59	Co	1	72	204.30	ppb	0.58	200.00	80 -	120	102.2	
60	Ni	1	72	201.10	ppb	0.81	200.00	80 -	120	100.6	
63	Cu	1	72	204.40	ppb	0.29	200.00	80 -	120	102.2	
66	Zn	1	72	192.20	ppb	0.54	200.00	80 -	120	96.1	
75	As	1	72	192.40	ppb	0.71	200.00	80 -	120	96.2	
78	Se	1	72	186.50	ppb	0.61	200.00	80 -	120	93.3	
88	Sr	2	115	200.70	ppb	1.28	200.00	80 -	120	100.4	
95	Mo	2	115	186.40	ppb	1.26	200.00	80 -	120	93.2	
107	Ag	2	115	191.80	ppb	1.50	200.00	80 -	120	95.9	
111	Cd	2	115	184.90	ppb	1.28	200.00	80 -	120	92.5	
118	Sn	2	115	198.80	ppb	1.23	200.00	80 -	120	99.4	
121	Sb	2	115	188.40	ppb	1.39	200.00	80 -	120	94.2	
137	Ba	2	115	195.40	ppb	2.14	200.00	80 -	120	97.7	
205	Tl	2	209	204.70	ppb	1.07	200.00	80 -	120	102.4	
208	Pb	2	209	200.90	ppb	1.68	200.00	80 -	120	100.5	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-62425.43	2.23	35.48	-175942.6	70 -	120	ISFail
45	Sc	1	152501.11	0.45	138057.45	110.5	70 -	120	
45	Sc	2	3952946.00	0.93	4152726.00	95.2	70 -	120	
72	Ge	1	92354.59	0.31	86466.48	106.8	70 -	120	
115	In	2	6303113.50	1.09	6053544.50	104.1	70 -	120	
209	Bi	2	5781782.50	1.24	5465338.50	105.8	70 -	120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\062AREF.D\062AREF.D#

Date Acquired:	May 25 2016 05:06 pm	Sample Name:	**1605097-28A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	53.870	ppb	#REF!	1.90	2000.00	>RL
9	Be	2	45	2.287	ppb	#REF!	8.37	2000.00	>RL
11	B	2	45	66.330	ppb	#REF!	2.97	2000.00	>RL
23	Na	1	45	2812.000	ppb	#REF!	0.26	25000.00	>RL
24	Mg	1	45	12380.000	ppb	#REF!	1.17	25000.00	>RL
27	Al	1	45	59530.000	ppb	#REF!	1.15	10000.00	OUTCAL
39	K	1	45	14360.000	ppb	#REF!	0.27	25000.00	>RL
44	Ca	2	45	92720.000	ppb	#REF!	2.57	25000.00	OUTCAL
47	Ti	1	45	489.500	ppb	#REF!	0.49	2000.00	>RL
51	V	1	45	94.150	ppb	#REF!	1.26	2000.00	>RL
52	Cr	1	45	65.890	ppb	#REF!	0.80	2000.00	>RL
55	Mn	1	45	702.600	ppb	#REF!	1.10	2000.00	>RL
56	Fe	1	72	54530.000	ppb	#REF!	1.36	10000.00	OUTCAL
59	Co	1	72	18.420	ppb	#REF!	0.98	2000.00	>RL
60	Ni	1	72	37.460	ppb	#REF!	0.13	2000.00	>RL
63	Cu	1	72	55.890	ppb	#REF!	0.84	2000.00	>RL
66	Zn	1	72	420.000	ppb	#REF!	0.57	2000.00	>RL
75	As	1	72	19.830	ppb	#REF!	0.71	2000.00	>RL
78	Se	1	72	19.310	ppb	#REF!	1.77	2000.00	>RL
88	Sr	2	115	338.300	ppb	#REF!	2.53	2000.00	>RL
95	Mo	2	115	1.866	ppb	#REF!	4.67	2000.00	ND
107	Ag	2	115	0.347	ppb	#REF!	9.02	500.00	ND
111	Cd	2	115	1.476	ppb	#REF!	4.52	2000.00	>RL
118	Sn	2	115	6.700	ppb	#REF!	3.86	2000.00	J
121	Sb	2	115	4.070	ppb	#REF!	4.54	500.00	>RL
137	Ba	2	115	698.300	ppb	#REF!	3.02	2000.00	>RL
205	Tl	2	209	0.689	ppb	#REF!	7.91	2000.00	ND
208	Pb	2	209	127.600	ppb	#REF!	2.01	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5439.20	9.70	RHigh	35.48	-15330.1	70 - 120	ISFail
45	Sc	1	147746.67	0.41		138057.45	107.0	70 - 120	
45	Sc	2	3791624.30	2.04		4152726.00	91.3	70 - 120	
72	Ge	1	88550.49	0.83		86466.48	102.4	70 - 120	
115	In	2	5875712.00	2.46		6053544.50	97.1	70 - 120	
209	Bi	2	5299272.00	2.06		5465338.50	97.0	70 - 120	

DT QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\063DT1.D\063DT1.D#

Date Acquired:	May 25 2016 05:12 pm	Sample Name:	**1605097-28A SD**
Acq. Method:	DHL_3Fe.M	Misc Info:	SD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	25.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	25.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	10.68	ppb	0.31	-1009.98	90 - 110	-5.3	
9	Be	2	45	0.50	ppb	4.56	2.29	90 - 110	108.4	GOOD
11	B	2	45	14.59	ppb	1.96	66.33	90 - 110	110.0	GOOD
23	Na	1	45	550.40	ppb	0.62	2812.00	90 - 110	97.9	GOOD
24	Mg	1	45	2388.00	ppb	1.70	12380.00	90 - 110	96.4	GOOD
27	Al	1	45	11330.00	ppb	2.01	59530.00	90 - 110	95.2	GOOD
39	K	1	45	2808.00	ppb	0.81	14360.00	90 - 110	97.8	GOOD
44	Ca	2	45	18700.00	ppb	0.84	92720.00	90 - 110	100.8	GOOD
47	Ti	1	45	96.33	ppb	4.93	489.50	90 - 110	98.4	GOOD
51	V	1	45	18.26	ppb	0.83	94.15	90 - 110	97.0	GOOD
52	Cr	1	45	12.95	ppb	2.42	65.89	90 - 110	98.3	GOOD
55	Mn	1	45	138.80	ppb	0.88	702.60	90 - 110	98.8	GOOD
56	Fe	1	72	10530.00	ppb	1.55	54530.00	90 - 110	96.6	GOOD
59	Co	1	72	3.62	ppb	2.09	18.42	90 - 110	98.1	GOOD
60	Ni	1	72	7.57	ppb	1.52	37.46	90 - 110	101.0	GOOD
63	Cu	1	72	11.57	ppb	1.48	55.89	90 - 110	103.5	GOOD
66	Zn	1	72	91.25	ppb	1.39	420.00	90 - 110	108.6	GOOD
75	As	1	72	4.02	ppb	2.27	19.83	90 - 110	101.4	GOOD
78	Se	1	72	3.79	ppb	4.59	19.31	90 - 110	98.1	GOOD
88	Sr	2	115	63.06	ppb	1.25	338.30	90 - 110	93.2	GOOD
95	Mo	2	115	0.38	ppb	5.61	1.87	90 - 110	101.9	GOOD
107	Ag	2	115	0.10	ppb	1.12	0.35	90 - 110	144.4	
111	Cd	2	115	0.35	ppb	11.00	1.48	90 - 110	118.0	
118	Sn	2	115	1.38	ppb	3.37	6.70	90 - 110	102.6	GOOD
121	Sb	2	115	0.81	ppb	2.46	4.07	90 - 110	98.9	GOOD
137	Ba	2	115	134.60	ppb	1.51	698.30	90 - 110	96.4	GOOD
205	Tl	2	209	0.17	ppb	4.40	0.69	90 - 110	121.4	
208	Pb	2	209	24.44	ppb	1.42	127.60	90 - 110	95.8	GOOD

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHig	-1009.98	6.08	35.48	-2846.6	70 -	120	ISFail
45	Sc	1		148827.52	0.63	138057.45	107.8	70 -	120	
45	Sc	2		3881641.80	1.01	4152726.00	93.5	70 -	120	
72	Ge	1		91383.96	0.18	86466.48	105.7	70 -	120	
115	In	2		6188540.50	0.88	6053544.50	102.2	70 -	120	
209	Bi	2		5756888.50	1.23	5465338.50	105.3	70 -	120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\064SMPL.D\064SMPL.D#

Date Acquired:	May 25 2016 05:18 pm	Sample Name:	**1605097-08A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	142.200	ppb	#REF!	0.81	2000.00	>RL
9	Be	2	45	4.147	ppb	#REF!	2.54	2000.00	>RL
11	B	2	45	134.400	ppb	#REF!	3.30	2000.00	>RL
23	Na	1	45	2572.000	ppb	#REF!	0.64	25000.00	>RL
24	Mg	1	45	17820.000	ppb	#REF!	0.75	25000.00	>RL
27	Al	1	45	72430.000	ppb	#REF!	0.72	10000.00	OUTCAL
39	K	1	45	18060.000	ppb	#REF!	1.17	25000.00	>RL
44	Ca	2	45	83040.000	ppb	#REF!	1.47	25000.00	OUTCAL
47	Ti	1	45	166.200	ppb	#REF!	1.10	2000.00	>RL
51	V	1	45	116.700	ppb	#REF!	1.38	2000.00	>RL
52	Cr	1	45	79.020	ppb	#REF!	1.02	2000.00	>RL
55	Mn	1	45	1101.000	ppb	#REF!	0.92	2000.00	>RL
56	Fe	1	72	109400.000	ppb	#REF!	0.88	10000.00	OUTCAL
59	Co	1	72	57.130	ppb	#REF!	1.60	2000.00	>RL
60	Ni	1	72	85.840	ppb	#REF!	0.76	2000.00	>RL
63	Cu	1	72	12.800	ppb	#REF!	1.08	2000.00	>RL
66	Zn	1	72	357.100	ppb	#REF!	0.86	2000.00	>RL
75	As	1	72	31.200	ppb	#REF!	0.93	2000.00	>RL
78	Se	1	72	38.340	ppb	#REF!	3.18	2000.00	>RL
88	Sr	2	115	594.000	ppb	#REF!	2.05	2000.00	>RL
95	Mo	2	115	1.796	ppb	#REF!	1.16	2000.00	ND
107	Ag	2	115	0.127	ppb	#REF!	5.35	500.00	ND
111	Cd	2	115	1.046	ppb	#REF!	11.53	2000.00	J
118	Sn	2	115	5.639	ppb	#REF!	2.34	2000.00	ND
121	Sb	2	115	0.391	ppb	#REF!	9.52	500.00	ND
137	Ba	2	115	147.100	ppb	#REF!	2.23	2000.00	>RL
205	Tl	2	209	0.767	ppb	#REF!	1.99	2000.00	ND
208	Pb	2	209	41.640	ppb	#REF!	1.22	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-15430.84	7.57	RHigh	35.48	-43491.0	70 - 120	ISFail
45	Sc	1	146700.56	0.06		138057.45	106.3	70 - 120	
45	Sc	2	3823181.30	1.88		4152726.00	92.1	70 - 120	
72	Ge	1	88533.40	0.34		86466.48	102.4	70 - 120	
115	In	2	5968607.00	1.65		6053544.50	98.6	70 - 120	
209	Bi	2	5262328.50	1.05		5465338.50	96.3	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\065SMPL.D\065SMPL.D#

Date Acquired:	May 25 2016 05:24 pm	Sample Name:	**1605097-09A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	135.100	ppb	#REF!	1.40	2000.00	>RL
9	Be	2	45	3.302	ppb	#REF!	2.80	2000.00	>RL
11	B	2	45	137.700	ppb	#REF!	1.88	2000.00	>RL
23	Na	1	45	5300.000	ppb	#REF!	0.28	25000.00	>RL
24	Mg	1	45	14970.000	ppb	#REF!	1.07	25000.00	>RL
27	Al	1	45	66790.000	ppb	#REF!	1.77	10000.00	OUTCAL
39	K	1	45	15970.000	ppb	#REF!	0.84	25000.00	>RL
44	Ca	2	45	44920.000	ppb	#REF!	2.20	25000.00	OUTCAL
47	Ti	1	45	187.900	ppb	#REF!	3.67	2000.00	>RL
51	V	1	45	122.900	ppb	#REF!	1.41	2000.00	>RL
52	Cr	1	45	78.370	ppb	#REF!	1.91	2000.00	>RL
55	Mn	1	45	176.700	ppb	#REF!	1.63	2000.00	>RL
56	Fe	1	72	112000.000	ppb	#REF!	2.61	10000.00	OUTCAL
59	Co	1	72	24.620	ppb	#REF!	1.44	2000.00	>RL
60	Ni	1	72	40.450	ppb	#REF!	0.07	2000.00	>RL
63	Cu	1	72	14.000	ppb	#REF!	1.72	2000.00	>RL
66	Zn	1	72	248.500	ppb	#REF!	0.18	2000.00	>RL
75	As	1	72	27.160	ppb	#REF!	1.49	2000.00	>RL
78	Se	1	72	21.410	ppb	#REF!	5.50	2000.00	>RL
88	Sr	2	115	298.800	ppb	#REF!	1.64	2000.00	>RL
95	Mo	2	115	0.936	ppb	#REF!	6.72	2000.00	ND
107	Ag	2	115	0.107	ppb	#REF!	7.55	500.00	ND
111	Cd	2	115	0.655	ppb	#REF!	11.75	2000.00	J
118	Sn	2	115	5.713	ppb	#REF!	0.89	2000.00	ND
121	Sb	2	115	0.172	ppb	#REF!	10.66	500.00	ND
137	Ba	2	115	84.400	ppb	#REF!	1.94	2000.00	>RL
205	Tl	2	209	0.409	ppb	#REF!	2.34	2000.00	ND
208	Pb	2	209	33.930	ppb	#REF!	1.35	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-13954.99	2.90	35.48	-39331.4	70 - 120	ISFail
45	Sc	1	145404.66	0.78	138057.45	105.3	70 - 120	
45	Sc	2	3767598.00	2.22	4152726.00	90.7	70 - 120	
72	Ge	1	87422.16	0.32	86466.48	101.1	70 - 120	
115	In	2	5841503.50	0.97	6053544.50	96.5	70 - 120	
209	Bi	2	5121247.00	0.99	5465338.50	93.7	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\066SMPL.D\066SMPL.D#

Date Acquired:	May 25 2016 05:30 pm	Sample Name:	**1605097-10A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	113.300	ppb	#REF!	0.74	2000.00	>RL
9	Be	2	45	3.445	ppb	#REF!	4.86	2000.00	>RL
11	B	2	45	135.600	ppb	#REF!	1.65	2000.00	>RL
23	Na	1	45	6089.000	ppb	#REF!	1.07	25000.00	>RL
24	Mg	1	45	14820.000	ppb	#REF!	1.59	25000.00	>RL
27	Al	1	45	69640.000	ppb	#REF!	1.82	10000.00	OUTCAL
39	K	1	45	16340.000	ppb	#REF!	0.95	25000.00	>RL
44	Ca	2	45	44870.000	ppb	#REF!	2.04	25000.00	OUTCAL
47	Ti	1	45	185.600	ppb	#REF!	1.38	2000.00	>RL
51	V	1	45	117.900	ppb	#REF!	2.10	2000.00	>RL
52	Cr	1	45	78.560	ppb	#REF!	1.19	2000.00	>RL
55	Mn	1	45	1344.000	ppb	#REF!	1.16	2000.00	>RL
56	Fe	1	72	111100.000	ppb	#REF!	1.61	10000.00	OUTCAL
59	Co	1	72	41.530	ppb	#REF!	1.24	2000.00	>RL
60	Ni	1	72	53.740	ppb	#REF!	1.14	2000.00	>RL
63	Cu	1	72	14.130	ppb	#REF!	1.35	2000.00	>RL
66	Zn	1	72	259.600	ppb	#REF!	0.72	2000.00	>RL
75	As	1	72	27.980	ppb	#REF!	1.55	2000.00	>RL
78	Se	1	72	27.560	ppb	#REF!	1.67	2000.00	>RL
88	Sr	2	115	890.200	ppb	#REF!	1.16	2000.00	>RL
95	Mo	2	115	1.586	ppb	#REF!	1.89	2000.00	ND
107	Ag	2	115	0.108	ppb	#REF!	2.39	500.00	ND
111	Cd	2	115	0.800	ppb	#REF!	6.16	2000.00	J
118	Sn	2	115	5.719	ppb	#REF!	1.47	2000.00	ND
121	Sb	2	115	0.266	ppb	#REF!	2.01	500.00	ND
137	Ba	2	115	137.000	ppb	#REF!	2.10	2000.00	>RL
205	Tl	2	209	0.583	ppb	#REF!	4.08	2000.00	ND
208	Pb	2	209	40.220	ppb	#REF!	1.16	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-11488.25	4.43	35.48	-32379.0	70 - 120	ISFail
45	Sc	1	143116.66	0.67	138057.45	103.7	70 - 120	
45	Sc	2	3619966.30	2.09	4152726.00	87.2	70 - 120	
72	Ge	1	86276.96	0.82	86466.48	99.8	70 - 120	
115	In	2	5625527.50	0.53	6053544.50	92.9	70 - 120	
209	Bi	2	4997588.00	0.40	5465338.50	91.4	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\067SMPL.D\067SMPL.D#

Date Acquired:	May 25 2016 05:36 pm	Sample Name:	**1605097-11A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	82.760	ppb	#REF!	1.66	2000.00	>RL
9	Be	2	45	2.536	ppb	#REF!	2.78	2000.00	>RL
11	B	2	45	92.520	ppb	#REF!	2.52	2000.00	>RL
23	Na	1	45	1184.000	ppb	#REF!	0.83	25000.00	>RL
24	Mg	1	45	11600.000	ppb	#REF!	0.66	25000.00	>RL
27	Al	1	45	70810.000	ppb	#REF!	0.24	10000.00	OUTCAL
39	K	1	45	13610.000	ppb	#REF!	1.16	25000.00	>RL
44	Ca	2	45	146600.000	ppb	#REF!	2.61	25000.00	OUTCAL
47	Ti	1	45	263.300	ppb	#REF!	1.29	2000.00	>RL
51	V	1	45	99.300	ppb	#REF!	0.28	2000.00	>RL
52	Cr	1	45	61.930	ppb	#REF!	0.24	2000.00	>RL
55	Mn	1	45	406.200	ppb	#REF!	0.25	2000.00	>RL
56	Fe	1	72	70620.000	ppb	#REF!	0.97	10000.00	OUTCAL
59	Co	1	72	24.170	ppb	#REF!	0.95	2000.00	>RL
60	Ni	1	72	34.650	ppb	#REF!	0.77	2000.00	>RL
63	Cu	1	72	18.850	ppb	#REF!	0.29	2000.00	>RL
66	Zn	1	72	178.400	ppb	#REF!	0.28	2000.00	>RL
75	As	1	72	23.460	ppb	#REF!	0.27	2000.00	>RL
78	Se	1	72	23.910	ppb	#REF!	4.94	2000.00	>RL
88	Sr	2	115	2426.000	ppb	#REF!	2.47	2000.00	OUTCAL
95	Mo	2	115	2.054	ppb	#REF!	2.93	2000.00	J
107	Ag	2	115	0.136	ppb	#REF!	4.23	500.00	ND
111	Cd	2	115	0.793	ppb	#REF!	4.15	2000.00	J
118	Sn	2	115	5.745	ppb	#REF!	1.34	2000.00	ND
121	Sb	2	115	1.452	ppb	#REF!	5.23	500.00	ND
137	Ba	2	115	322.200	ppb	#REF!	2.74	2000.00	>RL
205	Tl	2	209	0.556	ppb	#REF!	0.41	2000.00	ND
208	Pb	2	209	50.170	ppb	#REF!	1.57	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-7284.50	7.61	RHigh	35.48	-20531.0	70 - 120	ISFail
45	Sc	1	142773.48	0.85		138057.45	103.4	70 - 120	
45	Sc	2	3519392.80	2.39		4152726.00	84.7	70 - 120	
72	Ge	1	84866.02	0.78		86466.48	98.1	70 - 120	
115	In	2	5735163.50	1.90		6053544.50	94.7	70 - 120	
209	Bi	2	5191821.50	0.86		5465338.50	95.0	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\068SMPL.D\068SMPL.D#

Date Acquired:	May 25 2016 05:42 pm	Sample Name:	**1605097-12A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	143.700	ppb	#REF!	1.39	2000.00	>RL
9	Be	2	45	4.769	ppb	#REF!	1.14	2000.00	>RL
11	B	2	45	140.000	ppb	#REF!	2.85	2000.00	>RL
23	Na	1	45	2437.000	ppb	#REF!	1.74	25000.00	>RL
24	Mg	1	45	16400.000	ppb	#REF!	1.92	25000.00	>RL
27	Al	1	45	71000.000	ppb	#REF!	2.08	10000.00	OUTCAL
39	K	1	45	18180.000	ppb	#REF!	1.47	25000.00	>RL
44	Ca	2	45	121400.000	ppb	#REF!	3.07	25000.00	OUTCAL
47	Ti	1	45	170.600	ppb	#REF!	3.25	2000.00	>RL
51	V	1	45	116.300	ppb	#REF!	1.20	2000.00	>RL
52	Cr	1	45	73.910	ppb	#REF!	1.44	2000.00	>RL
55	Mn	1	45	1328.000	ppb	#REF!	2.07	2000.00	>RL
56	Fe	1	72	110400.000	ppb	#REF!	2.60	10000.00	OUTCAL
59	Co	1	72	73.880	ppb	#REF!	2.20	2000.00	>RL
60	Ni	1	72	121.900	ppb	#REF!	1.08	2000.00	>RL
63	Cu	1	72	13.970	ppb	#REF!	1.64	2000.00	>RL
66	Zn	1	72	459.200	ppb	#REF!	1.59	2000.00	>RL
75	As	1	72	41.010	ppb	#REF!	1.80	2000.00	>RL
78	Se	1	72	67.640	ppb	#REF!	0.83	2000.00	>RL
88	Sr	2	115	8302.000	ppb	#REF!	2.35	2000.00	OUTCAL
95	Mo	2	115	3.821	ppb	#REF!	2.14	2000.00	J
107	Ag	2	115	0.107	ppb	#REF!	9.71	500.00	ND
111	Cd	2	115	1.289	ppb	#REF!	2.15	2000.00	>RL
118	Sn	2	115	5.247	ppb	#REF!	3.47	2000.00	ND
121	Sb	2	115	0.578	ppb	#REF!	10.96	500.00	ND
137	Ba	2	115	248.500	ppb	#REF!	3.36	2000.00	>RL
205	Tl	2	209	0.935	ppb	#REF!	3.54	2000.00	ND
208	Pb	2	209	42.800	ppb	#REF!	1.06	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-12288.89	4.47	35.48	-34635.5	70 - 120	ISFail
45	Sc	1	137760.64	1.30	138057.45	99.8	70 - 120	
45	Sc	2	3351395.00	2.17	4152726.00	80.7	70 - 120	
72	Ge	1	84619.82	0.64	86466.48	97.9	70 - 120	
115	In	2	5479101.00	2.35	6053544.50	90.5	70 - 120	
209	Bi	2	4894015.50	1.21	5465338.50	89.5	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\069SMPL.D\069SMPL.D#

Date Acquired:	May 25 2016 05:48 pm	Sample Name:	**1605097-13A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	131.400	ppb	#REF!	1.63	2000.00	>RL
9	Be	2	45	3.535	ppb	#REF!	0.18	2000.00	>RL
11	B	2	45	114.900	ppb	#REF!	1.40	2000.00	>RL
23	Na	1	45	2394.000	ppb	#REF!	0.84	25000.00	>RL
24	Mg	1	45	15740.000	ppb	#REF!	1.47	25000.00	>RL
27	Al	1	45	64580.000	ppb	#REF!	3.44	10000.00	OUTCAL
39	K	1	45	15610.000	ppb	#REF!	2.17	25000.00	>RL
44	Ca	2	45	67060.000	ppb	#REF!	2.41	25000.00	OUTCAL
47	Ti	1	45	138.700	ppb	#REF!	3.03	2000.00	>RL
51	V	1	45	102.800	ppb	#REF!	0.89	2000.00	>RL
52	Cr	1	45	72.350	ppb	#REF!	1.73	2000.00	>RL
55	Mn	1	45	935.900	ppb	#REF!	1.69	2000.00	>RL
56	Fe	1	72	95930.000	ppb	#REF!	1.55	10000.00	OUTCAL
59	Co	1	72	46.100	ppb	#REF!	1.37	2000.00	>RL
60	Ni	1	72	66.770	ppb	#REF!	1.85	2000.00	>RL
63	Cu	1	72	12.670	ppb	#REF!	1.29	2000.00	>RL
66	Zn	1	72	300.700	ppb	#REF!	0.65	2000.00	>RL
75	As	1	72	27.070	ppb	#REF!	1.23	2000.00	>RL
78	Se	1	72	33.580	ppb	#REF!	2.12	2000.00	>RL
88	Sr	2	115	897.300	ppb	#REF!	2.77	2000.00	>RL
95	Mo	2	115	1.852	ppb	#REF!	3.23	2000.00	ND
107	Ag	2	115	0.123	ppb	#REF!	1.93	500.00	ND
111	Cd	2	115	0.897	ppb	#REF!	9.51	2000.00	J
118	Sn	2	115	5.404	ppb	#REF!	1.46	2000.00	ND
121	Sb	2	115	0.417	ppb	#REF!	5.34	500.00	ND
137	Ba	2	115	145.100	ppb	#REF!	2.07	2000.00	>RL
205	Tl	2	209	0.701	ppb	#REF!	3.55	2000.00	ND
208	Pb	2	209	36.750	ppb	#REF!	1.26	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-11755.89	11.34	RHigh	35.48	-33133.3	70 - 120	ISFail
45	Sc	1	139860.64	1.00		138057.45	101.3	70 - 120	
45	Sc	2	3418213.30	2.23		4152726.00	82.3	70 - 120	
72	Ge	1	85078.02	0.69		86466.48	98.4	70 - 120	
115	In	2	5489251.00	0.97		6053544.50	90.7	70 - 120	
209	Bi	2	5028501.00	1.08		5465338.50	92.0	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\070SMPL.D\070SMPL.D#

Date Acquired:	May 25 2016 05:54 pm	Sample Name:	**1605097-14A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	148.900	ppb	#REF!	0.86	2000.00	>RL
9	Be	2	45	3.988	ppb	#REF!	4.16	2000.00	>RL
11	B	2	45	158.600	ppb	#REF!	2.50	2000.00	>RL
23	Na	1	45	6590.000	ppb	#REF!	1.35	25000.00	>RL
24	Mg	1	45	17730.000	ppb	#REF!	0.93	25000.00	>RL
27	Al	1	45	84020.000	ppb	#REF!	0.74	10000.00	OUTCAL
39	K	1	45	18140.000	ppb	#REF!	0.77	25000.00	>RL
44	Ca	2	45	38470.000	ppb	#REF!	2.27	25000.00	OUTCAL
47	Ti	1	45	211.100	ppb	#REF!	1.54	2000.00	>RL
51	V	1	45	148.100	ppb	#REF!	1.04	2000.00	>RL
52	Cr	1	45	94.800	ppb	#REF!	0.97	2000.00	>RL
55	Mn	1	45	320.000	ppb	#REF!	0.95	2000.00	>RL
56	Fe	1	72	137600.000	ppb	#REF!	0.95	10000.00	OUTCAL
59	Co	1	72	32.490	ppb	#REF!	1.07	2000.00	>RL
60	Ni	1	72	44.980	ppb	#REF!	0.35	2000.00	>RL
63	Cu	1	72	16.870	ppb	#REF!	0.37	2000.00	>RL
66	Zn	1	72	274.800	ppb	#REF!	0.56	2000.00	>RL
75	As	1	72	32.270	ppb	#REF!	0.62	2000.00	>RL
78	Se	1	72	37.760	ppb	#REF!	3.34	2000.00	>RL
88	Sr	2	115	418.800	ppb	#REF!	2.00	2000.00	>RL
95	Mo	2	115	1.083	ppb	#REF!	2.79	2000.00	ND
107	Ag	2	115	0.097	ppb	#REF!	8.87	500.00	ND
111	Cd	2	115	0.917	ppb	#REF!	4.53	2000.00	J
118	Sn	2	115	6.184	ppb	#REF!	3.32	2000.00	ND
121	Sb	2	115	0.128	ppb	#REF!	10.85	500.00	ND
137	Ba	2	115	95.630	ppb	#REF!	1.73	2000.00	>RL
205	Tl	2	209	0.450	ppb	#REF!	4.61	2000.00	ND
208	Pb	2	209	46.060	ppb	#REF!	1.58	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-13262.26	1.31	35.48	-37378.9	70 - 120	ISFail
45	Sc	1	137341.28	0.57	138057.45	99.5	70 - 120	
45	Sc	2	3431377.80	1.62	4152726.00	82.6	70 - 120	
72	Ge	1	82275.45	0.29	86466.48	95.2	70 - 120	
115	In	2	5359634.00	1.30	6053544.50	88.5	70 - 120	
209	Bi	2	4817572.50	0.97	5465338.50	88.1	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\071SMPL.D\071SMPL.D#

Date Acquired:	May 25 2016 06:00 pm	Sample Name:	**1605097-15A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	123.200	ppb	#REF!	2.12	2000.00	>RL
9	Be	2	45	3.530	ppb	#REF!	3.13	2000.00	>RL
11	B	2	45	135.300	ppb	#REF!	1.75	2000.00	>RL
23	Na	1	45	6189.000	ppb	#REF!	1.02	25000.00	>RL
24	Mg	1	45	15130.000	ppb	#REF!	2.50	25000.00	>RL
27	Al	1	45	71150.000	ppb	#REF!	1.95	10000.00	OUTCAL
39	K	1	45	16590.000	ppb	#REF!	0.98	25000.00	>RL
44	Ca	2	45	39880.000	ppb	#REF!	2.18	25000.00	OUTCAL
47	Ti	1	45	172.200	ppb	#REF!	1.53	2000.00	>RL
51	V	1	45	121.400	ppb	#REF!	1.05	2000.00	>RL
52	Cr	1	45	80.170	ppb	#REF!	1.42	2000.00	>RL
55	Mn	1	45	513.300	ppb	#REF!	1.26	2000.00	>RL
56	Fe	1	72	108000.000	ppb	#REF!	2.20	10000.00	OUTCAL
59	Co	1	72	45.600	ppb	#REF!	1.01	2000.00	>RL
60	Ni	1	72	55.270	ppb	#REF!	1.28	2000.00	>RL
63	Cu	1	72	13.850	ppb	#REF!	1.53	2000.00	>RL
66	Zn	1	72	273.900	ppb	#REF!	1.24	2000.00	>RL
75	As	1	72	28.790	ppb	#REF!	1.24	2000.00	>RL
78	Se	1	72	30.150	ppb	#REF!	2.32	2000.00	>RL
88	Sr	2	115	344.200	ppb	#REF!	2.11	2000.00	>RL
95	Mo	2	115	1.343	ppb	#REF!	4.22	2000.00	ND
107	Ag	2	115	0.100	ppb	#REF!	5.74	500.00	ND
111	Cd	2	115	0.763	ppb	#REF!	3.83	2000.00	J
118	Sn	2	115	5.719	ppb	#REF!	2.49	2000.00	ND
121	Sb	2	115	0.255	ppb	#REF!	1.49	500.00	ND
137	Ba	2	115	107.900	ppb	#REF!	2.88	2000.00	>RL
205	Tl	2	209	0.470	ppb	#REF!	1.20	2000.00	ND
208	Pb	2	209	40.520	ppb	#REF!	1.23	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-11508.06	3.13	35.48	-32434.8	70 - 120	ISFail
45	Sc	1	133895.86	0.69	138057.45	97.0	70 - 120	
45	Sc	2	3450333.30	2.19	4152726.00	83.1	70 - 120	
72	Ge	1	80614.12	0.28	86466.48	93.2	70 - 120	
115	In	2	5432316.00	2.21	6053544.50	89.7	70 - 120	
209	Bi	2	4894297.50	1.62	5465338.50	89.6	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\072SMPL.D\072SMPL.D#

Date Acquired:	May 25 2016 06:06 pm	Sample Name:	**1605097-16A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	38.190	ppb	#REF!	1.28	2000.00	>RL
9	Be	2	45	1.435	ppb	#REF!	1.35	2000.00	>RL
11	B	2	45	52.170	ppb	#REF!	2.07	2000.00	>RL
23	Na	1	45	2625.000	ppb	#REF!	1.09	25000.00	>RL
24	Mg	1	45	7633.000	ppb	#REF!	1.27	25000.00	>RL
27	Al	1	45	35780.000	ppb	#REF!	2.11	10000.00	OUTCAL
39	K	1	45	6754.000	ppb	#REF!	0.98	25000.00	>RL
44	Ca	2	45	60120.000	ppb	#REF!	3.08	25000.00	OUTCAL
47	Ti	1	45	307.500	ppb	#REF!	1.58	2000.00	>RL
51	V	1	45	63.250	ppb	#REF!	2.08	2000.00	>RL
52	Cr	1	45	51.340	ppb	#REF!	1.58	2000.00	>RL
55	Mn	1	45	642.900	ppb	#REF!	1.31	2000.00	>RL
56	Fe	1	72	33560.000	ppb	#REF!	1.62	10000.00	OUTCAL
59	Co	1	72	12.390	ppb	#REF!	1.44	2000.00	>RL
60	Ni	1	72	25.580	ppb	#REF!	2.06	2000.00	>RL
63	Cu	1	72	90.950	ppb	#REF!	1.12	2000.00	>RL
66	Zn	1	72	254.600	ppb	#REF!	1.22	2000.00	>RL
75	As	1	72	16.640	ppb	#REF!	1.15	2000.00	>RL
78	Se	1	72	11.410	ppb	#REF!	4.70	2000.00	>RL
88	Sr	2	115	515.200	ppb	#REF!	2.25	2000.00	>RL
95	Mo	2	115	2.094	ppb	#REF!	4.63	2000.00	J
107	Ag	2	115	0.655	ppb	#REF!	2.07	500.00	J
111	Cd	2	115	0.770	ppb	#REF!	10.93	2000.00	J
118	Sn	2	115	6.741	ppb	#REF!	2.84	2000.00	ND
121	Sb	2	115	1.627	ppb	#REF!	3.01	500.00	ND
137	Ba	2	115	401.900	ppb	#REF!	2.95	2000.00	>RL
205	Tl	2	209	0.433	ppb	#REF!	8.25	2000.00	ND
208	Pb	2	209	38.210	ppb	#REF!	1.84	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-3044.78	14.71	RHigh	35.48	-8581.5	70 - 120	ISFail
45	Sc	1	135190.47	1.13		138057.45	97.9	70 - 120	
45	Sc	2	3359069.30	1.52		4152726.00	80.9	70 - 120	
72	Ge	1	82021.79	0.69		86466.48	94.9	70 - 120	
115	In	2	5438215.50	1.14		6053544.50	89.8	70 - 120	
209	Bi	2	4998157.50	0.88		5465338.50	91.5	70 - 120	

PDS QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\073_PDS.D\073_PDS.D#

Date Acquired:	May 25 2016 06:12 pm	Sample Name:	**1605097-28A PDS**
Acq. Method:	DHL_3Fe.M	Misc Info:	PDS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	269.80	ppb	0.73	-29445.26	200	75-125	######	Fail
9	Be	2	45	194.10	ppb	1.32	2.29	200	75-125	95.9	
11	B	2	45	245.00	ppb	1.31	66.33	200	75-125	89.3	
23	Na	1	45	8248.00	ppb	1.07	2812.00	5000	75-125	108.7	
24	Mg	1	45	17640.00	ppb	0.70	12380.00	5000	75-125	105.2	
27	Al	1	45	65200.00	ppb	1.21	59530.00	5000	75-125	113.4	
39	K	1	45	20050.00	ppb	2.45	14360.00	5000	75-125	113.8	
44	Ca	2	45	98350.00	ppb	2.14	92720.00	5000	75-125	112.6	
47	Ti	1	45	707.30	ppb	1.10	489.50	200	75-125	108.9	
51	V	1	45	300.60	ppb	0.10	94.15	200	75-125	103.2	
52	Cr	1	45	271.20	ppb	0.59	65.89	200	75-125	102.7	
55	Mn	1	45	914.00	ppb	0.17	702.60	200	75-125	105.7	
56	Fe	1	72	60660.00	ppb	0.30	54530.00	5000	75-125	122.6	
59	Co	1	72	228.00	ppb	0.35	18.42	200	75-125	104.8	
60	Ni	1	72	236.70	ppb	1.08	37.46	200	75-125	99.6	
63	Cu	1	72	254.70	ppb	0.44	55.89	200	75-125	99.4	
66	Zn	1	72	610.90	ppb	0.24	420.00	200	75-125	95.5	
75	As	1	72	221.90	ppb	0.16	19.83	200	75-125	101.0	
78	Se	1	72	207.40	ppb	0.68	19.31	200	75-125	94.0	
88	Sr	2	115	543.10	ppb	1.51	338.30	200	75-125	102.4	
95	Mo	2	115	193.60	ppb	1.99	1.87	200	75-125	95.9	
107	Ag	2	115	186.70	ppb	2.34	0.35	200	75-125	93.2	
111	Cd	2	115	186.40	ppb	2.38	1.48	200	75-125	92.5	
118	Sn	2	115	212.70	ppb	1.91	6.70	200	75-125	103.0	
121	Sb	2	115	197.20	ppb	1.89	4.07	200	75-125	96.6	
137	Ba	2	115	910.90	ppb	3.72	698.30	200	75-125	106.3	
205	Tl	2	209	215.20	ppb	1.47	0.69	200	75-125	107.3	
208	Pb	2	209	340.20	ppb	1.15	127.60	200	75-125	106.3	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	RHig	-29445.26	6.43	35.48	-82989.8	70	-	120	ISFail
45	Sc	1		133346.86	0.23	138057.45	96.6	70	-	120	
45	Sc	2		3319231.30	1.25	4152726.00	79.9	70	-	120	
72	Ge	1		79858.46	0.65	86466.48	92.4	70	-	120	
115	In	2		5342066.00	1.33	6053544.50	88.2	70	-	120	
209	Bi	2		4828942.00	1.01	5465338.50	88.4	70	-	120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\074_MS.D\074_MS.D#

Date Acquired:	May 25 2016 06:18 pm	Sample Name:	**1605097-28A MS**
Acq. Method:	DHL_3Fe.M	Misc Info:	MS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	264.30	ppb	1.41	########	200	80-120	######	Fail
9	Be	2	45	187.60	ppb	1.78	2.29	200	80-120	92.7	
11	B	2	45	233.70	ppb	2.27	66.33	200	80-120	83.7	
23	Na	1	45	7959.00	ppb	0.44	2812.00	1000	80-120	514.7	Fail
24	Mg	1	45	17340.00	ppb	0.63	12380.00	1000	80-120	496.0	Fail
27	Al	1	45	62010.00	ppb	0.94	59530.00	1000	80-120	248.0	Fail
39	K	1	45	19400.00	ppb	0.56	14360.00	1000	80-120	504.0	Fail
44	Ca	2	45	97620.00	ppb	1.32	92720.00	1000	80-120	490.0	Fail
47	Ti	1	45	730.70	ppb	0.44	489.50	200	80-120	120.6	Fail
51	V	1	45	289.70	ppb	1.12	94.15	200	80-120	97.8	
52	Cr	1	45	259.80	ppb	1.23	65.89	200	80-120	97.0	
55	Mn	1	45	878.60	ppb	1.28	702.60	200	80-120	88.0	
56	Fe	1	72	54810.00	ppb	1.65	54530.00	1000	80-120	28.0	Fail
59	Co	1	72	217.70	ppb	0.73	18.42	200	80-120	99.6	
60	Ni	1	72	229.40	ppb	0.48	37.46	200	80-120	96.0	
63	Cu	1	72	246.30	ppb	0.77	55.89	200	80-120	95.2	
66	Zn	1	72	585.10	ppb	0.98	420.00	200	80-120	82.6	
75	As	1	72	209.50	ppb	0.42	19.83	200	80-120	94.8	
78	Se	1	72	199.20	ppb	1.77	19.31	200	80-120	89.9	
88	Sr	2	115	542.10	ppb	1.67	338.30	200	80-120	101.9	
95	Mo	2	115	179.40	ppb	1.46	1.87	200	80-120	88.8	
107	Ag	2	115	183.20	ppb	2.02	0.35	200	80-120	91.4	
111	Cd	2	115	182.20	ppb	1.63	1.48	200	80-120	90.4	
118	Sn	2	115	198.50	ppb	2.15	6.70	200	80-120	95.9	
121	Sb	2	115	67.45	ppb	1.96	4.07	200	80-120	31.7	Fail
137	Ba	2	115	969.10	ppb	3.28	698.30	200	80-120	135.4	Fail
205	Tl	2	209	209.70	ppb	1.49	0.69	200	80-120	104.5	
208	Pb	2	209	331.00	ppb	1.38	127.60	200	80-120	101.7	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-55032.41	2.41	35.48	########	70 - 120	ISFail
45	Sc	1	131064.13	0.21	138057.45	94.9	70 - 120	
45	Sc	2	3314812.00	1.64	4152726.00	79.8	70 - 120	
72	Ge	1	78394.84	0.19	86466.48	90.7	70 - 120	
115	In	2	5326506.50	1.70	6053544.50	88.0	70 - 120	
209	Bi	2	4825896.00	1.22	5465338.50	88.3	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\075_MS.D\075_MS.D#

Date Acquired:	May 25 2016 06:23 pm	Sample Name:	**1605097-28A MSD**
Acq. Method:	DHL_3Fe.M	Misc Info:	MSD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	255.20	ppb	0.17	########	200	80-120	######	Fail
9	Be	2	45	184.30	ppb	1.16	2.29	200	80-120	91.0	
11	B	2	45	225.90	ppb	1.27	66.33	200	80-120	79.8	Fail
23	Na	1	45	7648.00	ppb	0.06	2812.00	1000	80-120	483.6	Fail
24	Mg	1	45	16590.00	ppb	1.05	12380.00	1000	80-120	421.0	Fail
27	Al	1	45	59470.00	ppb	2.08	59530.00	1000	80-120	-6.0	Fail
39	K	1	45	18850.00	ppb	0.59	14360.00	1000	80-120	449.0	Fail
44	Ca	2	45	92930.00	ppb	1.91	92720.00	1000	80-120	21.0	Fail
47	Ti	1	45	730.00	ppb	0.25	489.50	200	80-120	120.3	Fail
51	V	1	45	284.10	ppb	0.99	94.15	200	80-120	95.0	
52	Cr	1	45	252.00	ppb	1.21	65.89	200	80-120	93.1	
55	Mn	1	45	851.20	ppb	0.52	702.60	200	80-120	74.3	Fail
56	Fe	1	72	51850.00	ppb	0.84	54530.00	1000	80-120	-268.0	Fail
59	Co	1	72	212.40	ppb	0.44	18.42	200	80-120	97.0	
60	Ni	1	72	224.80	ppb	0.86	37.46	200	80-120	93.7	
63	Cu	1	72	245.20	ppb	0.62	55.89	200	80-120	94.7	
66	Zn	1	72	563.40	ppb	0.58	420.00	200	80-120	71.7	Fail
75	As	1	72	207.60	ppb	0.29	19.83	200	80-120	93.9	
78	Se	1	72	193.40	ppb	1.75	19.31	200	80-120	87.0	
88	Sr	2	115	523.20	ppb	2.04	338.30	200	80-120	92.5	
95	Mo	2	115	177.20	ppb	2.27	1.87	200	80-120	87.7	
107	Ag	2	115	180.10	ppb	1.84	0.35	200	80-120	89.9	
111	Cd	2	115	180.00	ppb	1.81	1.48	200	80-120	89.3	
118	Sn	2	115	196.50	ppb	1.83	6.70	200	80-120	94.9	
121	Sb	2	115	67.52	ppb	1.96	4.07	200	80-120	31.7	Fail
137	Ba	2	115	914.40	ppb	0.75	698.30	200	80-120	108.1	
205	Tl	2	209	204.10	ppb	0.91	0.69	200	80-120	101.7	
208	Pb	2	209	320.20	ppb	1.28	127.60	200	80-120	96.3	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-53763.51	1.84	35.48	########	70 - 120	ISFail
45	Sc	1	130317.94	0.29	138057.45	94.4	70 - 120	
45	Sc	2	3323918.00	1.13	4152726.00	80.0	70 - 120	
72	Ge	1	78498.56	0.23	86466.48	90.8	70 - 120	
115	In	2	5302083.00	1.81	6053544.50	87.6	70 - 120	
209	Bi	2	4801700.00	0.56	5465338.50	87.9	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\077CCV1.D\077CCV1.D#

Date Acquired:	May 25 2016 06:35 pm	Sample Name:	**CCV3-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	224.10	ppb	0.51	200.00	90 -	110	112.1	Fail
9	Be	2	45	205.60	ppb	1.26	200.00	90 -	110	102.8	
11	B	2	45	191.60	ppb	1.68	200.00	90 -	110	95.8	
23	Na	1	45	5257.00	ppb	1.66	5000.00	90 -	110	105.1	
24	Mg	1	45	4989.00	ppb	1.41	5000.00	90 -	110	99.8	
27	Al	1	45	4902.00	ppb	1.30	5000.00	90 -	110	98.0	
39	K	1	45	5176.00	ppb	0.77	5000.00	90 -	110	103.5	
44	Ca	2	45	4974.00	ppb	1.20	5000.00	90 -	110	99.5	
47	Ti	1	45	199.80	ppb	1.83	200.00	90 -	110	99.9	
51	V	1	45	198.40	ppb	1.37	200.00	90 -	110	99.2	
52	Cr	1	45	201.00	ppb	1.36	200.00	90 -	110	100.5	
55	Mn	1	45	202.20	ppb	1.49	200.00	90 -	110	101.1	
56	Fe	1	72	5005.00	ppb	1.74	5000.00	90 -	110	100.1	
59	Co	1	72	204.80	ppb	1.90	200.00	90 -	110	102.4	
60	Ni	1	72	202.60	ppb	1.63	200.00	90 -	110	101.3	
63	Cu	1	72	206.10	ppb	1.72	200.00	90 -	110	103.1	
66	Zn	1	72	205.60	ppb	0.69	200.00	90 -	110	102.8	
75	As	1	72	207.60	ppb	0.58	200.00	90 -	110	103.8	
78	Se	1	72	207.20	ppb	0.30	200.00	90 -	110	103.6	
88	Sr	2	115	206.80	ppb	0.81	200.00	90 -	110	103.4	
95	Mo	2	115	189.10	ppb	0.96	200.00	90 -	110	94.6	
107	Ag	2	115	195.20	ppb	1.23	200.00	90 -	110	97.6	
111	Cd	2	115	195.80	ppb	1.47	200.00	90 -	110	97.9	
118	Sn	2	115	197.60	ppb	1.65	200.00	90 -	110	98.8	
121	Sb	2	115	196.20	ppb	1.26	200.00	90 -	110	98.1	
137	Ba	2	115	202.00	ppb	1.10	200.00	90 -	110	101.0	
205	Tl	2	209	208.80	ppb	1.22	200.00	90 -	110	104.4	
208	Pb	2	209	203.20	ppb	2.08	200.00	90 -	110	101.6	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-55353.93	0.78	35.48	-156012.0	70 -	120	ISFail
45	Sc	1	132440.27	0.34	138057.45	95.9	70 -	120	
45	Sc	2	3373511.30	0.43	4152726.00	81.2	70 -	120	
72	Ge	1	81496.83	0.51	86466.48	94.3	70 -	120	
115	In	2	5506163.50	1.19	6053544.50	91.0	70 -	120	
209	Bi	2	5191287.50	1.72	5465338.50	95.0	70 -	120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\079LCVL.D\079LCVL.D#

Date Acquired:	May 25 2016 06:48 pm	Sample Name:	**LCVL3-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	10.95	ppb	1.32	5.00	70 -	130	219.0	Fail
9	Be	2	45	1.10	ppb	4.19	1.00	70 -	130	110.2	
11	B	2	45	20.36	ppb	2.22	20.00	70 -	130	101.8	
23	Na	1	45	101.30	ppb	2.07	100.00	70 -	130	101.3	
24	Mg	1	45	102.00	ppb	1.40	100.00	70 -	130	102.0	
27	Al	1	45	114.40	ppb	2.00	100.00	70 -	130	114.4	
39	K	1	45	107.10	ppb	1.23	100.00	70 -	130	107.1	
44	Ca	2	45	111.40	ppb	2.39	100.00	70 -	130	111.4	
47	Ti	1	45	4.87	ppb	3.51	5.00	70 -	130	97.5	
51	V	1	45	1.07	ppb	4.78	1.00	70 -	130	107.3	
52	Cr	1	45	5.14	ppb	2.07	5.00	70 -	130	102.8	
55	Mn	1	45	5.09	ppb	1.65	5.00	70 -	130	101.8	
56	Fe	1	72	113.70	ppb	1.23	100.00	70 -	130	113.7	
59	Co	1	72	5.15	ppb	3.81	5.00	70 -	130	103.0	
60	Ni	1	72	5.04	ppb	2.45	5.00	70 -	130	100.7	
63	Cu	1	72	5.10	ppb	1.35	5.00	70 -	130	102.0	
66	Zn	1	72	5.04	ppb	1.70	5.00	70 -	130	100.7	
75	As	1	72	5.24	ppb	1.10	5.00	70 -	130	104.8	
78	Se	1	72	4.84	ppb	4.02	5.00	70 -	130	96.9	
88	Sr	2	115	4.99	ppb	2.27	5.00	70 -	130	99.7	
95	Mo	2	115	4.60	ppb	2.76	5.00	70 -	130	91.9	
107	Ag	2	115	1.98	ppb	1.41	2.00	70 -	130	99.0	
111	Cd	2	115	0.95	ppb	5.15	1.00	70 -	130	95.4	
118	Sn	2	115	5.00	ppb	2.75	5.00	70 -	130	99.9	
121	Sb	2	115	1.99	ppb	2.86	2.00	70 -	130	99.4	
137	Ba	2	115	4.95	ppb	1.39	5.00	70 -	130	98.9	
205	Tl	2	209	1.04	ppb	1.79	1.00	70 -	130	104.4	
208	Pb	2	209	1.08	ppb	3.07	1.00	70 -	130	108.1	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2 RHigl	-1368.58	9.05	35.48	-3857.3	70 -	120	ISFail
45	Sc	1	132194.70	0.57	138057.45	95.8	70 -	120	
45	Sc	2	3373480.80	2.08	4152726.00	81.2	70 -	120	
72	Ge	1	82538.56	0.78	86466.48	95.5	70 -	120	
115	In	2	5528710.50	1.00	6053544.50	91.3	70 -	120	
209	Bi	2	5205336.50	1.37	5465338.50	95.2	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\080_CCB.D\080_CCB.D#

Date Acquired:	May 25 2016 06:54 pm	Sample Name:	CCB3-160525
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.174	ppb	5.99	2.00	2.00	
9	Be	2	45	0.044	ppb	23.81	0.40	0.30	
11	B	2	45	3.542	ppb	3.33	10.00	10.00	
23	Na	1	45	5.276	ppb	0.48	50.00	#####	
24	Mg	1	45	3.450	ppb	2.79	50.00	#####	
27	Al	1	45	22.670	ppb	3.18	50.00	10.00	FailAq
39	K	1	45	11.050	ppb	5.41	50.00	#####	
44	Ca	2	45	36.660	ppb	4.62	50.00	#####	
47	Ti	1	45	0.320	ppb	32.74	4.00	3.00	
51	V	1	45	0.076	ppb	3.85	4.00	3.00	
52	Cr	1	45	0.073	ppb	6.84	2.00	2.00	
55	Mn	1	45	0.189	ppb	8.75	2.00	3.00	
56	Fe	1	72	12.020	ppb	5.47	50.00	30.00	
59	Co	1	72	0.054	ppb	9.25	2.00	3.00	
60	Ni	1	72	0.073	ppb	12.83	2.00	3.00	
63	Cu	1	72	0.090	ppb	8.33	2.00	2.00	
66	Zn	1	72	0.099	ppb	6.13	4.00	2.00	
75	As	1	72	0.082	ppb	10.49	2.00	2.00	
78	Se	1	72	0.101	ppb	27.71	0.60	2.00	
88	Sr	2	115	0.306	ppb	1.53	4.00	3.00	
95	Mo	2	115	0.053	ppb	28.91	2.00	2.00	
107	Ag	2	115	0.059	ppb	20.67	0.40	1.00	
111	Cd	2	115	0.046	ppb	15.27	0.40	0.30	
118	Sn	2	115	0.094	ppb	8.29	20.00	3.00	
121	Sb	2	115	0.057	ppb	17.69	2.00	0.80	
137	Ba	2	115	0.163	ppb	11.70	2.00	3.00	
205	Tl	2	209	0.073	ppb	12.00	2.00	0.50	
208	Pb	2	209	0.087	ppb	9.06	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-6.73	314.05	35.48	-19.0	70 - 120	ISFail
45	Sc	1		131019.38	1.80	138057.45	94.9	70 - 120	
45	Sc	2		3443980.30	1.36	4152726.00	82.9	70 - 120	
72	Ge	1		82146.60	0.43	86466.48	95.0	70 - 120	
115	In	2		5582825.00	0.97	6053544.50	92.2	70 - 120	
209	Bi	2		5275857.50	0.52	5465338.50	96.5	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\081SMPL.D\081SMPL.D#

Date Acquired:	May 25 2016 07:00 pm	Sample Name:	**1605097-17A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	75.320	ppb	#REF!	1.40	2000.00	>RL
9	Be	2	45	2.850	ppb	#REF!	5.16	2000.00	>RL
11	B	2	45	95.600	ppb	#REF!	2.06	2000.00	>RL
23	Na	1	45	1235.000	ppb	#REF!	0.26	25000.00	>RL
24	Mg	1	45	14990.000	ppb	#REF!	0.29	25000.00	>RL
27	Al	1	45	77180.000	ppb	#REF!	1.51	10000.00	OUTCAL
39	K	1	45	15830.000	ppb	#REF!	1.05	25000.00	>RL
44	Ca	2	45	73450.000	ppb	#REF!	1.84	25000.00	OUTCAL
47	Ti	1	45	282.800	ppb	#REF!	0.17	2000.00	>RL
51	V	1	45	121.400	ppb	#REF!	1.38	2000.00	>RL
52	Cr	1	45	77.760	ppb	#REF!	2.01	2000.00	>RL
55	Mn	1	45	662.700	ppb	#REF!	1.06	2000.00	>RL
56	Fe	1	72	75900.000	ppb	#REF!	0.86	10000.00	OUTCAL
59	Co	1	72	21.680	ppb	#REF!	1.29	2000.00	>RL
60	Ni	1	72	39.100	ppb	#REF!	1.55	2000.00	>RL
63	Cu	1	72	39.660	ppb	#REF!	1.55	2000.00	>RL
66	Zn	1	72	308.500	ppb	#REF!	1.91	2000.00	>RL
75	As	1	72	27.630	ppb	#REF!	2.33	2000.00	>RL
78	Se	1	72	22.510	ppb	#REF!	0.88	2000.00	>RL
88	Sr	2	115	502.600	ppb	#REF!	1.55	2000.00	>RL
95	Mo	2	115	2.268	ppb	#REF!	5.08	2000.00	J
107	Ag	2	115	0.285	ppb	#REF!	9.09	500.00	ND
111	Cd	2	115	1.450	ppb	#REF!	2.95	2000.00	>RL
118	Sn	2	115	6.833	ppb	#REF!	1.74	2000.00	ND
121	Sb	2	115	3.218	ppb	#REF!	1.47	500.00	J
137	Ba	2	115	444.700	ppb	#REF!	2.35	2000.00	>RL
205	Tl	2	209	0.718	ppb	#REF!	0.47	2000.00	ND
208	Pb	2	209	161.600	ppb	#REF!	1.70	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-7111.35	13.03	RHigh	35.48	-20042.9	70 - 120	ISFail
45	Sc	1	131487.16	0.33		138057.45	95.2	70 - 120	
45	Sc	2	3523340.00	1.76		4152726.00	84.8	70 - 120	
72	Ge	1	79134.14	0.67		86466.48	91.5	70 - 120	
115	In	2	5523756.50	1.78		6053544.50	91.2	70 - 120	
209	Bi	2	4834450.00	1.52		5465338.50	88.5	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\082SMPL.D\082SMPL.D#

Date Acquired:	May 25 2016 07:06 pm	Sample Name:	**1605097-18A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	49.600	ppb	#REF!	1.64	2000.00	>RL
9	Be	2	45	1.691	ppb	#REF!	3.98	2000.00	>RL
11	B	2	45	49.330	ppb	#REF!	3.47	2000.00	>RL
23	Na	1	45	556.200	ppb	#REF!	1.43	25000.00	>RL
24	Mg	1	45	8568.000	ppb	#REF!	1.22	25000.00	>RL
27	Al	1	45	47240.000	ppb	#REF!	2.08	10000.00	OUTCAL
39	K	1	45	8700.000	ppb	#REF!	1.30	25000.00	>RL
44	Ca	2	45	52220.000	ppb	#REF!	1.95	25000.00	OUTCAL
47	Ti	1	45	402.600	ppb	#REF!	0.94	2000.00	>RL
51	V	1	45	76.340	ppb	#REF!	0.88	2000.00	>RL
52	Cr	1	45	46.810	ppb	#REF!	1.51	2000.00	>RL
55	Mn	1	45	606.500	ppb	#REF!	1.35	2000.00	>RL
56	Fe	1	72	44460.000	ppb	#REF!	1.72	10000.00	OUTCAL
59	Co	1	72	15.410	ppb	#REF!	1.61	2000.00	>RL
60	Ni	1	72	27.930	ppb	#REF!	0.82	2000.00	>RL
63	Cu	1	72	47.090	ppb	#REF!	0.94	2000.00	>RL
66	Zn	1	72	312.500	ppb	#REF!	0.87	2000.00	>RL
75	As	1	72	19.080	ppb	#REF!	0.18	2000.00	>RL
78	Se	1	72	13.570	ppb	#REF!	4.61	2000.00	>RL
88	Sr	2	115	352.800	ppb	#REF!	1.53	2000.00	>RL
95	Mo	2	115	1.483	ppb	#REF!	5.62	2000.00	ND
107	Ag	2	115	0.194	ppb	#REF!	4.63	500.00	ND
111	Cd	2	115	0.789	ppb	#REF!	5.96	2000.00	J
118	Sn	2	115	6.453	ppb	#REF!	2.75	2000.00	ND
121	Sb	2	115	1.475	ppb	#REF!	2.30	500.00	ND
137	Ba	2	115	391.300	ppb	#REF!	2.46	2000.00	>RL
205	Tl	2	209	0.526	ppb	#REF!	6.65	2000.00	ND
208	Pb	2	209	38.280	ppb	#REF!	1.48	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4314.28	7.21	RHigh	35.48	-12159.6	70 - 120	ISFail
45	Sc	1	128974.22	0.43		138057.45	93.4	70 - 120	
45	Sc	2	3464820.00	1.75		4152726.00	83.4	70 - 120	
72	Ge	1	78908.72	0.37		86466.48	91.3	70 - 120	
115	In	2	5512393.00	0.25		6053544.50	91.1	70 - 120	
209	Bi	2	4900472.00	0.32		5465338.50	89.7	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\083SMPL.D\083SMPL.D#

Date Acquired:	May 25 2016 07:12 pm	Sample Name:	**1605097-19A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	61.460	ppb	#REF!	0.79	2000.00	>RL
9	Be	2	45	2.399	ppb	#REF!	4.42	2000.00	>RL
11	B	2	45	73.630	ppb	#REF!	2.20	2000.00	>RL
23	Na	1	45	1365.000	ppb	#REF!	0.44	25000.00	>RL
24	Mg	1	45	14670.000	ppb	#REF!	0.76	25000.00	>RL
27	Al	1	45	61210.000	ppb	#REF!	0.98	10000.00	OUTCAL
39	K	1	45	13010.000	ppb	#REF!	0.55	25000.00	>RL
44	Ca	2	45	136800.000	ppb	#REF!	1.92	25000.00	OUTCAL
47	Ti	1	45	727.600	ppb	#REF!	0.97	2000.00	>RL
51	V	1	45	125.800	ppb	#REF!	0.36	2000.00	>RL
52	Cr	1	45	67.740	ppb	#REF!	0.69	2000.00	>RL
55	Mn	1	45	784.900	ppb	#REF!	0.25	2000.00	>RL
56	Fe	1	72	64370.000	ppb	#REF!	0.48	10000.00	OUTCAL
59	Co	1	72	21.420	ppb	#REF!	1.38	2000.00	>RL
60	Ni	1	72	41.650	ppb	#REF!	1.03	2000.00	>RL
63	Cu	1	72	88.660	ppb	#REF!	0.09	2000.00	>RL
66	Zn	1	72	672.600	ppb	#REF!	0.67	2000.00	>RL
75	As	1	72	23.940	ppb	#REF!	0.94	2000.00	>RL
78	Se	1	72	21.730	ppb	#REF!	3.94	2000.00	>RL
88	Sr	2	115	641.400	ppb	#REF!	1.94	2000.00	>RL
95	Mo	2	115	1.924	ppb	#REF!	1.88	2000.00	ND
107	Ag	2	115	0.331	ppb	#REF!	6.23	500.00	ND
111	Cd	2	115	1.437	ppb	#REF!	5.22	2000.00	>RL
118	Sn	2	115	7.314	ppb	#REF!	1.81	2000.00	ND
121	Sb	2	115	2.402	ppb	#REF!	5.83	500.00	J
137	Ba	2	115	824.900	ppb	#REF!	1.96	2000.00	>RL
205	Tl	2	209	0.677	ppb	#REF!	3.30	2000.00	ND
208	Pb	2	209	96.620	ppb	#REF!	1.21	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5212.79	13.58	RHigh	35.48	-14692.0	70 - 120	ISFail
45	Sc	1	128056.30	0.29		138057.45	92.8	70 - 120	
45	Sc	2	3247656.30	1.20		4152726.00	78.2	70 - 120	
72	Ge	1	76664.41	0.82		86466.48	88.7	70 - 120	
115	In	2	5197623.00	1.51		6053544.50	85.9	70 - 120	
209	Bi	2	4663160.50	0.34		5465338.50	85.3	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\084SMPL.D\084SMPL.D#

Date Acquired:	May 25 2016 07:18 pm	Sample Name:	**1605097-29A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	53.820	ppb	#REF!	0.65	2000.00	>RL
9	Be	2	45	2.208	ppb	#REF!	4.65	2000.00	>RL
11	B	2	45	76.330	ppb	#REF!	2.90	2000.00	>RL
23	Na	1	45	2872.000	ppb	#REF!	0.22	25000.00	>RL
24	Mg	1	45	12990.000	ppb	#REF!	1.03	25000.00	>RL
27	Al	1	45	60950.000	ppb	#REF!	1.26	10000.00	OUTCAL
39	K	1	45	14670.000	ppb	#REF!	0.30	25000.00	>RL
44	Ca	2	45	111000.000	ppb	#REF!	1.63	25000.00	OUTCAL
47	Ti	1	45	532.300	ppb	#REF!	3.29	2000.00	>RL
51	V	1	45	100.700	ppb	#REF!	0.23	2000.00	>RL
52	Cr	1	45	66.970	ppb	#REF!	1.16	2000.00	>RL
55	Mn	1	45	734.300	ppb	#REF!	0.29	2000.00	>RL
56	Fe	1	72	54420.000	ppb	#REF!	1.01	10000.00	OUTCAL
59	Co	1	72	18.130	ppb	#REF!	0.84	2000.00	>RL
60	Ni	1	72	37.420	ppb	#REF!	0.89	2000.00	>RL
63	Cu	1	72	61.350	ppb	#REF!	0.40	2000.00	>RL
66	Zn	1	72	409.900	ppb	#REF!	1.09	2000.00	>RL
75	As	1	72	22.220	ppb	#REF!	0.47	2000.00	>RL
78	Se	1	72	19.290	ppb	#REF!	2.76	2000.00	>RL
88	Sr	2	115	393.900	ppb	#REF!	2.11	2000.00	>RL
95	Mo	2	115	1.667	ppb	#REF!	4.97	2000.00	ND
107	Ag	2	115	0.298	ppb	#REF!	8.47	500.00	ND
111	Cd	2	115	1.231	ppb	#REF!	4.93	2000.00	>RL
118	Sn	2	115	6.437	ppb	#REF!	2.61	2000.00	ND
121	Sb	2	115	3.663	ppb	#REF!	2.28	500.00	J
137	Ba	2	115	861.600	ppb	#REF!	2.11	2000.00	>RL
205	Tl	2	209	0.598	ppb	#REF!	2.81	2000.00	ND
208	Pb	2	209	125.400	ppb	#REF!	1.46	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4612.77	6.33	RHigh	35.48	-13000.8	70 - 120	ISFail
45	Sc	1	126021.84	0.24		138057.45	91.3	70 - 120	
45	Sc	2	3269674.80	1.38		4152726.00	78.7	70 - 120	
72	Ge	1	75782.02	0.14		86466.48	87.6	70 - 120	
115	In	2	5281163.00	1.45		6053544.50	87.2	70 - 120	
209	Bi	2	4705202.50	1.28		5465338.50	86.1	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\085SMPL.D\085SMPL.D#

Date Acquired:	May 25 2016 07:24 pm	Sample Name:	**1605097-31A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	58.290	ppb	#REF!	1.42	2000.00	>RL
9	Be	2	45	2.470	ppb	#REF!	3.45	2000.00	>RL
11	B	2	45	59.910	ppb	#REF!	3.17	2000.00	>RL
23	Na	1	45	806.600	ppb	#REF!	0.79	25000.00	>RL
24	Mg	1	45	11940.000	ppb	#REF!	0.64	25000.00	>RL
27	Al	1	45	69680.000	ppb	#REF!	1.38	10000.00	OUTCAL
39	K	1	45	16550.000	ppb	#REF!	1.36	25000.00	>RL
44	Ca	2	45	59170.000	ppb	#REF!	2.27	25000.00	OUTCAL
47	Ti	1	45	335.100	ppb	#REF!	0.28	2000.00	>RL
51	V	1	45	101.200	ppb	#REF!	1.17	2000.00	>RL
52	Cr	1	45	61.500	ppb	#REF!	1.12	2000.00	>RL
55	Mn	1	45	643.100	ppb	#REF!	1.76	2000.00	>RL
56	Fe	1	72	63180.000	ppb	#REF!	1.49	10000.00	OUTCAL
59	Co	1	72	24.950	ppb	#REF!	1.22	2000.00	>RL
60	Ni	1	72	36.540	ppb	#REF!	0.92	2000.00	>RL
63	Cu	1	72	25.840	ppb	#REF!	0.57	2000.00	>RL
66	Zn	1	72	194.900	ppb	#REF!	1.03	2000.00	>RL
75	As	1	72	23.450	ppb	#REF!	0.62	2000.00	>RL
78	Se	1	72	22.060	ppb	#REF!	2.48	2000.00	>RL
88	Sr	2	115	223.700	ppb	#REF!	2.46	2000.00	>RL
95	Mo	2	115	1.365	ppb	#REF!	4.72	2000.00	ND
107	Ag	2	115	0.196	ppb	#REF!	3.30	500.00	ND
111	Cd	2	115	0.975	ppb	#REF!	6.73	2000.00	J
118	Sn	2	115	5.647	ppb	#REF!	3.16	2000.00	ND
121	Sb	2	115	1.981	ppb	#REF!	2.14	500.00	ND
137	Ba	2	115	474.200	ppb	#REF!	2.07	2000.00	>RL
205	Tl	2	209	0.604	ppb	#REF!	3.39	2000.00	ND
208	Pb	2	209	66.970	ppb	#REF!	1.10	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5476.69	3.84	35.48	-15435.7	70 - 120	ISFail
45	Sc	1	127474.43	0.46	138057.45	92.3	70 - 120	
45	Sc	2	3453809.80	2.34	4152726.00	83.2	70 - 120	
72	Ge	1	76924.30	0.32	86466.48	89.0	70 - 120	
115	In	2	5397821.00	2.13	6053544.50	89.2	70 - 120	
209	Bi	2	4718903.50	0.78	5465338.50	86.3	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\086SMPL.D\086SMPL.D#

Date Acquired:	May 25 2016 07:30 pm	Sample Name:	**1605097-32A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	104.800	ppb	#REF!	1.17	2000.00	>RL
9	Be	2	45	3.341	ppb	#REF!	4.07	2000.00	>RL
11	B	2	45	78.270	ppb	#REF!	3.12	2000.00	>RL
23	Na	1	45	2486.000	ppb	#REF!	0.47	25000.00	>RL
24	Mg	1	45	16230.000	ppb	#REF!	1.52	25000.00	>RL
27	Al	1	45	87610.000	ppb	#REF!	0.95	10000.00	OUTCAL
39	K	1	45	19090.000	ppb	#REF!	0.34	25000.00	>RL
44	Ca	2	45	94650.000	ppb	#REF!	3.36	25000.00	OUTCAL
47	Ti	1	45	363.800	ppb	#REF!	1.13	2000.00	>RL
51	V	1	45	129.700	ppb	#REF!	0.80	2000.00	>RL
52	Cr	1	45	77.670	ppb	#REF!	0.38	2000.00	>RL
55	Mn	1	45	604.400	ppb	#REF!	1.18	2000.00	>RL
56	Fe	1	72	86970.000	ppb	#REF!	0.96	10000.00	OUTCAL
59	Co	1	72	34.360	ppb	#REF!	1.14	2000.00	>RL
60	Ni	1	72	49.090	ppb	#REF!	1.18	2000.00	>RL
63	Cu	1	72	17.870	ppb	#REF!	1.08	2000.00	>RL
66	Zn	1	72	223.900	ppb	#REF!	0.56	2000.00	>RL
75	As	1	72	26.670	ppb	#REF!	0.96	2000.00	>RL
78	Se	1	72	27.880	ppb	#REF!	3.45	2000.00	>RL
88	Sr	2	115	356.300	ppb	#REF!	1.96	2000.00	>RL
95	Mo	2	115	3.164	ppb	#REF!	3.73	2000.00	J
107	Ag	2	115	0.179	ppb	#REF!	6.26	500.00	ND
111	Cd	2	115	1.074	ppb	#REF!	6.66	2000.00	J
118	Sn	2	115	5.683	ppb	#REF!	4.20	2000.00	ND
121	Sb	2	115	0.308	ppb	#REF!	4.07	500.00	ND
137	Ba	2	115	683.400	ppb	#REF!	2.97	2000.00	>RL
205	Tl	2	209	0.652	ppb	#REF!	0.90	2000.00	ND
208	Pb	2	209	35.220	ppb	#REF!	1.73	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-8966.84	5.21	RHigh	35.48	-25272.5	70 - 120	ISFail
45	Sc	1	127067.53	0.33		138057.45	92.0	70 - 120	
45	Sc	2	3367670.80	2.79		4152726.00	81.1	70 - 120	
72	Ge	1	76178.23	0.44		86466.48	88.1	70 - 120	
115	In	2	5307777.00	1.86		6053544.50	87.7	70 - 120	
209	Bi	2	4614580.50	2.01		5465338.50	84.4	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\087SMPL.D\087SMPL.D#

Date Acquired:	May 25 2016 07:36 pm	Sample Name:	**1605097-33A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	144.900	ppb	#REF!	0.44	2000.00	>RL
9	Be	2	45	3.477	ppb	#REF!	3.23	2000.00	>RL
11	B	2	45	100.300	ppb	#REF!	1.35	2000.00	>RL
23	Na	1	45	3446.000	ppb	#REF!	0.57	25000.00	>RL
24	Mg	1	45	12910.000	ppb	#REF!	0.55	25000.00	>RL
27	Al	1	45	62560.000	ppb	#REF!	0.48	10000.00	OUTCAL
39	K	1	45	17590.000	ppb	#REF!	0.33	25000.00	>RL
44	Ca	2	45	83570.000	ppb	#REF!	1.47	25000.00	OUTCAL
47	Ti	1	45	261.000	ppb	#REF!	1.29	2000.00	>RL
51	V	1	45	95.960	ppb	#REF!	0.92	2000.00	>RL
52	Cr	1	45	62.790	ppb	#REF!	0.62	2000.00	>RL
55	Mn	1	45	377.600	ppb	#REF!	0.32	2000.00	>RL
56	Fe	1	72	90890.000	ppb	#REF!	0.13	10000.00	OUTCAL
59	Co	1	72	31.170	ppb	#REF!	0.48	2000.00	>RL
60	Ni	1	72	48.120	ppb	#REF!	1.35	2000.00	>RL
63	Cu	1	72	12.890	ppb	#REF!	0.86	2000.00	>RL
66	Zn	1	72	249.700	ppb	#REF!	1.37	2000.00	>RL
75	As	1	72	28.350	ppb	#REF!	1.24	2000.00	>RL
78	Se	1	72	32.250	ppb	#REF!	1.26	2000.00	>RL
88	Sr	2	115	267.100	ppb	#REF!	1.32	2000.00	>RL
95	Mo	2	115	2.699	ppb	#REF!	2.86	2000.00	J
107	Ag	2	115	0.114	ppb	#REF!	6.74	500.00	ND
111	Cd	2	115	0.796	ppb	#REF!	15.77	2000.00	J
118	Sn	2	115	5.113	ppb	#REF!	2.31	2000.00	ND
121	Sb	2	115	0.364	ppb	#REF!	6.60	500.00	ND
137	Ba	2	115	988.400	ppb	#REF!	2.02	2000.00	>RL
205	Tl	2	209	0.394	ppb	#REF!	3.62	2000.00	ND
208	Pb	2	209	30.670	ppb	#REF!	0.92	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-14823.05	3.18	35.48	-41777.9	70 - 120	ISFail
45	Sc	1	125673.22	0.59	138057.45	91.0	70 - 120	
45	Sc	2	3396330.00	1.06	4152726.00	81.8	70 - 120	
72	Ge	1	76055.75	0.39	86466.48	88.0	70 - 120	
115	In	2	5356839.00	1.12	6053544.50	88.5	70 - 120	
209	Bi	2	4709452.50	0.78	5465338.50	86.2	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\088SMPL.D\088SMPL.D#

Date Acquired:	May 25 2016 07:42 pm	Sample Name:	**1605097-34A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	66.520	ppb	#REF!	0.53	2000.00	>RL
9	Be	2	45	2.476	ppb	#REF!	0.95	2000.00	>RL
11	B	2	45	96.060	ppb	#REF!	0.99	2000.00	>RL
23	Na	1	45	5351.000	ppb	#REF!	0.66	25000.00	>RL
24	Mg	1	45	11730.000	ppb	#REF!	0.91	25000.00	>RL
27	Al	1	45	60680.000	ppb	#REF!	0.87	10000.00	OUTCAL
39	K	1	45	14580.000	ppb	#REF!	0.88	25000.00	>RL
44	Ca	2	45	162500.000	ppb	#REF!	0.44	25000.00	OUTCAL
47	Ti	1	45	202.000	ppb	#REF!	1.20	2000.00	>RL
51	V	1	45	91.020	ppb	#REF!	1.14	2000.00	>RL
52	Cr	1	45	59.470	ppb	#REF!	0.46	2000.00	>RL
55	Mn	1	45	412.000	ppb	#REF!	0.18	2000.00	>RL
56	Fe	1	72	70840.000	ppb	#REF!	0.91	10000.00	OUTCAL
59	Co	1	72	40.340	ppb	#REF!	0.76	2000.00	>RL
60	Ni	1	72	36.710	ppb	#REF!	0.98	2000.00	>RL
63	Cu	1	72	15.980	ppb	#REF!	0.94	2000.00	>RL
66	Zn	1	72	165.600	ppb	#REF!	0.92	2000.00	>RL
75	As	1	72	30.660	ppb	#REF!	0.20	2000.00	>RL
78	Se	1	72	28.660	ppb	#REF!	7.54	2000.00	>RL
88	Sr	2	115	814.700	ppb	#REF!	0.72	2000.00	>RL
95	Mo	2	115	3.127	ppb	#REF!	1.68	2000.00	J
107	Ag	2	115	0.126	ppb	#REF!	2.88	500.00	ND
111	Cd	2	115	0.842	ppb	#REF!	12.27	2000.00	J
118	Sn	2	115	5.425	ppb	#REF!	1.17	2000.00	ND
121	Sb	2	115	0.623	ppb	#REF!	6.73	500.00	ND
137	Ba	2	115	261.900	ppb	#REF!	0.84	2000.00	>RL
205	Tl	2	209	0.577	ppb	#REF!	0.65	2000.00	ND
208	Pb	2	209	39.380	ppb	#REF!	0.39	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5465.69	1.23	35.48	-15404.7	70 - 120	ISFail
45	Sc	1	117078.90	0.80	138057.45	84.8	70 - 120	
45	Sc	2	3112931.80	1.70	4152726.00	75.0	70 - 120	
72	Ge	1	71373.93	0.43	86466.48	82.5	70 - 120	
115	In	2	5017112.50	0.44	6053544.50	82.9	70 - 120	
209	Bi	2	4477310.50	0.82	5465338.50	81.9	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\089SMPL.D\089SMPL.D#

Date Acquired:	May 25 2016 07:48 pm	Sample Name:	**1605097-35A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	59.810	ppb	#REF!	1.27	2000.00	>RL
9	Be	2	45	2.668	ppb	#REF!	4.15	2000.00	>RL
11	B	2	45	108.700	ppb	#REF!	1.64	2000.00	>RL
23	Na	1	45	2473.000	ppb	#REF!	2.00	25000.00	>RL
24	Mg	1	45	11700.000	ppb	#REF!	2.11	25000.00	>RL
27	Al	1	45	46890.000	ppb	#REF!	3.67	10000.00	OUTCAL
39	K	1	45	18340.000	ppb	#REF!	0.82	25000.00	>RL
44	Ca	2	45	111600.000	ppb	#REF!	2.19	25000.00	OUTCAL
47	Ti	1	45	282.400	ppb	#REF!	1.90	2000.00	>RL
51	V	1	45	69.550	ppb	#REF!	1.93	2000.00	>RL
52	Cr	1	45	62.790	ppb	#REF!	1.91	2000.00	>RL
55	Mn	1	45	541.200	ppb	#REF!	2.40	2000.00	>RL
56	Fe	1	72	74420.000	ppb	#REF!	2.85	10000.00	OUTCAL
59	Co	1	72	21.360	ppb	#REF!	1.79	2000.00	>RL
60	Ni	1	72	42.270	ppb	#REF!	1.50	2000.00	>RL
63	Cu	1	72	4.589	ppb	#REF!	1.89	2000.00	J
66	Zn	1	72	174.100	ppb	#REF!	1.52	2000.00	>RL
75	As	1	72	19.800	ppb	#REF!	1.77	2000.00	>RL
78	Se	1	72	22.700	ppb	#REF!	4.09	2000.00	>RL
88	Sr	2	115	760.300	ppb	#REF!	2.34	2000.00	>RL
95	Mo	2	115	1.813	ppb	#REF!	0.81	2000.00	ND
107	Ag	2	115	0.097	ppb	#REF!	16.33	500.00	ND
111	Cd	2	115	0.665	ppb	#REF!	11.58	2000.00	J
118	Sn	2	115	5.230	ppb	#REF!	4.53	2000.00	ND
121	Sb	2	115	0.126	ppb	#REF!	6.91	500.00	ND
137	Ba	2	115	47.290	ppb	#REF!	2.36	2000.00	>RL
205	Tl	2	209	0.380	ppb	#REF!	4.46	2000.00	ND
208	Pb	2	209	18.110	ppb	#REF!	0.77	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4533.77	8.91	RHigh	35.48	-12778.2	70 - 120	ISFail
45	Sc	1	126965.38	1.07		138057.45	92.0	70 - 120	
45	Sc	2	3200493.30	1.19		4152726.00	77.1	70 - 120	
72	Ge	1	76836.98	0.94		86466.48	88.9	70 - 120	
115	In	2	5276371.00	1.76		6053544.50	87.2	70 - 120	
209	Bi	2	4815798.50	0.67		5465338.50	88.1	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\090SMPL.D\090SMPL.D#

Date Acquired:	May 25 2016 07:54 pm	Sample Name:	**1605097-36A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	72.840	ppb	#REF!	1.35	2000.00	>RL
9	Be	2	45	2.964	ppb	#REF!	8.04	2000.00	>RL
11	B	2	45	68.710	ppb	#REF!	1.28	2000.00	>RL
23	Na	1	45	693.000	ppb	#REF!	0.70	25000.00	>RL
24	Mg	1	45	13820.000	ppb	#REF!	0.61	25000.00	>RL
27	Al	1	45	81720.000	ppb	#REF!	1.45	10000.00	OUTCAL
39	K	1	45	18730.000	ppb	#REF!	0.26	25000.00	>RL
44	Ca	2	45	55430.000	ppb	#REF!	1.36	25000.00	OUTCAL
47	Ti	1	45	338.100	ppb	#REF!	1.58	2000.00	>RL
51	V	1	45	116.800	ppb	#REF!	1.37	2000.00	>RL
52	Cr	1	45	71.540	ppb	#REF!	1.50	2000.00	>RL
55	Mn	1	45	727.000	ppb	#REF!	0.34	2000.00	>RL
56	Fe	1	72	74710.000	ppb	#REF!	0.08	10000.00	OUTCAL
59	Co	1	72	30.410	ppb	#REF!	1.13	2000.00	>RL
60	Ni	1	72	44.440	ppb	#REF!	0.77	2000.00	>RL
63	Cu	1	72	27.210	ppb	#REF!	2.95	2000.00	>RL
66	Zn	1	72	219.200	ppb	#REF!	0.90	2000.00	>RL
75	As	1	72	25.510	ppb	#REF!	1.01	2000.00	>RL
78	Se	1	72	26.820	ppb	#REF!	4.32	2000.00	>RL
88	Sr	2	115	258.300	ppb	#REF!	0.88	2000.00	>RL
95	Mo	2	115	1.772	ppb	#REF!	3.72	2000.00	ND
107	Ag	2	115	0.196	ppb	#REF!	2.26	500.00	ND
111	Cd	2	115	1.053	ppb	#REF!	9.86	2000.00	J
118	Sn	2	115	5.761	ppb	#REF!	0.76	2000.00	ND
121	Sb	2	115	1.795	ppb	#REF!	4.85	500.00	ND
137	Ba	2	115	516.600	ppb	#REF!	1.99	2000.00	>RL
205	Tl	2	209	0.669	ppb	#REF!	1.17	2000.00	ND
208	Pb	2	209	76.630	ppb	#REF!	1.48	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-6570.70	5.90	RHigh	35.48	-18519.1	70 - 120	ISFail
45	Sc	1	127820.74	0.35		138057.45	92.6	70 - 120	
45	Sc	2	3340190.80	0.94		4152726.00	80.4	70 - 120	
72	Ge	1	77221.16	0.39		86466.48	89.3	70 - 120	
115	In	2	5410128.50	0.88		6053544.50	89.4	70 - 120	
209	Bi	2	4879558.50	0.86		5465338.50	89.3	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\091CCV1.D\091CCV1.D#

Date Acquired:	May 25 2016 08:00 pm	Sample Name:	**CCV4-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	218.10	ppb	0.45	200.00	90 -	110	109.1	
9	Be	2	45	202.80	ppb	1.61	200.00	90 -	110	101.4	
11	B	2	45	186.20	ppb	0.72	200.00	90 -	110	93.1	
23	Na	1	45	5248.00	ppb	0.23	5000.00	90 -	110	105.0	
24	Mg	1	45	4949.00	ppb	1.42	5000.00	90 -	110	99.0	
27	Al	1	45	4907.00	ppb	1.17	5000.00	90 -	110	98.1	
39	K	1	45	5162.00	ppb	0.88	5000.00	90 -	110	103.2	
44	Ca	2	45	5035.00	ppb	1.17	5000.00	90 -	110	100.7	
47	Ti	1	45	197.50	ppb	0.88	200.00	90 -	110	98.8	
51	V	1	45	199.70	ppb	1.30	200.00	90 -	110	99.9	
52	Cr	1	45	200.60	ppb	1.38	200.00	90 -	110	100.3	
55	Mn	1	45	204.40	ppb	0.37	200.00	90 -	110	102.2	
56	Fe	1	72	5115.00	ppb	0.94	5000.00	90 -	110	102.3	
59	Co	1	72	206.60	ppb	0.99	200.00	90 -	110	103.3	
60	Ni	1	72	203.50	ppb	0.77	200.00	90 -	110	101.8	
63	Cu	1	72	206.90	ppb	0.27	200.00	90 -	110	103.5	
66	Zn	1	72	206.20	ppb	0.37	200.00	90 -	110	103.1	
75	As	1	72	210.00	ppb	0.95	200.00	90 -	110	105.0	
78	Se	1	72	206.70	ppb	1.38	200.00	90 -	110	103.4	
88	Sr	2	115	205.50	ppb	1.18	200.00	90 -	110	102.8	
95	Mo	2	115	188.30	ppb	1.03	200.00	90 -	110	94.2	
107	Ag	2	115	192.40	ppb	1.22	200.00	90 -	110	96.2	
111	Cd	2	115	192.60	ppb	1.16	200.00	90 -	110	96.3	
118	Sn	2	115	199.00	ppb	1.50	200.00	90 -	110	99.5	
121	Sb	2	115	197.80	ppb	1.43	200.00	90 -	110	98.9	
137	Ba	2	115	202.90	ppb	1.59	200.00	90 -	110	101.5	
205	Tl	2	209	209.90	ppb	2.26	200.00	90 -	110	105.0	
208	Pb	2	209	201.30	ppb	1.54	200.00	90 -	110	100.7	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-52192.45	0.70	35.48	-147101.5	70 -	120		ISFail
45	Sc	1	123775.41	0.53	138057.45	89.7	70 -	120		
45	Sc	2	3241279.00	1.27	4152726.00	78.1	70 -	120		
72	Ge	1	76393.88	0.58	86466.48	88.4	70 -	120		
115	In	2	5457622.50	1.71	6053544.50	90.2	70 -	120		
209	Bi	2	5083478.00	0.94	5465338.50	93.0	70 -	120		

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\093LCVL.D\093LCVL.D#

Date Acquired:	May 25 2016 08:12 pm	Sample Name:	**LCVL4-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	10.71	ppb	0.90	5.00	70 -	130	214.2	Fail
9	Be	2	45	1.01	ppb	2.41	1.00	70 -	130	101.2	
11	B	2	45	19.60	ppb	2.59	20.00	70 -	130	98.0	
23	Na	1	45	98.51	ppb	0.63	100.00	70 -	130	98.5	
24	Mg	1	45	103.20	ppb	1.90	100.00	70 -	130	103.2	
27	Al	1	45	121.20	ppb	0.75	100.00	70 -	130	121.2	
39	K	1	45	109.60	ppb	2.66	100.00	70 -	130	109.6	
44	Ca	2	45	120.00	ppb	3.06	100.00	70 -	130	120.0	
47	Ti	1	45	5.98	ppb	14.77	5.00	70 -	130	119.7	
51	V	1	45	1.06	ppb	6.51	1.00	70 -	130	106.1	
52	Cr	1	45	5.04	ppb	3.79	5.00	70 -	130	100.8	
55	Mn	1	45	5.29	ppb	0.90	5.00	70 -	130	105.9	
56	Fe	1	72	125.50	ppb	2.39	100.00	70 -	130	125.5	
59	Co	1	72	5.05	ppb	2.11	5.00	70 -	130	100.9	
60	Ni	1	72	5.10	ppb	1.07	5.00	70 -	130	101.9	
63	Cu	1	72	5.08	ppb	2.01	5.00	70 -	130	101.6	
66	Zn	1	72	4.87	ppb	3.16	5.00	70 -	130	97.3	
75	As	1	72	5.27	ppb	1.54	5.00	70 -	130	105.4	
78	Se	1	72	5.17	ppb	3.96	5.00	70 -	130	103.4	
88	Sr	2	115	5.02	ppb	1.52	5.00	70 -	130	100.4	
95	Mo	2	115	4.61	ppb	3.99	5.00	70 -	130	92.1	
107	Ag	2	115	1.92	ppb	0.82	2.00	70 -	130	96.2	
111	Cd	2	115	1.01	ppb	10.89	1.00	70 -	130	101.1	
118	Sn	2	115	4.97	ppb	2.31	5.00	70 -	130	99.4	
121	Sb	2	115	1.93	ppb	3.68	2.00	70 -	130	96.6	
137	Ba	2	115	5.23	ppb	4.69	5.00	70 -	130	104.6	
205	Tl	2	209	1.02	ppb	0.65	1.00	70 -	130	102.3	
208	Pb	2	209	1.01	ppb	0.43	1.00	70 -	130	101.2	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2 RHigl	-1383.62	8.79	35.48	-3899.7	70 -	120	ISFail
45	Sc	1	127192.41	1.52	138057.45	92.1	70 -	120	
45	Sc	2	3302091.00	1.63	4152726.00	79.5	70 -	120	
72	Ge	1	79279.07	0.74	86466.48	91.7	70 -	120	
115	In	2	5476371.00	1.17	6053544.50	90.5	70 -	120	
209	Bi	2	5219516.50	0.53	5465338.50	95.5	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\094_CCB.D\094_CCB.D#

Date Acquired:	May 25 2016 08:18 pm	Sample Name:	**CCB4-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.133	ppb	6.28	2.00	2.00	
9	Be	2	45	0.025	ppb	18.54	0.40	0.30	
11	B	2	45	3.193	ppb	2.17	10.00	10.00	
23	Na	1	45	5.372	ppb	5.20	50.00	#####	
24	Mg	1	45	3.716	ppb	6.39	50.00	#####	
27	Al	1	45	23.950	ppb	7.39	50.00	10.00	FailAq
39	K	1	45	9.750	ppb	2.79	50.00	#####	
44	Ca	2	45	38.080	ppb	3.00	50.00	#####	
47	Ti	1	45	0.119	ppb	69.30	4.00	3.00	
51	V	1	45	0.075	ppb	11.65	4.00	3.00	
52	Cr	1	45	0.069	ppb	11.74	2.00	2.00	
55	Mn	1	45	0.176	ppb	3.07	2.00	3.00	
56	Fe	1	72	15.770	ppb	10.37	50.00	30.00	
59	Co	1	72	0.022	ppb	15.43	2.00	3.00	
60	Ni	1	72	0.096	ppb	17.56	2.00	3.00	
63	Cu	1	72	0.085	ppb	19.07	2.00	2.00	
66	Zn	1	72	0.115	ppb	7.88	4.00	2.00	
75	As	1	72	0.055	ppb	4.49	2.00	2.00	
78	Se	1	72	0.125	ppb	14.28	0.60	2.00	
88	Sr	2	115	0.247	ppb	3.23	4.00	3.00	
95	Mo	2	115	0.022	ppb	14.10	2.00	2.00	
107	Ag	2	115	0.038	ppb	23.81	0.40	1.00	
111	Cd	2	115	0.040	ppb	36.53	0.40	0.30	
118	Sn	2	115	0.041	ppb	15.66	20.00	3.00	
121	Sb	2	115	0.010	ppb	14.00	2.00	0.80	
137	Ba	2	115	0.122	ppb	14.11	2.00	3.00	
205	Tl	2	209	0.042	ppb	8.92	2.00	0.50	
208	Pb	2	209	0.054	ppb	6.74	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-7.96	138.90	35.48	-22.4	70 - 120	ISFail
45	Sc	1		125573.63	0.51	138057.45	91.0	70 - 120	
45	Sc	2		3352020.80	1.17	4152726.00	80.7	70 - 120	
72	Ge	1		78407.98	0.54	86466.48	90.7	70 - 120	
115	In	2		5570337.50	1.06	6053544.50	92.0	70 - 120	
209	Bi	2		5268501.00	1.17	5465338.50	96.4	70 - 120	

PB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\095__PB.D\095__PB.D#

Date Acquired:	May 25 2016 08:24 pm	Sample Name:	**MB-75216**
Acq. Method:	DHL_3Fe.M	Misc Info:	MBLKICPMS_TSDOD
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	MDL	RL	Flag
7	Li	2	45	0.070	ppb	4.70	2.0	8.00	
9	Be	2	45	0.002	ppb	55.47	0.4	1.20	
11	B	2	45	0.988	ppb	2.50	10.0	30.00	
23	Na	1	45	4.416	ppb	4.22	50.0	#####	
24	Mg	1	45	3.168	ppb	8.21	50.0	#####	
27	Al	1	45	11.340	ppb	8.17	50.0	#####	
39	K	1	45	10.080	ppb	3.70	50.0	#####	
44	Ca	2	45	23.300	ppb	2.99	50.0	#####	
47	Ti	1	45	0.238	ppb	45.83	4.0	10.00	
51	V	1	45	0.028	ppb	15.35	4.0	10.00	
52	Cr	1	45	0.215	ppb	8.16	2.0	8.00	
55	Mn	1	45	0.143	ppb	13.02	2.0	8.00	
56	Fe	1	72	17.000	ppb	6.37	50.0	#####	
59	Co	1	72	0.012	ppb	13.68	2.0	8.00	
60	Ni	1	72	0.154	ppb	12.72	2.0	8.00	
63	Cu	1	72	0.076	ppb	2.62	2.0	8.00	
66	Zn	1	72	0.920	ppb	8.33	4.0	10.00	
75	As	1	72	0.022	ppb	12.28	2.0	4.00	
78	Se	1	72	0.125	ppb	25.75	0.6	2.00	
88	Sr	2	115	0.078	ppb	3.18	4.0	10.00	
95	Mo	2	115	0.018	ppb	17.28	2.0	8.00	
107	Ag	2	115	0.018	ppb	18.75	0.4	0.80	
111	Cd	2	115	0.021	ppb	63.35	0.4	1.20	
118	Sn	2	115	3.891	ppb	2.35	20.0	40.00	
121	Sb	2	115	-0.001	ppb	15.73	2.0	4.00	
137	Ba	2	115	0.075	ppb	10.38	2.0	8.00	
205	Tl	2	209	0.025	ppb	18.73	2.0	4.00	
208	Pb	2	209	0.045	ppb	0.86	0.4	1.20	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHig	-22.95	21.75	35.48	-64.7	70 - 120	ISFail
45	Sc	1		126317.22	0.72	138057.45	91.5	70 - 120	
45	Sc	2		3500376.00	2.13	4152726.00	84.3	70 - 120	
72	Ge	1		78277.06	1.35	86466.48	90.5	70 - 120	
115	In	2		5718756.00	1.23	6053544.50	94.5	70 - 120	
209	Bi	2		5375578.50	0.98	5465338.50	98.4	70 - 120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\096_LCS.D\096_LCS.D#

Date Acquired:	May 25 2016 08:30 pm	Sample Name:	**LCS-75216**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	205.50	ppb	0.51	200.00	80 -	120	102.8	
9	Be	2	45	188.20	ppb	1.44	200.00	80 -	120	94.1	
11	B	2	45	176.10	ppb	1.18	200.00	80 -	120	88.1	
23	Na	1	45	5173.00	ppb	1.12	1000.00	80 -	120	517.3	Fail
24	Mg	1	45	4928.00	ppb	1.19	1000.00	80 -	120	492.8	Fail
27	Al	1	45	991.90	ppb	0.55	1000.00	80 -	120	99.2	
39	K	1	45	5150.00	ppb	0.45	1000.00	80 -	120	515.0	Fail
44	Ca	2	45	4914.00	ppb	1.52	1000.00	80 -	120	491.4	Fail
47	Ti	1	45	200.50	ppb	2.70	200.00	80 -	120	100.3	
51	V	1	45	196.40	ppb	1.13	200.00	80 -	120	98.2	
52	Cr	1	45	197.10	ppb	1.61	200.00	80 -	120	98.6	
55	Mn	1	45	201.70	ppb	1.45	200.00	80 -	120	100.9	
56	Fe	1	72	10.30	ppb	0.81	1000.00	80 -	120	1.0	Fail
59	Co	1	72	201.80	ppb	1.11	200.00	80 -	120	100.9	
60	Ni	1	72	196.10	ppb	0.41	200.00	80 -	120	98.1	
63	Cu	1	72	201.20	ppb	1.17	200.00	80 -	120	100.6	
66	Zn	1	72	189.70	ppb	1.17	200.00	80 -	120	94.9	
75	As	1	72	196.30	ppb	0.76	200.00	80 -	120	98.2	
78	Se	1	72	187.40	ppb	1.34	200.00	80 -	120	93.7	
88	Sr	2	115	205.70	ppb	0.97	200.00	80 -	120	102.9	
95	Mo	2	115	188.50	ppb	1.44	200.00	80 -	120	94.3	
107	Ag	2	115	191.30	ppb	1.78	200.00	80 -	120	95.7	
111	Cd	2	115	186.50	ppb	1.79	200.00	80 -	120	93.3	
118	Sn	2	115	201.20	ppb	2.36	200.00	80 -	120	100.6	
121	Sb	2	115	192.70	ppb	1.93	200.00	80 -	120	96.4	
137	Ba	2	115	198.50	ppb	2.29	200.00	80 -	120	99.3	
205	Tl	2	209	206.20	ppb	2.20	200.00	80 -	120	103.1	
208	Pb	2	209	201.30	ppb	1.54	200.00	80 -	120	100.7	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-52739.15	0.35	35.48	-148642.4	70 -	120	ISFail
45	Sc	1	126782.71	0.15	138057.45	91.8	70 -	120	
45	Sc	2	3463862.00	1.79	4152726.00	83.4	70 -	120	
72	Ge	1	78198.08	0.52	86466.48	90.4	70 -	120	
115	In	2	5623388.50	1.72	6053544.50	92.9	70 -	120	
209	Bi	2	5141356.00	1.42	5465338.50	94.1	70 -	120	

LCS QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\097_LCS.D\097_LCS.D#

Date Acquired:	May 25 2016 08:36 pm	Sample Name:	**LCSD-75216**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCSDICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Dil:	Undiluted
Instrument:	ICPMS3	Total Dil:	5.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	209.40	ppb	0.99	200.00	80 -	120	104.7	
9	Be	2	45	189.60	ppb	0.82	200.00	80 -	120	94.8	
11	B	2	45	181.80	ppb	0.76	200.00	80 -	120	90.9	
23	Na	1	45	5246.00	ppb	0.53	1000.00	80 -	120	524.6	Fail
24	Mg	1	45	5021.00	ppb	0.67	1000.00	80 -	120	502.1	Fail
27	Al	1	45	1034.00	ppb	1.79	1000.00	80 -	120	103.4	
39	K	1	45	5296.00	ppb	1.20	1000.00	80 -	120	529.6	Fail
44	Ca	2	45	4975.00	ppb	1.42	1000.00	80 -	120	497.5	Fail
47	Ti	1	45	206.90	ppb	1.92	200.00	80 -	120	103.5	
51	V	1	45	200.50	ppb	0.79	200.00	80 -	120	100.3	
52	Cr	1	45	200.20	ppb	1.25	200.00	80 -	120	100.1	
55	Mn	1	45	207.60	ppb	1.22	200.00	80 -	120	103.8	
56	Fe	1	72	8.36	ppb	1.47	1000.00	80 -	120	0.8	Fail
59	Co	1	72	202.50	ppb	0.71	200.00	80 -	120	101.3	
60	Ni	1	72	198.60	ppb	0.39	200.00	80 -	120	99.3	
63	Cu	1	72	202.00	ppb	0.65	200.00	80 -	120	101.0	
66	Zn	1	72	191.80	ppb	1.21	200.00	80 -	120	95.9	
75	As	1	72	198.60	ppb	0.43	200.00	80 -	120	99.3	
78	Se	1	72	190.70	ppb	0.59	200.00	80 -	120	95.4	
88	Sr	2	115	205.30	ppb	1.12	200.00	80 -	120	102.7	
95	Mo	2	115	188.20	ppb	1.54	200.00	80 -	120	94.1	
107	Ag	2	115	189.40	ppb	1.42	200.00	80 -	120	94.7	
111	Cd	2	115	186.00	ppb	1.88	200.00	80 -	120	93.0	
118	Sn	2	115	199.90	ppb	2.14	200.00	80 -	120	100.0	
121	Sb	2	115	191.50	ppb	1.24	200.00	80 -	120	95.8	
137	Ba	2	115	199.30	ppb	0.67	200.00	80 -	120	99.7	
205	Tl	2	209	209.00	ppb	0.54	200.00	80 -	120	104.5	
208	Pb	2	209	204.60	ppb	1.50	200.00	80 -	120	102.3	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	-53672.47	1.02	35.48	-151272.9	70 -	120	ISFail
45	Sc	1	127889.62	1.19	138057.45	92.6	70 -	120	
45	Sc	2	3469782.80	1.09	4152726.00	83.6	70 -	120	
72	Ge	1	79083.59	0.45	86466.48	91.5	70 -	120	
115	In	2	5679878.00	2.05	6053544.50	93.8	70 -	120	
209	Bi	2	5172574.00	1.38	5465338.50	94.6	70 -	120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\099AREF.D\099AREF.D#

Date Acquired:	May 25 2016 08:48 pm	Sample Name:	**1605097-41A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	65.210	ppb	#REF!	1.81	2000.00	>RL
9	Be	2	45	2.702	ppb	#REF!	3.71	2000.00	>RL
11	B	2	45	68.620	ppb	#REF!	1.93	2000.00	>RL
23	Na	1	45	1013.000	ppb	#REF!	1.23	25000.00	>RL
24	Mg	1	45	14400.000	ppb	#REF!	0.62	25000.00	>RL
27	Al	1	45	84070.000	ppb	#REF!	0.18	10000.00	OUTCAL
39	K	1	45	19230.000	ppb	#REF!	1.36	25000.00	>RL
44	Ca	2	45	49050.000	ppb	#REF!	2.43	25000.00	OUTCAL
47	Ti	1	45	378.500	ppb	#REF!	1.26	2000.00	>RL
51	V	1	45	121.400	ppb	#REF!	0.91	2000.00	>RL
52	Cr	1	45	73.170	ppb	#REF!	0.86	2000.00	>RL
55	Mn	1	45	690.100	ppb	#REF!	1.11	2000.00	>RL
56	Fe	1	72	74190.000	ppb	#REF!	1.08	10000.00	OUTCAL
59	Co	1	72	28.630	ppb	#REF!	1.77	2000.00	>RL
60	Ni	1	72	42.500	ppb	#REF!	1.00	2000.00	>RL
63	Cu	1	72	27.790	ppb	#REF!	1.17	2000.00	>RL
66	Zn	1	72	229.200	ppb	#REF!	1.68	2000.00	>RL
75	As	1	72	26.240	ppb	#REF!	1.12	2000.00	>RL
78	Se	1	72	25.780	ppb	#REF!	2.30	2000.00	>RL
88	Sr	2	115	291.000	ppb	#REF!	1.69	2000.00	>RL
95	Mo	2	115	1.767	ppb	#REF!	1.59	2000.00	ND
107	Ag	2	115	0.256	ppb	#REF!	9.54	500.00	ND
111	Cd	2	115	0.965	ppb	#REF!	7.51	2000.00	J
118	Sn	2	115	5.874	ppb	#REF!	2.11	2000.00	J
121	Sb	2	115	1.715	ppb	#REF!	2.72	500.00	ND
137	Ba	2	115	450.800	ppb	#REF!	3.08	2000.00	>RL
205	Tl	2	209	0.798	ppb	#REF!	5.51	2000.00	ND
208	Pb	2	209	56.670	ppb	#REF!	2.00	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-6121.55	2.67	35.48	-17253.2	70 - 120	ISFail
45	Sc	1	123737.78	0.14	138057.45	89.6	70 - 120	
45	Sc	2	3448607.30	1.74	4152726.00	83.0	70 - 120	
72	Ge	1	74548.27	0.79	86466.48	86.2	70 - 120	
115	In	2	5429657.00	1.48	6053544.50	89.7	70 - 120	
209	Bi	2	4751971.00	1.74	5465338.50	86.9	70 - 120	

DT QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\100DT1.D\100DT1.D#

Date Acquired:	May 25 2016 08:54 pm	Sample Name:	**1605097-41A SD**
Acq. Method:	DHL_3Fe.M	Misc Info:	SD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	25.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	25.00

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)	Rec(%)	Flag
7	Li	2	45	12.27	ppb	0.57	-1130.01	90 - 110	-5.4	
9	Be	2	45	0.59	ppb	3.56	2.70	90 - 110	108.9	GOOD
11	B	2	45	14.11	ppb	1.63	68.62	90 - 110	102.8	GOOD
23	Na	1	45	177.10	ppb	3.03	1013.00	90 - 110	87.4	
24	Mg	1	45	2502.00	ppb	0.96	14400.00	90 - 110	86.9	
27	Al	1	45	14660.00	ppb	1.89	84070.00	90 - 110	87.2	
39	K	1	45	3403.00	ppb	1.30	19230.00	90 - 110	88.5	
44	Ca	2	45	9516.00	ppb	1.88	49050.00	90 - 110	97.0	GOOD
47	Ti	1	45	65.88	ppb	4.75	378.50	90 - 110	87.0	
51	V	1	45	21.59	ppb	1.89	121.40	90 - 110	88.9	
52	Cr	1	45	13.22	ppb	2.27	73.17	90 - 110	90.3	GOOD
55	Mn	1	45	124.20	ppb	2.14	690.10	90 - 110	90.0	
56	Fe	1	72	13040.00	ppb	1.35	74190.00	90 - 110	87.9	
59	Co	1	72	5.02	ppb	1.10	28.63	90 - 110	87.6	
60	Ni	1	72	7.87	ppb	3.00	42.50	90 - 110	92.5	GOOD
63	Cu	1	72	5.10	ppb	2.22	27.79	90 - 110	91.8	GOOD
66	Zn	1	72	44.88	ppb	2.43	229.20	90 - 110	97.9	GOOD
75	As	1	72	4.85	ppb	2.35	26.24	90 - 110	92.3	GOOD
78	Se	1	72	4.84	ppb	5.91	25.78	90 - 110	93.9	GOOD
88	Sr	2	115	50.41	ppb	0.80	291.00	90 - 110	86.6	
95	Mo	2	115	0.34	ppb	6.71	1.77	90 - 110	94.9	GOOD
107	Ag	2	115	0.08	ppb	6.97	0.26	90 - 110	148.7	
111	Cd	2	115	0.21	ppb	18.97	0.97	90 - 110	109.9	GOOD
118	Sn	2	115	1.07	ppb	4.43	5.87	90 - 110	90.7	GOOD
121	Sb	2	115	0.34	ppb	2.50	1.72	90 - 110	100.6	GOOD
137	Ba	2	115	81.32	ppb	2.19	450.80	90 - 110	90.2	GOOD
205	Tl	2	209	0.20	ppb	3.75	0.80	90 - 110	124.0	
208	Pb	2	209	10.20	ppb	1.33	56.67	90 - 110	90.0	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHig	-1130.01	15.39	35.48	-3184.9	70 -	120	ISFail
45	Sc	1		122021.13	0.44	138057.45	88.4	70 -	120	
45	Sc	2		3421712.80	1.50	4152726.00	82.4	70 -	120	
72	Ge	1		76179.46	1.09	86466.48	88.1	70 -	120	
115	In	2		5566847.00	1.75	6053544.50	92.0	70 -	120	
209	Bi	2		5026028.00	0.88	5465338.50	92.0	70 -	120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\101SMPL.D\101SMPL.D#

Date Acquired:	May 25 2016 09:00 pm	Sample Name:	**1605097-37A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	124.400	ppb	#REF!	1.36	2000.00	>RL
9	Be	2	45	3.656	ppb	#REF!	0.89	2000.00	>RL
11	B	2	45	85.320	ppb	#REF!	2.10	2000.00	>RL
23	Na	1	45	2101.000	ppb	#REF!	0.70	25000.00	>RL
24	Mg	1	45	16740.000	ppb	#REF!	2.03	25000.00	>RL
27	Al	1	45	88900.000	ppb	#REF!	2.18	10000.00	OUTCAL
39	K	1	45	20800.000	ppb	#REF!	1.42	25000.00	>RL
44	Ca	2	45	86530.000	ppb	#REF!	2.25	25000.00	OUTCAL
47	Ti	1	45	343.800	ppb	#REF!	3.37	2000.00	>RL
51	V	1	45	129.700	ppb	#REF!	1.46	2000.00	>RL
52	Cr	1	45	73.910	ppb	#REF!	1.73	2000.00	>RL
55	Mn	1	45	599.400	ppb	#REF!	1.46	2000.00	>RL
56	Fe	1	72	93830.000	ppb	#REF!	1.61	10000.00	OUTCAL
59	Co	1	72	41.590	ppb	#REF!	1.14	2000.00	>RL
60	Ni	1	72	53.780	ppb	#REF!	0.97	2000.00	>RL
63	Cu	1	72	19.720	ppb	#REF!	1.32	2000.00	>RL
66	Zn	1	72	251.000	ppb	#REF!	1.19	2000.00	>RL
75	As	1	72	29.360	ppb	#REF!	0.47	2000.00	>RL
78	Se	1	72	29.080	ppb	#REF!	3.18	2000.00	>RL
88	Sr	2	115	345.600	ppb	#REF!	1.99	2000.00	>RL
95	Mo	2	115	1.640	ppb	#REF!	7.39	2000.00	ND
107	Ag	2	115	0.189	ppb	#REF!	0.85	500.00	ND
111	Cd	2	115	1.088	ppb	#REF!	9.65	2000.00	J
118	Sn	2	115	5.734	ppb	#REF!	2.47	2000.00	ND
121	Sb	2	115	0.822	ppb	#REF!	3.26	500.00	ND
137	Ba	2	115	711.900	ppb	#REF!	1.44	2000.00	>RL
205	Tl	2	209	0.635	ppb	#REF!	3.61	2000.00	ND
208	Pb	2	209	46.930	ppb	#REF!	1.44	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-12200.75	1.30	35.48	-34387.1	70 - 120	ISFail
45	Sc	1	123851.74	0.70	138057.45	89.7	70 - 120	
45	Sc	2	3354120.30	2.08	4152726.00	80.8	70 - 120	
72	Ge	1	73929.75	0.43	86466.48	85.5	70 - 120	
115	In	2	5294538.50	1.08	6053544.50	87.5	70 - 120	
209	Bi	2	4597563.50	0.76	5465338.50	84.1	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\102SMPL.D\102SMPL.D#

Date Acquired:	May 25 2016 09:06 pm	Sample Name:	**1605097-38A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	165.300	ppb	#REF!	1.71	2000.00	>RL
9	Be	2	45	3.944	ppb	#REF!	1.65	2000.00	>RL
11	B	2	45	118.700	ppb	#REF!	2.16	2000.00	>RL
23	Na	1	45	4216.000	ppb	#REF!	1.05	25000.00	>RL
24	Mg	1	45	15010.000	ppb	#REF!	2.11	25000.00	>RL
27	Al	1	45	72630.000	ppb	#REF!	2.64	10000.00	OUTCAL
39	K	1	45	20260.000	ppb	#REF!	1.22	25000.00	>RL
44	Ca	2	45	103500.000	ppb	#REF!	1.28	25000.00	OUTCAL
47	Ti	1	45	286.200	ppb	#REF!	1.77	2000.00	>RL
51	V	1	45	112.300	ppb	#REF!	1.35	2000.00	>RL
52	Cr	1	45	68.820	ppb	#REF!	1.50	2000.00	>RL
55	Mn	1	45	517.500	ppb	#REF!	0.98	2000.00	>RL
56	Fe	1	72	106700.000	ppb	#REF!	1.83	10000.00	OUTCAL
59	Co	1	72	49.780	ppb	#REF!	1.76	2000.00	>RL
60	Ni	1	72	59.470	ppb	#REF!	1.46	2000.00	>RL
63	Cu	1	72	13.240	ppb	#REF!	2.35	2000.00	>RL
66	Zn	1	72	282.100	ppb	#REF!	0.99	2000.00	>RL
75	As	1	72	34.330	ppb	#REF!	1.17	2000.00	>RL
78	Se	1	72	43.450	ppb	#REF!	3.06	2000.00	>RL
88	Sr	2	115	366.900	ppb	#REF!	1.41	2000.00	>RL
95	Mo	2	115	3.206	ppb	#REF!	1.84	2000.00	J
107	Ag	2	115	0.143	ppb	#REF!	9.18	500.00	ND
111	Cd	2	115	1.025	ppb	#REF!	11.60	2000.00	J
118	Sn	2	115	5.682	ppb	#REF!	1.19	2000.00	ND
121	Sb	2	115	0.352	ppb	#REF!	5.58	500.00	ND
137	Ba	2	115	734.500	ppb	#REF!	1.92	2000.00	>RL
205	Tl	2	209	0.461	ppb	#REF!	2.48	2000.00	ND
208	Pb	2	209	34.090	ppb	#REF!	1.31	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-16245.52	6.31	RHigh	35.48	-45787.1	70 - 120	ISFail
45	Sc	1	120496.93	0.54		138057.45	87.3	70 - 120	
45	Sc	2	3326237.00	1.39		4152726.00	80.1	70 - 120	
72	Ge	1	73303.52	0.53		86466.48	84.8	70 - 120	
115	In	2	5280186.00	1.60		6053544.50	87.2	70 - 120	
209	Bi	2	4669097.50	0.64		5465338.50	85.4	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\103SMPL.D\103SMPL.D#

Date Acquired:	May 25 2016 09:12 pm	Sample Name:	**1605097-39A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	61.100	ppb	#REF!	1.59	2000.00	>RL
9	Be	2	45	2.420	ppb	#REF!	2.41	2000.00	>RL
11	B	2	45	95.730	ppb	#REF!	3.68	2000.00	>RL
23	Na	1	45	4198.000	ppb	#REF!	1.44	25000.00	>RL
24	Mg	1	45	11220.000	ppb	#REF!	0.31	25000.00	>RL
27	Al	1	45	55910.000	ppb	#REF!	1.37	10000.00	OUTCAL
39	K	1	45	14940.000	ppb	#REF!	0.68	25000.00	>RL
44	Ca	2	45	200300.000	ppb	#REF!	2.44	25000.00	OUTCAL
47	Ti	1	45	201.500	ppb	#REF!	1.80	2000.00	>RL
51	V	1	45	85.480	ppb	#REF!	0.95	2000.00	>RL
52	Cr	1	45	63.120	ppb	#REF!	0.23	2000.00	>RL
55	Mn	1	45	1888.000	ppb	#REF!	0.50	2000.00	>RL
56	Fe	1	72	76520.000	ppb	#REF!	0.56	10000.00	OUTCAL
59	Co	1	72	44.570	ppb	#REF!	0.17	2000.00	>RL
60	Ni	1	72	59.430	ppb	#REF!	0.38	2000.00	>RL
63	Cu	1	72	10.840	ppb	#REF!	1.43	2000.00	>RL
66	Zn	1	72	148.500	ppb	#REF!	0.88	2000.00	>RL
75	As	1	72	31.860	ppb	#REF!	0.95	2000.00	>RL
78	Se	1	72	27.110	ppb	#REF!	6.50	2000.00	>RL
88	Sr	2	115	1086.000	ppb	#REF!	2.48	2000.00	>RL
95	Mo	2	115	5.482	ppb	#REF!	1.23	2000.00	J
107	Ag	2	115	0.106	ppb	#REF!	5.50	500.00	ND
111	Cd	2	115	0.808	ppb	#REF!	10.43	2000.00	J
118	Sn	2	115	5.250	ppb	#REF!	2.06	2000.00	ND
121	Sb	2	115	0.264	ppb	#REF!	6.34	500.00	ND
137	Ba	2	115	185.900	ppb	#REF!	2.44	2000.00	>RL
205	Tl	2	209	0.793	ppb	#REF!	2.10	2000.00	ND
208	Pb	2	209	29.610	ppb	#REF!	1.10	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5363.48	5.89	RHigh	35.48	-15116.7	70 - 120	ISFail
45	Sc	1	118254.37	0.32		138057.45	85.7	70 - 120	
45	Sc	2	3189905.80	1.89		4152726.00	76.8	70 - 120	
72	Ge	1	71139.59	0.76		86466.48	82.3	70 - 120	
115	In	2	5200306.50	1.86		6053544.50	85.9	70 - 120	
209	Bi	2	4641069.50	0.64		5465338.50	84.9	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\104SMPL.D\104SMPL.D#

Date Acquired:	May 25 2016 09:18 pm	Sample Name:	**1605097-40A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	61.040	ppb	#REF!	1.62	2000.00	>RL
9	Be	2	45	2.710	ppb	#REF!	2.15	2000.00	>RL
11	B	2	45	109.200	ppb	#REF!	3.66	2000.00	>RL
23	Na	1	45	2021.000	ppb	#REF!	1.30	25000.00	>RL
24	Mg	1	45	12790.000	ppb	#REF!	0.85	25000.00	>RL
27	Al	1	45	50730.000	ppb	#REF!	2.26	10000.00	OUTCAL
39	K	1	45	19280.000	ppb	#REF!	1.05	25000.00	>RL
44	Ca	2	45	153500.000	ppb	#REF!	3.04	25000.00	OUTCAL
47	Ti	1	45	304.200	ppb	#REF!	4.66	2000.00	>RL
51	V	1	45	73.790	ppb	#REF!	0.80	2000.00	>RL
52	Cr	1	45	63.940	ppb	#REF!	2.02	2000.00	>RL
55	Mn	1	45	351.300	ppb	#REF!	2.19	2000.00	>RL
56	Fe	1	72	75880.000	ppb	#REF!	2.58	10000.00	OUTCAL
59	Co	1	72	21.880	ppb	#REF!	0.97	2000.00	>RL
60	Ni	1	72	40.070	ppb	#REF!	1.46	2000.00	>RL
63	Cu	1	72	4.757	ppb	#REF!	0.76	2000.00	J
66	Zn	1	72	176.500	ppb	#REF!	0.50	2000.00	>RL
75	As	1	72	21.570	ppb	#REF!	1.62	2000.00	>RL
78	Se	1	72	23.580	ppb	#REF!	2.12	2000.00	>RL
88	Sr	2	115	798.600	ppb	#REF!	1.55	2000.00	>RL
95	Mo	2	115	1.546	ppb	#REF!	3.25	2000.00	ND
107	Ag	2	115	0.103	ppb	#REF!	15.58	500.00	ND
111	Cd	2	115	0.660	ppb	#REF!	12.54	2000.00	J
118	Sn	2	115	5.297	ppb	#REF!	2.12	2000.00	ND
121	Sb	2	115	0.078	ppb	#REF!	13.09	500.00	ND
137	Ba	2	115	48.630	ppb	#REF!	2.30	2000.00	>RL
205	Tl	2	209	0.346	ppb	#REF!	1.53	2000.00	ND
208	Pb	2	209	18.780	ppb	#REF!	1.26	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5334.03	2.12	35.48	-15033.7	70 - 120	ISFail
45	Sc	1	122883.97	1.08	138057.45	89.0	70 - 120	
45	Sc	2	3201654.30	1.75	4152726.00	77.1	70 - 120	
72	Ge	1	74147.09	0.32	86466.48	85.8	70 - 120	
115	In	2	5391600.50	1.76	6053544.50	89.1	70 - 120	
209	Bi	2	4934351.00	1.38	5465338.50	90.3	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\105SMPL.D\105SMPL.D#

Date Acquired:	May 25 2016 09:24 pm	Sample Name:	**1605097-42A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	127.500	ppb	#REF!	1.24	2000.00	>RL
9	Be	2	45	3.653	ppb	#REF!	2.85	2000.00	>RL
11	B	2	45	86.190	ppb	#REF!	2.05	2000.00	>RL
23	Na	1	45	2276.000	ppb	#REF!	0.29	25000.00	>RL
24	Mg	1	45	16240.000	ppb	#REF!	0.88	25000.00	>RL
27	Al	1	45	83360.000	ppb	#REF!	0.84	10000.00	OUTCAL
39	K	1	45	20320.000	ppb	#REF!	0.80	25000.00	>RL
44	Ca	2	45	104000.000	ppb	#REF!	2.39	25000.00	OUTCAL
47	Ti	1	45	323.400	ppb	#REF!	1.19	2000.00	>RL
51	V	1	45	125.200	ppb	#REF!	1.18	2000.00	>RL
52	Cr	1	45	74.380	ppb	#REF!	1.37	2000.00	>RL
55	Mn	1	45	874.100	ppb	#REF!	1.06	2000.00	>RL
56	Fe	1	72	92870.000	ppb	#REF!	1.66	10000.00	OUTCAL
59	Co	1	72	37.610	ppb	#REF!	1.04	2000.00	>RL
60	Ni	1	72	52.320	ppb	#REF!	1.28	2000.00	>RL
63	Cu	1	72	17.830	ppb	#REF!	0.88	2000.00	>RL
66	Zn	1	72	238.600	ppb	#REF!	0.89	2000.00	>RL
75	As	1	72	27.800	ppb	#REF!	1.36	2000.00	>RL
78	Se	1	72	28.840	ppb	#REF!	1.08	2000.00	>RL
88	Sr	2	115	376.000	ppb	#REF!	1.82	2000.00	>RL
95	Mo	2	115	2.834	ppb	#REF!	1.61	2000.00	J
107	Ag	2	115	0.178	ppb	#REF!	4.57	500.00	ND
111	Cd	2	115	1.090	ppb	#REF!	4.43	2000.00	J
118	Sn	2	115	5.549	ppb	#REF!	0.96	2000.00	ND
121	Sb	2	115	0.608	ppb	#REF!	3.01	500.00	ND
137	Ba	2	115	801.600	ppb	#REF!	2.19	2000.00	>RL
205	Tl	2	209	0.587	ppb	#REF!	3.28	2000.00	ND
208	Pb	2	209	40.560	ppb	#REF!	1.24	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-11203.80	7.70	RHigh	35.48	-31577.3	70 - 120	ISFail
45	Sc	1	123082.47	0.31		138057.45	89.2	70 - 120	
45	Sc	2	3206890.00	1.77		4152726.00	77.2	70 - 120	
72	Ge	1	73620.99	0.65		86466.48	85.1	70 - 120	
115	In	2	5292549.50	1.52		6053544.50	87.4	70 - 120	
209	Bi	2	4736602.50	1.92		5465338.50	86.7	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\106SMPL.D\106SMPL.D#

Date Acquired:	May 25 2016 09:30 pm	Sample Name:	**1605097-43A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	163.500	ppb	#REF!	1.80	2000.00	>RL
9	Be	2	45	3.803	ppb	#REF!	2.29	2000.00	>RL
11	B	2	45	114.100	ppb	#REF!	1.93	2000.00	>RL
23	Na	1	45	3887.000	ppb	#REF!	0.56	25000.00	>RL
24	Mg	1	45	14920.000	ppb	#REF!	0.74	25000.00	>RL
27	Al	1	45	73520.000	ppb	#REF!	0.26	10000.00	OUTCAL
39	K	1	45	19470.000	ppb	#REF!	0.76	25000.00	>RL
44	Ca	2	45	148000.000	ppb	#REF!	1.50	25000.00	OUTCAL
47	Ti	1	45	308.100	ppb	#REF!	2.26	2000.00	>RL
51	V	1	45	115.000	ppb	#REF!	1.10	2000.00	>RL
52	Cr	1	45	70.240	ppb	#REF!	0.47	2000.00	>RL
55	Mn	1	45	927.800	ppb	#REF!	0.59	2000.00	>RL
56	Fe	1	72	101200.000	ppb	#REF!	0.89	10000.00	OUTCAL
59	Co	1	72	51.530	ppb	#REF!	0.63	2000.00	>RL
60	Ni	1	72	57.640	ppb	#REF!	1.27	2000.00	>RL
63	Cu	1	72	12.960	ppb	#REF!	1.01	2000.00	>RL
66	Zn	1	72	267.200	ppb	#REF!	0.72	2000.00	>RL
75	As	1	72	33.570	ppb	#REF!	1.15	2000.00	>RL
78	Se	1	72	34.140	ppb	#REF!	0.94	2000.00	>RL
88	Sr	2	115	454.800	ppb	#REF!	1.83	2000.00	>RL
95	Mo	2	115	2.778	ppb	#REF!	1.04	2000.00	J
107	Ag	2	115	0.129	ppb	#REF!	9.49	500.00	ND
111	Cd	2	115	0.899	ppb	#REF!	2.21	2000.00	J
118	Sn	2	115	5.516	ppb	#REF!	1.86	2000.00	ND
121	Sb	2	115	0.363	ppb	#REF!	1.42	500.00	ND
137	Ba	2	115	764.800	ppb	#REF!	0.72	2000.00	>RL
205	Tl	2	209	0.520	ppb	#REF!	7.55	2000.00	ND
208	Pb	2	209	42.140	ppb	#REF!	1.59	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)		Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-14548.20	5.46	RHigh	35.48	-41003.3	70 - 120	ISFail
45	Sc	1	117388.41	0.18		138057.45	85.0	70 - 120	
45	Sc	2	3142539.30	2.51		4152726.00	75.7	70 - 120	
72	Ge	1	71591.80	0.36		86466.48	82.8	70 - 120	
115	In	2	5202106.00	1.91		6053544.50	85.9	70 - 120	
209	Bi	2	4648383.00	1.49		5465338.50	85.1	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\107SMPL.D\107SMPL.D#

Date Acquired:	May 25 2016 09:36 pm	Sample Name:	**1605097-44A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	65.520	ppb	#REF!	1.81	2000.00	>RL
9	Be	2	45	2.214	ppb	#REF!	2.65	2000.00	>RL
11	B	2	45	92.010	ppb	#REF!	3.95	2000.00	>RL
23	Na	1	45	3990.000	ppb	#REF!	0.46	25000.00	>RL
24	Mg	1	45	11250.000	ppb	#REF!	1.17	25000.00	>RL
27	Al	1	45	54760.000	ppb	#REF!	0.59	10000.00	OUTCAL
39	K	1	45	13300.000	ppb	#REF!	0.47	25000.00	>RL
44	Ca	2	45	206500.000	ppb	#REF!	3.65	25000.00	OUTCAL
47	Ti	1	45	206.300	ppb	#REF!	1.04	2000.00	>RL
51	V	1	45	81.950	ppb	#REF!	0.56	2000.00	>RL
52	Cr	1	45	52.440	ppb	#REF!	0.73	2000.00	>RL
55	Mn	1	45	279.700	ppb	#REF!	0.23	2000.00	>RL
56	Fe	1	72	69780.000	ppb	#REF!	1.20	10000.00	OUTCAL
59	Co	1	72	28.990	ppb	#REF!	0.58	2000.00	>RL
60	Ni	1	72	39.580	ppb	#REF!	0.54	2000.00	>RL
63	Cu	1	72	9.169	ppb	#REF!	0.64	2000.00	>RL
66	Zn	1	72	140.800	ppb	#REF!	0.77	2000.00	>RL
75	As	1	72	27.690	ppb	#REF!	0.45	2000.00	>RL
78	Se	1	72	27.140	ppb	#REF!	3.49	2000.00	>RL
88	Sr	2	115	1271.000	ppb	#REF!	2.22	2000.00	>RL
95	Mo	2	115	2.962	ppb	#REF!	2.99	2000.00	J
107	Ag	2	115	0.099	ppb	#REF!	12.26	500.00	ND
111	Cd	2	115	0.596	ppb	#REF!	17.54	2000.00	J
118	Sn	2	115	6.692	ppb	#REF!	2.95	2000.00	ND
121	Sb	2	115	0.182	ppb	#REF!	11.99	500.00	ND
137	Ba	2	115	103.400	ppb	#REF!	2.42	2000.00	>RL
205	Tl	2	209	0.532	ppb	#REF!	3.59	2000.00	ND
208	Pb	2	209	27.140	ppb	#REF!	2.67	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-5061.77	0.99	35.48	-14266.3	70 - 120	ISFail
45	Sc	1	113873.16	1.13	138057.45	82.5	70 - 120	
45	Sc	2	2945208.80	3.28	4152726.00	70.9	70 - 120	
72	Ge	1	68433.69	0.47	86466.48	79.1	70 - 120	
115	In	2	4937800.50	1.91	6053544.50	81.6	70 - 120	
209	Bi	2	4491450.50	1.80	5465338.50	82.2	70 - 120	

Sample QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\108SMPL.D\108SMPL.D#

Date Acquired:	May 25 2016 09:42 pm	Sample Name:	**1605097-45A**
Acq. Method:	DHL_3Fe.M	Misc Info:	SAMPICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		Corr. Con	RSD(%)	High Limit	Flag
7	Li	2	45	59.190	ppb	#REF!	1.02	2000.00	>RL
9	Be	2	45	2.566	ppb	#REF!	2.80	2000.00	>RL
11	B	2	45	108.200	ppb	#REF!	2.19	2000.00	>RL
23	Na	1	45	2589.000	ppb	#REF!	0.60	25000.00	>RL
24	Mg	1	45	11980.000	ppb	#REF!	1.47	25000.00	>RL
27	Al	1	45	46820.000	ppb	#REF!	2.26	10000.00	OUTCAL
39	K	1	45	18320.000	ppb	#REF!	1.36	25000.00	>RL
44	Ca	2	45	136600.000	ppb	#REF!	2.73	25000.00	OUTCAL
47	Ti	1	45	307.000	ppb	#REF!	2.72	2000.00	>RL
51	V	1	45	71.950	ppb	#REF!	1.19	2000.00	>RL
52	Cr	1	45	61.160	ppb	#REF!	1.89	2000.00	>RL
55	Mn	1	45	844.400	ppb	#REF!	1.40	2000.00	>RL
56	Fe	1	72	74880.000	ppb	#REF!	1.83	10000.00	OUTCAL
59	Co	1	72	26.610	ppb	#REF!	0.81	2000.00	>RL
60	Ni	1	72	50.920	ppb	#REF!	0.51	2000.00	>RL
63	Cu	1	72	5.964	ppb	#REF!	0.33	2000.00	J
66	Zn	1	72	175.200	ppb	#REF!	0.72	2000.00	>RL
75	As	1	72	22.710	ppb	#REF!	0.93	2000.00	>RL
78	Se	1	72	25.830	ppb	#REF!	5.38	2000.00	>RL
88	Sr	2	115	1115.000	ppb	#REF!	3.15	2000.00	>RL
95	Mo	2	115	2.356	ppb	#REF!	3.54	2000.00	J
107	Ag	2	115	0.103	ppb	#REF!	10.91	500.00	ND
111	Cd	2	115	0.772	ppb	#REF!	13.75	2000.00	J
118	Sn	2	115	5.089	ppb	#REF!	3.82	2000.00	ND
121	Sb	2	115	0.143	ppb	#REF!	9.74	500.00	ND
137	Ba	2	115	83.640	ppb	#REF!	1.65	2000.00	>RL
205	Tl	2	209	0.493	ppb	#REF!	4.04	2000.00	ND
208	Pb	2	209	24.470	ppb	#REF!	2.10	2000.00	>RL

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-4777.24	3.27	35.48	-13464.4	70 - 120	ISFail
45	Sc	1	114952.18	0.71	138057.45	83.3	70 - 120	
45	Sc	2	2964179.30	2.21	4152726.00	71.4	70 - 120	
72	Ge	1	69755.27	0.77	86466.48	80.7	70 - 120	
115	In	2	5031171.00	1.28	6053544.50	83.1	70 - 120	
209	Bi	2	4657669.50	2.05	5465338.50	85.2	70 - 120	

PDS QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\110_PDS.D\110_PDS.D#

Date Acquired:	May 25 2016 09:54 pm	Sample Name:	**1605097-41A PDS**
Acq. Method:	DHL_3Fe.M	Misc Info:	PDS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	248.50	ppb	1.54	-26968.20	200	75-125	######	Fail
9	Be	2	45	174.50	ppb	2.13	2.70	200	75-125	85.9	
11	B	2	45	220.30	ppb	0.91	68.62	200	75-125	75.8	
23	Na	1	45	5882.00	ppb	0.62	1013.00	5000	75-125	97.4	
24	Mg	1	45	17770.00	ppb	1.16	14400.00	5000	75-125	67.4	Fail
27	Al	1	45	80070.00	ppb	1.59	84070.00	5000	75-125	-80.0	Fail
39	K	1	45	21920.00	ppb	0.91	19230.00	5000	75-125	53.8	Fail
44	Ca	2	45	51890.00	ppb	1.73	49050.00	5000	75-125	56.8	Fail
47	Ti	1	45	541.80	ppb	1.23	378.50	200	75-125	81.7	
51	V	1	45	305.30	ppb	1.22	121.40	200	75-125	92.0	
52	Cr	1	45	261.30	ppb	1.64	73.17	200	75-125	94.1	
55	Mn	1	45	811.80	ppb	1.07	690.10	200	75-125	60.9	Fail
56	Fe	1	72	71300.00	ppb	1.47	74190.00	5000	75-125	-57.8	Fail
59	Co	1	72	220.50	ppb	1.37	28.63	200	75-125	95.9	
60	Ni	1	72	224.80	ppb	0.63	42.50	200	75-125	91.2	
63	Cu	1	72	210.20	ppb	1.35	27.79	200	75-125	91.2	
66	Zn	1	72	388.70	ppb	1.12	229.20	200	75-125	79.8	
75	As	1	72	217.00	ppb	0.47	26.24	200	75-125	95.4	
78	Se	1	72	202.40	ppb	1.77	25.78	200	75-125	88.3	
88	Sr	2	115	472.10	ppb	1.56	291.00	200	75-125	90.6	
95	Mo	2	115	185.30	ppb	1.99	1.77	200	75-125	91.8	
107	Ag	2	115	175.00	ppb	2.02	0.26	200	75-125	87.4	
111	Cd	2	115	178.10	ppb	1.41	0.97	200	75-125	88.6	
118	Sn	2	115	202.50	ppb	1.84	5.87	200	75-125	98.3	
121	Sb	2	115	187.90	ppb	1.50	1.72	200	75-125	93.1	
137	Ba	2	115	632.10	ppb	1.81	450.80	200	75-125	90.7	
205	Tl	2	209	206.40	ppb	1.32	0.80	200	75-125	102.8	
208	Pb	2	209	254.60	ppb	0.94	56.67	200	75-125	99.0	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-26968.20	3.59	35.48	-76008.4	70 - 120	ISFail
45	Sc	1	112479.95	0.48	138057.45	81.5	70 - 120	
45	Sc	2	3149629.30	0.71	4152726.00	75.8	70 - 120	
72	Ge	1	68725.95	0.67	86466.48	79.5	70 - 120	
115	In	2	5207528.00	1.73	6053544.50	86.0	70 - 120	
209	Bi	2	4644441.00	0.81	5465338.50	85.0	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\111_MS.D\111_MS.D#

Date Acquired:	May 25 2016 10:00 pm	Sample Name:	**1605097-41A MS**
Acq. Method:	DHL_3Fe.M	Misc Info:	MS ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	250.20	ppb	1.04	########	200	80-120	######	Fail
9	Be	2	45	171.00	ppb	1.73	2.70	200	80-120	84.1	
11	B	2	45	222.40	ppb	2.19	68.62	200	80-120	76.9	Fail
23	Na	1	45	5947.00	ppb	0.72	1013.00	1000	80-120	493.4	Fail
24	Mg	1	45	18490.00	ppb	0.52	14400.00	1000	80-120	409.0	Fail
27	Al	1	45	85250.00	ppb	0.20	84070.00	1000	80-120	118.0	
39	K	1	45	24330.00	ppb	0.60	19230.00	1000	80-120	510.0	Fail
44	Ca	2	45	47780.00	ppb	1.44	49050.00	1000	80-120	-127.0	Fail
47	Ti	1	45	568.50	ppb	1.03	378.50	200	80-120	95.0	
51	V	1	45	310.00	ppb	0.45	121.40	200	80-120	94.3	
52	Cr	1	45	259.90	ppb	0.75	73.17	200	80-120	93.4	
55	Mn	1	45	859.60	ppb	0.87	690.10	200	80-120	84.8	
56	Fe	1	72	70880.00	ppb	1.32	74190.00	1000	80-120	-331.0	Fail
59	Co	1	72	220.70	ppb	0.75	28.63	200	80-120	96.0	
60	Ni	1	72	227.20	ppb	0.79	42.50	200	80-120	92.4	
63	Cu	1	72	211.80	ppb	0.65	27.79	200	80-120	92.0	
66	Zn	1	72	392.60	ppb	0.22	229.20	200	80-120	81.7	
75	As	1	72	213.90	ppb	0.17	26.24	200	80-120	93.8	
78	Se	1	72	205.20	ppb	0.70	25.78	200	80-120	89.7	
88	Sr	2	115	457.00	ppb	2.34	291.00	200	80-120	83.0	
95	Mo	2	115	169.60	ppb	1.78	1.77	200	80-120	83.9	
107	Ag	2	115	175.70	ppb	2.04	0.26	200	80-120	87.7	
111	Cd	2	115	176.10	ppb	2.55	0.97	200	80-120	87.6	
118	Sn	2	115	193.60	ppb	2.28	5.87	200	80-120	93.9	
121	Sb	2	115	65.07	ppb	1.84	1.72	200	80-120	31.7	Fail
137	Ba	2	115	649.80	ppb	2.98	450.80	200	80-120	99.5	
205	Tl	2	209	212.60	ppb	2.29	0.80	200	80-120	105.9	
208	Pb	2	209	262.50	ppb	0.98	56.67	200	80-120	102.9	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-49634.36	1.91	35.48	########	70 - 120	ISFail
45	Sc	1	115554.32	0.70	138057.45	83.7	70 - 120	
45	Sc	2	3186061.00	1.30	4152726.00	76.7	70 - 120	
72	Ge	1	70086.66	0.36	86466.48	81.1	70 - 120	
115	In	2	5291176.50	2.03	6053544.50	87.4	70 - 120	
209	Bi	2	4665717.00	1.03	5465338.50	85.4	70 - 120	

MS/MSD QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\112_MS.D\112_MS.D#

Date Acquired:	May 25 2016 10:06 pm	Sample Name:	**1605097-41A MSD**
Acq. Method:	DHL_3Fe.M	Misc Info:	MSD ICPMS_TSDOD1
Operator:	KL	Bench Diln:	5.00
Last Cal. Update:	May 25 2016 12:14 pm	Auto Diln:	Undiluted
Instrument:	ICPMS3	Total Diln:	5.00

QC Elements

Element				Conc.		RSD(%)	Ref Conc	Spike	Range	Rec(%)	Flag
7	Li	2	45	245.30	ppb	1.87	########	200	80-120	######	Fail
9	Be	2	45	166.00	ppb	2.06	2.70	200	80-120	81.6	
11	B	2	45	219.00	ppb	2.04	68.62	200	80-120	75.2	Fail
23	Na	1	45	5778.00	ppb	0.54	1013.00	1000	80-120	476.5	Fail
24	Mg	1	45	18590.00	ppb	0.67	14400.00	1000	80-120	419.0	Fail
27	Al	1	45	84710.00	ppb	1.78	84070.00	1000	80-120	64.0	Fail
39	K	1	45	23710.00	ppb	2.04	19230.00	1000	80-120	448.0	Fail
44	Ca	2	45	48400.00	ppb	1.28	49050.00	1000	80-120	-65.0	Fail
47	Ti	1	45	534.80	ppb	0.62	378.50	200	80-120	78.2	Fail
51	V	1	45	304.90	ppb	1.01	121.40	200	80-120	91.8	
52	Cr	1	45	254.50	ppb	1.16	73.17	200	80-120	90.7	
55	Mn	1	45	833.20	ppb	0.61	690.10	200	80-120	71.6	Fail
56	Fe	1	72	72900.00	ppb	0.71	74190.00	1000	80-120	-129.0	Fail
59	Co	1	72	214.30	ppb	0.89	28.63	200	80-120	92.8	
60	Ni	1	72	221.30	ppb	1.18	42.50	200	80-120	89.4	
63	Cu	1	72	205.40	ppb	0.39	27.79	200	80-120	88.8	
66	Zn	1	72	390.90	ppb	1.30	229.20	200	80-120	80.9	
75	As	1	72	208.20	ppb	0.57	26.24	200	80-120	91.0	
78	Se	1	72	197.10	ppb	1.03	25.78	200	80-120	85.7	
88	Sr	2	115	461.40	ppb	2.79	291.00	200	80-120	85.2	
95	Mo	2	115	168.60	ppb	1.65	1.77	200	80-120	83.4	
107	Ag	2	115	174.40	ppb	2.38	0.26	200	80-120	87.1	
111	Cd	2	115	173.60	ppb	1.98	0.97	200	80-120	86.3	
118	Sn	2	115	192.50	ppb	2.49	5.87	200	80-120	93.3	
121	Sb	2	115	66.22	ppb	1.70	1.72	200	80-120	32.3	Fail
137	Ba	2	115	716.20	ppb	2.52	450.80	200	80-120	132.7	Fail
205	Tl	2	209	205.70	ppb	2.02	0.80	200	80-120	102.5	
208	Pb	2	209	254.30	ppb	1.43	56.67	200	80-120	98.8	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	-48441.43	4.02	35.48	########	70 - 120	ISFail
45	Sc	1	111819.46	0.30	138057.45	81.0	70 - 120	
45	Sc	2	3199715.80	1.76	4152726.00	77.1	70 - 120	
72	Ge	1	67933.56	0.74	86466.48	78.6	70 - 120	
115	In	2	5270491.00	2.11	6053544.50	87.1	70 - 120	
209	Bi	2	4699666.50	1.20	5465338.50	86.0	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\114CCV1.D\114CCV1.D#

Date Acquired:	May 25 2016 10:18 pm	Sample Name:	**CCV5-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	197.00	ppb	1.12	200.00	90 -	110	98.5	
9	Be	2	45	187.70	ppb	1.80	200.00	90 -	110	93.9	
11	B	2	45	174.30	ppb	0.67	200.00	90 -	110	87.2	Fail
23	Na	1	45	5147.00	ppb	0.53	5000.00	90 -	110	102.9	
24	Mg	1	45	4911.00	ppb	1.74	5000.00	90 -	110	98.2	
27	Al	1	45	4933.00	ppb	2.51	5000.00	90 -	110	98.7	
39	K	1	45	5234.00	ppb	0.52	5000.00	90 -	110	104.7	
44	Ca	2	45	4982.00	ppb	1.66	5000.00	90 -	110	99.6	
47	Ti	1	45	205.10	ppb	2.71	200.00	90 -	110	102.6	
51	V	1	45	198.80	ppb	0.97	200.00	90 -	110	99.4	
52	Cr	1	45	199.70	ppb	1.66	200.00	90 -	110	99.9	
55	Mn	1	45	206.70	ppb	0.97	200.00	90 -	110	103.4	
56	Fe	1	72	5045.00	ppb	2.05	5000.00	90 -	110	100.9	
59	Co	1	72	201.80	ppb	0.75	200.00	90 -	110	100.9	
60	Ni	1	72	197.40	ppb	1.01	200.00	90 -	110	98.7	
63	Cu	1	72	202.00	ppb	0.91	200.00	90 -	110	101.0	
66	Zn	1	72	204.80	ppb	0.85	200.00	90 -	110	102.4	
75	As	1	72	210.60	ppb	1.01	200.00	90 -	110	105.3	
78	Se	1	72	210.60	ppb	3.62	200.00	90 -	110	105.3	
88	Sr	2	115	208.40	ppb	2.16	200.00	90 -	110	104.2	
95	Mo	2	115	187.10	ppb	1.38	200.00	90 -	110	93.6	
107	Ag	2	115	190.40	ppb	1.10	200.00	90 -	110	95.2	
111	Cd	2	115	192.10	ppb	1.43	200.00	90 -	110	96.1	
118	Sn	2	115	198.00	ppb	1.59	200.00	90 -	110	99.0	
121	Sb	2	115	198.80	ppb	1.85	200.00	90 -	110	99.4	
137	Ba	2	115	207.50	ppb	1.61	200.00	90 -	110	103.8	
205	Tl	2	209	212.50	ppb	0.97	200.00	90 -	110	106.3	
208	Pb	2	209	203.50	ppb	1.32	200.00	90 -	110	101.8	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-46314.04	1.05	35.48	-130533.6	70 -	120		ISFail
45	Sc	1	110748.88	1.03	138057.45	80.2	70 -	120		
45	Sc	2	3152866.00	0.92	4152726.00	75.9	70 -	120		
72	Ge	1	69207.07	0.50	86466.48	80.0	70 -	120		
115	In	2	5332633.00	1.05	6053544.50	88.1	70 -	120		
209	Bi	2	4925184.00	1.52	5465338.50	90.1	70 -	120		

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\116LCVL.D\116LCVL.D#

Date Acquired:	May 25 2016 10:30 pm	Sample Name:	**LCVL5-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	9.64	ppb	1.95	5.00	70 -	130	192.8	Fail
9	Be	2	45	0.97	ppb	2.01	1.00	70 -	130	97.2	
11	B	2	45	18.31	ppb	1.25	20.00	70 -	130	91.6	
23	Na	1	45	96.59	ppb	1.25	100.00	70 -	130	96.6	
24	Mg	1	45	99.01	ppb	0.20	100.00	70 -	130	99.0	
27	Al	1	45	109.80	ppb	2.83	100.00	70 -	130	109.8	
39	K	1	45	105.90	ppb	5.78	100.00	70 -	130	105.9	
44	Ca	2	45	105.60	ppb	0.22	100.00	70 -	130	105.6	
47	Ti	1	45	4.81	ppb	16.29	5.00	70 -	130	96.2	
51	V	1	45	1.09	ppb	4.18	1.00	70 -	130	108.5	
52	Cr	1	45	5.10	ppb	1.53	5.00	70 -	130	102.0	
55	Mn	1	45	5.26	ppb	2.20	5.00	70 -	130	105.3	
56	Fe	1	72	111.90	ppb	0.93	100.00	70 -	130	111.9	
59	Co	1	72	5.06	ppb	1.60	5.00	70 -	130	101.2	
60	Ni	1	72	4.91	ppb	1.66	5.00	70 -	130	98.1	
63	Cu	1	72	5.02	ppb	1.09	5.00	70 -	130	100.4	
66	Zn	1	72	4.64	ppb	5.57	5.00	70 -	130	92.8	
75	As	1	72	5.10	ppb	2.61	5.00	70 -	130	101.9	
78	Se	1	72	5.21	ppb	4.53	5.00	70 -	130	104.2	
88	Sr	2	115	4.96	ppb	1.31	5.00	70 -	130	99.2	
95	Mo	2	115	4.49	ppb	4.00	5.00	70 -	130	89.7	
107	Ag	2	115	1.87	ppb	3.09	2.00	70 -	130	93.3	
111	Cd	2	115	1.07	ppb	5.45	1.00	70 -	130	106.7	
118	Sn	2	115	4.80	ppb	1.87	5.00	70 -	130	95.9	
121	Sb	2	115	1.93	ppb	1.68	2.00	70 -	130	96.6	
137	Ba	2	115	5.38	ppb	1.20	5.00	70 -	130	107.6	
205	Tl	2	209	1.09	ppb	0.87	1.00	70 -	130	109.2	
208	Pb	2	209	1.03	ppb	1.81	1.00	70 -	130	102.9	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2 RHigl	-1267.46	5.49	35.48	-3572.3	70 -	120	ISFail
45	Sc	1	108932.16	0.52	138057.45	78.9	70 -	120	
45	Sc	2	3162863.30	0.98	4152726.00	76.2	70 -	120	
72	Ge	1	69309.40	1.05	86466.48	80.2	70 -	120	
115	In	2	5446255.00	0.81	6053544.50	90.0	70 -	120	
209	Bi	2	5138521.00	2.04	5465338.50	94.0	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\117_CCB.D\117_CCB.D#

Date Acquired:	May 25 2016 10:36 pm	Sample Name:	**CCB5-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.176	ppb	3.00	2.00	2.00	
9	Be	2	45	0.041	ppb	30.05	0.40	0.30	
11	B	2	45	3.393	ppb	2.05	10.00	10.00	
23	Na	1	45	4.638	ppb	3.36	50.00	#####	
24	Mg	1	45	2.497	ppb	8.92	50.00	#####	
27	Al	1	45	21.330	ppb	1.41	50.00	10.00	FailAq
39	K	1	45	9.270	ppb	6.66	50.00	#####	
44	Ca	2	45	31.930	ppb	1.06	50.00	#####	
47	Ti	1	45	0.276	ppb	45.83	4.00	3.00	
51	V	1	45	0.063	ppb	3.88	4.00	3.00	
52	Cr	1	45	0.070	ppb	3.65	2.00	2.00	
55	Mn	1	45	0.177	ppb	7.70	2.00	3.00	
56	Fe	1	72	12.190	ppb	4.45	50.00	30.00	
59	Co	1	72	0.044	ppb	11.67	2.00	3.00	
60	Ni	1	72	0.082	ppb	7.69	2.00	3.00	
63	Cu	1	72	0.070	ppb	0.90	2.00	2.00	
66	Zn	1	72	0.075	ppb	3.98	4.00	2.00	
75	As	1	72	0.081	ppb	13.06	2.00	2.00	
78	Se	1	72	0.223	ppb	32.76	0.60	2.00	
88	Sr	2	115	0.239	ppb	2.60	4.00	3.00	
95	Mo	2	115	0.063	ppb	13.89	2.00	2.00	
107	Ag	2	115	0.047	ppb	8.70	0.40	1.00	
111	Cd	2	115	0.040	ppb	29.51	0.40	0.30	
118	Sn	2	115	0.084	ppb	10.20	20.00	3.00	
121	Sb	2	115	0.063	ppb	11.78	2.00	0.80	
137	Ba	2	115	0.131	ppb	6.38	2.00	3.00	
205	Tl	2	209	0.094	ppb	2.33	2.00	0.50	
208	Pb	2	209	0.073	ppb	7.41	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-19.20	114.84	35.48	-54.1	70 - 120	ISFail
45	Sc	1		108610.82	1.06	138057.45	78.7	70 - 120	
45	Sc	2		3165561.00	1.22	4152726.00	76.2	70 - 120	
72	Ge	1		68732.01	0.58	86466.48	79.5	70 - 120	
115	In	2		5408195.00	0.98	6053544.50	89.3	70 - 120	
209	Bi	2		5098436.00	1.12	5465338.50	93.3	70 - 120	

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\128CCV1.D\128CCV1.D#

Date Acquired:	May 25 2016 11:42 pm	Sample Name:	CCV6-160525
Acq. Method:	DHL_3Fe.M	Misc Info:	CCV ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	200.40	ppb	1.58	200.00	90 -	110	100.2	
9	Be	2	45	185.30	ppb	1.16	200.00	90 -	110	92.7	
11	B	2	45	168.70	ppb	1.35	200.00	90 -	110	84.4	Fail
23	Na	1	45	5083.00	ppb	2.01	5000.00	90 -	110	101.7	
24	Mg	1	45	4869.00	ppb	1.73	5000.00	90 -	110	97.4	
27	Al	1	45	4873.00	ppb	2.60	5000.00	90 -	110	97.5	
39	K	1	45	5179.00	ppb	1.25	5000.00	90 -	110	103.6	
44	Ca	2	45	4980.00	ppb	1.82	5000.00	90 -	110	99.6	
47	Ti	1	45	203.40	ppb	1.47	200.00	90 -	110	101.7	
51	V	1	45	197.70	ppb	2.28	200.00	90 -	110	98.9	
52	Cr	1	45	197.30	ppb	2.22	200.00	90 -	110	98.7	
55	Mn	1	45	200.80	ppb	1.38	200.00	90 -	110	100.4	
56	Fe	1	72	5155.00	ppb	2.47	5000.00	90 -	110	103.1	
59	Co	1	72	199.80	ppb	1.54	200.00	90 -	110	99.9	
60	Ni	1	72	196.80	ppb	1.13	200.00	90 -	110	98.4	
63	Cu	1	72	201.70	ppb	1.44	200.00	90 -	110	100.9	
66	Zn	1	72	199.80	ppb	1.34	200.00	90 -	110	99.9	
75	As	1	72	208.90	ppb	1.23	200.00	90 -	110	104.5	
78	Se	1	72	204.70	ppb	1.99	200.00	90 -	110	102.4	
88	Sr	2	115	204.10	ppb	1.40	200.00	90 -	110	102.1	
95	Mo	2	115	181.20	ppb	1.73	200.00	90 -	110	90.6	
107	Ag	2	115	184.10	ppb	1.85	200.00	90 -	110	92.1	
111	Cd	2	115	186.40	ppb	1.88	200.00	90 -	110	93.2	
118	Sn	2	115	192.60	ppb	2.38	200.00	90 -	110	96.3	
121	Sb	2	115	193.30	ppb	1.98	200.00	90 -	110	96.7	
137	Ba	2	115	204.70	ppb	2.29	200.00	90 -	110	102.4	
205	Tl	2	209	207.30	ppb	1.30	200.00	90 -	110	103.7	
208	Pb	2	209	196.80	ppb	2.13	200.00	90 -	110	98.4	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)			Flag
6	Li	2	-42918.88	2.57	35.48	-120964.5	70 -	120		ISFail
45	Sc	1	102410.13	1.68	138057.45	74.2	70 -	120		
45	Sc	2	2853647.30	1.74	4152726.00	68.7	70 -	120		ISFail
72	Ge	1	63865.52	0.78	86466.48	73.9	70 -	120		
115	In	2	5005018.50	1.35	6053544.50	82.7	70 -	120		
209	Bi	2	4670776.00	2.13	5465338.50	85.5	70 -	120		

CCV QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\130LCVL.D\130LCVL.D#

Date Acquired:	May 25 2016 11:54 pm	Sample Name:	**LCVL6-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	LCVLICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	Expected	QC Range(%)		Rec(%)	Flag
7	Li	2	45	9.32	ppb	3.31	5.00	70 -	130	186.3	Fail
9	Be	2	45	0.92	ppb	0.29	1.00	70 -	130	91.7	
11	B	2	45	17.25	ppb	2.32	20.00	70 -	130	86.3	
23	Na	1	45	97.94	ppb	1.90	100.00	70 -	130	97.9	
24	Mg	1	45	103.80	ppb	1.35	100.00	70 -	130	103.8	
27	Al	1	45	133.70	ppb	0.79	100.00	70 -	130	133.7	Fail
39	K	1	45	118.20	ppb	1.13	100.00	70 -	130	118.2	
44	Ca	2	45	116.00	ppb	3.47	100.00	70 -	130	116.0	
47	Ti	1	45	5.62	ppb	8.25	5.00	70 -	130	112.3	
51	V	1	45	1.12	ppb	1.89	1.00	70 -	130	111.8	
52	Cr	1	45	4.77	ppb	1.73	5.00	70 -	130	95.3	
55	Mn	1	45	4.93	ppb	4.06	5.00	70 -	130	98.5	
56	Fe	1	72	162.30	ppb	2.92	100.00	70 -	130	162.3	Fail
59	Co	1	72	4.79	ppb	1.47	5.00	70 -	130	95.8	
60	Ni	1	72	4.70	ppb	3.36	5.00	70 -	130	94.0	
63	Cu	1	72	4.85	ppb	2.32	5.00	70 -	130	97.0	
66	Zn	1	72	4.46	ppb	3.45	5.00	70 -	130	89.2	
75	As	1	72	5.04	ppb	2.43	5.00	70 -	130	100.8	
78	Se	1	72	5.60	ppb	4.06	5.00	70 -	130	111.9	
88	Sr	2	115	4.79	ppb	2.80	5.00	70 -	130	95.8	
95	Mo	2	115	4.16	ppb	5.94	5.00	70 -	130	83.2	
107	Ag	2	115	1.75	ppb	2.69	2.00	70 -	130	87.5	
111	Cd	2	115	0.89	ppb	5.04	1.00	70 -	130	89.2	
118	Sn	2	115	4.65	ppb	2.58	5.00	70 -	130	93.0	
121	Sb	2	115	1.80	ppb	3.19	2.00	70 -	130	89.8	
137	Ba	2	115	5.09	ppb	4.08	5.00	70 -	130	101.8	
205	Tl	2	209	0.97	ppb	3.13	1.00	70 -	130	97.3	
208	Pb	2	209	0.98	ppb	3.77	1.00	70 -	130	98.5	

ISTD Elements

Element			CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)		Flag
6	Li	2	RHigl -945.40	16.32	35.48	-2664.6	70 -	120	ISFail
45	Sc	1	100837.95	0.46	138057.45	73.0	70 -	120	
45	Sc	2	2922297.00	0.68	4152726.00	70.4	70 -	120	
72	Ge	1	63381.90	0.99	86466.48	73.3	70 -	120	
115	In	2	5080630.00	0.49	6053544.50	83.9	70 -	120	
209	Bi	2	4998467.50	0.78	5465338.50	91.5	70 -	120	

CCB QC Report

C:\ICPCHEM\1\DATA\16E25k02.B\131_CCB.D\131_CCB.D#

Date Acquired:	May 26 2016 12:00 am	Sample Name:	**CCB6-160525**
Acq. Method:	DHL_3Fe.M	Misc Info:	CCB ICPMS_TW
Operator:	KL	Diln Factor:	1.00
Last Cal. Update:	May 25 2016 12:14 pm		
Instrument:	ICPMS3		

QC Elements

Element				Conc.		RSD(%)	MDL S	MDL Aq	Flag
7	Li	2	45	0.157	ppb	5.80	2.00	2.00	
9	Be	2	45	0.028	ppb	27.61	0.40	0.30	
11	B	2	45	3.100	ppb	3.94	10.00	10.00	
23	Na	1	45	4.803	ppb	2.36	50.00	#####	
24	Mg	1	45	4.184	ppb	15.33	50.00	#####	
27	Al	1	45	28.580	ppb	4.22	50.00	10.00	FailAq
39	K	1	45	12.520	ppb	0.35	50.00	#####	
44	Ca	2	45	36.670	ppb	3.07	50.00	#####	
47	Ti	1	45	0.247	ppb	78.07	4.00	3.00	
51	V	1	45	0.080	ppb	23.07	4.00	3.00	
52	Cr	1	45	0.082	ppb	11.62	2.00	2.00	
55	Mn	1	45	0.121	ppb	9.69	2.00	3.00	
56	Fe	1	72	31.830	ppb	11.92	50.00	30.00	FailAq
59	Co	1	72	0.035	ppb	17.06	2.00	3.00	
60	Ni	1	72	0.072	ppb	9.58	2.00	3.00	
63	Cu	1	72	0.059	ppb	14.27	2.00	2.00	
66	Zn	1	72	0.073	ppb	15.34	4.00	2.00	
75	As	1	72	0.064	ppb	13.72	2.00	2.00	
78	Se	1	72	0.026	ppb	25.00	0.60	2.00	
88	Sr	2	115	0.310	ppb	11.15	4.00	3.00	
95	Mo	2	115	0.031	ppb	32.83	2.00	2.00	
107	Ag	2	115	0.028	ppb	36.98	0.40	1.00	
111	Cd	2	115	0.024	ppb	40.88	0.40	0.30	
118	Sn	2	115	0.055	ppb	4.52	20.00	3.00	
121	Sb	2	115	0.045	ppb	5.44	2.00	0.80	
137	Ba	2	115	0.084	ppb	16.82	2.00	3.00	
205	Tl	2	209	0.057	ppb	14.54	2.00	0.50	
208	Pb	2	209	0.068	ppb	4.36	0.40	0.30	

ISTD Elements

Element				CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6	Li	2	RHigh	-13.32	308.30	35.48	-37.6	70 - 120	ISFail
45	Sc	1		96951.78	1.05	138057.45	70.2	70 - 120	
45	Sc	2		2859048.00	1.46	4152726.00	68.8	70 - 120	ISFail
72	Ge	1		62246.74	0.70	86466.48	72.0	70 - 120	
115	In	2		4955151.00	1.30	6053544.50	81.9	70 - 120	
209	Bi	2		4765777.00	0.11	5465338.50	87.2	70 - 120	

ICP-MS4
For

DHL Work Order
1605097

ICP-MS4_160516B
For

DHL Work Order
1605097

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG	Run ID: ICP-MS4_160516B SOP: MET-ICPMS-01			
Review Item	**Yes**	**No**	**N/A**	**2nd Level Review**
Data Folder Contents 1. Is the Prep Batch Report included? ***Check the Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**		2nd Level Review
Tune	Before ICAL	RSD ≤ 5% / Peak Width@10% <0.9amu	X			x
P/A Factor	Before ICAL	Increasing trend	X			
Initial Calibration Curve (ICAL) (Blank + 4 Standards)	Prior to samples and when ICV fails	R ≥ 0.995 (DoD) R ≥ 0.998 (6020A)	X			
Review Item	**Frequency**	**Limits**	**Pass**	**Fail**	**N/A**	**Review**
ICSA (N/A for Method 200.8+U)	After calibration & every 12 hours	< RL (except Mn & Zn)	X			x
ICSAB (N/A for Method 200.8+U)	After calibration & every 12 hours	80-120% (correct for ICSA result)	X			
Note: LCVLs and ICSA/ICSAB are N/A for Method 200.8 or project-specific exceptions						
ICV (Second Source Verification)	After ICAL	90-110%	X			x
ICB	After calibration	< MDL	X			
CCV	Every 10 samples	90-110%	X			
CCB	Every 10 samples	< MDL (ALL + DoD)	X			
Internal Standards	Every sample and QC sample	> 70% (6020A) 60-125% (200.8) 30-120% (DoD)	X			
LCVL (6020A test code)	After ICAL, every 10 samples and end of run	70-130%			X	
LCVL (All metals test codes except 200.8/6020A)	After ICAL and end of run	70-130%	X			
Method Blank (MB)	Every Batch	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			
Filter/TCLP/SPLP Blank	Filter-Dissolved only TCLP / SPLP	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit			X	
Lab Control Sample (LCS)	Every Batch	80-120%	X			
Lab Control Sample Dup (LCSD)	Every Batch	80-120%	X			
LCSD - RPD	Every LCS/LCSD	15 (H2O) / 20 (Soil)	X			
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Every Batch	80-120%	X			
MSD - RPD	Every MS/MSD	15 (H2O) / 20 (Soil)	X			
Dilution Test (SD) - RPD	Every Batch	10	X			
Post Digestion Spike (PDS)	Every Batch	75-125/80-120 (6020A)	X			

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	6 months	X			x
2. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	All results > high point of ICAL must be diluted	X			
3. Are ALL reported analytes and reported results > MDL highlighted by the analyst?		X	**Confirm with analyst if LIMS result does not match Labcore**		

VARIANCE REPORT

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.

NON-CONFORMANCES / VARIANCE	Criteria	Yes	No	N/A	2nd Level
1. Are all non-conformances and corrective actions included and noted?	All deviations from the method and SOP that affect data quality			X	x
2. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

TECHNICAL DIRECTOR / QA MANAGER APPROVAL
SIGNATURE AND DATE STAMP:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
__ CCV out of control (± 10%)	__ Carryover from previous run	__ Reanalyze QC to confirm
__ CCB out of control (> MDL / >½ RL)	__ Cross contamination	__ Recalibrate
__ MB out of control (> RL / >½ RL)	__ Lab Artifact	__ Reprep/Reanalyze sample
__ LCS __ LCSD out of control (± 20%)	__ Prep Spike error (describe)	__ Reprep/Reanalyze Batch
__ MS __ MSD out of control (± 20%)	__ Matrix Effect	__ Reanalyze Batch/Sample/QC
__ RPD out of control for MS/MSD (15/25)	__ High Levels of Target Metals	__ Verify reagents are clean
__ Internal Standard(s) out of control (see Method)	__ Insufficient sample for QC	__ Reanalyze sample to confirm
__ No MS/MSD prepared - LCS/LCSD used instead	__ Digestion/Prep Error	__ Sample results ND w/ dilution
__ Missing QC (other than MS/MSD)	__ Analytical Error	__ Client notified and approved
__ QC sample(s) was mis-spiked	__ Client Request	__ Flag Data/ Case Narative
__ ICSA/ICSAB missing or out of control (± 20%)		__ Accept data
__ LCVL out of control (± 30%)		__ Cal Std high and sample ND
__ Other (describe below)	__ Other (describe below)	__ Other (describe below)

General Comments and Impact on Data: See Run Log

Analyst: _____ Date of Completion: 05/17/2016

Second-Level Review: Janice Whitt Date Stamp: 5/17/2016

REVIEWED BY
By Janice Whitt at 10:36:04 AM, 5/17/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160516B** **Run No.:** 85839

Analytical Run Date: 5/16/2016 **InstrumentID:** ICP-MS4

Analyst: Ryan Oliver

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:13:00 PM		
L2-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:15:00 PM		
L-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:17:00 PM		
10X-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:19:00 PM		
5X-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:21:00 PM		
2X-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:23:00 PM		
H-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:25:00 PM		
H2-160516	1	ICPMS_TWDOD	CAL	R85839	5/16/2016 12:27:00 PM		
ICSA-160516	1	ICPMS_TWDOD	ICSA	R85839	5/16/2016 12:35:00 PM		
ICSAB-160516	1	ICPMS_TWDOD	ICSB	R85839	5/16/2016 12:37:00 PM		
ICV-160516	1	ICPMS_TWDOD	ICV	R85839	5/16/2016 12:45:00 PM		
LCVL-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 1:04:00 PM		
ICB-160516	1	ICPMS_TWDOD	ICB	R85839	5/16/2016 1:08:00 PM		
MB-75006	5	ICPMS_TSDOD1	MBLK	75006	5/16/2016 1:10:00 PM		
LCS-75006	5	ICPMS_TSDOD1	LCS	75006	5/16/2016 1:12:00 PM		
LCSD-75006	5	ICPMS_TSDOD1	LCSD	75006	5/16/2016 1:14:00 PM		
1605034-09A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:18:00 PM		
1605034-09A SD	25	ICPMS_TSDOD1	SD	75006	5/16/2016 1:20:00 PM		
1605034-01A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:22:00 PM		
1605034-02A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:24:00 PM		
1605034-03A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:26:00 PM		
1605034-04A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:28:00 PM		
1605034-05A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:30:00 PM		
1605034-06A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:32:00 PM		
1605034-07A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:34:00 PM		
1605034-08A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:36:00 PM		
1605034-10A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 1:38:00 PM		
1605034-09A PDS	5	ICPMS_TSDOD1	PDS	75006	5/16/2016 1:40:00 PM		
1605034-09A MS	5	ICPMS_TSDOD1	MS	75006	5/16/2016 1:42:00 PM		
1605034-09A MSD	5	ICPMS_TSDOD1	MSD	75006	5/16/2016 1:44:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

Run ID: ICP-MS4_160516B **Run No.:** 85839

CCV1-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 1:46:00 PM		
LCVL1-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 1:54:00 PM		
CCB1-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 1:58:00 PM		
1605034-11A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:00:00 PM		
1605034-12A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:02:00 PM		
1605034-13A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:04:00 PM		
1605034-14A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:06:00 PM		
1605034-15A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:08:00 PM		
1605034-16A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:10:00 PM		
1605034-17A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:12:00 PM		
1605034-18A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:14:00 PM		
1605034-19A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:16:00 PM		
1605034-20A	5	ICPMS_TSDOD1	SAMP	75006	5/16/2016 2:18:00 PM		
CCV2-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 2:20:00 PM		
LCVL2-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 2:25:00 PM		
CCB2-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 2:30:00 PM		
MB-75009	5	ICPMS_TSDOD1	MBLK	75009	5/16/2016 2:32:00 PM		
LCS-75009	5	ICPMS_TSDOD1	LCS	75009	5/16/2016 2:34:00 PM		
LCSD-75009	5	ICPMS_TSDOD1	LCSD	75009	5/16/2016 2:36:00 PM		
1605047-03A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:40:00 PM		
1605047-03A SD	25	ICPMS_TSDOD1	SD	75009	5/16/2016 2:42:00 PM		
1605034-21A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:44:00 PM		
1605034-22A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:46:00 PM		
1605034-23A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:48:00 PM		
1605034-24A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:50:00 PM		
1605034-25A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:52:00 PM		
1605034-26A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:54:00 PM		
1605034-27A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:56:00 PM		
1605034-28A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 2:58:00 PM		
1605034-29A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:00:00 PM		
1605047-03A PDS	5	ICPMS_TSDOD1	PDS	75009	5/16/2016 3:02:00 PM		
1605047-03A MS	5	ICPMS_TSDOD1	MS	75009	5/16/2016 3:04:00 PM		
1605047-03A MSD	5	ICPMS_TSDOD1	MSD	75009	5/16/2016 3:06:00 PM		
CCV3-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 3:08:00 PM		
LCVL3-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 3:12:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

Run ID: ICP-MS4_160516B **Run No.:** 85839

CCB3-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 3:14:00 PM		
1605034-30A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:16:00 PM		
1605047-01A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:18:00 PM		
1605047-02A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:20:00 PM		
1605047-04A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:22:00 PM		
1605047-05A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:24:00 PM		
1605047-06A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:26:00 PM		
1605047-07A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:28:00 PM		
1605047-08A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:30:00 PM		
1605047-09A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:33:00 PM		
1605047-10A	5	ICPMS_TSDOD1	SAMP	75009	5/16/2016 3:34:00 PM		
CCV4-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 3:36:00 PM		
LCVL4-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 3:41:00 PM		
CCB4-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 3:43:00 PM		
MB-75135	5	ICPMS_TSDOD1	MBLK	75135	5/16/2016 3:45:00 PM		
LCS-75135	5	ICPMS_TSDOD1	LCS	75135	5/16/2016 3:47:00 PM		
LCSD-75135	5	ICPMS_TSDOD1	LCSD	75135	5/16/2016 3:49:00 PM		
1605098-41A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 3:53:00 PM		
1605098-41A SD	25	ICPMS_TSDOD1	SD	75135	5/16/2016 3:55:00 PM		
1605097-20A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 3:57:00 PM		
1605097-21A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 3:59:00 PM		
1605097-23A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:01:00 PM		
1605097-26A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:03:00 PM		
1605098-31A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:05:00 PM		
1605098-34A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:07:00 PM		
1605098-37A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:09:00 PM		
1605098-40A	5	ICPMS_TSDOD1	SAMP	75135	5/16/2016 4:11:00 PM		
1605098-41A PDS	5	ICPMS_TSDOD1	PDS	75135	5/16/2016 4:15:00 PM		
1605098-41A MS	5	ICPMS_TSDOD1	MS	75135	5/16/2016 4:17:00 PM		
1605098-41A MSD	5	ICPMS_TSDOD1	MSD	75135	5/16/2016 4:19:00 PM		
CCV5-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 4:25:00 PM		
LCVL5-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 4:29:00 PM		
CCB5-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 4:31:00 PM		
MB-75099	5	ICPMS_TSDOD1	MBLK	75099	5/16/2016 4:33:00 PM		
LCS-75099	5	ICPMS_TSDOD1	LCS	75099	5/16/2016 4:36:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

Run ID: ICP-MS4_160516B **Run No.:** 85839

LCSD-75099	5	ICPMS_TSDOD1	LCSD	75099	5/16/2016 4:38:00 PM		
1605071-17A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:42:00 PM		
1605071-17A SD	25	ICPMS_TSDOD1	SD	75099	5/16/2016 4:44:00 PM		
1605071-12A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:46:00 PM		
1605071-13A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:48:00 PM		
1605071-14A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:50:00 PM		
1605071-15A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:52:00 PM		
1605071-16A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:54:00 PM		
1605071-18A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:56:00 PM		
1605071-19A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 4:58:00 PM		
1605071-20A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:00:00 PM		
1605071-21A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:02:00 PM		
1605071-17A PDS	5	ICPMS_TSDOD1	PDS	75099	5/16/2016 5:04:00 PM		
1605071-17A MS	5	ICPMS_TSDOD1	MS	75099	5/16/2016 5:06:00 PM		
1605071-17A MSD	5	ICPMS_TSDOD1	MSD	75099	5/16/2016 5:08:00 PM		
CCV6-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 5:10:00 PM		
LCVL6-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 5:14:00 PM		
CCB6-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 5:16:00 PM		
1605071-22A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:18:00 PM		
1605071-23A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:20:00 PM		
1605071-24A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:22:00 PM		
1605071-25A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:24:00 PM		
1605071-26A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:26:00 PM		
1605071-27A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:28:00 PM		
1605071-30A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:30:00 PM		
1605071-31A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:32:00 PM		
1605071-33A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:34:00 PM		
1605071-34A	5	ICPMS_TSDOD1	SAMP	75099	5/16/2016 5:36:00 PM		
CCV7-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 5:38:00 PM		
LCVL7-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 5:42:00 PM		
CCB7-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 5:44:00 PM		
MB-75104	5	ICPMS_TSDOD1	MBLK	75104	5/16/2016 5:46:00 PM		
LCS-75104	5	ICPMS_TSDOD1	LCS	75104	5/16/2016 5:48:00 PM		
LCSD-75104	5	ICPMS_TSDOD1	LCSD	75104	5/16/2016 5:50:00 PM		
1605071-53A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 5:54:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

Run ID: ICP-MS4_160516B **Run No.:** 85839

1605071-53A SD	25	ICPMS_TSDOD1	SD	75104	5/16/2016 5:56:00 PM		
1605071-37A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 5:59:00 PM		
1605071-40A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:01:00 PM		
1605071-41A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:03:00 PM		
1605071-42A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:05:00 PM		
1605071-43A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:07:00 PM		
1605071-44A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:09:00 PM		
1605071-45A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:11:00 PM		
1605071-46A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:13:00 PM		
1605071-47A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:15:00 PM		
1605071-53A PDS	5	ICPMS_TSDOD1	PDS	75104	5/16/2016 6:17:00 PM		
1605071-53A MS	5	ICPMS_TSDOD1	MS	75104	5/16/2016 6:19:00 PM		
1605071-53A MSD	5	ICPMS_TSDOD1	MSD	75104	5/16/2016 6:21:00 PM		
CCV8-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 6:22:00 PM		
LCVL8-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 6:27:00 PM		
CCB8-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 6:29:00 PM		
1605071-48A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:31:00 PM		
1605071-49A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:33:00 PM		
1605071-50A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:35:00 PM		
1605071-51A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:37:00 PM		
1605071-52A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:39:00 PM		
1605071-54A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:41:00 PM		
1605074-01A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:43:00 PM		
1605074-02A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:45:00 PM		
1605074-03A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:47:00 PM		
1605074-04A	5	ICPMS_TSDOD1	SAMP	75104	5/16/2016 6:49:00 PM		
CCV9-160516	1	ICPMS_TWDOD	CCV	R85839	5/16/2016 6:51:00 PM		
LCVL9-160516	1	ICPMS_TWDOD	LCVL	R85839	5/16/2016 6:55:00 PM		
CCB9-160516	1	ICPMS_TWDOD	CCB	R85839	5/16/2016 7:11:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160426	ICPMS CCV 200/5000 PPB		07/25/2016
MET-H2CAL-1604	ICPMS High Cal2 2000ppb std 8		07/25/2016
MET-HCAL-16042	ICPMS High Cal 500ppb/10ppm s		07/25/2016
MET-ICV-160426	ICPMS ICV 100 ppb		07/25/2016
MET-IS-160323	INTERNAL STANDARD 1 PPM		06/21/2016
MET-L2CAL-16042	ICPMS Low Cal2 1/20ppb std 2		07/25/2016
MET-LCAL-160426	ICPMS Low Cal 10/200ppb std 3		07/25/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		07/25/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		07/25/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16042	ICPMS Mid Cal 250/5000ppb std		07/25/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160502-	10 PPM Ag+Sb PDS		07/31/2016
MET-PDS-160502-	10 PPM CUSTOM PDS SOLUTI		07/31/2016
MET-PDS-160502-	250 PPM Naturals+Al+Fe PDS		07/31/2016

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160516.b

Acquisition Order

#	Sequence Flow
1	Calibration Standards
2	Unknown Samples
3	Blank Samples

Calibration Standards:

#	Sample Type	Sample Name	Comment	Vial#	File Name
1	CCB		CAL ICPMS_TW	1101	
2	CCB		CAL ICPMS_TW	1101	
3	CCB		CAL ICPMS_TW	1101	
4	CCB		CAL ICPMS_TW	1102	
5	CCB		CAL ICPMS_TW	1102	
6	CCB		CAL ICPMS_TW	1102	
7	CCB		CAL ICPMS_TW	1102	
8	CCB		CAL ICPMS_TW	1103	
9	CCB		CAL ICPMS_TW	1103	
10	CCB		CAL ICPMS_TW	1103	
11	CCB		CAL ICPMS_TW	1103	
12	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
13	CalStd	L2-160516	CAL ICPMS_TW	2102	
14	CalStd	L-160516	CAL ICPMS_TW	2103	
15	CalStd	10X-160516	CAL ICPMS_TW	2104	
16	CalStd	5X-160516	CAL ICPMS_TW	2105	
17	CalStd	2X-160516	CAL ICPMS_TW	2106	
18	CalStd	H-160516	CAL ICPMS_TW	2107	
19	CalStd	H2-160516	CAL ICPMS_TW	2108	
20	ICB	BLANK	CCB ICPMS_TW	1101	

#	Level	Dilution	Skip
1			Skip
2			Skip
3			Skip
4			Skip
5			Skip
6			Skip
7			Skip
8			
9			
10			
11			
12	1		
13	2		
14	3		
15	4		
16	5		
17	6		
18	7		
19	8		

Sample List

#	Sample Type	Sample Name	Comment	Vial#	File Name
20					
21	ICB	BLANK	CCB ICPMS_TW	1102	
22	ICB	BLANK	CCB ICPMS_TW	1103	
23	ICSA	ICSA-160516	ICSAICPMS_TW	2109	
24	ICSB	ICSAB-160516	ICSBICPMS_TW	2110	
25	ICB	BLANK	CCB ICPMS_TW	1101	
26	ICB	BLANK	CCB ICPMS_TW	1102	
27	ICB	BLANK	CCB ICPMS_TW	1103	
28	ICV	ICV-160516	ICV ICPMS_TW	2111	
29	ICB	ICB-160516	ICB ICPMS_TW	1101	
30	ICB	ICB-160516	ICB ICPMS_TW	1103	
31	LLICV	LCVL-160516	LCVLICPMS_TW	2112	
32	ICB	ICB-160516	ICB ICPMS_TW	1102	
33	ICB	ICB-160516	ICB ICPMS_TW	1103	
34	PB	MB-75006	MBLKICPMS_TSDOD1	2201	
35	LCS_S	LCS-75006	LCS ICPMS_TSDOD1	2202	
36	LCS_S	LCSD-75006	LCSDICPMS_TSDOD1	2203	
37	CCB	RINSE	CCB ICPMS_TW	1101	
38	AllRef	1605034-09A	SAMPICPMS_TSDOD1	2204	
39	SD	1605034-09A SD	SD ICPMS_TSDOD1	2205	
40	Sample	1605034-01A	SAMPICPMS_TSDOD1	2206	

#	Level	Dilution	Skip
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34		5	
35		5	
36		5	
37			
38		5	
39		25	
40		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	Sample	1605034-02A	SAMPICPMS_TSDOD1	2207	
42	Sample	1605034-03A	SAMPICPMS_TSDOD1	2208	
43	Sample	1605034-04A	SAMPICPMS_TSDOD1	2209	
44	Sample	1605034-05A	SAMPICPMS_TSDOD1	2210	
45	Sample	1605034-06A	SAMPICPMS_TSDOD1	2211	

Sample List

46	Sample	1605034-07A	SAMPICPMS_TSDOD1	2212
47	Sample	1605034-08A	SAMPICPMS_TSDOD1	2301
48	Sample	1605034-10A	SAMPICPMS_TSDOD1	2302
49	PDS	1605034-09A PDS	PDS ICPMS_TSDOD1	2303
50	MS_S	1605034-09A MS	MS ICPMS_TSDOD1	2304
51	MS_S	1605034-09A MSD	MSD ICPMS_TSDOD1	2305
52	CCV	CCV1-160516	CCV ICPMS_TW	1207
53	CCB	CCB1-160516	CCB ICPMS_TW	1102
54	LLCCV	LCVL1-160516	LCVLICPMS_TW	2112
55	CCB	CCB1-160516	CCB ICPMS_TW	1103
56	Sample	1605034-11A	SAMPICPMS_TSDOD1	2306
57	Sample	1605034-12A	SAMPICPMS_TSDOD1	2307
58	Sample	1605034-13A	SAMPICPMS_TSDOD1	2308
59	Sample	1605034-14A	SAMPICPMS_TSDOD1	2309
60	Sample	1605034-15A	SAMPICPMS_TSDOD1	2310

#	Level	Dilution	Skip
41		5	
42		5	
43		5	
44		5	
45		5	
46		5	
47		5	
48		5	
49		5	
50		5	
51		5	
52			
53			
54			
55			
56		5	
57		5	
58		5	
59		5	
60		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	Sample	1605034-16A	SAMPICPMS_TSDOD1	2311	
62	Sample	1605034-17A	SAMPICPMS_TSDOD1	2312	
63	Sample	1605034-18A	SAMPICPMS_TSDOD1	2401	
64	Sample	1605034-19A	SAMPICPMS_TSDOD1	2402	
65	Sample	1605034-20A	SAMPICPMS_TSDOD1	2403	
66	CCV	CCV2-160516	CCV ICPMS_TW	1207	
67	CCB	CCB2-160516	CCB ICPMS_TW	1102	
68	LLCCV	LCVL2-160516	LCVLICPMS_TW	2112	
69	CCB	CCB2-160516	CCB ICPMS_TW	1103	
70	PB	MB-75009	MBLKICPMS_TSDOD1	3101	
71	LCS_S	LCS-75009	LCS ICPMS_TSDOD1	3102	
72	LCS_S	LCSD-75009	LCSDICPMS_TSDOD1	3103	
73	CCB	RINSE	CCB ICPMS_TW	1101	

Sample List

74	AllRef	1605047-03A	SAMPICPMS_TSDOD1	3104
75	SD	1605047-03A SD	SD ICPMS_TSDOD1	3105
76	Sample	1605034-21A	SAMPICPMS_TSDOD1	3106
77	Sample	1605034-22A	SAMPICPMS_TSDOD1	3107
78	Sample	1605034-23A	SAMPICPMS_TSDOD1	3108
79	Sample	1605034-24A	SAMPICPMS_TSDOD1	3109
80	Sample	1605034-25A	SAMPICPMS_TSDOD1	3110

#	Level	Dilution	Skip
61		5	
62		5	
63		5	
64		5	
65		5	
66			
67			
68			
69			
70		5	
71		5	
72		5	
73			
74		5	
75		25	
76		5	
77		5	
78		5	
79		5	
80		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	Sample	1605034-26A	SAMPICPMS_TSDOD1	3111	
82	Sample	1605034-27A	SAMPICPMS_TSDOD1	3112	
83	Sample	1605034-28A	SAMPICPMS_TSDOD1	3201	
84	Sample	1605034-29A	SAMPICPMS_TSDOD1	3202	
85	PDS	1605047-03A PDS	PDS ICPMS_TSDOD1	3203	
86	MS_S	1605047-03A MS	MS ICPMS_TSDOD1	3204	
87	MS_S	1605047-03A MSD	MSD ICPMS_TSDOD1	3205	
88	CCV	CCV3-160516	CCV ICPMS_TW	1207	
89	CCB	CCB3-160516	CCB ICPMS_TW	1102	
90	LLCCV	LCVL3-160516	LCVLICPMS_TW	2512	
91	CCB	CCB3-160516	CCB ICPMS_TW	1103	
92	Sample	1605034-30A	SAMPICPMS_TSDOD1	3206	
93	Sample	1605047-01A	SAMPICPMS_TSDOD1	3207	
94	Sample	1605047-02A	SAMPICPMS_TSDOD1	3208	
95	Sample	1605047-04A	SAMPICPMS_TSDOD1	3209	
96	Sample	1605047-05A	SAMPICPMS_TSDOD1	3210	
97	Sample	1605047-06A	SAMPICPMS_TSDOD1	3211	
98	Sample	1605047-07A	SAMPICPMS_TSDOD1	3212	
99	Sample	1605047-08A	SAMPICPMS_TSDOD1	3301	
100	Sample	1605047-09A	SAMPICPMS_TSDOD1	3302	

Sample List

#	Level	Dilution	Skip
81		5	
82		5	
83		5	
84		5	
85		5	
86		5	
87		5	
88			
89			
90			
91			
92		5	
93		5	
94		5	
95		5	
96		5	
97		5	
98		5	
99		5	
100		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	Sample	1605047-10A	SAMPICPMS_TSDOD1	3303	
102	CCV	CCV4-160516	CCV ICPMS_TW	1207	
103	CCB	CCB4-160516	CCB ICPMS_TW	1102	
104	LLCCV	LCVL4-160516	LCVLICPMS_TW	2512	
105	CCB	CCB4-160516	CCB ICPMS_TW	1103	
106	PB	MB-75135	MBLKICPMS_TSDOD1	3309	
107	LCS_S	LCS-75135	LCS ICPMS_TSDOD1	3310	
108	LCS_S	LCSD-75135	LCSDICPMS_TSDOD1	3311	
109	CCB	RINSE	CCB ICPMS_TW	1101	
110	AllRef	1605098-41A	SAMPICPMS_TSDOD1	3312	
111	SD	1605098-41A SD	SD ICPMS_TSDOD1	3401	
112	Sample	1605097-20A	SAMPICPMS_TSDOD1	3402	
113	Sample	1605097-21A	SAMPICPMS_TSDOD1	3403	
114	Sample	1605097-23A	SAMPICPMS_TSDOD1	3404	
115	Sample	1605097-26A	SAMPICPMS_TSDOD1	3405	
116	Sample	1605098-31A	SAMPICPMS_TSDOD1	3406	
117	Sample	1605098-34A	SAMPICPMS_TSDOD1	3407	
118	Sample	1605098-37A	SAMPICPMS_TSDOD1	3408	
119	Sample	1605098-40A	SAMPICPMS_TSDOD1	3409	
120	Sample	1605030-02A	SAMP6020A_S	3304	

#	Level	Dilution	Skip
101		5	
102			
103			
104			
105			
106		5	
107		5	

Sample List

108		5
109		
110		5
111		25
112		5
113		5
114		5
115		5
116		5
117		5
118		5
119		5
120		500

#	Sample Type	Sample Name	Comment	Vial#	File Name
121	PDS	1605098-41A PDS	PDS ICPMS_TSDOD1	3410	
122	MS_S	1605098-41A MS	MS ICPMS_TSDOD1	3411	
123	MS_S	1605098-41A MSD	MSD ICPMS_TSDOD1	3412	
124	CCV	CCV5-160516	CCV ICPMS_TW	1207	
125	CCB	CCB5-160516	CCB ICPMS_TW	1102	
126	LLCCV	LCVL5-160516	LCVLICPMS_TW	2511	
127	CCB	CCB5-160516	CCB ICPMS_TW	1103	
128	PB	MB-75099	MBLKICPMS_TSDOD1	4101	
129	LCS_S	LCS-75099	LCS ICPMS_TSDOD1	4102	
130	LCS_S	LCSD-75099	LCSDICPMS_TSDOD1	4103	
131	CCB	RINSE	CCB ICPMS_TW	1101	
132	AllRef	1605071-17A	SAMPICPMS_TSDOD1	4104	
133	SD	1605071-17A SD	SD ICPMS_TSDOD1	4105	
134	Sample	1605071-12A	SAMPICPMS_TSDOD1	4106	
135	Sample	1605071-13A	SAMPICPMS_TSDOD1	4107	
136	Sample	1605071-14A	SAMPICPMS_TSDOD1	4108	
137	Sample	1605071-15A	SAMPICPMS_TSDOD1	4109	
138	Sample	1605071-16A	SAMPICPMS_TSDOD1	4110	
139	Sample	1605071-18A	SAMPICPMS_TSDOD1	4111	
140	Sample	1605071-19A	SAMPICPMS_TSDOD1	4112	

#	Level	Dilution	Skip
121		5	
122		5	
123		5	
124			
125			
126			
127			
128		5	
129		5	
130		5	
131			
132		5	
133		25	
134		5	
135		5	

Sample List

136		5
137		5
138		5
139		5
140		5

#	Sample Type	Sample Name	Comment	Vial#	File Name
141	Sample	1605071-20A	SAMPICPMS_TSDOD1	4201	
142	Sample	1605071-21A	SAMPICPMS_TSDOD1	4202	
143	PDS	1605071-17A PDS	PDS ICPMS_TSDOD1	4203	
144	MS_S	1605071-17A MS	MS ICPMS_TSDOD1	4204	
145	MS_S	1605071-17A MSD	MSD ICPMS_TSDOD1	4205	
146	CCV	CCV6-160516	CCV ICPMS_TW	1207	
147	CCB	CCB6-160516	CCB ICPMS_TW	1102	
148	LLCCV	LCVL6-160516	LCVLICPMS_TW	2511	
149	CCB	CCB6-160516	CCB ICPMS_TW	1103	
150	Sample	1605071-22A	SAMPICPMS_TSDOD1	4206	
151	Sample	1605071-23A	SAMPICPMS_TSDOD1	4207	
152	Sample	1605071-24A	SAMPICPMS_TSDOD1	4208	
153	Sample	1605071-25A	SAMPICPMS_TSDOD1	4209	
154	Sample	1605071-26A	SAMPICPMS_TSDOD1	4210	
155	Sample	1605071-27A	SAMPICPMS_TSDOD1	4211	
156	Sample	1605071-30A	SAMPICPMS_TSDOD1	4212	
157	Sample	1605071-31A	SAMPICPMS_TSDOD1	4301	
158	Sample	1605071-33A	SAMPICPMS_TSDOD1	4302	
159	Sample	1605071-34A	SAMPICPMS_TSDOD1	4303	
160	CCV	CCV7-160516	CCV ICPMS_TW	1207	

#	Level	Dilution	Skip
141		5	
142		5	
143		5	
144		5	
145		5	
146			
147			
148			
149			
150		5	
151		5	
152		5	
153		5	
154		5	
155		5	
156		5	
157		5	
158		5	
159		5	
160			

#	Sample Type	Sample Name	Comment	Vial#	File Name
161	CCB	CCB7-160516	CCB ICPMS_TW	1102	

Sample List

162	LLCCV	LCVL7-160516	LCVLICPMS_TW	2510
163	CCB	CCB7-160516	CCB ICPMS_TW	1102
164	PB	MB-75104	MBLKICPMS_TSDOD1	4310
165	LCS_S	LCS-75104	LCS ICPMS_TSDOD1	4311
166	LCS_S	LCSD-75104	LCSDICPMS_TSDOD1	4312
167	CCB	RINSE	CCB ICPMS_TW	1101
168	AllRef	1605071-53A	SAMPICPMS_TSDOD1	4401
169	SD	1605071-53A SD	SD ICPMS_TSDOD1	4402
170	Sample	1605071-37A	SAMPICPMS_TSDOD1	4403
171	Sample	1605071-40A	SAMPICPMS_TSDOD1	4404
172	Sample	1605071-41A	SAMPICPMS_TSDOD1	4405
173	Sample	1605071-42A	SAMPICPMS_TSDOD1	4406
174	Sample	1605071-43A	SAMPICPMS_TSDOD1	4407
175	Sample	1605071-44A	SAMPICPMS_TSDOD1	4408
176	Sample	1605071-45A	SAMPICPMS_TSDOD1	4409
177	Sample	1605071-46A	SAMPICPMS_TSDOD1	4410
178	Sample	1605071-47A	SAMPICPMS_TSDOD1	4411
179	PDS	1605071-53A PDS	PDS ICPMS_TSDOD1	4412
180	MS_S	1605071-53A MS	MS ICPMS_TSDOD1	4501

#	Level	Dilution	Skip
161			
162			
163			
164		5	
165		5	
166		5	
167			
168		5	
169		25	
170		5	
171		5	
172		5	
173		5	
174		5	
175		5	
176		5	
177		5	
178		5	
179		5	
180		5	

#	Sample Type	Sample Name	Comment	Vial#	File Name
181	MS_S	1605071-53A MSD	MSD ICPMS_TSDOD1	4502	
182	CCV	CCV8-160516	CCV ICPMS_TW	1207	
183	CCB	CCB8-160516	CCB ICPMS_TW	1102	
184	LLCCV	LCVL8-160516	LCVLICPMS_TW	2510	
185	CCB	CCB8-160516	CCB ICPMS_TW	1103	
186	Sample	1605071-48A	SAMPICPMS_TSDOD1	4503	
187	Sample	1605071-49A	SAMPICPMS_TSDOD1	4504	
188	Sample	1605071-50A	SAMPICPMS_TSDOD1	4505	
189	Sample	1605071-51A	SAMPICPMS_TSDOD1	4506	

Sample List

190	Sample	1605071-52A	SAMPICPMS_TSDOD1	4507
191	Sample	1605071-54A	SAMPICPMS_TSDOD1	4508
192	Sample	1605074-01A	SAMPICPMS_TSDOD1	4509
193	Sample	1605074-02A	SAMPICPMS_TSDOD1	4510
194	Sample	1605074-03A	SAMPICPMS_TSDOD1	4511
195	Sample	1605074-04A	SAMPICPMS_TSDOD1	4512
196	CCV	CCV9-160516	CCV ICPMS_TW	1207
197	CCB	CCB9-160516	CCB ICPMS_TW	1102
198	LLCCV	LCVL9-160516	LCVLICPMS_TW	2511
199	CCB	CCB9-160516	CCB ICPMS_TW	1102
200	CCB	CCB9-160516	CCB ICPMS_TW	1102

#	Level	Dilution	Skip
181		5	
182			
183			
184			
185			
186		5	
187		5	
188		5	
189		5	
190		5	
191		5	
192		5	
193		5	
194		5	
195		5	
196			
197			
198			
199			
200			

#	Sample Type	Sample Name	Comment	Vial#	File Name
201	CCB	CCB9-160516	CCB ICPMS_TW	1102	
202	CCB	CCB9-160516	CCB ICPMS_TW	1102	
203	CCB	CCB9-160516	CCB ICPMS_TW	1103	
204	CCB	CCB9-160516	CCB ICPMS_TW	1103	
205	CCB	CCB9-160516	CCB ICPMS_TW	1103	
206	CCB	CCB9-160516	CCB ICPMS_TW	1103	

#	Level	Dilution	Skip
201			
202			
203			
204			
205			
206			

Unknown Samples:

Sample List

Blank Samples:

Periodic Block

#	Block Name	Period	Unit	Reset By

Sublist

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 11:29:00 AM**
Digestion:
Prep End Date:

Prep Batch **75135** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List
Hot Block #3
Thermometer #71
Balance #20
Pipette #P-01
Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-20A	Soil		1.12	50	50.000	1 of 1	
1605097-21A	Soil		1.09	50	50.000	1 of 1	
1605097-23A	Soil		1.03	50	50.000	1 of 1	
1605097-26A	Soil		1.08	50	50.000	1 of 1	
1605098-31A	Soil		1.14	50	50.000	1 of 1	
1605098-34A	Soil		1.10	50	50.000	1 of 1	
1605098-37A	Soil		1.06	50	50.000	1 of 1	
1605098-40A	Soil		1.06	50	50.000	1 of 1	
1605098-41A	Soil		1.09	50	50.000	1 of 1	
LCS-75135	Soil		1	50	50.000	of	
LCSD-75135	Soil		1	50	50.000	of	
MB-75135	Soil		1	50	50.000	of	
MS			1.03				
MSD			1.06				

Number	Reagent Name	Amt	Units	Exp. Da
9974	Hydrogen Peroxide	3	ml	01/20/2026
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160509-4	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/07/2016
MET-SPIKE-160509-5	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/07/2016

12:28 - 12:38
14:40 - 14:40
15:00 - 17:00
17:08 - 17:23

05/13/16

REVIEWED BY
By Janice Whitt at 10:14:20 AM, 5/17/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/12/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.
4) DETERMINE TOTAL WT.
5) CALCULATE VOLUME OF H2O AT °C (in mL)

% TEST VOL = Volume of H2O at °C/Test Volume * 100

%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100

VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY

					BIAS	PRECISION
PIPETTE ID: P-01	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	5.00	5.0090	4.9990	99.98	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		5.0017	4.9917	99.83		
3		4.9996	4.9896	99.79		
AVERAGE (MEAN)		5.003	4.993	99.87		0.099
						PASS

PIPETTE ID: P-09	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	0.20	0.2021	0.2017	100.85	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2026	0.2022	101.10		
3		0.2006	0.2002	100.10		
AVERAGE (MEAN)		0.202	0.201	100.68		0.516
						PASS

PIPETTE ID:	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

C. V. Gyle 5/12/16
Analyst / Date

REVIEWED BY
By Janice Whitt at 10:13:05 AM, 5/17/2016
Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 11:29:00 AM**
Digestion: **Start: 5/12/2016 12:28:00 PM / Stop: 5/12/2016 5:23:00 PM**
Prep End Date: **5/13/2016 9:05:48 AM**

Prep Batch **75135** Prep Code: **3050_IDOD** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

- Hot Block #3
- Thermometer #71
- Balance #20
- Pipette #P-01
- Pipette#-P-09

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-20A	Soil		1.12	50	44.643	1 of 1	
1605097-21A	Soil		1.09	50	45.872	1 of 1	
1605097-23A	Soil		1.03	50	48.544	1 of 1	
1605097-26A	Soil		1.08	50	46.296	1 of 1	
1605098-31A	Soil		1.14	50	43.860	1 of 1	
1605098-34A	Soil		1.1	50	45.455	1 of 1	
1605098-37A	Soil		1.06	50	47.170	1 of 1	
1605098-40A	Soil		1.06	50	47.170	1 of 1	
1605098-41A	Soil		1.09	50	45.872	1 of 1	
1605098-41A MS	Soil		1.03	50	48.544	of	
1605098-41A MSD	Soil		1.06	50	47.170	of	
1605098-41A PDS	Soil		1.09	50	45.872	of	
1605098-41A SD	Soil		1.09	50	45.872	of	
LCS-75135	Soil		1	50	50.000	of	
LCSD-75135	Soil		1	50	50.000	of	
MB-75135	Soil		1	50	50.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9974	Hydrogen Peroxide	3	ml	01/20/2026
10056	Digestion Vessels	1	vessel	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	10	ml	01/10/2026
10137	Hydrochloric Acid (trace metal grade)	5	ml	01/10/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.5	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	1	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	1	08/09/2016

REVIEWED BY
By Janice Whitt at 10:14:23 AM, 5/17/2016

Calibration Summary Report

Date Acquired 5/16/2016 12:13
Data Batch 160516.b

Level	Calibration File Name
1	034CALB.d
2	035CALS.d
3	036CALS.d
4	037CALS.d
5	038CALS.d
6	039CALS.d
7	040CALS.d
8	041CALS.d

Calibration Table

Ele	Corr Coef	Curve Equation
As	1.0000	y = 0.0013 * x + 2.1604E-004
Be	1.0000	y = 6.4330E-005 * x + 2.0153E-006
B	0.9999	y = 2.0450E-005 * x + 1.5046E-004
Na	1.0000	y = 7.6435E-004 * x + 0.0537
Mg	1.0000	y = 3.7787E-004 * x + 7.7363E-004
Al	0.9999	y = 1.3498E-004 * x + 1.9756E-004
K	1.0000	y = 3.8112E-004 * x + 0.0514
Ca	0.9999	y = 2.1721E-005 * x + 2.3138E-004
Ti	1.0000	y = 1.4560E-004 * x + 2.2346E-006
V	1.0000	y = 0.0050 * x + 0.0025
Cr	1.0000	y = 0.0060 * x + 0.0021
Mn	1.0000	y = 0.0032 * x + 9.1295E-004
Fe	1.0000	y = 0.0051 * x + 0.0175
Co	1.0000	y = 0.0129 * x + 1.7398E-004
Ni	1.0000	y = 0.0036 * x + 5.7511E-004
Cu	1.0000	y = 0.0098 * x + 0.0049
Zn	1.0000	y = 0.0016 * x + 4.3144E-004
Se	1.0000	y = 7.5403E-005 * x + 1.0251E-004
Sr	1.0000	y = 6.4423E-004 * x + 2.2509E-005
Mo	1.0000	y = 5.9258E-004 * x + 7.2626E-006
Ag	0.9999	y = 0.0019 * x + 1.4898E-005
Cd	1.0000	y = 2.6872E-004 * x + 1.5289E-006
Sn	1.0000	y = 5.5204E-004 * x + 1.8213E-004
Sb	0.9999	y = 8.5259E-004 * x + 3.1272E-005
Tl	1.0000	y = 0.0016 * x + 1.9351E-005
Ba	1.0000	y = 2.6911E-004 * x + 5.0734E-006
Pb	1.0000	y = 0.0022 * x + 3.1769E-004
Li	1.0000	y = 4.8609E-005 * x + 1.9222E-005

REVIEWED BY
By Janice Whitt at 9:32:33 AM, 5/17/2016

Calibration Summary Report

Level 7 Cal

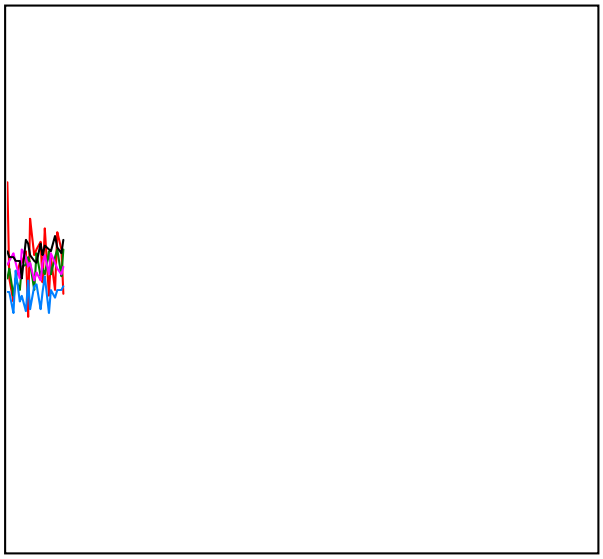
Ele	Conc	Calc	%Rec
As	500	494.73	99
Be	500	505.30	101
B	500	518.78	104
Na	10000	10141.06	101
Mg	10000	10196.11	102
Al	10000	10049.08	100
K	10000	10164.23	102
Ca	10000	9672.61	97
Ti	500	507.22	101
V	500	502.82	101
Cr	500	504.88	101
Mn	500	498.41	100
Fe	10000	10015.95	100
Co	500	501.56	100
Ni	500	502.25	100
Cu	500	503.81	101
Zn	500	497.18	99
Se	500	495.31	99
Sr	500	495.73	99
Mo	500	494.04	99
Ag	500	502.57	101
Cd	500	497.12	99
Sn	500	493.81	99
Sb	500	503.35	101
Tl	500	513.35	103
Ba	500	496.71	99
Pb	500	500.73	100

Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	2001.70	100
Be	2000	1998.96	100
B	2000	1994.14	100
Na	25000	24916.54	100
Mg	25000	24905.02	100
K	25000	24930.40	100
Ca	25000	25173.08	99
Ti	2000	1998.19	100
V	2000	1999.64	100
Cr	2000	1999.12	100
Mn	2000	2001.04	100
Co	2000	1999.34	100
Ni	2000	1999.12	100
Cu	2000	1998.30	100
Zn	2000	2000.57	100
Se	2000	2001.36	100
Sr	2000	2002.63	100
Mo	2000	2003.15	100
Cd	2000	2001.51	100
Sn	2000	2002.77	100
Tl	2000	1996.39	100
Ba	2000	2002.28	100
Pb	2000	2000.05	100
Li	2000	1997.30	100

REVIEWED BY
By Janice Whitt at 9:32:37 AM, 5/17/2016

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
51	200	95	106.6	11.12
59	2000	1109	1037.2	4.91
89	2000	978	946.7	4.83
140	5000	2619	2627.2	3.15
205	5000	2855	2745.7	3.20
156/140	1	0.267 %	0.281 %	38.48
75	200	14	20.2	100.82
78	20	5	7.7	42.78
56	5000	2302	2186.5	4.18
31	200	94	119.5	15.15

Integration Time [sec] 0.10

Plasma Parameters

RF Power	1550	Carrier Gas	0.53
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	6.3
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-90	Cell Exit	-60
Deflect	2.6		

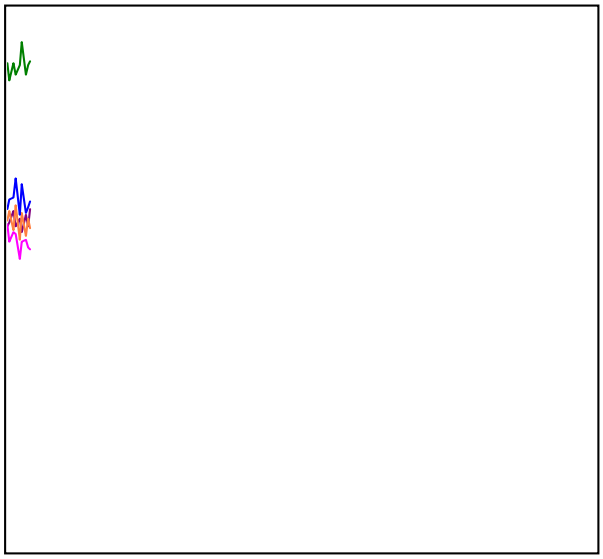
Cell Parameters

Use Gas	true	3rd Gas Flow	0
He Flow	4.7	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.36E+2	Pa	Carrier Gas(BP)	1.99E+2	kPa
Analyzer Press	2.11E-4	Pa	Reflected Power	2	W
Forward Power	1551	W			

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1259	1214.6	2.40
59	2000	1799	1786.0	2.24
89	5000	2971	3021.6	3.65
140	5000	2768	2851.1	3.27
205	5000	1987	2069.0	3.42
156/140	2	1.265 %	1.084 %	10.85
78	5000	2298	2330.2	2.02
63	1000	644	644.6	3.48
75	10000	6167	6160.6	1.98
Integration Time [sec]		0.10		

Plasma Parameters

RF Power	1550	Carrier Gas	0.53
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	6.3
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-90	Cell Exit	-60
Deflect	7.0		

Cell Parameters

Use Gas	false	3rd Gas Flow	0
He Flow	4.2	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.35E+2	Pa	Carrier Gas(BP)	2.01E+2	kPa
Analyzer Press	1.25E-4	Pa	Reflected Power	2	W
Forward Power	1549	W			

US EPA Tune Check Sample Report

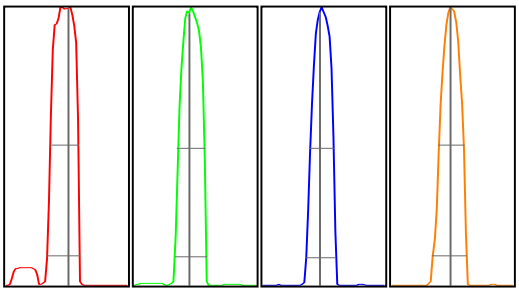
Batch Folder C:\Agilent\ICPMH\1\DATA\DHL TEMPLATE Li.b
Report Comment
Instrument Name ICPMS4 JP12361998

[No gas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	804620	0.70	5.00	
59	1068250	1.07	5.00	
115	1403611	0.41	5.00	
205	1211243	1.76	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	805420	812074	797893	800352	807359
59	1087360	1060308	1070307	1062123	1061152
115	1411650	1403412	1406438	1398545	1398009
205	1244073	1221795	1196407	1198551	1195389

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	121133	7.05	6.9 - 7.1		0.789	0.850	
59	176131	58.90	58.9 - 59.1		0.762	0.850	
115	262817	114.95	114.9 - 115.1		0.726	0.850	
205	217175	205.00	204.9 - 205.1		0.820	0.850	

X% = 10 **Int Time [sec] =** 0.1 **Acq Time [sec] =** 135.05 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Nebulizer Pump	0.10	rps
RF Matching	1.90	V	S/C Temp	2	℃
Smpl Depth	8.0	mm	Gas Switch	Dilution Gas	
Carrier Gas	0.53	L/min	Makeup/Dilution Gas	0.52	L/min
Option Gas	0.0	%			

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Cell Entrance	-40	V
Extract 2	-200.0	V	Cell Exit	-60	V
Omega Bias	-90	V	Deflect	7.0	V
Omega Lens	6.3	V	Plate Bias	-60	V

REVIEWED BY
By Janice Whitt at 9:32:42 AM, 5/17/2016

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		OctP Bias	-18.0	V
He Flow	0.0	mL/min	OctP RF	200	V
H2 Flow	0.0	mL/min	Energy Discrimination	3.0	V
3rd Gas Flow	0	%			

P/A Factor Tuning Report

Current Sample

Sample Name: BLANK STD 1
Data File: 034CALB.d
Acquired: 05/16/2016 12:13:29

Detector Parameters and P/A Factors

Discriminator: 4.5 mV
AnalogHV: 1760 V
PulseHV: 1210 V

Acquired: 05/16/2016 10:47:39

Mass[u]	Element	P/A Factor
6	Li	0.098496
9	Be	0.112338
23	Na	0.119180
24	Mg	0.123864
27	Al	0.128284
39	K	0.130182
45	Sc	0.131718
48		0.131992
51	V	0.133425
52	Cr	0.136299
55	Mn	0.138470
59	Co	0.141580
60	Ni	0.142019
63	Cu	0.145427
66	Zn	0.144313
72		0.143606
74	Ge	0.144250
75	As	0.143445
88	Sr	0.144615
89		0.143433
95		0.143749
97	Mo	0.143776
98	Mo	0.144291
99	[Mo]	0.145862
101		0.145734
105		0.148493
111	Cd	0.149753
114	Cd	0.150176
115	In	0.149972
118	Sn	0.149689
121		0.149797
123	Sb	0.149409
135	Ba	0.149385
138		0.150991
175		0.154667
193		0.155688
205	Tl	0.156379
206	[Pb]	0.156315
207	[Pb]	0.156903
208	Pb	0.157338
209	Bi	0.157512
232		0.157913
238	U	0.157505
44	Ca	Signal too low
78	Se	Signal too low
107	Ag	Signal too low
172		Signal too low

REVIEWED BY
By Janice Whitt at 9:32:46 AM, 5/17/2016

Calibration Blank Report

Date Acquired	5/16/2016 12:13	Sample Name	BLANK STD 1
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	034CALB.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	19	27.85
9	Be	45	2	50.00
11	B	45	149	19.04
23	Na	45	53132	1.44
24	Mg	45	766	2.40
27	Al	45	196	6.45
39	K	45	50902	0.38
44	Ca	45	229	21.81
47	Ti	45	2	173.21
51	V	45	2487	1.93
52	Cr	45	2071	4.20
55	Mn	45	903	3.52
56	Fe	45	17343	1.25
59	Co	72	129	26.04
60	Ni	72	426	16.10
63	Cu	72	3644	4.38
66	Zn	72	319	18.83
75	As	72	160	7.23
78	Se	72	76	16.17
88	Sr	115	148	9.12
95	Mo	115	48	38.42
107	Ag	115	98	18.78
111	Cd	115	10	57.72
118	Sn	115	1196	2.25
121	Sb	115	206	22.02
137	Ba	115	33	20.00
205	Tl	209	294	9.22
208	Pb	209	4836	1.04

QC ISTD Table

Mass	Name	CPS	%RSD
45	Sc	989663	0.96
72	Ge	739879	0.79
115	In	6565136	0.89
209	Bi	15222533	1.19

Calibration Standard Report

Date Acquired	5/16/2016 12:15	Sample Name	L2-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	035CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	52	8.81
9	Be	45	59	10.58
11	B	45	124	19.00
23	Na	45	71682	0.85
24	Mg	45	8137	1.03
27	Al	45	2891	2.94
39	K	45	59356	0.32
44	Ca	45	756	8.57
47	Ti	45	128	26.26
51	V	45	7186	1.96
52	Cr	45	8019	2.41
55	Mn	45	3640	8.86
56	Fe	45	113349	1.91
59	Co	72	10004	3.73
60	Ni	72	3400	3.10
63	Cu	72	10884	1.65
66	Zn	72	1648	6.72
75	As	72	1181	3.38
78	Se	72	134	9.83
88	Sr	115	4270	4.86
95	Mo	115	3778	3.97
107	Ag	115	12176	1.65
111	Cd	115	1718	7.71
118	Sn	115	4740	1.89
121	Sb	115	5570	2.20
137	Ba	115	1688	3.37
205	Tl	209	24540	1.05
208	Pb	209	37281	1.63

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	969970	0.87	989663	98.01	70	120	
72	Ge	734187	0.45	739879	99.23	70	120	
115	In	6588367	0.10	6565136	100.35	70	120	
209	Bi	15295093	1.60	15222533	100.48	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:17	Sample Name	L-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	036CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	495	3.85
9	Be	45	597	8.29
11	B	45	312	5.05
23	Na	45	205126	0.48
24	Mg	45	74731	0.07
27	Al	45	26279	1.15
39	K	45	123721	0.29
44	Ca	45	4301	1.84
47	Ti	45	1460	1.95
51	V	45	50191	1.05
52	Cr	45	58887	0.52
55	Mn	45	31167	2.81
56	Fe	45	971108	0.61
59	Co	72	95222	0.74
60	Ni	72	26831	1.92
63	Cu	72	76207	0.55
66	Zn	72	12242	0.84
75	As	72	9915	1.71
78	Se	72	595	9.12
88	Sr	115	41031	1.31
95	Mo	115	36831	1.59
107	Ag	115	119481	0.70
111	Cd	115	17216	0.66
118	Sn	115	35887	2.89
121	Sb	115	54655	0.34
137	Ba	115	17381	2.11
205	Tl	209	240935	0.41
208	Pb	209	327437	0.60

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	959742	0.61	989663	96.98	70	120	
72	Ge	723998	0.63	739879	97.85	70	120	
115	In	6490295	1.02	6565136	98.86	70	120	
209	Bi	15205984	2.69	15222533	99.89	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:19	Sample Name	10X-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	037CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	2322	3.95
9	Be	45	3052	2.16
11	B	45	1149	7.19
23	Na	45	799876	0.39
24	Mg	45	367858	0.41
27	Al	45	127462	0.27
39	K	45	418941	0.74
44	Ca	45	20262	1.18
47	Ti	45	7058	1.16
51	V	45	240041	1.06
52	Cr	45	290373	0.87
55	Mn	45	154609	0.91
56	Fe	45	4864100	0.46
59	Co	72	478327	0.93
60	Ni	72	131742	0.81
63	Cu	72	369411	0.32
66	Zn	72	59301	1.84
75	As	72	48628	0.99
78	Se	72	2822	3.23
88	Sr	115	204443	0.59
95	Mo	115	186130	1.18
107	Ag	115	606219	0.29
111	Cd	115	86359	0.73
118	Sn	115	177055	0.68
121	Sb	115	273825	0.97
137	Ba	115	85357	0.50
205	Tl	209	1200243	0.79
208	Pb	209	1625521	1.26

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	965684	0.40	989663	97.58	70	120	
72	Ge	726561	0.51	739879	98.20	70	120	
115	In	6502907	1.15	6565136	99.05	70	120	
209	Bi	15363317	2.30	15222533	100.92	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:21	Sample Name	5X-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	038CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	4748	1.40
9	Be	45	6059	0.27
11	B	45	2143	2.91
23	Na	45	1559150	0.34
24	Mg	45	742202	0.21
27	Al	45	258296	0.93
39	K	45	795677	0.41
44	Ca	45	40346	1.20
47	Ti	45	13950	0.34
51	V	45	478438	0.52
52	Cr	45	574104	0.42
55	Mn	45	304849	0.39
56	Fe	45	9711093	0.83
59	Co	72	951253	0.55
60	Ni	72	262622	0.59
63	Cu	72	733309	0.46
66	Zn	72	117365	0.32
75	As	72	97474	0.40
78	Se	72	5569	2.50
88	Sr	115	412067	0.70
95	Mo	115	375370	0.89
107	Ag	115	1214271	0.47
111	Cd	115	174217	1.11
118	Sn	115	354830	0.90
121	Sb	115	554782	0.12
137	Ba	115	172424	0.56
205	Tl	209	2464090	0.70
208	Pb	209	3268962	0.35

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	970285	0.25	989663	98.04	70	120	
72	Ge	727408	0.46	739879	98.31	70	120	
115	In	6520475	2.66	6565136	99.32	70	120	
209	Bi	15160200	1.63	15222533	99.59	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:23	Sample Name	2X-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	039CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	11895	0.36
9	Be	45	15606	0.20
11	B	45	5304	5.31
23	Na	45	3863011	0.24
24	Mg	45	1867398	0.89
27	Al	45	646706	0.73
39	K	45	1910456	0.88
44	Ca	45	102550	1.48
47	Ti	45	35516	0.05
51	V	45	1206201	0.56
52	Cr	45	1444024	0.77
55	Mn	45	769961	0.65
56	Fe	45	24931975	0.46
59	Co	72	2390685	0.36
60	Ni	72	660422	0.83
63	Cu	72	1847014	0.29
66	Zn	72	294429	0.55
75	As	72	245969	0.54
78	Se	72	13903	1.73
88	Sr	115	1032756	0.51
95	Mo	115	948565	0.69
107	Ag	115	3067540	0.35
111	Cd	115	440590	0.22
118	Sn	115	895873	0.74
121	Sb	115	1395441	1.19
137	Ba	115	432794	1.07
205	Tl	209	6236297	0.22
208	Pb	209	8321908	0.74

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	973916	0.73	989663	98.41	70	120	
72	Ge	738284	1.03	739879	99.78	70	120	
115	In	6720201	0.86	6565136	102.36	70	120	
209	Bi	15434354	1.75	15222533	101.39	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:25	Sample Name	H-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	040CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	23890	0.39
9	Be	45	31279	0.04
11	B	45	10353	1.63
23	Na	45	7510621	3.10
24	Mg	45	3707935	0.17
27	Al	45	1305356	0.40
39	K	45	3776973	0.76
44	Ca	45	202385	1.53
47	Ti	45	71062	0.10
51	V	45	2413827	0.54
52	Cr	45	2904600	1.41
55	Mn	45	1540539	1.08
56	Fe	45	49403441	1.28
59	Co	72	4783151	0.37
60	Ni	72	1320488	0.64
63	Cu	72	3658397	1.04
66	Zn	72	585875	0.13
75	As	72	493223	0.26
78	Se	72	27720	0.17
88	Sr	115	2074048	0.70
95	Mo	115	1901227	0.86
107	Ag	115	6083712	0.42
111	Cd	115	867531	0.98
118	Sn	115	1771469	1.23
121	Sb	115	2787137	1.45
137	Ba	115	868070	0.81
205	Tl	209	12606041	2.70
208	Pb	209	16616909	1.05

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	962220	0.53	989663	97.23	70	120	
72	Ge	740203	0.39	739879	100.04	70	120	
115	In	6493983	0.74	6565136	98.92	70	120	
209	Bi	15306948	1.93	15222533	100.55	70	120	

Calibration Standard Report

Date Acquired	5/16/2016 12:27	Sample Name	H2-160516
Data Batch	160516.b	Comment	CAL ICPMS_TW
Data File Name	041CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	94360	0.15
9	Be	45	124959	1.20
11	B	45	39777	1.09
23	Na	45	18560536	1.58
24	Mg	45	9144615	2.14
27	Al	45	2090	11.76
39	K	45	9282861	0.46
44	Ca	45	531593	1.29
47	Ti	45	282740	1.21
51	V	45	9688266	1.64
52	Cr	45	11609230	0.52
55	Mn	45	6243744	0.55
56	Fe	45	53024	13.58
59	Co	72	18953981	0.49
60	Ni	72	5223729	0.31
63	Cu	72	14414170	0.84
66	Zn	72	2342558	0.44
75	As	72	1983313	0.39
78	Se	72	111116	0.41
88	Sr	115	8400397	2.43
95	Mo	115	7728986	0.21
107	Ag	115	2097	23.47
111	Cd	115	3502037	0.15
118	Sn	115	7200028	0.67
121	Sb	115	4263	0.91
137	Ba	115	3508378	0.98
205	Tl	209	49941925	0.91
208	Pb	209	67594172	1.11

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	971821	1.15	989663	98.20	70	120	
72	Ge	735820	0.24	739879	99.45	70	120	
115	In	6511206	0.33	6565136	99.18	70	120	
209	Bi	15593242	1.38	15222533	102.44	70	120	

Interference Check Solution A (ICS-A) Report

Date Acquired	5/16/2016 12:35	Sample Name	ICSA-160516
Data Batch	160516.b	Comment	ICSAICPMS_TW
Data File Name	045ICSA.d	Dilution	1

Mass	Name	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
9	Be	0.070	6	72.6	1.2	0.8	
11	B	13.327	389	1.3	30	30	
51	V	-0.061	2029	8.2	10	10	
52	Cr	0.433	4304	0.4	8	5	
55	Mn	1.249	4525	1.7	8	10	
59	Co	0.564	5136	0.7	8	10	
60	Ni	0.462	1530	7.8	8	10	
63	Cu	0.750	8480	4.6	8	10	
66	Zn	1.702	2168	2.6	10	5	
75	As	0.707	807	6.2	4	5	
78	Se	0.297	86	2.0	2	5	
88	Sr	1.472	5996	1.7	10	10	
107	Ag	0.164	1976	2.6	0.8	2	
111	Cd	0.489	822	11.4	1.2	1	
118	Sn	0.633	3287	7.3	10	10	
121	Sb	0.403	2317	4.2	4	2.5	
137	Ba	0.344	602	2.6	8	10	
205	Tl	0.167	4113	7.2	4	1.5	
208	Pb	0.423	17708	3.8	1.2	1	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	919349	0.18	989663	92.90	70	120	
72	Ge	690788	0.75	739879	93.37	70	120	
115	In	6178274	2.21	6565136	94.11	70	120	
209	Bi	14330312	1.00	15222533	94.14	70	120	

Interference Check Solution AB (ICS-AB) Report

Date Acquired	5/16/2016 12:37	Sample Name	ICSAB-160516
Data Batch	160516.b	Comment	ICSBICPMS_TW
Data File Name	046ICSB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
51	V	45	40.920	188413	1.25	40	102.3	80	120	
52	Cr	45	21.538	119346	1.23	20	107.7	80	120	
55	Mn	45	19.546	58095	0.39	20	97.7	80	120	
59	Co	72	40.820	364572	0.76	40	102.0	80	120	
60	Ni	72	38.796	95861	0.69	40	97.0	80	120	
63	Cu	72	20.922	145497	1.14	20	104.6	80	120	
66	Zn	72	20.159	22525	1.25	20	100.8	80	120	
75	As	72	20.311	19101	0.64	20	101.6	80	120	
78	Se	72	19.952	1114	4.41	20	99.8	80	120	
107	Ag	115	18.823	217557	0.91	20	94.1	80	120	
111	Cd	115	10.001	16661	2.33	10	100.0	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	912523	0.80	989663	92.21	70	120	
72	Ge	692993	0.59	739879	93.66	70	120	
115	In	6198552	1.89	6565136	94.42	70	120	
209	Bi	14414928	2.43	15222533	94.69	70	120	

Initial Calibration Verification (ICV) Report

Date Acquired	5/16/2016 12:45	Sample Name	ICV-160516
Data Batch	160516.b	Comment	ICV ICPMS_TW
Data File Name	050_ICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	102.036	4901	1.27	100	102.0	90	110	
9	Be	45	101.265	6415	2.24	100	101.3	90	110	
11	B	45	105.632	2275	3.87	100	105.6	90	110	
23	Na	45	2641.859	2040670	0.44	2500	105.7	90	110	
24	Mg	45	2627.634	978183	0.43	2500	105.1	90	110	
27	Al	45	2529.069	336250	0.45	2500	101.2	90	110	
39	K	45	2571.354	1015339	0.69	2500	102.9	90	110	
44	Ca	45	2404.069	51631	0.85	2500	96.2	90	110	
47	Ti	45	100.717	14438	1.01	100	100.7	90	110	
51	V	45	102.938	507538	1.36	100	102.9	90	110	
52	Cr	45	108.084	637805	0.16	100	108.1	90	110	
55	Mn	45	100.675	319085	1.43	100	100.7	90	110	
56	Fe	45	2559.298	12927694	1.12	2500	102.4	90	110	
59	Co	72	105.570	1020966	0.69	100	105.6	90	110	
60	Ni	72	107.126	285930	1.50	100	107.1	90	110	
63	Cu	72	103.286	763431	0.92	100	103.3	90	110	
66	Zn	72	104.068	124607	2.02	100	104.1	90	110	
75	As	72	101.470	102703	0.07	100	101.5	90	110	
78	Se	72	101.426	5817	1.69	100	101.4	90	110	
88	Sr	115	100.132	432908	0.62	100	100.1	90	110	
95	Mo	115	97.187	386430	0.14	100	97.2	90	110	
107	Ag	115	97.927	1224850	0.49	100	97.9	90	110	
111	Cd	115	99.729	179816	0.44	100	99.7	90	110	
118	Sn	115	102.527	380996	1.21	100	102.5	90	110	
121	Sb	115	99.369	568617	0.55	100	99.4	90	110	
137	Ba	115	98.986	178765	1.21	100	99.0	90	110	
205	Tl	209	101.079	2558610	1.05	100	101.1	90	110	
208	Pb	209	101.129	3463213	1.15	100	101.1	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	984407	0.20	989663	99.47	70	120	
72	Ge	750542	0.33	739879	101.44	70	120	
115	In	6712010	2.48	6565136	102.24	70	120	
209	Bi	15780912	2.94	15222533	103.67	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 13:04	Sample Name	LCVL-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	053LICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.085	497	6.39	10	100.8	70	130	
9	Be	45	1.110	72	10.47	1	111.0	70	130	
11	B	45	23.217	610	6.44	20	116.1	70	130	
23	Na	45	101.480	128091	0.99	100	101.5	70	130	
24	Mg	45	100.262	37729	0.40	100	100.3	70	130	
27	Al	45	100.461	13428	1.73	100	100.5	70	130	
39	K	45	103.524	88702	0.46	100	103.5	70	130	
44	Ca	45	102.198	2392	1.67	100	102.2	70	130	
47	Ti	45	4.941	704	5.44	5	98.8	70	130	
51	V	45	1.016	7394	1.69	1	101.6	70	130	
52	Cr	45	5.074	31630	0.88	5	101.5	70	130	
55	Mn	45	4.672	15531	2.01	5	93.4	70	130	
56	Fe	45	96.898	501663	1.07	100	96.9	70	130	
59	Co	72	5.113	49253	2.39	5	102.3	70	130	
60	Ni	72	5.281	14413	2.97	5	105.6	70	130	
63	Cu	72	5.054	40605	1.89	5	101.1	70	130	
66	Zn	72	5.152	6435	3.09	5	103.0	70	130	
75	As	72	4.955	5136	1.31	5	99.1	70	130	
78	Se	72	5.352	377	10.14	5	107.0	70	130	
88	Sr	115	4.896	21492	0.69	5	97.9	70	130	
95	Mo	115	4.707	18923	1.22	5	94.1	70	130	
107	Ag	115	1.880	23820	0.84	2	94.0	70	130	
111	Cd	115	0.943	1725	0.80	1	94.3	70	130	
118	Sn	115	4.941	19687	0.90	5	98.8	70	130	
121	Sb	115	1.895	11143	1.50	2	94.7	70	130	
137	Ba	115	4.844	8856	2.19	5	96.9	70	130	
205	Tl	209	0.990	24961	1.27	1	99.0	70	130	
208	Pb	209	0.965	37433	0.96	1	96.5	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	975960	0.75	989663	98.62	70	120	
72	Ge	745697	0.56	739879	100.79	70	120	
115	In	6766926	1.32	6565136	103.07	70	120	
209	Bi	15530111	0.87	15222533	102.02	70	120	

Initial Calibration Blank (ICB) Report

Date Acquired	5/16/2016 13:08	Sample Name	ICB-160516
Data Batch	160516.b	Comment	ICB ICPMS_TW
Data File Name	055_ICB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.209	9	33.3	2	5	
9	Be	45	0.016	3	145.3	0.4	0.3	
11	B	45	0.800	166	4.2	10	10	
23	Na	45	-0.159	53162	0.6	50	100	
24	Mg	45	-1.218	311	2.2	50	100	
27	Al	45	0.038	201	20.1	50	10	
39	K	45	1.719	51697	1.1	50	100	
44	Ca	45	0.906	249	10.0	50	100	
47	Ti	45	-0.008	1	173.2	4	3	
51	V	45	-0.036	2316	8.1	4	3	
52	Cr	45	-0.016	1983	3.7	2	2	
55	Mn	45	-0.171	360	12.1	2	3	
56	Fe	45	-1.175	11419	2.5	50	50	
59	Co	72	-0.004	93	3.6	2	3	
60	Ni	72	0.008	453	3.7	2	3	
63	Cu	72	-0.129	2740	7.3	2	2	
66	Zn	72	0.047	379	9.2	4	2	
75	As	72	-0.007	154	16.5	2	2	
78	Se	72	0.011	77	18.9	1	2	
88	Sr	115	-0.008	116	28.9	4	3	
95	Mo	115	-0.003	36	37.9	2	2	
107	Ag	115	0.002	122	22.0	0.4	1	
111	Cd	115	-0.001	8	107.8	0.4	0.3	
118	Sn	115	-0.027	1132	6.9	4	3	
121	Sb	115	-0.005	180	38.3	2	0.8	
137	Ba	115	-0.007	22	48.2	2	3	
205	Tl	209	-0.004	194	12.9	2	0.5	
208	Pb	209	-0.030	3948	5.4	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	992459	0.15	989663	100.28	70	120	
72	Ge	749087	0.80	739879	101.24	70	120	
115	In	6765962	1.39	6565136	103.06	70	120	
209	Bi	15607134	1.04	15222533	102.53	70	120	

Method Blank Report

Date Acquired	5/16/16 1:10 PM	Sample Name	MB-75006
Data Batch	160516.b	Comment	MBLKICPMS_TSDOD1
Data File Name	056_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	-0.146	12	50.00		
9	Be	45	0.005	2	65.47		
11	B	45	2.415	198	10.83		
23	Na	45	6.305	57904	1.24		
24	Mg	45	1.447	1307	7.45		
27	Al	45	6.560	1072	10.13		
39	K	45	4.983	52785	1.07		
44	Ca	45	25.949	787	4.64		
47	Ti	45	0.193	30	11.10		
51	V	45	0.012	2545	7.63		
52	Cr	45	-0.019	1957	3.40		
55	Mn	45	-0.169	366	12.04		
56	Fe	45	1.612	25517	1.62		
59	Co	72	-0.001	122	41.39		
60	Ni	72	0.896	2752	6.12		
63	Cu	72	0.027	3805	4.06		
66	Zn	72	2.641	3396	3.83		
75	As	72	0.006	164	15.30		
78	Se	72	0.019	76	11.54		
88	Sr	115	0.105	603	7.25		
95	Mo	115	0.015	107	29.81		
107	Ag	115	0.003	132	16.21		
111	Cd	115	0.001	11	45.82		
118	Sn	115	3.710	14888	0.24		
121	Sb	115	0.015	292	11.71		
137	Ba	115	0.033	93	14.29		
205	Tl	209	-0.003	228	16.18		
208	Pb	209	0.087	8113	4.64		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	989768	0.68	989663	100.01	70	120	
72	Ge	732862	0.79	739879	99.05	70	120	
115	In	6675589	0.28	6565136	101.68	70	120	
209	Bi	16015037	1.36	15222533	105.21	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 13:12	Sample Name	LCS-75006
Data Batch	160516.b	Comment	LCS ICPMS_TSDOD1
Data File Name	057_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	209.944	9921	1.65	200	105.0	80	120	
9	Be	45	206.367	12884	1.01	200	103.2	80	120	
11	B	45	208.122	4276	1.34	200	104.1	80	120	
23	Na	45	5237.709	3936752	1.49	1000	523.8	80	120	Fail
24	Mg	45	5226.543	1917199	0.61	1000	522.7	80	120	Fail
27	Al	45	1023.887	134300	0.46	1000	102.4	80	120	
39	K	45	5185.325	1967489	1.09	1000	518.5	80	120	Fail
44	Ca	45	4923.988	104003	1.35	1000	492.4	80	120	Fail
47	Ti	45	207.009	29250	1.03	200	103.5	80	120	
51	V	45	208.631	1011485	0.38	200	104.3	80	120	
52	Cr	45	210.321	1221452	0.44	200	105.2	80	120	
55	Mn	45	204.962	639471	1.17	200	102.5	80	120	
56	Fe	45	1005.837	5018600	0.96	1000	100.6	80	120	
59	Co	72	212.928	2009387	0.97	200	106.5	80	120	
60	Ni	72	213.025	554460	0.43	200	106.5	80	120	
63	Cu	72	211.182	1519571	0.47	200	105.6	80	120	
66	Zn	72	209.961	245013	0.37	200	105.0	80	120	
75	As	72	206.420	203729	0.78	200	103.2	80	120	
78	Se	72	207.574	11540	0.76	200	103.8	80	120	
88	Sr	115	201.554	843090	0.77	200	100.8	80	120	
95	Mo	115	203.315	782237	0.32	200	101.7	80	120	
107	Ag	115	204.282	2472298	0.23	200	102.1	80	120	
111	Cd	115	206.011	359420	0.15	200	103.0	80	120	
118	Sn	115	211.760	760125	0.88	200	105.9	80	120	
121	Sb	115	203.526	1126727	0.71	200	101.8	80	120	
137	Ba	115	206.707	361137	1.07	200	103.4	80	120	
205	Tl	209	208.998	5189092	0.67	200	104.5	80	120	
208	Pb	209	205.479	6898435	1.16	200	102.7	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	970404	0.80	989663	98.05	70	120	
72	Ge	732468	0.57	739879	99.00	70	120	
115	In	6493298	1.62	6565136	98.91	70	120	
209	Bi	15481261	2.76	15222533	101.70	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 13:14	Sample Name	LCSD-75006
Data Batch	160516.b	Comment	LCSDICPMS_TSDOD1
Data File Name	058_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	207.884	9790	1.78	200	103.9	80	120	
9	Be	45	209.962	13063	0.88	200	105.0	80	120	
11	B	45	208.625	4272	5.15	200	104.3	80	120	
23	Na	45	5183.054	3882782	0.22	1000	518.3	80	120	Fail
24	Mg	45	5157.745	1885329	0.26	1000	515.8	80	120	Fail
27	Al	45	1012.501	132349	0.21	1000	101.3	80	120	
39	K	45	5106.947	1931794	0.83	1000	510.7	80	120	Fail
44	Ca	45	4900.715	103151	1.63	1000	490.1	80	120	Fail
47	Ti	45	204.847	28844	1.06	200	102.4	80	120	
51	V	45	206.156	996055	1.12	200	103.1	80	120	
52	Cr	45	207.067	1198447	0.64	200	103.5	80	120	
55	Mn	45	202.790	630455	0.61	200	101.4	80	120	
56	Fe	45	998.242	4963385	0.31	1000	99.8	80	120	
59	Co	72	213.369	1984897	0.53	200	106.7	80	120	
60	Ni	72	214.072	549238	1.47	200	107.0	80	120	
63	Cu	72	210.965	1496329	0.84	200	105.5	80	120	
66	Zn	72	209.358	240821	0.60	200	104.7	80	120	
75	As	72	205.413	199838	0.76	200	102.7	80	120	
78	Se	72	205.781	11277	0.65	200	102.9	80	120	
88	Sr	115	197.382	832329	0.24	200	98.7	80	120	
95	Mo	115	198.127	768348	0.52	200	99.1	80	120	
107	Ag	115	201.339	2456251	0.68	200	100.7	80	120	
111	Cd	115	203.225	357380	0.59	200	101.6	80	120	
118	Sn	115	207.461	750676	0.31	200	103.7	80	120	
121	Sb	115	201.420	1124074	0.55	200	100.7	80	120	
137	Ba	115	201.315	354570	0.64	200	100.7	80	120	
205	Tl	209	209.481	5110641	1.07	200	104.7	80	120	
208	Pb	209	208.125	6864665	0.12	200	104.1	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	966996	0.53	989663	97.71	70	120	
72	Ge	722003	0.48	739879	97.58	70	120	
115	In	6545303	1.51	6565136	99.70	70	120	
209	Bi	15205868	0.85	15222533	99.89	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/16/2016 13:20	Sample Name	1605034-09A SD
Data Batch	160516.b	Comment	SD ICPMS_TSDOD1
Data File Name	061_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	26.640	1276	2.83	134.8	98.8	110	90	Good
9	Be	45	0.673	44	17.75	3.3	102.3	110	90	Good
11	B	45	35.106	843	2.05	175.1	100.3	110	90	Good
23	Na	45	1341.138	1047781	1.49	6535.8	102.6	110	90	Good
24	Mg	45	3494.518	1283260	1.37	16837.3	103.8	110	90	Good
27	Al	45	14690.969	1926174	0.39	73374.6	100.1	110	90	Good
39	K	45	3527.955	1355883	1.85	17339.4	101.7	110	90	Good
44	Ca	45	12320.196	260127	0.90	60377.4	102.0	110	90	Good
47	Ti	45	34.854	4931	3.30	169.9	102.5	110	90	Good
51	V	45	24.533	121203	0.96	120.9	101.5	110	90	Good
52	Cr	45	17.126	101420	1.31	83.9	102.1	110	90	Good
55	Mn	45	28.811	90727	2.44	139.3	103.4	110	90	Good
56	Fe	45	20147.777	100294176	1.66	98301.1	102.5	110	90	Good
59	Co	72	3.980	37400	1.12	19.4	102.8	110	90	Good
60	Ni	72	7.622	20089	0.89	37.0	103.1	110	90	Good
63	Cu	72	3.147	25995	1.12	15.5	101.6	110	90	Good
66	Zn	72	44.997	52356	1.83	213.7	105.3	110	90	Good
75	As	72	4.484	4546	2.63	22.1	101.5	110	90	Good
78	Se	72	1.288	145	16.44	4.8	132.8	110	90	
88	Sr	115	131.704	559348	0.67	658.1	100.1	110	90	Good
95	Mo	115	0.163	686	4.41	0.8	106.6	110	90	Good
107	Ag	115	0.015	281	20.96	0.0	213.5	110	90	
111	Cd	115	0.019	44	33.82	0.1	96.8	110	90	Good
118	Sn	115	0.928	4576	2.48	5.4	86.0	110	90	
121	Sb	115	0.052	497	12.54	0.2	141.5	110	90	
137	Ba	115	16.132	28651	2.10	81.5	99.0	110	90	Good
205	Tl	209	0.091	2566	0.20	0.4	107.4	110	90	Good
208	Pb	209	8.477	290720	0.93	42.2	100.5	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	971239	0.33	989663	98.14	70	120	
72	Ge	726881	0.26	739879	98.24	70	120	
115	In	6592914	2.11	6565136	100.42	70	120	
209	Bi	15555554	1.23	15222533	102.19	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/16/2016 13:40	Sample Name	1605034-09A PDS
Data Batch	160516.b	Comment	PDS ICPMS_TSDOD1
Data File Name	071_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	333.603	14929	0.57	134.8	200	99.4	75	125	
9	Be	45	199.550	11806	0.84	3.3	200	98.1	75	125	
11	B	45	363.902	6980	2.96	175.1	200	94.4	75	125	
23	Na	45	11259.262	7963257	2.07	6535.8	5000	94.5	75	125	
24	Mg	45	21484.494	7465063	3.08	16837.3	5000	92.9	75	125	
27	Al	45	76254.063	9464344	1.62	73374.6	5000	57.6	75	125	Fail
39	K	45	22399.065	7897508	0.83	17339.4	5000	101.2	75	125	
44	Ca	45	64626.998	1291046	0.41	60377.4	5000	85.0	75	125	
47	Ti	45	368.848	49389	1.00	169.9	200	99.5	75	125	
51	V	45	319.957	1468813	0.62	120.9	200	99.5	75	125	
52	Cr	45	284.913	1567370	0.63	83.9	200	100.5	75	125	
55	Mn	45	325.385	961526	1.10	139.3	200	93.0	75	125	
56	Fe	45	########	483426221	1.94	98301.1	5000	85.5	75	125	
59	Co	72	219.507	1933532	1.74	19.4	200	100.1	75	125	
60	Ni	72	231.557	562479	1.26	37.0	200	97.3	75	125	
63	Cu	72	207.702	1394917	0.67	15.5	200	96.1	75	125	
66	Zn	72	408.096	444204	0.95	213.7	200	97.2	75	125	
75	As	72	221.100	203668	1.34	22.1	200	99.5	75	125	
78	Se	72	198.308	10292	0.87	4.8	200	96.7	75	125	
88	Sr	115	864.726	3346085	1.40	658.1	200	103.3	75	125	
95	Mo	115	197.110	701583	0.78	0.8	200	98.2	75	125	
107	Ag	115	184.889	2070097	0.89	0.0	200	92.4	75	125	
111	Cd	115	192.671	310976	0.84	0.1	200	96.3	75	125	
118	Sn	115	212.209	704715	0.27	5.4	200	103.4	75	125	
121	Sb	115	199.393	1021239	0.53	0.2	200	99.6	75	125	
137	Ba	115	280.531	453461	0.67	81.5	200	99.5	75	125	
205	Tl	209	204.741	4567036	0.97	0.4	200	102.2	75	125	
208	Pb	209	245.105	7390663	0.39	42.2	200	101.5	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	919593	0.91	989663	92.92	70	120	
72	Ge	683645	1.04	739879	92.40	70	120	
115	In	6006664	0.89	6565136	91.49	70	120	
209	Bi	13902007	0.54	15222533	91.33	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 13:42	Sample Name	1605034-09A MS
Data Batch	160516.b	Comment	MS ICPMS_TSDOD1
Data File Name	072_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	334.787	15092	0.78	134.8	200	100.0	80	120	
9	Be	45	196.459	11710	0.95	3.3	200	96.6	80	120	
11	B	45	364.078	7037	2.00	175.1	200	94.5	80	120	
23	Na	45	12070.592	8596574	0.79	6535.8	1000	553.5	80	120	Fail
24	Mg	45	22789.795	7977364	1.24	16837.3	1000	595.2	80	120	Fail
27	Al	45	85785.137	10726957	0.60	73374.6	1000	1241.1	80	120	Fail
39	K	45	22708.720	8065917	2.30	17339.4	1000	536.9	80	120	Fail
44	Ca	45	73115.949	1471358	0.30	60377.4	1000	1273.9	80	120	Fail
47	Ti	45	258.838	34916	2.92	169.9	200	44.5	80	120	Fail
51	V	45	334.371	1546245	1.11	120.9	200	106.7	80	120	
52	Cr	45	289.487	1604306	1.20	83.9	200	102.8	80	120	
55	Mn	45	329.353	980435	1.48	139.3	200	95.0	80	120	
56	Fe	45	########	534186859	2.86	98301.1	1000	1421.2	80	120	Fail
59	Co	72	220.444	1946431	1.24	19.4	200	100.5	80	120	
60	Ni	72	236.094	574920	1.17	37.0	200	99.6	80	120	
63	Cu	72	215.249	1449006	0.66	15.5	200	99.9	80	120	
66	Zn	72	431.091	470375	1.05	213.7	200	108.7	80	120	
75	As	72	224.408	207200	0.51	22.1	200	101.2	80	120	
78	Se	72	196.949	10247	0.74	4.8	200	96.1	80	120	
88	Sr	115	787.560	3061934	0.66	658.1	200	64.8	80	120	Fail
95	Mo	115	177.496	634779	0.35	0.8	200	88.4	80	120	
107	Ag	115	194.406	2187046	0.62	0.0	200	97.2	80	120	
111	Cd	115	196.122	318047	0.82	0.1	200	98.0	80	120	
118	Sn	115	202.110	674396	1.40	5.4	200	98.4	80	120	
121	Sb	115	59.744	307567	2.24	0.2	200	29.8	80	120	Fail
137	Ba	115	282.677	459086	1.14	81.5	200	100.6	80	120	
205	Tl	209	199.998	4584911	0.51	0.4	200	99.8	80	120	
208	Pb	209	243.308	7540652	0.99	42.2	200	100.6	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	926378	0.96	989663	93.61	70	120	
72	Ge	685316	0.91	739879	92.63	70	120	
115	In	6034722	0.26	6565136	91.92	70	120	
209	Bi	14293476	2.72	15222533	93.90	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 13:44	Sample Name	1605034-09A MSD
Data Batch	160516.b	Comment	MSD ICPMS_TSDOD1
Data File Name	073_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	334.807	15319	0.79	134.8	200	100.0	80	120	
9	Be	45	197.628	11955	0.63	3.3	200	97.2	80	120	
11	B	45	367.083	7199	1.24	175.1	200	96.0	80	120	
23	Na	45	12120.945	8761353	2.21	6535.8	1000	558.5	80	120	Fail
24	Mg	45	22881.031	8129418	0.65	16837.3	1000	604.4	80	120	Fail
27	Al	45	81820.065	10384114	1.50	73374.6	1000	844.6	80	120	Fail
39	K	45	22745.606	8199060	2.36	17339.4	1000	540.6	80	120	Fail
44	Ca	45	64325.791	1313856	1.03	60377.4	1000	394.8	80	120	Fail
47	Ti	45	272.580	37316	2.10	169.9	200	51.3	80	120	Fail
51	V	45	327.263	1535923	0.43	120.9	200	103.2	80	120	
52	Cr	45	285.177	1603976	0.11	83.9	200	100.7	80	120	
55	Mn	45	335.991	1015037	0.17	139.3	200	98.3	80	120	
56	Fe	45	########	505742540	1.83	98301.1	1000	666.7	80	120	Fail
59	Co	72	220.595	1969623	1.18	19.4	200	100.6	80	120	
60	Ni	72	235.750	580505	0.47	37.0	200	99.4	80	120	
63	Cu	72	213.306	1452078	0.35	15.5	200	98.9	80	120	
66	Zn	72	419.979	463373	0.88	213.7	200	103.2	80	120	
75	As	72	220.613	205993	0.30	22.1	200	99.3	80	120	
78	Se	72	198.769	10457	1.41	4.8	200	97.0	80	120	
88	Sr	115	790.029	3117285	0.26	658.1	200	66.0	80	120	Fail
95	Mo	115	175.082	635454	0.42	0.8	200	87.2	80	120	
107	Ag	115	194.843	2224669	0.75	0.0	200	97.4	80	120	
111	Cd	115	196.720	323764	0.60	0.1	200	98.3	80	120	
118	Sn	115	199.467	675482	0.30	5.4	200	97.0	80	120	
121	Sb	115	57.570	300801	0.31	0.2	200	28.7	80	120	Fail
137	Ba	115	287.418	473748	0.86	81.5	200	103.0	80	120	
205	Tl	209	203.827	4601821	0.90	0.4	200	101.7	80	120	
208	Pb	209	249.705	7621002	1.25	42.2	200	103.8	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	940177	0.43	989663	95.00	70	120	
72	Ge	692978	0.20	739879	93.66	70	120	
115	In	6124954	1.14	6565136	93.30	70	120	
209	Bi	14071667	1.48	15222533	92.44	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 13:46	Sample Name	CCV1-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	074_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	209.695	9481	0.51	200	104.8	90	110	
9	Be	45	205.110	12253	0.74	200	102.6	90	110	
11	B	45	206.377	4057	4.27	200	103.2	90	110	
23	Na	45	5106.625	3673844	0.35	5000	102.1	90	110	
24	Mg	45	5020.981	1762261	0.22	5000	100.4	90	110	
27	Al	45	4809.347	602962	1.31	5000	96.2	90	110	
39	K	45	4998.473	1816524	0.30	5000	100.0	90	110	
44	Ca	45	4653.452	94065	1.15	5000	93.1	90	110	
47	Ti	45	200.562	27114	1.25	200	100.3	90	110	
51	V	45	199.852	927228	0.75	200	99.9	90	110	
52	Cr	45	202.006	1122662	0.98	200	101.0	90	110	
55	Mn	45	196.971	588019	0.76	200	98.5	90	110	
56	Fe	45	4984.138	23730162	0.88	5000	99.7	90	110	
59	Co	72	206.099	1856924	0.63	200	103.0	90	110	
60	Ni	72	207.112	514673	0.72	200	103.6	90	110	
63	Cu	72	206.916	1421556	0.21	200	103.5	90	110	
66	Zn	72	205.297	228724	0.68	200	102.6	90	110	
75	As	72	201.853	190213	0.43	200	100.9	90	110	
78	Se	72	198.619	10545	0.60	200	99.3	90	110	
88	Sr	115	192.983	791908	0.15	200	96.5	90	110	
95	Mo	115	195.082	736231	0.53	200	97.5	90	110	
107	Ag	115	201.631	2393789	0.25	200	100.8	90	110	
111	Cd	115	198.022	338891	0.76	200	99.0	90	110	
118	Sn	115	196.732	692801	0.28	200	98.4	90	110	
121	Sb	115	198.003	1075274	0.65	200	99.0	90	110	
137	Ba	115	194.735	333740	1.62	200	97.4	90	110	
205	Tl	209	201.942	4866803	0.48	200	101.0	90	110	
208	Pb	209	198.484	6466924	0.23	200	99.2	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	928507	0.89	989663	93.82	70	120	
72	Ge	699337	0.87	739879	94.52	70	120	
115	In	6368736	0.83	6565136	97.01	70	120	
209	Bi	15021348	1.41	15222533	98.68	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 13:54	Sample Name	LCVL1-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	076LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.263	471	7.65	10	102.6	70	130	
9	Be	45	1.052	63	9.12	1	105.2	70	130	
11	B	45	23.964	582	6.18	20	119.8	70	130	
23	Na	45	106.088	122505	0.07	100	106.1	70	130	
24	Mg	45	101.096	35425	2.20	100	101.1	70	130	
27	Al	45	100.459	12505	1.58	100	100.5	70	130	
39	K	45	95.468	79821	1.13	100	95.5	70	130	
44	Ca	45	102.467	2233	4.69	100	102.5	70	130	
47	Ti	45	5.686	754	0.92	5	113.7	70	130	
51	V	45	0.895	6337	2.56	1	89.5	70	130	
52	Cr	45	5.191	30094	1.68	5	103.8	70	130	
55	Mn	45	4.733	14641	0.97	5	94.7	70	130	
56	Fe	45	96.494	465380	0.29	100	96.5	70	130	
59	Co	72	5.193	46491	2.05	5	103.9	70	130	
60	Ni	72	5.211	13222	0.39	5	104.2	70	130	
63	Cu	72	5.077	37896	0.35	5	101.5	70	130	
66	Zn	72	5.065	5884	1.66	5	101.3	70	130	
75	As	72	4.981	4797	1.58	5	99.6	70	130	
78	Se	72	5.124	339	6.38	5	102.5	70	130	
88	Sr	115	4.889	19577	1.64	5	97.8	70	130	
95	Mo	115	4.784	17541	1.98	5	95.7	70	130	
107	Ag	115	1.925	22237	1.79	2	96.2	70	130	
111	Cd	115	0.948	1582	5.17	1	94.8	70	130	
118	Sn	115	4.834	17596	0.91	5	96.7	70	130	
121	Sb	115	1.958	10494	2.37	2	97.9	70	130	
137	Ba	115	4.925	8211	3.17	5	98.5	70	130	
205	Tl	209	1.037	23711	1.77	1	103.7	70	130	
208	Pb	209	1.008	35274	2.34	1	100.8	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	908967	0.56	989663	91.85	70	120	
72	Ge	693086	1.07	739879	93.68	70	120	
115	In	6172107	0.18	6565136	94.01	70	120	
209	Bi	14093720	2.54	15222533	92.58	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 13:58	Sample Name	CCB1-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	077_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.178	10	31.6	2	5	
9	Be	45	0.031	4	87.7	0.4	0.3	
11	B	45	2.793	190	29.3	10	10	
23	Na	45	5.850	53156	0.4	50	100	
24	Mg	45	-1.195	294	8.2	50	100	
27	Al	45	0.177	202	17.2	50	10	
39	K	45	-2.921	45993	0.6	50	100	
44	Ca	45	4.532	301	13.9	50	100	
47	Ti	45	0.018	4	43.4	4	3	
51	V	45	-0.137	1673	3.4	4	3	
52	Cr	45	0.000	1912	3.3	2	2	
55	Mn	45	-0.151	390	5.6	2	3	
56	Fe	45	-0.961	11519	2.0	50	50	
59	Co	72	-0.005	72	46.2	2	3	
60	Ni	72	0.019	447	18.7	2	3	
63	Cu	72	-0.092	2800	6.5	2	2	
66	Zn	72	0.080	389	12.5	4	2	
75	As	72	-0.039	114	6.0	2	2	
78	Se	72	0.347	90	7.0	1	2	
88	Sr	115	-0.002	132	11.4	4	3	
95	Mo	115	0.002	53	59.6	2	2	
107	Ag	115	0.008	183	4.8	0.4	1	
111	Cd	115	0.002	12	68.7	0.4	0.3	
118	Sn	115	-0.093	811	1.0	4	3	
121	Sb	115	0.029	349	19.0	2	0.8	
137	Ba	115	-0.007	20	66.7	2	3	
205	Tl	209	0.006	407	3.0	2	0.5	
208	Pb	209	-0.006	4324	2.7	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	913989	0.76	989663	92.35	70	120	
72	Ge	695826	1.03	739879	94.05	70	120	
115	In	6207349	1.28	6565136	94.55	70	120	
209	Bi	14220201	0.47	15222533	93.42	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 14:20	Sample Name	CCV2-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	088_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	213.033	9240	0.78	200	106.5	90	110	
9	Be	45	213.059	12210	1.37	200	106.5	90	110	
11	B	45	210.257	3965	5.16	200	105.1	90	110	
23	Na	45	5186.963	3578726	0.72	5000	103.7	90	110	
24	Mg	45	5136.646	1729446	1.20	5000	102.7	90	110	
27	Al	45	4901.582	589439	0.63	5000	98.0	90	110	
39	K	45	5108.327	1779741	0.55	5000	102.2	90	110	
44	Ca	45	4758.506	92256	0.35	5000	95.2	90	110	
47	Ti	45	202.045	26202	1.44	200	101.0	90	110	
51	V	45	203.964	907653	0.60	200	102.0	90	110	
52	Cr	45	206.157	1098834	0.46	200	103.1	90	110	
55	Mn	45	201.004	575528	0.37	200	100.5	90	110	
56	Fe	45	5062.950	23120077	1.09	5000	101.3	90	110	
59	Co	72	208.057	1823033	0.48	200	104.0	90	110	
60	Ni	72	207.396	501213	0.47	200	103.7	90	110	
63	Cu	72	208.061	1390045	0.62	200	104.0	90	110	
66	Zn	72	205.378	222535	0.99	200	102.7	90	110	
75	As	72	204.385	187302	0.95	200	102.2	90	110	
78	Se	72	199.465	10299	2.59	200	99.7	90	110	
88	Sr	115	193.617	766049	0.24	200	96.8	90	110	
95	Mo	115	196.104	713617	0.18	200	98.1	90	110	
107	Ag	115	202.307	2315877	0.31	200	101.2	90	110	
111	Cd	115	197.206	325392	0.77	200	98.6	90	110	
118	Sn	115	197.488	670571	1.04	200	98.7	90	110	
121	Sb	115	200.009	1047389	0.79	200	100.0	90	110	
137	Ba	115	194.789	321899	0.74	200	97.4	90	110	
205	Tl	209	202.318	4673824	0.52	200	101.2	90	110	
208	Pb	209	199.925	6244306	0.31	200	100.0	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	890725	1.58	989663	90.00	70	120	
72	Ge	680078	0.51	739879	91.92	70	120	
115	In	6141454	1.52	6565136	93.55	70	120	
209	Bi	14398494	0.91	15222533	94.59	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 14:25	Sample Name	LCVL2-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	090LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.684	508	6.14	10	106.8	70	130	
9	Be	45	0.913	57	12.86	1	91.3	70	130	
11	B	45	25.649	637	4.16	20	128.2	70	130	
23	Na	45	101.337	123703	0.30	100	101.3	70	130	
24	Mg	45	98.535	35850	0.56	100	98.5	70	130	
27	Al	45	95.191	12306	1.03	100	95.2	70	130	
39	K	45	94.245	82395	1.70	100	94.2	70	130	
44	Ca	45	96.283	2191	2.65	100	96.3	70	130	
47	Ti	45	4.772	658	11.27	5	95.4	70	130	
51	V	45	0.872	6468	3.31	1	87.2	70	130	
52	Cr	45	5.122	30844	1.45	5	102.4	70	130	
55	Mn	45	4.683	15045	2.31	5	93.7	70	130	
56	Fe	45	97.005	485419	0.45	100	97.0	70	130	
59	Co	72	5.216	48012	0.86	5	104.3	70	130	
60	Ni	72	5.377	14016	0.74	5	107.5	70	130	
63	Cu	72	5.035	38673	0.28	5	100.7	70	130	
66	Zn	72	5.111	6105	6.53	5	102.2	70	130	
75	As	72	5.104	5051	0.63	5	102.1	70	130	
78	Se	72	4.867	335	14.84	5	97.3	70	130	
88	Sr	115	4.930	20190	1.55	5	98.6	70	130	
95	Mo	115	4.782	17932	1.64	5	95.6	70	130	
107	Ag	115	1.968	23257	3.54	2	98.4	70	130	
111	Cd	115	0.982	1675	1.55	1	98.2	70	130	
118	Sn	115	4.833	17991	0.43	5	96.7	70	130	
121	Sb	115	1.965	10774	4.26	2	98.3	70	130	
137	Ba	115	4.941	8425	3.09	5	98.8	70	130	
205	Tl	209	0.968	23957	0.43	1	96.8	70	130	
208	Pb	209	0.937	35793	1.11	1	93.7	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	943274	0.57	989663	95.31	70	120	
72	Ge	712639	0.65	739879	96.32	70	120	
115	In	6312100	0.56	6565136	96.15	70	120	
209	Bi	15245130	2.67	15222533	100.15	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 14:30	Sample Name	CCB2-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	091_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.129	12	50.7	2	5	
9	Be	45	0.019	3	33.3	0.4	0.3	
11	B	45	3.155	199	4.2	10	10	
23	Na	45	3.498	52147	2.0	50	100	
24	Mg	45	-1.081	338	21.7	50	100	
27	Al	45	0.164	203	13.4	50	10	
39	K	45	-4.378	46046	1.4	50	100	
44	Ca	45	1.363	241	22.1	50	100	
47	Ti	45	0.042	8	89.2	4	3	
51	V	45	-0.173	1527	5.6	4	3	
52	Cr	45	-0.004	1912	1.4	2	2	
55	Mn	45	-0.165	356	11.8	2	3	
56	Fe	45	-0.836	12254	2.8	50	50	
59	Co	72	-0.007	54	18.7	2	3	
60	Ni	72	0.009	424	9.6	2	3	
63	Cu	72	-0.108	2702	1.7	2	2	
66	Zn	72	0.029	333	16.7	4	2	
75	As	72	-0.046	108	7.9	2	2	
78	Se	72	0.271	86	9.2	1	2	
88	Sr	115	-0.003	128	13.4	4	3	
95	Mo	115	-0.002	39	47.2	2	2	
107	Ag	115	0.004	140	14.5	0.4	1	
111	Cd	115	0.004	16	24.8	0.4	0.3	
118	Sn	115	-0.139	660	3.6	4	3	
121	Sb	115	-0.001	189	24.3	2	0.8	
137	Ba	115	-0.008	18	43.3	2	3	
205	Tl	209	-0.001	274	7.9	2	0.5	
208	Pb	209	-0.045	3275	2.7	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	925238	0.43	989663	93.49	70	120	
72	Ge	698858	0.63	739879	94.46	70	120	
115	In	6255951	2.77	6565136	95.29	70	120	
209	Bi	14909903	2.36	15222533	97.95	70	120	

Method Blank Report

Date Acquired	5/16/16 2:32 PM	Sample Name	MB-75009
Data Batch	160516.b	Comment	MBLKICPMS_TSDOD1
Data File Name	092_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.027	19	32.73		
9	Be	45	0.009	2	65.47		
11	B	45	2.637	186	23.92		
23	Na	45	6.956	53588	2.18		
24	Mg	45	2.038	1402	4.55		
27	Al	45	8.923	1273	3.40		
39	K	45	2.983	47748	0.98		
44	Ca	45	36.523	930	11.30		
47	Ti	45	0.153	22	31.22		
51	V	45	-0.142	1638	2.06		
52	Cr	45	-0.018	1805	8.99		
55	Mn	45	-0.072	620	3.88		
56	Fe	45	3.338	31454	2.81		
59	Co	72	-0.005	73	25.31		
60	Ni	72	0.023	453	5.15		
63	Cu	72	0.026	3572	4.89		
66	Zn	72	2.765	3328	3.78		
75	As	72	-0.042	110	16.39		
78	Se	72	0.144	78	17.13		
88	Sr	115	0.109	580	12.29		
95	Mo	115	0.009	80	4.16		
107	Ag	115	0.005	154	10.65		
111	Cd	115	-0.004	2	86.60		
118	Sn	115	3.533	13375	1.33		
121	Sb	115	0.026	336	8.45		
137	Ba	115	0.051	118	26.30		
205	Tl	209	-0.003	224	18.15		
208	Pb	209	0.049	6332	6.50		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	908247	0.34	989663	91.77	70	120	
72	Ge	688962	0.91	739879	93.12	70	120	
115	In	6273036	1.35	6565136	95.55	70	120	
209	Bi	14910407	0.24	15222533	97.95	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 14:34	Sample Name	LCS-75009
Data Batch	160516.b	Comment	LCS ICPMS_TSDOD1
Data File Name	093_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	208.024	9142	1.19	200	104.0	80	120	
9	Be	45	205.622	11939	3.25	200	102.8	80	120	
11	B	45	194.547	3726	1.82	200	97.3	80	120	
23	Na	45	5164.230	3610071	0.08	1000	516.4	80	120	Fail
24	Mg	45	5067.667	1728543	1.12	1000	506.8	80	120	Fail
27	Al	45	983.135	119920	0.60	1000	98.3	80	120	
39	K	45	5059.248	1786212	0.29	1000	505.9	80	120	Fail
44	Ca	45	4753.182	93367	0.49	1000	475.3	80	120	Fail
47	Ti	45	200.060	26287	1.96	200	100.0	80	120	
51	V	45	203.459	917352	1.03	200	101.7	80	120	
52	Cr	45	204.354	1103705	0.95	200	102.2	80	120	
55	Mn	45	197.674	573523	1.48	200	98.8	80	120	
56	Fe	45	985.714	4573618	0.63	1000	98.6	80	120	
59	Co	72	208.060	1826727	0.33	200	104.0	80	120	
60	Ni	72	208.232	504243	0.33	200	104.1	80	120	
63	Cu	72	207.062	1386187	1.33	200	103.5	80	120	
66	Zn	72	205.376	222975	2.04	200	102.7	80	120	
75	As	72	200.553	184155	0.52	200	100.3	80	120	
78	Se	72	194.783	10078	0.11	200	97.4	80	120	
88	Sr	115	192.224	755668	0.80	200	96.1	80	120	
95	Mo	115	198.636	718181	0.25	200	99.3	80	120	
107	Ag	115	198.125	2253487	0.63	200	99.1	80	120	
111	Cd	115	198.571	325603	0.77	200	99.3	80	120	
118	Sn	115	200.894	677734	0.30	200	100.4	80	120	
121	Sb	115	195.706	1018319	0.64	200	97.9	80	120	
137	Ba	115	193.616	317914	0.78	200	96.8	80	120	
205	Tl	209	200.363	4622373	0.35	200	100.2	80	120	
208	Pb	209	198.232	6183218	0.67	200	99.1	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	902361	1.03	989663	91.18	70	120	
72	Ge	681425	0.16	739879	92.10	70	120	
115	In	6103148	2.16	6565136	92.96	70	120	
209	Bi	14379141	0.99	15222533	94.46	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 14:36	Sample Name	LCSD-75009
Data Batch	160516.b	Comment	LCSDICPMS_TSDOD1
Data File Name	094_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	213.775	9357	0.60	200	106.9	80	120	
9	Be	45	209.701	12126	0.95	200	104.9	80	120	
11	B	45	207.676	3953	2.69	200	103.8	80	120	
23	Na	45	5184.619	3609957	0.78	1000	518.5	80	120	Fail
24	Mg	45	5093.188	1730354	1.10	1000	509.3	80	120	Fail
27	Al	45	993.991	120770	0.64	1000	99.4	80	120	
39	K	45	5114.530	1798199	0.45	1000	511.5	80	120	Fail
44	Ca	45	4805.621	94033	2.30	1000	480.6	80	120	Fail
47	Ti	45	204.026	26702	0.92	200	102.0	80	120	
51	V	45	207.397	931357	0.62	200	103.7	80	120	
52	Cr	45	208.941	1123987	0.60	200	104.5	80	120	
55	Mn	45	201.998	583733	0.85	200	101.0	80	120	
56	Fe	45	997.168	4608469	0.43	1000	99.7	80	120	
59	Co	72	212.817	1861920	0.25	200	106.4	80	120	
60	Ni	72	211.812	511122	0.96	200	105.9	80	120	
63	Cu	72	210.355	1403204	0.22	200	105.2	80	120	
66	Zn	72	209.372	226501	0.23	200	104.7	80	120	
75	As	72	205.183	187733	0.36	200	102.6	80	120	
78	Se	72	197.546	10184	0.69	200	98.8	80	120	
88	Sr	115	196.237	764524	0.11	200	98.1	80	120	
95	Mo	115	200.506	718468	1.30	200	100.3	80	120	
107	Ag	115	201.869	2275549	1.58	200	100.9	80	120	
111	Cd	115	201.161	326874	1.08	200	100.6	80	120	
118	Sn	115	206.658	690902	0.40	200	103.3	80	120	
121	Sb	115	198.886	1025421	0.45	200	99.4	80	120	
137	Ba	115	197.484	321364	0.37	200	98.7	80	120	
205	Tl	209	205.510	4676829	1.02	200	102.8	80	120	
208	Pb	209	204.328	6286160	0.22	200	102.2	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	898812	0.74	989663	90.82	70	120	
72	Ge	679059	0.95	739879	91.78	70	120	
115	In	6046732	1.04	6565136	92.10	70	120	
209	Bi	14185433	1.91	15222533	93.19	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/16/2016 14:42	Sample Name	1605047-03A SD
Data Batch	160516.b	Comment	SD ICPMS_TSDOD1
Data File Name	097_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	13.410	616	3.67	68.1	98.4	110	90	Good
9	Be	45	0.680	42	16.50	3.0	112.5	110	90	
11	B	45	25.201	611	2.46	101.6	124.0	110	90	
23	Na	45	864.633	655835	0.43	4220.6	102.4	110	90	Good
24	Mg	45	2725.860	946078	0.37	13257.3	102.8	110	90	Good
27	Al	45	9615.652	1191431	0.81	47193.0	101.9	110	90	Good
39	K	45	2757.478	1011743	0.48	13489.0	102.2	110	90	Good
44	Ca	45	35496.402	707830	0.43	174560.5	101.7	110	90	Good
47	Ti	45	30.376	4062	1.93	144.6	105.0	110	90	Good
51	V	45	18.986	89161	0.42	94.5	100.4	110	90	Good
52	Cr	45	12.532	70643	0.57	62.5	100.2	110	90	Good
55	Mn	45	215.981	637257	0.32	1054.3	102.4	110	90	Good
56	Fe	45	13146.525	61841811	2.17	63421.0	103.6	110	90	Good
59	Co	72	5.251	46870	0.39	26.0	100.9	110	90	Good
60	Ni	72	7.315	18345	0.88	36.3	100.6	110	90	Good
63	Cu	72	1.542	13846	1.20	8.4	91.7	110	90	Good
66	Zn	72	27.250	30260	1.39	134.4	101.3	110	90	Good
75	As	72	3.586	3485	2.75	18.1	99.2	110	90	Good
78	Se	72	1.545	151	9.83	5.0	154.3	110	90	
88	Sr	115	80.592	325660	0.35	418.9	96.2	110	90	Good
95	Mo	115	0.394	1510	8.55	2.0	99.3	110	90	Good
107	Ag	115	0.016	277	9.10	0.0	199.4	110	90	
111	Cd	115	0.035	68	2.84	0.2	86.8	110	90	
118	Sn	115	0.674	3478	11.05	4.2	81.2	110	90	
121	Sb	115	0.036	387	13.47	0.2	89.2	110	90	
137	Ba	115	93.091	157093	0.43	473.7	98.3	110	90	Good
205	Tl	209	0.078	2115	1.50	0.4	106.4	110	90	Good
208	Pb	209	4.626	151787	0.51	23.5	98.5	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	917829	0.67	989663	92.74	70	120	
72	Ge	691021	0.38	739879	93.40	70	120	
115	In	6270566	1.51	6565136	95.51	70	120	
209	Bi	14670653	0.75	15222533	96.37	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/16/2016 15:02	Sample Name	1605047-03A PDS
Data Batch	160516.b	Comment	PDS ICPMS_TSDOD1
Data File Name	107_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	282.252	11626	1.83	68.1	200	107.1	75	125	
9	Be	45	212.962	11596	2.26	3.0	200	105.0	75	125	
11	B	45	320.548	5673	1.66	101.6	200	109.5	75	125	
23	Na	45	9315.548	6070779	1.11	4220.6	5000	101.9	75	125	
24	Mg	45	18371.461	5874203	1.70	13257.3	5000	102.3	75	125	
27	Al	45	53645.260	6128017	1.22	47193.0	5000	129.0	75	125	Fail
39	K	45	18732.800	6083848	1.27	13489.0	5000	104.9	75	125	
44	Ca	45	########	3388838	0.79	174560.5	5000	196.1	75	125	Fail
47	Ti	45	354.886	43727	0.95	144.6	200	105.1	75	125	
51	V	45	303.996	1284201	0.47	94.5	200	104.7	75	125	
52	Cr	45	273.854	1386360	1.01	62.5	200	105.7	75	125	
55	Mn	45	1296.284	3522368	0.76	1054.3	200	121.0	75	125	
56	Fe	45	71675.280	310799197	0.37	63421.0	5000	165.1	75	125	Fail
59	Co	72	237.740	1924720	1.05	26.0	200	105.9	75	125	
60	Ni	72	241.924	540132	1.04	36.3	200	102.8	75	125	
63	Cu	72	210.477	1299125	0.27	8.4	200	101.0	75	125	
66	Zn	72	341.710	341884	0.35	134.4	200	103.6	75	125	
75	As	72	224.272	189863	1.06	18.1	200	103.1	75	125	
78	Se	72	209.328	9983	2.44	5.0	200	102.2	75	125	
88	Sr	115	634.602	2295721	0.40	418.9	200	107.8	75	125	
95	Mo	115	206.122	685878	0.78	2.0	200	102.1	75	125	
107	Ag	115	190.222	1991138	0.45	0.0	200	95.1	75	125	
111	Cd	115	199.687	301306	1.30	0.2	200	99.7	75	125	
118	Sn	115	216.081	670802	0.86	4.2	200	106.0	75	125	
121	Sb	115	208.283	997303	0.51	0.2	200	104.0	75	125	
137	Ba	115	712.227	1076238	1.00	473.7	200	119.3	75	125	
205	Tl	209	204.644	4473080	0.77	0.4	200	102.1	75	125	
208	Pb	209	228.069	6738590	0.43	23.5	200	102.3	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	846267	1.45	989663	85.51	70	120	
72	Ge	628386	1.56	739879	84.93	70	120	
115	In	5615055	0.28	6565136	85.53	70	120	
209	Bi	13624114	1.72	15222533	89.50	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 15:04	Sample Name	1605047-03A MS
Data Batch	160516.b	Comment	MS ICPMS_TSDOD1
Data File Name	108_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	281.458	11850	1.03	68.1	200	106.7	80	120	
9	Be	45	210.176	11697	1.50	3.0	200	103.6	80	120	
11	B	45	308.377	5585	4.63	101.6	200	103.4	80	120	
23	Na	45	9465.008	6304207	1.76	4220.6	1000	524.4	80	120	Fail
24	Mg	45	19328.400	6318243	1.87	13257.3	1000	607.1	80	120	Fail
27	Al	45	56169.246	6558457	1.73	47193.0	1000	897.6	80	120	Fail
39	K	45	19767.611	6560292	1.65	13489.0	1000	627.9	80	120	Fail
44	Ca	45	########	3605089	0.99	174560.5	1000	1731.9	80	120	Fail
47	Ti	45	311.679	39251	1.55	144.6	200	83.5	80	120	
51	V	45	310.840	1342239	0.49	94.5	200	108.2	80	120	
52	Cr	45	270.665	1400667	0.70	62.5	200	104.1	80	120	
55	Mn	45	1302.154	3616723	0.38	1054.3	200	123.9	80	120	Fail
56	Fe	45	70661.973	313189410	1.15	63421.0	1000	724.1	80	120	Fail
59	Co	72	229.945	1906373	0.56	26.0	200	102.0	80	120	
60	Ni	72	239.028	546515	0.54	36.3	200	101.3	80	120	
63	Cu	72	208.029	1315024	0.49	8.4	200	99.8	80	120	
66	Zn	72	340.197	348573	1.04	134.4	200	102.9	80	120	
75	As	72	219.918	190668	0.62	18.1	200	100.9	80	120	
78	Se	72	199.818	9761	1.95	5.0	200	97.4	80	120	
88	Sr	115	647.704	2373714	0.46	418.9	200	114.4	80	120	
95	Mo	115	192.975	650580	0.85	2.0	200	95.5	80	120	
107	Ag	115	198.544	2105668	1.02	0.0	200	99.3	80	120	
111	Cd	115	200.323	306243	1.74	0.2	200	100.1	80	120	
118	Sn	115	206.509	649526	0.95	4.2	200	101.2	80	120	
121	Sb	115	63.768	309417	0.79	0.2	200	31.8	80	120	Fail
137	Ba	115	674.685	1032828	1.11	473.7	200	100.5	80	120	
205	Tl	209	203.357	4496542	0.77	0.4	200	101.5	80	120	
208	Pb	209	224.379	6706910	0.44	23.5	200	100.5	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	864954	0.67	989663	87.40	70	120	
72	Ge	643468	0.48	739879	86.97	70	120	
115	In	5689651	1.83	6565136	86.66	70	120	
209	Bi	13781458	1.35	15222533	90.53	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 15:06	Sample Name	1605047-03A MSD
Data Batch	160516.b	Comment	MSD ICPMS_TSDOD1
Data File Name	109_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	293.951	12432	0.34	68.1	200	112.9	80	120	
9	Be	45	213.874	11957	0.77	3.0	200	105.4	80	120	
11	B	45	311.980	5674	0.79	101.6	200	105.2	80	120	
23	Na	45	9817.862	6567309	1.12	4220.6	1000	559.7	80	120	Fail
24	Mg	45	20331.783	6676917	2.89	13257.3	1000	707.4	80	120	Fail
27	Al	45	60908.582	7143914	0.71	47193.0	1000	1371.6	80	120	Fail
39	K	45	20149.595	6717039	0.72	13489.0	1000	666.1	80	120	Fail
44	Ca	45	########	3806997	0.91	174560.5	1000	2714.0	80	120	Fail
47	Ti	45	315.850	39962	1.61	144.6	200	85.6	80	120	
51	V	45	319.241	1384822	1.35	94.5	200	112.4	80	120	
52	Cr	45	276.258	1436103	0.60	62.5	200	106.9	80	120	
55	Mn	45	1262.937	3523882	0.64	1054.3	200	104.3	80	120	
56	Fe	45	76179.357	339178467	2.23	63421.0	1000	1275.8	80	120	Fail
59	Co	72	233.362	1966638	0.83	26.0	200	103.7	80	120	
60	Ni	72	241.608	561532	0.61	36.3	200	102.6	80	120	
63	Cu	72	208.702	1341099	0.98	8.4	200	100.1	80	120	
66	Zn	72	349.098	363628	0.50	134.4	200	107.3	80	120	
75	As	72	222.315	195933	1.31	18.1	200	102.1	80	120	
78	Se	72	197.588	9814	1.28	5.0	200	96.3	80	120	
88	Sr	115	670.708	2497394	1.21	418.9	200	125.9	80	120	Fail
95	Mo	115	193.859	663950	1.19	2.0	200	95.9	80	120	
107	Ag	115	197.129	2123802	0.49	0.0	200	98.5	80	120	
111	Cd	115	198.055	307585	0.29	0.2	200	98.9	80	120	
118	Sn	115	206.433	659642	0.61	4.2	200	101.1	80	120	
121	Sb	115	63.510	313124	0.95	0.2	200	31.7	80	120	Fail
137	Ba	115	722.393	1123557	0.98	473.7	200	124.3	80	120	Fail
205	Tl	209	205.472	4551958	0.59	0.4	200	102.6	80	120	
208	Pb	209	229.111	6861346	0.08	23.5	200	102.8	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	868908	0.67	989663	87.80	70	120	
72	Ge	654177	1.16	739879	88.42	70	120	
115	In	5779347	0.64	6565136	88.03	70	120	
209	Bi	13809348	1.67	15222533	90.72	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 15:08	Sample Name	CCV3-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	110_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	216.864	9324	1.06	200	108.4	90	110	
9	Be	45	214.637	12193	0.88	200	107.3	90	110	
11	B	45	211.711	3955	1.45	200	105.9	90	110	
23	Na	45	5181.433	3543946	0.85	5000	103.6	90	110	
24	Mg	45	5114.814	1707034	0.26	5000	102.3	90	110	
27	Al	45	4854.345	578666	0.40	5000	97.1	90	110	
39	K	45	5050.532	1744742	0.86	5000	101.0	90	110	
44	Ca	45	4764.941	91582	0.89	5000	95.3	90	110	
47	Ti	45	203.393	26148	1.76	200	101.7	90	110	
51	V	45	203.565	898018	0.72	200	101.8	90	110	
52	Cr	45	206.027	1088757	1.54	200	103.0	90	110	
55	Mn	45	199.041	564995	0.40	200	99.5	90	110	
56	Fe	45	4996.050	22620042	2.05	5000	99.9	90	110	
59	Co	72	207.892	1798397	0.90	200	103.9	90	110	
60	Ni	72	207.218	494403	0.60	200	103.6	90	110	
63	Cu	72	207.983	1371854	0.70	200	104.0	90	110	
66	Zn	72	203.785	217977	0.95	200	101.9	90	110	
75	As	72	204.118	184666	0.53	200	102.1	90	110	
78	Se	72	199.995	10193	1.33	200	100.0	90	110	
88	Sr	115	192.356	755939	0.94	200	96.2	90	110	
95	Mo	115	197.357	713336	0.47	200	98.7	90	110	
107	Ag	115	203.576	2314645	0.52	200	101.8	90	110	
111	Cd	115	198.099	324686	0.72	200	99.0	90	110	
118	Sn	115	195.109	658038	0.50	200	97.6	90	110	
121	Sb	115	198.275	1031237	1.25	200	99.1	90	110	
137	Ba	115	195.746	321320	0.61	200	97.9	90	110	
205	Tl	209	201.803	4656789	0.76	200	100.9	90	110	
208	Pb	209	200.216	6246472	0.59	200	100.1	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	882899	0.82	989663	89.21	70	120	
72	Ge	671409	0.78	739879	90.75	70	120	
115	In	6099239	0.39	6565136	92.90	70	120	
209	Bi	14383100	1.15	15222533	94.49	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 15:12	Sample Name	LCVL3-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	112LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.284	457	5.86	10	102.8	70	130	
9	Be	45	0.911	53	41.60	1	91.1	70	130	
11	B	45	29.694	667	16.26	20	148.5	70	130	Fail
23	Na	45	103.321	116708	0.27	100	103.3	70	130	
24	Mg	45	101.462	34409	1.30	100	101.5	70	130	
27	Al	45	98.606	11883	1.75	100	98.6	70	130	
39	K	45	104.646	80337	0.24	100	104.6	70	130	
44	Ca	45	99.546	2106	4.03	100	99.5	70	130	
47	Ti	45	5.398	693	3.47	5	108.0	70	130	
51	V	45	0.861	5988	3.42	1	86.1	70	130	
52	Cr	45	5.302	29712	0.98	5	106.0	70	130	
55	Mn	45	4.758	14243	0.41	5	95.2	70	130	
56	Fe	45	98.346	458768	0.53	100	98.3	70	130	
59	Co	72	5.210	45254	0.38	5	104.2	70	130	
60	Ni	72	5.377	13227	0.30	5	107.5	70	130	
63	Cu	72	5.109	36981	1.89	5	102.2	70	130	
66	Zn	72	5.187	5840	0.34	5	103.7	70	130	
75	As	72	5.099	4762	1.06	5	102.0	70	130	
78	Se	72	6.386	393	7.14	5	127.7	70	130	
88	Sr	115	4.855	19053	1.29	5	97.1	70	130	
95	Mo	115	4.783	17185	1.92	5	95.7	70	130	
107	Ag	115	1.977	22380	1.11	2	98.8	70	130	
111	Cd	115	0.987	1615	10.05	1	98.7	70	130	
118	Sn	115	4.940	17593	1.08	5	98.8	70	130	
121	Sb	115	2.047	10743	1.42	2	102.3	70	130	
137	Ba	115	4.909	8018	4.05	5	98.2	70	130	
205	Tl	209	1.070	24582	1.20	1	107.0	70	130	
208	Pb	209	0.994	34998	1.97	1	99.4	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	879743	0.17	989663	88.89	70	120	
72	Ge	672492	0.43	739879	90.89	70	120	
115	In	6048948	1.50	6565136	92.14	70	120	
209	Bi	14161166	1.15	15222533	93.03	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 15:14	Sample Name	CCB3-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	113_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.041	19	31.4	2	5	
9	Be	45	0.063	5	10.8	0.4	0.3	
11	B	45	6.906	257	11.2	10	10	
23	Na	45	2.473	48917	0.8	50	100	
24	Mg	45	-1.012	344	26.3	50	100	
27	Al	45	0.398	221	2.3	50	10	
39	K	45	2.272	46033	1.1	50	100	
44	Ca	45	3.876	278	11.8	50	100	
47	Ti	45	0.028	6	124.9	4	3	
51	V	45	-0.180	1421	9.2	4	3	
52	Cr	45	0.012	1907	5.2	2	2	
55	Mn	45	-0.134	424	8.4	2	3	
56	Fe	45	-0.438	13448	1.4	50	50	
59	Co	72	-0.001	104	9.2	2	3	
60	Ni	72	0.033	461	11.5	2	3	
63	Cu	72	-0.138	2379	6.0	2	2	
66	Zn	72	0.094	388	8.7	4	2	
75	As	72	-0.028	119	22.8	2	2	
78	Se	72	0.338	85	4.1	1	2	
88	Sr	115	0.005	159	21.5	4	3	
95	Mo	115	0.011	83	8.0	2	2	
107	Ag	115	0.012	226	4.7	0.4	1	
111	Cd	115	0.000	10	66.7	0.4	0.3	
118	Sn	115	-0.116	720	3.8	4	3	
121	Sb	115	0.023	312	20.2	2	0.8	
137	Ba	115	0.015	56	9.2	2	3	
205	Tl	209	0.034	1038	10.8	2	0.5	
208	Pb	209	-0.013	4114	3.0	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	880130	0.24	989663	88.93	70	120	
72	Ge	666505	0.25	739879	90.08	70	120	
115	In	6113700	2.32	6565136	93.12	70	120	
209	Bi	14165135	1.63	15222533	93.05	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 15:36	Sample Name	CCV4-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	124_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	224.410	9148	1.48	200	112.2	90	110	Fail
9	Be	45	220.810	11894	2.13	200	110.4	90	110	Fail
11	B	45	212.634	3766	0.57	200	106.3	90	110	
23	Na	45	5342.109	3463214	0.04	5000	106.8	90	110	
24	Mg	45	5267.668	1666938	0.68	5000	105.4	90	110	
27	Al	45	5001.773	565380	0.27	5000	100.0	90	110	
39	K	45	5193.221	1700014	0.33	5000	103.9	90	110	
44	Ca	45	4857.498	88528	1.18	5000	97.1	90	110	
47	Ti	45	205.408	25041	1.86	200	102.7	90	110	
51	V	45	209.520	876379	0.78	200	104.8	90	110	
52	Cr	45	210.707	1055728	0.34	200	105.4	90	110	
55	Mn	45	206.588	556043	0.76	200	103.3	90	110	
56	Fe	45	5210.511	22368586	2.60	5000	104.2	90	110	
59	Co	72	211.145	1778364	0.67	200	105.6	90	110	
60	Ni	72	209.121	485777	0.38	200	104.6	90	110	
63	Cu	72	209.794	1347254	0.53	200	104.9	90	110	
66	Zn	72	206.275	214830	0.52	200	103.1	90	110	
75	As	72	204.214	179879	0.25	200	102.1	90	110	
78	Se	72	201.271	9987	2.17	200	100.6	90	110	
88	Sr	115	194.821	736962	0.63	200	97.4	90	110	
95	Mo	115	199.494	693991	1.03	200	99.7	90	110	
107	Ag	115	205.509	2248881	0.40	200	102.8	90	110	
111	Cd	115	201.282	317525	0.45	200	100.6	90	110	
118	Sn	115	201.325	653580	1.29	200	100.7	90	110	
121	Sb	115	204.940	1025935	0.31	200	102.5	90	110	
137	Ba	115	201.758	318761	0.46	200	100.9	90	110	
205	Tl	209	205.312	4588353	0.03	200	102.7	90	110	
208	Pb	209	203.072	6135497	0.73	200	101.5	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	837252	1.41	989663	84.60	70	120	
72	Ge	653686	0.29	739879	88.35	70	120	
115	In	5871806	1.99	6565136	89.44	70	120	
209	Bi	13929813	1.34	15222533	91.51	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 15:41	Sample Name	LCVL4-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	126LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.374	502	9.57	10	113.7	70	130	
9	Be	45	1.008	59	22.89	1	100.8	70	130	
11	B	45	27.691	629	11.43	20	138.5	70	130	Fail
23	Na	45	101.963	115499	0.46	100	102.0	70	130	
24	Mg	45	100.373	33960	0.92	100	100.4	70	130	
27	Al	45	95.963	11540	2.07	100	96.0	70	130	
39	K	45	101.973	79237	0.32	100	102.0	70	130	
44	Ca	45	96.103	2035	1.02	100	96.1	70	130	
47	Ti	45	4.933	632	3.89	5	98.7	70	130	
51	V	45	0.865	5988	3.20	1	86.5	70	130	
52	Cr	45	5.198	29089	0.17	5	104.0	70	130	
55	Mn	45	4.802	14330	0.81	5	96.0	70	130	
56	Fe	45	98.288	457336	0.28	100	98.3	70	130	
59	Co	72	5.218	44802	0.75	5	104.4	70	130	
60	Ni	72	5.289	12868	1.09	5	105.8	70	130	
63	Cu	72	5.043	36126	0.63	5	100.9	70	130	
66	Zn	72	5.259	5850	2.54	5	105.2	70	130	
75	As	72	5.049	4663	2.16	5	101.0	70	130	
78	Se	72	5.656	352	3.23	5	113.1	70	130	
88	Sr	115	4.842	19027	2.14	5	96.8	70	130	
95	Mo	115	4.750	17094	1.79	5	95.0	70	130	
107	Ag	115	1.962	22254	1.53	2	98.1	70	130	
111	Cd	115	1.011	1655	4.04	1	101.1	70	130	
118	Sn	115	4.861	17352	3.40	5	97.2	70	130	
121	Sb	115	1.983	10434	1.22	2	99.2	70	130	
137	Ba	115	4.867	7966	3.12	5	97.3	70	130	
205	Tl	209	1.027	23862	1.70	1	102.7	70	130	
208	Pb	209	0.968	34594	0.27	1	96.8	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	877488	0.15	989663	88.67	70	120	
72	Ge	664769	0.40	739879	89.85	70	120	
115	In	6060456	2.56	6565136	92.31	70	120	
209	Bi	14322636	1.51	15222533	94.09	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 15:43	Sample Name	CCB4-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	127_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.218	26	12.2	2	5	
9	Be	45	-0.014	1	100.0	0.4	0.3	
11	B	45	7.323	264	16.0	10	10	
23	Na	45	0.413	47620	0.8	50	100	
24	Mg	45	-1.201	282	16.8	50	100	
27	Al	45	0.040	179	14.9	50	10	
39	K	45	7.200	47778	1.3	50	100	
44	Ca	45	1.169	227	21.5	50	100	
47	Ti	45	0.011	3	100.1	4	3	
51	V	45	-0.151	1550	2.6	4	3	
52	Cr	45	0.034	2026	4.7	2	2	
55	Mn	45	-0.178	301	10.3	2	3	
56	Fe	45	-0.294	14124	1.8	50	50	
59	Co	72	-0.003	92	16.7	2	3	
60	Ni	72	0.037	481	16.0	2	3	
63	Cu	72	-0.120	2550	3.6	2	2	
66	Zn	72	0.003	297	7.8	4	2	
75	As	72	-0.030	119	9.6	2	2	
78	Se	72	0.277	84	7.9	1	2	
88	Sr	115	0.005	159	34.6	4	3	
95	Mo	115	0.000	46	30.5	2	2	
107	Ag	115	0.005	148	31.1	0.4	1	
111	Cd	115	0.000	9	78.1	0.4	0.3	
118	Sn	115	-0.117	724	14.6	4	3	
121	Sb	115	0.019	293	18.8	2	0.8	
137	Ba	115	0.001	33	10.0	2	3	
205	Tl	209	0.013	578	10.2	2	0.5	
208	Pb	209	-0.027	3748	2.9	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	881830	1.06	989663	89.10	70	120	
72	Ge	680733	0.48	739879	92.01	70	120	
115	In	6172345	0.67	6565136	94.02	70	120	
209	Bi	14448499	0.64	15222533	94.92	70	120	

Method Blank Report

Date Acquired	5/16/16 3:45 PM	Sample Name	MB-75135
Data Batch	160516.b	Comment	MBLKICPMS_TSDOD1
Data File Name	128_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.619	43	11.08		
9	Be	45	-0.013	1	100.00		
11	B	45	10.299	312	15.15		J
23	Na	45	734905.569	486094398	0.82		FAIL
24	Mg	45	1.740	1238	3.16		
27	Al	45	8.364	1148	13.30		
39	K	45	93.009	75173	1.14		FAIL
44	Ca	45	43.116	1010	5.83		
47	Ti	45	0.152	21	48.24		
51	V	45	-0.178	1409	10.30		
52	Cr	45	2.620	15352	2.37		J
55	Mn	45	0.453	2048	5.75		
56	Fe	45	15.607	84359	0.26		
59	Co	72	0.028	352	3.82		
60	Ni	72	5.062	12190	1.90		J
63	Cu	72	0.397	5793	3.74		
66	Zn	72	1.991	2366	2.61		
75	As	72	-0.015	128	12.00		
78	Se	72	0.467	91	9.83		
88	Sr	115	0.215	949	8.67		
95	Mo	115	0.072	294	12.21		
107	Ag	115	0.045	581	9.88		
111	Cd	115	0.001	11	91.66		
118	Sn	115	4.069	14302	0.93		J
121	Sb	115	0.017	271	24.97		
137	Ba	115	0.068	138	9.78		
205	Tl	209	0.005	353	8.17		
208	Pb	209	-0.001	4130	2.74		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	865387	1.61	989663	87.44	70	120	
72	Ge	657188	0.54	739879	88.82	70	120	
115	In	5890096	1.14	6565136	89.72	70	120	
209	Bi	13132845	0.29	15222533	86.27	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 15:47	Sample Name	LCS-75135
Data Batch	160516.b	Comment	LCS ICPMS_TSDOD1
Data File Name	129_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	198.362	8604	0.75	200	99.2	80	120	
9	Be	45	197.528	11318	0.99	200	98.8	80	120	
11	B	45	201.122	3796	2.73	200	100.6	80	120	
23	Na	45	679309.210	462512604	1.88	1000	#####	80	120	Fail
24	Mg	45	4878.738	1642643	1.56	1000	487.9	80	120	Fail
27	Al	45	967.115	116443	1.24	1000	96.7	80	120	
39	K	45	5022.195	1750579	1.49	1000	502.2	80	120	Fail
44	Ca	45	4758.500	92260	1.46	1000	475.9	80	120	Fail
47	Ti	45	199.898	25923	0.88	200	99.9	80	120	
51	V	45	199.811	889145	0.31	200	99.9	80	120	
52	Cr	45	194.745	1038157	0.50	200	97.4	80	120	
55	Mn	45	190.016	544146	1.00	200	95.0	80	120	
56	Fe	45	953.343	4366605	1.24	1000	95.3	80	120	
59	Co	72	198.205	1704422	1.10	200	99.1	80	120	
60	Ni	72	197.795	469150	1.74	200	98.9	80	120	
63	Cu	72	193.731	1270485	0.92	200	96.9	80	120	
66	Zn	72	199.601	212251	0.20	200	99.8	80	120	
75	As	72	202.962	182533	0.69	200	101.5	80	120	
78	Se	72	200.786	10173	1.52	200	100.4	80	120	
88	Sr	115	191.774	741276	1.54	200	95.9	80	120	
95	Mo	115	195.792	696024	0.94	200	97.9	80	120	
107	Ag	115	188.937	2112785	0.42	200	94.5	80	120	
111	Cd	115	191.277	308338	0.59	200	95.6	80	120	
118	Sn	115	201.128	667107	0.57	200	100.6	80	120	
121	Sb	115	197.546	1010535	1.18	200	98.8	80	120	
137	Ba	115	195.823	316149	1.03	200	97.9	80	120	
205	Tl	209	195.168	4315424	0.69	200	97.6	80	120	
208	Pb	209	195.844	5854296	0.73	200	97.9	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	890635	1.23	989663	89.99	70	120	
72	Ge	667410	0.46	739879	90.21	70	120	
115	In	5998629	0.65	6565136	91.37	70	120	
209	Bi	13785028	2.56	15222533	90.56	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 15:49	Sample Name	LCSD-75135
Data Batch	160516.b	Comment	LCSDICPMS_TSDOD1
Data File Name	130_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	183.483	7785	1.88	200	91.7	80	120	
9	Be	45	181.005	10143	2.46	200	90.5	80	120	
11	B	45	195.514	3614	3.37	200	97.8	80	120	
23	Na	45	670047.494	446099938	1.37	1000	#####	80	120	Fail
24	Mg	45	4951.178	1630126	1.34	1000	495.1	80	120	Fail
27	Al	45	989.925	116548	0.92	1000	99.0	80	120	
39	K	45	5160.438	1757736	1.41	1000	516.0	80	120	Fail
44	Ca	45	4814.865	91289	1.73	1000	481.5	80	120	Fail
47	Ti	45	184.650	23416	1.21	200	92.3	80	120	
51	V	45	186.649	812468	1.65	200	93.3	80	120	
52	Cr	45	182.647	952294	0.91	200	91.3	80	120	
55	Mn	45	175.236	490813	1.59	200	87.6	80	120	
56	Fe	45	964.517	4319874	1.26	1000	96.5	80	120	
59	Co	72	181.768	1537382	0.93	200	90.9	80	120	
60	Ni	72	182.449	425659	1.10	200	91.2	80	120	
63	Cu	72	181.484	1170785	0.95	200	90.7	80	120	
66	Zn	72	183.545	192000	1.59	200	91.8	80	120	
75	As	72	188.183	166468	0.96	200	94.1	80	120	
78	Se	72	181.114	9034	3.54	200	90.6	80	120	
88	Sr	115	181.458	678979	1.39	200	90.7	80	120	
95	Mo	115	183.680	632067	0.94	200	91.8	80	120	
107	Ag	115	193.727	2097189	1.51	200	96.9	80	120	
111	Cd	115	177.411	276833	0.97	200	88.7	80	120	
118	Sn	115	189.445	608347	1.12	200	94.7	80	120	
121	Sb	115	205.687	1018453	0.29	200	102.8	80	120	
137	Ba	115	181.803	284119	1.18	200	90.9	80	120	
205	Tl	209	184.139	3856669	0.36	200	92.1	80	120	
208	Pb	209	184.660	5229916	0.99	200	92.3	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	870940	1.10	989663	88.00	70	120	
72	Ge	656446	1.08	739879	88.72	70	120	
115	In	5807204	1.47	6565136	88.46	70	120	
209	Bi	13059865	2.73	15222533	85.79	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/16/2016 15:55	Sample Name	1605098-41A SD
Data Batch	160516.b	Comment	SD ICPMS_TSDOD1
Data File Name	133_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	13.732	610	3.33	65.6	104.6	110	90	Good
9	Be	45	0.429	26	28.50	2.2	95.7	110	90	Good
11	B	45	18.748	474	7.04	87.3	107.4	110	90	Good
23	Na	45	153535.007	104303520	1.99	735299.9	104.4	110	90	Good
24	Mg	45	2252.734	756965	0.73	10867.0	103.7	110	90	Good
27	Al	45	11368.988	1363580	1.29	55771.4	101.9	110	90	Good
39	K	45	2502.022	892876	0.96	12204.8	102.5	110	90	Good
44	Ca	45	19456.488	375662	1.17	94381.5	103.1	110	90	Good
47	Ti	45	39.614	5126	2.25	195.1	101.5	110	90	Good
51	V	45	18.977	86269	0.78	92.8	102.2	110	90	Good
52	Cr	45	13.472	73380	1.17	66.4	101.4	110	90	Good
55	Mn	45	105.959	303045	0.56	510.4	103.8	110	90	Good
56	Fe	45	11930.117	54329471	1.26	57124.3	104.4	110	90	Good
59	Co	72	4.877	41927	0.33	23.5	103.7	110	90	Good
60	Ni	72	9.268	22284	2.63	44.7	103.6	110	90	Good
63	Cu	72	3.455	25807	2.17	16.7	103.3	110	90	Good
66	Zn	72	39.665	42289	1.13	189.0	104.9	110	90	Good
75	As	72	3.871	3613	0.56	19.1	101.5	110	90	Good
78	Se	72	1.465	142	10.02	5.1	143.1	110	90	
88	Sr	115	60.952	240478	0.97	311.0	98.0	110	90	Good
95	Mo	115	0.278	1054	4.02	1.4	97.5	110	90	Good
107	Ag	115	0.023	358	17.91	0.1	113.7	110	90	
111	Cd	115	0.077	136	5.12	0.4	100.8	110	90	Good
118	Sn	115	0.837	3944	1.26	4.9	86.1	110	90	
121	Sb	115	0.383	2190	7.71	2.0	95.1	110	90	Good
137	Ba	115	134.801	222052	1.12	683.2	98.7	110	90	Good
205	Tl	209	0.101	2568	5.13	0.5	103.3	110	90	Good
208	Pb	209	14.215	439648	0.21	71.2	99.8	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	888480	0.69	989663	89.78	70	120	
72	Ge	665520	1.04	739879	89.95	70	120	
115	In	6121311	1.28	6565136	93.24	70	120	
209	Bi	14122912	0.83	15222533	92.78	70	120	

Sample Report

Date Acquired	5/16/16 3:57 PM	Sample Name	1605097-20A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	134SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	48.614	2109	3.08	2000	>RL
9	Be	45	1.797	104	22.05	2000	>RL
11	B	45	56.553	1158	4.84	2000	>RL
23	Na	45	740352.045	501116229	1.79	25000	OUTCAL
24	Mg	45	12360.999	4136999	0.39	25000	>RL
27	Al	45	40039.227	4786566	0.78	10000	OUTCAL
39	K	45	8528.007	2923775	0.36	25000	>RL
44	Ca	45	155763.608	2996482	0.41	25000	OUTCAL
47	Ti	45	916.220	118140	0.82	2000	>RL
51	V	45	95.431	423452	0.07	2000	>RL
52	Cr	45	43.139	230106	0.76	2000	>RL
55	Mn	45	681.198	1937570	0.27	2000	>RL
56	Fe	45	45345.716	205795347	0.69	10000	OUTCAL
59	Co	72	18.941	158581	1.58	2000	>RL
60	Ni	72	33.305	77168	1.30	2000	>RL
63	Cu	72	35.375	228330	0.18	2000	>RL
66	Zn	72	238.724	246937	0.73	2000	>RL
75	As	72	17.807	15709	0.33	2000	>RL
78	Se	72	4.767	300	8.05	2000	>RL
88	Sr	115	740.788	2733175	1.34	2000	>RL
95	Mo	115	1.747	5968	2.63	2000	
107	Ag	115	0.132	1492	4.66	500	
111	Cd	115	0.526	818	5.56	2000	>RL
118	Sn	115	4.710	15932	1.08	2000	>RL
121	Sb	115	1.692	8439	1.14	500	
137	Ba	115	542.741	836429	0.44	2000	>RL
205	Tl	209	0.547	11778	2.71	2000	
208	Pb	209	42.817	1223189	0.36	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	885677	1.29	989663	89.49	70	120	
72	Ge	649371	0.21	739879	87.77	70	120	
115	In	5727046	0.92	6565136	87.23	70	120	
209	Bi	13134778	1.03	15222533	86.29	70	120	

Sample Report

Date Acquired	5/16/16 3:59 PM	Sample Name	1605097-21A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	135SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	102.967	4719	1.55	2000	>RL
9	Be	45	3.296	201	8.31	2000	>RL
11	B	45	194.656	3880	2.75	2000	>RL
23	Na	45	697655.655	500904887	1.75	25000	OUTCAL
24	Mg	45	16824.869	5972719	0.69	25000	>RL
27	Al	45	54751.804	6942927	1.01	10000	OUTCAL
39	K	45	13954.391	5044332	1.50	25000	>RL
44	Ca	45	73791.159	1505869	0.86	25000	OUTCAL
47	Ti	45	122.092	16700	1.26	2000	>RL
51	V	45	100.383	472369	0.71	2000	>RL
52	Cr	45	68.957	388990	0.45	2000	>RL
55	Mn	45	8244.436	24864390	0.30	2000	OUTCAL
56	Fe	45	224716.899	1081626055	1.09	10000	OUTCAL
59	Co	72	35.813	316821	0.71	2000	>RL
60	Ni	72	69.558	169922	0.72	2000	>RL
63	Cu	72	11.606	81454	0.74	2000	>RL
66	Zn	72	293.906	321275	0.69	2000	>RL
75	As	72	22.476	20920	0.82	2000	>RL
78	Se	72	13.706	780	6.35	2000	>RL
88	Sr	115	7543.069	29194231	0.21	2000	OUTCAL
95	Mo	115	2.036	7291	1.77	2000	>RL
107	Ag	115	0.040	542	15.01	500	
111	Cd	115	1.909	3090	5.14	2000	>RL
118	Sn	115	5.377	18925	1.58	2000	>RL
121	Sb	115	0.173	1073	2.48	500	
137	Ba	115	299.633	484445	0.60	2000	>RL
205	Tl	209	4.803	101735	0.35	2000	>RL
208	Pb	209	35.519	1018030	0.46	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	939411	1.07	989663	94.92	70	120	
72	Ge	686401	0.55	739879	92.77	70	120	
115	In	6007658	0.12	6565136	91.51	70	120	
209	Bi	13168243	0.79	15222533	86.50	70	120	

Sample Report

Date Acquired	5/16/16 4:01 PM	Sample Name	1605097-23A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	136SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	76.064	3354	0.85	2000	>RL
9	Be	45	2.920	171	15.27	2000	>RL
11	B	45	136.491	2655	4.46	2000	>RL
23	Na	45	46913.151	32404803	1.79	25000	OUTCAL
24	Mg	45	15386.225	5246700	1.95	25000	>RL
27	Al	45	68669.027	8363933	1.39	10000	OUTCAL
39	K	45	13380.042	4647901	0.66	25000	>RL
44	Ca	45	100677.804	1973468	0.70	25000	OUTCAL
47	Ti	45	182.690	24004	1.49	2000	>RL
51	V	45	106.476	481140	1.39	2000	>RL
52	Cr	45	62.400	338328	0.52	2000	>RL
55	Mn	45	342.466	992984	0.53	2000	>RL
56	Fe	45	63580.154	294011731	1.49	10000	OUTCAL
59	Co	72	18.444	161095	0.64	2000	>RL
60	Ni	72	32.499	78565	0.54	2000	>RL
63	Cu	72	22.099	150040	0.95	2000	>RL
66	Zn	72	205.103	221353	0.70	2000	>RL
75	As	72	18.833	17323	1.72	2000	>RL
78	Se	72	4.447	296	9.81	2000	>RL
88	Sr	115	616.172	2446272	0.38	2000	>RL
95	Mo	115	1.811	6657	3.83	2000	
107	Ag	115	0.100	1246	9.58	500	
111	Cd	115	0.452	758	10.12	2000	>RL
118	Sn	115	5.337	19277	0.79	2000	>RL
121	Sb	115	1.639	8802	2.49	500	
137	Ba	115	464.699	770604	1.22	2000	>RL
205	Tl	209	0.497	11616	0.58	2000	
208	Pb	209	84.736	2618066	1.09	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	902358	0.36	989663	91.18	70	120	
72	Ge	677447	0.95	739879	91.56	70	120	
115	In	6162311	0.64	6565136	93.86	70	120	
209	Bi	14228697	1.02	15222533	93.47	70	120	

Sample Report

Date Acquired	5/16/16 4:03 PM	Sample Name	1605097-26A
Data Batch	160516.b	Comment	SAMPICPMS_TSDOD1
Data File Name	137SMPL.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	118.566	5231	1.74	2000	>RL
9	Be	45	4.482	263	1.76	2000	>RL
11	B	45	178.490	3438	1.81	2000	>RL
23	Na	45	45256.715	31342357	0.69	25000	OUTCAL
24	Mg	45	16437.755	5619873	1.45	25000	>RL
27	Al	45	60182.113	7349431	3.34	10000	OUTCAL
39	K	45	14704.545	5116349	1.16	25000	>RL
44	Ca	45	141864.386	2787770	0.53	25000	OUTCAL
47	Ti	45	142.191	18730	2.25	2000	>RL
51	V	45	105.769	479188	0.60	2000	>RL
52	Cr	45	70.941	385357	0.51	2000	>RL
55	Mn	45	4501.198	13073799	1.40	2000	OUTCAL
56	Fe	45	156767.685	726752344	1.19	10000	OUTCAL
59	Co	72	42.000	368683	0.38	2000	>RL
60	Ni	72	75.235	182351	0.64	2000	>RL
63	Cu	72	11.915	82890	1.20	2000	>RL
66	Zn	72	305.555	331439	0.70	2000	>RL
75	As	72	24.926	23006	1.43	2000	>RL
78	Se	72	9.713	569	8.30	2000	>RL
88	Sr	115	2527.268	10027854	0.61	2000	OUTCAL
95	Mo	115	1.744	6410	1.22	2000	
107	Ag	115	0.026	384	5.90	500	
111	Cd	115	1.236	2056	1.66	2000	>RL
118	Sn	115	5.364	19356	1.46	2000	>RL
121	Sb	115	0.153	996	2.73	500	
137	Ba	115	254.600	422001	1.04	2000	>RL
205	Tl	209	3.120	71847	0.36	2000	>RL
208	Pb	209	35.539	1106024	0.35	2000	>RL

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	904645	0.33	989663	91.41	70	120	
72	Ge	681116	0.02	739879	92.06	70	120	
115	In	6159274	1.11	6565136	93.82	70	120	
209	Bi	14300196	1.70	15222533	93.94	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/16/2016 16:15	Sample Name	1605098-41A PDS
Data Batch	160516.b	Comment	PDS ICPMS_TSDOD1
Data File Name	143_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	256.613	11136	0.48	65.6	200	95.5	75	125	
9	Be	45	198.218	11369	1.66	2.2	200	98.0	75	125	
11	B	45	280.582	5249	7.40	87.3	200	96.7	75	125	
23	Na	45	########	528983108	0.71	735299.9	5000	820.4	75	125	Fail
24	Mg	45	16616.877	5597919	1.96	10867.0	5000	115.0	75	125	
27	Al	45	64561.025	7768596	1.04	55771.4	5000	175.8	75	125	Fail
39	K	45	18033.773	6173158	2.61	12204.8	5000	116.6	75	125	
44	Ca	45	########	2031241	2.14	94381.5	5000	210.2	75	125	Fail
47	Ti	45	407.883	52938	1.61	195.1	200	106.4	75	125	
51	V	45	302.038	1344224	0.91	92.8	200	104.6	75	125	
52	Cr	45	269.474	1437179	0.94	66.4	200	101.5	75	125	
55	Mn	45	730.992	2092873	0.68	510.4	200	110.3	75	125	
56	Fe	45	63846.894	291653713	0.53	57124.3	5000	134.5	75	125	Fail
59	Co	72	229.911	1938411	1.01	23.5	200	103.2	75	125	
60	Ni	72	243.798	566856	0.97	44.7	200	99.5	75	125	
63	Cu	72	212.546	1366314	1.19	16.7	200	97.9	75	125	
66	Zn	72	399.528	416286	1.95	189.0	200	105.2	75	125	
75	As	72	230.685	203388	1.43	19.1	200	105.8	75	125	
78	Se	72	212.903	10572	0.56	5.1	200	103.9	75	125	
88	Sr	115	545.437	2013784	1.36	311.0	200	117.2	75	125	
95	Mo	115	207.217	703693	1.34	1.4	200	102.9	75	125	
107	Ag	115	185.792	1984767	1.52	0.1	200	92.8	75	125	
111	Cd	115	200.192	308302	0.28	0.4	200	99.9	75	125	
118	Sn	115	217.883	690368	0.50	4.9	200	106.5	75	125	
121	Sb	115	219.447	1072368	1.36	2.0	200	108.7	75	125	
137	Ba	115	935.547	1442775	1.83	683.2	200	126.2	75	125	Fail
205	Tl	209	205.746	4313643	1.08	0.5	200	102.6	75	125	
208	Pb	209	283.997	8048616	1.14	71.2	200	106.4	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	891413	0.77	989663	90.07	70	120	
72	Ge	654359	0.78	739879	88.44	70	120	
115	In	5731271	1.07	6565136	87.30	70	120	
209	Bi	13068234	1.17	15222533	85.85	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 16:17	Sample Name	1605098-41A MS
Data Batch	160516.b	Comment	MS ICPMS_TSDOD1
Data File Name	144_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	254.204	10677	0.62	65.6	200	94.3	80	120	
9	Be	45	188.856	10483	1.46	2.2	200	93.3	80	120	
11	B	45	273.766	4961	3.56	87.3	200	93.2	80	120	
23	Na	45	########	443263387	1.01	735299.9	1000	#####	80	120	Fail
24	Mg	45	16140.179	5262475	1.30	10867.0	1000	527.3	80	120	Fail
27	Al	45	65308.102	7605936	1.16	55771.4	1000	953.7	80	120	Fail
39	K	45	18021.943	5970758	2.07	12204.8	1000	581.7	80	120	Fail
44	Ca	45	72937.999	1367071	1.19	94381.5	1000	#####	80	120	Fail
47	Ti	45	421.259	52920	1.60	195.1	200	113.1	80	120	
51	V	45	298.703	1286682	1.67	92.8	200	102.9	80	120	
52	Cr	45	257.379	1328553	1.27	66.4	200	95.5	80	120	
55	Mn	45	668.029	1851181	1.83	510.4	200	78.8	80	120	Fail
56	Fe	45	62302.156	275442585	1.69	57124.3	1000	517.8	80	120	Fail
59	Co	72	220.781	1787351	1.10	23.5	200	98.6	80	120	
60	Ni	72	236.550	528158	1.18	44.7	200	95.9	80	120	
63	Cu	72	209.289	1291978	1.22	16.7	200	96.3	80	120	
66	Zn	72	382.631	382814	0.71	189.0	200	96.8	80	120	
75	As	72	221.342	187411	1.49	19.1	200	101.1	80	120	
78	Se	72	203.777	9719	2.01	5.1	200	99.3	80	120	
88	Sr	115	485.758	1727743	0.87	311.0	200	87.4	80	120	
95	Mo	115	190.112	621994	1.73	1.4	200	94.3	80	120	
107	Ag	115	191.711	1973026	1.36	0.1	200	95.8	80	120	
111	Cd	115	194.408	288423	1.89	0.4	200	97.0	80	120	
118	Sn	115	204.909	625499	1.39	4.9	200	100.0	80	120	
121	Sb	115	68.660	323342	1.28	2.0	200	33.3	80	120	Fail
137	Ba	115	726.397	1079180	1.10	683.2	200	21.6	80	120	Fail
205	Tl	209	202.015	4080858	2.33	0.5	200	100.8	80	120	
208	Pb	209	262.652	7171405	1.65	71.2	200	95.7	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	862772	1.00	989663	87.18	70	120	
72	Ge	628395	1.53	739879	84.93	70	120	
115	In	5520546	0.68	6565136	84.09	70	120	
209	Bi	12591981	2.95	15222533	82.72	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 16:19	Sample Name	1605098-41A MSD
Data Batch	160516.b	Comment	MSD ICPMS_TSDOD1
Data File Name	145_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	255.246	10865	1.98	65.6	200	94.8	80	120	
9	Be	45	190.808	10734	0.41	2.2	200	94.3	80	120	
11	B	45	293.327	5376	4.19	87.3	200	103.0	80	120	
23	Na	45	########	435652756	2.06	735299.9	1000	#####	80	120	Fail
24	Mg	45	16531.024	5462352	1.97	10867.0	1000	566.4	80	120	Fail
27	Al	45	65256.561	7701913	1.89	55771.4	1000	948.5	80	120	Fail
39	K	45	18310.868	6146779	1.38	12204.8	1000	610.6	80	120	Fail
44	Ca	45	95161.372	1807428	0.75	94381.5	1000	78.0	80	120	Fail
47	Ti	45	405.280	51595	0.82	195.1	200	105.1	80	120	
51	V	45	296.933	1296195	0.64	92.8	200	102.1	80	120	
52	Cr	45	258.645	1353051	0.66	66.4	200	96.1	80	120	
55	Mn	45	796.809	2237525	1.54	510.4	200	143.2	80	120	Fail
56	Fe	45	63861.319	286144140	2.28	57124.3	1000	673.7	80	120	Fail
59	Co	72	221.383	1831911	1.24	23.5	200	98.9	80	120	
60	Ni	72	241.232	550492	0.77	44.7	200	98.3	80	120	
63	Cu	72	209.235	1320141	0.99	16.7	200	96.3	80	120	
66	Zn	72	389.022	397817	1.32	189.0	200	100.0	80	120	
75	As	72	219.842	190245	1.11	19.1	200	100.4	80	120	
78	Se	72	201.744	9835	1.09	5.1	200	98.3	80	120	
88	Sr	115	530.621	1957423	0.58	311.0	200	109.8	80	120	
95	Mo	115	187.342	635679	0.55	1.4	200	93.0	80	120	
107	Ag	115	187.037	1996398	0.41	0.1	200	93.5	80	120	
111	Cd	115	192.011	295441	0.68	0.4	200	95.8	80	120	
118	Sn	115	200.532	634858	0.74	4.9	200	97.8	80	120	
121	Sb	115	62.566	305611	1.27	2.0	200	30.3	80	120	Fail
137	Ba	115	741.540	1142634	1.14	683.2	200	29.2	80	120	Fail
205	Tl	209	199.436	4203781	0.71	0.5	200	99.5	80	120	
208	Pb	209	259.312	7389600	0.40	71.2	200	94.0	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	874334	0.26	989663	88.35	70	120	
72	Ge	642228	0.62	739879	86.80	70	120	
115	In	5726650	1.46	6565136	87.23	70	120	
209	Bi	13144669	2.77	15222533	86.35	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 16:25	Sample Name	CCV5-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	146_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	206.323	9457	1.56	200	103.2	90	110	
9	Be	45	201.793	12219	1.03	200	100.9	90	110	
11	B	45	199.736	3986	4.71	200	99.9	90	110	
23	Na	45	5194.867	3787479	0.52	5000	103.9	90	110	
24	Mg	45	5035.842	1791603	0.36	5000	100.7	90	110	
27	Al	45	4892.202	621693	0.53	5000	97.8	90	110	
39	K	45	5097.711	1876924	0.39	5000	102.0	90	110	
44	Ca	45	4707.355	96450	1.70	5000	94.1	90	110	
47	Ti	45	198.296	27174	1.17	200	99.1	90	110	
51	V	45	202.995	954642	1.55	200	101.5	90	110	
52	Cr	45	204.436	1151646	1.23	200	102.2	90	110	
55	Mn	45	199.017	602232	0.90	200	99.5	90	110	
56	Fe	45	5006.943	24164590	1.11	5000	100.1	90	110	
59	Co	72	204.633	1895027	0.34	200	102.3	90	110	
60	Ni	72	204.929	523438	0.87	200	102.5	90	110	
63	Cu	72	204.331	1442904	1.15	200	102.2	90	110	
66	Zn	72	203.991	233596	0.50	200	102.0	90	110	
75	As	72	204.799	198340	0.59	200	102.4	90	110	
78	Se	72	201.947	11018	1.35	200	101.0	90	110	
88	Sr	115	192.449	816604	1.12	200	96.2	90	110	
95	Mo	115	191.230	746260	0.18	200	95.6	90	110	
107	Ag	115	197.611	2425915	0.25	200	98.8	90	110	
111	Cd	115	196.765	348225	0.80	200	98.4	90	110	
118	Sn	115	195.719	712818	1.83	200	97.9	90	110	
121	Sb	115	198.547	1114972	0.65	200	99.3	90	110	
137	Ba	115	195.085	345725	0.55	200	97.5	90	110	
205	Tl	209	196.802	4879191	0.89	200	98.4	90	110	
208	Pb	209	194.162	6508257	0.20	200	97.1	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	941156	0.45	989663	95.10	70	120	
72	Ge	718752	0.68	739879	97.14	70	120	
115	In	6586431	1.72	6565136	100.32	70	120	
209	Bi	15451891	0.40	15222533	101.51	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 16:29	Sample Name	LCVL5-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	148LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.164	511	8.30	10	111.6	70	130	
9	Be	45	1.182	71	24.44	1	118.2	70	130	
11	B	45	24.283	589	6.44	20	121.4	70	130	
23	Na	45	194.307	184043	0.99	100	194.3	70	130	Fail
24	Mg	45	101.507	35615	1.15	100	101.5	70	130	
27	Al	45	100.026	12468	1.60	100	100.0	70	130	
39	K	45	98.303	80915	0.97	100	98.3	70	130	
44	Ca	45	97.785	2144	2.59	100	97.8	70	130	
47	Ti	45	5.123	681	14.33	5	102.5	70	130	
51	V	45	0.866	6215	4.38	1	86.6	70	130	
52	Cr	45	5.192	30140	2.12	5	103.8	70	130	
55	Mn	45	4.706	14581	1.02	5	94.1	70	130	
56	Fe	45	97.048	468580	1.20	100	97.0	70	130	
59	Co	72	5.101	46233	0.45	5	102.0	70	130	
60	Ni	72	5.130	13184	1.41	5	102.6	70	130	
63	Cu	72	4.965	37595	0.43	5	99.3	70	130	
66	Zn	72	5.039	5929	1.87	5	100.8	70	130	
75	As	72	5.160	5026	1.50	5	103.2	70	130	
78	Se	72	5.547	365	11.38	5	110.9	70	130	
88	Sr	115	4.771	19965	0.60	5	95.4	70	130	
95	Mo	115	4.670	17893	2.01	5	93.4	70	130	
107	Ag	115	1.914	23111	2.39	2	95.7	70	130	
111	Cd	115	1.024	1785	5.62	1	102.4	70	130	
118	Sn	115	4.787	18217	1.29	5	95.7	70	130	
121	Sb	115	1.985	11114	1.51	2	99.2	70	130	
137	Ba	115	4.865	8476	0.79	5	97.3	70	130	
205	Tl	209	0.985	24064	1.38	1	98.5	70	130	
208	Pb	209	0.940	35435	0.67	1	94.0	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	910164	0.31	989663	91.97	70	120	
72	Ge	701664	1.19	739879	94.83	70	120	
115	In	6448967	0.50	6565136	98.23	70	120	
209	Bi	15047127	0.89	15222533	98.85	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 16:31	Sample Name	CCB5-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	149_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.406	35	15.9	2	5	
9	Be	45	0.003	2	132.3	0.4	0.3	
11	B	45	2.921	189	10.6	10	10	
23	Na	45	94.470	113138	0.2	50	100	FailSoil
24	Mg	45	-1.121	314	8.0	50	100	
27	Al	45	-0.236	149	7.9	50	10	
39	K	45	7.526	48801	0.7	50	100	
44	Ca	45	4.265	291	16.9	50	100	
47	Ti	45	-0.015	0	#DIV/0!	4	3	
51	V	45	-0.147	1600	7.5	4	3	
52	Cr	45	0.000	1882	5.1	2	2	
55	Mn	45	-0.175	317	2.8	2	3	
56	Fe	45	-0.720	12432	2.0	50	50	
59	Co	72	0.001	133	32.5	2	3	
60	Ni	72	0.034	482	4.9	2	3	
63	Cu	72	-0.094	2782	5.9	2	2	
66	Zn	72	0.148	463	8.8	4	2	
75	As	72	-0.038	114	11.7	2	2	
78	Se	72	0.213	82	22.7	1	2	
88	Sr	115	0.001	149	2.6	4	3	
95	Mo	115	0.007	72	21.3	2	2	
107	Ag	115	0.010	216	18.6	0.4	1	
111	Cd	115	0.003	14	48.0	0.4	0.3	
118	Sn	115	-0.080	874	5.4	4	3	
121	Sb	115	0.012	264	34.6	2	0.8	
137	Ba	115	0.008	46	30.5	2	3	
205	Tl	209	0.011	549	2.5	2	0.5	
208	Pb	209	-0.047	3159	4.0	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	898656	0.09	989663	90.80	70	120	
72	Ge	694759	0.65	739879	93.90	70	120	
115	In	6347033	0.63	6565136	96.68	70	120	
209	Bi	14584411	0.90	15222533	95.81	70	120	

Method Blank Report

Date Acquired	5/16/16 4:33 PM	Sample Name	MB-75099
Data Batch	160516.b	Comment	MBLKICPMS_TSDOD1
Data File Name	150_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.545	41	20.91		
9	Be	45	-0.020	1	86.60		
11	B	45	4.659	219	3.17		
23	Na	45	97.635	114280	0.75		FAIL
24	Mg	45	3.322	1807	5.10		
27	Al	45	8.779	1231	3.61		
39	K	45	6.840	48129	1.70		
44	Ca	45	123.383	2592	4.93		FAIL
47	Ti	45	0.174	24	68.62		
51	V	45	-0.122	1696	5.70		
52	Cr	45	0.227	3070	4.64		
55	Mn	45	0.024	880	5.34		
56	Fe	45	11.621	68647	0.97		
59	Co	72	0.004	152	11.02		
60	Ni	72	0.146	734	3.44		
63	Cu	72	0.076	3812	1.19		
66	Zn	72	4.223	4805	3.44		J
75	As	72	-0.016	131	6.29		
78	Se	72	0.408	90	7.13		
88	Sr	115	0.174	826	12.16		
95	Mo	115	0.016	102	27.74		
107	Ag	115	0.010	203	17.35		
111	Cd	115	0.001	11	148.01		
118	Sn	115	3.912	14367	1.96		
121	Sb	115	0.011	250	30.75		
137	Ba	115	0.056	123	22.12		
205	Tl	209	0.005	413	6.40		
208	Pb	209	0.005	4959	3.30		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	890707	1.02	989663	90.00	70	120	
72	Ge	672082	0.88	739879	90.84	70	120	
115	In	6136501	0.90	6565136	93.47	70	120	
209	Bi	15100168	1.28	15222533	99.20	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 16:36	Sample Name	LCS-75099
Data Batch	160516.b	Comment	LCS ICPMS_TSDOD1
Data File Name	151_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	211.417	9070	1.58	200	105.7	80	120	
9	Be	45	206.616	11712	2.23	200	103.3	80	120	
11	B	45	209.458	3906	2.41	200	104.7	80	120	
23	Na	45	5216.669	3559748	0.48	1000	521.7	80	120	Fail
24	Mg	45	5032.793	1675945	0.86	1000	503.3	80	120	Fail
27	Al	45	992.967	118244	0.53	1000	99.3	80	120	
39	K	45	5065.025	1745729	0.15	1000	506.5	80	120	Fail
44	Ca	45	4738.137	90862	0.95	1000	473.8	80	120	Fail
47	Ti	45	200.775	25753	1.43	200	100.4	80	120	
51	V	45	202.937	893252	0.77	200	101.5	80	120	
52	Cr	45	202.975	1070242	1.15	200	101.5	80	120	
55	Mn	45	198.795	563039	0.59	200	99.4	80	120	
56	Fe	45	978.989	4434513	0.39	1000	97.9	80	120	
59	Co	72	205.339	1785326	1.04	200	102.7	80	120	
60	Ni	72	204.811	491138	0.26	200	102.4	80	120	
63	Cu	72	203.963	1352186	0.51	200	102.0	80	120	
66	Zn	72	201.647	216805	0.59	200	100.8	80	120	
75	As	72	201.727	183429	0.41	200	100.9	80	120	
78	Se	72	198.881	10189	0.98	200	99.4	80	120	
88	Sr	115	193.026	759204	1.01	200	96.5	80	120	
95	Mo	115	195.396	706820	0.94	200	97.7	80	120	
107	Ag	115	196.949	2241090	1.35	200	98.5	80	120	
111	Cd	115	196.589	322473	1.19	200	98.3	80	120	
118	Sn	115	203.437	686623	0.65	200	101.7	80	120	
121	Sb	115	198.244	1031908	1.48	200	99.1	80	120	
137	Ba	115	198.057	325371	0.96	200	99.0	80	120	
205	Tl	209	204.721	4686722	1.10	200	102.4	80	120	
208	Pb	209	200.685	6211983	0.79	200	100.3	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	880920	0.93	989663	89.01	70	120	
72	Ge	674825	0.74	739879	91.21	70	120	
115	In	6104033	0.35	6565136	92.98	70	120	
209	Bi	14271697	1.64	15222533	93.75	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 16:38	Sample Name	LCSD-75099
Data Batch	160516.b	Comment	LCSDICPMS_TSDOD1
Data File Name	152_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	218.452	9280	0.17	200	109.2	80	120	
9	Be	45	210.604	11821	1.70	200	105.3	80	120	
11	B	45	211.020	3896	3.69	200	105.5	80	120	
23	Na	45	5320.224	3594373	0.28	1000	532.0	80	120	Fail
24	Mg	45	5177.795	1707513	0.81	1000	517.8	80	120	Fail
27	Al	45	1003.022	118285	0.41	1000	100.3	80	120	
39	K	45	5163.498	1761669	0.74	1000	516.3	80	120	Fail
44	Ca	45	4834.228	91805	1.62	1000	483.4	80	120	Fail
47	Ti	45	207.478	26355	1.98	200	103.7	80	120	
51	V	45	211.478	921732	0.45	200	105.7	80	120	
52	Cr	45	210.424	1098676	0.66	200	105.2	80	120	
55	Mn	45	205.083	575201	0.43	200	102.5	80	120	
56	Fe	45	1004.460	4505623	0.66	1000	100.4	80	120	
59	Co	72	209.572	1808551	0.32	200	104.8	80	120	
60	Ni	72	208.938	497291	1.17	200	104.5	80	120	
63	Cu	72	210.672	1386181	0.54	200	105.3	80	120	
66	Zn	72	209.169	223198	0.58	200	104.6	80	120	
75	As	72	205.081	185089	0.54	200	102.5	80	120	
78	Se	72	198.397	10088	2.47	200	99.2	80	120	
88	Sr	115	195.305	772806	0.53	200	97.7	80	120	
95	Mo	115	196.504	715150	1.11	200	98.3	80	120	
107	Ag	115	199.059	2278955	0.83	200	99.5	80	120	
111	Cd	115	201.106	331894	0.30	200	100.6	80	120	
118	Sn	115	207.469	704471	0.34	200	103.7	80	120	
121	Sb	115	200.288	1048884	0.28	200	100.1	80	120	
137	Ba	115	200.495	331372	0.23	200	100.2	80	120	
205	Tl	209	207.267	4756871	0.74	200	103.6	80	120	
208	Pb	209	203.447	6313124	0.87	200	101.7	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	872384	0.27	989663	88.15	70	120	
72	Ge	669778	0.37	739879	90.53	70	120	
115	In	6141658	1.07	6565136	93.55	70	120	
209	Bi	14305373	1.16	15222533	93.97	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/16/2016 16:44	Sample Name	1605071-17A SD
Data Batch	160516.b	Comment	SD ICPMS_TSDOD1
Data File Name	155_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	10.644	493	1.33	52.0	102.3	110	90	Good
9	Be	45	0.380	24	31.92	1.9	101.4	110	90	Good
11	B	45	16.536	449	7.62	61.0	135.6	110	90	
23	Na	45	209.019	196095	0.29	784.5	133.2	110	90	
24	Mg	45	1999.766	694904	0.76	9739.2	102.7	110	90	Good
27	Al	45	9813.836	1217167	0.56	47702.7	102.9	110	90	Good
39	K	45	2321.700	860141	0.67	11378.3	102.0	110	90	Good
44	Ca	45	13060.789	260829	0.68	64190.3	101.7	110	90	Good
47	Ti	45	73.855	9881	1.87	363.5	101.6	110	90	Good
51	V	45	16.007	75604	0.97	80.1	99.9	110	90	Good
52	Cr	45	9.576	54484	1.61	46.9	102.1	110	90	Good
55	Mn	45	124.007	366588	0.11	604.1	102.6	110	90	Good
56	Fe	45	10236.620	48202027	1.06	49589.4	103.2	110	90	Good
59	Co	72	3.386	30289	1.22	16.5	102.5	110	90	Good
60	Ni	72	6.581	16557	1.07	32.0	102.9	110	90	Good
63	Cu	72	6.002	44084	1.39	29.3	102.5	110	90	Good
66	Zn	72	56.711	62701	0.85	271.8	104.3	110	90	Good
75	As	72	3.156	3088	1.26	15.3	103.2	110	90	Good
78	Se	72	0.926	119	12.77	3.7	123.6	110	90	
88	Sr	115	55.717	233086	1.27	283.2	98.4	110	90	Good
95	Mo	115	0.299	1197	3.64	1.5	98.3	110	90	Good
107	Ag	115	0.028	437	11.85	0.1	124.8	110	90	
111	Cd	115	0.093	173	30.22	0.5	99.3	110	90	Good
118	Sn	115	0.834	4170	3.85	5.1	81.8	110	90	
121	Sb	115	0.312	1928	5.18	1.5	101.2	110	90	Good
137	Ba	115	85.819	149905	0.66	440.6	97.4	110	90	Good
205	Tl	209	0.110	2994	1.93	0.5	109.1	110	90	Good
208	Pb	209	9.430	316254	0.56	47.8	98.6	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	918751	1.19	989663	92.83	70	120	
72	Ge	691568	0.91	739879	93.47	70	120	
115	In	6490438	1.19	6565136	98.86	70	120	
209	Bi	15236152	0.99	15222533	100.09	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/16/2016 17:04	Sample Name	1605071-17A PDS
Data Batch	160516.b	Comment	PDS ICPMS_TSDOD1
Data File Name	165_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	247.200	10816	1.06	52.0	200	97.6	75	125	
9	Be	45	201.085	11627	1.56	1.9	200	99.6	75	125	
11	B	45	260.938	4931	1.67	61.0	200	100.0	75	125	
23	Na	45	5691.224	3957682	0.25	784.5	5000	98.1	75	125	
24	Mg	45	14724.088	5001014	1.43	9739.2	5000	99.7	75	125	
27	Al	45	52838.696	6409687	1.93	47702.7	5000	102.7	75	125	
39	K	45	16274.772	5620821	1.18	11378.3	5000	97.9	75	125	
44	Ca	45	68260.052	1332674	0.72	64190.3	5000	81.4	75	125	
47	Ti	45	553.090	72373	1.07	363.5	200	94.8	75	125	
51	V	45	276.843	1242357	0.98	80.1	200	98.4	75	125	
52	Cr	45	245.300	1319097	0.74	46.9	200	99.2	75	125	
55	Mn	45	786.718	2270785	0.23	604.1	200	91.3	75	125	
56	Fe	45	53618.491	246945012	0.33	49589.4	5000	80.6	75	125	
59	Co	72	217.711	1882782	0.89	16.5	200	100.6	75	125	
60	Ni	72	227.089	541640	0.92	32.0	200	97.6	75	125	
63	Cu	72	221.704	1461757	0.72	29.3	200	96.2	75	125	
66	Zn	72	464.756	496641	0.12	271.8	200	96.5	75	125	
75	As	72	213.879	193445	1.44	15.3	200	99.3	75	125	
78	Se	72	196.894	10033	1.20	3.7	200	96.6	75	125	
88	Sr	115	465.379	1862168	0.98	283.2	200	91.1	75	125	
95	Mo	115	185.975	684465	0.53	1.5	200	92.2	75	125	
107	Ag	115	175.247	2029028	0.89	0.1	200	87.6	75	125	
111	Cd	115	183.985	307061	0.35	0.5	200	91.8	75	125	
118	Sn	115	201.479	691897	0.29	5.1	200	98.2	75	125	
121	Sb	115	195.454	1035088	0.54	1.5	200	97.0	75	125	
137	Ba	115	621.791	1039225	0.11	440.6	200	90.6	75	125	
205	Tl	209	195.396	4520825	0.47	0.5	200	97.4	75	125	
208	Pb	209	241.036	7539582	0.33	47.8	200	96.6	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	898721	0.50	989663	90.81	70	120	
72	Ge	671245	0.93	739879	90.72	70	120	
115	In	6210825	0.96	6565136	94.60	70	120	
209	Bi	14426342	2.48	15222533	94.77	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 17:06	Sample Name	1605071-17A MS
Data Batch	160516.b	Comment	MS ICPMS_TSDOD1
Data File Name	166_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	259.919	11261	0.27	52.0	200	104.0	80	120	
9	Be	45	205.351	11758	0.77	1.9	200	101.7	80	120	
11	B	45	264.827	4954	3.62	61.0	200	101.9	80	120	
23	Na	45	5809.770	3999911	0.80	784.5	1000	502.5	80	120	Fail
24	Mg	45	15702.101	5281388	2.15	9739.2	1000	596.3	80	120	Fail
27	Al	45	56480.714	6784995	1.73	47702.7	1000	877.8	80	120	Fail
39	K	45	17651.641	6032955	0.80	11378.3	1000	627.3	80	120	Fail
44	Ca	45	74337.558	1437204	0.75	64190.3	1000	1014.7	80	120	Fail
47	Ti	45	616.579	79899	1.04	363.5	200	126.5	80	120	Fail
51	V	45	288.140	1280393	0.96	80.1	200	104.0	80	120	
52	Cr	45	251.182	1337574	0.62	46.9	200	102.1	80	120	
55	Mn	45	857.618	2451308	0.48	604.1	200	126.7	80	120	Fail
56	Fe	45	53563.507	244289599	0.26	49589.4	1000	397.4	80	120	Fail
59	Co	72	221.300	1904045	0.96	16.5	200	102.4	80	120	
60	Ni	72	236.366	560880	1.04	32.0	200	102.2	80	120	
63	Cu	72	230.447	1511523	0.24	29.3	200	100.6	80	120	
66	Zn	72	494.493	525728	0.14	271.8	200	111.4	80	120	
75	As	72	216.185	194542	1.08	15.3	200	100.4	80	120	
78	Se	72	198.317	10055	1.11	3.7	200	97.3	80	120	
88	Sr	115	511.202	1986730	0.56	283.2	200	114.0	80	120	
95	Mo	115	184.004	657776	0.73	1.5	200	91.2	80	120	
107	Ag	115	191.184	2149938	0.67	0.1	200	95.5	80	120	
111	Cd	115	193.934	314409	1.29	0.5	200	96.7	80	120	
118	Sn	115	199.653	665913	0.28	5.1	200	97.3	80	120	
121	Sb	115	62.302	320538	0.84	1.5	200	30.4	80	120	Fail
137	Ba	115	651.855	1058110	0.32	440.6	200	105.6	80	120	
205	Tl	209	196.854	4554672	0.54	0.5	200	98.2	80	120	
208	Pb	209	245.079	7665397	0.43	47.8	200	98.6	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	889967	0.37	989663	89.93	70	120	
72	Ge	667863	1.10	739879	90.27	70	120	
115	In	6034223	2.49	6565136	91.91	70	120	
209	Bi	14421481	1.04	15222533	94.74	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 17:08	Sample Name	1605071-17A MSD
Data Batch	160516.b	Comment	MSD ICPMS_TSDOD1
Data File Name	167_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	267.374	11574	0.76	52.0	200	107.7	80	120	
9	Be	45	214.885	12295	0.67	1.9	200	106.5	80	120	
11	B	45	261.468	4887	3.98	61.0	200	100.3	80	120	
23	Na	45	5834.218	4013119	0.78	784.5	1000	505.0	80	120	Fail
24	Mg	45	15041.203	5054659	0.58	9739.2	1000	530.2	80	120	Fail
27	Al	45	52391.073	6288694	0.74	47702.7	1000	468.8	80	120	Fail
39	K	45	17092.843	5838489	2.44	11378.3	1000	571.5	80	120	Fail
44	Ca	45	69132.409	1335607	1.23	64190.3	1000	494.2	80	120	Fail
47	Ti	45	604.194	78237	0.96	363.5	200	120.3	80	120	Fail
51	V	45	287.227	1275272	0.44	80.1	200	103.6	80	120	
52	Cr	45	254.161	1352350	0.43	46.9	200	103.6	80	120	
55	Mn	45	802.887	2293341	1.12	604.1	200	99.4	80	120	
56	Fe	45	50659.655	230907360	1.85	49589.4	1000	107.0	80	120	
59	Co	72	225.222	1934550	0.59	16.5	200	104.4	80	120	
60	Ni	72	238.956	566054	0.32	32.0	200	103.5	80	120	
63	Cu	72	236.095	1545826	0.93	29.3	200	103.4	80	120	
66	Zn	72	478.406	507761	0.23	271.8	200	103.3	80	120	
75	As	72	220.736	198292	1.08	15.3	200	102.7	80	120	
78	Se	72	206.160	10432	0.24	3.7	200	101.2	80	120	
88	Sr	115	484.923	1912374	0.52	283.2	200	100.9	80	120	
95	Mo	115	186.415	676222	0.61	1.5	200	92.4	80	120	
107	Ag	115	191.941	2190250	0.78	0.1	200	95.9	80	120	
111	Cd	115	197.494	324862	0.61	0.5	200	98.5	80	120	
118	Sn	115	201.437	681793	0.55	5.1	200	98.2	80	120	
121	Sb	115	61.972	323605	0.25	1.5	200	30.2	80	120	Fail
137	Ba	115	626.837	1032576	1.08	440.6	200	93.1	80	120	
205	Tl	209	203.906	4723800	1.16	0.5	200	101.7	80	120	
208	Pb	209	246.677	7725494	0.58	47.8	200	99.4	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	889383	1.43	989663	89.87	70	120	
72	Ge	666687	0.57	739879	90.11	70	120	
115	In	6121127	0.48	6565136	93.24	70	120	
209	Bi	14439468	0.76	15222533	94.86	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 17:10	Sample Name	CCV6-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	168_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	213.408	9181	1.38	200	106.7	90	110	
9	Be	45	209.990	11935	0.20	200	105.0	90	110	
11	B	45	213.840	3996	0.84	200	106.9	90	110	
23	Na	45	5171.083	3539097	0.44	5000	103.4	90	110	
24	Mg	45	5086.882	1698736	0.49	5000	101.7	90	110	
27	Al	45	4842.871	577658	0.77	5000	96.9	90	110	
39	K	45	5045.732	1744250	0.57	5000	100.9	90	110	
44	Ca	45	4718.312	90740	1.17	5000	94.4	90	110	
47	Ti	45	200.612	25805	0.82	200	100.3	90	110	
51	V	45	201.521	889543	0.73	200	100.8	90	110	
52	Cr	45	203.307	1074995	0.58	200	101.7	90	110	
55	Mn	45	198.168	562858	1.38	200	99.1	90	110	
56	Fe	45	5027.582	22774697	1.66	5000	100.6	90	110	
59	Co	72	208.093	1786647	0.63	200	104.0	90	110	
60	Ni	72	207.703	491836	0.30	200	103.9	90	110	
63	Cu	72	209.231	1369624	0.46	200	104.6	90	110	
66	Zn	72	206.124	218823	0.46	200	103.1	90	110	
75	As	72	205.667	184669	0.58	200	102.8	90	110	
78	Se	72	202.565	10246	1.71	200	101.3	90	110	
88	Sr	115	189.324	757736	0.18	200	94.7	90	110	
95	Mo	115	192.790	709739	0.87	200	96.4	90	110	
107	Ag	115	198.503	2298708	1.16	200	99.3	90	110	
111	Cd	115	193.880	323642	0.69	200	96.9	90	110	
118	Sn	115	194.979	669765	1.08	200	97.5	90	110	
121	Sb	115	196.776	1042390	0.76	200	98.4	90	110	
137	Ba	115	194.044	324379	0.70	200	97.0	90	110	
205	Tl	209	199.953	4622761	0.61	200	100.0	90	110	
208	Pb	209	199.348	6230635	0.30	200	99.7	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	883401	0.02	989663	89.26	70	120	
72	Ge	666377	0.90	739879	90.07	70	120	
115	In	6213763	2.37	6565136	94.65	70	120	
209	Bi	14408785	0.75	15222533	94.65	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 17:14	Sample Name	LCVL6-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	170LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.588	503	7.46	10	115.9	70	130	
9	Be	45	1.211	69	16.71	1	121.1	70	130	
11	B	45	23.866	551	8.26	20	119.3	70	130	
23	Na	45	147.871	143854	0.30	100	147.9	70	130	Fail
24	Mg	45	100.455	33419	2.27	100	100.5	70	130	
27	Al	45	95.751	11322	3.30	100	95.8	70	130	
39	K	45	99.537	77117	0.07	100	99.5	70	130	
44	Ca	45	101.553	2103	9.19	100	101.6	70	130	
47	Ti	45	5.098	642	9.81	5	102.0	70	130	
51	V	45	0.829	5732	5.08	1	82.9	70	130	
52	Cr	45	5.265	28950	0.91	5	105.3	70	130	
55	Mn	45	4.732	13897	2.00	5	94.6	70	130	
56	Fe	45	97.688	447073	0.50	100	97.7	70	130	
59	Co	72	5.197	44135	0.84	5	103.9	70	130	
60	Ni	72	5.183	12477	0.63	5	103.7	70	130	
63	Cu	72	5.007	35499	1.88	5	100.1	70	130	
66	Zn	72	5.313	5841	4.84	5	106.3	70	130	
75	As	72	5.103	4660	1.42	5	102.1	70	130	
78	Se	72	5.529	342	0.72	5	110.6	70	130	
88	Sr	115	4.865	19052	1.73	5	97.3	70	130	
95	Mo	115	4.802	17216	1.23	5	96.0	70	130	
107	Ag	115	1.889	21347	1.23	2	94.5	70	130	
111	Cd	115	1.007	1642	8.09	1	100.7	70	130	
118	Sn	115	4.920	17492	1.45	5	98.4	70	130	
121	Sb	115	1.994	10448	0.24	2	99.7	70	130	
137	Ba	115	4.812	7845	1.44	5	96.2	70	130	
205	Tl	209	1.077	24577	1.17	1	107.7	70	130	
208	Pb	209	0.940	33131	0.60	1	94.0	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	862900	0.58	989663	87.19	70	120	
72	Ge	657469	0.73	739879	88.86	70	120	
115	In	6035394	0.32	6565136	91.93	70	120	
209	Bi	14076246	2.11	15222533	92.47	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 17:16	Sample Name	CCB6-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	171_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.442	35	14.5	2	5	
9	Be	45	0.023	3	0.0	0.4	0.3	
11	B	45	1.888	161	10.2	10	10	
23	Na	45	50.705	78783	1.0	50	100	FailSoil
24	Mg	45	-1.015	332	19.0	50	100	
27	Al	45	0.219	193	27.1	50	10	
39	K	45	7.289	46205	0.6	50	100	
44	Ca	45	2.941	251	14.3	50	100	
47	Ti	45	0.056	9	21.6	4	3	
51	V	45	-0.149	1507	2.9	4	3	
52	Cr	45	-0.011	1725	3.4	2	2	
55	Mn	45	-0.154	358	20.1	2	3	
56	Fe	45	-0.338	13462	3.4	50	50	
59	Co	72	0.000	118	18.8	2	3	
60	Ni	72	0.071	540	3.4	2	3	
63	Cu	72	-0.181	2059	0.2	2	2	
66	Zn	72	0.170	459	16.8	4	2	
75	As	72	-0.012	130	15.8	2	2	
78	Se	72	0.088	71	20.7	1	2	
88	Sr	115	-0.005	113	15.6	4	3	
95	Mo	115	0.005	60	33.8	2	2	
107	Ag	115	0.011	204	19.7	0.4	1	
111	Cd	115	0.001	10	33.3	0.4	0.3	
118	Sn	115	-0.122	672	0.8	4	3	
121	Sb	115	0.017	267	17.7	2	0.8	
137	Ba	115	0.013	50	40.5	2	3	
205	Tl	209	0.044	1247	11.2	2	0.5	
208	Pb	209	-0.054	2775	5.0	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	852332	1.06	989663	86.12	70	120	
72	Ge	653355	0.84	739879	88.31	70	120	
115	In	5871850	2.36	6565136	89.44	70	120	
209	Bi	13867207	0.86	15222533	91.10	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 17:38	Sample Name	CCV7-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	182_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	216.848	8948	0.27	200	108.4	90	110	
9	Be	45	210.738	11489	2.67	200	105.4	90	110	
11	B	45	209.770	3763	4.04	200	104.9	90	110	
23	Na	45	5239.304	3439015	1.19	5000	104.8	90	110	
24	Mg	45	5123.893	1641326	0.85	5000	102.5	90	110	
27	Al	45	5004.156	572553	0.80	5000	100.1	90	110	
39	K	45	5155.804	1708647	0.71	5000	103.1	90	110	
44	Ca	45	4888.281	90169	1.01	5000	97.8	90	110	
47	Ti	45	197.926	24421	1.17	200	99.0	90	110	
51	V	45	202.794	858621	0.50	200	101.4	90	110	
52	Cr	45	202.971	1029441	0.11	200	101.5	90	110	
55	Mn	45	198.523	540873	1.33	200	99.3	90	110	
56	Fe	45	5066.456	22014587	0.27	5000	101.3	90	110	
59	Co	72	203.517	1709552	0.13	200	101.8	90	110	
60	Ni	72	202.583	469370	0.32	200	101.3	90	110	
63	Cu	72	203.016	1300410	1.01	200	101.5	90	110	
66	Zn	72	202.687	210560	1.04	200	101.3	90	110	
75	As	72	203.221	178552	1.23	200	101.6	90	110	
78	Se	72	200.940	9946	1.59	200	100.5	90	110	
88	Sr	115	191.847	735348	0.49	200	95.9	90	110	
95	Mo	115	192.891	680000	0.37	200	96.4	90	110	
107	Ag	115	198.078	2196549	0.80	200	99.0	90	110	
111	Cd	115	195.089	311857	0.78	200	97.5	90	110	
118	Sn	115	194.926	641184	0.80	200	97.5	90	110	
121	Sb	115	198.600	1007405	1.03	200	99.3	90	110	
137	Ba	115	197.372	315985	0.91	200	98.7	90	110	
205	Tl	209	196.484	4428415	0.55	200	98.2	90	110	
208	Pb	209	195.125	5945664	0.41	200	97.6	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	847374	0.44	989663	85.62	70	120	
72	Ge	652051	1.49	739879	88.13	70	120	
115	In	5948718	0.47	6565136	90.61	70	120	
209	Bi	14047653	0.98	15222533	92.28	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 17:42	Sample Name	LCVL7-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	184LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.735	472	4.98	10	107.3	70	130	
9	Be	45	1.168	67	14.65	1	116.8	70	130	
11	B	45	25.393	584	9.75	20	127.0	70	130	
23	Na	45	132.710	135333	0.65	100	132.7	70	130	Fail
24	Mg	45	100.664	33859	0.52	100	100.7	70	130	
27	Al	45	101.267	12097	3.16	100	101.3	70	130	
39	K	45	100.626	78326	1.12	100	100.6	70	130	
44	Ca	45	102.547	2145	2.76	100	102.5	70	130	
47	Ti	45	5.249	669	7.63	5	105.0	70	130	
51	V	45	0.920	6193	3.31	1	92.0	70	130	
52	Cr	45	5.136	28600	0.48	5	102.7	70	130	
55	Mn	45	4.819	14294	2.98	5	96.4	70	130	
56	Fe	45	101.912	470909	1.83	100	101.9	70	130	
59	Co	72	5.213	44755	0.50	5	104.3	70	130	
60	Ni	72	5.215	12690	1.30	5	104.3	70	130	
63	Cu	72	5.038	36090	1.00	5	100.8	70	130	
66	Zn	72	5.321	5913	1.25	5	106.4	70	130	
75	As	72	5.070	4680	1.77	5	101.4	70	130	
78	Se	72	4.843	311	5.91	5	96.9	70	130	
88	Sr	115	4.752	19127	1.78	5	95.0	70	130	
95	Mo	115	4.718	17387	1.36	5	94.4	70	130	
107	Ag	115	1.928	22382	1.43	2	96.4	70	130	
111	Cd	115	0.935	1569	4.12	1	93.5	70	130	
118	Sn	115	4.792	17536	1.00	5	95.8	70	130	
121	Sb	115	1.933	10418	2.17	2	96.7	70	130	
137	Ba	115	4.859	8143	2.71	5	97.2	70	130	
205	Tl	209	1.004	23695	0.69	1	100.4	70	130	
208	Pb	209	0.919	33561	1.82	1	91.9	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	872405	0.53	989663	88.15	70	120	
72	Ge	664615	0.55	739879	89.83	70	120	
115	In	6203310	1.23	6565136	94.49	70	120	
209	Bi	14532820	1.06	15222533	95.47	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 17:44	Sample Name	CCB7-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	185_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.284	29	25.7	2	5	
9	Be	45	0.017	3	142.0	0.4	0.3	
11	B	45	5.548	229	12.4	10	10	
23	Na	45	31.448	67435	0.8	50	100	
24	Mg	45	-0.640	461	17.2	50	100	
27	Al	45	1.859	389	15.9	50	10	
39	K	45	2.600	45489	1.5	50	100	
44	Ca	45	2.613	250	9.3	50	100	
47	Ti	45	0.029	6	69.3	4	3	
51	V	45	-0.105	1728	5.6	4	3	
52	Cr	45	-0.004	1793	4.2	2	2	
55	Mn	45	-0.145	387	17.7	2	3	
56	Fe	45	1.218	20605	18.0	50	50	
59	Co	72	0.007	178	24.9	2	3	
60	Ni	72	-0.009	361	11.7	2	3	
63	Cu	72	-0.181	2093	7.1	2	2	
66	Zn	72	-0.011	276	18.1	4	2	
75	As	72	-0.005	139	5.7	2	2	
78	Se	72	0.230	80	9.2	1	2	
88	Sr	115	0.009	172	25.8	4	3	
95	Mo	115	0.015	99	13.6	2	2	
107	Ag	115	0.011	217	7.1	0.4	1	
111	Cd	115	0.008	22	60.6	0.4	0.3	
118	Sn	115	-0.101	777	6.0	4	3	
121	Sb	115	0.022	308	26.9	2	0.8	
137	Ba	115	0.044	104	29.7	2	3	
205	Tl	209	0.029	932	15.5	2	0.5	
208	Pb	209	-0.062	2598	8.1	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	867642	0.63	989663	87.67	70	120	
72	Ge	664975	0.97	739879	89.88	70	120	
115	In	6146026	0.40	6565136	93.62	70	120	
209	Bi	14268893	2.38	15222533	93.74	70	120	

Method Blank Report

Date Acquired	5/16/16 5:46 PM	Sample Name	MB-75104
Data Batch	160516.b	Comment	MBLKICPMS_TSDOD1
Data File Name	186_PB.d	Dilution	5

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.159	24	11.02		
9	Be	45	0.016	3	141.97		
11	B	45	6.222	248	13.20		
23	Na	45	39.858	75037	0.96		
24	Mg	45	2.766	1622	5.80		
27	Al	45	7.875	1123	10.44		
39	K	45	8.803	48852	0.86		
44	Ca	45	39.260	967	3.41		
47	Ti	45	0.267	37	15.75		
51	V	45	-0.152	1563	6.34		
52	Cr	45	-0.004	1842	6.31		
55	Mn	45	-0.148	390	8.15		
56	Fe	45	3.701	32534	3.67		
59	Co	72	0.002	132	5.82		
60	Ni	72	0.033	468	9.46		
63	Cu	72	-0.081	2794	7.24		
66	Zn	72	2.585	3074	4.46		
75	As	72	-0.035	114	16.90		
78	Se	72	0.031	71	15.23		
88	Sr	115	0.116	623	12.05		
95	Mo	115	0.026	143	26.82		
107	Ag	115	0.007	179	16.91		
111	Cd	115	0.002	13	0.00		
118	Sn	115	3.494	13551	4.51		
121	Sb	115	0.009	252	28.23		
137	Ba	115	0.056	130	26.77		
205	Tl	209	0.014	640	9.04		
208	Pb	209	-0.040	3500	1.03		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	891697	0.83	989663	90.10	70	120	
72	Ge	676387	0.23	739879	91.42	70	120	
115	In	6417437	1.76	6565136	97.75	70	120	
209	Bi	15159244	0.36	15222533	99.58	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 17:48	Sample Name	LCS-75104
Data Batch	160516.b	Comment	LCS ICPMS_TSDOD1
Data File Name	187_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	217.307	9304	2.17	200	108.7	80	120	
9	Be	45	211.209	11948	0.37	200	105.6	80	120	
11	B	45	212.171	3947	1.85	200	106.1	80	120	
23	Na	45	5186.769	3533063	1.13	1000	518.7	80	120	Fail
24	Mg	45	5074.940	1686759	0.46	1000	507.5	80	120	Fail
27	Al	45	982.133	116730	0.66	1000	98.2	80	120	
39	K	45	5102.024	1754985	1.20	1000	510.2	80	120	Fail
44	Ca	45	4796.504	91807	0.70	1000	479.7	80	120	Fail
47	Ti	45	202.170	25884	2.64	200	101.1	80	120	
51	V	45	206.829	908606	0.67	200	103.4	80	120	
52	Cr	45	209.381	1101893	1.32	200	104.7	80	120	
55	Mn	45	202.060	571185	0.05	200	101.0	80	120	
56	Fe	45	994.334	4495360	0.17	1000	99.4	80	120	
59	Co	72	207.600	1802640	0.78	200	103.8	80	120	
60	Ni	72	208.276	498798	0.29	200	104.1	80	120	
63	Cu	72	206.224	1365382	0.45	200	103.1	80	120	
66	Zn	72	204.721	219813	0.56	200	102.4	80	120	
75	As	72	204.335	185560	0.09	200	102.2	80	120	
78	Se	72	199.405	10202	2.02	200	99.7	80	120	
88	Sr	115	193.308	765214	0.58	200	96.7	80	120	
95	Mo	115	196.878	716794	0.47	200	98.4	80	120	
107	Ag	115	197.715	2264311	0.24	200	98.9	80	120	
111	Cd	115	196.096	323738	0.59	200	98.0	80	120	
118	Sn	115	201.661	685012	0.46	200	100.8	80	120	
121	Sb	115	196.868	1031342	0.30	200	98.4	80	120	
137	Ba	115	197.246	326103	0.77	200	98.6	80	120	
205	Tl	209	200.742	4673451	0.37	200	100.4	80	120	
208	Pb	209	199.049	6265029	0.46	200	99.5	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	879268	0.83	989663	88.85	70	120	
72	Ge	673931	0.26	739879	91.09	70	120	
115	In	6144786	1.91	6565136	93.60	70	120	
209	Bi	14509519	0.36	15222533	95.32	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/16/2016 17:50	Sample Name	LCSD-75104
Data Batch	160516.b	Comment	LCSDICPMS_TSDOD1
Data File Name	188_LS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	216.426	9354	1.13	200	108.2	80	120	
9	Be	45	212.684	12142	0.97	200	106.3	80	120	
11	B	45	212.325	3988	4.41	200	106.2	80	120	
23	Na	45	5194.382	3571044	0.53	1000	519.4	80	120	Fail
24	Mg	45	5110.510	1714436	0.64	1000	511.1	80	120	Fail
27	Al	45	979.320	117482	0.26	1000	97.9	80	120	
39	K	45	5080.396	1763607	0.78	1000	508.0	80	120	Fail
44	Ca	45	4739.837	91581	1.88	1000	474.0	80	120	Fail
47	Ti	45	199.433	25770	1.59	200	99.7	80	120	
51	V	45	205.748	912093	1.03	200	102.9	80	120	
52	Cr	45	206.480	1096723	0.66	200	103.2	80	120	
55	Mn	45	199.979	570579	0.47	200	100.0	80	120	
56	Fe	45	999.344	4560486	1.26	1000	99.9	80	120	
59	Co	72	210.802	1817306	0.87	200	105.4	80	120	
60	Ni	72	208.925	496761	0.22	200	104.5	80	120	
63	Cu	72	207.598	1364596	0.16	200	103.8	80	120	
66	Zn	72	206.258	219874	0.99	200	103.1	80	120	
75	As	72	205.548	185321	0.79	200	102.8	80	120	
78	Se	72	196.657	9990	0.84	200	98.3	80	120	
88	Sr	115	191.400	760364	0.45	200	95.7	80	120	
95	Mo	115	194.808	711841	0.48	200	97.4	80	120	
107	Ag	115	196.119	2254545	0.90	200	98.1	80	120	
111	Cd	115	197.057	326540	0.57	200	98.5	80	120	
118	Sn	115	202.138	689326	1.71	200	101.1	80	120	
121	Sb	115	197.646	1039393	1.00	200	98.8	80	120	
137	Ba	115	197.200	327227	0.21	200	98.6	80	120	
205	Tl	209	200.607	4691591	1.48	200	100.3	80	120	
208	Pb	209	199.945	6321709	0.55	200	100.0	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	887672	2.27	989663	89.69	70	120	
72	Ge	669090	0.15	739879	90.43	70	120	
115	In	6169843	3.20	6565136	93.98	70	120	
209	Bi	14575012	0.59	15222533	95.75	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/16/2016 17:56	Sample Name	1605071-53A SD
Data Batch	160516.b	Comment	SD ICPMS_TSDOD1
Data File Name	191_SD.d	Dilution	25

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	20.183	865	3.69	98.9	102.1	110	90	Good
9	Be	45	0.758	44	28.48	3.8	99.9	110	90	Good
11	B	45	38.615	812	9.25	177.0	109.1	110	90	Good
23	Na	45	2179.930	1487065	0.77	10853.8	100.4	110	90	Good
24	Mg	45	3538.431	1156768	1.42	17593.3	100.6	110	90	Good
27	Al	45	11876.356	1386222	0.65	59013.6	100.6	110	90	Good
39	K	45	4083.408	1389954	0.43	20156.4	101.3	110	90	Good
44	Ca	45	25548.076	479976	0.66	125427.9	101.8	110	90	Good
47	Ti	45	73.435	9246	0.43	359.6	102.1	110	90	Good
51	V	45	17.472	77464	0.54	88.1	99.1	110	90	Good
52	Cr	45	14.728	77896	0.88	73.0	100.9	110	90	Good
55	Mn	45	79.829	222393	1.36	389.4	102.5	110	90	Good
56	Fe	45	19080.842	84548612	0.25	90986.7	104.9	110	90	Good
59	Co	72	6.078	51050	1.18	29.2	103.9	110	90	Good
60	Ni	72	7.488	17670	0.81	36.5	102.6	110	90	Good
63	Cu	72	1.143	10487	2.59	5.5	103.1	110	90	Good
66	Zn	72	40.643	42350	1.90	195.8	103.8	110	90	Good
75	As	72	3.585	3281	2.26	17.7	101.3	110	90	Good
78	Se	72	1.180	125	13.73	5.4	109.4	110	90	Good
88	Sr	115	96.724	378414	0.70	499.3	96.9	110	90	Good
95	Mo	115	0.266	1002	7.94	1.4	95.4	110	90	Good
107	Ag	115	0.023	348	23.01	0.1	186.0	110	90	
111	Cd	115	0.034	64	31.18	0.2	112.0	110	90	
118	Sn	115	0.798	3779	3.89	5.1	78.9	110	90	
121	Sb	115	0.050	451	21.24	0.2	131.7	110	90	
137	Ba	115	26.183	42802	1.88	135.0	97.0	110	90	Good
205	Tl	209	0.117	2970	10.41	0.4	137.7	110	90	
208	Pb	209	3.448	111947	1.57	17.5	98.3	110	90	Good

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	864639	1.16	989663	87.37	70	120	
72	Ge	650517	0.67	739879	87.92	70	120	
115	In	6070614	0.34	6565136	92.47	70	120	
209	Bi	14367769	1.01	15222533	94.38	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/16/2016 18:17	Sample Name	1605071-53A PDS
Data Batch	160516.b	Comment	PDS ICPMS_TSDOD1
Data File Name	201_PDS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	299.530	12602	1.66	98.9	200	100.3	75	125	
9	Be	45	205.480	11427	1.26	3.8	200	100.8	75	125	
11	B	45	381.572	6875	0.38	177.0	200	102.3	75	125	
23	Na	45	15731.814	10440065	1.58	10853.8	5000	97.6	75	125	
24	Mg	45	22867.217	7469823	2.53	17593.3	5000	105.5	75	125	
27	Al	45	64658.101	7543925	1.12	59013.6	5000	112.9	75	125	
39	K	45	25711.946	8514482	0.22	20156.4	5000	111.1	75	125	
44	Ca	45	########	2446259	0.46	125427.9	5000	97.1	75	125	
47	Ti	45	557.449	70151	2.14	359.6	200	98.9	75	125	
51	V	45	288.642	1245711	0.55	88.1	200	100.3	75	125	
52	Cr	45	274.616	1420132	0.75	73.0	200	100.8	75	125	
55	Mn	45	575.449	1597709	0.40	389.4	200	93.0	75	125	
56	Fe	45	97102.927	430087547	1.29	90986.7	5000	122.3	75	125	
59	Co	72	228.797	1895552	0.56	29.2	200	99.8	75	125	
60	Ni	72	231.028	527844	0.52	36.5	200	97.3	75	125	
63	Cu	72	195.540	1235329	0.74	5.5	200	95.0	75	125	
66	Zn	72	388.674	397934	0.44	195.8	200	96.4	75	125	
75	As	72	217.689	188613	0.76	17.7	200	100.0	75	125	
78	Se	72	201.489	9835	1.03	5.4	200	98.0	75	125	
88	Sr	115	687.559	2602796	0.41	499.3	200	94.1	75	125	
95	Mo	115	192.436	669975	1.11	1.4	200	95.5	75	125	
107	Ag	115	176.982	1938519	0.78	0.1	200	88.5	75	125	
111	Cd	115	187.555	296143	0.83	0.2	200	93.7	75	125	
118	Sn	115	204.809	665385	0.52	5.1	200	99.9	75	125	
121	Sb	115	191.198	958126	0.20	0.2	200	95.5	75	125	
137	Ba	115	330.052	522018	0.49	135.0	200	97.5	75	125	
205	Tl	209	194.627	4378810	0.79	0.4	200	97.1	75	125	
208	Pb	209	209.523	6372901	0.88	17.5	200	96.0	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	864374	0.64	989663	87.34	70	120	
72	Ge	643068	1.44	739879	86.92	70	120	
115	In	5880658	3.30	6565136	89.57	70	120	
209	Bi	14021642	0.43	15222533	92.11	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 18:19	Sample Name	1605071-53A MS
Data Batch	160516.b	Comment	MS ICPMS_TSDOD1
Data File Name	202_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	308.595	12613	0.92	98.9	200	104.9	80	120	
9	Be	45	209.250	11306	0.87	3.8	200	102.7	80	120	
11	B	45	374.255	6554	1.62	177.0	200	98.6	80	120	
23	Na	45	15939.921	10276454	1.36	10853.8	1000	508.6	80	120	Fail
24	Mg	45	23014.948	7304144	1.86	17593.3	1000	542.2	80	120	Fail
27	Al	45	66648.950	7555516	2.01	59013.6	1000	763.5	80	120	Fail
39	K	45	25651.305	8252989	0.71	20156.4	1000	549.5	80	120	Fail
44	Ca	45	########	2320114	1.02	125427.9	1000	175.7	80	120	Fail
47	Ti	45	563.962	68956	0.49	359.6	200	102.2	80	120	
51	V	45	293.770	1231755	1.25	88.1	200	102.8	80	120	
52	Cr	45	274.475	1379018	1.11	73.0	200	100.7	80	120	
55	Mn	45	594.926	1604792	1.10	389.4	200	102.8	80	120	
56	Fe	45	95000.102	408813904	1.30	90986.7	1000	401.3	80	120	Fail
59	Co	72	229.114	1855863	1.71	29.2	200	99.9	80	120	
60	Ni	72	235.680	526494	1.03	36.5	200	99.6	80	120	
63	Cu	72	201.361	1243805	0.55	5.5	200	97.9	80	120	
66	Zn	72	399.014	399440	1.56	195.8	200	101.6	80	120	
75	As	72	219.944	186316	0.25	17.7	200	101.1	80	120	
78	Se	72	200.431	9566	0.26	5.4	200	97.5	80	120	
88	Sr	115	706.068	2577754	0.26	499.3	200	103.4	80	120	
95	Mo	115	187.664	630247	0.52	1.4	200	93.1	80	120	
107	Ag	115	192.357	2032087	0.56	0.1	200	96.1	80	120	
111	Cd	115	195.392	297553	0.85	0.2	200	97.6	80	120	
118	Sn	115	202.004	632934	0.66	5.1	200	98.5	80	120	
121	Sb	115	64.760	313042	0.79	0.2	200	32.3	80	120	Fail
137	Ba	115	429.321	654808	1.16	135.0	200	147.2	80	120	Fail
205	Tl	209	195.267	4334928	1.25	0.4	200	97.4	80	120	
208	Pb	209	211.624	6351126	0.89	17.5	200	97.0	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	839765	0.62	989663	84.85	70	120	
72	Ge	628707	0.64	739879	84.97	70	120	
115	In	5667651	1.50	6565136	86.33	70	120	
209	Bi	13837731	1.29	15222533	90.90	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/16/2016 18:21	Sample Name	1605071-53A MSD
Data Batch	160516.b	Comment	MSD ICPMS_TSDOD1
Data File Name	203_MSS.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	312.784	12601	0.80	98.9	200	107.0	80	120	
9	Be	45	205.879	10964	1.59	3.8	200	101.0	80	120	
11	B	45	389.221	6713	2.10	177.0	200	106.1	80	120	
23	Na	45	16296.448	10354763	1.38	10853.8	1000	544.3	80	120	Fail
24	Mg	45	23416.729	7324631	0.73	17593.3	1000	582.3	80	120	Fail
27	Al	45	66515.586	7431867	2.24	59013.6	1000	750.2	80	120	Fail
39	K	45	26303.800	8340229	1.42	20156.4	1000	614.7	80	120	Fail
44	Ca	45	########	2382698	0.24	125427.9	1000	709.3	80	120	Fail
47	Ti	45	550.353	66328	0.42	359.6	200	95.4	80	120	
51	V	45	291.860	1206166	0.78	88.1	200	101.9	80	120	
52	Cr	45	276.385	1368636	0.25	73.0	200	101.7	80	120	
55	Mn	45	603.095	1603413	0.39	389.4	200	106.9	80	120	
56	Fe	45	98689.312	418598792	1.03	90986.7	1000	770.3	80	120	Fail
59	Co	72	229.105	1825824	0.60	29.2	200	99.9	80	120	
60	Ni	72	236.759	520351	0.58	36.5	200	100.1	80	120	
63	Cu	72	201.871	1226801	0.87	5.5	200	98.2	80	120	
66	Zn	72	401.478	395393	0.72	195.8	200	102.8	80	120	
75	As	72	219.113	182613	0.12	17.7	200	100.7	80	120	
78	Se	72	200.156	9399	2.64	5.4	200	97.4	80	120	
88	Sr	115	692.136	2500189	1.14	499.3	200	96.4	80	120	
95	Mo	115	187.886	624354	0.02	1.4	200	93.2	80	120	
107	Ag	115	191.984	2006779	0.73	0.1	200	96.0	80	120	
111	Cd	115	191.752	288897	1.07	0.2	200	95.8	80	120	
118	Sn	115	201.590	625024	0.19	5.1	200	98.3	80	120	
121	Sb	115	65.168	311734	0.39	0.2	200	32.5	80	120	Fail
137	Ba	115	351.108	529883	0.52	135.0	200	108.0	80	120	
205	Tl	209	198.799	4289995	1.11	0.4	200	99.2	80	120	
208	Pb	209	213.166	6218209	0.73	17.5	200	97.8	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	827709	0.36	989663	83.64	70	120	
72	Ge	618540	0.50	739879	83.60	70	120	
115	In	5609453	2.38	6565136	85.44	70	120	
209	Bi	13452531	2.44	15222533	88.37	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 18:22	Sample Name	CCV8-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	204_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	217.071	8691	1.98	200	108.5	90	110	
9	Be	45	209.591	11086	0.59	200	104.8	90	110	
11	B	45	217.666	3784	4.20	200	108.8	90	110	
23	Na	45	5138.682	3273142	0.83	5000	102.8	90	110	
24	Mg	45	5094.892	1583302	0.76	5000	101.9	90	110	
27	Al	45	4949.710	549432	1.01	5000	99.0	90	110	
39	K	45	5067.389	1629970	0.95	5000	101.3	90	110	
44	Ca	45	4809.238	86073	1.65	5000	96.2	90	110	
47	Ti	45	202.801	24274	2.43	200	101.4	90	110	
51	V	45	203.029	833961	0.84	200	101.5	90	110	
52	Cr	45	203.781	1002690	0.81	200	101.9	90	110	
55	Mn	45	200.190	529115	1.02	200	100.1	90	110	
56	Fe	45	5203.833	21934996	2.16	5000	104.1	90	110	
59	Co	72	205.681	1676341	0.68	200	102.8	90	110	
60	Ni	72	204.373	459404	0.46	200	102.2	90	110	
63	Cu	72	205.669	1278115	0.49	200	102.8	90	110	
66	Zn	72	203.898	205488	0.61	200	101.9	90	110	
75	As	72	204.425	174242	0.24	200	102.2	90	110	
78	Se	72	199.208	9566	2.02	200	99.6	90	110	
88	Sr	115	191.552	720339	1.21	200	95.8	90	110	
95	Mo	115	192.399	665494	1.01	200	96.2	90	110	
107	Ag	115	198.179	2156401	0.68	200	99.1	90	110	
111	Cd	115	194.119	304492	0.48	200	97.1	90	110	
118	Sn	115	195.223	630237	0.46	200	97.6	90	110	
121	Sb	115	199.385	992480	0.39	200	99.7	90	110	
137	Ba	115	197.076	309611	0.96	200	98.5	90	110	
205	Tl	209	194.374	4391033	0.40	200	97.2	90	110	
208	Pb	209	193.592	5912909	0.27	200	96.8	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	822124	0.71	989663	83.07	70	120	
72	Ge	632554	0.47	739879	85.49	70	120	
115	In	5841340	3.11	6565136	88.98	70	120	
209	Bi	14080226	0.99	15222533	92.50	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 18:27	Sample Name	LCVL8-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	206LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.521	491	5.81	10	115.2	70	130	
9	Be	45	1.258	70	14.03	1	125.8	70	130	
11	B	45	29.502	639	4.85	20	147.5	70	130	Fail
23	Na	45	124.345	126077	2.38	100	124.3	70	130	
24	Mg	45	113.461	37009	7.99	100	113.5	70	130	
27	Al	45	140.685	16278	18.19	100	140.7	70	130	Fail
39	K	45	104.872	77480	2.08	100	104.9	70	130	
44	Ca	45	162.410	3190	21.96	100	162.4	70	130	Fail
47	Ti	45	5.521	683	2.97	5	110.4	70	130	
51	V	45	0.993	6328	8.96	1	99.3	70	130	
52	Cr	45	5.331	28773	0.10	5	106.6	70	130	
55	Mn	45	5.285	15158	2.92	5	105.7	70	130	
56	Fe	45	156.792	696607	20.79	100	156.8	70	130	Fail
59	Co	72	5.257	44412	2.08	5	105.1	70	130	
60	Ni	72	5.329	12752	0.48	5	106.6	70	130	
63	Cu	72	4.989	35204	1.26	5	99.8	70	130	
66	Zn	72	5.375	5877	4.72	5	107.5	70	130	
75	As	72	5.060	4598	3.88	5	101.2	70	130	
78	Se	72	5.407	334	6.57	5	108.1	70	130	
88	Sr	115	5.213	20409	4.20	5	104.3	70	130	
95	Mo	115	4.799	17210	0.05	5	96.0	70	130	
107	Ag	115	2.006	22664	0.95	2	100.3	70	130	
111	Cd	115	1.126	1836	5.35	1	112.6	70	130	
118	Sn	115	4.917	17485	1.48	5	98.3	70	130	
121	Sb	115	2.115	11077	4.55	2	105.8	70	130	
137	Ba	115	5.039	8217	3.61	5	100.8	70	130	
205	Tl	209	1.139	26973	4.27	1	113.9	70	130	
208	Pb	209	1.012	36688	6.02	1	101.2	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	847606	0.79	989663	85.65	70	120	
72	Ge	654071	0.41	739879	88.40	70	120	
115	In	6036873	1.64	6565136	91.95	70	120	
209	Bi	14617183	1.77	15222533	96.02	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 18:29	Sample Name	CCB8-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	207_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.494	37	29.2	2	5	
9	Be	45	0.146	10	47.8	0.4	0.3	
11	B	45	9.616	294	8.3	10	10	
23	Na	45	25.846	62342	1.4	50	100	
24	Mg	45	5.066	2275	65.7	50	100	
27	Al	45	21.968	2680	57.0	50	10	FailAq
39	K	45	8.951	46562	0.7	50	100	
44	Ca	45	33.489	812	59.2	50	100	
47	Ti	45	0.192	26	49.4	4	3	
51	V	45	-0.075	1816	21.0	4	3	
52	Cr	45	0.093	2249	15.8	2	2	
55	Mn	45	0.028	851	35.9	2	3	
56	Fe	45	29.671	143637	58.9	50	50	
59	Co	72	0.069	698	43.1	2	3	
60	Ni	72	0.174	786	18.9	2	3	
63	Cu	72	-0.141	2330	10.6	2	2	
66	Zn	72	0.316	614	8.2	4	2	
75	As	72	0.022	162	11.2	2	2	
78	Se	72	0.142	75	5.7	1	2	
88	Sr	115	0.224	1007	61.7	4	3	
95	Mo	115	0.077	319	65.6	2	2	
107	Ag	115	0.045	598	54.9	0.4	1	
111	Cd	115	0.060	107	43.0	0.4	0.3	
118	Sn	115	-0.038	972	19.2	4	3	
121	Sb	115	0.145	936	37.3	2	0.8	
137	Ba	115	0.117	220	63.7	2	3	
205	Tl	209	0.109	2824	27.2	2	0.5	
208	Pb	209	-0.006	4431	22.9	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	849034	1.40	989663	85.79	70	120	
72	Ge	658317	0.65	739879	88.98	70	120	
115	In	6023431	0.85	6565136	91.75	70	120	
209	Bi	14490985	1.44	15222533	95.19	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/16/2016 18:51	Sample Name	CCV9-160516
Data Batch	160516.b	Comment	CCV ICPMS_TW
Data File Name	218_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	213.687	8601	1.68	200	106.8	90	110	
9	Be	45	210.421	11188	1.47	200	105.2	90	110	
11	B	45	221.927	3875	1.45	200	111.0	90	110	Fail
23	Na	45	5078.194	3252299	0.32	5000	101.6	90	110	
24	Mg	45	5012.323	1565994	0.39	5000	100.2	90	110	
27	Al	45	4899.318	546714	1.00	5000	98.0	90	110	
39	K	45	5071.714	1639996	0.43	5000	101.4	90	110	
44	Ca	45	4834.518	86981	0.63	5000	96.7	90	110	
47	Ti	45	199.759	24039	1.15	200	99.9	90	110	
51	V	45	203.382	839924	0.81	200	101.7	90	110	
52	Cr	45	203.141	1004906	0.43	200	101.6	90	110	
55	Mn	45	197.856	525743	0.71	200	98.9	90	110	
56	Fe	45	5087.905	21562741	0.26	5000	101.8	90	110	
59	Co	72	206.484	1677647	0.83	200	103.2	90	110	
60	Ni	72	204.471	458192	0.91	200	102.2	90	110	
63	Cu	72	205.512	1273165	0.51	200	102.8	90	110	
66	Zn	72	203.486	204438	0.21	200	101.7	90	110	
75	As	72	204.877	174084	0.19	200	102.4	90	110	
78	Se	72	200.033	9576	0.84	200	100.0	90	110	
88	Sr	115	189.674	720787	1.13	200	94.8	90	110	
95	Mo	115	190.352	665218	0.42	200	95.2	90	110	
107	Ag	115	195.760	2151943	0.31	200	97.9	90	110	
111	Cd	115	191.441	303397	0.64	200	95.7	90	110	
118	Sn	115	192.350	627291	0.66	200	96.2	90	110	
121	Sb	115	195.566	983471	0.43	200	97.8	90	110	
137	Ba	115	195.752	310670	0.16	200	97.9	90	110	
205	Tl	209	195.609	4391889	0.58	200	97.8	90	110	
208	Pb	209	193.568	5876364	0.63	200	96.8	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	826513	0.88	989663	83.51	70	120	
72	Ge	630588	0.45	739879	85.23	70	120	
115	In	5898037	1.62	6565136	89.84	70	120	
209	Bi	13995254	1.38	15222533	91.94	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/16/2016 18:55	Sample Name	LCVL9-160516
Data Batch	160516.b	Comment	LCVLICPMS_TW
Data File Name	220LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.985	465	2.27	10	109.9	70	130	
9	Be	45	1.146	64	7.75	1	114.6	70	130	
11	B	45	25.219	560	6.44	20	126.1	70	130	
23	Na	45	114.350	118595	1.84	100	114.4	70	130	
24	Mg	45	100.628	32613	2.30	100	100.6	70	130	
27	Al	45	97.887	11273	1.62	100	97.9	70	130	
39	K	45	100.969	75584	1.65	100	101.0	70	130	
44	Ca	45	102.701	2070	5.20	100	102.7	70	130	
47	Ti	45	4.724	580	7.34	5	94.5	70	130	
51	V	45	0.864	5730	1.43	1	86.4	70	130	
52	Cr	45	5.144	27595	0.32	5	102.9	70	130	
55	Mn	45	4.733	13541	1.92	5	94.7	70	130	
56	Fe	45	98.886	440677	0.92	100	98.9	70	130	
59	Co	72	5.131	42820	1.16	5	102.6	70	130	
60	Ni	72	5.150	12187	1.96	5	103.0	70	130	
63	Cu	72	4.877	34066	2.03	5	97.5	70	130	
66	Zn	72	4.988	5407	0.16	5	99.8	70	130	
75	As	72	5.006	4495	2.84	5	100.1	70	130	
78	Se	72	5.181	319	14.40	5	103.6	70	130	
88	Sr	115	4.796	18654	1.59	5	95.9	70	130	
95	Mo	115	4.789	17056	1.01	5	95.8	70	130	
107	Ag	115	1.910	21434	1.26	2	95.5	70	130	
111	Cd	115	0.912	1478	10.96	1	91.2	70	130	
118	Sn	115	4.624	16394	2.04	5	92.5	70	130	
121	Sb	115	1.984	10328	3.20	2	99.2	70	130	
137	Ba	115	4.890	7918	1.52	5	97.8	70	130	
205	Tl	209	1.010	23545	1.60	1	101.0	70	130	
208	Pb	209	0.921	33200	0.96	1	92.1	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	840578	0.23	989663	84.94	70	120	
72	Ge	646097	0.65	739879	87.32	70	120	
115	In	5994768	0.82	6565136	91.31	70	120	
209	Bi	14351976	0.52	15222533	94.28	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/16/2016 19:11	Sample Name	CCB9-160516
Data Batch	160516.b	Comment	CCB ICPMS_TW
Data File Name	228_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.216	24	8.6	2	5	
9	Be	45	0.013	2	173.2	0.4	0.3	
11	B	45	2.796	170	2.0	10	10	
23	Na	45	14.825	53228	0.6	50	100	
24	Mg	45	1.497	1097	48.4	50	100	
27	Al	45	11.145	1393	46.9	50	10	FailAq
39	K	45	8.291	44695	0.7	50	100	
44	Ca	45	15.708	468	40.4	50	100	
47	Ti	45	0.087	12	31.5	4	3	
51	V	45	-0.134	1511	1.3	4	3	
52	Cr	45	0.010	1762	7.4	2	2	
55	Mn	45	-0.085	524	26.1	2	3	
56	Fe	45	11.572	62879	50.0	50	50	
59	Co	72	0.003	133	52.0	2	3	
60	Ni	72	0.072	526	8.3	2	3	
63	Cu	72	-0.232	1680	2.7	2	2	
66	Zn	72	0.173	448	1.9	4	2	
75	As	72	-0.044	99	14.0	2	2	
78	Se	72	0.207	75	0.8	1	2	
88	Sr	115	0.065	376	53.3	4	3	
95	Mo	115	0.013	87	16.8	2	2	
107	Ag	115	0.009	182	29.4	0.4	1	
111	Cd	115	0.009	23	14.3	0.4	0.3	
118	Sn	115	-0.187	462	8.1	4	3	
121	Sb	115	0.008	223	19.6	2	0.8	
137	Ba	115	0.068	137	51.9	2	3	
205	Tl	209	0.010	499	7.0	2	0.5	
208	Pb	209	-0.078	2105	12.9	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	818678	0.55	989663	82.72	70	120	
72	Ge	633690	0.50	739879	85.65	70	120	
115	In	5856719	0.63	6565136	89.21	70	120	
209	Bi	14267833	1.92	15222533	93.73	70	120	

ICP-MS4_160520C
For

DHL Work Order
1605097

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

PROJECT AND BATCH NUMBERS ARE LISTED ON THE RUN LOG	Run ID: ICP-MS4_160520C SOP: MET-ICPMS-01			
Review Item	**Yes**	**No**	**N/A**	**2nd Level Review**
Data Folder Contents 1. Is the Prep Batch Report included? ***Check the Prep Start/End Dates, Sample Amounts, Bottle #s***	X			
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			x
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**		2nd Level Review
Tune	Before ICAL	RSD ≤ 5% / Peak Width@10% <0.9amu	X			
P/A Factor	Before ICAL	Increasing trend	X			x
Initial Calibration Curve (ICAL) (Blank + 4 Standards)	Prior to samples and when ICV fails	R ≥ 0.995 (DoD) R ≥ 0.998 (6020A)	X			
Review Item	**Frequency**	**Limits**	**Pass**	**Fail**	**N/A**	**Review**
ICSA (N/A for Method 200.8+U)	After calibration & every 12 hours	< RL (except Mn & Zn)	X			x
ICSAB (N/A for Method 200.8+U)	After calibration & every 12 hours	80-120% (correct for ICSA result)	X			
Note: LCVLs and ICSA/ICSAB are N/A for Method 200.8 or project-specific exceptions						
ICV (Second Source Verification)	After ICAL	90-110%	X			
ICB	After calibration	< MDL	X			
CCV	Every 10 samples	90-110%	X			
CCB	Every 10 samples	< MDL (ALL + DoD)	X			
Internal Standards	Every sample and QC sample	> 70% (6020A) 60-125% (200.8) 30-120% (DoD)	X			
LCVL (6020A test code)	After ICAL, every 10 samples and end of run	70-130%	X			
LCVL (All metals test codes except 200.8/6020A)	After ICAL and end of run	70-130%			X	x
Method Blank (MB)	Every Batch	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			
Filter/TCLP/SPLP Blank	Filter-Dissolved only TCLP / SPLP	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit			X	
Lab Control Sample (LCS)	Every Batch	80-120%	X			
Lab Control Sample Dup (LCSD)	Every Batch	80-120%	X			
LCSD - RPD	Every LCS/LCSD	15 (H2O) / 20 (Soil)	X			
Matrix Spike/ Matrix Spike Duplicate (MS/MSD)	Every Batch	80-120%		X		
MSD - RPD	Every MS/MSD	15 (H2O) / 20 (Soil)	X			
Dilution Test (SD) - RPD	Every Batch	10	X			
Post Digestion Spike (PDS)	Every Batch	75-125 / 80-120 (6020A)	X			

Lab Data Review Check List
EPA Method 6020 / 6020A / 200.8 - Trace Metals by ICP-MS

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	6 months	X			x
2. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	All results > high point of ICAL must be diluted	X			
3. Are ALL reported analytes and reported results > MDL highlighted by the analyst?		X	**Confirm with analyst if LIMS result does not match Labcore**		

VARIANCE REPORT

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.

NON-CONFORMANCES / VARIANCE	Criteria	Yes	No	N/A	2nd Level
1. Are all non-conformances and corrective actions included and noted?	All deviations from the method and SOP that affect data quality	X			x
2. Does the variance require approval by the Technical Director/General Manager/QA Manager?		X			

TECHNICAL DIRECTOR / QA MANAGER APPROVAL
SIGNATURE AND DATE STAMP:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
__ CCV out of control (± 10%)	__ Carryover from previous run	__ Reanalyze QC to confirm
__ CCB out of control (> MDL / >½ RL)	__ Cross contamination	__ Recalibrate
__ MB out of control (> RL / >½ RL)	__ Lab Artifact	__ Reprep/Reanalyze sample
__ LCS __ LCSD out of control (± 20%)	__ Prep Spike error (describe)	__ Reprep/Reanalyze Batch
__ MS __ MSD out of control (± 20%)	__ Matrix Effect	__ Reanalyze Batch/Sample/QC
__ RPD out of control for MS/MSD (15/25)	__ High Levels of Target Metals	__ Verify reagents are clean
__ Internal Standard(s) out of control (see Method)	__ Insufficient sample for QC	__ Reanalyze sample to confirm
__ No MS/MSD prepared - LCS/LCSD used instead	__ Digestion/Prep Error	__ Sample results ND w/ dilution
__ Missing QC (other than MS/MSD)	__ Analytical Error	__ Client notified and approved
__ QC sample(s) was mis-spiked	__ Client Request	__ Flag Data/ Case Narative
__ ICSA/ICSAB missing or out of control (± 20%)		__ Accept data
__ LCVL out of control (± 30%)		__ Cal Std high and sample ND
__ Other (describe below)	__ Other (describe below)	__ Other (describe below)

General Comments and Impact on Data: See Run Log

Analyst: _____ Date of Completion: 05/23/2016

Second-Level Review: Janice Whitt Date Stamp: 5/23/2016

REVIEWED BY
By Janice Whitt at 2:57:44 PM, 5/23/2016

DHL Analytical, Inc.

Run ID: **ICP-MS4_160520C** **Run No.:** 85935

Analytical Run Date: 5/20/2016 **InstrumentID:** ICP-MS4

Analyst: Ryan Oliver

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
BLANK STD 1	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 10:52:00 AM		
L2-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 10:54:00 AM		
L-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 10:56:00 AM		
10X-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 10:58:00 AM		
5X-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 11:00:00 AM		
2X-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 11:02:00 AM		
H-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 11:04:00 AM		
H2-160520	1	ICPMS_TWDOD	CAL	R85935	5/20/2016 11:06:00 AM		
ICSA-160520	1	ICPMS_TWDOD	ICSA	R85935	5/20/2016 11:14:00 AM		
ICSAB-160520	1	ICPMS_TWDOD	ICSB	R85935	5/20/2016 11:16:00 AM		
ICV-160520	1	ICPMS_TWDOD	ICV	R85935	5/20/2016 11:28:00 AM		
LCVL-160520	1	ICPMS_TWDOD	LCVL	R85935	5/20/2016 11:40:00 AM		
ICB-160520	1	ICPMS_TWDOD	ICB	R85935	5/20/2016 11:45:00 AM		
CCV2-160520	1	ICPMS_TWDOD	CCV	R85935	5/20/2016 1:06:00 PM		
LCVL2-160520	1	ICPMS_TWDOD	LCVL	R85935	5/20/2016 1:11:00 PM		
CCB2-160520	1	ICPMS_TWDOD	CCB	R85935	5/20/2016 1:20:00 PM		
MB-75180	1	ICPMS_TWDOD	MBLK	75180	5/20/2016 1:22:00 PM		
LCS-75180	1	ICPMS_TWDOD	LCS	75180	5/20/2016 1:24:00 PM		
LCSD-75180	1	ICPMS_TWDOD	LCSD	75180	5/20/2016 1:26:00 PM		
1605097-27A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:30:00 PM		
1605097-27A SD	5	ICPMS_TWDOD	SD	75180	5/20/2016 1:32:00 PM		
1605047-31A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:34:00 PM		
1605047-32A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:36:00 PM		
1605047-38A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:38:00 PM		
1605071-28A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:40:00 PM		
1605071-29A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:42:00 PM		
1605074-33A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:44:00 PM		
1605074-34A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:46:00 PM		
1605074-35A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:48:00 PM		
1605096-36A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 1:50:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160520-	10 PPM Ag+Sb PDS		11/18/2016
MET-PDS-160520-	10 PPM CUSTOM PDS SOLUTI		11/18/2016
MET-PDS-160520-	250 PPM Naturals+Al+Fe PDS		11/18/2016

DHL Analytical, Inc.

Run ID: ICP-MS4_160520C **Run No.:** 85935

1605097-27A PDS	1	ICPMS_TWDOD	PDS	75180	5/20/2016 1:52:00 PM		
1605097-27A MS	1	ICPMS_TWDOD	MS	75180	5/20/2016 1:54:00 PM		S-flag Pb- Low
1605097-27A MSD	1	ICPMS_TWDOD	MSD	75180	5/20/2016 1:56:00 PM		
CCV3-160520	1	ICPMS_TWDOD	CCV	R85935	5/20/2016 1:58:00 PM		
LCVL3-160520	1	ICPMS_TWDOD	LCVL	R85935	5/20/2016 2:04:00 PM		
CCB3-160520	1	ICPMS_TWDOD	CCB	R85935	5/20/2016 2:06:00 PM		
1605096-37A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:08:00 PM		
1605096-44A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:10:00 PM		
1605097-30A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:12:00 PM		
1605098-42A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:14:00 PM		
1605121-46A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:16:00 PM		
1605121-47A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:18:00 PM		
1605135-46A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:20:00 PM		
1605144-16A	1	ICPMS_TWDOD	SAMP	75180	5/20/2016 2:22:00 PM		
CCV4-160520	1	ICPMS_TWDOD	CCV	R85935	5/20/2016 2:24:00 PM		
LCVL4-160520	1	ICPMS_TWDOD	LCVL	R85935	5/20/2016 2:41:00 PM		
CCB4-160520	1	ICPMS_TWDOD	CCB	R85935	5/20/2016 2:48:00 PM		

Std ID	Std Name	Type	Exp. Date
MET-CCV-160511	ICPMS CCV 200/5000 PPB		08/10/2016
MET-H2CAL-1605	ICPMS High Cal2 2000ppb std 8		08/10/2016
MET-HCAL-16051	ICPMS High Cal 500ppb/10ppm s		08/10/2016
MET-ICV-160511	ICPMS ICV 100 ppb		08/10/2016
MET-IS-160511	INTERNAL STANDARD 1 PPM		11/09/2016
MET-L2CAL-16051	ICPMS Low Cal2 1/20ppb std 2		08/10/2016
MET-LCAL-160511	ICPMS Low Cal 10/200ppb std 3		08/10/2016
MET-LCAL10X-16	ICPMS Low Cal 10/200ppb std 4		08/10/2016
MET-LCAL5X-160	ICPMS Low Cal 10/200ppb std 5		08/09/2016
MET-LCVLSPIKE-	LCVL METALS SPIKE (100/500		11/07/2016
MET-MCAL-16051	ICPMS Mid Cal 250/5000ppb std		08/10/2016
MET-PA-160421	ICPMS PA FACTOR SOLUTION		10/20/2016
MET-PDS-160520-	10 PPM Ag+Sb PDS		11/18/2016
MET-PDS-160520-	10 PPM CUSTOM PDS SOLUTI		11/18/2016
MET-PDS-160520-	250 PPM Naturals+Al+Fe PDS		11/18/2016

Sample List

Batch Folder C:\Agilent\ICPMH\1\DATA\160520.b

Acquisition Order

#	Sequence Flow
1	Calibration Standards
2	Unknown Samples
3	Blank Samples

Calibration Standards:

#	Sample Type	Sample Name	Comment	Vial#	File Name
1	CCB		CAL ICPMS_TW	1101	
2	CCB		CAL ICPMS_TW	1101	
3	CCB		CAL ICPMS_TW	1101	
4	CCB		CAL ICPMS_TW	1102	
5	CCB		CAL ICPMS_TW	1102	
6	CCB		CAL ICPMS_TW	1102	
7	CCB		CAL ICPMS_TW	1102	
8	CCB		CAL ICPMS_TW	1103	
9	CCB		CAL ICPMS_TW	1103	
10	CCB		CAL ICPMS_TW	1103	
11	CCB		CAL ICPMS_TW	1103	
12	CalBlk	BLANK STD 1	CAL ICPMS_TW	2101	
13	CalStd	L2-160520	CAL ICPMS_TW	2102	
14	CalStd	L-160520	CAL ICPMS_TW	2103	
15	CalStd	10X-160520	CAL ICPMS_TW	2104	
16	CalStd	5X-160520	CAL ICPMS_TW	2105	
17	CalStd	2X-160520	CAL ICPMS_TW	2106	
18	CalStd	H-160520	CAL ICPMS_TW	2107	
19	CalStd	H2-160520	CAL ICPMS_TW	2108	
20	ICB	BLANK	CCB ICPMS_TW	1101	

#	Level	Dilution	Skip
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12	1		
13	2		
14	3		
15	4		
16	5		
17	6		
18	7		
19	8		

Sample List

#	Sample Type	Sample Name	Comment	Vial#	File Name
20					
21	ICB	BLANK	CCB ICPMS_TW	1102	
22	ICB	BLANK	CCB ICPMS_TW	1103	
23	ICSA	ICSA-160520	ICSAICPMS_TW	2109	
24	ICSB	ICSAB-160520	ICSBICPMS_TW	2110	
25	ICB	BLANK	CCB ICPMS_TW	1101	
26	ICB	BLANK	CCB ICPMS_TW	1102	
27	ICB	BLANK	CCB ICPMS_TW	1103	
28	ICV	ICV-160520	ICV ICPMS_TW	2111	
29	ICB	ICB-160520	ICB ICPMS_TW	1101	
30	ICB	ICB-160520	ICB ICPMS_TW	1103	
31	LLICV	LCVL-160520	LCVLICPMS_TW	2112	
32	ICB	ICB-160520	ICB ICPMS_TW	1102	
33	ICB	ICB-160520	ICB ICPMS_TW	1103	
34	PB_W	MB-75206	MBLK200.8_EPA	2201	
35	LCS_W	LCS-75206	LCS 200.8_EPA	2202	
36	LCS_W	LCSD-75206	LCSD200.8_EPA	2203	
37	CCB	RINSE	CCB ICPMS_TW	1101	
38	AllRef	1605161-13A	SAMP200.8_EPA	2204	
39	SD	1605161-13A SD	SD 200.8_EPA	2205	
40	SAMP_W	1605161-01A	SAMP200.8_EPA	2206	

#	Level	Dilution	Skip
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
33			
34		1	
35		1	
36		1	
37			
38		1	
39		5	
40		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
41	SAMP_W	1605161-02A	SAMP200.8_EPA	2207	
42	SAMP_W	1605161-03A	SAMP200.8_EPA	2208	
43	SAMP_W	1605161-04A	SAMP200.8_EPA	2209	
44	SAMP_W	1605161-05A	SAMP200.8_EPA	2210	
45	SAMP_W	1605161-06A	SAMP200.8_EPA	2211	

Sample List

46	SAMP_W	1605161-07A	SAMP200.8_EPA	2212
47	SAMP_W	1605161-08A	SAMP200.8_EPA	2301
48	SAMP_W	1605161-09A	SAMP200.8_EPA	2302
49	PDS	1605161-13A PDS	PDS 200.8_EPA	2303
50	MS_W	1605161-13A MS	MS 200.8_EPA	2304
51	MS_W	1605161-13A MSD	MSD 200.8_EPA	2305
52	CCV	CCV1-160520	CCV ICPMS_TW	1207
53	CCB	CCB1-160520	CCB ICPMS_TW	1102
54	LLCCV	LCVL1-160520	LCVLICPMS_TW	2112
55	CCB	CCB1-160520	CCB ICPMS_TW	1103
56	SAMP_W	1605161-10A	SAMP200.8_EPA	2306
57	SAMP_W	1605161-11A	SAMP200.8_EPA	2307
58	SAMP_W	1605161-12A	SAMP200.8_EPA	2308
59	SAMP_W	1605161-13A	SAMP200.8_EPA	2309
60	SAMP_W	1605161-14A	SAMP200.8_EPA	2310

#	Level	Dilution	Skip
41		1	
42		1	
43		1	
44		1	
45		1	
46		1	
47		1	
48		1	
49		1	
50		1	
51		1	
52			
53			
54			
55			
56		1	
57		1	
58		1	
59		1	
60		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
61	SAMP_W	1605161-15A	SAMP200.8_EPA	2311	
62	SAMP_W	1605161-16A	SAMP200.8_EPA	2312	
63	SAMP_W	1605161-17A	SAMP200.8_EPA	2401	
64	SAMP_W	1605161-18A	SAMP200.8_EPA	2402	
65	SAMP_W	1605161-19A	SAMP200.8_EPA	2403	
66	CCV	CCV2-160520	CCV ICPMS_TW	1207	
67	CCB	CCB2-160520	CCB ICPMS_TW	1102	
68	LLCCV	LCVL2-160520	LCVLICPMS_TW	2112	
69	CCB	CCB2-160520	CCB ICPMS_TW	1103	
70	PB_W	MB-75180	MBLKICPMS_TWDOD	3101	
71	LCS_W	LCS-75180	LCS ICPMS_TWDOD	3102	
72	LCS_W	LCSD-75180	LCSDICPMS_TWDOD	3103	
73	CCB	RINSE	CCB ICPMS_TW	1101	

Sample List

74	AllRef	1605097-27A	SAMPICPMS_TWDOD	3104
75	SD	1605097-27A SD	SD ICPMS_TWDOD	3105
76	SAMP_W	1605047-31A	SAMPICPMS_TWDOD	3106
77	SAMP_W	1605047-32A	SAMPICPMS_TWDOD	3107
78	SAMP_W	1605047-38A	SAMPICPMS_TWDOD	3108
79	SAMP_W	1605071-28A	SAMPICPMS_TWDOD	3109
80	SAMP_W	1605071-29A	SAMPICPMS_TWDOD	3110

#	Level	Dilution	Skip
61		1	
62		1	
63		1	
64		1	
65		1	
66			
67			
68			
69			
70		1	
71		1	
72		1	
73			
74		1	
75		5	
76		1	
77		1	
78		1	
79		1	
80		1	

#	Sample Type	Sample Name	Comment	Vial#	File Name
81	SAMP_W	1605074-33A	SAMPICPMS_TWDOD	3111	
82	SAMP_W	1605074-34A	SAMPICPMS_TWDOD	3112	
83	SAMP_W	1605074-35A	SAMPICPMS_TWDOD	3201	
84	SAMP_W	1605096-36A	SAMPICPMS_TWDOD	3202	
85	PDS	1605097-27A PDS	PDS ICPMS_TWDOD	3203	
86	MS_W	1605097-27A MS	MS ICPMS_TWDOD	3204	
87	MS_W	1605097-27A MSD	MSD ICPMS_TWDOD	3205	
88	CCV	CCV3-160520	CCV ICPMS_TW	1207	
89	CCB	CCB3-160520	CCB ICPMS_TW	1102	
90	LLCCV	LCVL3-160520	LCVLICPMS_TW	2512	
91	CCB	CCB3-160520	CCB ICPMS_TW	1103	
92	SAMP_W	1605096-37A	SAMPICPMS_TWDOD	3206	
93	SAMP_W	1605096-44A	SAMPICPMS_TWDOD	3207	
94	SAMP_W	1605097-30A	SAMPICPMS_TWDOD	3208	
95	SAMP_W	1605098-42A	SAMPICPMS_TWDOD	3209	
96	SAMP_W	1605121-46A	SAMPICPMS_TWDOD	3210	
97	SAMP_W	1605121-47A	SAMPICPMS_TWDOD	3211	
98	SAMP_W	1605135-46A	SAMPICPMS_TWDOD	3212	
99	SAMP_W	1605144-16A	SAMPICPMS_TWDOD	2501	
100	CCV	CCV4-160520	CCV ICPMS_TW	1207	

Sample List

#	Level	Dilution	Skip
81		1	
82		1	
83		1	
84		1	
85		1	
86		1	
87		1	
88			
89			
90			
91			
92		1	
93		1	
94		1	
95		1	
96		1	
97		1	
98		1	
99		1	
100			

#	Sample Type	Sample Name	Comment	Vial#	File Name
101	CCB	CCB4-160520	CCB ICPMS_TW	1102	
102	LLCCV	LCVL4-160520	LCVLICPMS_TW	2512	
103	CCB	CCB4-160520	CCB ICPMS_TW	1103	
104	PB_W	MB-75233	MBLKICPMS_TW	3301	
105	LCS_W	LCS-75233	LCS ICPMS_TW	3302	
106	LCS_W	LCSD-75233	LCSDICPMS_TW	3303	
107	CCB	RINSE	CCB ICPMS_TW	1101	
108	AllRef	1605172-04C	SAMPICPMS_TW	3304	
109	SD	1605172-04C SD	SD ICPMS_TW	3305	
110	SAMP_W	1605169-01C	SAMPICPMS_TW	3306	
111	SAMP_W	1605183-01C	SAMP6020A_W	3307	
112	SAMP_W	1605173-01E	SAMPICPMS_TW	3308	
113	SAMP_W	1605173-02E	SAMPICPMS_TW	3309	
114	SAMP_W	1605173-03E	SAMPICPMS_TW	3310	
115	SAMP_W	1605173-04E	SAMPICPMS_TW	3311	
116	SAMP_W	1604114-25B	SAMPICPMS_TW	3312	
117	SAMP_W	1604114-26B	SAMPICPMS_TW	3401	
118	SAMP_W	1604114-27B	SAMPICPMS_TW	3402	
119	PDS	1605172-04C PDS	PDS ICPMS_TW	3403	
120	MS_W	1605172-04C MS	MS ICPMS_TW	3404	

#	Level	Dilution	Skip
101			
102			
103			
104		1	
105		1	
106		1	
107			

Sample List

108		1
109		5
110		1
111		1
112		1
113		1
114		1
115		1
116		1
117		1
118		1
119		1
120		1

#	Sample Type	Sample Name	Comment	Vial#	File Name
121	MS_W	1605172-04C MSD	MSD ICPMS_TW	3405	
122	CCV	CCV5-160520	CCV ICPMS_TW	1207	
123	CCB	CCB5-160520	CCB ICPMS_TW	1102	
124	CCB	CCB5-160520	CCB ICPMS_TW	1102	
125	CCB	CCB5-160520	CCB ICPMS_TW	1102	
126	CCB	CCB5-160520	CCB ICPMS_TW	1103	
127	CCB	CCB5-160520	CCB ICPMS_TW	1103	
128	CCB	CCB5-160520	CCB ICPMS_TW	1103	
129	LLCCV	LCVL5-160520	LCVLICPMS_TW	2511	
130	CCB	CCB5-160520	CCB ICPMS_TW	1103	
131	SAMP_W	1605172-01C	SAMPICPMS_TW	3406	
132	SAMP_W	1605172-02C	SAMPICPMS_TW	3407	
133	SAMP_W	1605172-03C	SAMPICPMS_TW	3408	
134	SAMP_W	1605181-01A	SAMPICPMS_TW	3409	
135	CCV	CCV6-160520	CCV ICPMS_TW	1207	
136	CCB	CCB6-160520	CCB ICPMS_TW	1102	
137	CCB	CCB6-160520	CCB ICPMS_TW	1102	
138	CCB	CCB6-160520	CCB ICPMS_TW	1103	
139	CCB	CCB6-160520	CCB ICPMS_TW	1103	
140	LLCCV	LCVL6-160520	LCVLICPMS_TW	2511	

#	Level	Dilution	Skip
121		1	
122			
123			
124			
125			
126			
127			
128			
129			
130			
131		1	
132		1	
133		1	
134		1	
135			

Sample List

136
137
138
139
140

#	Sample Type	Sample Name	Comment	Vial#	File Name
141	CCB	CCB6-160520	CCB ICPMS_TW	1102	
142	CCB	CCB6-160520	CCB ICPMS_TW	1102	
143	CCB	CCB6-160520	CCB ICPMS_TW	1102	
144	CCB	CCB6-160520	CCB ICPMS_TW	1103	
145	CCB	CCB6-160520	CCB ICPMS_TW	1103	
146	CCB	CCB6-160520	CCB ICPMS_TW	1103	

#	Level	Dilution	Skip
141			
142			
143			
144			
145			
146			

Unknown Samples:

Blank Samples:

Periodic Block

#	Block Name	Period	Unit	Reset By

Sublist

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 8:30:00 AM**
Digestion:
Prep End Date:

Prep Batch **75180** Prep Code: **3005ADOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/mL**

Equipment List

- Hot Block #4
- Thermometer #71
- Pipette #P-09-Spikes
- Pipette #P-01 Samples

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605047-31A	Equip Blank		50	50	1.000	1 of 1	
1605047-32A	Equip Blank		50	50	1.000	1 of 1	
1605047-38A	Equip Blank		50	50	1.000	1 of 1	
1605071-28A	Equip Blank		50	50	1.000	1 of 1	
1605071-29A	Equip Blank		50	50	1.000	1 of 1	
1605074-33A	Equip Blank		50	50	1.000	1 of 1	
1605074-34A	Equip Blank		50	50	1.000	1 of 1	
1605074-35A	Equip Blank		50	50	1.000	1 of 1	
1605096-36A	Equip Blank		50	50	1.000	1 of 1	
1605096-37A	Equip Blank		50	50	1.000	1 of 1	
1605096-44A	Equip Blank		50	50	1.000	1 of 1	
1605097-27A	Equip Blank		50	50	1.000	1 of 1	MS + MSD
1605097-30A	Equip Blank		50	50	1.000	1 of 1	
1605098-42A	Equip Blank		50	50	1.000	1 of 1	
1605121-46A	Equip Blank		50	50	1.000	1 of 1	
1605121-47A	Equip Blank		50	50	1.000	1 of 1	
1605135-46A	Equip Blank		50	50	1.000	1 of 1	
1605144-16A	Equip Blank		50	50	1.000	1 of 1	
LCS-75180	Aqueous		50	50	1.000	of	
LCSD-75180	Aqueous		50	50	1.000	of	
MB-75180	Aqueous		50	50	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9641	Hydrochloric Acid (trace metal grade)	1	ml	09/22/2025
10056	Digestion Vessels	1	ml	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	1	ml	01/10/2026

9:54 - 15:33

REVIEWED BY
By Janice Whitt at 2:45:04 PM, 5/23/2016

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.1	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	0.2	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	0.2	08/09/2016

5/19/16

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	CVD	**BALANCE #:**	26	
TEST DATE:	05/19/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**		
PIPETTER LAB ID:	P-01, P-09	**WATER TEMP (°C):**	**21-23°C**	
TEST VOLUME:	See Below	**WATER DENSITY:**	**0.998**	**(0.9980-0.9976)**

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE	**% TEST VOL = Volume of H2O at °C/Test Volume * 100**
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.	**%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100**
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.	
4) DETERMINE TOTAL WT.	
5) CALCULATE VOLUME OF H2O AT °C (in mL)	**VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY**

					BIAS	PRECISION
PIPETTE ID: P-01	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	5.00	4.9999	4.9899	99.80	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		4.9998	4.9898	99.80		
3		4.9952	4.9852	99.70		
AVERAGE (MEAN)		4.998	4.988	99.77		0.054
						PASS

PIPETTE ID: P-09	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	0.20	0.2007	0.2003	100.15	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.2025	0.2021	101.05		
3		0.2027	0.2023	101.15		
AVERAGE (MEAN)		0.202	0.202	100.78		0.545
						PASS

PIPETTE ID:	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1						RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2						
3						
AVERAGE (MEAN)						

5/19/16
Analyst / Date

REVIEWED BY
By Janice Whitt at 2:45:08 PM, 5/23/2016
Review and Approved / Date

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/19/2016 8:30:00 AM**
Digestion: **Start: 5/19/2016 9:54:00 AM / Stop: 5/19/2016 3:33:00 PM**
Prep End Date: **5/19/2016 3:41:51 PM**

Prep Batch **75180** Prep Code: **3005ADOD** Technician: **Cassie Van Dyke**

Prep Factor Units: **mL/mL**

Equipment List

Hot Block #4
Thermometer #71
Pipette #P-09-Spikes
Pipette #P-01 Samples

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605047-31A	Equip Blank		50	50	1.000	1 of 1	
1605047-32A	Equip Blank		50	50	1.000	1 of 1	
1605047-38A	Equip Blank		50	50	1.000	1 of 1	
1605071-28A	Equip Blank		50	50	1.000	1 of 1	
1605071-29A	Equip Blank		50	50	1.000	1 of 1	
1605074-33A	Equip Blank		50	50	1.000	1 of 1	
1605074-34A	Equip Blank		50	50	1.000	1 of 1	
1605074-35A	Equip Blank		50	50	1.000	1 of 1	
1605096-36A	Equip Blank		50	50	1.000	1 of 1	
1605096-37A	Equip Blank		50	50	1.000	1 of 1	
1605096-44A	Equip Blank		50	50	1.000	1 of 1	
1605097-27A	Equip Blank		50	50	1.000	1 of 1	
1605097-27A MS	Equip Blank		50	50	1.000	of	
1605097-27A MSD	Equip Blank		50	50	1.000	of	
1605097-27A PDS	Equip Blank		50	50	1.000	of	
1605097-27A SD	Equip Blank		50	50	1.000	of	
1605097-30A	Equip Blank		50	50	1.000	1 of 1	
1605098-42A	Equip Blank		50	50	1.000	1 of 1	
1605121-46A	Equip Blank		50	50	1.000	1 of 1	
1605121-47A	Equip Blank		50	50	1.000	1 of 1	
1605135-46A	Equip Blank		50	50	1.000	1 of 1	
1605144-16A	Equip Blank		50	50	1.000	1 of 1	
LCS-75180	Aqueous		50	50	1.000	of	
LCSD-75180	Aqueous		50	50	1.000	of	
MB-75180	Aqueous		50	50	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9641	Hydrochloric Acid (trace metal grade)	1	ml	09/22/2025
10056	Digestion Vessels	1	ml	02/10/2026
10136	Nitric Acid (Trace Metal Grade)	1	ml	01/10/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
MET-150914-10	AL PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-150914-9	FE PRIMARY STD 1000 PPM	LCS/MS/MSD	0.25	10/01/2016
MET-SPIKE-160406-1	2500 PPM NATURALS CAL	LCS/MS/MSD	0.1	07/05/2016
MET-SPIKE-160511-1	50 PPM Custom+Sn,Ti,B,Mo,Sr CAL	LCS/MS/MSD	0.2	08/09/2016
MET-SPIKE-160511-2	50 PPM Sb+Ag CAL	LCS/MS/MSD	0.2	08/09/2016

REVIEWED BY
By Janice Whitt at 2:45:11 PM, 5/23/2016

MECHANICAL VOLUMETRIC PIPETTE VOLUME DAILY CHECK - DOD QSM 5.0

ANALYST:	RO	**BALANCE #:**	30
TEST DATE:	05/20/2016	**Water is at Room Temperatue (70-73°F) / (21-23°C)**	
PIPETTER LAB ID:	See Below	**WATER TEMP (°C):**	21-23°C
TEST VOLUME:	See Below	**WATER DENSITY:**	0.998 (0.9980-0.9976)

REFERENCE:	DoD QSM 5.0
# of REPLICATES:	3
LABWARE TYPE:	MECHANICAL VOLUMETRIC PIPETTE
FREQUENCY:	DAILY BEFORE USE
MEAN CRITERIA:	± 2% OF NOMINAL VOLUME (VOLUME OF USE/TEST VOLUME)
RSD CRITERIA:	< 1% OF NOMINAL VOLUME (BASED ON MINIMUM OF 3 REPLICATE MEASUREMENTS)

1) RECORD ROOM AND WATER TEMPERATURE
2) TARE VESSEL ON BALANCE. ADD TEST VOLUME.
3) WEIGH 3 REPLICATES AT THE TEST VOLUME.
4) DETERMINE TOTAL WT.
5) CALCULATE VOLUME OF H2O AT °C (in mL)

% TEST VOL = Volume of H2O at °C/Test Volume * 100

%RSD = STDEV (Mean Volume)/AVERAGE (Mean Volume) *100

VOLUME OF H2O AT °C = TOTAL WT * WATER DENSITY

					BIAS	PRECISION
PIPETTE ID: P-31	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	4.00	3.9957	3.9877	99.69	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		3.9968	3.9888	99.72		
3		3.9926	3.9846	99.62		
AVERAGE (MEAN)		**3.995**	**3.987**	**99.68**		**0.055**
						PASS

PIPETTE ID: P-21	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	1.00	0.9998	0.9978	99.78	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.9976	0.9956	99.56		
3		0.9977	0.9957	99.57		
AVERAGE (MEAN)		**0.998**	**0.996**	**99.64**		**0.124**
						PASS

PIPETTE ID: P-39	**TEST VOLUME (mL)**	**TOTAL WT (g)**	**Volume of H_2O at °C**	**% TEST VOL (98-102%)**	**MEAN CRITERIA (± 2%)**	**% RSD Calculated**
1	0.500	0.4996	0.4986	99.72	PASS	RSD MUST BE ≤ 1% OF TEST VOLUME VALUE
2		0.4999	0.4989	99.78		
3		0.4989	0.4979	99.58		
AVERAGE (MEAN)		**0.499**	**0.498**	**99.69**		**0.103**
						PASS

5/20/16

Analyst / Date

REVIEWED BY
By Janice Whitt at 2:45:14 PM, 5/23/2016

Review and Approved / Date

Calibration Summary Report

Date Acquired 5/20/2016 10:52
Data Batch 160520.b

Level	Calibration File Name
1	012CALB.d
2	013CALS.d
3	014CALS.d
4	015CALS.d
5	016CALS.d
6	017CALS.d
7	018CALS.d
8	019CALS.d

Calibration Table

Ele	Corr Coef	Curve Equation
As	1.0000	y = 0.0014 * x + 1.9173E-004
Be	1.0000	y = 6.7611E-005 * x + 4.0753E-006
B	1.0000	y = 2.3935E-005 * x + 6.6671E-005
Na	0.9999	y = 8.2020E-004 * x + 0.0425
Mg	0.9999	y = 4.1094E-004 * x + 0.0010
Al	1.0000	y = 1.4756E-004 * x + 3.6385E-004
K	0.9999	y = 3.9899E-004 * x + 0.0507
Ca	1.0000	y = 2.2762E-005 * x + 2.4734E-004
Ti	1.0000	y = 1.5550E-004 * x + 2.4548E-006
V	1.0000	y = 0.0053 * x + 0.0030
Cr	1.0000	y = 0.0064 * x + 0.0010
Mn	1.0000	y = 0.0034 * x + 1.2334E-004
Fe	1.0000	y = 0.0054 * x + 0.0075
Co	1.0000	y = 0.0134 * x + 1.6697E-004
Ni	1.0000	y = 0.0037 * x + 5.9595E-004
Cu	1.0000	y = 0.0102 * x + 0.0033
Zn	1.0000	y = 0.0017 * x + 3.7275E-004
Se	1.0000	y = 7.9937E-005 * x + 9.8739E-005
Sr	1.0000	y = 6.4021E-004 * x + 3.3178E-005
Mo	1.0000	y = 6.0622E-004 * x + 4.8584E-006
Ag	0.9999	y = 0.0019 * x + 7.8947E-006
Cd	1.0000	y = 2.8420E-004 * x + 1.5075E-006
Sn	1.0000	y = 5.9872E-004 * x + 6.4692E-005
Sb	1.0000	y = 9.1882E-004 * x + 2.1127E-005
Tl	1.0000	y = 0.0017 * x + 2.3075E-006
Ba	1.0000	y = 2.9131E-004 * x + 3.1689E-006
Pb	1.0000	y = 0.0023 * x + 2.2673E-005
Li	1.0000	y = 5.2630E-005 * x + 1.4809E-005

REVIEWED BY
By Janice Whitt at 2:45:18 PM, 5/23/2016

Calibration Summary Report

Level 7 Cal

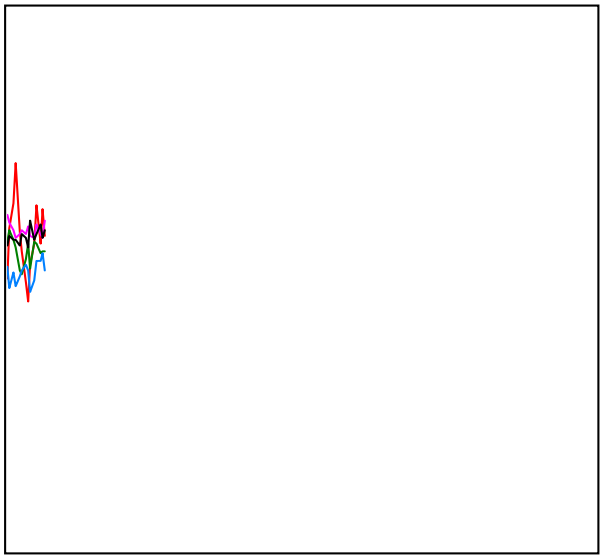
Ele	Conc	Calc	%Rec
As	500	494.27	99
Be	500	507.25	101
B	500	512.43	102
Na	10000	10274.86	103
Mg	10000	10243.18	102
Al	10000	9999.22	100
K	10000	10218.11	102
Ca	10000	9805.32	98
Ti	500	501.17	100
V	500	507.40	101
Cr	500	509.33	102
Mn	500	509.95	102
Fe	10000	9967.53	100
Co	500	512.00	102
Ni	500	505.16	101
Cu	500	508.82	102
Zn	500	506.99	101
Se	500	497.89	100
Sr	500	505.73	101
Mo	500	498.28	100
Ag	500	497.63	100
Cd	500	496.13	99
Sn	500	494.23	99
Sb	500	501.03	100
Tl	500	509.21	102
Ba	500	495.71	99
Pb	500	503.45	101

Level 8 Cal

Ele	Conc	Calc	%Rec
As	2000	2001.88	100
Be	2000	1997.64	100
B	2000	1996.74	100
Na	25000	24858.90	101
Mg	25000	24867.65	101
K	25000	24896.46	100
Ca	25000	25100.13	100
Ti	2000	1999.82	100
V	2000	1997.81	100
Cr	2000	1997.17	100
Mn	2000	1996.76	100
Co	2000	1995.80	100
Ni	2000	1997.77	100
Cu	2000	1996.80	100
Zn	2000	1997.23	100
Se	2000	2000.32	100
Sr	2000	1998.31	100
Mo	2000	2000.69	100
Cd	2000	2001.01	100
Sn	2000	2001.88	100
Tl	2000	1997.65	100
Ba	2000	2001.53	100
Pb	2000	1999.22	100
Li	2000	1995.26	100

REVIEWED BY
By Janice Whitt at 2:45:21 PM, 5/23/2016

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
51	200	116	114.9	11.79
59	2000	1105	1102.9	4.38
89	2000	1032	1025.3	4.05
140	5000	3033	2949.5	2.29
205	5000	2959	2890.5	2.51
156/140	1	0.462 %	0.345 %	35.57
75	20	3	4.9	44.86
78	20	3	7.9	39.26
56	5000	2420	2326.3	2.61
31	100	56	49.2	9.44
Integration Time [sec]		0.10		

Plasma Parameters

RF Power	1550	Carrier Gas	0.55
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	6.6
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-80	Cell Exit	-60
Deflect	2.4		

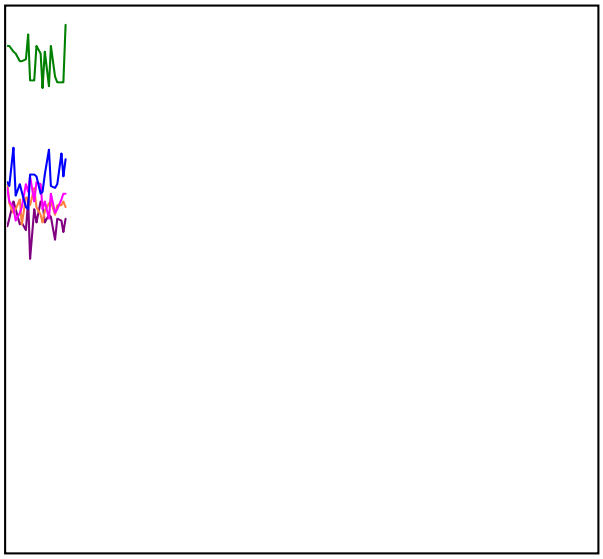
Cell Parameters

Use Gas	true	3rd Gas Flow	0
He Flow	4.7	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.26E+2	Pa	Carrier Gas(BP)	2.53E+2	kPa
Analyzer Press	2.03E-4	Pa	Reflected Power	1	W
Forward Power	1550	W			

Current Signal



Mass	Range	Count	Avg. Count	RSD [%]
7	2000	1222	1219.4	4.17
59	2000	1933	1800.7	3.77
89	5000	3170	3179.9	2.86
140	5000	3279	3231.5	3.58
205	5000	2137	2197.3	4.10
156/140	2	1.373 %	1.107 %	20.36
78	5000	2219	2298.0	2.84
63	500	361	341.0	4.61
75	10000	5042	4978.2	1.76
Integration Time [sec]		0.10		

Plasma Parameters

RF Power	1550	Carrier Gas	0.55
RF Matching	1.90	Option Gas	0.0
Smpl Depth	8.0	Nebulizer Pump	0.10
S/C Temp	2		

Lenses Parameters

Extract 1	0.0	Omega Lens	6.6
Extract 2	-200.0	Cell Entrance	-40
Omega Bias	-80	Cell Exit	-60
Deflect	7.0		

Cell Parameters

Use Gas	false	3rd Gas Flow	0
He Flow	4.2	OctP Bias	-18.0
H2 Flow	0.0	OctP RF	200
Energy Discrimination	3.0		

Meters

IF/BK Press	2.25E+2	Pa	Carrier Gas(BP)	2.51E+2	kPa
Analyzer Press	1.15E-4	Pa	Reflected Power	1	W
Forward Power	1549	W			

US EPA Tune Check Sample Report

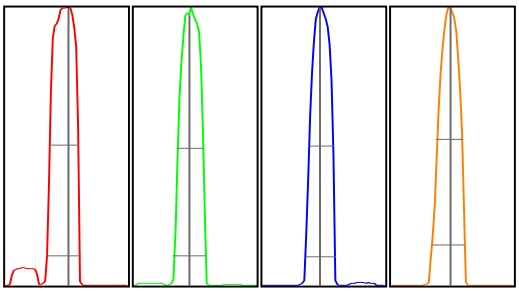
Batch Folder C:\Agilent\ICPMH\1\DATA\DHL TEMPLATE Li.b
Report Comment
Instrument Name ICPMS4 JP12361998

[No gas]

Mass	Count (Mean)	RSD% (Actual)	RSD% (Required)	RSD% (Flag)
7	766071	0.59	5.00	
59	1002535	0.88	5.00	
115	1534120	0.47	5.00	
205	1337735	0.65	5.00	

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
7	761000	762770	766402	767567	772618
59	994287	996607	1000508	1004518	1016753
115	1531586	1527087	1528422	1540459	1543047
205	1347346	1339137	1338492	1340161	1323539

Integration Time [sec] = 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	Width-X% (Actual)	Width-X% (Required)	Width-X% (Flag)
7	114427	7.05	6.9 - 7.1		0.792	0.850	
59	169781	58.90	58.9 - 59.1		0.757	0.850	
115	281192	114.95	114.9 - 115.1		0.715	0.850	
205	235049	205.00	204.9 - 205.1		0.792	0.850	

X% = 10 **Int Time [sec] =** 0.1 **Acq Time [sec] =** 135.05 **Y Axis =** Linear

Tune Parameters

Plasma Paramters

ParameterName	Value	Unit	ParameterName	Value	Unit
RF Power	1550	W	Nebulizer Pump	0.10	rps
RF Matching	1.90	V	S/C Temp	2	℃
Smpl Depth	8.0	mm	Gas Switch	Dilution Gas	
Carrier Gas	0.55	L/min	Makeup/Dilution Gas	0.50	L/min
Option Gas	0.0	%			

Lenses Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Extract 1	0.0	V	Cell Entrance	-40	V
Extract 2	-200.0	V	Cell Exit	-60	V
Omega Bias	-80	V	Deflect	7.0	V
Omega Lens	6.6	V	Plate Bias	-60	V

Cell Parameters

ParameterName	Value	Unit	ParameterName	Value	Unit
Use Gas	false		OctP Bias	-18.0	V
He Flow	0.0	mL/min	OctP RF	200	V
H2 Flow	0.0	mL/min	Energy Discrimination	3.0	V
3rd Gas Flow	0	%			

REVIEWED BY
By Janice Whitt at 2:45:29 PM, 5/23/2016

P/A Factor Tuning Report

Current Sample

Sample Name: BLANK STD 1
Data File: 012CALB.d
Acquired: 05/20/2016 10:52:47

Detector Parameters and P/A Factors

Discriminator: 4.5 mV
AnalogHV: 1756 V
PulseHV: 1224 V

Acquired: 05/20/2016 10:17:33

Mass[u]	Element	P/A Factor
6	Li	0.098134
9	Be	0.112424
23	Na	0.120362
24	Mg	0.125799
27	Al	0.129086
39	K	0.130962
45	Sc	0.132626
48		0.132901
51	V	0.134336
52	Cr	0.138170
55	Mn	0.140003
59	Co	0.143275
60	Ni	0.144291
63	Cu	0.146894
66	Zn	0.146603
72		0.145810
74	Ge	0.145819
75	As	0.144825
88	Sr	0.145917
89		0.145627
95		0.145741
97	Mo	0.145945
98	Mo	0.146160
99	[Mo]	0.149063
101		0.148703
105		0.151466
111	Cd	0.152171
114	Cd	0.152307
115	In	0.152070
118	Sn	0.152341
121		0.151907
123	Sb	0.151213
135	Ba	0.153085
138		0.153114
175		0.157166
193		0.158115
205	Tl	0.159390
206	[Pb]	0.158901
207	[Pb]	0.160233
208	Pb	0.160034
209	Bi	0.160265
232		0.160153
238	U	0.160001
44	Ca	Signal too low
78	Se	Signal too low
107	Ag	Signal too low
172		Signal too low

REVIEWED BY
By Janice Whitt at 2:45:32 PM, 5/23/2016

Calibration Blank Report

Date Acquired	5/20/2016 10:52	Sample Name	BLANK STD 1
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	012CALB.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	13	11.46
9	Be	45	4	31.49
11	B	45	60	38.88
23	Na	45	38295	1.98
24	Mg	45	929	4.13
27	Al	45	328	9.67
39	K	45	45687	1.92
44	Ca	45	223	14.74
47	Ti	45	2	173.21
51	V	45	2712	3.25
52	Cr	45	932	8.94
55	Mn	45	111	4.58
56	Fe	45	6780	0.46
59	Co	72	116	10.13
60	Ni	72	412	4.45
63	Cu	72	2314	7.14
66	Zn	72	258	12.02
75	As	72	133	9.18
78	Se	72	68	18.46
88	Sr	115	220	6.60
95	Mo	115	32	39.17
107	Ag	115	52	47.91
111	Cd	115	10	0.00
118	Sn	115	429	7.22
121	Sb	115	140	14.48
137	Ba	115	21	59.77
205	Tl	209	38	10.19
208	Pb	209	371	5.49

QC ISTD Table

Mass	Name	CPS	%RSD
45	Sc	900744	0.58
72	Ge	691836	0.52
115	In	6634288	1.31
209	Bi	16365010	0.86

Calibration Standard Report

Date Acquired	5/20/2016 10:54	Sample Name	L2-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	013CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	51	19.61
9	Be	45	59	16.17
11	B	45	81	47.63
23	Na	45	54693	1.98
24	Mg	45	8631	1.06
27	Al	45	3024	4.27
39	K	45	52837	1.33
44	Ca	45	673	9.59
47	Ti	45	142	21.27
51	V	45	7566	1.37
52	Cr	45	6659	1.56
55	Mn	45	3339	3.35
56	Fe	45	103212	0.39
59	Co	72	9894	1.63
60	Ni	72	3053	2.78
63	Cu	72	9651	1.49
66	Zn	72	1510	9.51
75	As	72	1134	3.65
78	Se	72	138	13.66
88	Sr	115	4758	9.98
95	Mo	115	4017	1.96
107	Ag	115	13061	1.16
111	Cd	115	1892	1.58
118	Sn	115	4368	1.85
121	Sb	115	6040	1.52
137	Ba	115	1957	3.12
205	Tl	209	28454	0.85
208	Pb	209	38051	1.40

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	888675	0.90	900744	98.66	70	120	
72	Ge	693617	1.22	691836	100.26	70	120	
115	In	6537693	1.64	6634288	98.54	70	120	
209	Bi	16272142	1.22	16365010	99.43	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 10:56	Sample Name	L-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	014CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	475	4.33
9	Be	45	589	2.81
11	B	45	213	8.70
23	Na	45	187072	0.24
24	Mg	45	75079	1.15
27	Al	45	26142	0.55
39	K	45	117199	0.47
44	Ca	45	4092	2.49
47	Ti	45	1508	7.61
51	V	45	49367	1.70
52	Cr	45	57479	0.64
55	Mn	45	30593	1.12
56	Fe	45	958300	0.88
59	Co	72	94946	1.52
60	Ni	72	26516	2.15
63	Cu	72	74283	1.74
66	Zn	72	11910	2.27
75	As	72	9774	0.72
78	Se	72	636	2.65
88	Sr	115	41218	0.48
95	Mo	115	38411	0.41
107	Ag	115	126475	0.65
111	Cd	115	18563	1.42
118	Sn	115	38626	1.15
121	Sb	115	58717	1.10
137	Ba	115	18171	0.63
205	Tl	209	272304	0.87
208	Pb	209	366431	0.81

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	873243	0.62	900744	96.95	70	120	
72	Ge	678023	0.58	691836	98.00	70	120	
115	In	6551099	0.64	6634288	98.75	70	120	
209	Bi	15917913	1.04	16365010	97.27	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 10:58	Sample Name	10X-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	015CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	2372	1.63
9	Be	45	2923	2.25
11	B	45	1067	9.08
23	Na	45	770119	0.18
24	Mg	45	367454	0.88
27	Al	45	128655	0.92
39	K	45	399073	0.48
44	Ca	45	19370	0.75
47	Ti	45	6789	2.58
51	V	45	235086	0.94
52	Cr	45	281473	0.22
55	Mn	45	151664	1.11
56	Fe	45	4726262	0.52
59	Co	72	472848	1.31
60	Ni	72	128482	0.55
63	Cu	72	359776	1.03
66	Zn	72	59442	1.18
75	As	72	47843	0.10
78	Se	72	2827	1.34
88	Sr	115	207253	0.76
95	Mo	115	189832	0.47
107	Ag	115	625220	0.51
111	Cd	115	90493	0.63
118	Sn	115	188562	0.79
121	Sb	115	291979	0.59
137	Ba	115	91676	0.52
205	Tl	209	1369668	0.21
208	Pb	209	1836011	0.28

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	870783	0.49	900744	96.67	70	120	
72	Ge	675804	0.16	691836	97.68	70	120	
115	In	6511848	1.01	6634288	98.15	70	120	
209	Bi	15817982	1.93	16365010	96.66	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 11:00	Sample Name	5X-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	016CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	4719	0.99
9	Be	45	6031	2.61
11	B	45	2106	2.38
23	Na	45	1487744	0.34
24	Mg	45	730325	0.75
27	Al	45	254158	1.00
39	K	45	743764	0.35
44	Ca	45	38890	0.92
47	Ti	45	13122	1.48
51	V	45	464545	0.24
52	Cr	45	553845	0.36
55	Mn	45	296245	0.64
56	Fe	45	9475567	0.90
59	Co	72	929518	0.70
60	Ni	72	254645	0.94
63	Cu	72	705956	0.91
66	Zn	72	115636	0.55
75	As	72	94999	1.00
78	Se	72	5517	1.18
88	Sr	115	407209	0.73
95	Mo	115	382159	0.27
107	Ag	115	1246974	0.27
111	Cd	115	180002	0.67
118	Sn	115	373685	0.75
121	Sb	115	581845	0.44
137	Ba	115	181959	0.36
205	Tl	209	2721048	0.56
208	Pb	209	3638595	0.14

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	867111	0.94	900744	96.27	70	120	
72	Ge	670073	0.40	691836	96.85	70	120	
115	In	6345212	1.15	6634288	95.64	70	120	
209	Bi	15774838	1.13	16365010	96.39	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 11:02	Sample Name	2X-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	017CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	11645	1.45
9	Be	45	14799	0.87
11	B	45	5271	3.09
23	Na	45	3674579	0.75
24	Mg	45	1829610	0.19
27	Al	45	638745	0.27
39	K	45	1790546	0.40
44	Ca	45	96796	0.45
47	Ti	45	33606	0.77
51	V	45	1166196	0.37
52	Cr	45	1399555	0.43
55	Mn	45	749211	1.10
56	Fe	45	23607094	0.99
59	Co	72	2343107	0.54
60	Ni	72	639981	0.74
63	Cu	72	1763980	0.57
66	Zn	72	293583	0.29
75	As	72	238361	0.79
78	Se	72	13619	1.02
88	Sr	115	1023414	0.41
95	Mo	115	955739	0.13
107	Ag	115	3129309	0.67
111	Cd	115	450580	1.28
118	Sn	115	940332	0.60
121	Sb	115	1446811	0.41
137	Ba	115	456887	0.89
205	Tl	209	6865122	2.34
208	Pb	209	9182346	0.28

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	863899	0.62	900744	95.91	70	120	
72	Ge	676172	1.16	691836	97.74	70	120	
115	In	6342174	1.08	6634288	95.60	70	120	
209	Bi	15798184	1.06	16365010	96.54	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 11:04	Sample Name	H-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	018CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	23477	0.78
9	Be	45	29678	0.77
11	B	45	10670	2.57
23	Na	45	7328693	1.45
24	Mg	45	3642987	0.46
27	Al	45	1276992	0.43
39	K	45	3571412	0.39
44	Ca	45	193325	1.27
47	Ti	45	67432	0.26
51	V	45	2342136	0.46
52	Cr	45	2811568	0.73
55	Mn	45	1497737	1.02
56	Fe	45	46607699	0.12
59	Co	72	4664541	0.37
60	Ni	72	1265436	0.57
63	Cu	72	3510221	0.93
66	Zn	72	580522	0.69
75	As	72	478495	0.53
78	Se	72	27052	0.42
88	Sr	115	2062251	0.76
95	Mo	115	1923834	1.60
107	Ag	115	6149064	1.18
111	Cd	115	897958	0.69
118	Sn	115	1885001	0.48
121	Sb	115	2931945	1.17
137	Ba	115	919713	0.73
205	Tl	209	13843577	0.15
208	Pb	209	18376231	1.17

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	865250	0.07	900744	96.06	70	120	
72	Ge	678053	0.72	691836	98.01	70	120	
115	In	6368809	0.55	6634288	96.00	70	120	
209	Bi	15682376	1.12	16365010	95.83	70	120	

Calibration Standard Report

Date Acquired	5/20/2016 11:06	Sample Name	H2-160520
Data Batch	160520.b	Comment	CAL ICPMS_TW
Data File Name	019CALS.d	Dilution	1

Mass	Name	IS	CPS	%RSD
7	Li	45	91520	0.61
9	Be	45	117696	1.05
11	B	45	41703	2.00
23	Na	45	17804069	1.61
24	Mg	45	8905730	0.41
27	Al	45	1268	15.64
39	K	45	8700336	3.99
44	Ca	45	498064	0.89
47	Ti	45	270980	0.88
51	V	45	9279476	1.91
52	Cr	45	11100250	2.57
55	Mn	45	5906029	1.36
56	Fe	45	31079	21.18
59	Co	72	18091149	2.15
60	Ni	72	4978053	0.80
63	Cu	72	13698455	1.21
66	Zn	72	2274547	0.47
75	As	72	1927729	0.53
78	Se	72	107929	0.33
88	Sr	115	8069912	1.86
95	Mo	115	7651186	1.88
107	Ag	115	2167	27.48
111	Cd	115	3587268	0.74
118	Sn	115	7561068	0.94
121	Sb	115	4899	3.75
137	Ba	115	3678176	0.64
205	Tl	209	54027345	1.56
208	Pb	209	72597616	1.51

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	Flag
45	Sc	871411	0.35	900744	96.74	70	120	
72	Ge	674585	0.55	691836	97.51	70	120	
115	In	6308303	0.56	6634288	95.09	70	120	
209	Bi	15600790	0.51	16365010	95.33	70	120	

Interference Check Solution A (ICS-A) Report

Date Acquired	5/20/2016 11:14	Sample Name	ICSA-160520
Data Batch	160520.b	Comment	ICSAICPMS_TW
Data File Name	023ICSA.d	Dilution	1

Mass	Name	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
9	Be	0.178	13	11.5	1.2	0.8	
11	B	12.857	310	15.8	30	30	
51	V	-0.035	2337	3.4	10	10	
52	Cr	0.435	3153	9.6	8	5	
55	Mn	1.453	4183	2.6	8	10	
59	Co	0.572	5053	6.0	8	10	
60	Ni	0.460	1477	4.3	8	10	
63	Cu	0.966	8479	8.6	8	10	
66	Zn	1.514	1886	2.4	10	5	
75	As	0.723	788	5.3	4	5	
78	Se	0.403	84	12.1	2	5	
88	Sr	1.450	5706	4.5	10	10	
107	Ag	0.149	1757	1.5	0.8	2	
111	Cd	0.508	864	8.0	1.2	1	
118	Sn	1.337	5130	5.4	10	10	
121	Sb	0.431	2474	8.2	4	2.5	
137	Ba	0.360	641	0.8	8	10	
205	Tl	0.057	1457	3.8	4	1.5	
208	Pb	0.112	4071	5.3	1.2	1	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	827611	0.57	900744	91.88	70	120	
72	Ge	643920	0.43	691836	93.07	70	120	
115	In	5931990	0.71	6634288	89.41	70	120	
209	Bi	14414677	1.32	16365010	88.08	70	120	

Interference Check Solution AB (ICS-AB) Report

Date Acquired	5/20/2016 11:16	Sample Name	ICSAB-160520
Data Batch	160520.b	Comment	ICSBICPMS_TW
Data File Name	024ICSB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
51	V	45	40.230	179228	0.38	40	100.6	80	120	
52	Cr	45	21.180	112220	0.68	20	105.9	80	120	
55	Mn	45	20.090	56319	0.85	20	100.5	80	120	
59	Co	72	40.765	350154	0.67	40	101.9	80	120	
60	Ni	72	37.991	90057	0.27	40	95.0	80	120	
63	Cu	72	21.028	138786	0.46	20	105.1	80	120	
66	Zn	72	20.320	22160	1.43	20	101.6	80	120	
75	As	72	19.962	18332	0.50	20	99.8	80	120	
78	Se	72	20.880	1130	1.09	20	104.4	80	120	
107	Ag	115	19.272	219521	0.59	20	96.4	80	120	
111	Cd	115	10.173	16977	1.44	10	101.7	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	824440	0.46	900744	91.53	70	120	
72	Ge	639098	0.68	691836	92.38	70	120	
115	In	5869841	0.52	6634288	88.48	70	120	
209	Bi	14474563	1.18	16365010	88.45	70	120	

Initial Calibration Verification (ICV) Report

Date Acquired	5/20/2016 11:28	Sample Name	ICV-160520
Data Batch	160520.b	Comment	ICV ICPMS_TW
Data File Name	028_ICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	100.332	4824	1.81	100	100.3	90	110	
9	Be	45	103.176	6359	1.46	100	103.2	90	110	
11	B	45	106.105	2375	2.15	100	106.1	90	110	
23	Na	45	2619.649	1996303	0.67	2500	104.8	90	110	
24	Mg	45	2613.352	979367	0.11	2500	104.5	90	110	
27	Al	45	2492.346	335405	0.21	2500	99.7	90	110	
39	K	45	2576.179	982676	0.45	2500	103.0	90	110	
44	Ca	45	2392.260	49836	0.98	2500	95.7	90	110	
47	Ti	45	102.414	14511	1.78	100	102.4	90	110	
51	V	45	103.304	504292	0.75	100	103.3	90	110	
52	Cr	45	105.424	613523	0.38	100	105.4	90	110	
55	Mn	45	102.300	316459	1.21	100	102.3	90	110	
56	Fe	45	2567.305	12645614	0.68	2500	102.7	90	110	
59	Co	72	106.357	1016420	0.67	100	106.4	90	110	
60	Ni	72	103.434	272118	0.62	100	103.4	90	110	
63	Cu	72	102.858	746210	0.57	100	102.9	90	110	
66	Zn	72	103.642	124695	1.04	100	103.6	90	110	
75	As	72	100.339	101992	0.91	100	100.3	90	110	
78	Se	72	104.060	5986	1.79	100	104.1	90	110	
88	Sr	115	103.091	442072	0.16	100	103.1	90	110	
95	Mo	115	98.299	398988	0.75	100	98.3	90	110	
107	Ag	115	98.962	1285452	0.32	100	99.0	90	110	
111	Cd	115	99.483	189297	1.17	100	99.5	90	110	
118	Sn	115	101.471	407166	1.20	100	101.5	90	110	
121	Sb	115	98.770	607715	0.72	100	98.8	90	110	
137	Ba	115	98.652	192414	0.96	100	98.7	90	110	
205	Tl	209	101.466	2836271	0.84	100	101.5	90	110	
208	Pb	209	101.685	3816480	0.50	100	101.7	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	911084	0.27	900744	101.15	70	120	
72	Ge	711191	0.51	691836	102.80	70	120	
115	In	6694931	0.54	6634288	100.91	70	120	
209	Bi	16123032	0.92	16365010	98.52	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/20/2016 11:40	Sample Name	LCVL-160520
Data Batch	160520.b	Comment	LCVLICPMS_TW
Data File Name	031LICV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.211	493	3.28	10	102.1	70	130	
9	Be	45	0.883	57	3.51	1	88.3	70	130	
11	B	45	23.200	556	15.56	20	116.0	70	130	
23	Na	45	105.249	115108	0.58	100	105.2	70	130	
24	Mg	45	100.404	37782	2.89	100	100.4	70	130	
27	Al	45	96.019	12984	1.75	100	96.0	70	130	
39	K	45	105.822	83035	0.80	100	105.8	70	130	
44	Ca	45	97.034	2194	6.79	100	97.0	70	130	
47	Ti	45	4.981	694	16.24	5	99.6	70	130	
51	V	45	0.990	7405	1.67	1	99.0	70	130	
52	Cr	45	5.164	30348	0.92	5	103.3	70	130	
55	Mn	45	4.932	15067	0.98	5	98.6	70	130	
56	Fe	45	98.316	481338	0.67	100	98.3	70	130	
59	Co	72	5.160	48099	1.92	5	103.2	70	130	
60	Ni	72	5.266	13871	3.84	5	105.3	70	130	
63	Cu	72	5.055	37891	1.05	5	101.1	70	130	
66	Zn	72	5.003	6103	1.75	5	100.1	70	130	
75	As	72	5.096	5168	1.25	5	101.9	70	130	
78	Se	72	4.860	337	3.91	5	97.2	70	130	
88	Sr	115	5.140	21310	1.33	5	102.8	70	130	
95	Mo	115	4.953	19283	2.26	5	99.1	70	130	
107	Ag	115	1.964	24482	0.47	2	98.2	70	130	
111	Cd	115	1.030	1888	5.78	1	103.0	70	130	
118	Sn	115	5.127	20100	1.89	5	102.5	70	130	
121	Sb	115	1.951	11631	2.50	2	97.6	70	130	
137	Ba	115	5.004	9363	2.13	5	100.1	70	130	
205	Tl	209	0.992	27078	1.04	1	99.2	70	130	
208	Pb	209	0.967	35772	0.59	1	96.7	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	893427	0.34	900744	99.19	70	120	
72	Ge	692133	0.84	691836	100.04	70	120	
115	In	6412520	1.80	6634288	96.66	70	120	
209	Bi	15729452	0.95	16365010	96.12	70	120	

Initial Calibration Blank (ICB) Report

Date Acquired	5/20/2016 11:45	Sample Name	ICB-160520
Data Batch	160520.b	Comment	ICB ICPMS_TW
Data File Name	033_ICB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	0.079	17	24.0	2	5	
9	Be	45	0.096	10	11.9	0.4	0.3	
11	B	45	2.797	122	14.0	10	10	
23	Na	45	1.389	39897	0.2	50	100	
24	Mg	45	-0.816	636	7.3	50	100	
27	Al	45	-0.630	248	10.8	50	10	
39	K	45	4.622	48039	0.4	50	100	
44	Ca	45	0.493	236	7.3	50	100	
47	Ti	45	0.032	7	132.3	4	3	
51	V	45	0.003	2768	7.0	4	3	
52	Cr	45	-0.004	922	6.2	2	2	
55	Mn	45	0.012	149	15.9	2	3	
56	Fe	45	0.182	7778	2.3	50	50	
59	Co	72	0.001	131	10.3	2	3	
60	Ni	72	-0.045	304	13.2	2	3	
63	Cu	72	-0.086	1743	2.3	2	2	
66	Zn	72	0.005	270	10.7	4	2	
75	As	72	0.026	161	5.5	2	2	
78	Se	72	0.216	82	13.1	1	2	
88	Sr	115	-0.005	196	17.2	4	3	
95	Mo	115	0.004	49	43.3	2	2	
107	Ag	115	0.002	71	15.1	0.4	1	
111	Cd	115	-0.002	7	50.0	0.4	0.3	
118	Sn	115	0.236	1351	4.6	4	3	
121	Sb	115	0.008	189	2.7	2	0.8	
137	Ba	115	-0.002	18	57.3	2	3	
205	Tl	209	0.000	32	39.2	2	0.5	
208	Pb	209	-0.001	313	21.3	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	914027	1.10	900744	101.47	70	120	
72	Ge	707118	0.50	691836	102.21	70	120	
115	In	6559701	1.67	6634288	98.88	70	120	
209	Bi	15784059	0.77	16365010	96.45	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/20/2016 13:06	Sample Name	CCV2-160520
Data Batch	160520.b	Comment	CCV ICPMS_TW
Data File Name	066_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	206.782	9383	0.75	200	103.4	90	110	
9	Be	45	206.653	12034	2.11	200	103.3	90	110	
11	B	45	208.432	4353	3.34	200	104.2	90	110	
23	Na	45	5168.925	3686872	0.54	5000	103.4	90	110	
24	Mg	45	5109.315	1808629	0.07	5000	102.2	90	110	
27	Al	45	4965.141	631105	1.07	5000	99.3	90	110	
39	K	45	5070.813	1785627	0.49	5000	101.4	90	110	
44	Ca	45	4837.310	95013	0.31	5000	96.7	90	110	
47	Ti	45	201.140	26931	1.95	200	100.6	90	110	
51	V	45	203.158	934716	0.26	200	101.6	90	110	
52	Cr	45	203.913	1120596	0.27	200	102.0	90	110	
55	Mn	45	203.279	594158	0.25	200	101.6	90	110	
56	Fe	45	5042.514	23467994	2.63	5000	100.9	90	110	
59	Co	72	209.877	1876358	0.40	200	104.9	90	110	
60	Ni	72	207.066	509243	0.87	200	103.5	90	110	
63	Cu	72	208.708	1414211	0.15	200	104.4	90	110	
66	Zn	72	207.264	233038	0.84	200	103.6	90	110	
75	As	72	201.926	191894	0.46	200	101.0	90	110	
78	Se	72	202.755	10849	1.10	200	101.4	90	110	
88	Sr	115	204.295	814939	0.35	200	102.1	90	110	
95	Mo	115	202.212	763670	0.55	200	101.1	90	110	
107	Ag	115	205.239	2480385	1.13	200	102.6	90	110	
111	Cd	115	199.199	352656	0.69	200	99.6	90	110	
118	Sn	115	197.089	735458	0.76	200	98.5	90	110	
121	Sb	115	199.804	1143701	0.34	200	99.9	90	110	
137	Ba	115	198.088	359480	0.42	200	99.0	90	110	
205	Tl	209	200.163	5318716	0.54	200	100.1	90	110	
208	Pb	209	199.769	7127416	0.69	200	99.9	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	861013	0.67	900744	95.59	70	120	
72	Ge	665333	0.20	691836	96.17	70	120	
115	In	6231428	2.47	6634288	93.93	70	120	
209	Bi	15327196	0.94	16365010	93.66	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/20/2016 13:11	Sample Name	LCVL2-160520
Data Batch	160520.b	Comment	LCVLICPMS_TW
Data File Name	068LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.180	474	2.40	10	101.8	70	130	
9	Be	45	0.959	59	8.65	1	95.9	70	130	
11	B	45	21.476	500	5.81	20	107.4	70	130	
23	Na	45	114.680	117582	1.00	100	114.7	70	130	
24	Mg	45	102.970	37317	0.48	100	103.0	70	130	
27	Al	45	98.909	12880	4.15	100	98.9	70	130	
39	K	45	108.787	81036	0.93	100	108.8	70	130	
44	Ca	45	94.480	2064	3.75	100	94.5	70	130	
47	Ti	45	5.005	672	10.88	5	100.1	70	130	
51	V	45	1.123	7743	1.49	1	112.3	70	130	
52	Cr	45	5.141	29121	0.49	5	102.8	70	130	
55	Mn	45	4.988	14682	1.06	5	99.8	70	130	
56	Fe	45	99.852	470995	0.94	100	99.9	70	130	
59	Co	72	5.265	47388	0.94	5	105.3	70	130	
60	Ni	72	5.263	13389	2.18	5	105.3	70	130	
63	Cu	72	4.987	36119	2.85	5	99.7	70	130	
66	Zn	72	5.046	5941	3.03	5	100.9	70	130	
75	As	72	5.075	4969	1.43	5	101.5	70	130	
78	Se	72	4.862	326	7.08	5	97.2	70	130	
88	Sr	115	5.081	20655	2.50	5	101.6	70	130	
95	Mo	115	4.888	18659	3.10	5	97.8	70	130	
107	Ag	115	1.957	23909	0.54	2	97.8	70	130	
111	Cd	115	0.957	1719	2.72	1	95.7	70	130	
118	Sn	115	5.006	19243	1.11	5	100.1	70	130	
121	Sb	115	1.956	11427	1.88	2	97.8	70	130	
137	Ba	115	4.966	9110	2.66	5	99.3	70	130	
205	Tl	209	0.981	26754	0.55	1	98.1	70	130	
208	Pb	209	0.963	35540	1.14	1	96.3	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	860941	0.31	900744	95.58	70	120	
72	Ge	668324	0.73	691836	96.60	70	120	
115	In	6285266	1.03	6634288	94.74	70	120	
209	Bi	15704344	0.74	16365010	95.96	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/20/2016 13:20	Sample Name	CCB2-160520
Data Batch	160520.b	Comment	CCB ICPMS_TW
Data File Name	069_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.014	13	25.4	2	5	
9	Be	45	-0.006	3	34.6	0.4	0.3	
11	B	45	2.688	118	17.3	10	10	
23	Na	45	1.684	39484	2.0	50	100	
24	Mg	45	-0.399	780	2.7	50	100	
27	Al	45	-0.348	281	7.9	50	10	
39	K	45	7.540	48329	1.2	50	100	
44	Ca	45	-1.660	189	6.3	50	100	
47	Ti	45	0.008	3	100.1	4	3	
51	V	45	0.049	2943	3.7	4	3	
52	Cr	45	-0.015	847	3.8	2	2	
55	Mn	45	-0.011	78	8.9	2	3	
56	Fe	45	0.069	7107	2.5	50	50	
59	Co	72	-0.007	53	43.7	2	3	
60	Ni	72	-0.065	244	13.7	2	3	
63	Cu	72	-0.125	1426	1.3	2	2	
66	Zn	72	-0.037	213	14.9	4	2	
75	As	72	0.009	141	11.2	2	2	
78	Se	72	-0.189	58	22.2	1	2	
88	Sr	115	0.038	371	62.4	4	3	
95	Mo	115	-0.003	19	56.7	2	2	
107	Ag	115	0.003	94	22.4	0.4	1	
111	Cd	115	0.005	19	62.0	0.4	0.3	
118	Sn	115	0.076	714	4.9	4	3	
121	Sb	115	0.016	233	23.8	2	0.8	
137	Ba	115	0.007	33	17.3	2	3	
205	Tl	209	0.000	34	39.1	2	0.5	
208	Pb	209	-0.001	310	17.2	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	899519	0.65	900744	99.86	70	120	
72	Ge	688533	0.82	691836	99.52	70	120	
115	In	6468049	0.42	6634288	97.49	70	120	
209	Bi	16017395	0.29	16365010	97.88	70	120	

Method Blank Report

Date Acquired	5/20/16 1:22 PM	Sample Name	MB-75180
Data Batch	160520.b	Comment	MBLKICPMS_TWDOD
Data File Name	070_LRB.d	Dilution	1

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.065	16	43.00		
9	Be	45	-0.016	3	43.30		
11	B	45	3.680	139	7.33		
23	Na	45	1.602	39357	1.68		
24	Mg	45	1.079	1323	9.33		
27	Al	45	6.638	1207	6.50		
39	K	45	6.087	47729	1.50		
44	Ca	45	17.031	570	6.85		
47	Ti	45	0.000	2	86.60		
51	V	45	0.098	3175	2.84		
52	Cr	45	0.003	946	10.81		
55	Mn	45	0.007	131	27.42		
56	Fe	45	0.701	10161	1.53		
59	Co	72	-0.006	58	35.25		
60	Ni	72	-0.056	270	9.64		
63	Cu	72	-0.120	1478	9.63		
66	Zn	72	0.584	947	5.99		
75	As	72	-0.003	131	9.62		
78	Se	72	0.231	82	12.61		
88	Sr	115	0.102	651	7.42		
95	Mo	115	-0.004	14	74.18		
107	Ag	115	0.004	98	20.55		
111	Cd	115	-0.005	0	#DIV/0!		
118	Sn	115	0.027	536	6.23		
121	Sb	115	0.014	222	8.66		
137	Ba	115	0.032	82	24.77		
205	Tl	209	0.000	47	25.75		
208	Pb	209	0.004	533	7.68		

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	898027	1.16	900744	99.70	70	120	
72	Ge	696733	0.54	691836	100.71	70	120	
115	In	6624535	1.15	6634288	99.85	70	120	
209	Bi	16420634	0.64	16365010	100.34	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/20/2016 13:24	Sample Name	LCS-75180
Data Batch	160520.b	Comment	LCS ICPMS_TWDOD
Data File Name	071_LFB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	207.477	9515	1.62	200	103.7	80	120	
9	Be	45	202.266	11905	1.32	200	101.1	80	120	
11	B	45	195.161	4124	4.40	200	97.6	80	120	
23	Na	45	5153.894	3715782	0.89	5000	103.1	80	120	
24	Mg	45	5118.954	1831544	0.71	5000	102.4	80	120	
27	Al	45	4981.246	639961	1.20	5000	99.6	80	120	
39	K	45	5041.266	1794560	0.13	5000	100.8	80	120	
44	Ca	45	4740.164	94110	0.45	5000	94.8	80	120	
47	Ti	45	192.838	26098	0.93	200	96.4	80	120	
51	V	45	200.032	930245	0.81	200	100.0	80	120	
52	Cr	45	200.955	1116256	0.75	200	100.5	80	120	
55	Mn	45	199.655	589846	0.43	200	99.8	80	120	
56	Fe	45	5071.775	23856763	1.05	5000	101.4	80	120	
59	Co	72	207.626	1874260	0.84	200	103.8	80	120	
60	Ni	72	204.682	508272	0.59	200	102.3	80	120	
63	Cu	72	205.447	1405663	1.66	200	102.7	80	120	
66	Zn	72	202.971	230430	0.68	200	101.5	80	120	
75	As	72	196.603	188655	0.16	200	98.3	80	120	
78	Se	72	200.300	10823	0.38	200	100.1	80	120	
88	Sr	115	196.190	794822	0.55	200	98.1	80	120	
95	Mo	115	195.187	748613	0.26	200	97.6	80	120	
107	Ag	115	196.529	2412668	1.27	200	98.3	80	120	
111	Cd	115	196.284	352950	1.05	200	98.1	80	120	
118	Sn	115	193.543	733613	1.09	200	96.8	80	120	
121	Sb	115	198.951	1156640	0.59	200	99.5	80	120	
137	Ba	115	195.083	359597	1.11	200	97.5	80	120	
205	Tl	209	200.277	5442896	1.66	200	100.1	80	120	
208	Pb	209	196.766	7180277	0.50	200	98.4	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	870277	0.61	900744	96.62	70	120	
72	Ge	671795	0.07	691836	97.10	70	120	
115	In	6329080	2.64	6634288	95.40	70	120	
209	Bi	15677643	1.30	16365010	95.80	70	120	

Laboratory Control Sample (LCS) Report

Date Acquired	5/20/2016 13:26	Sample Name	LCSD-75180
Data Batch	160520.b	Comment	LCSDICPMS_TWDOD
Data File Name	072_LFB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	211.628	9552	1.66	200	105.8	80	120	
9	Be	45	207.907	12043	0.86	200	104.0	80	120	
11	B	45	207.539	4312	1.43	200	103.8	80	120	
23	Na	45	5362.484	3803524	0.49	5000	107.2	80	120	
24	Mg	45	5350.645	1884119	0.41	5000	107.0	80	120	
27	Al	45	4623.801	584689	0.66	5000	92.5	80	120	
39	K	45	5298.886	1854221	0.78	5000	106.0	80	120	
44	Ca	45	4926.669	96259	0.97	5000	98.5	80	120	
47	Ti	45	200.210	26667	0.20	200	100.1	80	120	
51	V	45	205.077	938586	0.55	200	102.5	80	120	
52	Cr	45	204.586	1118439	0.90	200	102.3	80	120	
55	Mn	45	205.641	597919	0.06	200	102.8	80	120	
56	Fe	45	5087.447	23550804	1.09	5000	101.7	80	120	
59	Co	72	214.414	1904053	0.24	200	107.2	80	120	
60	Ni	72	209.839	512595	0.45	200	104.9	80	120	
63	Cu	72	210.981	1419956	0.46	200	105.5	80	120	
66	Zn	72	204.234	228100	0.64	200	102.1	80	120	
75	As	72	202.120	190788	0.15	200	101.1	80	120	
78	Se	72	201.529	10711	1.06	200	100.8	80	120	
88	Sr	115	196.352	801400	0.82	200	98.2	80	120	
95	Mo	115	195.900	756939	0.79	200	98.0	80	120	
107	Ag	115	195.076	2412277	0.22	200	97.5	80	120	
111	Cd	115	198.025	358702	0.47	200	99.0	80	120	
118	Sn	115	194.683	743307	0.78	200	97.3	80	120	
121	Sb	115	195.279	1143707	0.47	200	97.6	80	120	
137	Ba	115	194.998	362068	0.19	200	97.5	80	120	
205	Tl	209	201.393	5413984	0.64	200	100.7	80	120	
208	Pb	209	200.604	7241369	0.67	200	100.3	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	856491	0.13	900744	95.09	70	120	
72	Ge	660905	0.92	691836	95.53	70	120	
115	In	6373621	0.51	6634288	96.07	70	120	
209	Bi	15514322	2.64	16365010	94.80	70	120	

Sample Report

Date Acquired	5/20/16 1:30 PM	Sample Name	1605097-27A
Data Batch	160520.b	Comment	SAMPICPMS_TWDOD
Data File Name	074_ARF.d	Dilution	1

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.188	21	27.47	2000	
9	Be	45	0.133	11	26.96	2000	
11	B	45	77.905	1670	5.43	2000	>RL
23	Na	45	172.086	158798	1.04	25000	>RL
24	Mg	45	19.324	7757	2.48	25000	
27	Al	45	166.621	21574	1.92	10000	>RL
39	K	45	33.181	55300	0.93	25000	
44	Ca	45	360.351	7306	1.91	25000	>RL
47	Ti	45	0.315	44	43.95	2000	
51	V	45	0.178	3423	5.04	2000	
52	Cr	45	1.062	6749	1.34	2000	
55	Mn	45	0.788	2420	4.74	2000	
56	Fe	45	26.154	128704	1.27	10000	
59	Co	72	0.037	450	7.07	2000	
60	Ni	72	1.720	4696	5.72	2000	
63	Cu	72	0.256	4018	2.81	2000	
66	Zn	72	4.124	4956	2.22	2000	>RL
75	As	72	0.066	193	12.87	2000	
78	Se	72	0.120	73	4.70	2000	
88	Sr	115	2.683	11107	0.96	2000	
95	Mo	115	0.694	2699	4.51	2000	
107	Ag	115	0.018	276	12.12	500	
111	Cd	115	0.011	30	19.25	2000	
118	Sn	115	0.218	1237	5.41	2000	
121	Sb	115	0.095	690	11.71	500	
137	Ba	115	0.650	1221	4.51	2000	
205	Tl	209	0.015	464	6.90	2000	
208	Pb	209	0.121	4864	4.20	2000	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	864656	0.35	900744	95.99	70	120	
72	Ge	675759	0.28	691836	97.68	70	120	
115	In	6343286	0.63	6634288	95.61	70	120	
209	Bi	16011935	0.84	16365010	97.84	70	120	

Dilution Sample (Dil) Report

Date Acquired	5/20/2016 13:32	Sample Name	1605097-27A SD
Data Batch	160520.b	Comment	SD ICPMS_TWDOD
Data File Name	075_SD.d	Dilution	5

Mass	Name	IS	Conc	CPS	%RSD	Ref Value	%Rec	Low	High	Flag
7	Li	45	0.068	16	12.50	0.2	180.5	110	90	
9	Be	45	-0.038	1	114.56	0.1	-141.3	110	90	
11	B	45	17.535	423	8.52	77.9	112.5	110	90	
23	Na	45	35.699	62521	0.91	172.1	103.7	110	90	Good
24	Mg	45	3.836	2271	5.49	19.3	99.3	110	90	Good
27	Al	45	34.453	4743	3.67	166.6	103.4	110	90	Good
39	K	45	11.074	48015	1.21	33.2	166.9	110	90	
44	Ca	45	74.540	1693	4.14	360.4	103.4	110	90	Good
47	Ti	45	0.107	17	87.16	0.3	169.7	110	90	
51	V	45	0.073	2960	6.49	0.2	205.2	110	90	
52	Cr	45	0.197	1996	7.06	1.1	92.7	110	90	Good
55	Mn	45	0.148	544	14.36	0.8	93.8	110	90	Good
56	Fe	45	5.267	31343	1.57	26.2	100.7	110	90	Good
59	Co	72	0.009	193	14.73	0.0	121.3	110	90	
60	Ni	72	0.263	1052	2.56	1.7	76.4	110	90	
63	Cu	72	-0.047	1923	10.96	0.3	-91.9	110	90	
66	Zn	72	0.853	1217	12.34	4.1	103.4	110	90	Good
75	As	72	0.029	157	5.00	0.1	222.6	110	90	
78	Se	72	0.336	84	9.94	0.1	1399.8	110	90	
88	Sr	115	0.548	2455	2.52	2.7	102.1	110	90	Good
95	Mo	115	0.153	626	21.59	0.7	110.5	110	90	
107	Ag	115	0.009	164	25.34	0.0	250.0	110	90	
111	Cd	115	0.003	16	32.73	0.0	143.0	110	90	
118	Sn	115	0.074	696	6.98	0.2	169.5	110	90	
121	Sb	115	0.045	399	25.38	0.1	235.1	110	90	
137	Ba	115	0.117	239	11.62	0.7	90.2	110	90	Good
205	Tl	209	0.005	176	19.02	0.0	164.6	110	90	
208	Pb	209	0.027	1372	7.85	0.1	113.9	110	90	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	870854	0.91	900744	96.68	70	120	
72	Ge	671393	0.27	691836	97.05	70	120	
115	In	6391281	1.83	6634288	96.34	70	120	
209	Bi	15830888	0.33	16365010	96.74	70	120	

Post Digestion Spike Sample (PDS) Report

Date Acquired	5/20/2016 13:52	Sample Name	1605097-27A PDS
Data Batch	160520.b	Comment	PDS ICPMS_TWDOD
Data File Name	085_PDS.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	208.981	9280	1.02	0.2	200	104.4	75	125	
9	Be	45	205.509	11711	0.53	0.1	200	102.7	75	125	
11	B	45	285.809	5820	2.43	77.9	200	104.0	75	125	
23	Na	45	5404.541	3770772	0.71	172.1	5000	104.6	75	125	
24	Mg	45	5227.887	1811012	0.25	19.3	5000	104.2	75	125	
27	Al	45	5186.356	645154	1.11	166.6	5000	100.4	75	125	
39	K	45	5131.767	1767946	0.81	33.2	5000	102.0	75	125	
44	Ca	45	5036.090	96794	0.63	360.4	5000	93.5	75	125	
47	Ti	45	204.672	26818	0.31	0.3	200	102.2	75	125	
51	V	45	205.614	925765	1.11	0.2	200	102.7	75	125	
52	Cr	45	209.415	1126215	0.10	1.1	200	104.2	75	125	
55	Mn	45	201.270	575717	0.99	0.8	200	100.2	75	125	
56	Fe	45	5141.790	23416040	2.86	26.2	5000	102.3	75	125	
59	Co	72	212.432	1865010	0.28	0.0	200	106.2	75	125	
60	Ni	72	206.554	498845	0.40	1.7	200	102.4	75	125	
63	Cu	72	205.509	1367501	0.81	0.3	200	102.6	75	125	
66	Zn	72	206.091	227552	0.83	4.1	200	101.0	75	125	
75	As	72	197.771	184566	0.70	0.1	200	98.9	75	125	
78	Se	72	202.393	10635	0.90	0.1	200	101.1	75	125	
88	Sr	115	206.704	815896	0.34	2.7	200	102.0	75	125	
95	Mo	115	198.384	741330	0.42	0.7	200	98.8	75	125	
107	Ag	115	184.548	2207022	0.22	0.0	200	92.3	75	125	
111	Cd	115	195.191	341931	0.27	0.0	200	97.6	75	125	
118	Sn	115	202.579	748007	0.46	0.2	200	101.2	75	125	
121	Sb	115	188.867	1069835	1.39	0.1	200	94.4	75	125	
137	Ba	115	199.288	357867	0.43	0.7	200	99.3	75	125	
205	Tl	209	199.302	5296717	0.74	0.0	200	99.6	75	125	
208	Pb	209	199.936	7134456	0.42	0.1	200	99.9	75	125	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	842584	0.33	900744	93.54	70	120	
72	Ge	653370	0.47	691836	94.44	70	120	
115	In	6164044	0.75	6634288	92.91	70	120	
209	Bi	15329899	0.74	16365010	93.67	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/20/2016 13:54	Sample Name	1605097-27A MS
Data Batch	160520.b	Comment	MS ICPMS_TWDOD
Data File Name	086_MSW.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	170.064	7584	1.95	0.2	200	84.9	80	120	
9	Be	45	170.036	9730	0.33	0.1	200	85.0	80	120	
11	B	45	211.300	4335	2.63	77.9	200	66.7	80	120	Fail
23	Na	45	5276.203	3697081	0.68	172.1	5000	102.1	80	120	
24	Mg	45	5130.074	1784373	1.29	19.3	5000	102.2	80	120	
27	Al	45	4817.494	601724	1.24	166.6	5000	93.0	80	120	
39	K	45	5034.751	1742366	0.92	33.2	5000	100.0	80	120	
44	Ca	45	4749.301	91663	0.93	360.4	5000	87.8	80	120	
47	Ti	45	161.792	21287	1.94	0.3	200	80.7	80	120	
51	V	45	167.529	757849	1.08	0.2	200	83.7	80	120	
52	Cr	45	169.182	913736	0.52	1.1	200	84.1	80	120	
55	Mn	45	167.173	480133	1.01	0.8	200	83.2	80	120	
56	Fe	45	4989.600	22816465	1.30	26.2	5000	99.3	80	120	
59	Co	72	170.716	1510248	1.41	0.0	200	85.3	80	120	
60	Ni	72	170.393	414746	0.92	1.7	200	84.3	80	120	
63	Cu	72	170.672	1144804	0.98	0.3	200	85.2	80	120	
66	Zn	72	171.664	191038	0.75	4.1	200	83.8	80	120	
75	As	72	164.901	155123	1.29	0.1	200	82.4	80	120	
78	Se	72	162.927	8642	1.69	0.1	200	81.4	80	120	
88	Sr	115	166.659	660795	1.05	2.7	200	82.0	80	120	
95	Mo	115	163.856	615005	0.41	0.7	200	81.6	80	120	
107	Ag	115	198.800	2387903	0.89	0.0	200	99.4	80	120	
111	Cd	115	165.115	290524	0.61	0.0	200	82.6	80	120	
118	Sn	115	163.476	606381	0.54	0.2	200	81.6	80	120	
121	Sb	115	201.813	1148120	0.30	0.1	200	100.9	80	120	
137	Ba	115	165.330	298187	0.64	0.7	200	82.3	80	120	
205	Tl	209	163.516	4397378	0.75	0.0	200	81.8	80	120	
208	Pb	209	161.721	5839522	0.48	0.1	200	80.8	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	846025	0.40	900744	93.93	70	120	
72	Ge	658505	1.30	691836	95.18	70	120	
115	In	6191469	0.95	6634288	93.33	70	120	
209	Bi	15511736	0.59	16365010	94.79	70	120	

Matrix Spike Sample (MS) Report

Date Acquired	5/20/2016 13:56	Sample Name	1605097-27A MSD
Data Batch	160520.b	Comment	MSD ICPMS_TWDOD
Data File Name	087_MSW.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Ref Conc	Spk Amt	%Rec	Low	High	Flag
7	Li	45	205.597	9304	1.62	0.2	200	102.7	80	120	
9	Be	45	203.064	11793	1.41	0.1	200	101.5	80	120	
11	B	45	242.909	5050	4.50	77.9	200	82.5	80	120	
23	Na	45	5177.237	3682905	1.10	172.1	5000	100.1	80	120	
24	Mg	45	4993.908	1763105	0.25	19.3	5000	99.5	80	120	
27	Al	45	4936.520	625831	0.74	166.6	5000	95.4	80	120	
39	K	45	4965.228	1744703	1.20	33.2	5000	98.6	80	120	
44	Ca	45	4753.640	93125	1.29	360.4	5000	87.9	80	120	
47	Ti	45	195.210	26068	0.98	0.3	200	97.4	80	120	
51	V	45	200.675	920875	0.73	0.2	200	100.2	80	120	
52	Cr	45	203.955	1117867	0.41	1.1	200	101.4	80	120	
55	Mn	45	202.473	590229	0.83	0.8	200	100.8	80	120	
56	Fe	45	5112.057	23726119	2.33	26.2	5000	101.7	80	120	
59	Co	72	206.133	1846156	0.73	0.0	200	103.0	80	120	
60	Ni	72	206.533	508832	0.56	1.7	200	102.4	80	120	
63	Cu	72	206.199	1399718	0.23	0.3	200	103.0	80	120	
66	Zn	72	204.471	230307	1.38	4.1	200	100.2	80	120	
75	As	72	198.160	188652	0.84	0.1	200	99.0	80	120	
78	Se	72	201.130	10782	0.12	0.1	200	100.5	80	120	
88	Sr	115	201.026	801163	0.72	2.7	200	99.2	80	120	
95	Mo	115	199.764	753727	1.09	0.7	200	99.5	80	120	
107	Ag	115	197.459	2384307	0.18	0.0	200	98.7	80	120	
111	Cd	115	200.097	353929	0.48	0.0	200	100.0	80	120	
118	Sn	115	197.870	737731	0.96	0.2	200	98.8	80	120	
121	Sb	115	201.125	1150215	0.35	0.1	200	100.5	80	120	
137	Ba	115	199.346	361437	0.39	0.7	200	99.3	80	120	
205	Tl	209	195.932	5357915	0.27	0.0	200	98.0	80	120	
208	Pb	209	195.812	7189529	0.20	0.1	200	97.8	80	120	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	858705	0.07	900744	95.33	70	120	
72	Ge	666512	0.03	691836	96.34	70	120	
115	In	6223826	0.86	6634288	93.81	70	120	
209	Bi	15779807	2.46	16365010	96.42	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/20/2016 13:58	Sample Name	CCV3-160520
Data Batch	160520.b	Comment	CCV ICPMS_TW
Data File Name	088_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	203.180	9274	0.83	200	101.6	90	110	
9	Be	45	203.486	11920	1.02	200	101.7	90	110	
11	B	45	210.276	4416	1.73	200	105.1	90	110	
23	Na	45	5132.134	3682741	0.63	5000	102.6	90	110	
24	Mg	45	5086.454	1811320	0.58	5000	101.7	90	110	
27	Al	45	4980.080	636833	0.78	5000	99.6	90	110	
39	K	45	5081.672	1800039	0.46	5000	101.6	90	110	
44	Ca	45	4836.944	95568	0.34	5000	96.7	90	110	
47	Ti	45	200.071	26952	1.98	200	100.0	90	110	
51	V	45	203.154	940224	0.55	200	101.6	90	110	
52	Cr	45	202.100	1117262	0.18	200	101.1	90	110	
55	Mn	45	202.982	596833	0.52	200	101.5	90	110	
56	Fe	45	5019.103	23493427	1.22	5000	100.4	90	110	
59	Co	72	208.419	1864213	1.18	200	104.2	90	110	
60	Ni	72	205.434	505495	0.52	200	102.7	90	110	
63	Cu	72	209.149	1417980	1.14	200	104.6	90	110	
66	Zn	72	205.831	231556	1.37	200	102.9	90	110	
75	As	72	201.676	191753	0.22	200	100.8	90	110	
78	Se	72	204.247	10934	1.41	200	102.1	90	110	
88	Sr	115	201.502	818714	0.86	200	100.8	90	110	
95	Mo	115	199.699	768114	0.40	200	99.8	90	110	
107	Ag	115	202.247	2489708	0.73	200	101.1	90	110	
111	Cd	115	199.234	359250	0.46	200	99.6	90	110	
118	Sn	115	196.022	745053	0.39	200	98.0	90	110	
121	Sb	115	199.544	1163397	0.25	200	99.8	90	110	
137	Ba	115	198.512	366908	1.08	200	99.3	90	110	
205	Tl	209	199.782	5446376	0.37	200	99.9	90	110	
208	Pb	209	197.855	7242369	0.64	200	98.9	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	866202	1.29	900744	96.17	70	120	
72	Ge	665686	0.56	691836	96.22	70	120	
115	In	6344920	0.75	6634288	95.64	70	120	
209	Bi	15726160	1.52	16365010	96.10	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/20/2016 14:04	Sample Name	LCVL3-160520
Data Batch	160520.b	Comment	LCVLICPMS_TW
Data File Name	090LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	11.230	527	10.42	10	112.3	70	130	
9	Be	45	1.010	63	17.89	1	101.0	70	130	
11	B	45	24.634	571	4.38	20	123.2	70	130	
23	Na	45	98.195	107074	0.50	100	98.2	70	130	
24	Mg	45	101.451	37176	1.95	100	101.5	70	130	
27	Al	45	99.147	13048	0.90	100	99.1	70	130	
39	K	45	103.570	80094	1.64	100	103.6	70	130	
44	Ca	45	100.317	2202	2.99	100	100.3	70	130	
47	Ti	45	5.093	691	7.81	5	101.9	70	130	
51	V	45	1.066	7563	1.15	1	106.6	70	130	
52	Cr	45	5.146	29458	1.00	5	102.9	70	130	
55	Mn	45	5.131	15261	1.50	5	102.6	70	130	
56	Fe	45	100.203	477688	0.08	100	100.2	70	130	
59	Co	72	5.197	47885	1.12	5	103.9	70	130	
60	Ni	72	5.154	13429	0.94	5	103.1	70	130	
63	Cu	72	5.013	37155	1.61	5	100.3	70	130	
66	Zn	72	5.311	6389	4.69	5	106.2	70	130	
75	As	72	4.952	4966	1.28	5	99.0	70	130	
78	Se	72	5.555	371	4.76	5	111.1	70	130	
88	Sr	115	5.152	21317	0.76	5	103.0	70	130	
95	Mo	115	4.876	18942	2.94	5	97.5	70	130	
107	Ag	115	1.956	24332	2.20	2	97.8	70	130	
111	Cd	115	0.961	1757	3.66	1	96.1	70	130	
118	Sn	115	5.019	19639	1.08	5	100.4	70	130	
121	Sb	115	2.013	11969	1.61	2	100.7	70	130	
137	Ba	115	4.958	9262	1.20	5	99.2	70	130	
205	Tl	209	0.992	27281	1.62	1	99.2	70	130	
208	Pb	209	0.977	36361	0.51	1	97.7	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	870167	0.41	900744	96.61	70	120	
72	Ge	684121	0.81	691836	98.88	70	120	
115	In	6398204	0.37	6634288	96.44	70	120	
209	Bi	15843229	2.06	16365010	96.81	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/20/2016 14:06	Sample Name	CCB3-160520
Data Batch	160520.b	Comment	CCB ICPMS_TW
Data File Name	091_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.018	12	28.9	2	5	
9	Be	45	0.007	4	75.0	0.4	0.3	
11	B	45	5.180	166	19.3	10	10	
23	Na	45	-4.493	33660	2.0	50	100	
24	Mg	45	-1.062	516	7.2	50	100	
27	Al	45	-0.474	254	16.5	50	10	
39	K	45	5.967	46044	0.9	50	100	
44	Ca	45	0.316	221	16.5	50	100	
47	Ti	45	0.034	7	86.6	4	3	
51	V	45	0.086	3011	4.6	4	3	
52	Cr	45	0.000	899	4.6	2	2	
55	Mn	45	-0.001	103	29.6	2	3	
56	Fe	45	0.192	7426	0.8	50	50	
59	Co	72	0.009	199	23.8	2	3	
60	Ni	72	-0.070	230	15.3	2	3	
63	Cu	72	-0.120	1441	7.2	2	2	
66	Zn	72	-0.026	223	3.9	4	2	
75	As	72	0.026	155	2.8	2	2	
78	Se	72	0.144	75	6.5	1	2	
88	Sr	115	-0.007	181	12.5	4	3	
95	Mo	115	0.003	42	22.8	2	2	
107	Ag	115	0.009	161	2.4	0.4	1	
111	Cd	115	0.000	10	33.3	0.4	0.3	
118	Sn	115	0.131	907	6.1	4	3	
121	Sb	115	0.092	671	12.4	2	0.8	
137	Ba	115	0.013	44	11.5	2	3	
205	Tl	209	0.004	156	14.3	2	0.5	
208	Pb	209	0.003	463	8.5	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	867169	1.51	900744	96.27	70	120	
72	Ge	678651	0.28	691836	98.09	70	120	
115	In	6326752	0.94	6634288	95.36	70	120	
209	Bi	15694418	1.64	16365010	95.90	70	120	

Sample Report

Date Acquired	5/20/16 2:12 PM	Sample Name	1605097-30A
Data Batch	160520.b	Comment	SAMPICPMS_TWDOD
Data File Name	094_WS.d	Dilution	1

Mass	Name	IS	Conc (ppb)	CPS	%RSD	High Limit	Flag
7	Li	45	0.101	17	12.01	2000	
9	Be	45	-0.009	3	57.74	2000	
11	B	45	40.881	900	7.21	2000	>RL
23	Na	45	166.103	153884	0.62	25000	>RL
24	Mg	45	2.612	1812	5.85	25000	
27	Al	45	23.654	3318	0.71	10000	J
39	K	45	26.017	52603	0.79	25000	
44	Ca	45	36.988	938	6.55	25000	
47	Ti	45	0.092	14	13.35	2000	
51	V	45	0.119	3137	5.63	2000	
52	Cr	45	0.874	5691	1.59	2000	
55	Mn	45	0.378	1210	8.41	2000	
56	Fe	45	13.316	68425	0.58	10000	
59	Co	72	0.023	316	7.93	2000	
60	Ni	72	1.064	3037	2.91	2000	
63	Cu	72	0.051	2590	3.09	2000	
66	Zn	72	2.053	2576	3.44	2000	J
75	As	72	0.045	172	1.71	2000	
78	Se	72	0.081	71	4.81	2000	
88	Sr	115	0.140	788	5.87	2000	
95	Mo	115	0.766	3018	4.58	2000	
107	Ag	115	0.005	113	16.38	500	
111	Cd	115	-0.003	3	100.05	2000	
118	Sn	115	0.389	1916	5.23	2000	
121	Sb	115	0.061	494	11.57	500	
137	Ba	115	0.104	216	6.25	2000	
205	Tl	209	0.002	103	12.90	2000	
208	Pb	209	0.025	1254	9.47	2000	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	860933	0.66	900744	95.58	70	120	
72	Ge	671360	1.44	691836	97.04	70	120	
115	In	6429481	1.74	6634288	96.91	70	120	
209	Bi	15723842	0.53	16365010	96.08	70	120	

Continuing Calibration Verification (CCV) Report

Date Acquired	5/20/2016 14:24	Sample Name	CCV4-160520
Data Batch	160520.b	Comment	CCV ICPMS_TW
Data File Name	100_CCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	209.123	9388	0.80	200	104.6	90	110	
9	Be	45	208.207	11994	0.48	200	104.1	90	110	
11	B	45	203.797	4212	3.86	200	101.9	90	110	
23	Na	45	5148.990	3633551	0.68	5000	103.0	90	110	
24	Mg	45	5123.233	1794203	0.40	5000	102.5	90	110	
27	Al	45	4980.045	626267	0.50	5000	99.6	90	110	
39	K	45	5038.185	1755471	0.35	5000	100.8	90	110	
44	Ca	45	4785.666	92998	0.86	5000	95.7	90	110	
47	Ti	45	199.374	26410	2.03	200	99.7	90	110	
51	V	45	202.096	919918	0.37	200	101.0	90	110	
52	Cr	45	202.131	1098976	0.19	200	101.1	90	110	
55	Mn	45	202.769	586339	1.07	200	101.4	90	110	
56	Fe	45	5041.066	23208886	2.16	5000	100.8	90	110	
59	Co	72	207.997	1837266	0.54	200	104.0	90	110	
60	Ni	72	206.739	502343	0.77	200	103.4	90	110	
63	Cu	72	206.988	1385843	0.86	200	103.5	90	110	
66	Zn	72	203.079	225616	1.76	200	101.5	90	110	
75	As	72	199.013	186865	0.89	200	99.5	90	110	
78	Se	72	200.798	10616	0.97	200	100.4	90	110	
88	Sr	115	201.110	805597	1.18	200	100.6	90	110	
95	Mo	115	199.684	757215	0.24	200	99.8	90	110	
107	Ag	115	203.488	2469488	0.16	200	101.7	90	110	
111	Cd	115	199.985	355504	0.18	200	100.0	90	110	
118	Sn	115	197.462	739911	0.69	200	98.7	90	110	
121	Sb	115	198.318	1139914	0.61	200	99.2	90	110	
137	Ba	115	198.384	361502	0.28	200	99.2	90	110	
205	Tl	209	198.777	5414678	1.21	200	99.4	90	110	
208	Pb	209	196.887	7201152	0.36	200	98.4	90	110	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	851803	0.12	900744	94.57	70	120	
72	Ge	657385	0.52	691836	95.02	70	120	
115	In	6255271	0.87	6634288	94.29	70	120	
209	Bi	15713189	1.11	16365010	96.02	70	120	

Low Level Calibration Verification (LLCV) Report

Date Acquired	5/20/2016 14:41	Sample Name	LCVL4-160520
Data Batch	160520.b	Comment	LCVLICPMS_TW
Data File Name	102LCCV.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	Exp	%Rec	Low	High	Flag
7	Li	45	10.685	502	3.49	10	106.9	70	130	
9	Be	45	1.096	68	6.41	1	109.6	70	130	
11	B	45	23.853	554	7.94	20	119.3	70	130	
23	Na	45	93.918	103987	0.70	100	93.9	70	130	
24	Mg	45	99.544	36480	0.51	100	99.5	70	130	
27	Al	45	99.184	13048	0.80	100	99.2	70	130	
39	K	45	105.038	80572	0.51	100	105.0	70	130	
44	Ca	45	92.119	2039	1.77	100	92.1	70	130	
47	Ti	45	5.333	723	9.71	5	106.7	70	130	
51	V	45	1.049	7481	3.19	1	104.9	70	130	
52	Cr	45	5.152	29482	1.43	5	103.0	70	130	
55	Mn	45	4.912	14610	1.67	5	98.2	70	130	
56	Fe	45	99.465	474042	0.99	100	99.5	70	130	
59	Co	72	5.203	47305	0.83	5	104.1	70	130	
60	Ni	72	5.133	13200	2.09	5	102.7	70	130	
63	Cu	72	5.024	36741	1.23	5	100.5	70	130	
66	Zn	72	5.226	6207	1.40	5	104.5	70	130	
75	As	72	5.050	4995	1.79	5	101.0	70	130	
78	Se	72	5.706	375	1.39	5	114.1	70	130	
88	Sr	115	4.972	21117	3.12	5	99.4	70	130	
95	Mo	115	4.710	18774	0.76	5	94.2	70	130	
107	Ag	115	1.888	24096	1.18	2	94.4	70	130	
111	Cd	115	0.955	1792	2.86	1	95.5	70	130	
118	Sn	115	4.754	19110	1.41	5	95.1	70	130	
121	Sb	115	1.846	11275	1.66	2	92.3	70	130	
137	Ba	115	4.953	9493	1.16	5	99.1	70	130	
205	Tl	209	0.994	26913	0.64	1	99.4	70	130	
208	Pb	209	0.974	35718	1.32	1	97.4	70	130	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	869866	0.59	900744	96.57	70	120	
72	Ge	675027	0.39	691836	97.57	70	120	
115	In	6564471	0.91	6634288	98.95	70	120	
209	Bi	15594017	0.83	16365010	95.29	70	120	

Continuing Calibration Blank (CCB) Report

Date Acquired	5/20/2016 14:48	Sample Name	CCB4-160520
Data Batch	160520.b	Comment	CCB ICPMS_TW
Data File Name	103_CCB.d	Dilution	1

Mass	Name	IS	Conc	CPS	%RSD	MDL S	MDL Aq	QC Flag
7	Li	45	-0.025	11	58.7	2	5	
9	Be	45	-0.019	2	24.7	0.4	0.3	
11	B	45	0.364	63	39.7	10	10	
23	Na	45	-7.059	30783	0.7	50	100	
24	Mg	45	-1.361	396	1.0	50	100	
27	Al	45	-0.498	243	17.8	50	10	
39	K	45	4.451	44003	0.3	50	100	
44	Ca	45	1.218	230	6.8	50	100	
47	Ti	45	0.044	8	65.5	4	3	
51	V	45	0.114	3035	8.6	4	3	
52	Cr	45	-0.015	788	5.7	2	2	
55	Mn	45	-0.019	49	10.4	2	3	
56	Fe	45	0.164	7056	6.1	50	50	
59	Co	72	-0.003	86	9.8	2	3	
60	Ni	72	-0.033	309	9.1	2	3	
63	Cu	72	-0.124	1360	4.9	2	2	
66	Zn	72	-0.033	207	14.0	4	2	
75	As	72	-0.001	124	10.6	2	2	
78	Se	72	0.097	70	21.7	1	2	
88	Sr	115	0.011	251	13.3	4	3	
95	Mo	115	-0.004	14	35.3	2	2	
107	Ag	115	0.002	71	57.9	0.4	1	
111	Cd	115	-0.004	2	86.6	0.4	0.3	
118	Sn	115	0.031	519	5.5	4	3	
121	Sb	115	0.006	166	31.5	2	0.8	
137	Ba	115	0.015	47	18.9	2	3	
205	Tl	209	0.000	26	61.6	2	0.5	
208	Pb	209	-0.002	280	20.0	0.4	0.3	

QC ISTD Table

Mass	Name	CPS	%RSD	Ref CPS	%Rec	Low	High	QC Flag
45	Sc	838258	0.89	900744	93.06	70	120	
72	Ge	652989	0.94	691836	94.38	70	120	
115	In	6222740	1.27	6634288	93.80	70	120	
209	Bi	15341203	0.92	16365010	93.74	70	120	

Pmoist
For

DHL Work Order
1605097

PMOIST_160511A
For

DHL Work Order
1605097

Percent Moisture - Bench Sheet

Enter ALL weights into the DHL LIMS - Single Analyte Worksheet

Method Requirements: Samples dried to constant weight (12-16 hours) at oven temperature of 110 ± 5°C

Constant Weight is achieved if 2nd weight is <0.1% of 1st weight
[(Final Weight - 2nd Weightl) / (Final Weightl)] x 100%

RUN ID:	160511 PMOIST A				
Date Started:	05/11/2016	Date Ended:	05/12/16	Date Ended:	
Time Started:	16:26	Time Ended:	09:55	Time Ended:	
Analyst Start:	WB	Analyst End:	WB	Analyst End:	
Balance #	20	Balance #	20	Balance #	
Oven #	FISHER-2	Thermometer #	81	2nd Weighing - if 1st dry is <12 hrs	
		Correction Factor	0.0		
Initial Temperature	107.7°C	Final Temperature	108.2		

Sample ID	Tare Wt (g)	Tare + Sample (g)	Final Wt (g)	2nd Weight	<0.1% (Y/N)
&SampID					
1605071-37A	1.01	13.33	12.45		DNR
1605072-04A	1.05	13.08	8.87		
1605072-05A	0.98	13.96	11.94		
1605072-06A	1.00	14.04	11.72		
1605072-07A	1.01	13.72	11.88		
1605072-08A	1.02	14.22	12.25		
1605090-06C	1.02	13.37	12.20		
1605090-07C	1.00	14.19	12.49		
1605090-08C	1.01	12.54	11.77		
1605090-09C	1.04	12.59	11.50		
1605090-10C	1.01	14.09	12.61		
1605090-11C	1.01	13.30	12.12		
1605090-12C	1.01	14.37	13.51		
1605090-13C	1.03	12.79	11.64		
1605090-14C	1.02	13.80	13.30		
1605092-01C	0.99	16.46	3.17		
1605097-16A	1.01	13.53	10.75		DNR
1605097-17A	1.01	12.76			DNR
1605097-18A	1.01	13.20	12.18		DNR
1605097-19A	1.02	13.56	12.43		DNR
1605097-17A DUP	1.00	12.13	10.95		

DOD - Will Redo

Broken Jar

Mostly water

Samp Spilled

DoD - Will Redo

Data Folder Contents	Review Items	Check	2nd Level Review
Hard Copies MUST match LIMS data			
1. Is the Prep Batch Report included?	Prep Start/End Dates SampAmt=10, FinVol=10 20 field samples/batch, 1 DUP/batch	X	
2. Is the Run Log included?	Test Code, Sample Type Batch ID, and Analysis Date/Time	X	x
3. Is PMOIST bench sheet included?	Bench sheet vs. LIMS - Single Analyte Worksheet	X	
4. Is the RPD for the sample DUP ≤30%?	If RPD fails criteria, then state reason below: DUP not reported since parent sample was spilled.	X	

QA APPROVED
By John DuPont at 9:27:21 AM, 5/13/2016

Analyst: [signature] Date: 05/12/16

Second-Level Review: Janice Whitt Date: 5/12/2016

F:\IC\Pmoist\PMOIST 2016\160511 PMOIST A

REVIEWED BY
By Janice Whitt at 5:34:32 PM, 5/12/2016

DHL Analytical, Inc.

Run ID: **PMOIST_160511A** **Run No.:** 85780

Analytical Run Date: 5/11/2016 **InstrumentID:** Pmoist

Analyst: Will Boston

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
1605071-37A	1	PMOIST	SAMP	75102	5/11/2016		
1605072-04A	1	PMOIST	SAMP	75102	5/11/2016		
1605072-05A	1	PMOIST	SAMP	75102	5/11/2016		
1605072-06A	1	PMOIST	SAMP	75102	5/11/2016		
1605072-07A	1	PMOIST	SAMP	75102	5/11/2016		
1605072-08A	1	PMOIST	SAMP	75102	5/11/2016		
1605090-06C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-07C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-08C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-09C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-10C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-11C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-12C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-13C	1	PMOIST	SAMP	75102	5/11/2016		
1605090-14C	1	PMOIST	SAMP	75102	5/11/2016		
1605092-01C	1	PMOIST	SAMP	75102	5/11/2016		
1605097-16A	1	PMOIST	SAMP	75102	5/11/2016		
1605097-18A	1	PMOIST	SAMP	75102	5/11/2016		
1605097-19A	1	PMOIST	SAMP	75102	5/11/2016		
1605097-17A-DUP	1	PMOIST	DUP	75102	5/11/2016		

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:59:13 AM**
Digestion: **Start: 5/11/2016 4:26:00 PM / Stop: 5/12/2016 9:55:00 AM**
Prep End Date: **5/12/2016 1:26:29 PM**

Prep Batch **75102** Prep Code: **PMOIST_PREP** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

Oven #2
Balance #20
Thermometer # 81

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-37A	Soil		10	10	1.000	1 of 1	
	DOD - Will Do Over						
1605072-04A	Sediment		10	10	1.000	1 of 1	
	Broken Sample Jar						
1605072-05A	Sediment		10	10	1.000	1 of 1	
1605072-06A	Sediment		10	10	1.000	1 of 1	
1605072-07A	Sediment		10	10	1.000	1 of 1	
1605072-08A	Sediment		10	10	1.000	1 of 1	
1605090-06C	Soil		10	10	1.000	1 of 1	
1605090-07C	Soil		10	10	1.000	1 of 1	
1605090-08C	Soil		10	10	1.000	1 of 1	
1605090-09C	Soil		10	10	1.000	1 of 1	
1605090-10C	Soil		10	10	1.000	1 of 1	
1605090-11C	Soil		10	10	1.000	1 of 1	
1605090-12C	Soil		10	10	1.000	1 of 1	
1605090-13C	Soil		10	10	1.000	1 of 1	
1605090-14C	Soil		10	10	1.000	1 of 1	
1605092-01C	Sludge		10	10	1.000	1 of 1	
	Mostly Water Mix sample well before prep						
1605097-16A	Soil		10	10	1.000	1 of 1	
	DOD - Will Do Over						
1605097-17A-DUP	Soil		10	10	1.000	of	
	Parent Sample Spilled						
1605097-18A	Soil		10	10	1.000	1 of 1	
	DOD - Will Do Over						

REVIEWED BY
By Janice Whitt at 5:07:47 PM, 5/12/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/11/2016 9:59:13 AM**
Digestion: **Start: 5/11/2016 4:26:00 PM / Stop: 5/12/2016 9:55:00 AM**
Prep End Date: **5/12/2016 1:26:29 PM**

Prep Batch **75102** Prep Code: **PMOIST_PREP** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

Oven #2
Balance #20
Thermometer # 81

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-19A	Soil		10	10	1.000	1 of 1	
	DOD - Will Do Over						

REVIEWED BY
By Janice Whitt at 5:07:49 PM, 5/12/2016

PMOIST_160512A
For

DHL Work Order
1605097

DHL Analytical, Inc.

Run ID: **PMOIST_160512A** **Run No.:** 85807

Analytical Run Date: 5/12/2016 **InstrumentID:** Pmoist

Analyst: Will Boston

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
1605071-37A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-16A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-17A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-18A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-19A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-20A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-21A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-23A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605097-26A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-31A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-34A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-37A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-40A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-41A	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605099-01C	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605130-01C	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605133-04B	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605133-05B	1	PMOIST	SAMP	75130	5/13/2016 12:52:20 PM		
1605098-40A DUP	1	PMOIST	SAMP DUP	75130	5/13/2016 12:52:20 PM		

REVIEWED/APPROVED

By Sherri Herschmann at 4:59:47 PM, 5/13/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 10:04:47 AM**
Digestion: **Start: 5/12/2016 5:47:00 PM / Stop: 5/13/2016 8:51:00 AM**
Prep End Date: **5/13/2016 12:52:20 PM**

Prep Batch **75130** Prep Code: **PMOIST_PREP** Technician: **Will Boston**

Prep Factor Units: **mL/g**

Equipment List

Oven #2
Balance #20
Thermometer # 81

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605071-37A	Soil		10	10	1.000	1 of 1	
DOD redo							
1605097-16A	Soil		10	10	1.000	1 of 1	
DOD redo							
1605097-17A	Soil		10	10	1.000	1 of 1	
DOD redo							
1605097-18A	Soil		10	10	1.000	1 of 1	
DOD redo							
1605097-19A	Soil		10	10	1.000	1 of 1	
DOD redo							
1605097-20A	Soil		10	10	1.000	1 of 1	
1605097-21A	Soil		10	10	1.000	1 of 1	
1605097-23A	Soil		10	10	1.000	1 of 1	
1605097-26A	Soil		10	10	1.000	1 of 1	
1605098-31A	Soil		10	10	1.000	1 of 1	
1605098-34A	Soil		10	10	1.000	1 of 1	
1605098-37A	Soil		10	10	1.000	1 of 1	
1605098-40A	Soil		10	10	1.000	1 of 1	
1605098-40A DUP	Soil		10	10	1.000	of	
1605098-41A	Soil		10	10	1.000	1 of 1	
1605099-01C	Sludge		10	10	1.000	of 2	
1605130-01C	Soil		10	10	1.000	1 of 1	
1605133-04B	Soil		10	10	1.000	1 of 1	
1605133-05B	Soil		10	10	1.000	1 of 1	

REVIEWED/APPROVED

By Sherri Herschmann at 4:59:50 PM, 5/13/2016

Method Requirements: Samples dried to constant weight (12-16 hours) at oven temperature of 110 ± 5°C

Constant Weight is achieved if 2nd weight is <0.1% of 1st weight

[(Final Weight - 2nd Weight) / (Final Weight)] x 100%

RUN ID:	160512 PMOIST A				
Date Started:	05/12/2016	Date Ended:	05/13/16	Date Ended:	
Time Started:	17:47	Time Ended:	08:51	Time Ended:	
Analyst Start:	WB	Analyst End:	WB	Analyst End:	
Balance #	20	Balance #	20	Balance #	
Oven #	FISHER-2	Thermometer #	81	2nd Weighing - if 1st dry is <12 hrs	
		Correction Factor	0.0		
Initial Temperature	107.4°C	Final Temperature	107.5		

Sample ID	Tare Wt (g)	Tare + Sample (g)	Final Wt (g)	2nd Weight	<0.1% (Y/N)
SampID					
1605071-37A	1.04	12.94	12.00		
1605097-16A	1.01	12.41	10.18		
1605097-17A	0.99	12.16	10.98		
1605097-18A	0.99	12.94	12.14		
1605097-19A	1.02	12.52	11.52		
1605097-20A	1.02	12.11	10.67		
1605097-21A	1.03	13.29	11.81		
1605097-23A	1.00	12.58	10.88		
1605097-26A	1.03	13.20	11.25		
1605098-31A	1.05	12.70	11.34		
1605098-34A	1.01	12.45	11.52		
1605098-37A	1.02	12.91	11.81		
1605098-40A	1.07	13.63	12.65		
1605098-41A	1.0	12.94	11.83		
1605099-01C	1.00	12.66	4.11		
1605130-01C	0.99	13.67	10.25		
1605133-04B	1.01	13.95	10.83		
1605133-05B	1.01	13.16	10.07		
160 5098-40 DUP	0.99	12.87	11.99		

Data Folder Contents	Review Items	Check	2nd Level Review
Hard Copies MUST match LIMS data			
1. Is the Prep Batch Report included?	Prep Start/End Dates SampAmt=10, FinVol=10 20 field samples/batch, 1 DUP/batch	X	X
2. Is the Run Log included?	Test Code, Sample Type Batch ID, and Analysis Date/Time	X	
3. Is PMOIST bench sheet included?	Bench sheet vs. LIMS - Single Analyte Worksheet	X	
4. Is the RPD for the sample DUP ≤30%?	If RPD fails criteria, then state reason below:	X	

Analyst: [signature] Date: 05/13/16

[signature] 05/13/2016

REVIEWED/APPROVED

By Sherri Herschmann at 4:59:55 PM, 5/13/2016

□□MM□□□□

□

□□□□d□□□□

□□□ □□□□□□□□	□□□□□□□	M□□r x□	□□□ □□□□□ □□□□□□□□□□□□□□ □□□□□	□□r□□□□ □□□ □□□□□	□□□□□□□□□□□□			
					□□ □□	□□□ □□	M□□□	M□□□□
□□ □□□ □016□8□10□□□□	160□0□8□□0□	□□□□□	□/0□/2016□	□	□	□□	□□	□
□□□ □0□□0□0□□□□□	160□0□8□□1□	□□□□□	□/0□/2016□	□	□	□□	□□	□
□□□ □08□0□0□□□□□	160□0□8□□□□	□□□□□	□/0□/2016□	□	□	□□	□□	□
□□□ □08□0□□□2□0□□□	160□0□8□□□□	□□□□□	□/0□/2016□	□	□	□□	□□	□
□□□ □08□2□0□□□0□□□	160□0□8□□6□	□□□□□	□/0□/2016□	□	□	□□	□□	□
□□□ □0□□0□0□□□□□	160□0□8□□□□	□□□□□	□/0□/2016□	□	□	□□	□□	□
□□□ □0□□0□□□2□0□□□	160□0□8□□8□	□□□□□	□/0□/2016□	□	□	□□	□□	□
□□□ □0□□2□0□□□0□□□	160□0□8□□□□	□□□□□	□/0□/2016□	□	□	□□	□□	□
□□□0□□20160□0□□□□	160□0□8□□0□	□□□□□	□/0□/2016□	□□□ □0□□ □0□0□□□□	□	□□	□□	□
□□□06□20160□0□□□□	160□0□8□□1□	□□□□□	□/0□/2016□	□□□ □08□ □0□0□□□□	□	□□	□□	□
□□11□20160□0□□□□	160□0□8□□2□	□ □□□r□	□/0□/2016□	□	□	□□	□□	□

□

□ □□□□□□□

1□M□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□d□□□□□□□d□□□

2□□□ □□□□□□ □□r□□□□□□□□□□/□ □□r□□□□□□□□□□□□d□□□□□□□□□□□□□□□M□/M□□ □□□□□□□□□□□□□□□□□□□□

[illegible]

[illegible]

[illegible]	[illegible]		[illegible]		[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

1 [illegible] 11 20160 0 [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[

□□M□□□□□□□□□□□□□□□□□□M□□□□□□□□□□□□□□□□□□

□□□ □□□□

| □□□ □□□□□□□□/□□□□□□□□□□□□□□□ | □□□ □□□□□d□ | □□□ □□□□□□□□□□□ | □□□□□□□□□□□□□□□□

□□□

□ □□□□

M□□□□□□□□□□□□□□□

□

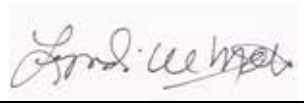
□

1□□□ □□□d□□□□□□□ □□□□

□

□□□□□□□□□□□□d□□□d□□□□□□□ □□□□□r□□□□□□□□□□ □□□□□□ □□□□d□□□r□□□□r□□□□□□d□□□□□□□□□□□□□□□

□□□



2016

□□□□ □□□□□M□□□□2□8□□□□
□□MM□□□

□□□ □□□□ □□□□□□□r□□□ □r□□□□□□□□□	□□□ □□□□□□□	□□□ □□□□□d	□ □□□□□□□r	□□□□□□□
□□□□				
160□0□8	□□□□□□□002□08□0□2□□□	□□□□	□□	□□
	□□□□□□□002□08□2□□□□□	□□□□	□□	□□
	□□□□□□□002□08□□□6□□□	□□□□	□□	□□
	□□□□□□□002□08□6□8□□□	□□□□	□□	□□
	□□□□□□□002□08□8□10□□□	□□□□	□□	□□

r		d	r	
	06 20160 0	r		d
		r		d
		r		d
		r		d
		r		d
		r		d
		r		d
		r		d
		r		d
		r		d
		d 1 2 d r		d
		r		d
		r		d
	11 20160 0			
M				
160 0 8	002 08 0 2			
	002 08 2			
	002 08 6			
	002 08 6 8			
	002 08 8 10			
	002 08 0 2			
	002 08 2			
	002 08 6			
	002 08 6 8			
	002 08 8 10			
	002 08 0 2			
	002 08 2			
	002 08 6			
	002 08 6 8			
	002 08 8 10			
	016 0 2			
	016 2			
	016 6			
	016 6 8			
	016 8 10			
	016 0 2			
	016 2			
	016 6			
	016 6 8			
	016 8 10			
	016 0 2			
	016 2			
	016 6			
	016 6 8			
	016 8 10			
	0 0 0			
	08 0 0			
	08 0 2 0			
	08 2 0 0			
	0 0 0			
	0 0 2 0			
	0 2 0 0			
	0 20160 0			
	06 20160 0			
	11 20160 0			

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70023

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: Alex.Walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erika.Denkenberger@arcadis.com

DATE: MAY 9, 2016 PAGE 1 OF 3
PO #: DHL QUOTE #:
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285081.0000.00044 COLLECTOR: C. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐ [METHOD 8021]	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO [METHOD 8015] ☐ DRO [METHOD 8105] ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX1 1 ☐ Lead	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
SGR-DU002-08(0-2)-A	01	5-9-16	0930	S	Bag	1				X					X					X								
SGR-DU002-08(2-4)-A	02	5-9-16	0931	S	Bag	1				X					X					X								
SGR-DU002-08(4-6)-A	03	5-9-16	0932	S	Bag	1				X					X					X								
SGR-DU002-08(6-8)-A	04	5-9-16	0934	S	Bag	1				X					X					X								
SGR-DU002-08(8-10)-A	05	5-9-16	0935	S	Bag	1				X					X					X								
SGR-DU002-08(0-2)-B	06	5-9-16	0939	S	Bag	1				X					X					X								
SGR-DU002-08(2-4)-B	07	5-9-16	0941	S	Bag	1				X					X					X								
SGR-DU002-08(4-6)-B	08	5-9-16	0942	S	Bag	1				X					X					X								
SGR-DU002-08(6-8)-B	09	5-9-16	0943	S	Bag	1				X					X					X								
SGR-DU002-08(8-10)-B	10	5-9-16	0944	S	Bag	1				X					X					X								
SGR-DU002-08(0-2)-C	11	5-9-16	0947	S	Bag	1				X					X					X								
SGR-DU002-08(2-4)-C	12	5-9-16	0949	S	Bag	1				X					X					X								
SGR-DU002-08(4-6)-C	13	5-9-16	0950	S	Bag	1				X					X					X								
SGR-DU002-08(6-8)-C	14	5-9-16	0951	S	Bag	1				X					X					X								
SGR-DU002-08(8-10)-C	15	5-9-16	0952	S	Bag	1				X					X					X								

RELINQUISHED BY: (Signature) DATE/TIME 5-9-16/1800 RECEIVED BY: (Signature) FedEx
RELINQUISHED BY: (Signature) FedEx DATE/TIME 5/10/16 10:00 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return 3

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 1.4 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY ☐ HAND DELIVERED
0.9 | 0.7 | 2.5 | 0.6 | 1.6 | 2.3 | 1.3 | 1.8 | 1.5 | 1.4 | 10 | 35 | 40

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

Nº 70024
CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: Alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erica.Denkenberger@arcadis.com

DATE: PAGE 2 OF 3
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1005098
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285081.0000.00044 COLLECTOR: C. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐ [METHOD 8021]	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO [METHOD 8015] ☐ DRO [METHOD 8105] ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 608 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐ 1 LEAD	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
SGR-DU016(0-2)-A	16	5-5-16	1349	S	Bag	1				X					X					X								
SGR-DU016(2-4)-A	17	5-5-16	1350	S	Bag	1				X					X					X								
SGR-DU016(4-6)-A	18	5-5-16	1353	S	Bag	1				X					X					X								
SGR-DU016(6-8)-A	19	5-5-16	1354	S	Bag	1				X					X					X								
SGR-DU016(8-10)-A	20	5-5-16	1355	S	Bag	1				X					X					X								
SGR-DU016(0-2)-B	21	5-5-16	1359	S	Bag	1				X					X					X								
SGR-DU016(2-4)-B	22	5-5-16	1400	S	Bag	1				X					X					X								
SGR-DU016(4-6)-B	23	5-5-16	1401	S	Bag	1				X					X					X								
SGR-DU016(6-8)-B	24	5-5-16	1402	S	Bag	1				X					X					X								
SGR-DU016(8-10)-B	25	5-5-16	1403	S	Bag	1				X					X					X								
SGR-DU016(0-2)-C	26	5-5-16	1406	S	Bag	1				X					X					X								
SGR-DU016(2-4)-C	27	5-5-16	1407	S	Bag	1				X					X					X								
SGR-DU016(4-6)-C	28	5-5-16	1408	S	Bag	1				X					X					X								
SGR-DU016(6-8)-C	29	5-5-16	1409	S	Bag	1				X					X					X								
SGR-DU016(8-10)-C	30	5-5-16	1410	S	Bag	1				X					X					X								

RELINQUISHED BY: (Signature) DATE/TIME 5-5-16 1800 RECEIVED BY: (Signature) FedEx
RELINQUISHED BY: (Signature) DATE/TIME 5/10/16 10:00 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.4 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70026
CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walters@Arcadis.com
DATA REPORTED TO: alex walters
ADDITIONAL REPORT COPIES TO: Erica.Venkenberger@arcadis.com

DATE: May 9, 2016 PAGE 3 OF 3
PO #: 04285081.0000.00044 DHL WORK ORDER #: 16005098
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285081.0000.00044 COLLECTOR: C. Ferguson

Authorize 5% surcharge for TRRP Report? ❑ Yes ❑ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ❑ NaOH ❑	ICE	UNPRESERVED	ANALYSES: BTEX ❑ MTBE ❑ 8021 METHOD ❑	TPH 1005 ❑ TPH 1006 ❑ HOLD 1006 ❑	GRO (METHOD 8015) ❑ DRO (METHOD 8105) ❑	VOC 8260 ❑ VOC 624 ❑ VOC 8260/5035 ❑	SVOC 8270 ❑ PAH 8270 ❑ HOLD PAH ❑ SVOC 625 ❑	8270 PEST ❑ 625 PEST/PCB ❑ 608 PCB ❑ 8082 PCB ❑ 8270 PCB ❑	8270 O-P PEST ❑ 8081 HERB ❑ T PHOS, AMMONIA ❑	8321 HERB ❑ METALS 6020 ❑ METALS 200.8 ❑ DISS. METALS ❑ Lead	RCRA ❑ TX11 ❑	PH ❑ HEX CHROM ❑ ALKALINITY ❑ COD ❑	CHLORIDE ❑ ANIONS ❑	TCLP-SVOC ❑ VOC ❑ PEST ❑ HERB ❑	TCLP-METALS ❑ RCRA 8 ❑ TX-11 ❑ Pb ❑	RCI ❑ FLASHPOINT ❑ DGAS ❑	TDS ❑ TSS ❑ % MOISTURE ❑ CYANIDE ❑	FIELD NOTES
ROW-09 (0-0.5)	31	5-9-16	0855	S	4oz Jar	1				X					X					X							
ROW-09 (0.5-2.0)	32	5-9-16	0905	S	4oz Jar	1				X					X					X							Extract + Hold
ROW-09 (2.0-4.0)	33	5-9-16	0910	S	4oz Jar	1				X					X					X							"
ROW-08 (0-0.5)	34	5-9-16	0937	S	4oz Jar	1				X					X					X							
ROW-08 (0.5-2.0)	35	5-9-16	1000	S	4oz Jar	1				X					X					X							Extract + Hold
ROW-08 (2.0-4.0)	36	5-9-16	1010	S	4oz Jar	1				X					X					X							"
ROW-07 (~~0~~-0.5)	37	5-9-16	1020	S	4oz Jar	1				X					X					X							
ROW-07 (0.5-2.0)	38	5-9-16	1030	S	4oz Jar	1				X					X					X							Extract + Hold
ROW-07 (2.0-4.0)	39	5-9-16	1040	S	4oz Jar	1				X					X					X							"
DUP05 (20160509)	40	5-9-16	0930	S	4oz Jar	1				X					X					X							
DUP06 (20160509)	41	5-9-16	1080	S	4oz Jar	1				X					X					X							
EBIL (20160507)	42	5-7-16	1700	W	poly/glass	2				X					X					X							
(X) added per A Walters 5/12/16 @ 4:45 afo																											
(V) -36, -39 added per A. Walters 5/24/16 @ 4:39 afo																											

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)
5-9-16 1800 Fedex
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)
Fedex 5/10/16 10:00 Hover
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

❑ DHL DISPOSAL @ $5.00 each ❑ Return 5

TURN AROUND TIME
RUSH ❑ CALL FIRST
1 DAY ❑ CALL FIRST
2 DAY ❑
NORMAL ☒
OTHER ❑ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 1.4 THERM #: 78
CUSTODY SEALS: ❑ BROKEN ☒ INTACT ❑ NOT USED
CARRIER: ❑ LONE STAR ☒ FEDEX ❑ UPS ❑ OTHER
❑ COURIER DELIVERY
❑ HAND DELIVERED

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Arcadis** Date Received: **5/10/2016**

Work Order Number **1605098** Received by **JT**

Checklist completed by: Signature 5/11/2016 Date Reviewed by Initials 5/11/2016 Date

Carrier name FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	**1.4** °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 8086
	Adjusted? NO		Checked by
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: Per Alex, add EB11 to this work order and analyze for PAH + Pb.

Corrective Action Added sample per clients request.

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605098-01
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	23.6	0.0909	0.273	0.136		mg/Kg-dry	5	05/25/16 09:48 PM
IS: Bismuth	83.8	0	30-120	0		%REC	5	05/25/16 09:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0658	0.0491	0.0981	0.0736	J	mg/Kg-dry	10	05/20/16 05:53 PM
Acenaphthylene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/20/16 05:53 PM
Anthracene	0.273	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[a]anthracene	1.62	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[a]pyrene	1.92	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[b]fluoranthene	1.78	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[e]pyrene	1.39	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[g,h,i]perylene	1.34	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[j]fluoranthene	0.909	0.0491	0.0981	0.0736	N	mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[k]fluoranthene	0.937	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Chrysene	1.95	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Dibenz[a,h]anthracene	0.272	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Fluoranthene	3.06	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Fluorene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/20/16 05:53 PM
Indeno[1,2,3-cd]pyrene	1.14	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Phenanthrene	1.32	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Pyrene	2.69	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
IS: Acenaphthene-d10	95.6	0	50-200	0		%REC	10	05/20/16 05:53 PM
IS: Chrysene-d12	82.0	0	50-200	0		%REC	10	05/20/16 05:53 PM
IS: Naphthalene-d8	92.5	0	50-200	0		%REC	10	05/20/16 05:53 PM
IS: Perylene-d12	83.2	0	50-200	0		%REC	10	05/20/16 05:53 PM
IS: Phenanthrene-d10	76.3	0	50-200	0		%REC	10	05/20/16 05:53 PM
Surr: 2-Fluorobiphenyl	85.2	0	46-115	0		%REC	10	05/20/16 05:53 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605098-01
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.9	0	58-133	0		%REC	10	05/20/16 05:53 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605098-02
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:31 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	24.0	0.0893	0.268	0.134		mg/Kg-dry	5	05/25/16 10:42 PM
IS: Bismuth	82.6	0	30-120	0		%REC	5	05/25/16 10:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/20/16 09:00 PM
Acenaphthylene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/20/16 09:00 PM
Anthracene	0.114	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[a]anthracene	1.01	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[a]pyrene	1.30	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[b]fluoranthene	1.22	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[e]pyrene	0.956	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[g,h,i]perylene	0.949	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[j]fluoranthene	0.590	0.0479	0.0959	0.0719	N	mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[k]fluoranthene	0.593	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Chrysene	1.26	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Dibenz[a,h]anthracene	0.174	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Fluoranthene	1.68	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Fluorene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/20/16 09:00 PM
Indeno[1,2,3-cd]pyrene	0.788	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Phenanthrene	0.579	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Pyrene	1.53	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/20/16 09:00 PM
IS: Chrysene-d12	84.1	0	50-200	0		%REC	10	05/20/16 09:00 PM
IS: Naphthalene-d8	96.1	0	50-200	0		%REC	10	05/20/16 09:00 PM
IS: Perylene-d12	86.6	0	50-200	0		%REC	10	05/20/16 09:00 PM
IS: Phenanthrene-d10	78.4	0	50-200	0		%REC	10	05/20/16 09:00 PM
Surr: 2-Fluorobiphenyl	87.4	0	46-115	0		%REC	10	05/20/16 09:00 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605098-02
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:31 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.6	0	58-133	0		%REC	10	05/20/16 09:00 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605098-03
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:32 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	18.0	0.0840	0.252	0.126		mg/Kg-dry	5	05/25/16 10:48 PM
IS: Bismuth	84.2	0	30-120	0		%REC	5	05/25/16 10:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/20/16 09:37 PM
Acenaphthylene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/20/16 09:37 PM
Anthracene	0.234	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[a]anthracene	1.11	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[a]pyrene	1.11	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[b]fluoranthene	1.07	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[e]pyrene	0.774	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[g,h,i]perylene	0.743	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[j]fluoranthene	0.527	0.0483	0.0966	0.0725	N	mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[k]fluoranthene	0.530	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Chrysene	1.25	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Dibenz[a,h]anthracene	0.139	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Fluoranthene	2.58	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Fluorene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/20/16 09:37 PM
Indeno[1,2,3-cd]pyrene	0.649	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Phenanthrene	1.20	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Pyrene	2.13	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
IS: Acenaphthene-d10	99.4	0	50-200	0		%REC	10	05/20/16 09:37 PM
IS: Chrysene-d12	83.4	0	50-200	0		%REC	10	05/20/16 09:37 PM
IS: Naphthalene-d8	94.0	0	50-200	0		%REC	10	05/20/16 09:37 PM
IS: Perylene-d12	85.3	0	50-200	0		%REC	10	05/20/16 09:37 PM
IS: Phenanthrene-d10	77.2	0	50-200	0		%REC	10	05/20/16 09:37 PM
Surr: 2-Fluorobiphenyl	93.0	0	46-115	0		%REC	10	05/20/16 09:37 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605098-03
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:32 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.9	0	58-133	0		%REC	10	05/20/16 09:37 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605098-04
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:34 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	16.4	0.0847	0.254	0.127		mg/Kg-dry	5	05/25/16 10:54 PM
IS: Bismuth	82.2	0	30-120	0		%REC	5	05/25/16 10:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Acenaphthylene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[a]anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[a]pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[b]fluoranthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[e]pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[g,h,i]perylene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[j]fluoranthene	0.0741	0.0494	0.0988	0.0741	NU	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[k]fluoranthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Chrysene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Dibenz[a,h]anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Fluoranthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Fluorene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Indeno[1,2,3-cd]pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Phenanthrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/20/16 10:14 PM
IS: Chrysene-d12	85.0	0	50-200	0		%REC	10	05/20/16 10:14 PM
IS: Naphthalene-d8	97.1	0	50-200	0		%REC	10	05/20/16 10:14 PM
IS: Perylene-d12	87.4	0	50-200	0		%REC	10	05/20/16 10:14 PM
IS: Phenanthrene-d10	79.0	0	50-200	0		%REC	10	05/20/16 10:14 PM
Surr: 2-Fluorobiphenyl	86.3	0	46-115	0		%REC	10	05/20/16 10:14 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605098-04
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:34 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.4	0	58-133	0		%REC	10	05/20/16 10:14 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605098-05
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:35 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	19.5	0.0870	0.261	0.130		mg/Kg-dry	5	05/25/16 11:00 PM
IS: Bismuth	83.2	0	30-120	0		%REC	5	05/25/16 11:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Acenaphthylene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[a]anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[a]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[b]fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[e]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[g,h,i]perylene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[j]fluoranthene	0.0718	0.0478	0.0957	0.0718	NU	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[k]fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Chrysene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Dibenz[a,h]anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Fluorene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Indeno[1,2,3-cd]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Phenanthrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/20/16 10:52 PM
IS: Chrysene-d12	83.4	0	50-200	0		%REC	10	05/20/16 10:52 PM
IS: Naphthalene-d8	96.5	0	50-200	0		%REC	10	05/20/16 10:52 PM
IS: Perylene-d12	85.8	0	50-200	0		%REC	10	05/20/16 10:52 PM
IS: Phenanthrene-d10	77.1	0	50-200	0		%REC	10	05/20/16 10:52 PM
Surr: 2-Fluorobiphenyl	90.4	0	46-115	0		%REC	10	05/20/16 10:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605098-05
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:35 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.9	0	58-133	0		%REC	10	05/20/16 10:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605098-06
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:39 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	13.3	0.0926	0.278	0.139		mg/Kg-dry	5	05/25/16 11:06 PM
IS: Bismuth	83.8	0	30-120	0		%REC	5	05/25/16 11:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/20/16 11:29 PM
Acenaphthylene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/20/16 11:29 PM
Anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[a]anthracene	0.457	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[a]pyrene	0.661	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[b]fluoranthene	0.623	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[e]pyrene	0.480	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[g,h,i]perylene	0.496	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[j]fluoranthene	0.276	0.0500	0.0999	0.0749	N	mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[k]fluoranthene	0.290	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Chrysene	0.606	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Dibenz[a,h]anthracene	0.0690	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/20/16 11:29 PM
Fluoranthene	0.724	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Fluorene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/20/16 11:29 PM
Indeno[1,2,3-cd]pyrene	0.404	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Phenanthrene	0.223	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Pyrene	0.683	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/20/16 11:29 PM
IS: Chrysene-d12	86.4	0	50-200	0		%REC	10	05/20/16 11:29 PM
IS: Naphthalene-d8	97.2	0	50-200	0		%REC	10	05/20/16 11:29 PM
IS: Perylene-d12	88.3	0	50-200	0		%REC	10	05/20/16 11:29 PM
IS: Phenanthrene-d10	78.4	0	50-200	0		%REC	10	05/20/16 11:29 PM
Surr: 2-Fluorobiphenyl	88.1	0	46-115	0		%REC	10	05/20/16 11:29 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605098-06
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:39 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.2	0	58-133	0		%REC	10	05/20/16 11:29 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605098-07
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:41 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	15.3	0.0893	0.268	0.134		mg/Kg-dry	5	05/25/16 11:12 PM
IS: Bismuth	80.6	0	30-120	0		%REC	5	05/25/16 11:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0698	0.0466	0.0931	0.0698	U	mg/Kg-dry	10	05/21/16 12:07 AM
Acenaphthylene	0.0698	0.0466	0.0931	0.0698	U	mg/Kg-dry	10	05/21/16 12:07 AM
Anthracene	0.0698	0.0466	0.0931	0.0698	U	mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[a]anthracene	0.410	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[a]pyrene	0.571	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[b]fluoranthene	0.534	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[e]pyrene	0.419	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[g,h,i]perylene	0.430	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[j]fluoranthene	0.240	0.0466	0.0931	0.0698	N	mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[k]fluoranthene	0.257	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Chrysene	0.531	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Dibenz[a,h]anthracene	0.0698	0.0466	0.0931	0.0698	U	mg/Kg-dry	10	05/21/16 12:07 AM
Fluoranthene	0.648	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Fluorene	0.0698	0.0466	0.0931	0.0698	U	mg/Kg-dry	10	05/21/16 12:07 AM
Indeno[1,2,3-cd]pyrene	0.348	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Phenanthrene	0.202	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Pyrene	0.593	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/21/16 12:07 AM
IS: Chrysene-d12	83.6	0	50-200	0		%REC	10	05/21/16 12:07 AM
IS: Naphthalene-d8	96.0	0	50-200	0		%REC	10	05/21/16 12:07 AM
IS: Perylene-d12	86.1	0	50-200	0		%REC	10	05/21/16 12:07 AM
IS: Phenanthrene-d10	77.7	0	50-200	0		%REC	10	05/21/16 12:07 AM
Surr: 2-Fluorobiphenyl	90.7	0	46-115	0		%REC	10	05/21/16 12:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605098-07
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:41 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.8	0	58-133	0		%REC	10	05/21/16 12:07 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605098-08
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:42 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	10.4	0.0962	0.288	0.144		mg/Kg-dry	5	05/25/16 11:18 PM
IS: Bismuth	84.3	0	30-120	0		%REC	5	05/25/16 11:18 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Acenaphthylene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Anthracene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[a]anthracene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[a]pyrene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[b]fluoranthene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[e]pyrene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[g,h,i]perylene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[j]fluoranthene	0.0712	0.0474	0.0949	0.0712	NU	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[k]fluoranthene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Chrysene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Dibenz[a,h]anthracene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Fluoranthene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Fluorene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Indeno[1,2,3-cd]pyrene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Phenanthrene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Pyrene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
IS: Acenaphthene-d10	99.3	0	50-200	0		%REC	10	05/21/16 12:44 AM
IS: Chrysene-d12	81.8	0	50-200	0		%REC	10	05/21/16 12:44 AM
IS: Naphthalene-d8	95.1	0	50-200	0		%REC	10	05/21/16 12:44 AM
IS: Perylene-d12	84.1	0	50-200	0		%REC	10	05/21/16 12:44 AM
IS: Phenanthrene-d10	75.2	0	50-200	0		%REC	10	05/21/16 12:44 AM
Surr: 2-Fluorobiphenyl	90.7	0	46-115	0		%REC	10	05/21/16 12:44 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605098-08
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:42 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/21/16 12:44 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605098-09
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:43 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	16.8	0.0893	0.268	0.134		mg/Kg-dry	5	05/25/16 11:24 PM
IS: Bismuth	84.4	0	30-120	0		%REC	5	05/25/16 11:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[a]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[a]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[b]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[e]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[g,h,i]perylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[j]fluoranthene	0.0747	0.0498	0.0996	0.0747	NU	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[k]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Chrysene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Indeno[1,2,3-cd]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Phenanthrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/21/16 01:21 AM
IS: Chrysene-d12	82.7	0	50-200	0		%REC	10	05/21/16 01:21 AM
IS: Naphthalene-d8	96.1	0	50-200	0		%REC	10	05/21/16 01:21 AM
IS: Perylene-d12	85.1	0	50-200	0		%REC	10	05/21/16 01:21 AM
IS: Phenanthrene-d10	77.3	0	50-200	0		%REC	10	05/21/16 01:21 AM
Surr: 2-Fluorobiphenyl	88.5	0	46-115	0		%REC	10	05/21/16 01:21 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605098-09
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:43 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/21/16 01:21 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605098-10
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:44 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	12.8	0.0901	0.270	0.135		mg/Kg-dry	5	05/25/16 11:30 PM
IS: Bismuth	86.2	0	30-120	0		%REC	5	05/25/16 11:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Acenaphthylene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[a]anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[a]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[b]fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[e]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[g,h,i]perylene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[j]fluoranthene	0.0718	0.0478	0.0957	0.0718	NU	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[k]fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Chrysene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Dibenz[a,h]anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Fluorene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Indeno[1,2,3-cd]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Phenanthrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
IS: Acenaphthene-d10	99.0	0	50-200	0		%REC	10	05/21/16 01:58 AM
IS: Chrysene-d12	82.3	0	50-200	0		%REC	10	05/21/16 01:58 AM
IS: Naphthalene-d8	95.3	0	50-200	0		%REC	10	05/21/16 01:58 AM
IS: Perylene-d12	84.8	0	50-200	0		%REC	10	05/21/16 01:58 AM
IS: Phenanthrene-d10	76.1	0	50-200	0		%REC	10	05/21/16 01:58 AM
Surr: 2-Fluorobiphenyl	87.2	0	46-115	0		%REC	10	05/21/16 01:58 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605098-10
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:44 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.4	0	58-133	0		%REC	10	05/21/16 01:58 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605098-11
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:47 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	15.7	0.0935	0.280	0.140		mg/Kg-dry	5	05/25/16 11:36 PM
IS: Bismuth	80.8	0	30-120	0		%REC	5	05/25/16 11:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/21/16 02:36 AM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/21/16 02:36 AM
Anthracene	0.142	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[a]anthracene	0.619	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[a]pyrene	0.630	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[b]fluoranthene	0.588	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[e]pyrene	0.430	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[g,h,i]perylene	0.414	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[j]fluoranthene	0.279	0.0499	0.0997	0.0748	N	mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[k]fluoranthene	0.298	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Chrysene	0.715	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Dibenz[a,h]anthracene	0.0599	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/21/16 02:36 AM
Fluoranthene	1.47	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/21/16 02:36 AM
Indeno[1,2,3-cd]pyrene	0.355	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Phenanthrene	0.698	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Pyrene	1.21	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/21/16 02:36 AM
IS: Chrysene-d12	85.3	0	50-200	0		%REC	10	05/21/16 02:36 AM
IS: Naphthalene-d8	97.2	0	50-200	0		%REC	10	05/21/16 02:36 AM
IS: Perylene-d12	88.0	0	50-200	0		%REC	10	05/21/16 02:36 AM
IS: Phenanthrene-d10	76.8	0	50-200	0		%REC	10	05/21/16 02:36 AM
Surr: 2-Fluorobiphenyl	84.1	0	46-115	0		%REC	10	05/21/16 02:36 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605098-11
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:47 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.6	0	58-133	0		%REC	10	05/21/16 02:36 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605098-12
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:49 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	11.3	0.0877	0.263	0.132		mg/Kg-dry	5	05/23/16 06:28 PM
IS: Bismuth	97.7	0	30-120	0		%REC	5	05/23/16 06:28 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Acenaphthylene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Anthracene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[a]anthracene	0.0764	0.0493	0.0985	0.0739	J	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[a]pyrene	0.0744	0.0493	0.0985	0.0739	J	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[b]fluoranthene	0.0760	0.0493	0.0985	0.0739	J	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[e]pyrene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[g,h,i]perylene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[j]fluoranthene	0.0739	0.0493	0.0985	0.0739	NU	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[k]fluoranthene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Chrysene	0.0789	0.0493	0.0985	0.0739	J	mg/Kg-dry	10	05/23/16 10:56 AM
Dibenz[a,h]anthracene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Fluoranthene	0.149	0.0493	0.0985	0.0739		mg/Kg-dry	10	05/23/16 10:56 AM
Fluorene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Indeno[1,2,3-cd]pyrene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Phenanthrene	0.0884	0.0493	0.0985	0.0739	J	mg/Kg-dry	10	05/23/16 10:56 AM
Pyrene	0.121	0.0493	0.0985	0.0739		mg/Kg-dry	10	05/23/16 10:56 AM
IS: Acenaphthene-d10	99.3	0	50-200	0		%REC	10	05/23/16 10:56 AM
IS: Chrysene-d12	79.5	0	50-200	0		%REC	10	05/23/16 10:56 AM
IS: Naphthalene-d8	95.2	0	50-200	0		%REC	10	05/23/16 10:56 AM
IS: Perylene-d12	82.2	0	50-200	0		%REC	10	05/23/16 10:56 AM
IS: Phenanthrene-d10	75.7	0	50-200	0		%REC	10	05/23/16 10:56 AM
Surr: 2-Fluorobiphenyl	90.8	0	46-115	0		%REC	10	05/23/16 10:56 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605098-12
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:49 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	82.9	0	58-133	0		%REC	10	05/23/16 10:56 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605098-13
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:50 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	24.4	0.0980	0.294	0.147		mg/Kg-dry	5	05/23/16 06:30 PM
IS: Bismuth	96.5	0	30-120	0		%REC	5	05/23/16 06:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[a]pyrene	0.0590	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[b]fluoranthene	0.0588	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[g,h,i]perylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[k]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Chrysene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Dibenz[a,h]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Fluoranthene	0.0527	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/23/16 11:34 AM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Indeno[1,2,3-cd]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 11:34 AM
IS: Chrysene-d12	83.9	0	50-200	0		%REC	10	05/23/16 11:34 AM
IS: Naphthalene-d8	98.2	0	50-200	0		%REC	10	05/23/16 11:34 AM
IS: Perylene-d12	88.5	0	50-200	0		%REC	10	05/23/16 11:34 AM
IS: Phenanthrene-d10	76.9	0	50-200	0		%REC	10	05/23/16 11:34 AM
Surr: 2-Fluorobiphenyl	88.7	0	46-115	0		%REC	10	05/23/16 11:34 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605098-13
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:50 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.2	0	58-133	0		%REC	10	05/23/16 11:34 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605098-14
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:51 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	18.0	0.0901	0.270	0.135		mg/Kg-dry	5	05/23/16 06:32 PM
IS: Bismuth	96.1	0	30-120	0		%REC	5	05/23/16 06:32 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Acenaphthylene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Anthracene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[a]anthracene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[a]pyrene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[b]fluoranthene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[e]pyrene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[g,h,i]perylene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[j]fluoranthene	0.0737	0.0491	0.0982	0.0737	NU	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[k]fluoranthene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Chrysene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Dibenz[a,h]anthracene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Fluoranthene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Fluorene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Indeno[1,2,3-cd]pyrene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Phenanthrene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Pyrene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 12:11 PM
IS: Chrysene-d12	83.1	0	50-200	0		%REC	10	05/23/16 12:11 PM
IS: Naphthalene-d8	97.9	0	50-200	0		%REC	10	05/23/16 12:11 PM
IS: Perylene-d12	86.9	0	50-200	0		%REC	10	05/23/16 12:11 PM
IS: Phenanthrene-d10	77.3	0	50-200	0		%REC	10	05/23/16 12:11 PM
Surr: 2-Fluorobiphenyl	89.2	0	46-115	0		%REC	10	05/23/16 12:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605098-14
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:51 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.2	0	58-133	0		%REC	10	05/23/16 12:11 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605098-15
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:52 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	25.9	0.0962	0.288	0.144		mg/Kg-dry	5	05/23/16 06:34 PM
IS: Bismuth	93.7	0	30-120	0		%REC	5	05/23/16 06:34 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/23/16 12:48 PM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/23/16 12:48 PM
Anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[a]anthracene	0.444	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[a]pyrene	0.615	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[b]fluoranthene	0.544	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[e]pyrene	0.437	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[g,h,i]perylene	0.417	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[j]fluoranthene	0.257	0.0490	0.0980	0.0735	N	mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[k]fluoranthene	0.269	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Chrysene	0.544	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Dibenz[a,h]anthracene	0.0788	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/23/16 12:48 PM
Fluoranthene	0.571	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/23/16 12:48 PM
Indeno[1,2,3-cd]pyrene	0.339	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Phenanthrene	0.124	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Pyrene	0.545	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 12:48 PM
IS: Chrysene-d12	86.2	0	50-200	0		%REC	10	05/23/16 12:48 PM
IS: Naphthalene-d8	96.9	0	50-200	0		%REC	10	05/23/16 12:48 PM
IS: Perylene-d12	89.7	0	50-200	0		%REC	10	05/23/16 12:48 PM
IS: Phenanthrene-d10	77.5	0	50-200	0		%REC	10	05/23/16 12:48 PM
Surr: 2-Fluorobiphenyl	86.7	0	46-115	0		%REC	10	05/23/16 12:48 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605098-15
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:52 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.0	0	58-133	0		%REC	10	05/23/16 12:48 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605098-16
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:49 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	19.3	0.0862	0.259	0.129		mg/Kg-dry	5	05/23/16 06:36 PM
IS: Bismuth	93.4	0	30-120	0		%REC	5	05/23/16 06:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.191	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Acenaphthylene	0.142	0.0943	0.189	0.142	U	mg/Kg-dry	20	05/23/16 01:26 PM
Anthracene	1.19	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[a]anthracene	4.15	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[a]pyrene	4.21	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[b]fluoranthene	3.84	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[e]pyrene	2.89	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[g,h,i]perylene	2.75	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[j]fluoranthene	1.98	0.0943	0.189	0.142	N	mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[k]fluoranthene	1.96	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Chrysene	4.77	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Dibenz[a,h]anthracene	0.520	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Fluoranthene	10.3	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Fluorene	0.160	0.0943	0.189	0.142	J	mg/Kg-dry	20	05/23/16 01:26 PM
Indeno[1,2,3-cd]pyrene	2.36	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Phenanthrene	5.53	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Pyrene	8.37	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	20	05/23/16 01:26 PM
IS: Chrysene-d12	85.6	0	50-200	0		%REC	20	05/23/16 01:26 PM
IS: Naphthalene-d8	98.0	0	50-200	0		%REC	20	05/23/16 01:26 PM
IS: Perylene-d12	88.4	0	50-200	0		%REC	20	05/23/16 01:26 PM
IS: Phenanthrene-d10	79.5	0	50-200	0		%REC	20	05/23/16 01:26 PM
Surr: 2-Fluorobiphenyl	92.3	0	46-115	0		%REC	20	05/23/16 01:26 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605098-16
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:49 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.7	0	58-133	0		%REC	20	05/23/16 01:26 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605098-17
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:50 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **RO**
Lead	7.39		0.0926	0.278	0.139		mg/Kg-dry	5	05/23/16 06:20 PM
IS: Bismuth	93.4		0	30-120	0		%REC	5	05/23/16 06:20 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.108		0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Acenaphthylene	0.0735		0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/21/16 03:13 AM
Anthracene	0.597	JH	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[a]anthracene	2.13	J	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[a]pyrene	2.20	J	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[b]fluoranthene	1.96	J	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[e]pyrene	1.49	JH	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[g,h,i]perylene	1.45	JH	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[j]fluoranthene	1.02	JH	0.0490	0.0980	0.0735	N	mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[k]fluoranthene	1.02	J	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Chrysene	2.45	J	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Dibenz[a,h]anthracene	0.274	J	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Fluoranthene	5.14		0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Fluorene	0.0997		0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Indeno[1,2,3-cd]pyrene	1.22	J	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Phenanthrene	2.66	J	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Pyrene	4.17		0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
IS: Acenaphthene-d10	97.7		0	50-200	0		%REC	10	05/21/16 03:13 AM
IS: Chrysene-d12	82.1		0	50-200	0		%REC	10	05/21/16 03:13 AM
IS: Naphthalene-d8	93.1		0	50-200	0		%REC	10	05/21/16 03:13 AM
IS: Perylene-d12	83.6		0	50-200	0		%REC	10	05/21/16 03:13 AM
IS: Phenanthrene-d10	78.2		0	50-200	0		%REC	10	05/21/16 03:13 AM
Surr: 2-Fluorobiphenyl	88.8		0	46-115	0		%REC	10	05/21/16 03:13 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605098-17
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:50 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.8	0	58-133	0		%REC	10	05/21/16 03:13 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605098-18
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:53 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.33	0.0935	0.280	0.140		mg/Kg-dry	5	05/23/16 06:38 PM
IS: Bismuth	94.3	0	30-120	0		%REC	5	05/23/16 06:38 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.120	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Acenaphthylene	0.0695	0.0463	0.0927	0.0695	U	mg/Kg-dry	10	05/23/16 02:03 PM
Anthracene	0.637	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[a]anthracene	1.68	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[a]pyrene	1.58	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[b]fluoranthene	1.36	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[e]pyrene	0.978	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[g,h,i]perylene	0.863	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[j]fluoranthene	0.720	0.0463	0.0927	0.0695	N	mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[k]fluoranthene	0.712	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Chrysene	1.85	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Dibenz[a,h]anthracene	0.203	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Fluoranthene	4.44	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Fluorene	0.128	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Indeno[1,2,3-cd]pyrene	0.782	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Phenanthrene	2.60	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Pyrene	3.57	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/23/16 02:03 PM
IS: Chrysene-d12	82.3	0	50-200	0		%REC	10	05/23/16 02:03 PM
IS: Naphthalene-d8	95.1	0	50-200	0		%REC	10	05/23/16 02:03 PM
IS: Perylene-d12	86.1	0	50-200	0		%REC	10	05/23/16 02:03 PM
IS: Phenanthrene-d10	77.0	0	50-200	0		%REC	10	05/23/16 02:03 PM
Surr: 2-Fluorobiphenyl	86.8	0	46-115	0		%REC	10	05/23/16 02:03 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605098-18
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:53 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.8	0	58-133	0		%REC	10	05/23/16 02:03 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605098-19
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:54 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.52	0.0893	0.268	0.134		mg/Kg-dry	5	05/23/16 06:40 PM
IS: Bismuth	94.9	0	30-120	0		%REC	5	05/23/16 06:40 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Acenaphthylene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Anthracene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[a]anthracene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[a]pyrene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[b]fluoranthene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[e]pyrene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[g,h,i]perylene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[j]fluoranthene	0.0703	0.0469	0.0937	0.0703	NU	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[k]fluoranthene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Chrysene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Dibenz[a,h]anthracene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Fluoranthene	0.0525	0.0469	0.0937	0.0703	J	mg/Kg-dry	10	05/23/16 02:39 PM
Fluorene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Indeno[1,2,3-cd]pyrene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Phenanthrene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Pyrene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 02:39 PM
IS: Chrysene-d12	83.1	0	50-200	0		%REC	10	05/23/16 02:39 PM
IS: Naphthalene-d8	97.6	0	50-200	0		%REC	10	05/23/16 02:39 PM
IS: Perylene-d12	87.3	0	50-200	0		%REC	10	05/23/16 02:39 PM
IS: Phenanthrene-d10	76.6	0	50-200	0		%REC	10	05/23/16 02:39 PM
Surr: 2-Fluorobiphenyl	89.1	0	46-115	0		%REC	10	05/23/16 02:39 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605098-19
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:54 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.3	0	58-133	0		%REC	10	05/23/16 02:39 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605098-20
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:55 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.68	0.0909	0.273	0.136		mg/Kg-dry	5	05/23/16 06:56 PM
IS: Bismuth	93.5	0	30-120	0		%REC	5	05/23/16 06:56 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Acenaphthylene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Anthracene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[a]anthracene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[a]pyrene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[b]fluoranthene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[e]pyrene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[g,h,i]perylene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[j]fluoranthene	0.0717	0.0478	0.0956	0.0717	NU	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[k]fluoranthene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Chrysene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Dibenz[a,h]anthracene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Fluoranthene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Fluorene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Indeno[1,2,3-cd]pyrene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Phenanthrene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Pyrene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/23/16 03:17 PM
IS: Chrysene-d12	84.8	0	50-200	0		%REC	10	05/23/16 03:17 PM
IS: Naphthalene-d8	99.5	0	50-200	0		%REC	10	05/23/16 03:17 PM
IS: Perylene-d12	88.5	0	50-200	0		%REC	10	05/23/16 03:17 PM
IS: Phenanthrene-d10	78.9	0	50-200	0		%REC	10	05/23/16 03:17 PM
Surr: 2-Fluorobiphenyl	85.9	0	46-115	0		%REC	10	05/23/16 03:17 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605098-20
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:55 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.2	0	58-133	0		%REC	10	05/23/16 03:17 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605098-21
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:59 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	14.3	0.0870	0.261	0.130		mg/Kg-dry	5	05/23/16 06:58 PM
IS: Bismuth	90.0	0	30-120	0		%REC	5	05/23/16 06:58 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.143	0.0954	0.191	0.143	U	mg/Kg-dry	20	05/23/16 03:54 PM
Acenaphthylene	0.143	0.0954	0.191	0.143	U	mg/Kg-dry	20	05/23/16 03:54 PM
Anthracene	0.456	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[a]anthracene	2.02	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[a]pyrene	2.30	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[b]fluoranthene	2.15	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[e]pyrene	1.64	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[g,h,i]perylene	1.64	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[j]fluoranthene	1.03	0.0954	0.191	0.143	N	mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[k]fluoranthene	1.04	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Chrysene	2.36	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Dibenz[a,h]anthracene	0.300	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Fluoranthene	4.16	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Fluorene	0.143	0.0954	0.191	0.143	U	mg/Kg-dry	20	05/23/16 03:54 PM
Indeno[1,2,3-cd]pyrene	1.38	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Phenanthrene	2.05	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Pyrene	3.42	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
IS: Acenaphthene-d10	106	0	50-200	0		%REC	20	05/23/16 03:54 PM
IS: Chrysene-d12	84.2	0	50-200	0		%REC	20	05/23/16 03:54 PM
IS: Naphthalene-d8	99.3	0	50-200	0		%REC	20	05/23/16 03:54 PM
IS: Perylene-d12	87.1	0	50-200	0		%REC	20	05/23/16 03:54 PM
IS: Phenanthrene-d10	81.1	0	50-200	0		%REC	20	05/23/16 03:54 PM
Surr: 2-Fluorobiphenyl	99.1	0	46-115	0		%REC	20	05/23/16 03:54 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605098-21
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:59 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	87.1	0	58-133	0		%REC	20	05/23/16 03:54 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605098-22
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:00 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.51	0.0855	0.256	0.128		mg/Kg-dry	5	05/23/16 07:00 PM
IS: Bismuth	90.8	0	30-120	0		%REC	5	05/23/16 07:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/23/16 04:31 PM
Acenaphthylene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/23/16 04:31 PM
Anthracene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[a]anthracene	0.633	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[a]pyrene	0.960	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[b]fluoranthene	0.873	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[e]pyrene	0.691	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[g,h,i]perylene	0.724	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[j]fluoranthene	0.398	0.0492	0.0983	0.0737	N	mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[k]fluoranthene	0.422	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Chrysene	0.824	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Dibenz[a,h]anthracene	0.0849	0.0492	0.0983	0.0737	J	mg/Kg-dry	10	05/23/16 04:31 PM
Fluoranthene	0.971	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Fluorene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/23/16 04:31 PM
Indeno[1,2,3-cd]pyrene	0.593	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Phenanthrene	0.229	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Pyrene	0.926	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/23/16 04:31 PM
IS: Chrysene-d12	86.5	0	50-200	0		%REC	10	05/23/16 04:31 PM
IS: Naphthalene-d8	99.5	0	50-200	0		%REC	10	05/23/16 04:31 PM
IS: Perylene-d12	90.2	0	50-200	0		%REC	10	05/23/16 04:31 PM
IS: Phenanthrene-d10	78.7	0	50-200	0		%REC	10	05/23/16 04:31 PM
Surr: 2-Fluorobiphenyl	85.0	0	46-115	0		%REC	10	05/23/16 04:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605098-22
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:00 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.7	0	58-133	0		%REC	10	05/23/16 04:31 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605098-23
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:01 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.19	0.0840	0.252	0.126		mg/Kg-dry	5	05/23/16 07:02 PM
IS: Bismuth	93.0	0	30-120	0		%REC	5	05/23/16 07:02 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[a]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[a]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[b]fluoranthene	0.0532	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[g,h,i]perylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[k]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Chrysene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Dibenz[a,h]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Fluoranthene	0.0500	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/23/16 05:09 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Indeno[1,2,3-cd]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 05:09 PM
IS: Chrysene-d12	82.5	0	50-200	0		%REC	10	05/23/16 05:09 PM
IS: Naphthalene-d8	97.2	0	50-200	0		%REC	10	05/23/16 05:09 PM
IS: Perylene-d12	85.8	0	50-200	0		%REC	10	05/23/16 05:09 PM
IS: Phenanthrene-d10	77.2	0	50-200	0		%REC	10	05/23/16 05:09 PM
Surr: 2-Fluorobiphenyl	88.1	0	46-115	0		%REC	10	05/23/16 05:09 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605098-23
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:01 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.9	0	58-133	0		%REC	10	05/23/16 05:09 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605098-24
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:02 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.34	0.0952	0.286	0.143		mg/Kg-dry	5	05/23/16 07:04 PM
IS: Bismuth	93.3	0	30-120	0		%REC	5	05/23/16 07:04 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Acenaphthylene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Anthracene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[a]anthracene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[a]pyrene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[b]fluoranthene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[e]pyrene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[g,h,i]perylene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[j]fluoranthene	0.0719	0.0479	0.0959	0.0719	NU	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[k]fluoranthene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Chrysene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Dibenz[a,h]anthracene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Fluoranthene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Fluorene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Indeno[1,2,3-cd]pyrene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Phenanthrene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Pyrene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
IS: Acenaphthene-d10	105	0	50-200	0		%REC	10	05/23/16 05:46 PM
IS: Chrysene-d12	86.5	0	50-200	0		%REC	10	05/23/16 05:46 PM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/23/16 05:46 PM
IS: Perylene-d12	89.9	0	50-200	0		%REC	10	05/23/16 05:46 PM
IS: Phenanthrene-d10	80.6	0	50-200	0		%REC	10	05/23/16 05:46 PM
Surr: 2-Fluorobiphenyl	86.3	0	46-115	0		%REC	10	05/23/16 05:46 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605098-24
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:02 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.4	0	58-133	0		%REC	10	05/23/16 05:46 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605098-25
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:03 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.95	0.0990	0.297	0.149		mg/Kg-dry	5	05/23/16 07:06 PM
IS: Bismuth	94.3	0	30-120	0		%REC	5	05/23/16 07:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[a]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[b]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[g,h,i]perylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[k]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Chrysene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Dibenz[a,h]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Indeno[1,2,3-cd]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 10:09 PM
IS: Chrysene-d12	81.5	0	50-200	0		%REC	10	05/23/16 10:09 PM
IS: Naphthalene-d8	97.5	0	50-200	0		%REC	10	05/23/16 10:09 PM
IS: Perylene-d12	85.2	0	50-200	0		%REC	10	05/23/16 10:09 PM
IS: Phenanthrene-d10	76.5	0	50-200	0		%REC	10	05/23/16 10:09 PM
Surr: 2-Fluorobiphenyl	87.9	0	46-115	0		%REC	10	05/23/16 10:09 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605098-25
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:03 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.5	0	58-133	0		%REC	10	05/23/16 10:09 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605098-26
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:06 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	12.8	0.0862	0.259	0.129		mg/Kg-dry	5	05/23/16 07:08 PM
IS: Bismuth	91.6	0	30-120	0		%REC	5	05/23/16 07:08 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0713	0.0475	0.0951	0.0713	U	mg/Kg-dry	10	05/23/16 10:47 PM
Acenaphthylene	0.0713	0.0475	0.0951	0.0713	U	mg/Kg-dry	10	05/23/16 10:47 PM
Anthracene	0.0731	0.0475	0.0951	0.0713	J	mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[a]anthracene	0.608	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[a]pyrene	0.810	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[b]fluoranthene	0.791	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[e]pyrene	0.622	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[g,h,i]perylene	0.634	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[j]fluoranthene	0.362	0.0475	0.0951	0.0713	N	mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[k]fluoranthene	0.366	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Chrysene	0.777	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Dibenz[a,h]anthracene	0.0952	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Fluoranthene	1.05	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Fluorene	0.0713	0.0475	0.0951	0.0713	U	mg/Kg-dry	10	05/23/16 10:47 PM
Indeno[1,2,3-cd]pyrene	0.509	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Phenanthrene	0.400	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Pyrene	0.935	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/23/16 10:47 PM
IS: Chrysene-d12	85.3	0	50-200	0		%REC	10	05/23/16 10:47 PM
IS: Naphthalene-d8	99.0	0	50-200	0		%REC	10	05/23/16 10:47 PM
IS: Perylene-d12	89.1	0	50-200	0		%REC	10	05/23/16 10:47 PM
IS: Phenanthrene-d10	79.4	0	50-200	0		%REC	10	05/23/16 10:47 PM
Surr: 2-Fluorobiphenyl	86.0	0	46-115	0		%REC	10	05/23/16 10:47 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605098-26
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:06 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.3	0	58-133	0		%REC	10	05/23/16 10:47 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605098-27
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:07 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	8.08	0.0870	0.261	0.130		mg/Kg-dry	5	05/23/16 07:10 PM
IS: Bismuth	90.7	0	30-120	0		%REC	5	05/23/16 07:10 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0526	0.0466	0.0932	0.0699	J	mg/Kg-dry	10	05/23/16 11:24 PM
Acenaphthylene	0.0699	0.0466	0.0932	0.0699	U	mg/Kg-dry	10	05/23/16 11:24 PM
Anthracene	0.348	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[a]anthracene	1.52	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[a]pyrene	1.49	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[b]fluoranthene	1.43	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[e]pyrene	1.07	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[g,h,i]perylene	0.976	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[j]fluoranthene	0.724	0.0466	0.0932	0.0699	N	mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[k]fluoranthene	0.727	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Chrysene	1.74	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Dibenz[a,h]anthracene	0.210	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Fluoranthene	2.97	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Fluorene	0.0699	0.0466	0.0932	0.0699	U	mg/Kg-dry	10	05/23/16 11:24 PM
Indeno[1,2,3-cd]pyrene	0.856	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Phenanthrene	1.59	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Pyrene	2.36	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/23/16 11:24 PM
IS: Chrysene-d12	83.8	0	50-200	0		%REC	10	05/23/16 11:24 PM
IS: Naphthalene-d8	98.6	0	50-200	0		%REC	10	05/23/16 11:24 PM
IS: Perylene-d12	88.4	0	50-200	0		%REC	10	05/23/16 11:24 PM
IS: Phenanthrene-d10	80.1	0	50-200	0		%REC	10	05/23/16 11:24 PM
Surr: 2-Fluorobiphenyl	84.0	0	46-115	0		%REC	10	05/23/16 11:24 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605098-27
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:07 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.2	0	58-133	0		%REC	10	05/23/16 11:24 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605098-28
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:08 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	6.09	0.0855	0.256	0.128		mg/Kg-dry	5	05/23/16 07:12 PM
IS: Bismuth	93.4	0	30-120	0		%REC	5	05/23/16 07:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[a]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[a]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[b]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[e]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[g,h,i]perylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[k]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Chrysene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Dibenz[a,h]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Indeno[1,2,3-cd]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/24/16 12:01 AM
IS: Chrysene-d12	84.1	0	50-200	0		%REC	10	05/24/16 12:01 AM
IS: Naphthalene-d8	98.3	0	50-200	0		%REC	10	05/24/16 12:01 AM
IS: Perylene-d12	87.8	0	50-200	0		%REC	10	05/24/16 12:01 AM
IS: Phenanthrene-d10	78.3	0	50-200	0		%REC	10	05/24/16 12:01 AM
Surr: 2-Fluorobiphenyl	86.5	0	46-115	0		%REC	10	05/24/16 12:01 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605098-28
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:08 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.7	0	58-133	0		%REC	10	05/24/16 12:01 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605098-29
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:09 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.53	0.0877	0.263	0.132		mg/Kg-dry	5	05/23/16 07:14 PM
IS: Bismuth	93.5	0	30-120	0		%REC	5	05/23/16 07:14 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/24/16 12:38 AM
Acenaphthylene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/24/16 12:38 AM
Anthracene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[a]anthracene	0.154	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[a]pyrene	0.190	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[b]fluoranthene	0.171	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[e]pyrene	0.119	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[g,h,i]perylene	0.123	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[j]fluoranthene	0.0561	0.0488	0.0976	0.0732	JN	mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[k]fluoranthene	0.0856	0.0488	0.0976	0.0732	J	mg/Kg-dry	10	05/24/16 12:38 AM
Chrysene	0.183	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Dibenz[a,h]anthracene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/24/16 12:38 AM
Fluoranthene	0.283	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Fluorene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/24/16 12:38 AM
Indeno[1,2,3-cd]pyrene	0.100	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Phenanthrene	0.106	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Pyrene	0.251	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/24/16 12:38 AM
IS: Chrysene-d12	80.5	0	50-200	0		%REC	10	05/24/16 12:38 AM
IS: Naphthalene-d8	99.1	0	50-200	0		%REC	10	05/24/16 12:38 AM
IS: Perylene-d12	85.4	0	50-200	0		%REC	10	05/24/16 12:38 AM
IS: Phenanthrene-d10	76.4	0	50-200	0		%REC	10	05/24/16 12:38 AM
Surr: 2-Fluorobiphenyl	86.8	0	46-115	0		%REC	10	05/24/16 12:38 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605098-29
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:09 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.8	0	58-133	0		%REC	10	05/24/16 12:38 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605098-30
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:10 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.10	0.0926	0.278	0.139		mg/Kg-dry	5	05/23/16 05:12 PM
IS: Bismuth	94.0	0	30-120	0		%REC	5	05/23/16 05:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Acenaphthylene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[a]anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[a]pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[b]fluoranthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[e]pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[g,h,i]perylene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[j]fluoranthene	0.0744	0.0496	0.0992	0.0744	NU	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[k]fluoranthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Chrysene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Dibenz[a,h]anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Fluoranthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Fluorene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Indeno[1,2,3-cd]pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Phenanthrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/24/16 01:16 AM
IS: Chrysene-d12	81.8	0	50-200	0		%REC	10	05/24/16 01:16 AM
IS: Naphthalene-d8	94.9	0	50-200	0		%REC	10	05/24/16 01:16 AM
IS: Perylene-d12	84.7	0	50-200	0		%REC	10	05/24/16 01:16 AM
IS: Phenanthrene-d10	75.8	0	50-200	0		%REC	10	05/24/16 01:16 AM
Surr: 2-Fluorobiphenyl	86.4	0	46-115	0		%REC	10	05/24/16 01:16 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605098-30
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:10 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.4	0	58-133	0		%REC	10	05/24/16 01:16 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-09(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-31
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 08:55 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	19.4	0.0993	0.298	0.149		mg/Kg-dry	5	05/16/16 04:05 PM
IS: Bismuth	94.0	0	30-120	0		%REC	5	05/16/16 04:05 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0845	0.0563	0.113	0.0845	U	mg/Kg-dry	10	05/14/16 06:51 AM
Acenaphthylene	0.0845	0.0563	0.113	0.0845	U	mg/Kg-dry	10	05/14/16 06:51 AM
Anthracene	0.0621	0.0563	0.113	0.0845	J	mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[a]anthracene	0.415	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[a]pyrene	0.500	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[b]fluoranthene	0.488	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[e]pyrene	0.376	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[g,h,i]perylene	0.414	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[j]fluoranthene	0.259	0.0563	0.113	0.0845	N	mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[k]fluoranthene	0.271	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Chrysene	0.525	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Dibenz[a,h]anthracene	0.105	0.0563	0.113	0.0845	J	mg/Kg-dry	10	05/14/16 06:51 AM
Fluoranthene	0.699	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Fluorene	0.0845	0.0563	0.113	0.0845	U	mg/Kg-dry	10	05/14/16 06:51 AM
Indeno[1,2,3-cd]pyrene	0.349	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Phenanthrene	0.300	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Pyrene	0.597	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/14/16 06:51 AM
IS: Chrysene-d12	82.2	0	50-200	0		%REC	10	05/14/16 06:51 AM
IS: Naphthalene-d8	94.5	0	50-200	0		%REC	10	05/14/16 06:51 AM
IS: Perylene-d12	83.7	0	50-200	0		%REC	10	05/14/16 06:51 AM
IS: Phenanthrene-d10	92.3	0	50-200	0		%REC	10	05/14/16 06:51 AM
Surr: 2-Fluorobiphenyl	77.8	0	46-115	0		%REC	10	05/14/16 06:51 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-09(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-31
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 08:55 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	82.7	0	58-133	0		%REC	10	05/14/16 06:51 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	11.7	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT: Arcadis
Project: Laredo SGR
Project No: 04285081.0000.00044
Lab Order: 1605098

Client Sample ID: ROW-08(0-0.5)
Lab ID: 1605098-34
Collection Date: 05/09/16 09:37 AM
Matrix: SOIL

Analyses	Result		DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID				**SW6020A**					Analyst: **RO**
Lead	28.7		0.0990	0.297	0.148		mg/Kg-dry	5	05/16/16 04:07 PM
IS: Bismuth	90.6		0	30-120	0		%REC	5	05/16/16 04:07 PM
PAHS: GC/MS				**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0810		0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/14/16 07:28 AM
Acenaphthylene	0.0810		0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/14/16 07:28 AM
Anthracene	0.0756		0.0540	0.108	0.0810	J	mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[a]anthracene	0.556	J	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[a]pyrene	0.651		0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[b]fluoranthene	0.635		0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[e]pyrene	0.492		0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[g,h,i]perylene	0.522		0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[j]fluoranthene	0.338		0.0540	0.108	0.0810	N	mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[k]fluoranthene	0.353		0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Chrysene	0.707		0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Dibenz[a,h]anthracene	0.126		0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Fluoranthene	0.909	J	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Fluorene	0.0810		0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/14/16 07:28 AM
Indeno[1,2,3-cd]pyrene	0.436	J	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Phenanthrene	0.372		0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Pyrene	0.789		0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
IS: Acenaphthene-d10	109		0	50-200	0		%REC	10	05/14/16 07:28 AM
IS: Chrysene-d12	86.6		0	50-200	0		%REC	10	05/14/16 07:28 AM
IS: Naphthalene-d8	99.8		0	50-200	0		%REC	10	05/14/16 07:28 AM
IS: Perylene-d12	89.6		0	50-200	0		%REC	10	05/14/16 07:28 AM
IS: Phenanthrene-d10	96.6		0	50-200	0		%REC	10	05/14/16 07:28 AM
Surr: 2-Fluorobiphenyl	80.8		0	46-115	0		%REC	10	05/14/16 07:28 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-34
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:37 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	83.2	0	58-133	0		%REC	10	05/14/16 07:28 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	8.13	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605098-35
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:00 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	23.0	0.103	0.309	0.155		mg/Kg-dry	5	05/23/16 05:14 PM
IS: Bismuth	95.5	0	30-120	0		%REC	5	05/23/16 05:14 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0772	0.0515	0.103	0.0772	U	mg/Kg-dry	10	05/19/16 04:11 PM
Acenaphthylene	0.0772	0.0515	0.103	0.0772	U	mg/Kg-dry	10	05/19/16 04:11 PM
Anthracene	0.112	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[a]anthracene	0.826	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[a]pyrene	1.04	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[b]fluoranthene	0.992	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[e]pyrene	0.776	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[g,h,i]perylene	0.792	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[j]fluoranthene	0.492	0.0515	0.103	0.0772	N	mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[k]fluoranthene	0.505	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Chrysene	1.02	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Dibenz[a,h]anthracene	0.151	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Fluoranthene	1.57	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Fluorene	0.0772	0.0515	0.103	0.0772	U	mg/Kg-dry	10	05/19/16 04:11 PM
Indeno[1,2,3-cd]pyrene	0.662	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Phenanthrene	0.597	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Pyrene	1.37	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/19/16 04:11 PM
IS: Chrysene-d12	89.1	0	50-200	0		%REC	10	05/19/16 04:11 PM
IS: Naphthalene-d8	93.3	0	50-200	0		%REC	10	05/19/16 04:11 PM
IS: Perylene-d12	91.8	0	50-200	0		%REC	10	05/19/16 04:11 PM
IS: Phenanthrene-d10	84.0	0	50-200	0		%REC	10	05/19/16 04:11 PM
Surr: 2-Fluorobiphenyl	94.7	0	46-115	0		%REC	10	05/19/16 04:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605098-35
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:00 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	86.9	0	58-133	0		%REC	10	05/19/16 04:11 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	6.71	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(2.0-4.0)
Project:	Laredo SGR	**Lab ID:**	1605098-36
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:10 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.30	0.106	0.318	0.159		mg/Kg-dry	5	06/01/16 11:14 AM
IS: Bismuth	94.4	0	30-120	0		%REC	5	06/01/16 11:14 AM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Acenaphthylene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Anthracene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[a]anthracene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[a]pyrene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[b]fluoranthene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[e]pyrene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[g,h,i]perylene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[j]fluoranthene	0.0869	0.0579	0.116	0.0869	NU	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[k]fluoranthene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Chrysene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Dibenz[a,h]anthracene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Fluoranthene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Fluorene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Indeno[1,2,3-cd]pyrene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Phenanthrene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Pyrene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
IS: Acenaphthene-d10	96.5	0	50-200	0		%REC	10	05/26/16 01:41 AM
IS: Chrysene-d12	77.5	0	50-200	0		%REC	10	05/26/16 01:41 AM
IS: Naphthalene-d8	93.9	0	50-200	0		%REC	10	05/26/16 01:41 AM
IS: Perylene-d12	81.0	0	50-200	0		%REC	10	05/26/16 01:41 AM
IS: Phenanthrene-d10	71.5	0	50-200	0		%REC	10	05/26/16 01:41 AM
Surr: 2-Fluorobiphenyl	93.7	0	46-115	0		%REC	10	05/26/16 01:41 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(2.0-4.0)
Project:	Laredo SGR	**Lab ID:**	1605098-36
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:10 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.5	0	58-133	0		%REC	10	05/26/16 01:41 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	15.7	0	0	0		WT%	1	05/27/16 10:11 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-37
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:20 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	38.0	0.104	0.312	0.156		mg/Kg-dry	5	05/16/16 04:09 PM
IS: Bismuth	88.8	0	30-120	0		%REC	5	05/16/16 04:09 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0819	0.0546	0.109	0.0819	U	mg/Kg-dry	10	05/14/16 08:05 AM
Acenaphthylene	0.0819	0.0546	0.109	0.0819	U	mg/Kg-dry	10	05/14/16 08:05 AM
Anthracene	0.0929	0.0546	0.109	0.0819	J	mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[a]anthracene	0.801	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[a]pyrene	1.05	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[b]fluoranthene	1.03	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[e]pyrene	0.794	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[g,h,i]perylene	0.906	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[j]fluoranthene	0.536	0.0546	0.109	0.0819	N	mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[k]fluoranthene	0.555	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Chrysene	1.03	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Dibenz[a,h]anthracene	0.209	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Fluoranthene	1.19	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Fluorene	0.0819	0.0546	0.109	0.0819	U	mg/Kg-dry	10	05/14/16 08:05 AM
Indeno[1,2,3-cd]pyrene	0.753	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Phenanthrene	0.500	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Pyrene	1.04	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
IS: Acenaphthene-d10	107	0	50-200	0		%REC	10	05/14/16 08:05 AM
IS: Chrysene-d12	82.6	0	50-200	0		%REC	10	05/14/16 08:05 AM
IS: Naphthalene-d8	95.7	0	50-200	0		%REC	10	05/14/16 08:05 AM
IS: Perylene-d12	86.0	0	50-200	0		%REC	10	05/14/16 08:05 AM
IS: Phenanthrene-d10	94.1	0	50-200	0		%REC	10	05/14/16 08:05 AM
Surr: 2-Fluorobiphenyl	81.7	0	46-115	0		%REC	10	05/14/16 08:05 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-37
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:20 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	83.4	0	58-133	0		%REC	10	05/14/16 08:05 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	9.25	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:					
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605098-38
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	15.5	0.104	0.313	0.157		mg/Kg-dry	5	05/23/16 05:16 PM
IS: Bismuth	96.6	0	30-120	0		%REC	5	05/23/16 05:16 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0902	0.0534	0.107	0.0801	J	mg/Kg-dry	10	05/19/16 04:48 PM
Acenaphthylene	0.0801	0.0534	0.107	0.0801	U	mg/Kg-dry	10	05/19/16 04:48 PM
Anthracene	0.350	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[a]anthracene	2.17	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[a]pyrene	2.39	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[b]fluoranthene	2.22	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[e]pyrene	1.67	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[g,h,i]perylene	1.56	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[j]fluoranthene	1.16	0.0534	0.107	0.0801	N	mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[k]fluoranthene	1.18	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Chrysene	2.53	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Dibenz[a,h]anthracene	0.352	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Fluoranthene	4.23	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Fluorene	0.0801	0.0534	0.107	0.0801	U	mg/Kg-dry	10	05/19/16 04:48 PM
Indeno[1,2,3-cd]pyrene	1.40	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Phenanthrene	1.70	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Pyrene	3.57	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
IS: Acenaphthene-d10	106	0	50-200	0		%REC	10	05/19/16 04:48 PM
IS: Chrysene-d12	94.3	0	50-200	0		%REC	10	05/19/16 04:48 PM
IS: Naphthalene-d8	97.7	0	50-200	0		%REC	10	05/19/16 04:48 PM
IS: Perylene-d12	95.4	0	50-200	0		%REC	10	05/19/16 04:48 PM
IS: Phenanthrene-d10	89.7	0	50-200	0		%REC	10	05/19/16 04:48 PM
Surr: 2-Fluorobiphenyl	90.3	0	46-115	0		%REC	10	05/19/16 04:48 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605098-38
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	84.1	0	58-133	0		%REC	10	05/19/16 04:48 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	9.64	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(2.0-4.0)
Project:	Laredo SGR	**Lab ID:**	1605098-39
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:40 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	16.2	0.101	0.302	0.151		mg/Kg-dry	5	06/01/16 11:18 AM
IS: Bismuth	97.9	0	30-120	0		%REC	5	06/01/16 11:18 AM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0880	0.0500	0.0999	0.0750	J	mg/Kg-dry	10	05/26/16 02:18 AM
Acenaphthylene	0.0750	0.0500	0.0999	0.0750	U	mg/Kg-dry	10	05/26/16 02:18 AM
Anthracene	0.128	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[a]anthracene	1.07	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[a]pyrene	1.81	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[b]fluoranthene	1.44	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[e]pyrene	1.21	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[g,h,i]perylene	1.40	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[j]fluoranthene	0.731	0.0500	0.0999	0.0750	N	mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[k]fluoranthene	0.695	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Chrysene	1.34	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Dibenz[a,h]anthracene	0.196	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Fluoranthene	1.66	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Fluorene	0.0750	0.0500	0.0999	0.0750	U	mg/Kg-dry	10	05/26/16 02:18 AM
Indeno[1,2,3-cd]pyrene	1.14	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Phenanthrene	0.601	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Pyrene	1.52	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
IS: Acenaphthene-d10	97.8	0	50-200	0		%REC	10	05/26/16 02:18 AM
IS: Chrysene-d12	80.5	0	50-200	0		%REC	10	05/26/16 02:18 AM
IS: Naphthalene-d8	93.3	0	50-200	0		%REC	10	05/26/16 02:18 AM
IS: Perylene-d12	84.3	0	50-200	0		%REC	10	05/26/16 02:18 AM
IS: Phenanthrene-d10	73.5	0	50-200	0		%REC	10	05/26/16 02:18 AM
Surr: 2-Fluorobiphenyl	93.4	0	46-115	0		%REC	10	05/26/16 02:18 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(2.0-4.0)
Project:	Laredo SGR	**Lab ID:**	1605098-39
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:40 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/26/16 02:18 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	8.88	0	0	0		WT%	1	05/27/16 10:11 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP05(20160509)
Project:	Laredo SGR	**Lab ID:**	1605098-40
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	32.4	0.102	0.307	0.153		mg/Kg-dry	5	05/16/16 04:11 PM
IS: Bismuth	88.7	0	30-120	0		%REC	5	05/16/16 04:11 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0778	0.0519	0.104	0.0778	U	mg/Kg-dry	10	05/19/16 05:25 PM
Acenaphthylene	0.0778	0.0519	0.104	0.0778	U	mg/Kg-dry	10	05/19/16 05:25 PM
Anthracene	0.0778	0.0519	0.104	0.0778	U	mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[a]anthracene	0.352	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[a]pyrene	0.491	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[b]fluoranthene	0.497	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[e]pyrene	0.394	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[g,h,i]perylene	0.398	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[j]fluoranthene	0.235	0.0519	0.104	0.0778	N	mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[k]fluoranthene	0.232	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Chrysene	0.468	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Dibenz[a,h]anthracene	0.0558	0.0519	0.104	0.0778	J	mg/Kg-dry	10	05/19/16 05:25 PM
Fluoranthene	0.595	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Fluorene	0.0778	0.0519	0.104	0.0778	U	mg/Kg-dry	10	05/19/16 05:25 PM
Indeno[1,2,3-cd]pyrene	0.320	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Phenanthrene	0.199	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Pyrene	0.561	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/19/16 05:25 PM
IS: Chrysene-d12	94.3	0	50-200	0		%REC	10	05/19/16 05:25 PM
IS: Naphthalene-d8	98.6	0	50-200	0		%REC	10	05/19/16 05:25 PM
IS: Perylene-d12	96.9	0	50-200	0		%REC	10	05/19/16 05:25 PM
IS: Phenanthrene-d10	87.6	0	50-200	0		%REC	10	05/19/16 05:25 PM
Surr: 2-Fluorobiphenyl	84.9	0	46-115	0		%REC	10	05/19/16 05:25 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP05(20160509)
Project:	Laredo SGR	**Lab ID:**	1605098-40
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.9	0	58-133	0		%REC	10	05/19/16 05:25 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	7.77	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP06(20160509)
Project:	Laredo SGR	**Lab ID:**	1605098-41
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:50 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	18.1	0.101	0.304	0.152		mg/Kg-dry	5	05/16/16 03:53 PM
IS: Bismuth	85.3	0	30-120	0		%REC	5	05/16/16 03:53 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0682	0.0512	0.102	0.0768	J	mg/Kg-dry	10	05/19/16 06:02 PM
Acenaphthylene	0.0768	0.0512	0.102	0.0768	U	mg/Kg-dry	10	05/19/16 06:02 PM
Anthracene	0.167	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[a]anthracene	1.44	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[a]pyrene	2.12	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[b]fluoranthene	1.94	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[e]pyrene	1.54	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[g,h,i]perylene	1.65	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[j]fluoranthene	0.978	0.0512	0.102	0.0768	N	mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[k]fluoranthene	0.995	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Chrysene	1.82	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Dibenz[a,h]anthracene	0.326	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Fluoranthene	2.26	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Fluorene	0.0768	0.0512	0.102	0.0768	U	mg/Kg-dry	10	05/19/16 06:02 PM
Indeno[1,2,3-cd]pyrene	1.38	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Phenanthrene	0.812	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Pyrene	2.04	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
IS: Acenaphthene-d10	98.4	0	50-200	0		%REC	10	05/19/16 06:02 PM
IS: Chrysene-d12	86.7	0	50-200	0		%REC	10	05/19/16 06:02 PM
IS: Naphthalene-d8	92.6	0	50-200	0		%REC	10	05/19/16 06:02 PM
IS: Perylene-d12	88.7	0	50-200	0		%REC	10	05/19/16 06:02 PM
IS: Phenanthrene-d10	83.9	0	50-200	0		%REC	10	05/19/16 06:02 PM
Surr: 2-Fluorobiphenyl	92.5	0	46-115	0		%REC	10	05/19/16 06:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	DUP06(20160509)
Project:	Laredo SGR	**Lab ID:**	1605098-41
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:50 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	86.1	0	58-133	0		%REC	10	05/19/16 06:02 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	9.53	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB11(20160507)
Project:	Laredo SGR	**Lab ID:**	1605098-42
Project No:	04285081.0000.00044	**Collection Date:**	05/07/16 05:00 PM
Lab Order:	1605098	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER			**SW6020A**					Analyst: **RO**
Lead	0.000900	0.000300	0.00100	0.000900	U	mg/L	1	05/20/16 02:14 PM
IS: Bismuth	96.9	0	30-120	0		%REC	1	05/20/16 02:14 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Acenaphthylene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Anthracene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[a]anthracene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[a]pyrene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[b]fluoranthene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[e]pyrene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[g,h,i]perylene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[j]fluoranthene	0.0000615	0.0000385	0.0000769	0.0000615	NU	mg/L	1	05/18/16 10:40 PM
Benzo[k]fluoranthene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Chrysene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Dibenz[a,h]anthracene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Fluoranthene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Fluorene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Indeno[1,2,3-cd]pyrene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Phenanthrene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Pyrene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
IS: Acenaphthene-d10	87.6	0	50-200	0		%REC	1	05/18/16 10:40 PM
IS: Chrysene-d12	87.9	0	50-200	0		%REC	1	05/18/16 10:40 PM
IS: Naphthalene-d8	87.7	0	50-200	0		%REC	1	05/18/16 10:40 PM
IS: Perylene-d12	88.3	0	50-200	0		%REC	1	05/18/16 10:40 PM
IS: Phenanthrene-d10	84.9	0	50-200	0		%REC	1	05/18/16 10:40 PM
Surr: 2-Fluorobiphenyl	59.3	0	53-106	0		%REC	1	05/18/16 10:40 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	EB11(20160507)
Project:	Laredo SGR	**Lab ID:**	1605098-42
Project No:	04285081.0000.00044	**Collection Date:**	05/07/16 05:00 PM
Lab Order:	1605098	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	61.5	0	58-132	0		%REC	1	05/18/16 10:40 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

June 06, 2016

Alex Walter
Arcadis
8725 Rosehill #350
Lenexa, Kansas 66215
TEL: (913) 492-0900
FAX (913) 492-0902

Order No.: 1605098

RE: Laredo SGR

Dear Alex Walter:

DHL Analytical, Inc. received 42 sample(s) on 5/10/2016 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of DoD QSM Ver 5 and NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. This report shall not be reproduced except in full without the written approval of DHL Analytical, Inc. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas & DoD Laboratory Certification Number: T104704211-16-16 & DoD-ELAP #L15-426

Table of Contents

Miscellaneous Documents **3**

CaseNarrative 1605098 ..... **19**

WorkOrderSampleSummary 1605098 ..... **22**

PrepDatesReport 1605098 ..... **23**

TCLP Dates Report 1605098 ..... **27**

AnalyticalDatesReport 1605098 ..... **29**

Analytical Report 1605098 ..... **33**

AnalyticalQCSummaryReport 1605098 ..... **113**

MQLSummaryReport 1605098 ..... **171**

GCMS8 Raw Data **172**

ICP-MS3 Raw Data **632**

ICP-MS4 Raw Data **724**

Pmoist Raw Data **1048**

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70023

CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: Alex.Walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erika.Denkenberger@arcadis.com

DATE: MAY 9, 2016 PAGE 1 OF 3
PO #: DHL QUOTE #:
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285081.0000.00044 COLLECTOR: C. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐ [METHOD 8021]	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO [METHOD 8015] ☐ DRO [METHOD 8105] ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ T PHOS, AMMONIA ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX1 1 ☐ Lead	PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐	CHLORIDE ☐ ANIONS ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ FLASHPOINT ☐ DGAS ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	FIELD NOTES
SGR-DU002-08(0-2)-A	01	5-9-16	0930	S	Bag	1				X					X					X								
SGR-DU002-08(2-4)-A	02	5-9-16	0931	S	Bag	1				X					X					X								
SGR-DU002-08(4-6)-A	03	5-9-16	0932	S	Bag	1				X					X					X								
SGR-DU002-08(6-8)-A	04	5-9-16	0934	S	Bag	1				X					X					X								
SGR-DU002-08(8-10)-A	05	5-9-16	0935	S	Bag	1				X					X					X								
SGR-DU002-08(0-2)-B	06	5-9-16	0939	S	Bag	1				X					X					X								
SGR-DU002-08(2-4)-B	07	5-9-16	0941	S	Bag	1				X					X					X								
SGR-DU002-08(4-6)-B	08	5-9-16	0942	S	Bag	1				X					X					X								
SGR-DU002-08(6-8)-B	09	5-9-16	0943	S	Bag	1				X					X					X								
SGR-DU002-08(8-10)-B	10	5-9-16	0944	S	Bag	1				X					X					X								
SGR-DU002-08(0-2)-C	11	5-9-16	0947	S	Bag	1				X					X					X								
SGR-DU002-08(2-4)-C	12	5-9-16	0949	S	Bag	1				X					X					X								
SGR-DU002-08(4-6)-C	13	5-9-16	0950	S	Bag	1				X					X					X								
SGR-DU002-08(6-8)-C	14	5-9-16	0951	S	Bag	1				X					X					X								
SGR-DU002-08(8-10)-C	15	5-9-16	0952	S	Bag	1				X					X					X								

RELINQUISHED BY: (Signature) DATE/TIME 5-9-16/1800 RECEIVED BY: (Signature) FedEx
RELINQUISHED BY: (Signature) FedEx DATE/TIME 5/10/16 10:00 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return 3

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 1.4 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY ☐ HAND DELIVERED
0.9 | 0.7 | 2.5 | 0.6 | 1.6 | 2.3 | 1.3 | 1.8 | 1.5 | 1.4 | 10 | 35 | 40

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

Nº 70024
CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa, KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: Alex.walter@arcadis.com
DATA REPORTED TO: Alex Walter
ADDITIONAL REPORT COPIES TO: Erica.Denkenberger@arcadis.com

DATE: PAGE 2 OF 3
PO #: 04285081.0000.00044 DHL WORK ORDER #: 1005098
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285081.0000.00044 COLLECTOR: C. Ferguson

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ [METHOD 8021] | TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ | GRO [METHOD 8015] ☐ DRO [METHOD 8105] ☐ | VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ | 8270 PEST ☐ 625 PEST/PCB ☐ 8082 PCB ☐ 608 PCB ☐ | 8270 O-P PEST ☐ 625 PEST ☐ 8082 PCB ☐ 8270 PCB ☐ | 8321 HERB ☐ T PHOS, AMMONIA ☐ | METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ | RCRA ☐ TX11 ☐ 1 LEAD | PH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ | CHLORIDE ☐ ANIONS ☐ | TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ | TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ | RCI ☐ FLASHPOINT ☐ DGAS ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 NaOH	ICE	UNPRESERVED	FIELD NOTES
SGR-DU016(0-2)-A	16	5-5-16	1349	S	Bag	1				X		
SGR-DU016(2-4)-A	17	5-5-16	1350	S	Bag	1				X		
SGR-DU016(4-6)-A	18	5-5-16	1353	S	Bag	1				X		
SGR-DU016(6-8)-A	19	5-5-16	1354	S	Bag	1				X		
SGR-DU016(8-10)-A	20	5-5-16	1355	S	Bag	1				X		
SGR-DU016(0-2)-B	21	5-5-16	1359	S	Bag	1				X		
SGR-DU016(2-4)-B	22	5-5-16	1400	S	Bag	1				X		
SGR-DU016(4-6)-B	23	5-5-16	1401	S	Bag	1				X		
SGR-DU016(6-8)-B	24	5-5-16	1402	S	Bag	1				X		
SGR-DU016(8-10)-B	25	5-5-16	1403	S	Bag	1				X		
SGR-DU016(0-2)-C	26	5-5-16	1406	S	Bag	1				X		
SGR-DU016(2-4)-C	27	5-5-16	1407	S	Bag	1				X		
SGR-DU016(4-6)-C	28	5-5-16	1408	S	Bag	1				X		
SGR-DU016(6-8)-C	29	5-5-16	1409	S	Bag	1				X		
SGR-DU016(8-10)-C	30	5-5-16	1410	S	Bag	1				X		

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	5-5-16 1800	FedEx
FedEx	5/10/16 10:00	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

4

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.4 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 70026
CHAIN-OF-CUSTODY

CLIENT: Arcadis
ADDRESS: 8725 Rosehill Suite 350 Lenexa KS 66215
PHONE: 913 645 3203 FAX/E-MAIL: alex.walters@Arcadis.com
DATA REPORTED TO: alex walters
ADDITIONAL REPORT COPIES TO: Erica.Venkenberger@arcadis.com

DATE: May 9, 2016 PAGE 3 OF 3
PO #: 04285081.0000.00044 DHL WORK ORDER #: 16005098
PROJECT LOCATION OR NAME: Laredo SGR
CLENT PROJECT #: 04285081.0000.00044 COLLECTOR: C. Ferguson

Authorize 5% surcharge for TRRP Report? ❑ Yes ❑ No

S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT P=PAINT SL=SLUDGE O=OTHER SO=SOLID

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ❑ NaOH ❑	ICE	UNPRESERVED	ANALYSES: BTEX ❑ MTBE ❑ 8021 METHOD ❑	TPH 1005 ❑ TPH 1006 ❑ HOLD 1006 ❑	GRO (METHOD 8015) ❑ DRO (METHOD 8105) ❑	VOC 8260 ❑ VOC 624 ❑ VOC 8260/5035 ❑	SVOC 8270 ❑ PAH 8270 ❑ HOLD PAH ❑ SVOC 625 ❑	8270 PEST ❑ 625 PEST/PCB ❑ 608 PCB ❑ 8082 PCB ❑ 8270 PCB ❑	8270 O-P PEST ❑ 8081 HERB ❑ T PHOS, AMMONIA ❑	8321 HERB ❑ METALS 6020 ❑ METALS 200.8 ❑ DISS. METALS ❑ Lead	RCRA ❑ TX11 ❑	PH ❑ HEX CHROM ❑ ALKALINITY ❑ COD ❑	CHLORIDE ❑ ANIONS ❑	TCLP-SVOC ❑ VOC ❑ PEST ❑ HERB ❑	TCLP-METALS ❑ RCRA 8 ❑ TX-11 ❑ Pb ❑	RCI ❑ FLASHPOINT ❑ DGAS ❑	TDS ❑ TSS ❑ % MOISTURE ❑ CYANIDE ❑	FIELD NOTES
ROW-09 (0-0.5)	31	5-9-16	0855	S	4oz Jar	1				X					X					X							
ROW-09 (0.5-2.0)	32	5-9-16	0905	S	4oz Jar	1				X					X					X							Extract + Hold
ROW-09 (2.0-4.0)	33	5-9-16	0910	S	4oz Jar	1				X					X					X							"
ROW-08 (0-0.5)	34	5-9-16	0937	S	4oz Jar	1				X					X					X							
ROW-08 (0.5-2.0)	35	5-9-16	1000	S	4oz Jar	1				X					X					X							Extract + Hold
ROW-08 (2.0-4.0)	36	5-9-16	1010	S	4oz Jar	1				X					X					X							"
ROW-07 (~~0~~-0.5)	37	5-9-16	1020	S	4oz Jar	1				X					X					X							
ROW-07 (0.5-2.0)	38	5-9-16	1030	S	4oz Jar	1				X					X					X							Extract + Hold
ROW-07 (2.0-4.0)	39	5-9-16	1040	S	4oz Jar	1				X					X					X							"
DUP05 (20160509)	40	5-9-16	0930	S	4oz Jar	1				X					X					X							
DUP06 (20160509)	41	5-9-16	1080	S	4oz Jar	1				X					X					X							
EBIL (20160507)	42	5-7-16	1700	W	poly/glass	2				X					X					X							
(X) added per A Walters 5/12/16 @ 4:45 afo																											
(V) -36, -39 added per A. Walters 5/24/16 @ 4:39 afo																											

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)
5-9-16 1800 Fedex
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)
Fedex 5/10/16 10:00 Hover
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

❑ DHL DISPOSAL @ $5.00 each ❑ Return 5

TURN AROUND TIME
RUSH ❑ CALL FIRST
1 DAY ❑ CALL FIRST
2 DAY ❑
NORMAL ☒
OTHER ❑ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 1.4 THERM #: 78
CUSTODY SEALS: ❑ BROKEN ☒ INTACT ❑ NOT USED
CARRIER: ❑ LONE STAR ☒ FEDEX ❑ UPS ❑ OTHER
❑ COURIER DELIVERY
❑ HAND DELIVERED

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J16223/727F

FedEx Express

14 of 15

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9046 7822
Mstr# 7762 9046 7395
0201

78664
TX-US AUS

44 BSMA

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J16223/727F

FedEx Express

4 of 15

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9046 7590
Mstr# 7762 9046 7395
0201

78664
TX-US AUS

44 BSMA

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

TO JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J1/6323/727F

FedEx Express

1 of 2

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7762 9903 5640
MASTER

44 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J1/6323/727F

FedEx Express

3 of 15

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9046 7400
Mstr# 7762 9046 7395 0201

44 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 5/9/16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J16323/727F

FedEx Express

7 of 15

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9046 7888
Mstr# 7762 9046 7395
0201

78664
TX-US AUS

44 BSMA

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J16323/727F

FedEx Express

6 of 15

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

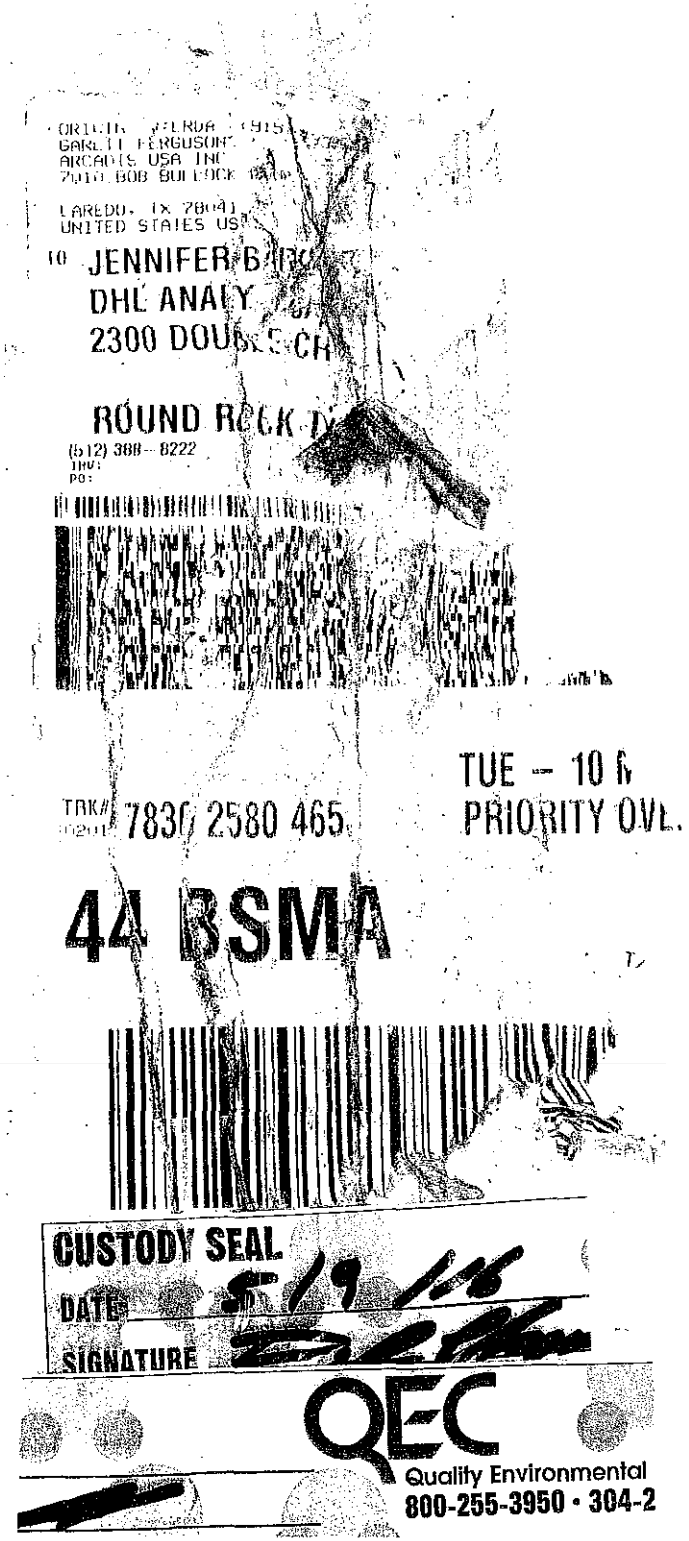
MPS# 0263 7762 9046 7421
Mstr# 7762 9046 7395
0201

78664
TX-US AUS

44 BSMA

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 05/09/16
SIGNATURE


ORIGIN
GARETT FERGUSON
ARCADIS USA INC
7010 BOB BULLOCK
LAREDO TX 7804
UNITED STATES US
JENNIFER B
DHL ANALY
2300 DOU
ROUND ROCK
(512) 388-8222
INV:
PO:
TUE - 10
TRK# 7830 2580 465
PRIORITY OVL
44 BSMA
CUSTODY SEAL
DATE 5/9/16
SIGNATURE
QEC
Quality Environmental
800-255-3950 • 304-2


ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP
SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN
BILL SENDER
CUSTODY SEAL
DATE 5/10/16
SIGNATURE
QEC
Quality Env
800-255-3
ROUND ROCK TX 78664
(512) 388-8222
REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044
DEPT:
FedEx Express
8 of 15
MPS# 0263 7762 9046 7693
Mstr# 7762 9046 7395
0201
TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT
78664
TX-US AUS
44 BSMA

label:

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

TO JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163231727F

FedEx Express

1 of 15

TRK# 0201 7762 9046 7395

MASTER

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

44 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 5/10/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163231727F

FedEx Express

2 of 2

MPS# 0263 7762 9903 5308

Mstr# 7762 9903 5640

0201

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

44 BSMA

78664
TX-US AUS

QEC
Quality Environmental Containers
950 • 304-255-3900

CUSTODY SEAL
DATE 05/10/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163233727F

FedEx Express

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

13 of 15
MPS# 7762 9046 7646

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163233727F

FedEx Express

11 of 15
TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9046 7443
Mstr# 7762 9046 7395 0201

44 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J1/6323/727F

FedEx Express

2 of 15
MPS# 0263 7762 9046 7579
Mstr# 7762 9046 7395
0201

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

44 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 5/9/17
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J1/6323/727F

FedEx Express

5 of 15
MPS# 0263 7762 9046 7605
Mstr# 7762 9046 7395
0201

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

44 BSMA

78664
TX-US AUS

CUSTODY SEAL
DATE 5/9/17
SIGNATURE

QEC
Quality Environmental
800-255-3950 • 304-

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163231727F

FedEx Express

15 of 15
MPS# 0263 7762 9046 7730
Mstr# 7762 9046 7395

0201

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

78664
TX-US AUS

44 BSMA

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163231727F

FedEx Express

12 of 15
MPS# 0263 7762 9046 7936
Mstr# 7762 9046 7395

0201

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

78664
TX-US AUS

44 BSMA

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163231727F

FedEx Express

10 of 15

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9046 7899
Mstr# 7762 9046 7395
0201

78664
TX-US AUS

44 BSMA

QEC
Quality Environmental Containers
800-255-[illegible]50 • 304-255-3900

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

ORIGIN ID:LRDA (915) 433-1761
GARETT FERGUSON
ARCADIS US, INC.
7010 BOB BULLOCK LOOP

LAREDO, TX 78041
UNITED STATES US

SHIP DATE: 09MAY16
ACTWGT: 70.00 LB
CAD: 1660358/INET3730
DIMS: 24x13x15 IN

BILL SENDER

JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF: 04285081.0000.00044
INV:
PO: 04285081.0000.00044 DEPT:

540J163231727F

FedEx Express

9 of 15

TUE - 10 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 0263 7762 9046 7237
Mstr# 7762 9046 7395
0201

78664
TX-US AUS

44 BSMA

CUSTODY SEAL
DATE 05/09/16
SIGNATURE

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Arcadis** Date Received: **5/10/2016**

Work Order Number **1605098** Received by **JT**

Checklist completed by: Signature 5/11/2016 Date Reviewed by Initials 5/11/2016 Date

Carrier name FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	**1.4** °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 8086
	Adjusted? NO		Checked by
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: Per Alex, add EB11 to this work order and analyze for PAH + Pb.

Corrective Action Added sample per clients request.

DHL Analytical, Inc.
Laboratory Review Checklist: Reportable Data

Project Name: Laredo SGR	**Date:** 6/6/2016
Reviewer Name: Angie O'Donnell	**Laboratory Work Order:** 1605098
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-Custody (C-O-C)					
R1	OI	**1)** Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				**R1-01**
		2) Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample detection limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?	X				
		7) Were % moisture (or solids) reported for all soil and sediment samples?	X				
		8) Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035?			X		
		9) If required for the project, TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?	X				
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < MQL?	X				
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		6) Was the LCSD RPD within QC limits (if applicable)?	X				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			**R7-03**
		4) Were MS/MSD RPDs within laboratory QC limits?		X			**R7-04**
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	X				
		2) Were analytical duplicates analyzed at the appropriate frequency?	X				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				**R10-01**
		2) Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?	X				
		3) Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

DHL Analytical, Inc.
Laboratory Review Checklist (continued): Supporting Data

Project Name: Laredo SGR | **Date:** 6/6/2016

Reviewer Name: Angie O'Donnell | **Laboratory Work Order:** 1605098

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	**X**				
		2) Were percent RSDs or correlation coefficient criteria met?	**X**				
		3) Was the number of standards recommended in the method used for all analytes?	**X**				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	**X**				
		5) Are ICAL data available for all instruments used?	**X**				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	**X**				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):**					
		1) Was the CCV analyzed at the method-required frequency?	**X**				
		2) Were percent differences for each analyte within the method-required QC limits?	**X**				
		3) Was the ICAL curve verified for each analyte?	**X**				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	**X**				
S3	O	**Mass Spectral Tuning:**					
		1) Was the appropriate compound for the method used for tuning?	**X**				
		2) Were ion abundance data within the method-required QC limits?	**X**				
S4	O	**Internal Standards (IS):**					
		1) Were IS area counts and retention times within the method-required QC limits?	**X**				
S5	OI	**Raw Data (NELAC Section 5.5.10)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	**X**				
		2) Were data associated with manual integrations flagged on the raw data?	**X**				
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			**X**		
S7	O	**Tentatively Identified Compounds (TICs):**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			**X**		
S8	I	**Interference Check Sample (ICS) Results:**					
		1) Were percent recoveries within method QC limits?	**X**				
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?		**X**			**S9-01**
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	**X**				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	**X**				
S11	OI	**Proficiency Test Reports:**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	**X**				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	**X**				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	**X**				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5 – Appendix C?	**X**				
		2) Is documentation of the analyst's competency up-to-date and on file?	**X**				
S15	OI	**Verification/Validation Documentation for Methods** (NELAC Chapter 5)					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	**X**				
S16	OI	**Laboratory Standard Operating Procedures (SOPs):**					
		1) Are laboratory SOPs current and on file for each method performed?	**X**				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;
R2 Sample identification cross-reference;
R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC Chapter 5,
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
R5 Test reports/summary forms for blank samples;
R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) The amount of analyte measured in the duplicate,
  b) The calculated RPD, and
  c) The laboratory's QC limits for analytical duplicates.
R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in Laboratory Review checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on June 1-5, 2015. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

John DuPont – General Manager

Scott Schroeder – Technical Director



Signature

06/06/16

Date

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605098

CASE NARRATIVE

This case narrative describes abnormalities and deviations that may affect the results and summarizes all known issues that need to be highlighted for the data user to assess the results. This case narrative and the report contents are compliant with DoD QSM Ver. 5.0 and NELAC.

The "U" flag indicates the results for that sample are nondetect.

Samples were analyzed using the methods outlined in the following references:

Method SW8270D-LL - PAH Analysis (The compound Benzo[j]fluoranthene is not NELAC or DOD Certified)
Method SW6020A- Metals Analysis

Exception Report R1-01

Samples were received on and log-in performed on 5/10/2016. A total of 42 samples were received (including Sample EB11 (20160507) added per the client's request on 5/10/2016; a total of 40 samples were analyzed. The samples arrived in good condition and were properly packaged. Additional analysis was requested for four samples, per the client's request on 5/17/2016 and 5/24/2016.

Exception Report R7-03 and R7-04

For Metals Analysis, for water Batch 75180, the recovery of Lead for the Matrix Spike (1605097-27 MS) was below the method control limits. This is flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated LCS. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

For Metals Analysis, for soil Batch 75237, the recovery and RPD of Lead for the Matrix Spike and Matrix Spike Duplicate (1605121-01 MS/MSD) were outside of the method control limits. These are flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated LCS. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

For PAH Analysis, for soil batch 75192, the recoveries/RPDs of up to fourteen compounds for the Matrix Spike and Matrix Spike Duplicate (1605098-17 MS/MSD) were outside of the method control limits. These were flagged accordingly in the QC Summary Report. The recoveries of these compounds were within method control limits in the associated LCS. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

For PAH Analysis, for soil batch 75218, the recoveries of up to fourteen compounds for the Matrix Spike and Matrix Spike Duplicate (1605121-01 MS/MSD) were outside of the method control limits. These were flagged accordingly in the QC Summary Report. The recoveries of these compounds were within method control limits in the associated LCS. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

Exception Report R10-01

For PAH Analysis, the samples were diluted due to observed color of extract; dilution meets project specifications.

For PAH Analysis, some samples were analyzed at higher dilution than usual, due to very dark color extract observed.

For Metals Preparation Batch 75402 performed on 5/31/2016, there was a slight loss of sample volume for Matrix Spike (1605098-36 MS) , due to slight boil over during prep procedure. The recovery of the Matrix Spike was within method control limits, there was insignificant effect to the results. No further corrective action was taken.

For all of the surface and subsurface samples in this project, DHL Analytical performed an Incremental Sampling Method (ISM) according to an internal SOP, as approved by the client and included in the project QAPP. This workorder consist of the following sample types: sub-surface Samples (DHL WO # 1605098-01 through -30) processed to pass #10 sieve (2mm), of those, three subsurface samples had insufficient sample volume to perform the sub-sampling procedure as stated in the SOP and the entire sieved sample mass was used for the analysis. The remaining samples analyzed were discreet soil samples collected in 4 ounce soil containers and ISM process not used, as per project specs.

Exception Report S9-01

For Lead Analysis, the RPD of Lead for the Serial Dilution (1605097-41 SD) was marginally above the method control limit. This is flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated Post Digestion Spike. The client approved of the DHL Analytical action to note this in the case narrative and proceed with analysis. No further corrective action was taken.

A summary of project communication follows:

The Subcontract Agreement No. D16-003 for Arcadis Project No. 04285081.0000.00043 was sent to DHL Analytical from client and signed on 1/6/2016, the contract for work signed and approved by both parties on 1/12/2016. A Modification No. 01-D16-003 was signed by both parties on 4/21/2016.

CLIENT:	Arcadis
Project:	Laredo SGR
Lab Order:	1605098

CASE NARRATIVE

The bottlekit was requested from Ana Gutierrez of Arcadis sent via email to John DuPont on 4/21/2016.
The following DHL Bottle Orders:
#6941 sent on 4/28/2016 via Lonestar Overnight Ground to arrive by 5/2/2016
#6942 sent on 5/3/2016 via Lonestar Overnight Ground to arrive by 5/4/2016
#6943 sent on 5/6/2016 via Lonestar Overnight Ground to arrive by 5/9/2016
#6944 sent on 5/10/2016 via Lonestar Overnight Ground to arrive by 5/11/2016.

This sample delivery group arrives at DHL Analytical on 5/10/2016. A Sample Summary was sent on 5/11, 18, 24/2016. Associated shipping documents are kept in the project folder and/or client folder as part of the Administrative records filed in the QA office.

DHL project manager/qa staff discussed with client the following issues:
email communications 5/13/2016 - from J. DuPont to the Arcadis Kansas Laredo email group regarding request to dilute based on color of extract
email communications 5/27/2016 - from J. DuPont to L. Mott of Arcadis regarding exceedance(s) for various MS/MSDs for PAH analysis and an and recovery of MS/MSD and RPD for Lead exceeded limits. The client accepted the corrective action for the quality exceedances on 5/31/2016.

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT: Arcadis
Project: Laredo SGR
Lab Order: 1605098

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1605098-01	SGR-DU002-08(0-2)-A		05/09/16 09:30 AM	5/10/2016
1605098-02	SGR-DU002-08(2-4)-A		05/09/16 09:31 AM	5/10/2016
1605098-03	SGR-DU002-08(4-6)-A		05/09/16 09:32 AM	5/10/2016
1605098-04	SGR-DU002-08(6-8)-A		05/09/16 09:34 AM	5/10/2016
1605098-05	SGR-DU002-08(8-10)-A		05/09/16 09:35 AM	5/10/2016
1605098-06	SGR-DU002-08(0-2)-B		05/09/16 09:39 AM	5/10/2016
1605098-07	SGR-DU002-08(2-4)-B		05/09/16 09:41 AM	5/10/2016
1605098-08	SGR-DU002-08(4-6)-B		05/09/16 09:42 AM	5/10/2016
1605098-09	SGR-DU002-08(6-8)-B		05/09/16 09:43 AM	5/10/2016
1605098-10	SGR-DU002-08(8-10)-B		05/09/16 09:44 AM	5/10/2016
1605098-11	SGR-DU002-08(0-2)-C		05/09/16 09:47 AM	5/10/2016
1605098-12	SGR-DU002-08(2-4)-C		05/09/16 09:49 AM	5/10/2016
1605098-13	SGR-DU002-08(4-6)-C		05/09/16 09:50 AM	5/10/2016
1605098-14	SGR-DU002-08(6-8)-C		05/09/16 09:51 AM	5/10/2016
1605098-15	SGR-DU002-08(8-10)-C		05/09/16 09:52 AM	5/10/2016
1605098-16	SGR-DU016(0-2)-A		05/09/16 01:49 PM	5/10/2016
1605098-17	SGR-DU016(2-4)-A		05/09/16 01:50 PM	5/10/2016
1605098-18	SGR-DU016(4-6)-A		05/09/16 01:53 PM	5/10/2016
1605098-19	SGR-DU016(6-8)-A		05/09/16 01:54 PM	5/10/2016
1605098-20	SGR-DU016(8-10)-A		05/09/16 01:55 PM	5/10/2016
1605098-21	SGR-DU016(0-2)-B		05/09/16 01:59 PM	5/10/2016
1605098-22	SGR-DU016(2-4)-B		05/09/16 02:00 PM	5/10/2016
1605098-23	SGR-DU016(4-6)-B		05/09/16 02:01 PM	5/10/2016
1605098-24	SGR-DU016(6-8)-B		05/09/16 02:02 PM	5/10/2016
1605098-25	SGR-DU016(8-10)-B		05/09/16 02:03 PM	5/10/2016
1605098-26	SGR-DU016(0-2)-C		05/09/16 02:06 PM	5/10/2016
1605098-27	SGR-DU016(2-4)-C		05/09/16 02:07 PM	5/10/2016
1605098-28	SGR-DU016(4-6)-C		05/09/16 02:08 PM	5/10/2016
1605098-29	SGR-DU016(6-8)-C		05/09/16 02:09 PM	5/10/2016
1605098-30	SGR-DU016(8-10)-C		05/09/16 02:10 PM	5/10/2016
1605098-31	ROW-09(0-0.5)		05/09/16 08:55 AM	5/10/2016
1605098-32	ROW-09(0.5-2.0)		05/09/16 09:05 AM	5/10/2016
1605098-33	ROW-09(2.0-4.0)		05/09/16 09:10 AM	5/10/2016
1605098-34	ROW-08(0-0.5)		05/09/16 09:37 AM	5/10/2016
1605098-35	ROW-08(0.5-2.0)		05/09/16 10:00 AM	5/10/2016
1605098-36	ROW-08(2.0-4.0)		05/09/16 10:10 AM	5/10/2016
1605098-37	ROW-07(0-0.5)		05/09/16 10:20 AM	5/10/2016
1605098-38	ROW-07(0.5-2.0)		05/09/16 10:30 AM	5/10/2016
1605098-39	ROW-07(2.0-4.0)		05/09/16 10:40 AM	5/10/2016
1605098-40	DUP05(20160509)		05/09/16 09:30 AM	5/10/2016
1605098-41	DUP06(20160509)		05/09/16 10:50 AM	5/10/2016
1605098-42	EB11(20160507)		05/07/16 05:00 PM	5/10/2016

Lab Order: 1605098
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605098-01A	SGR-DU002-08(0-2)-A	05/09/16 09:30 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(0-2)-A	05/09/16 09:30 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-02A	SGR-DU002-08(2-4)-A	05/09/16 09:31 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(2-4)-A	05/09/16 09:31 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-03A	SGR-DU002-08(4-6)-A	05/09/16 09:32 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(4-6)-A	05/09/16 09:32 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-04A	SGR-DU002-08(6-8)-A	05/09/16 09:34 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(6-8)-A	05/09/16 09:34 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-05A	SGR-DU002-08(8-10)-A	05/09/16 09:35 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(8-10)-A	05/09/16 09:35 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-06A	SGR-DU002-08(0-2)-B	05/09/16 09:39 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(0-2)-B	05/09/16 09:39 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-07A	SGR-DU002-08(2-4)-B	05/09/16 09:41 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(2-4)-B	05/09/16 09:41 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-08A	SGR-DU002-08(4-6)-B	05/09/16 09:42 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(4-6)-B	05/09/16 09:42 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-09A	SGR-DU002-08(6-8)-B	05/09/16 09:43 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(6-8)-B	05/09/16 09:43 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-10A	SGR-DU002-08(8-10)-B	05/09/16 09:44 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(8-10)-B	05/09/16 09:44 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-11A	SGR-DU002-08(0-2)-C	05/09/16 09:47 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU002-08(0-2)-C	05/09/16 09:47 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/18/16 08:30 AM	75216
1605098-12A	SGR-DU002-08(2-4)-C	05/09/16 09:49 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU002-08(2-4)-C	05/09/16 09:49 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-13A	SGR-DU002-08(4-6)-C	05/09/16 09:50 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU002-08(4-6)-C	05/09/16 09:50 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-14A	SGR-DU002-08(6-8)-C	05/09/16 09:51 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU002-08(6-8)-C	05/09/16 09:51 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236

Lab Order: 1605098
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605098-15A	SGR-DU002-08(8-10)-C	05/09/16 09:52 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU002-08(8-10)-C	05/09/16 09:52 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-16A	SGR-DU016(0-2)-A	05/09/16 01:49 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(0-2)-A	05/09/16 01:49 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-17A	SGR-DU016(2-4)-A	05/09/16 01:50 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/17/16 08:34 AM	75192
	SGR-DU016(2-4)-A	05/09/16 01:50 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-18A	SGR-DU016(4-6)-A	05/09/16 01:53 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(4-6)-A	05/09/16 01:53 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-19A	SGR-DU016(6-8)-A	05/09/16 01:54 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(6-8)-A	05/09/16 01:54 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-20A	SGR-DU016(8-10)-A	05/09/16 01:55 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(8-10)-A	05/09/16 01:55 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-21A	SGR-DU016(0-2)-B	05/09/16 01:59 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(0-2)-B	05/09/16 01:59 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-22A	SGR-DU016(2-4)-B	05/09/16 02:00 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(2-4)-B	05/09/16 02:00 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-23A	SGR-DU016(4-6)-B	05/09/16 02:01 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(4-6)-B	05/09/16 02:01 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-24A	SGR-DU016(6-8)-B	05/09/16 02:02 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(6-8)-B	05/09/16 02:02 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-25A	SGR-DU016(8-10)-B	05/09/16 02:03 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(8-10)-B	05/09/16 02:03 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-26A	SGR-DU016(0-2)-C	05/09/16 02:06 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(0-2)-C	05/09/16 02:06 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-27A	SGR-DU016(2-4)-C	05/09/16 02:07 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(2-4)-C	05/09/16 02:07 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-28A	SGR-DU016(4-6)-C	05/09/16 02:08 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(4-6)-C	05/09/16 02:08 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236

Lab Order: 1605098
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605098-29A	SGR-DU016(6-8)-C	05/09/16 02:09 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(6-8)-C	05/09/16 02:09 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:08 AM	75236
1605098-30A	SGR-DU016(8-10)-C	05/09/16 02:10 PM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:37 AM	75217
	SGR-DU016(8-10)-C	05/09/16 02:10 PM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:13 AM	75237
1605098-31A	ROW-09(0-0.5)	05/09/16 08:55 AM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	ROW-09(0-0.5)	05/09/16 08:55 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/13/16 10:10 AM	75151
	ROW-09(0-0.5)	05/09/16 08:55 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 11:29 AM	75135
1605098-34A	ROW-08(0-0.5)	05/09/16 09:37 AM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	ROW-08(0-0.5)	05/09/16 09:37 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/13/16 10:10 AM	75151
	ROW-08(0-0.5)	05/09/16 09:37 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 11:29 AM	75135
1605098-35A	ROW-08(0.5-2.0)	05/09/16 10:00 AM	Soil	D2216	Moisture Preparation	05/19/16 02:01 PM	75243
	ROW-08(0.5-2.0)	05/09/16 10:00 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:50 AM	75218
	ROW-08(0.5-2.0)	05/09/16 10:00 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:13 AM	75237
1605098-36A	ROW-08(2.0-4.0)	05/09/16 10:10 AM	Soil	D2216	Moisture Preparation	05/26/16 01:04 PM	75367
	ROW-08(2.0-4.0)	05/09/16 10:10 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:50 AM	75218
	ROW-08(2.0-4.0)	05/09/16 10:10 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/31/16 10:47 AM	75402
1605098-37A	ROW-07(0-0.5)	05/09/16 10:20 AM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	ROW-07(0-0.5)	05/09/16 10:20 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/13/16 10:10 AM	75151
	ROW-07(0-0.5)	05/09/16 10:20 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 11:29 AM	75135
1605098-38A	ROW-07(0.5-2.0)	05/09/16 10:30 AM	Soil	D2216	Moisture Preparation	05/19/16 02:01 PM	75243
	ROW-07(0.5-2.0)	05/09/16 10:30 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:50 AM	75218
	ROW-07(0.5-2.0)	05/09/16 10:30 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/19/16 10:13 AM	75237
1605098-39A	ROW-07(2.0-4.0)	05/09/16 10:40 AM	Soil	D2216	Moisture Preparation	05/26/16 01:04 PM	75367
	ROW-07(2.0-4.0)	05/09/16 10:40 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:50 AM	75218
	ROW-07(2.0-4.0)	05/09/16 10:40 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/31/16 10:47 AM	75402
1605098-40A	DUP05(20160509)	05/09/16 09:30 AM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	DUP05(20160509)	05/09/16 09:30 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:50 AM	75218
	DUP05(20160509)	05/09/16 09:30 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 11:29 AM	75135

Lab Order: 1605098
Client: Arcadis
Project: Laredo SGR

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605098-41A	DUP06(20160509)	05/09/16 10:50 AM	Soil	D2216	Moisture Preparation	05/12/16 10:04 AM	75130
	DUP06(20160509)	05/09/16 10:50 AM	Soil	SW3550C	Soil Prep Sonication: PAH	05/18/16 08:50 AM	75218
	DUP06(20160509)	05/09/16 10:50 AM	Soil	SW3050B	Soil Prep Total Metals: ICP-MS	05/12/16 11:29 AM	75135
1605098-42A	EB11(20160507)	05/07/16 05:00 PM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	05/19/16 08:30 AM	75180
1605098-42B	EB11(20160507)	05/07/16 05:00 PM	Equip Blank	SW3510C	Aq Prep Sep Funnel: PAH	05/13/16 08:48 AM	75146

Lab Order: 1605098
Client: Arcadis
Project: Laredo SGR

ISM PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605098-01A	SGR-DU002-08(0-2)-A	5/9/2016 9:30:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605098-02A	SGR-DU002-08(2-4)-A	5/9/2016 9:31:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605098-03A	SGR-DU002-08(4-6)-A	5/9/2016 9:32:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605098-04A	SGR-DU002-08(6-8)-A	5/9/2016 9:34:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605098-05A	SGR-DU002-08(8-10)-A	5/9/2016 9:35:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605098-06A	SGR-DU002-08(0-2)-B	5/9/2016 9:39:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605098-07A	SGR-DU002-08(2-4)-B	5/9/2016 9:41:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605098-08A	SGR-DU002-08(4-6)-B	5/9/2016 9:42:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605098-09A	SGR-DU002-08(6-8)-B	5/9/2016 9:43:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605098-10A	SGR-DU002-08(8-10)-B	5/9/2016 9:44:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 2:10:55 PM	75141
1605098-11A	SGR-DU002-08(0-2)-C	5/9/2016 9:47:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-12A	SGR-DU002-08(2-4)-C	5/9/2016 9:49:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-13A	SGR-DU002-08(4-6)-C	5/9/2016 9:50:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-14A	SGR-DU002-08(6-8)-C	5/9/2016 9:51:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-15A	SGR-DU002-08(8-10)-C	5/9/2016 9:52:00 AM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-16A	SGR-DU016(0-2)-A	5/9/2016 1:49:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-17A	SGR-DU016(2-4)-A	5/9/2016 1:50:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-18A	SGR-DU016(4-6)-A	5/9/2016 1:53:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-19A	SGR-DU016(6-8)-A	5/9/2016 1:54:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-20A	SGR-DU016(8-10)-A	5/9/2016 1:55:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-21A	SGR-DU016(0-2)-B	5/9/2016 1:59:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-22A	SGR-DU016(2-4)-B	5/9/2016 2:00:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-23A	SGR-DU016(4-6)-B	5/9/2016 2:01:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-24A	SGR-DU016(6-8)-B	5/9/2016 2:02:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-25A	SGR-DU016(8-10)-B	5/9/2016 2:03:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-26A	SGR-DU016(0-2)-C	5/9/2016 2:06:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-27A	SGR-DU016(2-4)-C	5/9/2016 2:07:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-28A	SGR-DU016(4-6)-C	5/9/2016 2:08:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144

Lab Order: 1605098
Client: Arcadis
Project: Laredo SGR

ISM PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1605098-29A	SGR-DU016(6-8)-C	5/9/2016 2:09:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144
1605098-30A	SGR-DU016(8-10)-C	5/9/2016 2:10:00 PM	Soil	ISM-2	Incremental Sample Prep 2mm Sieve	5/12/2016 5:00:00 PM	75144

Lab Order: 1605098
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605098-01A	SGR-DU002-08(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 05:53 PM	GCMS8_160520A
	SGR-DU002-08(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 09:48 PM	ICP-MS3_160525A
1605098-02A	SGR-DU002-08(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 09:00 PM	GCMS8_160520A
	SGR-DU002-08(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 10:42 PM	ICP-MS3_160525A
1605098-03A	SGR-DU002-08(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 09:37 PM	GCMS8_160520A
	SGR-DU002-08(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 10:48 PM	ICP-MS3_160525A
1605098-04A	SGR-DU002-08(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 10:14 PM	GCMS8_160520A
	SGR-DU002-08(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 10:54 PM	ICP-MS3_160525A
1605098-05A	SGR-DU002-08(8-10)-A	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 10:52 PM	GCMS8_160520A
	SGR-DU002-08(8-10)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 11:00 PM	ICP-MS3_160525A
1605098-06A	SGR-DU002-08(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/20/16 11:29 PM	GCMS8_160520A
	SGR-DU002-08(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 11:06 PM	ICP-MS3_160525A
1605098-07A	SGR-DU002-08(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/21/16 12:07 AM	GCMS8_160520A
	SGR-DU002-08(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 11:12 PM	ICP-MS3_160525A
1605098-08A	SGR-DU002-08(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/21/16 12:44 AM	GCMS8_160520A
	SGR-DU002-08(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 11:18 PM	ICP-MS3_160525A
1605098-09A	SGR-DU002-08(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/21/16 01:21 AM	GCMS8_160520A
	SGR-DU002-08(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 11:24 PM	ICP-MS3_160525A
1605098-10A	SGR-DU002-08(8-10)-B	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/21/16 01:58 AM	GCMS8_160520A
	SGR-DU002-08(8-10)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 11:30 PM	ICP-MS3_160525A
1605098-11A	SGR-DU002-08(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/21/16 02:36 AM	GCMS8_160520A
	SGR-DU002-08(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75216	5	05/25/16 11:36 PM	ICP-MS3_160525A
1605098-12A	SGR-DU002-08(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 10:56 AM	GCMS8_160523A
	SGR-DU002-08(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:28 PM	ICP-MS4_160523F
1605098-13A	SGR-DU002-08(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 11:34 AM	GCMS8_160523A
	SGR-DU002-08(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:30 PM	ICP-MS4_160523F
1605098-14A	SGR-DU002-08(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 12:11 PM	GCMS8_160523A
	SGR-DU002-08(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:32 PM	ICP-MS4_160523F

Lab Order: 1605098
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605098-15A	SGR-DU002-08(8-10)-C	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 12:48 PM	GCMS8_160523A
	SGR-DU002-08(8-10)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:34 PM	ICP-MS4_160523F
1605098-16A	SGR-DU016(0-2)-A	Soil	SW8270D-LL	PAHs: GC/MS	75217	20	05/23/16 01:26 PM	GCMS8_160523A
	SGR-DU016(0-2)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:36 PM	ICP-MS4_160523F
1605098-17A	SGR-DU016(2-4)-A	Soil	SW8270D-LL	PAHs: GC/MS	75192	10	05/21/16 03:13 AM	GCMS8_160520A
	SGR-DU016(2-4)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:20 PM	ICP-MS4_160523F
1605098-18A	SGR-DU016(4-6)-A	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 02:03 PM	GCMS8_160523A
	SGR-DU016(4-6)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:38 PM	ICP-MS4_160523F
1605098-19A	SGR-DU016(6-8)-A	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 02:39 PM	GCMS8_160523A
	SGR-DU016(6-8)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:40 PM	ICP-MS4_160523F
1605098-20A	SGR-DU016(8-10)-A	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 03:17 PM	GCMS8_160523A
	SGR-DU016(8-10)-A	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:56 PM	ICP-MS4_160523F
1605098-21A	SGR-DU016(0-2)-B	Soil	SW8270D-LL	PAHs: GC/MS	75217	20	05/23/16 03:54 PM	GCMS8_160523A
	SGR-DU016(0-2)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 06:58 PM	ICP-MS4_160523F
1605098-22A	SGR-DU016(2-4)-B	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 04:31 PM	GCMS8_160523A
	SGR-DU016(2-4)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 07:00 PM	ICP-MS4_160523F
1605098-23A	SGR-DU016(4-6)-B	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 05:09 PM	GCMS8_160523A
	SGR-DU016(4-6)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 07:02 PM	ICP-MS4_160523F
1605098-24A	SGR-DU016(6-8)-B	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 05:46 PM	GCMS8_160523A
	SGR-DU016(6-8)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 07:04 PM	ICP-MS4_160523F
1605098-25A	SGR-DU016(8-10)-B	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 10:09 PM	GCMS8_160523A
	SGR-DU016(8-10)-B	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 07:06 PM	ICP-MS4_160523F
1605098-26A	SGR-DU016(0-2)-C	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 10:47 PM	GCMS8_160523A
	SGR-DU016(0-2)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 07:08 PM	ICP-MS4_160523F
1605098-27A	SGR-DU016(2-4)-C	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/23/16 11:24 PM	GCMS8_160523A
	SGR-DU016(2-4)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 07:10 PM	ICP-MS4_160523F
1605098-28A	SGR-DU016(4-6)-C	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/24/16 12:01 AM	GCMS8_160523A
	SGR-DU016(4-6)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 07:12 PM	ICP-MS4_160523F

Lab Order: 1605098
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605098-29A	SGR-DU016(6-8)-C	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/24/16 12:38 AM	GCMS8_160523A
	SGR-DU016(6-8)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75236	5	05/23/16 07:14 PM	ICP-MS4_160523F
1605098-30A	SGR-DU016(8-10)-C	Soil	SW8270D-LL	PAHs: GC/MS	75217	10	05/24/16 01:16 AM	GCMS8_160523A
	SGR-DU016(8-10)-C	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75237	5	05/23/16 05:12 PM	ICP-MS4_160523F
1605098-31A	ROW-09(0-0.5)	Soil	SW8270D-LL	PAHs: GC/MS	75151	10	05/14/16 06:51 AM	GCMS8_160513A
	ROW-09(0-0.5)	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	ROW-09(0-0.5)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75135	5	05/16/16 04:05 PM	ICP-MS4_160516B
1605098-34A	ROW-08(0-0.5)	Soil	SW8270D-LL	PAHs: GC/MS	75151	10	05/14/16 07:28 AM	GCMS8_160513A
	ROW-08(0-0.5)	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	ROW-08(0-0.5)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75135	5	05/16/16 04:07 PM	ICP-MS4_160516B
1605098-35A	ROW-08(0.5-2.0)	Soil	SW8270D-LL	PAHs: GC/MS	75218	10	05/19/16 04:11 PM	GCMS8_160519B
	ROW-08(0.5-2.0)	Soil	D2216	Percent Moisture	75243	1	05/20/16 09:12 AM	PMOIST_160519A
	ROW-08(0.5-2.0)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75237	5	05/23/16 05:14 PM	ICP-MS4_160523F
1605098-36A	ROW-08(2.0-4.0)	Soil	SW8270D-LL	PAHs: GC/MS	75218	10	05/26/16 01:41 AM	GCMS8_160525A
	ROW-08(2.0-4.0)	Soil	D2216	Percent Moisture	75367	1	05/27/16 10:11 AM	PMOIST_160526A
	ROW-08(2.0-4.0)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75402	5	06/01/16 11:14 AM	ICP-MS4_160601A
1605098-37A	ROW-07(0-0.5)	Soil	SW8270D-LL	PAHs: GC/MS	75151	10	05/14/16 08:05 AM	GCMS8_160513A
	ROW-07(0-0.5)	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	ROW-07(0-0.5)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75135	5	05/16/16 04:09 PM	ICP-MS4_160516B
1605098-38A	ROW-07(0.5-2.0)	Soil	SW8270D-LL	PAHs: GC/MS	75218	10	05/19/16 04:48 PM	GCMS8_160519B
	ROW-07(0.5-2.0)	Soil	D2216	Percent Moisture	75243	1	05/20/16 09:12 AM	PMOIST_160519A
	ROW-07(0.5-2.0)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75237	5	05/23/16 05:16 PM	ICP-MS4_160523F
1605098-39A	ROW-07(2.0-4.0)	Soil	SW8270D-LL	PAHs: GC/MS	75218	10	05/26/16 02:18 AM	GCMS8_160525A
	ROW-07(2.0-4.0)	Soil	D2216	Percent Moisture	75367	1	05/27/16 10:11 AM	PMOIST_160526A
	ROW-07(2.0-4.0)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75402	5	06/01/16 11:18 AM	ICP-MS4_160601A
1605098-40A	DUP05(20160509)	Soil	SW8270D-LL	PAHs: GC/MS	75218	10	05/19/16 05:25 PM	GCMS8_160519B
	DUP05(20160509)	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	DUP05(20160509)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75135	5	05/16/16 04:11 PM	ICP-MS4_160516B

Lab Order: 1605098
Client: Arcadis
Project: Laredo SGR

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1605098-41A	DUP06(20160509)	Soil	SW8270D-LL	PAHs: GC/MS	75218	10	05/19/16 06:02 PM	GCMS8_160519B
	DUP06(20160509)	Soil	D2216	Percent Moisture	75130	1	05/13/16 12:52 PM	PMOIST_160512A
	DUP06(20160509)	Soil	SW6020A	Trace Metals: ICP-MS - Solid	75135	5	05/16/16 03:53 PM	ICP-MS4_160516B
1605098-42A	EB11(20160507)	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75180	1	05/20/16 02:14 PM	ICP-MS4_160520C
1605098-42B	EB11(20160507)	Equip Blank	SW8270D-LL	PAHs: GC/MS	75146	1	05/18/16 10:40 PM	GCMS8_160518B

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605098-01
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	23.6	0.0909	0.273	0.136		mg/Kg-dry	5	05/25/16 09:48 PM
IS: Bismuth	83.8	0	30-120	0		%REC	5	05/25/16 09:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0658	0.0491	0.0981	0.0736	J	mg/Kg-dry	10	05/20/16 05:53 PM
Acenaphthylene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/20/16 05:53 PM
Anthracene	0.273	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[a]anthracene	1.62	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[a]pyrene	1.92	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[b]fluoranthene	1.78	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[e]pyrene	1.39	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[g,h,i]perylene	1.34	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[j]fluoranthene	0.909	0.0491	0.0981	0.0736	N	mg/Kg-dry	10	05/20/16 05:53 PM
Benzo[k]fluoranthene	0.937	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Chrysene	1.95	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Dibenz[a,h]anthracene	0.272	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Fluoranthene	3.06	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Fluorene	0.0736	0.0491	0.0981	0.0736	U	mg/Kg-dry	10	05/20/16 05:53 PM
Indeno[1,2,3-cd]pyrene	1.14	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Phenanthrene	1.32	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
Pyrene	2.69	0.0491	0.0981	0.0736		mg/Kg-dry	10	05/20/16 05:53 PM
IS: Acenaphthene-d10	95.6	0	50-200	0		%REC	10	05/20/16 05:53 PM
IS: Chrysene-d12	82.0	0	50-200	0		%REC	10	05/20/16 05:53 PM
IS: Naphthalene-d8	92.5	0	50-200	0		%REC	10	05/20/16 05:53 PM
IS: Perylene-d12	83.2	0	50-200	0		%REC	10	05/20/16 05:53 PM
IS: Phenanthrene-d10	76.3	0	50-200	0		%REC	10	05/20/16 05:53 PM
Surr: 2-Fluorobiphenyl	85.2	0	46-115	0		%REC	10	05/20/16 05:53 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605098-01
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.9	0	58-133	0		%REC	10	05/20/16 05:53 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605098-02
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:31 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	24.0	0.0893	0.268	0.134		mg/Kg-dry	5	05/25/16 10:42 PM
IS: Bismuth	82.6	0	30-120	0		%REC	5	05/25/16 10:42 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/20/16 09:00 PM
Acenaphthylene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/20/16 09:00 PM
Anthracene	0.114	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[a]anthracene	1.01	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[a]pyrene	1.30	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[b]fluoranthene	1.22	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[e]pyrene	0.956	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[g,h,i]perylene	0.949	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[j]fluoranthene	0.590	0.0479	0.0959	0.0719	N	mg/Kg-dry	10	05/20/16 09:00 PM
Benzo[k]fluoranthene	0.593	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Chrysene	1.26	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Dibenz[a,h]anthracene	0.174	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Fluoranthene	1.68	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Fluorene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/20/16 09:00 PM
Indeno[1,2,3-cd]pyrene	0.788	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Phenanthrene	0.579	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
Pyrene	1.53	0.0479	0.0959	0.0719		mg/Kg-dry	10	05/20/16 09:00 PM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/20/16 09:00 PM
IS: Chrysene-d12	84.1	0	50-200	0		%REC	10	05/20/16 09:00 PM
IS: Naphthalene-d8	96.1	0	50-200	0		%REC	10	05/20/16 09:00 PM
IS: Perylene-d12	86.6	0	50-200	0		%REC	10	05/20/16 09:00 PM
IS: Phenanthrene-d10	78.4	0	50-200	0		%REC	10	05/20/16 09:00 PM
Surr: 2-Fluorobiphenyl	87.4	0	46-115	0		%REC	10	05/20/16 09:00 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605098-02
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:31 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.6	0	58-133	0		%REC	10	05/20/16 09:00 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605098-03
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:32 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	18.0	0.0840	0.252	0.126		mg/Kg-dry	5	05/25/16 10:48 PM
IS: Bismuth	84.2	0	30-120	0		%REC	5	05/25/16 10:48 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/20/16 09:37 PM
Acenaphthylene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/20/16 09:37 PM
Anthracene	0.234	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[a]anthracene	1.11	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[a]pyrene	1.11	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[b]fluoranthene	1.07	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[e]pyrene	0.774	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[g,h,i]perylene	0.743	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[j]fluoranthene	0.527	0.0483	0.0966	0.0725	N	mg/Kg-dry	10	05/20/16 09:37 PM
Benzo[k]fluoranthene	0.530	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Chrysene	1.25	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Dibenz[a,h]anthracene	0.139	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Fluoranthene	2.58	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Fluorene	0.0725	0.0483	0.0966	0.0725	U	mg/Kg-dry	10	05/20/16 09:37 PM
Indeno[1,2,3-cd]pyrene	0.649	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Phenanthrene	1.20	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
Pyrene	2.13	0.0483	0.0966	0.0725		mg/Kg-dry	10	05/20/16 09:37 PM
IS: Acenaphthene-d10	99.4	0	50-200	0		%REC	10	05/20/16 09:37 PM
IS: Chrysene-d12	83.4	0	50-200	0		%REC	10	05/20/16 09:37 PM
IS: Naphthalene-d8	94.0	0	50-200	0		%REC	10	05/20/16 09:37 PM
IS: Perylene-d12	85.3	0	50-200	0		%REC	10	05/20/16 09:37 PM
IS: Phenanthrene-d10	77.2	0	50-200	0		%REC	10	05/20/16 09:37 PM
Surr: 2-Fluorobiphenyl	93.0	0	46-115	0		%REC	10	05/20/16 09:37 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605098-03
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:32 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.9	0	58-133	0		%REC	10	05/20/16 09:37 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605098-04
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:34 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	16.4	0.0847	0.254	0.127		mg/Kg-dry	5	05/25/16 10:54 PM
IS: Bismuth	82.2	0	30-120	0		%REC	5	05/25/16 10:54 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Acenaphthylene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[a]anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[a]pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[b]fluoranthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[e]pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[g,h,i]perylene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[j]fluoranthene	0.0741	0.0494	0.0988	0.0741	NU	mg/Kg-dry	10	05/20/16 10:14 PM
Benzo[k]fluoranthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Chrysene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Dibenz[a,h]anthracene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Fluoranthene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Fluorene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Indeno[1,2,3-cd]pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Phenanthrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
Pyrene	0.0741	0.0494	0.0988	0.0741	U	mg/Kg-dry	10	05/20/16 10:14 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/20/16 10:14 PM
IS: Chrysene-d12	85.0	0	50-200	0		%REC	10	05/20/16 10:14 PM
IS: Naphthalene-d8	97.1	0	50-200	0		%REC	10	05/20/16 10:14 PM
IS: Perylene-d12	87.4	0	50-200	0		%REC	10	05/20/16 10:14 PM
IS: Phenanthrene-d10	79.0	0	50-200	0		%REC	10	05/20/16 10:14 PM
Surr: 2-Fluorobiphenyl	86.3	0	46-115	0		%REC	10	05/20/16 10:14 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605098-04
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:34 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.4	0	58-133	0		%REC	10	05/20/16 10:14 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605098-05
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:35 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	19.5	0.0870	0.261	0.130		mg/Kg-dry	5	05/25/16 11:00 PM
IS: Bismuth	83.2	0	30-120	0		%REC	5	05/25/16 11:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Acenaphthylene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[a]anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[a]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[b]fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[e]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[g,h,i]perylene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[j]fluoranthene	0.0718	0.0478	0.0957	0.0718	NU	mg/Kg-dry	10	05/20/16 10:52 PM
Benzo[k]fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Chrysene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Dibenz[a,h]anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Fluorene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Indeno[1,2,3-cd]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Phenanthrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
Pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/20/16 10:52 PM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/20/16 10:52 PM
IS: Chrysene-d12	83.4	0	50-200	0		%REC	10	05/20/16 10:52 PM
IS: Naphthalene-d8	96.5	0	50-200	0		%REC	10	05/20/16 10:52 PM
IS: Perylene-d12	85.8	0	50-200	0		%REC	10	05/20/16 10:52 PM
IS: Phenanthrene-d10	77.1	0	50-200	0		%REC	10	05/20/16 10:52 PM
Surr: 2-Fluorobiphenyl	90.4	0	46-115	0		%REC	10	05/20/16 10:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605098-05
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:35 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.9	0	58-133	0		%REC	10	05/20/16 10:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605098-06
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:39 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	13.3	0.0926	0.278	0.139		mg/Kg-dry	5	05/25/16 11:06 PM
IS: Bismuth	83.8	0	30-120	0		%REC	5	05/25/16 11:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/20/16 11:29 PM
Acenaphthylene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/20/16 11:29 PM
Anthracene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[a]anthracene	0.457	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[a]pyrene	0.661	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[b]fluoranthene	0.623	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[e]pyrene	0.480	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[g,h,i]perylene	0.496	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[j]fluoranthene	0.276	0.0500	0.0999	0.0749	N	mg/Kg-dry	10	05/20/16 11:29 PM
Benzo[k]fluoranthene	0.290	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Chrysene	0.606	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Dibenz[a,h]anthracene	0.0690	0.0500	0.0999	0.0749	J	mg/Kg-dry	10	05/20/16 11:29 PM
Fluoranthene	0.724	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Fluorene	0.0749	0.0500	0.0999	0.0749	U	mg/Kg-dry	10	05/20/16 11:29 PM
Indeno[1,2,3-cd]pyrene	0.404	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Phenanthrene	0.223	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
Pyrene	0.683	0.0500	0.0999	0.0749		mg/Kg-dry	10	05/20/16 11:29 PM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/20/16 11:29 PM
IS: Chrysene-d12	86.4	0	50-200	0		%REC	10	05/20/16 11:29 PM
IS: Naphthalene-d8	97.2	0	50-200	0		%REC	10	05/20/16 11:29 PM
IS: Perylene-d12	88.3	0	50-200	0		%REC	10	05/20/16 11:29 PM
IS: Phenanthrene-d10	78.4	0	50-200	0		%REC	10	05/20/16 11:29 PM
Surr: 2-Fluorobiphenyl	88.1	0	46-115	0		%REC	10	05/20/16 11:29 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605098-06
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:39 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.2	0	58-133	0		%REC	10	05/20/16 11:29 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605098-07
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:41 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	15.3	0.0893	0.268	0.134		mg/Kg-dry	5	05/25/16 11:12 PM
IS: Bismuth	80.6	0	30-120	0		%REC	5	05/25/16 11:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0698	0.0466	0.0931	0.0698	U	mg/Kg-dry	10	05/21/16 12:07 AM
Acenaphthylene	0.0698	0.0466	0.0931	0.0698	U	mg/Kg-dry	10	05/21/16 12:07 AM
Anthracene	0.0698	0.0466	0.0931	0.0698	U	mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[a]anthracene	0.410	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[a]pyrene	0.571	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[b]fluoranthene	0.534	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[e]pyrene	0.419	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[g,h,i]perylene	0.430	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[j]fluoranthene	0.240	0.0466	0.0931	0.0698	N	mg/Kg-dry	10	05/21/16 12:07 AM
Benzo[k]fluoranthene	0.257	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Chrysene	0.531	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Dibenz[a,h]anthracene	0.0698	0.0466	0.0931	0.0698	U	mg/Kg-dry	10	05/21/16 12:07 AM
Fluoranthene	0.648	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Fluorene	0.0698	0.0466	0.0931	0.0698	U	mg/Kg-dry	10	05/21/16 12:07 AM
Indeno[1,2,3-cd]pyrene	0.348	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Phenanthrene	0.202	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
Pyrene	0.593	0.0466	0.0931	0.0698		mg/Kg-dry	10	05/21/16 12:07 AM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/21/16 12:07 AM
IS: Chrysene-d12	83.6	0	50-200	0		%REC	10	05/21/16 12:07 AM
IS: Naphthalene-d8	96.0	0	50-200	0		%REC	10	05/21/16 12:07 AM
IS: Perylene-d12	86.1	0	50-200	0		%REC	10	05/21/16 12:07 AM
IS: Phenanthrene-d10	77.7	0	50-200	0		%REC	10	05/21/16 12:07 AM
Surr: 2-Fluorobiphenyl	90.7	0	46-115	0		%REC	10	05/21/16 12:07 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605098-07
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:41 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.8	0	58-133	0		%REC	10	05/21/16 12:07 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605098-08
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:42 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	10.4	0.0962	0.288	0.144		mg/Kg-dry	5	05/25/16 11:18 PM
IS: Bismuth	84.3	0	30-120	0		%REC	5	05/25/16 11:18 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Acenaphthylene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Anthracene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[a]anthracene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[a]pyrene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[b]fluoranthene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[e]pyrene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[g,h,i]perylene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[j]fluoranthene	0.0712	0.0474	0.0949	0.0712	NU	mg/Kg-dry	10	05/21/16 12:44 AM
Benzo[k]fluoranthene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Chrysene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Dibenz[a,h]anthracene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Fluoranthene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Fluorene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Indeno[1,2,3-cd]pyrene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Phenanthrene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
Pyrene	0.0712	0.0474	0.0949	0.0712	U	mg/Kg-dry	10	05/21/16 12:44 AM
IS: Acenaphthene-d10	99.3	0	50-200	0		%REC	10	05/21/16 12:44 AM
IS: Chrysene-d12	81.8	0	50-200	0		%REC	10	05/21/16 12:44 AM
IS: Naphthalene-d8	95.1	0	50-200	0		%REC	10	05/21/16 12:44 AM
IS: Perylene-d12	84.1	0	50-200	0		%REC	10	05/21/16 12:44 AM
IS: Phenanthrene-d10	75.2	0	50-200	0		%REC	10	05/21/16 12:44 AM
Surr: 2-Fluorobiphenyl	90.7	0	46-115	0		%REC	10	05/21/16 12:44 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605098-08
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:42 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/21/16 12:44 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605098-09
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:43 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	16.8	0.0893	0.268	0.134		mg/Kg-dry	5	05/25/16 11:24 PM
IS: Bismuth	84.4	0	30-120	0		%REC	5	05/25/16 11:24 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Acenaphthylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[a]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[a]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[b]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[e]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[g,h,i]perylene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[j]fluoranthene	0.0747	0.0498	0.0996	0.0747	NU	mg/Kg-dry	10	05/21/16 01:21 AM
Benzo[k]fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Chrysene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Dibenz[a,h]anthracene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Fluoranthene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Fluorene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Indeno[1,2,3-cd]pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Phenanthrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
Pyrene	0.0747	0.0498	0.0996	0.0747	U	mg/Kg-dry	10	05/21/16 01:21 AM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/21/16 01:21 AM
IS: Chrysene-d12	82.7	0	50-200	0		%REC	10	05/21/16 01:21 AM
IS: Naphthalene-d8	96.1	0	50-200	0		%REC	10	05/21/16 01:21 AM
IS: Perylene-d12	85.1	0	50-200	0		%REC	10	05/21/16 01:21 AM
IS: Phenanthrene-d10	77.3	0	50-200	0		%REC	10	05/21/16 01:21 AM
Surr: 2-Fluorobiphenyl	88.5	0	46-115	0		%REC	10	05/21/16 01:21 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605098-09
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:43 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/21/16 01:21 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605098-10
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:44 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	12.8	0.0901	0.270	0.135		mg/Kg-dry	5	05/25/16 11:30 PM
IS: Bismuth	86.2	0	30-120	0		%REC	5	05/25/16 11:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Acenaphthylene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[a]anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[a]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[b]fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[e]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[g,h,i]perylene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[j]fluoranthene	0.0718	0.0478	0.0957	0.0718	NU	mg/Kg-dry	10	05/21/16 01:58 AM
Benzo[k]fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Chrysene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Dibenz[a,h]anthracene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Fluoranthene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Fluorene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Indeno[1,2,3-cd]pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Phenanthrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
Pyrene	0.0718	0.0478	0.0957	0.0718	U	mg/Kg-dry	10	05/21/16 01:58 AM
IS: Acenaphthene-d10	99.0	0	50-200	0		%REC	10	05/21/16 01:58 AM
IS: Chrysene-d12	82.3	0	50-200	0		%REC	10	05/21/16 01:58 AM
IS: Naphthalene-d8	95.3	0	50-200	0		%REC	10	05/21/16 01:58 AM
IS: Perylene-d12	84.8	0	50-200	0		%REC	10	05/21/16 01:58 AM
IS: Phenanthrene-d10	76.1	0	50-200	0		%REC	10	05/21/16 01:58 AM
Surr: 2-Fluorobiphenyl	87.2	0	46-115	0		%REC	10	05/21/16 01:58 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605098-10
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:44 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.4	0	58-133	0		%REC	10	05/21/16 01:58 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605098-11
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:47 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **KL**
Lead	15.7	0.0935	0.280	0.140		mg/Kg-dry	5	05/25/16 11:36 PM
IS: Bismuth	80.8	0	30-120	0		%REC	5	05/25/16 11:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/21/16 02:36 AM
Acenaphthylene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/21/16 02:36 AM
Anthracene	0.142	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[a]anthracene	0.619	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[a]pyrene	0.630	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[b]fluoranthene	0.588	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[e]pyrene	0.430	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[g,h,i]perylene	0.414	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[j]fluoranthene	0.279	0.0499	0.0997	0.0748	N	mg/Kg-dry	10	05/21/16 02:36 AM
Benzo[k]fluoranthene	0.298	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Chrysene	0.715	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Dibenz[a,h]anthracene	0.0599	0.0499	0.0997	0.0748	J	mg/Kg-dry	10	05/21/16 02:36 AM
Fluoranthene	1.47	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Fluorene	0.0748	0.0499	0.0997	0.0748	U	mg/Kg-dry	10	05/21/16 02:36 AM
Indeno[1,2,3-cd]pyrene	0.355	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Phenanthrene	0.698	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
Pyrene	1.21	0.0499	0.0997	0.0748		mg/Kg-dry	10	05/21/16 02:36 AM
IS: Acenaphthene-d10	101	0	50-200	0		%REC	10	05/21/16 02:36 AM
IS: Chrysene-d12	85.3	0	50-200	0		%REC	10	05/21/16 02:36 AM
IS: Naphthalene-d8	97.2	0	50-200	0		%REC	10	05/21/16 02:36 AM
IS: Perylene-d12	88.0	0	50-200	0		%REC	10	05/21/16 02:36 AM
IS: Phenanthrene-d10	76.8	0	50-200	0		%REC	10	05/21/16 02:36 AM
Surr: 2-Fluorobiphenyl	84.1	0	46-115	0		%REC	10	05/21/16 02:36 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605098-11
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:47 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.6	0	58-133	0		%REC	10	05/21/16 02:36 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605098-12
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:49 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	11.3	0.0877	0.263	0.132		mg/Kg-dry	5	05/23/16 06:28 PM
IS: Bismuth	97.7	0	30-120	0		%REC	5	05/23/16 06:28 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Acenaphthylene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Anthracene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[a]anthracene	0.0764	0.0493	0.0985	0.0739	J	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[a]pyrene	0.0744	0.0493	0.0985	0.0739	J	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[b]fluoranthene	0.0760	0.0493	0.0985	0.0739	J	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[e]pyrene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[g,h,i]perylene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[j]fluoranthene	0.0739	0.0493	0.0985	0.0739	NU	mg/Kg-dry	10	05/23/16 10:56 AM
Benzo[k]fluoranthene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Chrysene	0.0789	0.0493	0.0985	0.0739	J	mg/Kg-dry	10	05/23/16 10:56 AM
Dibenz[a,h]anthracene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Fluoranthene	0.149	0.0493	0.0985	0.0739		mg/Kg-dry	10	05/23/16 10:56 AM
Fluorene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Indeno[1,2,3-cd]pyrene	0.0739	0.0493	0.0985	0.0739	U	mg/Kg-dry	10	05/23/16 10:56 AM
Phenanthrene	0.0884	0.0493	0.0985	0.0739	J	mg/Kg-dry	10	05/23/16 10:56 AM
Pyrene	0.121	0.0493	0.0985	0.0739		mg/Kg-dry	10	05/23/16 10:56 AM
IS: Acenaphthene-d10	99.3	0	50-200	0		%REC	10	05/23/16 10:56 AM
IS: Chrysene-d12	79.5	0	50-200	0		%REC	10	05/23/16 10:56 AM
IS: Naphthalene-d8	95.2	0	50-200	0		%REC	10	05/23/16 10:56 AM
IS: Perylene-d12	82.2	0	50-200	0		%REC	10	05/23/16 10:56 AM
IS: Phenanthrene-d10	75.7	0	50-200	0		%REC	10	05/23/16 10:56 AM
Surr: 2-Fluorobiphenyl	90.8	0	46-115	0		%REC	10	05/23/16 10:56 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605098-12
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:49 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	82.9	0	58-133	0		%REC	10	05/23/16 10:56 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605098-13
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:50 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	24.4	0.0980	0.294	0.147		mg/Kg-dry	5	05/23/16 06:30 PM
IS: Bismuth	96.5	0	30-120	0		%REC	5	05/23/16 06:30 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[a]pyrene	0.0590	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[b]fluoranthene	0.0588	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[g,h,i]perylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/23/16 11:34 AM
Benzo[k]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Chrysene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Dibenz[a,h]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Fluoranthene	0.0527	0.0495	0.0989	0.0742	J	mg/Kg-dry	10	05/23/16 11:34 AM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Indeno[1,2,3-cd]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 11:34 AM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 11:34 AM
IS: Chrysene-d12	83.9	0	50-200	0		%REC	10	05/23/16 11:34 AM
IS: Naphthalene-d8	98.2	0	50-200	0		%REC	10	05/23/16 11:34 AM
IS: Perylene-d12	88.5	0	50-200	0		%REC	10	05/23/16 11:34 AM
IS: Phenanthrene-d10	76.9	0	50-200	0		%REC	10	05/23/16 11:34 AM
Surr: 2-Fluorobiphenyl	88.7	0	46-115	0		%REC	10	05/23/16 11:34 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605098-13
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:50 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.2	0	58-133	0		%REC	10	05/23/16 11:34 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605098-14
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:51 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	18.0	0.0901	0.270	0.135		mg/Kg-dry	5	05/23/16 06:32 PM
IS: Bismuth	96.1	0	30-120	0		%REC	5	05/23/16 06:32 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Acenaphthylene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Anthracene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[a]anthracene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[a]pyrene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[b]fluoranthene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[e]pyrene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[g,h,i]perylene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[j]fluoranthene	0.0737	0.0491	0.0982	0.0737	NU	mg/Kg-dry	10	05/23/16 12:11 PM
Benzo[k]fluoranthene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Chrysene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Dibenz[a,h]anthracene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Fluoranthene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Fluorene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Indeno[1,2,3-cd]pyrene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Phenanthrene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
Pyrene	0.0737	0.0491	0.0982	0.0737	U	mg/Kg-dry	10	05/23/16 12:11 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 12:11 PM
IS: Chrysene-d12	83.1	0	50-200	0		%REC	10	05/23/16 12:11 PM
IS: Naphthalene-d8	97.9	0	50-200	0		%REC	10	05/23/16 12:11 PM
IS: Perylene-d12	86.9	0	50-200	0		%REC	10	05/23/16 12:11 PM
IS: Phenanthrene-d10	77.3	0	50-200	0		%REC	10	05/23/16 12:11 PM
Surr: 2-Fluorobiphenyl	89.2	0	46-115	0		%REC	10	05/23/16 12:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605098-14
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:51 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.2	0	58-133	0		%REC	10	05/23/16 12:11 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605098-15
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:52 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	25.9	0.0962	0.288	0.144		mg/Kg-dry	5	05/23/16 06:34 PM
IS: Bismuth	93.7	0	30-120	0		%REC	5	05/23/16 06:34 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/23/16 12:48 PM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/23/16 12:48 PM
Anthracene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[a]anthracene	0.444	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[a]pyrene	0.615	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[b]fluoranthene	0.544	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[e]pyrene	0.437	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[g,h,i]perylene	0.417	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[j]fluoranthene	0.257	0.0490	0.0980	0.0735	N	mg/Kg-dry	10	05/23/16 12:48 PM
Benzo[k]fluoranthene	0.269	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Chrysene	0.544	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Dibenz[a,h]anthracene	0.0788	0.0490	0.0980	0.0735	J	mg/Kg-dry	10	05/23/16 12:48 PM
Fluoranthene	0.571	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Fluorene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/23/16 12:48 PM
Indeno[1,2,3-cd]pyrene	0.339	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Phenanthrene	0.124	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
Pyrene	0.545	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/23/16 12:48 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 12:48 PM
IS: Chrysene-d12	86.2	0	50-200	0		%REC	10	05/23/16 12:48 PM
IS: Naphthalene-d8	96.9	0	50-200	0		%REC	10	05/23/16 12:48 PM
IS: Perylene-d12	89.7	0	50-200	0		%REC	10	05/23/16 12:48 PM
IS: Phenanthrene-d10	77.5	0	50-200	0		%REC	10	05/23/16 12:48 PM
Surr: 2-Fluorobiphenyl	86.7	0	46-115	0		%REC	10	05/23/16 12:48 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU002-08(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605098-15
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:52 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	71.0	0	58-133	0		%REC	10	05/23/16 12:48 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605098-16
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:49 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	19.3	0.0862	0.259	0.129		mg/Kg-dry	5	05/23/16 06:36 PM
IS: Bismuth	93.4	0	30-120	0		%REC	5	05/23/16 06:36 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.191	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Acenaphthylene	0.142	0.0943	0.189	0.142	U	mg/Kg-dry	20	05/23/16 01:26 PM
Anthracene	1.19	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[a]anthracene	4.15	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[a]pyrene	4.21	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[b]fluoranthene	3.84	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[e]pyrene	2.89	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[g,h,i]perylene	2.75	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[j]fluoranthene	1.98	0.0943	0.189	0.142	N	mg/Kg-dry	20	05/23/16 01:26 PM
Benzo[k]fluoranthene	1.96	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Chrysene	4.77	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Dibenz[a,h]anthracene	0.520	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Fluoranthene	10.3	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Fluorene	0.160	0.0943	0.189	0.142	J	mg/Kg-dry	20	05/23/16 01:26 PM
Indeno[1,2,3-cd]pyrene	2.36	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Phenanthrene	5.53	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
Pyrene	8.37	0.0943	0.189	0.142		mg/Kg-dry	20	05/23/16 01:26 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	20	05/23/16 01:26 PM
IS: Chrysene-d12	85.6	0	50-200	0		%REC	20	05/23/16 01:26 PM
IS: Naphthalene-d8	98.0	0	50-200	0		%REC	20	05/23/16 01:26 PM
IS: Perylene-d12	88.4	0	50-200	0		%REC	20	05/23/16 01:26 PM
IS: Phenanthrene-d10	79.5	0	50-200	0		%REC	20	05/23/16 01:26 PM
Surr: 2-Fluorobiphenyl	92.3	0	46-115	0		%REC	20	05/23/16 01:26 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-A
Project:	Laredo SGR	**Lab ID:**	1605098-16
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:49 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.7	0	58-133	0		%REC	20	05/23/16 01:26 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605098-17
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:50 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.39	0.0926	0.278	0.139		mg/Kg-dry	5	05/23/16 06:20 PM
IS: Bismuth	93.4	0	30-120	0		%REC	5	05/23/16 06:20 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.108	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Acenaphthylene	0.0735	0.0490	0.0980	0.0735	U	mg/Kg-dry	10	05/21/16 03:13 AM
Anthracene	0.597	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[a]anthracene	2.13	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[a]pyrene	2.20	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[b]fluoranthene	1.96	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[e]pyrene	1.49	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[g,h,i]perylene	1.45	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[j]fluoranthene	1.02	0.0490	0.0980	0.0735	N	mg/Kg-dry	10	05/21/16 03:13 AM
Benzo[k]fluoranthene	1.02	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Chrysene	2.45	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Dibenz[a,h]anthracene	0.274	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Fluoranthene	5.14	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Fluorene	0.0997	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Indeno[1,2,3-cd]pyrene	1.22	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Phenanthrene	2.66	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
Pyrene	4.17	0.0490	0.0980	0.0735		mg/Kg-dry	10	05/21/16 03:13 AM
IS: Acenaphthene-d10	97.7	0	50-200	0		%REC	10	05/21/16 03:13 AM
IS: Chrysene-d12	82.1	0	50-200	0		%REC	10	05/21/16 03:13 AM
IS: Naphthalene-d8	93.1	0	50-200	0		%REC	10	05/21/16 03:13 AM
IS: Perylene-d12	83.6	0	50-200	0		%REC	10	05/21/16 03:13 AM
IS: Phenanthrene-d10	78.2	0	50-200	0		%REC	10	05/21/16 03:13 AM
Surr: 2-Fluorobiphenyl	88.8	0	46-115	0		%REC	10	05/21/16 03:13 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-A
Project:	Laredo SGR	**Lab ID:**	1605098-17
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:50 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.8	0	58-133	0		%REC	10	05/21/16 03:13 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605098-18
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:53 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.33	0.0935	0.280	0.140		mg/Kg-dry	5	05/23/16 06:38 PM
IS: Bismuth	94.3	0	30-120	0		%REC	5	05/23/16 06:38 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.120	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Acenaphthylene	0.0695	0.0463	0.0927	0.0695	U	mg/Kg-dry	10	05/23/16 02:03 PM
Anthracene	0.637	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[a]anthracene	1.68	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[a]pyrene	1.58	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[b]fluoranthene	1.36	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[e]pyrene	0.978	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[g,h,i]perylene	0.863	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[j]fluoranthene	0.720	0.0463	0.0927	0.0695	N	mg/Kg-dry	10	05/23/16 02:03 PM
Benzo[k]fluoranthene	0.712	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Chrysene	1.85	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Dibenz[a,h]anthracene	0.203	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Fluoranthene	4.44	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Fluorene	0.128	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Indeno[1,2,3-cd]pyrene	0.782	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Phenanthrene	2.60	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
Pyrene	3.57	0.0463	0.0927	0.0695		mg/Kg-dry	10	05/23/16 02:03 PM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/23/16 02:03 PM
IS: Chrysene-d12	82.3	0	50-200	0		%REC	10	05/23/16 02:03 PM
IS: Naphthalene-d8	95.1	0	50-200	0		%REC	10	05/23/16 02:03 PM
IS: Perylene-d12	86.1	0	50-200	0		%REC	10	05/23/16 02:03 PM
IS: Phenanthrene-d10	77.0	0	50-200	0		%REC	10	05/23/16 02:03 PM
Surr: 2-Fluorobiphenyl	86.8	0	46-115	0		%REC	10	05/23/16 02:03 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-A
Project:	Laredo SGR	**Lab ID:**	1605098-18
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:53 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.8	0	58-133	0		%REC	10	05/23/16 02:03 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605098-19
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:54 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.52	0.0893	0.268	0.134		mg/Kg-dry	5	05/23/16 06:40 PM
IS: Bismuth	94.9	0	30-120	0		%REC	5	05/23/16 06:40 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Acenaphthylene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Anthracene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[a]anthracene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[a]pyrene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[b]fluoranthene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[e]pyrene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[g,h,i]perylene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[j]fluoranthene	0.0703	0.0469	0.0937	0.0703	NU	mg/Kg-dry	10	05/23/16 02:39 PM
Benzo[k]fluoranthene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Chrysene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Dibenz[a,h]anthracene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Fluoranthene	0.0525	0.0469	0.0937	0.0703	J	mg/Kg-dry	10	05/23/16 02:39 PM
Fluorene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Indeno[1,2,3-cd]pyrene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Phenanthrene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
Pyrene	0.0703	0.0469	0.0937	0.0703	U	mg/Kg-dry	10	05/23/16 02:39 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 02:39 PM
IS: Chrysene-d12	83.1	0	50-200	0		%REC	10	05/23/16 02:39 PM
IS: Naphthalene-d8	97.6	0	50-200	0		%REC	10	05/23/16 02:39 PM
IS: Perylene-d12	87.3	0	50-200	0		%REC	10	05/23/16 02:39 PM
IS: Phenanthrene-d10	76.6	0	50-200	0		%REC	10	05/23/16 02:39 PM
Surr: 2-Fluorobiphenyl	89.1	0	46-115	0		%REC	10	05/23/16 02:39 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-A
Project:	Laredo SGR	**Lab ID:**	1605098-19
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:54 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	77.3	0	58-133	0		%REC	10	05/23/16 02:39 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605098-20
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:55 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.68	0.0909	0.273	0.136		mg/Kg-dry	5	05/23/16 06:56 PM
IS: Bismuth	93.5	0	30-120	0		%REC	5	05/23/16 06:56 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Acenaphthylene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Anthracene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[a]anthracene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[a]pyrene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[b]fluoranthene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[e]pyrene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[g,h,i]perylene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[j]fluoranthene	0.0717	0.0478	0.0956	0.0717	NU	mg/Kg-dry	10	05/23/16 03:17 PM
Benzo[k]fluoranthene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Chrysene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Dibenz[a,h]anthracene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Fluoranthene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Fluorene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Indeno[1,2,3-cd]pyrene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Phenanthrene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
Pyrene	0.0717	0.0478	0.0956	0.0717	U	mg/Kg-dry	10	05/23/16 03:17 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/23/16 03:17 PM
IS: Chrysene-d12	84.8	0	50-200	0		%REC	10	05/23/16 03:17 PM
IS: Naphthalene-d8	99.5	0	50-200	0		%REC	10	05/23/16 03:17 PM
IS: Perylene-d12	88.5	0	50-200	0		%REC	10	05/23/16 03:17 PM
IS: Phenanthrene-d10	78.9	0	50-200	0		%REC	10	05/23/16 03:17 PM
Surr: 2-Fluorobiphenyl	85.9	0	46-115	0		%REC	10	05/23/16 03:17 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-A
Project:	Laredo SGR	**Lab ID:**	1605098-20
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:55 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.2	0	58-133	0		%REC	10	05/23/16 03:17 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605098-21
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:59 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	14.3	0.0870	0.261	0.130		mg/Kg-dry	5	05/23/16 06:58 PM
IS: Bismuth	90.0	0	30-120	0		%REC	5	05/23/16 06:58 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.143	0.0954	0.191	0.143	U	mg/Kg-dry	20	05/23/16 03:54 PM
Acenaphthylene	0.143	0.0954	0.191	0.143	U	mg/Kg-dry	20	05/23/16 03:54 PM
Anthracene	0.456	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[a]anthracene	2.02	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[a]pyrene	2.30	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[b]fluoranthene	2.15	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[e]pyrene	1.64	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[g,h,i]perylene	1.64	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[j]fluoranthene	1.03	0.0954	0.191	0.143	N	mg/Kg-dry	20	05/23/16 03:54 PM
Benzo[k]fluoranthene	1.04	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Chrysene	2.36	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Dibenz[a,h]anthracene	0.300	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Fluoranthene	4.16	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Fluorene	0.143	0.0954	0.191	0.143	U	mg/Kg-dry	20	05/23/16 03:54 PM
Indeno[1,2,3-cd]pyrene	1.38	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Phenanthrene	2.05	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
Pyrene	3.42	0.0954	0.191	0.143		mg/Kg-dry	20	05/23/16 03:54 PM
IS: Acenaphthene-d10	106	0	50-200	0		%REC	20	05/23/16 03:54 PM
IS: Chrysene-d12	84.2	0	50-200	0		%REC	20	05/23/16 03:54 PM
IS: Naphthalene-d8	99.3	0	50-200	0		%REC	20	05/23/16 03:54 PM
IS: Perylene-d12	87.1	0	50-200	0		%REC	20	05/23/16 03:54 PM
IS: Phenanthrene-d10	81.1	0	50-200	0		%REC	20	05/23/16 03:54 PM
Surr: 2-Fluorobiphenyl	99.1	0	46-115	0		%REC	20	05/23/16 03:54 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-B
Project:	Laredo SGR	**Lab ID:**	1605098-21
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 01:59 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	87.1	0	58-133	0		%REC	20	05/23/16 03:54 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605098-22
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:00 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.51	0.0855	0.256	0.128		mg/Kg-dry	5	05/23/16 07:00 PM
IS: Bismuth	90.8	0	30-120	0		%REC	5	05/23/16 07:00 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/23/16 04:31 PM
Acenaphthylene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/23/16 04:31 PM
Anthracene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[a]anthracene	0.633	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[a]pyrene	0.960	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[b]fluoranthene	0.873	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[e]pyrene	0.691	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[g,h,i]perylene	0.724	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[j]fluoranthene	0.398	0.0492	0.0983	0.0737	N	mg/Kg-dry	10	05/23/16 04:31 PM
Benzo[k]fluoranthene	0.422	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Chrysene	0.824	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Dibenz[a,h]anthracene	0.0849	0.0492	0.0983	0.0737	J	mg/Kg-dry	10	05/23/16 04:31 PM
Fluoranthene	0.971	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Fluorene	0.0737	0.0492	0.0983	0.0737	U	mg/Kg-dry	10	05/23/16 04:31 PM
Indeno[1,2,3-cd]pyrene	0.593	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Phenanthrene	0.229	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
Pyrene	0.926	0.0492	0.0983	0.0737		mg/Kg-dry	10	05/23/16 04:31 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/23/16 04:31 PM
IS: Chrysene-d12	86.5	0	50-200	0		%REC	10	05/23/16 04:31 PM
IS: Naphthalene-d8	99.5	0	50-200	0		%REC	10	05/23/16 04:31 PM
IS: Perylene-d12	90.2	0	50-200	0		%REC	10	05/23/16 04:31 PM
IS: Phenanthrene-d10	78.7	0	50-200	0		%REC	10	05/23/16 04:31 PM
Surr: 2-Fluorobiphenyl	85.0	0	46-115	0		%REC	10	05/23/16 04:31 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-B
Project:	Laredo SGR	**Lab ID:**	1605098-22
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:00 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	72.7	0	58-133	0		%REC	10	05/23/16 04:31 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605098-23
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:01 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.19	0.0840	0.252	0.126		mg/Kg-dry	5	05/23/16 07:02 PM
IS: Bismuth	93.0	0	30-120	0		%REC	5	05/23/16 07:02 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Acenaphthylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[a]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[a]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[b]fluoranthene	0.0532	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[e]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[g,h,i]perylene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[j]fluoranthene	0.0743	0.0495	0.0990	0.0743	NU	mg/Kg-dry	10	05/23/16 05:09 PM
Benzo[k]fluoranthene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Chrysene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Dibenz[a,h]anthracene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Fluoranthene	0.0500	0.0495	0.0990	0.0743	J	mg/Kg-dry	10	05/23/16 05:09 PM
Fluorene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Indeno[1,2,3-cd]pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Phenanthrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
Pyrene	0.0743	0.0495	0.0990	0.0743	U	mg/Kg-dry	10	05/23/16 05:09 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 05:09 PM
IS: Chrysene-d12	82.5	0	50-200	0		%REC	10	05/23/16 05:09 PM
IS: Naphthalene-d8	97.2	0	50-200	0		%REC	10	05/23/16 05:09 PM
IS: Perylene-d12	85.8	0	50-200	0		%REC	10	05/23/16 05:09 PM
IS: Phenanthrene-d10	77.2	0	50-200	0		%REC	10	05/23/16 05:09 PM
Surr: 2-Fluorobiphenyl	88.1	0	46-115	0		%REC	10	05/23/16 05:09 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-B
Project:	Laredo SGR	**Lab ID:**	1605098-23
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:01 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.9	0	58-133	0		%REC	10	05/23/16 05:09 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605098-24
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:02 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.34	0.0952	0.286	0.143		mg/Kg-dry	5	05/23/16 07:04 PM
IS: Bismuth	93.3	0	30-120	0		%REC	5	05/23/16 07:04 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Acenaphthylene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Anthracene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[a]anthracene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[a]pyrene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[b]fluoranthene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[e]pyrene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[g,h,i]perylene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[j]fluoranthene	0.0719	0.0479	0.0959	0.0719	NU	mg/Kg-dry	10	05/23/16 05:46 PM
Benzo[k]fluoranthene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Chrysene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Dibenz[a,h]anthracene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Fluoranthene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Fluorene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Indeno[1,2,3-cd]pyrene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Phenanthrene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
Pyrene	0.0719	0.0479	0.0959	0.0719	U	mg/Kg-dry	10	05/23/16 05:46 PM
IS: Acenaphthene-d10	105	0	50-200	0		%REC	10	05/23/16 05:46 PM
IS: Chrysene-d12	86.5	0	50-200	0		%REC	10	05/23/16 05:46 PM
IS: Naphthalene-d8	101	0	50-200	0		%REC	10	05/23/16 05:46 PM
IS: Perylene-d12	89.9	0	50-200	0		%REC	10	05/23/16 05:46 PM
IS: Phenanthrene-d10	80.6	0	50-200	0		%REC	10	05/23/16 05:46 PM
Surr: 2-Fluorobiphenyl	86.3	0	46-115	0		%REC	10	05/23/16 05:46 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-B
Project:	Laredo SGR	**Lab ID:**	1605098-24
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:02 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.4	0	58-133	0		%REC	10	05/23/16 05:46 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605098-25
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:03 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	4.95	0.0990	0.297	0.149		mg/Kg-dry	5	05/23/16 07:06 PM
IS: Bismuth	94.3	0	30-120	0		%REC	5	05/23/16 07:06 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Acenaphthylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[a]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[a]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[b]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[e]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[g,h,i]perylene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[j]fluoranthene	0.0742	0.0495	0.0989	0.0742	NU	mg/Kg-dry	10	05/23/16 10:09 PM
Benzo[k]fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Chrysene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Dibenz[a,h]anthracene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Fluoranthene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Fluorene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Indeno[1,2,3-cd]pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Phenanthrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
Pyrene	0.0742	0.0495	0.0989	0.0742	U	mg/Kg-dry	10	05/23/16 10:09 PM
IS: Acenaphthene-d10	102	0	50-200	0		%REC	10	05/23/16 10:09 PM
IS: Chrysene-d12	81.5	0	50-200	0		%REC	10	05/23/16 10:09 PM
IS: Naphthalene-d8	97.5	0	50-200	0		%REC	10	05/23/16 10:09 PM
IS: Perylene-d12	85.2	0	50-200	0		%REC	10	05/23/16 10:09 PM
IS: Phenanthrene-d10	76.5	0	50-200	0		%REC	10	05/23/16 10:09 PM
Surr: 2-Fluorobiphenyl	87.9	0	46-115	0		%REC	10	05/23/16 10:09 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-B
Project:	Laredo SGR	**Lab ID:**	1605098-25
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:03 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.5	0	58-133	0		%REC	10	05/23/16 10:09 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605098-26
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:06 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	12.8	0.0862	0.259	0.129		mg/Kg-dry	5	05/23/16 07:08 PM
IS: Bismuth	91.6	0	30-120	0		%REC	5	05/23/16 07:08 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0713	0.0475	0.0951	0.0713	U	mg/Kg-dry	10	05/23/16 10:47 PM
Acenaphthylene	0.0713	0.0475	0.0951	0.0713	U	mg/Kg-dry	10	05/23/16 10:47 PM
Anthracene	0.0731	0.0475	0.0951	0.0713	J	mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[a]anthracene	0.608	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[a]pyrene	0.810	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[b]fluoranthene	0.791	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[e]pyrene	0.622	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[g,h,i]perylene	0.634	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[j]fluoranthene	0.362	0.0475	0.0951	0.0713	N	mg/Kg-dry	10	05/23/16 10:47 PM
Benzo[k]fluoranthene	0.366	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Chrysene	0.777	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Dibenz[a,h]anthracene	0.0952	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Fluoranthene	1.05	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Fluorene	0.0713	0.0475	0.0951	0.0713	U	mg/Kg-dry	10	05/23/16 10:47 PM
Indeno[1,2,3-cd]pyrene	0.509	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Phenanthrene	0.400	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
Pyrene	0.935	0.0475	0.0951	0.0713		mg/Kg-dry	10	05/23/16 10:47 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/23/16 10:47 PM
IS: Chrysene-d12	85.3	0	50-200	0		%REC	10	05/23/16 10:47 PM
IS: Naphthalene-d8	99.0	0	50-200	0		%REC	10	05/23/16 10:47 PM
IS: Perylene-d12	89.1	0	50-200	0		%REC	10	05/23/16 10:47 PM
IS: Phenanthrene-d10	79.4	0	50-200	0		%REC	10	05/23/16 10:47 PM
Surr: 2-Fluorobiphenyl	86.0	0	46-115	0		%REC	10	05/23/16 10:47 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(0-2)-C
Project:	Laredo SGR	**Lab ID:**	1605098-26
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:06 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.3	0	58-133	0		%REC	10	05/23/16 10:47 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605098-27
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:07 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	8.08	0.0870	0.261	0.130		mg/Kg-dry	5	05/23/16 07:10 PM
IS: Bismuth	90.7	0	30-120	0		%REC	5	05/23/16 07:10 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0526	0.0466	0.0932	0.0699	J	mg/Kg-dry	10	05/23/16 11:24 PM
Acenaphthylene	0.0699	0.0466	0.0932	0.0699	U	mg/Kg-dry	10	05/23/16 11:24 PM
Anthracene	0.348	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[a]anthracene	1.52	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[a]pyrene	1.49	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[b]fluoranthene	1.43	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[e]pyrene	1.07	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[g,h,i]perylene	0.976	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[j]fluoranthene	0.724	0.0466	0.0932	0.0699	N	mg/Kg-dry	10	05/23/16 11:24 PM
Benzo[k]fluoranthene	0.727	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Chrysene	1.74	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Dibenz[a,h]anthracene	0.210	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Fluoranthene	2.97	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Fluorene	0.0699	0.0466	0.0932	0.0699	U	mg/Kg-dry	10	05/23/16 11:24 PM
Indeno[1,2,3-cd]pyrene	0.856	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Phenanthrene	1.59	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
Pyrene	2.36	0.0466	0.0932	0.0699		mg/Kg-dry	10	05/23/16 11:24 PM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/23/16 11:24 PM
IS: Chrysene-d12	83.8	0	50-200	0		%REC	10	05/23/16 11:24 PM
IS: Naphthalene-d8	98.6	0	50-200	0		%REC	10	05/23/16 11:24 PM
IS: Perylene-d12	88.4	0	50-200	0		%REC	10	05/23/16 11:24 PM
IS: Phenanthrene-d10	80.1	0	50-200	0		%REC	10	05/23/16 11:24 PM
Surr: 2-Fluorobiphenyl	84.0	0	46-115	0		%REC	10	05/23/16 11:24 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(2-4)-C
Project:	Laredo SGR	**Lab ID:**	1605098-27
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:07 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.2	0	58-133	0		%REC	10	05/23/16 11:24 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605098-28
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:08 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	6.09	0.0855	0.256	0.128		mg/Kg-dry	5	05/23/16 07:12 PM
IS: Bismuth	93.4	0	30-120	0		%REC	5	05/23/16 07:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Acenaphthylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[a]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[a]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[b]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[e]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[g,h,i]perylene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[j]fluoranthene	0.0746	0.0497	0.0994	0.0746	NU	mg/Kg-dry	10	05/24/16 12:01 AM
Benzo[k]fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Chrysene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Dibenz[a,h]anthracene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Fluoranthene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Fluorene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Indeno[1,2,3-cd]pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Phenanthrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
Pyrene	0.0746	0.0497	0.0994	0.0746	U	mg/Kg-dry	10	05/24/16 12:01 AM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/24/16 12:01 AM
IS: Chrysene-d12	84.1	0	50-200	0		%REC	10	05/24/16 12:01 AM
IS: Naphthalene-d8	98.3	0	50-200	0		%REC	10	05/24/16 12:01 AM
IS: Perylene-d12	87.8	0	50-200	0		%REC	10	05/24/16 12:01 AM
IS: Phenanthrene-d10	78.3	0	50-200	0		%REC	10	05/24/16 12:01 AM
Surr: 2-Fluorobiphenyl	86.5	0	46-115	0		%REC	10	05/24/16 12:01 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(4-6)-C
Project:	Laredo SGR	**Lab ID:**	1605098-28
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:08 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	74.7	0	58-133	0		%REC	10	05/24/16 12:01 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605098-29
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:09 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.53	0.0877	0.263	0.132		mg/Kg-dry	5	05/23/16 07:14 PM
IS: Bismuth	93.5	0	30-120	0		%REC	5	05/23/16 07:14 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/24/16 12:38 AM
Acenaphthylene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/24/16 12:38 AM
Anthracene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[a]anthracene	0.154	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[a]pyrene	0.190	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[b]fluoranthene	0.171	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[e]pyrene	0.119	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[g,h,i]perylene	0.123	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[j]fluoranthene	0.0561	0.0488	0.0976	0.0732	JN	mg/Kg-dry	10	05/24/16 12:38 AM
Benzo[k]fluoranthene	0.0856	0.0488	0.0976	0.0732	J	mg/Kg-dry	10	05/24/16 12:38 AM
Chrysene	0.183	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Dibenz[a,h]anthracene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/24/16 12:38 AM
Fluoranthene	0.283	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Fluorene	0.0732	0.0488	0.0976	0.0732	U	mg/Kg-dry	10	05/24/16 12:38 AM
Indeno[1,2,3-cd]pyrene	0.100	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Phenanthrene	0.106	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
Pyrene	0.251	0.0488	0.0976	0.0732		mg/Kg-dry	10	05/24/16 12:38 AM
IS: Acenaphthene-d10	104	0	50-200	0		%REC	10	05/24/16 12:38 AM
IS: Chrysene-d12	80.5	0	50-200	0		%REC	10	05/24/16 12:38 AM
IS: Naphthalene-d8	99.1	0	50-200	0		%REC	10	05/24/16 12:38 AM
IS: Perylene-d12	85.4	0	50-200	0		%REC	10	05/24/16 12:38 AM
IS: Phenanthrene-d10	76.4	0	50-200	0		%REC	10	05/24/16 12:38 AM
Surr: 2-Fluorobiphenyl	86.8	0	46-115	0		%REC	10	05/24/16 12:38 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(6-8)-C
Project:	Laredo SGR	**Lab ID:**	1605098-29
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:09 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.8	0	58-133	0		%REC	10	05/24/16 12:38 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605098-30
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:10 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	5.10	0.0926	0.278	0.139		mg/Kg-dry	5	05/23/16 05:12 PM
IS: Bismuth	94.0	0	30-120	0		%REC	5	05/23/16 05:12 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Acenaphthylene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[a]anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[a]pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[b]fluoranthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[e]pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[g,h,i]perylene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[j]fluoranthene	0.0744	0.0496	0.0992	0.0744	NU	mg/Kg-dry	10	05/24/16 01:16 AM
Benzo[k]fluoranthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Chrysene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Dibenz[a,h]anthracene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Fluoranthene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Fluorene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Indeno[1,2,3-cd]pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Phenanthrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
Pyrene	0.0744	0.0496	0.0992	0.0744	U	mg/Kg-dry	10	05/24/16 01:16 AM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/24/16 01:16 AM
IS: Chrysene-d12	81.8	0	50-200	0		%REC	10	05/24/16 01:16 AM
IS: Naphthalene-d8	94.9	0	50-200	0		%REC	10	05/24/16 01:16 AM
IS: Perylene-d12	84.7	0	50-200	0		%REC	10	05/24/16 01:16 AM
IS: Phenanthrene-d10	75.8	0	50-200	0		%REC	10	05/24/16 01:16 AM
Surr: 2-Fluorobiphenyl	86.4	0	46-115	0		%REC	10	05/24/16 01:16 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	SGR-DU016(8-10)-C
Project:	Laredo SGR	**Lab ID:**	1605098-30
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 02:10 PM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	75.4	0	58-133	0		%REC	10	05/24/16 01:16 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-09(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-31
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 08:55 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	19.4	0.0993	0.298	0.149		mg/Kg-dry	5	05/16/16 04:05 PM
IS: Bismuth	94.0	0	30-120	0		%REC	5	05/16/16 04:05 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0845	0.0563	0.113	0.0845	U	mg/Kg-dry	10	05/14/16 06:51 AM
Acenaphthylene	0.0845	0.0563	0.113	0.0845	U	mg/Kg-dry	10	05/14/16 06:51 AM
Anthracene	0.0621	0.0563	0.113	0.0845	J	mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[a]anthracene	0.415	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[a]pyrene	0.500	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[b]fluoranthene	0.488	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[e]pyrene	0.376	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[g,h,i]perylene	0.414	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[j]fluoranthene	0.259	0.0563	0.113	0.0845	N	mg/Kg-dry	10	05/14/16 06:51 AM
Benzo[k]fluoranthene	0.271	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Chrysene	0.525	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Dibenz[a,h]anthracene	0.105	0.0563	0.113	0.0845	J	mg/Kg-dry	10	05/14/16 06:51 AM
Fluoranthene	0.699	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Fluorene	0.0845	0.0563	0.113	0.0845	U	mg/Kg-dry	10	05/14/16 06:51 AM
Indeno[1,2,3-cd]pyrene	0.349	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Phenanthrene	0.300	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
Pyrene	0.597	0.0563	0.113	0.0845		mg/Kg-dry	10	05/14/16 06:51 AM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/14/16 06:51 AM
IS: Chrysene-d12	82.2	0	50-200	0		%REC	10	05/14/16 06:51 AM
IS: Naphthalene-d8	94.5	0	50-200	0		%REC	10	05/14/16 06:51 AM
IS: Perylene-d12	83.7	0	50-200	0		%REC	10	05/14/16 06:51 AM
IS: Phenanthrene-d10	92.3	0	50-200	0		%REC	10	05/14/16 06:51 AM
Surr: 2-Fluorobiphenyl	77.8	0	46-115	0		%REC	10	05/14/16 06:51 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-09(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-31
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 08:55 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	82.7	0	58-133	0		%REC	10	05/14/16 06:51 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	11.7	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-34
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:37 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	28.7	0.0990	0.297	0.148		mg/Kg-dry	5	05/16/16 04:07 PM
IS: Bismuth	90.6	0	30-120	0		%REC	5	05/16/16 04:07 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/14/16 07:28 AM
Acenaphthylene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/14/16 07:28 AM
Anthracene	0.0756	0.0540	0.108	0.0810	J	mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[a]anthracene	0.556	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[a]pyrene	0.651	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[b]fluoranthene	0.635	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[e]pyrene	0.492	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[g,h,i]perylene	0.522	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[j]fluoranthene	0.338	0.0540	0.108	0.0810	N	mg/Kg-dry	10	05/14/16 07:28 AM
Benzo[k]fluoranthene	0.353	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Chrysene	0.707	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Dibenz[a,h]anthracene	0.126	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Fluoranthene	0.909	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Fluorene	0.0810	0.0540	0.108	0.0810	U	mg/Kg-dry	10	05/14/16 07:28 AM
Indeno[1,2,3-cd]pyrene	0.436	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Phenanthrene	0.372	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
Pyrene	0.789	0.0540	0.108	0.0810		mg/Kg-dry	10	05/14/16 07:28 AM
IS: Acenaphthene-d10	109	0	50-200	0		%REC	10	05/14/16 07:28 AM
IS: Chrysene-d12	86.6	0	50-200	0		%REC	10	05/14/16 07:28 AM
IS: Naphthalene-d8	99.8	0	50-200	0		%REC	10	05/14/16 07:28 AM
IS: Perylene-d12	89.6	0	50-200	0		%REC	10	05/14/16 07:28 AM
IS: Phenanthrene-d10	96.6	0	50-200	0		%REC	10	05/14/16 07:28 AM
Surr: 2-Fluorobiphenyl	80.8	0	46-115	0		%REC	10	05/14/16 07:28 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-34
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:37 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	83.2	0	58-133	0		%REC	10	05/14/16 07:28 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	8.13	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605098-35
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:00 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	23.0	0.103	0.309	0.155		mg/Kg-dry	5	05/23/16 05:14 PM
IS: Bismuth	95.5	0	30-120	0		%REC	5	05/23/16 05:14 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0772	0.0515	0.103	0.0772	U	mg/Kg-dry	10	05/19/16 04:11 PM
Acenaphthylene	0.0772	0.0515	0.103	0.0772	U	mg/Kg-dry	10	05/19/16 04:11 PM
Anthracene	0.112	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[a]anthracene	0.826	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[a]pyrene	1.04	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[b]fluoranthene	0.992	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[e]pyrene	0.776	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[g,h,i]perylene	0.792	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[j]fluoranthene	0.492	0.0515	0.103	0.0772	N	mg/Kg-dry	10	05/19/16 04:11 PM
Benzo[k]fluoranthene	0.505	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Chrysene	1.02	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Dibenz[a,h]anthracene	0.151	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Fluoranthene	1.57	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Fluorene	0.0772	0.0515	0.103	0.0772	U	mg/Kg-dry	10	05/19/16 04:11 PM
Indeno[1,2,3-cd]pyrene	0.662	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Phenanthrene	0.597	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
Pyrene	1.37	0.0515	0.103	0.0772		mg/Kg-dry	10	05/19/16 04:11 PM
IS: Acenaphthene-d10	100	0	50-200	0		%REC	10	05/19/16 04:11 PM
IS: Chrysene-d12	89.1	0	50-200	0		%REC	10	05/19/16 04:11 PM
IS: Naphthalene-d8	93.3	0	50-200	0		%REC	10	05/19/16 04:11 PM
IS: Perylene-d12	91.8	0	50-200	0		%REC	10	05/19/16 04:11 PM
IS: Phenanthrene-d10	84.0	0	50-200	0		%REC	10	05/19/16 04:11 PM
Surr: 2-Fluorobiphenyl	94.7	0	46-115	0		%REC	10	05/19/16 04:11 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605098-35
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:00 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	86.9	0	58-133	0		%REC	10	05/19/16 04:11 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	6.71	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(2.0-4.0)
Project:	Laredo SGR	**Lab ID:**	1605098-36
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:10 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	7.30	0.106	0.318	0.159		mg/Kg-dry	5	06/01/16 11:14 AM
IS: Bismuth	94.4	0	30-120	0		%REC	5	06/01/16 11:14 AM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Acenaphthylene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Anthracene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[a]anthracene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[a]pyrene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[b]fluoranthene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[e]pyrene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[g,h,i]perylene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[j]fluoranthene	0.0869	0.0579	0.116	0.0869	NU	mg/Kg-dry	10	05/26/16 01:41 AM
Benzo[k]fluoranthene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Chrysene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Dibenz[a,h]anthracene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Fluoranthene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Fluorene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Indeno[1,2,3-cd]pyrene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Phenanthrene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
Pyrene	0.0869	0.0579	0.116	0.0869	U	mg/Kg-dry	10	05/26/16 01:41 AM
IS: Acenaphthene-d10	96.5	0	50-200	0		%REC	10	05/26/16 01:41 AM
IS: Chrysene-d12	77.5	0	50-200	0		%REC	10	05/26/16 01:41 AM
IS: Naphthalene-d8	93.9	0	50-200	0		%REC	10	05/26/16 01:41 AM
IS: Perylene-d12	81.0	0	50-200	0		%REC	10	05/26/16 01:41 AM
IS: Phenanthrene-d10	71.5	0	50-200	0		%REC	10	05/26/16 01:41 AM
Surr: 2-Fluorobiphenyl	93.7	0	46-115	0		%REC	10	05/26/16 01:41 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-08(2.0-4.0)
Project:	Laredo SGR	**Lab ID:**	1605098-36
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:10 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	78.5	0	58-133	0		%REC	10	05/26/16 01:41 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	15.7	0	0	0		WT%	1	05/27/16 10:11 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-37
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:20 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	38.0	0.104	0.312	0.156		mg/Kg-dry	5	05/16/16 04:09 PM
IS: Bismuth	88.8	0	30-120	0		%REC	5	05/16/16 04:09 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0819	0.0546	0.109	0.0819	U	mg/Kg-dry	10	05/14/16 08:05 AM
Acenaphthylene	0.0819	0.0546	0.109	0.0819	U	mg/Kg-dry	10	05/14/16 08:05 AM
Anthracene	0.0929	0.0546	0.109	0.0819	J	mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[a]anthracene	0.801	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[a]pyrene	1.05	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[b]fluoranthene	1.03	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[e]pyrene	0.794	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[g,h,i]perylene	0.906	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[j]fluoranthene	0.536	0.0546	0.109	0.0819	N	mg/Kg-dry	10	05/14/16 08:05 AM
Benzo[k]fluoranthene	0.555	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Chrysene	1.03	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Dibenz[a,h]anthracene	0.209	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Fluoranthene	1.19	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Fluorene	0.0819	0.0546	0.109	0.0819	U	mg/Kg-dry	10	05/14/16 08:05 AM
Indeno[1,2,3-cd]pyrene	0.753	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Phenanthrene	0.500	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
Pyrene	1.04	0.0546	0.109	0.0819		mg/Kg-dry	10	05/14/16 08:05 AM
IS: Acenaphthene-d10	107	0	50-200	0		%REC	10	05/14/16 08:05 AM
IS: Chrysene-d12	82.6	0	50-200	0		%REC	10	05/14/16 08:05 AM
IS: Naphthalene-d8	95.7	0	50-200	0		%REC	10	05/14/16 08:05 AM
IS: Perylene-d12	86.0	0	50-200	0		%REC	10	05/14/16 08:05 AM
IS: Phenanthrene-d10	94.1	0	50-200	0		%REC	10	05/14/16 08:05 AM
Surr: 2-Fluorobiphenyl	81.7	0	46-115	0		%REC	10	05/14/16 08:05 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(0-0.5)
Project:	Laredo SGR	**Lab ID:**	1605098-37
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:20 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	83.4	0	58-133	0		%REC	10	05/14/16 08:05 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	9.25	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:					
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605098-38
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	15.5	0.104	0.313	0.157		mg/Kg-dry	5	05/23/16 05:16 PM
IS: Bismuth	96.6	0	30-120	0		%REC	5	05/23/16 05:16 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0902	0.0534	0.107	0.0801	J	mg/Kg-dry	10	05/19/16 04:48 PM
Acenaphthylene	0.0801	0.0534	0.107	0.0801	U	mg/Kg-dry	10	05/19/16 04:48 PM
Anthracene	0.350	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[a]anthracene	2.17	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[a]pyrene	2.39	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[b]fluoranthene	2.22	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[e]pyrene	1.67	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[g,h,i]perylene	1.56	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[j]fluoranthene	1.16	0.0534	0.107	0.0801	N	mg/Kg-dry	10	05/19/16 04:48 PM
Benzo[k]fluoranthene	1.18	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Chrysene	2.53	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Dibenz[a,h]anthracene	0.352	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Fluoranthene	4.23	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Fluorene	0.0801	0.0534	0.107	0.0801	U	mg/Kg-dry	10	05/19/16 04:48 PM
Indeno[1,2,3-cd]pyrene	1.40	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Phenanthrene	1.70	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
Pyrene	3.57	0.0534	0.107	0.0801		mg/Kg-dry	10	05/19/16 04:48 PM
IS: Acenaphthene-d10	106	0	50-200	0		%REC	10	05/19/16 04:48 PM
IS: Chrysene-d12	94.3	0	50-200	0		%REC	10	05/19/16 04:48 PM
IS: Naphthalene-d8	97.7	0	50-200	0		%REC	10	05/19/16 04:48 PM
IS: Perylene-d12	95.4	0	50-200	0		%REC	10	05/19/16 04:48 PM
IS: Phenanthrene-d10	89.7	0	50-200	0		%REC	10	05/19/16 04:48 PM
Surr: 2-Fluorobiphenyl	90.3	0	46-115	0		%REC	10	05/19/16 04:48 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(0.5-2.0)
Project:	Laredo SGR	**Lab ID:**	1605098-38
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	84.1	0	58-133	0		%REC	10	05/19/16 04:48 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	9.64	0	0	0		WT%	1	05/20/16 09:12 AM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(2.0-4.0)
Project:	Laredo SGR	**Lab ID:**	1605098-39
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:40 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	16.2	0.101	0.302	0.151		mg/Kg-dry	5	06/01/16 11:18 AM
IS: Bismuth	97.9	0	30-120	0		%REC	5	06/01/16 11:18 AM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0880	0.0500	0.0999	0.0750	J	mg/Kg-dry	10	05/26/16 02:18 AM
Acenaphthylene	0.0750	0.0500	0.0999	0.0750	U	mg/Kg-dry	10	05/26/16 02:18 AM
Anthracene	0.128	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[a]anthracene	1.07	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[a]pyrene	1.81	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[b]fluoranthene	1.44	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[e]pyrene	1.21	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[g,h,i]perylene	1.40	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[j]fluoranthene	0.731	0.0500	0.0999	0.0750	N	mg/Kg-dry	10	05/26/16 02:18 AM
Benzo[k]fluoranthene	0.695	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Chrysene	1.34	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Dibenz[a,h]anthracene	0.196	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Fluoranthene	1.66	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Fluorene	0.0750	0.0500	0.0999	0.0750	U	mg/Kg-dry	10	05/26/16 02:18 AM
Indeno[1,2,3-cd]pyrene	1.14	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Phenanthrene	0.601	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
Pyrene	1.52	0.0500	0.0999	0.0750		mg/Kg-dry	10	05/26/16 02:18 AM
IS: Acenaphthene-d10	97.8	0	50-200	0		%REC	10	05/26/16 02:18 AM
IS: Chrysene-d12	80.5	0	50-200	0		%REC	10	05/26/16 02:18 AM
IS: Naphthalene-d8	93.3	0	50-200	0		%REC	10	05/26/16 02:18 AM
IS: Perylene-d12	84.3	0	50-200	0		%REC	10	05/26/16 02:18 AM
IS: Phenanthrene-d10	73.5	0	50-200	0		%REC	10	05/26/16 02:18 AM
Surr: 2-Fluorobiphenyl	93.4	0	46-115	0		%REC	10	05/26/16 02:18 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	ROW-07(2.0-4.0)
Project:	Laredo SGR	**Lab ID:**	1605098-39
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:40 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	76.1	0	58-133	0		%REC	10	05/26/16 02:18 AM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	8.88	0	0	0		WT%	1	05/27/16 10:11 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP05(20160509)
Project:	Laredo SGR	**Lab ID:**	1605098-40
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	32.4	0.102	0.307	0.153		mg/Kg-dry	5	05/16/16 04:11 PM
IS: Bismuth	88.7	0	30-120	0		%REC	5	05/16/16 04:11 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0778	0.0519	0.104	0.0778	U	mg/Kg-dry	10	05/19/16 05:25 PM
Acenaphthylene	0.0778	0.0519	0.104	0.0778	U	mg/Kg-dry	10	05/19/16 05:25 PM
Anthracene	0.0778	0.0519	0.104	0.0778	U	mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[a]anthracene	0.352	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[a]pyrene	0.491	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[b]fluoranthene	0.497	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[e]pyrene	0.394	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[g,h,i]perylene	0.398	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[j]fluoranthene	0.235	0.0519	0.104	0.0778	N	mg/Kg-dry	10	05/19/16 05:25 PM
Benzo[k]fluoranthene	0.232	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Chrysene	0.468	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Dibenz[a,h]anthracene	0.0558	0.0519	0.104	0.0778	J	mg/Kg-dry	10	05/19/16 05:25 PM
Fluoranthene	0.595	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Fluorene	0.0778	0.0519	0.104	0.0778	U	mg/Kg-dry	10	05/19/16 05:25 PM
Indeno[1,2,3-cd]pyrene	0.320	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Phenanthrene	0.199	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
Pyrene	0.561	0.0519	0.104	0.0778		mg/Kg-dry	10	05/19/16 05:25 PM
IS: Acenaphthene-d10	103	0	50-200	0		%REC	10	05/19/16 05:25 PM
IS: Chrysene-d12	94.3	0	50-200	0		%REC	10	05/19/16 05:25 PM
IS: Naphthalene-d8	98.6	0	50-200	0		%REC	10	05/19/16 05:25 PM
IS: Perylene-d12	96.9	0	50-200	0		%REC	10	05/19/16 05:25 PM
IS: Phenanthrene-d10	87.6	0	50-200	0		%REC	10	05/19/16 05:25 PM
Surr: 2-Fluorobiphenyl	84.9	0	46-115	0		%REC	10	05/19/16 05:25 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP05(20160509)
Project:	Laredo SGR	**Lab ID:**	1605098-40
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 09:30 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	79.9	0	58-133	0		%REC	10	05/19/16 05:25 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	7.77	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	DUP06(20160509)
Project:	Laredo SGR	**Lab ID:**	1605098-41
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:50 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - SOLID			**SW6020A**					Analyst: **RO**
Lead	18.1	0.101	0.304	0.152		mg/Kg-dry	5	05/16/16 03:53 PM
IS: Bismuth	85.3	0	30-120	0		%REC	5	05/16/16 03:53 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0682	0.0512	0.102	0.0768	J	mg/Kg-dry	10	05/19/16 06:02 PM
Acenaphthylene	0.0768	0.0512	0.102	0.0768	U	mg/Kg-dry	10	05/19/16 06:02 PM
Anthracene	0.167	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[a]anthracene	1.44	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[a]pyrene	2.12	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[b]fluoranthene	1.94	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[e]pyrene	1.54	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[g,h,i]perylene	1.65	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[j]fluoranthene	0.978	0.0512	0.102	0.0768	N	mg/Kg-dry	10	05/19/16 06:02 PM
Benzo[k]fluoranthene	0.995	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Chrysene	1.82	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Dibenz[a,h]anthracene	0.326	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Fluoranthene	2.26	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Fluorene	0.0768	0.0512	0.102	0.0768	U	mg/Kg-dry	10	05/19/16 06:02 PM
Indeno[1,2,3-cd]pyrene	1.38	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Phenanthrene	0.812	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
Pyrene	2.04	0.0512	0.102	0.0768		mg/Kg-dry	10	05/19/16 06:02 PM
IS: Acenaphthene-d10	98.4	0	50-200	0		%REC	10	05/19/16 06:02 PM
IS: Chrysene-d12	86.7	0	50-200	0		%REC	10	05/19/16 06:02 PM
IS: Naphthalene-d8	92.6	0	50-200	0		%REC	10	05/19/16 06:02 PM
IS: Perylene-d12	88.7	0	50-200	0		%REC	10	05/19/16 06:02 PM
IS: Phenanthrene-d10	83.9	0	50-200	0		%REC	10	05/19/16 06:02 PM
Surr: 2-Fluorobiphenyl	92.5	0	46-115	0		%REC	10	05/19/16 06:02 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	DUP06(20160509)
Project:	Laredo SGR	**Lab ID:**	1605098-41
Project No:	04285081.0000.00044	**Collection Date:**	05/09/16 10:50 AM
Lab Order:	1605098	**Matrix:**	SOIL

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	86.1	0	58-133	0		%REC	10	05/19/16 06:02 PM
PERCENT MOISTURE			**D2216**					Analyst: **WB**
Percent Moisture	9.53	0	0	0		WT%	1	05/13/16 12:52 PM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT:	Arcadis	**Client Sample ID:**	EB11(20160507)
Project:	Laredo SGR	**Lab ID:**	1605098-42
Project No:	04285081.0000.00044	**Collection Date:**	05/07/16 05:00 PM
Lab Order:	1605098	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER			**SW6020A**					Analyst: **RO**
Lead	0.000900	0.000300	0.00100	0.000900	U	mg/L	1	05/20/16 02:14 PM
IS: Bismuth	96.9	0	30-120	0		%REC	1	05/20/16 02:14 PM
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Acenaphthene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Acenaphthylene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Anthracene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[a]anthracene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[a]pyrene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[b]fluoranthene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[e]pyrene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[g,h,i]perylene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Benzo[j]fluoranthene	0.0000615	0.0000385	0.0000769	0.0000615	NU	mg/L	1	05/18/16 10:40 PM
Benzo[k]fluoranthene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Chrysene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Dibenz[a,h]anthracene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Fluoranthene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Fluorene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Indeno[1,2,3-cd]pyrene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Phenanthrene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
Pyrene	0.0000615	0.0000385	0.0000769	0.0000615	U	mg/L	1	05/18/16 10:40 PM
IS: Acenaphthene-d10	87.6	0	50-200	0		%REC	1	05/18/16 10:40 PM
IS: Chrysene-d12	87.9	0	50-200	0		%REC	1	05/18/16 10:40 PM
IS: Naphthalene-d8	87.7	0	50-200	0		%REC	1	05/18/16 10:40 PM
IS: Perylene-d12	88.3	0	50-200	0		%REC	1	05/18/16 10:40 PM
IS: Phenanthrene-d10	84.9	0	50-200	0		%REC	1	05/18/16 10:40 PM
Surr: 2-Fluorobiphenyl	59.3	0	53-106	0		%REC	1	05/18/16 10:40 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT:	Arcadis	**Client Sample ID:**	EB11(20160507)
Project:	Laredo SGR	**Lab ID:**	1605098-42
Project No:	04285081.0000.00044	**Collection Date:**	05/07/16 05:00 PM
Lab Order:	1605098	**Matrix:**	EQUIP BLANK

Analyses	Result	DL	RL	LOD	Qual	Units	DF	Date Analyzed
PAHS: GC/MS			**SW8270D-LL**					Analyst: **KL**
Surr: 4-Terphenyl-d14	61.5	0	58-132	0		%REC	1	05/18/16 10:40 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160518B

Sample ID **DCS1-74845**	Batch ID: **74845**	TestNo: **SW6020A**	Units: **mg/Kg**
SampType: **DCS**	Run ID: **ICP-MS3_160518B**	Analysis Date: **5/18/2016 2:52:00 PM**	Prep Date: **4/28/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.289	0.300	0.2500	0	116	80	120	0	0	

Qualifiers:	B	Analyte detected in the associated Method Blank	DF	Dilution Factor	
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit	Page 1 of 58
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	
	RL	Reporting Limit	S	Spike Recovery outside control limits	
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified	

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160525A

The QC data in batch 75216 applies to the following samples: 1605098-01A, 1605098-02A, 1605098-03A, 1605098-04A, 1605098-05A, 1605098-06A, 1605098-07A, 1605098-08A, 1605098-09A, 1605098-10A, 1605098-11A

Sample ID **MB-75216** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 8:24:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		98.4	30	120			

Sample ID **LCS-75216** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 8:30:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.3	0.300	50.00	0	101	84	118			
IS: Bismuth	50.0		200.0		94.1	30	120			

Sample ID **LCSD-75216** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 8:36:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	51.2	0.300	50.00	0	102	84	118	1.63	20	
IS: Bismuth	50.0		200.0		94.6	30	120	0	0	

Sample ID **1605097-41A SD** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 8:54:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	11.8	1.39	0	13.12				10.5	10	R
IS: Bismuth	231		185.2		92.0	30	120	0	0	

Sample ID **1605097-41A PDS** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 9:54:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	58.9	0.278	46.30	13.12	99.0	80	120			
IS: Bismuth	46.3		925.9		85.0	30	120			

Sample ID **1605097-41A MS** Batch ID: **75216** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS3_160525A** Analysis Date: **5/25/2016 10:00:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	59.1	0.270	45.05	13.12	102	84	118			
IS: Bismuth	45.0		180.2		85.4	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160525A

Sample ID **1605097-41A MSD**	Batch ID: **75216**	TestNo: **SW6020A**	Units: **mg/Kg-dry**		
SampType: **MSD**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 10:06:00 PM**	Prep Date: **5/18/2016**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	58.9	0.278	46.30	13.12	98.8	84	118	0.434	20	
IS: Bismuth	46.3		185.2		86.0	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160525A

Sample ID **ICV1-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 12:52:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.0996	0.00100	0.100	0	99.6	90	110			
IS: Bismuth	0.200		0.200		91.9	30	120			

Sample ID **ILCVL-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 1:04:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00103	0.00100	0.00100	0	103	80	120			
IS: Bismuth	0.200		0.200		93.6	30	120			

Sample ID **CCV4-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 8:00:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.201	0.00100	0.200	0	101	90	110			
IS: Bismuth	0.200		0.200		93.0	30	120			

Sample ID **LCVL4-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 8:12:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00101	0.00100	0.00100	0	101	80	120			
IS: Bismuth	0.200		0.200		95.5	30	120			

Sample ID **CCV5-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 10:18:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.204	0.00100	0.200	0	102	90	110			
IS: Bismuth	0.200		0.200		90.1	30	120			

Sample ID **LCVL5-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 10:30:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00103	0.00100	0.00100	0	103	80	120			
IS: Bismuth	0.200		0.200		94.0	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160525A

Sample ID **CCV6-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 11:42:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.197	0.00100	0.200	0	98.4	90	110			
IS: Bismuth	0.200		0.200		85.5	30	120			

Sample ID **LCVL6-160525**	Batch ID: **R86019**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS3_160525A**	Analysis Date: **5/25/2016 11:54:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000985	0.00100	0.00100	0	98.5	80	120			
IS: Bismuth	0.200		0.200		91.5	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160427C

Sample ID **DCS1-74736**	Batch ID: **74736**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **DCS**	Run ID: **ICP-MS4_160427C**	Analysis Date: **4/27/2016 4:25:00 PM**	Prep Date: **4/21/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000486	0.00100	0.000500	0	97.2	80	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160429A

Sample ID **DCS1-74845**	Batch ID: **74845**	TestNo: **SW6020A**	Units: **mg/Kg**
SampType: **DCS**	Run ID: **ICP-MS4_160429A**	Analysis Date: **4/29/2016 12:19:00 PM**	Prep Date: **4/28/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.310	0.300	0.2500	0	124	70	130	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160516B

The QC data in batch 75135 applies to the following samples: 1605098-31A, 1605098-34A, 1605098-37A, 1605098-40A, 1605098-41A

Sample ID	**MB-75135**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MBLK**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 3:45:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		86.3	30	120			

Sample ID	**LCS-75135**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**LCS**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 3:47:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	49.0	0.300	50.00	0	97.9	84	118			
IS: Bismuth	50.0		200.0		90.6	30	120			

Sample ID	**LCSD-75135**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**LCSD**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 3:49:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	46.2	0.300	50.00	0	92.3	84	118	5.88	20	
IS: Bismuth	50.0		200.0		85.8	30	120	0	0	

Sample ID	**1605098-41A SD**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**SD**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 3:55:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	18.0	1.52	0	18.06				0.218	10	
IS: Bismuth	254		202.8		92.8	30	120	0	0	

Sample ID	**1605098-41A PDS**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**PDS**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 4:15:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	72.0	0.304	50.70	18.06	106	80	120			
IS: Bismuth	50.7		1014		85.8	30	120			

Sample ID	**1605098-41A MS**	Batch ID:	**75135**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MS**	Run ID:	**ICP-MS4_160516B**	Analysis Date:	**5/16/2016 4:17:00 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	70.5	0.322	53.66	18.06	97.7	84	118			
IS: Bismuth	53.7		214.6		82.7	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160516B

Sample ID **1605098-41A MSD**	Batch ID: **75135**	TestNo: **SW6020A**	Units: **mg/Kg-dry**		
SampType: **MSD**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 4:19:00 PM**	Prep Date: **5/12/2016**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	67.6	0.313	52.14	18.06	95.0	84	118	4.15	20	
IS: Bismuth	52.1		208.6		86.4	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160516B

Sample ID **ICV-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 12:45:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.101	0.00100	0.100	0	101	90	110			
IS: Bismuth	0.200		0.200		104	30	120			

Sample ID **LCVL-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 1:04:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000965	0.00100	0.00100	0	96.5	80	120			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID **CCV4-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 3:36:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.203	0.00100	0.200	0	102	90	110			
IS: Bismuth	0.200		0.200		91.5	30	120			

Sample ID **LCVL4-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 3:41:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000968	0.00100	0.00100	0	96.8	80	120			
IS: Bismuth	0.200		0.200		94.1	30	120			

Sample ID **CCV5-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 4:25:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.194	0.00100	0.200	0	97.1	90	110			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID **LCVL5-160516**	Batch ID: **R85839**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160516B**	Analysis Date: **5/16/2016 4:29:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000940	0.00100	0.00100	0	94.0	80	120			
IS: Bismuth	0.200		0.200		98.8	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

The QC data in batch 75180 applies to the following samples: 1605098-42A

Sample ID	MB-75180	Batch ID:	75180	TestNo:	SW6020A	Units:	mg/L
SampType:	MBLK	Run ID:	ICP-MS4_160520C	Analysis Date:	5/20/2016 1:22:00 PM	Prep Date:	5/19/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000900	0.00100								U
IS: Bismuth	0.200		0.200		100	30	120			

Sample ID	LCS-75180	Batch ID:	75180	TestNo:	SW6020A	Units:	mg/L
SampType:	LCS	Run ID:	ICP-MS4_160520C	Analysis Date:	5/20/2016 1:24:00 PM	Prep Date:	5/19/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.197	0.00100	0.200	0	98.4	88	115			
IS: Bismuth	0.200		0.200		95.8	30	120			

Sample ID	LCSD-75180	Batch ID:	75180	TestNo:	SW6020A	Units:	mg/L
SampType:	LCSD	Run ID:	ICP-MS4_160520C	Analysis Date:	5/20/2016 1:26:00 PM	Prep Date:	5/19/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.201	0.00100	0.200	0	100	88	115	1.93	20	
IS: Bismuth	0.200		0.200		94.8	30	120	0	0	

Sample ID	1605097-27A SD	Batch ID:	75180	TestNo:	SW6020A	Units:	mg/L
SampType:	SD	Run ID:	ICP-MS4_160520C	Analysis Date:	5/20/2016 1:32:00 PM	Prep Date:	5/19/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00450	0.00500	0	0				0	10	U
IS: Bismuth	1.00		0.200		96.7	30	120	0	0	

Sample ID	1605097-27A PDS	Batch ID:	75180	TestNo:	SW6020A	Units:	mg/L
SampType:	PDS	Run ID:	ICP-MS4_160520C	Analysis Date:	5/20/2016 1:52:00 PM	Prep Date:	5/19/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.200	0.00100	0.200	0	100	80	120			
IS: Bismuth	0.200		0.200		93.7	30	120			

Sample ID	1605097-27A MS	Batch ID:	75180	TestNo:	SW6020A	Units:	mg/L
SampType:	MS	Run ID:	ICP-MS4_160520C	Analysis Date:	5/20/2016 1:54:00 PM	Prep Date:	5/19/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.162	0.00100	0.200	0	80.9	88	115			S
IS: Bismuth	0.200		0.200		94.8	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank
J	Analyte detected between MDL and RL
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
J	Analyte detected between SDL and RL
DF	Dilution Factor
MDL	Method Detection Limit
R	RPD outside accepted control limits
S	Spike Recovery outside control limits
N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

Sample ID **1605097-27A MSD**	Batch ID: **75180**	TestNo: **SW6020A**	Units: **mg/L**		
SampType: **MSD**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 1:56:00 PM**	Prep Date: **5/19/2016**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.196	0.00100	0.200	0	97.9	88	115	19.1	20	
IS: Bismuth	0.200		0.200		96.4	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

Sample ID **ICV-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 11:28:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.102	0.00100	0.100	0	102	90	110			
IS: Bismuth	0.200		0.200		98.5	30	120			

Sample ID **LCVL-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 11:40:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000967	0.00100	0.00100	0	96.7	80	120			
IS: Bismuth	0.200		0.200		96.1	30	120			

Sample ID **CCV2-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 1:06:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.200	0.00100	0.200	0	99.9	90	110			
IS: Bismuth	0.200		0.200		93.7	30	120			

Sample ID **LCVL2-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 1:11:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000963	0.00100	0.00100	0	96.3	80	120			
IS: Bismuth	0.200		0.200		96.0	30	120			

Sample ID **CCV3-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 1:58:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.198	0.00100	0.200	0	98.9	90	110			
IS: Bismuth	0.200		0.200		96.1	30	120			

Sample ID **LCVL3-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 2:04:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000977	0.00100	0.00100	0	97.7	80	120			
IS: Bismuth	0.200		0.200		96.8	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160520C

Sample ID **CCV4-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 2:24:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.197	0.00100	0.200	0	98.4	90	110			
IS: Bismuth	0.200		0.200		96.0	30	120			

Sample ID **LCVL4-160520**	Batch ID: **R85935**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160520C**	Analysis Date: **5/20/2016 2:41:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000974	0.00100	0.00100	0	97.4	80	120			
IS: Bismuth	0.200		0.200		95.3	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160523F

The QC data in batch 75236 applies to the following samples: 1605098-12A, 1605098-13A, 1605098-14A, 1605098-15A, 1605098-16A, 1605098-17A, 1605098-18A, 1605098-19A, 1605098-20A, 1605098-21A, 1605098-22A, 1605098-23A, 1605098-24A, 1605098-25A, 1605098-26A, 1605098-27A, 1605098-28A, 1605098-29A

Sample ID **MB-75236** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:12:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		99.9	30	120			

Sample ID **LCS-75236** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:14:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	48.2	0.300	50.00	0	96.5	84	118			
IS: Bismuth	50.0		200.0		94.2	30	120			

Sample ID **LCSD-75236** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **LCSD** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:16:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	47.1	0.300	50.00	0	94.2	84	118	2.43	20	
IS: Bismuth	50.0		200.0		97.7	30	120	0	0	

Sample ID **1605098-17A SD** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **SD** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:22:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	7.33	1.39	0	7.388				0.824	10	
IS: Bismuth	231		185.2		98.8	30	120	0	0	

Sample ID **1605098-17A PDS** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **PDS** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:42:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	50.1	0.278	46.30	7.388	92.3	80	120			
IS: Bismuth	46.3		925.9		91.6	30	120			

Sample ID **1605098-17A MS** Batch ID: **75236** TestNo: **SW6020A** Units: **mg/Kg-dry**
SampType: **MS** Run ID: **ICP-MS4_160523F** Analysis Date: **5/23/2016 6:44:00 PM** Prep Date: **5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	47.6	0.268	44.64	7.388	90.0	84	118			
IS: Bismuth	44.6		178.6		91.8	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160523F

Sample ID **1605098-17A MSD**	Batch ID: **75236**	TestNo: **SW6020A**	Units: **mg/Kg-dry**		
SampType: **MSD**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 6:46:00 PM**	Prep Date: **5/19/2016**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	44.1	0.259	43.10	7.388	85.2	84	118	7.55	20	
IS: Bismuth	43.1		172.4		91.6	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160523F

The QC data in batch 75237 applies to the following samples: 1605098-30A, 1605098-35A, 1605098-38A

Sample ID	**MB-75237**	Batch ID:	**75237**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MBLK**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 5:00:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		105	30	120			

Sample ID	**LCS-75237**	Batch ID:	**75237**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**LCS**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 5:02:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	47.7	0.300	50.00	0	95.3	84	118			
IS: Bismuth	50.0		200.0		101	30	120			

Sample ID	**LCSD-75237**	Batch ID:	**75237**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**LCSD**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 5:04:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	48.3	0.300	50.00	0	96.5	84	118	1.26	20	
IS: Bismuth	50.0		200.0		100	30	120	0	0	

Sample ID	**1605121-01A SD**	Batch ID:	**75237**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**SD**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 5:10:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	128	1.36	0	130.6				1.95	10	
IS: Bismuth	227		181.8		98.7	30	120	0	0	

Sample ID	**1605121-01A PDS**	Batch ID:	**75237**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**PDS**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 5:30:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	176	0.273	45.45	130.6	101	80	120			
IS: Bismuth	45.5		909.1		95.5	30	120			

Sample ID	**1605121-01A MS**	Batch ID:	**75237**	TestNo:	**SW6020A**	Units:	**mg/Kg-dry**
SampType:	**MS**	Run ID:	**ICP-MS4_160523F**	Analysis Date:	**5/23/2016 5:32:00 PM**	Prep Date:	**5/19/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	165	0.278	46.30	130.6	75.3	84	118			S
IS: Bismuth	46.3		185.2		93.1	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160523F

Sample ID **1605121-01A MSD**	Batch ID: **75237**	TestNo: **SW6020A**	Units: **mg/Kg-dry**		
SampType: **MSD**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 5:34:00 PM**	Prep Date: **5/19/2016**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	204	0.297	49.50	130.6	149	84	118	21.1	20	SR
IS: Bismuth	49.5		198.0		95.5	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160523F

Sample ID **ICV-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 11:13:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.0990	0.00100	0.100	0	99.0	90	110			
IS: Bismuth	0.200		0.200		102	30	120			

Sample ID **LCVL-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 11:22:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000970	0.00100	0.00100	0	97.0	80	120			
IS: Bismuth	0.200		0.200		99.6	30	120			

Sample ID **CCV6-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 4:51:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.190	0.00100	0.200	0	94.8	90	110			
IS: Bismuth	0.200		0.200		96.8	30	120			

Sample ID **LCVL6-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 4:55:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000979	0.00100	0.00100	0	97.9	80	120			
IS: Bismuth	0.200		0.200		101	30	120			

Sample ID **CCV7-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 5:36:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.191	0.00100	0.200	0	95.6	90	110			
IS: Bismuth	0.200		0.200		96.1	30	120			

Sample ID **LCVL7-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 5:40:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00104	0.00100	0.00100	0	104	80	120			
IS: Bismuth	0.200		0.200		99.4	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160523F

Sample ID **CCV8-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 6:04:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.189	0.00100	0.200	0	94.3	90	110			
IS: Bismuth	0.200		0.200		99.5	30	120			

Sample ID **LCVL8-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 6:08:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000997	0.00100	0.00100	0	99.7	80	120			
IS: Bismuth	0.200		0.200		97.1	30	120			

Sample ID **CCV9-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 6:48:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.188	0.00100	0.200	0	94.0	90	110			
IS: Bismuth	0.200		0.200		97.9	30	120			

Sample ID **LCVL9-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 6:52:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000969	0.00100	0.00100	0	96.9	80	120			
IS: Bismuth	0.200		0.200		96.5	30	120			

Sample ID **CCV10-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 7:16:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.188	0.00100	0.200	0	94.2	90	110			
IS: Bismuth	0.200		0.200		93.4	30	120			

Sample ID **LCVL10-160523**	Batch ID: **R85956**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160523F**	Analysis Date: **5/23/2016 7:20:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000960	0.00100	0.00100	0	96.0	80	120			
IS: Bismuth	0.200		0.200		92.2	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_160601A**

The QC data in batch 75402 applies to the following samples: 1605098-36A, 1605098-39A

Sample ID **MB-75402**	Batch ID: **75402**	TestNo: **SW6020A**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 11:06:00 AM**	Prep Date: **5/31/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.150	0.300								U
IS: Bismuth	50.0		200.0		101	30	120			

Sample ID **LCS-75402**	Batch ID: **75402**	TestNo: **SW6020A**	Units: **mg/Kg-dry**
SampType: **LCS**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 11:08:00 AM**	Prep Date: **5/31/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	52.5	0.300	50.00	0	105	84	118			
IS: Bismuth	50.0		200.0		97.8	30	120			

Sample ID **LCSD-75402**	Batch ID: **75402**	TestNo: **SW6020A**	Units: **mg/Kg-dry**
SampType: **LCSD**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 11:10:00 AM**	Prep Date: **5/31/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	53.0	0.300	50.00	0	106	84	118	1.03	20	
IS: Bismuth	50.0		200.0		97.1	30	120	0	0	

Sample ID **1605098-36A SD**	Batch ID: **75402**	TestNo: **SW6020A**	Units: **mg/Kg-dry**
SampType: **SD**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 11:16:00 AM**	Prep Date: **5/31/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	6.79	1.59	0	7.301				7.22	10	
IS: Bismuth	265		211.8		103	30	120	0	0	

Sample ID **1605098-36A PDS**	Batch ID: **75402**	TestNo: **SW6020A**	Units: **mg/Kg-dry**
SampType: **PDS**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 11:20:00 AM**	Prep Date: **5/31/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	60.8	0.318	52.94	7.301	101	80	120			
IS: Bismuth	52.9		1059		96.9	30	120			

Sample ID **1605098-36A MS**	Batch ID: **75402**	TestNo: **SW6020A**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 11:22:00 AM**	Prep Date: **5/31/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	64.1	0.345	57.56	7.301	98.7	84	118			
IS: Bismuth	57.6		230.3		97.5	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160601A

Sample ID **1605098-36A MSD**	Batch ID: **75402**	TestNo: **SW6020A**	Units: **mg/Kg-dry**		
SampType: **MSD**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 11:24:00 AM**	Prep Date: **5/31/2016**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	66.1	0.336	55.93	7.301	105	84	118	3.05	20	
IS: Bismuth	55.9		223.7		95.5	30	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160601A

Sample ID **ICV-160601**	Batch ID: **R86092**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 10:53:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.103	0.00100	0.100	0	103	90	110			
IS: Bismuth	0.200		0.200		98.2	30	120			

Sample ID **LCVL-160601**	Batch ID: **R86092**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 10:58:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.00101	0.00100	0.00100	0	101	80	120			
IS: Bismuth	0.200		0.200		101	30	120			

Sample ID **CCV1-160601**	Batch ID: **R86092**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 11:50:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.199	0.00100	0.200	0	99.4	90	110			
IS: Bismuth	0.200		0.200		101	30	120			

Sample ID **LCVL1-160601**	Batch ID: **R86092**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_160601A**	Analysis Date: **6/1/2016 11:58:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.000943	0.00100	0.00100	0	94.3	80	120			
IS: Bismuth	0.200		0.200		99.3	30	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160510B

Sample ID **DCS-74876**	Batch ID: **74876**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **DCS**	Run ID: **GCMS8_160510B**	Analysis Date: **5/11/2016 4:29:00 AM**	Prep Date: **4/29/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0113	0.0100	0.01000	0	113	20	200	0	0	
Acenaphthylene	0.0116	0.0100	0.01000	0	116	20	200	0	0	
Anthracene	0.0104	0.0100	0.01000	0	104	20	200	0	0	
Benzo[a]anthracene	0.0111	0.0100	0.01000	0	111	20	200	0	0	
Benzo[a]pyrene	0.0100	0.0100	0.01000	0	100	20	200	0	0	
Benzo[b]fluoranthene	0.0105	0.0100	0.01000	0	105	20	200	0	0	
Benzo[e]pyrene	0.0110	0.0100	0.01000	0	110	20	200	0	0	
Benzo[g,h,i]perylene	0.0110	0.0100	0.01000	0	110	20	200	0	0	
Benzo[j]fluoranthene	0.0106	0.0100	0.01000	0	106	20	200	0	0	N
Benzo[k]fluoranthene	0.0104	0.0100	0.01000	0	104	20	200	0	0	
Chrysene	0.0118	0.0100	0.01000	0	118	20	200	0	0	
Dibenz[a,h]anthracene	0.0119	0.0100	0.01000	0	119	20	200	0	0	
Fluoranthene	0.0133	0.0100	0.01000	0	133	20	200	0	0	
Fluorene	0.0102	0.0100	0.01000	0	102	20	200	0	0	
Indeno[1,2,3-cd]pyrene	0.0107	0.0100	0.01000	0	107	20	200	0	0	
Phenanthrene	0.0127	0.0100	0.01000	0	127	20	200	0	0	
Pyrene	0.0133	0.0100	0.01000	0	133	20	200	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

The QC data in batch 75151 applies to the following samples: 1605098-31A, 1605098-34A, 1605098-37A

Sample ID **LCS-75151** Batch ID: **75151** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160513A** Analysis Date: **5/14/2016 4:22:00 AM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.822	0.0100	1.000	0	82.2	44	111			
Acenaphthylene	0.841	0.0100	1.000	0	84.1	39	116			
Anthracene	0.793	0.0100	1.000	0	79.3	50	114			
Benzo[a]anthracene	0.887	0.0100	1.000	0	88.7	54	122			
Benzo[a]pyrene	0.881	0.0100	1.000	0	88.1	50	125			
Benzo[b]fluoranthene	0.911	0.0100	1.000	0	91.1	53	128			
Benzo[e]pyrene	0.880	0.0100	1.000	0	88.0	43	140			
Benzo[g,h,i]perylene	0.964	0.0100	1.000	0	96.4	49	127			
Benzo[j]fluoranthene	0.951	0.0100	1.000	0	95.1	45	125			N
Benzo[k]fluoranthene	1.04	0.0100	1.000	0	104	56	123			
Chrysene	0.900	0.0100	1.000	0	90.0	57	118			
Dibenz[a,h]anthracene	1.01	0.0100	1.000	0	101	50	129			
Fluoranthene	0.851	0.0100	1.000	0	85.1	55	119			
Fluorene	0.738	0.0100	1.000	0	73.8	47	114			
Indeno[1,2,3-cd]pyrene	0.985	0.0100	1.000	0	98.5	49	130			
Phenanthrene	0.857	0.0100	1.000	0	85.7	49	113			
Pyrene	0.844	0.0100	1.000	0	84.4	55	117			
IS: Acenaphthene-d10	4.00		4.000		102	50	200			
IS: Chrysene-d12	4.00		4.000		86.8	50	200			
IS: Naphthalene-d8	4.00		4.000		104	50	200			
IS: Perylene-d12	4.00		4.000		92.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		80.6	50	200			
Surr: 2-Fluorobiphenyl	0.800		1.000		80.0	46	115			
Surr: 4-Terphenyl-d14	0.800		1.000		80.0	58	133			

Sample ID **MB-75151** Batch ID: **75151** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160513A** Analysis Date: **5/14/2016 5:00:00 AM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U
Chrysene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

Sample ID **MB-75151**	Batch ID: **75151**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 5:00:00 AM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		100	50	200			
IS: Chrysene-d12	4.00		4.000		88.8	50	200			
IS: Naphthalene-d8	4.00		4.000		102	50	200			
IS: Perylene-d12	4.00		4.000		98.7	50	200			
IS: Phenanthrene-d10	4.00		4.000		79.0	50	200			
Surr: 2-Fluorobiphenyl	0.777		1.000		77.7	46	115			
Surr: 4-Terphenyl-d14	0.771		1.000		77.1	58	133			

Sample ID **1605096-14AMS**	Batch ID: **75151**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 10:33:00 AM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.900	0.0978	0.9775	0	92.1	44	111			
Acenaphthylene	0.895	0.0978	0.9775	0	91.5	39	116			
Anthracene	0.911	0.0978	0.9775	0.06435	86.7	50	114			
Benzo[a]anthracene	1.38	0.0978	0.9775	0.4604	94.2	54	122			
Benzo[a]pyrene	1.56	0.0978	0.9775	0.6222	95.9	50	125			
Benzo[b]fluoranthene	1.55	0.0978	0.9775	0.5931	97.4	53	128			
Benzo[e]pyrene	1.35	0.0978	0.9775	0.4568	91.6	43	140			
Benzo[g,h,i]perylene	1.58	0.0978	0.9775	0.5691	104	49	127			
Benzo[j]fluoranthene	1.25	0.0978	0.9775	0.3035	97.0	45	125			N
Benzo[k]fluoranthene	1.34	0.0978	0.9775	0.3441	102	56	123			
Chrysene	1.51	0.0978	0.9775	0.5960	93.4	57	118			
Dibenz[a,h]anthracene	1.15	0.0978	0.9775	0.1572	102	50	129			
Fluoranthene	1.44	0.0978	0.9775	0.6633	79.2	55	119			
Fluorene	0.893	0.0978	0.9775	0	91.3	47	114			
Indeno[1,2,3-cd]pyrene	1.49	0.0978	0.9775	0.4750	104	49	130			
Phenanthrene	1.19	0.0978	0.9775	0.2818	93.0	49	113			
Pyrene	1.32	0.0978	0.9775	0.5727	76.1	55	117			
IS: Acenaphthene-d10	39.1		3.910		113	50	200			
IS: Chrysene-d12	39.1		3.910		79.6	50	200			
IS: Naphthalene-d8	39.1		3.910		96.5	50	200			
IS: Perylene-d12	39.1		3.910		84.7	50	200			
IS: Phenanthrene-d10	39.1		3.910		96.2	50	200			
Surr: 2-Fluorobiphenyl	0.865		0.9775		88.5	46	115			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

Sample ID **1605096-14AMS**	Batch ID: **75151**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 10:33:00 AM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.879		0.9775		89.9	58	133			

Sample ID **1605096-14AMSD**	Batch ID: **75151**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 11:10:00 AM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.889	0.0976	0.9756	0	91.1	44	111	1.25	20	
Acenaphthylene	0.887	0.0976	0.9756	0	90.9	39	116	0.908	20	
Anthracene	0.901	0.0976	0.9756	0.06435	85.8	50	114	1.13	20	
Benzo[a]anthracene	1.37	0.0976	0.9756	0.4604	93.7	54	122	0.486	20	
Benzo[a]pyrene	1.54	0.0976	0.9756	0.6222	94.2	50	125	1.18	20	
Benzo[b]fluoranthene	1.52	0.0976	0.9756	0.5931	95.4	53	128	1.43	20	
Benzo[e]pyrene	1.33	0.0976	0.9756	0.4568	89.7	43	140	1.56	20	
Benzo[g,h,i]perylene	1.54	0.0976	0.9756	0.5691	100	49	127	2.35	20	
Benzo[j]fluoranthene	1.24	0.0976	0.9756	0.3035	96.1	45	125	0.830	20	N
Benzo[k]fluoranthene	1.32	0.0976	0.9756	0.3441	100	56	123	1.26	20	
Chrysene	1.52	0.0976	0.9756	0.5960	94.5	57	118	0.560	20	
Dibenz[a,h]anthracene	1.13	0.0976	0.9756	0.1572	99.7	50	129	2.13	20	
Fluoranthene	1.47	0.0976	0.9756	0.6633	82.6	55	119	2.20	20	
Fluorene	0.874	0.0976	0.9756	0	89.6	47	114	2.12	20	
Indeno[1,2,3-cd]pyrene	1.46	0.0976	0.9756	0.4750	101	49	130	2.18	20	
Phenanthrene	1.20	0.0976	0.9756	0.2818	94.1	49	113	0.736	20	
Pyrene	1.35	0.0976	0.9756	0.5727	79.5	55	117	2.45	20	
IS: Acenaphthene-d10	39.0		3.902		115	50	200	0	0	
IS: Chrysene-d12	39.0		3.902		80.6	50	200	0	0	
IS: Naphthalene-d8	39.0		3.902		97.9	50	200	0	0	
IS: Perylene-d12	39.0		3.902		85.7	50	200	0	0	
IS: Phenanthrene-d10	39.0		3.902		96.3	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.870		0.9756		89.2	46	115	0	0	
Surr: 4-Terphenyl-d14	0.861		0.9756		88.3	58	133	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

Sample ID **ICV2-160513**	Batch ID: **R85824**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 1:17:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.99	0.0100	2.000	0	99.6	80	120			
Acenaphthylene	2.02	0.0100	2.000	0	101	80	120			
Anthracene	1.82	0.0100	2.000	0	91.1	80	120			
Benzo[a]anthracene	1.94	0.0100	2.000	0	96.8	80	120			
Benzo[a]pyrene	1.99	0.0100	2.000	0	99.5	80	120			
Benzo[b]fluoranthene	1.99	0.0100	2.000	0	99.5	80	120			
Benzo[e]pyrene	1.93	0.0100	2.000	0	96.3	80	120			
Benzo[g,h,i]perylene	2.11	0.0100	2.000	0	105	80	120			
Benzo[j]fluoranthene	2.12	0.0100	2.000	0	106	80	120			N
Benzo[k]fluoranthene	2.24	0.0100	2.000	0	112	80	120			
Chrysene	1.96	0.0100	2.000	0	97.9	80	120			
Dibenz[a,h]anthracene	2.19	0.0100	2.000	0	110	80	120			
Fluoranthene	1.75	0.0100	2.000	0	87.7	80	120			
Fluorene	1.90	0.0100	2.000	0	94.8	80	120			
Indeno[1,2,3-cd]pyrene	2.14	0.0100	2.000	0	107	80	120			
Phenanthrene	1.92	0.0100	2.000	0	95.9	80	120			
Pyrene	1.74	0.0100	2.000	0	86.9	80	120			
IS: Acenaphthene-d10	4.00		4.000		93.4	50	200			
IS: Chrysene-d12	4.00		4.000		83.2	50	200			
IS: Naphthalene-d8	4.00		4.000		92.3	50	200			
IS: Perylene-d12	4.00		4.000		86.1	50	200			
IS: Phenanthrene-d10	4.00		4.000		89.4	50	200			
Surr: 2-Fluorobiphenyl	2.01		2.000		101	65	120			
Surr: 4-Terphenyl-d14	2.00		2.000		100	65	120			

Sample ID **ICV3-160513**	Batch ID: **R85824**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 12:24:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0100	2.000	0	100	50	150			
Acenaphthylene	2.02	0.0100	2.000	0	101	50	150			
Anthracene	1.80	0.0100	2.000	0	90.0	50	150			
Benzo[a]anthracene	1.95	0.0100	2.000	0	97.5	50	150			
Benzo[a]pyrene	2.00	0.0100	2.000	0	100	50	150			
Benzo[b]fluoranthene	2.00	0.0100	2.000	0	99.9	50	150			
Benzo[e]pyrene	1.95	0.0100	2.000	0	97.4	50	150			
Benzo[g,h,i]perylene	2.17	0.0100	2.000	0	108	50	150			
Benzo[j]fluoranthene	2.11	0.0100	2.000	0	106	50	150			N
Benzo[k]fluoranthene	2.23	0.0100	2.000	0	112	50	150			
Chrysene	1.97	0.0100	2.000	0	98.3	50	150			
Dibenz[a,h]anthracene	2.24	0.0100	2.000	0	112	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160513A

Sample ID **ICV3-160513**	Batch ID: **R85824**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160513A**	Analysis Date: **5/14/2016 12:24:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.61	0.0100	2.000	0	80.4	50	150			
Fluorene	1.95	0.0100	2.000	0	97.3	50	150			
Indeno[1,2,3-cd]pyrene	2.20	0.0100	2.000	0	110	50	150			
Phenanthrene	1.93	0.0100	2.000	0	96.4	50	150			
Pyrene	1.57	0.0100	2.000	0	78.4	50	150			
IS: Acenaphthene-d10	4.00		4.000		105	50	200			
IS: Chrysene-d12	4.00		4.000		81.0	50	200			
IS: Naphthalene-d8	4.00		4.000		92.8	50	200			
IS: Perylene-d12	4.00		4.000		85.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		95.7	50	200			
Surr: 2-Fluorobiphenyl	2.12		2.000		106	50	150			
Surr: 4-Terphenyl-d14	2.00		2.000		100	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518A

Sample ID **DCS-75209**	Batch ID: **75209**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **DCS**	Run ID: **GCMS8_160518A**	Analysis Date: **5/18/2016 10:22:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000307	0.0000500	0.0000400	0	76.8	20	170	0	0	
Acenaphthylene	0.0000308	0.0000500	0.0000400	0	77.0	20	170	0	0	
Anthracene	0.0000322	0.0000500	0.0000400	0	80.5	20	170	0	0	
Benzo[a]anthracene	0.0000306	0.0000500	0.0000400	0	76.4	20	170	0	0	
Benzo[a]pyrene	0.0000288	0.0000500	0.0000400	0	72.0	20	170	0	0	
Benzo[b]fluoranthene	0.0000304	0.0000500	0.0000400	0	76.0	20	170	0	0	
Benzo[e]pyrene	0.0000308	0.0000500	0.0000400	0	76.9	20	170	0	0	
Benzo[g,h,i]perylene	0.0000282	0.0000500	0.0000400	0	70.4	20	170	0	0	
Benzo[j]fluoranthene	0.0000254	0.0000500	0.0000400	0	63.6	20	170	0	0	N
Benzo[k]fluoranthene	0.0000283	0.0000500	0.0000400	0	70.8	20	170	0	0	
Chrysene	0.0000293	0.0000500	0.0000400	0	73.4	20	170	0	0	
Dibenz[a,h]anthracene	0.0000221	0.0000500	0.0000400	0	55.2	20	170	0	0	
Fluoranthene	0.0000331	0.0000500	0.0000400	0	82.7	20	170	0	0	
Fluorene	0.0000302	0.0000500	0.0000400	0	75.4	20	170	0	0	
Indeno[1,2,3-cd]pyrene	0.0000275	0.0000500	0.0000400	0	68.8	20	170	0	0	
Phenanthrene	0.0000339	0.0000500	0.0000400	0	84.6	20	170	0	0	
Pyrene	0.0000328	0.0000500	0.0000400	0	81.9	20	170	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518B

The QC data in batch 75146 applies to the following samples: 1605098-42B

Sample ID **LCS-75146** Batch ID: **75146** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **LCS** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 2:03:00 PM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00262	0.0000500	0.00400	0	65.5	48	114			
Acenaphthylene	0.00261	0.0000500	0.00400	0	65.4	35	121			
Anthracene	0.00247	0.0000500	0.00400	0	61.7	53	119			
Benzo[a]anthracene	0.00297	0.0000500	0.00400	0	74.3	59	120			
Benzo[a]pyrene	0.00301	0.0000500	0.00400	0	75.2	53	120			
Benzo[b]fluoranthene	0.00309	0.0000500	0.00400	0	77.3	53	126			
Benzo[e]pyrene	0.00295	0.0000500	0.00400	0	73.6	40	140			
Benzo[g,h,i]perylene	0.00300	0.0000500	0.00400	0	74.9	44	128			
Benzo[j]fluoranthene	0.00295	0.0000500	0.00400	0	73.8	45	124			N
Benzo[k]fluoranthene	0.00309	0.0000500	0.00400	0	77.1	54	125			
Chrysene	0.00298	0.0000500	0.00400	0	74.6	57	120			
Dibenz[a,h]anthracene	0.00302	0.0000500	0.00400	0	75.4	44	131			
Fluoranthene	0.00291	0.0000500	0.00400	0	72.7	58	120			
Fluorene	0.00272	0.0000500	0.00400	0	68.0	50	118			
Indeno[1,2,3-cd]pyrene	0.00300	0.0000500	0.00400	0	75.0	48	130			
Phenanthrene	0.00259	0.0000500	0.00400	0	64.8	53	115			
Pyrene	0.00292	0.0000500	0.00400	0	73.0	53	121			
IS: Acenaphthene-d10	0.00800		0.00800		78.1	50	200			
IS: Chrysene-d12	0.00800		0.00800		77.8	50	200			
IS: Naphthalene-d8	0.00800		0.00800		81.0	50	200			
IS: Perylene-d12	0.00800		0.00800		76.7	50	200			
IS: Phenanthrene-d10	0.00800		0.00800		78.1	50	200			
Surr: 2-Fluorobiphenyl	4.48		8.000		56.0	53	106			
Surr: 4-Terphenyl-d14	5.28		8.000		65.9	58	132			

Sample ID **MB-75146** Batch ID: **75146** TestNo: **SW8270D-LL** Units: **mg/L**
SampType: **MBLK** Run ID: **GCMS8_160518B** Analysis Date: **5/18/2016 2:40:00 PM** Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000400	0.0000500								U
Acenaphthylene	0.0000400	0.0000500								U
Anthracene	0.0000400	0.0000500								U
Benzo[a]anthracene	0.0000400	0.0000500								U
Benzo[a]pyrene	0.0000400	0.0000500								U
Benzo[b]fluoranthene	0.0000400	0.0000500								U
Benzo[e]pyrene	0.0000400	0.0000500								U
Benzo[g,h,i]perylene	0.0000400	0.0000500								U
Benzo[j]fluoranthene	0.0000400	0.0000500								NU
Benzo[k]fluoranthene	0.0000400	0.0000500								U
Chrysene	0.0000400	0.0000500								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518B

Sample ID **MB-75146**	Batch ID: **75146**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 2:40:00 PM**	Prep Date: **5/13/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dibenz[a,h]anthracene	0.0000400	0.0000500								U
Fluoranthene	0.0000400	0.0000500								U
Fluorene	0.0000400	0.0000500								U
Indeno[1,2,3-cd]pyrene	0.0000400	0.0000500								U
Phenanthrene	0.0000400	0.0000500								U
Pyrene	0.0000400	0.0000500								U
IS: Acenaphthene-d10	0.00800		0.00800		82.7	50	200			
IS: Chrysene-d12	0.00800		0.00800		85.3	50	200			
IS: Naphthalene-d8	0.00800		0.00800		85.3	50	200			
IS: Perylene-d12	0.00800		0.00800		85.3	50	200			
IS: Phenanthrene-d10	0.00800		0.00800		84.3	50	200			
Surr: 2-Fluorobiphenyl	4.61		8.000		57.6	53	106			
Surr: 4-Terphenyl-d14	5.33		8.000		66.7	58	132			

Sample ID **SBLK-160518**	Batch ID: **75146**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **SBLK**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 10:03:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.0000400	0.0000500	0							U
Acenaphthylene	0.0000400	0.0000500	0							U
Anthracene	0.0000400	0.0000500	0							U
Benzo[a]anthracene	0.0000400	0.0000500	0							U
Benzo[a]pyrene	0.0000400	0.0000500	0							U
Benzo[b]fluoranthene	0.0000400	0.0000500	0							U
Benzo[e]pyrene	0.0000400	0.0000500	0							U
Benzo[g,h,i]perylene	0.0000400	0.0000500	0							U
Benzo[j]fluoranthene	0.0000400	0.0000500	0							NU
Benzo[k]fluoranthene	0.0000400	0.0000500	0							U
Chrysene	0.0000400	0.0000500	0							U
Dibenz[a,h]anthracene	0.0000400	0.0000500	0							U
Fluoranthene	0.0000400	0.0000500	0							U
Fluorene	0.0000400	0.0000500	0							U
Indeno[1,2,3-cd]pyrene	0.0000400	0.0000500	0							U
Phenanthrene	0.0000400	0.0000500	0							U
Pyrene	0.0000400	0.0000500	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518B

Sample ID **ICV-160518**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **ICV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 9:35:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0000500	2.00	0	101	80	120			
Acenaphthylene	2.01	0.0000500	2.00	0	101	80	120			
Anthracene	1.88	0.0000500	2.00	0	93.9	80	120			
Benzo[a]anthracene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[a]pyrene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[b]fluoranthene	2.13	0.0000500	2.00	0	106	80	120			
Benzo[e]pyrene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[g,h,i]perylene	2.11	0.0000500	2.00	0	105	80	120			
Benzo[j]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			N
Benzo[k]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			
Chrysene	2.11	0.0000500	2.00	0	106	80	120			
Dibenz[a,h]anthracene	2.11	0.0000500	2.00	0	105	80	120			
Fluoranthene	2.14	0.0000500	2.00	0	107	80	120			
Fluorene	2.02	0.0000500	2.00	0	101	80	120			
Indeno[1,2,3-cd]pyrene	2.10	0.0000500	2.00	0	105	80	120			
Phenanthrene	1.88	0.0000500	2.00	0	94.0	80	120			
Pyrene	2.14	0.0000500	2.00	0	107	80	120			
IS: Acenaphthene-d10	4.00		4.00		87.5	50	200			
IS: Chrysene-d12	4.00		4.00		88.7	50	200			
IS: Naphthalene-d8	4.00		4.00		88.3	50	200			
IS: Perylene-d12	4.00		4.00		87.9	50	200			
IS: Phenanthrene-d10	4.00		4.00		86.7	50	200			
Surr: 2-Fluorobiphenyl	1910		2000		95.7	65	120			
Surr: 4-Terphenyl-d14	2040		2000		102	65	120			

Sample ID **ICV2-160518**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **ICV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 8:49:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0000500	2.00	0	100	80	120			
Acenaphthylene	1.99	0.0000500	2.00	0	99.7	80	120			
Anthracene	1.86	0.0000500	2.00	0	93.0	80	120			
Benzo[a]anthracene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[a]pyrene	2.13	0.0000500	2.00	0	107	80	120			
Benzo[b]fluoranthene	2.12	0.0000500	2.00	0	106	80	120			
Benzo[e]pyrene	2.11	0.0000500	2.00	0	106	80	120			
Benzo[g,h,i]perylene	2.14	0.0000500	2.00	0	107	80	120			
Benzo[j]fluoranthene	2.13	0.0000500	2.00	0	106	80	120			N
Benzo[k]fluoranthene	2.19	0.0000500	2.00	0	109	80	120			
Chrysene	2.10	0.0000500	2.00	0	105	80	120			
Dibenz[a,h]anthracene	2.13	0.0000500	2.00	0	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160518B

Sample ID **ICV2-160518**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **ICV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/18/2016 8:49:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.07	0.0000500	2.00	0	104	80	120			
Fluorene	2.01	0.0000500	2.00	0	101	80	120			
Indeno[1,2,3-cd]pyrene	2.11	0.0000500	2.00	0	105	80	120			
Phenanthrene	1.86	0.0000500	2.00	0	93.1	80	120			
Pyrene	2.07	0.0000500	2.00	0	104	80	120			
IS: Acenaphthene-d10	4.00		4.00		96.3	50	200			
IS: Chrysene-d12	4.00		4.00		93.5	50	200			
IS: Naphthalene-d8	4.00		4.00		94.6	50	200			
IS: Perylene-d12	4.00		4.00		93.4	50	200			
IS: Phenanthrene-d10	4.00		4.00		93.3	50	200			
Surr: 2-Fluorobiphenyl	1920		2000		96.2	65	120			
Surr: 4-Terphenyl-d14	2030		2000		102	65	120			

Sample ID **CCV-160520**	Batch ID: **R85875**	TestNo: **SW8270D-LL**	Units: **mg/L**
SampType: **CCV**	Run ID: **GCMS8_160518B**	Analysis Date: **5/19/2016 2:59:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.989	0.0000500	1.00	0	98.9	50	150			
Acenaphthylene	0.998	0.0000500	1.00	0	99.8	50	150			
Anthracene	0.938	0.0000500	1.00	0	93.8	50	150			
Benzo[a]anthracene	1.00	0.0000500	1.00	0	100	50	150			
Benzo[a]pyrene	1.01	0.0000500	1.00	0	101	50	150			
Benzo[b]fluoranthene	1.01	0.0000500	1.00	0	101	50	150			
Benzo[e]pyrene	1.01	0.0000500	1.00	0	101	50	150			
Benzo[g,h,i]perylene	1.02	0.0000500	1.00	0	102	50	150			
Benzo[j]fluoranthene	1.01	0.0000500	1.00	0	101	50	150			N
Benzo[k]fluoranthene	1.04	0.0000500	1.00	0	104	50	150			
Chrysene	1.00	0.0000500	1.00	0	100	50	150			
Dibenz[a,h]anthracene	1.02	0.0000500	1.00	0	102	50	150			
Fluoranthene	0.983	0.0000500	1.00	0	98.3	50	150			
Fluorene	0.978	0.0000500	1.00	0	97.8	50	150			
Indeno[1,2,3-cd]pyrene	1.02	0.0000500	1.00	0	102	50	150			
Phenanthrene	0.940	0.0000500	1.00	0	94.0	50	150			
Pyrene	0.984	0.0000500	1.00	0	98.4	50	150			
IS: Acenaphthene-d10	4.00		4.00		105	50	200			
IS: Chrysene-d12	4.00		4.00		94.9	50	200			
IS: Naphthalene-d8	4.00		4.00		100	50	200			
IS: Perylene-d12	4.00		4.00		96.4	50	200			
IS: Phenanthrene-d10	4.00		4.00		95.2	50	200			
Surr: 2-Fluorobiphenyl	1000		1000		100	50	150			
Surr: 4-Terphenyl-d14	999		1000		99.9	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160519B

The QC data in batch 75218 applies to the following samples: 1605098-35A, 1605098-36A, 1605098-38A, 1605098-39A, 1605098-40A, 1605098-41A

Sample ID **LCS-75218** Batch ID: **75218** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160519B** Analysis Date: **5/19/2016 2:57:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.771	0.0100	1.000	0	77.1	44	111			
Acenaphthylene	0.780	0.0100	1.000	0	78.0	39	116			
Anthracene	0.764	0.0100	1.000	0	76.4	50	114			
Benzo[a]anthracene	0.838	0.0100	1.000	0	83.8	54	122			
Benzo[a]pyrene	0.823	0.0100	1.000	0	82.3	50	125			
Benzo[b]fluoranthene	0.843	0.0100	1.000	0	84.3	53	128			
Benzo[e]pyrene	0.907	0.0100	1.000	0	90.7	43	140			
Benzo[g,h,i]perylene	0.836	0.0100	1.000	0	83.6	49	127			
Benzo[j]fluoranthene	0.859	0.0100	1.000	0	85.9	45	125			N
Benzo[k]fluoranthene	0.865	0.0100	1.000	0	86.5	56	123			
Chrysene	0.838	0.0100	1.000	0	83.8	57	118			
Dibenz[a,h]anthracene	0.843	0.0100	1.000	0	84.3	50	129			
Fluoranthene	0.890	0.0100	1.000	0	89.0	55	119			
Fluorene	0.774	0.0100	1.000	0	77.4	47	114			
Indeno[1,2,3-cd]pyrene	0.838	0.0100	1.000	0	83.8	49	130			
Phenanthrene	0.776	0.0100	1.000	0	77.6	49	113			
Pyrene	0.897	0.0100	1.000	0	89.7	55	117			
IS: Acenaphthene-d10	4.00		4.000		88.1	50	200			
IS: Chrysene-d12	4.00		4.000		94.8	50	200			
IS: Naphthalene-d8	4.00		4.000		93.2	50	200			
IS: Perylene-d12	4.00		4.000		97.0	50	200			
IS: Phenanthrene-d10	4.00		4.000		82.6	50	200			
Surr: 2-Fluorobiphenyl	0.739		1.000		73.9	46	115			
Surr: 4-Terphenyl-d14	0.794		1.000		79.4	58	133			

Sample ID **MB-75218** Batch ID: **75218** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160519B** Analysis Date: **5/19/2016 3:34:00 PM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U
Chrysene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160519B

Sample ID **MB-75218**	Batch ID: **75218**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS8_160519B**	Analysis Date: **5/19/2016 3:34:00 PM**	Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		86.7	50	200			
IS: Chrysene-d12	4.00		4.000		93.1	50	200			
IS: Naphthalene-d8	4.00		4.000		88.7	50	200			
IS: Perylene-d12	4.00		4.000		95.2	50	200			
IS: Phenanthrene-d10	4.00		4.000		80.7	50	200			
Surr: 2-Fluorobiphenyl	0.745		1.000		74.5	46	115			
Surr: 4-Terphenyl-d14	0.785		1.000		78.5	58	133			

Sample ID **1605121-01AMS**	Batch ID: **75218**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160519B**	Analysis Date: **5/19/2016 11:35:00 PM**	Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.10	0.0971	0.9709	1.450	67.2	44	111			
Acenaphthylene	0.844	0.0971	0.9709	0	87.0	39	116			
Anthracene	5.46	0.0971	0.9709	4.279	121	50	114			S
Benzo[a]anthracene	34.8	0.0971	0.9709	35.53	-74.1	54	122			S
Benzo[b]fluoranthene	40.1	0.0971	0.9709	42.18	-209	53	128			S
Benzo[e]pyrene	31.5	0.0971	0.9709	32.78	-128	43	140			S
Benzo[g,h,i]perylene	32.9	0.0971	0.9709	33.71	-82.9	49	127			S
Benzo[j]fluoranthene	20.9	0.0971	0.9709	21.39	-52.9	45	125			SN
Benzo[k]fluoranthene	21.5	0.0971	0.9709	21.21	27.8	56	123			S
Dibenz[a,h]anthracene	8.00	0.0971	0.9709	7.566	44.8	50	129			S
Fluorene	1.50	0.0971	0.9709	0.7011	81.8	47	114			
Indeno[1,2,3-cd]pyrene	27.8	0.0971	0.9709	28.46	-72.4	49	130			S
Phenanthrene	22.8	0.0971	0.9709	20.19	269	49	113			S
IS: Acenaphthene-d10	38.8		3.883		97.0	50	200			
IS: Chrysene-d12	38.8		3.883		87.0	50	200			
IS: Naphthalene-d8	38.8		3.883		95.2	50	200			
IS: Perylene-d12	38.8		3.883		93.1	50	200			
IS: Phenanthrene-d10	38.8		3.883		83.5	50	200			
Surr: 2-Fluorobiphenyl	0.830		0.9709		85.4	46	115			
Surr: 4-Terphenyl-d14	0.812		0.9709		83.6	58	133			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160519B

Sample ID **1605121-01AMSD**	Batch ID: **75218**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160519B**	Analysis Date: **5/20/2016 12:11:00 AM**	Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.41	0.0962	0.9625	1.450	100	44	111	13.7	20	
Acenaphthylene	0.818	0.0962	0.9625	0	84.9	39	116	3.23	20	
Anthracene	6.03	0.0962	0.9625	4.279	182	50	114	9.96	20	S
Benzo[a]anthracene	39.0	0.0962	0.9625	35.53	364	54	122	11.4	20	S
Benzo[b]fluoranthene	44.8	0.0962	0.9625	42.18	271	53	128	10.9	20	S
Benzo[e]pyrene	35.3	0.0962	0.9625	32.78	259	43	140	11.2	20	S
Benzo[g,h,i]perylene	36.9	0.0962	0.9625	33.71	332	49	127	11.5	20	S
Benzo[j]fluoranthene	23.3	0.0962	0.9625	21.39	194	45	125	10.8	20	SN
Benzo[k]fluoranthene	23.7	0.0962	0.9625	21.21	262	56	123	9.98	20	S
Dibenz[a,h]anthracene	8.76	0.0962	0.9625	7.566	125	50	129	9.11	20	
Fluorene	1.69	0.0962	0.9625	0.7011	103	47	114	12.5	20	
Indeno[1,2,3-cd]pyrene	30.7	0.0962	0.9625	28.46	234	49	130	10.1	20	S
Phenanthrene	24.8	0.0962	0.9625	20.19	480	49	113	8.43	20	S
IS: Acenaphthene-d10	38.5		3.850		98.3	50	200	0	0	
IS: Chrysene-d12	38.5		3.850		88.3	50	200	0	0	
IS: Naphthalene-d8	38.5		3.850		97.4	50	200	0	0	
IS: Perylene-d12	38.5		3.850		94.5	50	200	0	0	
IS: Phenanthrene-d10	38.5		3.850		84.7	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.797		0.9625		82.8	46	115	0	0	
Surr: 4-Terphenyl-d14	0.791		0.9625		82.2	58	133	0	0	

Sample ID **SBLK-160520**	Batch ID: **75218**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS8_160519B**	Analysis Date: **5/20/2016 10:28:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[a]pyrene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Sample ID **1605121-01AMS**	Batch ID: **75218**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160519B**	Analysis Date: **5/20/2016 11:42:00 AM**	Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[a]pyrene	41.3	0.485	0.9709	45.20	-405	50	125			S
Chrysene	40.6	0.485	0.9709	43.97	-344	57	118			S

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160519B

Sample ID **1605121-01AMS**	Batch ID: **75218**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160519B**	Analysis Date: **5/20/2016 11:42:00 AM**	Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	57.1	0.485	0.9709	58.17	-115	55	119			S
Pyrene	50.9	0.485	0.9709	52.68	-180	55	117			S
IS: Acenaphthene-d10	194		3.883		102	50	200			
IS: Chrysene-d12	194		3.883		87.4	50	200			
IS: Naphthalene-d8	194		3.883		95.6	50	200			
IS: Perylene-d12	194		3.883		88.7	50	200			
IS: Phenanthrene-d10	194		3.883		81.4	50	200			
Surr: 2-Fluorobiphenyl	0.865		0.9709		89.0	46	115			
Surr: 4-Terphenyl-d14	0.805		0.9709		83.0	58	133			

Sample ID **1605121-01AMSD**	Batch ID: **75218**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160519B**	Analysis Date: **5/20/2016 12:19:00 PM**	Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[a]pyrene	48.9	0.481	0.9625	45.20	385	50	125	16.9	20	S
Chrysene	48.5	0.481	0.9625	43.97	471	57	118	17.7	20	S
Fluoranthene	66.5	0.481	0.9625	58.17	865	55	119	15.3	20	S
Pyrene	59.7	0.481	0.9625	52.68	730	55	117	15.9	20	S
IS: Acenaphthene-d10	192		3.850		98.4	50	200	0	0	
IS: Chrysene-d12	192		3.850		85.3	50	200	0	0	
IS: Naphthalene-d8	192		3.850		93.6	50	200	0	0	
IS: Perylene-d12	192		3.850		88.3	50	200	0	0	
IS: Phenanthrene-d10	192		3.850		78.6	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.875		0.9625		91.0	46	115	0	0	
Surr: 4-Terphenyl-d14	0.804		0.9625		83.6	58	133	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160519B

Sample ID **ICV2-160519**	Batch ID: **R85895**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160519B**	Analysis Date: **5/19/2016 2:20:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.99	0.0100	2.000	0	99.4	80	120			
Acenaphthylene	1.99	0.0100	2.000	0	99.4	80	120			
Anthracene	1.83	0.0100	2.000	0	91.6	80	120			
Benzo[a]anthracene	2.10	0.0100	2.000	0	105	80	120			
Benzo[a]pyrene	2.11	0.0100	2.000	0	105	80	120			
Benzo[b]fluoranthene	2.11	0.0100	2.000	0	105	80	120			
Benzo[e]pyrene	2.10	0.0100	2.000	0	105	80	120			
Benzo[g,h,i]perylene	2.14	0.0100	2.000	0	107	80	120			
Benzo[j]fluoranthene	2.13	0.0100	2.000	0	106	80	120			N
Benzo[k]fluoranthene	2.16	0.0100	2.000	0	108	80	120			
Chrysene	2.09	0.0100	2.000	0	104	80	120			
Dibenz[a,h]anthracene	2.15	0.0100	2.000	0	108	80	120			
Fluoranthene	1.99	0.0100	2.000	0	99.6	80	120			
Fluorene	1.96	0.0100	2.000	0	98.1	80	120			
Indeno[1,2,3-cd]pyrene	2.13	0.0100	2.000	0	107	80	120			
Phenanthrene	1.87	0.0100	2.000	0	93.3	80	120			
Pyrene	1.99	0.0100	2.000	0	99.5	80	120			
IS: Acenaphthene-d10	4.00		4.000		102	50	200			
IS: Chrysene-d12	4.00		4.000		92.0	50	200			
IS: Naphthalene-d8	4.00		4.000		97.3	50	200			
IS: Perylene-d12	4.00		4.000		94.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		92.8	50	200			
Surr: 2-Fluorobiphenyl	1.98		2.000		99.1	65	120			
Surr: 4-Terphenyl-d14	2.00		2.000		100	65	120			

Sample ID **ICV3-160519**	Batch ID: **R85895**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160519B**	Analysis Date: **5/20/2016 1:26:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.01	0.0100	2.000	0	101	80	120			
Acenaphthylene	2.03	0.0100	2.000	0	102	80	120			
Anthracene	1.86	0.0100	2.000	0	92.8	80	120			
Benzo[a]anthracene	2.11	0.0100	2.000	0	106	80	120			
Benzo[a]pyrene	2.12	0.0100	2.000	0	106	80	120			
Benzo[b]fluoranthene	2.14	0.0100	2.000	0	107	80	120			
Benzo[e]pyrene	2.11	0.0100	2.000	0	105	80	120			
Benzo[g,h,i]perylene	2.15	0.0100	2.000	0	107	80	120			
Benzo[j]fluoranthene	2.10	0.0100	2.000	0	105	80	120			N
Benzo[k]fluoranthene	2.12	0.0100	2.000	0	106	80	120			
Chrysene	2.11	0.0100	2.000	0	105	80	120			
Dibenz[a,h]anthracene	2.19	0.0100	2.000	0	109	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160519B

Sample ID **ICV3-160519**	Batch ID: **R85895**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160519B**	Analysis Date: **5/20/2016 1:26:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.04	0.0100	2.000	0	102	80	120			
Fluorene	1.90	0.0100	2.000	0	95.1	80	120			
Indeno[1,2,3-cd]pyrene	2.16	0.0100	2.000	0	108	80	120			
Phenanthrene	1.86	0.0100	2.000	0	93.0	80	120			
Pyrene	2.05	0.0100	2.000	0	103	80	120			
IS: Acenaphthene-d10	4.00		4.000		96.9	50	200			
IS: Chrysene-d12	4.00		4.000		84.6	50	200			
IS: Naphthalene-d8	4.00		4.000		95.2	50	200			
IS: Perylene-d12	4.00		4.000		90.2	50	200			
IS: Phenanthrene-d10	4.00		4.000		81.7	50	200			
Surr: 2-Fluorobiphenyl	2.01		2.000		101	65	120			
Surr: 4-Terphenyl-d14	1.95		2.000		97.6	65	120			

Sample ID **ICV-160520**	Batch ID: **R85895**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160519B**	Analysis Date: **5/20/2016 9:14:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[a]pyrene	2.12	0.0100	2.000	0	106	80	120			
Chrysene	2.13	0.0100	2.000	0	107	80	120			
Fluoranthene	2.08	0.0100	2.000	0	104	80	120			
Pyrene	2.10	0.0100	2.000	0	105	80	120			
IS: Acenaphthene-d10	4.00		4.000		99.4	50	200			
IS: Chrysene-d12	4.00		4.000		88.2	50	200			
IS: Naphthalene-d8	4.00		4.000		94.9	50	200			
IS: Perylene-d12	4.00		4.000		89.9	50	200			
IS: Phenanthrene-d10	4.00		4.000		85.8	50	200			
Surr: 2-Fluorobiphenyl	2.06		2.000		103	65	120			
Surr: 4-Terphenyl-d14	2.01		2.000		100	65	120			

Sample ID **ICV2-160520**	Batch ID: **R85895**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160519B**	Analysis Date: **5/20/2016 7:07:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[a]pyrene	2.11	0.0100	2.000	0	105	50	150			
Chrysene	2.13	0.0100	2.000	0	107	50	150			
Fluoranthene	2.08	0.0100	2.000	0	104	50	150			
Pyrene	2.07	0.0100	2.000	0	104	50	150			
IS: Acenaphthene-d10	4.00		4.000		96.0	50	200			
IS: Chrysene-d12	4.00		4.000		83.7	50	200			
IS: Naphthalene-d8	4.00		4.000		94.0	50	200			
IS: Perylene-d12	4.00		4.000		84.8	50	200			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160519B

Sample ID **ICV2-160520**	Batch ID: **R85895**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**		
SampType: **CCV**	Run ID: **GCMS8_160519B**	Analysis Date: **5/20/2016 7:07:00 PM**	Prep Date:		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
IS: Phenanthrene-d10	4.00		4.000		84.7	50	200			
Surr: 2-Fluorobiphenyl	2.02		2.000		101	50	150			
Surr: 4-Terphenyl-d14	2.06		2.000		103	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

The QC data in batch 75192 applies to the following samples: 1605098-01A, 1605098-02A, 1605098-03A, 1605098-04A, 1605098-05A, 1605098-06A, 1605098-07A, 1605098-08A, 1605098-09A, 1605098-10A, 1605098-11A, 1605098-17A

Sample ID **LCS-75192** Batch ID: **75192** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160520A** Analysis Date: **5/20/2016 9:50:00 AM** Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.752	0.0100	1.000	0	75.2	44	111			
Acenaphthylene	0.763	0.0100	1.000	0	76.3	39	116			
Anthracene	0.719	0.0100	1.000	0	71.9	50	114			
Benzo[a]anthracene	0.755	0.0100	1.000	0	75.5	54	122			
Benzo[a]pyrene	0.739	0.0100	1.000	0	73.9	50	125			
Benzo[b]fluoranthene	0.758	0.0100	1.000	0	75.8	53	128			
Benzo[e]pyrene	0.828	0.0100	1.000	0	82.8	43	140			
Benzo[g,h,i]perylene	0.762	0.0100	1.000	0	76.2	49	127			
Benzo[j]fluoranthene	0.774	0.0100	1.000	0	77.4	45	125			N
Benzo[k]fluoranthene	0.768	0.0100	1.000	0	76.8	56	123			
Chrysene	0.757	0.0100	1.000	0	75.7	57	118			
Dibenz[a,h]anthracene	0.771	0.0100	1.000	0	77.1	50	129			
Fluoranthene	0.811	0.0100	1.000	0	81.1	55	119			
Fluorene	0.715	0.0100	1.000	0	71.5	47	114			
Indeno[1,2,3-cd]pyrene	0.771	0.0100	1.000	0	77.1	49	130			
Phenanthrene	0.722	0.0100	1.000	0	72.2	49	113			
Pyrene	0.816	0.0100	1.000	0	81.6	55	117			
IS: Acenaphthene-d10	4.00		4.000		86.3	50	200			
IS: Chrysene-d12	4.00		4.000		85.4	50	200			
IS: Naphthalene-d8	4.00		4.000		89.4	50	200			
IS: Perylene-d12	4.00		4.000		89.4	50	200			
IS: Phenanthrene-d10	4.00		4.000		73.7	50	200			
Surr: 2-Fluorobiphenyl	0.747		1.000		74.7	46	115			
Surr: 4-Terphenyl-d14	0.710		1.000		71.0	58	133			

Sample ID **MB-75192** Batch ID: **75192** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160520A** Analysis Date: **5/20/2016 10:28:00 AM** Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

Sample ID **MB-75192**	Batch ID: **75192**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS8_160520A**	Analysis Date: **5/20/2016 10:28:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		87.3	50	200			
IS: Chrysene-d12	4.00		4.000		82.6	50	200			
IS: Naphthalene-d8	4.00		4.000		88.8	50	200			
IS: Perylene-d12	4.00		4.000		85.9	50	200			
IS: Phenanthrene-d10	4.00		4.000		72.4	50	200			
Surr: 2-Fluorobiphenyl	0.757		1.000		75.7	46	115			
Surr: 4-Terphenyl-d14	0.726		1.000		72.6	58	133			

Sample ID **SBLK2-160520**	Batch ID: **75192**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS8_160520A**	Analysis Date: **5/20/2016 8:22:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100	0							U
Acenaphthylene	0.00750	0.0100	0							U
Anthracene	0.00750	0.0100	0							U
Benzo[a]anthracene	0.00750	0.0100	0							U
Benzo[a]pyrene	0.00750	0.0100	0							U
Benzo[b]fluoranthene	0.00750	0.0100	0							U
Benzo[e]pyrene	0.00750	0.0100	0							U
Benzo[g,h,i]perylene	0.00750	0.0100	0							U
Benzo[j]fluoranthene	0.00750	0.0100	0							NU
Benzo[k]fluoranthene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Dibenz[a,h]anthracene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Fluorene	0.00750	0.0100	0							U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100	0							U
Phenanthrene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

Sample ID **1605098-17AMS**	Batch ID: **75192**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160520A**	Analysis Date: **5/21/2016 3:50:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.831	0.0951	0.9515	0.1082	76.0	44	111			
Acenaphthylene	0.749	0.0951	0.9515	0	78.7	39	116			
Anthracene	1.18	0.0951	0.9515	0.5968	60.9	50	114			
Benzo[a]anthracene	2.53	0.0951	0.9515	2.125	42.4	54	122			S
Benzo[a]pyrene	2.62	0.0951	0.9515	2.203	44.2	50	125			S
Benzo[b]fluoranthene	2.44	0.0951	0.9515	1.963	50.6	53	128			S
Benzo[e]pyrene	2.10	0.0951	0.9515	1.494	63.3	43	140			
Benzo[g,h,i]perylene	1.98	0.0951	0.9515	1.446	56.0	49	127			
Benzo[j]fluoranthene	1.61	0.0951	0.9515	1.018	62.3	45	125			N
Benzo[k]fluoranthene	1.60	0.0951	0.9515	1.017	61.3	56	123			
Chrysene	2.83	0.0951	0.9515	2.446	40.2	57	118			S
Dibenz[a,h]anthracene	0.847	0.0951	0.9515	0.2736	60.2	50	129			
Fluoranthene	5.04	0.0951	0.9515	5.136	-10.1	55	119			S
Fluorene	0.764	0.0951	0.9515	0.09971	69.8	47	114			
Indeno[1,2,3-cd]pyrene	1.80	0.0951	0.9515	1.225	60.0	49	130			
Phenanthrene	2.87	0.0951	0.9515	2.655	22.9	49	113			S
Pyrene	4.28	0.0951	0.9515	4.166	11.9	55	117			S
IS: Acenaphthene-d10	38.1		3.806		99.2	50	200			
IS: Chrysene-d12	38.1		3.806		85.8	50	200			
IS: Naphthalene-d8	38.1		3.806		94.9	50	200			
IS: Perylene-d12	38.1		3.806		88.7	50	200			
IS: Phenanthrene-d10	38.1		3.806		79.4	50	200			
Surr: 2-Fluorobiphenyl	0.814		0.9515		85.6	46	115			
Surr: 4-Terphenyl-d14	0.692		0.9515		72.8	58	133			

Sample ID **1605098-17AMSD**	Batch ID: **75192**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160520A**	Analysis Date: **5/21/2016 4:27:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.947	0.0954	0.9542	0.1082	87.9	44	111	13.1	20	
Acenaphthylene	0.779	0.0954	0.9542	0	81.6	39	116	3.94	20	
Anthracene	1.75	0.0954	0.9542	0.5968	120	50	114	39.0	20	SR
Benzo[a]anthracene	4.01	0.0954	0.9542	2.125	198	54	122	45.3	20	SR
Benzo[a]pyrene	3.97	0.0954	0.9542	2.203	185	50	125	40.9	20	SR
Benzo[b]fluoranthene	3.67	0.0954	0.9542	1.963	179	53	128	40.2	20	SR
Benzo[e]pyrene	2.95	0.0954	0.9542	1.494	153	43	140	33.9	20	SR
Benzo[g,h,i]perylene	2.69	0.0954	0.9542	1.446	131	49	127	30.5	20	SR
Benzo[j]fluoranthene	2.29	0.0954	0.9542	1.018	133	45	125	34.9	20	SRN
Benzo[k]fluoranthene	2.18	0.0954	0.9542	1.017	122	56	123	30.8	20	R
Chrysene	4.41	0.0954	0.9542	2.446	206	57	118	43.8	20	SR
Dibenz[a,h]anthracene	1.18	0.0954	0.9542	0.2736	94.8	50	129	32.8	20	R

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

Sample ID **1605098-17AMSD**	Batch ID: **75192**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160520A**	Analysis Date: **5/21/2016 4:27:00 AM**	Prep Date: **5/17/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	8.88	0.0954	0.9542	5.136	392	55	119	55.1	20	SR
Fluorene	0.890	0.0954	0.9542	0.09971	82.8	47	114	15.3	20	
Indeno[1,2,3-cd]pyrene	2.46	0.0954	0.9542	1.225	130	49	130	31.3	20	R
Phenanthrene	5.08	0.0954	0.9542	2.655	254	49	113	55.5	20	SR
Pyrene	7.31	0.0954	0.9542	4.166	329	55	117	52.3	20	SR
IS: Acenaphthene-d10	38.2		3.817		95.5	50	200	0	0	
IS: Chrysene-d12	38.2		3.817		82.7	50	200	0	0	
IS: Naphthalene-d8	38.2		3.817		92.2	50	200	0	0	
IS: Perylene-d12	38.2		3.817		84.0	50	200	0	0	
IS: Phenanthrene-d10	38.2		3.817		76.6	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.818		0.9542		85.7	46	115	0	0	
Surr: 4-Terphenyl-d14	0.728		0.9542		76.3	58	133	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

Sample ID **ICV-160520**	Batch ID: **R85908**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160520A**	Analysis Date: **5/20/2016 9:14:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.02	0.0100	2.000	0	101	80	120			
Acenaphthylene	2.04	0.0100	2.000	0	102	80	120			
Anthracene	1.86	0.0100	2.000	0	93.2	80	120			
Benzo[a]anthracene	2.15	0.0100	2.000	0	107	80	120			
Benzo[a]pyrene	2.12	0.0100	2.000	0	106	80	120			
Benzo[b]fluoranthene	2.15	0.0100	2.000	0	107	80	120			
Benzo[e]pyrene	2.13	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.13	0.0100	2.000	0	107	80	120			
Benzo[j]fluoranthene	2.15	0.0100	2.000	0	108	80	120			N
Benzo[k]fluoranthene	2.16	0.0100	2.000	0	108	80	120			
Chrysene	2.13	0.0100	2.000	0	107	80	120			
Dibenz[a,h]anthracene	2.15	0.0100	2.000	0	108	80	120			
Fluoranthene	2.08	0.0100	2.000	0	104	80	120			
Fluorene	1.90	0.0100	2.000	0	95.1	80	120			
Indeno[1,2,3-cd]pyrene	2.13	0.0100	2.000	0	107	80	120			
Phenanthrene	1.87	0.0100	2.000	0	93.3	80	120			
Pyrene	2.10	0.0100	2.000	0	105	80	120			
IS: Acenaphthene-d10	4.00		4.000		99.4	50	200			
IS: Chrysene-d12	4.00		4.000		88.2	50	200			
IS: Naphthalene-d8	4.00		4.000		94.9	50	200			
IS: Perylene-d12	4.00		4.000		89.9	50	200			
IS: Phenanthrene-d10	4.00		4.000		85.8	50	200			
Surr: 2-Fluorobiphenyl	2.06		2.000		103	65	120			
Surr: 4-Terphenyl-d14	2.01		2.000		100	65	120			

Sample ID **ICV2-160520**	Batch ID: **R85908**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160520A**	Analysis Date: **5/20/2016 7:07:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.02	0.0100	2.000	0	101	80	120			
Acenaphthylene	2.04	0.0100	2.000	0	102	80	120			
Anthracene	1.85	0.0100	2.000	0	92.3	80	120			
Benzo[a]anthracene	2.13	0.0100	2.000	0	107	80	120			
Benzo[a]pyrene	2.11	0.0100	2.000	0	105	80	120			
Benzo[b]fluoranthene	2.15	0.0100	2.000	0	107	80	120			
Benzo[e]pyrene	2.12	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.11	0.0100	2.000	0	106	80	120			
Benzo[j]fluoranthene	2.11	0.0100	2.000	0	105	80	120			N
Benzo[k]fluoranthene	2.12	0.0100	2.000	0	106	80	120			
Chrysene	2.13	0.0100	2.000	0	107	80	120			
Dibenz[a,h]anthracene	2.15	0.0100	2.000	0	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160520A

Sample ID **ICV2-160520**	Batch ID: **R85908**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160520A**	Analysis Date: **5/20/2016 7:07:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.08	0.0100	2.000	0	104	80	120			
Fluorene	1.94	0.0100	2.000	0	96.9	80	120			
Indeno[1,2,3-cd]pyrene	2.14	0.0100	2.000	0	107	80	120			
Phenanthrene	1.88	0.0100	2.000	0	94.0	80	120			
Pyrene	2.07	0.0100	2.000	0	104	80	120			
IS: Acenaphthene-d10	4.00		4.000		96.0	50	200			
IS: Chrysene-d12	4.00		4.000		83.7	50	200			
IS: Naphthalene-d8	4.00		4.000		94.0	50	200			
IS: Perylene-d12	4.00		4.000		84.8	50	200			
IS: Phenanthrene-d10	4.00		4.000		84.7	50	200			
Surr: 2-Fluorobiphenyl	2.02		2.000		101	65	120			
Surr: 4-Terphenyl-d14	2.06		2.000		103	65	120			

Sample ID **CCV-160520**	Batch ID: **R85908**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160520A**	Analysis Date: **5/21/2016 5:05:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.999	0.0100	1.000	0	99.9	50	150			
Acenaphthylene	1.02	0.0100	1.000	0	102	50	150			
Anthracene	0.924	0.0100	1.000	0	92.4	50	150			
Benzo[a]anthracene	1.01	0.0100	1.000	0	101	50	150			
Benzo[a]pyrene	0.997	0.0100	1.000	0	99.7	50	150			
Benzo[b]fluoranthene	0.995	0.0100	1.000	0	99.5	50	150			
Benzo[e]pyrene	1.00	0.0100	1.000	0	100	50	150			
Benzo[g,h,i]perylene	1.00	0.0100	1.000	0	100	50	150			
Benzo[j]fluoranthene	0.999	0.0100	1.000	0	99.9	50	150			N
Benzo[k]fluoranthene	1.01	0.0100	1.000	0	101	50	150			
Chrysene	1.01	0.0100	1.000	0	101	50	150			
Dibenz[a,h]anthracene	1.00	0.0100	1.000	0	100	50	150			
Fluoranthene	0.997	0.0100	1.000	0	99.7	50	150			
Fluorene	0.930	0.0100	1.000	0	93.0	50	150			
Indeno[1,2,3-cd]pyrene	1.01	0.0100	1.000	0	101	50	150			
Phenanthrene	0.944	0.0100	1.000	0	94.4	50	150			
Pyrene	0.997	0.0100	1.000	0	99.7	50	150			
IS: Acenaphthene-d10	4.00		4.000		107	50	200			
IS: Chrysene-d12	4.00		4.000		87.5	50	200			
IS: Naphthalene-d8	4.00		4.000		102	50	200			
IS: Perylene-d12	4.00		4.000		88.7	50	200			
IS: Phenanthrene-d10	4.00		4.000		87.3	50	200			
Surr: 2-Fluorobiphenyl	1.05		1.000		105	50	150			
Surr: 4-Terphenyl-d14	0.996		1.000		99.6	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160523A

The QC data in batch 75217 applies to the following samples: 1605098-12A, 1605098-13A, 1605098-14A, 1605098-15A, 1605098-16A, 1605098-18A, 1605098-19A, 1605098-20A, 1605098-21A, 1605098-22A, 1605098-23A, 1605098-24A, 1605098-25A, 1605098-26A, 1605098-27A, 1605098-28A, 1605098-29A, 1605098-30A

Sample ID **LCS-75217** Batch ID: **75217** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **LCS** Run ID: **GCMS8_160523A** Analysis Date: **5/23/2016 9:42:00 AM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.776	0.0100	1.000	0	77.6	44	111			
Acenaphthylene	0.787	0.0100	1.000	0	78.7	39	116			
Anthracene	0.750	0.0100	1.000	0	75.0	50	114			
Benzo[a]anthracene	0.804	0.0100	1.000	0	80.4	54	122			
Benzo[a]pyrene	0.772	0.0100	1.000	0	77.2	50	125			
Benzo[b]fluoranthene	0.806	0.0100	1.000	0	80.6	53	128			
Benzo[e]pyrene	0.880	0.0100	1.000	0	88.0	43	140			
Benzo[g,h,i]perylene	0.799	0.0100	1.000	0	79.9	49	127			
Benzo[j]fluoranthene	0.818	0.0100	1.000	0	81.8	45	125			N
Benzo[k]fluoranthene	0.800	0.0100	1.000	0	80.0	56	123			
Chrysene	0.813	0.0100	1.000	0	81.3	57	118			
Dibenz[a,h]anthracene	0.806	0.0100	1.000	0	80.6	50	129			
Fluoranthene	0.854	0.0100	1.000	0	85.4	55	119			
Fluorene	0.748	0.0100	1.000	0	74.8	47	114			
Indeno[1,2,3-cd]pyrene	0.809	0.0100	1.000	0	80.9	49	130			
Phenanthrene	0.762	0.0100	1.000	0	76.2	49	113			
Pyrene	0.857	0.0100	1.000	0	85.7	55	117			
IS: Acenaphthene-d10	4.00		4.000		88.3	50	200			
IS: Chrysene-d12	4.00		4.000		86.4	50	200			
IS: Naphthalene-d8	4.00		4.000		90.8	50	200			
IS: Perylene-d12	4.00		4.000		89.9	50	200			
IS: Phenanthrene-d10	4.00		4.000		75.9	50	200			
Surr: 2-Fluorobiphenyl	0.749		1.000		74.9	46	115			
Surr: 4-Terphenyl-d14	0.741		1.000		74.1	58	133			

Sample ID **MB-75217** Batch ID: **75217** TestNo: **SW8270D-LL** Units: **mg/Kg-dry**
SampType: **MBLK** Run ID: **GCMS8_160523A** Analysis Date: **5/23/2016 10:20:00 AM** Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100								U
Acenaphthylene	0.00750	0.0100								U
Anthracene	0.00750	0.0100								U
Benzo[a]anthracene	0.00750	0.0100								U
Benzo[a]pyrene	0.00750	0.0100								U
Benzo[b]fluoranthene	0.00750	0.0100								U
Benzo[e]pyrene	0.00750	0.0100								U
Benzo[g,h,i]perylene	0.00750	0.0100								U
Benzo[j]fluoranthene	0.00750	0.0100								NU
Benzo[k]fluoranthene	0.00750	0.0100								U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160523A

Sample ID **MB-75217**	Batch ID: **75217**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MBLK**	Run ID: **GCMS8_160523A**	Analysis Date: **5/23/2016 10:20:00 AM**	Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chrysene	0.00750	0.0100								U
Dibenz[a,h]anthracene	0.00750	0.0100								U
Fluoranthene	0.00750	0.0100								U
Fluorene	0.00750	0.0100								U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100								U
Phenanthrene	0.00750	0.0100								U
Pyrene	0.00750	0.0100								U
IS: Acenaphthene-d10	4.00		4.000		90.4	50	200			
IS: Chrysene-d12	4.00		4.000		84.1	50	200			
IS: Naphthalene-d8	4.00		4.000		90.7	50	200			
IS: Perylene-d12	4.00		4.000		87.3	50	200			
IS: Phenanthrene-d10	4.00		4.000		74.0	50	200			
Surr: 2-Fluorobiphenyl	0.788		1.000		78.8	46	115			
Surr: 4-Terphenyl-d14	0.758		1.000		75.8	58	133			

Sample ID **1605098-22AMS**	Batch ID: **75217**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160523A**	Analysis Date: **5/23/2016 6:25:00 PM**	Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.804	0.0968	0.9681	0	83.0	44	111			
Acenaphthylene	0.768	0.0968	0.9681	0	79.3	39	116			
Anthracene	0.790	0.0968	0.9681	0	81.6	50	114			
Benzo[a]anthracene	1.55	0.0968	0.9681	0.6327	94.4	54	122			
Benzo[a]pyrene	1.83	0.0968	0.9681	0.9601	89.8	50	125			
Benzo[b]fluoranthene	1.69	0.0968	0.9681	0.8726	84.0	53	128			
Benzo[e]pyrene	1.58	0.0968	0.9681	0.6912	92.0	43	140			
Benzo[g,h,i]perylene	1.49	0.0968	0.9681	0.7244	79.0	49	127			
Benzo[j]fluoranthene	1.21	0.0968	0.9681	0.3979	83.5	45	125			N
Benzo[k]fluoranthene	1.19	0.0968	0.9681	0.4215	79.2	56	123			
Chrysene	1.74	0.0968	0.9681	0.8235	94.4	57	118			
Dibenz[a,h]anthracene	0.842	0.0968	0.9681	0.08486	78.2	50	129			
Fluoranthene	2.10	0.0968	0.9681	0.9709	116	55	119			
Fluorene	0.710	0.0968	0.9681	0	73.3	47	114			
Indeno[1,2,3-cd]pyrene	1.36	0.0968	0.9681	0.5933	79.6	49	130			
Phenanthrene	1.07	0.0968	0.9681	0.2290	86.4	49	113			
Pyrene	2.02	0.0968	0.9681	0.9256	113	55	117			
IS: Acenaphthene-d10	38.7		3.872		103	50	200			
IS: Chrysene-d12	38.7		3.872		85.5	50	200			
IS: Naphthalene-d8	38.7		3.872		99.7	50	200			
IS: Perylene-d12	38.7		3.872		89.2	50	200			
IS: Phenanthrene-d10	38.7		3.872		79.1	50	200			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160523A

Sample ID **1605098-22AMS**	Batch ID: **75217**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MS**	Run ID: **GCMS8_160523A**	Analysis Date: **5/23/2016 6:25:00 PM**	Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorobiphenyl	0.801		0.9681		82.8	46	115			
Surr: 4-Terphenyl-d14	0.715		0.9681		73.8	58	133			

Sample ID **1605098-22AMSD**	Batch ID: **75217**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **MSD**	Run ID: **GCMS8_160523A**	Analysis Date: **5/23/2016 7:02:00 PM**	Prep Date: **5/18/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.790	0.0984	0.9843	0	80.3	44	111	1.75	20	
Acenaphthylene	0.769	0.0984	0.9843	0	78.1	39	116	0.122	20	
Anthracene	0.763	0.0984	0.9843	0	77.5	50	114	3.57	20	
Benzo[a]anthracene	1.33	0.0984	0.9843	0.6327	70.5	54	122	15.3	20	
Benzo[a]pyrene	1.61	0.0984	0.9843	0.9601	66.4	50	125	12.5	20	
Benzo[b]fluoranthene	1.54	0.0984	0.9843	0.8726	67.8	53	128	9.08	20	
Benzo[e]pyrene	1.45	0.0984	0.9843	0.6912	77.5	43	140	8.44	20	
Benzo[g,h,i]perylene	1.41	0.0984	0.9843	0.7244	69.2	49	127	5.82	20	
Benzo[j]fluoranthene	1.11	0.0984	0.9843	0.3979	72.5	45	125	8.17	20	N
Benzo[k]fluoranthene	1.10	0.0984	0.9843	0.4215	69.2	56	123	7.45	20	
Chrysene	1.54	0.0984	0.9843	0.8235	72.6	57	118	12.1	20	
Dibenz[a,h]anthracene	0.811	0.0984	0.9843	0.08486	73.8	50	129	3.77	20	
Fluoranthene	1.74	0.0984	0.9843	0.9709	78.0	55	119	18.7	20	
Fluorene	0.706	0.0984	0.9843	0	71.7	47	114	0.546	20	
Indeno[1,2,3-cd]pyrene	1.30	0.0984	0.9843	0.5933	71.6	49	130	4.89	20	
Phenanthrene	0.959	0.0984	0.9843	0.2290	74.1	49	113	10.5	20	
Pyrene	1.69	0.0984	0.9843	0.9256	78.1	55	117	17.6	20	
IS: Acenaphthene-d10	39.4		3.937		103	50	200	0	0	
IS: Chrysene-d12	39.4		3.937		85.2	50	200	0	0	
IS: Naphthalene-d8	39.4		3.937		99.1	50	200	0	0	
IS: Perylene-d12	39.4		3.937		89.2	50	200	0	0	
IS: Phenanthrene-d10	39.4		3.937		79.8	50	200	0	0	
Surr: 2-Fluorobiphenyl	0.795		0.9843		80.8	46	115	0	0	
Surr: 4-Terphenyl-d14	0.699		0.9843		71.0	58	133	0	0	

Sample ID **SB-160523**	Batch ID: **75217**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS8_160523A**	Analysis Date: **5/23/2016 9:31:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.00750	0.0100	0							U
Acenaphthylene	0.00750	0.0100	0							U
Anthracene	0.00750	0.0100	0							U
Benzo[a]anthracene	0.00750	0.0100	0							U
Benzo[a]pyrene	0.00750	0.0100	0							U

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160523A

Sample ID **SB-160523**	Batch ID: **75217**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **SBLK**	Run ID: **GCMS8_160523A**	Analysis Date: **5/23/2016 9:31:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo[b]fluoranthene	0.00750	0.0100	0							U
Benzo[e]pyrene	0.00750	0.0100	0							U
Benzo[g,h,i]perylene	0.00750	0.0100	0							U
Benzo[j]fluoranthene	0.00750	0.0100	0							NU
Benzo[k]fluoranthene	0.00750	0.0100	0							U
Chrysene	0.00750	0.0100	0							U
Dibenz[a,h]anthracene	0.00750	0.0100	0							U
Fluoranthene	0.00750	0.0100	0							U
Fluorene	0.00750	0.0100	0							U
Indeno[1,2,3-cd]pyrene	0.00750	0.0100	0							U
Phenanthrene	0.00750	0.0100	0							U
Pyrene	0.00750	0.0100	0							U
IS: Acenaphthene-d10	4.00		0							
IS: Chrysene-d12	4.00		0							
IS: Naphthalene-d8	4.00		0							
IS: Perylene-d12	4.00		0							
IS: Phenanthrene-d10	4.00		0							

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160523A

Sample ID **ICV-160523**	Batch ID: **R85951**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160523A**	Analysis Date: **5/23/2016 9:05:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.02	0.0100	2.000	0	101	80	120			
Acenaphthylene	2.04	0.0100	2.000	0	102	80	120			
Anthracene	1.85	0.0100	2.000	0	92.3	80	120			
Benzo[a]anthracene	2.13	0.0100	2.000	0	106	80	120			
Benzo[a]pyrene	2.13	0.0100	2.000	0	106	80	120			
Benzo[b]fluoranthene	2.12	0.0100	2.000	0	106	80	120			
Benzo[e]pyrene	2.12	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.14	0.0100	2.000	0	107	80	120			
Benzo[j]fluoranthene	2.13	0.0100	2.000	0	106	80	120			N
Benzo[k]fluoranthene	2.11	0.0100	2.000	0	105	80	120			
Chrysene	2.11	0.0100	2.000	0	105	80	120			
Dibenz[a,h]anthracene	2.17	0.0100	2.000	0	109	80	120			
Fluoranthene	2.05	0.0100	2.000	0	103	80	120			
Fluorene	2.00	0.0100	2.000	0	100	80	120			
Indeno[1,2,3-cd]pyrene	2.16	0.0100	2.000	0	108	80	120			
Phenanthrene	1.88	0.0100	2.000	0	94.2	80	120			
Pyrene	2.05	0.0100	2.000	0	103	80	120			
IS: Acenaphthene-d10	4.00		4.000		103	50	200			
IS: Chrysene-d12	4.00		4.000		97.0	50	200			
IS: Naphthalene-d8	4.00		4.000		103	50	200			
IS: Perylene-d12	4.00		4.000		101	50	200			
IS: Phenanthrene-d10	4.00		4.000		95.5	50	200			
Surr: 2-Fluorobiphenyl	1.95		2.000		97.7	65	120			
Surr: 4-Terphenyl-d14	1.99		2.000		99.3	65	120			

Sample ID **ICV2-160523**	Batch ID: **R85951**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160523A**	Analysis Date: **5/23/2016 8:17:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.03	0.0100	2.000	0	101	80	120			
Acenaphthylene	2.05	0.0100	2.000	0	103	80	120			
Anthracene	1.85	0.0100	2.000	0	92.6	80	120			
Benzo[a]anthracene	2.10	0.0100	2.000	0	105	80	120			
Benzo[a]pyrene	2.09	0.0100	2.000	0	104	80	120			
Benzo[b]fluoranthene	2.12	0.0100	2.000	0	106	80	120			
Benzo[e]pyrene	2.11	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.10	0.0100	2.000	0	105	80	120			
Benzo[j]fluoranthene	2.07	0.0100	2.000	0	104	80	120			N
Benzo[k]fluoranthene	2.07	0.0100	2.000	0	104	80	120			
Chrysene	2.10	0.0100	2.000	0	105	80	120			
Dibenz[a,h]anthracene	2.13	0.0100	2.000	0	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160523A

Sample ID **ICV2-160523**	Batch ID: **R85951**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160523A**	Analysis Date: **5/23/2016 8:17:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	2.00	0.0100	2.000	0	100	80	120			
Fluorene	1.89	0.0100	2.000	0	94.4	80	120			
Indeno[1,2,3-cd]pyrene	2.12	0.0100	2.000	0	106	80	120			
Phenanthrene	1.86	0.0100	2.000	0	93.1	80	120			
Pyrene	1.99	0.0100	2.000	0	99.5	80	120			
IS: Acenaphthene-d10	4.00		4.000		95.8	50	200			
IS: Chrysene-d12	4.00		4.000		78.3	50	200			
IS: Naphthalene-d8	4.00		4.000		89.2	50	200			
IS: Perylene-d12	4.00		4.000		81.8	50	200			
IS: Phenanthrene-d10	4.00		4.000		78.3	50	200			
Surr: 2-Fluorobiphenyl	2.17		2.000		108	65	120			
Surr: 4-Terphenyl-d14	1.96		2.000		98.0	65	120			

Sample ID **CCV1-160523**	Batch ID: **R85951**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160523A**	Analysis Date: **5/24/2016 1:52:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.00	0.0100	1.000	0	100	50	150			
Acenaphthylene	1.03	0.0100	1.000	0	103	50	150			
Anthracene	0.929	0.0100	1.000	0	92.9	50	150			
Benzo[a]anthracene	1.01	0.0100	1.000	0	101	50	150			
Benzo[a]pyrene	1.00	0.0100	1.000	0	100	50	150			
Benzo[b]fluoranthene	1.01	0.0100	1.000	0	101	50	150			
Benzo[e]pyrene	1.01	0.0100	1.000	0	101	50	150			
Benzo[g,h,i]perylene	1.01	0.0100	1.000	0	101	50	150			
Benzo[j]fluoranthene	0.998	0.0100	1.000	0	99.8	50	150			N
Benzo[k]fluoranthene	0.984	0.0100	1.000	0	98.4	50	150			
Chrysene	1.01	0.0100	1.000	0	101	50	150			
Dibenz[a,h]anthracene	1.02	0.0100	1.000	0	102	50	150			
Fluoranthene	0.978	0.0100	1.000	0	97.8	50	150			
Fluorene	0.932	0.0100	1.000	0	93.2	50	150			
Indeno[1,2,3-cd]pyrene	1.02	0.0100	1.000	0	102	50	150			
Phenanthrene	0.946	0.0100	1.000	0	94.6	50	150			
Pyrene	0.978	0.0100	1.000	0	97.8	50	150			
IS: Acenaphthene-d10	4.00		4.000		116	50	200			
IS: Chrysene-d12	4.00		4.000		93.0	50	200			
IS: Naphthalene-d8	4.00		4.000		110	50	200			
IS: Perylene-d12	4.00		4.000		97.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		92.7	50	200			
Surr: 2-Fluorobiphenyl	1.07		1.000		107	50	150			
Surr: 4-Terphenyl-d14	0.977		1.000		97.7	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160525A

Sample ID **ICV2-160525**	Batch ID: **R86005**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **ICV**	Run ID: **GCMS8_160525A**	Analysis Date: **5/25/2016 8:44:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.02	0.0100	2.000	0	101	80	120			
Acenaphthylene	2.07	0.0100	2.000	0	103	80	120			
Anthracene	1.83	0.0100	2.000	0	91.6	80	120			
Benzo[a]anthracene	2.12	0.0100	2.000	0	106	80	120			
Benzo[a]pyrene	2.10	0.0100	2.000	0	105	80	120			
Benzo[b]fluoranthene	2.10	0.0100	2.000	0	105	80	120			
Benzo[e]pyrene	2.13	0.0100	2.000	0	106	80	120			
Benzo[g,h,i]perylene	2.12	0.0100	2.000	0	106	80	120			
Benzo[j]fluoranthene	2.08	0.0100	2.000	0	104	80	120			N
Benzo[k]fluoranthene	2.07	0.0100	2.000	0	104	80	120			
Chrysene	2.12	0.0100	2.000	0	106	80	120			
Dibenz[a,h]anthracene	2.13	0.0100	2.000	0	107	80	120			
Fluoranthene	2.01	0.0100	2.000	0	100	80	120			
Fluorene	1.89	0.0100	2.000	0	94.4	80	120			
Indeno[1,2,3-cd]pyrene	2.13	0.0100	2.000	0	107	80	120			
Phenanthrene	1.88	0.0100	2.000	0	93.8	80	120			
Pyrene	2.01	0.0100	2.000	0	100	80	120			
IS: Acenaphthene-d10	4.00		4.000		101	50	200			
IS: Chrysene-d12	4.00		4.000		81.0	50	200			
IS: Naphthalene-d8	4.00		4.000		91.7	50	200			
IS: Perylene-d12	4.00		4.000		84.6	50	200			
IS: Phenanthrene-d10	4.00		4.000		81.6	50	200			
Surr: 2-Fluorobiphenyl	2.23		2.000		112	65	120			
Surr: 4-Terphenyl-d14	1.99		2.000		99.6	65	120			

Sample ID **CCV-160525**	Batch ID: **R86005**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160525A**	Analysis Date: **5/26/2016 2:55:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.01	0.0100	1.000	0	101	50	150			
Acenaphthylene	1.03	0.0100	1.000	0	103	50	150			
Anthracene	0.920	0.0100	1.000	0	92.0	50	150			
Benzo[a]anthracene	1.02	0.0100	1.000	0	102	50	150			
Benzo[a]pyrene	1.01	0.0100	1.000	0	101	50	150			
Benzo[b]fluoranthene	1.02	0.0100	1.000	0	102	50	150			
Benzo[e]pyrene	1.03	0.0100	1.000	0	103	50	150			
Benzo[g,h,i]perylene	1.00	0.0100	1.000	0	100	50	150			
Benzo[j]fluoranthene	1.01	0.0100	1.000	0	101	50	150			N
Benzo[k]fluoranthene	0.990	0.0100	1.000	0	99.0	50	150			
Chrysene	1.02	0.0100	1.000	0	102	50	150			
Dibenz[a,h]anthracene	1.01	0.0100	1.000	0	101	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS8_160525A

Sample ID **CCV-160525**	Batch ID: **R86005**	TestNo: **SW8270D-LL**	Units: **mg/Kg-dry**
SampType: **CCV**	Run ID: **GCMS8_160525A**	Analysis Date: **5/26/2016 2:55:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoranthene	1.00	0.0100	1.000	0	100	50	150			
Fluorene	0.926	0.0100	1.000	0	92.6	50	150			
Indeno[1,2,3-cd]pyrene	1.02	0.0100	1.000	0	102	50	150			
Phenanthrene	0.939	0.0100	1.000	0	93.9	50	150			
Pyrene	1.01	0.0100	1.000	0	101	50	150			
IS: Acenaphthene-d10	4.00		4.000		123	50	200			
IS: Chrysene-d12	4.00		4.000		99.1	50	200			
IS: Naphthalene-d8	4.00		4.000		115	50	200			
IS: Perylene-d12	4.00		4.000		102	50	200			
IS: Phenanthrene-d10	4.00		4.000		95.9	50	200			
Surr: 2-Fluorobiphenyl	1.11		1.000		111	50	150			
Surr: 4-Terphenyl-d14	0.982		1.000		98.2	50	150			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_160512A

The QC data in batch 75130 applies to the following samples: 1605098-31A, 1605098-34A, 1605098-37A, 1605098-40A, 1605098-41A

Sample ID	**1605098-40A DUP**	Batch ID:	**75130**	TestNo:	**D2216**	Units:	**WT%**
SampType:	**DUP**	Run ID:	**PMOIST_160512A**	Analysis Date:	**5/13/2016 12:52:20 PM**	Prep Date:	**5/12/2016**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	7.41	0	0	7.772				4.80	30	

Qualifiers:	B	Analyte detected in the associated Method Blank	DF	Dilution Factor	
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit	Page 56 of 58
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	
	RL	Reporting Limit	S	Spike Recovery outside control limits	
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified	

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_160519A

The QC data in batch 75243 applies to the following samples: 1605098-35A, 1605098-38A

Sample ID **1605187-01A DUP**	Batch ID: **75243**	TestNo: **D2216**		Units: **WT%**	
SampType: **DUP**	Run ID: **PMOIST_160519A**	Analysis Date: **5/20/2016 9:12:00 AM**		Prep Date: **5/19/2016**	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	3.08	0	0	3.135				1.83	30	

Qualifiers:	B	Analyte detected in the associated Method Blank	DF	Dilution Factor	
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit	Page 57 of 58
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	
	RL	Reporting Limit	S	Spike Recovery outside control limits	
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified	

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

ANALYTICAL QC SUMMARY REPORT

RunID: PMOIST_160526A

The QC data in batch 75367 applies to the following samples: 1605098-36A, 1605098-39A

Sample ID **1605252-04C DUP**	Batch ID: **75367**	TestNo: **D2216**		Units: **WT%**	
SampType: **DUP**	Run ID: **PMOIST_160526A**	Analysis Date: **5/27/2016 10:11:00 AM**		Prep Date: **5/26/2016**	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Percent Moisture	11.4	0	0	11.34				0.303	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

DHL Analytical, Inc.

Date: *06-Jun-16*

CLIENT: Arcadis
Work Order: 1605098
Project: Laredo SGR

MQL SUMMARY REPORT

TestNo: SW6020A	MDL	MQL
Analyte	**mg/Kg-dry**	**mg/Kg-dry**
Lead	0.100	0.300

TestNo: SW6020A	MDL	MQL
Analyte	**mg/L**	**mg/L**
Lead	0.000300	0.00100

TestNo: SW8270D-LL	MDL	MQL
Analyte	**mg/Kg-dry**	**mg/Kg-dry**
Acenaphthene	0.00500	0.0100
Acenaphthylene	0.00500	0.0100
Anthracene	0.00500	0.0100
Benzo[a]anthracene	0.00500	0.0100
Benzo[a]pyrene	0.00500	0.0100
Benzo[b]fluoranthene	0.00500	0.0100
Benzo[e]pyrene	0.00500	0.0100
Benzo[g,h,i]perylene	0.00500	0.0100
Benzo[j]fluoranthene	0.00500	0.0100
Benzo[k]fluoranthene	0.00500	0.0100
Chrysene	0.00500	0.0100
Dibenz[a,h]anthracene	0.00500	0.0100
Fluoranthene	0.00500	0.0100
Fluorene	0.00500	0.0100
Indeno[1,2,3-cd]pyrene	0.00500	0.0100
Phenanthrene	0.00500	0.0100
Pyrene	0.00500	0.0100

TestNo: SW8270D-LL	MDL	MQL
Analyte	**mg/L**	**mg/L**
Acenaphthene	0.0000250	0.0000500
Acenaphthylene	0.0000250	0.0000500
Anthracene	0.0000250	0.0000500
Benzo[a]anthracene	0.0000250	0.0000500
Benzo[a]pyrene	0.0000250	0.0000500
Benzo[b]fluoranthene	0.0000250	0.0000500
Benzo[e]pyrene	0.0000250	0.0000500
Benzo[g,h,i]perylene	0.0000250	0.0000500
Benzo[j]fluoranthene	0.0000250	0.0000500
Benzo[k]fluoranthene	0.0000250	0.0000500
Chrysene	0.0000250	0.0000500
Dibenz[a,h]anthracene	0.0000250	0.0000500
Fluoranthene	0.0000250	0.0000500
Fluorene	0.0000250	0.0000500
Indeno[1,2,3-cd]pyrene	0.0000250	0.0000500
Phenanthrene	0.0000250	0.0000500
Pyrene	0.0000250	0.0000500

Qualifiers: MQL -Method Quantitation Limit as defined by TRRP
MDL -Method Detection Limit as defined by TRRP

GCMS8
For

DHL Work Order
1605098

GCMS8_160513A
For

DHL Work Order
1605098

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Project Number(s): SEE RUN LOG.	**Run ID: GCMS8_160513A**
Batch Number(s): SEE RUN LOG.	**SOP:** ORGANICS-PAH-01
Matrix: SEE RUN LOG.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			X
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		X
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			X
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)		X		

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	X
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			X
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality	X			X
2. Are all corrective actions included?		X			
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?		X		X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___ LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	X High Levels of target analytes	___ Verify H2O/reagents are clean
X RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	X Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	X Other (describe below)	___ Accept data
___ Other (describe below)		

___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: **All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.**

RPD out of limits for 9 analytes in batch MS/MSD (75101).

ICV3 functions as CCV for this analytical run. This run did not meet ICV criteria, the rest of the batch 75151 will be rerun

1605071-25AMSD: % RPD out of limits for 9 analytes due to matrix. Recoveries ok for all target analytes. RPD is very low for surrogates and analytes with low results in the sample.

Analyst: Karyn Lane Date: 5/16/2016 9:44

Second-Level Review: Date: ***REVIEWED/APPROVED*** **05/16/2016**

By Sherri Herschmann at 2:57:11 PM, 5/16/2016

DHL Analytical, Inc.

Run ID: GCMS8_160513A **Run No.:** 85824

Analytical Run Date: 5/13/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 658 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160510.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160513	1	PAH_LL_SDOD1	TUNE	R85824	5/13/2016 1:38:00 PM		
ICV-160513	1	PAH_LL_SDOD1	ICV	R85824	5/13/2016 2:14:00 PM		
LCS-75101	1	PAH_LL_SDOD1	LCS	75101	5/13/2016 2:52:00 PM		
MB-75101	1	PAH_LL_SDOD1	MBLK	75101	5/13/2016 3:29:00 PM		
1605071-24A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 4:06:00 PM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605071-25A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 4:43:00 PM		
1605071-26A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 5:20:00 PM		
1605071-27A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 5:57:00 PM		
1605071-30A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 6:33:00 PM		
1605071-40A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 7:10:00 PM		
1605071-41A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 7:47:00 PM		
1605071-42A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 8:24:00 PM		
1605071-43A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 9:00:00 PM		
1605071-44A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 9:37:00 PM		
1605071-45A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 10:13:00 PM		
1605071-46A	10	PAH_LL_SDOD1	SAMP	75101	5/13/2016 10:50:00 PM		
1605071-25AMS	10	PAH_LL_SDOD1	MS	75101	5/13/2016 11:27:00 PM		
1605071-25AMSD	10	PAH_LL_SDOD1	MSD	75101	5/14/2016 12:03:00 AM		% RPD out of limits for 9 analytes due to matrix. Recoveries ok for all target analytes. RPD is very low for surrogates and analytes with low results in the sample.
DFTPP2-160513	1	PAH_LL_SDOD1	TUNE	R85824	5/14/2016 12:40:00 AM		
ICV2-160513	1	PAH_LL_SDOD1	ICV	R85824	5/14/2016 1:17:00 AM		
SBLK-160513	1	PAH_LL_SDOD1	SBLK	75101	5/14/2016 1:54:00 AM		
1605071-47A	10	PAH_LL_SDOD1	SAMP	75101	5/14/2016 2:31:00 AM		
1605071-48A	10	PAH_LL_SDOD1	SAMP	75101	5/14/2016 3:08:00 AM		
1605071-49A	10	PAH_LL_SDOD1	SAMP	75101	5/14/2016 3:45:00 AM		
LCS-75151	1	PAH_LL_SDOD1	LCS	75151	5/14/2016 4:22:00 AM		
MB-75151	1	PAH_LL_SDOD1	MBLK	75151	5/14/2016 5:00:00 AM		

REVIEWED/APPROVED

By Sherri Herschmann at 3:01:23 PM, 5/16/2016

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

DHL Analytical, Inc.

Run ID: GCMS8_160513A **Run No.:** 85824

1605097-21A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 5:36:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605097-23A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 6:13:00 AM		
1605098-31A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 6:51:00 AM		
1605098-34A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 7:28:00 AM		
1605098-37A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 8:05:00 AM		
1605096-23A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 8:43:00 AM		
1605096-24A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 9:20:00 AM		
1605096-14A	10	PAH_LL_SDOD1	SAMP	75151	5/14/2016 9:57:00 AM		
1605096-14AMS	10	PAH_LL_SDOD1	MS	75151	5/14/2016 10:33:00 AM		
1605096-14AMSD	10	PAH_LL_SDOD1	MSD	75151	5/14/2016 11:10:00 AM		
DFTPP3-160513	1	PAH_LL_SDOD1	TUNE	R85824	5/14/2016 11:47:00 AM		
ICV3-160513	1	PAH_LL_SDOD1	CCV	R85824	5/14/2016 12:24:00 PM		Does not meet ICV criteria - imported as a CCV to close out the batch. The rest of batch 75151 will be rerun.

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

REVIEWED/APPROVED

By Sherri Herschmann at 3:01:48 PM, 5/16/2016

Sequence Name: C:\msdchem\1\sequence\160513.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160513\
Instrument Name: GCMS #8
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

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

Line			Sample Name/Misc Info		
1)	Sample	1	16051301	DFTPPPAH	DFTPP-160513
2)	Sample	2	16051302	PAH160510	ICV-160513
3)	Sample	1	16051303	PAH160510	SBLK
4)	Sample	2	16051304	DFTPPPAH	DFTPP-160513
5)	Sample	3	16051305	PAH160510	ICV-160513
6)	Sample	4	16051306	PAH160510	LCS-75101
7)	Sample	5	16051307	PAH160510	MB-75101
8)	Sample	6	16051308	PAH160510	1605071-24A
9)	Sample	7	16051309	PAH160510	1605071-25A
10)	Sample	8	16051310	PAH160510	1605071-26A
11)	Sample	9	16051311	PAH160510	1605071-27A
12)	Sample	10	16051312	PAH160510	1605071-30A
13)	Sample	11	16051313	PAH160510	1605071-40A
14)	Sample	12	16051314	PAH160510	1605171-41A
15)	Sample	13	16051315	PAH160510	1605071-42A
16)	Sample	14	16051316	PAH160510	1605071-43A
17)	Sample	15	16051317	PAH160510	1605071-44A
18)	Sample	16	16051318	PAH160510	1605071-45A
19)	Sample	17	16051319	PAH160510	1605071-46A
20)	Sample	18	16051320	PAH160510	1605071-25AMS
21)	Sample	19	16051321	PAH160510	1605071-25AMSD
22)	Sample	20	16051322	DFTPPPAH	DFTPP2-160513
23)	Sample	21	16051323	PAH160510	ICV2-160513
24)	Sample	22	16051324	PAH160510	SBLK-160513
25)	Sample	23	16051325	PAH160510	1605071-47A
26)	Sample	24	16051326	PAH160510	1605071-48A
27)	Sample	25	16051327	PAH160510	1605071-49A
28)	Sample	26	16051328	PAH160510	LCS-75151
29)	Sample	27	16051329	PAH160510	MB-75151
30)	Sample	28	16051330	PAH160510	1605097-21A
31)	Sample	29	16051331	PAH160510	1605097-23A
32)	Sample	30	16051332	PAH160510	1605098-31A
33)	Sample	31	16051333	PAH160510	1605098-34A
34)	Sample	32	16051334	PAH160510	1605098-37A
35)	Sample	33	16051335	PAH160510	1605096-23A
36)	Sample	34	16051336	PAH160510	1605096-24A
37)	Sample	35	16051337	PAH160510	1605096-14A
38)	Sample	36	16051338	PAH160510	1605096-14AMS
39)	Sample	37	16051339	PAH160510	1605096-14AMSD
40)	Sample	20	16051340	DFTPPPAH	DFTPP3-160513
41)	Sample	21	16051341	PAH160510	ICV3-160513
~~42)~~	~~Sample~~	~~22~~	~~16051342~~	~~PAH160510~~	~~SBLK-160513~~
~~43)~~	~~Sample~~	~~38~~	~~16051343~~	~~PAH160510~~	~~1605096-01A~~

Remainder of sequence will be rerun. ICV3 does not meet ICV specifications and if imported as a CCV.

Sequence Name: C:\msdchem\1\sequence\160513.S

	Line	Type	Vial	DataFile	Method	Sample Name
44)		Sample	39	16051344	PAH160510	1605096-02A
45)		Sample	40	16051345	PAH160510	1605096-03A
46)		Sample	41	16051346	PAH160510	1605096-13A
47)		Sample	42	16051347	PAH160510	1605096-15A
48)		Sample	43	16051348	PAH160510	1605096-16A
49)		Sample	44	16051349	PAH160510	1605096-17A
50)		Sample	45	16051350	PAH160510	1605096-18A
51)		Sample	46	16051351	PAH160510	1605096-19A
52)		Sample	47	16051352	PAH160510	1605096-20A
53)		Sample	48	16051353	PAH160510	1605096-21A
54)		Sample	49	16051354	PAH160510	1605096-22A
55)		Sample	50	16051355	PAH160510	CCV-160513

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 10:10:34 AM**
Digestion:
Prep End Date: **5/13/2016 2:30:00 PM**

Prep Batch **75151** Prep Code: **3550_PAHDOD** Technician: **Alex Robbins**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-01A	Soil		10.05	10	0.995	1 of 1	
1605096-02A	Soil		10.05	10	0.995	1 of 1	
1605096-03A	Soil		10.04	10	0.996	1 of 1	
1605096-13A	Soil		10.24	10	0.977	1 of 1	
1605096-14A	Soil		10.07	10	0.993	1 of 3	
1605096-14AMS	Soil		10.23	10	0.978	1 of	
1605096-14AMSD	Soil		10.25	10	0.976	12 of	
1605096-15A	Soil		10	10	1.000	1 of 1	
1605096-16A	Soil		10.02	10	0.998	1 of 1	
1605096-17A	Soil		10.09	10	0.991	1 of 1	
1605096-18A	Soil		10.11	10	0.989	1 of 1	
1605096-19A	Soil		10.11	10	0.989	1 of 1	
1605096-20A	Soil		10.2	10	0.980	1 of 1	
1605096-21A	Soil		10.11	10	0.989	1 of 1	
1605096-22A	Soil		10.59	10	0.944	1 of 1	
1605096-23A	Soil		10.06	10	0.994	1 of 1	
1605096-24A	Soil		10.15	10	0.985	1 of 1	
1605097-21A	Soil		10.44	10	0.958	1 of 1	
1605097-23A	Soil		10.06	10	0.994	1 of 1	
1605098-31A	Soil		10.05	10	0.995	1 of 1	
1605098-34A	Soil		10.08	10	0.992	1 of 1	
1605098-37A	Soil		10.09	10	0.991	1 of 1	
LCS-75151	Soil		10	10	1.000	of	
MB-75151	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED/APPROVED

By Sherri Herschmann at 3:13:11 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 10:10:34 AM**
Digestion:
Prep End Date: 5/13/16 ~~12:24 PM~~ 2:30PM

Prep Batch **75151** Prep Code: **3550_PAHDOD** Technician: **ADMIN**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-01A	Soil		10	10.05	1.000	1 of 1	
1605096-02A	Soil		10	10.05	1.000	1 of 1	
1605096-03A	Soil		10	10.04	1.000	1 of 1	
1605096-13A	Soil		10	10.24	1.000	1 of 1	
1605096-14A	Soil		10	10.07	1.000	1 of 3	
1605096-14AMS	Soil		10	10.23	1.000	1 of	
1605096-14AMSD	Soil		10	10.25	1.000	1,2 of	
1605096-15A	Soil		10	10.00	1.000	1 of 1	
1605096-16A	Soil		10	10.02	1.000	1 of 1	
1605096-17A	Soil		10	10.09	1.000	1 of 1	
1605096-18A	Soil		10	10.11	1.000	1 of 1	
1605096-19A	Soil		10	10.11	1.000	1 of 1	
1605096-20A	Soil		10	10.20	1.000	1 of 1	
1605096-21A	Soil		10	10.11	1.000	1 of 1	
1605096-22A	Soil		10	10.59	1.000	1 of 1	
1605096-23A	Soil		10	10.06	1.000	1 of 1	
1605096-24A	Soil		10	10.15	1.000	1 of 1	
1605097-21A	Soil		10	10.44	1.000	1 of 1	
1605097-23A	Soil		10	10.00	1.000	1 of 1	
1605098-31A	Soil		10	10.05	1.000	1 of 1	
1605098-34A	Soil		10	10.08	1.000	1 of 1	
1605098-37A	Soil		10	10.09	1.000	1 of 1	
LCS-75151	Soil		10	10	1.000	of	
MB-75151	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
9927	purified sodium sulfate	10	g	07/04/2016
10169	Methylene Chloride	8	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.25	08/08/2016

REVIEWED/APPROVED
By Sherri Herschmann at 3:32:25 PM, 5/16/2016

5/13/16 AR 5/13/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 7:00:00 PM**
Digestion: **Start: 5/10/2016 8:00:00 PM / Stop: 5/12/2016 9:00:00 AM**
Prep End Date: **5/12/2016 1:11:38 PM**

Prep Batch **75083** Prep Code: **ISM250_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605096-01A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-02A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-03A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-13A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-14A	Soil		0	0	#Num!		of	3	
	Sample has grass in it								
1605096-15A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-38A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-39A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-40A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-41A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-42A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								
1605096-43A	Soil		0	0	#Num!	1	of	1	
	Sample has grass in it								

REVIEWED/APPROVED

By Sherri Herschmann at 3:13:42 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 7:00:00 PM**
Digestion: **Start: 5/10/2016 8:30:00 PM / Stop: 5/12/2016 9:00:00 AM**
Prep End Date: **5/12/2016 5:30:00 PM**

Prep Batch **75084** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #			Cleanup
1605096-16A	Soil		0	0	#Num!	1	of	1	
1605096-17A	Soil		0	0	#Num!	1	of	1	
1605096-18A	Soil		0	0	#Num!	1	of	1	
1605096-19A	Soil		0	0	#Num!	1	of	1	
1605096-20A	Soil		0	0	#Num!	1	of	1	
1605096-21A	Soil		0	0	#Num!	1	of	1	
1605096-22A	Soil		0	0	#Num!	1	of	1	
1605096-23A	Soil		0	0	#Num!	1	of	1	
1605096-24A	Soil		0	0	#Num!	1	of	1	
1605096-25A	Soil		0	0	#Num!	1	of	1	
1605096-26A	Soil		0	0	#Num!	1	of	1	
1605096-27A	Soil		0	0	#Num!	1	of	1	
1605096-28A	Soil		0	0	#Num!	1	of	1	
1605096-29A	Soil		0	0	#Num!	1	of	1	
1605096-30A	Soil		0	0	#Num!	1	of	1	
1605096-45A	Soil		0	0	#Num!	1	of	1	
1605096-46A	Soil		0	0	#Num!	1	of	1	
1605096-47A	Soil		0	0	#Num!	1	of	1	
1605096-48A	Soil		0	0	#Num!	1	of	1	
1605096-49A	Soil		0	0	#Num!	1	of	1	
1605096-50A	Soil		0	0	#Num!	1	of	1	
1605096-51A	Soil		0	0	#Num!	1	of	1	
1605096-52A	Soil		0	0	#Num!		of	3	
1605096-53A	Soil		0	0	#Num!	1	of	1	
1605096-54A	Soil		0	0	#Num!	1	of	1	
1605096-55A	Soil		0	0	#Num!	1	of	1	
1605096-56A	Soil		0	0	#Num!	1	of	1	

REVIEWED/APPROVED

By Sherri Herschmann at 3:13:45 PM, 5/16/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/10/2016 7:00:00 PM**
Digestion: **Start: 5/10/2016 8:30:00 PM / Stop: 5/12/2016 9:00:00 AM**
Prep End Date: **5/12/2016 5:30:00 PM**

Prep Factor Units: **mL/**

Prep Batch **75084** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605096-57A	Soil		0	0	#Num!	1 of 1	
1605096-58A	Soil		0	0	#Num!	1 of 1	
1605096-59A	Soil		0	0	#Num!	1 of 1	
1605096-60A	Soil		0	0	#Num!	1 of 1	
1605096-61A	Soil		0	0	#Num!	1 of 1	
1605096-62A	Soil		0	0	#Num!	1 of 1	
1605096-63A	Soil		0	0	#Num!	1 of 1	
1605096-64A	Soil		0	0	#Num!	1 of 1	
1605096-65A	Soil		0	0	#Num!	1 of 1	
1605096-66A	Soil		0	0	#Num!	1 of 1	
1605096-67A	Soil		0	0	#Num!	1 of 1	
1605096-68A	Soil		0	0	#Num!	1 of 1	
1605096-69A	Soil		0	0	#Num!	1 of 1	
1605096-70A	Soil		0	0	#Num!	1 of 1	
1605096-71A	Soil		0	0	#Num!	1 of 1	
1605096-72A	Soil		0	0	#Num!	1 of 1	
1605096-73A	Soil		0	0	#Num!	1 of 1	
1605096-74A	Soil		0	0	#Num!	1 of 1	

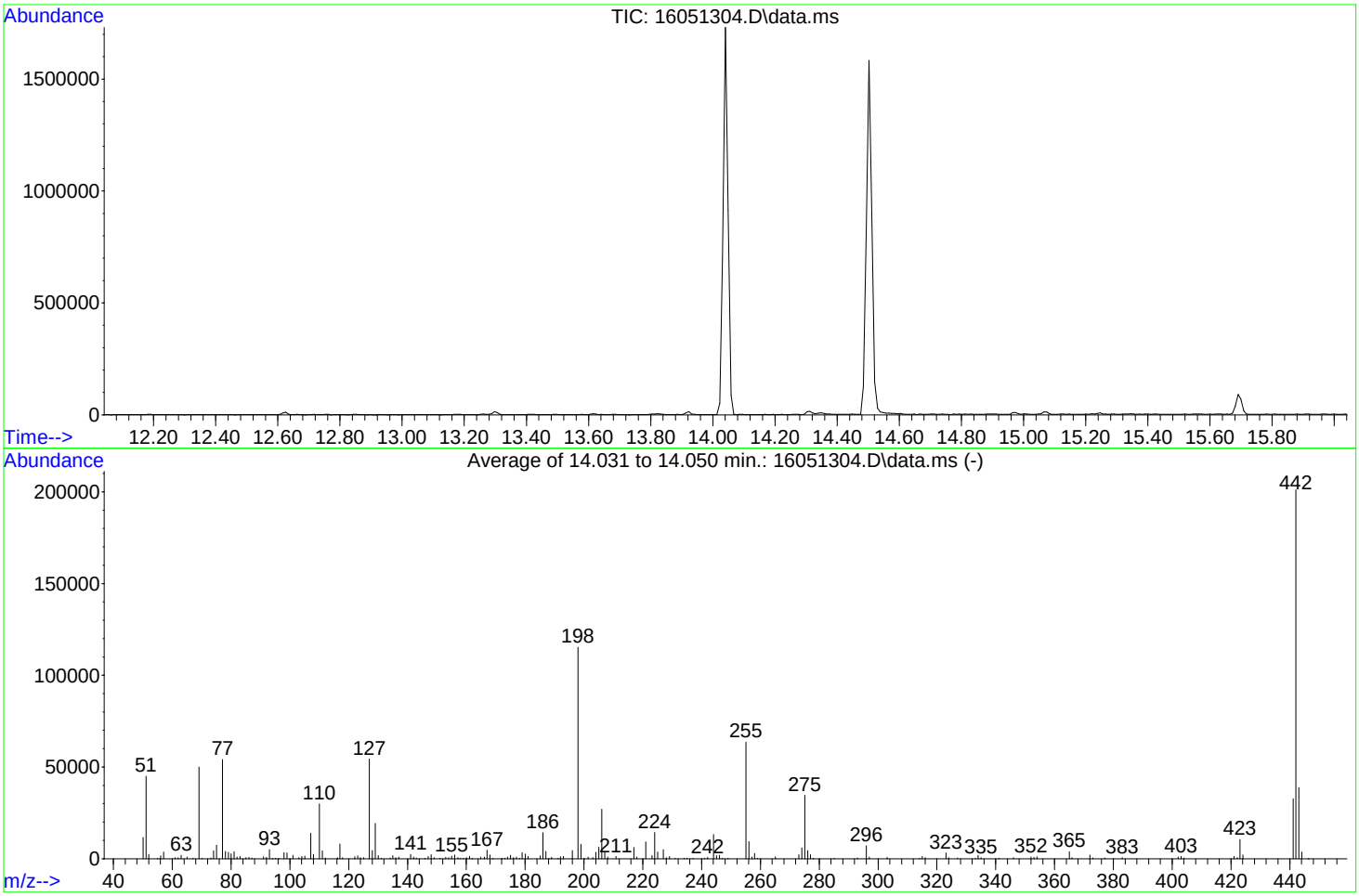
REVIEWED/APPROVED

By Sherri Herschmann at 3:13:47 PM, 5/16/2016

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051304.D
Acq On : 13 May 2016 1:38 pm
Operator :
Sample : DFTPP-160513
Misc : TUNE
ALS Vial : 2 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

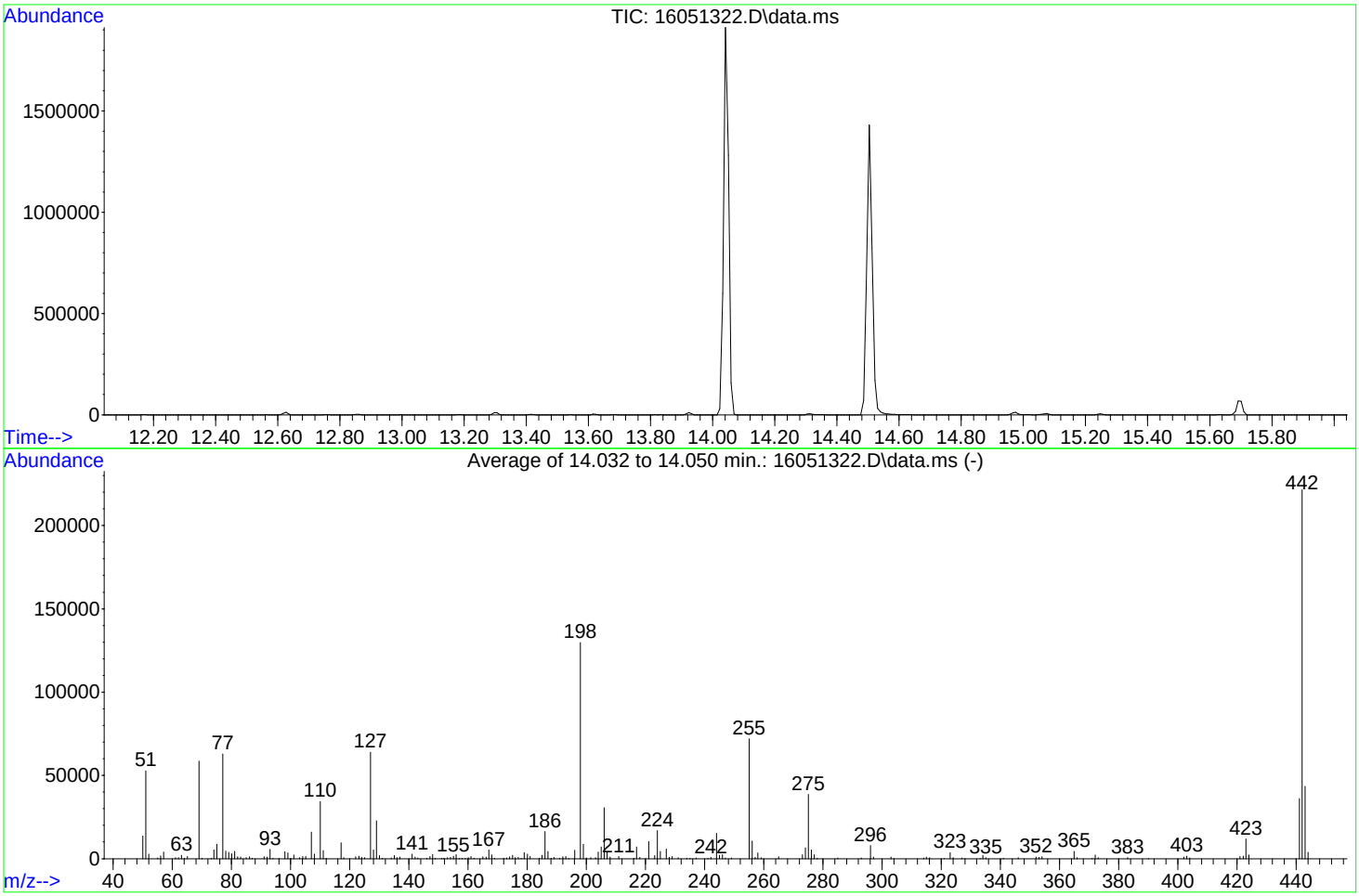
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	39.0	44991	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.4	50042	PASS
70	69	0.00	2	0.4	188	PASS
127	198	10	80	47.1	54384	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	115349	PASS
199	198	5	9	6.8	7870	PASS
275	198	10	60	29.9	34527	PASS
365	198	1	200	3.3	3797	PASS
441	442	0.01	24	16.2	32591	PASS
442	198	50	400	174.4	201200	PASS
443	442	15	24	19.3	38843	PASS

REVIEWED/APPROVED
By Sherri Herschmann at 3:14:07 PM, 5/16/2016

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051322.D
Acq On : 14 May 2016 12:40 am
Operator :
Sample : DFTPP2-160513
Misc : TUNE
ALS Vial : 20 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

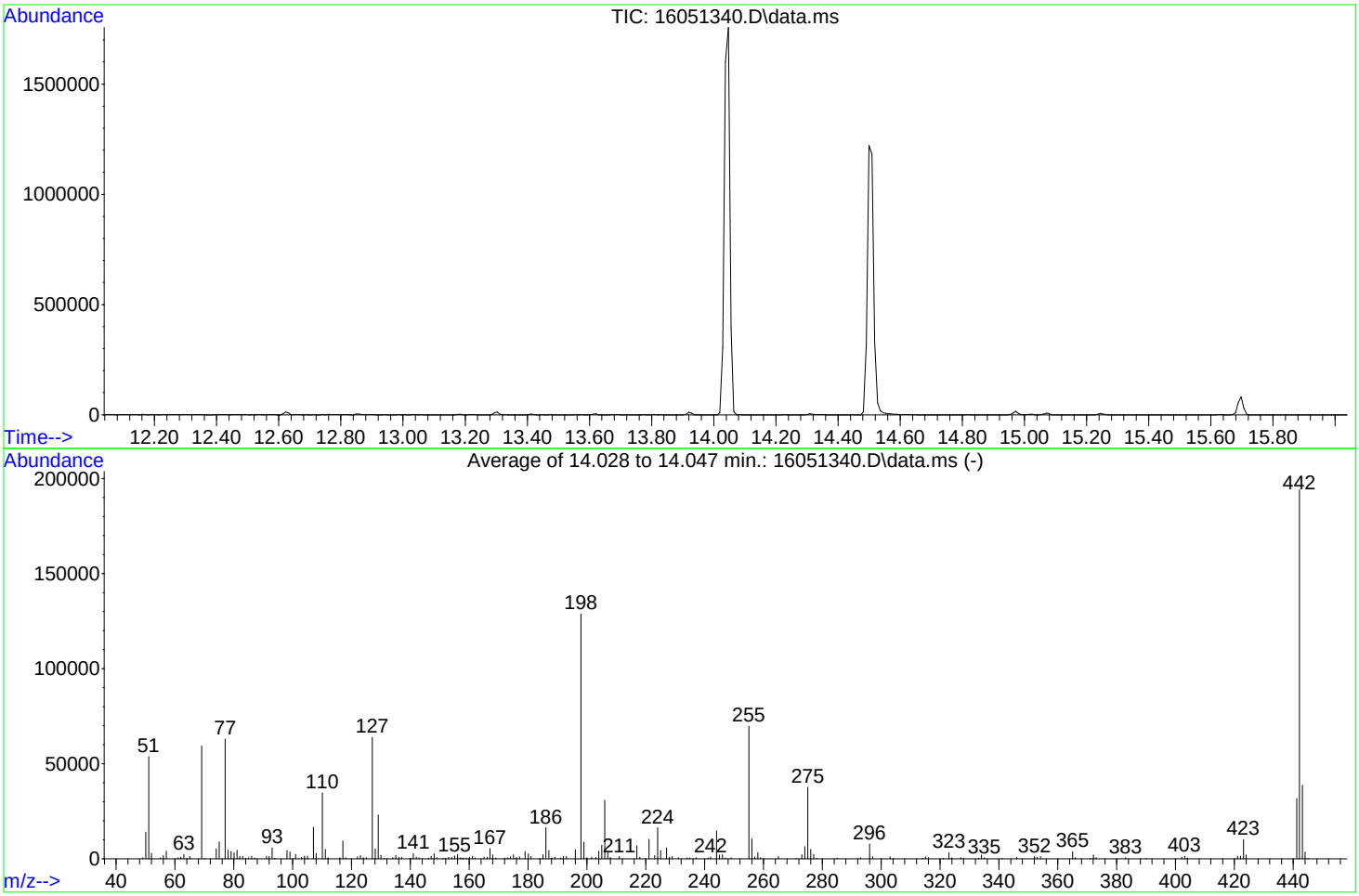
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	40.6	52696	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	45.2	58605	PASS
70	69	0.00	2	0.3	201	PASS
127	198	10	80	49.3	63933	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	129720	PASS
199	198	5	9	6.7	8696	PASS
275	198	10	60	29.7	38561	PASS
365	198	1	200	3.4	4400	PASS
441	442	0.01	24	16.3	36047	PASS
442	198	50	400	170.8	221517	PASS
443	442	15	24	19.6	43356	PASS

REVIEWED/APPROVED
By Sherri Herschmann at 3:14:17 PM, 5/16/2016

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051340.D
Acq On : 14 May 2016 11:47 am
Operator :
Sample : DFTPP3-160513
Misc : TUNE
ALS Vial : 20 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	41.8	53781	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	46.1	59410	PASS
70	69	0.00	2	0.3	200	PASS
127	198	10	80	49.6	63829	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	128749	PASS
199	198	5	9	6.7	8671	PASS
275	198	10	60	29.2	37557	PASS
365	198	1	200	2.9	3699	PASS
441	442	0.01	24	16.3	31612	PASS
442	198	50	400	150.8	194201	PASS
443	442	15	24	19.9	38648	PASS

REVIEWED/APPROVED
By Sherri Herschmann at 3:14:19 PM, 5/16/2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051305.D
Acq On : 13 May 2016 2:14 pm
Operator :
Sample : ICV-160513
Misc : ICV
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 16 09:01:34 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

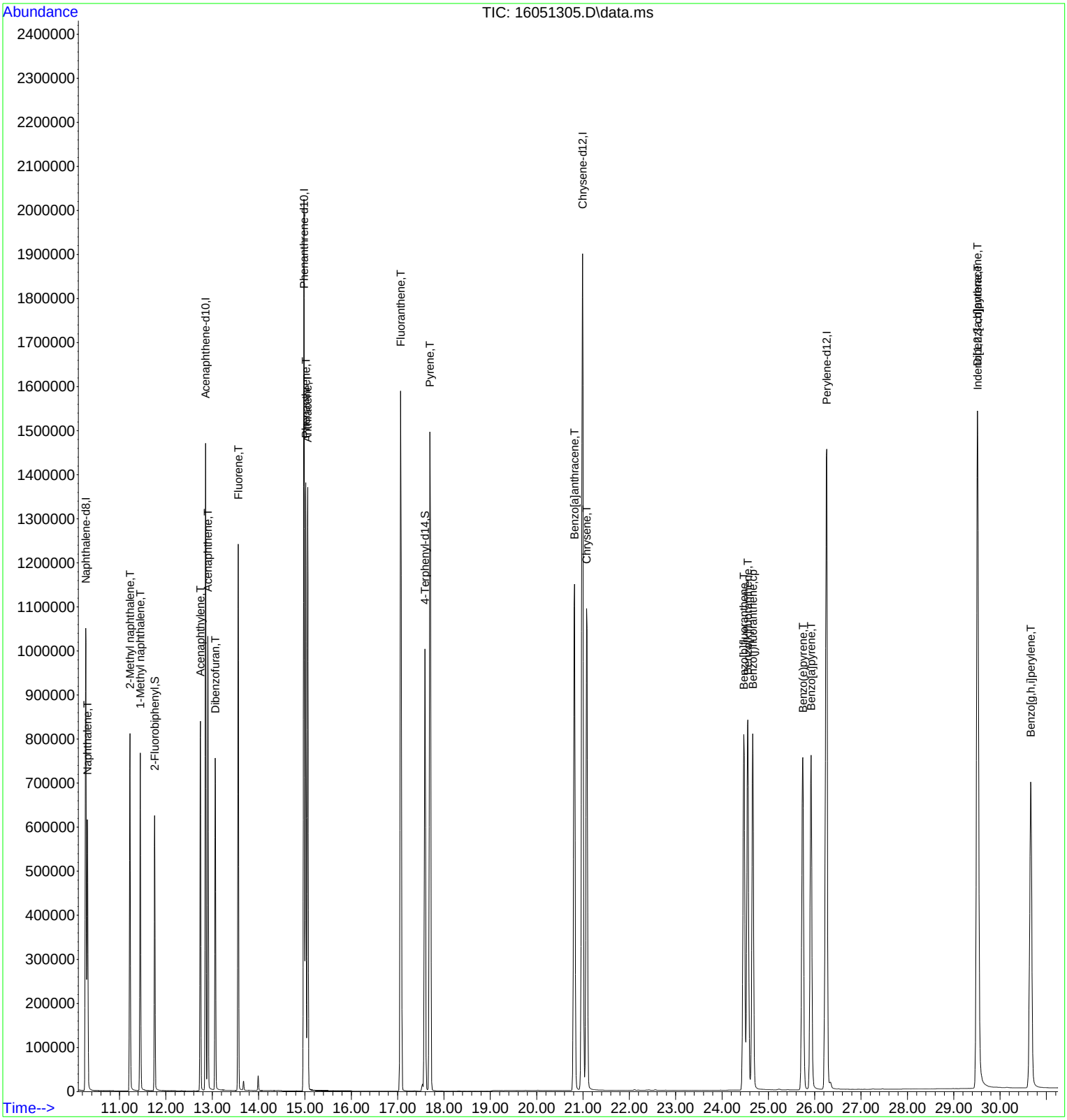
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1468119	4000.00	ug/kg	94
6) Acenaphthene-d10	12.857	164	854900	4000.00	ug/kg	87
11) Phenanthrene-d10	14.979	188	2439452	4000.00	ug/kg	79
16) Chrysene-d12	20.992	240	3300716	4000.00	ug/kg	94
20) Perylene-d12	26.259	264	2819826	4000.00	ug/kg	95
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	560276	1941.76	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 48.54%			
17) 4-Terphenyl-d14	17.589	244	1467513	1924.25	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 48.11%#			
Target Compounds						Qvalue
2) Naphthalene	10.306	128	704269	1979.40	ug/kg	100
3) 2-Methyl naphthalene	11.223	142	500668	2081.89	ug/kg	99
4) 1-Methyl naphthalene	11.445	142	455417	2039.72	ug/kg	98
7) Acenaphthylene	12.744	152	802733	1998.13	ug/kg	100
8) Acenaphthene	12.906	153	492723	1938.06	ug/kg	99
9) Dibenzofuran	13.064	168	717380	1747.35	ug/kg	88
10) Fluorene	13.560	166	662703	1716.45	ug/kg	99
12) Phenanthrene	15.017	178	1324260	1875.62	ug/kg	99
13) Anthracene	15.059	178	1378662	1802.32	ug/kg	99
14) Fluoranthene	17.066	202	1886532	2041.74	ug/kg	87
15) Pyrene	17.696	202	1920184	2071.94	ug/kg	91
18) Benzo[a]anthracene	20.816	228	1799412	1939.34	ug/kg	100
19) Chrysene	21.080	228	1648971	1941.39	ug/kg	100
21) Benzo[b]fluoranthene	24.471	252	1628703	2028.14	ug/kg	100
22) Benzo[k]fluoranthene	24.559	252	1482736	2302.03	ug/kg	98
23) Benzo(j)fluoranthene	24.662	252	1399385	2149.53	ug/kg	98
24) Benzo(e)pyrene	25.746	252	1492934	1936.92	ug/kg	98
25) Benzo[a]pyrene	25.922	252	1485885	2013.17	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.526	276	1689151	2065.73	ug/kg	94
27) Dibenz[a,h]anthracene	29.511	278	1426131	2139.30	ug/kg	98
28) Benzo[g,h,i]perylene	30.661	276	1444297	2024.19	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051305.D
Acq On : 13 May 2016 2:14 pm
Operator :
Sample : ICV-160513
Misc : ICV
ALS Vial : 3 Sample Multiplier: 1

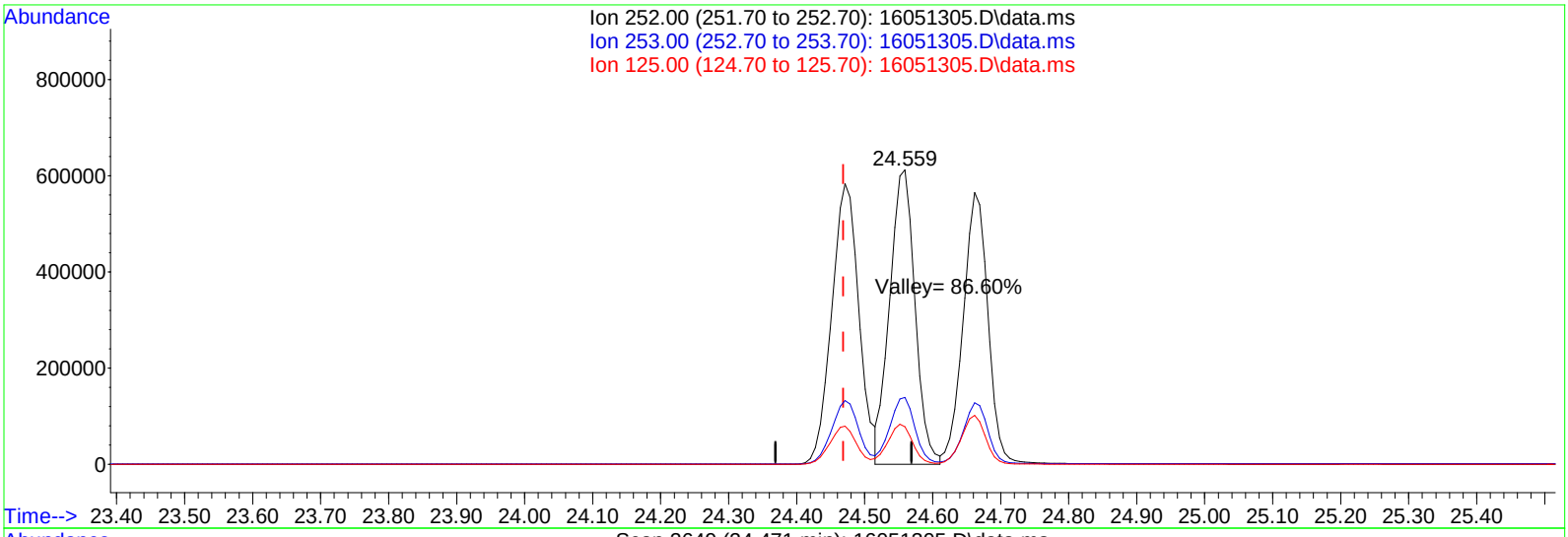
Quant Time: May 16 09:01:34 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

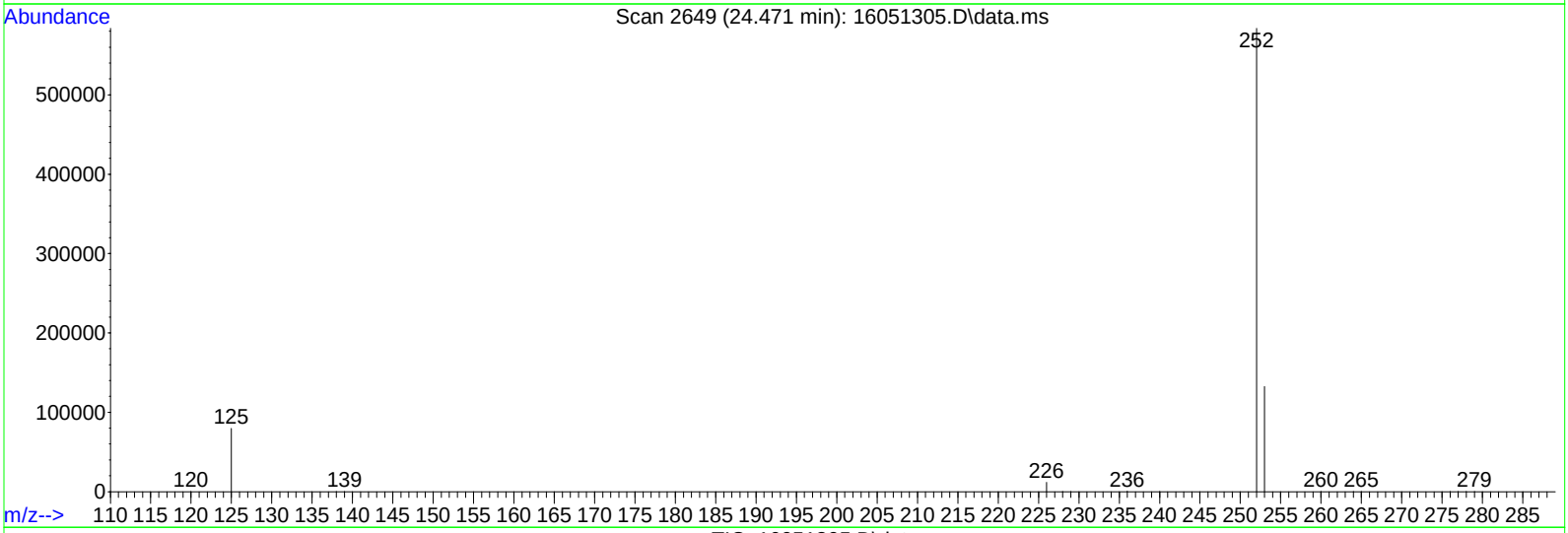


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051305.D
Acq On : 13 May 2016 2:14 pm
Operator :
Sample : ICV-160513
Misc : ICV
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 13 14:46:12 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration





TIC: 16051305.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.471min (+0.002) 2028.14ug/kg

response 1628703

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.54
125.00	13.80	13.61
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051306.D
Acq On : 13 May 2016 2:52 pm
Operator :
Sample : LCS-75101
Misc : LCS
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 16 09:01:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

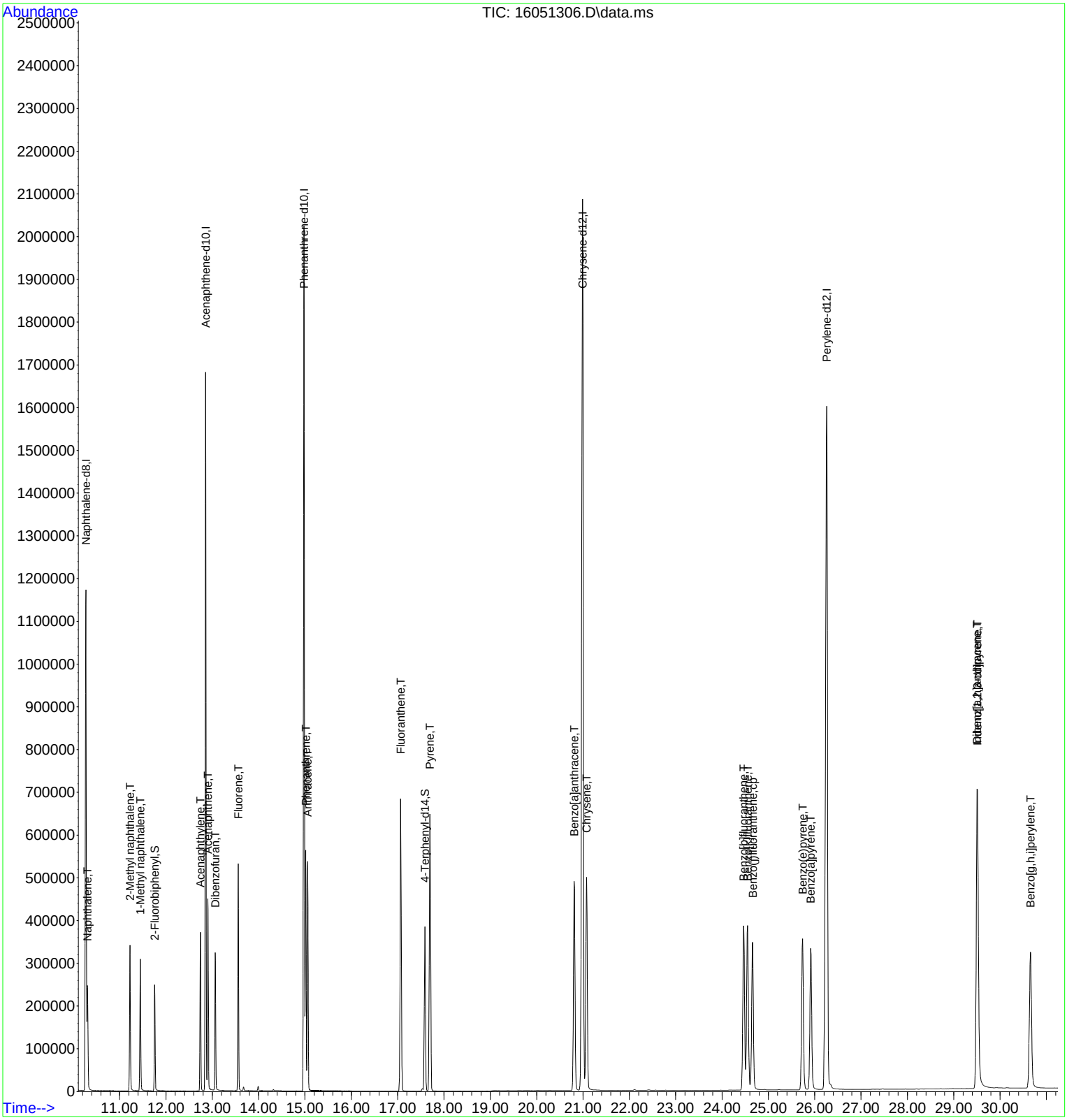
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1631796	4000.00	ug/kg	104
6) Acenaphthene-d10	12.857	164	996350	4000.00	ug/kg	102
11) Phenanthrene-d10	14.979	188	2406531	4000.00	ug/kg	78
16) Chrysene-d12	20.991	240	3501404	4000.00	ug/kg	100
20) Perylene-d12	26.258	264	3189331	4000.00	ug/kg	108
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	223623	697.28	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 17.43%#			
17) 4-Terphenyl-d14	17.589	244	540141	667.66	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 16.69%#			
Target Compounds						Qvalue
2) Naphthalene	10.305	128	271073	685.45	ug/kg	100
3) 2-Methyl naphthalene	11.222	142	206975	767.94	ug/kg	99
4) 1-Methyl naphthalene	11.449	142	189560	763.84	ug/kg	99
7) Acenaphthylene	12.744	152	351444	750.61	ug/kg	99
8) Acenaphthene	12.906	153	216450	730.51	ug/kg	99
9) Dibenzofuran	13.068	168	311681	651.40	ug/kg	93
10) Fluorene	13.559	166	284422	632.09	ug/kg	100
12) Phenanthrene	15.017	178	536030	769.60	ug/kg	98
13) Anthracene	15.059	178	534240	707.97	ug/kg	98
14) Fluoranthene	17.065	202	785210	861.44	ug/kg	93
15) Pyrene	17.696	202	792472	866.80	ug/kg	95
18) Benzo[a]anthracene	20.808	228	788304	800.91	ug/kg	99
19) Chrysene	21.079	228	730536	810.79	ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	747269	822.73	ug/kg	99
22) Benzo[k]fluoranthene	24.551	252	680817	934.55	ug/kg	97
23) Benzo(j)fluoranthene	24.661	252	624762	848.49	ug/kg	98
24) Benzo(e)pyrene	25.738	252	674235	773.40	ug/kg	98
25) Benzo[a]pyrene	25.914	252	652903	782.11	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.518	276	785880	849.74	ug/kg	92
27) Dibenz[a,h]anthracene	29.503	278	658520	873.38	ug/kg	97
28) Benzo[g,h,i]perylene	30.660	276	666820	826.28	ug/kg	95

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051306.D
Acq On : 13 May 2016 2:52 pm
Operator :
Sample : LCS-75101
Misc : LCS
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 16 09:01:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051307.D
Acq On : 13 May 2016 3:29 pm
Operator :
Sample : MB-75101
Misc : MBLK
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 16 09:01:39 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.274	136	1652863	4000.00	ug/kg	106
6) Acenaphthene-d10	12.857	164	1013401	4000.00	ug/kg	104
11) Phenanthrene-d10	14.979	188	2425991	4000.00	ug/kg	78
16) Chrysene-d12	20.991	240	3674535	4000.00	ug/kg	105
20) Perylene-d12	26.258	264	3217916	4000.00	ug/kg	108

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	205023	631.13	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 15.78%#			
17) 4-Terphenyl-d14	17.588	244	535570	630.81	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 15.77%#			

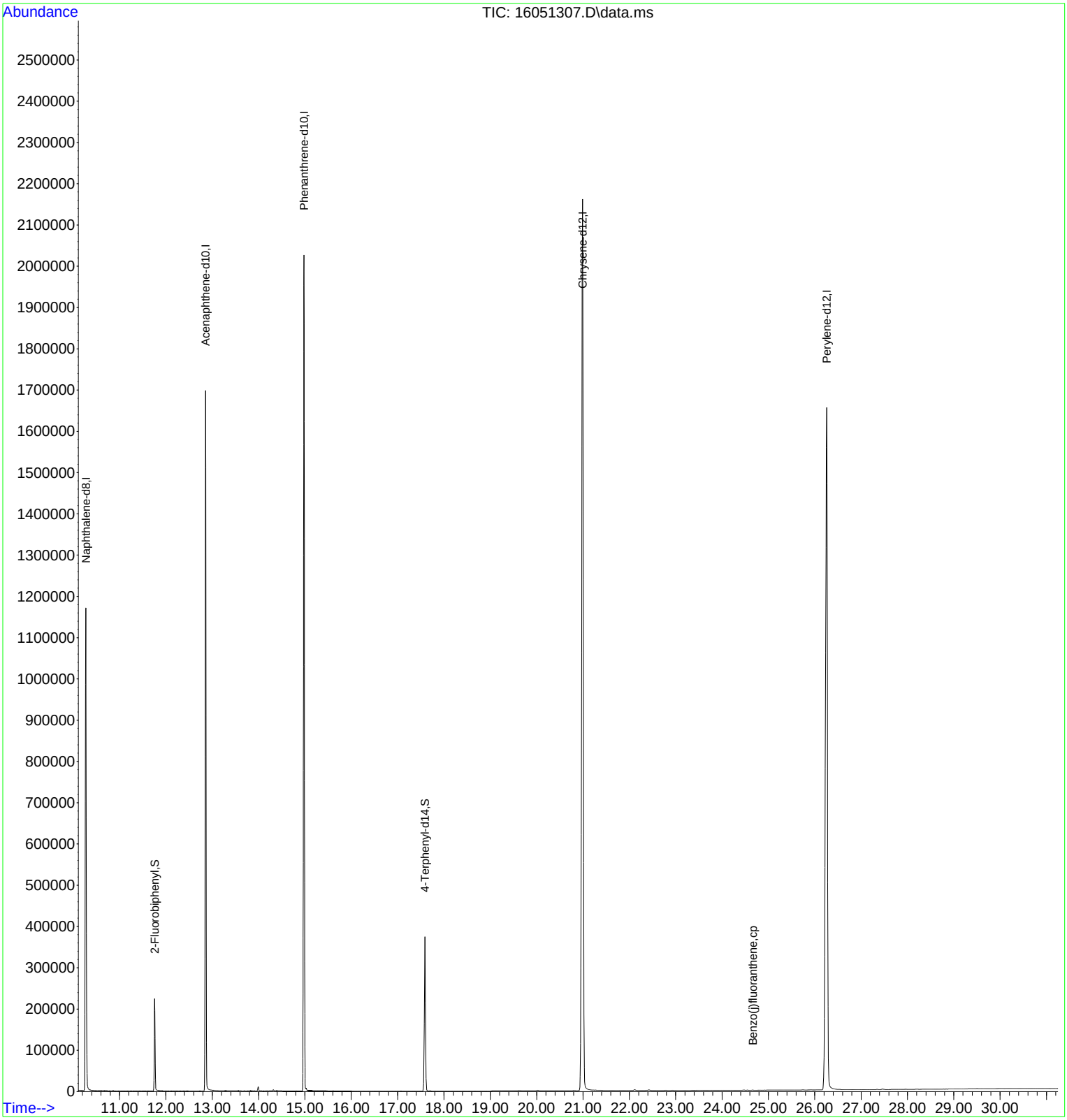
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.661	252	374	0.50	ug/kg#	71

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051307.D
Acq On : 13 May 2016 3:29 pm
Operator :
Sample : MB-75101
Misc : MBLK
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 16 09:01:39 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051320.D
Acq On : 13 May 2016 11:27 pm
Operator :
Sample : 1605071-25AMS
Misc : MS
ALS Vial : 18 Sample Multiplier: 10

Quant Time: May 16 09:01:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1478096	4000.00	ug/kg	95
6) Acenaphthene-d10	12.856	164	969820	4000.00	ug/kg	99
11) Phenanthrene-d10	14.982	188	2873755	4000.00	ug/kg	93
16) Chrysene-d12	20.990	240	3031059	4000.00	ug/kg	87
20) Perylene-d12	26.257	264	2628780	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	20399	70.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.76%#			
17) 4-Terphenyl-d14	17.588	244	52228	74.58	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.86%#			

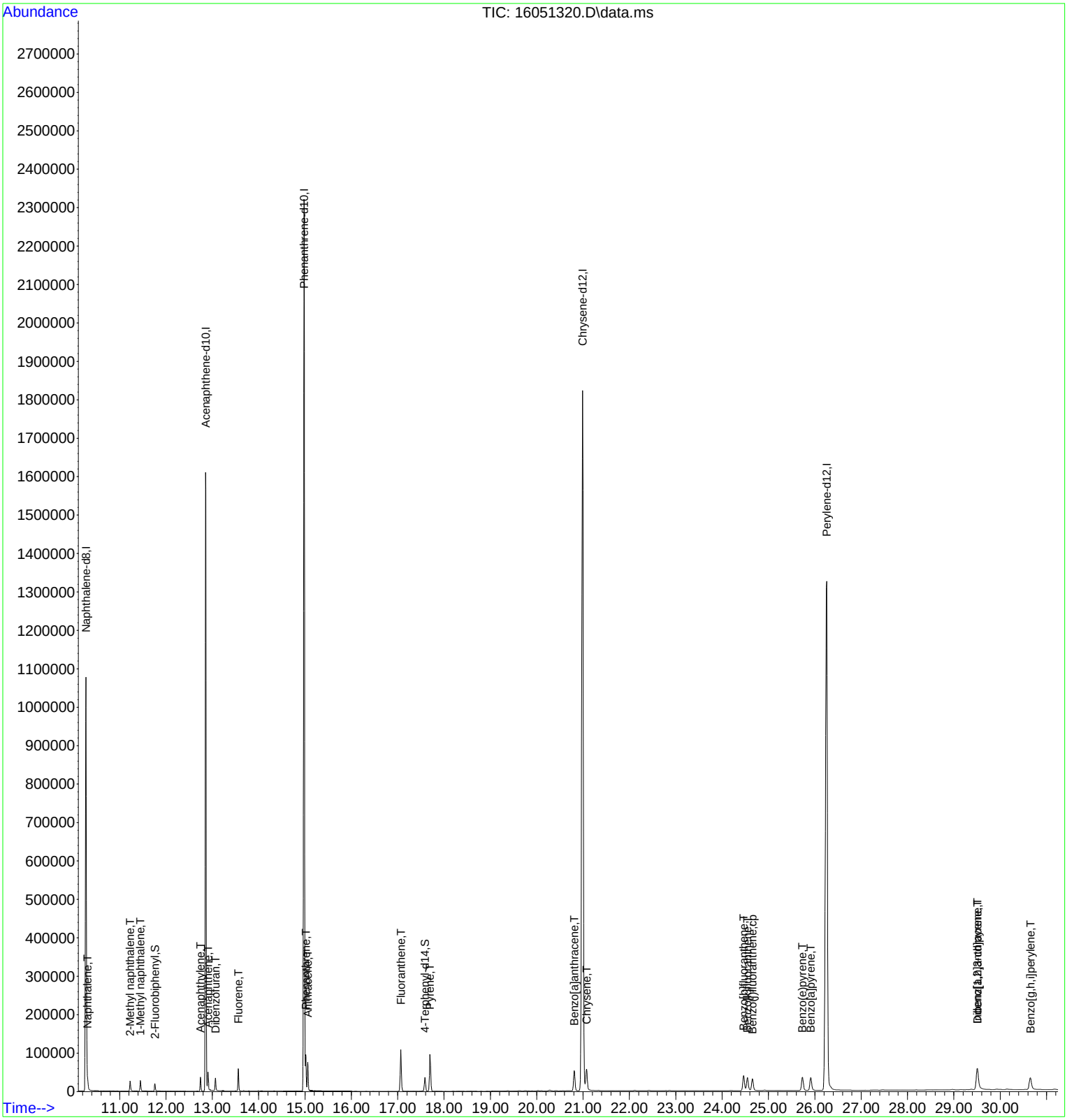
Target Compounds						Qvalue
2) Naphthalene	10.308	128	25928	72.38	ug/kg	100
3) 2-Methyl naphthalene	11.225	142	18410	78.07	ug/kg	98
4) 1-Methyl naphthalene	11.448	142	17567	78.15	ug/kg	99
7) Acenaphthylene	12.743	152	34710	76.16	ug/kg	99
8) Acenaphthene	12.910	153	21846	75.75	ug/kg	99
9) Dibenzofuran	13.067	168	33530	71.99	ug/kg	96
10) Fluorene	13.558	166	32479	74.15	ug/kg	99
12) Phenanthrene	15.018	178	82196	98.82	ug/kg	96
13) Anthracene	15.060	178	71515	79.36	ug/kg	97
14) Fluoranthene	17.065	202	125694	115.48	ug/kg	93
15) Pyrene	17.696	202	118019	108.10	ug/kg	96
18) Benzo[a]anthracene	20.807	228	83784	98.33	ug/kg	99
19) Chrysene	21.078	228	81153	104.04	ug/kg	98
21) Benzo[b]fluoranthene	24.462	252	76477	102.15	ug/kg	99
22) Benzo[k]fluoranthene	24.543	252	58968	98.20	ug/kg	97
23) Benzo(j)fluoranthene	24.653	252	57265	94.35	ug/kg	97
24) Benzo(e)pyrene	25.737	252	67855	94.43	ug/kg	97
25) Benzo[a]pyrene	25.913	252	71062	103.28	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.517	276	77915	102.21	ug/kg	91
27) Dibenz[a,h]anthracene	29.502	278	55047	88.58	ug/kg	96
28) Benzo[g,h,i]perylene	30.652	276	70315	105.71	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051320.D
Acq On : 13 May 2016 11:27 pm
Operator :
Sample : 1605071-25AMS
Misc : MS
ALS Vial : 18 Sample Multiplier: 10

Quant Time: May 16 09:01:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051321.D
Acq On : 14 May 2016 12:03 am
Operator :
Sample : 1605071-25AMSD
Misc : MSD
ALS Vial : 19 Sample Multiplier: 10

Quant Time: May 16 09:01:46 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1499453	4000.00	ug/kg	96
6) Acenaphthene-d10	12.857	164	997896	4000.00	ug/kg	102
11) Phenanthrene-d10	14.979	188	2914311	4000.00	ug/kg	94
16) Chrysene-d12	20.991	240	3027353	4000.00	ug/kg	87
20) Perylene-d12	26.258	264	2634762	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	20299	68.88	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.72%#			
17) 4-Terphenyl-d14	17.588	244	49891	71.33	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.78%#			

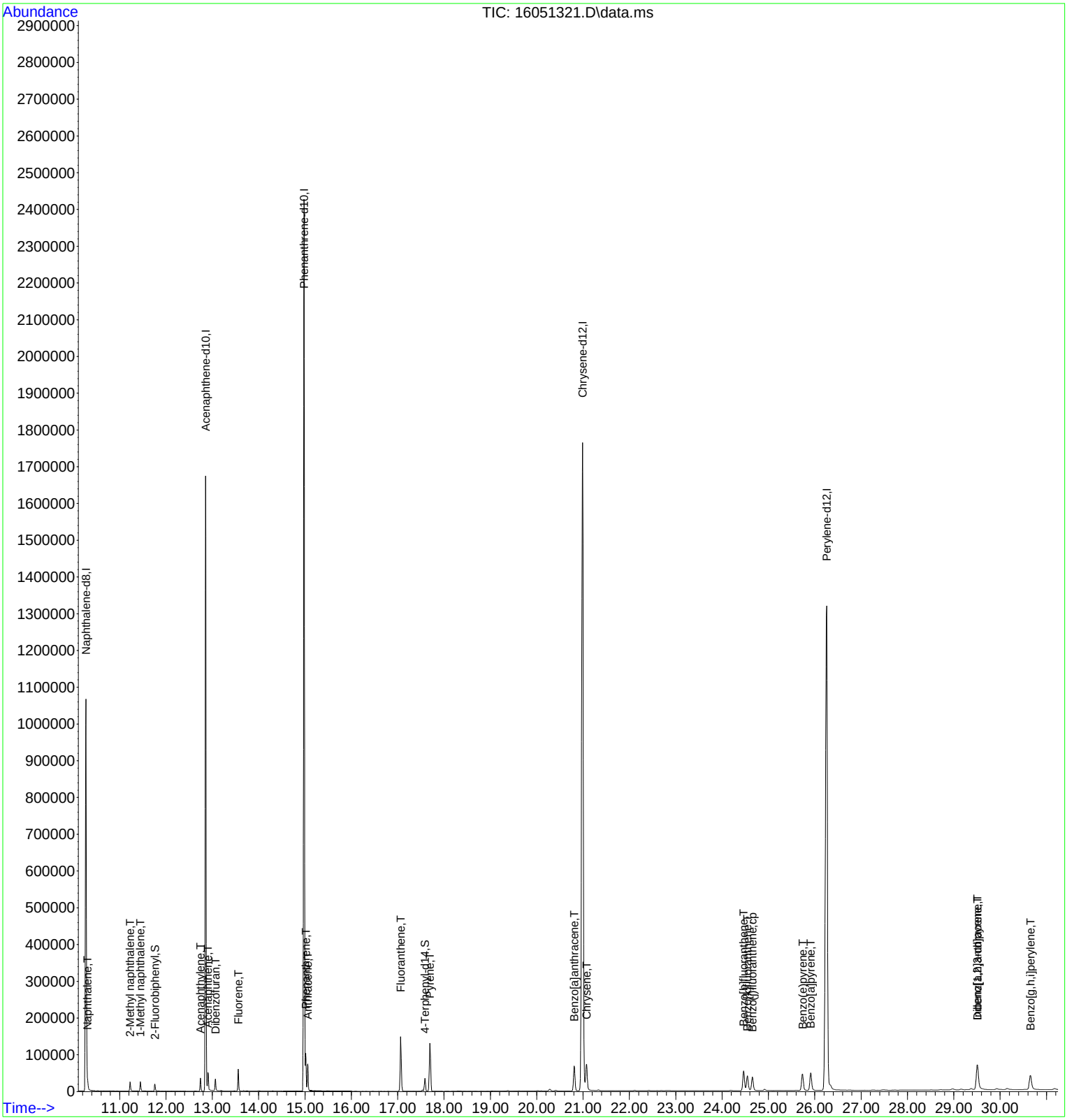
Target Compounds						Qvalue
2) Naphthalene	10.309	128	22697	62.46	ug/kg	99
3) 2-Methyl naphthalene	11.226	142	17149	71.96	ug/kg	98
4) 1-Methyl naphthalene	11.448	142	16368	71.78	ug/kg	99
7) Acenaphthylene	12.744	152	33763	72.00	ug/kg	99
8) Acenaphthene	12.906	153	21631	72.89	ug/kg	100
9) Dibenzofuran	13.068	168	33205	69.29	ug/kg	100
10) Fluorene	13.559	166	32399	71.89	ug/kg	99
12) Phenanthrene	15.017	178	89856	106.53	ug/kg	96
13) Anthracene	15.059	178	71032	77.73	ug/kg	97
14) Fluoranthene	17.065	202	170186	154.18	ug/kg	94
15) Pyrene	17.695	202	158340	143.02	ug/kg	97
18) Benzo[a]anthracene	20.808	228	107382	126.18	ug/kg	99
19) Chrysene	21.079	228	110560	141.92	ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	105022	139.96	ug/kg	99
22) Benzo[k]fluoranthene	24.544	252	70943	117.88	ug/kg	97
23) Benzo(j)fluoranthene	24.653	252	68086	111.93	ug/kg	96
24) Benzo(e)pyrene	25.738	252	88085	122.31	ug/kg	98
25) Benzo[a]pyrene	25.913	252	98131	142.29	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.510	276	97767	127.96	ug/kg	95
27) Dibenz[a,h]anthracene	29.503	278	59327	95.25	ug/kg	96
28) Benzo[g,h,i]perylene	30.653	276	88899	133.34	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051321.D
Acq On : 14 May 2016 12:03 am
Operator :
Sample : 1605071-25AMSD
Misc : MSD
ALS Vial : 19 Sample Multiplier: 10

Quant Time: May 16 09:01:46 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051323.D
Acq On : 14 May 2016 1:17 am
Operator :
Sample : ICV2-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 16 09:01:48 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

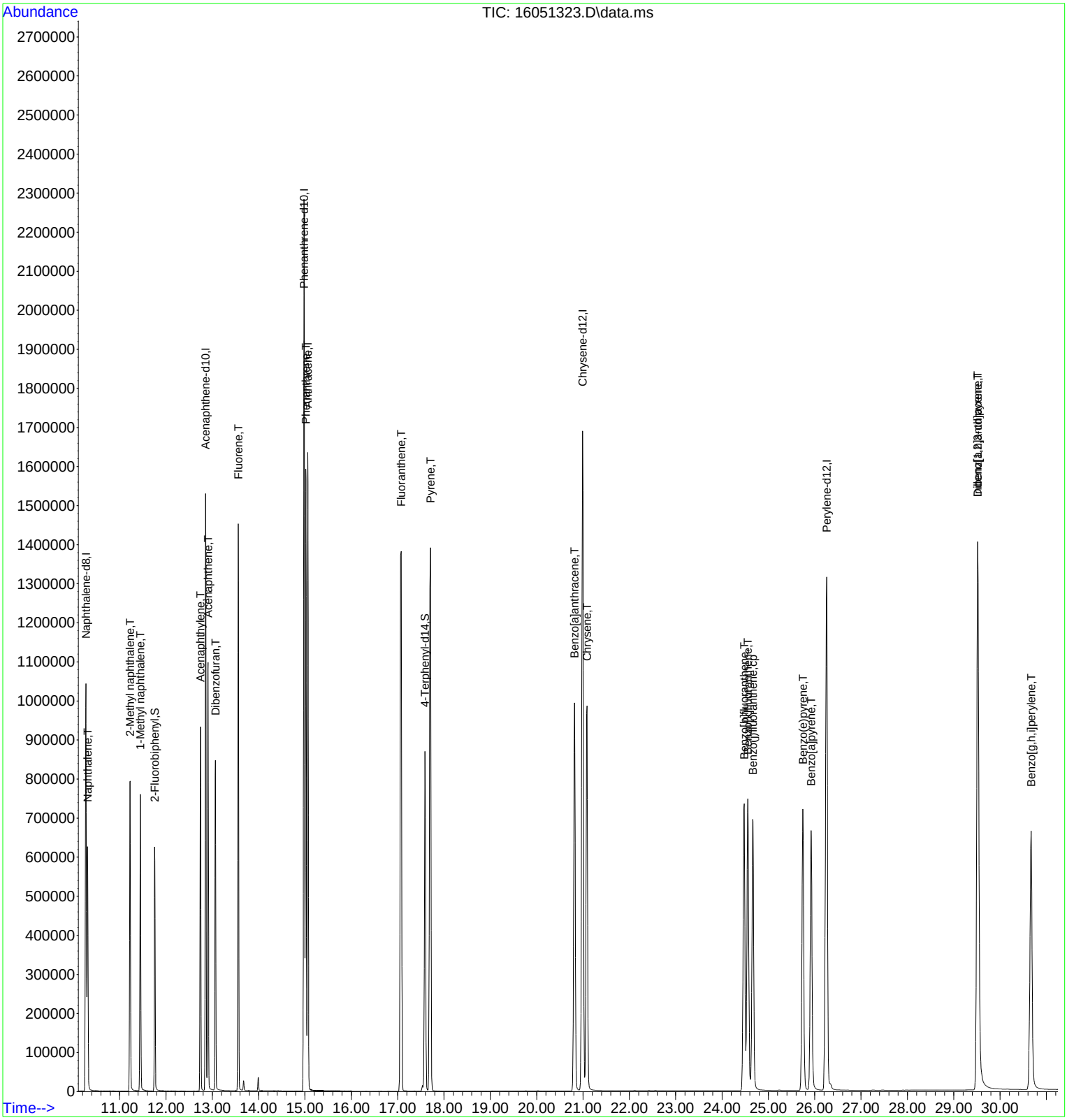
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1441846	4000.00	ug/kg	92
6) Acenaphthene-d10	12.856	164	912357	4000.00	ug/kg	93
11) Phenanthrene-d10	14.981	188	2775672	4000.00	ug/kg	89
16) Chrysene-d12	20.991	240	2907770	4000.00	ug/kg	83
20) Perylene-d12	26.258	264	2554349	4000.00	ug/kg	86
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	570857	2014.48	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	50.36%		
17) 4-Terphenyl-d14	17.587	244	1345289	2002.36	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	50.06%#		
Target Compounds						Qvalue
2) Naphthalene	10.309	128	698664	1999.43	ug/kg	100
3) 2-Methyl naphthalene	11.226	142	499170	2114.01	ug/kg	100
4) 1-Methyl naphthalene	11.448	142	455970	2079.41	ug/kg	100
7) Acenaphthylene	12.743	152	867089	2022.40	ug/kg	100
8) Acenaphthene	12.910	153	540524	1992.19	ug/kg	98
9) Dibenzofuran	13.068	168	814621	1859.25	ug/kg	99
10) Fluorene	13.559	166	780831	1895.04	ug/kg	100
12) Phenanthrene	15.019	178	1540126	1917.14	ug/kg	100
13) Anthracene	15.063	178	1585191	1821.30	ug/kg	100
14) Fluoranthene	17.077	202	1844784	1754.71	ug/kg	96
15) Pyrene	17.708	202	1831925	1737.27	ug/kg	93
18) Benzo[a]anthracene	20.815	228	1582135	1935.59	ug/kg	99
19) Chrysene	21.086	228	1464810	1957.62	ug/kg	99
21) Benzo[b]fluoranthene	24.478	252	1448333	1990.98	ug/kg	99
22) Benzo[k]fluoranthene	24.558	252	1306896	2239.91	ug/kg	98
23) Benzo(j)fluoranthene	24.668	252	1252205	2123.36	ug/kg	99
24) Benzo(e)pyrene	25.745	252	1345392	1926.91	ug/kg	99
25) Benzo[a]pyrene	25.921	252	1330830	1990.49	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.525	276	1584981	2139.80	ug/kg	99
27) Dibenz[a,h]anthracene	29.517	278	1323884	2192.32	ug/kg	97
28) Benzo[g,h,i]perylene	30.667	276	1362420	2107.88	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051323.D
Acq On : 14 May 2016 1:17 am
Operator :
Sample : ICV2-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

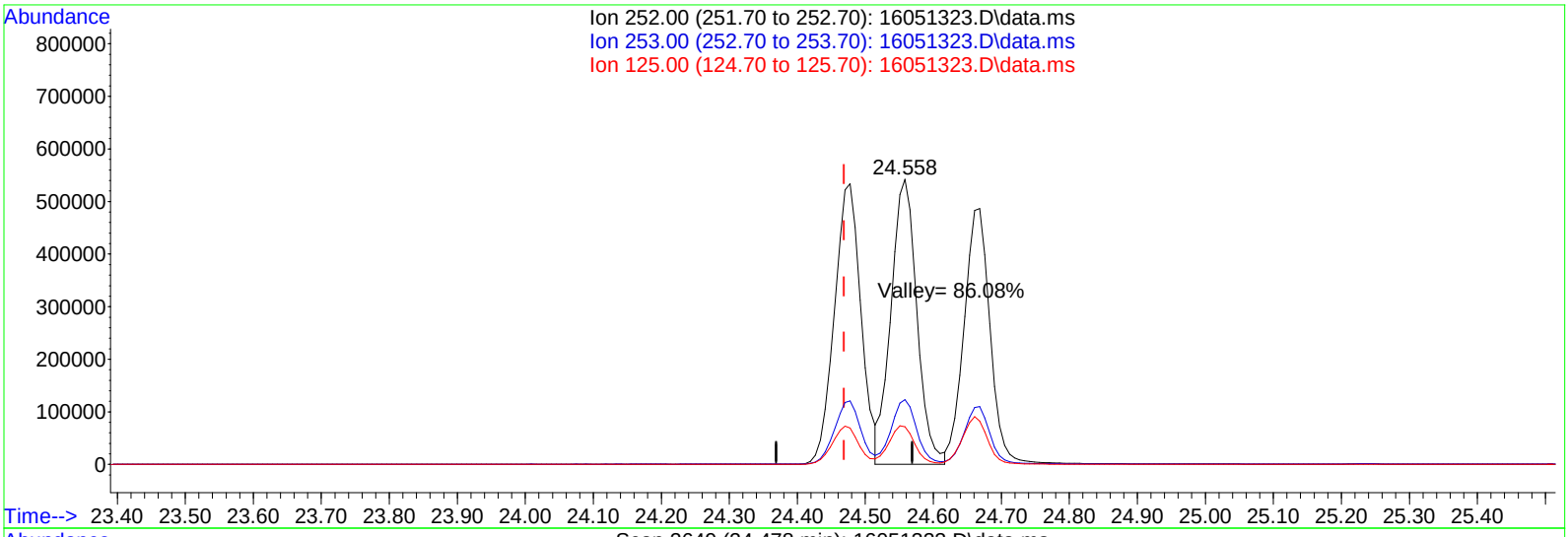
Quant Time: May 16 09:01:48 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

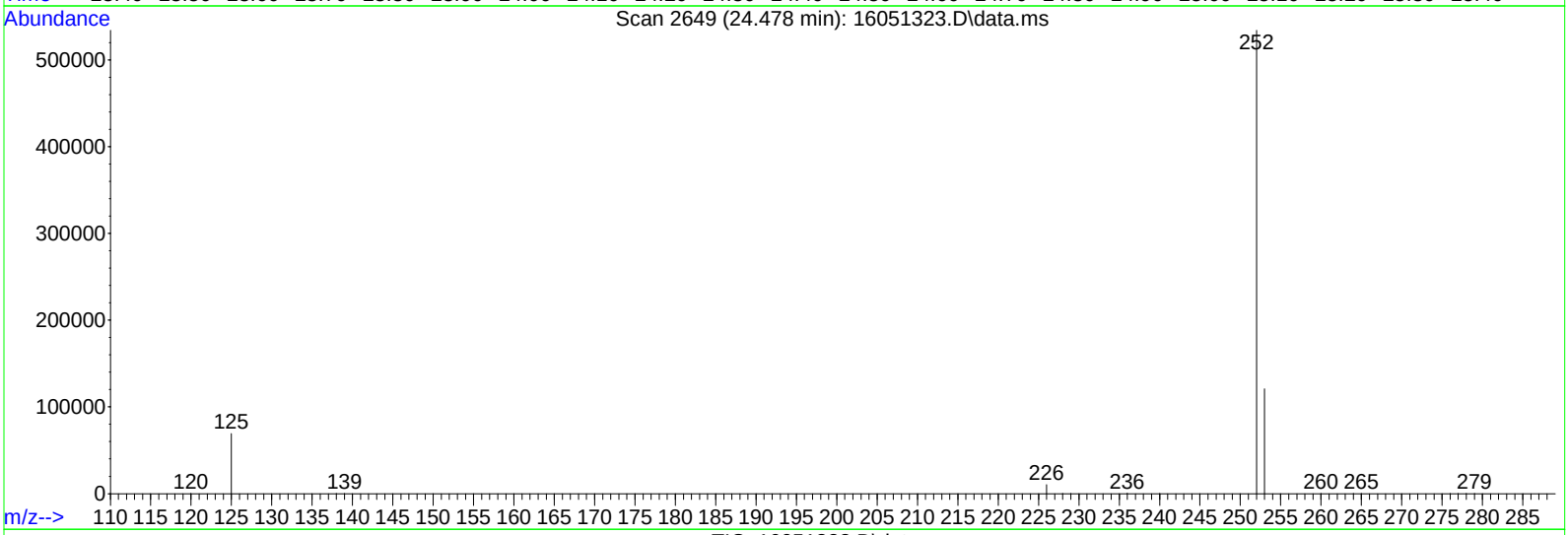


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051323.D
Acq On : 14 May 2016 1:17 am
Operator :
Sample : ICV2-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 14 01:48:59 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration





TIC: 16051323.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.478min (+0.009) 1990.98ug/kg

response 1448333

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.48
125.00	13.80	12.93
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051324.D
Acq On : 14 May 2016 1:54 am
Operator :
Sample : SBLK-160513
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 16 09:01:52 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1437759	4000.00	ug/kg	92
6) Acenaphthene-d10	12.861	164	963036	4000.00	ug/kg	99
11) Phenanthrene-d10	14.982	188	2871913	4000.00	ug/kg	92
16) Chrysene-d12	20.990	240	2820304	4000.00	ug/kg	81
20) Perylene-d12	26.257	264	2437867	4000.00	ug/kg	82

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	36	0.13	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.00%#			
17) 4-Terphenyl-d14	17.602	244	445	0.68	ug/kg	0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.02%#			

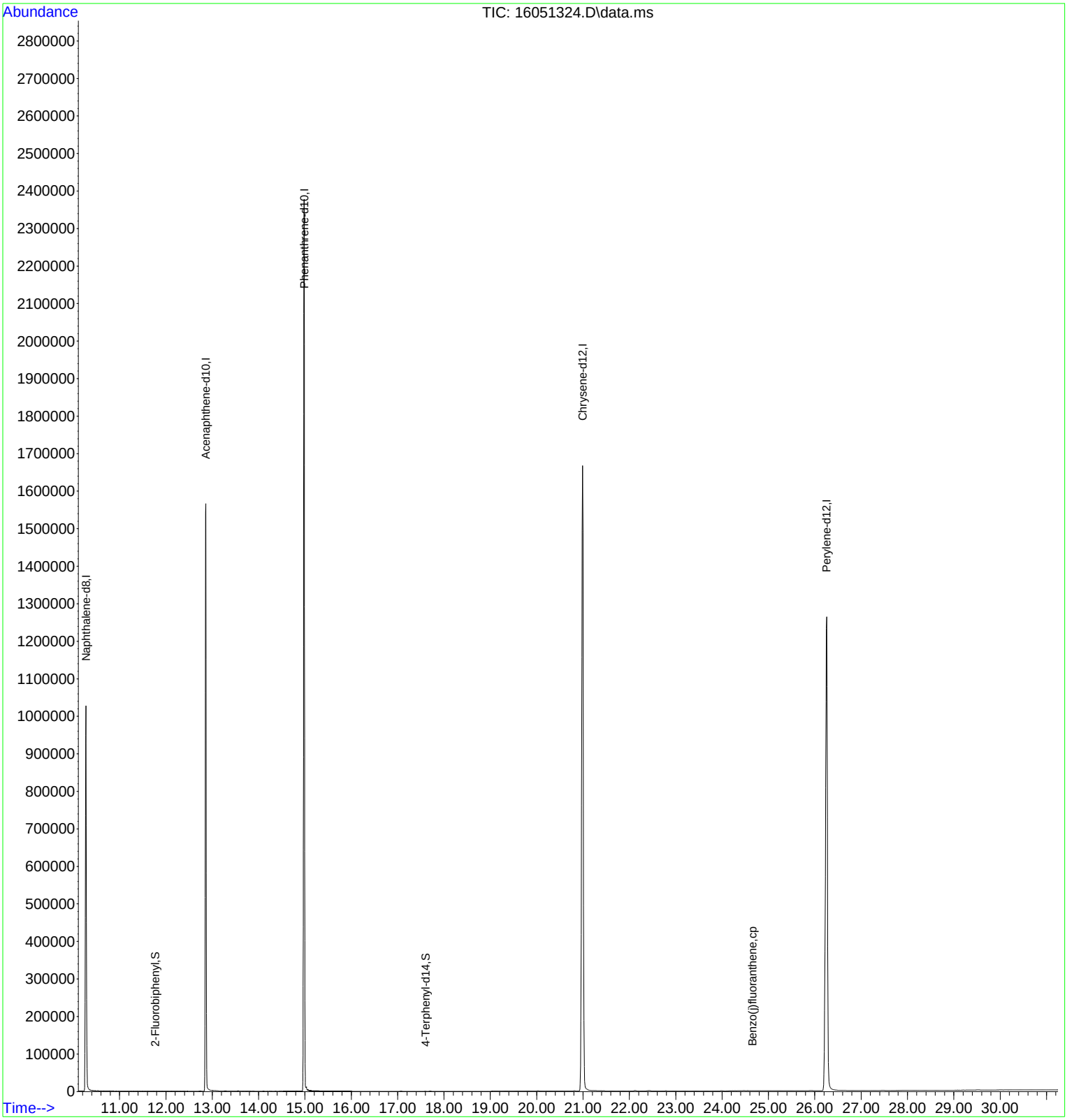
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.653	252	223	0.40	ug/kg	80

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051324.D
Acq On : 14 May 2016 1:54 am
Operator :
Sample : SBLK-160513
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 16 09:01:52 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051328.D
Acq On : 14 May 2016 4:22 am
Operator :
Sample : LCS-75151
Misc : LCS
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 16 09:01:55 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.274	136	1629610	4000.00	ug/kg	104
6) Acenaphthene-d10	12.857	164	994443	4000.00	ug/kg	102
11) Phenanthrene-d10	14.981	188	2502142	4000.00	ug/kg	81
16) Chrysene-d12	20.992	240	3035249	4000.00	ug/kg	87
20) Perylene-d12	26.258	264	2727872	4000.00	ug/kg	92

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	256294	800.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 20.01%#			
17) 4-Terphenyl-d14	17.589	244	561233	800.27	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 20.01%#			

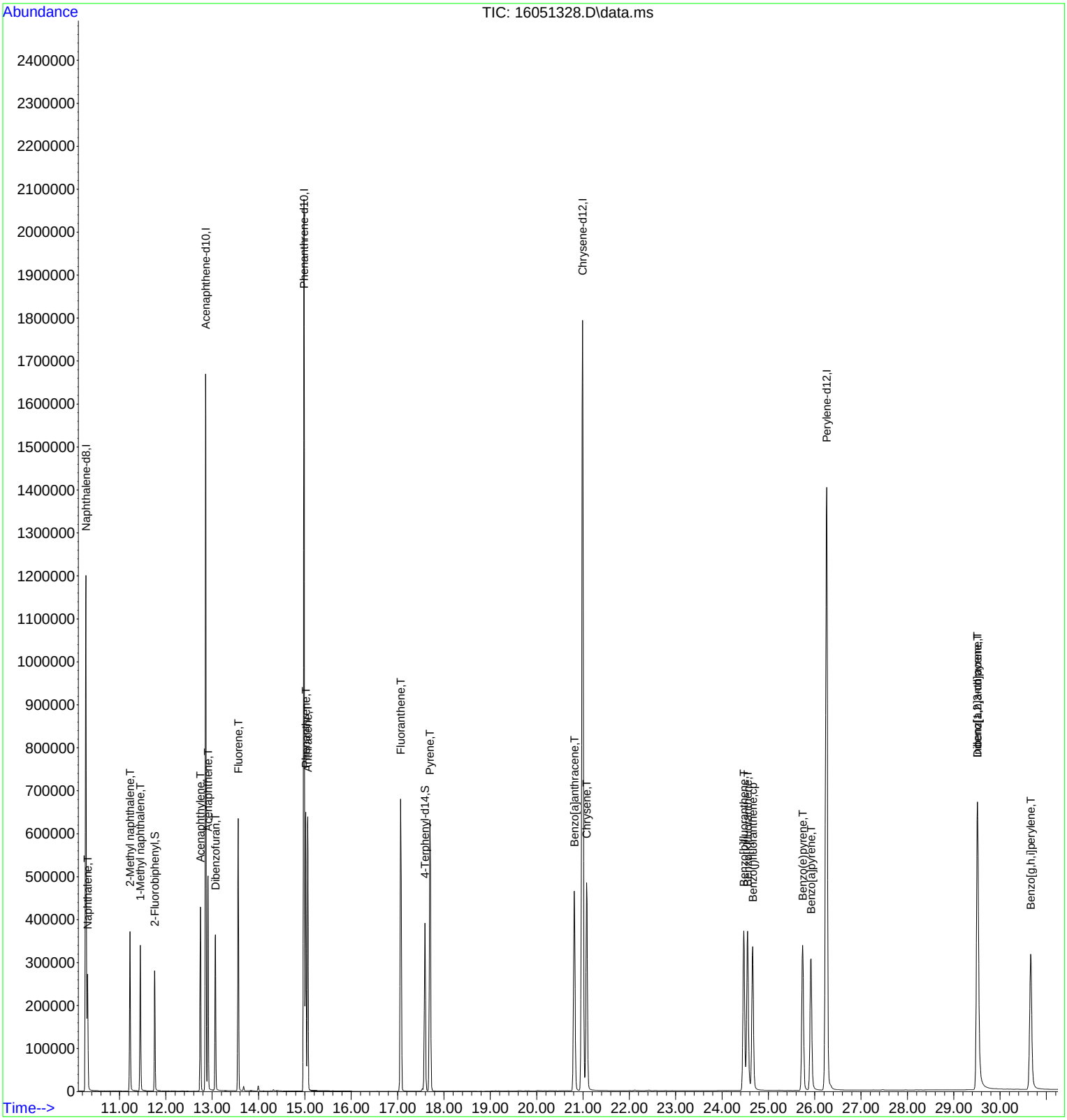
Target Compounds						Qvalue
2) Naphthalene	10.311	128	301940	764.53	ug/kg	99
3) 2-Methyl naphthalene	11.224	142	228727	850.01	ug/kg	97
4) 1-Methyl naphthalene	11.451	142	209606	845.75	ug/kg	99
7) Acenaphthylene	12.744	152	393069	841.12	ug/kg	99
8) Acenaphthene	12.911	153	243076	821.95	ug/kg	98
9) Dibenzofuran	13.069	168	355574	744.55	ug/kg	99
10) Fluorene	13.560	166	331368	737.83	ug/kg	100
12) Phenanthrene	15.017	178	620608	856.98	ug/kg	98
13) Anthracene	15.061	178	622427	793.31	ug/kg	98
14) Fluoranthene	17.066	202	806737	851.23	ug/kg	90
15) Pyrene	17.696	202	801977	843.68	ug/kg	92
18) Benzo[a]anthracene	20.816	228	756404	886.52	ug/kg	99
19) Chrysene	21.079	228	702605	899.55	ug/kg	99
21) Benzo[b]fluoranthene	24.471	252	707841	911.15	ug/kg	99
22) Benzo[k]fluoranthene	24.552	252	648477	1040.73	ug/kg	98
23) Benzo(j)fluoranthene	24.661	252	599026	951.15	ug/kg	98
24) Benzo(e)pyrene	25.738	252	656101	879.91	ug/kg	98
25) Benzo[a]pyrene	25.921	252	629330	881.40	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.518	276	779024	984.82	ug/kg	98
27) Dibenz[a,h]anthracene	29.503	278	648951	1006.29	ug/kg	98
28) Benzo[g,h,i]perylene	30.661	276	665477	964.11	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051328.D
Acq On : 14 May 2016 4:22 am
Operator :
Sample : LCS-75151
Misc : LCS
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 16 09:01:55 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051329.D
Acq On : 14 May 2016 5:00 am
Operator :
Sample : MB-75151
Misc : MBLK
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 16 09:01:58 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.273	136	1595656	4000.00	ug/kg	102
6) Acenaphthene-d10	12.861	164	981031	4000.00	ug/kg	100
11) Phenanthrene-d10	14.980	188	2451579	4000.00	ug/kg	79
16) Chrysene-d12	20.990	240	3103897	4000.00	ug/kg	89
20) Perylene-d12	26.257	264	2928373	4000.00	ug/kg	99

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	243825	777.49	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 19.44%#			
17) 4-Terphenyl-d14	17.589	244	553063	771.18	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 19.28%#			

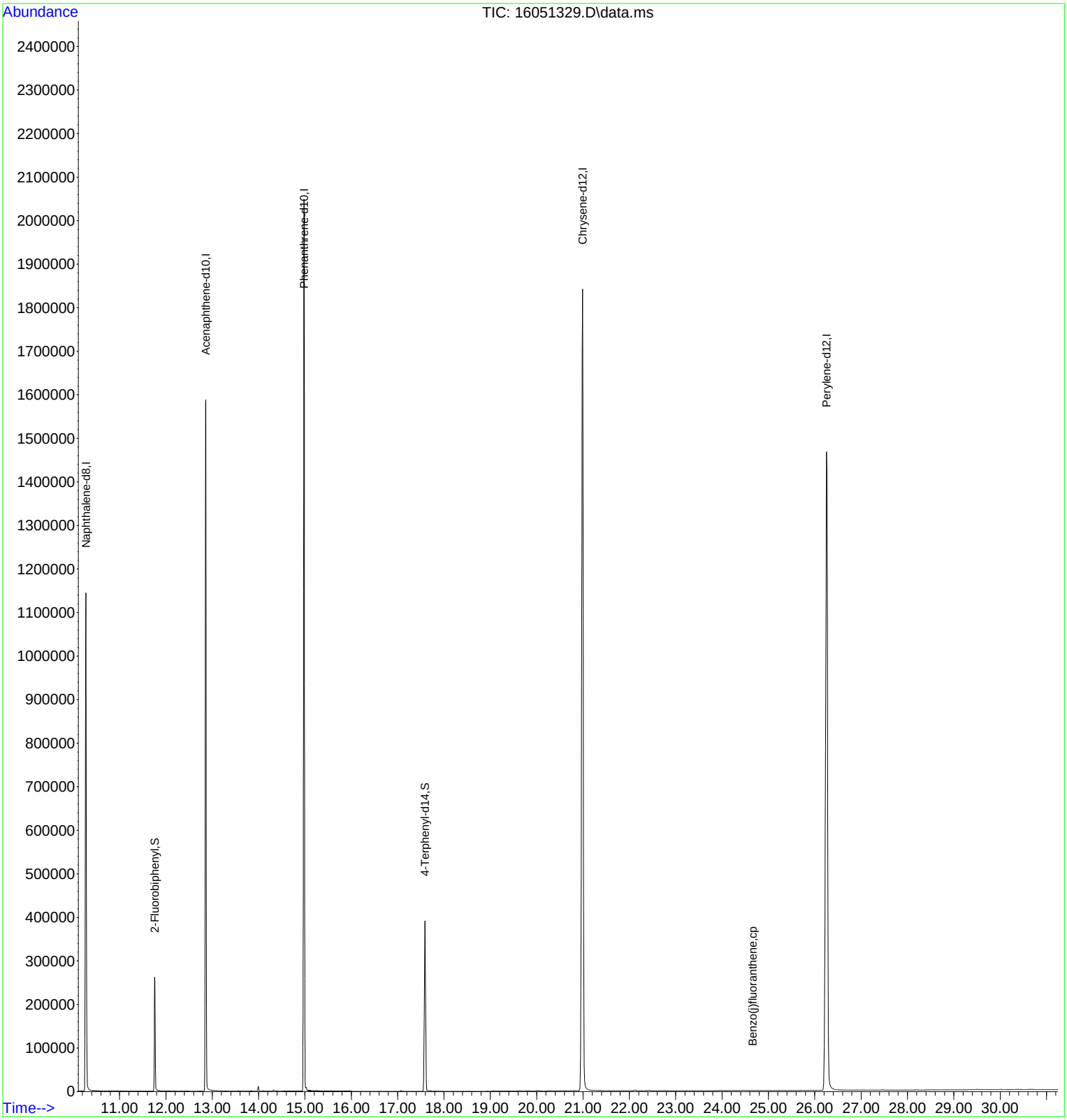
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.660	252	677	1.00	ug/kg	80

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051329.D
Acq On : 14 May 2016 5:00 am
Operator :
Sample : MB-75151
Misc : MBLK
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 16 09:01:58 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051332.D
Acq On : 14 May 2016 6:51 am
Operator :
Sample : 1605098-31A
Misc : SAMP
ALS Vial : 30 Sample Multiplier: 10

Quant Time: May 16 09:04:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1476117	4000.00	ug/kg	94
6) Acenaphthene-d10	12.857	164	980612	4000.00	ug/kg	100
11) Phenanthrene-d10	14.979	188	2865989	4000.00	ug/kg	92
16) Chrysene-d12	20.984	240	2872235	4000.00	ug/kg	82
20) Perylene-d12	26.251	264	2482067	4000.00	ug/kg	84

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	22569	77.79	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.94%#			
17) 4-Terphenyl-d14	17.589	244	54860	82.67	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.07%#			

Target Compounds						Qvalue
12) Phenanthrene	15.015	178	22120	26.67	ug/kg	97
13) Anthracene	15.059	178	4953	5.51	ug/kg	98
14) Fluoranthene	17.065	202	67369	62.06	ug/kg	96
15) Pyrene	17.696	202	57692	52.99	ug/kg	100
18) Benzo[a]anthracene	20.808	228	29734	36.83	ug/kg	98
19) Chrysene	21.072	228	34417	46.57	ug/kg	98
21) Benzo[b]fluoranthene	24.464	252	30596	43.28	ug/kg	98
22) Benzo[k]fluoranthene	24.544	252	13647	24.07	ug/kg	95
23) Benzo(j)fluoranthene	24.654	252	13160	22.97	ug/kg	91
24) Benzo(e)pyrene	25.731	252	22660	33.40	ug/kg	96
25) Benzo[a]pyrene	25.914	252	28854	44.41	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.511	276	22269	30.94	ug/kg	90
27) Dibenz[a,h]anthracene	29.496	278	5484	9.35	ug/kg	98
28) Benzo[g,h,i]perylene	30.653	276	23093	36.77	ug/kg	96

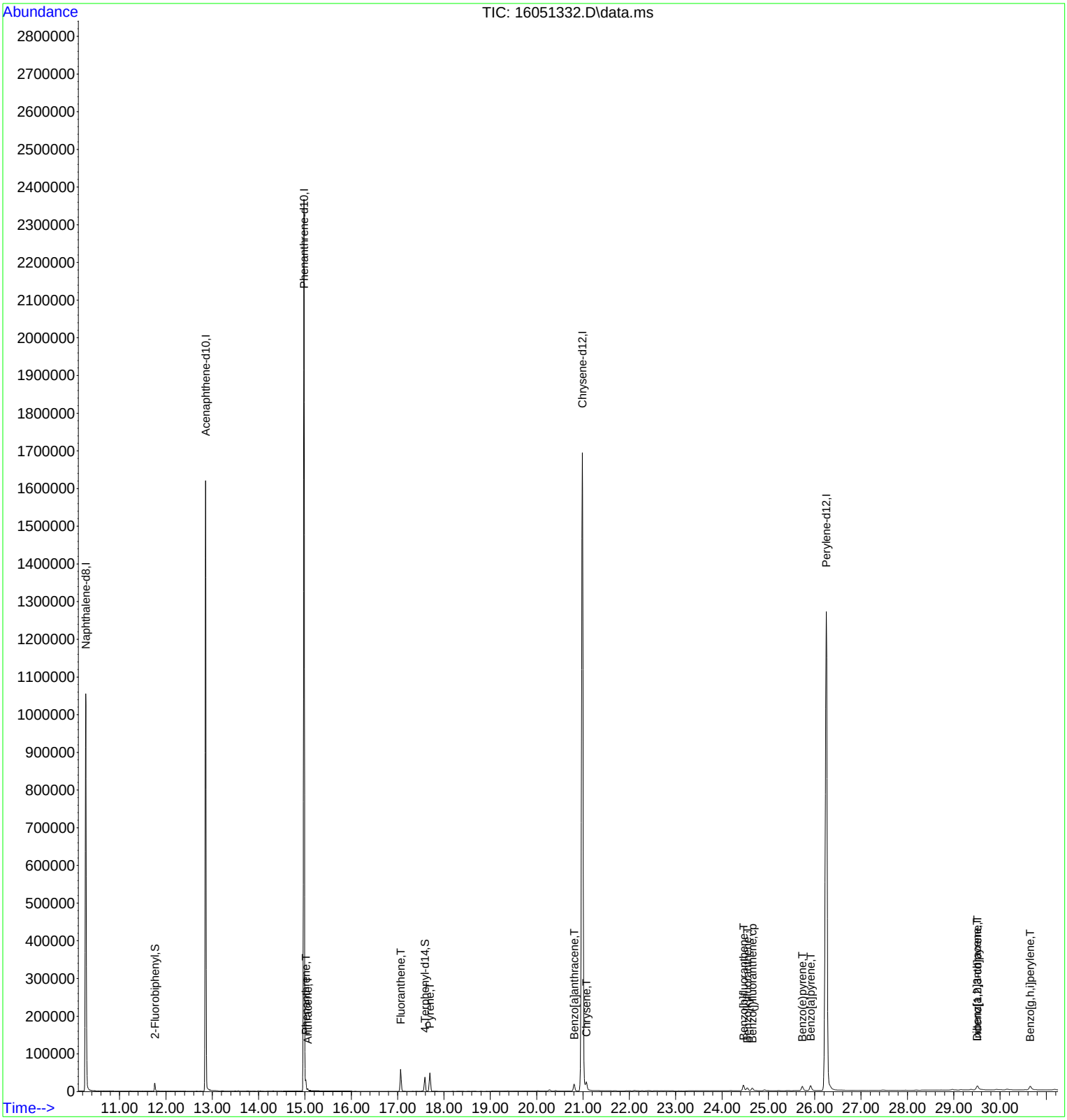
CONFIRMED
By Sherri Herschmann at 3:53:45 PM, 5/16/2016

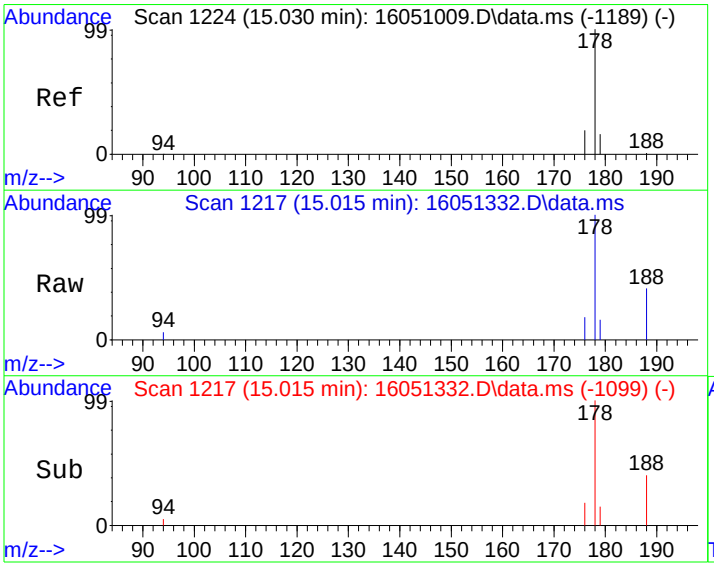
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051332.D
Acq On : 14 May 2016 6:51 am
Operator :
Sample : 1605098-31A
Misc : SAMP
ALS Vial : 30 Sample Multiplier: 10

Quant Time: May 16 09:04:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

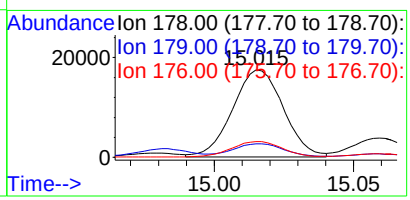


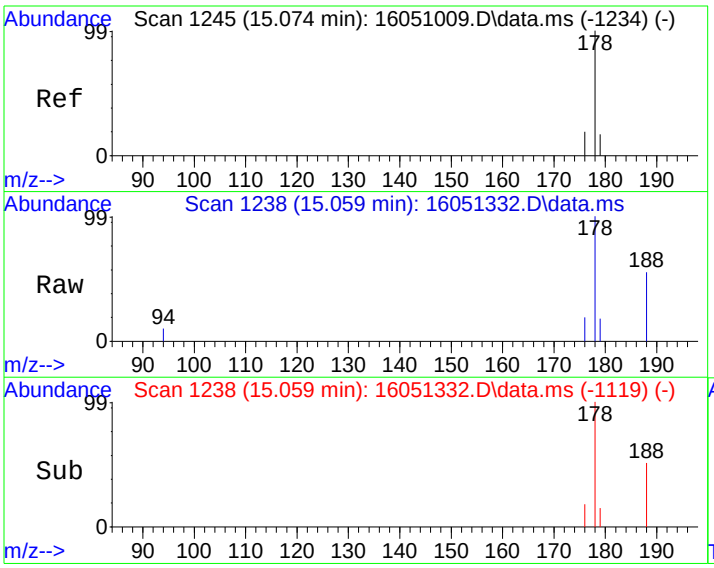


#12
Phenanthrene
Concen: 26.67 ug/kg
RT: 15.015 min Scan# 1217
Delta R.T. -0.001 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:178 Resp: 22120

Ion	Ratio	Lower	Upper
178	100		
179	14.7	0.0	36.4
176	18.1	0.0	39.2

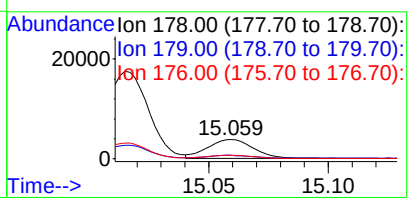


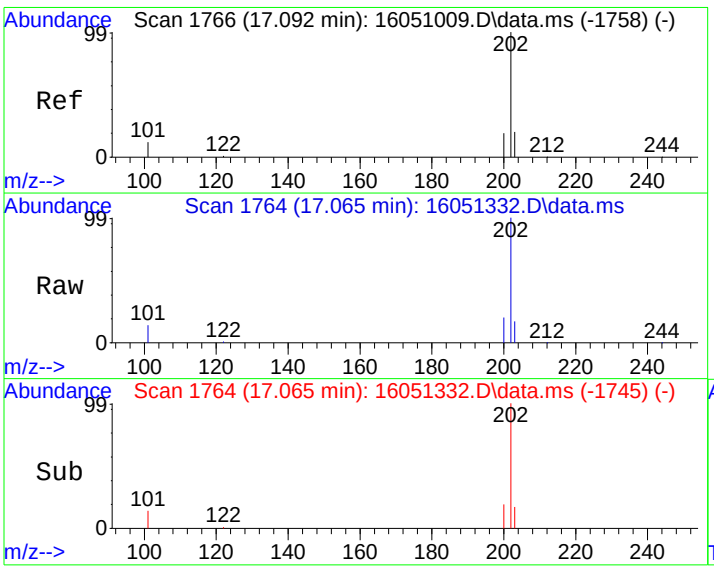


#13
Anthracene
Concen: 5.51 ug/kg
RT: 15.059 min Scan# 1238
Delta R.T. 0.001 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:178 Resp: 4953

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.5
176	18.1	0.0	38.6

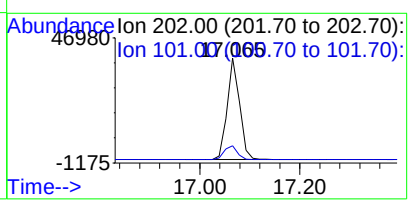


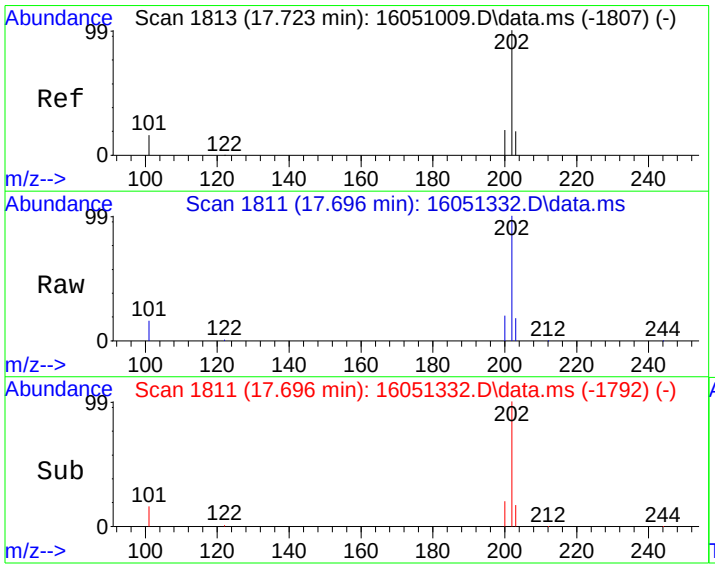


#14
Fluoranthene
Concen: 62.06 ug/kg
RT: 17.065 min Scan# 1764
Delta R.T. 0.000 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:202 Resp: 67369

Ion	Ratio	Lower	Upper
202	100		
101	13.6	0.0	32.0

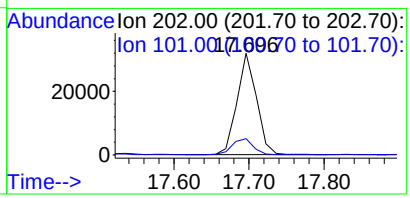


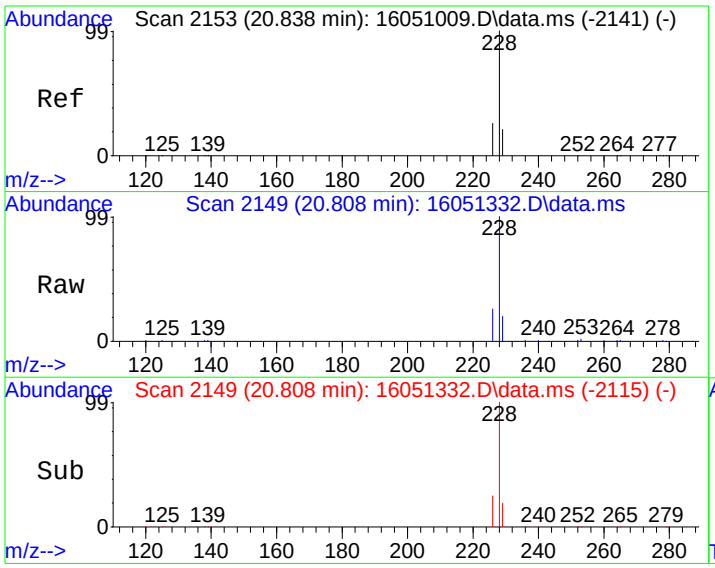


#15
Pyrene
Concen: 52.99 ug/kg
RT: 17.696 min Scan# 1811
Delta R.T. 0.000 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:202 Resp: 57692

Ion	Ratio	Lower	Upper
202	100		
101	15.8	0.0	35.9

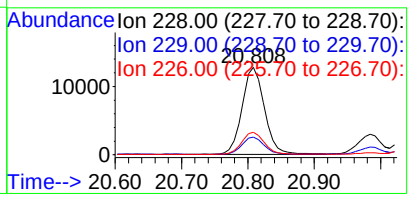


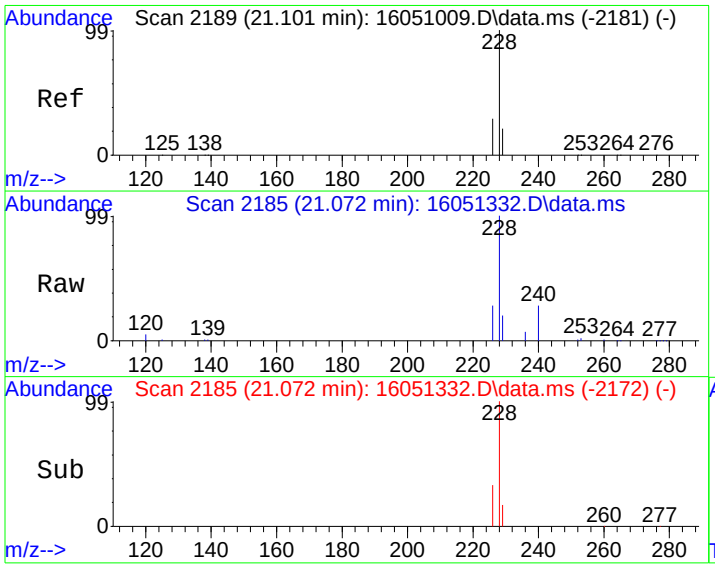


#18
Benzo[a]anthracene
Concen: 36.83 ug/kg
RT: 20.808 min Scan# 2149
Delta R.T. 0.002 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:228 Resp: 29734

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.7	40.7
226	25.4	5.9	45.9

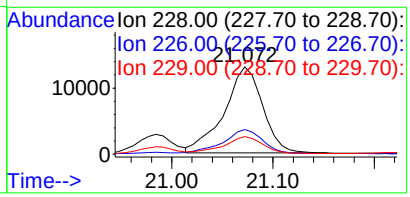


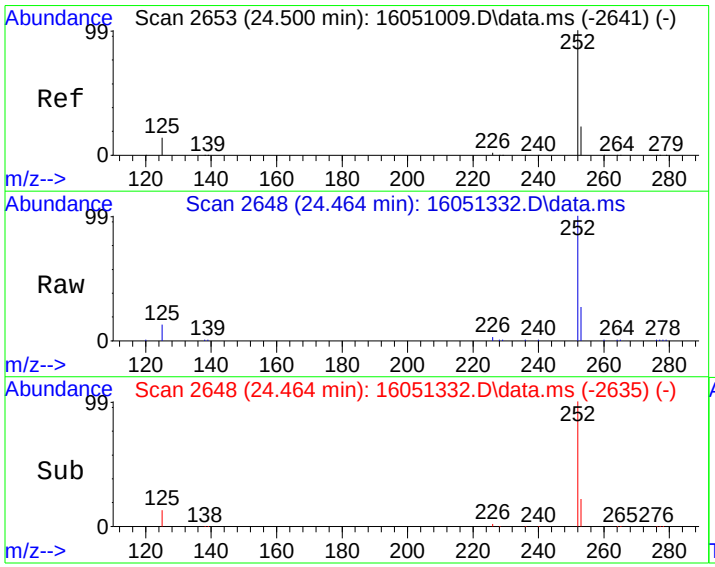


#19
Chrysene
Concen: 46.57 ug/kg
RT: 21.072 min Scan# 2185
Delta R.T. -0.005 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:228 Resp: 34417

Ion	Ratio	Lower	Upper
228	100		
226	27.9	8.8	48.8
229	19.7	0.5	40.5

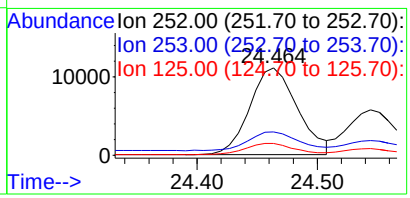


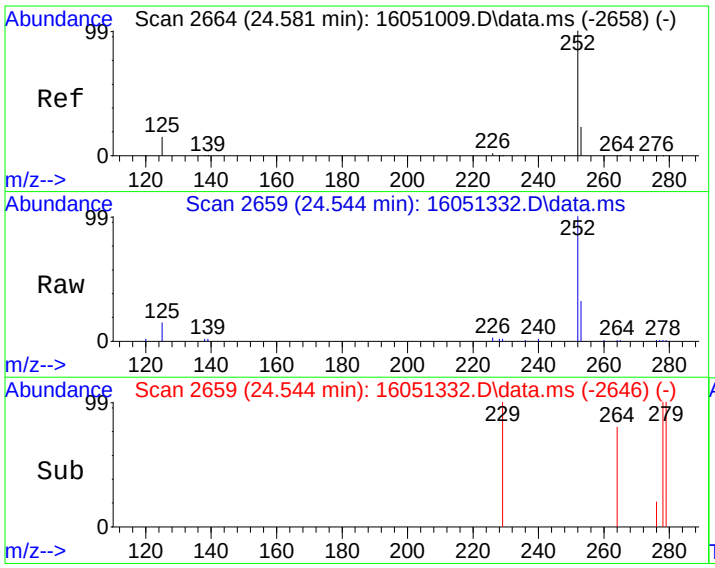


#21
Benzo[b]fluoranthene
Concen: 43.28 ug/kg
RT: 24.464 min Scan# 2648
Delta R.T. -0.005 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:252 Resp: 30596

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.6	42.6
125	12.6	0.0	33.8

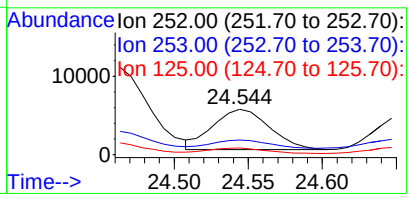


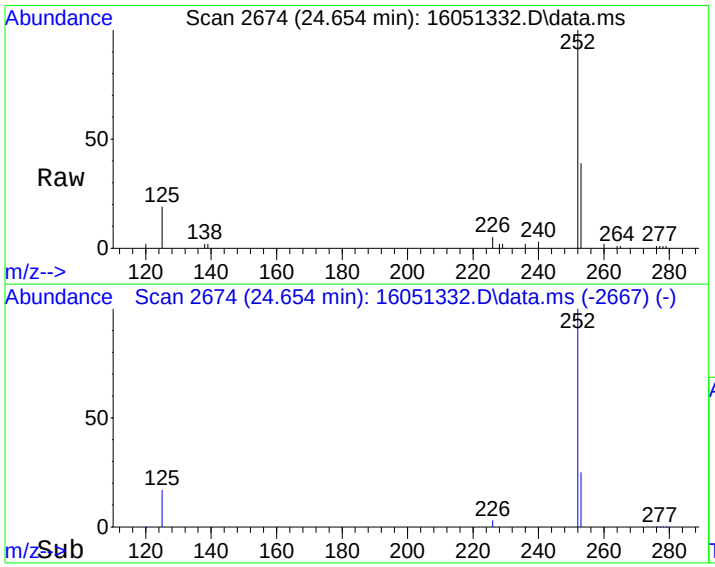


#22
Benzo[k]fluoranthene
Concen: 24.07 ug/kg
RT: 24.544 min Scan# 2659
Delta R.T. -0.005 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:252 Resp: 13647

Ion	Ratio	Lower	Upper
252	100		
253	19.9	2.8	42.8
125	13.3	0.0	34.7

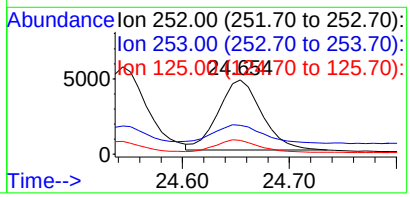


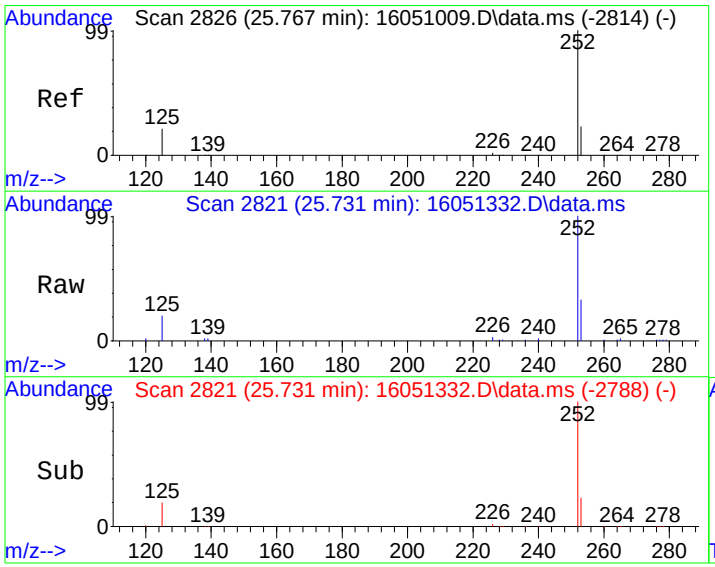


#23
Benzo(j)fluoranthene
Concen: 22.97 ug/kg
RT: 24.654 min Scan# 2674
Delta R.T. -0.005 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:252 Resp: 13160

Ion	Ratio	Lower	Upper
252	100		
253	29.1	2.3	42.3
125	17.5	0.0	39.2

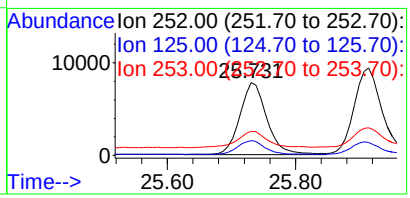


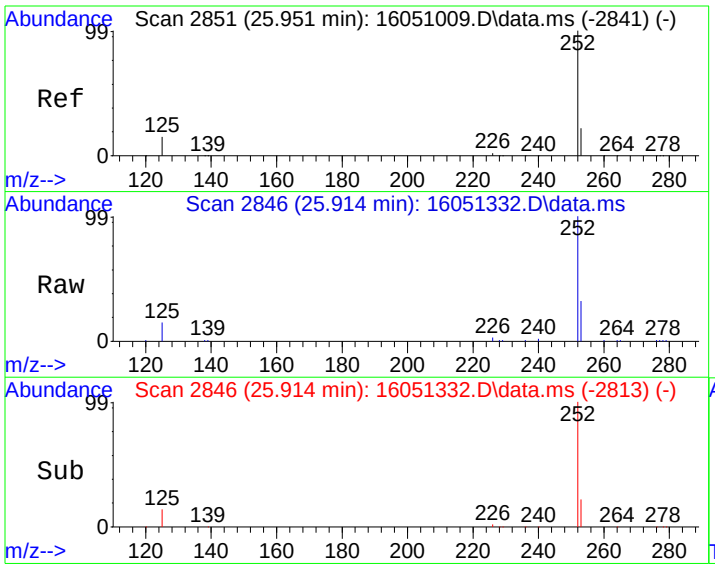


#24
Benzo(e)pyrene
Concen: 33.40 ug/kg
RT: 25.731 min Scan# 2821
Delta R.T. -0.005 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:252 Resp: 22660

Ion	Ratio	Lower	Upper
252	100		
125	19.4	0.8	40.8
253	25.0	2.4	42.4

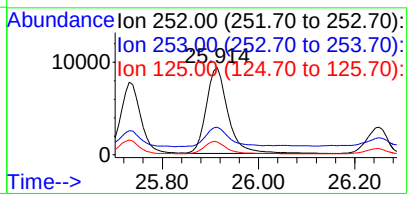


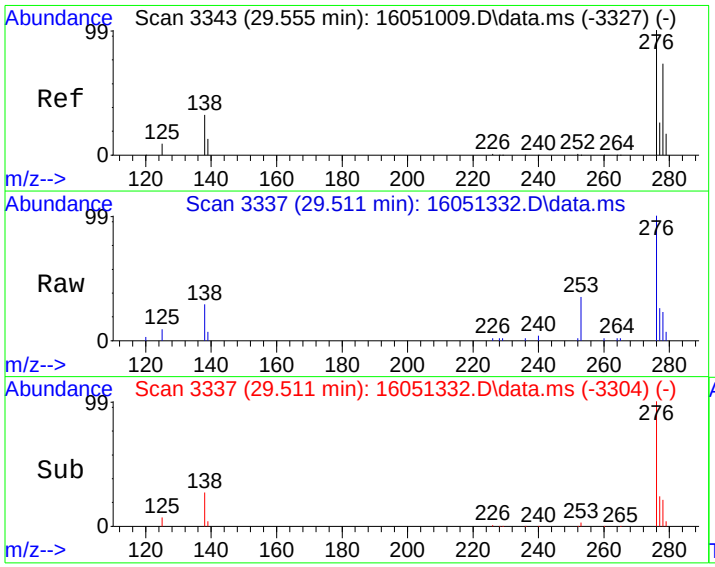


#25
Benzo[a]pyrene
Concen: 44.41 ug/kg
RT: 25.914 min Scan# 2846
Delta R.T. -0.005 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:252 Resp: 28854

Ion	Ratio	Lower	Upper
252	100		
253	22.4	2.5	42.5
125	13.7	0.0	35.5

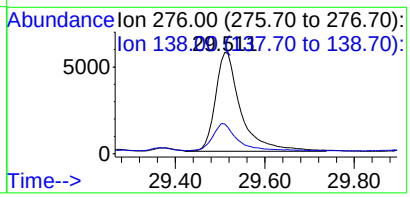


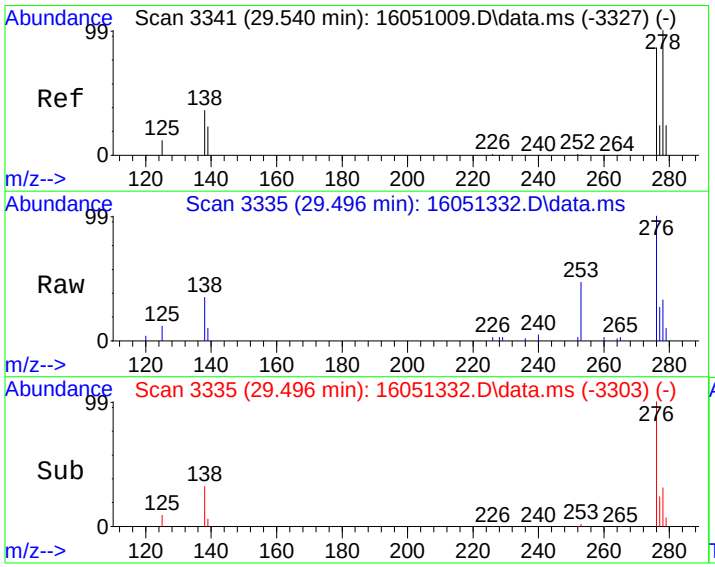


#26
Indeno[1,2,3-cd]pyrene
Concen: 30.94 ug/kg
RT: 29.511 min Scan# 3337
Delta R.T. -0.005 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:276 Resp: 22269

Ion	Ratio	Lower	Upper
276	100		
138	26.7	12.0	52.0

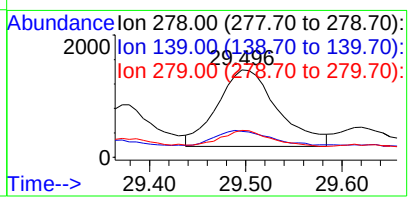


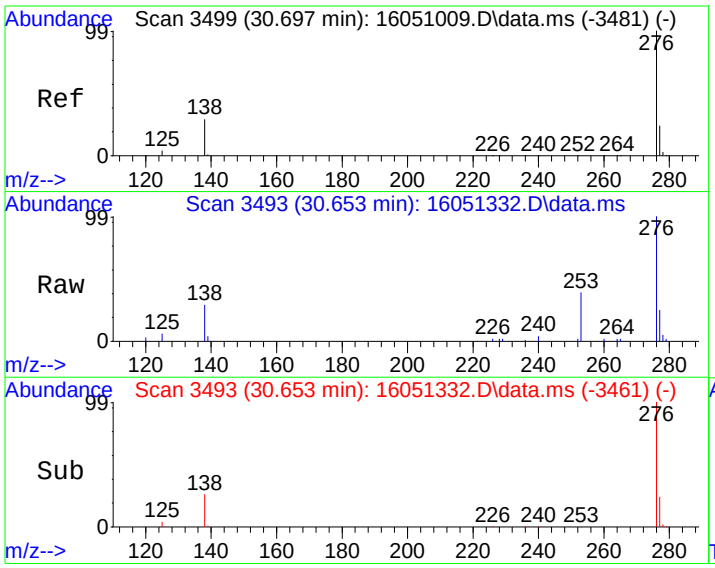


#27
Dibenz[a,h]anthracene
Concen: 9.35 ug/kg
RT: 29.496 min Scan# 3335
Delta R.T. -0.013 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:278 Resp: 5484

Ion	Ratio	Lower	Upper
278	100		
139	21.6	2.9	42.9
279	24.0	4.4	44.4

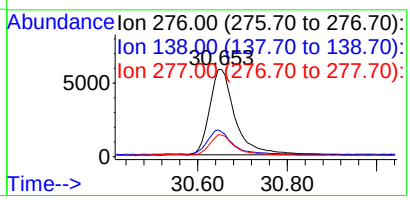




#28
Benzo[g,h,i]perylene
Concen: 36.77 ug/kg
RT: 30.653 min Scan# 3493
Delta R.T. -0.013 min
Lab File: 16051332.D
Acq: 14 May 2016 6:51 am

Tgt Ion:276 Resp: 23093

Ion	Ratio	Lower	Upper
276	100		
138	26.1	9.3	49.3
277	23.5	4.3	44.3



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051333.D
Acq On : 14 May 2016 7:28 am
Operator :
Sample : 1605098-34A
Misc : SAMP
ALS Vial : 31 Sample Multiplier: 10

Quant Time: May 16 09:04:20 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1559182	4000.00	ug/kg	100
6) Acenaphthene-d10	12.856	164	1066778	4000.00	ug/kg	109
11) Phenanthrene-d10	14.978	188	3000249	4000.00	ug/kg	97
16) Chrysene-d12	20.991	240	3029078	4000.00	ug/kg	87
20) Perylene-d12	26.250	264	2656732	4000.00	ug/kg	90

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	24756	80.79	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.02%#			
17) 4-Terphenyl-d14	17.589	244	58265	83.25	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.08%#			

Target Compounds						Qvalue
12) Phenanthrene	15.014	178	29912	34.45	ug/kg	98
13) Anthracene	15.058	178	6582	7.00	ug/kg	97
14) Fluoranthene	17.066	202	95633	84.15	ug/kg	97
15) Pyrene	17.696	202	83248	73.04	ug/kg	99
18) Benzo[a]anthracene	20.808	228	43847	51.49	ug/kg	98
19) Chrysene	21.071	228	51063	65.51	ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	44486	58.80	ug/kg	97
22) Benzo[k]fluoranthene	24.543	252	19837	32.69	ug/kg	95
23) Benzo(j)fluoranthene	24.653	252	19193	31.29	ug/kg	90
24) Benzo(e)pyrene	25.730	252	33085	45.56	ug/kg	96
25) Benzo[a]pyrene	25.906	252	41894	60.25	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.510	276	31131	40.41	ug/kg	91
27) Dibenz[a,h]anthracene	29.502	278	7342	11.69	ug/kg	97
28) Benzo[g,h,i]perylene	30.652	276	32503	48.35	ug/kg	97

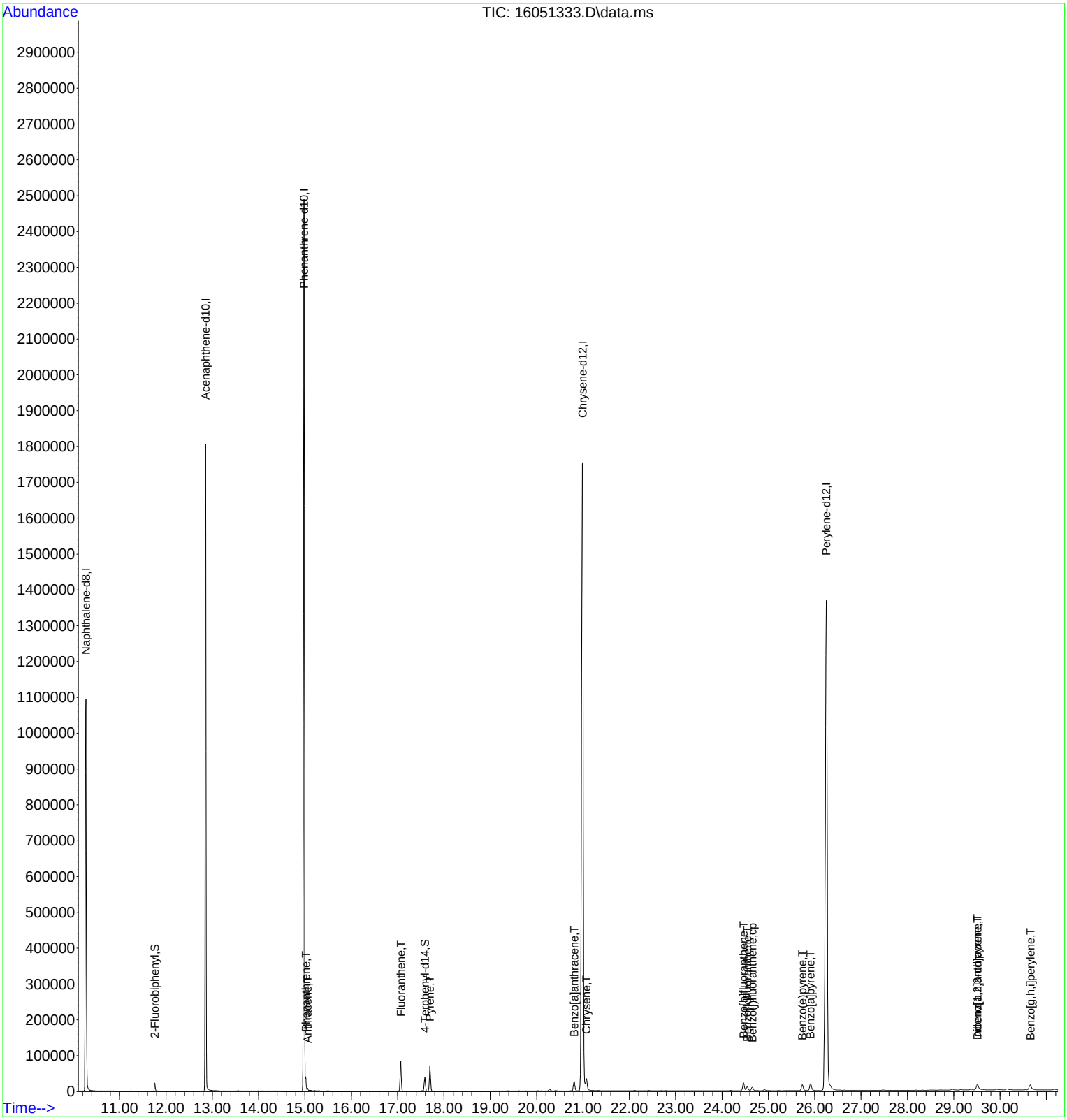
CONFIRMED
By Sherri Herschmann at 3:54:31 PM, 5/16/2016

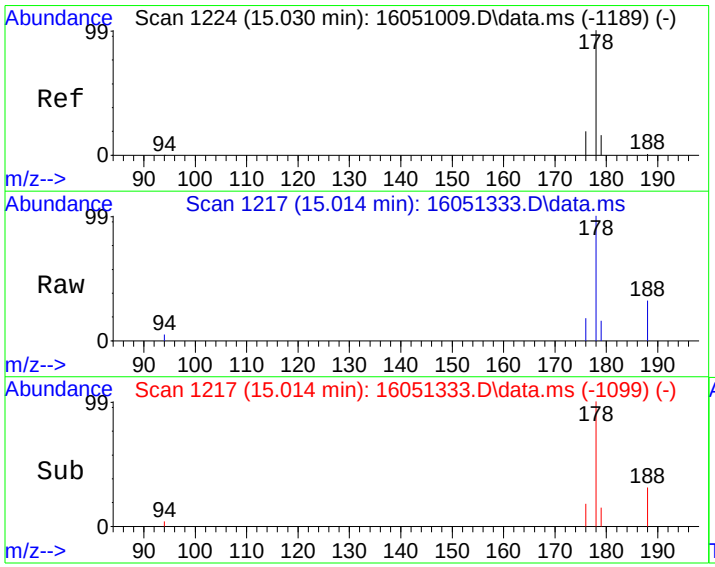
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051333.D
Acq On : 14 May 2016 7:28 am
Operator :
Sample : 1605098-34A
Misc : SAMP
ALS Vial : 31 Sample Multiplier: 10

Quant Time: May 16 09:04:20 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

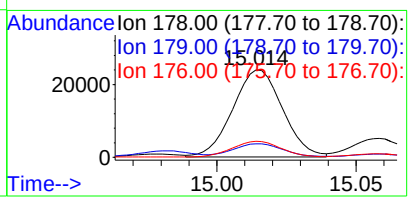


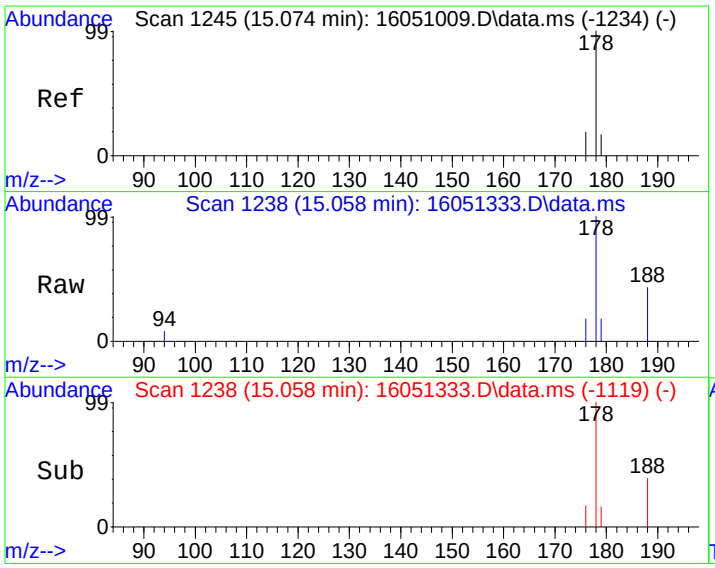


#12
Phenanthrene
Concen: 34.45 ug/kg
RT: 15.014 min Scan# 1217
Delta R.T. -0.002 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:178 Resp: 29912

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	18.5	0.0	39.2

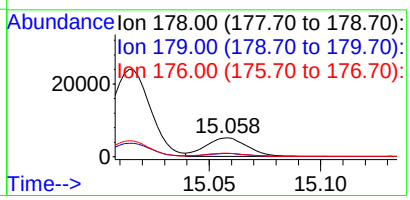


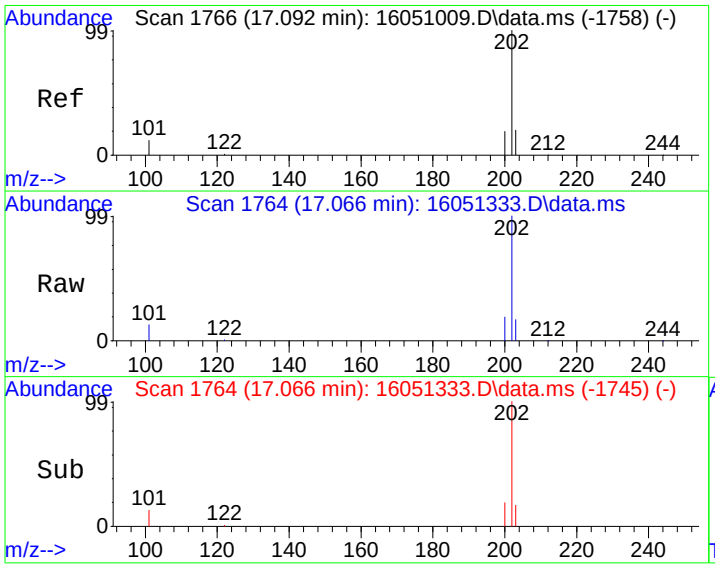


#13
Anthracene
Concen: 7.00 ug/kg
RT: 15.058 min Scan# 1238
Delta R.T. 0.000 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:178 Resp: 6582

Ion	Ratio	Lower	Upper
178	100		
179	15.7	0.0	36.5
176	17.2	0.0	38.6

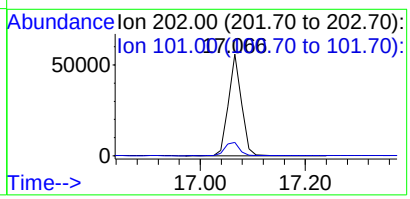


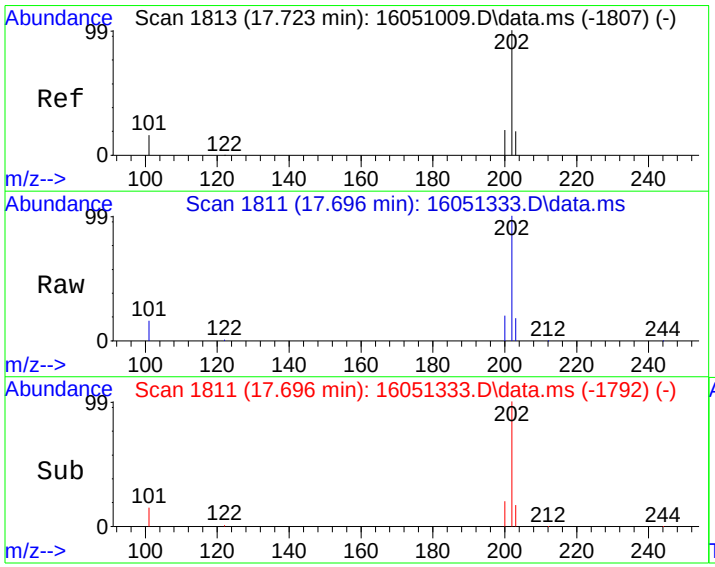


#14
Fluoranthene
Concen: 84.15 ug/kg
RT: 17.066 min Scan# 1764
Delta R.T. 0.001 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:202 Resp: 95633

Ion	Ratio	Lower	Upper
202	100		
101	13.0	0.0	32.0

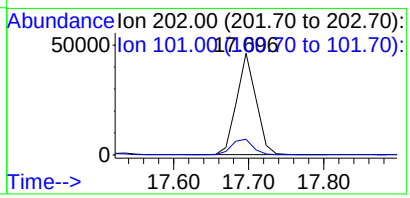


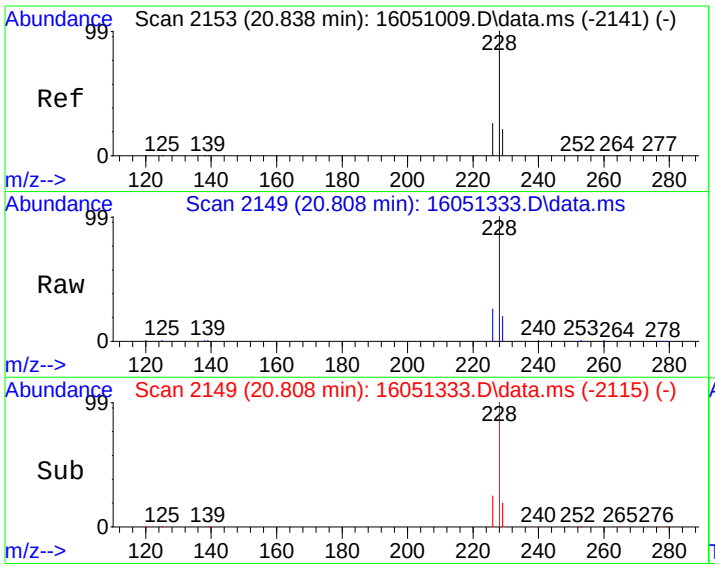


#15
Pyrene
Concen: 73.04 ug/kg
RT: 17.696 min Scan# 1811
Delta R.T. 0.001 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:202 Resp: 83248

Ion	Ratio	Lower	Upper
202	100		
101	15.4	0.0	35.9

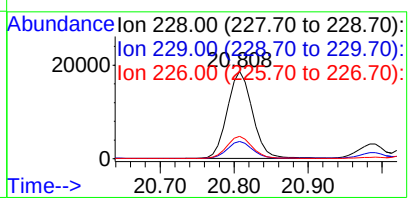


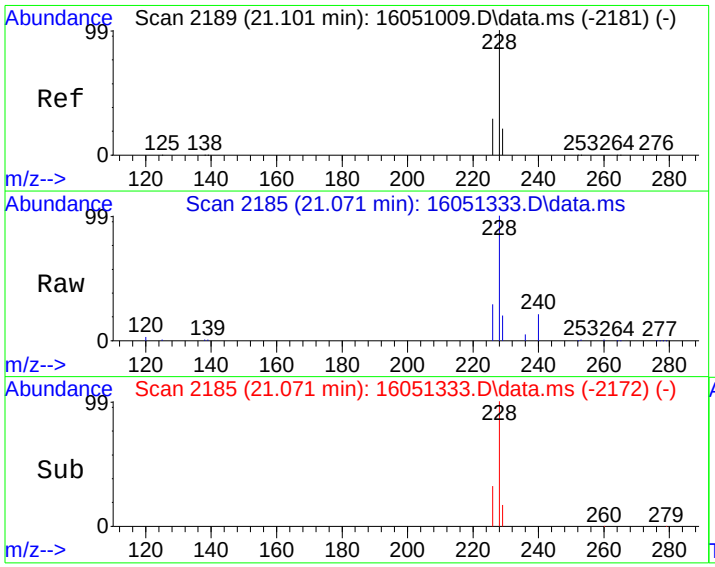


#18
Benzo[a]anthracene
Concen: 51.49 ug/kg
RT: 20.808 min Scan# 2149
Delta R.T. 0.001 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:228 Resp: 43847

Ion	Ratio	Lower	Upper
228	100		
229	19.5	0.7	40.7
226	25.4	5.9	45.9

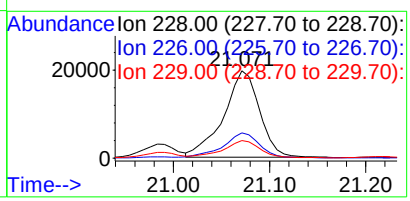


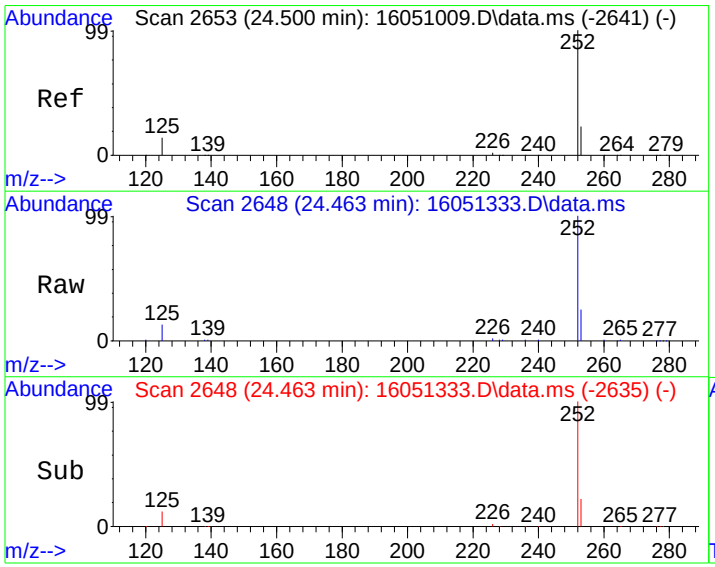


#19
Chrysene
Concen: 65.51 ug/kg
RT: 21.071 min Scan# 2185
Delta R.T. -0.006 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:228 Resp: 51063

Ion	Ratio	Lower	Upper
228	100		
226	28.7	8.8	48.8
229	19.7	0.5	40.5

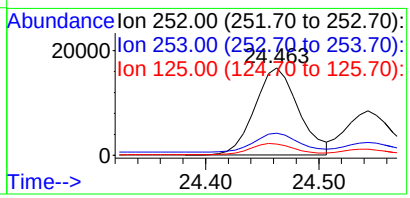


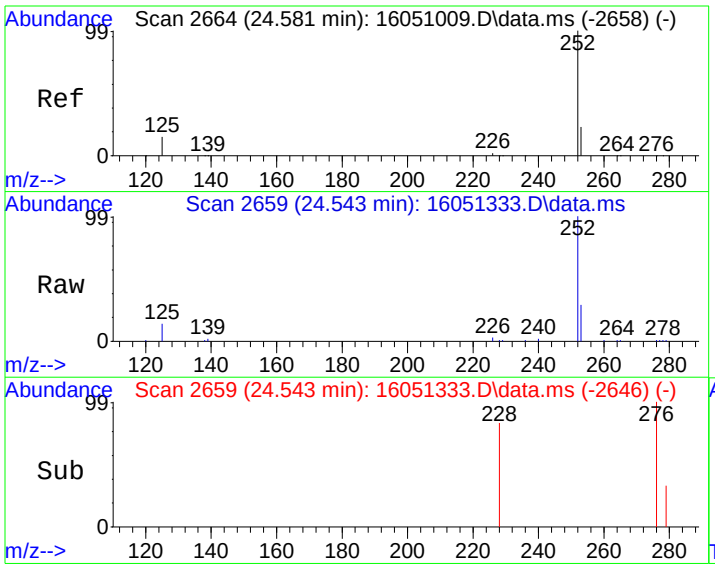


#21
Benzo[b]fluoranthene
Concen: 58.80 ug/kg
RT: 24.463 min Scan# 2648
Delta R.T. -0.006 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:252 Resp: 44486

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.6	42.6
125	12.2	0.0	33.8

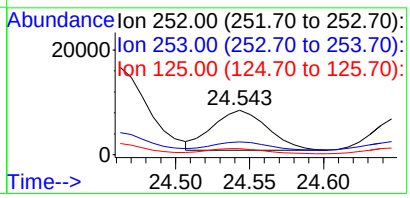


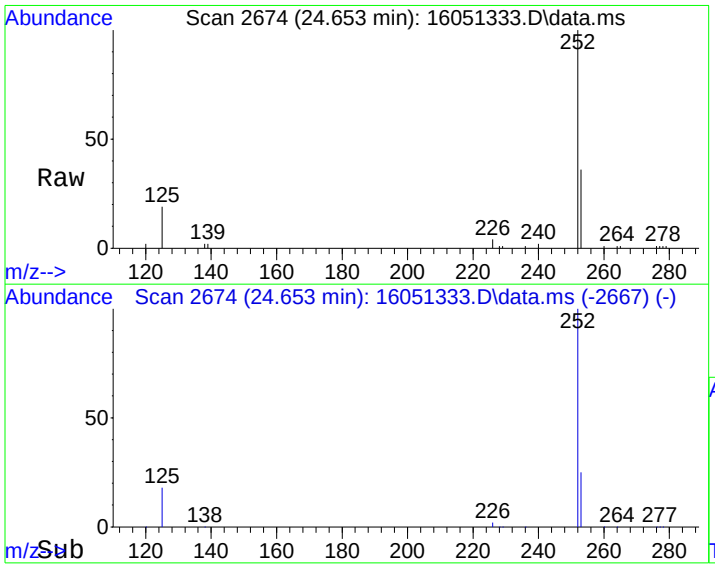


#22
Benzo[k]fluoranthene
Concen: 32.69 ug/kg
RT: 24.543 min Scan# 2659
Delta R.T. -0.006 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:252 Resp: 19837

Ion	Ratio	Lower	Upper
252	100		
253	20.1	2.8	42.8
125	12.5	0.0	34.7

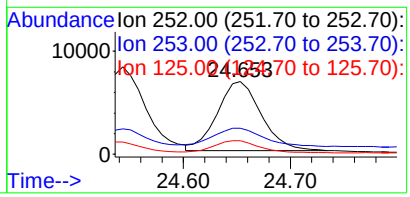


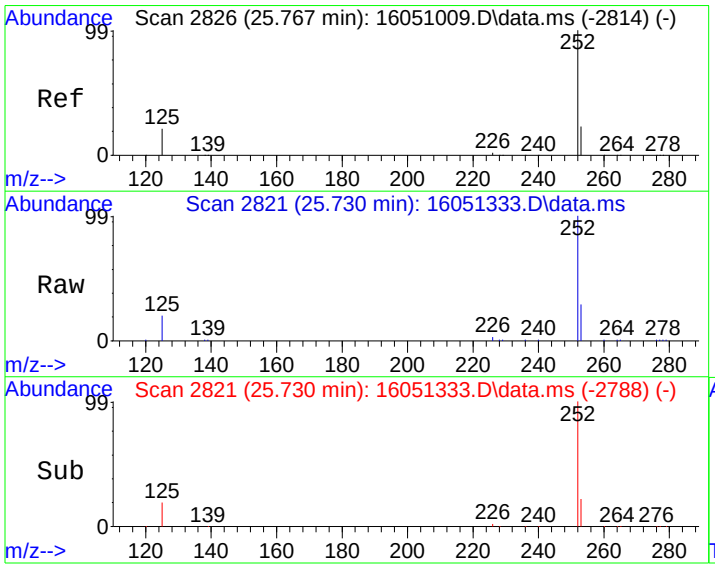


#23
Benzo(j)fluoranthene
Concen: 31.29 ug/kg
RT: 24.653 min Scan# 2674
Delta R.T. -0.006 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:252 Resp: 19193

Ion	Ratio	Lower	Upper
252	100		
253	29.9	2.3	42.3
125	17.4	0.0	39.2

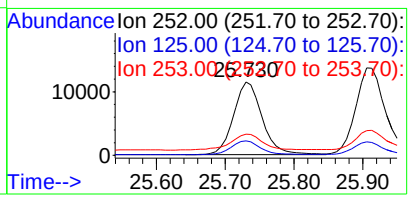


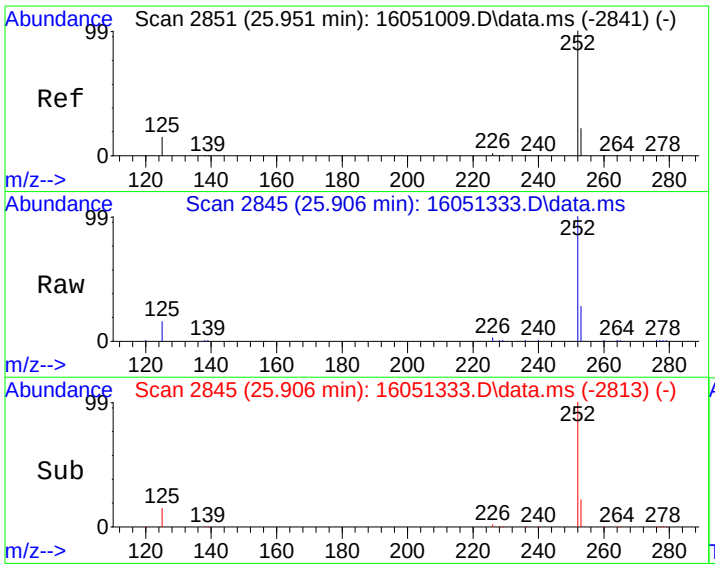


#24
Benzo(e)pyrene
Concen: 45.56 ug/kg
RT: 25.730 min Scan# 2821
Delta R.T. -0.006 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:252 Resp: 33085

Ion	Ratio	Lower	Upper
252	100		
125	19.3	0.8	40.8
253	24.7	2.4	42.4

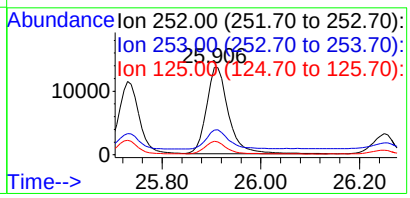


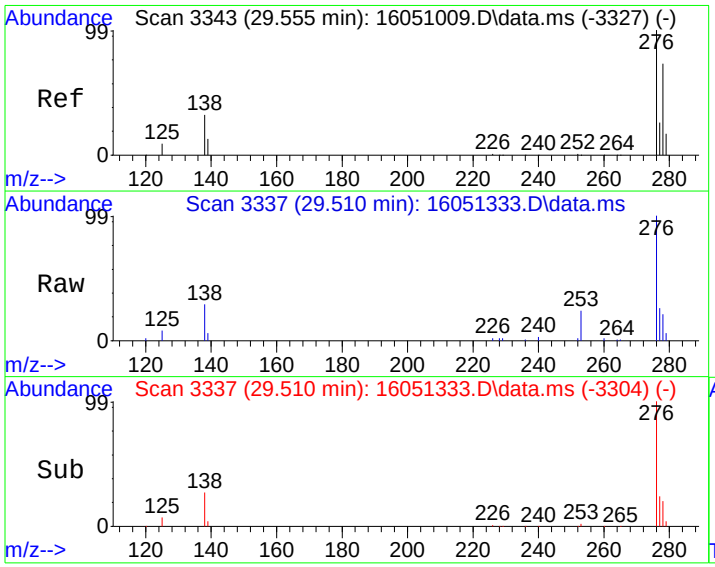


#25
Benzo[a]pyrene
Concen: 60.25 ug/kg
RT: 25.906 min Scan# 2845
Delta R.T. -0.013 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:252 Resp: 41894

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.5	42.5
125	14.7	0.0	35.5

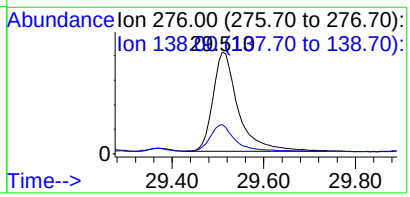


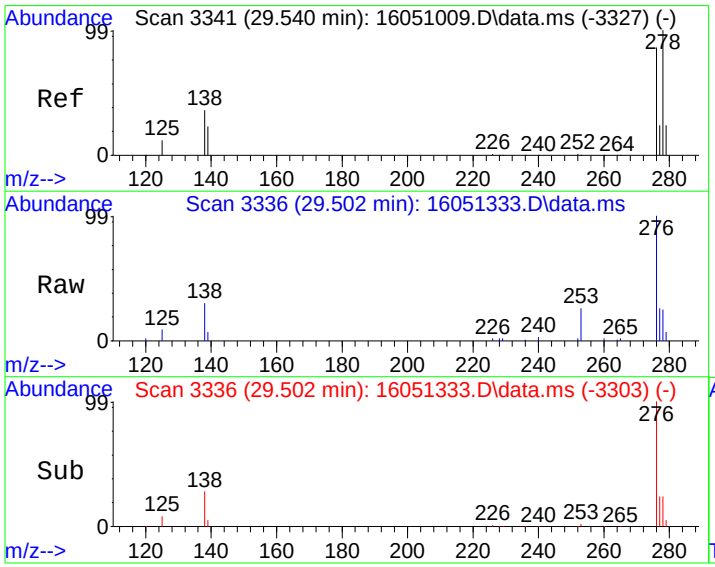


#26
Indeno[1,2,3-cd]pyrene
Concen: 40.41 ug/kg
RT: 29.510 min Scan# 3337
Delta R.T. -0.006 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:276 Resp: 31131

Ion	Ratio	Lower	Upper
276	100		
138	26.8	12.0	52.0

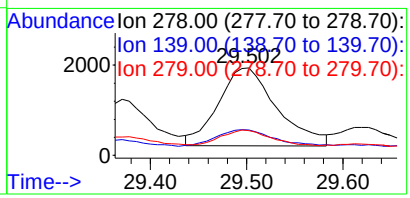


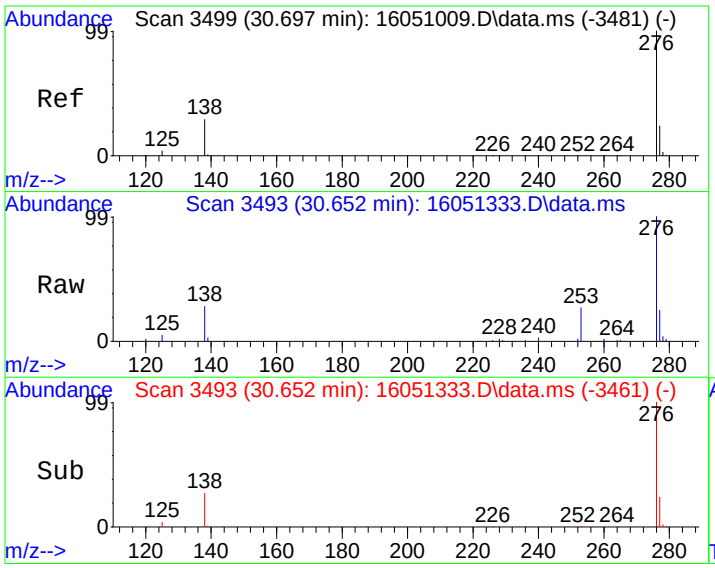


#27
Dibenz[a,h]anthracene
Concen: 11.69 ug/kg
RT: 29.502 min Scan# 3336
Delta R.T. -0.006 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:278 Resp: 7342

Ion	Ratio	Lower	Upper
278	100		
139	22.7	2.9	42.9
279	21.3	4.4	44.4

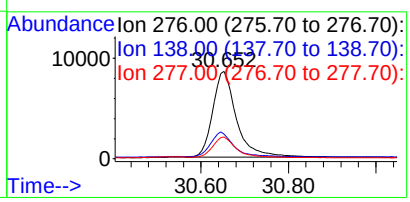




#28
Benzo[g,h,i]perylene
Concen: 48.35 ug/kg
RT: 30.652 min Scan# 3493
Delta R.T. -0.013 min
Lab File: 16051333.D
Acq: 14 May 2016 7:28 am

Tgt Ion:276 Resp: 32503

Ion	Ratio	Lower	Upper
276	100		
138	26.4	9.3	49.3
277	23.9	4.3	44.3



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051334.D
Acq On : 14 May 2016 8:05 am
Operator :
Sample : 1605098-37A
Misc : SAMP
ALS Vial : 32 Sample Multiplier: 10

Quant Time: May 16 09:04:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1494739	4000.00	ug/kg	96
6) Acenaphthene-d10	12.857	164	1050077	4000.00	ug/kg	107
11) Phenanthrene-d10	14.979	188	2920467	4000.00	ug/kg	94
16) Chrysene-d12	20.985	240	2886627	4000.00	ug/kg	83
20) Perylene-d12	26.251	264	2550552	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	24017	81.75	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.04%#			
17) 4-Terphenyl-d14	17.589	244	55655	83.45	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.09%#			

Target Compounds						Qvalue
12) Phenanthrene	15.015	178	38684	45.77	ug/kg	98
13) Anthracene	15.059	178	7794	8.51	ug/kg	96
14) Fluoranthene	17.066	202	120573	109.00	ug/kg	97
15) Pyrene	17.696	202	105417	95.01	ug/kg	99
18) Benzo[a]anthracene	20.809	228	59521	73.35	ug/kg	98
19) Chrysene	21.072	228	69808	93.98	ug/kg	99
21) Benzo[b]fluoranthene	24.464	252	68396	94.16	ug/kg	97
22) Benzo[k]fluoranthene	24.545	252	29627	50.85	ug/kg	95
23) Benzo(j)fluoranthene	24.654	252	28925	49.12	ug/kg	90
24) Benzo(e)pyrene	25.731	252	50660	72.66	ug/kg	96
25) Benzo[a]pyrene	25.907	252	64212	96.18	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.511	276	51022	68.98	ug/kg	89
27) Dibenz[a,h]anthracene	29.496	278	11527	19.12	ug/kg	98
28) Benzo[g,h,i]perylene	30.646	276	53561	82.99	ug/kg	98

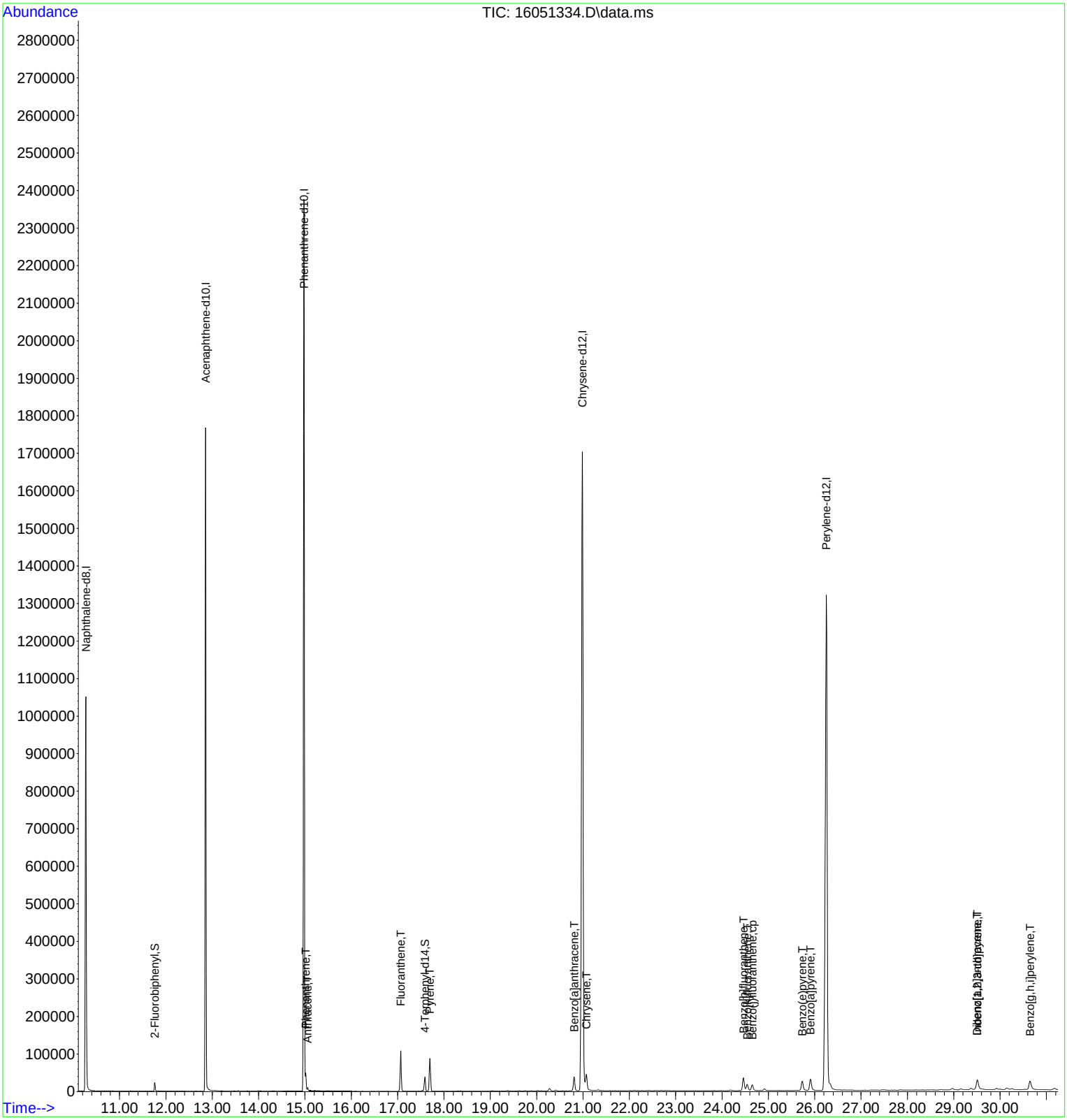
CONFIRMED
By Sherri Herschmann at 3:54:46 PM, 5/16/2016

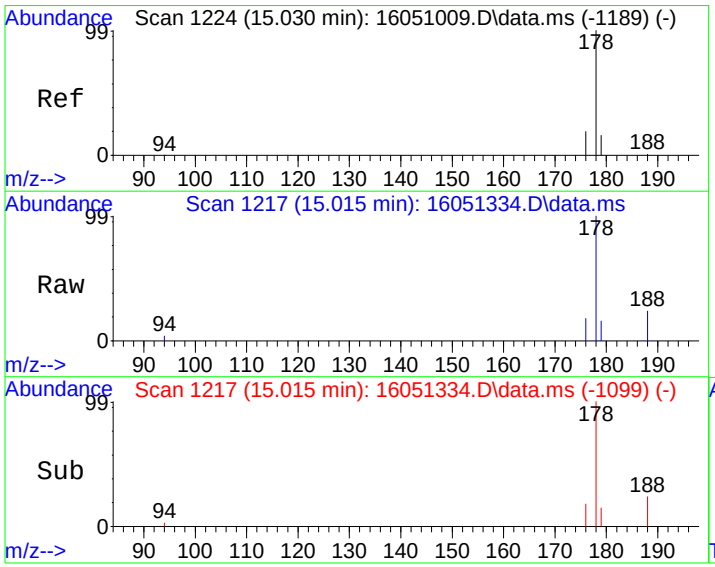
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051334.D
Acq On : 14 May 2016 8:05 am
Operator :
Sample : 1605098-37A
Misc : SAMP
ALS Vial : 32 Sample Multiplier: 10

Quant Time: May 16 09:04:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

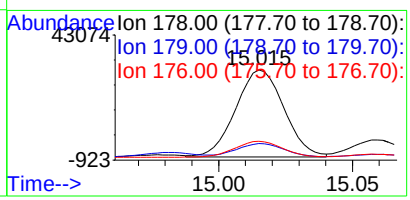


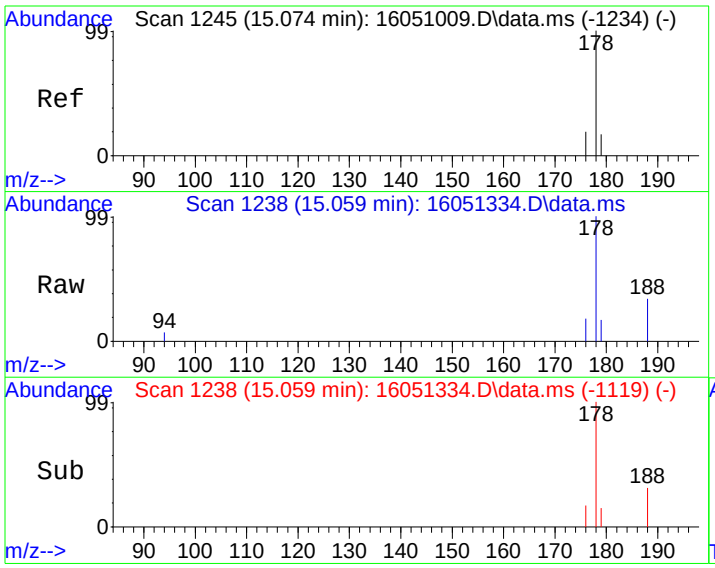


#12
Phenanthrene
Concen: 45.77 ug/kg
RT: 15.015 min Scan# 1217
Delta R.T. -0.001 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:178 Resp: 38684

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	18.5	0.0	39.2

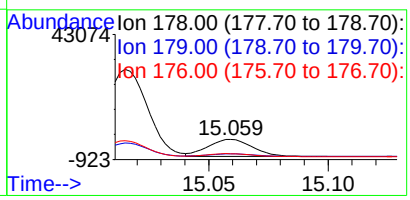


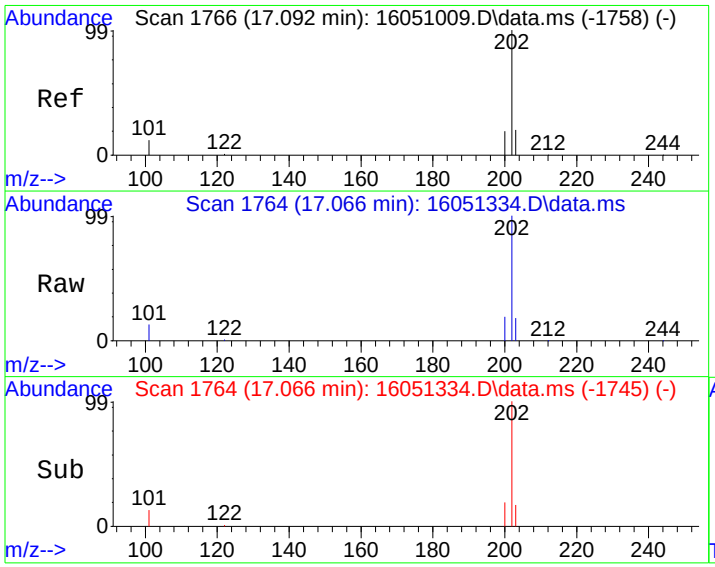


#13
Anthracene
Concen: 8.51 ug/kg
RT: 15.059 min Scan# 1238
Delta R.T. 0.001 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:178 Resp: 7794

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	36.5
176	17.0	0.0	38.6

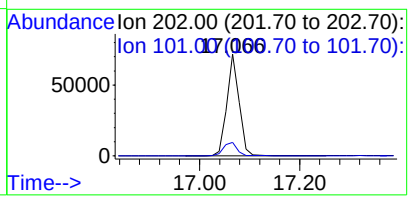


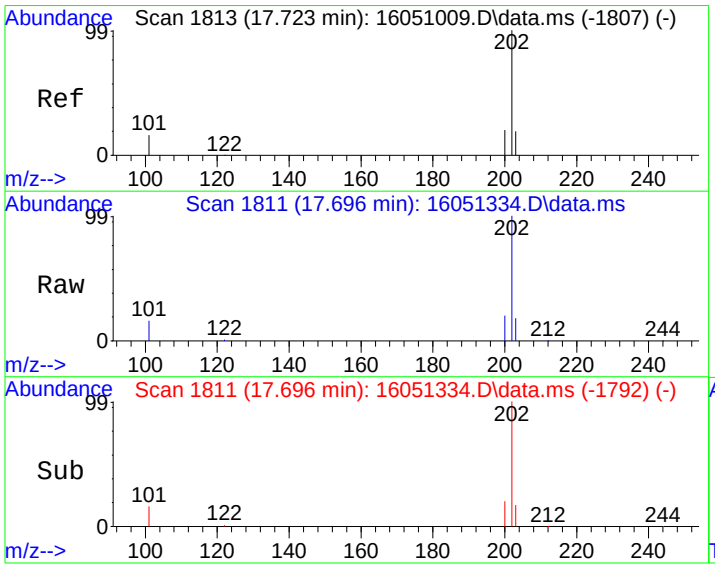


#14
Fluoranthene
Concen: 109.00 ug/kg
RT: 17.066 min Scan# 1764
Delta R.T. 0.000 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:202 Resp: 120573

Ion	Ratio	Lower	Upper
202	100		
101	13.3	0.0	32.0

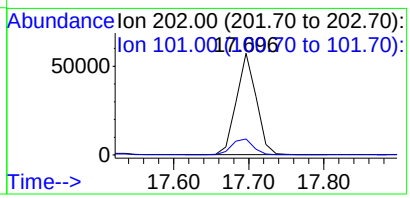


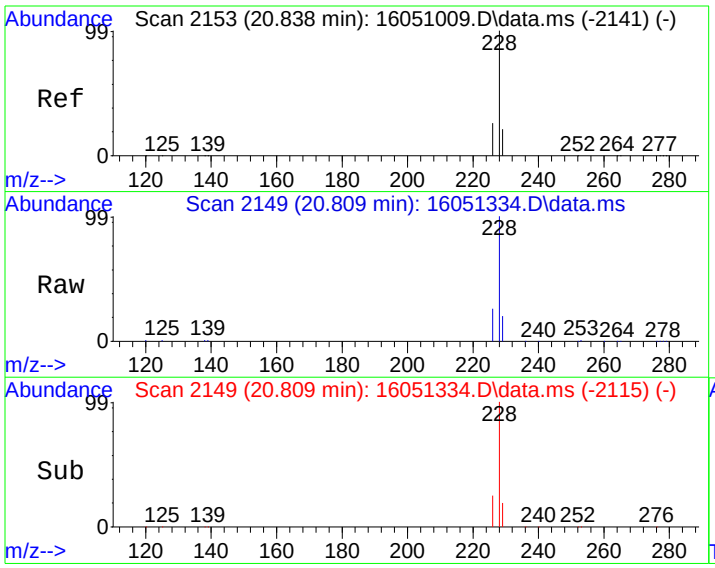


#15
Pyrene
Concen: 95.01 ug/kg
RT: 17.696 min Scan# 1811
Delta R.T. 0.000 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:202 Resp: 105417

Ion	Ratio	Lower	Upper
202	100		
101	15.6	0.0	35.9

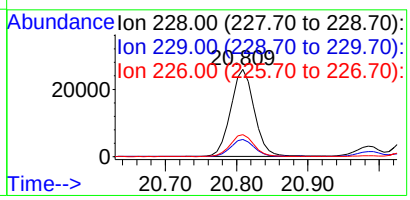


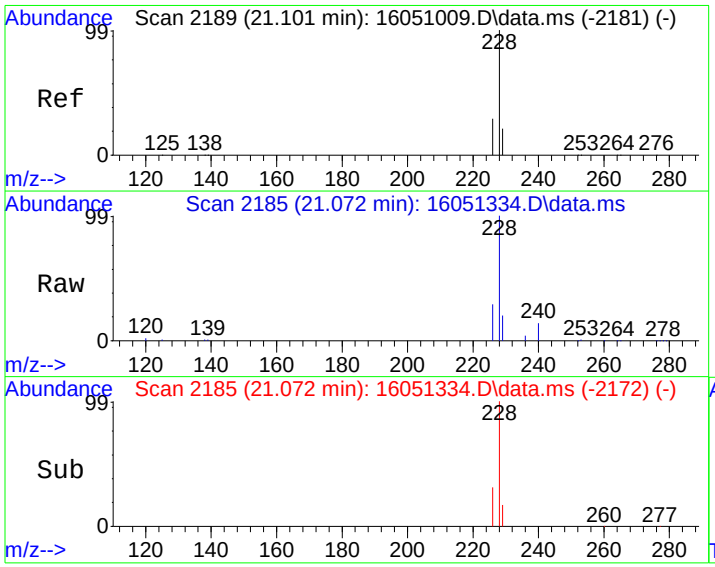


#18
Benzo[a]anthracene
Concen: 73.35 ug/kg
RT: 20.809 min Scan# 2149
Delta R.T. 0.002 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:228 Resp: 59521

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.7	40.7
226	25.3	5.9	45.9

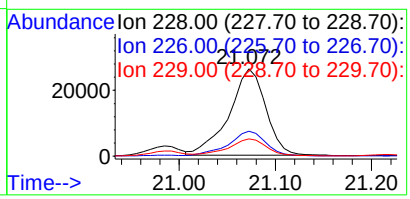


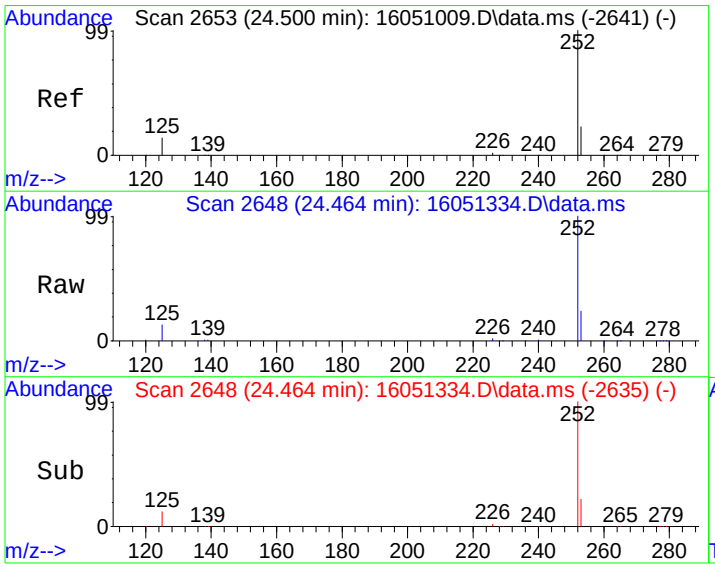


#19
Chrysene
Concen: 93.98 ug/kg
RT: 21.072 min Scan# 2185
Delta R.T. -0.005 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:228 Resp: 69808

Ion	Ratio	Lower	Upper
228	100		
226	28.5	8.8	48.8
229	19.7	0.5	40.5

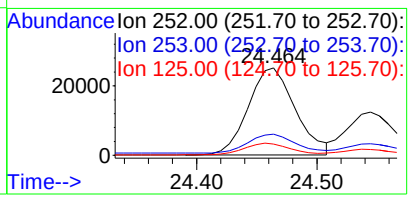


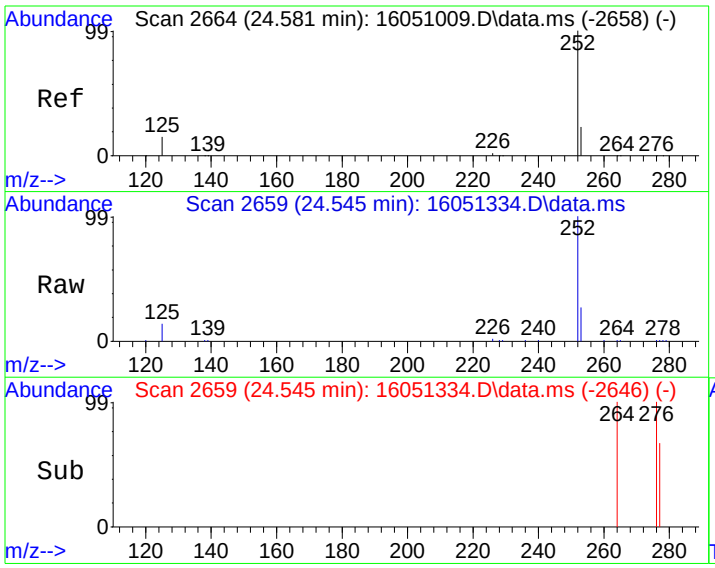


#21
Benzo[b]fluoranthene
Concen: 94.16 ug/kg
RT: 24.464 min Scan# 2648
Delta R.T. -0.005 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:252 Resp: 68396

Ion	Ratio	Lower	Upper
252	100		
253	21.7	2.6	42.6
125	12.3	0.0	33.8

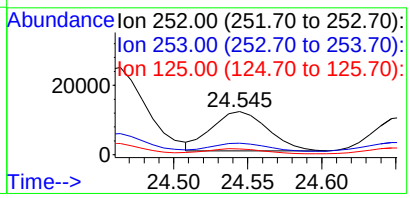


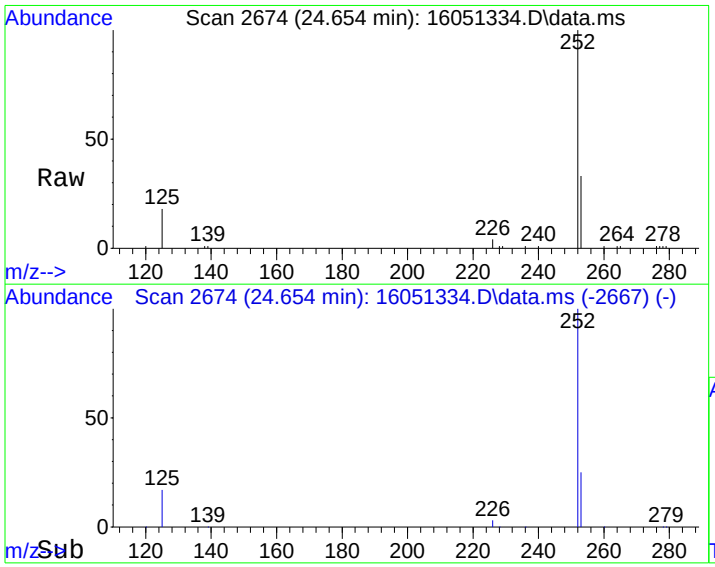


#22
Benzo[k]fluoranthene
Concen: 50.85 ug/kg
RT: 24.545 min Scan# 2659
Delta R.T. -0.005 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:252 Resp: 29627

Ion	Ratio	Lower	Upper
252	100		
253	20.4	2.8	42.8
125	12.4	0.0	34.7

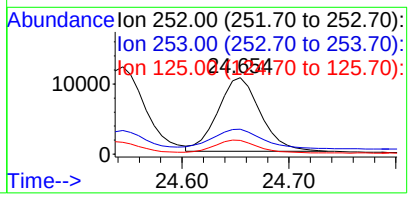


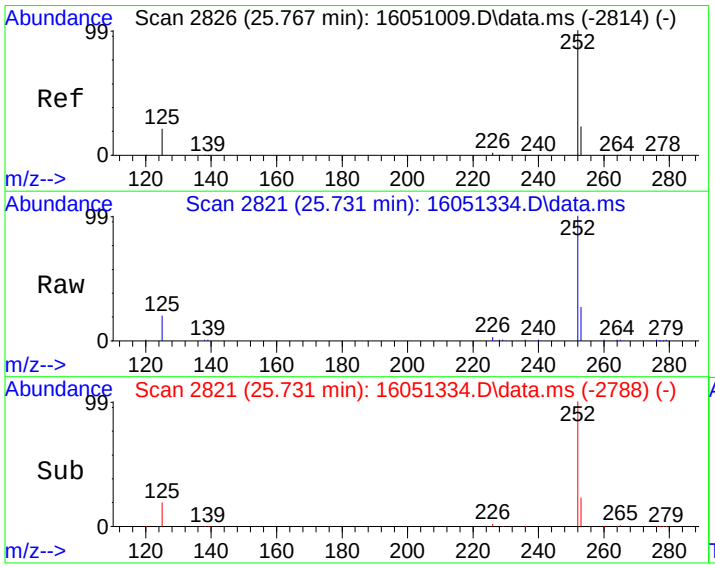


#23
Benzo(j)fluoranthene
Concen: 49.12 ug/kg
RT: 24.654 min Scan# 2674
Delta R.T. -0.005 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:252 Resp: 28925

Ion	Ratio	Lower	Upper
252	100		
253	29.5	2.3	42.3
125	17.8	0.0	39.2

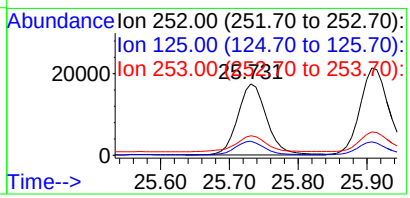


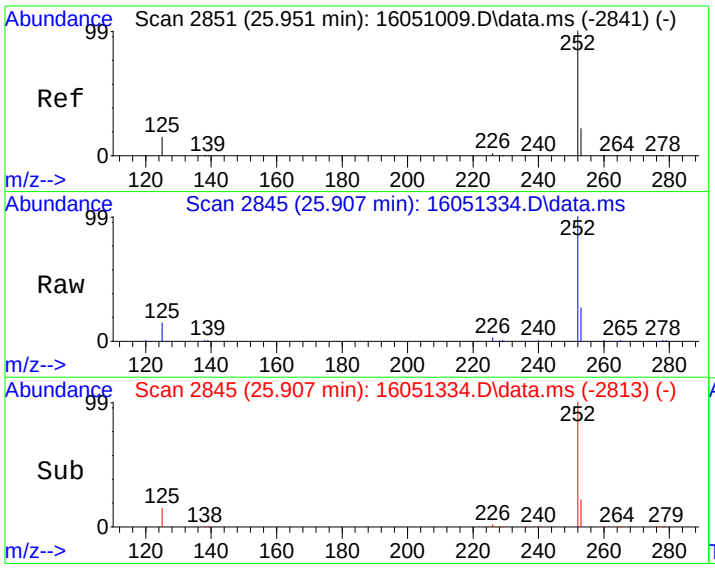


#24
Benzo(e)pyrene
Concen: 72.66 ug/kg
RT: 25.731 min Scan# 2821
Delta R.T. -0.005 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:252 Resp: 50660

Ion	Ratio	Lower	Upper
252	100		
125	18.9	0.8	40.8
253	24.7	2.4	42.4

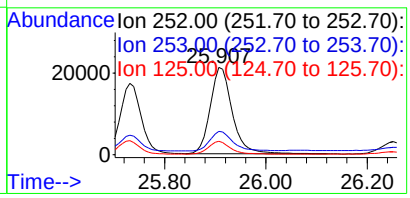


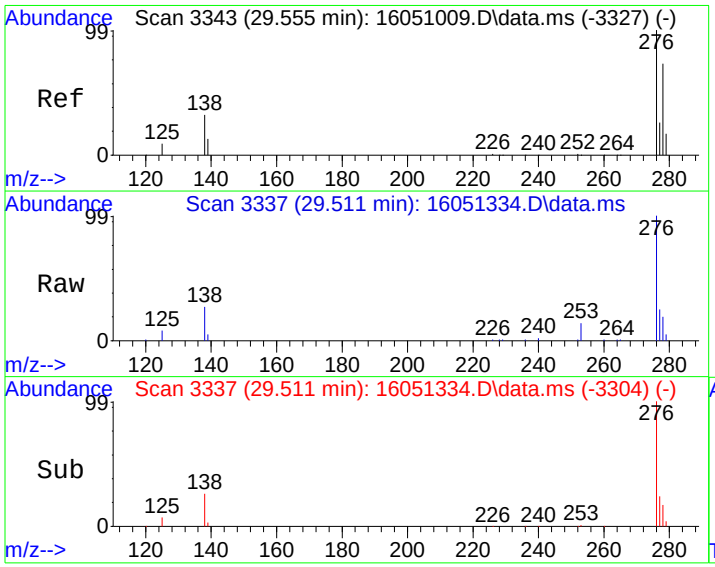


#25
Benzo[a]pyrene
Concen: 96.18 ug/kg
RT: 25.907 min Scan# 2845
Delta R.T. -0.012 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:252 Resp: 64212

Ion	Ratio	Lower	Upper
252	100		
253	22.6	2.5	42.5
125	14.8	0.0	35.5

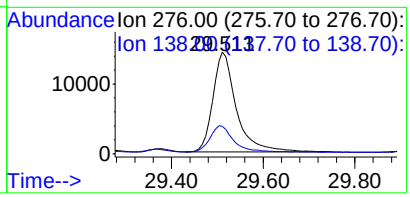


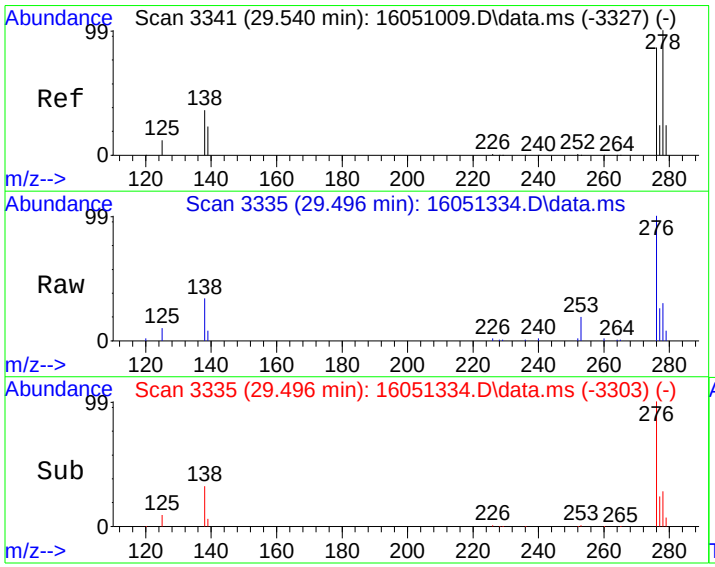


#26
Indeno[1,2,3-cd]pyrene
Concen: 68.98 ug/kg
RT: 29.511 min Scan# 3337
Delta R.T. -0.005 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:276 Resp: 51022

Ion	Ratio	Lower	Upper
276	100		
138	25.9	12.0	52.0

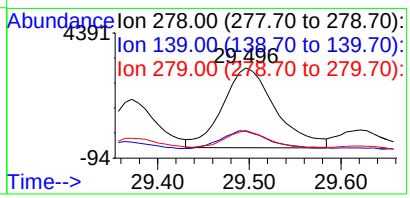


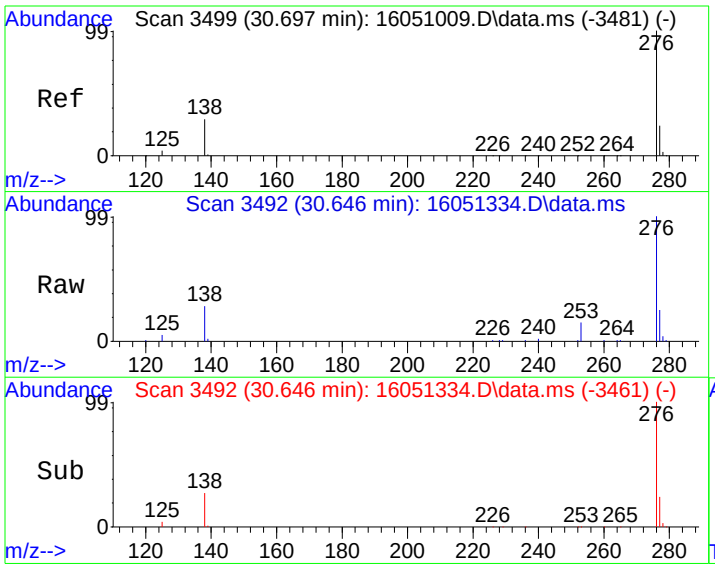


#27
Dibenz[a,h]anthracene
Concen: 19.12 ug/kg
RT: 29.496 min Scan# 3335
Delta R.T. -0.012 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:278 Resp: 11527

Ion	Ratio	Lower	Upper
278	100		
139	23.9	2.9	42.9
279	23.3	4.4	44.4

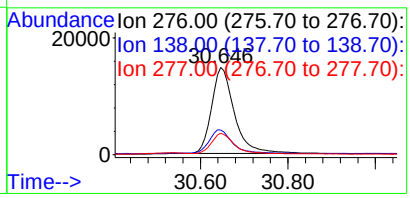




#28
Benzo[g,h,i]perylene
Concen: 82.99 ug/kg
RT: 30.646 min Scan# 3492
Delta R.T. -0.020 min
Lab File: 16051334.D
Acq: 14 May 2016 8:05 am

Tgt Ion:276 Resp: 53561

Ion	Ratio	Lower	Upper
276	100		
138	27.2	9.3	49.3
277	23.9	4.3	44.3



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051338.D
Acq On : 14 May 2016 10:33 am
Operator :
Sample : 1605096-14AMS
Misc : MS
ALS Vial : 36 Sample Multiplier: 10

Quant Time: May 16 09:02:01 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1507603	4000.00	ug/kg	96
6) Acenaphthene-d10	12.856	164	1100755	4000.00	ug/kg	113
11) Phenanthrene-d10	14.979	188	2986740	4000.00	ug/kg	96
16) Chrysene-d12	20.984	240	2783605	4000.00	ug/kg	80
20) Perylene-d12	26.250	264	2511903	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	26210	88.46	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.21%#			
17) 4-Terphenyl-d14	17.587	244	57816	89.89	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.25%#			

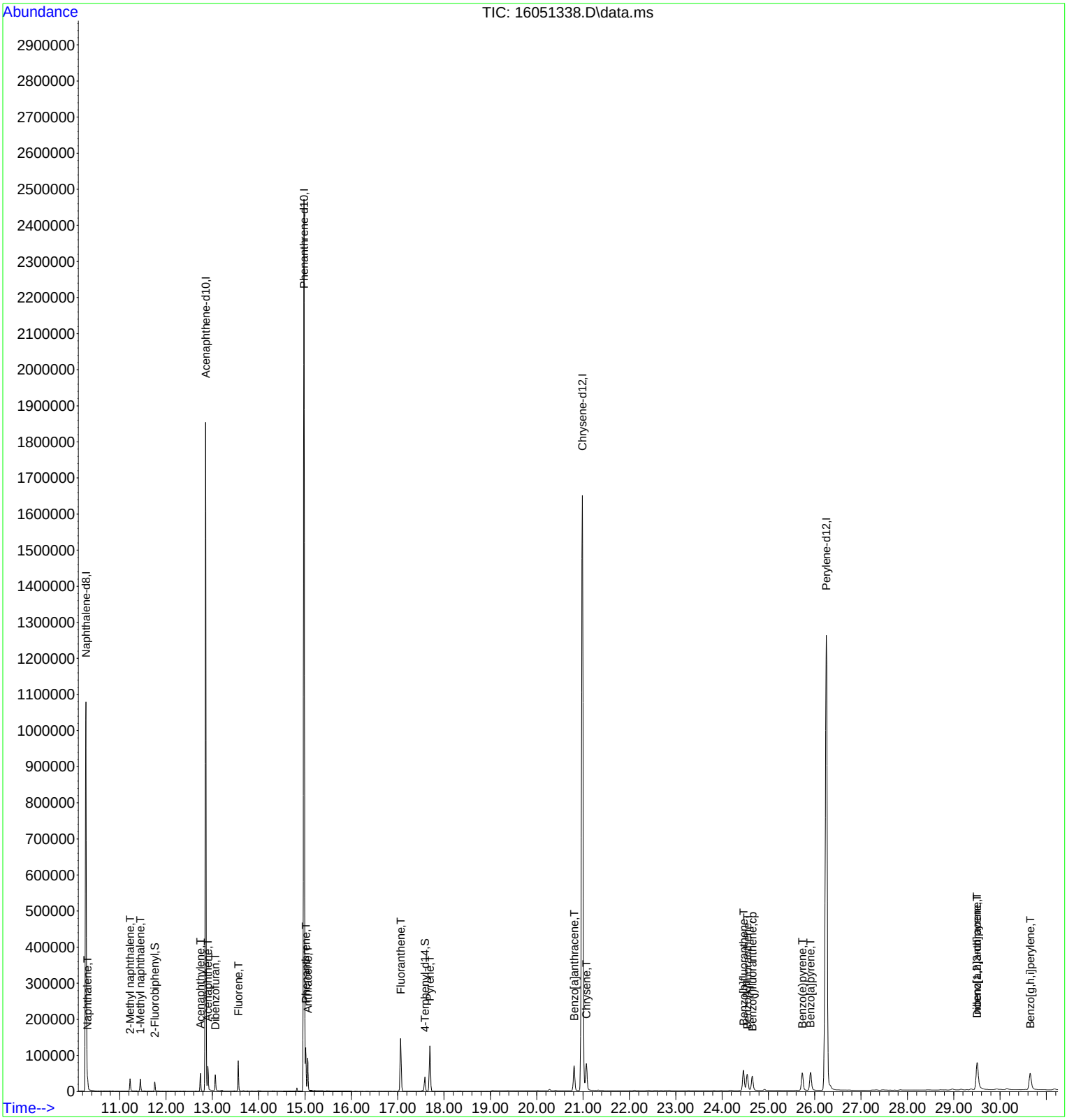
Target Compounds						Qvalue
2) Naphthalene	10.308	128	30719	84.08	ug/kg	99
3) 2-Methyl naphthalene	11.226	142	23312	96.11	ug/kg	99
4) 1-Methyl naphthalene	11.448	142	21853	95.31	ug/kg	99
7) Acenaphthylene	12.743	152	47350	91.54	ug/kg	99
8) Acenaphthene	12.906	153	30141	92.08	ug/kg	99
9) Dibenzofuran	13.068	168	46634	88.22	ug/kg	96
10) Fluorene	13.559	166	45390	91.31	ug/kg	99
12) Phenanthrene	15.015	178	105311	121.83	ug/kg	97
13) Anthracene	15.059	178	87323	93.24	ug/kg	97
14) Fluoranthene	17.064	202	166339	147.04	ug/kg	97
15) Pyrene	17.695	202	152768	134.64	ug/kg	98
18) Benzo[a]anthracene	20.808	228	110528	141.25	ug/kg	99
19) Chrysene	21.072	228	110606	154.41	ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	113090	158.09	ug/kg	98
22) Benzo[k]fluoranthene	24.544	252	78525	136.86	ug/kg	96
23) Benzo(j)fluoranthene	24.654	252	74257	128.05	ug/kg	97
24) Benzo(e)pyrene	25.730	252	94991	138.35	ug/kg	97
25) Benzo[a]pyrene	25.913	252	104882	159.52	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.510	276	111060	152.47	ug/kg	93
27) Dibenz[a,h]anthracene	29.495	278	70099	118.04	ug/kg	98
28) Benzo[g,h,i]perylene	30.653	276	102832	161.79	ug/kg	96

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051338.D
Acq On : 14 May 2016 10:33 am
Operator :
Sample : 1605096-14AMS
Misc : MS
ALS Vial : 36 Sample Multiplier: 10

Quant Time: May 16 09:02:01 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051339.D
Acq On : 14 May 2016 11:10 am
Operator :
Sample : 1605096-14AMSD
Misc : MSD
ALS Vial : 37 Sample Multiplier: 10

Quant Time: May 16 09:02:04 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1529462	4000.00	ug/kg	98
6) Acenaphthene-d10	12.857	164	1118986	4000.00	ug/kg	115
11) Phenanthrene-d10	14.979	188	2989296	4000.00	ug/kg	96
16) Chrysene-d12	20.984	240	2817619	4000.00	ug/kg	81
20) Perylene-d12	26.250	264	2541193	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	26820	89.22	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.23%#			
17) 4-Terphenyl-d14	17.588	244	57456	88.26	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.21%#			

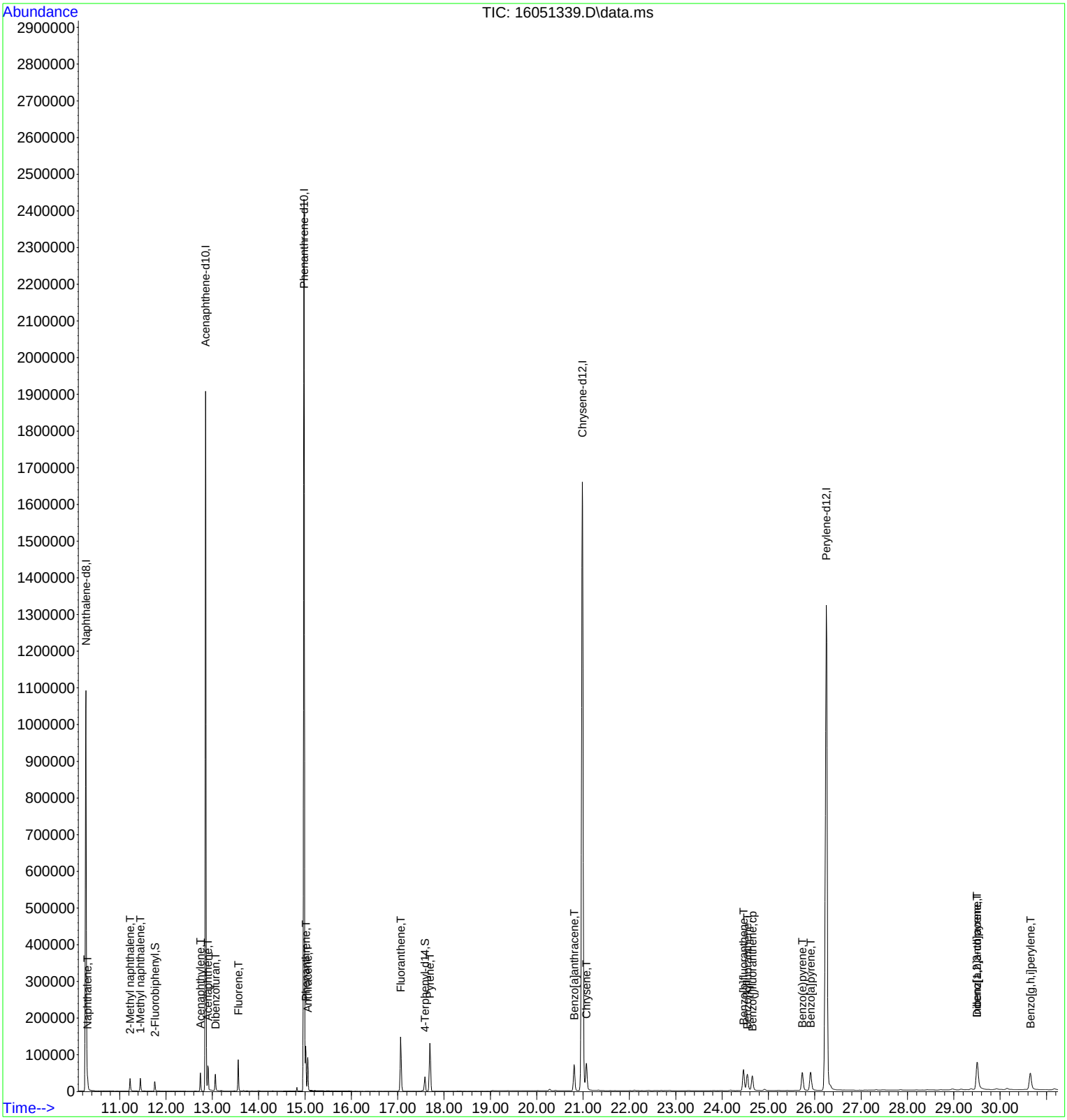
Target Compounds						Qvalue
2) Naphthalene	10.308	128	31040	83.74	ug/kg	99
3) 2-Methyl naphthalene	11.226	142	23489	95.47	ug/kg	99
4) 1-Methyl naphthalene	11.448	142	21942	94.33	ug/kg	99
7) Acenaphthylene	12.744	152	47794	90.89	ug/kg	99
8) Acenaphthene	12.906	153	30317	91.11	ug/kg	99
9) Dibenzofuran	13.068	168	46427	86.40	ug/kg	97
10) Fluorene	13.559	166	45263	89.57	ug/kg	99
12) Phenanthrene	15.016	178	106392	122.97	ug/kg	96
13) Anthracene	15.059	178	86586	92.37	ug/kg	98
14) Fluoranthene	17.065	202	170530	150.61	ug/kg	94
15) Pyrene	17.695	202	157001	138.25	ug/kg	97
18) Benzo[a]anthracene	20.808	228	111552	140.84	ug/kg	98
19) Chrysene	21.072	228	112802	155.58	ug/kg	99
21) Benzo[b]fluoranthene	24.463	252	113007	156.15	ug/kg	98
22) Benzo[k]fluoranthene	24.544	252	78601	135.41	ug/kg	97
23) Benzo(j)fluoranthene	24.653	252	74653	127.24	ug/kg	96
24) Benzo(e)pyrene	25.730	252	94798	136.48	ug/kg	97
25) Benzo[a]pyrene	25.913	252	105067	157.96	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.510	276	110154	149.48	ug/kg	94
27) Dibenz[a,h]anthracene	29.495	278	69559	115.78	ug/kg	97
28) Benzo[g,h,i]perylene	30.653	276	101816	158.34	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051339.D
Acq On : 14 May 2016 11:10 am
Operator :
Sample : 1605096-14AMSD
Misc : MSD
ALS Vial : 37 Sample Multiplier: 10

Quant Time: May 16 09:02:04 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051341.D
Acq On : 14 May 2016 12:24 pm
Operator :
Sample : ICV3-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 16 09:02:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

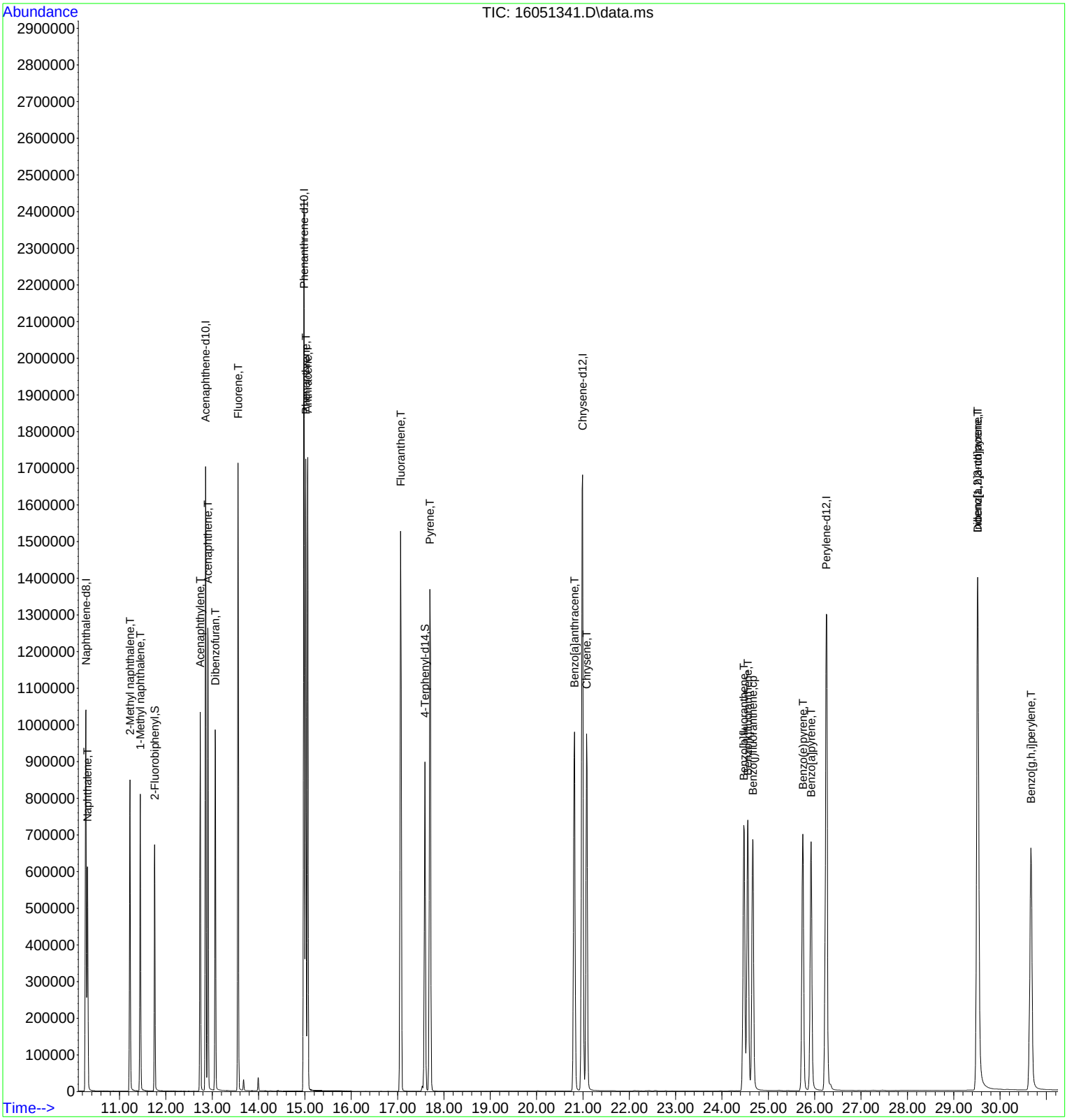
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.274	136	1450577	4000.00	ug/kg	93
6) Acenaphthene-d10	12.856	164	1026002	4000.00	ug/kg	105
11) Phenanthrene-d10	14.980	188	2972526	4000.00	ug/kg	96
16) Chrysene-d12	20.991	240	2832657	4000.00	ug/kg	81
20) Perylene-d12	26.258	264	2537523	4000.00	ug/kg	86
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	604792	2121.38	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	53.03%		
17) 4-Terphenyl-d14	17.588	244	1311494	2003.82	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	50.10%#		
Target Compounds						Qvalue
2) Naphthalene	10.311	128	708132	2014.33	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	515155	2169.51	ug/kg	98
4) 1-Methyl naphthalene	11.446	142	478801	2170.39	ug/kg	99
7) Acenaphthylene	12.743	152	973810	2019.73	ug/kg	100
8) Acenaphthene	12.905	153	613130	2009.49	ug/kg	99
9) Dibenzofuran	13.067	168	940579	1908.95	ug/kg	96
10) Fluorene	13.559	166	901263	1945.05	ug/kg	99
12) Phenanthrene	15.018	178	1658855	1928.18	ug/kg	100
13) Anthracene	15.060	178	1677822	1800.06	ug/kg	100
14) Fluoranthene	17.065	202	1810671	1608.21	ug/kg	87
15) Pyrene	17.695	202	1770337	1567.68	ug/kg	89
18) Benzo[a]anthracene	20.815	228	1553445	1950.89	ug/kg	100
19) Chrysene	21.079	228	1433597	1966.71	ug/kg	100
21) Benzo[b]fluoranthene	24.470	252	1443152	1997.01	ug/kg	100
22) Benzo[k]fluoranthene	24.558	252	1293627	2231.87	ug/kg	98
23) Benzo(j)fluoranthene	24.668	252	1238229	2113.59	ug/kg	99
24) Benzo(e)pyrene	25.745	252	1351056	1947.86	ug/kg	99
25) Benzo[a]pyrene	25.921	252	1330941	2003.86	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.525	276	1615795	2195.86	ug/kg	98
27) Dibenz[a,h]anthracene	29.510	278	1345426	2242.77	ug/kg	99
28) Benzo[g,h,i]perylene	30.667	276	1391591	2167.29	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051341.D
Acq On : 14 May 2016 12:24 pm
Operator :
Sample : ICV3-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

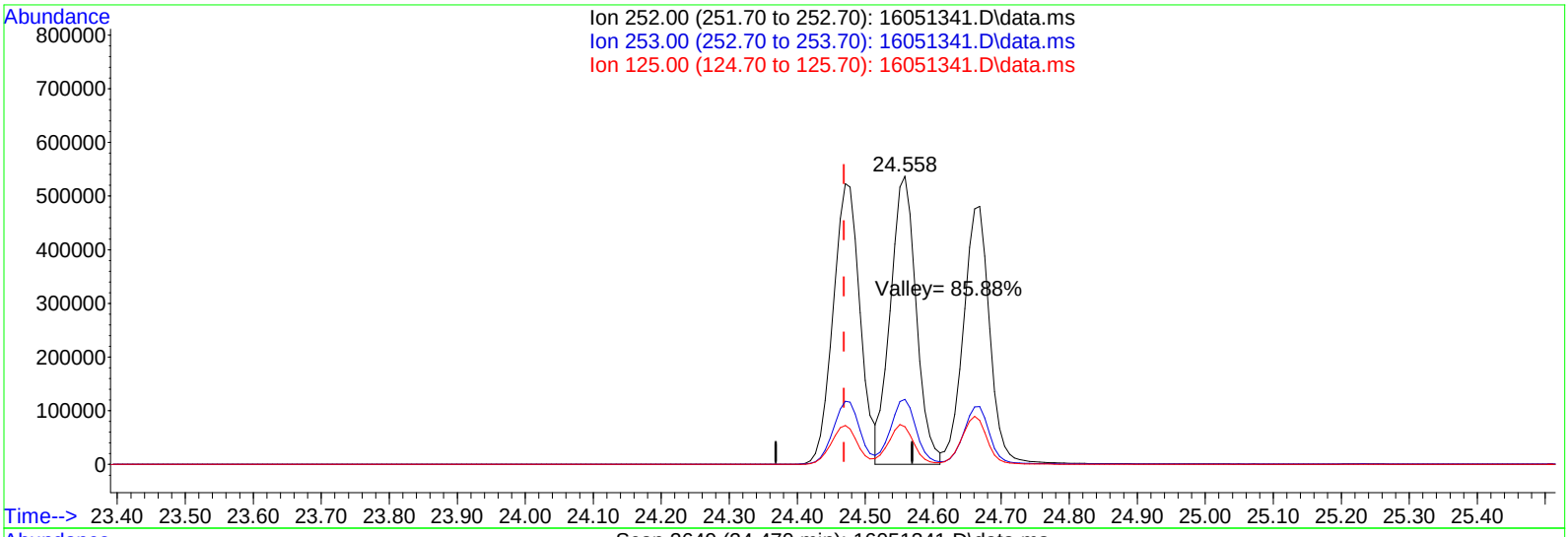
Quant Time: May 16 09:02:07 2016
Quant Method : C:\msdchem\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration

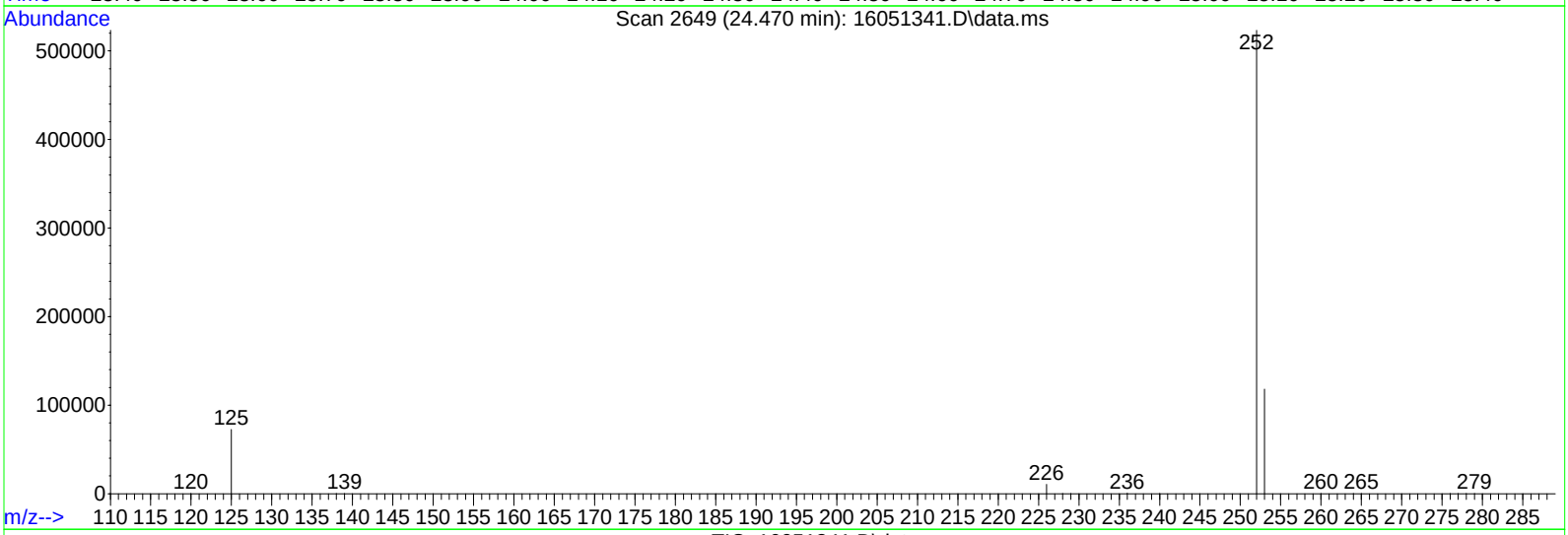


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160513\
Data File : 16051341.D
Acq On : 14 May 2016 12:24 pm
Operator :
Sample : ICV3-160513
Misc : ICV
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 14 12:55:38 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160510.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Fri May 13 12:50:28 2016
Response via : Initial Calibration





TIC: 16051341.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.470min (+0.002) 1997.01ug/kg

response 1443152

Ion	Exp%	Act%
252.00	100	100
253.00	22.60	22.45
125.00	13.80	13.86
0.00	0.00	0.00

GCMS8_160518B
For

DHL Work Order
1605098

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS8_160518B
Batch Number(s): See Run Log. Matrix: See Run Log.	SOP: ORGANICS-PAH-01

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			X
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		X
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			X
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS			X	
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS			X	
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)			X	

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	7 days (Aq) - extraction	X			X
	14 days (Soil) - extraction			X	
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard			X	
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			X
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality			X	X
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS __LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	X Flag data / Case narrative
X Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	X Other (describe below)	___ Accept data
___ Other (describe below)		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: **See Run Log.**

Equipment blanks - LCS and MB is only QC requirement.

Analyst: Karyn Lane Date: ***REVIEWED/APPROVED*** 5/19/2016

Second-Level Review: Date: *By Sherri Herschmann at 4:06:35 PM, 5/23/2016* **05/23/2016**

DHL Analytical, Inc.

Run ID: GCMS8_160518B **Run No.:** 85875

Analytical Run Date: 5/18/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 660 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160517.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160518	1	PAH_LL_WDOD1	TUNE	R85875	5/18/2016 8:58:00 AM		
ICV-160518	1	PAH_LL_WDOD1	ICV	R85875	5/18/2016 9:35:00 AM		Use DCS/LQV from GCMS8_160518A.
LCS-75146	1	PAH_LL_WDOD1	LCS	75146	5/18/2016 2:03:00 PM		Equipment blanks - LCS and MB is only QC requirement.
MB-75146	1	PAH_LL_WDOD1	MBLK	75146	5/18/2016 2:40:00 PM		
1605074-33B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 3:17:00 PM		
1605074-34B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 3:53:00 PM		
1605074-35B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 4:30:00 PM		
1605096-36B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 5:07:00 PM		
1605096-37B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 5:44:00 PM		
1605096-44B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 6:21:00 PM		
1605097-27B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 6:58:00 PM		
1605097-30B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 7:34:00 PM		
DFTPP2-160518	1	PAH_LL_WDOD1	TUNE	R85875	5/18/2016 8:11:00 PM		
ICV2-160518	1	PAH_LL_WDOD1	ICV	R85875	5/18/2016 8:49:00 PM		
SBLK-160518	1	PAH_LL_WDOD1	SBLK	75146	5/18/2016 10:03:00 PM		
1605098-42B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 10:40:00 PM		
1605121-46B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 11:17:00 PM		
1605121-47B	1	PAH_LL_WDOD1	SAMP	75146	5/18/2016 11:54:00 PM		
1605135-46B	1	PAH_LL_WDOD1	SAMP	75146	5/19/2016 12:31:00 AM		
1605144-16B	1	PAH_LL_WDOD1	SAMP	75146	5/19/2016 1:08:00 AM		
CCV-160520	1	PAH_LL_WDOD1	CCV	R85875	5/19/2016 2:59:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

REVIEWED/APPROVED

By Sherri Herschmann at 4:07:08 PM, 5/23/2016

Sequence Name: C:\msdchem\1\sequence\160518.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160518\
Instrument Name: GCMS #8
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

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

	Line		Sample Name/Misc Info		
1)	Sample	1	16051801	DFTPPPAH	DFTPP-160518
2)	Sample	2	16051802	PAH160517	ICV-160518
3)	Sample	3	16051803	PAH160517	DCS-75209
4)	Sample	4	16051804	PAH160517	LQV-75209
5)	Sample	5	16051805	PAH160517	LCS-75209
6)	Sample	6	16051806	PAH160517	LCSD-75209
7)	Sample	7	16051807	PAH160517	MB-75209
8)	Sample	8	16051808	PAH160517	1605142-01E
9)	Sample	9	16051809	PAH160517	LCS-75146
10)	Sample	10	16051810	PAH160517	MB-75146
11)	Sample	11	16051811	PAH160517	1605074-33B
12)	Sample	12	16051812	PAH160517	1605074-34B
13)	Sample	13	16051813	PAH160517	1605074-35B
14)	Sample	14	16051814	PAH160517	1605096-36B
15)	Sample	15	16051815	PAH160517	1605096-37B
16)	Sample	16	16051816	PAH160517	1605096-44B
17)	Sample	17	16051817	PAH160517	1605097-27B
18)	Sample	18	16051818	PAH160517	1605097-30B
19)	Sample	19	16051819	DFTPPPAH	DFTPP2-160518
20)	Sample	20	16051820	PAH160517	ICV2-160518
21)	Sample	21	16051821	PAH160517	SBLK
22)	Sample	22	16051822	PAH160517	SBLK-160518
23)	Sample	23	16051823	PAH160517	1605098-42B
24)	Sample	24	16051824	PAH160517	1605121-46B
25)	Sample	25	16051825	PAH160517	1605121-47B
26)	Sample	26	16051826	PAH160517	1605135-46B
27)	Sample	27	16051827	PAH160517	1605144-16B
28)	Sample	28	16051828	PAH160517	1605071-38A
29)	Sample	29	16051829	PAH160517	1605071-32A
30)	Sample	30	16051830	PAH160517	CCV-160520

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 8:48:47 AM**
Digestion:
Prep End Date: 5/13/16 11:35AM

Prep Batch **75146** Prep Code: **3510_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/mL**

Equipment List
Turbo-Vap #1,2,3
Balance # 25, 29

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-33B	Equip Blank	6	500	1	0.002	1 of 1	532.2 - 212.6 = 319.6
1605074-34B	Equip Blank		500	1	0.002	1 of 1	535.8 - 213.4 = 322.4
1605074-35B	Equip Blank		500	1	0.002	1 of 1	~~358.0~~ 538.0 - 214.4 = 323.6
1605096-36B	Equip Blank		500	1	0.002	1 of	543.3 - 213.4 = 329.9
1605096-37B	Equip Blank		500	1	0.002	1 of 1	538.9 - 213.6 = 318.4
1605096-44B	Equip Blank		500	1	0.002	1 of 1	531.6 - 212.5 = 319.1
1605097-27B	Equip Blank		500	1	0.002	1 of 1	536.8 - 212.2 = 324.6
1605097-30B	Equip Blank		500	1	0.002	1 of 1	537.3 - 213.3 = 324.0
1605098-42B	Equip Blank		500	1	0.002	1 of 1	537.9 - 212.9 = ~~325.1~~ 325
1605121-46B	Equip Blank		500	1	0.002	1 of 1	526.8 - 213.4 = 313.4
1605121-47B	Equip Blank		500	1	0.002	1 of 1	528.7 - 212.3 = ~~308.7~~ 316.4
1605135-46B	Equip Blank		500	1	0.002	1 of 1	534.2 - 212.8 = 321.4
LCS-75146	Aqueous		500	1	0.002	of	738.3 - 238.3 = 500.0
~~LCSD-75146~~ 5/13/16	Aqueous		500	1	0.002	of	Insufficient sample for MS/D 5/13/16
MB-75146	Aqueous		500	1	0.002	of	777.4 - 277.4 = 500.0

1605144 - 16B 6

536.0 - 214.7 = 321.3

Added @ 1:00PM 5/13/16.

REVIEWED/APPROVED
By Sherri Herschmann at 4:12:07 PM, 5/23/2016

Number	Reagent Name	Amt	Units	Exp. Da
7509	pH paper 0-14	1	paper	10/15/2025
9927	Purified Sodium Sulfate	10	g	07/04/2016
10169	Methylene Chloride	120	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/LCSD	0.01	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.1	08/08/2016

5/13/16 AR 5/13/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 8:48:47 AM**
Digestion:
Prep End Date: **5/13/2016 2:10:17 PM**

Prep Batch **75146** Prep Code: **3510_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/mL**

Equipment List

Turbo-Vap #1,2,3
Balance # 25, 29

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605074-33B	Equip Blank	6	319.6	1	0.003	1 of 1	
1605074-34B	Equip Blank	6	322.4	1	0.003	1 of 1	
1605074-35B	Equip Blank	6	323.6	1	0.003	1 of 1	
1605096-36B	Equip Blank	6	329.9	1	0.003	1 of 1	
1605096-37B	Equip Blank	6	318.4	1	0.003	1 of 1	
1605096-44B	Equip Blank	6	319.1	1	0.003	1 of 1	
1605097-27B	Equip Blank	6	324.6	1	0.003	1 of 1	
1605097-30B	Equip Blank	6	324	1	0.003	1 of 1	
1605098-42B	Equip Blank	6	~~315.1~~ **325**	1	0.003	1 of 1	
1605121-46B	Equip Blank	6	313.4	1	0.003	1 of 1	
1605121-47B	Equip Blank	6	~~308.7~~ **316.4**	1	0.003	1 of 1	
1605135-46B	Equip Blank	6	321.4	1	0.003	1 of 1	
1605144-16B	Equip Blank	6	321.3	1	0.003	1 of 1	
LCS-75146	Aqueous	6	500	1	0.002	of	
MB-75146	Aqueous	6	500	1	0.002	of	

REVIEWED/APPROVED

By Sherri Herschmann at 4:15:47 PM, 5/23/2016

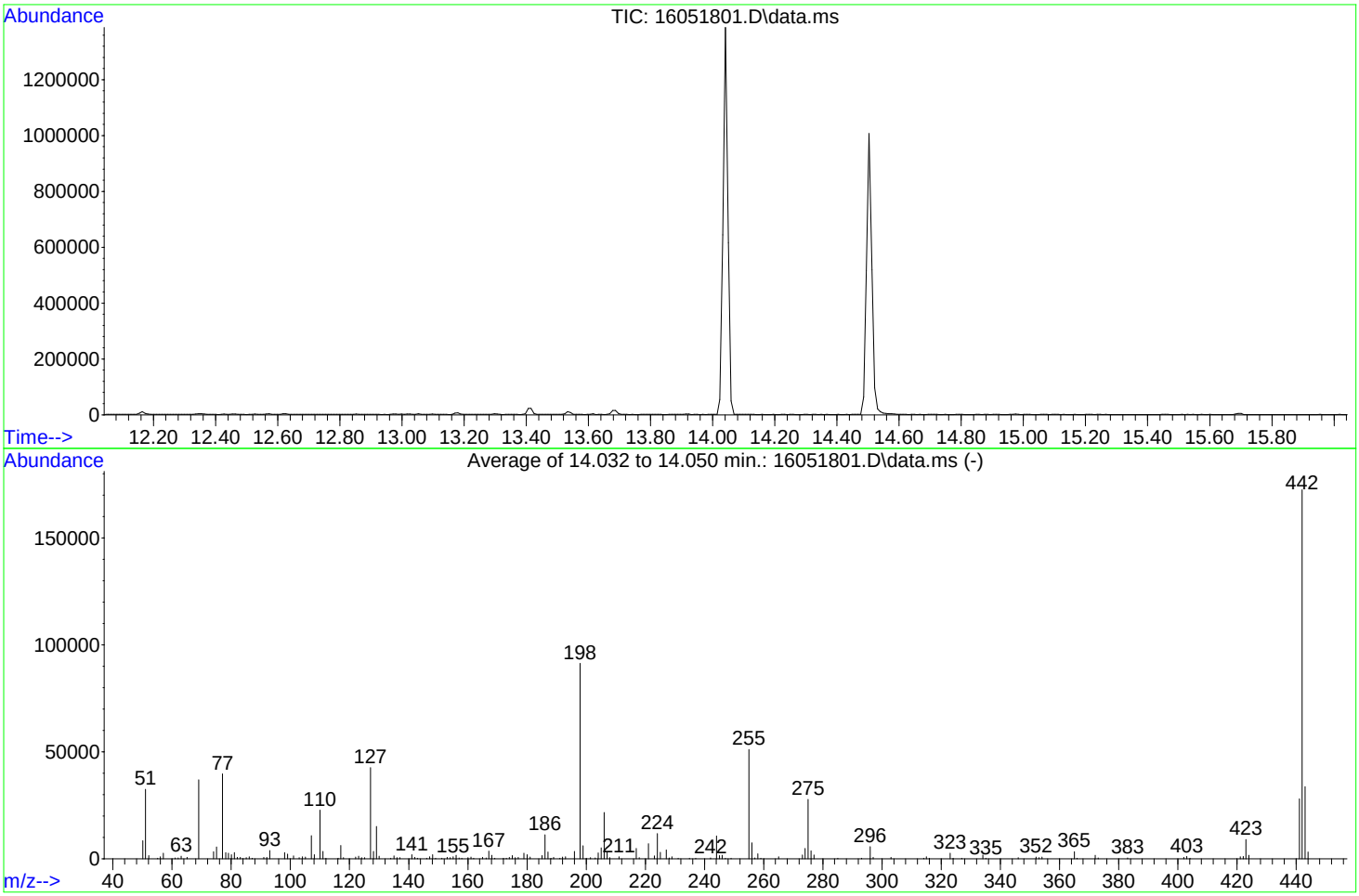
Number	Reagent Name	Amt	Units	Exp. Da
7509	pH paper 0-14	1	paper	10/15/2025
9927	Purified Sodium Sulfate	10	g	07/04/2016
10169	Methylene Chloride	120	ml	03/15/2026
10214	Whatman 41 Filter	1	filter	03/30/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160509	200 PPM PAH Spike Mix	LCS/LCSD	0.01	11/07/2016
SVPREP160510	40 PPM Surrogate Standard	ALL	0.1	08/08/2016

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051801.D
Acq On : 18 May 2016 8:58 am
Operator :
Sample : DFTPP-160518
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

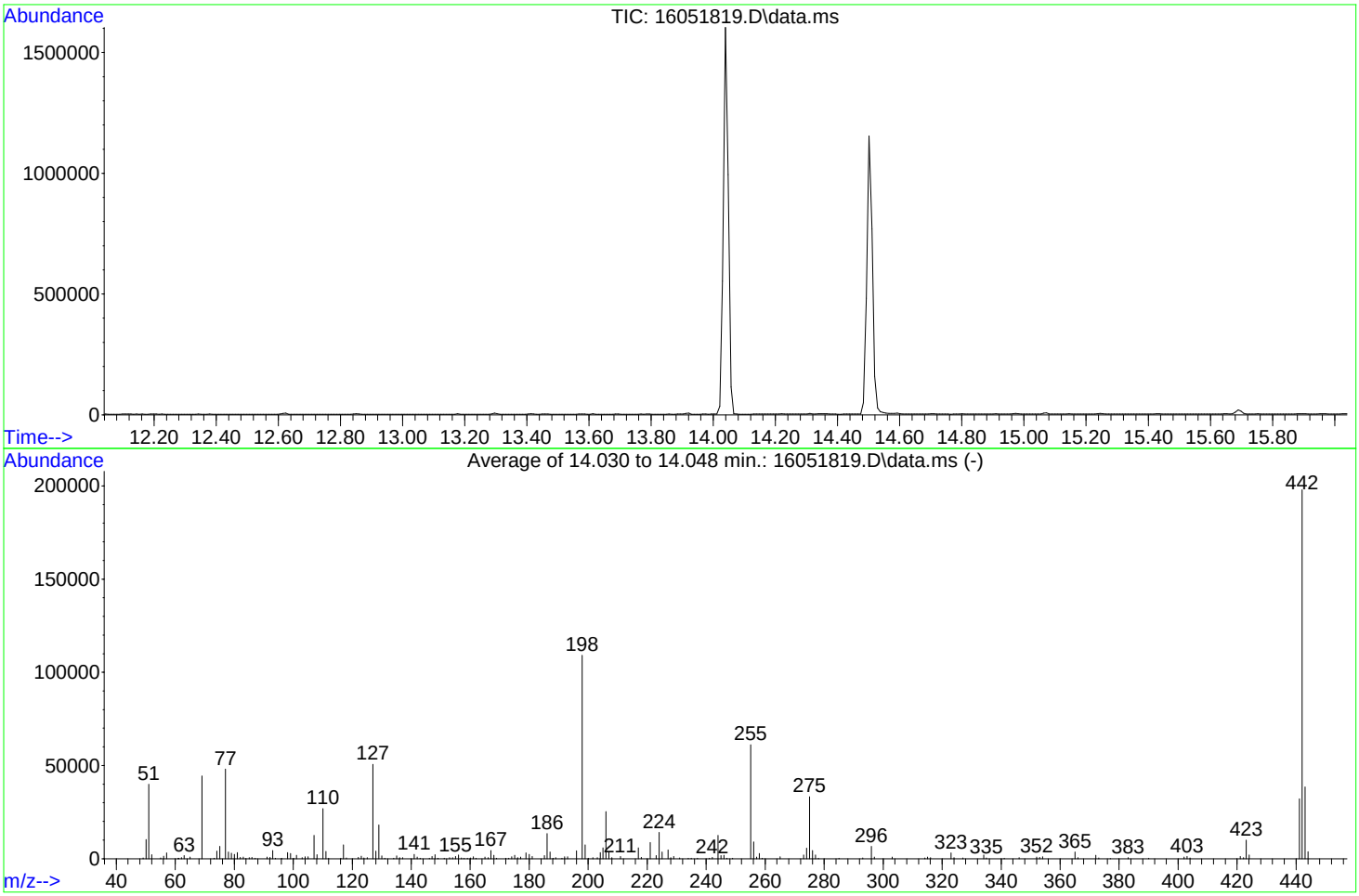
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	35.6	32471	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.5	36940	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.7	42606	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	91320	PASS
199	198	5	9	6.7	6088	PASS
275	198	10	60	30.3	27688	PASS
365	198	1	200	3.6	3268	PASS
441	442	0.01	24	16.3	28059	PASS
442	198	50	400	189.0	172605	PASS
443	442	15	24	19.6	33763	PASS

REVIEWED BY
By Janice Whitt at 2:34:46 PM, 5/19/2016

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051819.D
Acq On : 18 May 2016 8:11 pm
Operator :
Sample : DFTPP2-160518
Misc : TUNE
ALS Vial : 19 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	36.6	39974	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.8	44482	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.4	50616	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	109152	PASS
199	198	5	9	6.8	7381	PASS
275	198	10	60	30.5	33283	PASS
365	198	1	200	3.4	3666	PASS
441	442	0.01	24	16.2	32122	PASS
442	198	50	400	181.4	197986	PASS
443	442	15	24	19.5	38521	PASS

REVIEWED BY
By Janice Whitt at 12:56:17 PM, 5/23/2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051802.D
Acq On : 18 May 2016 9:35 am
Operator :
Sample : ICV-160518
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 18 11:42:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

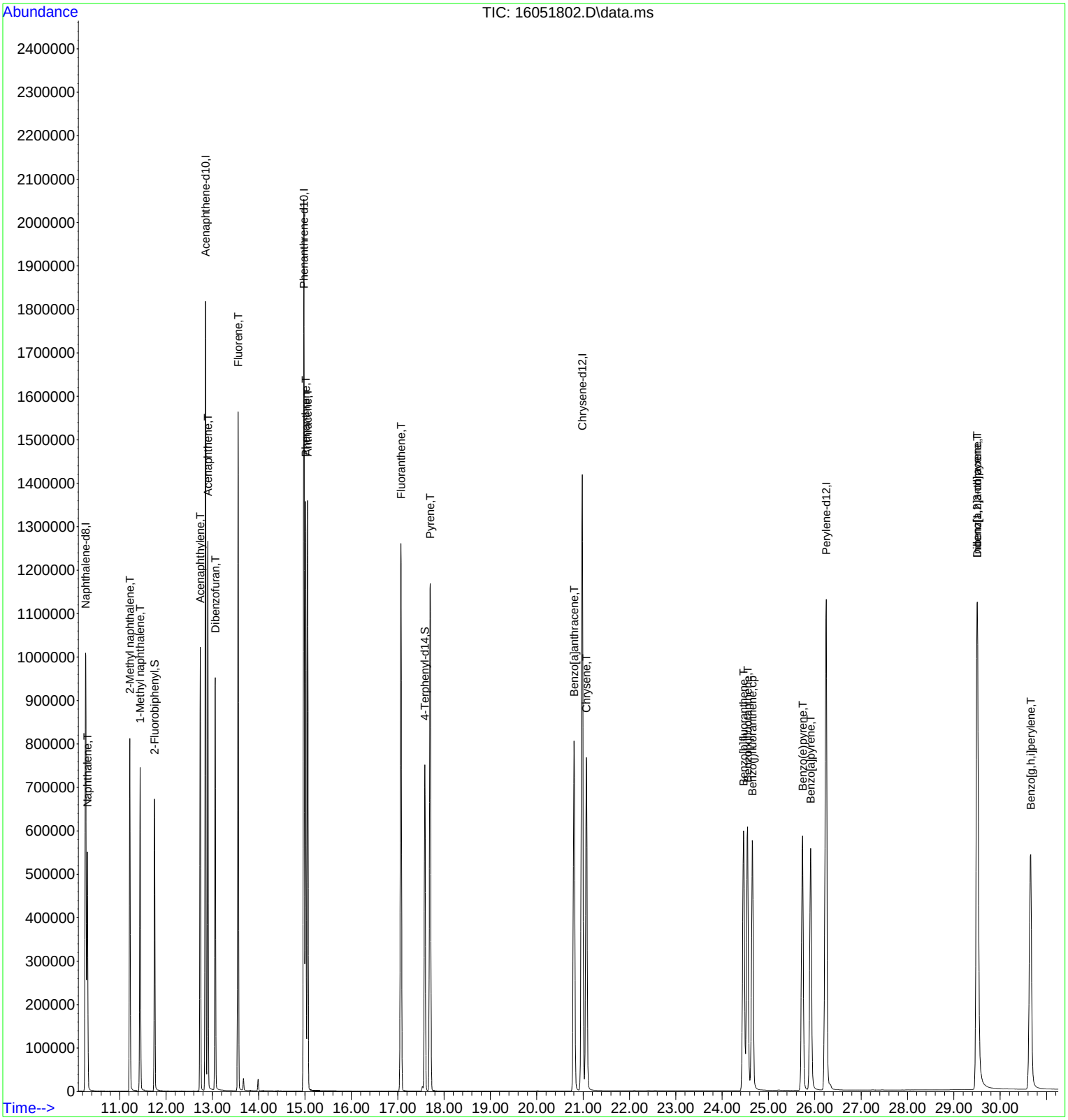
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.263	136	1439270	4000.00	ug/kg	88
6) Acenaphthene-d10	12.851	164	1096742	4000.00	ug/kg	87
11) Phenanthrene-d10	14.976	188	2537779	4000.00	ug/kg	87
16) Chrysene-d12	20.981	240	2403266	4000.00	ug/kg	89
20) Perylene-d12	26.247	264	2183143	4000.00	ug/kg	88
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.752	172	613046	1913.04	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 47.83%			
17) 4-Terphenyl-d14	17.584	244	1035464	2035.60	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 50.89%#			
Target Compounds						Qvalue
2) Naphthalene	10.300	128	645598	2002.26	ug/kg	100
3) 2-Methyl naphthalene	11.217	142	500194	1995.54	ug/kg	98
4) 1-Methyl naphthalene	11.444	142	460727	1942.42	ug/kg	99
7) Acenaphthylene	12.738	152	964211	2011.33	ug/kg	100
8) Acenaphthene	12.905	153	609340	2014.36	ug/kg	100
9) Dibenzofuran	13.062	168	927693	2013.19	ug/kg	99
10) Fluorene	13.553	166	845853	2023.03	ug/kg	100
12) Phenanthrene	15.014	178	1313221	1880.65	ug/kg	100
13) Anthracene	15.056	178	1326462	1877.33	ug/kg	100
14) Fluoranthene	17.068	202	1419444	2135.93	ug/kg	100
15) Pyrene	17.701	202	1398615	2140.87	ug/kg	99
18) Benzo[a]anthracene	20.805	228	1261556	2123.30	ug/kg	100
19) Chrysene	21.069	228	1160852	2112.58	ug/kg	100
21) Benzo[b]fluoranthene	24.460	252	1189531	2127.79	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	1074594	2120.12	ug/kg	100
23) Benzo(j)fluoranthene	24.651	252	1026600	2124.35	ug/kg	100
24) Benzo(e)pyrene	25.735	252	1119451	2121.93	ug/kg	100
25) Benzo[a]pyrene	25.910	252	1107058	2114.72	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.514	276	1344214	2098.92	ug/kg	99
27) Dibenz[a,h]anthracene	29.500	278	1122117	2109.02	ug/kg	99
28) Benzo[g,h,i]perylene	30.657	276	1164995	2108.28	ug/kg	100

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051802.D
Acq On : 18 May 2016 9:35 am
Operator :
Sample : ICV-160518
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

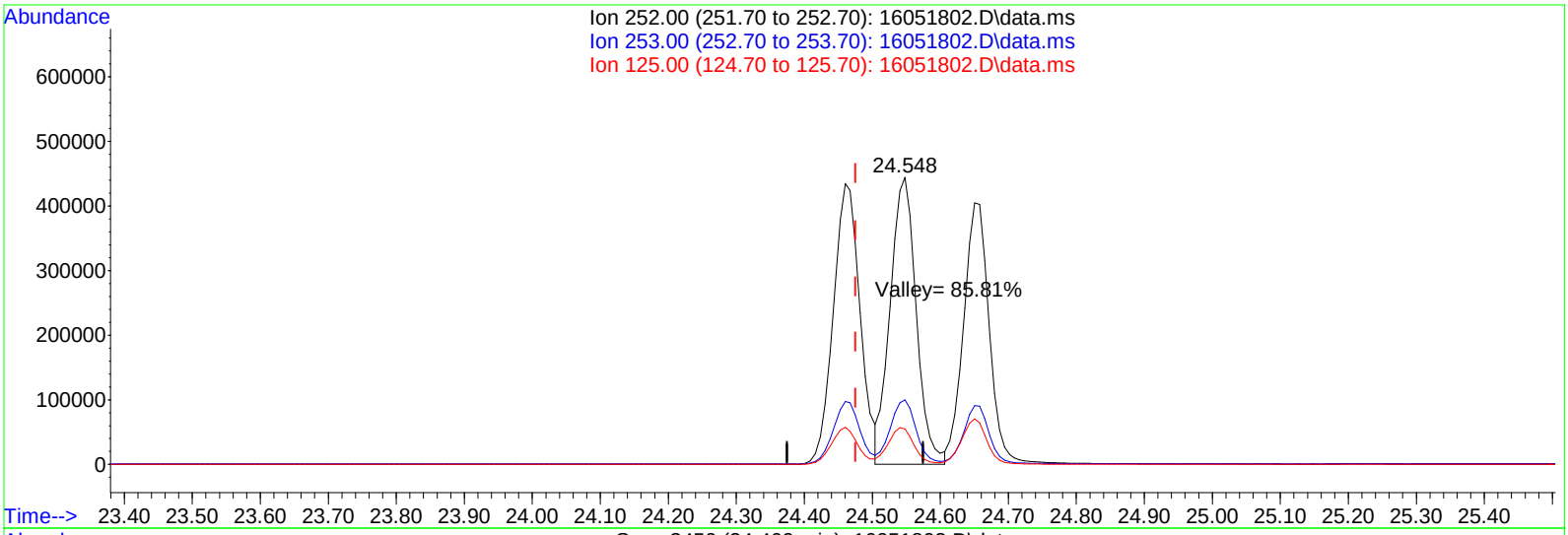
Quant Time: May 18 11:42:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

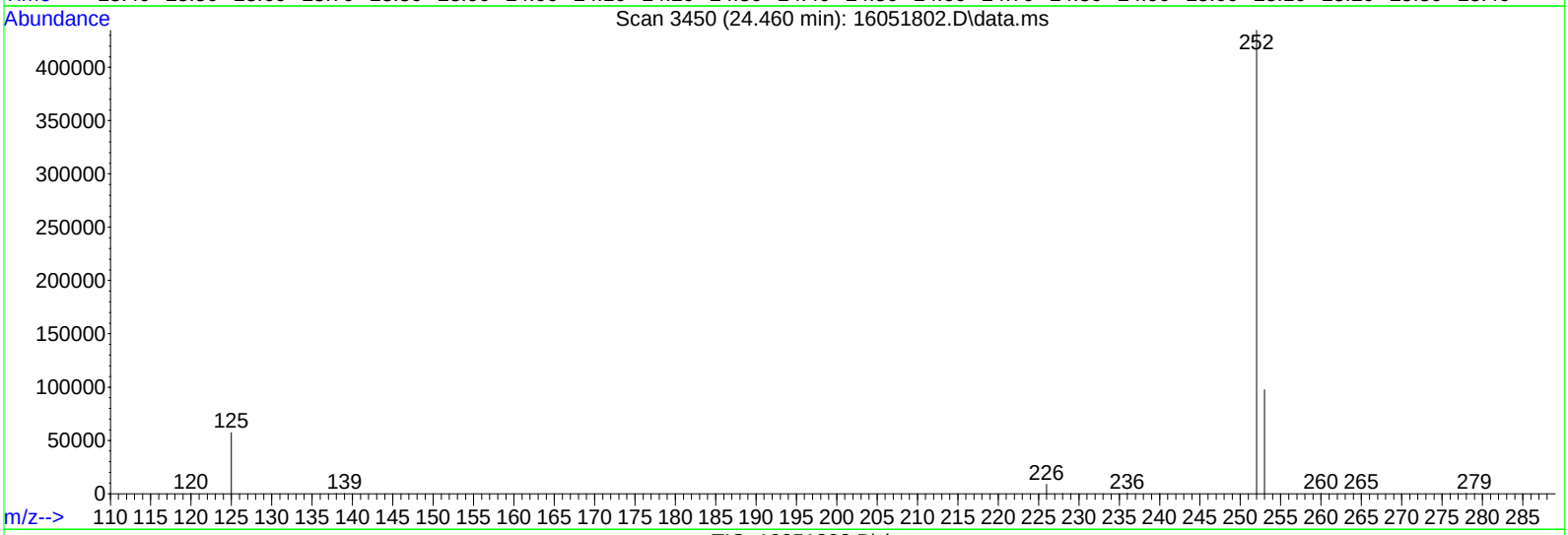


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051802.D
Acq On : 18 May 2016 9:35 am
Operator :
Sample : ICV-160518
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 18 11:42:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16051802.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.460min (-0.015) 2127.79ug/kg

response 1189531

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.26
125.00	12.20	13.16
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051809.D
Acq On : 18 May 2016 2:03 pm
Operator :
Sample : LCS-75146
Misc : LCS
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 09:16:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

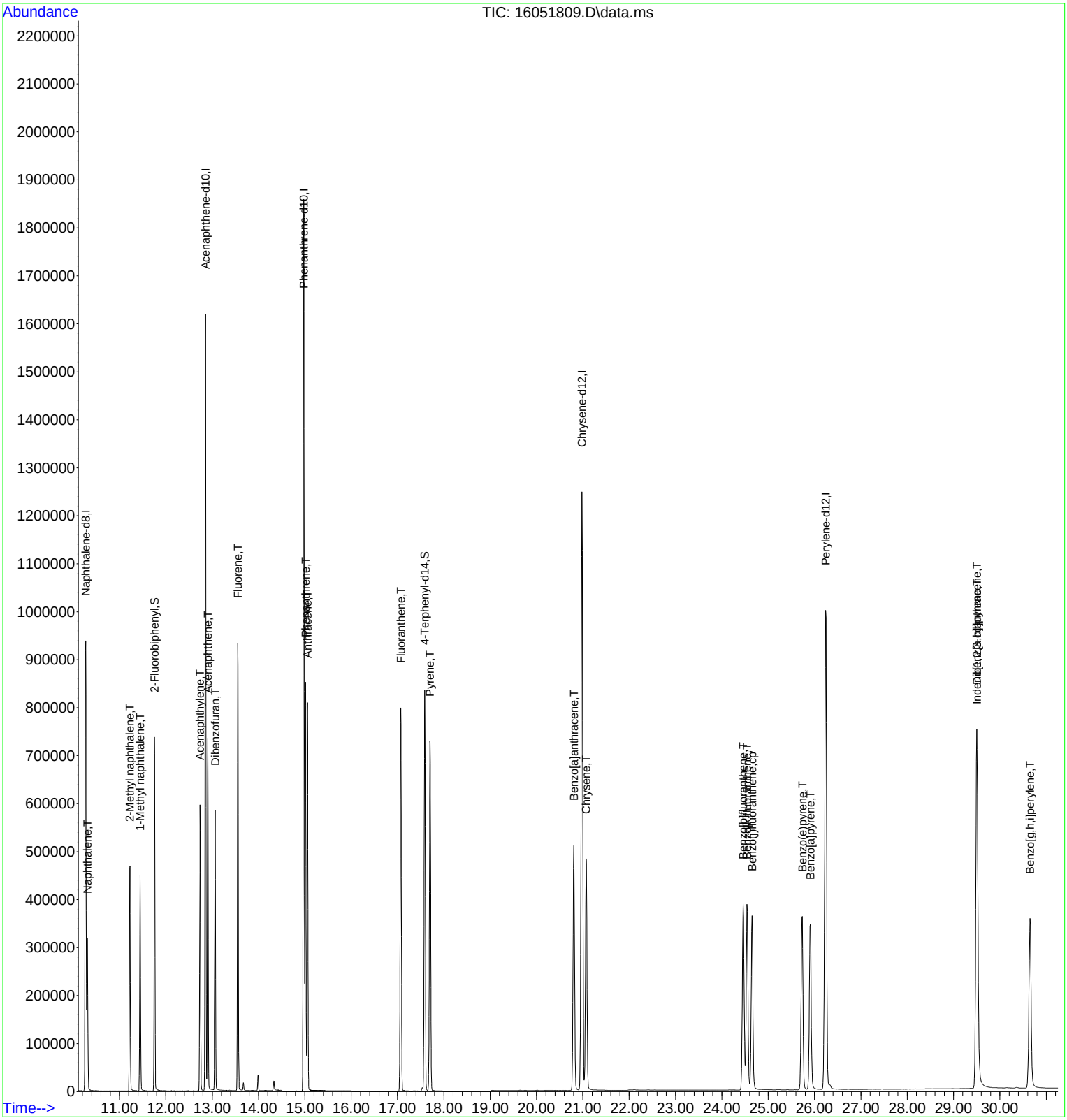
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1319910	4000.00	ug/kg	81
6) Acenaphthene-d10	12.857	164	979132	4000.00	ug/kg	78
11) Phenanthrene-d10	14.977	188	2285148	4000.00	ug/kg	78
16) Chrysene-d12	20.981	240	2110098	4000.00	ug/kg	78
20) Perylene-d12	26.241	264	1904087	4000.00	ug/kg	77
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.754	172	657780	2238.26	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 55.96%			
17) 4-Terphenyl-d14	17.586	244	1177981	2637.52	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 65.94%			
Target Compounds						Qvalue
2) Naphthalene	10.306	128	366938	1240.93	ug/kg	99
3) 2-Methyl naphthalene	11.224	142	288325	1254.30	ug/kg	99
4) 1-Methyl naphthalene	11.446	142	267309	1228.89	ug/kg	99
7) Acenaphthylene	12.739	152	559567	1307.45	ug/kg	99
8) Acenaphthene	12.906	153	353590	1309.30	ug/kg	99
9) Dibenzofuran	13.063	168	539351	1311.04	ug/kg	99
10) Fluorene	13.554	166	507450	1359.45	ug/kg	100
12) Phenanthrene	15.015	178	815126	1296.39	ug/kg	99
13) Anthracene	15.057	178	785637	1234.83	ug/kg	99
14) Fluoranthene	17.070	202	887651	1454.69	ug/kg	99
15) Pyrene	17.700	202	872881	1459.82	ug/kg	98
18) Benzo[a]anthracene	20.805	228	787235	1485.78	ug/kg	100
19) Chrysene	21.069	228	729981	1491.09	ug/kg	100
21) Benzo[b]fluoranthene	24.461	252	762202	1545.20	ug/kg	99
22) Benzo[k]fluoranthene	24.541	252	688207	1542.68	ug/kg	99
23) Benzo(j)fluoranthene	24.651	252	630685	1475.70	ug/kg	100
24) Benzo(e)pyrene	25.735	252	687368	1472.95	ug/kg	100
25) Benzo[a]pyrene	25.911	252	693028	1503.32	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.515	276	848810	1500.32	ug/kg	98
27) Dibenz[a,h]anthracene	29.500	278	709881	1508.82	ug/kg	99
28) Benzo[g,h,i]perylene	30.650	276	731582	1498.98	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051809.D
Acq On : 18 May 2016 2:03 pm
Operator :
Sample : LCS-75146
Misc : LCS
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 19 09:16:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051810.D
Acq On : 18 May 2016 2:40 pm
Operator :
Sample : MB-75146
Misc : MBLK
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 09:16:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1390449	4000.00	ug/kg	85
6) Acenaphthene-d10	12.857	164	1037657	4000.00	ug/kg	83
11) Phenanthrene-d10	14.977	188	2466155	4000.00	ug/kg	84
16) Chrysene-d12	20.981	240	2313139	4000.00	ug/kg	85
20) Perylene-d12	26.248	264	2116938	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	713716	2305.39	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	57.63%		
17) 4-Terphenyl-d14	17.590	244	1305557	2666.57	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	66.66%		

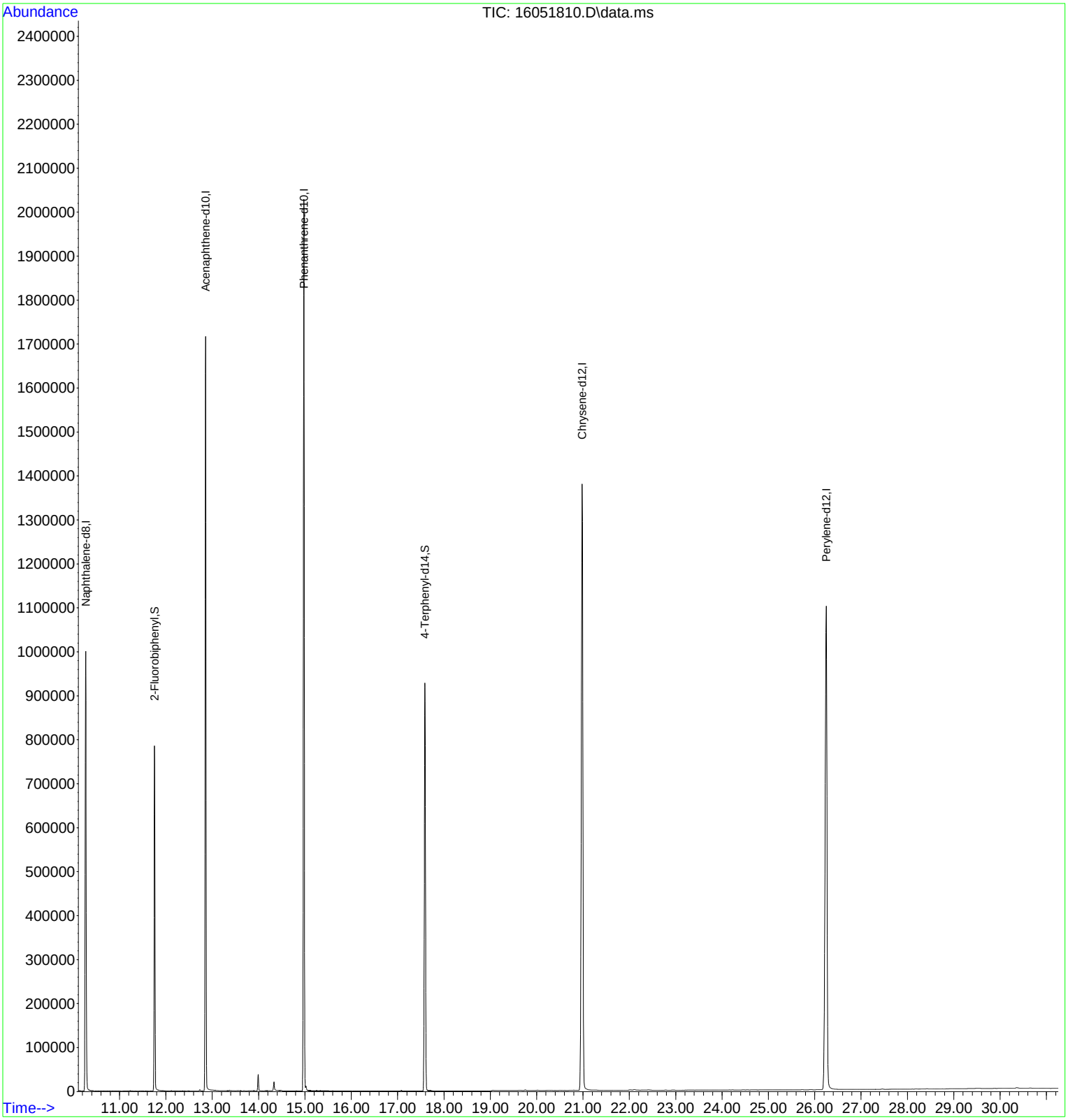
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051810.D
Acq On : 18 May 2016 2:40 pm
Operator :
Sample : MB-75146
Misc : MBLK
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 09:16:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051820.D
Acq On : 18 May 2016 8:49 pm
Operator :
Sample : ICV2-160518
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

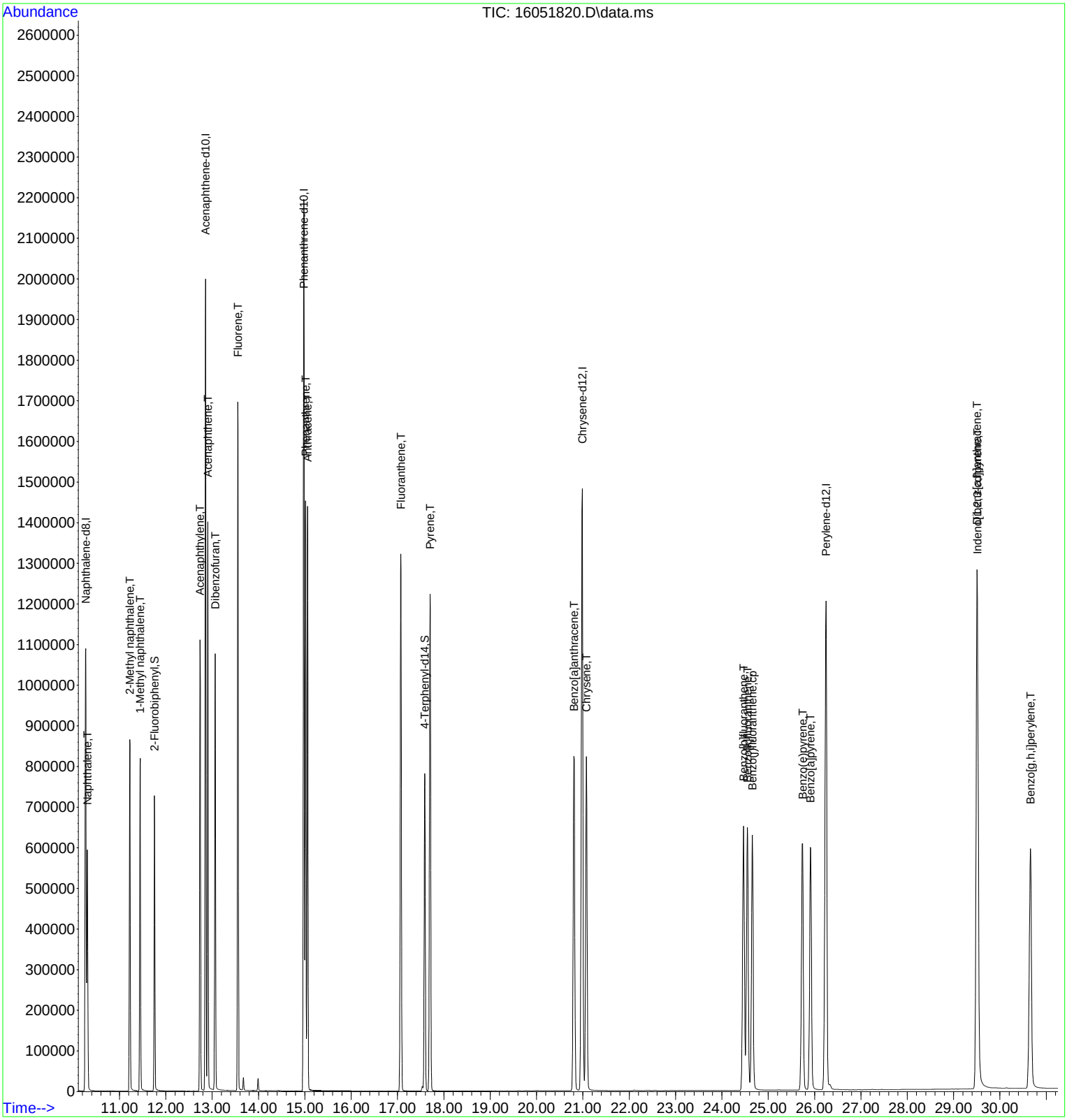
Quant Time: May 19 09:16:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1541947	4000.00	ug/kg	95
6) Acenaphthene-d10	12.857	164	1207997	4000.00	ug/kg	96
11) Phenanthrene-d10	14.979	188	2731012	4000.00	ug/kg	93
16) Chrysene-d12	20.989	240	2535151	4000.00	ug/kg	94
20) Perylene-d12	26.248	264	2319324	4000.00	ug/kg	93
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	660318	1923.35	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 48.08%			
17) 4-Terphenyl-d14	17.587	244	1090974	2033.15	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 50.83%#			
Target Compounds						Qvalue
2) Naphthalene	10.303	128	692653	2005.15	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	543376	2023.46	ug/kg	99
4) 1-Methyl naphthalene	11.446	142	498034	1959.89	ug/kg	99
7) Acenaphthylene	12.739	152	1052817	1993.89	ug/kg	100
8) Acenaphthene	12.906	153	669198	2008.49	ug/kg	100
9) Dibenzofuran	13.064	168	1014806	1999.41	ug/kg	98
10) Fluorene	13.555	166	927758	2014.57	ug/kg	100
12) Phenanthrene	15.015	178	1399624	1862.57	ug/kg	100
13) Anthracene	15.059	178	1414791	1860.66	ug/kg	99
14) Fluoranthene	17.071	202	1484668	2072.21	ug/kg	99
15) Pyrene	17.704	202	1458241	2070.73	ug/kg	99
18) Benzo[a]anthracene	20.805	228	1322898	2110.03	ug/kg	100
19) Chrysene	21.076	228	1217225	2099.27	ug/kg	100
21) Benzo[b]fluoranthene	24.468	252	1259735	2120.76	ug/kg	100
22) Benzo[k]fluoranthene	24.549	252	1175849	2185.94	ug/kg	99
23) Benzo(j)fluoranthene	24.658	252	1091106	2125.31	ug/kg	100
24) Benzo(e)pyrene	25.742	252	1183382	2110.90	ug/kg	100
25) Benzo[a]pyrene	25.918	252	1185414	2132.02	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.522	276	1433865	2107.85	ug/kg	98
27) Dibenz[a,h]anthracene	29.508	278	1204388	2131.84	ug/kg	99
28) Benzo[g,h,i]perylene	30.658	276	1254977	2139.12	ug/kg	98

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

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051820.D
Acq On : 18 May 2016 8:49 pm
Operator :
Sample : ICV2-160518
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

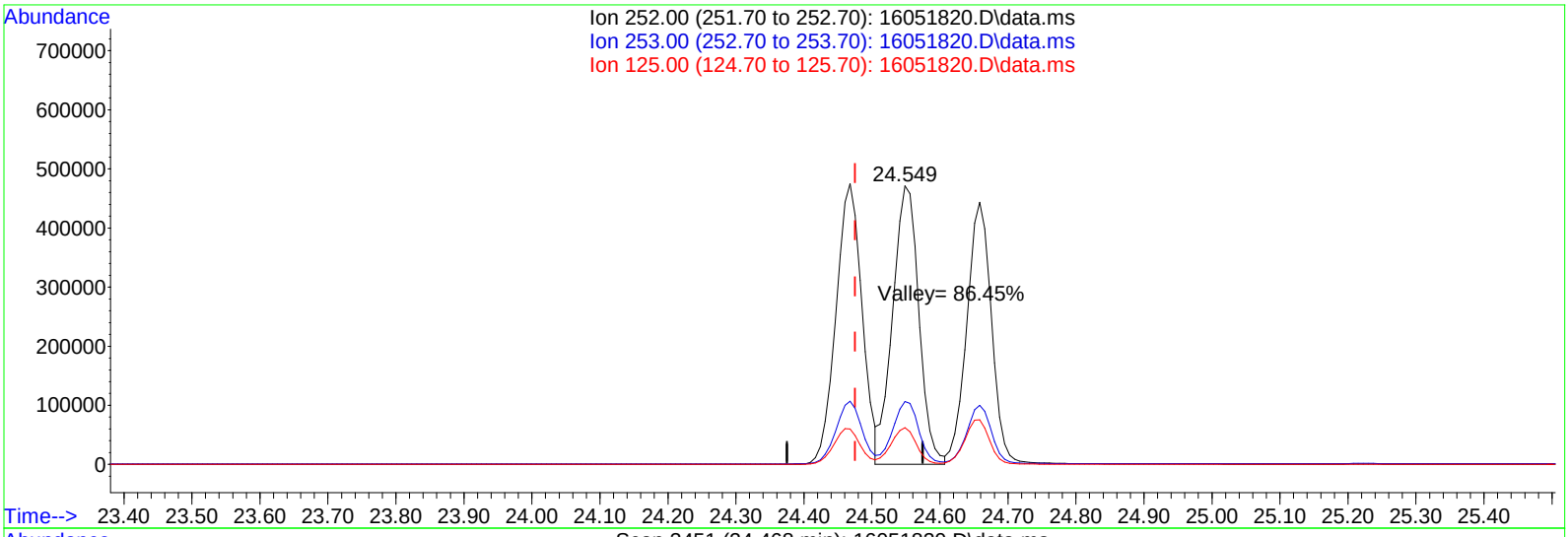
Quant Time: May 19 09:16:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

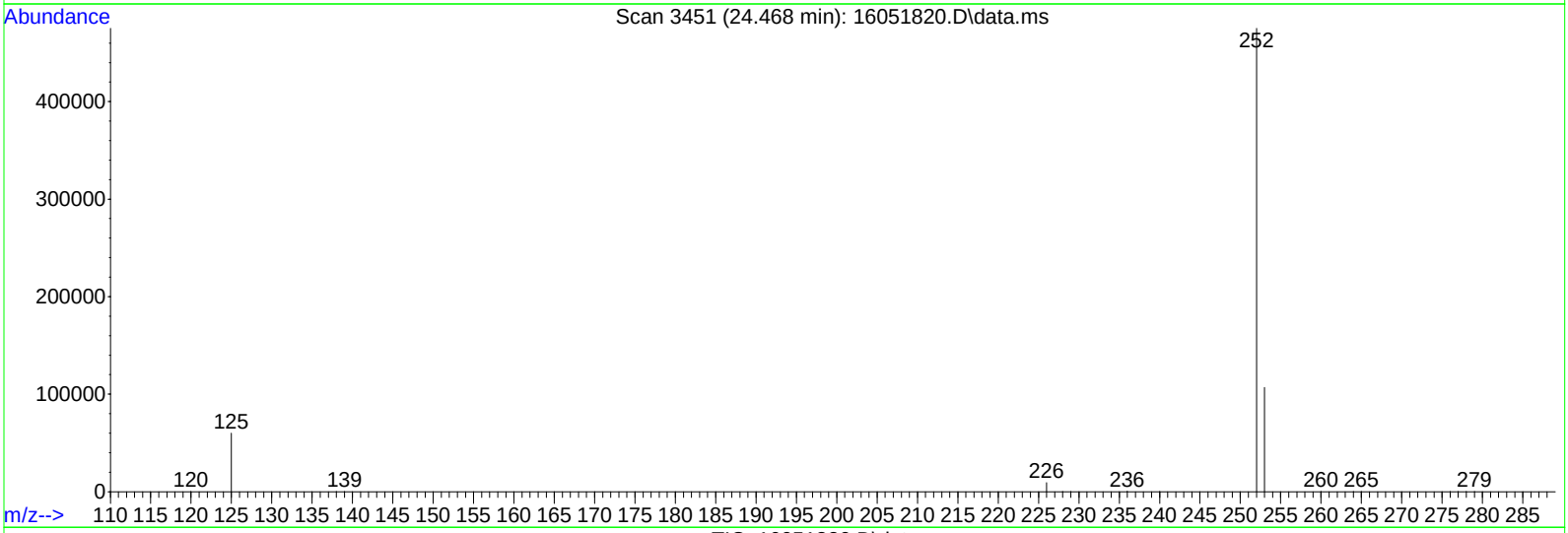


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051820.D
Acq On : 18 May 2016 8:49 pm
Operator :
Sample : ICV2-160518
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 18 21:20:24 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16051820.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.468min (-0.007) 2120.76ug/kg

response 1259735

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.27
125.00	12.20	12.57
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051822.D
Acq On : 18 May 2016 10:03 pm
Operator :
Sample : SBLK-160518
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 19 09:16:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1648675	4000.00	ug/kg	101
6) Acenaphthene-d10	12.857	164	1399121	4000.00	ug/kg	112
11) Phenanthrene-d10	14.977	188	2780441	4000.00	ug/kg	95
16) Chrysene-d12	20.980	240	2664039	4000.00	ug/kg	98
20) Perylene-d12	26.247	264	2504352	4000.00	ug/kg	101

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	70	0.19	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.00%#			
17) 4-Terphenyl-d14	17.592	244	276	0.49	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.01%#			

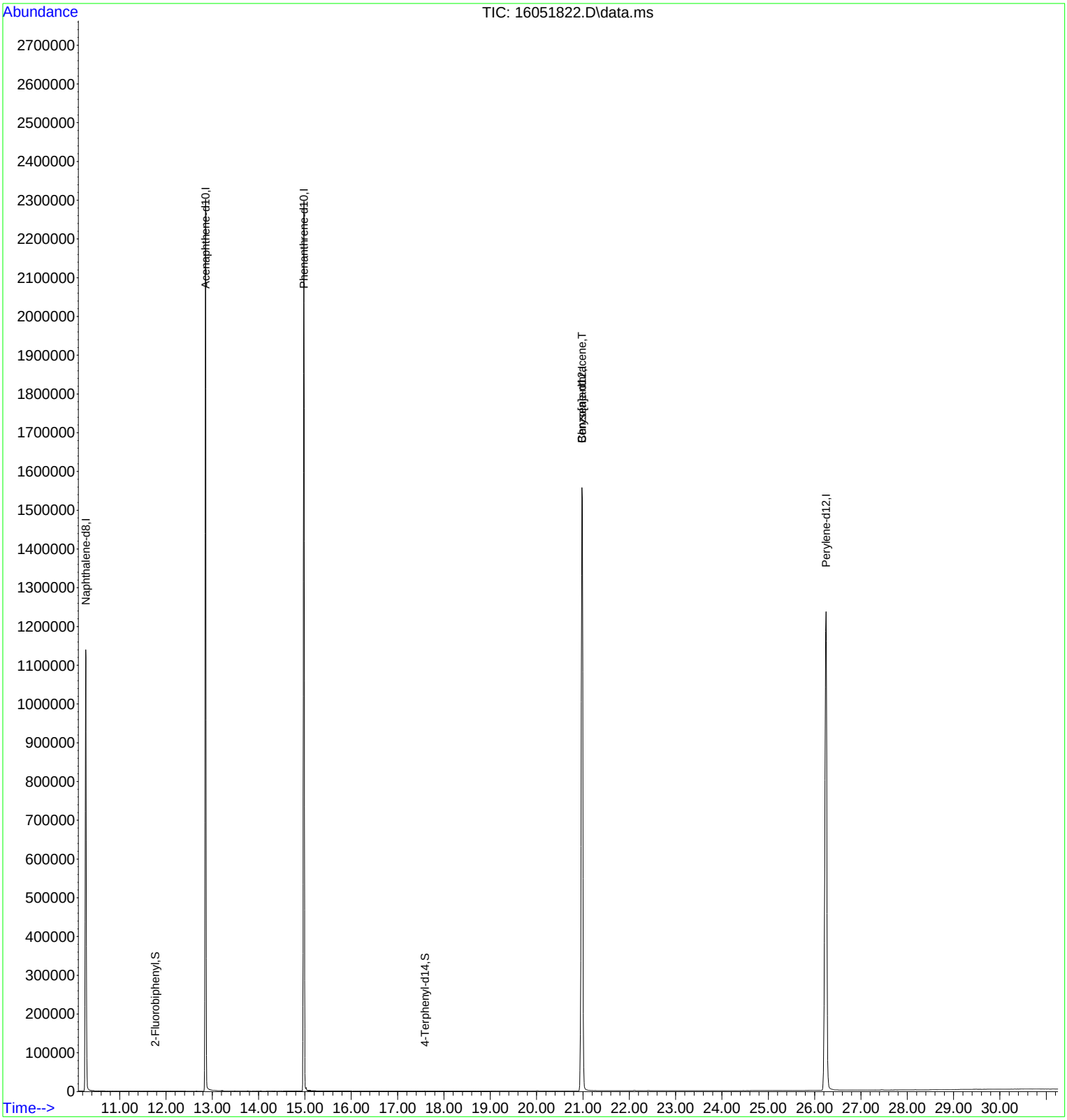
Target Compounds						Qvalue
18) Benzo[a]anthracene	20.980	228	6062	6.97	ug/kg	77

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051822.D
Acq On : 18 May 2016 10:03 pm
Operator :
Sample : SBLK-160518
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 19 09:16:28 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051823.D
Acq On : 18 May 2016 10:40 pm
Operator :
Sample : 1605098-42B
Misc : SAMP
ALS Vial : 23 Sample Multiplier: 1

Quant Time: May 19 09:18:36 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.266	136	1429726	4000.00	ug/kg	88
6) Acenaphthene-d10	12.857	164	1098733	4000.00	ug/kg	88
11) Phenanthrene-d10	14.977	188	2484609	4000.00	ug/kg	85
16) Chrysene-d12	20.980	240	2383144	4000.00	ug/kg	88
20) Perylene-d12	26.247	264	2193202	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	755030	2371.84	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	59.30%		
17) 4-Terphenyl-d14	17.587	244	1240374	2459.02	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	61.48%		

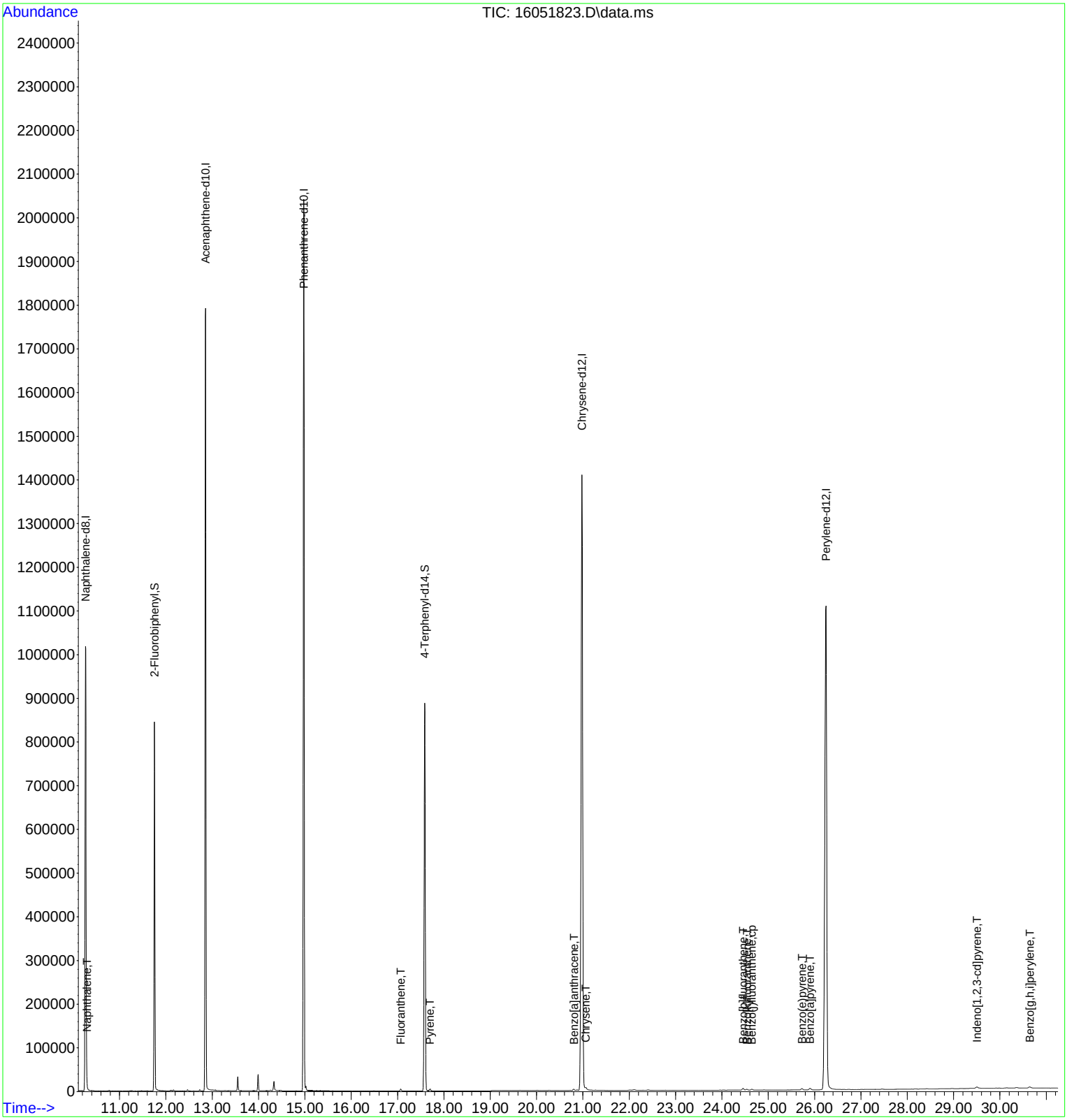
Target Compounds						Qvalue
2) Naphthalene	10.303	128	3660	11.43	ug/kg	94
14) Fluoranthene	17.068	202	5838	6.42	ug/kg	99
15) Pyrene	17.700	202	5436	5.84	ug/kg	96
18) Benzo[a]anthracene	20.804	228	5193	6.60	ug/kg	100
19) Chrysene	21.068	228	6951	9.45	ug/kg	98
21) Benzo[b]fluoranthene	24.460	252	8179	12.29	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	3706	5.94	ug/kg	97
23) Benzo(j)fluoranthene	24.643	252	3542	3.82	ug/kg	94
24) Benzo(e)pyrene	25.727	252	6010	8.39	ug/kg	88
25) Benzo[a]pyrene	25.903	252	7207	11.17	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.507	276	6448	6.76	ug/kg	91
28) Benzo[g,h,i]perylene	30.642	276	6082	7.51	ug/kg	99

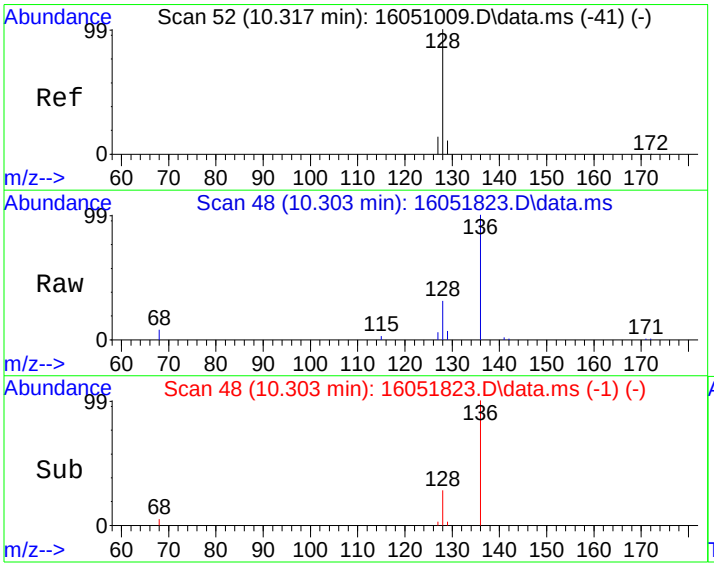
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051823.D
Acq On : 18 May 2016 10:40 pm
Operator :
Sample : 1605098-42B
Misc : SAMP
ALS Vial : 23 Sample Multiplier: 1

Quant Time: May 19 09:18:36 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

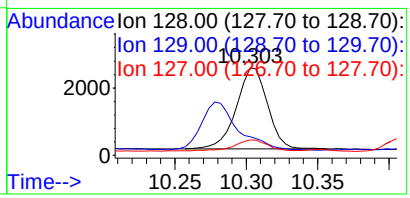


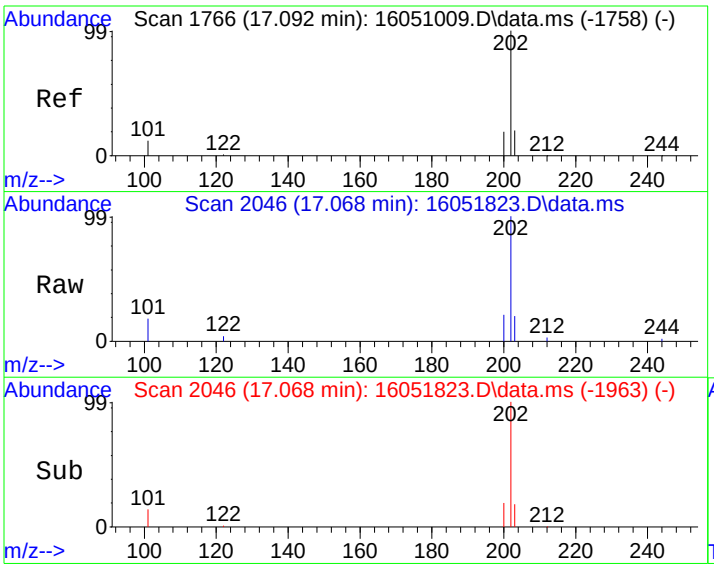


#2
Naphthalene
Concen: 11.43 ug/kg
RT: 10.303 min Scan# 48
Delta R.T. -0.007 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:128 Resp: 3660

Ion	Ratio	Lower	Upper
128	100		
129	16.1	0.0	31.3
127	13.6	0.0	33.6

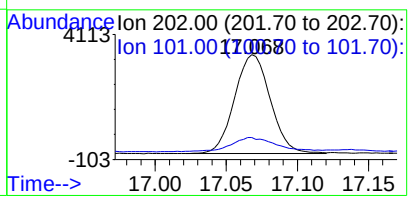


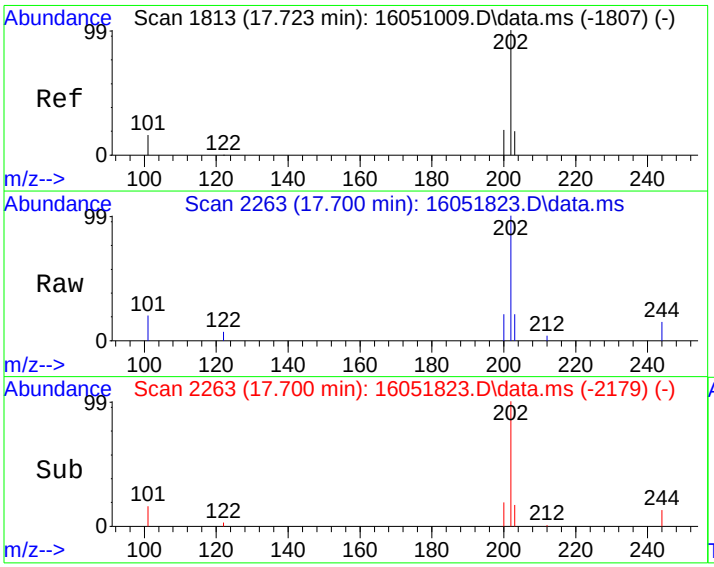


#14
Fluoranthene
Concen: 6.42 ug/kg
RT: 17.068 min Scan# 2046
Delta R.T. -0.008 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:202 Resp: 5838

Ion	Ratio	Lower	Upper
202	100		
101	13.8	0.0	34.4

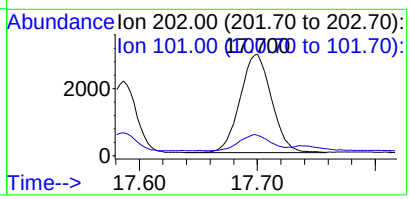


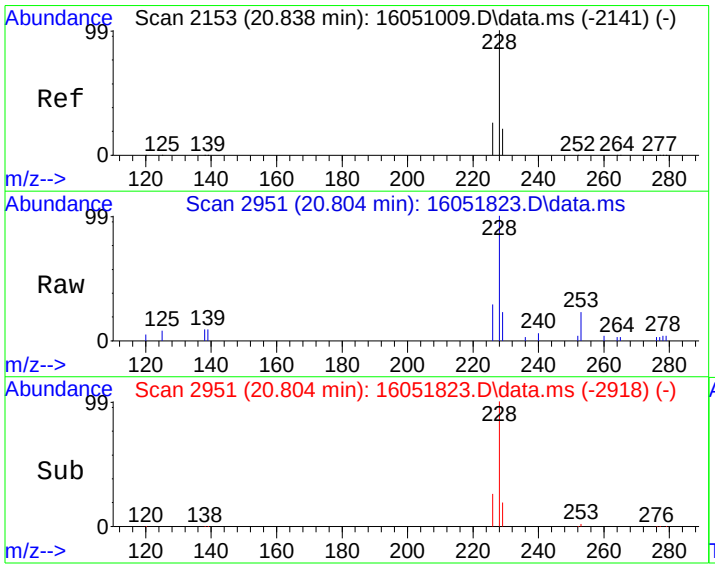


#15
Pyrene
Concen: 5.84 ug/kg
RT: 17.700 min Scan# 2263
Delta R.T. -0.006 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:202 Resp: 5436

Ion	Ratio	Lower	Upper
202	100		
101	15.6	0.0	37.3

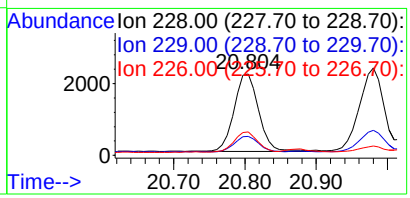


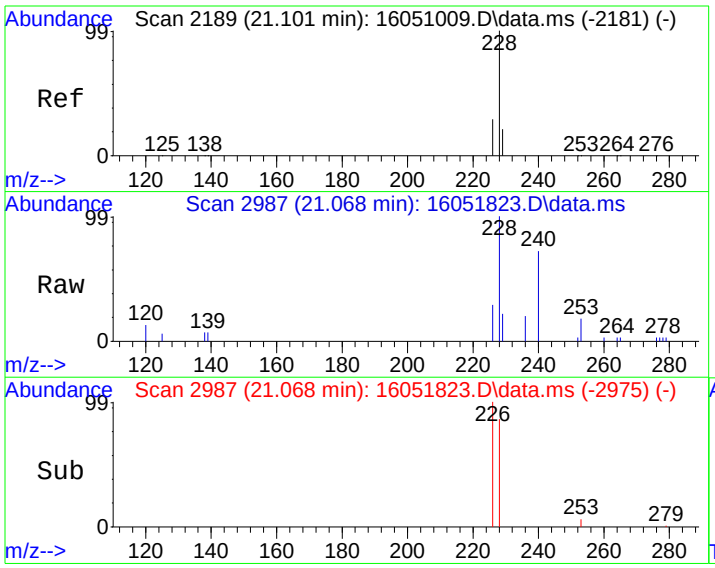


#18
Benzo[a]anthracene
Concen: 6.60 ug/kg
RT: 20.804 min Scan# 2951
Delta R.T. -0.008 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:228 Resp: 5193

Ion	Ratio	Lower	Upper
228	100		
229	20.0	0.3	40.3
226	25.6	5.7	45.7

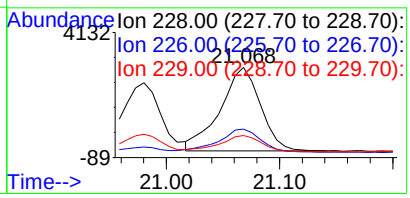


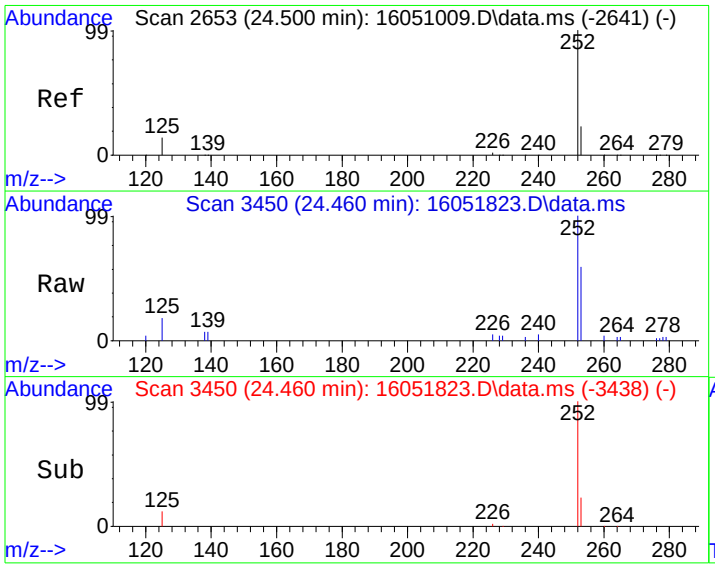


#19
Chrysene
Concen: 9.45 ug/kg
RT: 21.068 min Scan# 2987
Delta R.T. -0.015 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:228 Resp: 6951

Ion	Ratio	Lower	Upper
228	100		
226	27.4	8.2	48.2
229	19.3	0.3	40.3

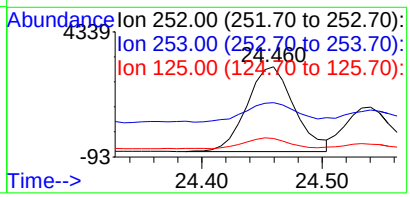


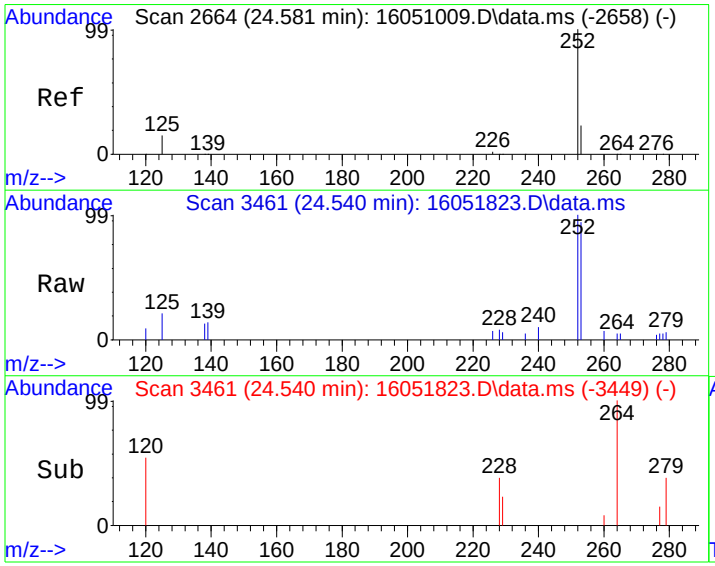


#21
Benzo[b]fluoranthene
Concen: 12.29 ug/kg
RT: 24.460 min Scan# 3450
Delta R.T. -0.015 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:252 Resp: 8179

Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.3	42.3
125	11.8	0.0	32.2

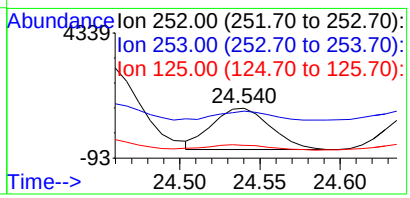


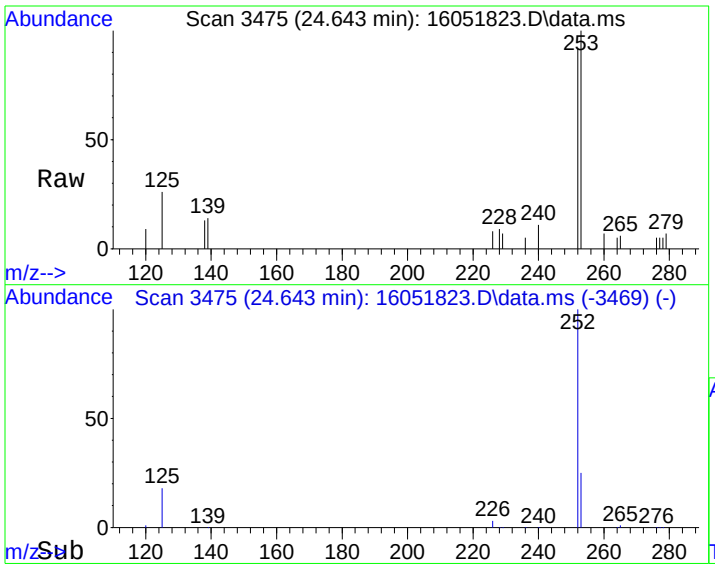


#22
Benzo[k]fluoranthene
Concen: 5.94 ug/kg
RT: 24.540 min Scan# 3461
Delta R.T. -0.015 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:252 Resp: 3706

Ion	Ratio	Lower	Upper
252	100		
253	21.8	2.5	42.5
125	10.6	0.0	32.6

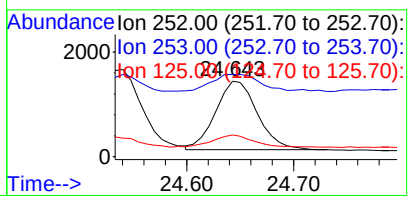


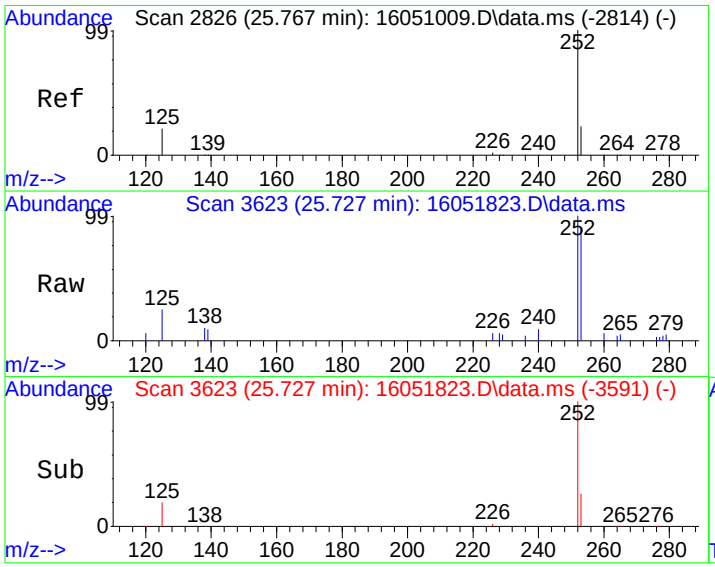


#23
Benzo(j)fluoranthene
Concen: 3.82 ug/kg
RT: 24.643 min Scan# 3475
Delta R.T. -0.022 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:252 Resp: 3542

Ion	Ratio	Lower	Upper
252	100		
253	27.4	2.2	42.2
125	17.4	0.0	37.3

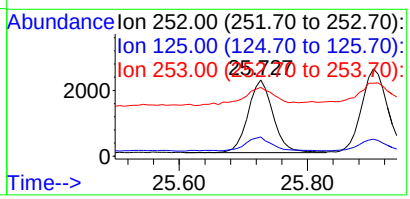


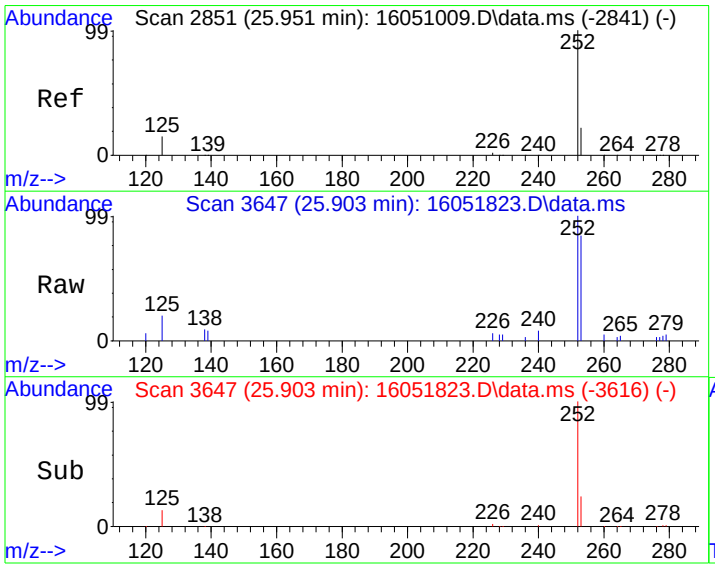


#24
Benzo(e)pyrene
Concen: 8.39 ug/kg
RT: 25.727 min Scan# 3623
Delta R.T. -0.015 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:252 Resp: 6010

Ion	Ratio	Lower	Upper
252	100		
125	18.7	0.0	38.7
253	33.2	2.3	42.3

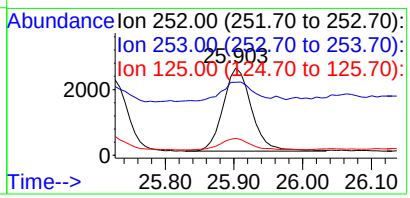


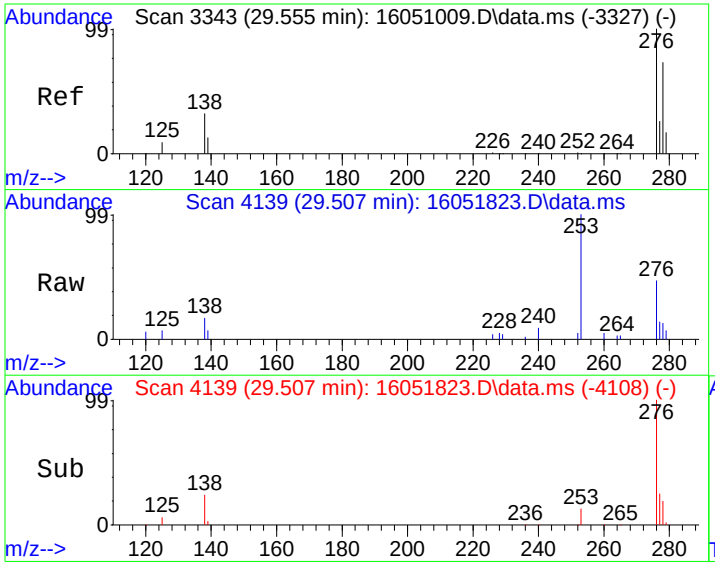


#25
Benzo[a]pyrene
Concen: 11.17 ug/kg
RT: 25.903 min Scan# 3647
Delta R.T. -0.022 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:252 Resp: 7207

Ion	Ratio	Lower	Upper
252	100		
253	22.4	2.3	42.3
125	14.0	0.0	33.5

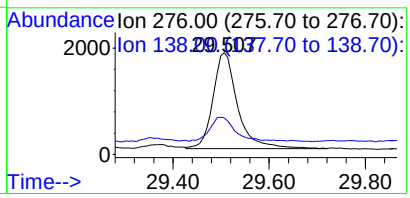


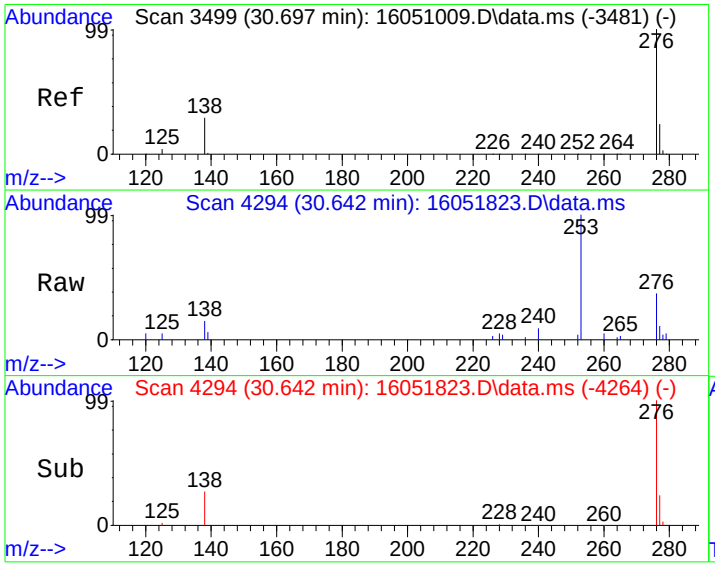


#26
Indeno[1,2,3-cd]pyrene
Concen: 6.76 ug/kg
RT: 29.507 min Scan# 4139
Delta R.T. -0.022 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:276 Resp: 6448

Ion	Ratio	Lower	Upper
276	100		
138	23.6	8.3	48.3

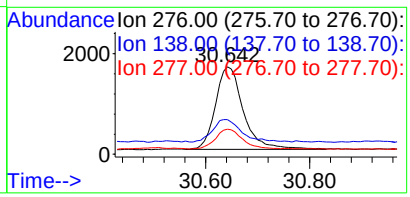




#28
Benzo[g,h,i]perylene
Concen: 7.51 ug/kg
RT: 30.642 min Scan# 4294
Delta R.T. -0.030 min
Lab File: 16051823.D
Acq: 18 May 2016 10:40 pm

Tgt Ion:276 Resp: 6082

Ion	Ratio	Lower	Upper
276	100		
138	27.1	5.8	45.8
277	24.2	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051830.D
Acq On : 19 May 2016 2:59 am
Operator :
Sample : CCV-160520
Misc : CCV
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 19 09:16:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1631750	4000.00	ug/kg	100
6) Acenaphthene-d10	12.857	164	1319311	4000.00	ug/kg	105
11) Phenanthrene-d10	14.979	188	2784459	4000.00	ug/kg	95
16) Chrysene-d12	20.987	240	2573498	4000.00	ug/kg	95
20) Perylene-d12	26.254	264	2394128	4000.00	ug/kg	96

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	363303	999.98	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 25.00%#			
17) 4-Terphenyl-d14	17.589	244	544298	999.25	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.98%#			

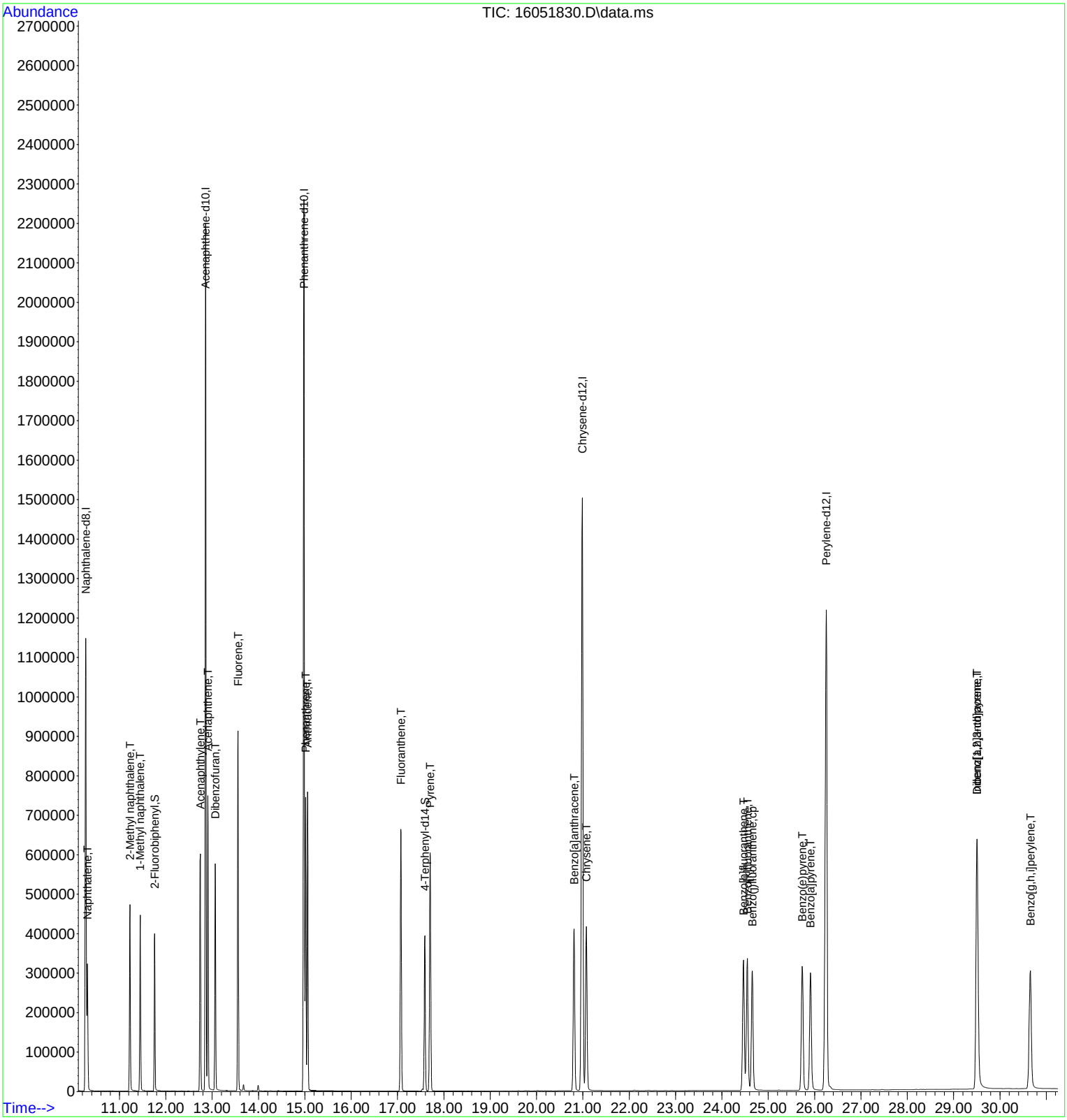
Target Compounds						Qvalue
2) Naphthalene	10.307	128	357903	979.07	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	290768	1023.19	ug/kg	100
4) 1-Methyl naphthalene	11.446	142	267657	995.33	ug/kg	100
7) Acenaphthylene	12.744	152	575333	997.67	ug/kg	99
8) Acenaphthene	12.906	153	360034	989.41	ug/kg	98
9) Dibenzofuran	13.063	168	545327	983.77	ug/kg	91
10) Fluorene	13.559	166	492027	978.26	ug/kg	100
12) Phenanthrene	15.015	178	720203	940.02	ug/kg	99
13) Anthracene	15.059	178	727233	938.06	ug/kg	99
14) Fluoranthene	17.071	202	741258	983.41	ug/kg	100
15) Pyrene	17.703	202	725670	984.46	ug/kg	98
18) Benzo[a]anthracene	20.811	228	655624	1002.53	ug/kg	99
19) Chrysene	21.075	228	607054	1004.84	ug/kg	100
21) Benzo[b]fluoranthene	24.466	252	630356	1005.29	ug/kg	100
22) Benzo[k]fluoranthene	24.547	252	586004	1036.28	ug/kg	99
23) Benzo(j)fluoranthene	24.657	252	547475	1008.23	ug/kg	99
24) Benzo(e)pyrene	25.734	252	600311	1012.62	ug/kg	99
25) Benzo[a]pyrene	25.909	252	592256	1013.62	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.513	276	732052	1018.20	ug/kg	99
27) Dibenz[a,h]anthracene	29.499	278	612851	1023.88	ug/kg	100
28) Benzo[g,h,i]perylene	30.656	276	630506	1016.87	ug/kg	100

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160518\
Data File : 16051830.D
Acq On : 19 May 2016 2:59 am
Operator :
Sample : CCV-160520
Misc : CCV
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 19 09:16:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



GCMS8_160519B
For

DHL Work Order
1605098

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Project Number(s): SEE RUN LOG.	**Run ID: GCMS8_160519B**
Batch Number(s): SEE RUN LOG.	**SOP:** ORGANICS-PAH-01
Matrix: SEE RUN LOG.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		x
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			x
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS		X		
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS		X		
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)	X			

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	7 days (Aq) - extraction			X	x
	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			x
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality	X			x
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___ LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	___ Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)		
		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data:

See run log. Client has been notified about MS/MSD failures and accepts results with matrix interference.

Analyst: Karyn Lane Date: 5/23/2016 11:37

Second-Level Review: Janice Whitt Date: 5/23/2016

REVIEWED BY
By Janice Whitt at 2:39:24 PM, 5/23/2016

DHL Analytical, Inc.

Run ID: GCMS8_160519B **Run No.:** 85895

Analytical Run Date: 5/19/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 660 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160517.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP2-160519	1	PAH_LL_SDOD1	TUNE	R85895	5/19/2016 1:44:00 PM		
ICV2-160519	1	PAH_LL_SDOD1	ICV	R85895	5/19/2016 2:20:00 PM		
LCS-75218	1	PAH_LL_SDOD1	LCS	75218	5/19/2016 2:57:00 PM		
MB-75218	1	PAH_LL_SDOD1	MBLK	75218	5/19/2016 3:34:00 PM		
1605098-35A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 4:11:00 PM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers. Some are run at larger dilution due to color of the extract and high concentration of hydrocarbons.
1605098-38A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 4:48:00 PM		
1605098-40A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 5:25:00 PM		
1605098-41A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 6:02:00 PM		
1605121-02A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 6:39:00 PM		
1605121-03A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 7:16:00 PM		
1605121-04A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 7:54:00 PM		
1605121-05A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 8:31:00 PM		
1605121-08A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 9:08:00 PM		
1605121-09A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 9:44:00 PM		
1605121-10A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 10:21:00 PM		
1605121-01A	10	PAH_LL_SDOD1	SAMP	75218	5/19/2016 10:58:00 PM		See 50x for analytes above cal in this parent run and any analytes above cal in MS/MSD.
1605121-01AMS	10	PAH_LL_SDOD1	MS	75218	5/19/2016 11:35:00 PM		9 analytes low.
1605121-01AMSD	10	PAH_LL_SDOD1	MSD	75218	5/20/2016 12:11:00 AM		8 analytes high. RPD ok. Matrix effect.
DFTPP3-160519	1	PAH_LL_SDOD1	TUNE	R85895	5/20/2016 12:48:00 AM		
ICV3-160519	1	PAH_LL_SDOD1	ICV	R85895	5/20/2016 1:26:00 AM		
SBLK-160519	1	PAH_LL_SDOD1	SBLK	75218	5/20/2016 2:40:00 AM		
1605121-12A	10	PAH_LL_SDOD1	SAMP	75218	5/20/2016 3:16:00 AM		
1605121-13A	10	PAH_LL_SDOD1	SAMP	75218	5/20/2016 3:53:00 AM		
1605121-14A	10	PAH_LL_SDOD1	SAMP	75218	5/20/2016 4:30:00 AM		
1605121-07A	10	PAH_LL_SDOD1	SAMP	75218	5/20/2016 5:07:00 AM		
1605121-11A	10	PAH_LL_SDOD1	SAMP	75218	5/20/2016 5:45:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

DHL Analytical, Inc.

Run ID: GCMS8_160519B **Run No.:** 85895

1605121-06A	10	PAH_LL_SDOD1	SAMP	75218	5/20/2016 6:22:00 AM		
CCV-160519	1	PAH_LL_SDOD1	CCV	R85895	5/20/2016 6:59:00 AM		
DFTPP-160520	1	PAH_LL_SDOD1	TUNE	R85895	5/20/2016 8:37:00 AM		
ICV-160520	1	PAH_LL_SDOD1	ICV	R85895	5/20/2016 9:14:00 AM		
SBLK-160520	1	PAH_LL_SDOD1	SBLK	75218	5/20/2016 10:28:00 AM		
1605121-01A	50	PAH_LL_SDOD1	SAMP	75218	5/20/2016 11:05:00 AM		
1605121-01AMS	50	PAH_LL_SDOD1	MS	75218	5/20/2016 11:42:00 AM		4 analytes low.
1605121-01AMSD	50	PAH_LL_SDOD1	MSD	75218	5/20/2016 12:19:00 PM		4 analytes high. RPD Ok.
ICV2-160520	1	PAH_LL_SDOD1	CCV	R85895	5/20/2016 7:07:00 PM		Second ICV for 5/20 imported as CCV for dilution.

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

Sequence Name: C:\msdchem\1\sequence\160519.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160519\
Instrument Name: GCMS #8
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

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

Line			Sample Name/Misc Info		
1)	Sample	1	16051901	DFTPPPCB	DFTPP-160519
2)	Sample	2	16051902	1660-160511	ICV-160519
3)	Sample	3	16051903	1660-160511	ICV-160519
4)	Sample	4	16051904	1660-160511	LCS-75186
5)	Sample	5	16051905	1660-160511	LCSD-75186
6)	Sample	6	16051906	1660-160511	MB-75186
7)	Sample	7	16051907	1660-160511	1605115-01B
8)	Sample	8	16051908	1660-160511	1605115-02B

Sequence Name: C:\msdchem\1\sequence\160519.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160519\
Instrument Name: GCMS #8
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

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

Line			Sample Name/Misc Info		
1)	Sample	1	16051901	DFTPPPCB	DFTPP-160519
2)	Sample	2	16051902	1660-160511	ICV-160519
3)	Sample	3	16051903	1660-160511	ICV-160519
4)	Sample	4	16051904	1660-160511	LCS-75186
5)	Sample	5	16051905	1660-160511	LCSD-75186
6)	Sample	6	16051906	1660-160511	MB-75186
7)	Sample	7	16051907	1660-160511	1605115-01B
8)	Sample	8	16051908	1660-160511	1605115-02B
9)	Sample	9	16051909	DFTPPPAH	DFTPP2-160519
10)	Sample	10	16051910	PAH160517	ICV2-160519
11)	Sample	11	16051911	PAH160517	LCS-75218
12)	Sample	12	16051912	PAH160517	MB-75218
13)	Sample	13	16051913	PAH160517	1605098-35A
14)	Sample	14	16051914	PAH160517	1605098-38A
15)	Sample	15	16051915	PAH160517	1605098-40A
16)	Sample	16	16051916	PAH160517	1605098-41A
17)	Sample	17	16051917	PAH160517	1605121-02A
18)	Sample	18	16051918	PAH160517	1605121-03A
19)	Sample	19	16051919	PAH160517	1605121-04A
20)	Sample	20	16051920	PAH160517	1605121-05A
21)	Sample	21	16051921	PAH160517	1605121-08A
22)	Sample	22	16051922	PAH160517	1605121-09A
23)	Sample	23	16051923	PAH160517	1605121-10A
24)	Sample	24	16051924	PAH160517	1605121-01A
25)	Sample	25	16051925	PAH160517	1605121-01AMS
26)	Sample	26	16051926	PAH160517	1605121-01AMSD
27)	Sample	27	16051927	DFTPPPAH	DFTPP3-160519
28)	Sample	28	16051928	PAH160517	ICV3-160519
29)	Sample	29	16051929	PAH160517	SBLK
30)	Sample	30	16051930	PAH160517	SBLK-160519
31)	Sample	31	16051931	PAH160517	1605121-12A
32)	Sample	32	16051932	PAH160517	1605121-13A
33)	Sample	33	16051933	PAH160517	1605121-14A
34)	Sample	34	16051934	PAH160517	1605121-07A
35)	Sample	35	16051935	PAH160517	1605121-11A
36)	Sample	36	16051936	PAH160517	1605121-06A
37)	Sample	37	16051937	PAH160517	CCV-160519

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/18/2016 8:50:22 AM**
Digestion:
Prep End Date: **5/18/2016 1:50:00 PM**

Prep Batch **75218** Prep Code: **3550_PAHDOD** Technician: **Alex Robbins**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-35A	Soil		10.41	10	0.961	1 of 1	
1605098-36A	Soil		10.24	10	0.977	1 of 1	
1605098-38A	Soil		10.36	10	0.965	1 of 1	
1605098-39A	Soil		10.98	10	0.911	1 of 1	
1605098-40A	Soil		10.45	10	0.957	1 of 1	
1605098-41A	Soil		10.8	10	0.926	1 of 1	
1605121-01A	Soil		10.56	10	0.947	1 of 1	
1605121-01AMS	Soil		10.3	10	0.971	of	
1605121-01AMSD	Soil		10.39	10	0.962	of	
1605121-02A	Soil		10.77	10	0.929	1 of 1	
1605121-03A	Soil		10.45	10	0.957	1 of 1	
1605121-04A	Soil		10.26	10	0.975	1 of 1	
1605121-05A	Soil		10.02	10	0.998	1 of 1	
1605121-06A	Soil		10.13	10	0.987	1 of 1	
1605121-07A	Soil		10.86	10	0.921	1 of 1	
1605121-08A	Soil		10.32	10	0.969	1 of 1	
1605121-09A	Soil		10.05	10	0.995	1 of 1	
1605121-10A	Soil		10.17	10	0.983	1 of 1	
1605121-11A	Soil		10.01	10	0.999	1 of 1	
1605121-12A	Soil		10.4	10	0.962	1 of 1	
1605121-13A	Soil		10.07	10	0.993	1 of 1	
1605121-14A	Soil		10.15	10	0.985	1 of 1	
LCS-75218	Soil		10	10	1.000	of	
MB-75218	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED/APPROVED

By Sherri Herschmann at 5:24:16 PM, 5/25/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/18/2016 8:50:22 AM**
Digestion:
Prep End Date: 5/18/16 1:50PM

Prep Batch **75218** Prep Code: **3550_PAHDOD** Technician: **Alex Robbins**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-35A	Soil		10.41	10	1.000	1 of 1	
1605098-36A	Soil	10.24	~~10.24~~	10	1.000	1 of 1	
	Extract and hold		5/18/16				
1605098-38A	Soil		10.36	10	1.000	1 of 1	
1605098-39A	Soil		10.98	10	1.000	1 of 1	
	Extract and hold						
1605098-40A	Soil		10.45	10	1.000	1 of 1	
1605098-41A	Soil		10.80	10	1.000	1 of 1	
1605121-01A	Soil		10.56	10	1.000	1 of 1	
1605121-01AMS	Soil		10.30	10	1.000	of	
1605121-01AMSD	Soil		10.39	10	1.000	of	
1605121-02A	Soil		10.77	10	1.000	1 of 1	
1605121-03A	Soil		10.45	10	1.000	1 of 1	
1605121-04A	Soil		10.26	10	1.000	1 of 1	
1605121-05A	Soil		10.02	10	1.000	1 of 1	
1605121-06A	Soil		10.13	10	1.000	1 of 1	
1605121-07A	Soil		10.86	10	1.000	1 of 1	
1605121-08A	Soil		10.32	10	1.000	1 of 1	
1605121-09A	Soil		10.05	10	1.000	1 of 1	
1605121-10A	Soil		10.17	10	1.000	1 of 1	
1605121-11A	Soil		10.01	10	1.000	1 of 1	
1605121-12A	Soil		10.40	10	1.000	1 of 1	
1605121-13A	Soil		10.07	10	1.000	1 of 1	
1605121-14A	Soil		10.15	10	1.000	1 of 1	
LCS-75218	Soil		10	10	1.000	of	
MB-75218	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. D
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/20[illegible]
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 1:28:06 PM, 5/23/2016

5/18/16 5/18/16 5/18/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 1:00:00 PM**
Digestion: **Start: 5/13/2016 2:00:00 PM / Stop: 5/17/2016 9:00:00 AM**
Prep End Date: **5/17/2016 12:00:00 PM**

Prep Batch **75155** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

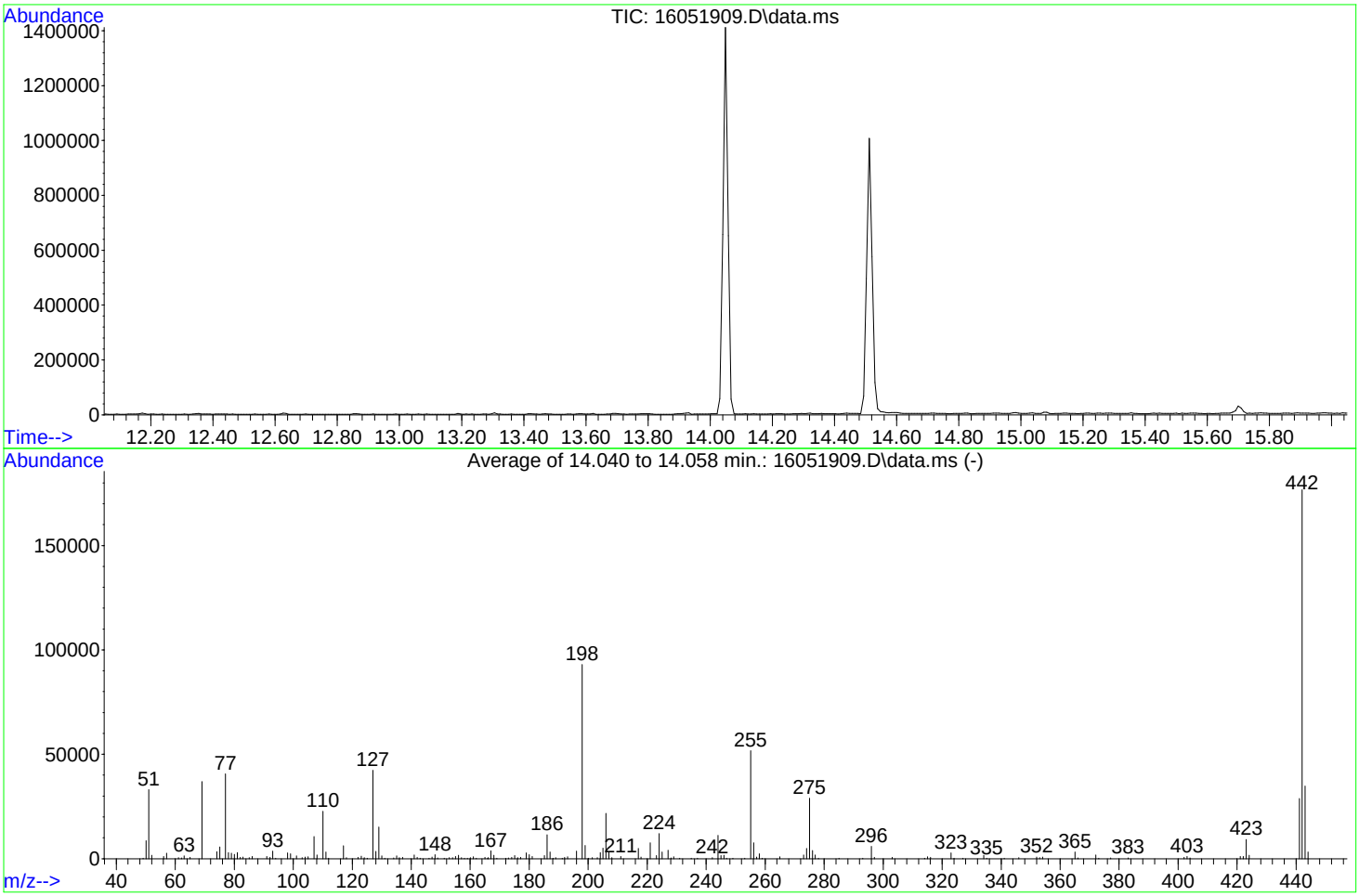
Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-01A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling - MS/MSD						
1605121-02A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-03A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-04A	Soil		0	0	#Num!	1 of 1	
1605121-05A	Soil		0	0	#Num!	1 of 1	
1605121-06A	Soil		0	0	#Num!	1 of 1	
1605121-07A	Soil		0	0	#Num!	1 of 1	
1605121-08A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-09A	Soil		0	0	#Num!	1 of 1	
1605121-10A	Soil		0	0	#Num!	1 of 1	
1605121-11A	Soil		0	0	#Num!	1 of 1	
1605121-12A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-13A	Soil		0	0	#Num!	1 of 1	
1605121-14A	Soil		0	0	#Num!	1 of 1	
1605121-15A	Soil		0	0	#Num!	1 of 1	
1605121-16A	Soil		0	0	#Num!	1 of 1	
1605121-17A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-18A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-19A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						

REVIEWED BY
By Janice Whitt at 1:25:15 PM, 5/23/2016

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051909.D
Acq On : 19 May 2016 1:44 pm
Operator :
Sample : DFTPP2-160519
Misc : TUNE
ALS Vial : 9 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 436, 437, 438; Background Corrected with Scan 432

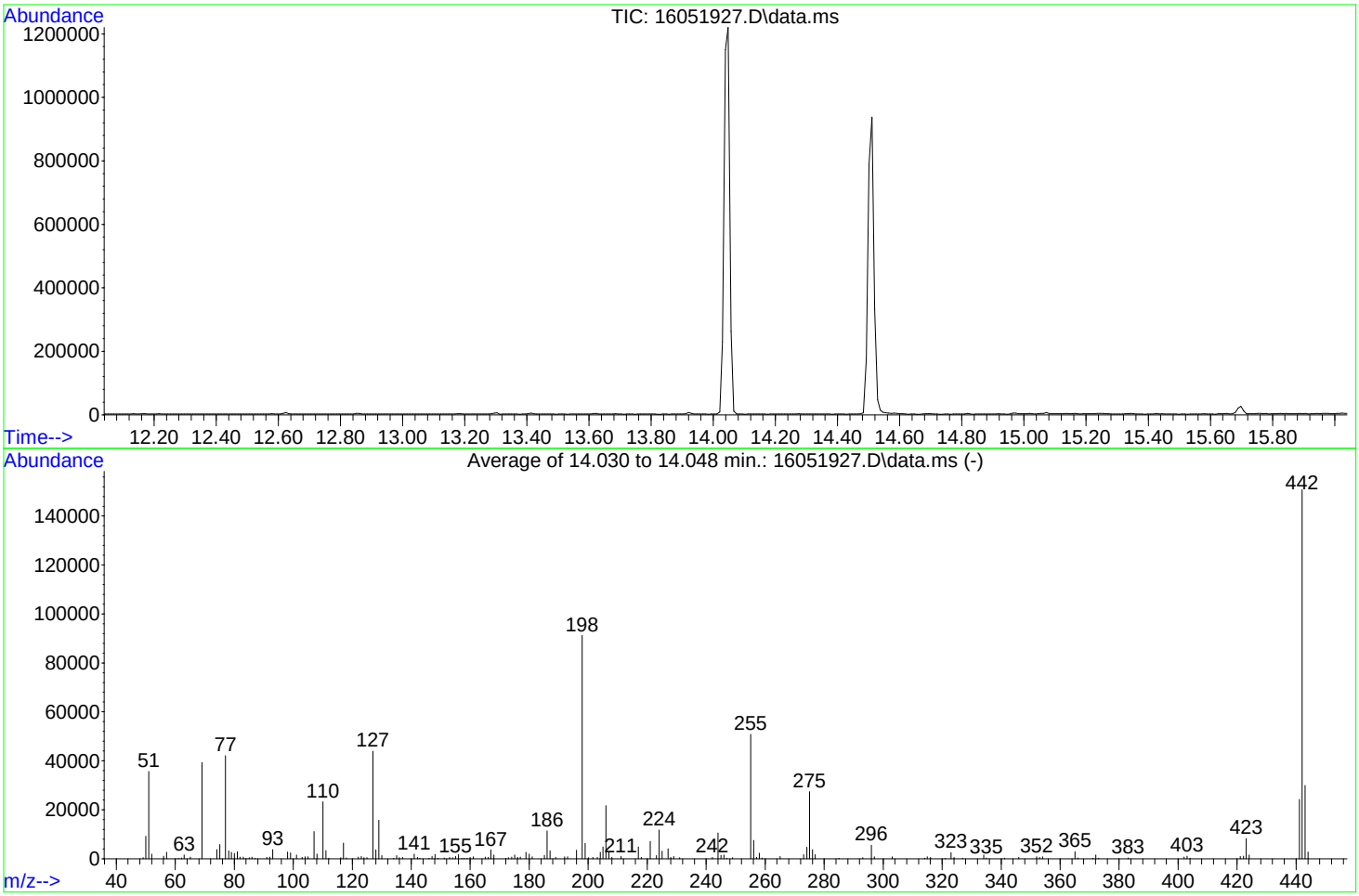
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	35.6	33070	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	39.7	36915	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	45.6	42392	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	93000	PASS
199	198	5	9	6.8	6281	PASS
275	198	10	60	31.2	28991	PASS
365	198	1	200	3.5	3242	PASS
441	442	0.01	24	16.3	28846	PASS
442	198	50	400	190.1	176760	PASS
443	442	15	24	19.7	34742	PASS

REVIEWED BY
By Janice Whitt at 1:25:18 PM, 5/23/2016

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051927.D
Acq On : 20 May 2016 12:48 am
Operator :
Sample : DFTPP3-160519
Misc : TUNE
ALS Vial : 27 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

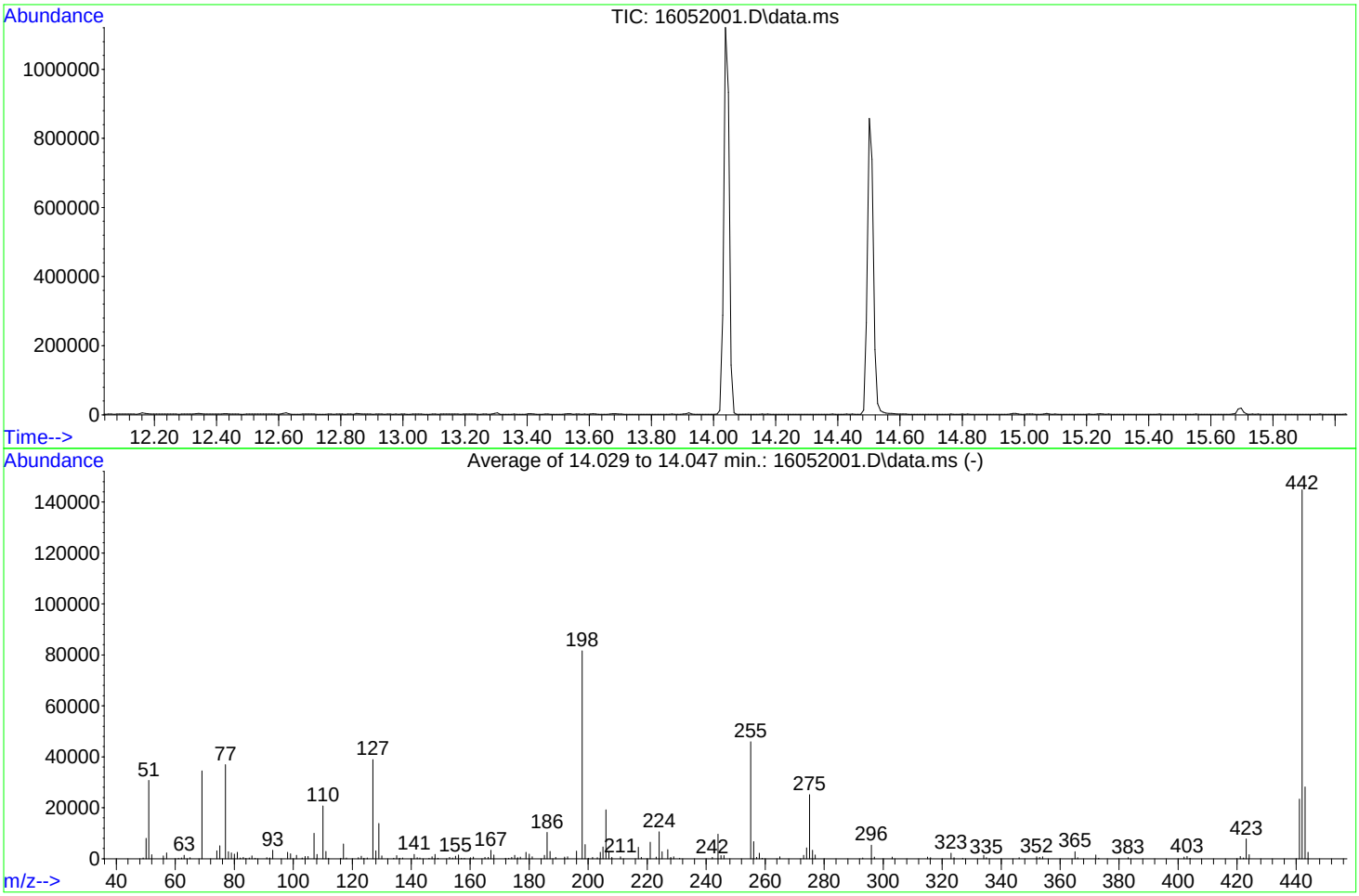
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	39.1	35680	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.0	39226	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	48.1	43874	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	91296	PASS
199	198	5	9	6.9	6282	PASS
275	198	10	60	30.0	27415	PASS
365	198	1	200	3.1	2850	PASS
441	442	0.01	24	16.1	24279	PASS
442	198	50	400	165.2	150792	PASS
443	442	15	24	19.8	29920	PASS

REVIEWED BY
By Janice Whitt at 1:25:20 PM, 5/23/2016

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052001.D
Acq On : 20 May 2016 8:37 am
Operator :
Sample : DFTPP-160520
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

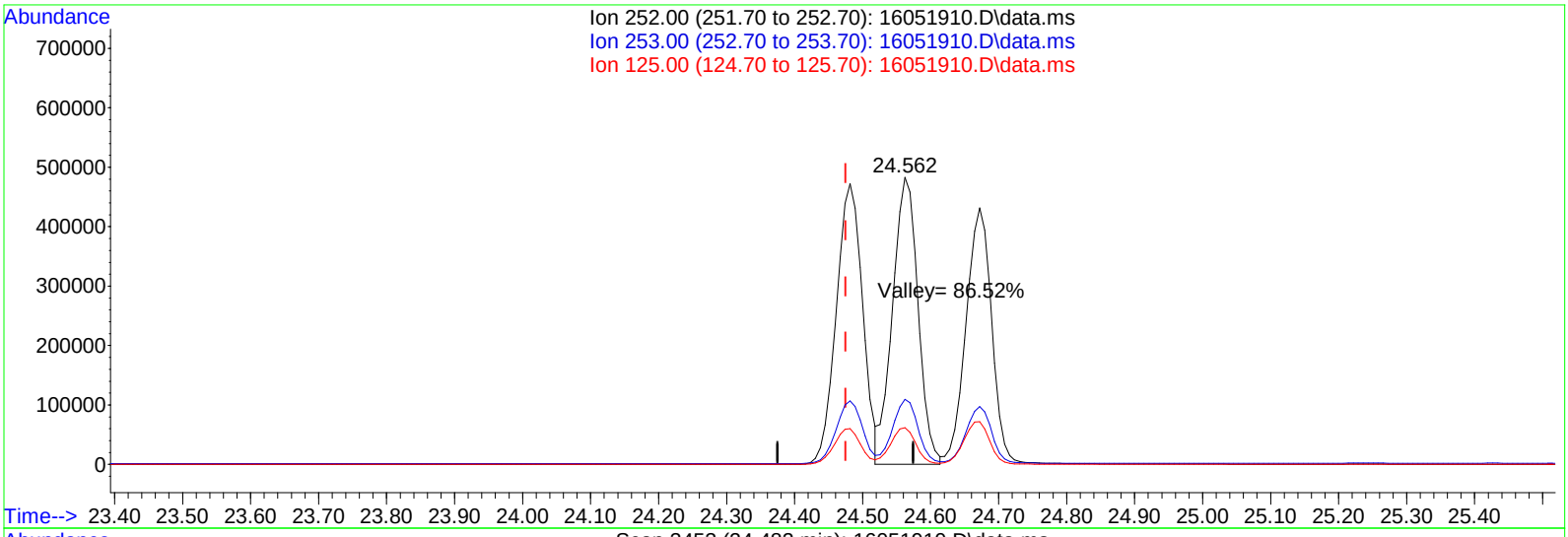
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	37.6	30736	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	42.2	34482	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	47.6	38869	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	81637	PASS
199	198	5	9	6.8	5532	PASS
275	198	10	60	30.7	25087	PASS
365	198	1	200	3.3	2702	PASS
441	442	0.01	24	16.1	23363	PASS
442	198	50	400	177.4	144840	PASS
443	442	15	24	19.4	28121	PASS

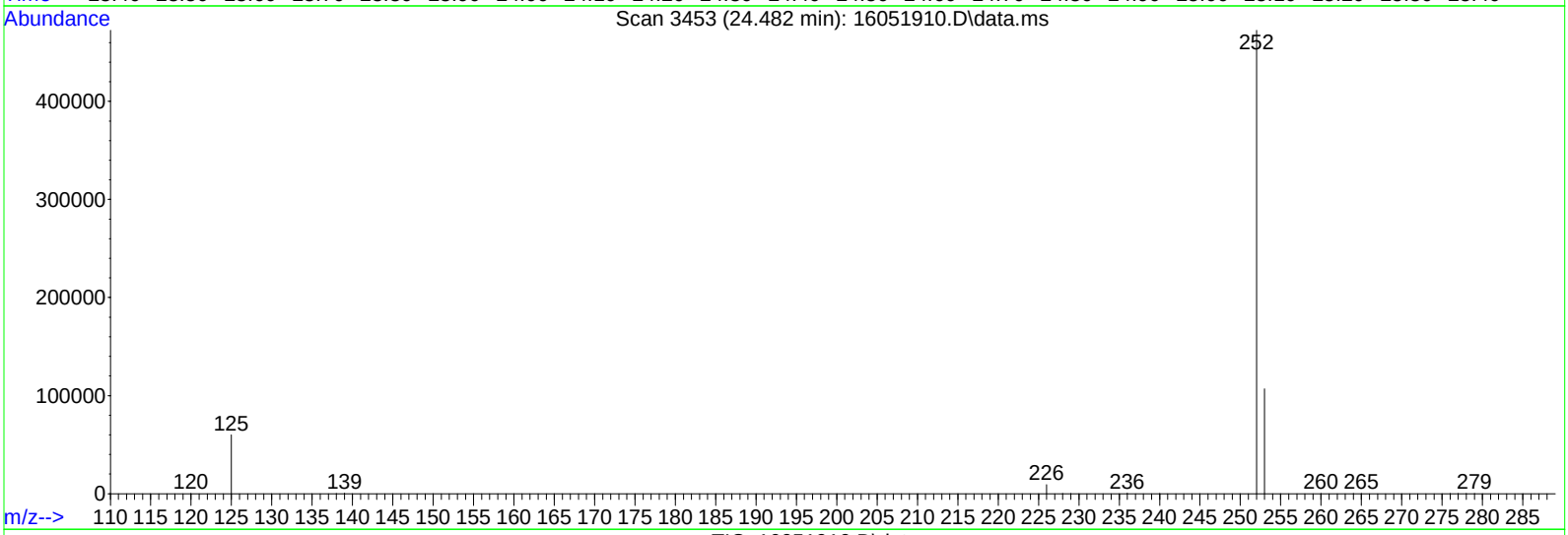
REVIEWED BY
By Janice Whitt at 1:25:25 PM, 5/23/2016

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051910.D
Acq On : 19 May 2016 2:20 pm
Operator :
Sample : ICV2-160519
Misc : ICV
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 19 14:52:10 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16051910.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.482min (+0.007) 2108.62ug/kg

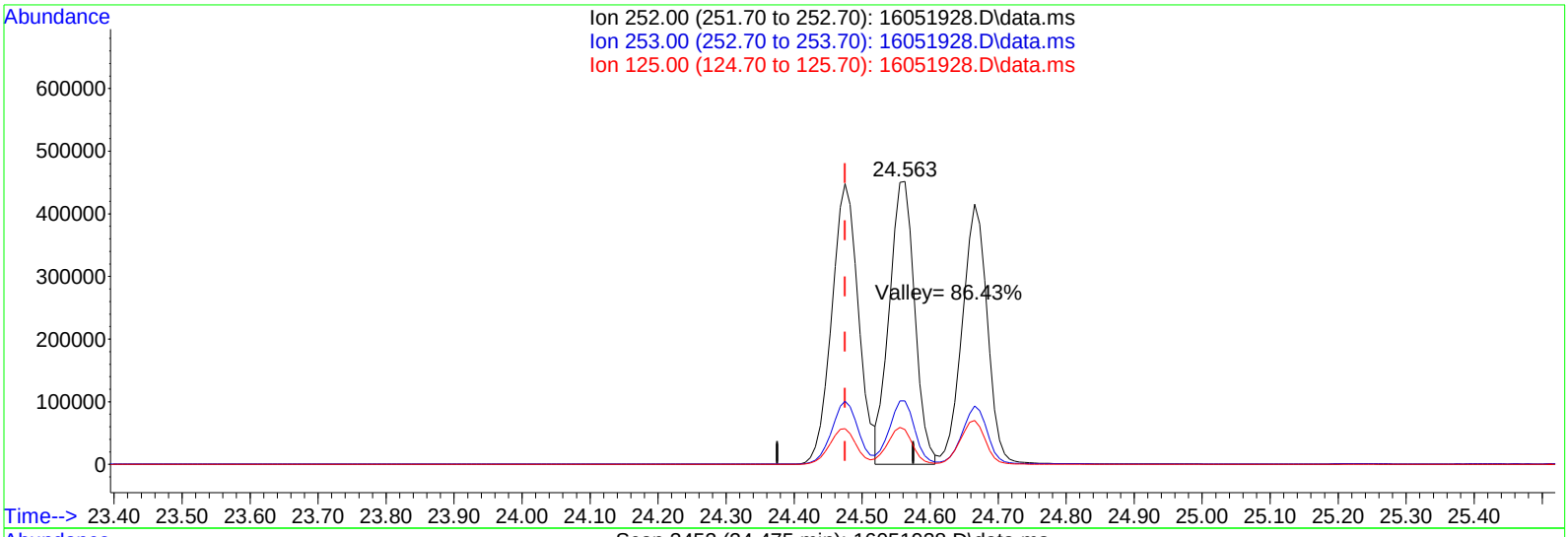
response 1268882

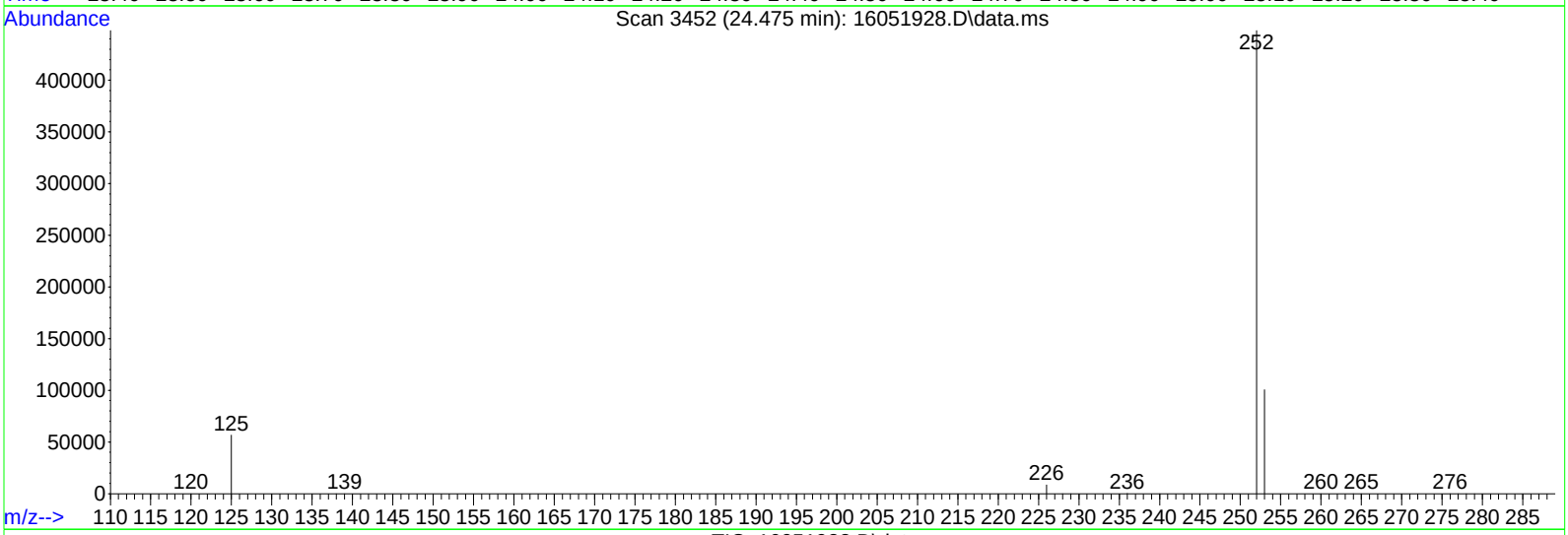
Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.29
125.00	12.20	12.68
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051928.D
Acq On : 20 May 2016 1:26 am
Operator :
Sample : ICV3-160519
Misc : ICV
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 20 01:57:23 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16051928.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.475min (+0.000) 2141.68ug/kg

response 1227418

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.31
125.00	12.20	12.66
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051910.D
Acq On : 19 May 2016 2:20 pm
Operator :
Sample : ICV2-160519
Misc : ICV
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 20 08:38:09 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

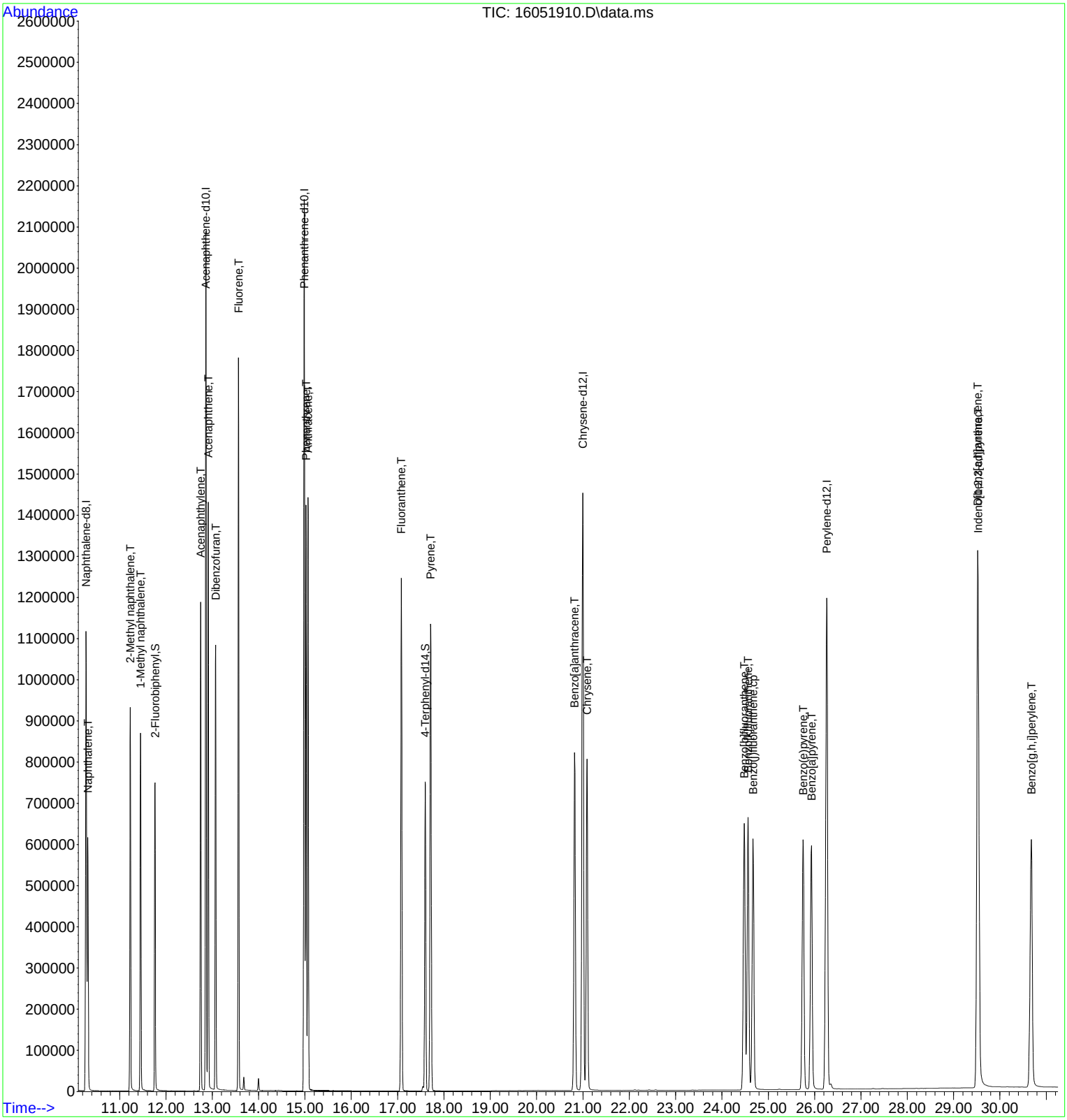
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1586313	4000.00	ug/kg	97
6) Acenaphthene-d10	12.861	164	1281447	4000.00	ug/kg	102
11) Phenanthrene-d10	14.985	188	2714601	4000.00	ug/kg	93
16) Chrysene-d12	20.995	240	2494169	4000.00	ug/kg	92
20) Perylene-d12	26.262	264	2349051	4000.00	ug/kg	95
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	699815	1981.38	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 49.53%			
17) 4-Terphenyl-d14	17.596	244	1058025	2004.15	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 50.10%#			
Target Compounds						Qvalue
2) Naphthalene	10.313	128	709964	1997.78	ug/kg	100
3) 2-Methyl naphthalene	11.230	142	567467	2054.07	ug/kg	100
4) 1-Methyl naphthalene	11.452	142	523698	2003.25	ug/kg	100
7) Acenaphthylene	12.748	152	1114010	1988.86	ug/kg	100
8) Acenaphthene	12.915	153	702762	1988.33	ug/kg	99
9) Dibenzofuran	13.072	168	1055955	1961.24	ug/kg	100
10) Fluorene	13.563	166	958736	1962.51	ug/kg	100
12) Phenanthrene	15.022	178	1394236	1866.62	ug/kg	100
13) Anthracene	15.067	178	1384649	1832.03	ug/kg	100
14) Fluoranthene	17.083	202	1421769	1991.82	ug/kg	100
15) Pyrene	17.712	202	1396229	1990.85	ug/kg	99
18) Benzo[a]anthracene	20.819	228	1296534	2101.53	ug/kg	100
19) Chrysene	21.090	228	1192232	2089.48	ug/kg	100
21) Benzo[b]fluoranthene	24.482	252	1268882	2108.62	ug/kg	100
22) Benzo[k]fluoranthene	24.562	252	1179529	2164.29	ug/kg	100
23) Benzo(j)fluoranthene	24.672	252	1105659	2126.45	ug/kg	99
24) Benzo(e)pyrene	25.749	252	1192808	2100.31	ug/kg	100
25) Benzo[a]pyrene	25.932	252	1186810	2106.68	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.536	276	1469855	2134.62	ug/kg	100
27) Dibenz[a,h]anthracene	29.521	278	1232062	2154.32	ug/kg	99
28) Benzo[g,h,i]perylene	30.679	276	1273999	2144.29	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051910.D
Acq On : 19 May 2016 2:20 pm
Operator :
Sample : ICV2-160519
Misc : ICV
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 20 08:38:09 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051911.D
Acq On : 19 May 2016 2:57 pm
Operator :
Sample : LCS-75218
Misc : LCS
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 20 08:38:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

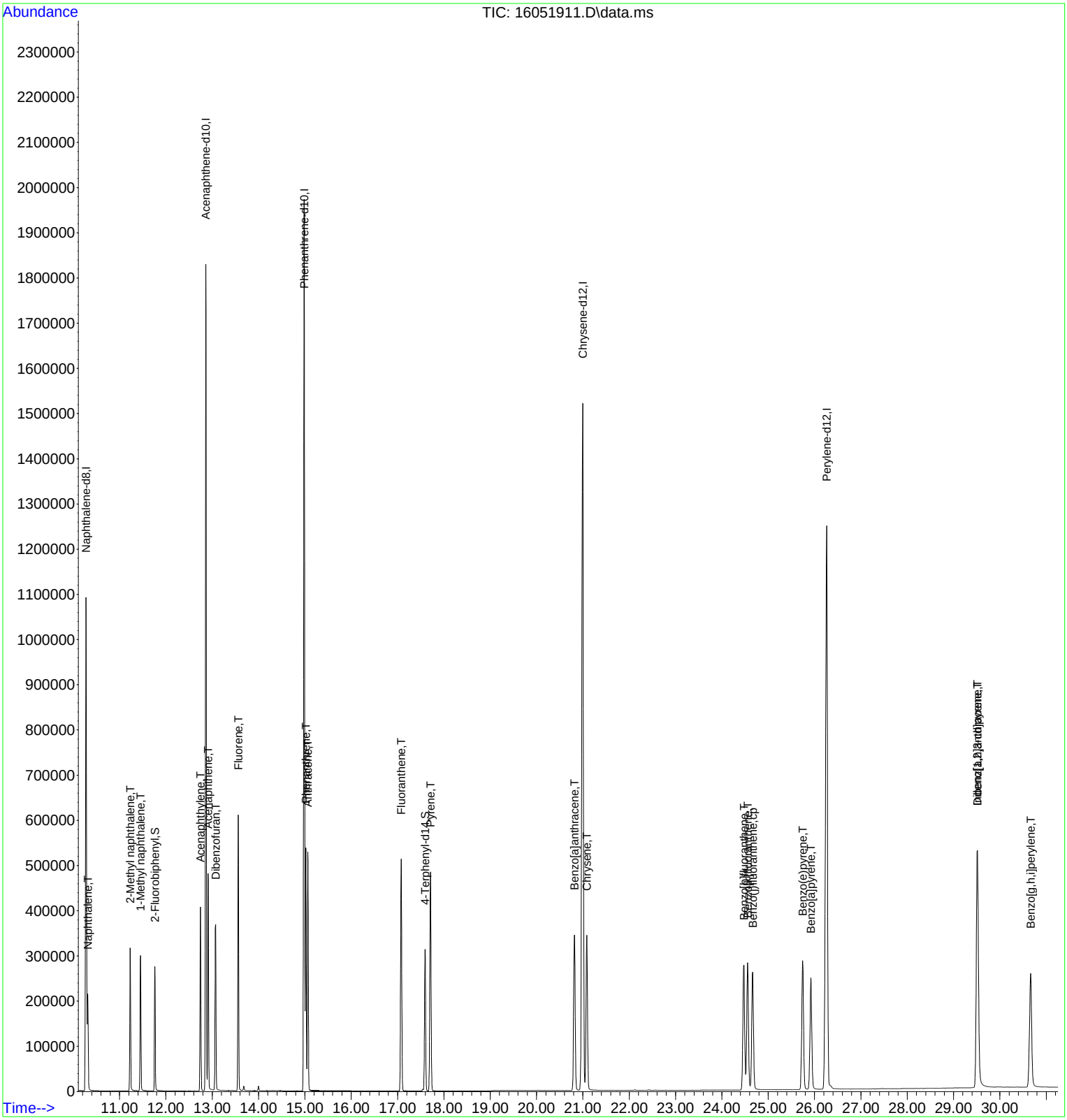
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.277	136	1518752	4000.00	ug/kg	93
6) Acenaphthene-d10	12.861	164	1104911	4000.00	ug/kg	88
11) Phenanthrene-d10	14.984	188	2416401	4000.00	ug/kg	83
16) Chrysene-d12	20.996	240	2569558	4000.00	ug/kg	95
20) Perylene-d12	26.263	264	2409398	4000.00	ug/kg	97
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.762	172	249918	739.07	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.48%#			
17) 4-Terphenyl-d14	17.596	244	432111	794.50	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 19.86%#			
Target Compounds						Qvalue
2) Naphthalene	10.314	128	242997	714.19	ug/kg	100
3) 2-Methyl naphthalene	11.231	142	196993	744.78	ug/kg	99
4) 1-Methyl naphthalene	11.453	142	181014	723.22	ug/kg	99
7) Acenaphthylene	12.748	152	376528	779.62	ug/kg	99
8) Acenaphthene	12.910	153	234995	771.10	ug/kg	98
9) Dibenzofuran	13.072	168	362467	780.78	ug/kg	97
10) Fluorene	13.563	166	325863	773.61	ug/kg	100
12) Phenanthrene	15.020	178	515847	775.85	ug/kg	98
13) Anthracene	15.064	178	513839	763.76	ug/kg	98
14) Fluoranthene	17.077	202	584078	890.45	ug/kg	99
15) Pyrene	17.709	202	575156	897.13	ug/kg	98
18) Benzo[a]anthracene	20.820	228	549310	837.72	ug/kg	99
19) Chrysene	21.084	228	507380	837.57	ug/kg	99
21) Benzo[b]fluoranthene	24.475	252	533923	843.22	ug/kg	99
22) Benzo[k]fluoranthene	24.556	252	493762	865.19	ug/kg	99
23) Benzo(j)fluoranthene	24.666	252	471047	858.93	ug/kg	99
24) Benzo(e)pyrene	25.742	252	542357	906.83	ug/kg	99
25) Benzo[a]pyrene	25.918	252	485519	822.94	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.522	276	608670	837.67	ug/kg	100
27) Dibenz[a,h]anthracene	29.508	278	510059	842.72	ug/kg	99
28) Benzo[g,h,i]perylene	30.665	276	523553	835.55	ug/kg	100

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051911.D
Acq On : 19 May 2016 2:57 pm
Operator :
Sample : LCS-75218
Misc : LCS
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 20 08:38:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051912.D
Acq On : 19 May 2016 3:34 pm
Operator :
Sample : MB-75218
Misc : MBLK
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 20 08:38:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1445169	4000.00	ug/kg	89
6) Acenaphthene-d10	12.861	164	1086882	4000.00	ug/kg	87
11) Phenanthrene-d10	14.983	188	2361633	4000.00	ug/kg	81
16) Chrysene-d12	20.994	240	2524428	4000.00	ug/kg	93
20) Perylene-d12	26.254	264	2363360	4000.00	ug/kg	95

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	239560	744.51	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.61%#			
17) 4-Terphenyl-d14	17.595	244	419689	785.46	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 19.64%#			

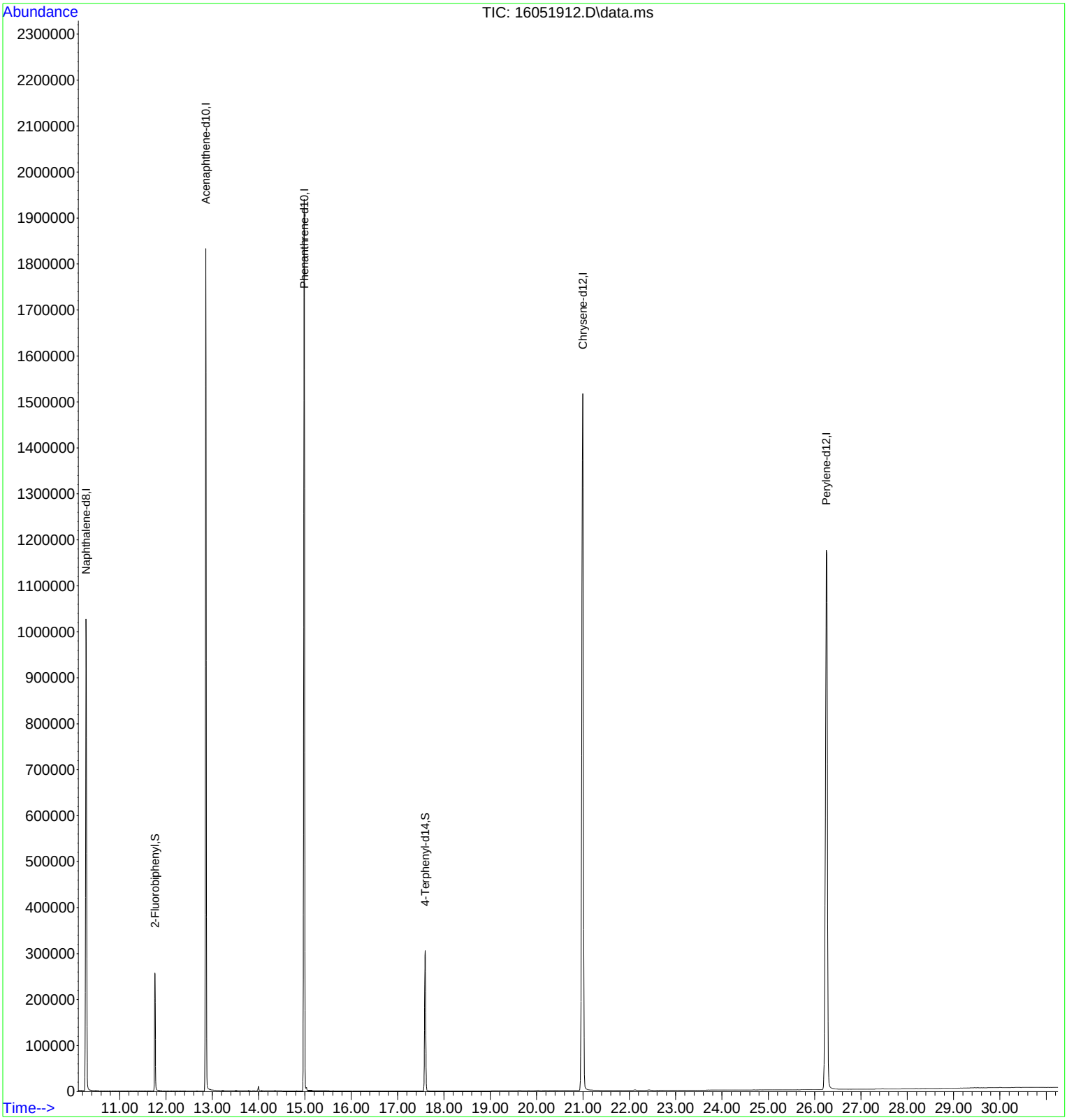
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051912.D
Acq On : 19 May 2016 3:34 pm
Operator :
Sample : MB-75218
Misc : MBLK
ALS Vial : 12 Sample Multiplier: 1

Quant Time: May 20 08:38:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051913.D
Acq On : 19 May 2016 4:11 pm
Operator :
Sample : 1605098-35A
Misc : SAMP
ALS Vial : 13 Sample Multiplier: 10

Quant Time: May 20 08:38:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1521177	4000.00	ug/kg	93
6) Acenaphthene-d10	12.862	164	1255396	4000.00	ug/kg	100
11) Phenanthrene-d10	14.983	188	2459483	4000.00	ug/kg	84
16) Chrysene-d12	20.995	240	2414395	4000.00	ug/kg	89
20) Perylene-d12	26.262	264	2279606	4000.00	ug/kg	92

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	32092	94.75	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.37%#			
17) 4-Terphenyl-d14	17.593	244	44403	86.89	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.17%#			

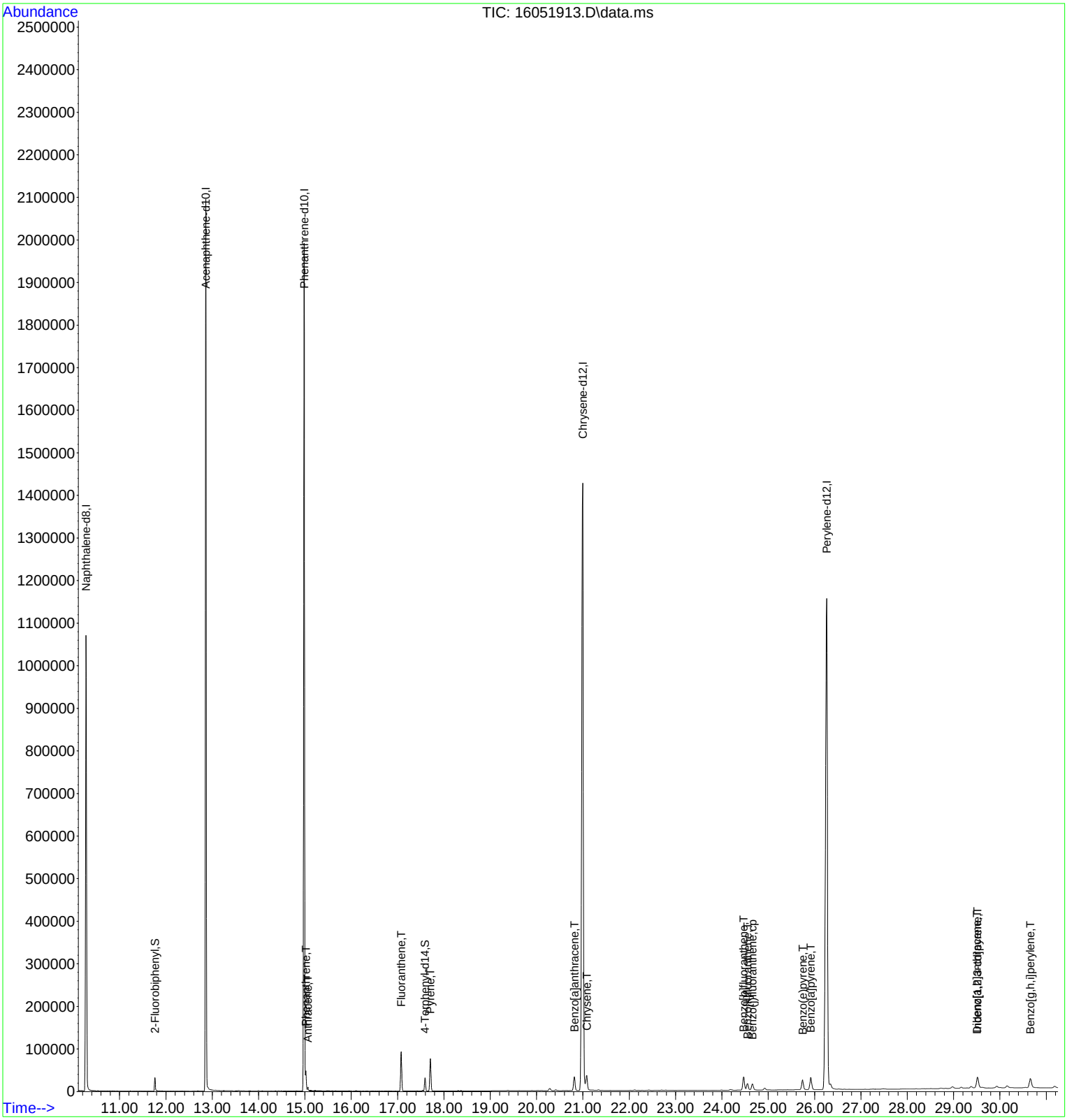
Target Compounds						Qvalue
12) Phenanthrene	15.019	178	39215	57.95	ug/kg	98
13) Anthracene	15.063	178	7462	10.90	ug/kg	98
14) Fluoranthene	17.077	202	104939	152.38	ug/kg	98
15) Pyrene	17.707	202	89419	132.77	ug/kg	97
18) Benzo[a]anthracene	20.812	228	51302	80.20	ug/kg	99
19) Chrysene	21.083	228	58773	99.19	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	59458	96.35	ug/kg	100
22) Benzo[k]fluoranthene	24.555	252	27390	49.06	ug/kg	97
23) Benzo(j)fluoranthene	24.658	252	26780	47.80	ug/kg	90
24) Benzo(e)pyrene	25.742	252	44704	75.41	ug/kg	96
25) Benzo[a]pyrene	25.918	252	57969	100.89	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.522	276	46712	64.28	ug/kg	89
27) Dibenz[a,h]anthracene	29.500	278	11131	14.70	ug/kg	96
28) Benzo[g,h,i]perylene	30.657	276	47889	76.87	ug/kg	99

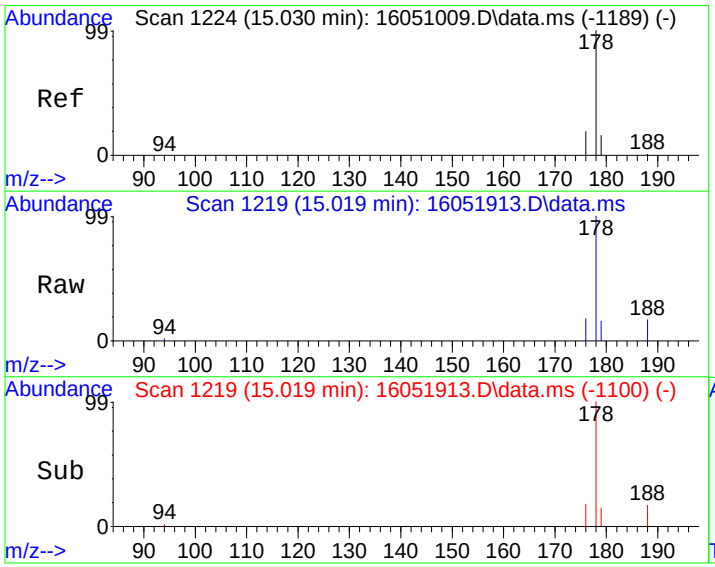
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051913.D
Acq On : 19 May 2016 4:11 pm
Operator :
Sample : 1605098-35A
Misc : SAMP
ALS Vial : 13 Sample Multiplier: 10

Quant Time: May 20 08:38:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

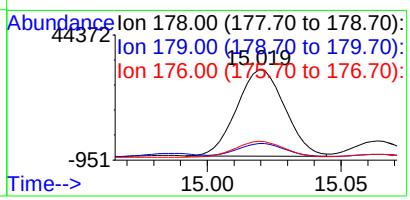


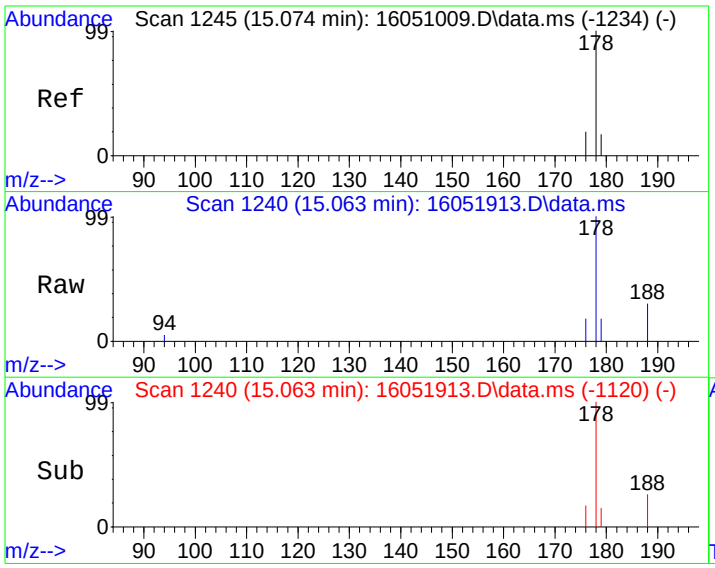


#12
Phenanthrene
Concen: 57.95 ug/kg
RT: 15.019 min Scan# 1219
Delta R.T. 0.000 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:178 Resp: 39215

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	18.3	0.0	39.0

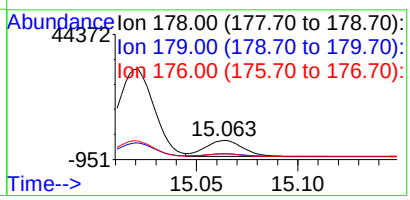


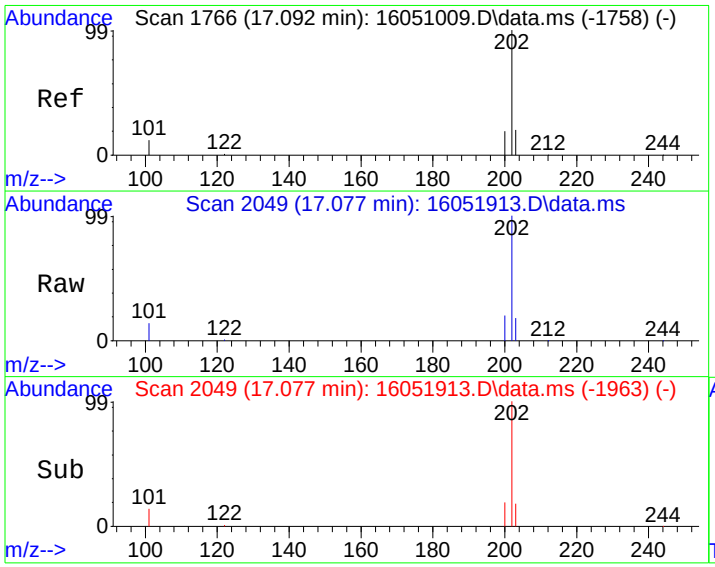


#13
Anthracene
Concen: 10.90 ug/kg
RT: 15.063 min Scan# 1240
Delta R.T. 0.002 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:178 Resp: 7462

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	36.3
176	17.3	0.0	38.5

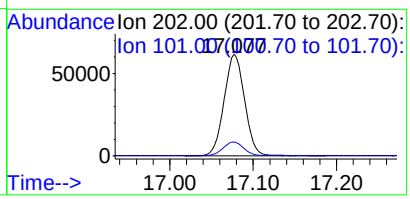


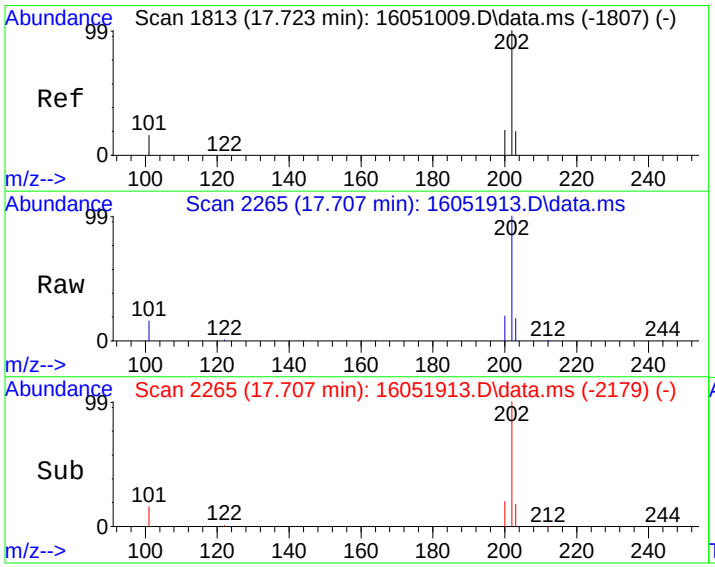


#14
Fluoranthene
Concen: 152.38 ug/kg
RT: 17.077 min Scan# 2049
Delta R.T. 0.001 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:202 Resp: 104939

Ion	Ratio	Lower	Upper
202	100		
101	13.6	0.0	34.4

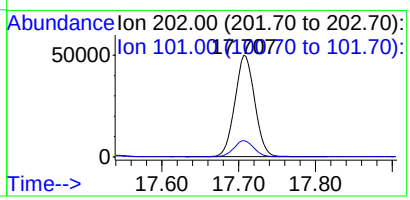


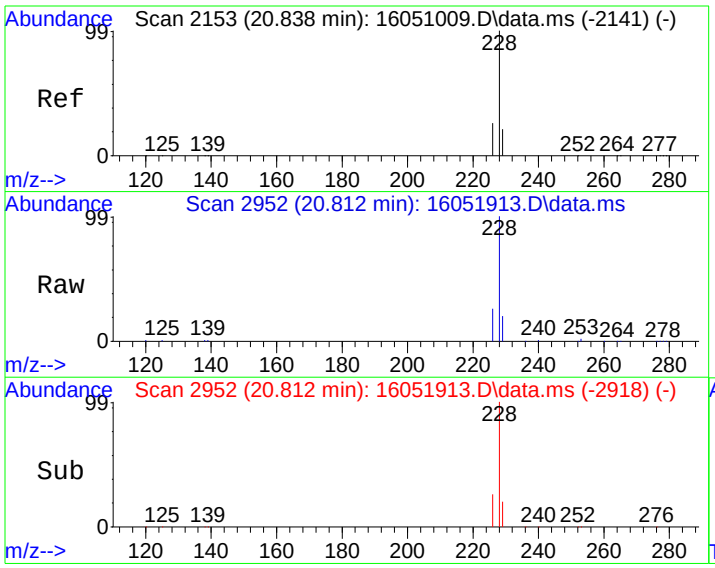


#15
Pyrene
Concen: 132.77 ug/kg
RT: 17.707 min Scan# 2265
Delta R.T. 0.001 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:202 Resp: 89419

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	37.3

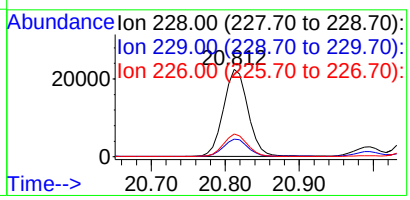


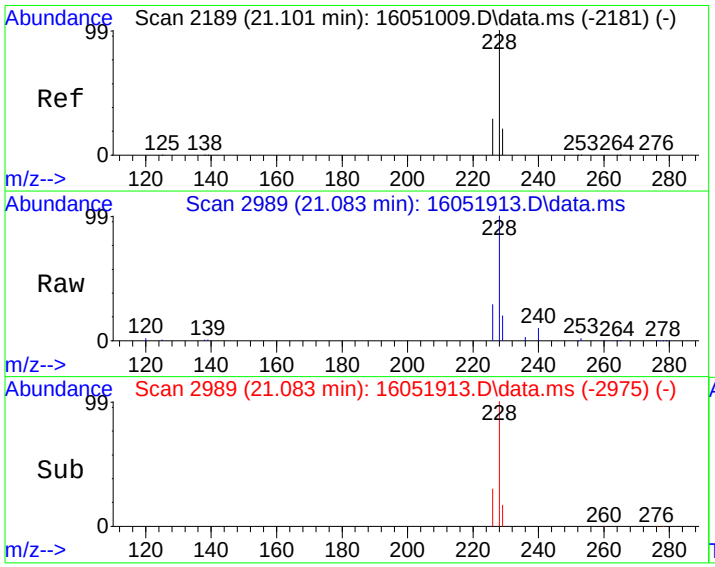


#18
Benzo[a]anthracene
Concen: 80.20 ug/kg
RT: 20.812 min Scan# 2952
Delta R.T. 0.000 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:228 Resp: 51302

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.3	40.3
226	25.8	5.7	45.7

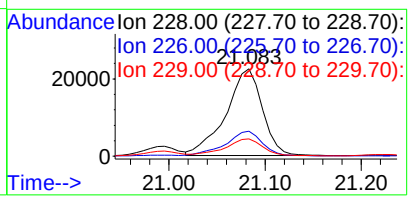


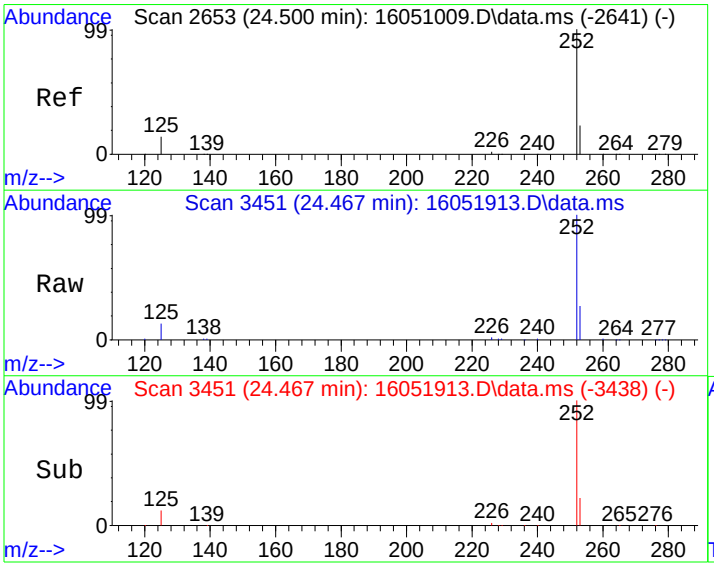


#19
Chrysene
Concen: 99.19 ug/kg
RT: 21.083 min Scan# 2989
Delta R.T. 0.000 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:228 Resp: 58773

Ion	Ratio	Lower	Upper
228	100		
226	28.5	8.2	48.2
229	19.5	0.3	40.3

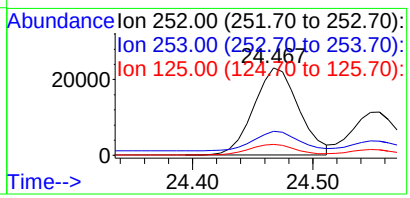


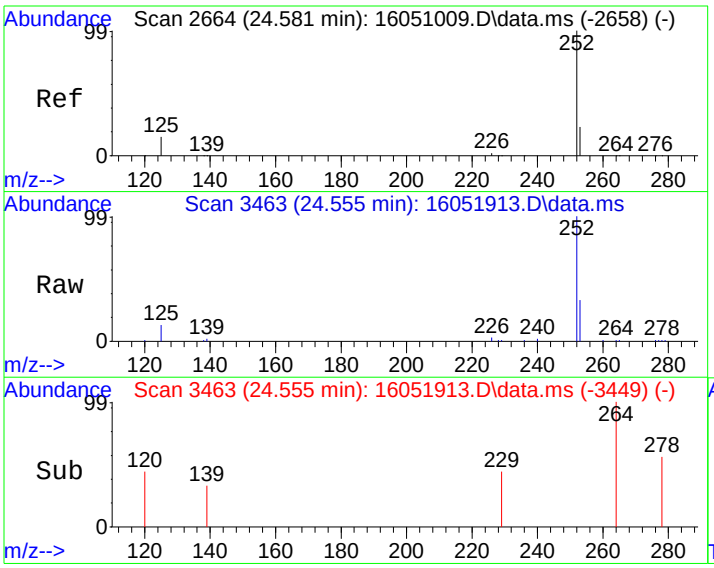


#21
Benzo[b]fluoranthene
Concen: 96.35 ug/kg
RT: 24.467 min Scan# 3451
Delta R.T. -0.008 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:252 Resp: 59458

Ion	Ratio	Lower	Upper
252	100		
253	22.2	2.3	42.3
125	12.2	0.0	32.2

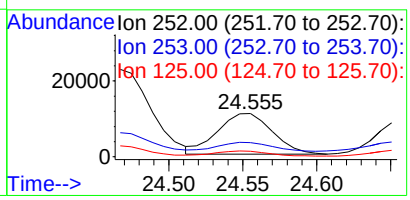


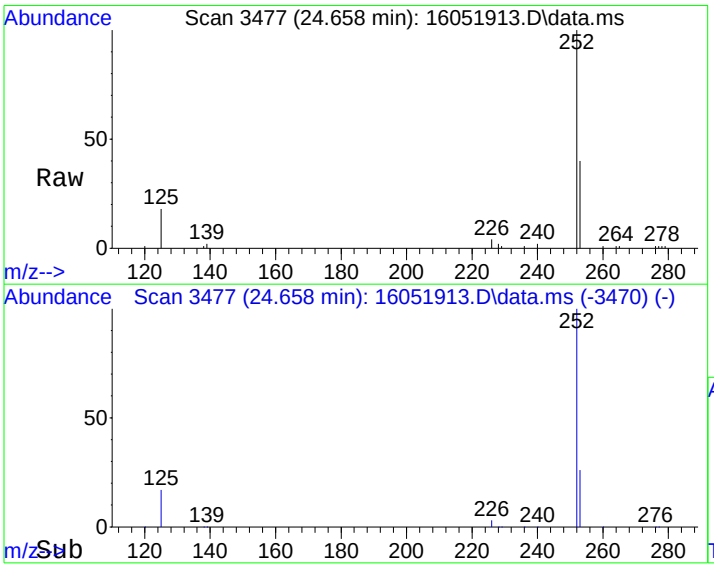


#22
Benzo[k]fluoranthene
Concen: 49.06 ug/kg
RT: 24.555 min Scan# 3463
Delta R.T. 0.000 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:252 Resp: 27390

Ion	Ratio	Lower	Upper
252	100		
253	20.5	2.5	42.5
125	11.8	0.0	32.6

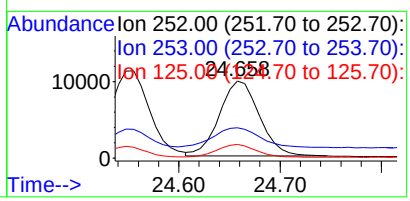


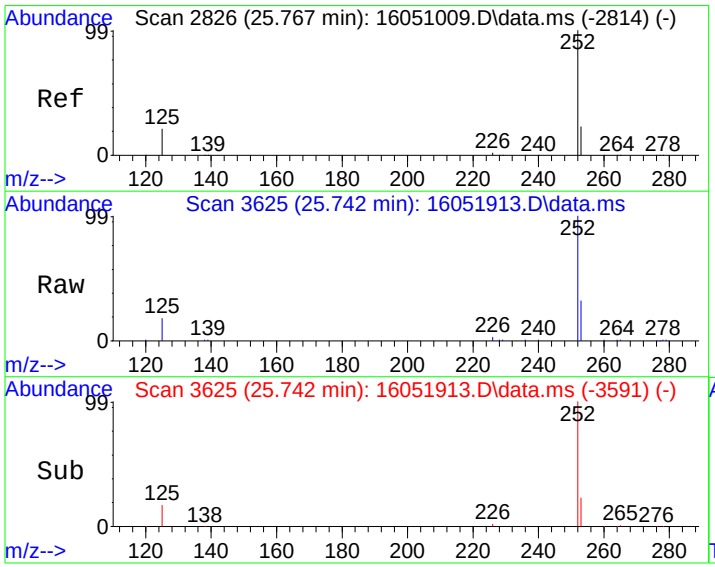


#23
Benzo(j)fluoranthene
Concen: 47.80 ug/kg
RT: 24.658 min Scan# 3477
Delta R.T. -0.007 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:252 Resp: 26780

Ion	Ratio	Lower	Upper
252	100		
253	30.0	2.2	42.2
125	16.6	0.0	37.3

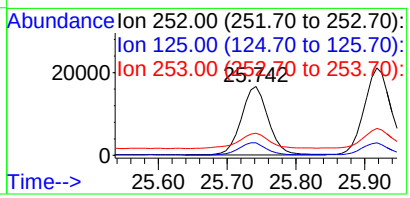


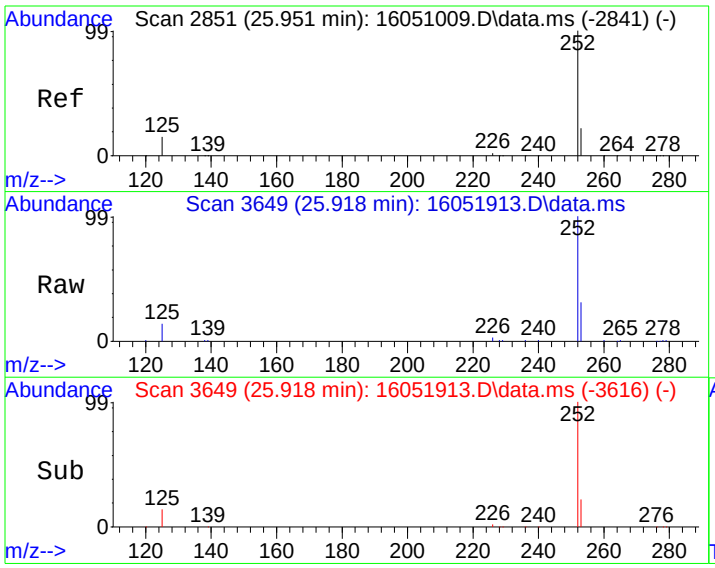


#24
Benzo(e)pyrene
Concen: 75.41 ug/kg
RT: 25.742 min Scan# 3625
Delta R.T. -0.000 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:252 Resp: 44704

Ion	Ratio	Lower	Upper
252	100		
125	18.2	0.0	38.7
253	25.5	2.3	42.3

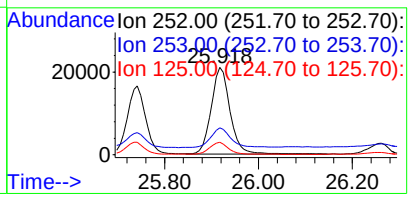


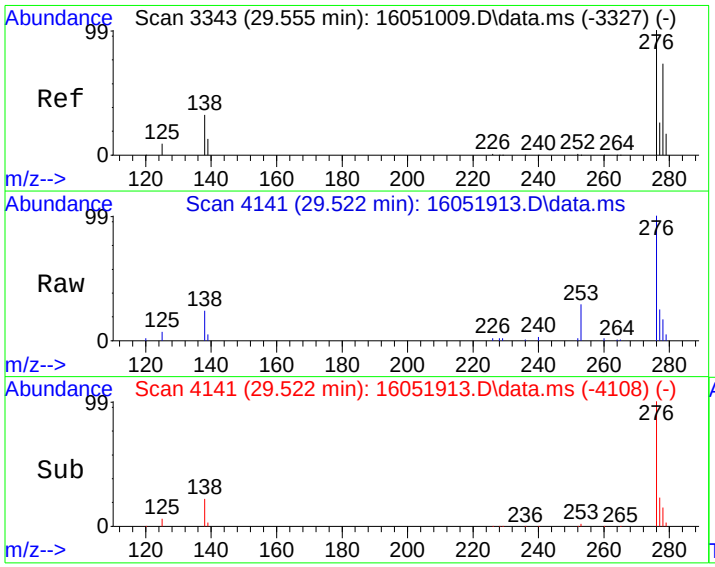


#25
Benzo[a]pyrene
Concen: 100.89 ug/kg
RT: 25.918 min Scan# 3649
Delta R.T. -0.007 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:252 Resp: 57969

Ion	Ratio	Lower	Upper
252	100		
253	22.7	2.3	42.3
125	13.7	0.0	33.5

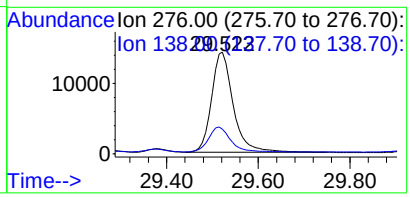


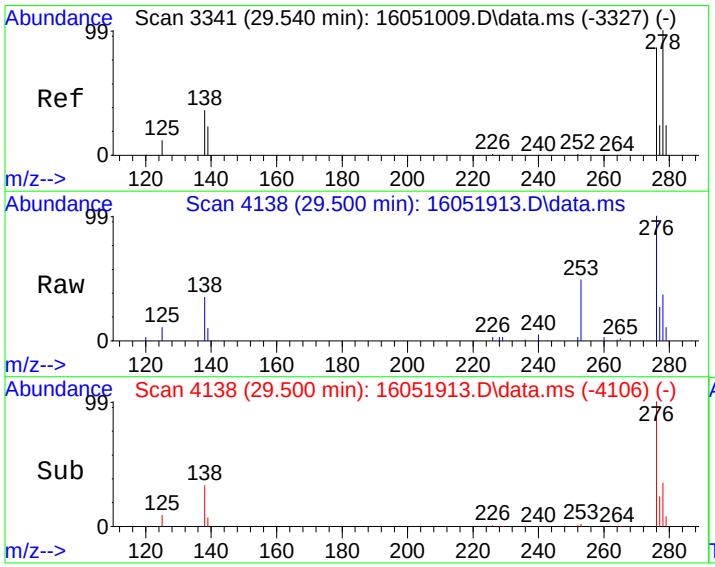


#26
Indeno[1,2,3-cd]pyrene
Concen: 64.28 ug/kg
RT: 29.522 min Scan# 4141
Delta R.T. -0.007 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:276 Resp: 46712

Ion	Ratio	Lower	Upper
276	100		
138	22.7	8.3	48.3

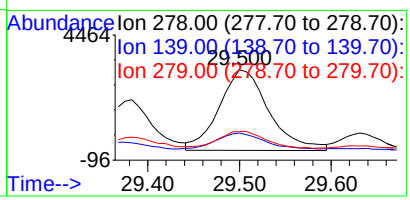


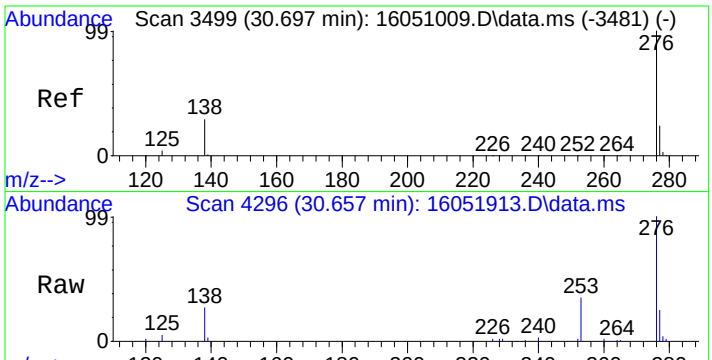


#27
Dibenz[a,h]anthracene
Concen: 14.70 ug/kg
RT: 29.500 min Scan# 4138
Delta R.T. -0.014 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:278 Resp: 11131

Ion	Ratio	Lower	Upper
278	100		
139	21.0	0.0	40.0
279	22.0	4.2	44.2

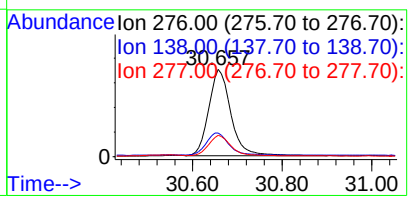




#28
Benzo[g,h,i]perylene
Concen: 76.87 ug/kg
RT: 30.657 min Scan# 4296
Delta R.T. -0.015 min
Lab File: 16051913.D
Acq: 19 May 2016 4:11 pm

Tgt Ion:276 Resp: 47889

Ion	Ratio	Lower	Upper
276	100		
138	25.4	5.8	45.8
277	23.7	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051914.D
Acq On : 19 May 2016 4:48 pm
Operator :
Sample : 1605098-38A
Misc : SAMP
ALS Vial : 14 Sample Multiplier: 10

Quant Time: May 20 08:38:57 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1593081	4000.00	ug/kg	98
6) Acenaphthene-d10	12.861	164	1324836	4000.00	ug/kg	106
11) Phenanthrene-d10	14.985	188	2625612	4000.00	ug/kg	90
16) Chrysene-d12	20.995	240	2555636	4000.00	ug/kg	94
20) Perylene-d12	26.262	264	2367950	4000.00	ug/kg	95

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	32023	90.28	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.26%#			
17) 4-Terphenyl-d14	17.594	244	45492	84.10	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.10%#			

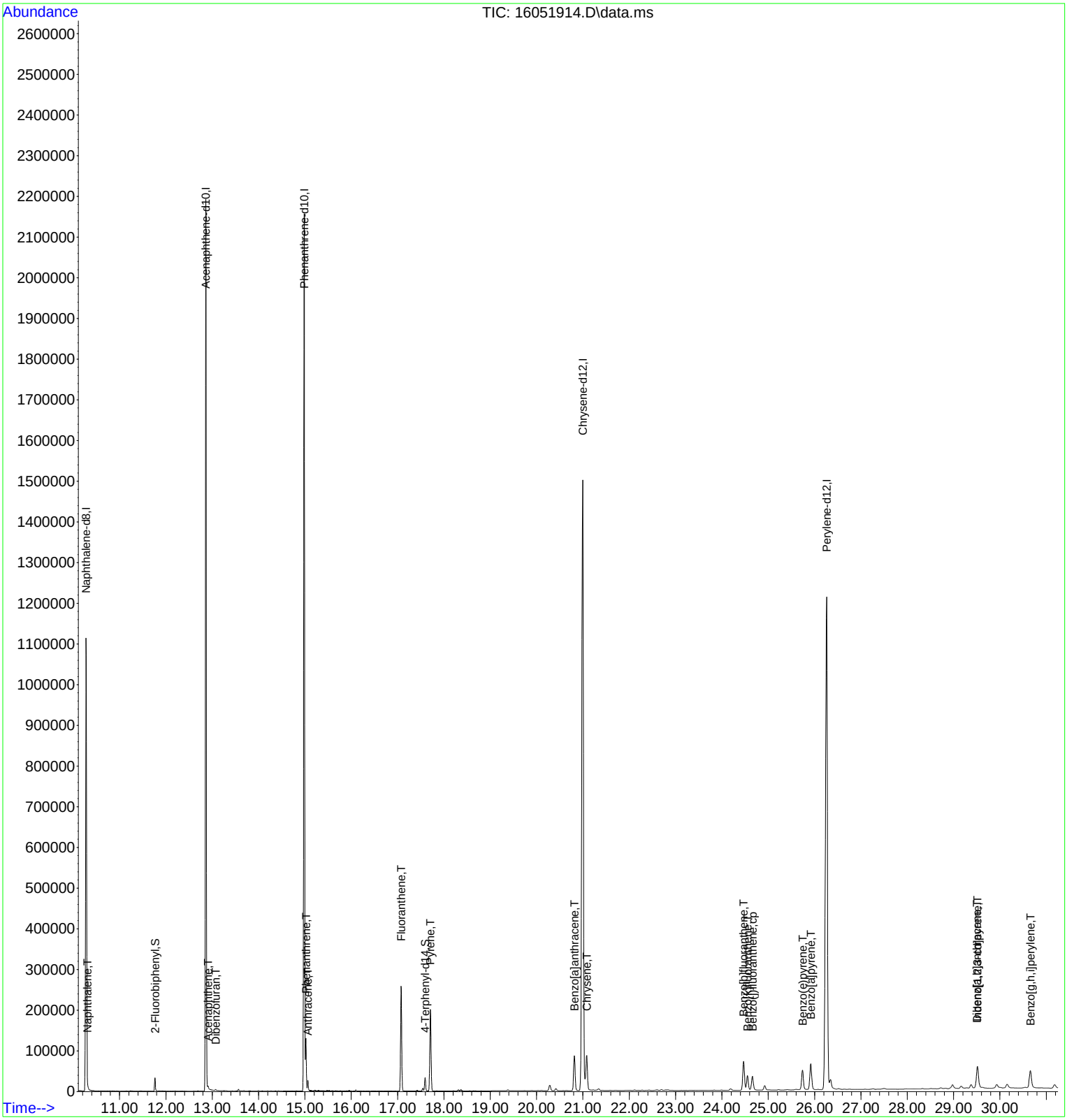
Target Compounds						Qvalue
2) Naphthalene	10.313	128	3680	10.31	ug/kg	98
8) Acenaphthene	12.911	153	3084	8.44	ug/kg	97
9) Dibenzofuran	13.073	168	2836	5.09	ug/kg	100
12) Phenanthrene	15.021	178	115034	159.23	ug/kg	97
13) Anthracene	15.063	178	23985	32.81	ug/kg	98
14) Fluoranthene	17.076	202	286681	395.73	ug/kg	98
15) Pyrene	17.708	202	236743	334.13	ug/kg	97
18) Benzo[a]anthracene	20.812	228	135080	202.75	ug/kg	99
19) Chrysene	21.083	228	145748	236.77	ug/kg	100
21) Benzo[b]fluoranthene	24.467	252	131834	208.04	ug/kg	100
22) Benzo[k]fluoranthene	24.548	252	63382	110.76	ug/kg	98
23) Benzo(j)fluoranthene	24.658	252	60881	108.52	ug/kg	90
24) Benzo(e)pyrene	25.742	252	94492	156.27	ug/kg	97
25) Benzo[a]pyrene	25.918	252	131588	223.40	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.514	276	96377	130.67	ug/kg	94
27) Dibenz[a,h]anthracene	29.500	278	22554	32.98	ug/kg	96
28) Benzo[g,h,i]perylene	30.657	276	92941	146.45	ug/kg	99

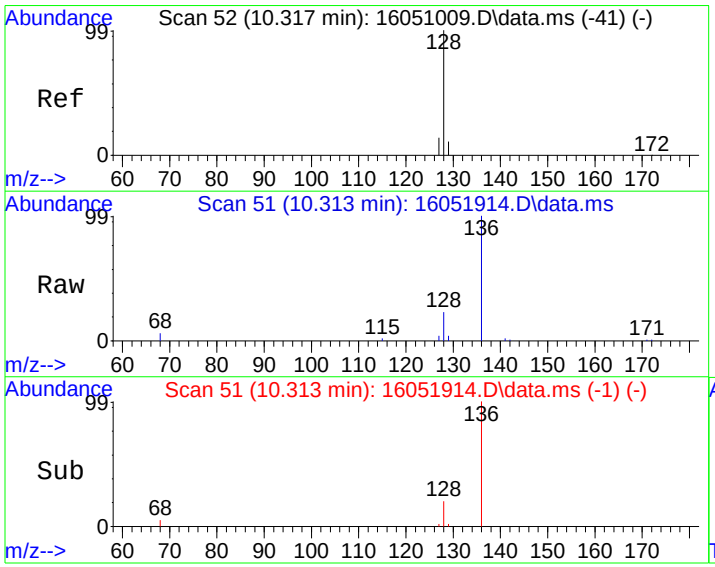
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051914.D
Acq On : 19 May 2016 4:48 pm
Operator :
Sample : 1605098-38A
Misc : SAMP
ALS Vial : 14 Sample Multiplier: 10

Quant Time: May 20 08:38:57 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

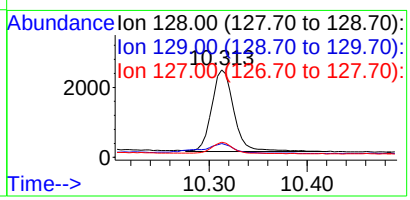


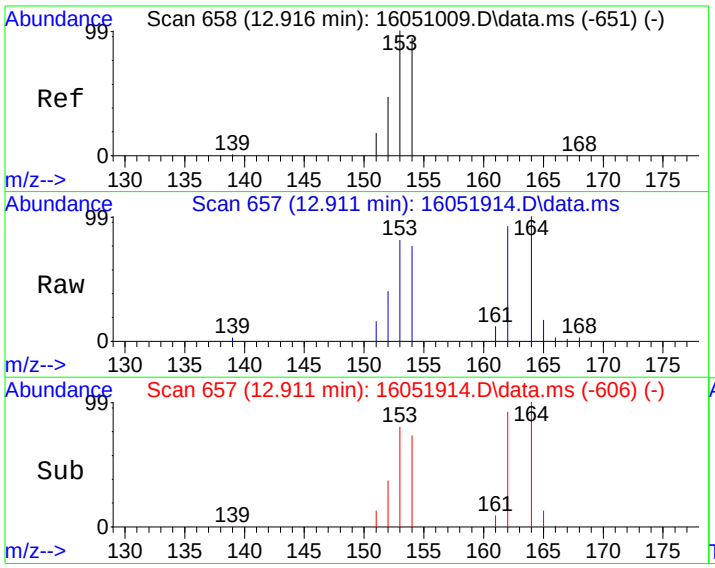


#2
Naphthalene
Concen: 10.31 ug/kg
RT: 10.313 min Scan# 51
Delta R.T. 0.003 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:128 Resp: 3680

Ion	Ratio	Lower	Upper
128	100		
129	12.0	0.0	31.3
127	14.1	0.0	33.6

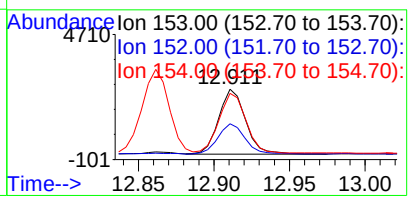


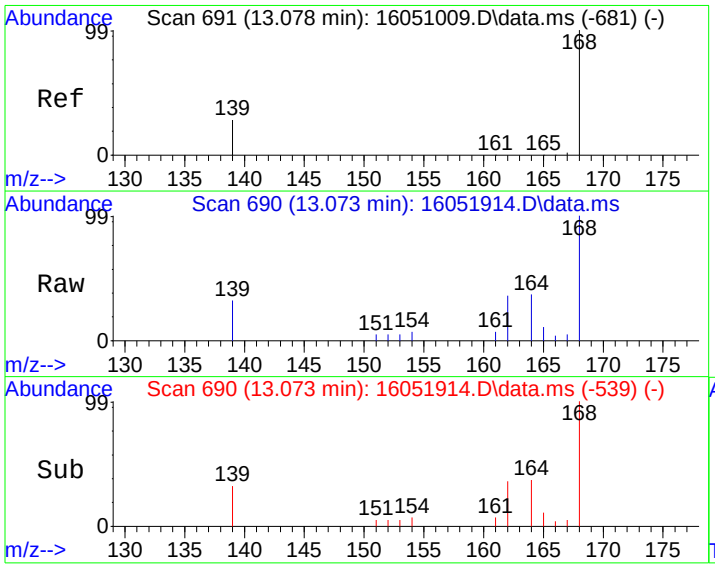


#8
Acenaphthene
Concen: 8.44 ug/kg
RT: 12.911 min Scan# 657
Delta R.T. -0.000 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:153 Resp: 3084

Ion	Ratio	Lower	Upper
153	100		
152	46.6	26.5	66.5
154	92.1	76.3	116.3

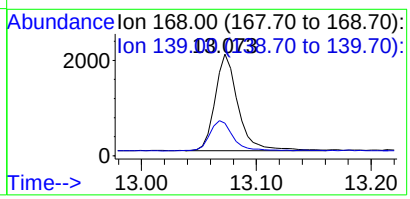


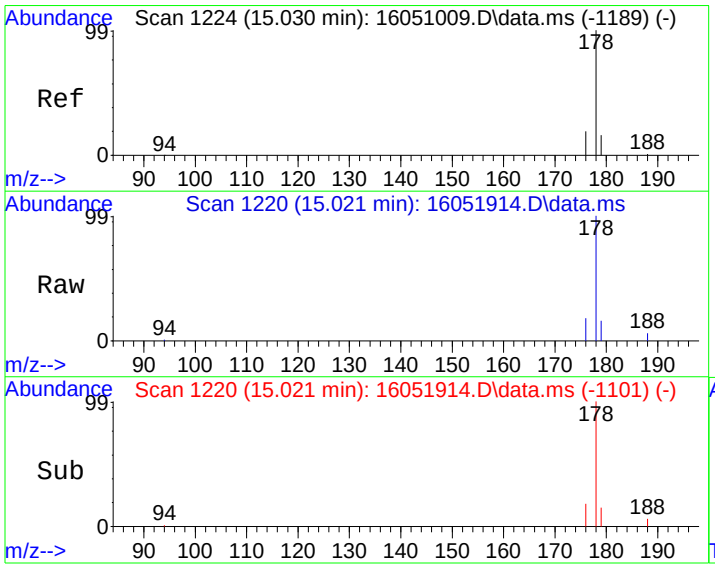


#9
Dibenzofuran
Concen: 5.09 ug/kg
RT: 13.073 min Scan# 690
Delta R.T. 0.004 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:168 Resp: 2836

Ion	Ratio	Lower	Upper
168	100		
139	28.1	8.2	48.2

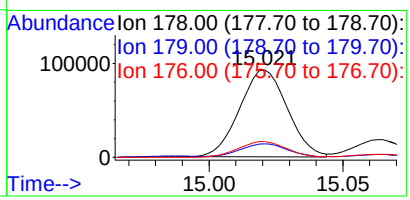


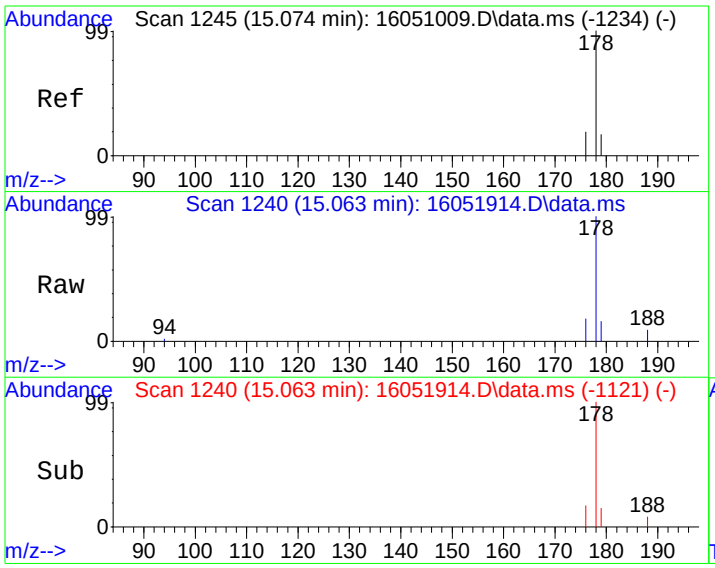


#12
Phenanthrene
Concen: 159.23 ug/kg
RT: 15.021 min Scan# 1220
Delta R.T. 0.002 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:178 Resp: 115034

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	36.4
176	18.1	0.0	39.0

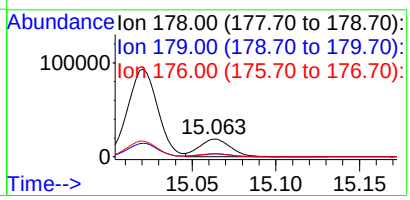


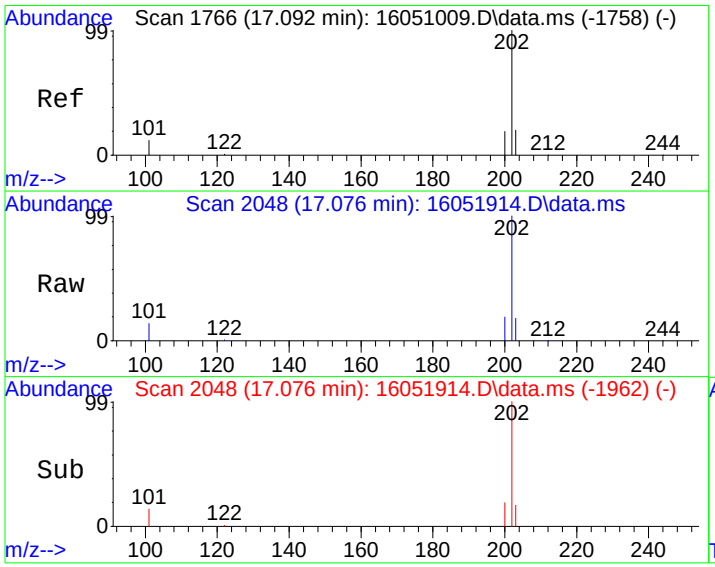


#13
Anthracene
Concen: 32.81 ug/kg
RT: 15.063 min Scan# 1240
Delta R.T. 0.002 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:178 Resp: 23985

Ion	Ratio	Lower	Upper
178	100		
179	15.4	0.0	36.3
176	17.3	0.0	38.5

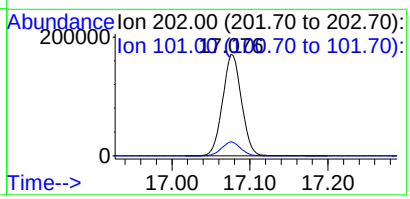


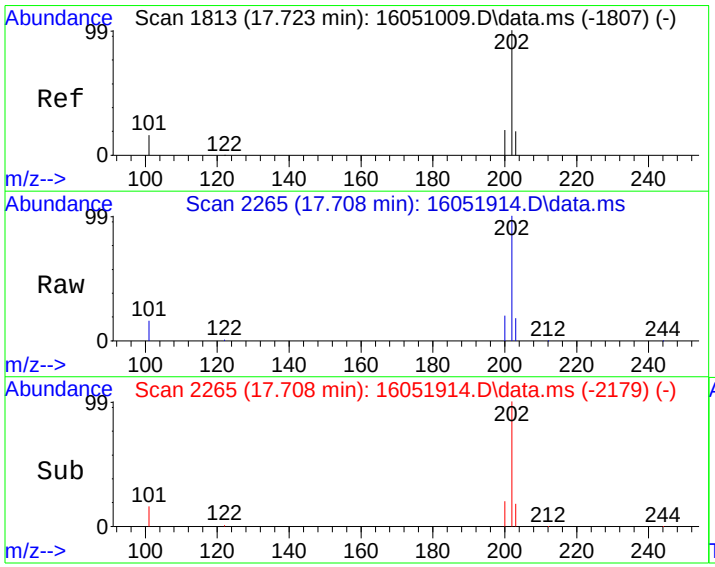


#14
Fluoranthene
Concen: 395.73 ug/kg
RT: 17.076 min Scan# 2048
Delta R.T. -0.000 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:202 Resp: 286681

Ion	Ratio	Lower	Upper
202	100		
101	13.7	0.0	34.4

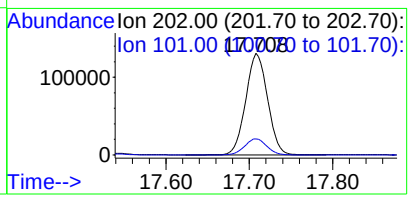


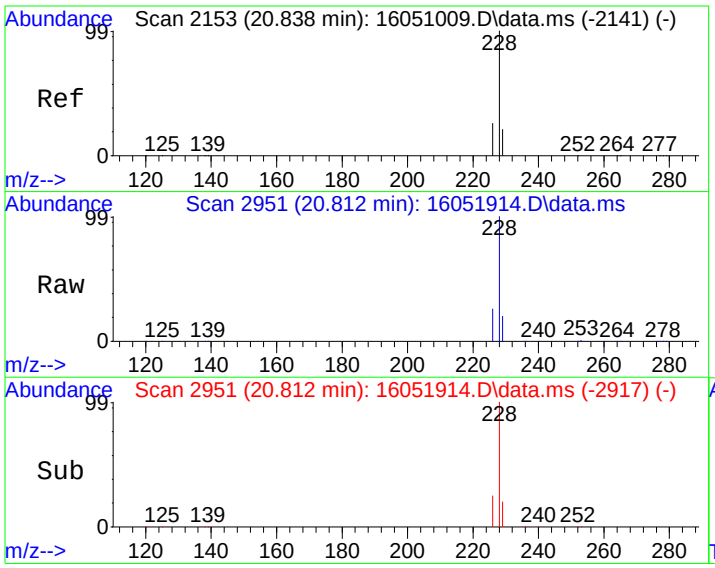


#15
Pyrene
Concen: 334.13 ug/kg
RT: 17.708 min Scan# 2265
Delta R.T. 0.002 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:202 Resp: 236743

Ion	Ratio	Lower	Upper
202	100		
101	15.8	0.0	37.3

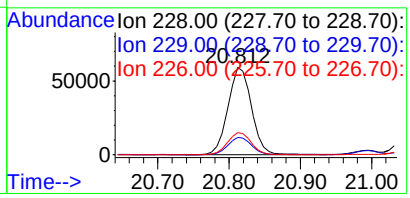


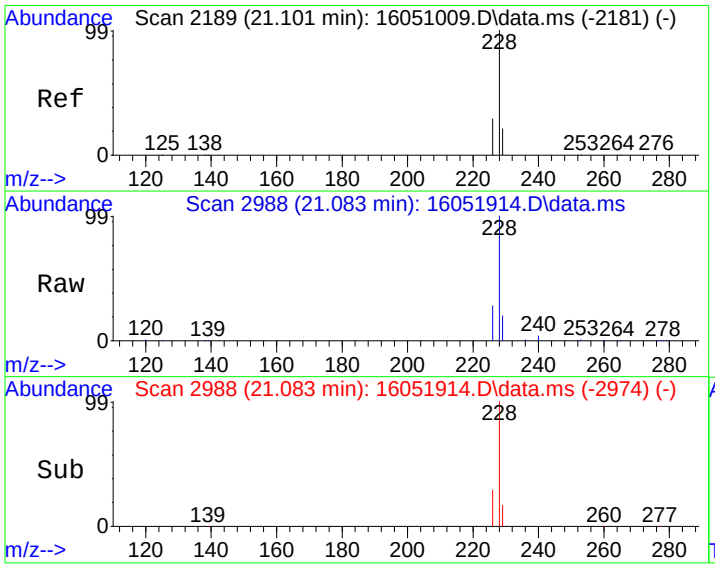


#18
Benzo[a]anthracene
Concen: 202.75 ug/kg
RT: 20.812 min Scan# 2951
Delta R.T. 0.000 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:228 Resp: 135080

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.3	40.3
226	25.4	5.7	45.7

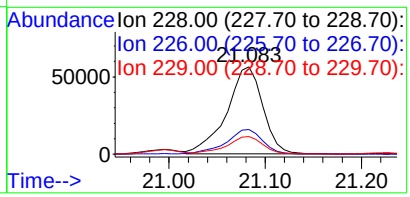


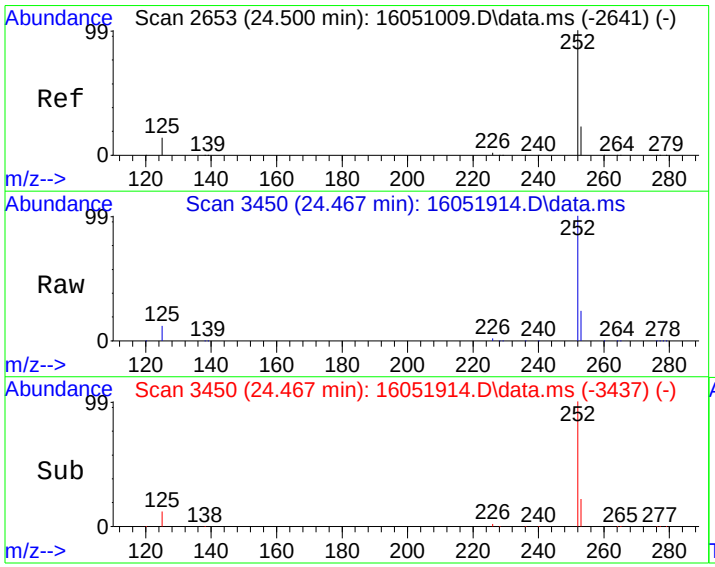


#19
Chrysene
Concen: 236.77 ug/kg
RT: 21.083 min Scan# 2988
Delta R.T. 0.000 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:228 Resp: 145748

Ion	Ratio	Lower	Upper
228	100		
226	28.1	8.2	48.2
229	19.9	0.3	40.3

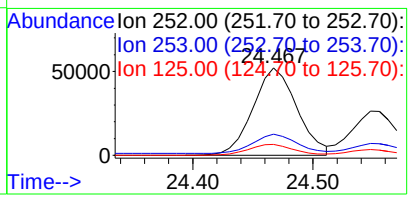


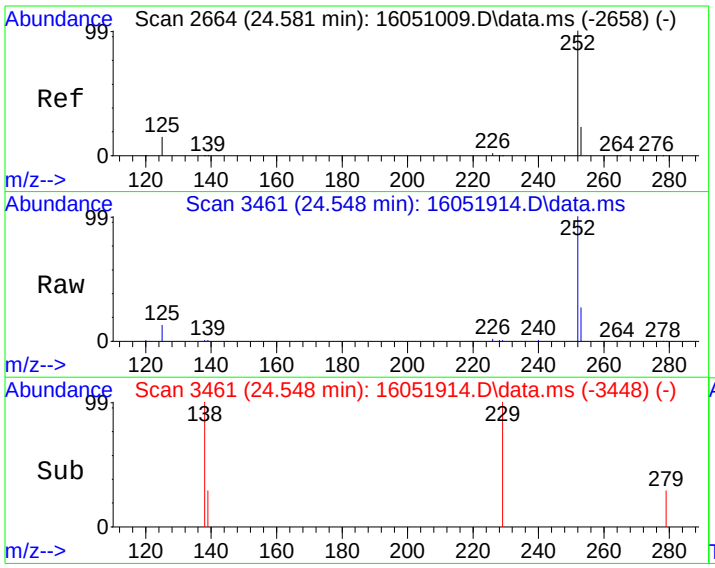


#21
Benzo[b]fluoranthene
Concen: 208.04 ug/kg
RT: 24.467 min Scan# 3450
Delta R.T. -0.008 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:252 Resp: 131834

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.3	42.3
125	12.2	0.0	32.2

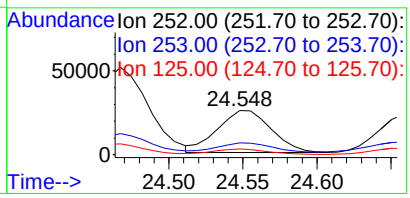


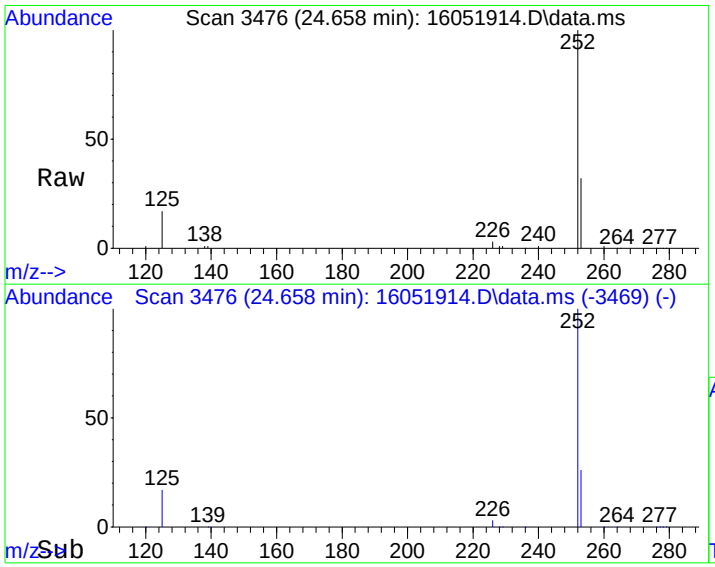


#22
Benzo[k]fluoranthene
Concen: 110.76 ug/kg
RT: 24.548 min Scan# 3461
Delta R.T. -0.007 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:252 Resp: 63382

Ion	Ratio	Lower	Upper
252	100		
253	20.9	2.5	42.5
125	12.8	0.0	32.6

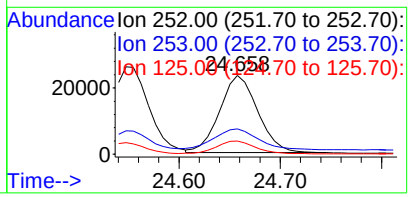


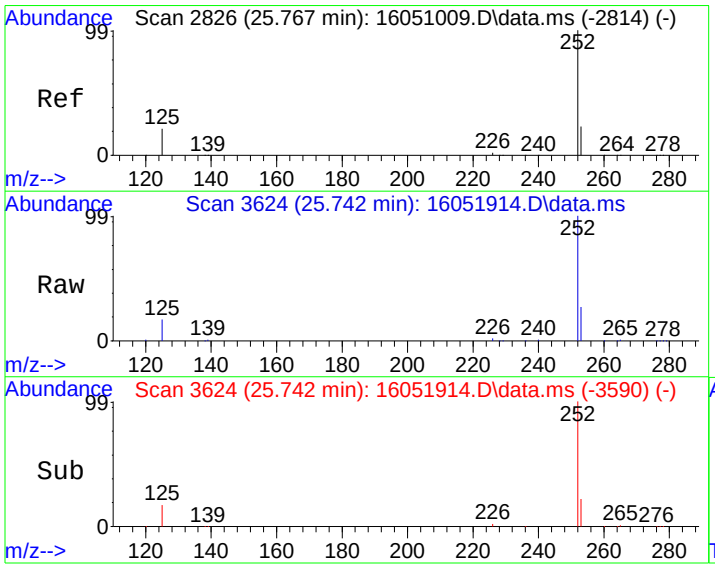


#23
Benzo(j)fluoranthene
Concen: 108.52 ug/kg
RT: 24.658 min Scan# 3476
Delta R.T. -0.007 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:252 Resp: 60881

Ion	Ratio	Lower	Upper
252	100		
253	30.7	2.2	42.2
125	16.8	0.0	37.3

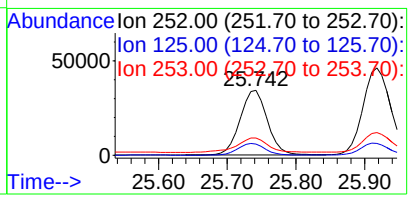


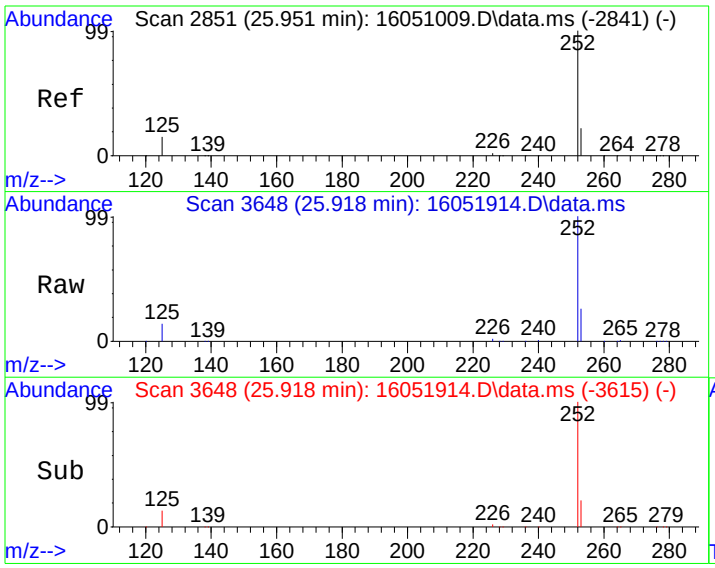


#24
Benzo(e)pyrene
Concen: 156.27 ug/kg
RT: 25.742 min Scan# 3624
Delta R.T. -0.000 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:252 Resp: 94492

Ion	Ratio	Lower	Upper
252	100		
125	18.0	0.0	38.7
253	24.8	2.3	42.3

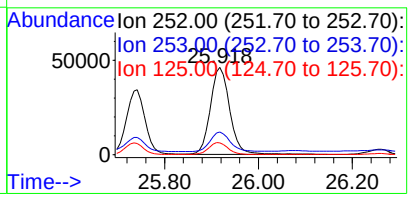


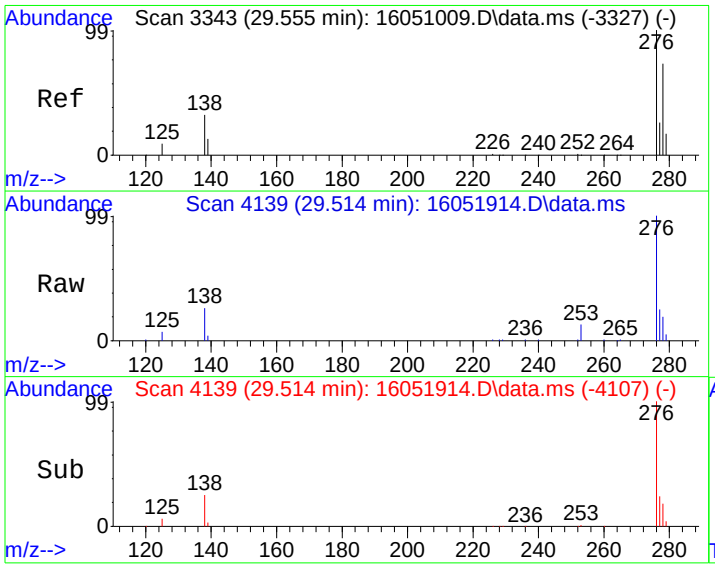


#25
Benzo[a]pyrene
Concen: 223.40 ug/kg
RT: 25.918 min Scan# 3648
Delta R.T. -0.007 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:252 Resp: 131588

Ion	Ratio	Lower	Upper
252	100		
253	22.3	2.3	42.3
125	13.4	0.0	33.5

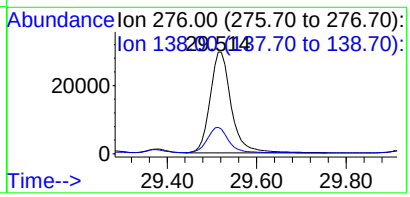


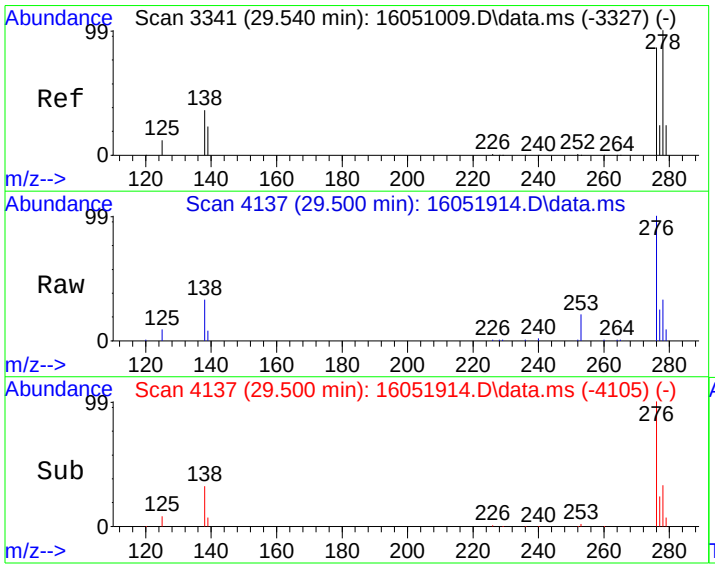


#26
Indeno[1,2,3-cd]pyrene
Concen: 130.67 ug/kg
RT: 29.514 min Scan# 4139
Delta R.T. -0.015 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:276 Resp: 96377

Ion	Ratio	Lower	Upper
276	100		
138	25.2	8.3	48.3

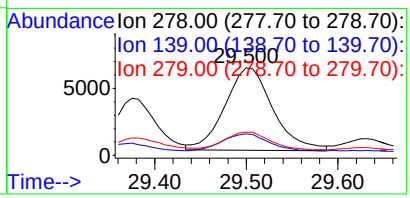


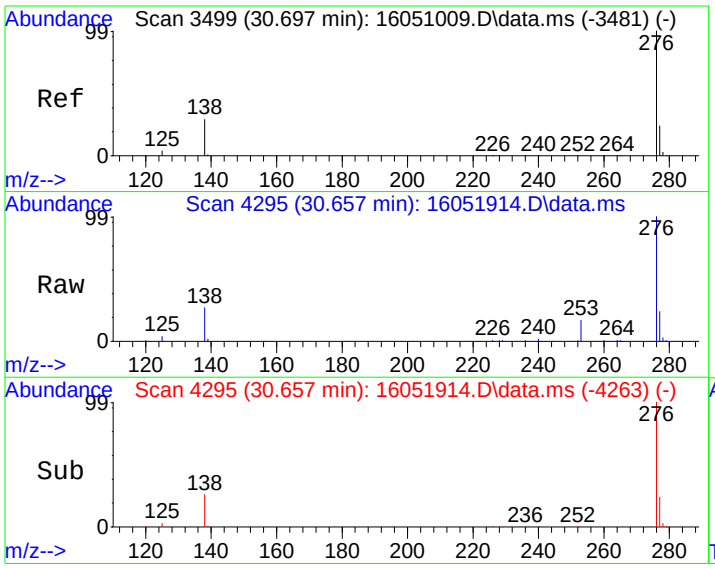


#27
Dibenz[a,h]anthracene
Concen: 32.98 ug/kg
RT: 29.500 min Scan# 4137
Delta R.T. -0.014 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:278 Resp: 22554

Ion	Ratio	Lower	Upper
278	100		
139	21.9	0.0	40.0
279	22.5	4.2	44.2

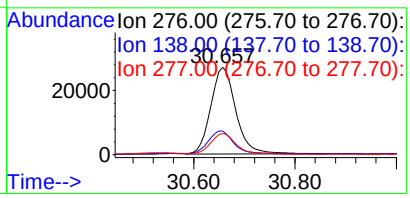




#28
Benzo[g,h,i]perylene
Concen: 146.45 ug/kg
RT: 30.657 min Scan# 4295
Delta R.T. -0.015 min
Lab File: 16051914.D
Acq: 19 May 2016 4:48 pm

Tgt Ion:276 Resp: 92941

Ion	Ratio	Lower	Upper
276	100		
138	26.4	5.8	45.8
277	23.9	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051915.D
Acq On : 19 May 2016 5:25 pm
Operator :
Sample : 1605098-40A
Misc : SAMP
ALS Vial : 15 Sample Multiplier: 10

Quant Time: May 20 08:39:06 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.278	136	1606936	4000.00	ug/kg	99
6) Acenaphthene-d10	12.862	164	1296206	4000.00	ug/kg	103
11) Phenanthrene-d10	14.985	188	2563771	4000.00	ug/kg	88
16) Chrysene-d12	20.994	240	2555731	4000.00	ug/kg	94
20) Perylene-d12	26.261	264	2407136	4000.00	ug/kg	97

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.763	172	30366	84.87	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.12%#			
17) 4-Terphenyl-d14	17.594	244	43202	79.86	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.00%#			

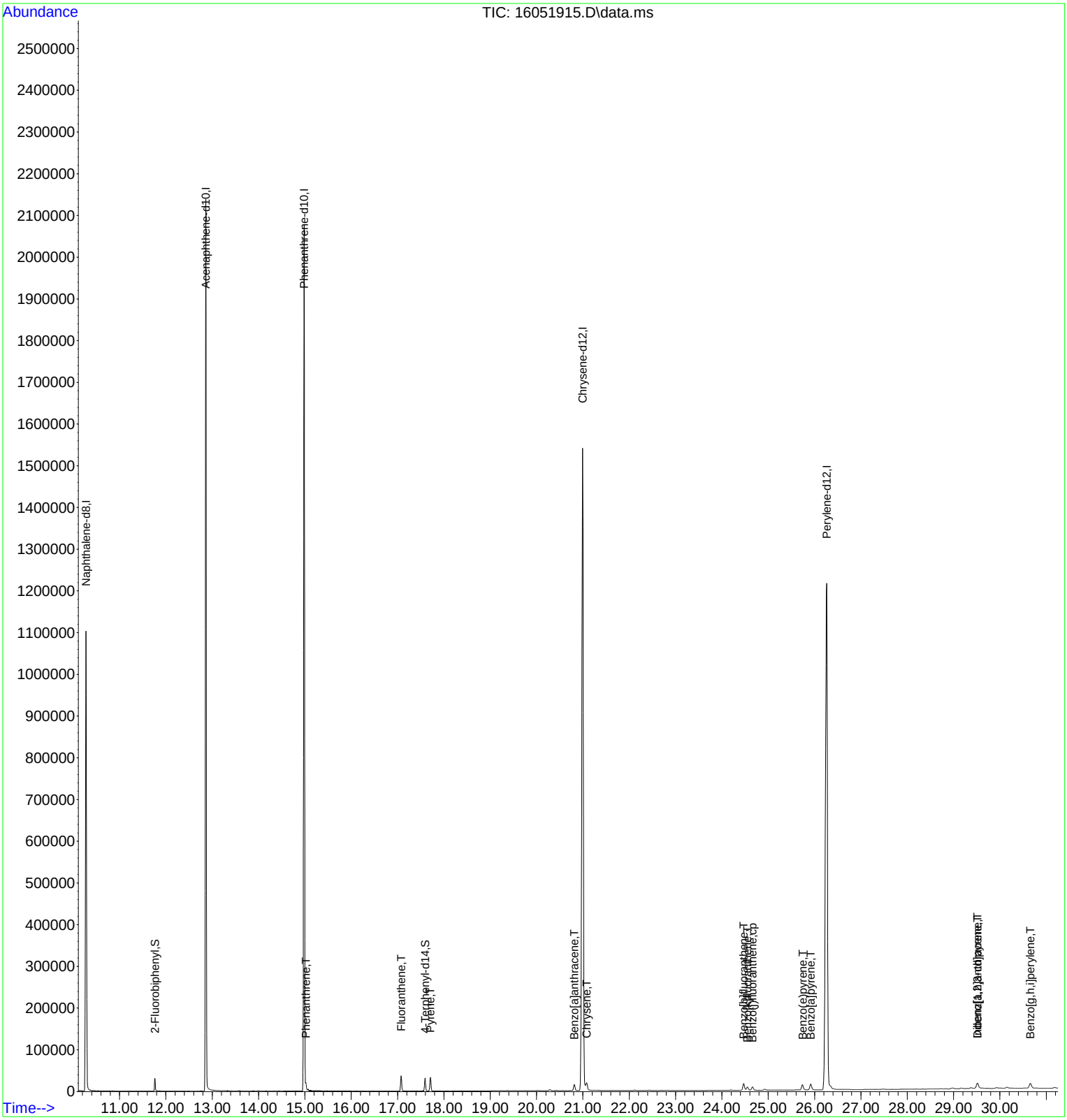
Target Compounds						Qvalue
12) Phenanthrene	15.021	178	13522	19.17	ug/kg	97
14) Fluoranthene	17.079	202	42202	57.38	ug/kg	98
15) Pyrene	17.708	202	38971	54.09	ug/kg	98
18) Benzo[a]anthracene	20.811	228	23657	33.88	ug/kg	99
19) Chrysene	21.082	228	29244	45.12	ug/kg	100
21) Benzo[b]fluoranthene	24.466	252	31769	47.86	ug/kg	99
22) Benzo[k]fluoranthene	24.547	252	13555	22.39	ug/kg	97
23) Benzo(j)fluoranthene	24.657	252	14335	22.65	ug/kg	89
24) Benzo(e)pyrene	25.741	252	24568	38.02	ug/kg	96
25) Benzo[a]pyrene	25.917	252	29407	47.33	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.521	276	24799	30.87	ug/kg	91
27) Dibenz[a,h]anthracene	29.506	278	6047	5.38	ug/kg	97
28) Benzo[g,h,i]perylene	30.656	276	26208	38.35	ug/kg	99

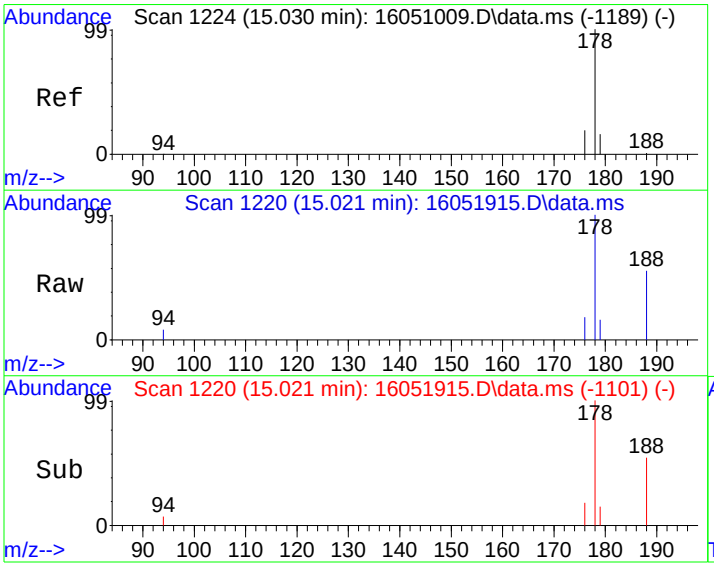
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051915.D
Acq On : 19 May 2016 5:25 pm
Operator :
Sample : 1605098-40A
Misc : SAMP
ALS Vial : 15 Sample Multiplier: 10

Quant Time: May 20 08:39:06 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

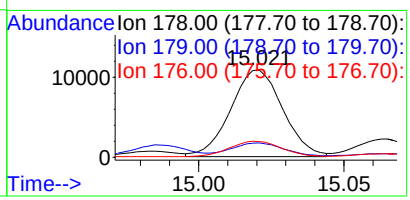


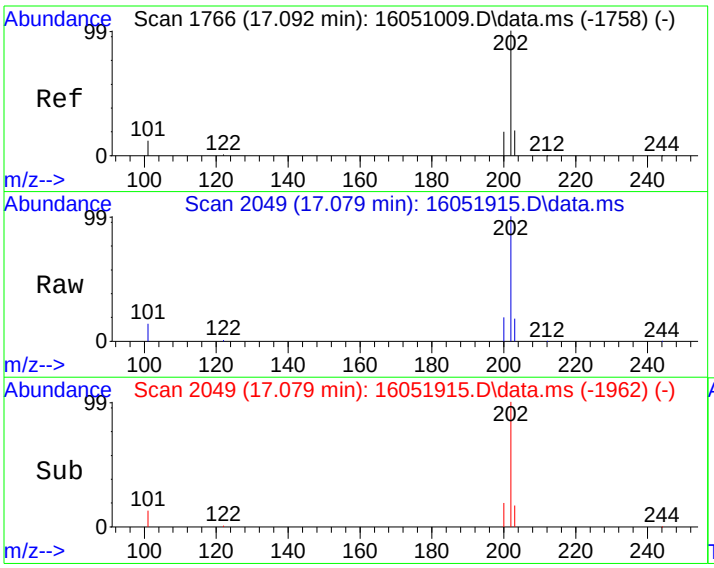


#12
Phenanthrene
Concen: 19.17 ug/kg
RT: 15.021 min Scan# 1220
Delta R.T. 0.002 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:178 Resp: 13522

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	18.0	0.0	39.0

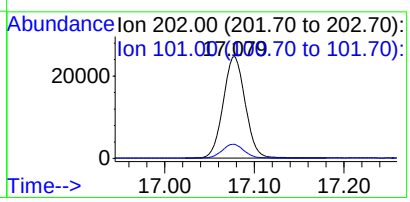


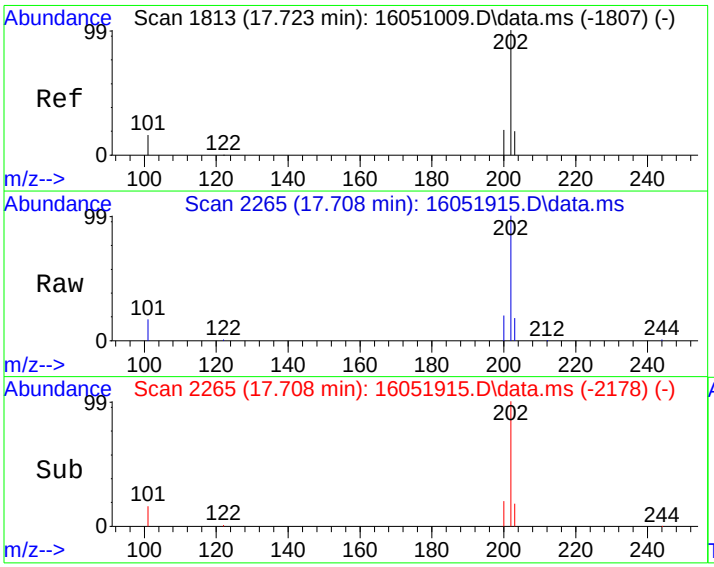


#14
Fluoranthene
Concen: 57.38 ug/kg
RT: 17.079 min Scan# 2049
Delta R.T. 0.003 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:202 Resp: 42202

Ion	Ratio	Lower	Upper
202	100		
101	13.4	0.0	34.4

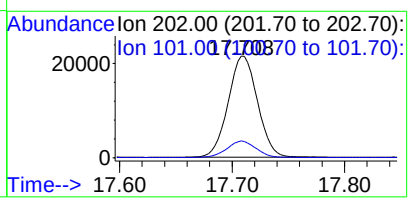


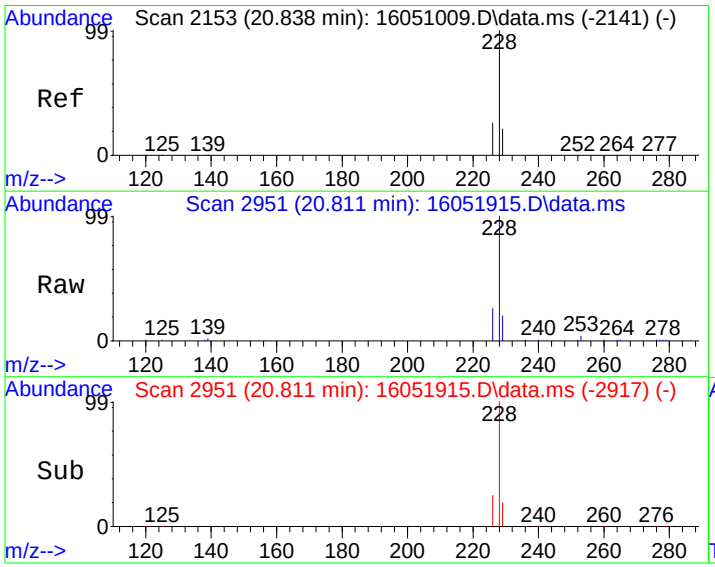


#15
Pyrene
Concen: 54.09 ug/kg
RT: 17.708 min Scan# 2265
Delta R.T. 0.002 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:202 Resp: 38971

Ion	Ratio	Lower	Upper
202	100		
101	16.2	0.0	37.3

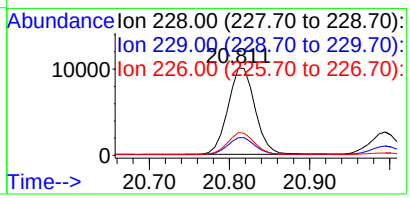


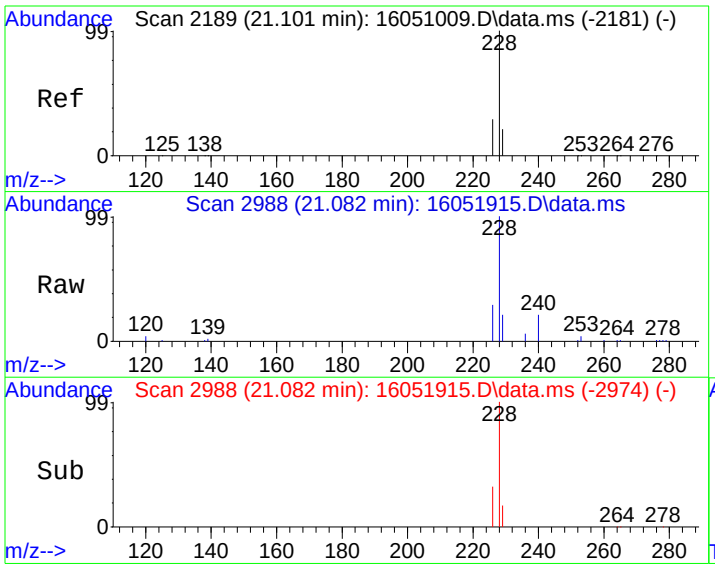


#18
Benzo[a]anthracene
Concen: 33.88 ug/kg
RT: 20.811 min Scan# 2951
Delta R.T. -0.001 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:228 Resp: 23657

Ion	Ratio	Lower	Upper
228	100		
229	19.4	0.3	40.3
226	25.4	5.7	45.7

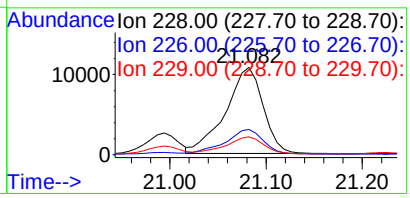


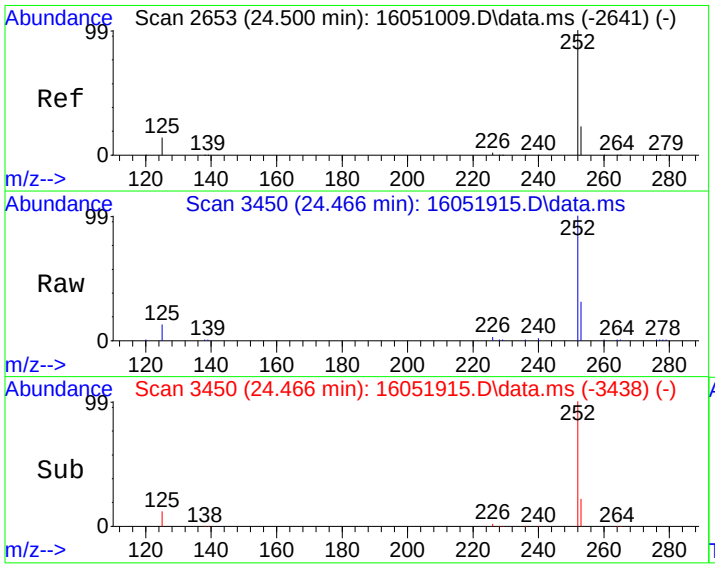


#19
Chrysene
Concen: 45.12 ug/kg
RT: 21.082 min Scan# 2988
Delta R.T. -0.001 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:228 Resp: 29244

Ion	Ratio	Lower	Upper
228	100		
226	28.3	8.2	48.2
229	19.9	0.3	40.3

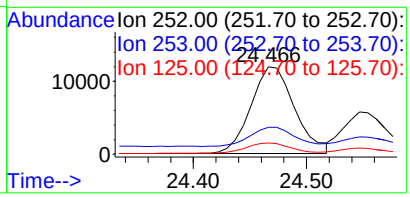


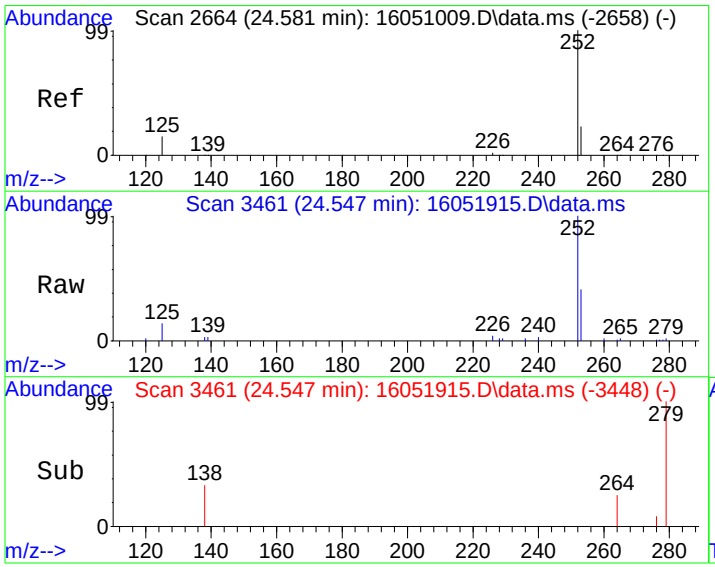


#21
Benzo[b]fluoranthene
Concen: 47.86 ug/kg
RT: 24.466 min Scan# 3450
Delta R.T. -0.009 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:252 Resp: 31769

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.3	42.3
125	11.9	0.0	32.2

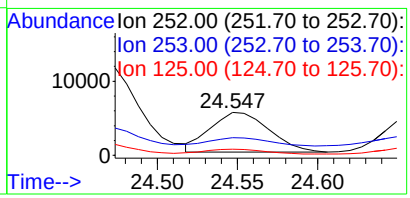


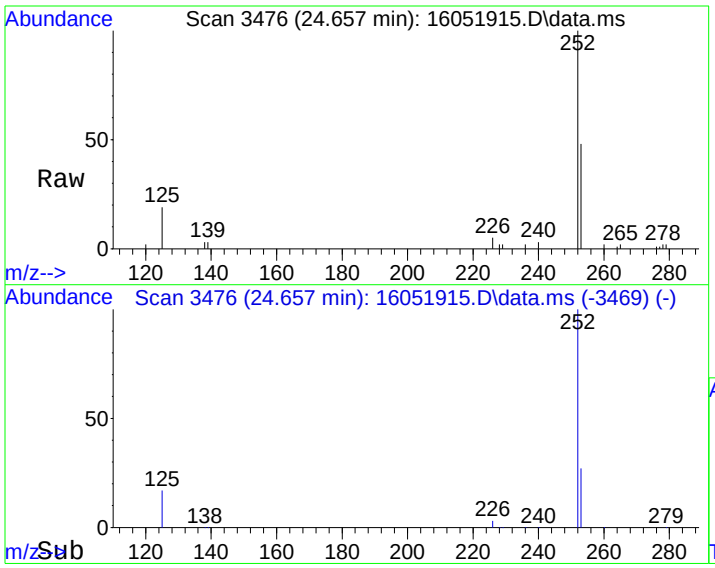


#22
Benzo[k]fluoranthene
Concen: 22.39 ug/kg
RT: 24.547 min Scan# 3461
Delta R.T. -0.008 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:252 Resp: 13555

Ion	Ratio	Lower	Upper
252	100		
253	20.2	2.5	42.5
125	12.3	0.0	32.6

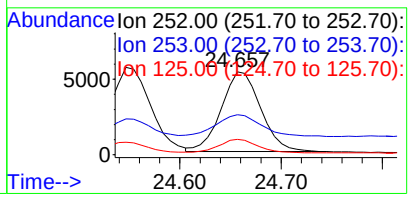


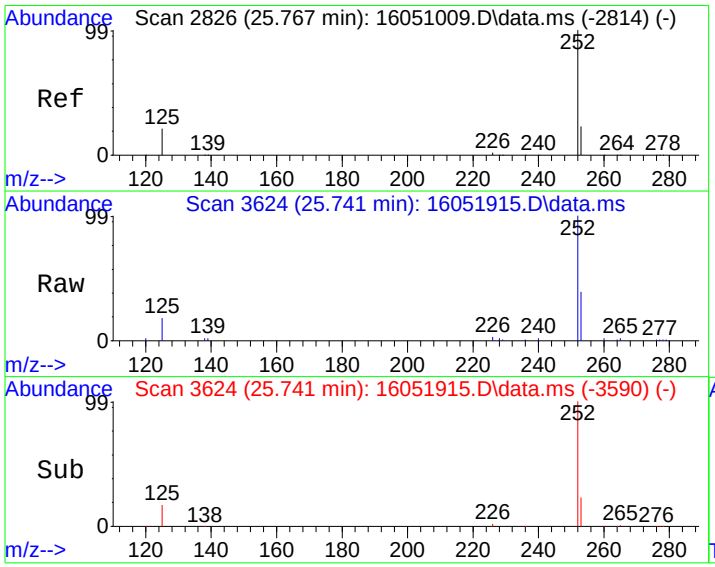


#23
Benzo(j)fluoranthene
Concen: 22.65 ug/kg
RT: 24.657 min Scan# 3476
Delta R.T. -0.008 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:252 Resp: 14335

Ion	Ratio	Lower	Upper
252	100		
253	30.7	2.2	42.2
125	16.3	0.0	37.3

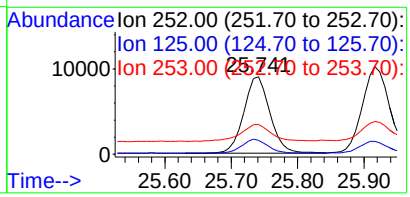


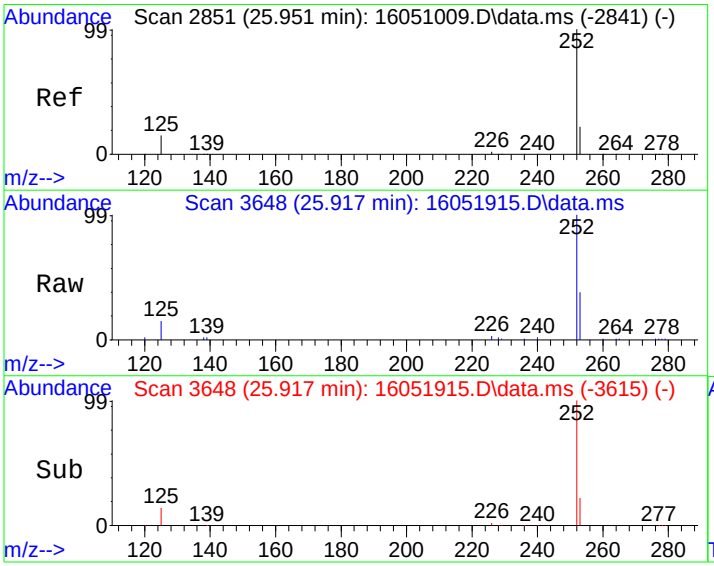


#24
Benzo(e)pyrene
Concen: 38.02 ug/kg
RT: 25.741 min Scan# 3624
Delta R.T. -0.001 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:252 Resp: 24568

Ion	Ratio	Lower	Upper
252	100		
125	18.0	0.0	38.7
253	25.1	2.3	42.3

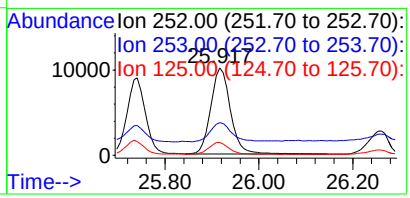


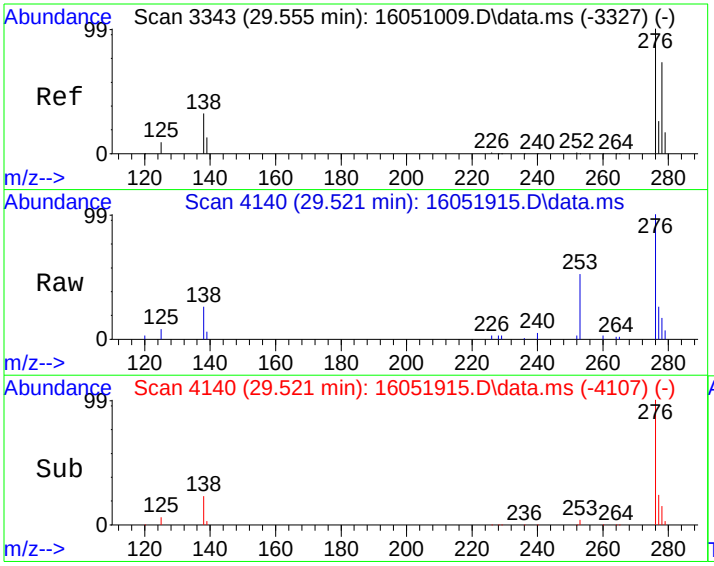


#25
Benzo[a]pyrene
Concen: 47.33 ug/kg
RT: 25.917 min Scan# 3648
Delta R.T. -0.008 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:252 Resp: 29407

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.3	42.3
125	13.7	0.0	33.5

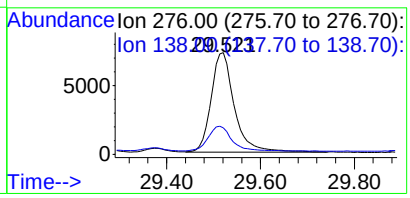


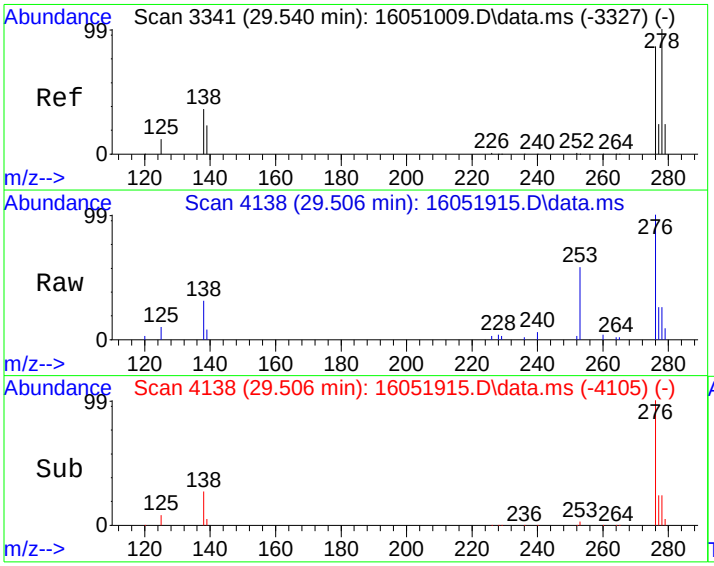


#26
Indeno[1,2,3-cd]pyrene
Concen: 30.87 ug/kg
RT: 29.521 min Scan# 4140
Delta R.T. -0.008 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:276 Resp: 24799

Ion	Ratio	Lower	Upper
276	100		
138	23.4	8.3	48.3

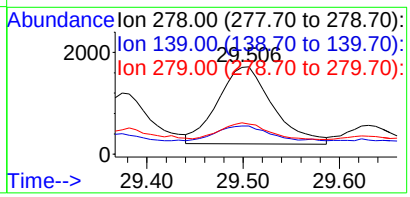


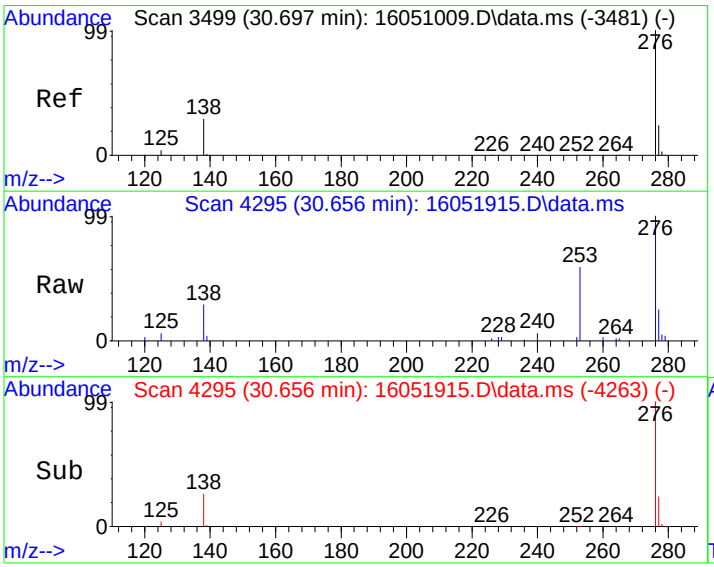


#27
Dibenz[a,h]anthracene
Concen: 5.38 ug/kg
RT: 29.506 min Scan# 4138
Delta R.T. -0.008 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:278 Resp: 6047

Ion	Ratio	Lower	Upper
278	100		
139	21.0	0.0	40.0
279	22.0	4.2	44.2

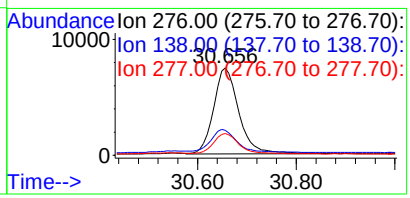




#28
Benzo[g,h,i]perylene
Concen: 38.35 ug/kg
RT: 30.656 min Scan# 4295
Delta R.T. -0.016 min
Lab File: 16051915.D
Acq: 19 May 2016 5:25 pm

Tgt Ion:276 Resp: 26208

Ion	Ratio	Lower	Upper
276	100		
138	25.7	5.8	45.8
277	23.6	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051916.D
Acq On : 19 May 2016 6:02 pm
Operator :
Sample : 1605098-41A
Misc : SAMP
ALS Vial : 16 Sample Multiplier: 10

Quant Time: May 20 08:39:13 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

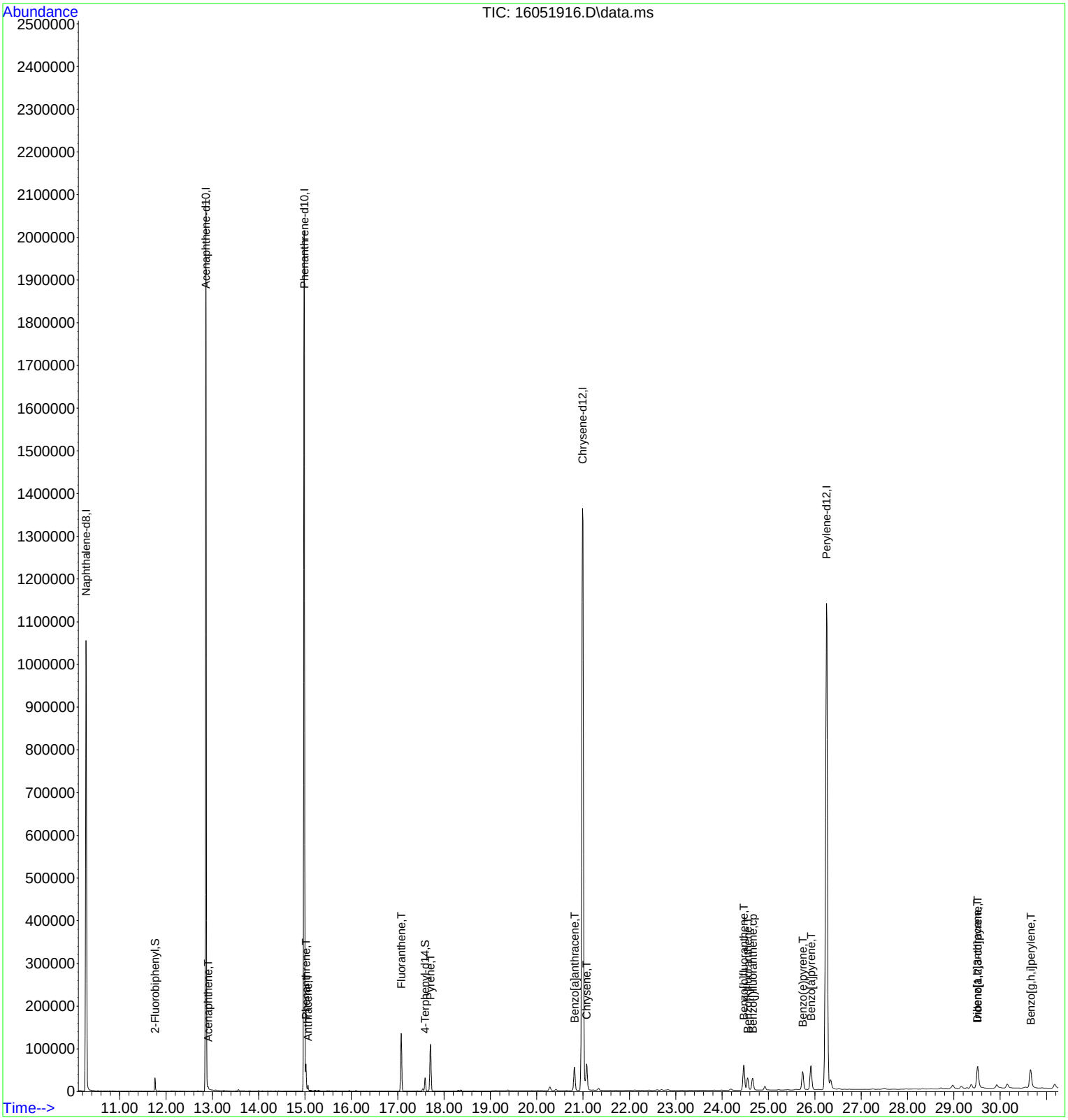
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1509888	4000.00	ug/kg	93
6) Acenaphthene-d10	12.861	164	1234544	4000.00	ug/kg	98
11) Phenanthrene-d10	14.983	188	2454846	4000.00	ug/kg	84
16) Chrysene-d12	20.988	240	2349957	4000.00	ug/kg	87
20) Perylene-d12	26.255	264	2201315	4000.00	ug/kg	89
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	31099	92.51	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.31%#			
17) 4-Terphenyl-d14	17.591	244	42834	86.12	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.15%#			
Target Compounds						Qvalue
8) Acenaphthene	12.911	153	2267	6.66	ug/kg	98
12) Phenanthrene	15.019	178	53584	79.33	ug/kg	97
13) Anthracene	15.063	178	11160	16.33	ug/kg	97
14) Fluoranthene	17.075	202	150836	220.75	ug/kg	99
15) Pyrene	17.707	202	133236	199.61	ug/kg	97
18) Benzo[a]anthracene	20.812	228	86691	140.76	ug/kg	99
19) Chrysene	21.076	228	101150	177.80	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	111716	189.42	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	51805	97.23	ug/kg	97
23) Benzo(j)fluoranthene	24.658	252	50025	95.52	ug/kg	89
24) Benzo(e)pyrene	25.735	252	84796	150.74	ug/kg	96
25) Benzo[a]pyrene	25.918	252	113578	207.21	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.514	276	92417	134.88	ug/kg	93
27) Dibenz[a,h]anthracene	29.500	278	20336	31.85	ug/kg	98
28) Benzo[g,h,i]perylene	30.657	276	95028	161.42	ug/kg	99

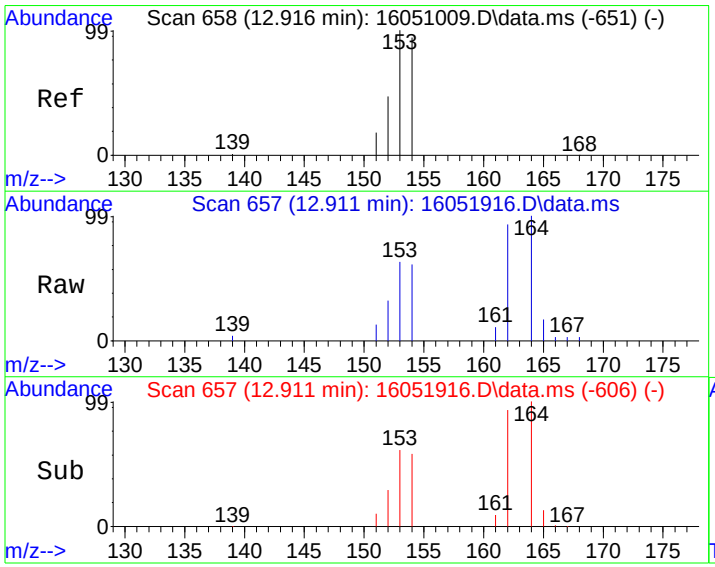
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051916.D
Acq On : 19 May 2016 6:02 pm
Operator :
Sample : 1605098-41A
Misc : SAMP
ALS Vial : 16 Sample Multiplier: 10

Quant Time: May 20 08:39:13 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

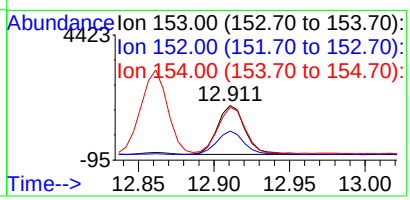


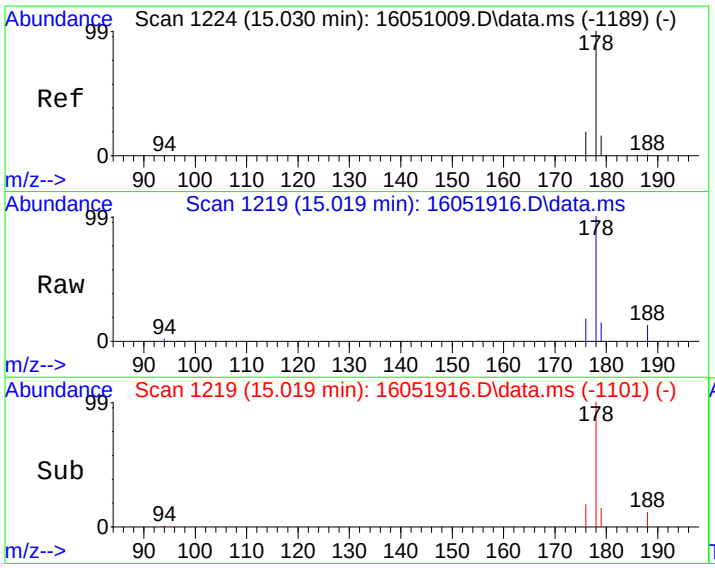


#8
Acenaphthene
Concen: 6.66 ug/kg
RT: 12.911 min Scan# 657
Delta R.T. -0.000 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:153 Resp: 2267

Ion	Ratio	Lower	Upper
153	100		
152	47.9	26.5	66.5
154	93.8	76.3	116.3

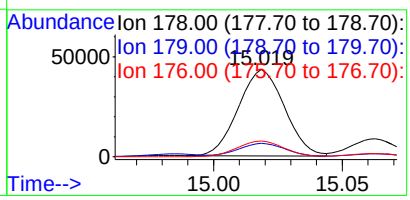


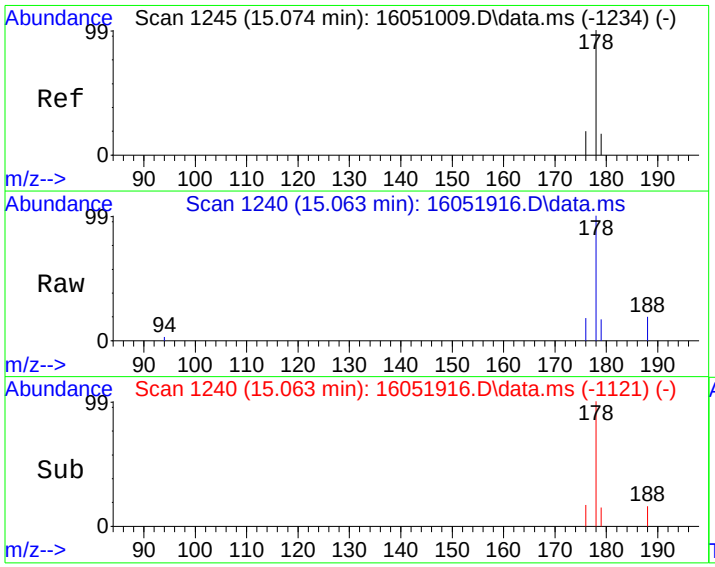


#12
Phenanthrene
Concen: 79.33 ug/kg
RT: 15.019 min Scan# 1219
Delta R.T. -0.001 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:178 Resp: 53584

Ion	Ratio	Lower	Upper
178	100		
179	14.8	0.0	36.4
176	18.2	0.0	39.0

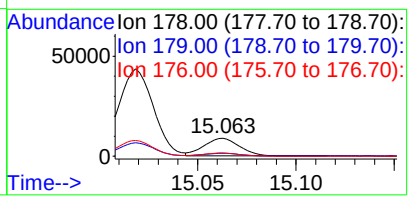


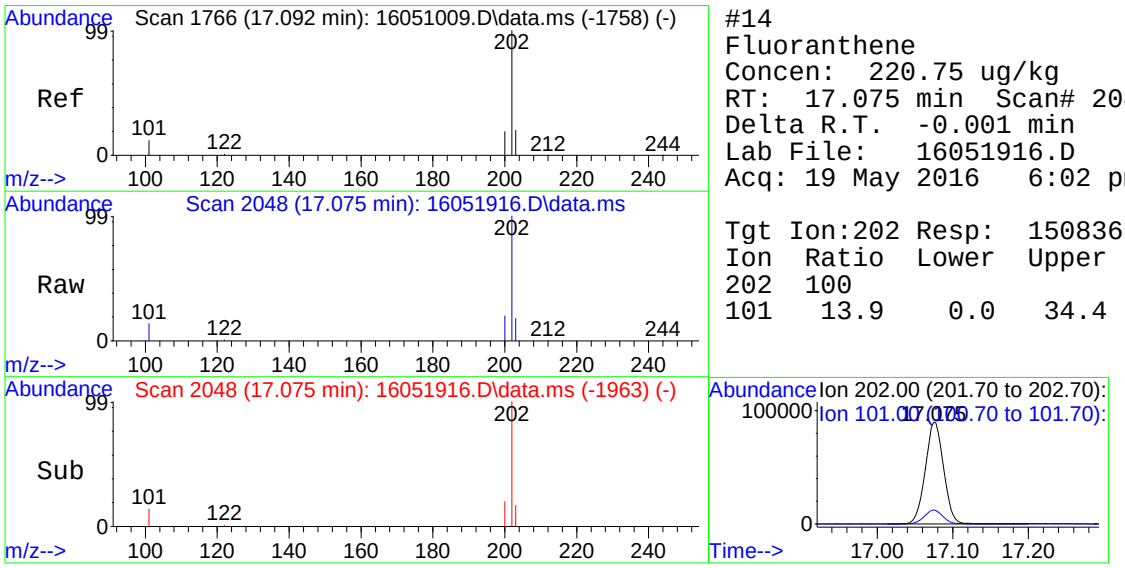


#13
Anthracene
Concen: 16.33 ug/kg
RT: 15.063 min Scan# 1240
Delta R.T. 0.002 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:178 Resp: 11160

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	36.3
176	17.3	0.0	38.5

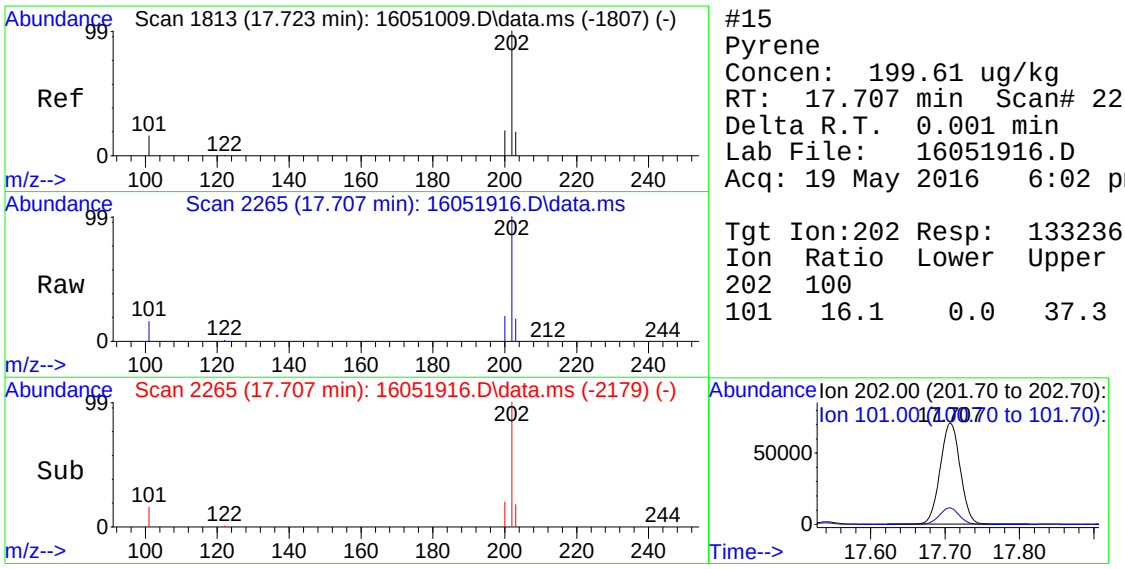




#14
Fluoranthene
Concen: 220.75 ug/kg
RT: 17.075 min Scan# 2048
Delta R.T. -0.001 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:202 Resp: 150836

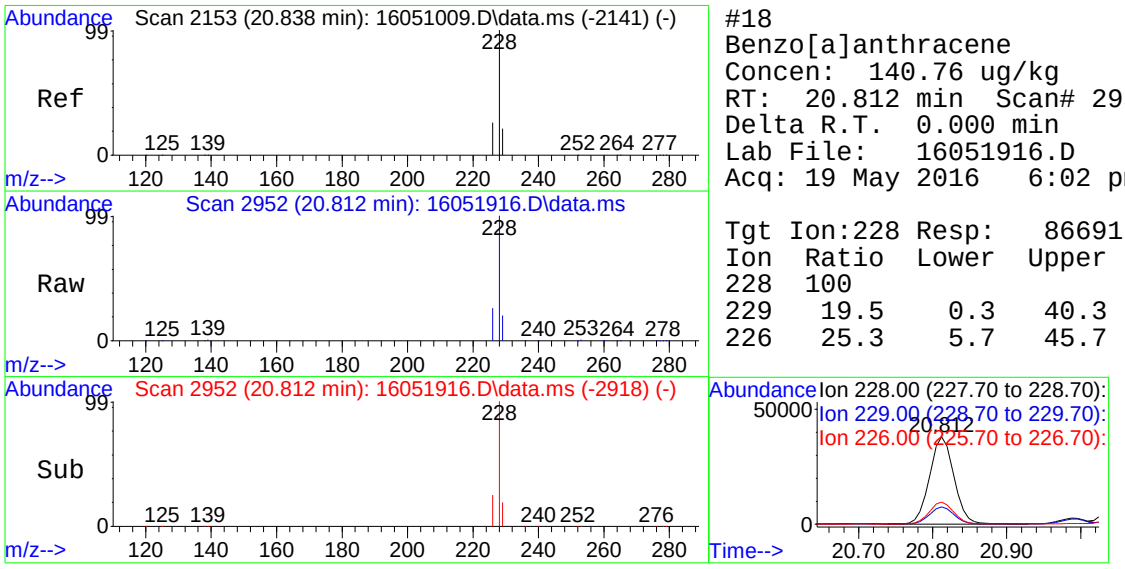
Ion	Ratio	Lower	Upper
202	100		
101	13.9	0.0	34.4



#15
Pyrene
Concen: 199.61 ug/kg
RT: 17.707 min Scan# 2265
Delta R.T. 0.001 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:202 Resp: 133236

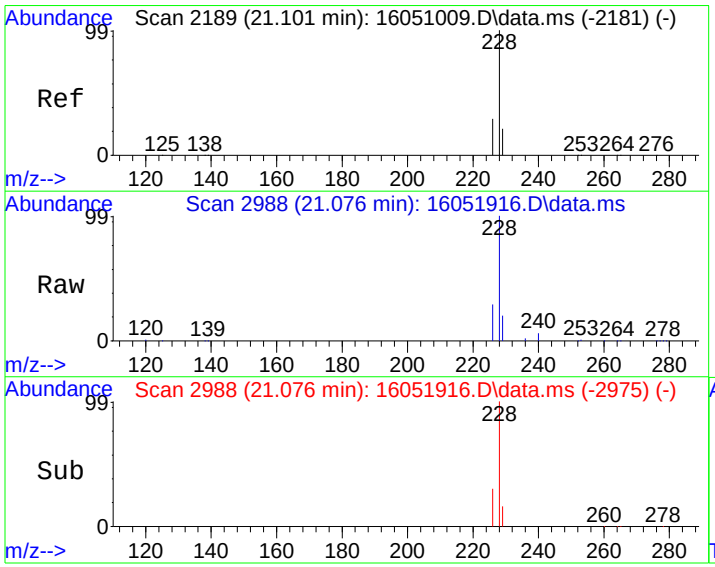
Ion	Ratio	Lower	Upper
202	100		
101	16.1	0.0	37.3



#18
Benzo[a]anthracene
Concen: 140.76 ug/kg
RT: 20.812 min Scan# 2952
Delta R.T. 0.000 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:228 Resp: 86691

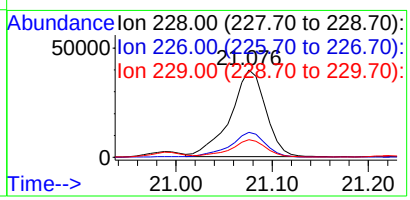
Ion	Ratio	Lower	Upper
228	100		
229	19.5	0.3	40.3
226	25.3	5.7	45.7

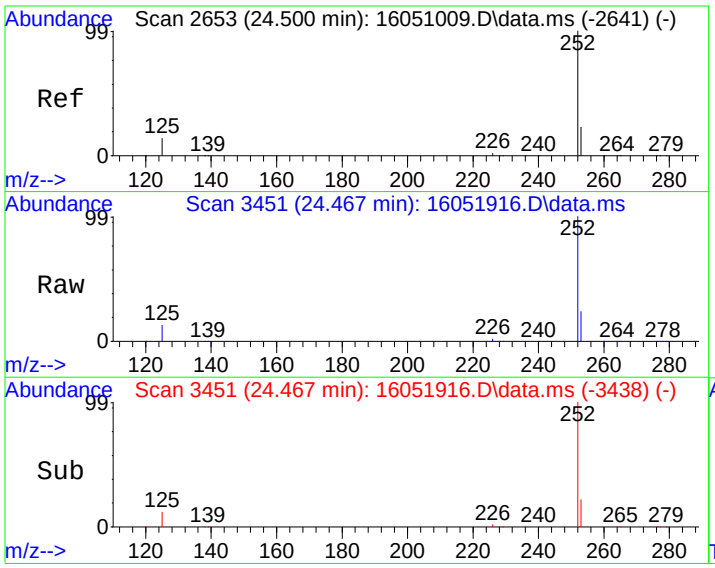


#19
Chrysene
Concen: 177.80 ug/kg
RT: 21.076 min Scan# 2988
Delta R.T. -0.007 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:228 Resp: 101150

Ion	Ratio	Lower	Upper
228	100		
226	28.4	8.2	48.2
229	19.9	0.3	40.3

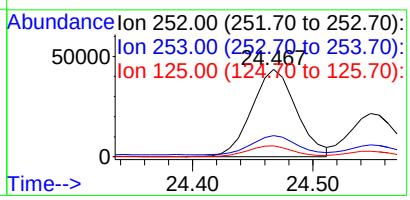


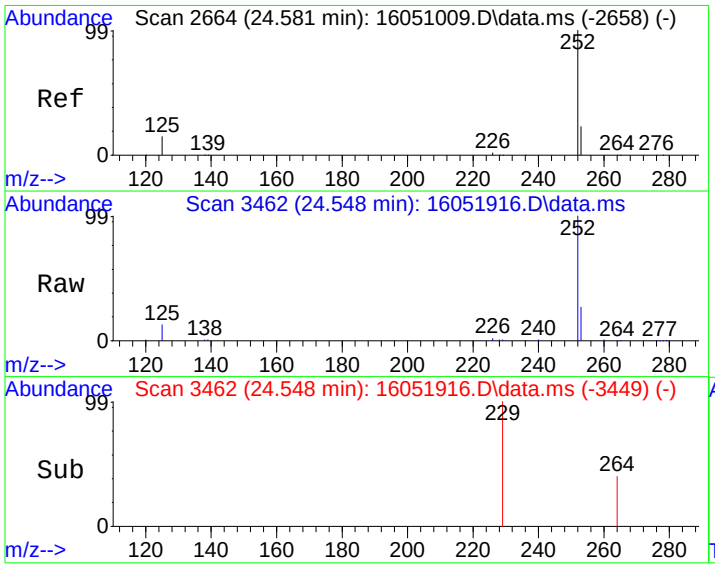


#21
Benzo[b]fluoranthene
Concen: 189.42 ug/kg
RT: 24.467 min Scan# 3451
Delta R.T. -0.008 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:252 Resp: 111716

Ion	Ratio	Lower	Upper
252	100		
253	21.8	2.3	42.3
125	12.3	0.0	32.2

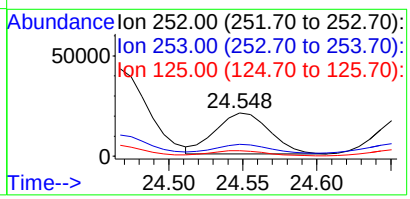


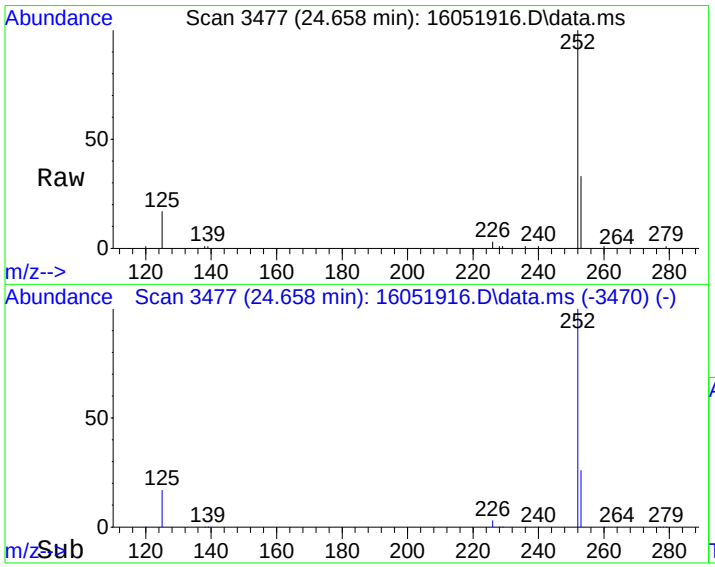


#22
Benzo[k]fluoranthene
Concen: 97.23 ug/kg
RT: 24.548 min Scan# 3462
Delta R.T. -0.007 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:252 Resp: 51805

Ion	Ratio	Lower	Upper
252	100		
253	20.7	2.5	42.5
125	12.2	0.0	32.6

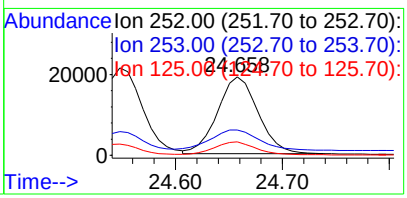


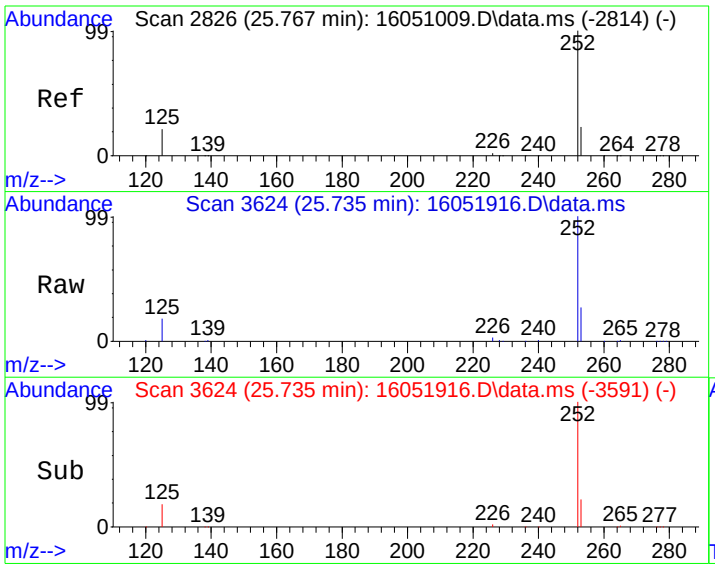


#23
Benzo(j)fluoranthene
Concen: 95.52 ug/kg
RT: 24.658 min Scan# 3477
Delta R.T. -0.007 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:252 Resp: 50025

Ion	Ratio	Lower	Upper
252	100		
253	31.1	2.2	42.2
125	16.8	0.0	37.3

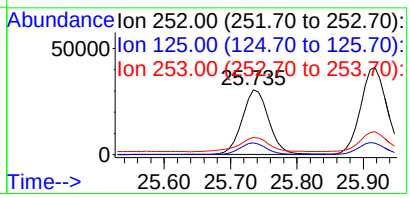


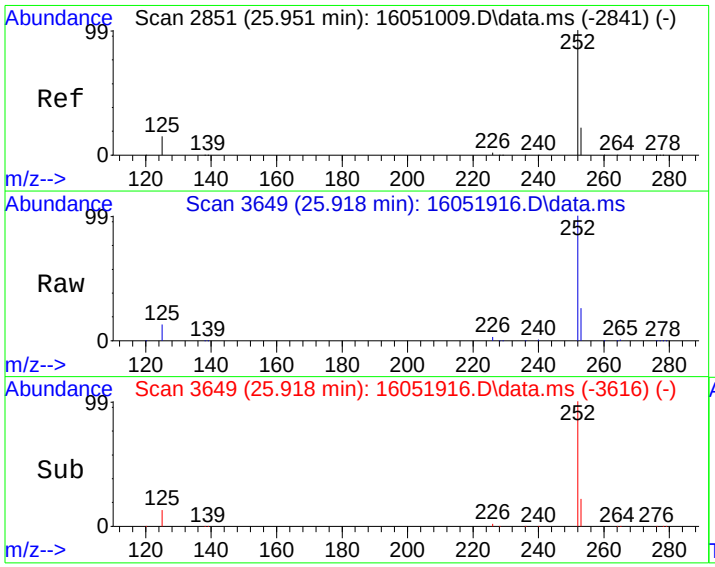


#24
Benzo(e)pyrene
Concen: 150.74 ug/kg
RT: 25.735 min Scan# 3624
Delta R.T. -0.007 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:252 Resp: 84796

Ion	Ratio	Lower	Upper
252	100		
125	17.9	0.0	38.7
253	24.9	2.3	42.3

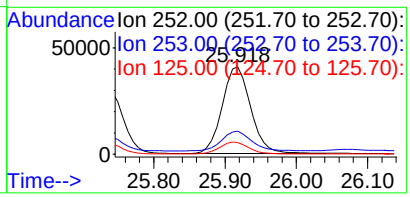


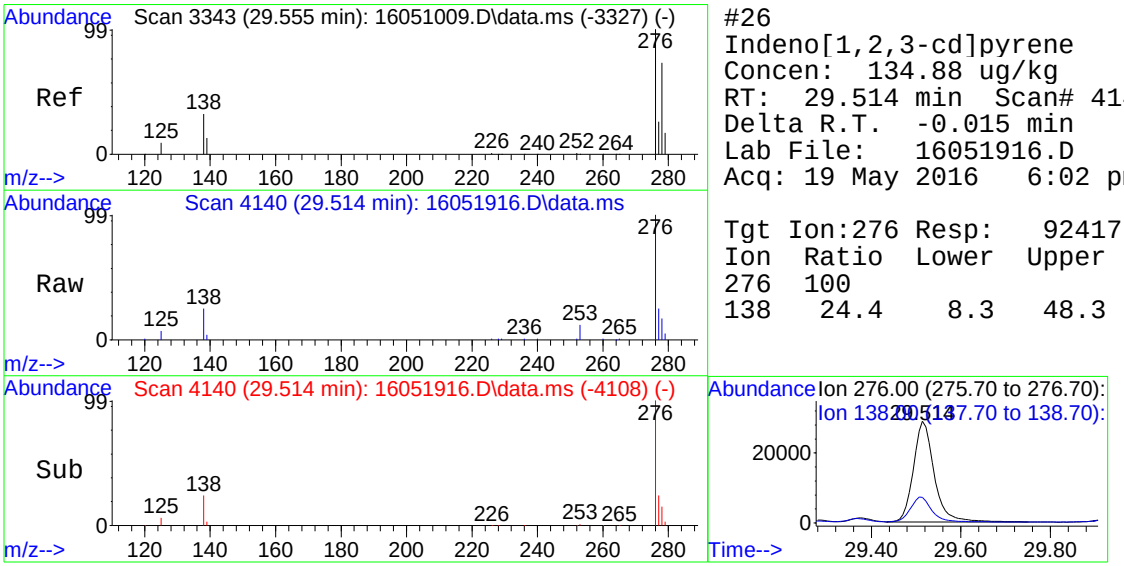


#25
Benzo[a]pyrene
Concen: 207.21 ug/kg
RT: 25.918 min Scan# 3649
Delta R.T. -0.007 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:252 Resp: 113578

Ion	Ratio	Lower	Upper
252	100		
253	22.7	2.3	42.3
125	13.2	0.0	33.5

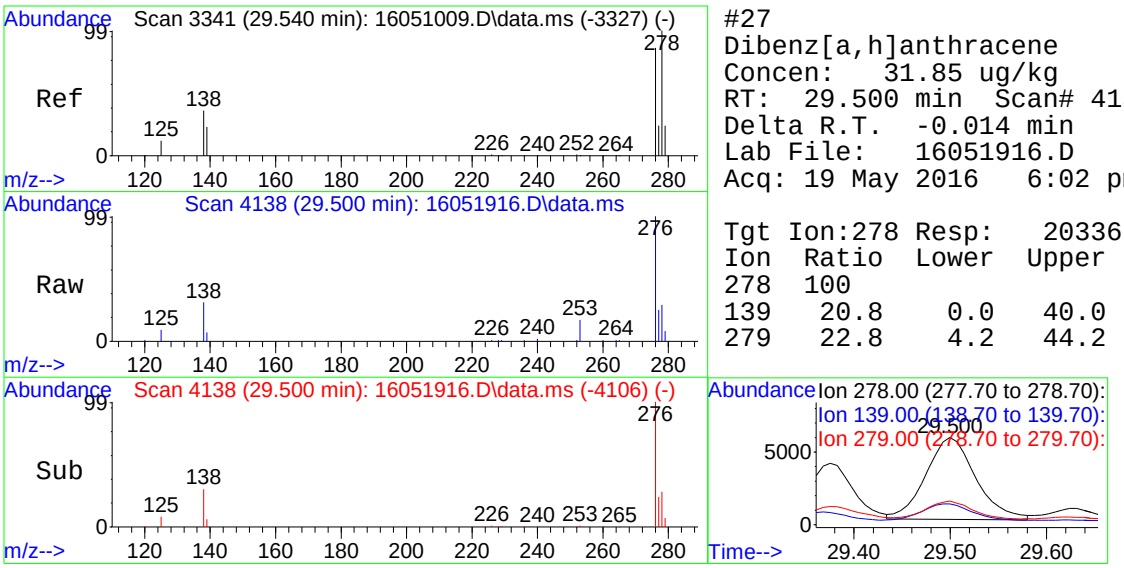




#26
Indeno[1,2,3-cd]pyrene
Concen: 134.88 ug/kg
RT: 29.514 min Scan# 4140
Delta R.T. -0.015 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:276 Resp: 92417

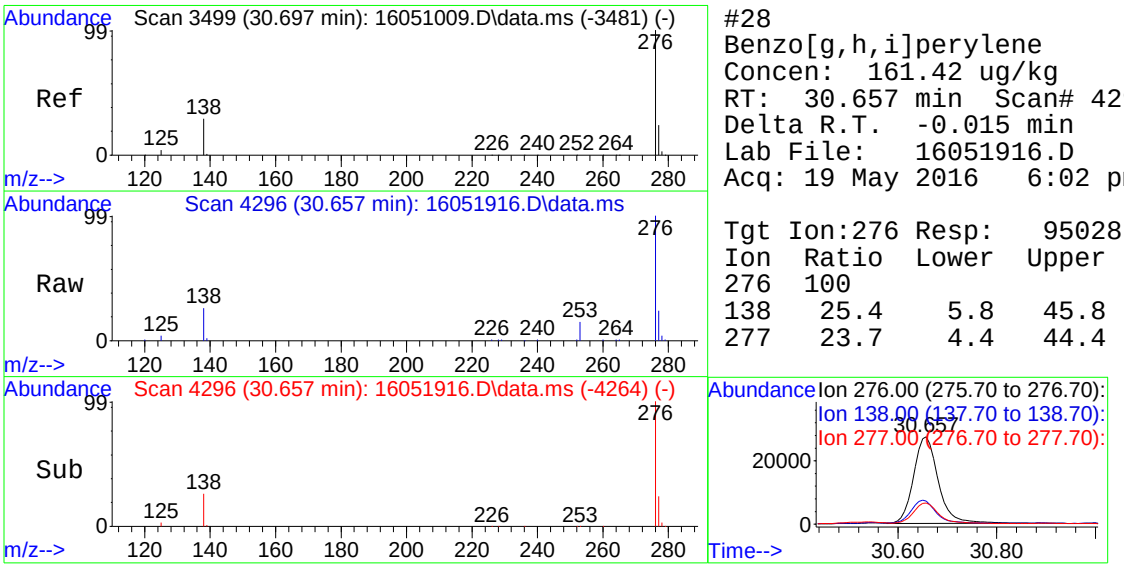
Ion	Ratio	Lower	Upper
276	100		
138	24.4	8.3	48.3



#27
Dibenz[a,h]anthracene
Concen: 31.85 ug/kg
RT: 29.500 min Scan# 4138
Delta R.T. -0.014 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:278 Resp: 20336

Ion	Ratio	Lower	Upper
278	100		
139	20.8	0.0	40.0
279	22.8	4.2	44.2



#28
Benzo[g,h,i]perylene
Concen: 161.42 ug/kg
RT: 30.657 min Scan# 4296
Delta R.T. -0.015 min
Lab File: 16051916.D
Acq: 19 May 2016 6:02 pm

Tgt Ion:276 Resp: 95028

Ion	Ratio	Lower	Upper
276	100		
138	25.4	5.8	45.8
277	23.7	4.4	44.4

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051925.D
Acq On : 19 May 2016 11:35 pm
Operator :
Sample : 1605121-01AMS
Misc : MS
ALS Vial : 25 Sample Multiplier: 10

Quant Time: May 20 08:38:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1551770	4000.00	ug/kg	95
6) Acenaphthene-d10	12.857	164	1216751	4000.00	ug/kg	97
11) Phenanthrene-d10	14.981	188	2443926	4000.00	ug/kg	84
16) Chrysene-d12	20.995	240	2359252	4000.00	ug/kg	87
20) Perylene-d12	26.262	264	2311134	4000.00	ug/kg	93

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	29521	85.44	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.14%#			
17) 4-Terphenyl-d14	17.590	244	41757	83.62	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.09%#			

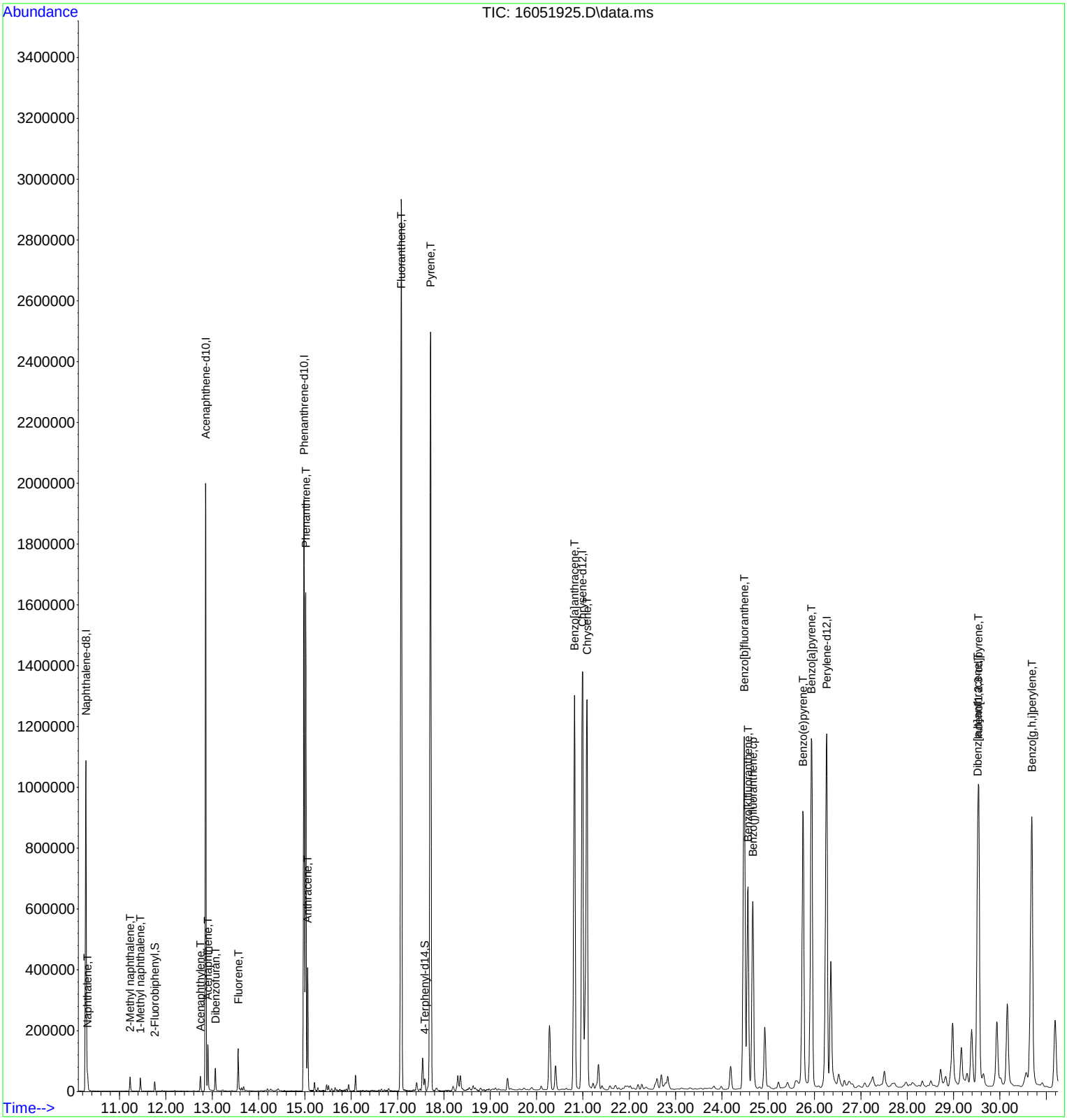
Target Compounds						Qvalue
2) Naphthalene	10.310	128	57916	166.60	ug/kg	99
3) 2-Methyl naphthalene	11.227	142	30310	112.16	ug/kg	100
4) 1-Methyl naphthalene	11.449	142	26746	104.59	ug/kg	99
7) Acenaphthylene	12.744	152	46257	86.97	ug/kg	99
8) Acenaphthene	12.906	153	72687	216.59	ug/kg	97
9) Dibenzofuran	13.068	168	74288	145.31	ug/kg	97
10) Fluorene	13.559	166	71438	154.01	ug/kg	98
12) Phenanthrene	15.019	178	1579723	2349.19	ug/kg	100
13) Anthracene	15.059	178	382317	561.87	ug/kg	98
14) Fluoranthene	17.080	202	3384818	5927.84	ug/kg	96
15) Pyrene	17.712	202	3009878	5150.26	ug/kg	98
18) Benzo[a]anthracene	20.820	228	2017213	3585.55	ug/kg	99
19) Chrysene	21.091	228	2315544	4547.93	ug/kg	99
21) Benzo[b]fluoranthene	24.482	252	2350440	4134.74	ug/kg	98
22) Benzo[k]fluoranthene	24.563	252	1185201	2212.04	ug/kg	99
23) Benzo(j)fluoranthene	24.673	252	1099570	2150.54	ug/kg	88
24) Benzo(e)pyrene	25.749	252	1770337	3248.22	ug/kg	97
25) Benzo[a]pyrene	25.940	252	2380308	4455.19	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.544	276	1907469	2859.18	ug/kg	94
27) Dibenz[a,h]anthracene	29.515	278	478676	824.07	ug/kg	99
28) Benzo[g,h,i]perylene	30.687	276	1931440	3389.62	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051925.D
Acq On : 19 May 2016 11:35 pm
Operator :
Sample : 1605121-01AMS
Misc : MS
ALS Vial : 25 Sample Multiplier: 10

Quant Time: May 20 08:38:18 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051926.D
Acq On : 20 May 2016 12:11 am
Operator :
Sample : 1605121-01AMSD
Misc : MSD
ALS Vial : 26 Sample Multiplier: 10

Quant Time: May 20 08:38:21 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

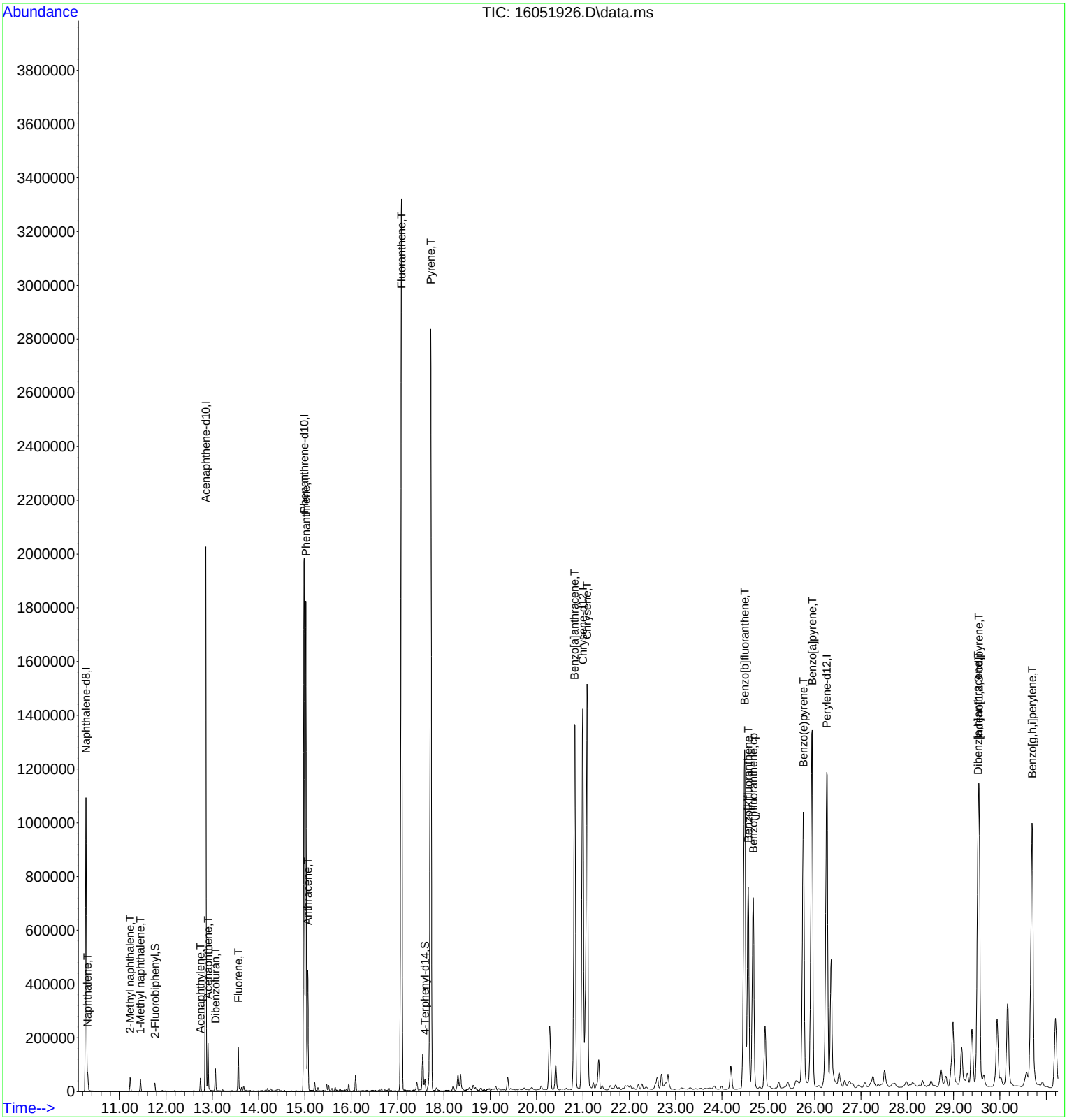
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.275	136	1588154	4000.00	ug/kg	97
6) Acenaphthene-d10	12.861	164	1232139	4000.00	ug/kg	98
11) Phenanthrene-d10	14.982	188	2479553	4000.00	ug/kg	85
16) Chrysene-d12	20.995	240	2394862	4000.00	ug/kg	88
20) Perylene-d12	26.262	264	2347255	4000.00	ug/kg	95
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	29270	82.78	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.07%#		
17) 4-Terphenyl-d14	17.591	244	41682	82.23	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	2.06%#		
Target Compounds						Qvalue
2) Naphthalene	10.308	128	68472	192.45	ug/kg	100
3) 2-Methyl naphthalene	11.226	142	32925	119.04	ug/kg	97
4) 1-Methyl naphthalene	11.448	142	28170	107.63	ug/kg	98
7) Acenaphthylene	12.743	152	45746	84.94	ug/kg	98
8) Acenaphthene	12.910	153	85201	250.71	ug/kg	98
9) Dibenzofuran	13.067	168	80470	155.44	ug/kg	99
10) Fluorene	13.558	166	82704	176.07	ug/kg	98
12) Phenanthrene	15.018	178	1759081	2578.32	ug/kg	100
13) Anthracene	15.060	178	432291	626.18	ug/kg	98
14) Fluoranthene	17.083	202	3807922	6748.77	ug/kg	96
15) Pyrene	17.716	202	3405439	5846.25	ug/kg	98
18) Benzo[a]anthracene	20.819	228	2288655	4055.17	ug/kg	99
19) Chrysene	21.090	228	2634297	5175.84	ug/kg	98
21) Benzo[b]fluoranthene	24.489	252	2657830	4652.58	ug/kg	98
22) Benzo[k]fluoranthene	24.570	252	1336457	2465.80	ug/kg	98
23) Benzo(j)fluoranthene	24.680	252	1247683	2416.26	ug/kg	88
24) Benzo(e)pyrene	25.756	252	2009864	3664.17	ug/kg	97
25) Benzo[a]pyrene	25.947	252	2721395	5063.88	ug/kg	98
26) Indeno[1,2,3-cd]pyrene	29.551	276	2146960	3191.09	ug/kg	92
27) Dibenz[a,h]anthracene	29.522	278	535946	910.60	ug/kg	99
28) Benzo[g,h,i]perylene	30.694	276	2198879	3834.68	ug/kg	97

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051926.D
Acq On : 20 May 2016 12:11 am
Operator :
Sample : 1605121-01AMSD
Misc : MSD
ALS Vial : 26 Sample Multiplier: 10

Quant Time: May 20 08:38:21 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051928.D
Acq On : 20 May 2016 1:26 am
Operator :
Sample : ICV3-160519
Misc : ICV
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 20 08:38:24 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

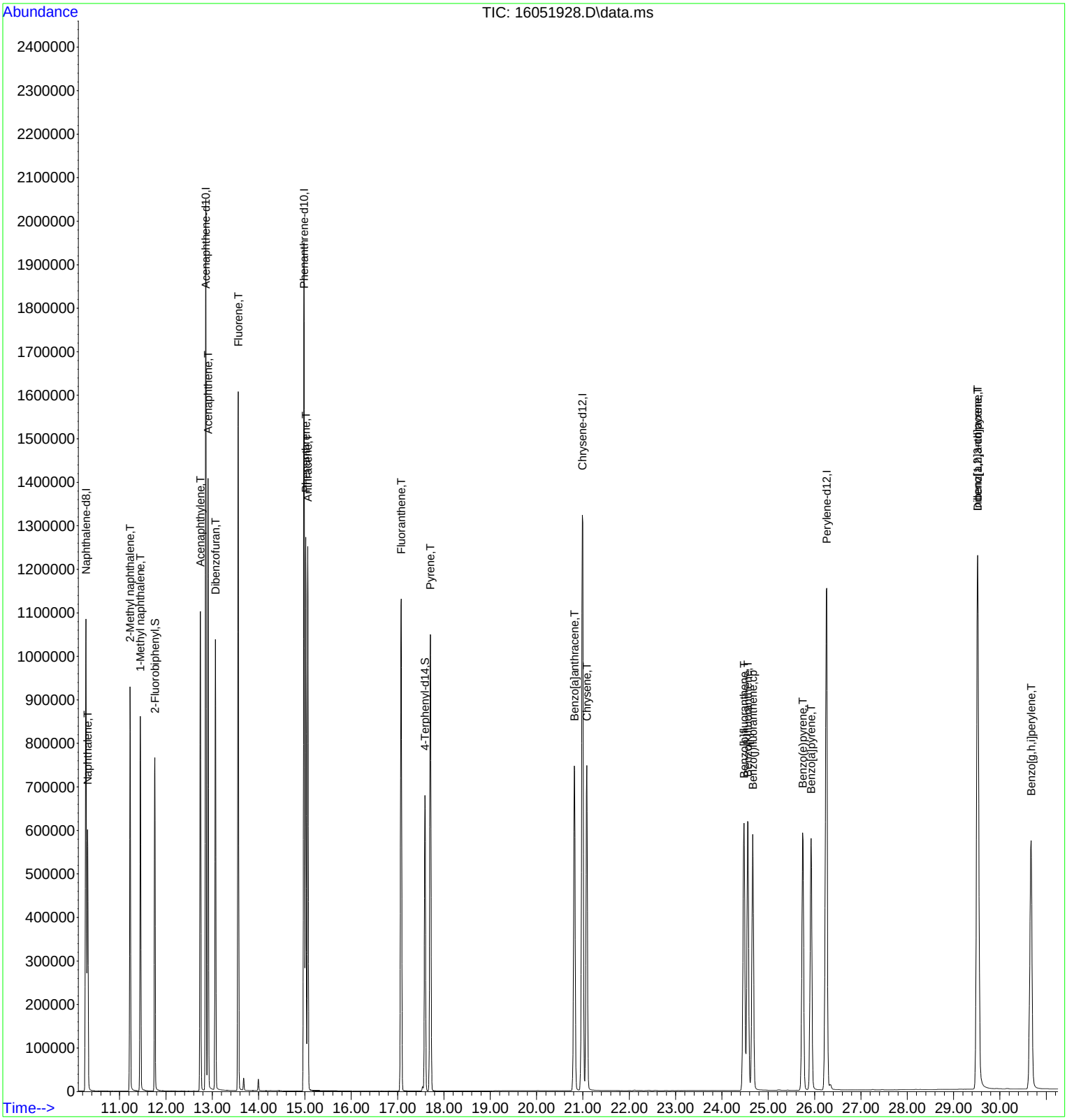
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1551122	4000.00	ug/kg	95
6) Acenaphthene-d10	12.861	164	1214874	4000.00	ug/kg	97
11) Phenanthrene-d10	14.980	188	2391833	4000.00	ug/kg	82
16) Chrysene-d12	20.996	240	2292045	4000.00	ug/kg	85
20) Perylene-d12	26.262	264	2238687	4000.00	ug/kg	90
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	694313	2010.40	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	50.26%		
17) 4-Terphenyl-d14	17.593	244	947417	1952.89	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	48.82%#		
Target Compounds						Qvalue
2) Naphthalene	10.309	128	695472	2001.40	ug/kg	100
3) 2-Methyl naphthalene	11.226	142	561429	2078.32	ug/kg	99
4) 1-Methyl naphthalene	11.449	142	516022	2018.67	ug/kg	99
7) Acenaphthylene	12.748	152	1078626	2031.21	ug/kg	99
8) Acenaphthene	12.910	153	674178	2011.99	ug/kg	99
9) Dibenzofuran	13.067	168	988368	1936.30	ug/kg	93
10) Fluorene	13.563	166	881101	1902.42	ug/kg	99
12) Phenanthrene	15.018	178	1224594	1860.74	ug/kg	99
13) Anthracene	15.062	178	1236181	1856.31	ug/kg	100
14) Fluoranthene	17.077	202	1278941	2036.09	ug/kg	100
15) Pyrene	17.706	202	1267395	2054.12	ug/kg	99
18) Benzo[a]anthracene	20.813	228	1196899	2111.63	ug/kg	100
19) Chrysene	21.084	228	1104270	2106.84	ug/kg	100
21) Benzo[b]fluoranthene	24.475	252	1227418	2141.68	ug/kg	100
22) Benzo[k]fluoranthene	24.563	252	1101629	2119.51	ug/kg	99
23) Benzo(j)fluoranthene	24.666	252	1039488	2096.41	ug/kg	100
24) Benzo(e)pyrene	25.742	252	1141739	2109.93	ug/kg	100
25) Benzo[a]pyrene	25.925	252	1139540	2123.03	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.529	276	1415742	2158.49	ug/kg	98
27) Dibenz[a,h]anthracene	29.515	278	1192495	2189.68	ug/kg	99
28) Benzo[g,h,i]perylene	30.672	276	1214603	2145.14	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051928.D
Acq On : 20 May 2016 1:26 am
Operator :
Sample : ICV3-160519
Misc : ICV
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 20 08:38:24 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051930.D
Acq On : 20 May 2016 2:40 am
Operator :
Sample : SBLK-160519
Misc : SBLK
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 20 08:38:27 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.275	136	1750646	4000.00	ug/kg	107
6) Acenaphthene-d10	12.861	164	1431079	4000.00	ug/kg	114
11) Phenanthrene-d10	14.982	188	2572799	4000.00	ug/kg	88
16) Chrysene-d12	20.995	240	2494186	4000.00	ug/kg	92
20) Perylene-d12	26.255	264	2379231	4000.00	ug/kg	96

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.764	172	89	0.23	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.01%#			
17) 4-Terphenyl-d14	17.593	244	283	0.54	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.01%#			

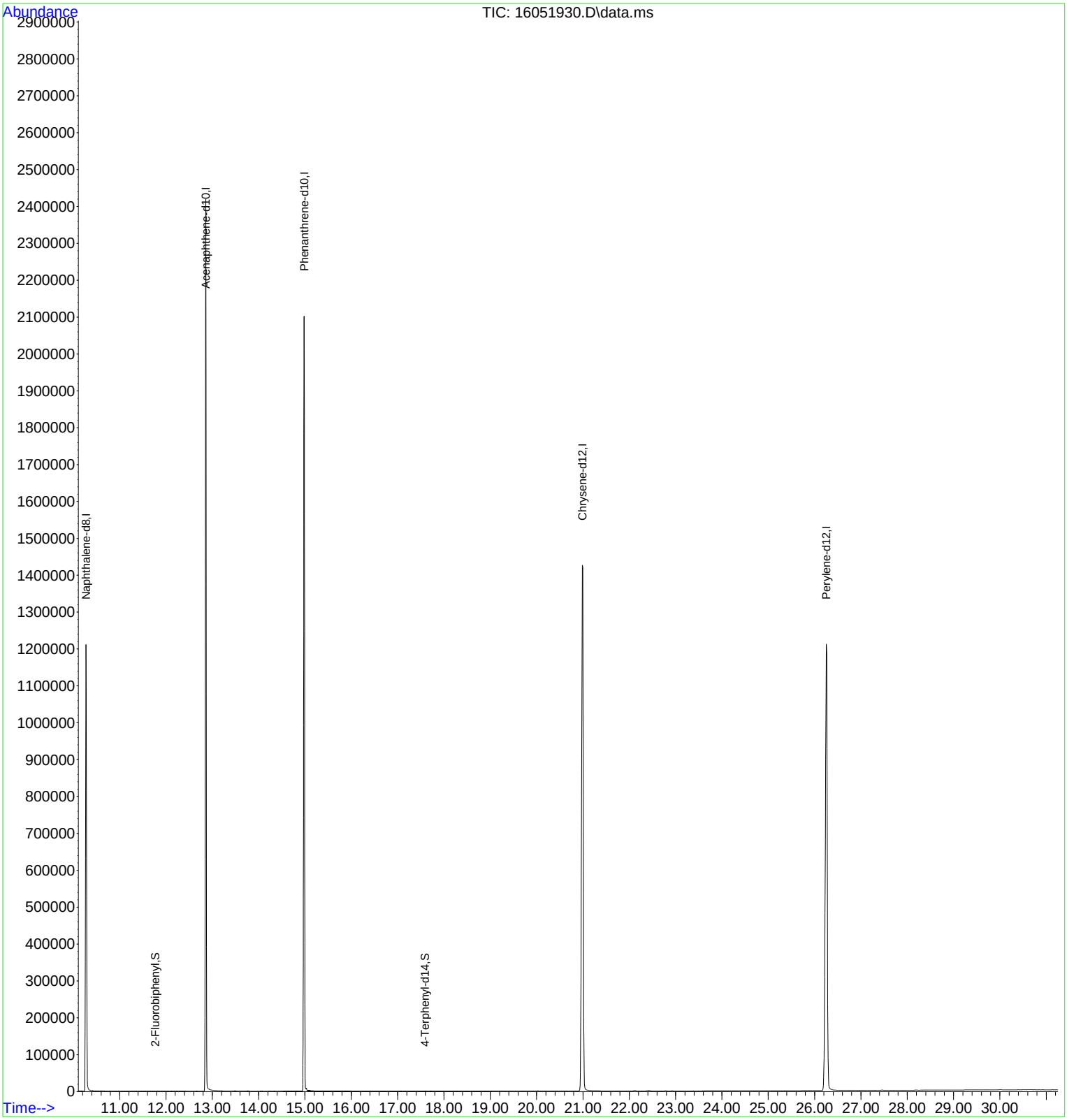
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051930.D
Acq On : 20 May 2016 2:40 am
Operator :
Sample : SBLK-160519
Misc : SBLK
ALS Vial : 30 Sample Multiplier: 1

Quant Time: May 20 08:38:27 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051937.D
Acq On : 20 May 2016 6:59 am
Operator :
Sample : CCV-160519
Misc : CCV
ALS Vial : 37 Sample Multiplier: 1

Quant Time: May 20 08:38:30 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

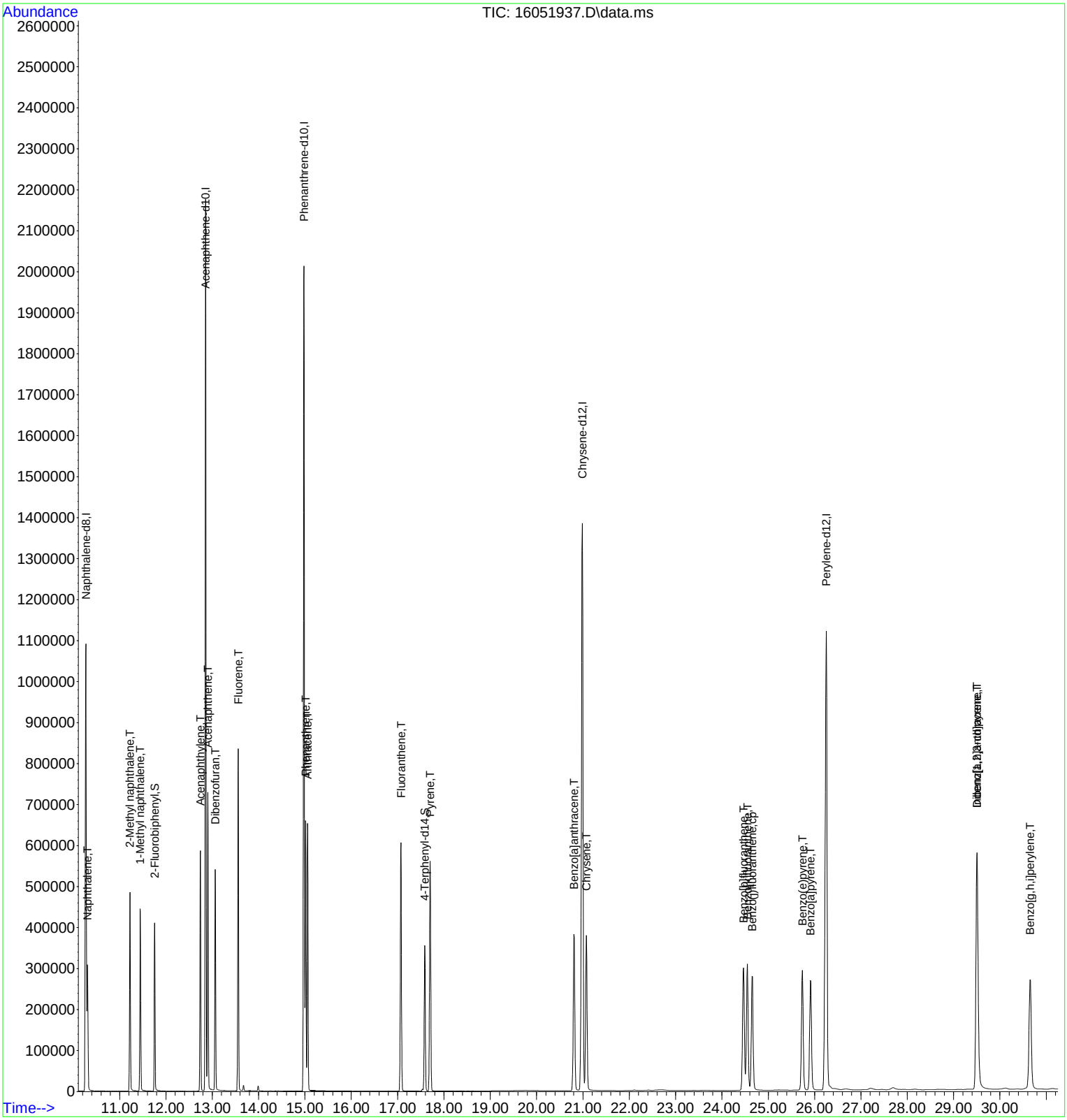
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1596529	4000.00	ug/kg	98
6) Acenaphthene-d10	12.856	164	1273874	4000.00	ug/kg	102
11) Phenanthrene-d10	14.978	188	2458683	4000.00	ug/kg	84
16) Chrysene-d12	20.988	240	2342216	4000.00	ug/kg	86
20) Perylene-d12	26.254	264	2171898	4000.00	ug/kg	87
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	365539	1028.33	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 25.71%#			
17) 4-Terphenyl-d14	17.587	244	489182	986.74	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.67%#			
Target Compounds						Qvalue
2) Naphthalene	10.304	128	352970	986.87	ug/kg	100
3) 2-Methyl naphthalene	11.222	142	294101	1057.75	ug/kg	98
4) 1-Methyl naphthalene	11.448	142	269618	1024.74	ug/kg	99
7) Acenaphthylene	12.743	152	559854	1005.46	ug/kg	99
8) Acenaphthene	12.905	153	346482	986.13	ug/kg	98
9) Dibenzofuran	13.063	168	513174	958.79	ug/kg	91
10) Fluorene	13.559	166	449201	924.97	ug/kg	100
12) Phenanthrene	15.014	178	633815	936.88	ug/kg	99
13) Anthracene	15.058	178	632927	924.59	ug/kg	99
14) Fluoranthene	17.071	202	668308	1004.74	ug/kg	99
15) Pyrene	17.704	202	655948	1008.38	ug/kg	97
18) Benzo[a]anthracene	20.805	228	598818	1006.17	ug/kg	100
19) Chrysene	21.076	228	555607	1010.64	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	574850	1010.68	ug/kg	100
22) Benzo[k]fluoranthene	24.548	252	531953	1036.96	ug/kg	100
23) Benzo(j)fluoranthene	24.657	252	503321	1022.08	ug/kg	99
24) Benzo(e)pyrene	25.734	252	544356	1012.18	ug/kg	99
25) Benzo[a]pyrene	25.910	252	538769	1016.47	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.514	276	668438	1025.01	ug/kg	99
27) Dibenz[a,h]anthracene	29.499	278	562619	1036.47	ug/kg	100
28) Benzo[g,h,i]perylene	30.657	276	577419	1026.77	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160519\
Data File : 16051937.D
Acq On : 20 May 2016 6:59 am
Operator :
Sample : CCV-160519
Misc : CCV
ALS Vial : 37 Sample Multiplier: 1

Quant Time: May 20 08:38:30 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052002.D
Acq On : 20 May 2016 9:14 am
Operator :
Sample : ICV-160520
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 20 13:07:10 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

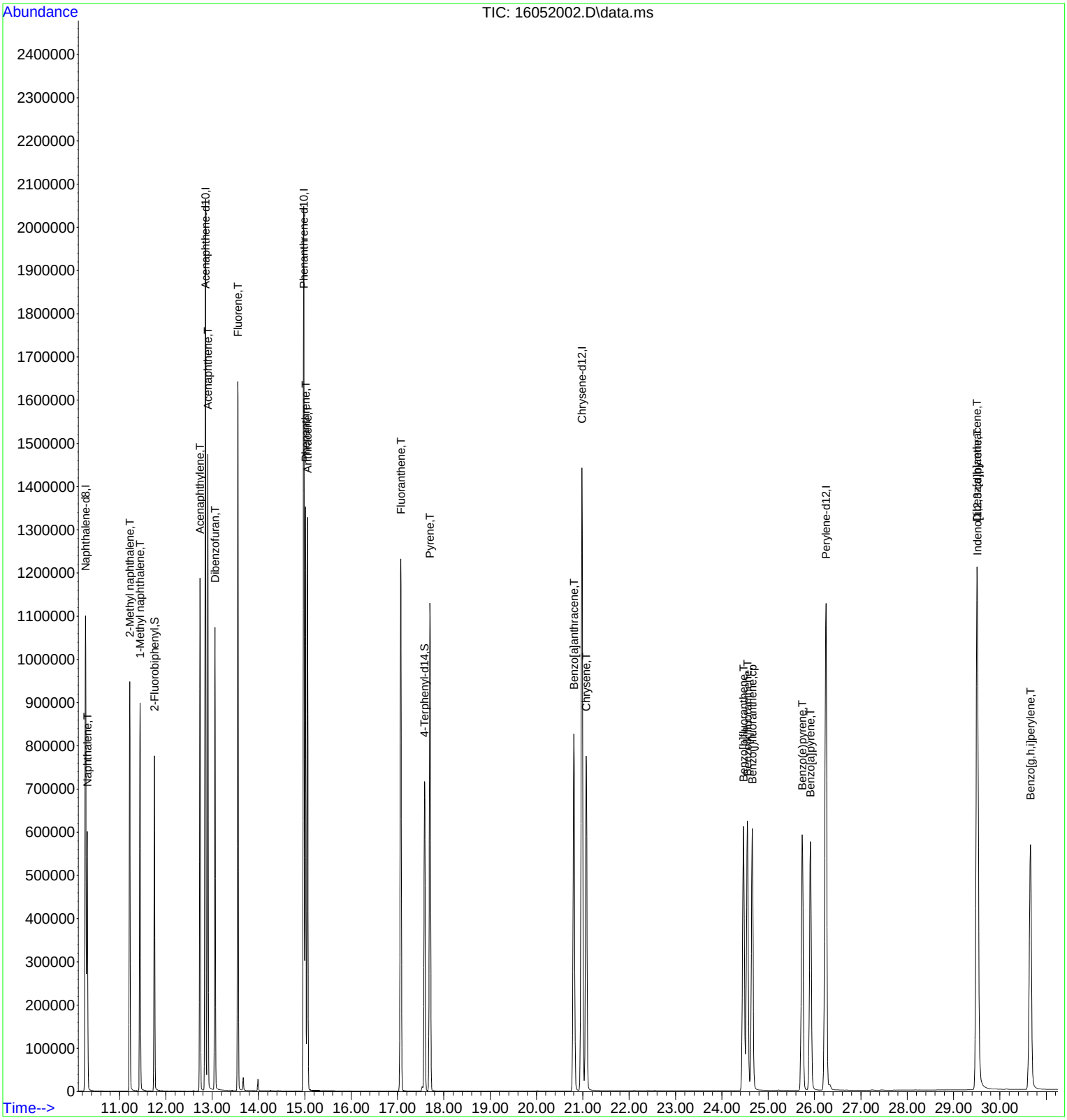
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.266	136	1547153	4000.00	ug/kg	95
6) Acenaphthene-d10	12.856	164	1247032	4000.00	ug/kg	99
11) Phenanthrene-d10	14.976	188	2509434	4000.00	ug/kg	86
16) Chrysene-d12	20.981	240	2390872	4000.00	ug/kg	88
20) Perylene-d12	26.248	264	2231698	4000.00	ug/kg	90
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	709214	2058.82	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	51.47%		
17) 4-Terphenyl-d14	17.587	244	1015188	2006.09	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	50.15%#		
Target Compounds						Qvalue
2) Naphthalene	10.303	128	698696	2015.83	ug/kg	100
3) 2-Methyl naphthalene	11.221	142	572699	2125.48	ug/kg	99
4) 1-Methyl naphthalene	11.443	142	529187	2075.48	ug/kg	99
7) Acenaphthylene	12.738	152	1111364	2038.89	ug/kg	100
8) Acenaphthene	12.905	153	693530	2016.37	ug/kg	99
9) Dibenzofuran	13.062	168	1026850	1959.81	ug/kg	95
10) Fluorene	13.558	166	903846	1901.21	ug/kg	99
12) Phenanthrene	15.014	178	1287796	1865.07	ug/kg	100
13) Anthracene	15.058	178	1302404	1864.10	ug/kg	100
14) Fluoranthene	17.071	202	1369440	2080.66	ug/kg	100
15) Pyrene	17.700	202	1356149	2097.12	ug/kg	99
18) Benzo[a]anthracene	20.806	228	1269123	2148.43	ug/kg	100
19) Chrysene	21.069	228	1164874	2131.85	ug/kg	100
21) Benzo[b]fluoranthene	24.468	252	1227085	2148.07	ug/kg	100
22) Benzo[k]fluoranthene	24.549	252	1117252	2157.59	ug/kg	99
23) Benzo(j)fluoranthene	24.659	252	1061744	2150.47	ug/kg	100
24) Benzo(e)pyrene	25.735	252	1146281	2125.69	ug/kg	100
25) Benzo[a]pyrene	25.911	252	1132855	2116.99	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.523	276	1395443	2133.05	ug/kg	98
27) Dibenz[a,h]anthracene	29.508	278	1170086	2153.50	ug/kg	99
28) Benzo[g,h,i]perylene	30.658	276	1203641	2131.86	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052002.D
Acq On : 20 May 2016 9:14 am
Operator :
Sample : ICV-160520
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

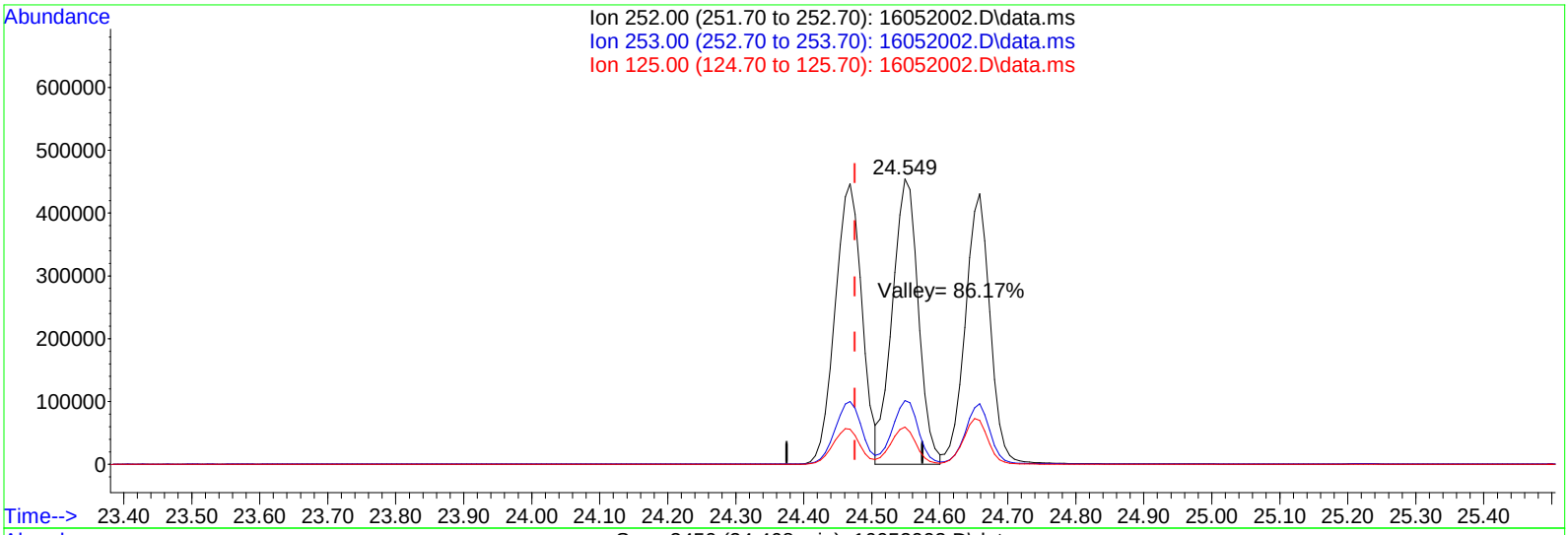
Quant Time: May 20 13:07:10 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

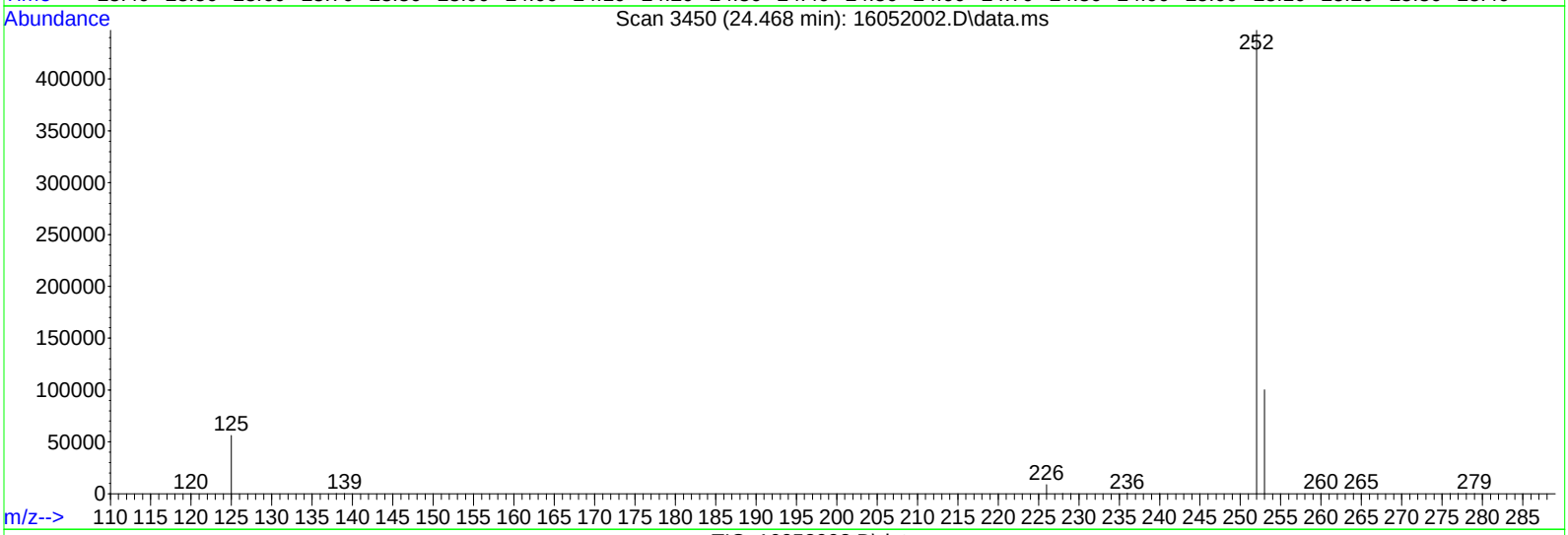


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052002.D
Acq On : 20 May 2016 9:14 am
Operator :
Sample : ICV-160520
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 20 12:29:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052002.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.468min (-0.007) 2148.07ug/kg

response 1227085

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.27
125.00	12.20	12.52
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052004.D
Acq On : 20 May 2016 10:28 am
Operator :
Sample : SBLK-160520
Misc : SBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 23 10:33:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1447548	4000.00	ug/kg	89
6) Acenaphthene-d10	12.852	164	1094738	4000.00	ug/kg	87
11) Phenanthrene-d10	14.975	188	2117575	4000.00	ug/kg	72
16) Chrysene-d12	20.980	240	2240420	4000.00	ug/kg	83
20) Perylene-d12	26.247	264	2132137	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.753	172	243872	756.66	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.92%#			
17) 4-Terphenyl-d14	17.583	244	344106	725.64	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 18.14%#			

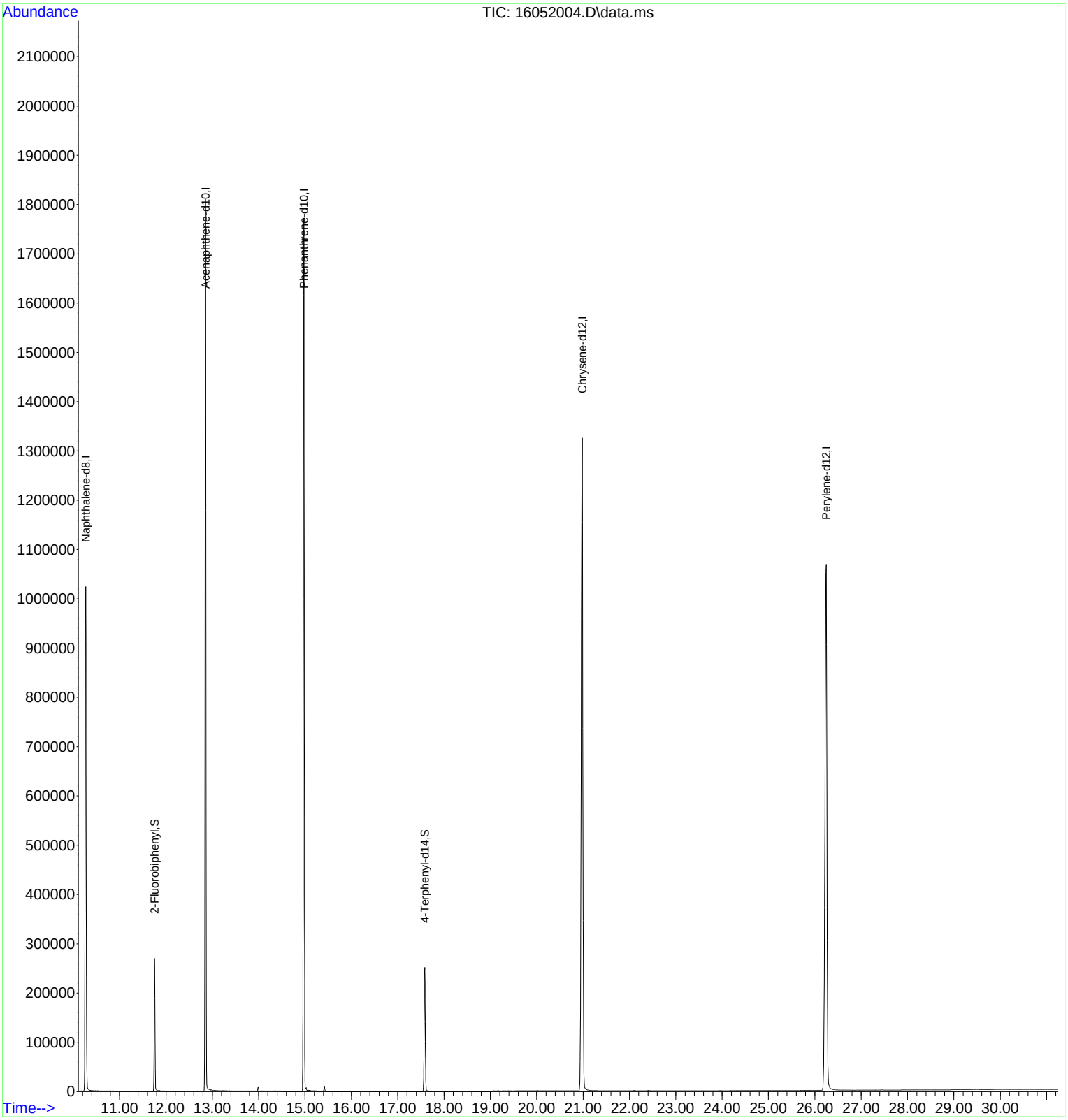
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052004.D
Acq On : 20 May 2016 10:28 am
Operator :
Sample : SBLK-160520
Misc : SBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 23 10:33:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052006.D
Acq On : 20 May 2016 11:42 am
Operator :
Sample : 1605121-01AMS
Misc : MS
ALS Vial : 6 Sample Multiplier: 50

Quant Time: May 20 12:29:40 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

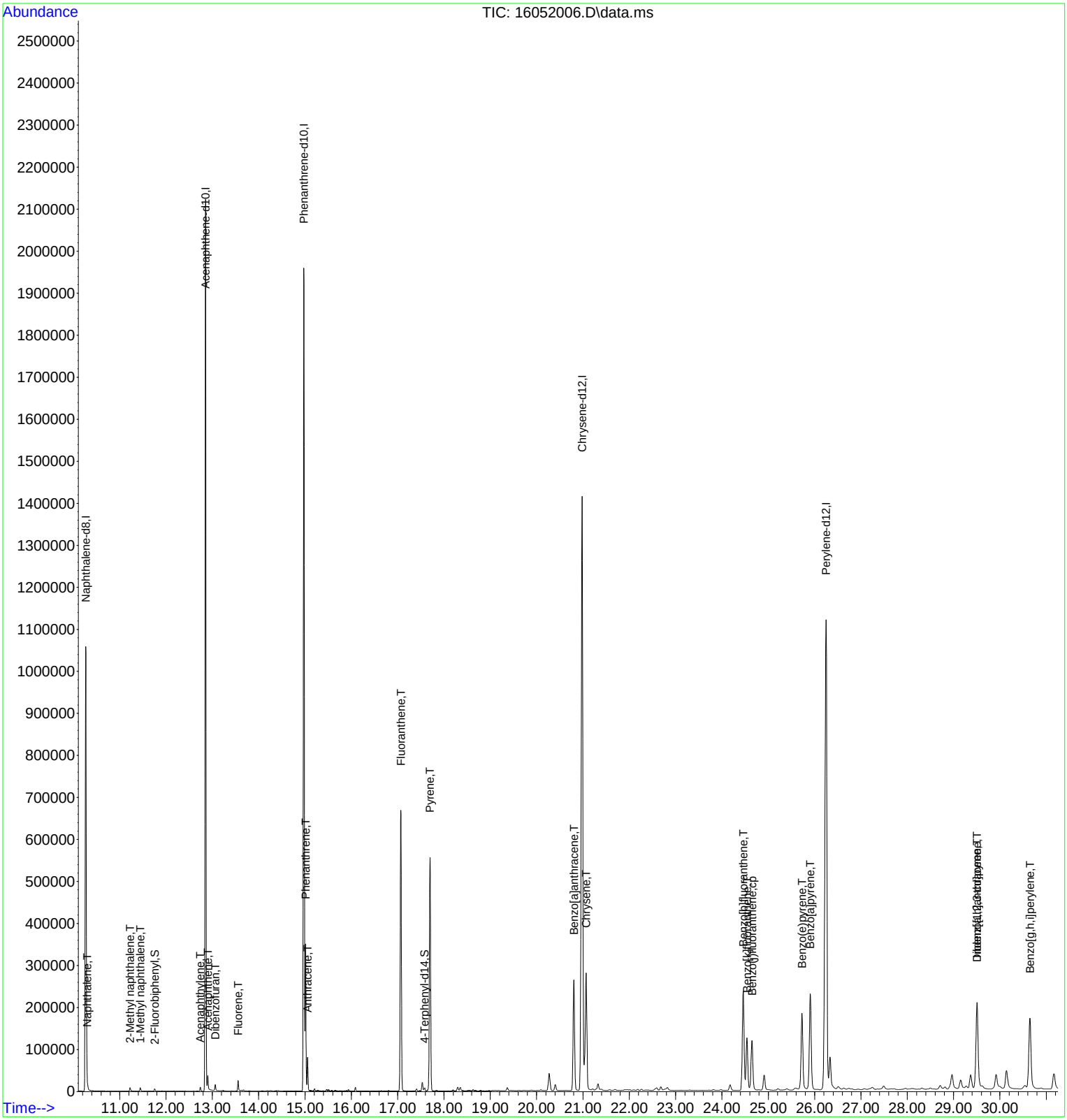
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.266	136	1558898	4000.00	ug/kg	96
6) Acenaphthene-d10	12.856	164	1276354	4000.00	ug/kg	102
11) Phenanthrene-d10	14.976	188	2382656	4000.00	ug/kg	81
16) Chrysene-d12	20.981	240	2369311	4000.00	ug/kg	87
20) Perylene-d12	26.247	264	2203212	4000.00	ug/kg	89
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	6180	17.81	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.45%#			
17) 4-Terphenyl-d14	17.584	244	8322	16.59	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.41%#			
Target Compounds						Qvalue
2) Naphthalene	10.303	128	11578	33.15	ug/kg	99
3) 2-Methyl naphthalene	11.225	142	6351	23.39	ug/kg	99
4) 1-Methyl naphthalene	11.447	142	5529	21.52	ug/kg	99
7) Acenaphthylene	12.738	152	9496	17.02	ug/kg	99
8) Acenaphthene	12.905	153	15006	42.63	ug/kg	98
9) Dibenzofuran	13.062	168	14796	27.59	ug/kg	92
10) Fluorene	13.553	166	13744	28.25	ug/kg	98
12) Phenanthrene	15.011	178	327537	499.60	ug/kg	98
13) Anthracene	15.056	178	76891	115.91	ug/kg	98
14) Fluoranthene	17.068	202	753875	1175.39	ug/kg	99
15) Pyrene	17.698	202	660666	1049.11	ug/kg	98
18) Benzo[a]anthracene	20.805	228	407771	671.47	ug/kg	99
19) Chrysene	21.069	228	467506	836.96	ug/kg	100
21) Benzo[b]fluoranthene	24.460	252	462281	797.62	ug/kg	100
22) Benzo[k]fluoranthene	24.541	252	215311	409.16	ug/kg	98
23) Benzo(j)fluoranthene	24.651	252	208620	410.65	ug/kg	89
24) Benzo(e)pyrene	25.727	252	342902	622.58	ug/kg	97
25) Benzo[a]pyrene	25.903	252	458431	850.16	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.507	276	356037	531.54	ug/kg	94
27) Dibenz[a,h]anthracene	29.492	278	85254	148.12	ug/kg	98
28) Benzo[g,h,i]perylene	30.650	276	361481	627.61	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052006.D
Acq On : 20 May 2016 11:42 am
Operator :
Sample : 1605121-01AMS
Misc : MS
ALS Vial : 6 Sample Multiplier: 50

Quant Time: May 20 12:29:40 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052007.D
Acq On : 20 May 2016 12:19 pm
Operator :
Sample : 1605121-01AMSD
Misc : MSD
ALS Vial : 7 Sample Multiplier: 50

Quant Time: May 20 13:07:13 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

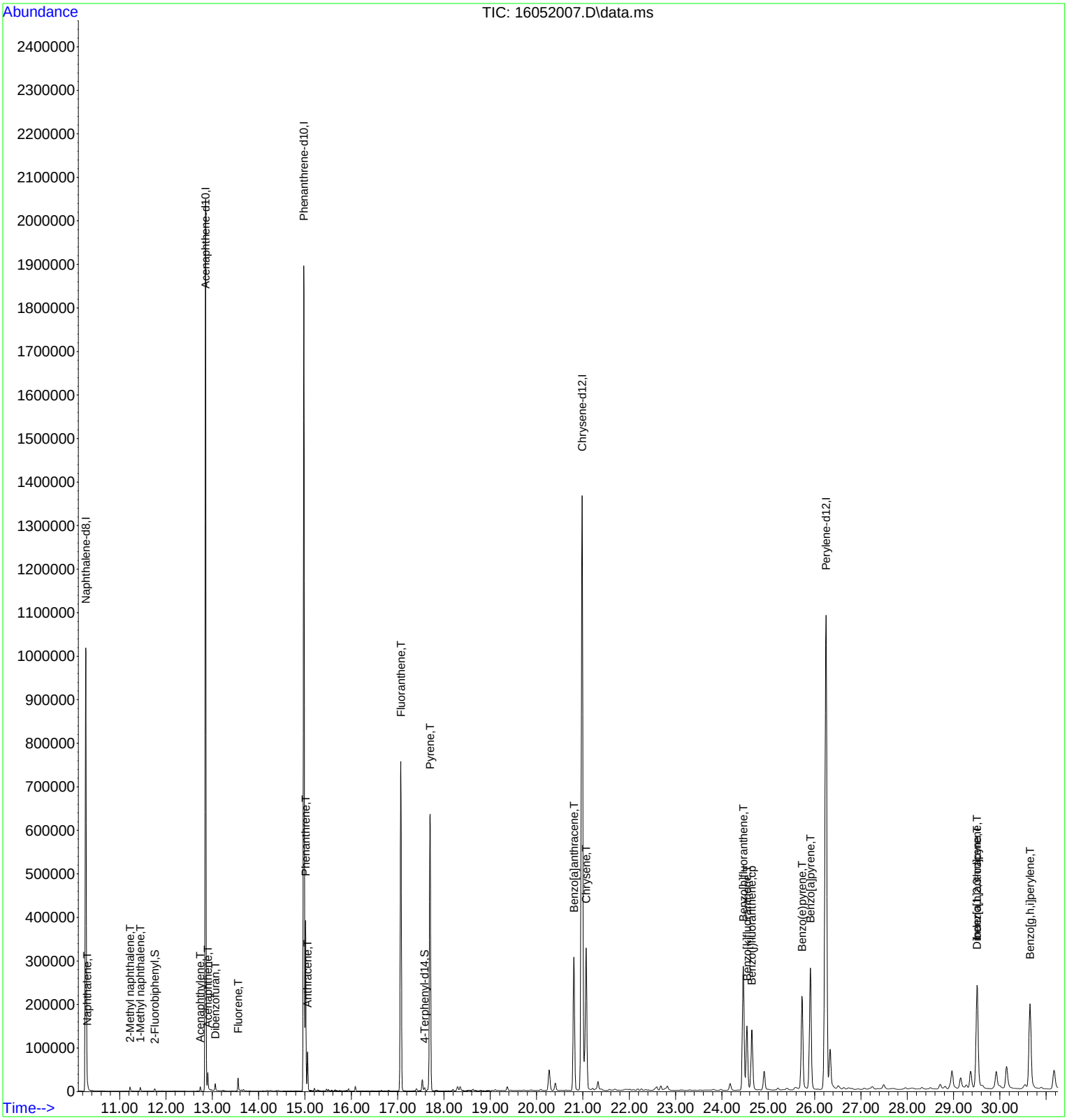
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1526101	4000.00	ug/kg	94
6) Acenaphthene-d10	12.856	164	1233530	4000.00	ug/kg	98
11) Phenanthrene-d10	14.976	188	2299411	4000.00	ug/kg	79
16) Chrysene-d12	20.981	240	2312245	4000.00	ug/kg	85
20) Perylene-d12	26.248	264	2191286	4000.00	ug/kg	88
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	6182	18.19	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.45%#			
17) 4-Terphenyl-d14	17.584	244	8177	16.71	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.42%#			
Target Compounds						Qvalue
2) Naphthalene	10.304	128	13632	39.87	ug/kg	100
3) 2-Methyl naphthalene	11.225	142	6742	25.37	ug/kg	99
4) 1-Methyl naphthalene	11.447	142	5832	23.19	ug/kg	99
7) Acenaphthylene	12.738	152	9470	17.56	ug/kg	99
8) Acenaphthene	12.905	153	17519	51.49	ug/kg	98
9) Dibenzofuran	13.062	168	16073	31.01	ug/kg	94
10) Fluorene	13.558	166	16017	34.06	ug/kg	100
12) Phenanthrene	15.012	178	365702	578.01	ug/kg	98
13) Anthracene	15.056	178	86139	134.55	ug/kg	98
14) Fluoranthene	17.068	202	850219	1381.80	ug/kg	100
15) Pyrene	17.701	202	750440	1240.65	ug/kg	98
18) Benzo[a]anthracene	20.806	228	476484	806.88	ug/kg	100
19) Chrysene	21.069	228	547004	1007.81	ug/kg	100
21) Benzo[b]fluoranthene	24.461	252	545577	949.52	ug/kg	100
22) Benzo[k]fluoranthene	24.541	252	253459	485.03	ug/kg	96
23) Benzo(j)fluoranthene	24.651	252	243339	482.85	ug/kg	89
24) Benzo(e)pyrene	25.728	252	402273	736.51	ug/kg	97
25) Benzo[a]pyrene	25.911	252	543493	1016.31	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.515	276	413098	621.68	ug/kg	91
27) Dibenz[a,h]anthracene	29.493	278	98730	173.30	ug/kg	98
28) Benzo[g,h,i]perylene	30.650	276	414627	725.64	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052007.D
Acq On : 20 May 2016 12:19 pm
Operator :
Sample : 1605121-01AMSD
Misc : MSD
ALS Vial : 7 Sample Multiplier: 50

Quant Time: May 20 13:07:13 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052018.D
Acq On : 20 May 2016 7:07 pm
Operator :
Sample : ICV2-160520
Misc : ICV
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 23 09:59:20 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

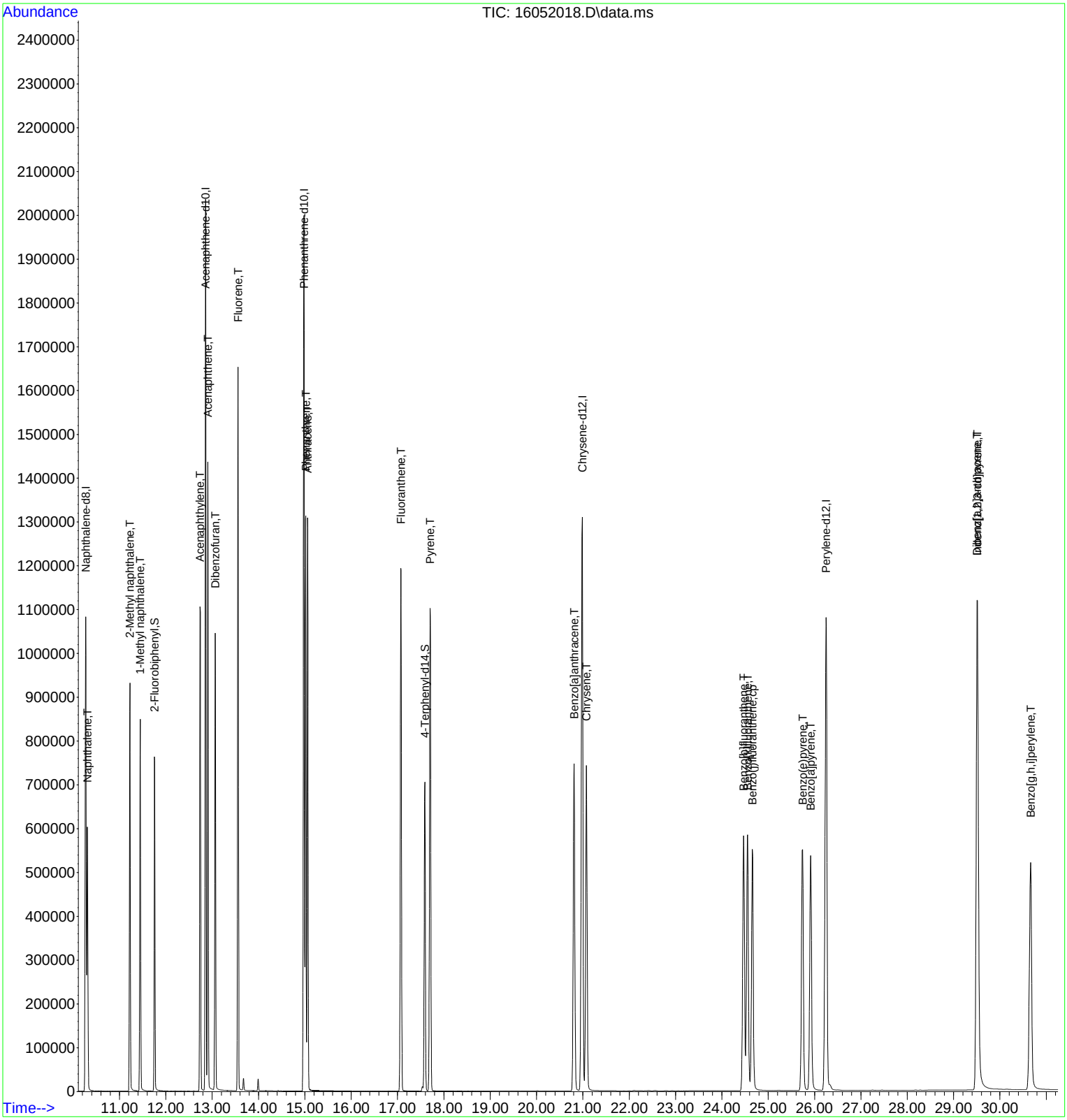
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1532151	4000.00	ug/kg	94
6) Acenaphthene-d10	12.857	164	1204470	4000.00	ug/kg	96
11) Phenanthrene-d10	14.979	188	2477706	4000.00	ug/kg	85
16) Chrysene-d12	20.988	240	2269640	4000.00	ug/kg	84
20) Perylene-d12	26.247	264	2105420	4000.00	ug/kg	85
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	688746	2018.98	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	50.47%		
17) 4-Terphenyl-d14	17.590	244	987579	2055.77	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	51.39%		
Target Compounds						Qvalue
2) Naphthalene	10.307	128	692924	2018.76	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	558282	2092.26	ug/kg	99
4) 1-Methyl naphthalene	11.446	142	511902	2027.34	ug/kg	100
7) Acenaphthylene	12.739	152	1073973	2039.92	ug/kg	100
8) Acenaphthene	12.906	153	671773	2022.13	ug/kg	98
9) Dibenzofuran	13.063	168	1000445	1976.89	ug/kg	89
10) Fluorene	13.559	166	890108	1938.47	ug/kg	100
12) Phenanthrene	15.017	178	1281253	1879.36	ug/kg	100
13) Anthracene	15.059	178	1273055	1845.43	ug/kg	100
14) Fluoranthene	17.071	202	1350402	2077.84	ug/kg	100
15) Pyrene	17.704	202	1324197	2072.72	ug/kg	99
18) Benzo[a]anthracene	20.812	228	1196044	2132.01	ug/kg	100
19) Chrysene	21.076	228	1105063	2130.33	ug/kg	100
21) Benzo[b]fluoranthene	24.467	252	1156713	2146.25	ug/kg	99
22) Benzo[k]fluoranthene	24.555	252	1038548	2124.80	ug/kg	100
23) Benzo(j)fluoranthene	24.658	252	982696	2107.83	ug/kg	100
24) Benzo(e)pyrene	25.742	252	1079577	2121.89	ug/kg	100
25) Benzo[a]pyrene	25.918	252	1065084	2109.47	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.522	276	1319070	2137.44	ug/kg	99
27) Dibenz[a,h]anthracene	29.507	278	1101978	2149.60	ug/kg	100
28) Benzo[g,h,i]perylene	30.664	276	1125638	2112.44	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052018.D
Acq On : 20 May 2016 7:07 pm
Operator :
Sample : ICV2-160520
Misc : ICV
ALS Vial : 18 Sample Multiplier: 1

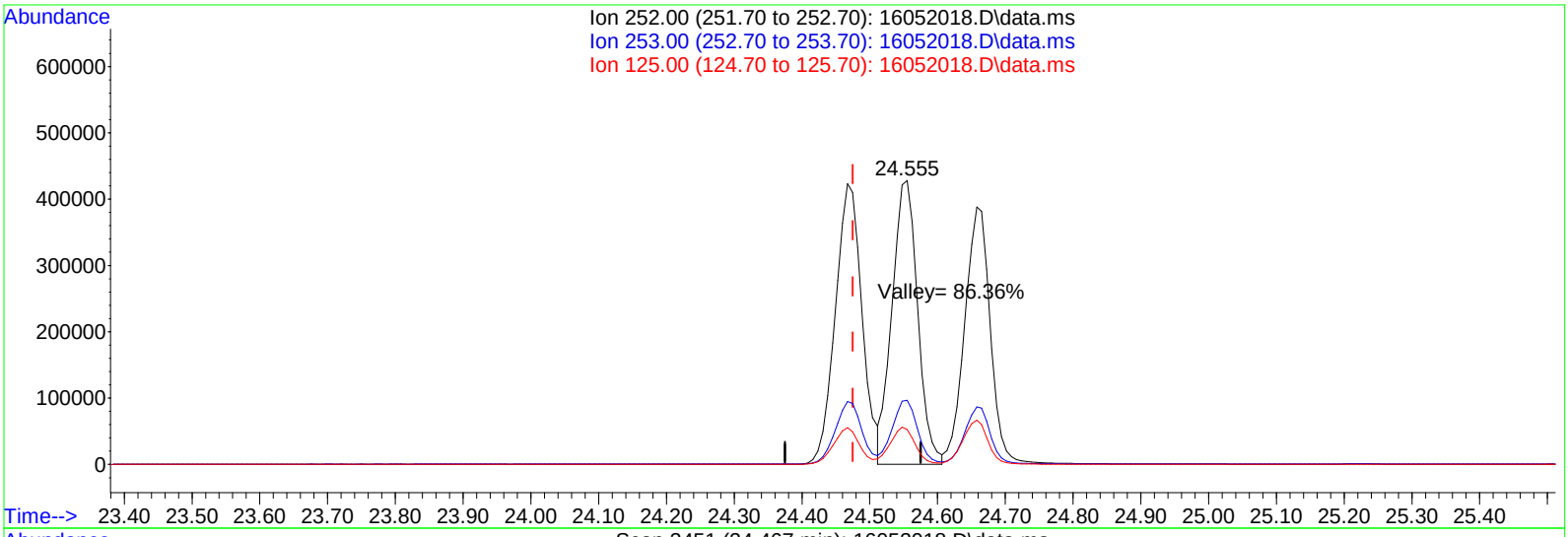
Quant Time: May 23 09:59:20 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

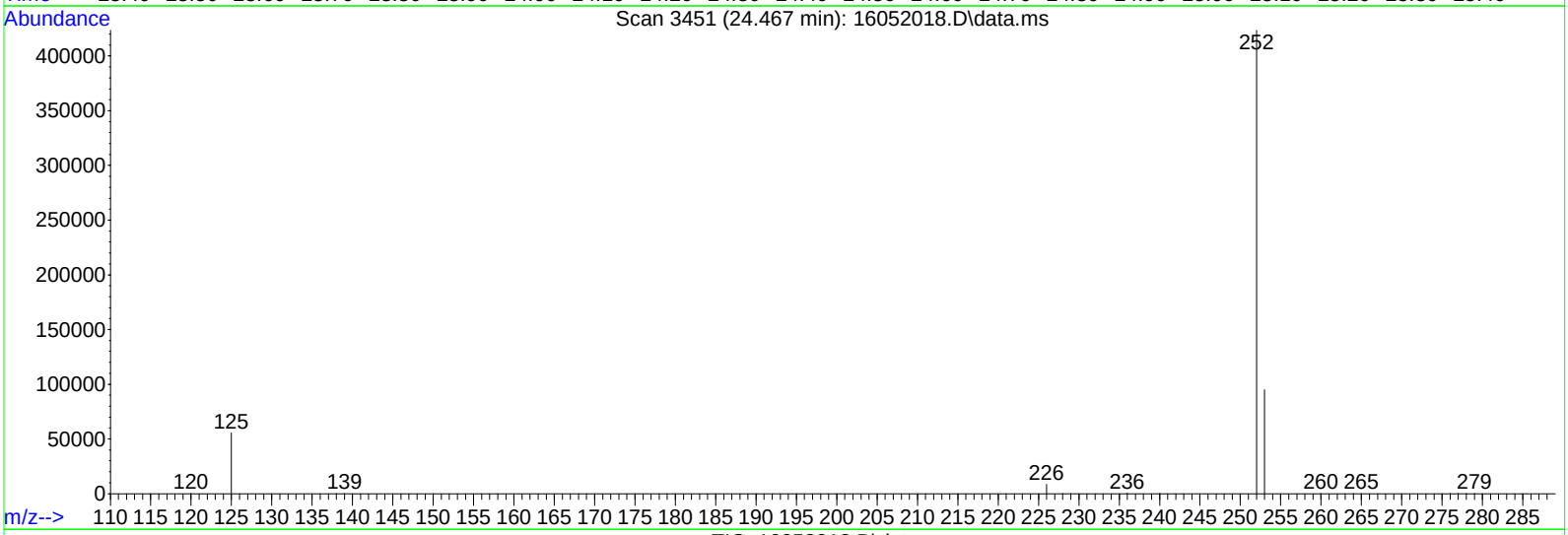


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052018.D
Acq On : 20 May 2016 7:07 pm
Operator :
Sample : ICV2-160520
Misc : ICV
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 20 19:38:35 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052018.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.467min (-0.008) 2146.25ug/kg

response 1156713

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.30
125.00	12.20	13.05
0.00	0.00	0.00

GCMS8_160520A
For

DHL Work Order
1605098

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Project Number(s): SEE RUN LOG.	**Run ID: GCMS8_160520A**
Batch Number(s): SEE RUN LOG.	**SOP:** ORGANICS-PAH-01
Matrix: SEE RUN LOG.	

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			X
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		X
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			X
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS		X		
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS		X		
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)		X		

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis 1. Are all sample hold times met?	7 days (Aq) - extraction			X	X
	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			X
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE 1. Are all non-conformances included and noted?	All deviations from the method and SOP that affect data quality	X			X
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___ LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
x MS x MSD out of control (See LIMS)	x High Levels of target analytes	___ Verify H2O/reagents are clean
x RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	x Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	x Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)		
		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: See run log.

All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605098-17AMS: 7 analytes low
1605098-17AMSD: 11 analytes high. 14 analytes fail RPD. Parent sample has high concentration of target hydrocarbons - matrix interference.

Analyst: Karyn Lane Date: ***REVIEWED/APPROVED*** 5/23/2016 12:11

Second-Level Review: Sherri Herschmann Date: *By Sherri Herschmann at 9:12:32 AM, 5/24/2016* **05/24/2016**

DHL Analytical, Inc.

Run ID: GCMS8_160520A **Run No.:** 85908

Analytical Run Date: 5/20/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 660 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160517.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160520	1	PAH_LL_SDOD1	TUNE	R85908	5/20/2016 8:37:00 AM		
ICV-160520	1	PAH_LL_SDOD1	ICV	R85908	5/20/2016 9:14:00 AM		
LCS-75192	1	PAH_LL_SDOD1	LCS	75192	5/20/2016 9:50:00 AM		
MB-75192	1	PAH_LL_SDOD1	MBLK	75192	5/20/2016 10:28:00 AM		
1605097-16A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 12:57:00 PM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605097-17A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 1:34:00 PM		
1605097-18A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 2:11:00 PM		
1605097-19A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 2:48:00 PM		
1605097-20A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 3:24:00 PM		
1605097-26A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 4:02:00 PM		
1605097-44A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 4:38:00 PM		
1605097-45A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 5:16:00 PM		
1605098-01A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 5:53:00 PM		
DFTPP2-160520	1	PAH_LL_SDOD1	TUNE	R85908	5/20/2016 6:30:00 PM		
ICV2-160520	1	PAH_LL_SDOD1	ICV	R85908	5/20/2016 7:07:00 PM		
SBLK2-160520	1	PAH_LL_SDOD1	SBLK	75192	5/20/2016 8:22:00 PM		
1605098-02A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 9:00:00 PM		
1605098-03A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 9:37:00 PM		
1605098-04A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 10:14:00 PM		
1605098-05A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 10:52:00 PM		
1605098-06A	10	PAH_LL_SDOD1	SAMP	75192	5/20/2016 11:29:00 PM		
1605098-07A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 12:07:00 AM		
1605098-08A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 12:44:00 AM		
1605098-09A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 1:21:00 AM		
1605098-10A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 1:58:00 AM		
1605098-11A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 2:36:00 AM		
1605098-17A	10	PAH_LL_SDOD1	SAMP	75192	5/21/2016 3:13:00 AM		
1605098-17AMS	10	PAH_LL_SDOD1	MS	75192	5/21/2016 3:50:00 AM		7 analytes low.

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

DHL Analytical, Inc.

Run ID: GCMS8_160520A **Run No.:** 85908

1605098-17AMSD	10	PAH_LL_SDOD1	MSD	75192	5/21/2016 4:27:00 AM		11 analytes high. 14 analytes fail RPD. Parent sample has high concentration of target hydrocarbons - matrix interference.
CCV-160520	1	PAH_LL_SDOD1	CCV	R85908	5/21/2016 5:05:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-08	4000 PPM INTERNAL STANDAR	ALL	07/21/2016

REVIEWED/APPROVED

By Sherri Herschmann at 9:12:35 AM, 5/24/2016

Sequence Name: C:\msdchem\1\sequence\160520.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160520\
Instrument Name: GCMS #8
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

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

Line		Sample Name/Misc Info		
1)	Sample	1	16052001 DFTPPPAH	DFTPP-160520
2)	Sample	2	16052002 PAH160517	ICV-160520
3)	Sample	3	16052003 PAH160517	LCS-75192
4)	Sample	4	16052004 PAH160517	MB-75192
5)	Sample	5	16052005 PAH160517	1605121-01A
6)	Sample	6	16052006 PAH160517	1605121-01AMS
7)	Sample	7	16052007 PAH160517	1605121-01AMSD

Sequence Name: C:\msdchem\1\sequence\160520.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160520\
Instrument Name: GCMS #8
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

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

Line		Sample Name/Misc Info		
1)	Sample	1	16052001 DFTPPPAH	DFTPP-160520
2)	Sample	2	16052002 PAH160517	ICV-160520
3)	Sample	3	16052003 PAH160517	LCS-75192
4)	Sample	4	16052004 PAH160517	MB-75192
5)	Sample	5	16052005 PAH160517	1605121-01A
6)	Sample	6	16052006 PAH160517	1605121-01AMS
7)	Sample	7	16052007 PAH160517	1605121-01AMSD
8)	Sample	8	16052008 PAH160517	1605097-16A
9)	Sample	9	16052009 PAH160517	1605097-17A
10)	Sample	10	16052010 PAH160517	1605097-18A
11)	Sample	11	16052011 PAH160517	1605097-19A
12)	Sample	12	16052012 PAH160517	1605097-20A
13)	Sample	13	16052013 PAH160517	1605097-26A
14)	Sample	14	16052014 PAH160517	1605097-44A
15)	Sample	15	16052015 PAH160517	1605097-45A
16)	Sample	16	16052016 PAH160517	1605098-01A
17)	Sample	17	16052017 DFTPPPAH	DFTPP2-160520
18)	Sample	18	16052018 PAH160517	ICV2-160520
19)	Sample	19	16052019 PAH160517	SBLK
20)	Sample	20	16052020 PAH160517	SBLK2-160520
21)	Sample	21	16052021 PAH160517	1605098-02A
22)	Sample	22	16052022 PAH160517	1605098-03A
23)	Sample	23	16052023 PAH160517	1605098-04A
24)	Sample	24	16052024 PAH160517	1605098-05A
25)	Sample	25	16052025 PAH160517	1605098-06A
26)	Sample	26	16052026 PAH160517	1605098-07A
27)	Sample	27	16052027 PAH160517	1605098-08A
28)	Sample	28	16052028 PAH160517	1605098-09A
29)	Sample	29	16052029 PAH160517	1605098-10A
30)	Sample	30	16052030 PAH160517	1605098-11A
31)	Sample	31	16052031 PAH160517	1605098-17A
32)	Sample	32	16052032 PAH160517	1605098-17AMS
33)	Sample	33	16052033 PAH160517	1605098-17AMSD
34)	Sample	34	16052034 PAH160517	CCV-160520

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 8:34:31 AM**
Digestion:
Prep End Date: **5/17/2016 1:23:00 PM**

Prep Batch **75192** Prep Code: **3550_PAHDOD** Technician: **Lauren Garcia**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-16A	Soil		10.53	10	0.950	1 of 1	
1605097-17A	Soil		10.84	10	0.923	1 of 1	
1605097-18A	Soil		10.54	10	0.949	1 of 1	
1605097-19A	Soil		10.01	10	0.999	1 of 1	
1605097-20A	Soil		10.23	10	0.978	1 of 1	
1605097-26A	Soil		10.49	10	0.953	1 of 1	
1605097-44A	Soil		10.03	10	0.997	1 of 1	
1605097-45A	Soil		10.26	10	0.975	1 of 1	
1605098-01A	Soil		10.19	10	0.981	1 of 1	
1605098-02A	Soil		10.43	10	0.959	1 of 1	
1605098-03A	Soil		10.35	10	0.966	1 of 1	
1605098-04A	Soil		10.12	10	0.988	1 of 1	
1605098-05A	Soil		10.45	10	0.957	1 of 1	
1605098-06A	Soil		10.01	10	0.999	1 of 1	
1605098-07A	Soil		10.74	10	0.931	1 of 1	
1605098-08A	Soil		10.54	10	0.949	1 of 1	
1605098-09A	Soil		10.04	10	0.996	1 of 1	
1605098-10A	Soil		10.45	10	0.957	1 of 1	
1605098-11A	Soil		10.03	10	0.997	1 of 1	
1605098-17A	Soil		10.2	10	0.980	1 of 1	
1605098-17AMS	Soil		10.51	10	0.951	of	
1605098-17AMSD	Soil		10.48	10	0.954	of	
LCS-75192	Soil		10	10	1.000	of	
MB-75192	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10169	Methylene Chloride	8	ml	03/15/2026
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED/APPROVED

By Sherri Herschmann at 9:15:47 AM, 5/24/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/17/2016 8:34:31 AM**
Digestion:
Prep End Date: 5/17/2016 1:23 PM

Prep Batch **75192** Prep Code: **3550_PAHDOD** Technician: **Lauren Garcia**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-16A	Soil		10.53	10	1.000	1 of 1	
1605097-17A	Soil		10.84	10	1.000	1 of 1	
1605097-18A	Soil		10.54	10	1.000	1 of 1	
1605097-19A	Soil		10.01	10	1.000	1 of 1	
1605097-20A	Soil		10.23	10	1.000	1 of 1	
1605097-26A	Soil		10.49	10	1.000	1 of 1	
1605097-44A	Soil		10.03	10	1.000	1 of 1	
1605097-45A	Soil		10.26	10	1.000	1 of 1	
1605098-01A	Soil		10.19	10	1.000	1 of 1	
1605098-02A	Soil		10.43	10	1.000	1 of 1	
1605098-03A	Soil		10.35	10	1.000	1 of 1	
1605098-04A	Soil		10.12	10	1.000	1 of 1	
1605098-05A	Soil		10.45	10	1.000	1 of 1	
1605098-06A	Soil		10.01	10	1.000	1 of 1	
1605098-07A	Soil		10.74	10	1.000	1 of 1	
1605098-08A	Soil		10.54	10	1.000	1 of 1	
1605098-09A	Soil		10.04	10	1.000	1 of 1	
1605098-10A	Soil		10.45	10	1.000	1 of 1	
1605098-11A	Soil		10.03	10	1.000	1 of 1	
1605098-17A	Soil		10.20	10	1.000	1 of 1	
1605098-17AMS	Soil		10.51	10	1.000	of	
1605098-17AMSD	Soil		10.48	10	1.000	of	
LCS-75192	Soil		10	10	1.000	of	
MB-75192	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10169	Methylene Chloride	8	ml	03/15/2026
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED/APPROVED
By Sherri Herschmann at 9:15:42 AM, 5/24/2016

5/17/16

5/17/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 2:10:55 PM**
Digestion: **Start: 5/12/2016 3:00:00 PM / Stop: 5/16/2016 8:30:00 AM**
Prep End Date:

Prep Batch **75141** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605097-36A	Soil		0	0	#Num!	1 of 1	
1605097-37A	Soil		0	0	#Num!	1 of 1	
1605097-38A	Soil		0	0	#Num!	1 of 1	
1605097-39A	Soil		0	0	#Num!	of 3	
1605097-40A	Soil		0	0	#Num!	1 of 1	
1605097-41A	Soil		0	0	#Num!	1 of 1	
1605097-42A	Soil		0	0	#Num!	1 of 1	
1605097-43A	Soil		0	0	#Num!	1 of 1	
1605097-44A	Soil		0	0	#Num!	1 of 1	
1605097-45A	Soil		0	0	#Num!	1 of 1	
1605098-01A	Soil		0	0	#Num!	1 of 1	
1605098-02A	Soil		0	0	#Num!	1 of 1	
1605098-03A	Soil		0	0	#Num!	1 of 1	
1605098-04A	Soil		0	0	#Num!	1 of 1	
1605098-05A	Soil		0	0	#Num!	1 of 1	
1605098-06A	Soil		0	0	#Num!	1 of 1	
1605098-07A	Soil		0	0	#Num!	1 of 1	
1605098-08A	Soil		0	0	#Num!	1 of 1	
1605098-09A	Soil		0	0	#Num!	1 of 1	
1605098-10A	Soil		0	0	#Num!	1 of 1	

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 5:00:00 PM**
Digestion: **Start: 5/12/2015 5:15:00 PM / Stop: 5/16/2016 8:30:00 AM**
Prep End Date:

Prep Batch **75144** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

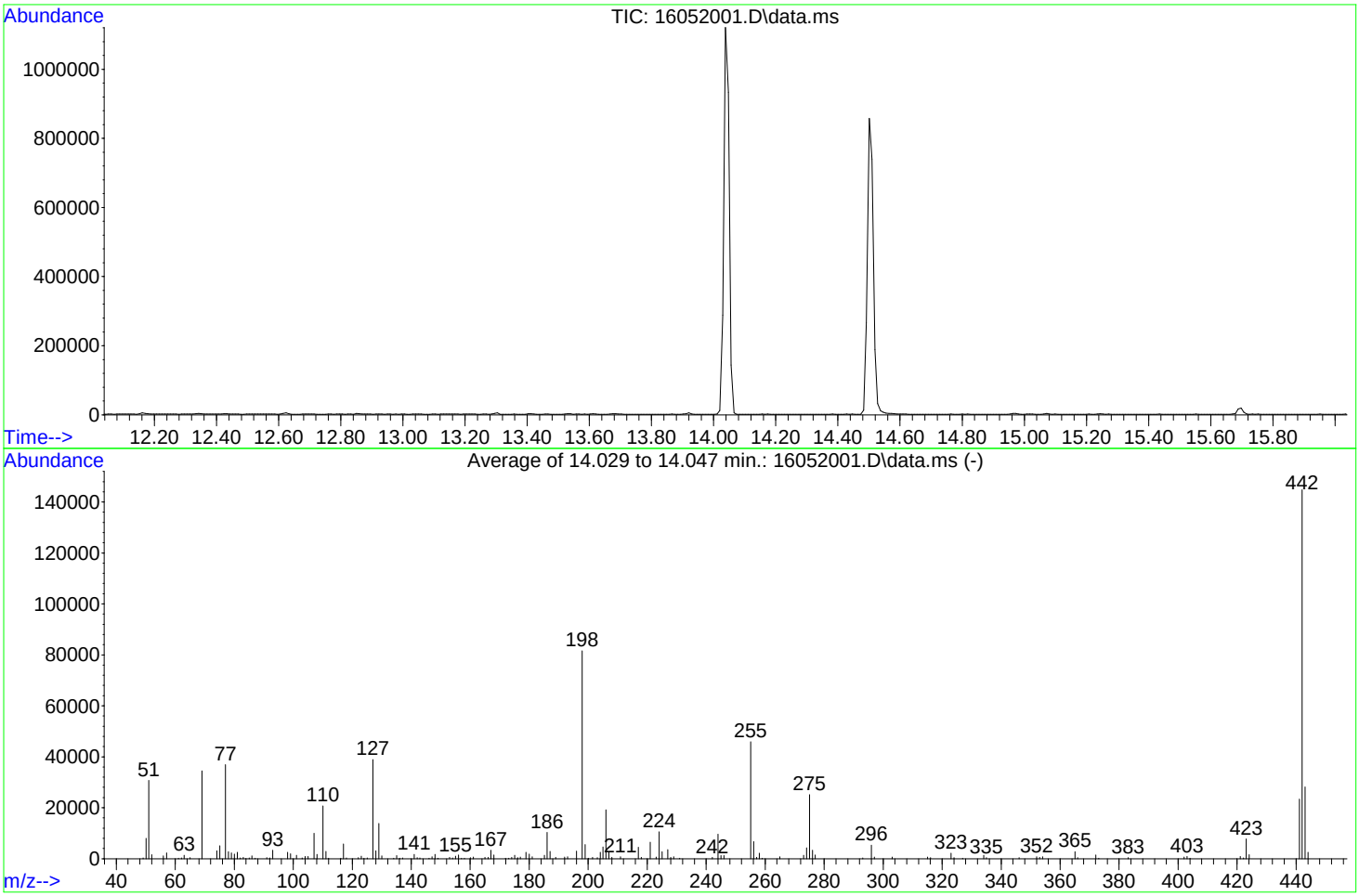
Prep Factor Units: mL/

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-11A	Soil		0	0	#Num!	1 of 1	
1605098-12A	Soil		0	0	#Num!	1 of 1	
1605098-13A	Soil		0	0	#Num!	1 of 1	
1605098-14A	Soil		0	0	#Num!	1 of 1	
1605098-15A	Soil		0	0	#Num!	1 of 1	
1605098-16A	Soil		0	0	#Num!	1 of 1	
1605098-17A	Soil		0	0	#Num!	1 of 1	
1605098-18A	Soil		0	0	#Num!	1 of 1	
1605098-19A	Soil		0	0	#Num!	1 of 1	
1605098-20A	Soil		0	0	#Num!	1 of 1	
1605098-21A	Soil		0	0	#Num!	1 of 1	
1605098-22A	Soil		0	0	#Num!	1 of 1	
1605098-23A	Soil		0	0	#Num!	1 of 1	
1605098-24A	Soil		0	0	#Num!	1 of 1	
1605098-25A	Soil		0	0	#Num!	1 of 1	
1605098-26A	Soil		0	0	#Num!	1 of 1	
1605098-27A	Soil		0	0	#Num!	1 of 1	
1605098-28A	Soil		0	0	#Num!	1 of 1	
1605098-29A	Soil		0	0	#Num!	1 of 1	
1605098-30A	Soil		0	0	#Num!	1 of 1	

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052001.D
Acq On : 20 May 2016 8:37 am
Operator :
Sample : DFTPP-160520
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

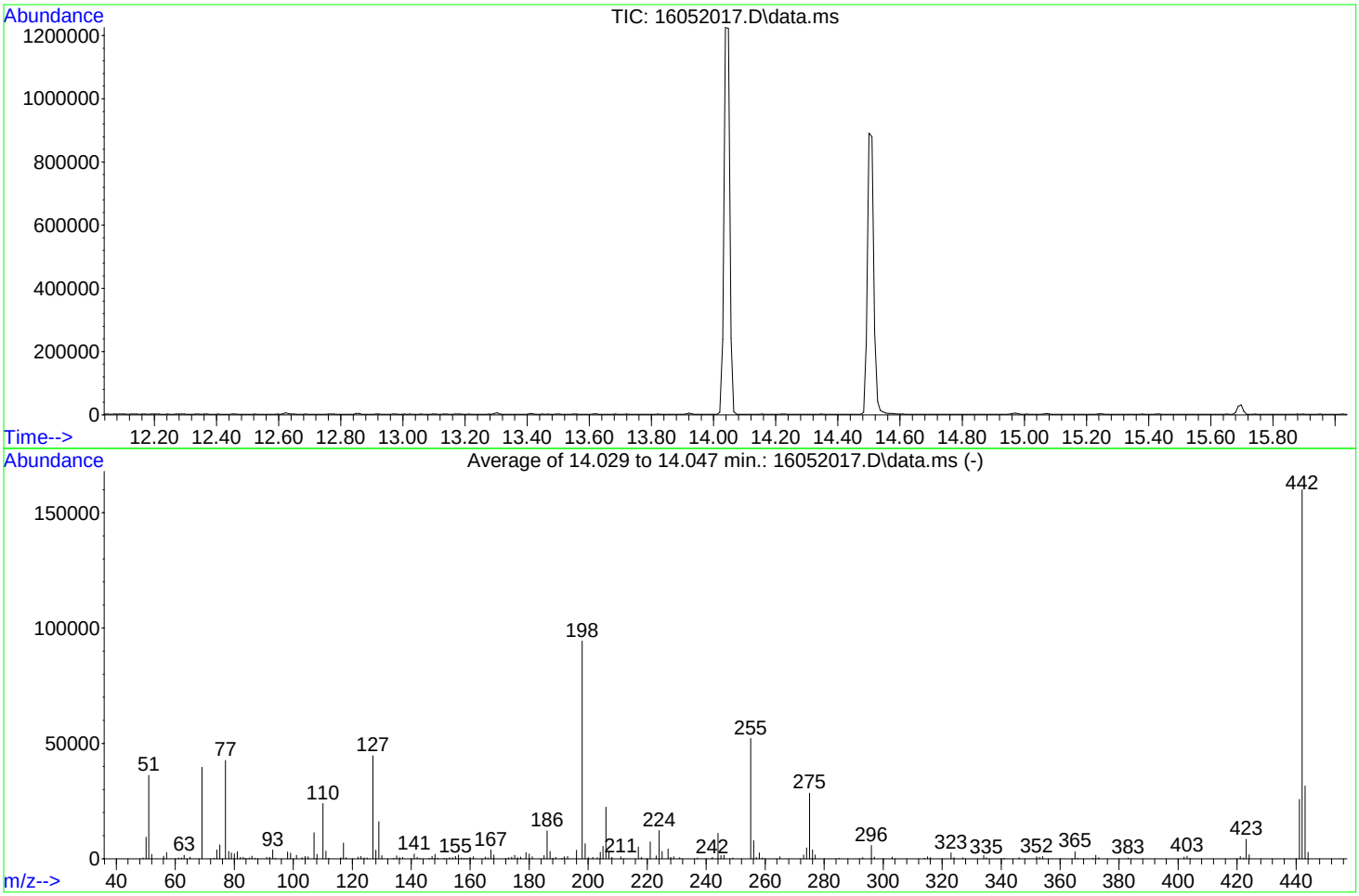
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	37.6	30736	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	42.2	34482	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	47.6	38869	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	81637	PASS
199	198	5	9	6.8	5532	PASS
275	198	10	60	30.7	25087	PASS
365	198	1	200	3.3	2702	PASS
441	442	0.01	24	16.1	23363	PASS
442	198	50	400	177.4	144840	PASS
443	442	15	24	19.4	28121	PASS

REVIEWED BY
By Janice Whitt at 1:25:25 PM, 5/23/2016

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052017.D
Acq On : 20 May 2016 6:30 pm
Operator :
Sample : DFTPP2-160520
Misc : TUNE
ALS Vial : 17 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	38.3	36152	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	41.9	39578	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	47.4	44704	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	94354	PASS
199	198	5	9	6.9	6518	PASS
275	198	10	60	30.2	28450	PASS
365	198	1	200	3.2	2989	PASS
441	442	0.01	24	16.1	25756	PASS
442	198	50	400	169.6	160034	PASS
443	442	15	24	19.7	31508	PASS

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052002.D
Acq On : 20 May 2016 9:14 am
Operator :
Sample : ICV-160520
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 20 13:07:10 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

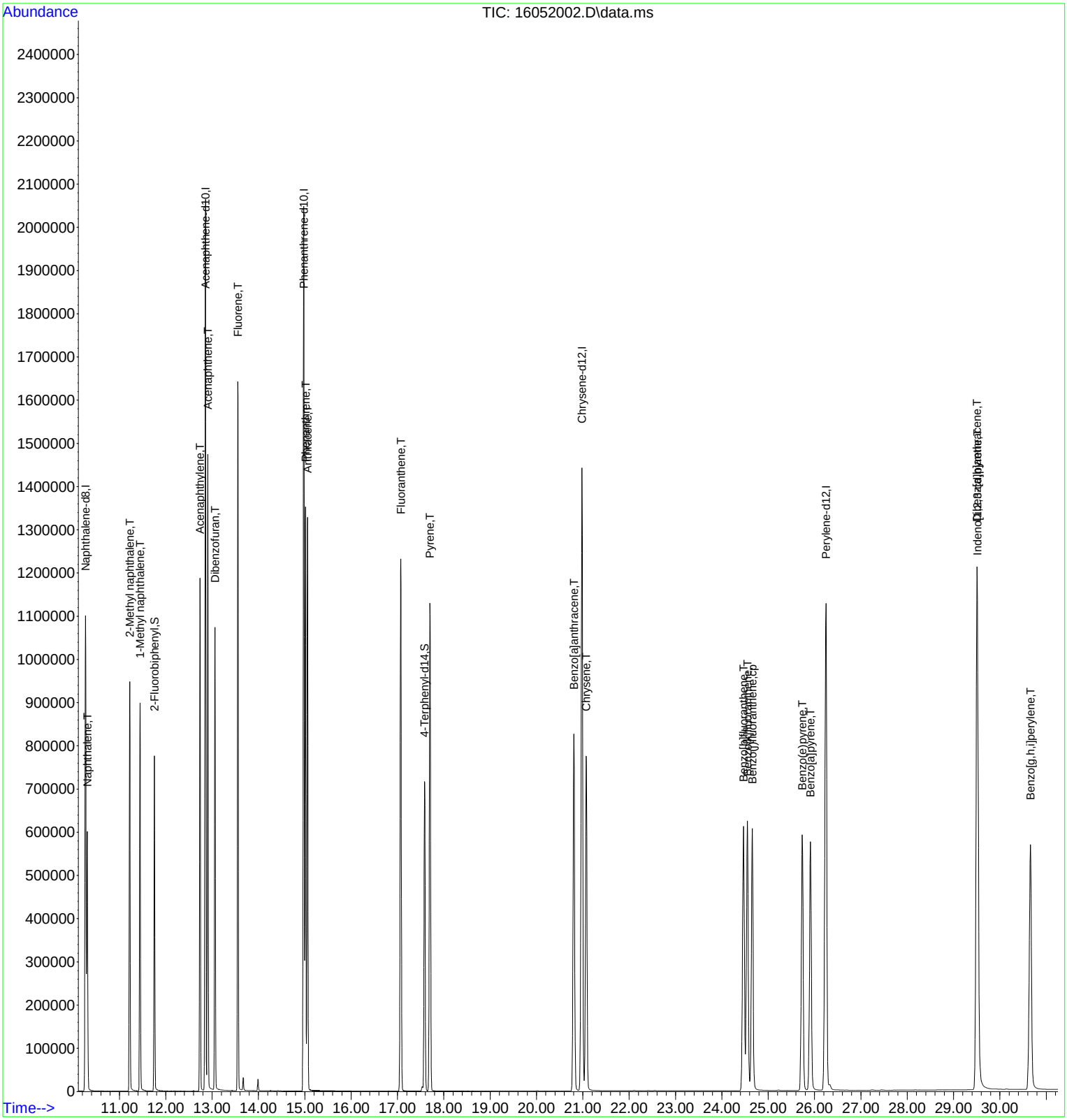
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.266	136	1547153	4000.00	ug/kg	95
6) Acenaphthene-d10	12.856	164	1247032	4000.00	ug/kg	99
11) Phenanthrene-d10	14.976	188	2509434	4000.00	ug/kg	86
16) Chrysene-d12	20.981	240	2390872	4000.00	ug/kg	88
20) Perylene-d12	26.248	264	2231698	4000.00	ug/kg	90
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	709214	2058.82	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 51.47%			
17) 4-Terphenyl-d14	17.587	244	1015188	2006.09	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 50.15%#			
Target Compounds						Qvalue
2) Naphthalene	10.303	128	698696	2015.83	ug/kg	100
3) 2-Methyl naphthalene	11.221	142	572699	2125.48	ug/kg	99
4) 1-Methyl naphthalene	11.443	142	529187	2075.48	ug/kg	99
7) Acenaphthylene	12.738	152	1111364	2038.89	ug/kg	100
8) Acenaphthene	12.905	153	693530	2016.37	ug/kg	99
9) Dibenzofuran	13.062	168	1026850	1959.81	ug/kg	95
10) Fluorene	13.558	166	903846	1901.21	ug/kg	99
12) Phenanthrene	15.014	178	1287796	1865.07	ug/kg	100
13) Anthracene	15.058	178	1302404	1864.10	ug/kg	100
14) Fluoranthene	17.071	202	1369440	2080.66	ug/kg	100
15) Pyrene	17.700	202	1356149	2097.12	ug/kg	99
18) Benzo[a]anthracene	20.806	228	1269123	2148.43	ug/kg	100
19) Chrysene	21.069	228	1164874	2131.85	ug/kg	100
21) Benzo[b]fluoranthene	24.468	252	1227085	2148.07	ug/kg	100
22) Benzo[k]fluoranthene	24.549	252	1117252	2157.59	ug/kg	99
23) Benzo(j)fluoranthene	24.659	252	1061744	2150.47	ug/kg	100
24) Benzo(e)pyrene	25.735	252	1146281	2125.69	ug/kg	100
25) Benzo[a]pyrene	25.911	252	1132855	2116.99	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.523	276	1395443	2133.05	ug/kg	98
27) Dibenz[a,h]anthracene	29.508	278	1170086	2153.50	ug/kg	99
28) Benzo[g,h,i]perylene	30.658	276	1203641	2131.86	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052002.D
Acq On : 20 May 2016 9:14 am
Operator :
Sample : ICV-160520
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

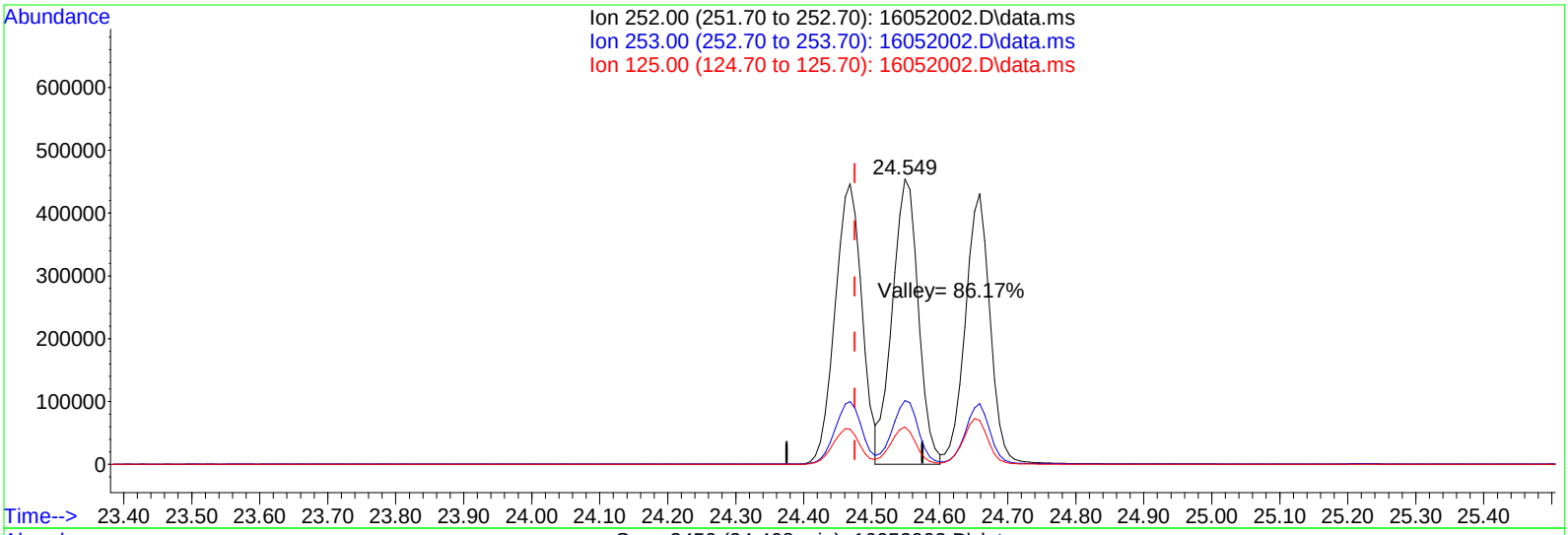
Quant Time: May 20 13:07:10 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

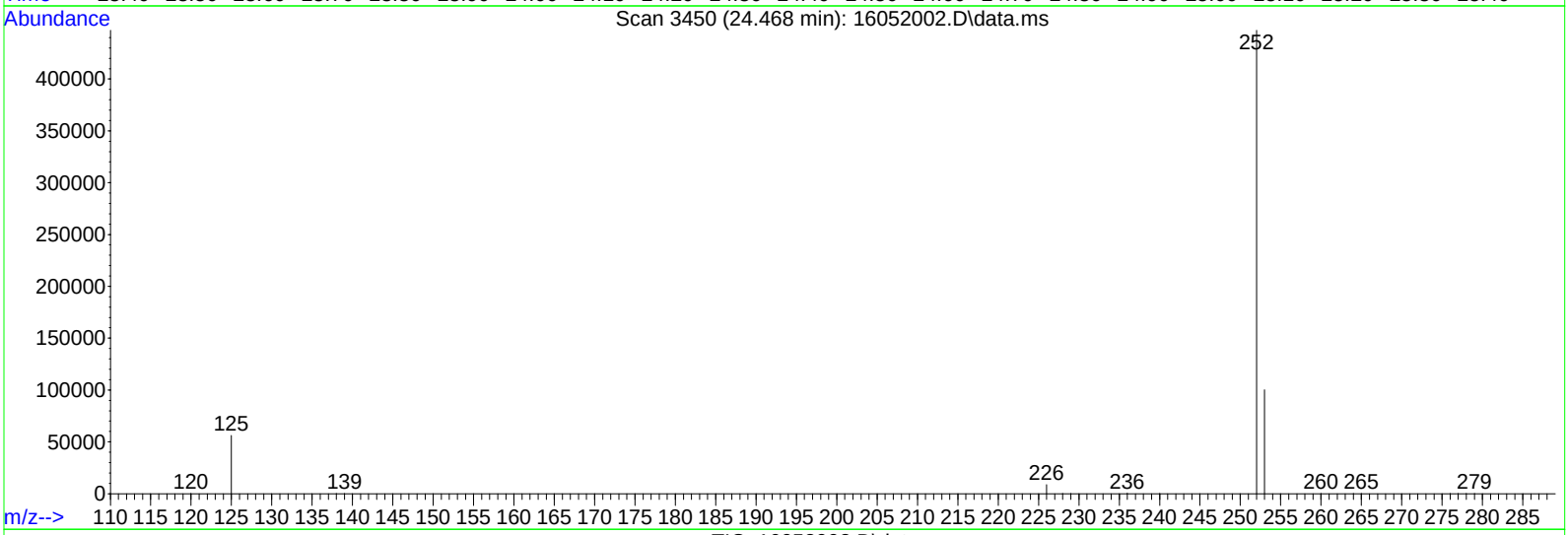


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052002.D
Acq On : 20 May 2016 9:14 am
Operator :
Sample : ICV-160520
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 20 12:29:31 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052002.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.468min (-0.007) 2148.07ug/kg

response 1227085

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.27
125.00	12.20	12.52
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052003.D
Acq On : 20 May 2016 9:50 am
Operator :
Sample : LCS-75192
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 20 12:29:34 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

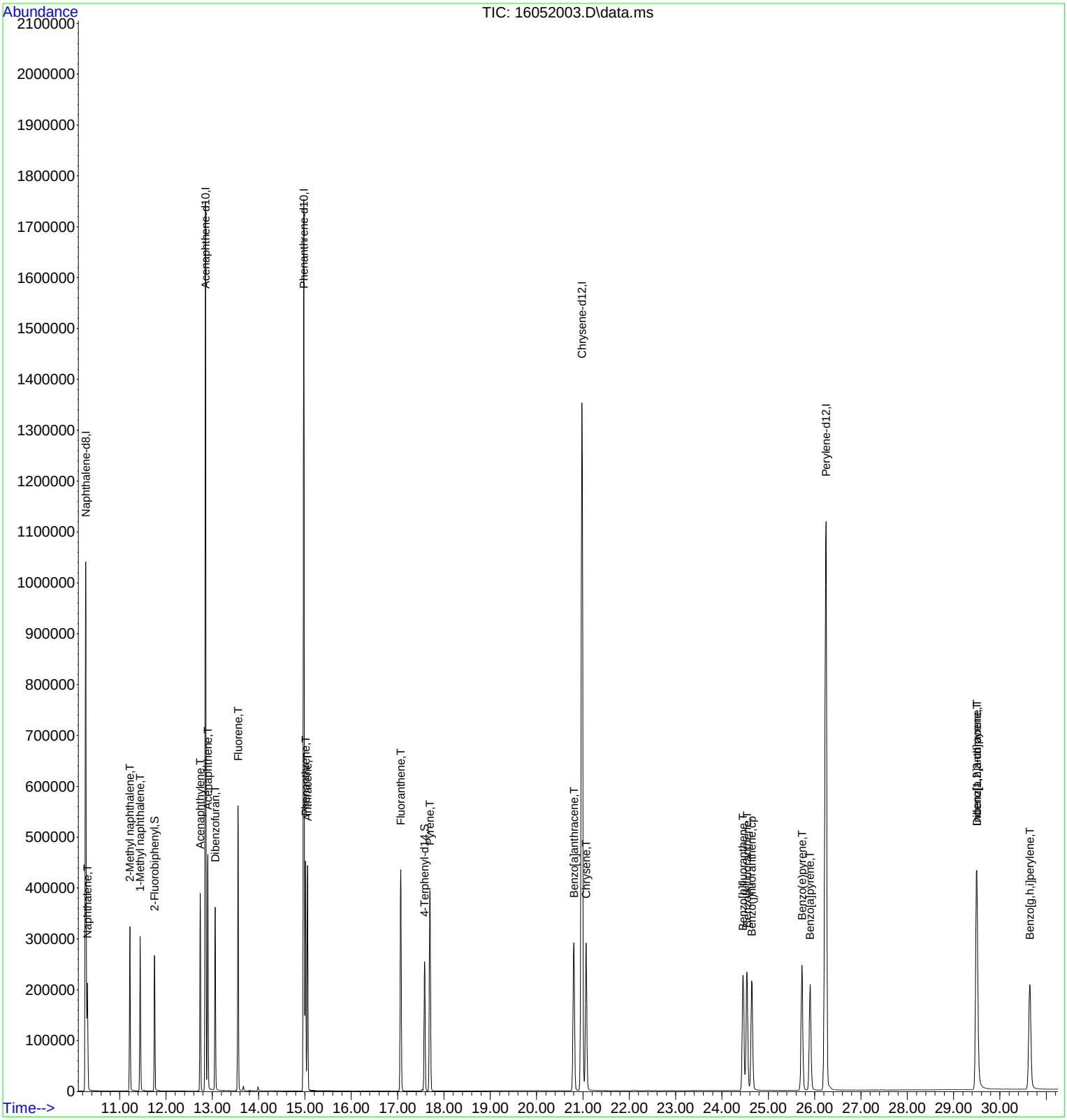
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1456833	4000.00	ug/kg	89
6) Acenaphthene-d10	12.856	164	1082331	4000.00	ug/kg	86
11) Phenanthrene-d10	14.974	188	2157034	4000.00	ug/kg	74
16) Chrysene-d12	20.980	240	2313733	4000.00	ug/kg	85
20) Perylene-d12	26.247	264	2219862	4000.00	ug/kg	89
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	242326	747.07	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.68%#			
17) 4-Terphenyl-d14	17.582	244	347948	710.49	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 17.76%#			
Target Compounds						Qvalue
2) Naphthalene	10.304	128	238989	732.26	ug/kg	100
3) 2-Methyl naphthalene	11.222	142	193674	763.35	ug/kg	99
4) 1-Methyl naphthalene	11.444	142	178170	742.11	ug/kg	100
7) Acenaphthylene	12.739	152	361127	763.33	ug/kg	99
8) Acenaphthene	12.905	153	224499	752.03	ug/kg	99
9) Dibenzofuran	13.063	168	339139	745.77	ug/kg	100
10) Fluorene	13.554	166	295103	715.20	ug/kg	99
12) Phenanthrene	15.012	178	428789	722.46	ug/kg	98
13) Anthracene	15.055	178	431671	718.78	ug/kg	98
14) Fluoranthene	17.067	202	475943	810.90	ug/kg	99
15) Pyrene	17.696	202	468157	816.33	ug/kg	98
18) Benzo[a]anthracene	20.804	228	446866	755.21	ug/kg	99
19) Chrysene	21.068	228	413535	756.51	ug/kg	99
21) Benzo[b]fluoranthene	24.452	252	442861	757.72	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	404292	767.64	ug/kg	99
23) Benzo(j)fluoranthene	24.642	252	392018	774.23	ug/kg	99
24) Benzo(e)pyrene	25.727	252	457025	827.84	ug/kg	99
25) Benzo[a]pyrene	25.902	252	402355	739.07	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.506	276	517001	771.01	ug/kg	100
27) Dibenz[a,h]anthracene	29.492	278	430909	771.19	ug/kg	99
28) Benzo[g,h,i]perylene	30.649	276	440888	762.35	ug/kg	98

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052003.D
Acq On : 20 May 2016 9:50 am
Operator :
Sample : LCS-75192
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 20 12:29:34 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052004.D
Acq On : 20 May 2016 10:28 am
Operator :
Sample : MB-75192
Misc : MBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 20 12:29:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1447548	4000.00	ug/kg	89
6) Acenaphthene-d10	12.852	164	1094738	4000.00	ug/kg	87
11) Phenanthrene-d10	14.975	188	2117575	4000.00	ug/kg	72
16) Chrysene-d12	20.980	240	2240420	4000.00	ug/kg	83
20) Perylene-d12	26.247	264	2132137	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.753	172	243872	756.66	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.92%#			
17) 4-Terphenyl-d14	17.583	244	344106	725.64	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 18.14%#			

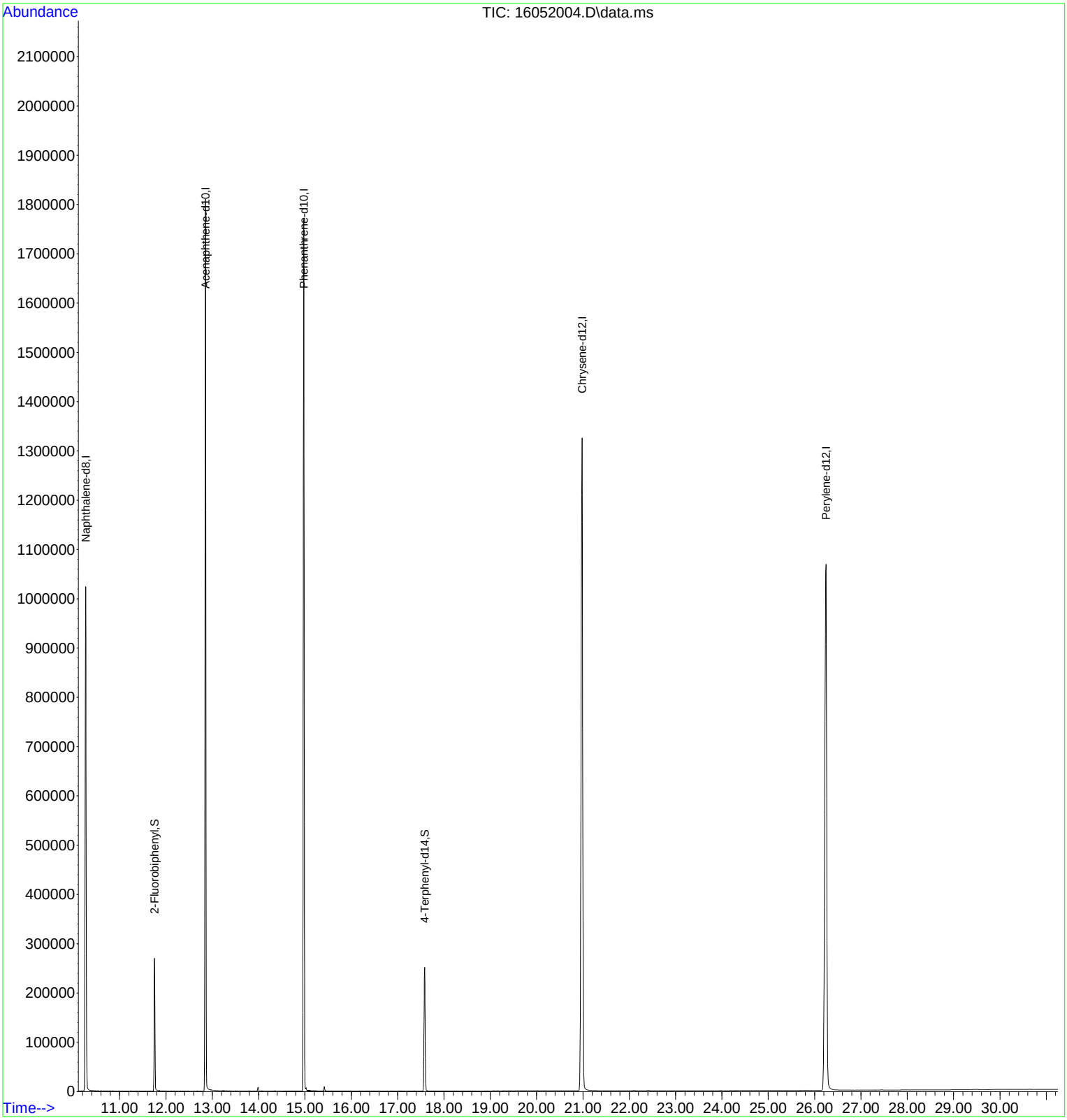
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052004.D
Acq On : 20 May 2016 10:28 am
Operator :
Sample : MB-75192
Misc : MBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 20 12:29:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052016.D
Acq On : 20 May 2016 5:53 pm
Operator :
Sample : 1605098-01A
Misc : SAMP
ALS Vial : 16 Sample Multiplier: 10

Quant Time: May 23 10:00:52 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1508047	4000.00	ug/kg	93
6) Acenaphthene-d10	12.857	164	1199006	4000.00	ug/kg	96
11) Phenanthrene-d10	14.979	188	2231692	4000.00	ug/kg	76
16) Chrysene-d12	20.987	240	2223269	4000.00	ug/kg	82
20) Perylene-d12	26.247	264	2066595	4000.00	ug/kg	83

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	28606	85.20	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.13%#			
17) 4-Terphenyl-d14	17.589	244	36173	76.87	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.92%#			

Target Compounds						Qvalue
2) Naphthalene	10.309	128	1715	5.08	ug/kg	99
8) Acenaphthene	12.906	153	2215	6.70	ug/kg	97
12) Phenanthrene	15.015	178	82451	134.27	ug/kg	98
13) Anthracene	15.059	178	17282	27.81	ug/kg	98
14) Fluoranthene	17.070	202	192683	311.79	ug/kg	99
15) Pyrene	17.702	202	165588	274.18	ug/kg	97
18) Benzo[a]anthracene	20.804	228	96077	165.29	ug/kg	99
19) Chrysene	21.075	228	106793	198.83	ug/kg	100
21) Benzo[b]fluoranthene	24.460	252	100557	181.51	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	47795	95.53	ug/kg	98
23) Benzo(j)fluoranthene	24.650	252	45595	92.64	ug/kg	89
24) Benzo(e)pyrene	25.734	252	75147	142.14	ug/kg	97
25) Benzo[a]pyrene	25.910	252	100757	195.66	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.514	276	75279	116.61	ug/kg	90
27) Dibenz[a,h]anthracene	29.492	278	16902	27.68	ug/kg	97
28) Benzo[g,h,i]perylene	30.649	276	75513	136.10	ug/kg	100

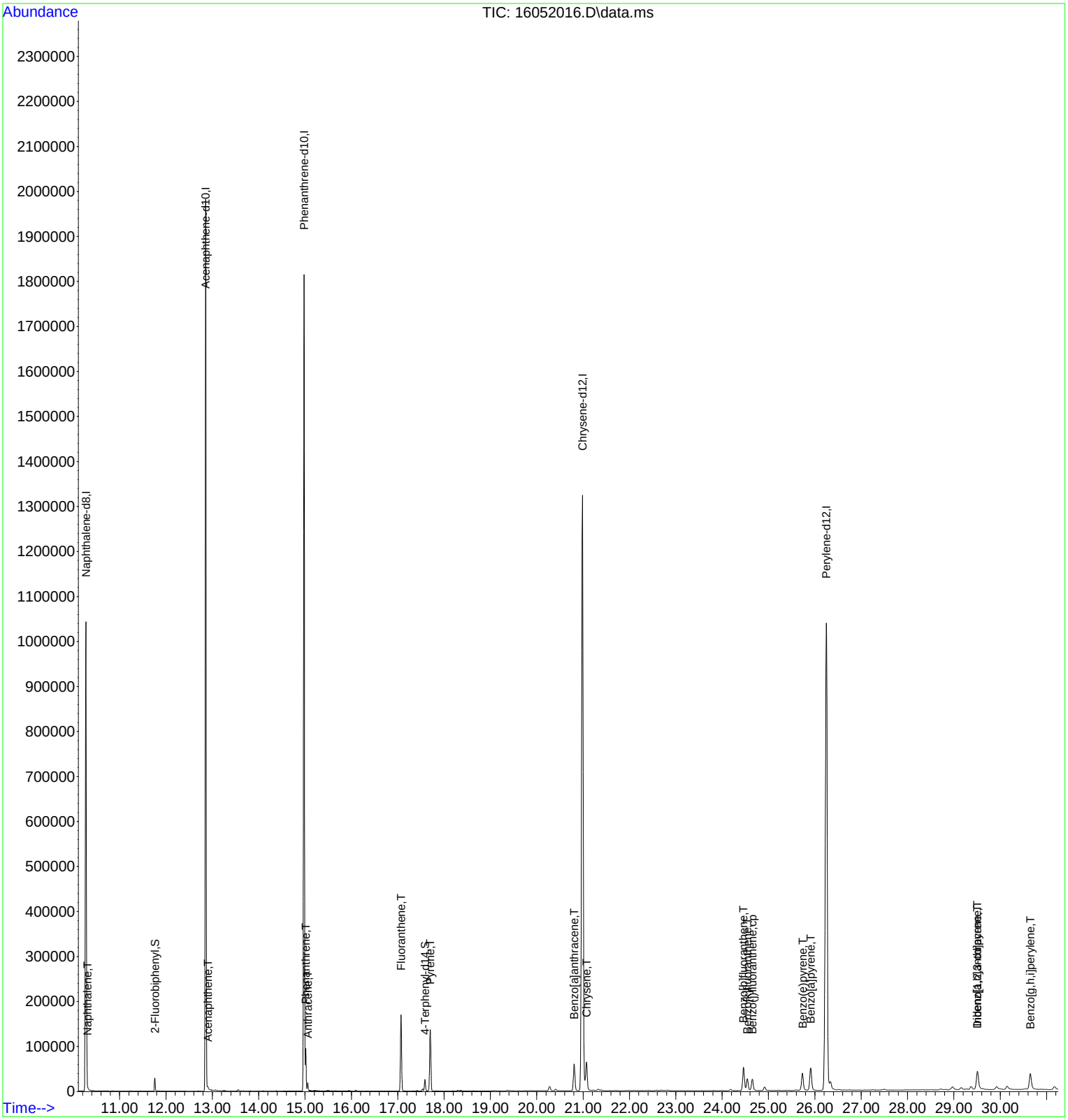
CONFIRMED
By Sherri Herschmann at 9:24:16 AM, 5/24/2016

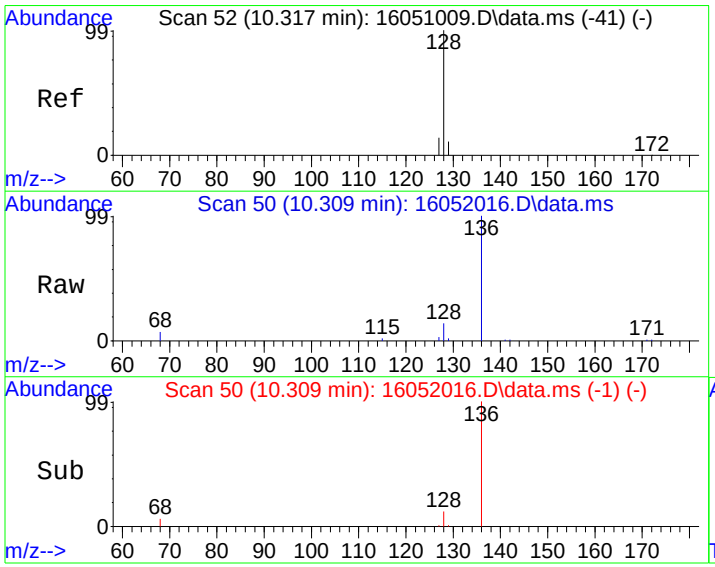
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052016.D
Acq On : 20 May 2016 5:53 pm
Operator :
Sample : 1605098-01A
Misc : SAMP
ALS Vial : 16 Sample Multiplier: 10

Quant Time: May 23 10:00:52 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

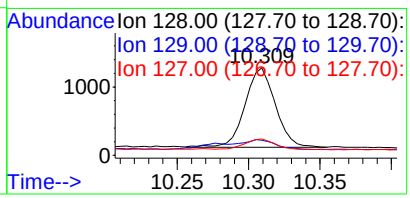


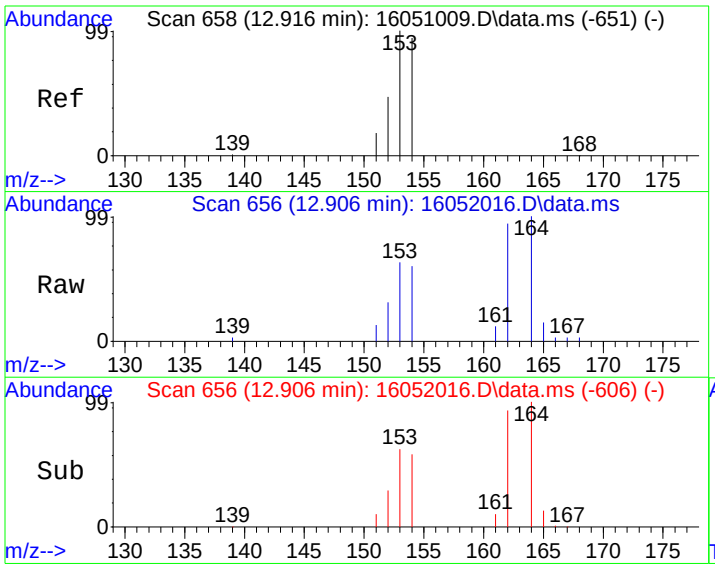


#2
Naphthalene
Concen: 5.08 ug/kg
RT: 10.309 min Scan# 50
Delta R.T. -0.000 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:128 Resp: 1715

Ion	Ratio	Lower	Upper
128	100		
129	11.7	0.0	31.3
127	13.4	0.0	33.6

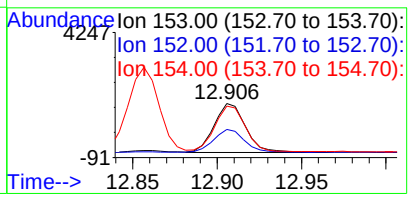


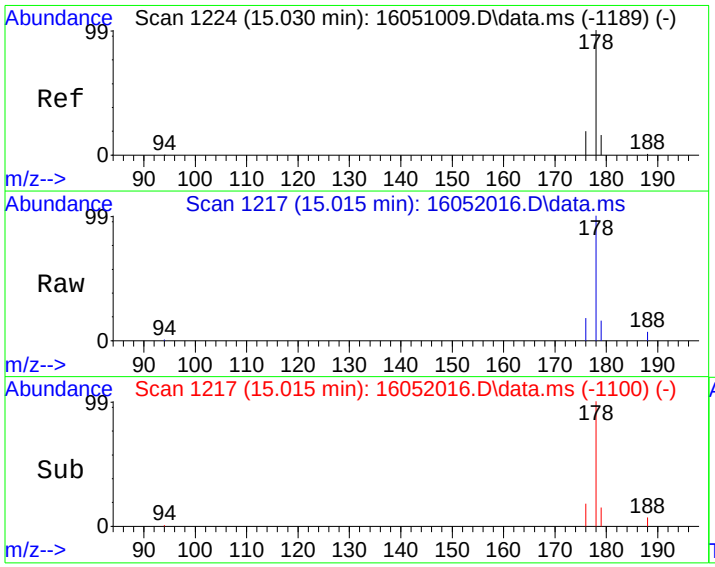


#8
Acenaphthene
Concen: 6.70 ug/kg
RT: 12.906 min Scan# 656
Delta R.T. -0.005 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:153 Resp: 2215

Ion	Ratio	Lower	Upper
153	100		
152	46.9	26.5	66.5
154	92.9	76.3	116.3

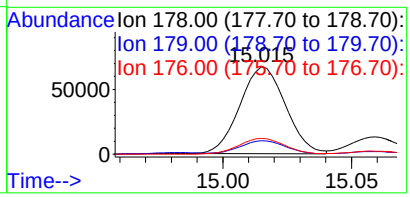


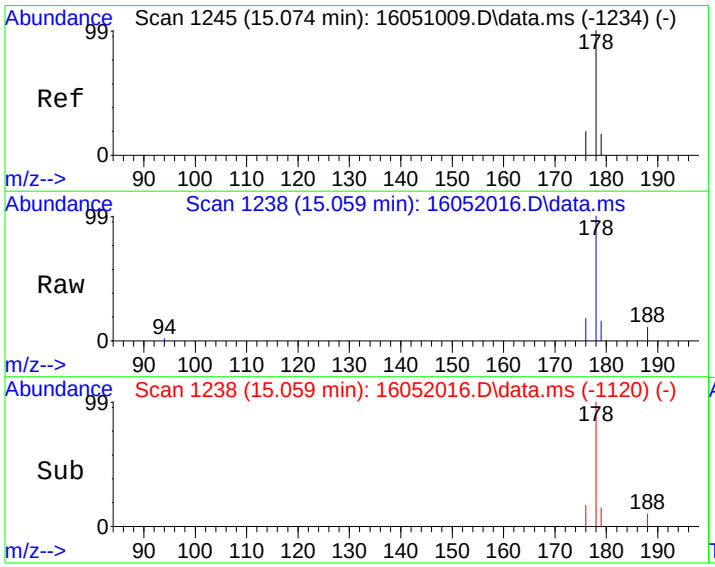


#12
Phenanthrene
Concen: 134.27 ug/kg
RT: 15.015 min Scan# 1217
Delta R.T. -0.004 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:178 Resp: 82451

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	18.2	0.0	39.0

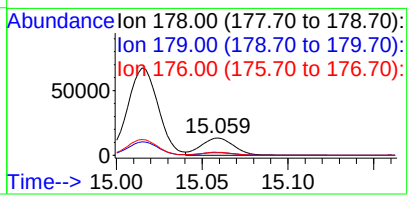


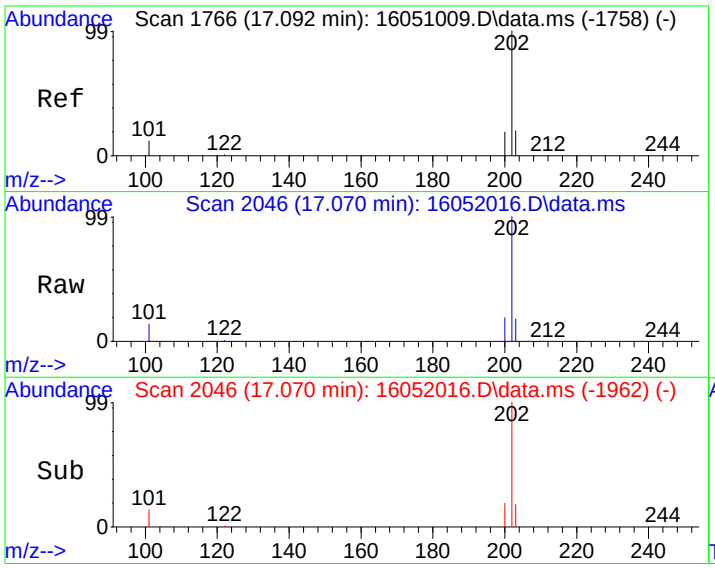


#13
Anthracene
Concen: 27.81 ug/kg
RT: 15.059 min Scan# 1238
Delta R.T. -0.002 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:178 Resp: 17282

Ion	Ratio	Lower	Upper
178	100		
179	15.5	0.0	36.3
176	17.1	0.0	38.5

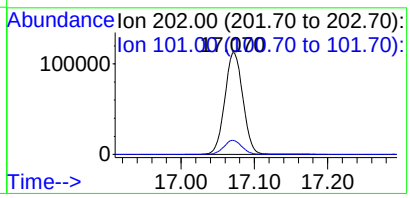


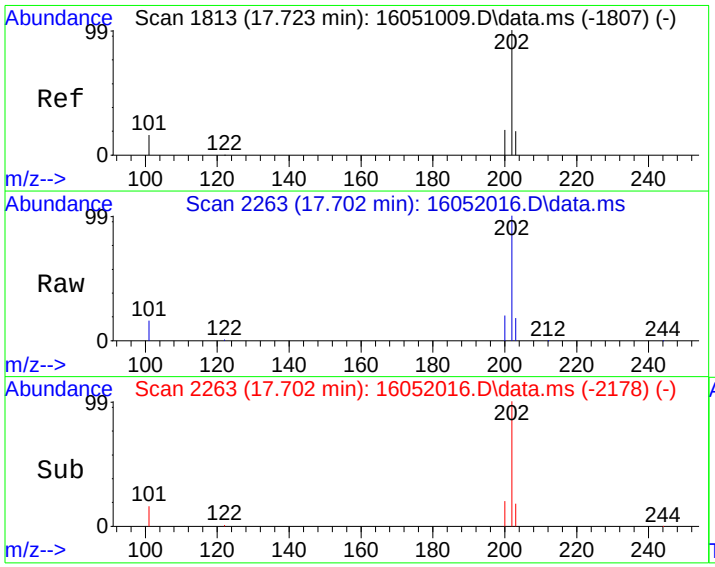


#14
Fluoranthene
Concen: 311.79 ug/kg
RT: 17.070 min Scan# 2046
Delta R.T. -0.006 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:202 Resp: 192683

Ion	Ratio	Lower	Upper
202	100		
101	13.9	0.0	34.4

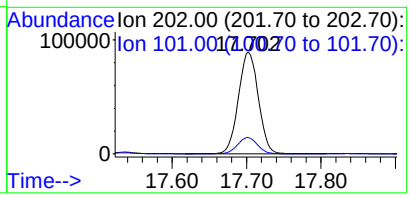


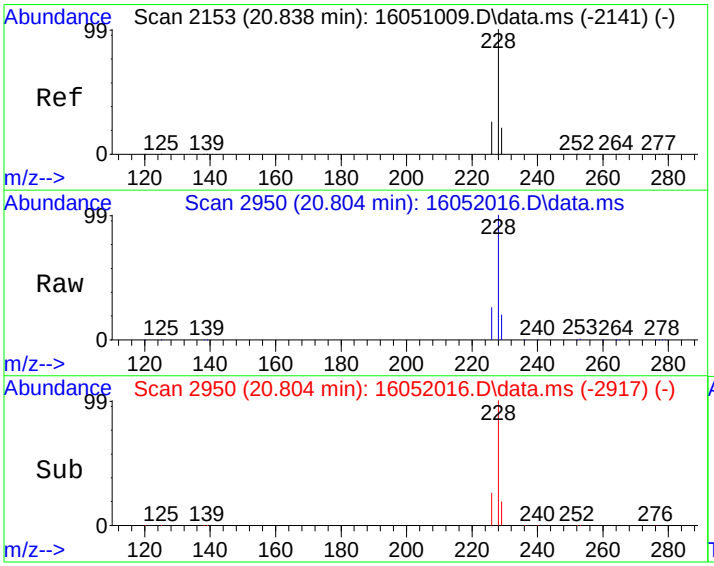


#15
Pyrene
Concen: 274.18 ug/kg
RT: 17.702 min Scan# 2263
Delta R.T. -0.004 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:202 Resp: 165588

Ion	Ratio	Lower	Upper
202	100		
101	16.0	0.0	37.3

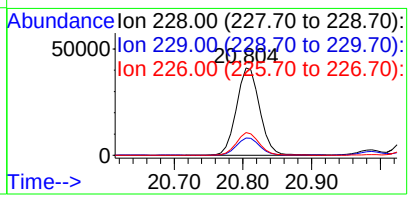


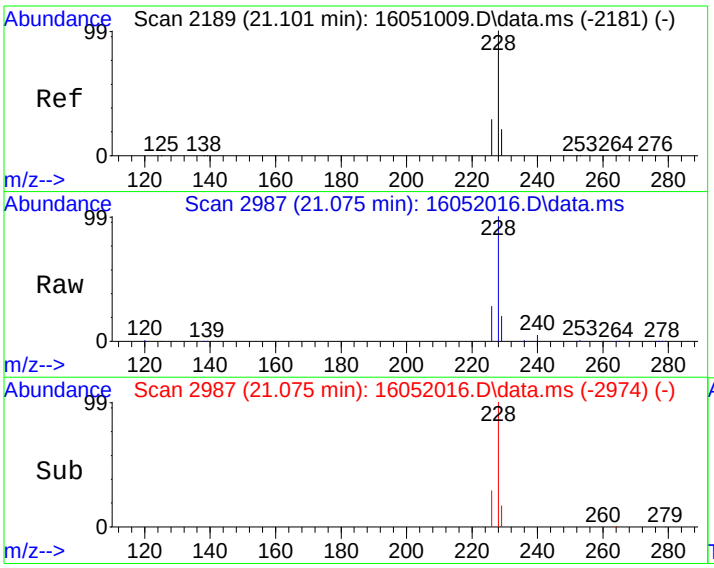


#18
Benzo[a]anthracene
Concen: 165.29 ug/kg
RT: 20.804 min Scan# 2950
Delta R.T. -0.008 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:228 Resp: 96077

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.3	40.3
226	26.0	5.7	45.7

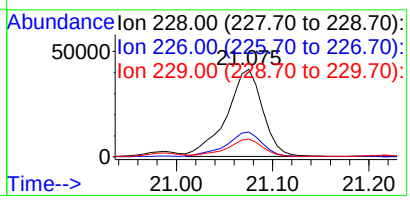


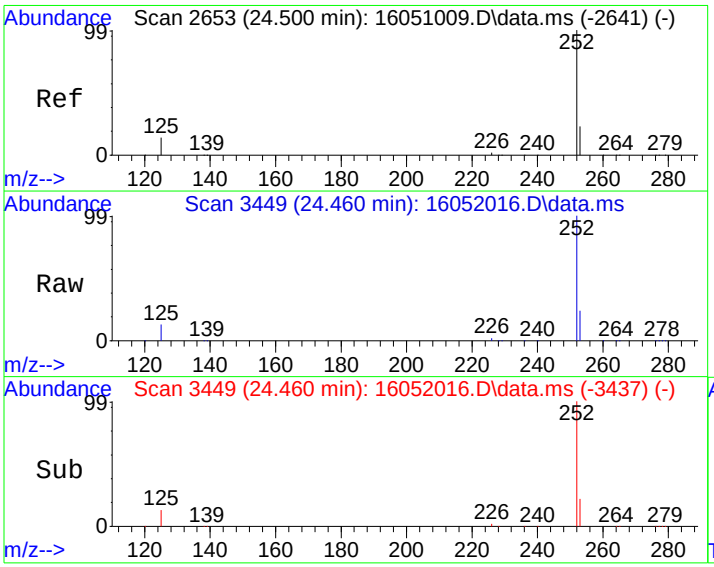


#19
Chrysene
Concen: 198.83 ug/kg
RT: 21.075 min Scan# 2987
Delta R.T. -0.008 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:228 Resp: 106793

Ion	Ratio	Lower	Upper
228	100		
226	28.2	8.2	48.2
229	19.9	0.3	40.3

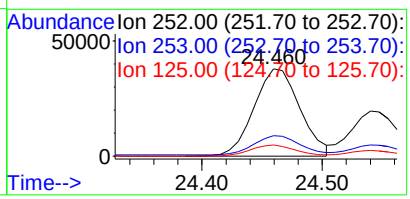


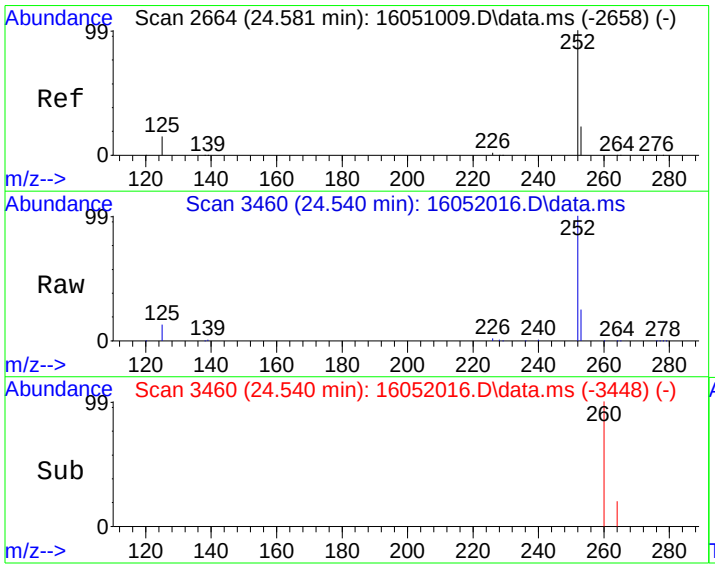


#21
Benzo[b]fluoranthene
Concen: 181.51 ug/kg
RT: 24.460 min Scan# 3449
Delta R.T. -0.015 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:252 Resp: 100557

Ion	Ratio	Lower	Upper
252	100		
253	22.2	2.3	42.3
125	12.8	0.0	32.2

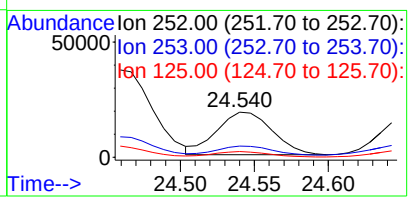


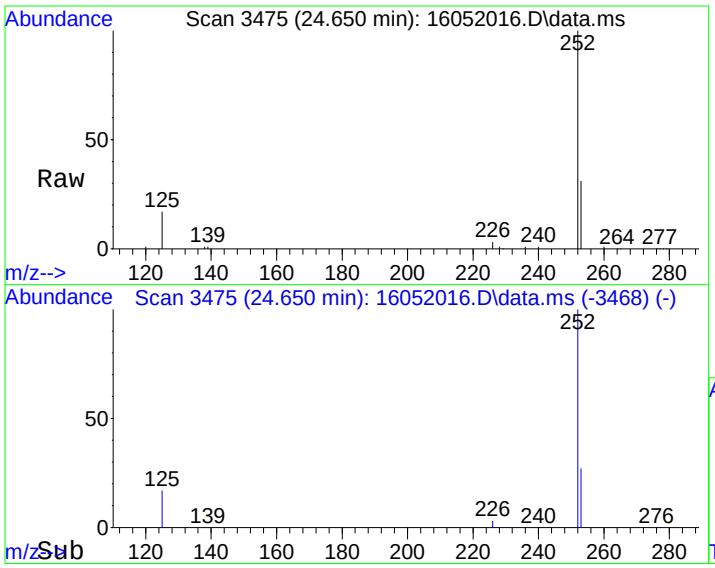


#22
Benzo[k]fluoranthene
Concen: 95.53 ug/kg
RT: 24.540 min Scan# 3460
Delta R.T. -0.015 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:252 Resp: 47795

Ion	Ratio	Lower	Upper
252	100		
253	21.1	2.5	42.5
125	12.5	0.0	32.6

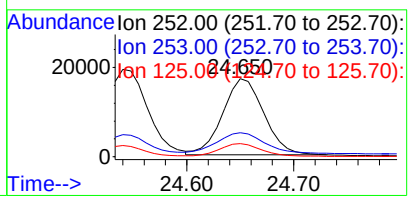


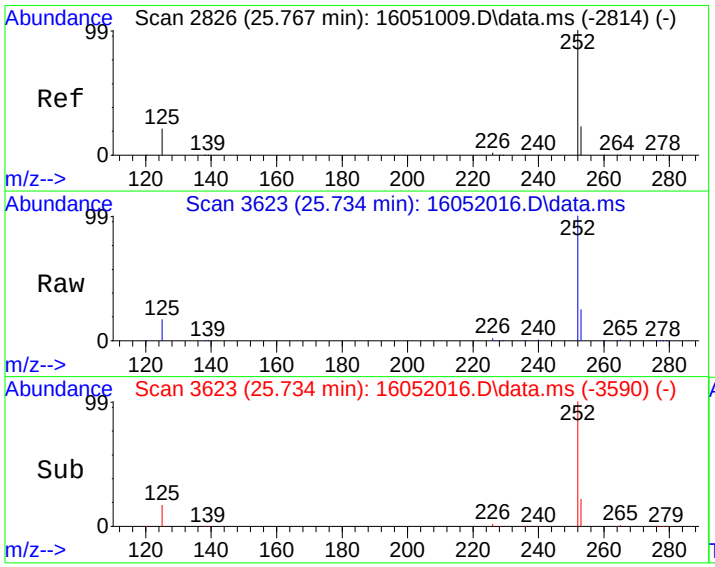


#23
Benzo(j)fluoranthene
Concen: 92.64 ug/kg
RT: 24.650 min Scan# 3475
Delta R.T. -0.015 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:252 Resp: 45595

Ion	Ratio	Lower	Upper
252	100		
253	30.6	2.2	42.2
125	16.6	0.0	37.3

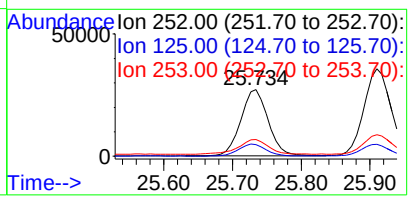


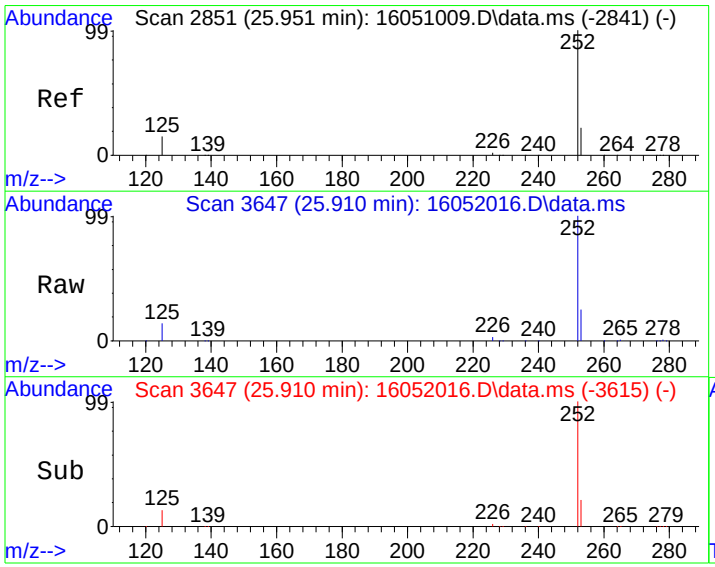


#24
Benzo(e)pyrene
Concen: 142.14 ug/kg
RT: 25.734 min Scan# 3623
Delta R.T. -0.008 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:252 Resp: 75147

Ion	Ratio	Lower	Upper
252	100		
125	17.8	0.0	38.7
253	24.6	2.3	42.3

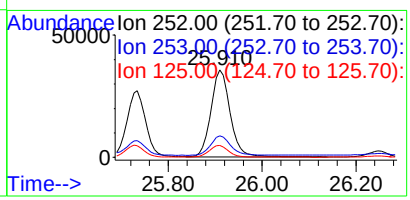


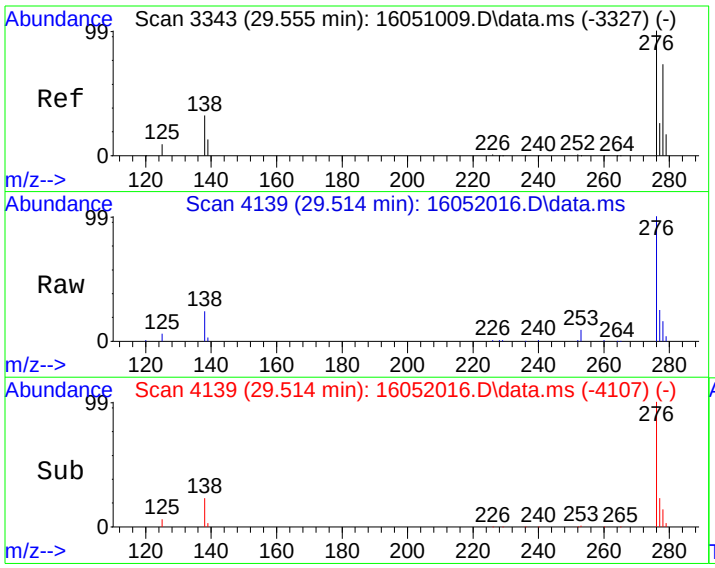


#25
Benzo[a]pyrene
Concen: 195.66 ug/kg
RT: 25.910 min Scan# 3647
Delta R.T. -0.015 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:252 Resp: 100757

Ion	Ratio	Lower	Upper
252	100		
253	22.4	2.3	42.3
125	13.5	0.0	33.5

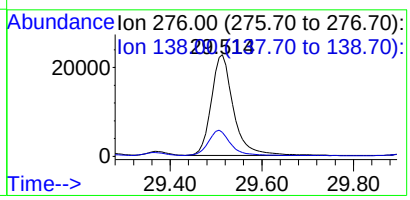


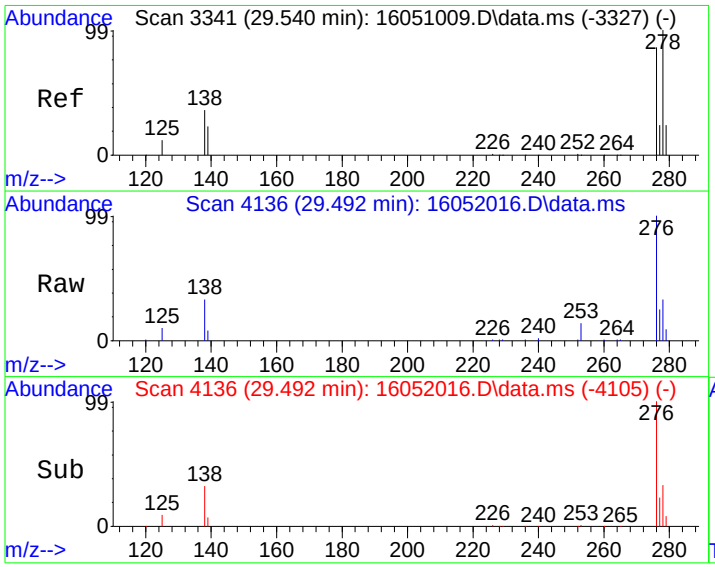


#26
Indeno[1,2,3-cd]pyrene
Concen: 116.61 ug/kg
RT: 29.514 min Scan# 4139
Delta R.T. -0.015 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:276 Resp: 75279

Ion	Ratio	Lower	Upper
276	100		
138	23.2	8.3	48.3

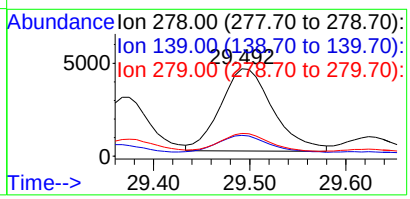


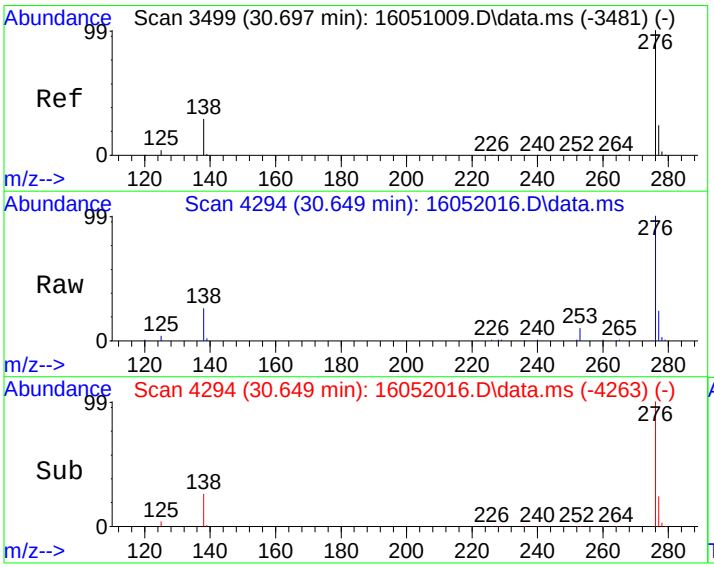


#27
Dibenz[a,h]anthracene
Concen: 27.68 ug/kg
RT: 29.492 min Scan# 4136
Delta R.T. -0.022 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:278 Resp: 16902

Ion	Ratio	Lower	Upper
278	100		
139	21.9	0.0	40.0
279	23.0	4.2	44.2

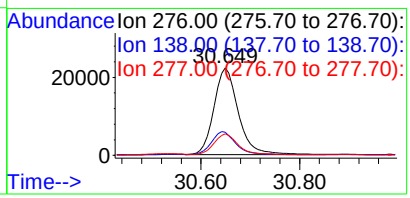




#28
Benzo[g,h,i]perylene
Concen: 136.10 ug/kg
RT: 30.649 min Scan# 4294
Delta R.T. -0.023 min
Lab File: 16052016.D
Acq: 20 May 2016 5:53 pm

Tgt Ion:276 Resp: 75513

Ion	Ratio	Lower	Upper
276	100		
138	25.8	5.8	45.8
277	23.9	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052018.D
Acq On : 20 May 2016 7:07 pm
Operator :
Sample : ICV2-160520
Misc : ICV
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 23 09:59:20 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

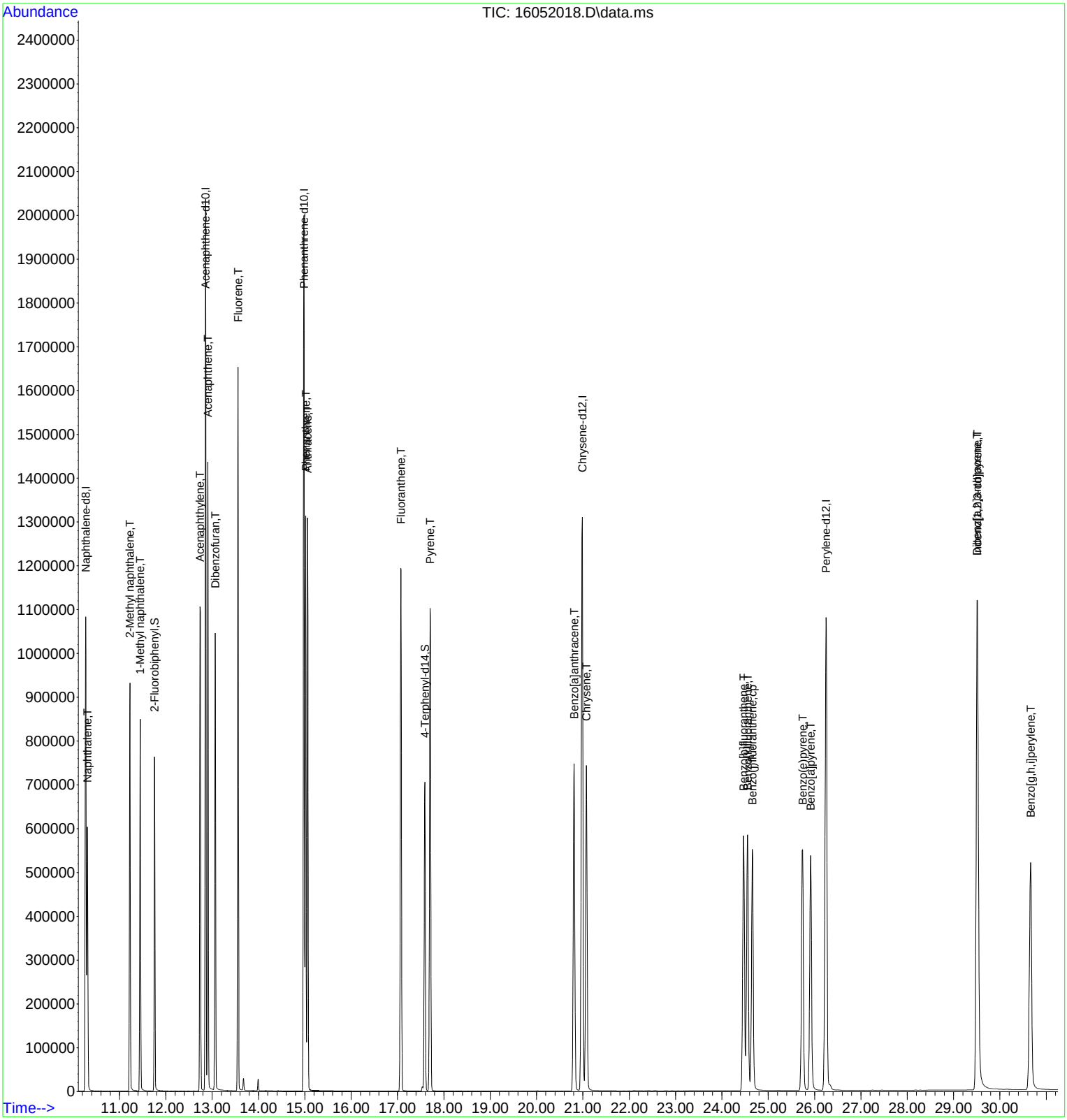
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1532151	4000.00	ug/kg	94
6) Acenaphthene-d10	12.857	164	1204470	4000.00	ug/kg	96
11) Phenanthrene-d10	14.979	188	2477706	4000.00	ug/kg	85
16) Chrysene-d12	20.988	240	2269640	4000.00	ug/kg	84
20) Perylene-d12	26.247	264	2105420	4000.00	ug/kg	85
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	688746	2018.98	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 50.47%			
17) 4-Terphenyl-d14	17.590	244	987579	2055.77	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 51.39%			
Target Compounds						Qvalue
2) Naphthalene	10.307	128	692924	2018.76	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	558282	2092.26	ug/kg	99
4) 1-Methyl naphthalene	11.446	142	511902	2027.34	ug/kg	100
7) Acenaphthylene	12.739	152	1073973	2039.92	ug/kg	100
8) Acenaphthene	12.906	153	671773	2022.13	ug/kg	98
9) Dibenzofuran	13.063	168	1000445	1976.89	ug/kg	89
10) Fluorene	13.559	166	890108	1938.47	ug/kg	100
12) Phenanthrene	15.017	178	1281253	1879.36	ug/kg	100
13) Anthracene	15.059	178	1273055	1845.43	ug/kg	100
14) Fluoranthene	17.071	202	1350402	2077.84	ug/kg	100
15) Pyrene	17.704	202	1324197	2072.72	ug/kg	99
18) Benzo[a]anthracene	20.812	228	1196044	2132.01	ug/kg	100
19) Chrysene	21.076	228	1105063	2130.33	ug/kg	100
21) Benzo[b]fluoranthene	24.467	252	1156713	2146.25	ug/kg	99
22) Benzo[k]fluoranthene	24.555	252	1038548	2124.80	ug/kg	100
23) Benzo(j)fluoranthene	24.658	252	982696	2107.83	ug/kg	100
24) Benzo(e)pyrene	25.742	252	1079577	2121.89	ug/kg	100
25) Benzo[a]pyrene	25.918	252	1065084	2109.47	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.522	276	1319070	2137.44	ug/kg	99
27) Dibenz[a,h]anthracene	29.507	278	1101978	2149.60	ug/kg	100
28) Benzo[g,h,i]perylene	30.664	276	1125638	2112.44	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052018.D
Acq On : 20 May 2016 7:07 pm
Operator :
Sample : ICV2-160520
Misc : ICV
ALS Vial : 18 Sample Multiplier: 1

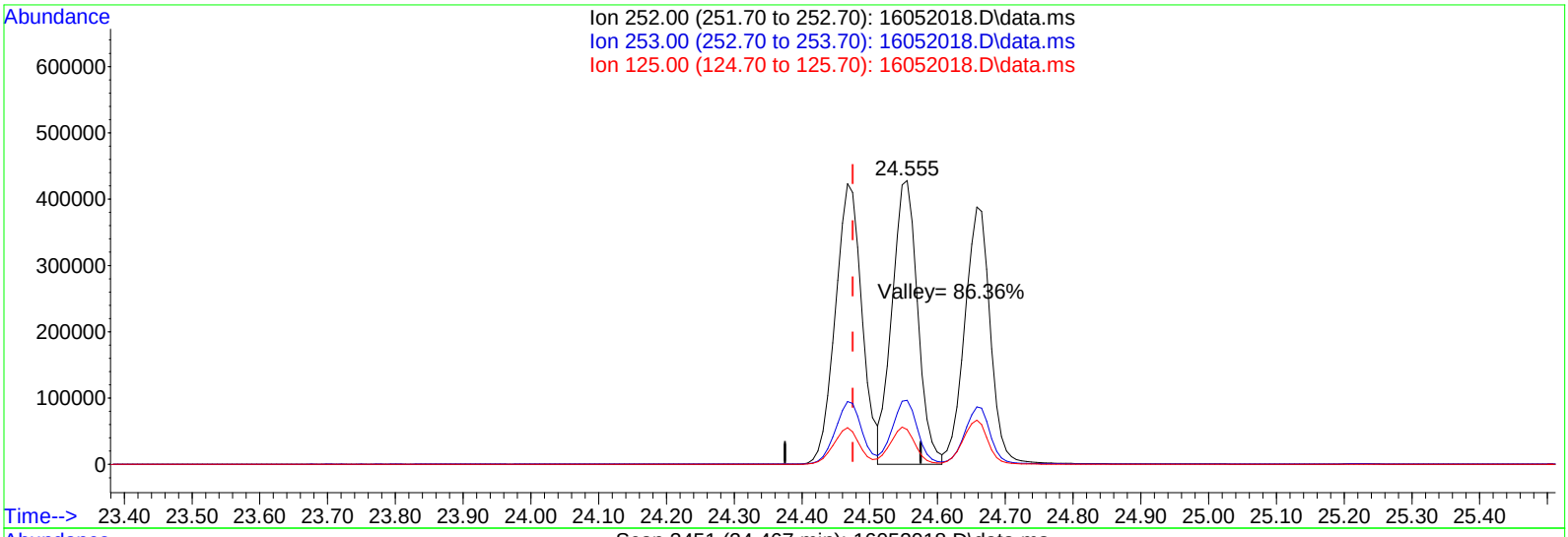
Quant Time: May 23 09:59:20 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

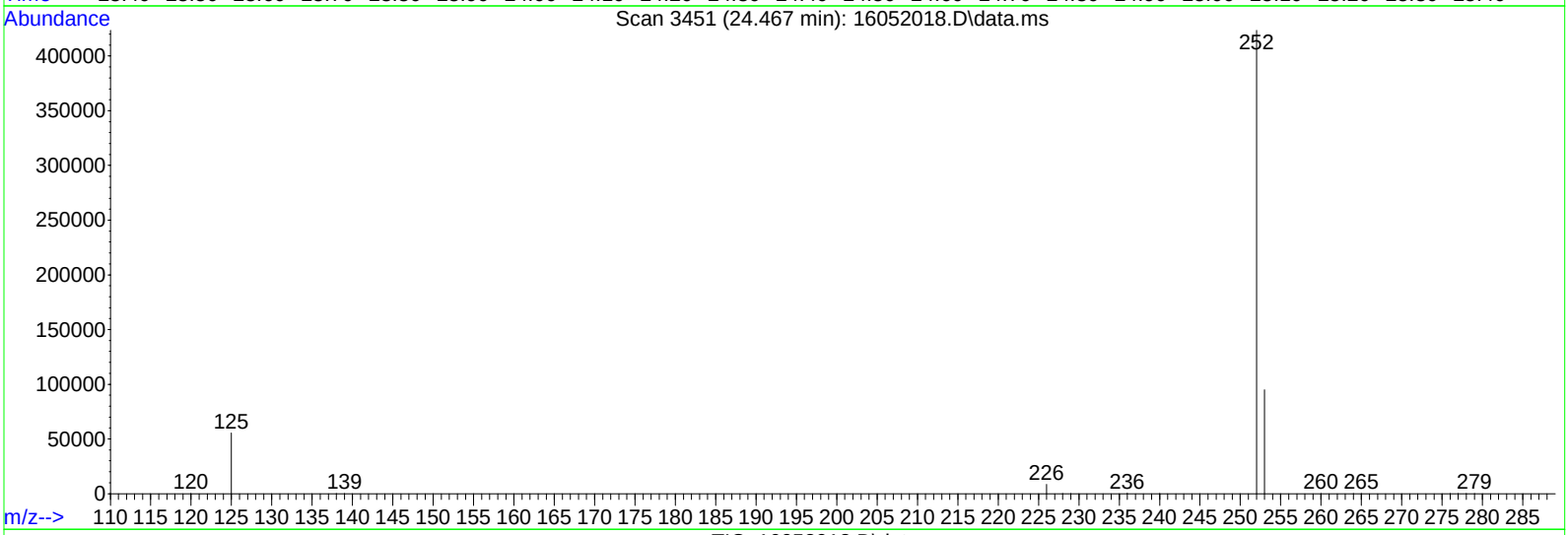


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052018.D
Acq On : 20 May 2016 7:07 pm
Operator :
Sample : ICV2-160520
Misc : ICV
ALS Vial : 18 Sample Multiplier: 1

Quant Time: May 20 19:38:35 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052018.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.467min (-0.008) 2146.25ug/kg

response 1156713

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.30
125.00	12.20	13.05
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052020.D
Acq On : 20 May 2016 8:22 pm
Operator :
Sample : SBLK2-160520
Misc : SBLK
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 23 09:59:23 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1753702	4000.00	ug/kg	108
6) Acenaphthene-d10	12.856	164	1450193	4000.00	ug/kg	116
11) Phenanthrene-d10	14.978	188	2595626	4000.00	ug/kg	89
16) Chrysene-d12	20.987	240	2589669	4000.00	ug/kg	96
20) Perylene-d12	26.254	264	2415221	4000.00	ug/kg	97

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	99	0.25	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.01%#			
17) 4-Terphenyl-d14	17.590	244	290	0.53	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.01%#			

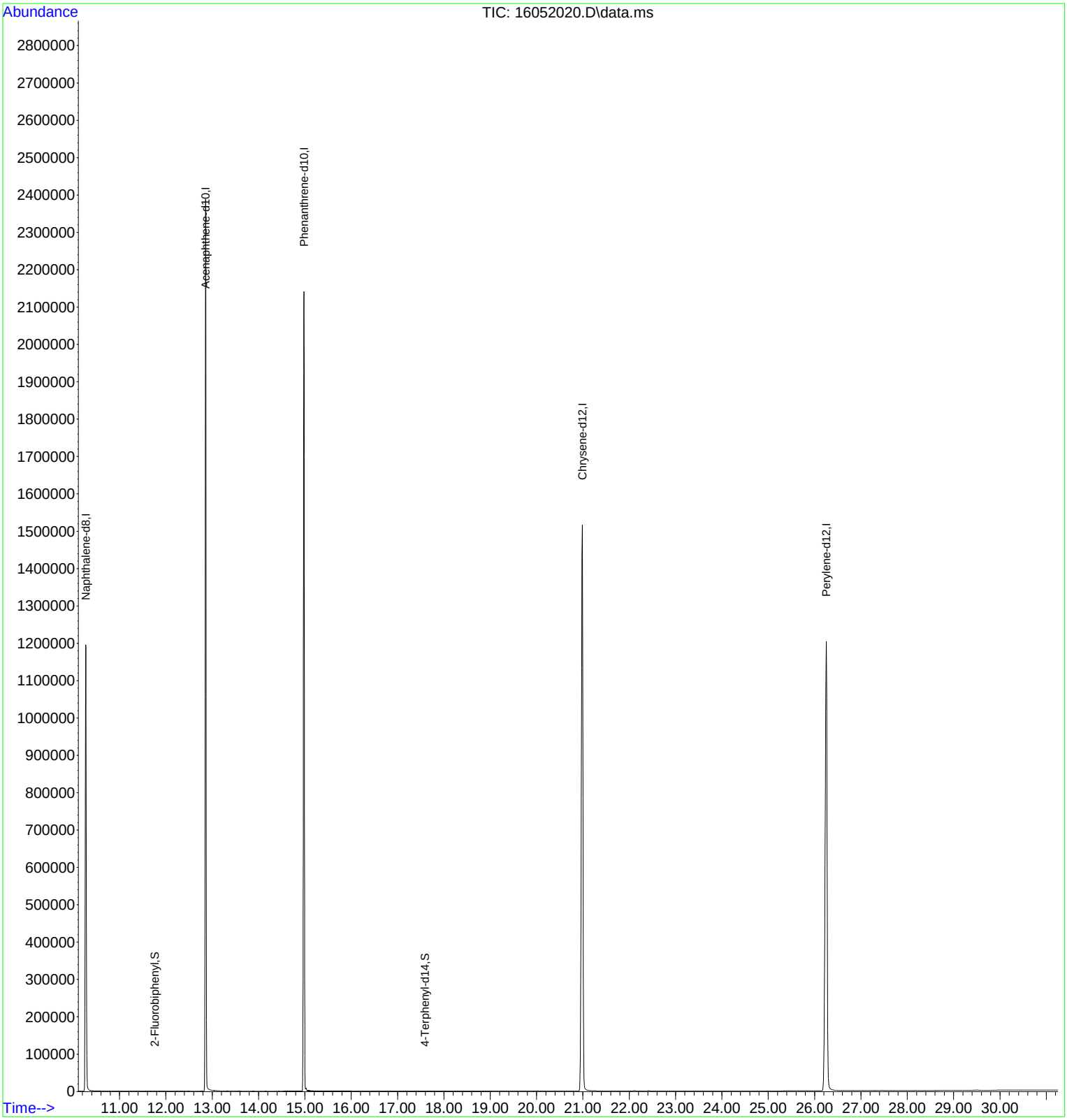
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052020.D
Acq On : 20 May 2016 8:22 pm
Operator :
Sample : SBLK2-160520
Misc : SBLK
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 23 09:59:23 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052021.D
Acq On : 20 May 2016 9:00 pm
Operator :
Sample : 1605098-02A
Misc : SAMP
ALS Vial : 21 Sample Multiplier: 10

Quant Time: May 23 10:01:01 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1566778	4000.00	ug/kg	96
6) Acenaphthene-d10	12.857	164	1254595	4000.00	ug/kg	100
11) Phenanthrene-d10	14.977	188	2294120	4000.00	ug/kg	78
16) Chrysene-d12	20.981	240	2279931	4000.00	ug/kg	84
20) Perylene-d12	26.248	264	2151417	4000.00	ug/kg	87

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	30499	87.43	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.19%#			
17) 4-Terphenyl-d14	17.587	244	36464	75.56	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.89%#			

Target Compounds						Qvalue
12) Phenanthrene	15.013	178	38093	60.35	ug/kg	98
13) Anthracene	15.057	178	7617	11.93	ug/kg	98
14) Fluoranthene	17.068	202	112246	175.15	ug/kg	98
15) Pyrene	17.698	202	100138	159.95	ug/kg	97
18) Benzo[a]anthracene	20.805	228	63009	104.91	ug/kg	99
19) Chrysene	21.069	228	72889	131.22	ug/kg	99
21) Benzo[b]fluoranthene	24.453	252	73659	127.08	ug/kg	99
22) Benzo[k]fluoranthene	24.534	252	32444	61.87	ug/kg	97
23) Benzo(j)fluoranthene	24.643	252	32094	61.57	ug/kg	90
24) Benzo(e)pyrene	25.727	252	55306	99.67	ug/kg	97
25) Benzo[a]pyrene	25.903	252	72997	135.39	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.507	276	55797	82.14	ug/kg	92
27) Dibenz[a,h]anthracene	29.493	278	12365	18.11	ug/kg	96
28) Benzo[g,h,i]perylene	30.643	276	57657	98.94	ug/kg	99

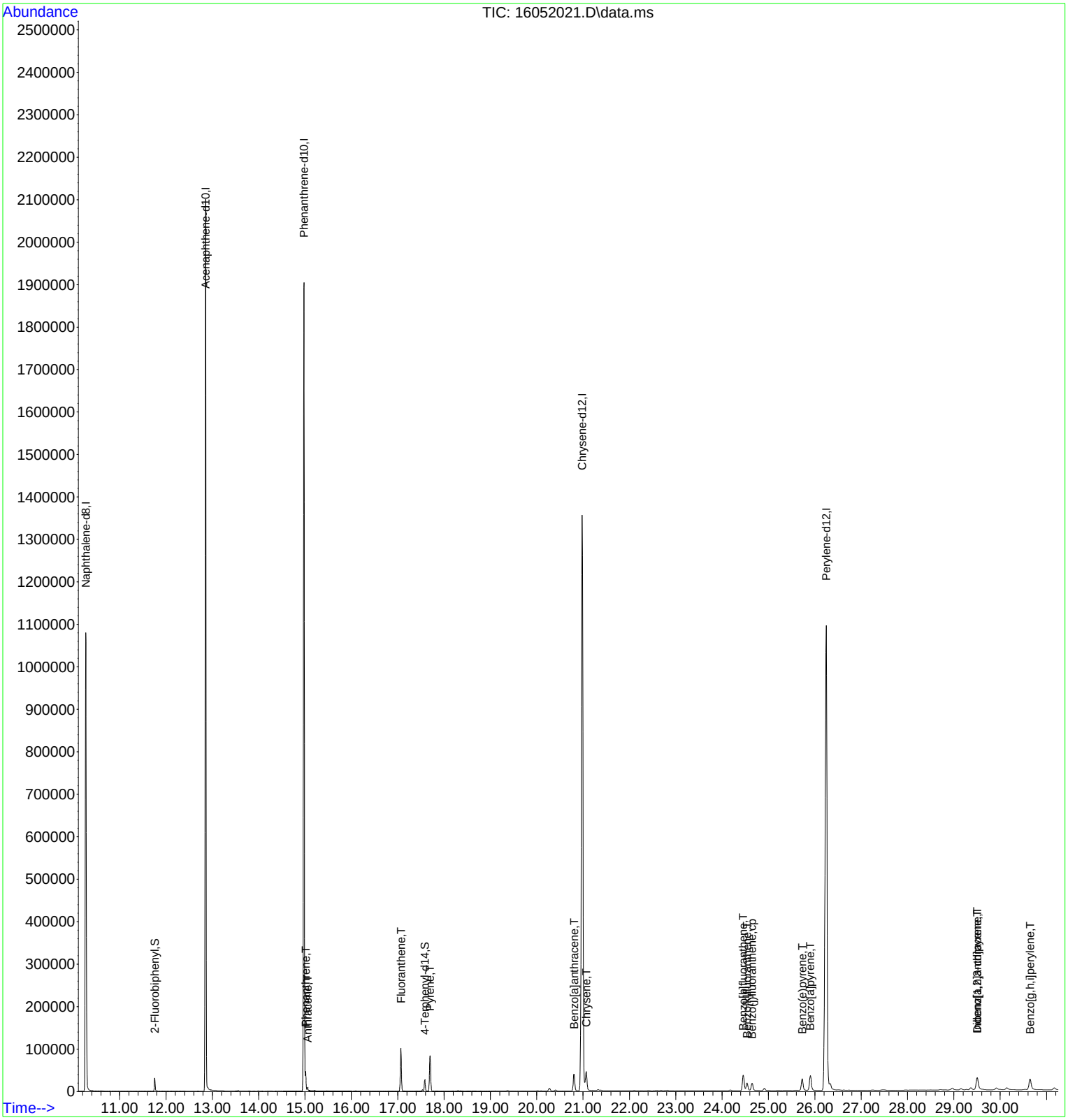
CONFIRMED
By Sherri Herschmann at 9:26:11 AM, 5/24/2016

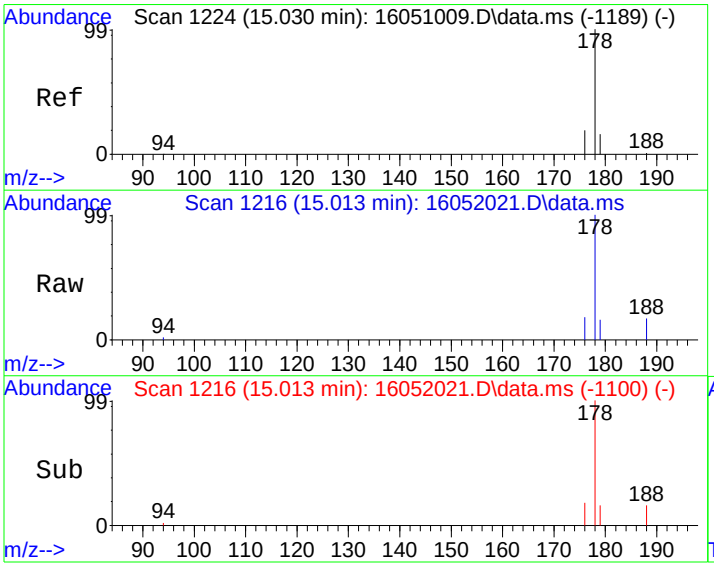
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052021.D
Acq On : 20 May 2016 9:00 pm
Operator :
Sample : 1605098-02A
Misc : SAMP
ALS Vial : 21 Sample Multiplier: 10

Quant Time: May 23 10:01:01 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

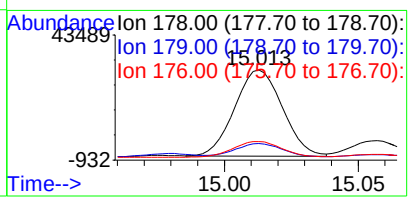


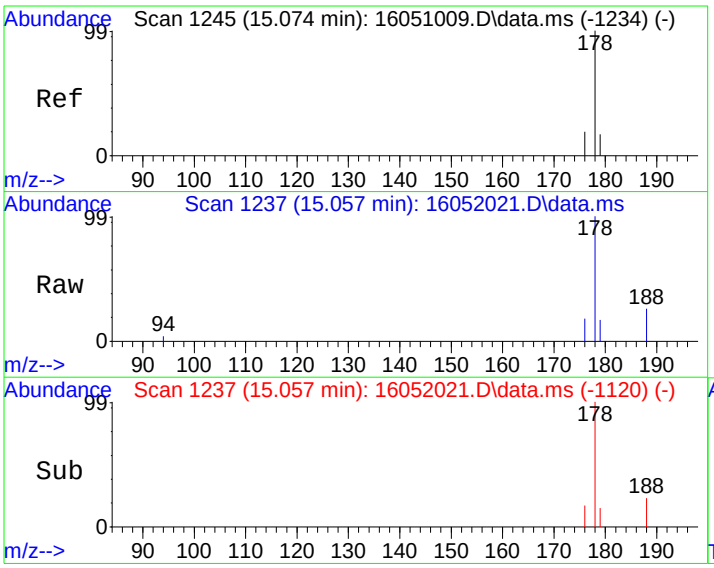


#12
Phenanthrene
Concen: 60.35 ug/kg
RT: 15.013 min Scan# 1216
Delta R.T. -0.006 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:178 Resp: 38093

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	36.4
176	18.1	0.0	39.0

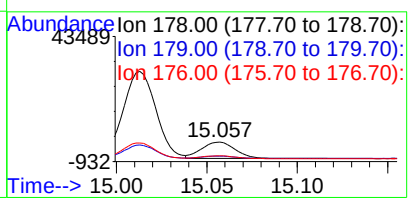


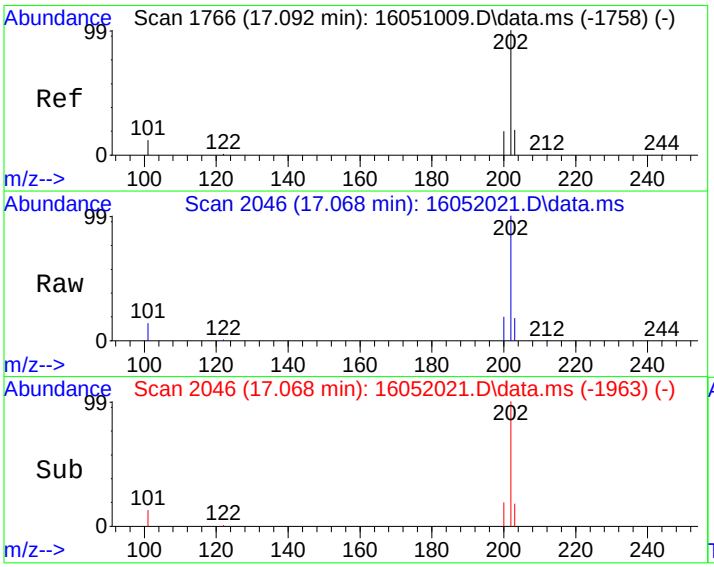


#13
Anthracene
Concen: 11.93 ug/kg
RT: 15.057 min Scan# 1237
Delta R.T. -0.004 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:178 Resp: 7617

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	36.3
176	17.5	0.0	38.5

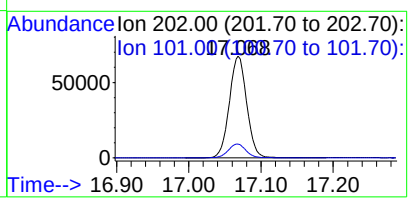


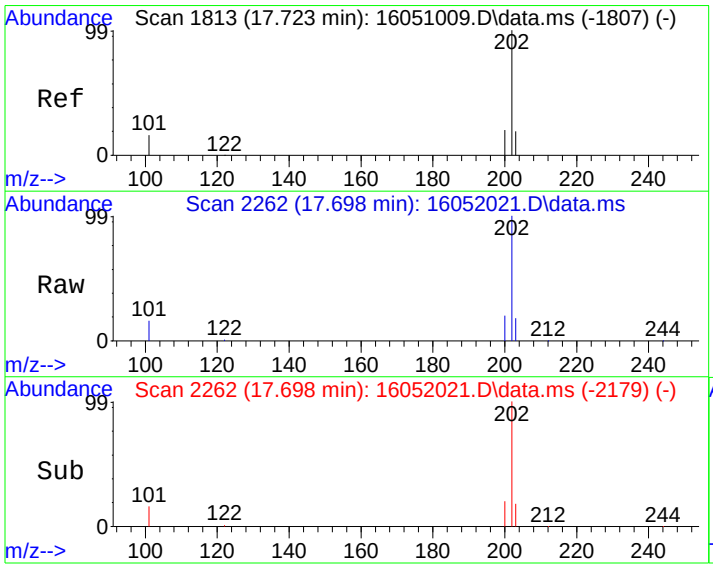


#14
Fluoranthene
Concen: 175.15 ug/kg
RT: 17.068 min Scan# 2046
Delta R.T. -0.008 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:202 Resp: 112246

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	34.4

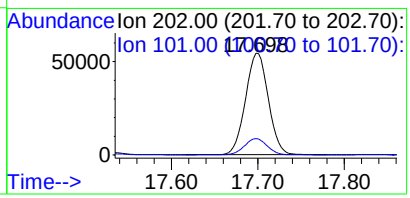


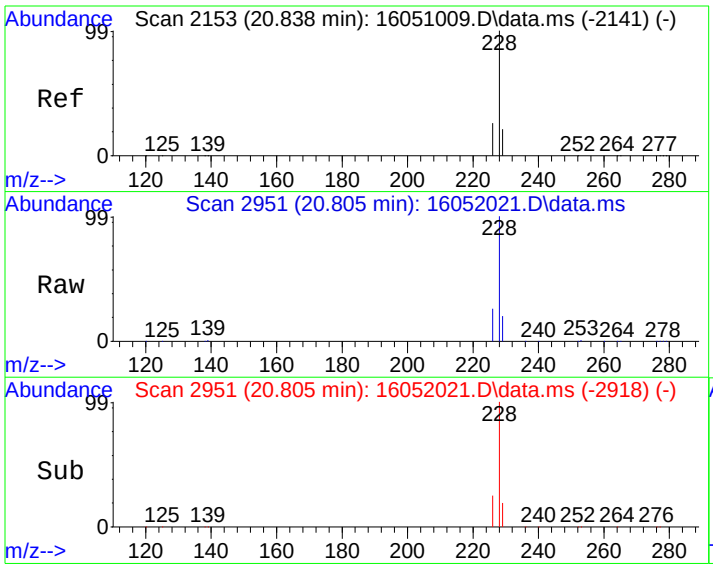


#15
Pyrene
Concen: 159.95 ug/kg
RT: 17.698 min Scan# 2262
Delta R.T. -0.008 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:202 Resp: 100138

Ion	Ratio	Lower	Upper
202	100		
101	16.0	0.0	37.3

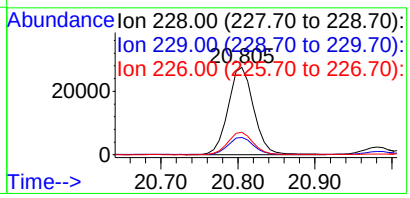


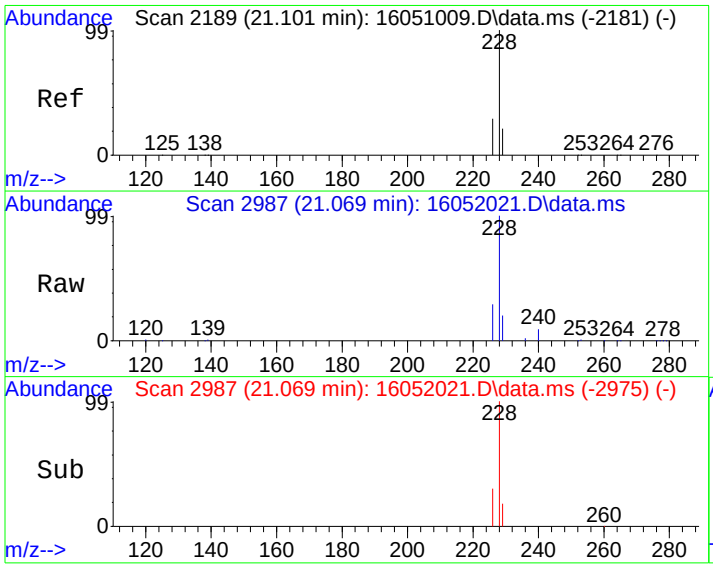


#18
Benzo[a]anthracene
Concen: 104.91 ug/kg
RT: 20.805 min Scan# 2951
Delta R.T. -0.007 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:228 Resp: 63009

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.3	40.3
226	25.4	5.7	45.7

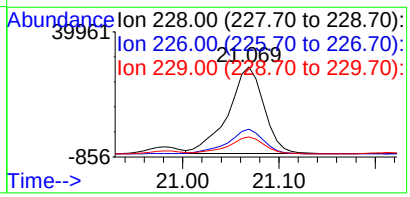


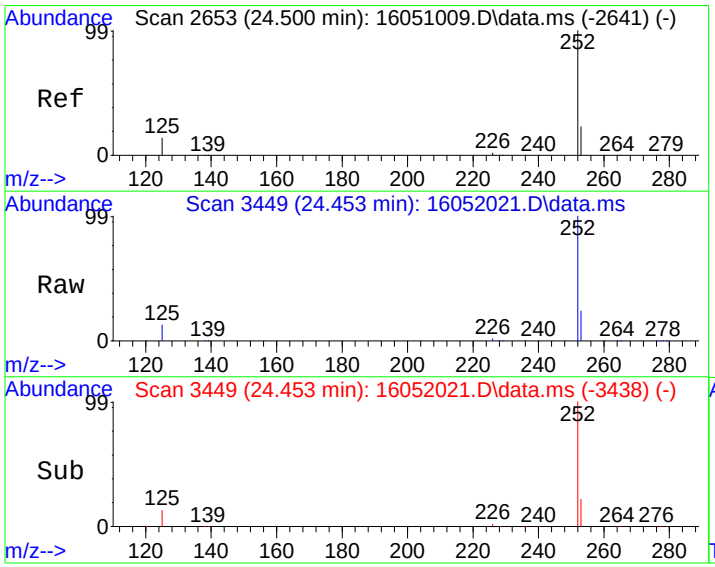


#19
Chrysene
Concen: 131.22 ug/kg
RT: 21.069 min Scan# 2987
Delta R.T. -0.014 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:228 Resp: 72889

Ion	Ratio	Lower	Upper
228	100		
226	28.4	8.2	48.2
229	19.7	0.3	40.3

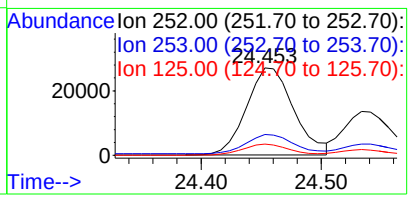


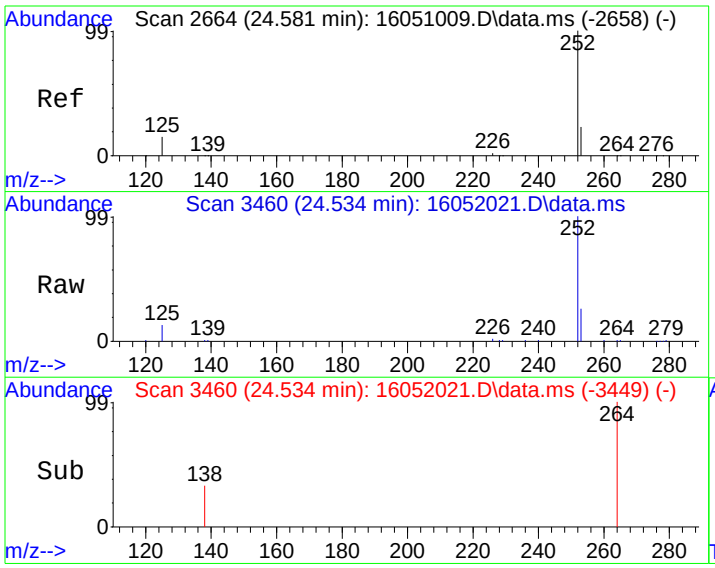


#21
Benzo[b]fluoranthene
Concen: 127.08 ug/kg
RT: 24.453 min Scan# 3449
Delta R.T. -0.022 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:252 Resp: 73659

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.3	42.3
125	12.8	0.0	32.2

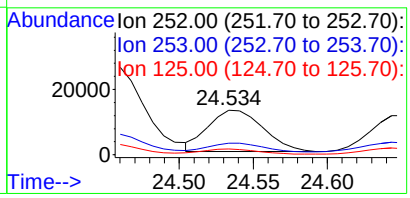


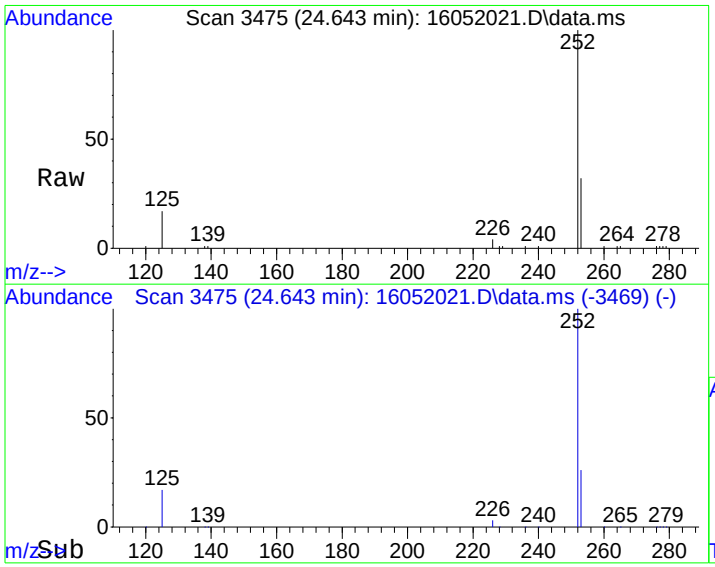


#22
Benzo[k]fluoranthene
Concen: 61.87 ug/kg
RT: 24.534 min Scan# 3460
Delta R.T. -0.021 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:252 Resp: 32444

Ion	Ratio	Lower	Upper
252	100		
253	20.3	2.5	42.5
125	12.5	0.0	32.6

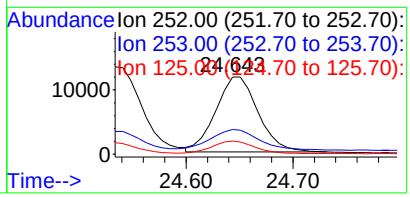


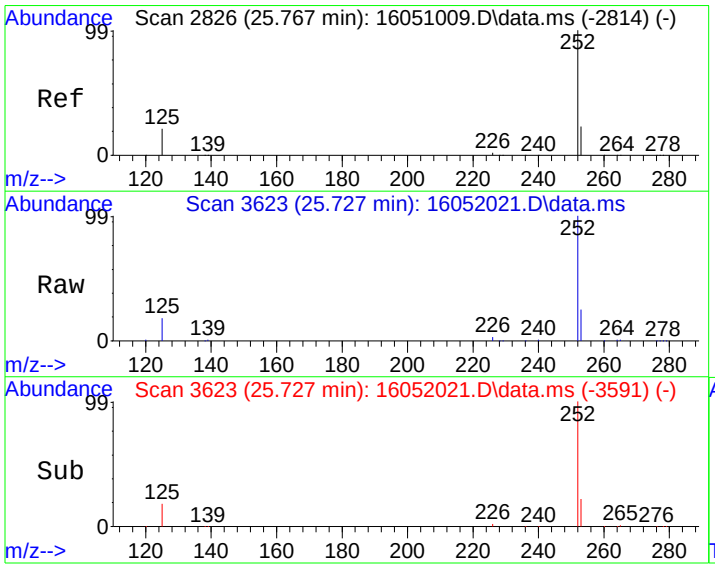


#23
Benzo(j)fluoranthene
Concen: 61.57 ug/kg
RT: 24.643 min Scan# 3475
Delta R.T. -0.022 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:252 Resp: 32094

Ion	Ratio	Lower	Upper
252	100		
253	30.7	2.2	42.2
125	16.8	0.0	37.3

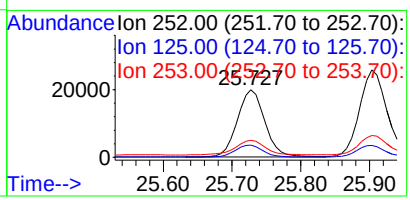


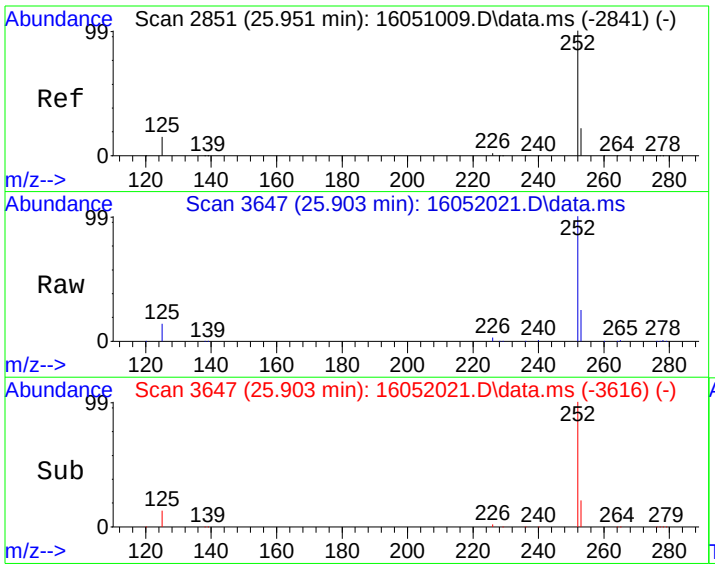


#24
Benzo(e)pyrene
Concen: 99.67 ug/kg
RT: 25.727 min Scan# 3623
Delta R.T. -0.015 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:252 Resp: 55306

Ion	Ratio	Lower	Upper
252	100		
125	18.0	0.0	38.7
253	24.0	2.3	42.3

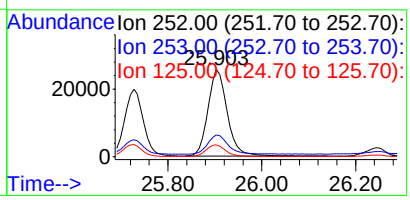


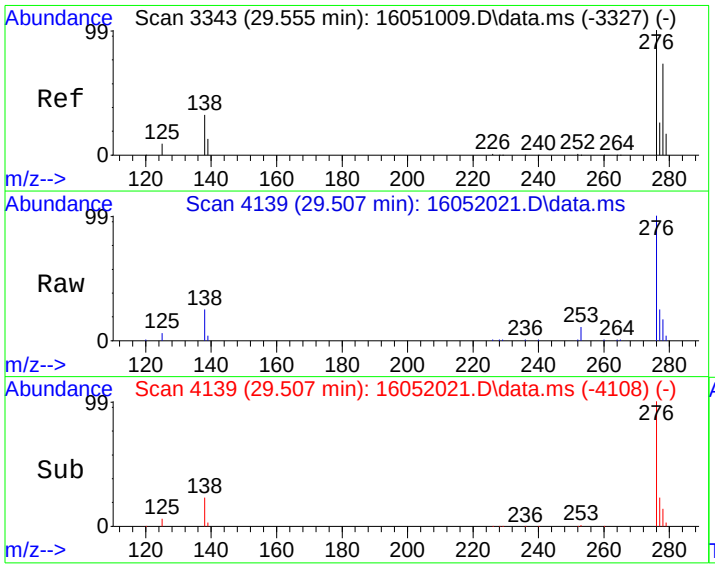


#25
Benzo[a]pyrene
Concen: 135.39 ug/kg
RT: 25.903 min Scan# 3647
Delta R.T. -0.022 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:252 Resp: 72997

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.3	42.3
125	13.3	0.0	33.5

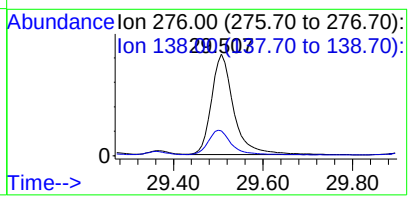


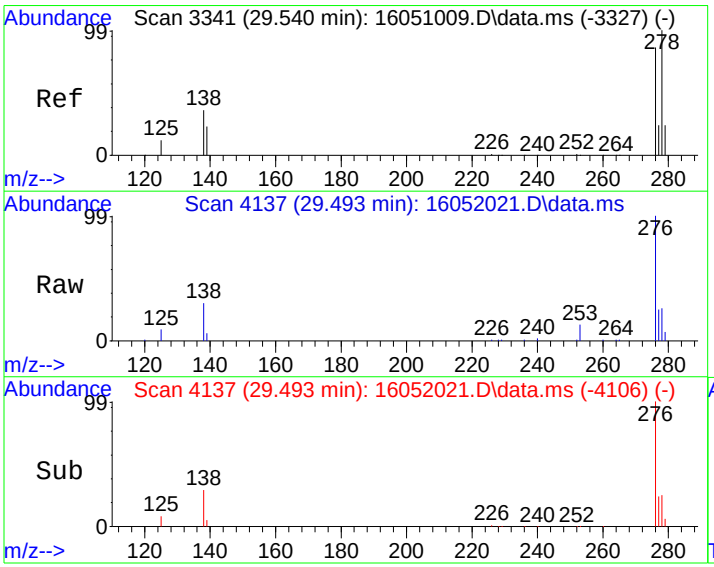


#26
Indeno[1,2,3-cd]pyrene
Concen: 82.14 ug/kg
RT: 29.507 min Scan# 4139
Delta R.T. -0.022 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:276 Resp: 55797

Ion	Ratio	Lower	Upper
276	100		
138	23.9	8.3	48.3

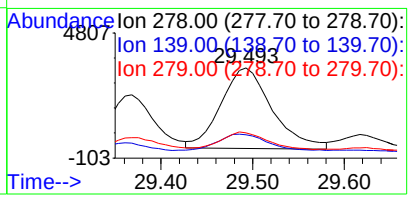


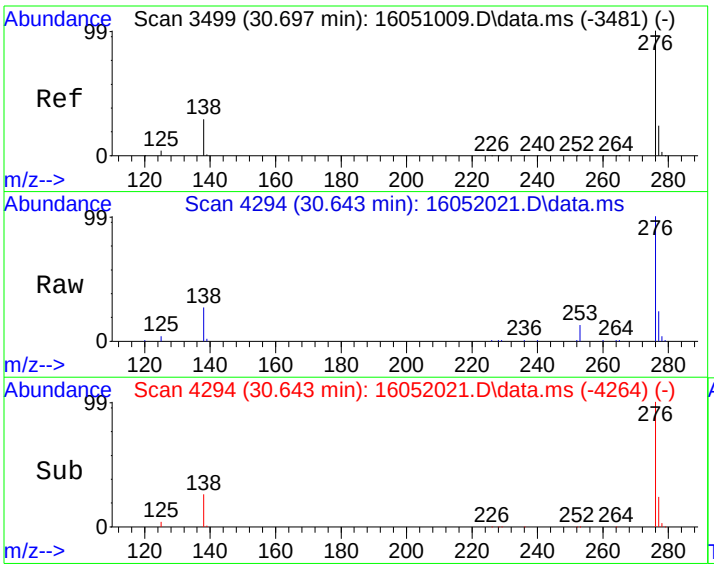


#27
Dibenz[a,h]anthracene
Concen: 18.11 ug/kg
RT: 29.493 min Scan# 4137
Delta R.T. -0.021 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:278 Resp: 12365

Ion	Ratio	Lower	Upper
278	100		
139	21.2	0.0	40.0
279	21.9	4.2	44.2

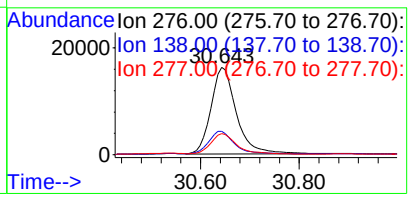




#28
Benzo[g,h,i]perylene
Concen: 98.94 ug/kg
RT: 30.643 min Scan# 4294
Delta R.T. -0.029 min
Lab File: 16052021.D
Acq: 20 May 2016 9:00 pm

Tgt Ion:276 Resp: 57657

Ion	Ratio	Lower	Upper
276	100		
138	26.0	5.8	45.8
277	23.7	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052022.D
Acq On : 20 May 2016 9:37 pm
Operator :
Sample : 1605098-03A
Misc : SAMP
ALS Vial : 22 Sample Multiplier: 10

Quant Time: May 23 10:01:10 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1532113	4000.00	ug/kg	94
6) Acenaphthene-d10	12.857	164	1247123	4000.00	ug/kg	99
11) Phenanthrene-d10	14.977	188	2259753	4000.00	ug/kg	77
16) Chrysene-d12	20.981	240	2261489	4000.00	ug/kg	83
20) Perylene-d12	26.248	264	2118673	4000.00	ug/kg	85
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	31721	92.99	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.32%#		
17) 4-Terphenyl-d14	17.584	244	38229	79.87	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	2.00%#		
Target Compounds						Qvalue
12) Phenanthrene	15.012	178	77395	124.47	ug/kg	98
13) Anthracene	15.057	178	15262	24.26	ug/kg	98
14) Fluoranthene	17.068	202	167469	267.01	ug/kg	98
15) Pyrene	17.698	202	134956	219.98	ug/kg	97
18) Benzo[a]anthracene	20.805	228	68462	115.12	ug/kg	99
19) Chrysene	21.069	228	71539	129.81	ug/kg	99
21) Benzo[b]fluoranthene	24.460	252	63443	110.90	ug/kg	99
22) Benzo[k]fluoranthene	24.541	252	28382	54.83	ug/kg	97
23) Benzo(j)fluoranthene	24.643	252	28193	54.57	ug/kg	91
24) Benzo(e)pyrene	25.727	252	44050	80.10	ug/kg	98
25) Benzo[a]pyrene	25.903	252	60985	114.50	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.507	276	45272	67.15	ug/kg	93
27) Dibenz[a,h]anthracene	29.485	278	10199	14.43	ug/kg	98
28) Benzo[g,h,i]perylene	30.643	276	44496	76.85	ug/kg	99

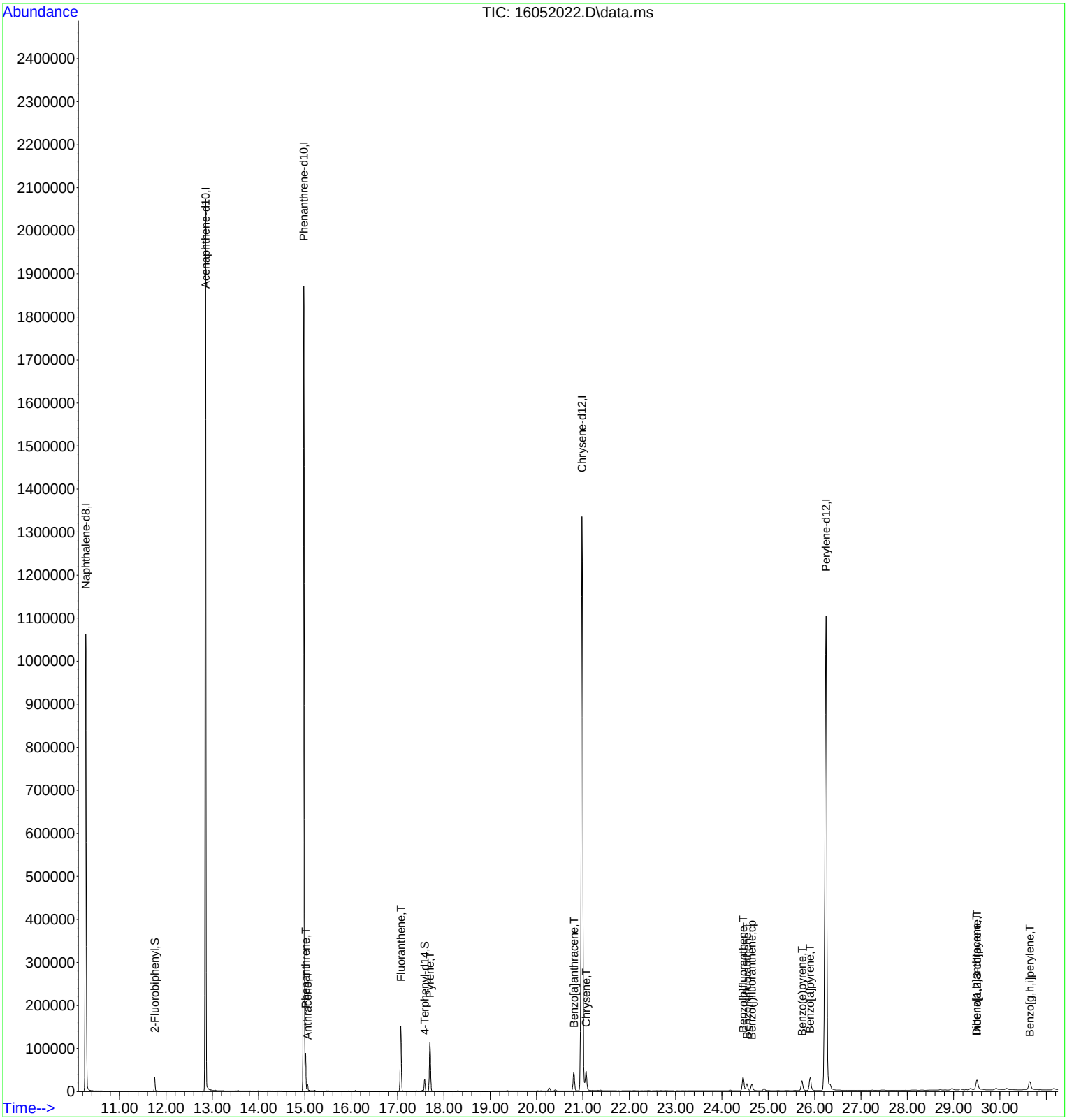
CONFIRMED
By Sherri Herschmann at 9:26:41 AM, 5/24/2016

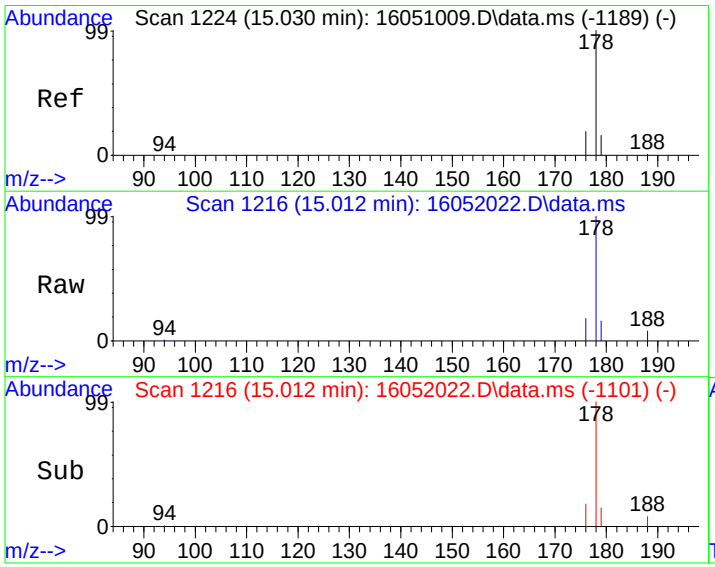
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052022.D
Acq On : 20 May 2016 9:37 pm
Operator :
Sample : 1605098-03A
Misc : SAMP
ALS Vial : 22 Sample Multiplier: 10

Quant Time: May 23 10:01:10 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

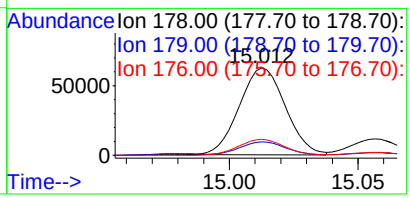


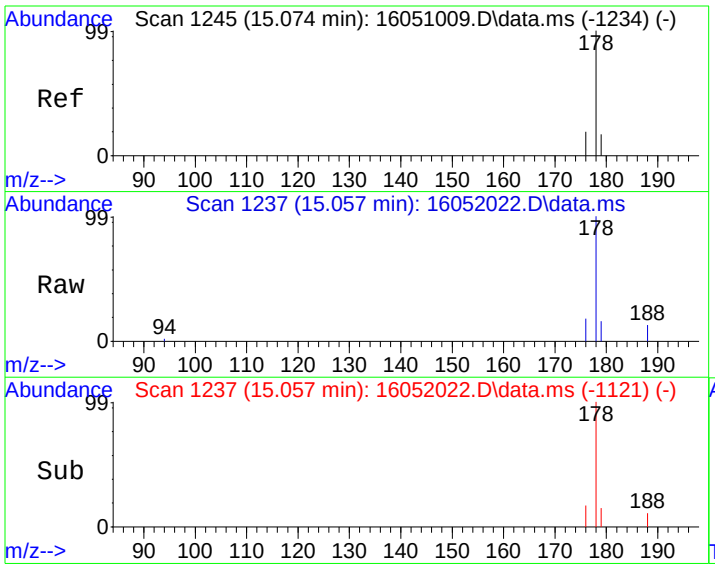


#12
Phenanthrene
Concen: 124.47 ug/kg
RT: 15.012 min Scan# 1216
Delta R.T. -0.007 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:178 Resp: 77395

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	18.3	0.0	39.0

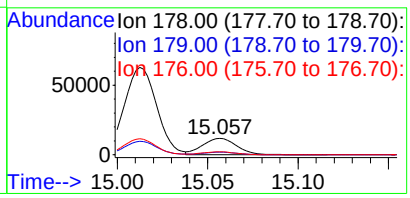


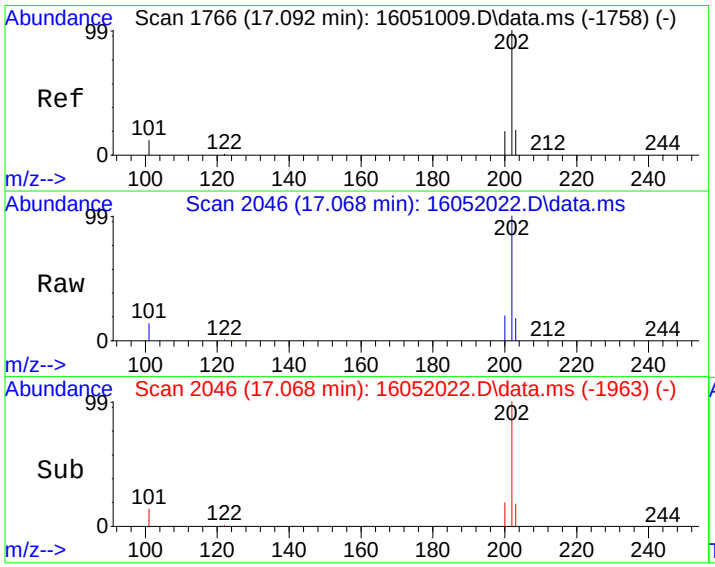


#13
Anthracene
Concen: 24.26 ug/kg
RT: 15.057 min Scan# 1237
Delta R.T. -0.005 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:178 Resp: 15262

Ion	Ratio	Lower	Upper
178	100		
179	15.5	0.0	36.3
176	17.3	0.0	38.5

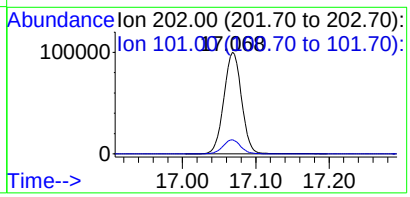


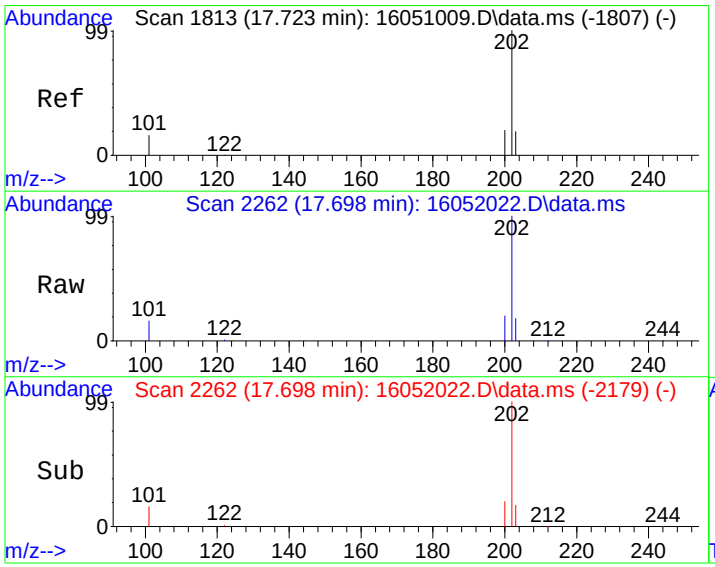


#14
Fluoranthene
Concen: 267.01 ug/kg
RT: 17.068 min Scan# 2046
Delta R.T. -0.008 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:202 Resp: 167469

Ion	Ratio	Lower	Upper
202	100		
101	13.7	0.0	34.4

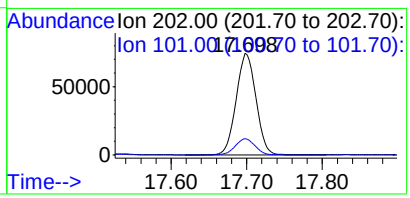


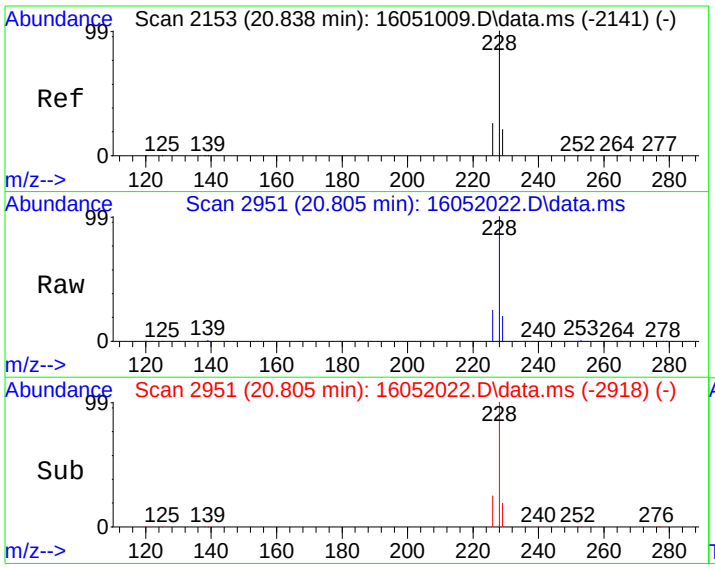


#15
Pyrene
Concen: 219.98 ug/kg
RT: 17.698 min Scan# 2262
Delta R.T. -0.008 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:202 Resp: 134956

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	37.3

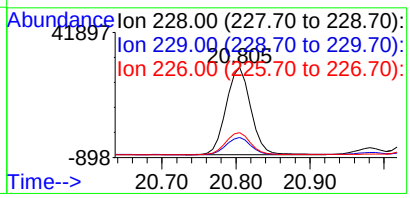


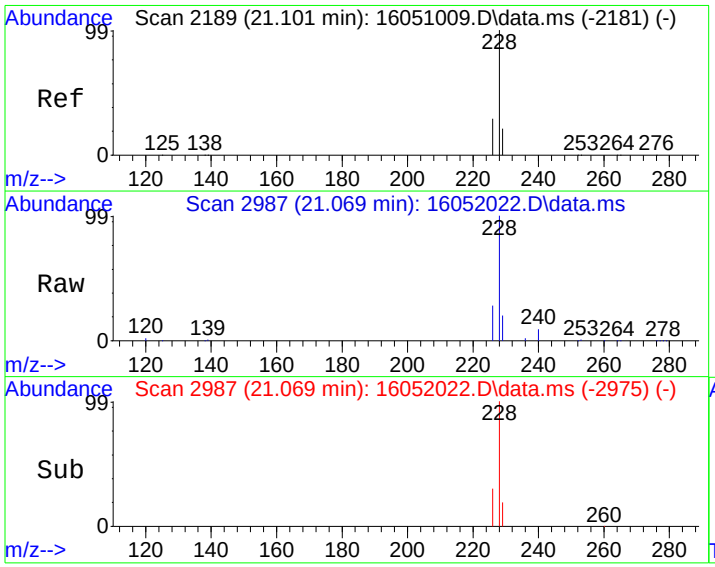


#18
Benzo[a]anthracene
Concen: 115.12 ug/kg
RT: 20.805 min Scan# 2951
Delta R.T. -0.007 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:228 Resp: 68462

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.3	40.3
226	25.3	5.7	45.7

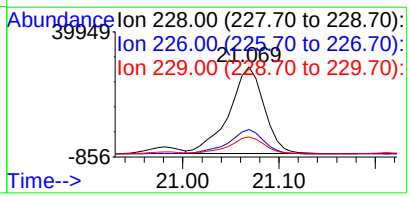


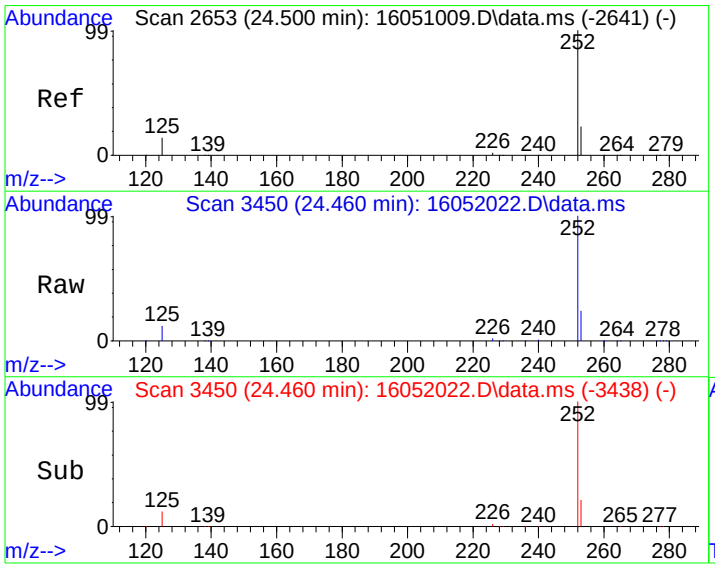


#19
Chrysene
Concen: 129.81 ug/kg
RT: 21.069 min Scan# 2987
Delta R.T. -0.014 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:228 Resp: 71539

Ion	Ratio	Lower	Upper
228	100		
226	28.0	8.2	48.2
229	19.8	0.3	40.3

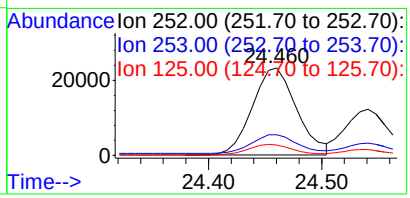


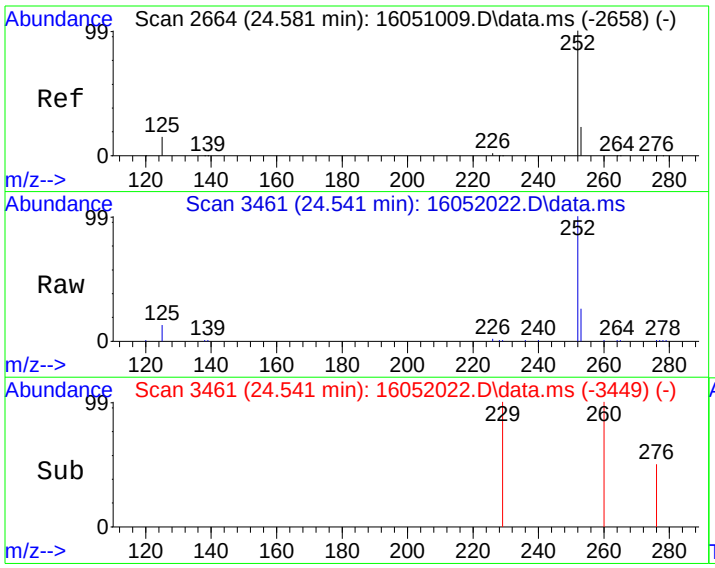


#21
Benzo[b]fluoranthene
Concen: 110.90 ug/kg
RT: 24.460 min Scan# 3450
Delta R.T. -0.015 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:252 Resp: 63443

Ion	Ratio	Lower	Upper
252	100		
253	21.6	2.3	42.3
125	11.7	0.0	32.2

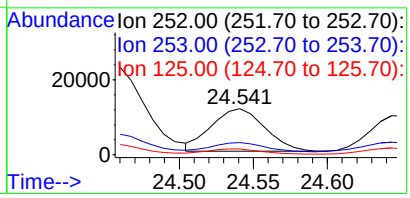


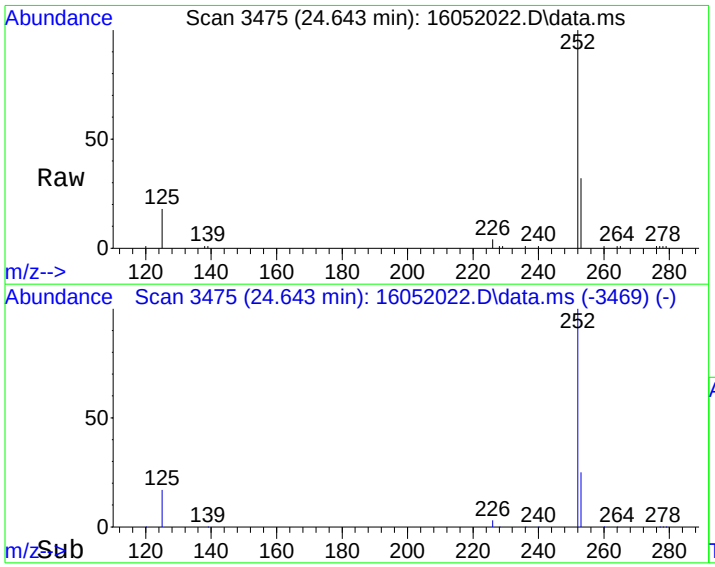


#22
Benzo[k]fluoranthene
Concen: 54.83 ug/kg
RT: 24.541 min Scan# 3461
Delta R.T. -0.014 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:252 Resp: 28382

Ion	Ratio	Lower	Upper
252	100		
253	20.4	2.5	42.5
125	12.0	0.0	32.6

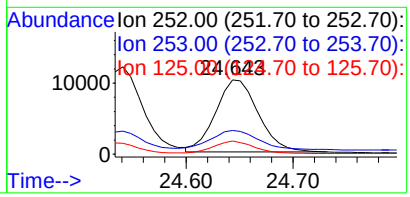


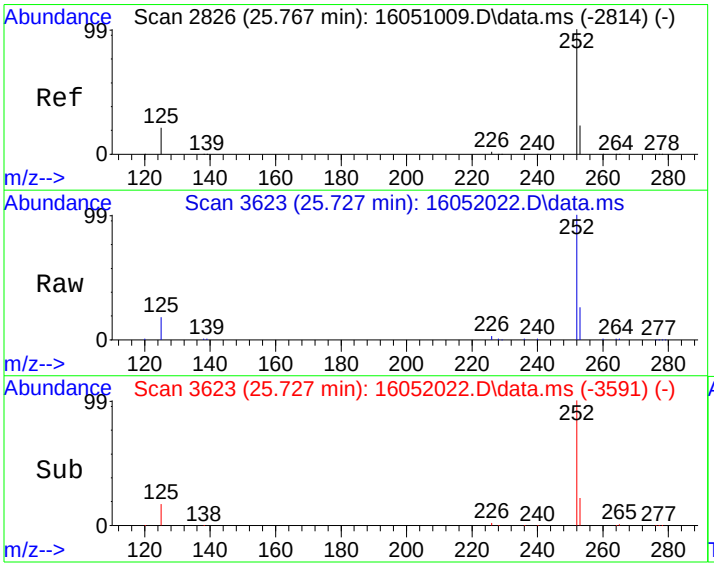


#23
Benzo(j)fluoranthene
Concen: 54.57 ug/kg
RT: 24.643 min Scan# 3475
Delta R.T. -0.022 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:252 Resp: 28193

Ion	Ratio	Lower	Upper
252	100		
253	28.9	2.2	42.2
125	16.4	0.0	37.3

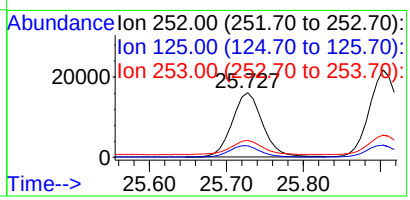


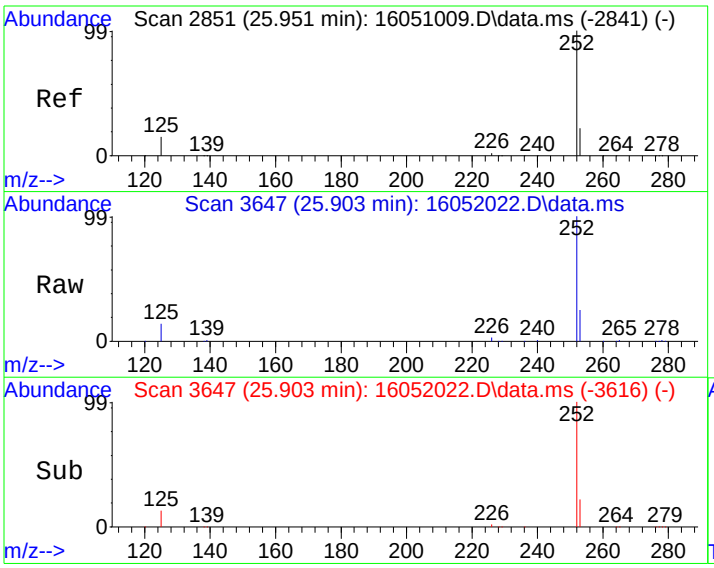


#24
Benzo(e)pyrene
Concen: 80.10 ug/kg
RT: 25.727 min Scan# 3623
Delta R.T. -0.015 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:252 Resp: 44050

Ion	Ratio	Lower	Upper
252	100		
125	18.1	0.0	38.7
253	23.7	2.3	42.3

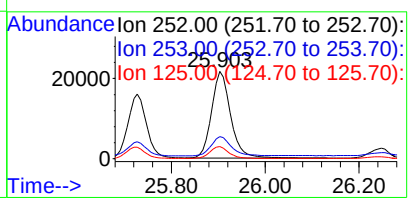


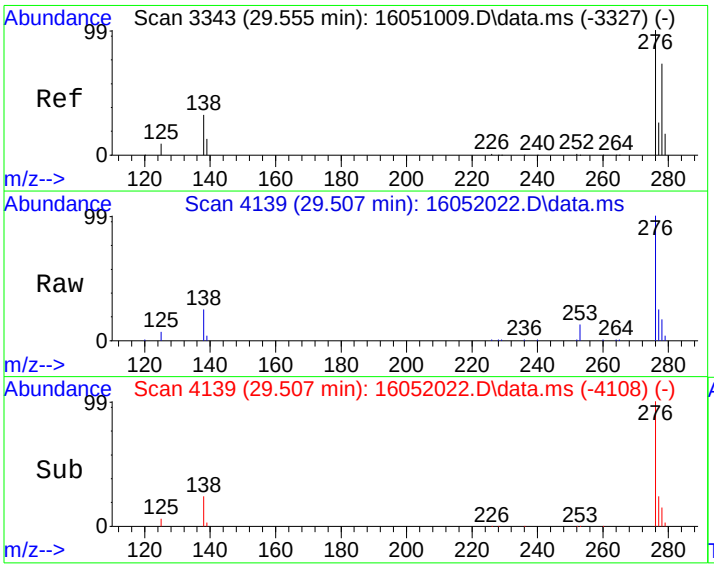


#25
Benzo[a]pyrene
Concen: 114.50 ug/kg
RT: 25.903 min Scan# 3647
Delta R.T. -0.022 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:252 Resp: 60985

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.3	42.3
125	13.6	0.0	33.5

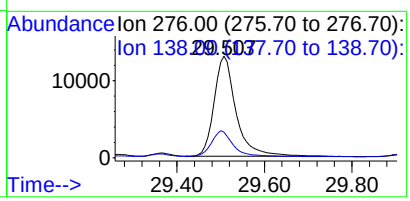


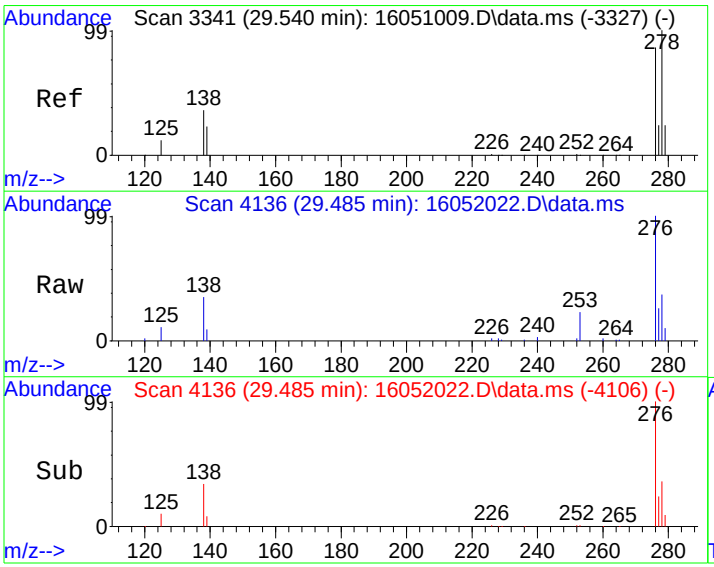


#26
Indeno[1,2,3-cd]pyrene
Concen: 67.15 ug/kg
RT: 29.507 min Scan# 4139
Delta R.T. -0.022 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:276 Resp: 45272

Ion	Ratio	Lower	Upper
276	100		
138	24.4	8.3	48.3

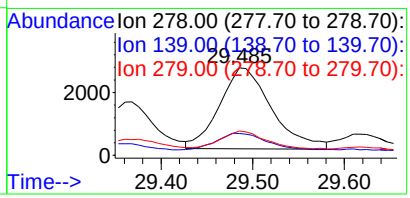


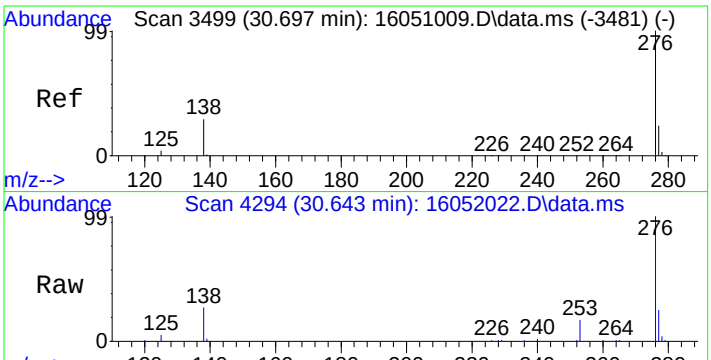


#27
Dibenz[a,h]anthracene
Concen: 14.43 ug/kg
RT: 29.485 min Scan# 4136
Delta R.T. -0.029 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:278 Resp: 10199

Ion	Ratio	Lower	Upper
278	100		
139	21.9	0.0	40.0
279	24.0	4.2	44.2

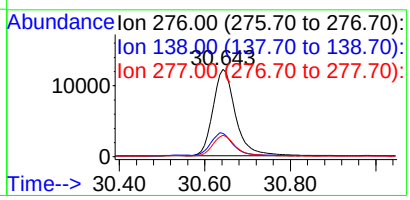




#28
Benzo[g,h,i]perylene
Concen: 76.85 ug/kg
RT: 30.643 min Scan# 4294
Delta R.T. -0.029 min
Lab File: 16052022.D
Acq: 20 May 2016 9:37 pm

Tgt Ion:276 Resp: 44496

Ion	Ratio	Lower	Upper
276	100		
138	25.6	5.8	45.8
277	24.0	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052023.D
Acq On : 20 May 2016 10:14 pm
Operator :
Sample : 1605098-04A
Misc : SAMP
ALS Vial : 23 Sample Multiplier: 10

Quant Time: May 23 10:01:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1581977	4000.00	ug/kg	97
6) Acenaphthene-d10	12.857	164	1277935	4000.00	ug/kg	102
11) Phenanthrene-d10	14.977	188	2311027	4000.00	ug/kg	79
16) Chrysene-d12	20.980	240	2304187	4000.00	ug/kg	85
20) Perylene-d12	26.247	264	2170360	4000.00	ug/kg	87

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	30396	86.30	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.16%#			
17) 4-Terphenyl-d14	17.584	244	36306	74.44	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.86%#			

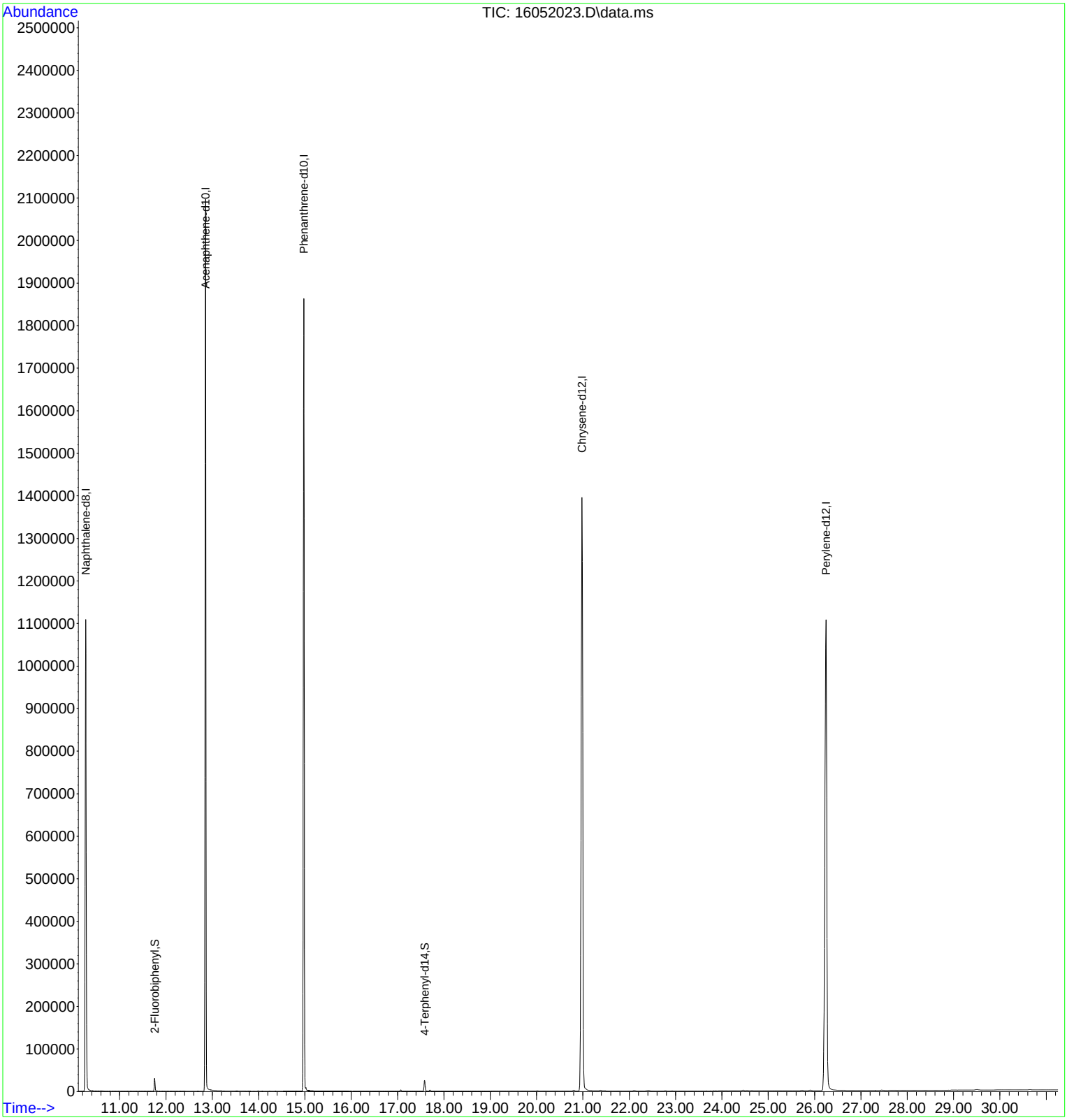
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052023.D
Acq On : 20 May 2016 10:14 pm
Operator :
Sample : 1605098-04A
Misc : SAMP
ALS Vial : 23 Sample Multiplier: 10

Quant Time: May 23 10:01:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052024.D
Acq On : 20 May 2016 10:52 pm
Operator :
Sample : 1605098-05A
Misc : SAMP
ALS Vial : 24 Sample Multiplier: 10

Quant Time: May 23 10:01:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1572585	4000.00	ug/kg	96
6) Acenaphthene-d10	12.856	164	1259304	4000.00	ug/kg	100
11) Phenanthrene-d10	14.976	188	2256382	4000.00	ug/kg	77
16) Chrysene-d12	20.979	240	2259578	4000.00	ug/kg	83
20) Perylene-d12	26.246	264	2129667	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.758	172	31648	90.39	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.26%#			
17) 4-Terphenyl-d14	17.584	244	37274	77.94	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.95%#			

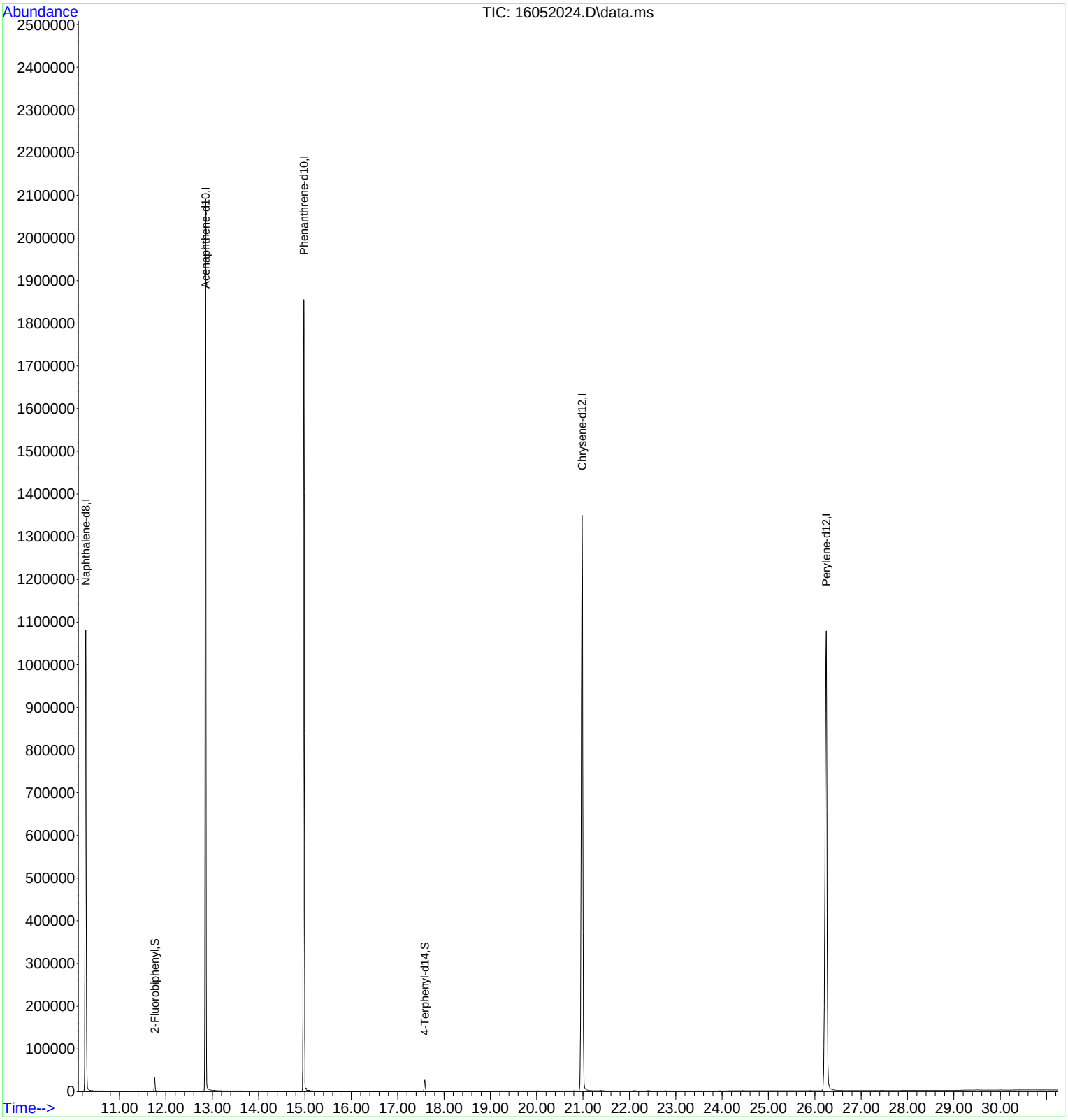
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052024.D
Acq On : 20 May 2016 10:52 pm
Operator :
Sample : 1605098-05A
Misc : SAMP
ALS Vial : 24 Sample Multiplier: 10

Quant Time: May 23 10:01:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052025.D
Acq On : 20 May 2016 11:29 pm
Operator :
Sample : 1605098-06A
Misc : SAMP
ALS Vial : 25 Sample Multiplier: 10

Quant Time: May 23 10:01:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.266	136	1584231	4000.00	ug/kg	97
6) Acenaphthene-d10	12.856	164	1269401	4000.00	ug/kg	101
11) Phenanthrene-d10	14.976	188	2293494	4000.00	ug/kg	78
16) Chrysene-d12	20.981	240	2342825	4000.00	ug/kg	86
20) Perylene-d12	26.248	264	2191915	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	31065	88.07	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.20%#			
17) 4-Terphenyl-d14	17.584	244	37278	75.17	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.88%#			

Target Compounds						Qvalue
12) Phenanthrene	15.011	178	14095	22.34	ug/kg	98
14) Fluoranthene	17.068	202	47350	72.52	ug/kg	97
15) Pyrene	17.698	202	43649	68.32	ug/kg	97
18) Benzo[a]anthracene	20.805	228	28913	45.79	ug/kg	99
19) Chrysene	21.069	228	35526	60.70	ug/kg	99
21) Benzo[b]fluoranthene	24.453	252	37397	62.39	ug/kg	99
22) Benzo[k]fluoranthene	24.541	252	15800	28.98	ug/kg	96
23) Benzo(j)fluoranthene	24.644	252	15545	27.58	ug/kg	89
24) Benzo(e)pyrene	25.720	252	27873	48.00	ug/kg	95
25) Benzo[a]pyrene	25.903	252	36943	66.12	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.507	276	28964	40.41	ug/kg	90
27) Dibenz[a,h]anthracene	29.493	278	6361	6.91	ug/kg	97
28) Benzo[g,h,i]perylene	30.643	276	30397	49.69	ug/kg	98

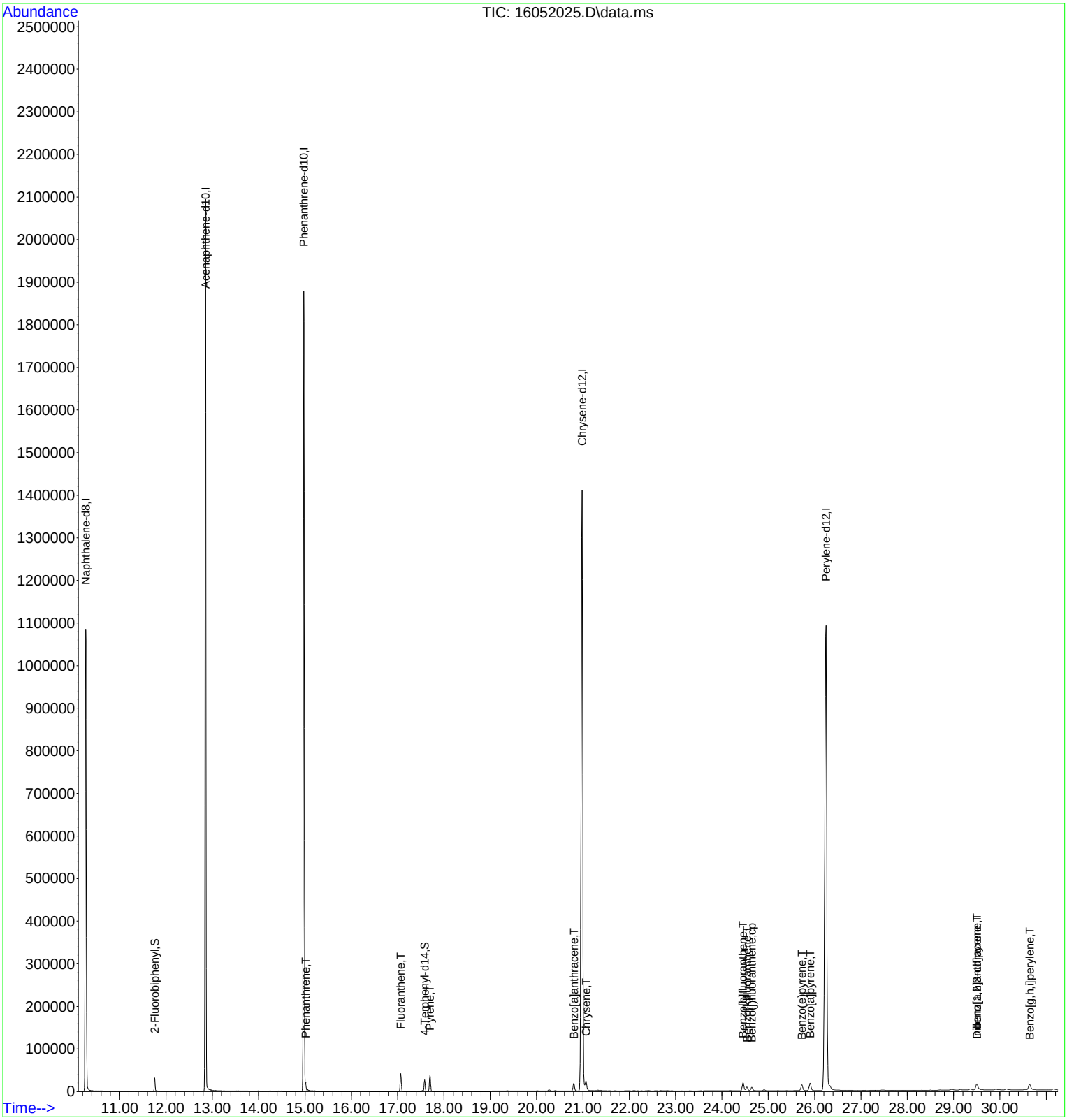
CONFIRMED
By Sherri Herschmann at 9:27:34 AM, 5/24/2016

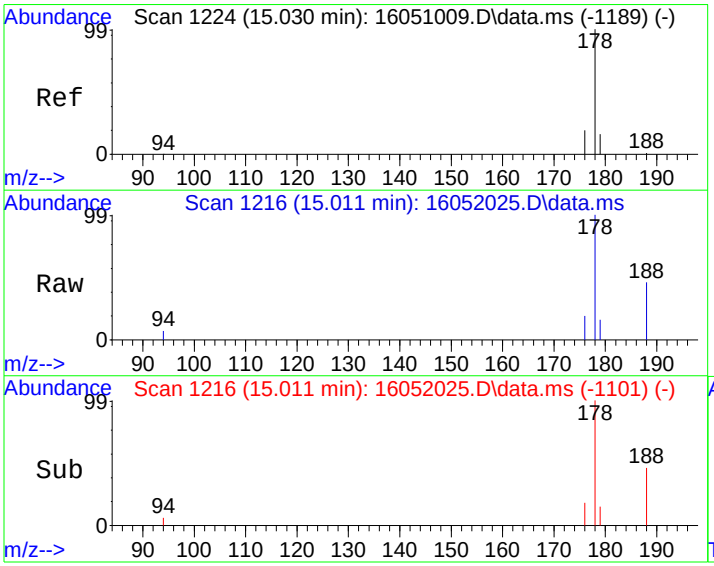
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052025.D
Acq On : 20 May 2016 11:29 pm
Operator :
Sample : 1605098-06A
Misc : SAMP
ALS Vial : 25 Sample Multiplier: 10

Quant Time: May 23 10:01:25 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

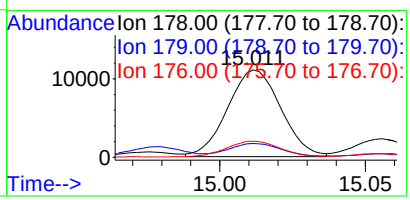


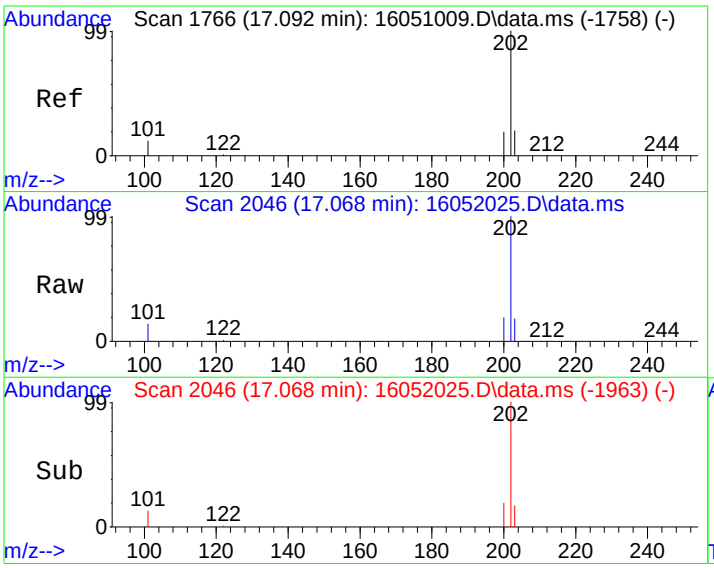


#12
Phenanthrene
Concen: 22.34 ug/kg
RT: 15.011 min Scan# 1216
Delta R.T. -0.008 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:178 Resp: 14095

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	36.4
176	18.4	0.0	39.0

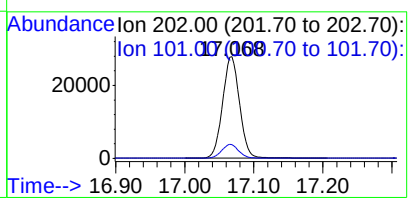


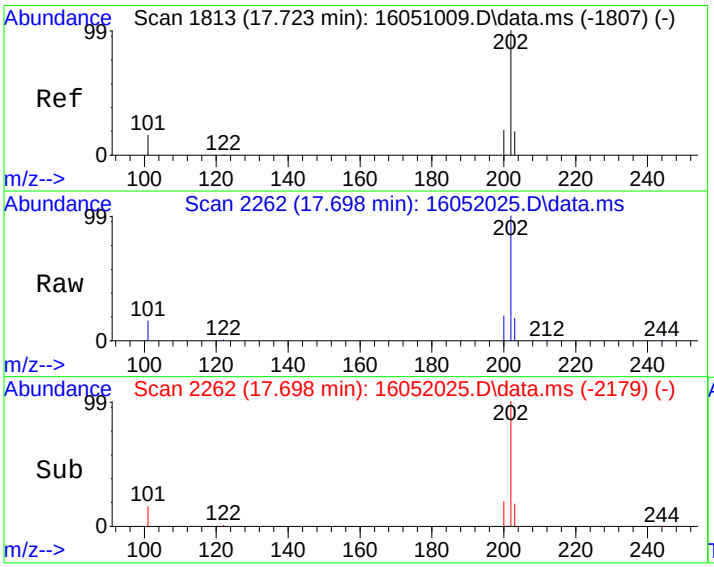


#14
Fluoranthene
Concen: 72.52 ug/kg
RT: 17.068 min Scan# 2046
Delta R.T. -0.008 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:202 Resp: 47350

Ion	Ratio	Lower	Upper
202	100		
101	13.4	0.0	34.4

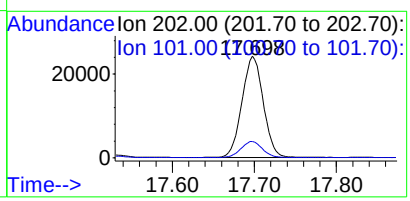


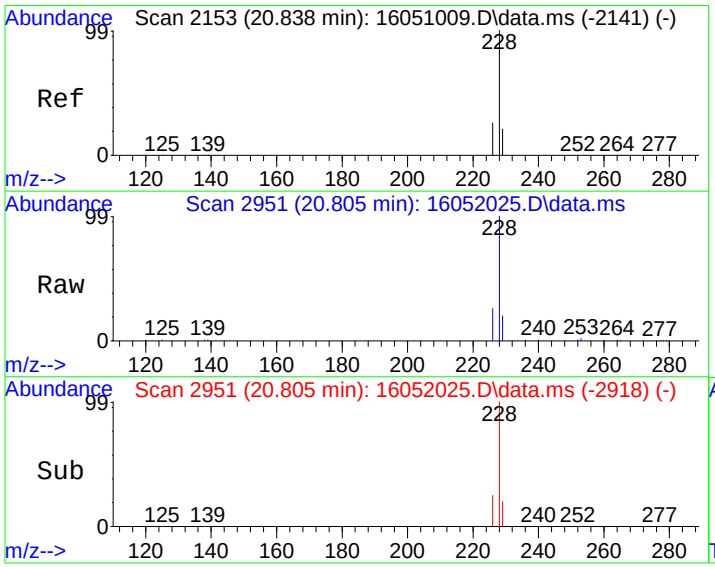


#15
Pyrene
Concen: 68.32 ug/kg
RT: 17.698 min Scan# 2262
Delta R.T. -0.008 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:202 Resp: 43649

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	37.3

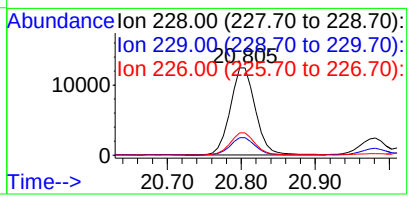


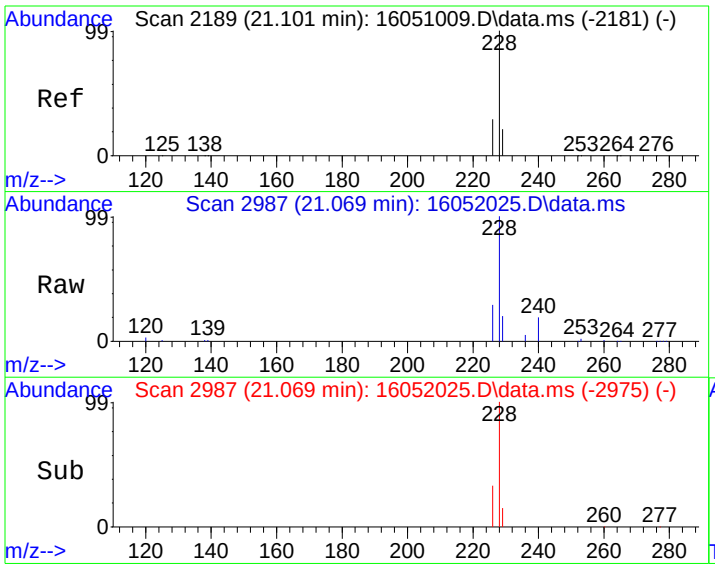


#18
Benzo[a]anthracene
Concen: 45.79 ug/kg
RT: 20.805 min Scan# 2951
Delta R.T. -0.007 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:228 Resp: 28913

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.3	40.3
226	25.4	5.7	45.7

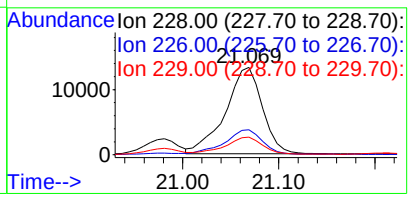


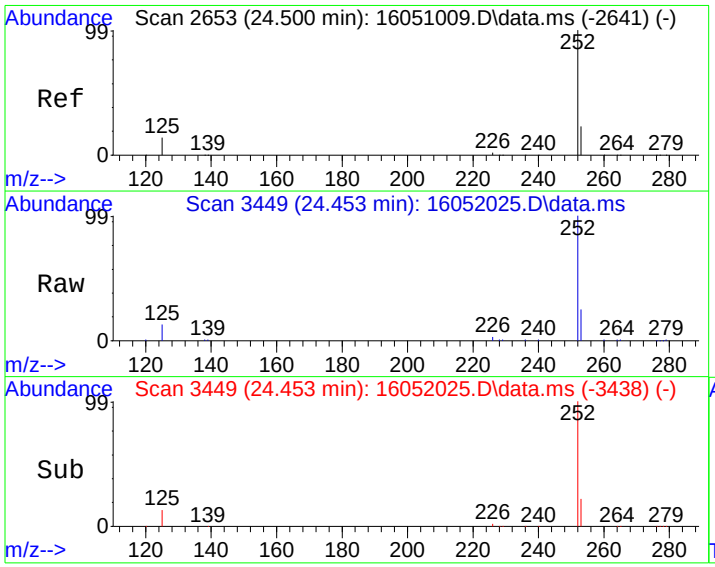


#19
Chrysene
Concen: 60.70 ug/kg
RT: 21.069 min Scan# 2987
Delta R.T. -0.014 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:228 Resp: 35526

Ion	Ratio	Lower	Upper
228	100		
226	28.2	8.2	48.2
229	19.6	0.3	40.3

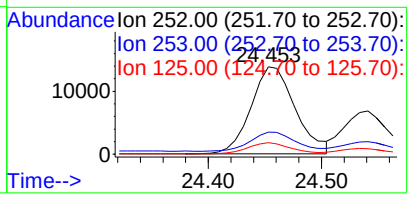


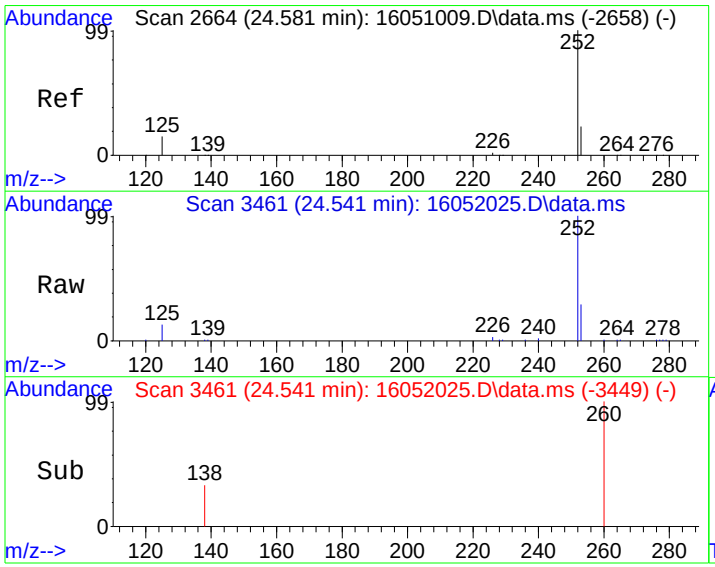


#21
Benzo[b]fluoranthene
Concen: 62.39 ug/kg
RT: 24.453 min Scan# 3449
Delta R.T. -0.022 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:252 Resp: 37397

Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.3	42.3
125	12.8	0.0	32.2

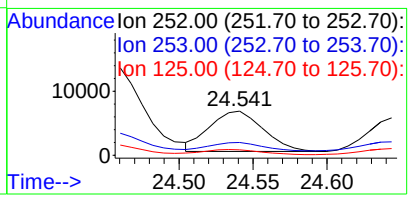


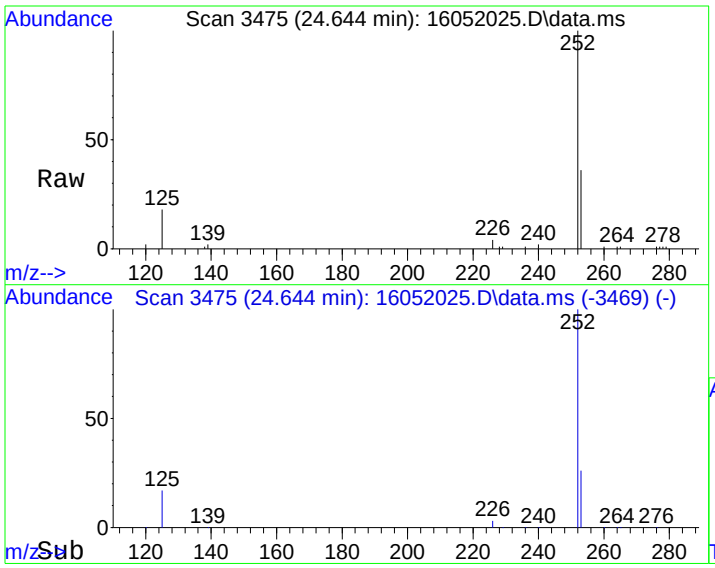


#22
Benzo[k]fluoranthene
Concen: 28.98 ug/kg
RT: 24.541 min Scan# 3461
Delta R.T. -0.014 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:252 Resp: 15800

Ion	Ratio	Lower	Upper
252	100		
253	20.3	2.5	42.5
125	11.5	0.0	32.6

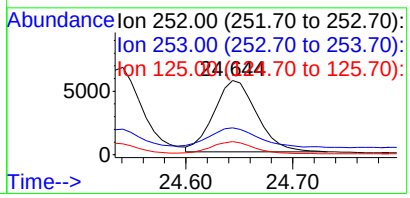


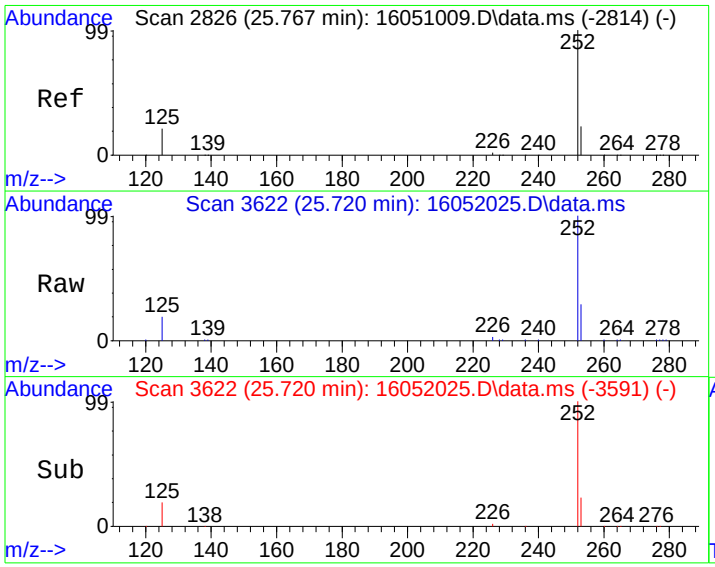


#23
Benzo(j)fluoranthene
Concen: 27.58 ug/kg
RT: 24.644 min Scan# 3475
Delta R.T. -0.021 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:252 Resp: 15545

Ion	Ratio	Lower	Upper
252	100		
253	30.9	2.2	42.2
125	16.8	0.0	37.3

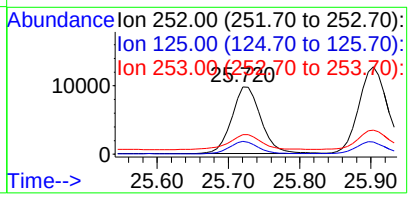


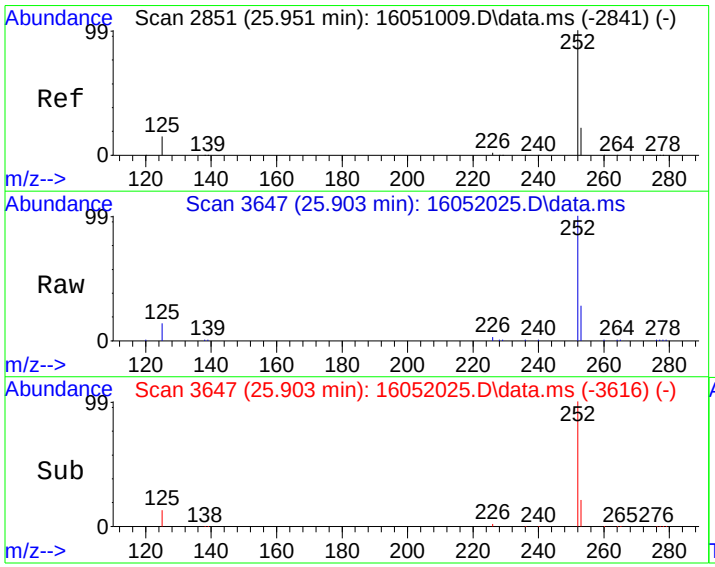


#24
Benzo(e)pyrene
Concen: 48.00 ug/kg
RT: 25.720 min Scan# 3622
Delta R.T. -0.022 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:252 Resp: 27873

Ion	Ratio	Lower	Upper
252	100		
125	18.0	0.0	38.7
253	26.0	2.3	42.3

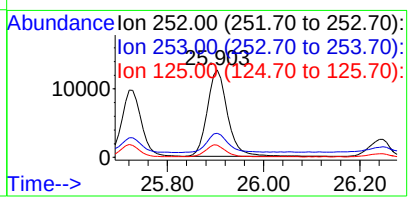


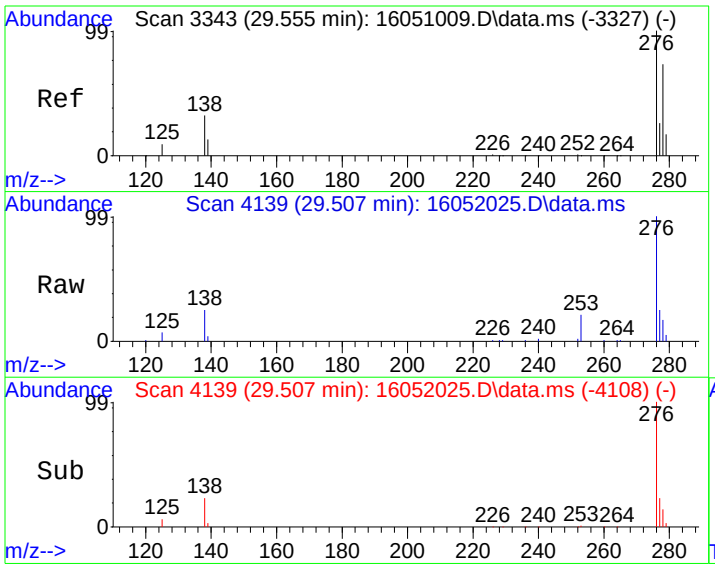


#25
Benzo[a]pyrene
Concen: 66.12 ug/kg
RT: 25.903 min Scan# 3647
Delta R.T. -0.022 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:252 Resp: 36943

Ion	Ratio	Lower	Upper
252	100		
253	22.1	2.3	42.3
125	13.5	0.0	33.5

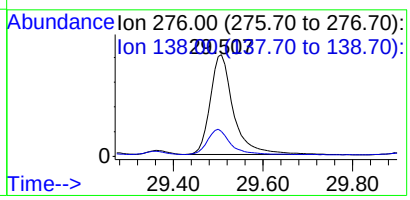


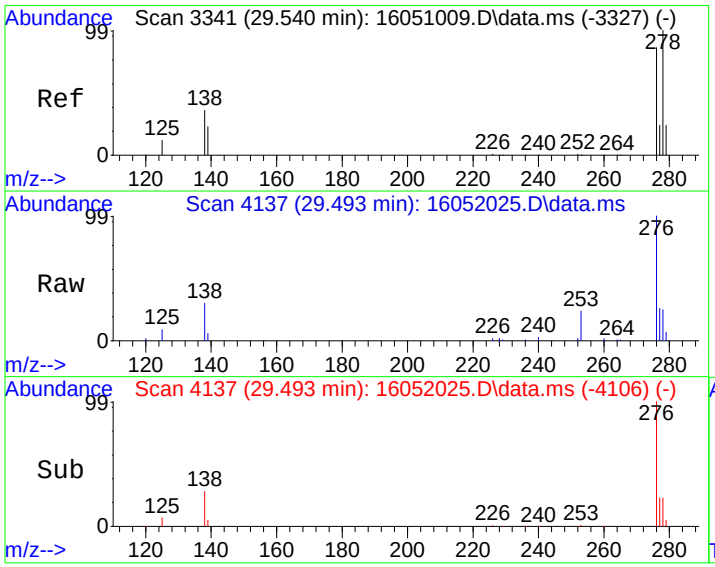


#26
Indeno[1,2,3-cd]pyrene
Concen: 40.41 ug/kg
RT: 29.507 min Scan# 4139
Delta R.T. -0.022 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:276 Resp: 28964

Ion	Ratio	Lower	Upper
276	100		
138	23.2	8.3	48.3

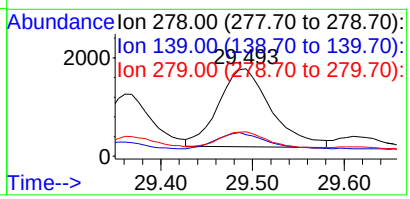


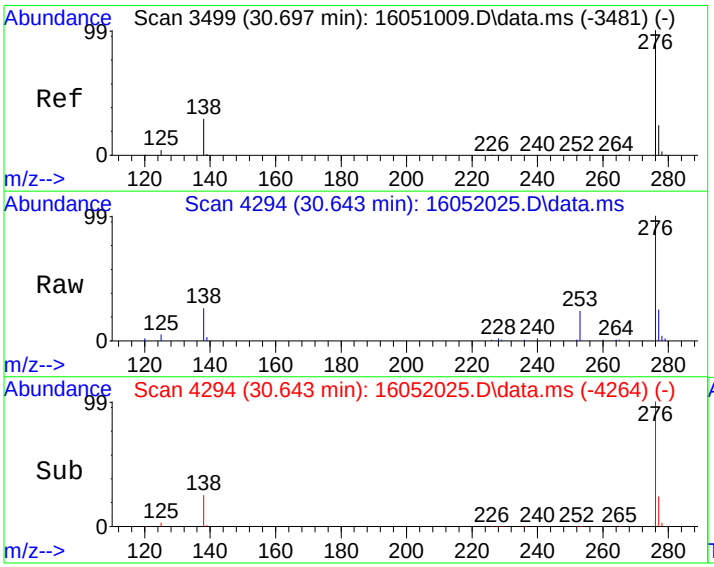


#27
Dibenz[a,h]anthracene
Concen: 6.91 ug/kg
RT: 29.493 min Scan# 4137
Delta R.T. -0.021 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:278 Resp: 6361

Ion	Ratio	Lower	Upper
278	100		
139	19.7	0.0	40.0
279	21.5	4.2	44.2

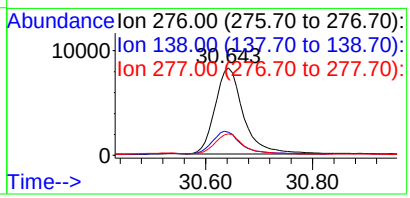




#28
Benzo[g,h,i]perylene
Concen: 49.69 ug/kg
RT: 30.643 min Scan# 4294
Delta R.T. -0.029 min
Lab File: 16052025.D
Acq: 20 May 2016 11:29 pm

Tgt Ion:276 Resp: 30397

Ion	Ratio	Lower	Upper
276	100		
138	25.1	5.8	45.8
277	23.5	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052026.D
Acq On : 21 May 2016 12:07 am
Operator :
Sample : 1605098-07A
Misc : SAMP
ALS Vial : 26 Sample Multiplier: 10

Quant Time: May 23 10:01:33 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1564771	4000.00	ug/kg	96
6) Acenaphthene-d10	12.852	164	1260130	4000.00	ug/kg	100
11) Phenanthrene-d10	14.975	188	2275111	4000.00	ug/kg	78
16) Chrysene-d12	20.981	240	2265473	4000.00	ug/kg	84
20) Perylene-d12	26.240	264	2137204	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	31610	90.73	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.27%#			
17) 4-Terphenyl-d14	17.582	244	37316	77.82	ug/kg	-0.01
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.95%#			

Target Compounds						Qvalue
12) Phenanthrene	15.010	178	13573	21.68	ug/kg	98
14) Fluoranthene	17.066	202	45104	69.55	ug/kg	98
15) Pyrene	17.695	202	40467	63.70	ug/kg	97
18) Benzo[a]anthracene	20.798	228	26937	44.05	ug/kg	99
19) Chrysene	21.062	228	32389	57.07	ug/kg	99
21) Benzo[b]fluoranthene	24.453	252	33589	57.33	ug/kg	99
22) Benzo[k]fluoranthene	24.534	252	14718	27.64	ug/kg	97
23) Benzo(j)fluoranthene	24.643	252	14268	25.78	ug/kg	90
24) Benzo(e)pyrene	25.720	252	25572	45.01	ug/kg	98
25) Benzo[a]pyrene	25.903	252	33510	61.36	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.500	276	26278	37.40	ug/kg	95
28) Benzo[g,h,i]perylene	30.635	276	27680	46.20	ug/kg	99

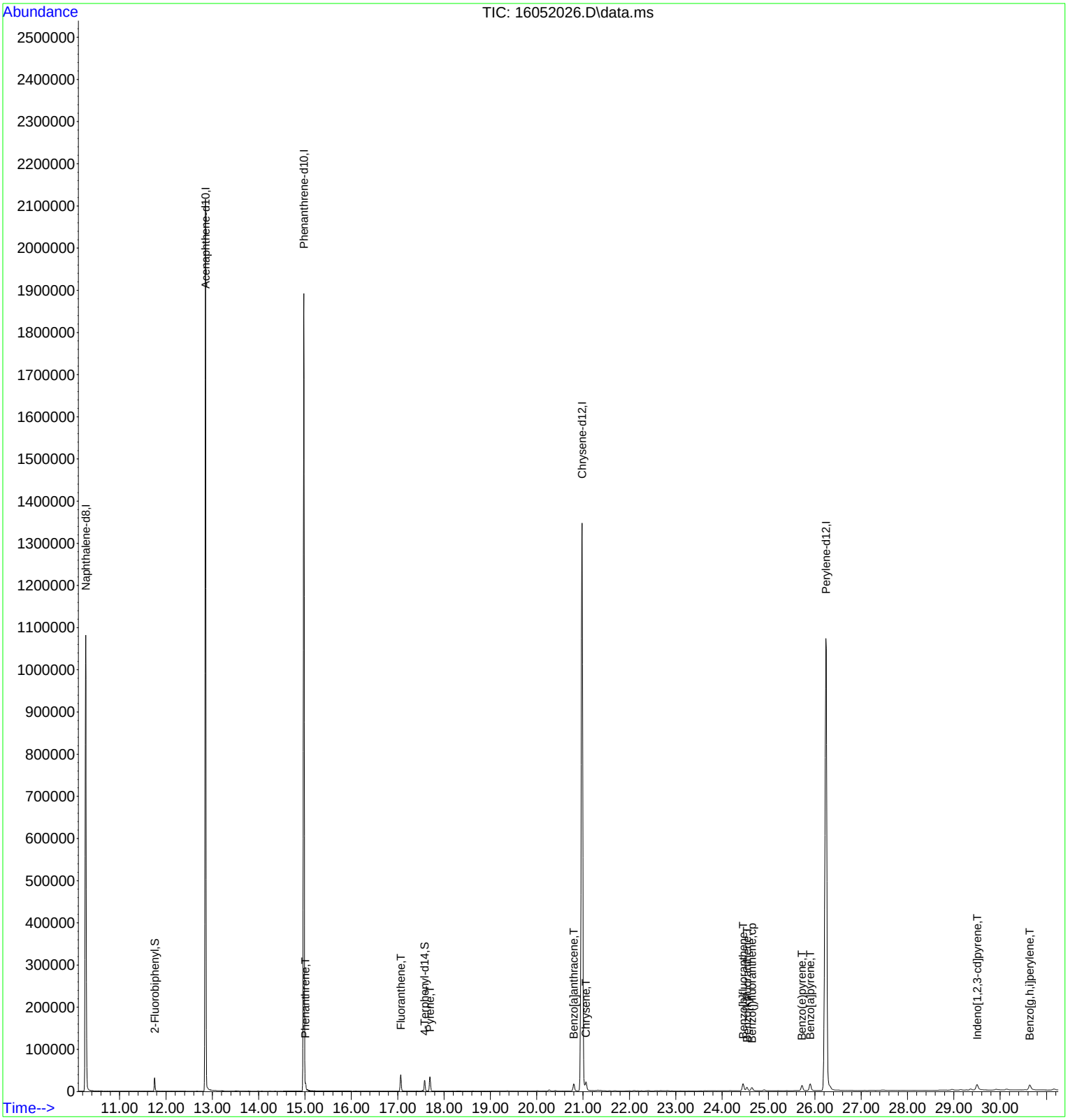
CONFIRMED
By Sherri Herschmann at 9:29:17 AM, 5/24/2016

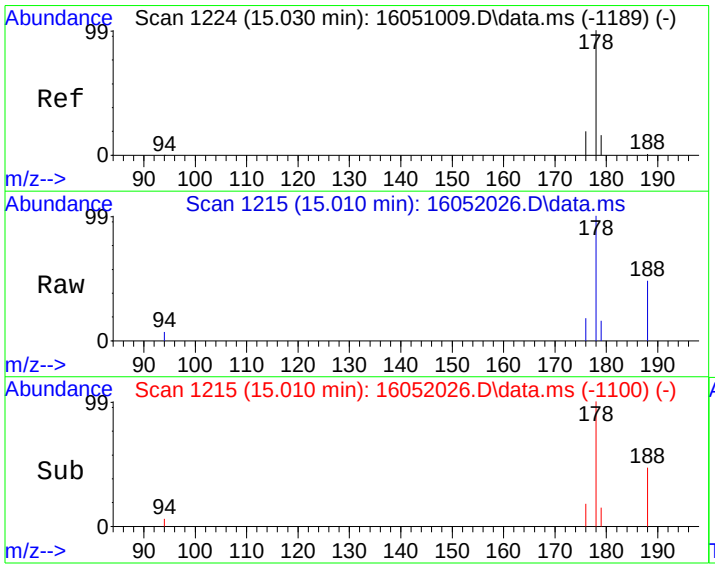
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052026.D
Acq On : 21 May 2016 12:07 am
Operator :
Sample : 1605098-07A
Misc : SAMP
ALS Vial : 26 Sample Multiplier: 10

Quant Time: May 23 10:01:33 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

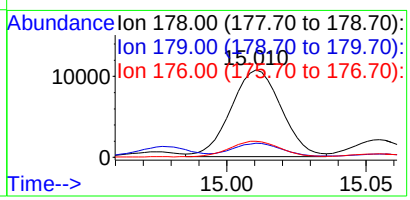


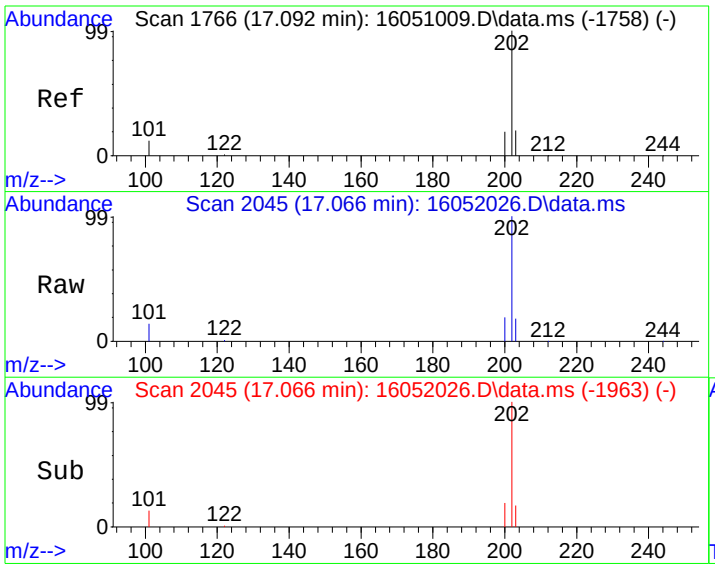


#12
Phenanthrene
Concen: 21.68 ug/kg
RT: 15.010 min Scan# 1215
Delta R.T. -0.009 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:178 Resp: 13573

Ion	Ratio	Lower	Upper
178	100		
179	15.4	0.0	36.4
176	18.4	0.0	39.0

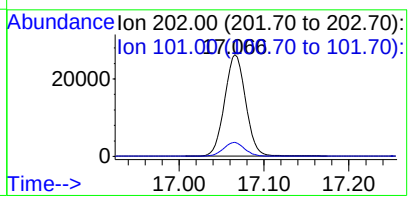


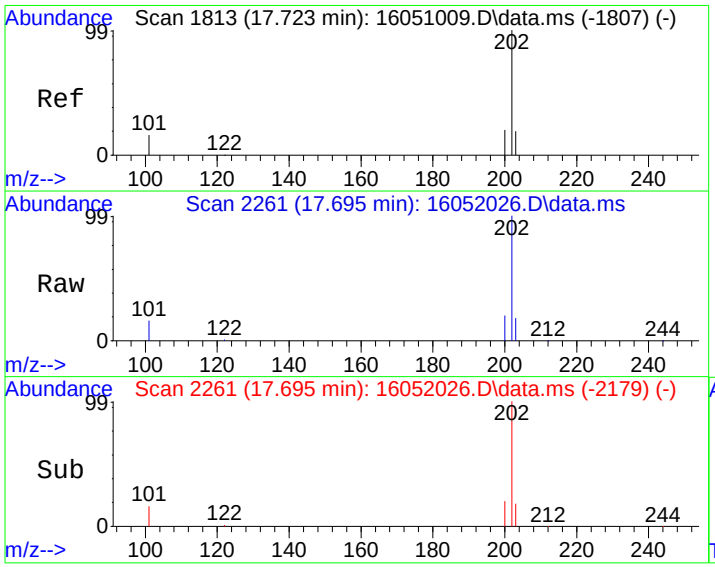


#14
Fluoranthene
Concen: 69.55 ug/kg
RT: 17.066 min Scan# 2045
Delta R.T. -0.010 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:202 Resp: 45104

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	34.4

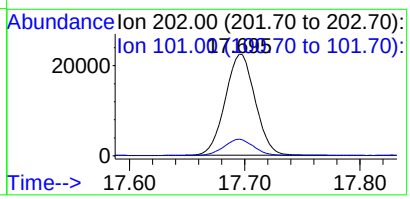


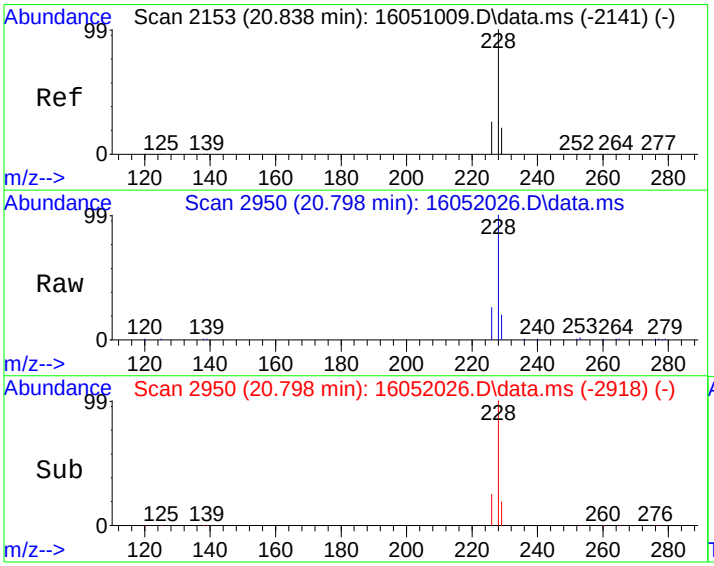


#15
Pyrene
Concen: 63.70 ug/kg
RT: 17.695 min Scan# 2261
Delta R.T. -0.011 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:202 Resp: 40467

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	37.3

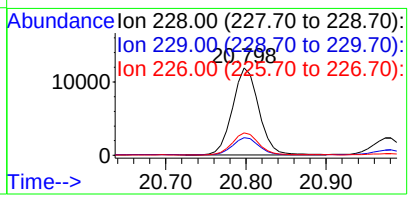


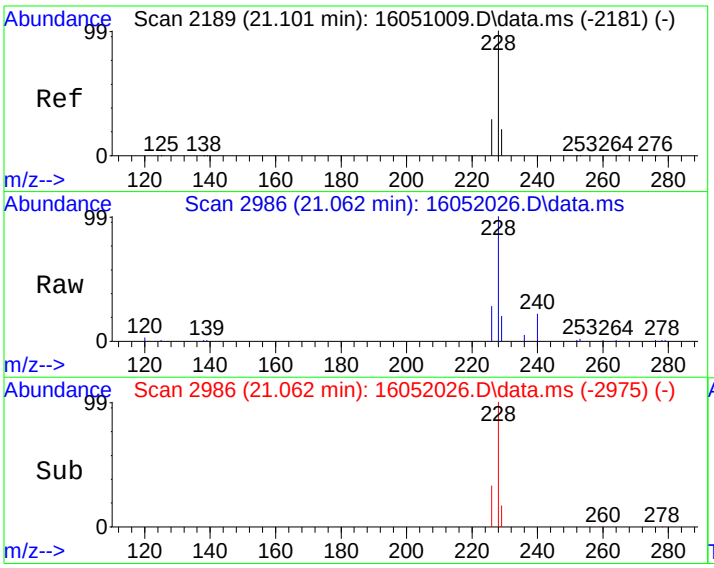


#18
Benzo[a]anthracene
Concen: 44.05 ug/kg
RT: 20.798 min Scan# 2950
Delta R.T. -0.014 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:228 Resp: 26937

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.3	40.3
226	25.4	5.7	45.7

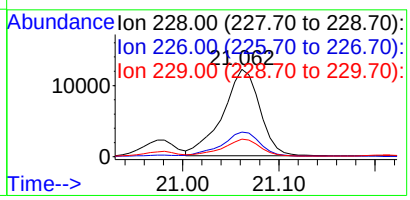


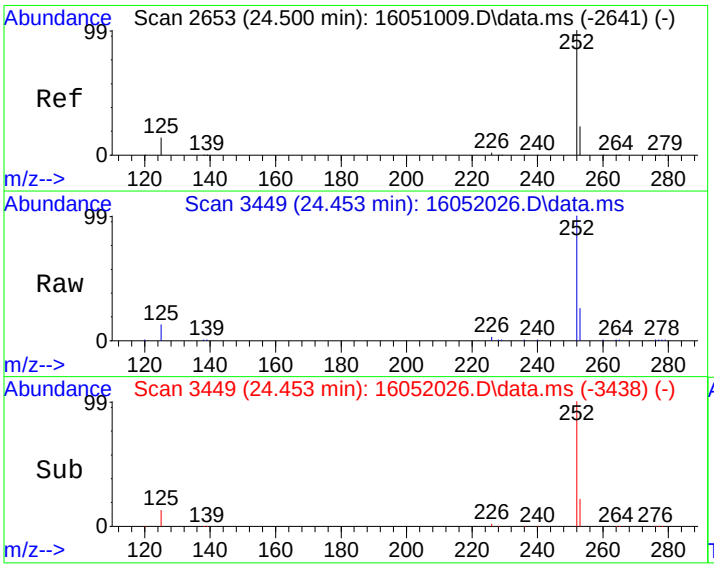


#19
Chrysene
Concen: 57.07 ug/kg
RT: 21.062 min Scan# 2986
Delta R.T. -0.021 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:228 Resp: 32389

Ion	Ratio	Lower	Upper
228	100		
226	28.0	8.2	48.2
229	19.8	0.3	40.3

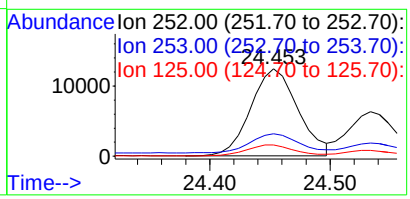


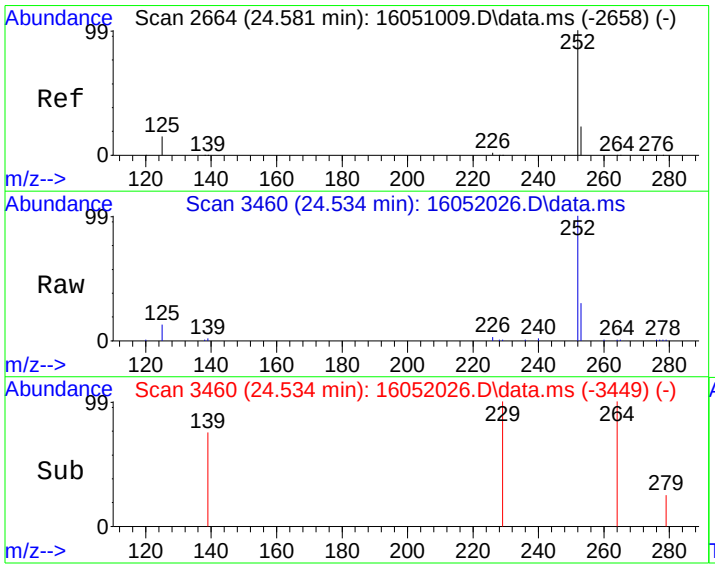


#21
Benzo[b]fluoranthene
Concen: 57.33 ug/kg
RT: 24.453 min Scan# 3449
Delta R.T. -0.022 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:252 Resp: 33589

Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.3	42.3
125	12.6	0.0	32.2

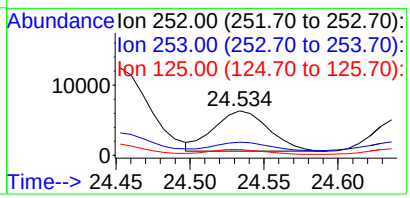


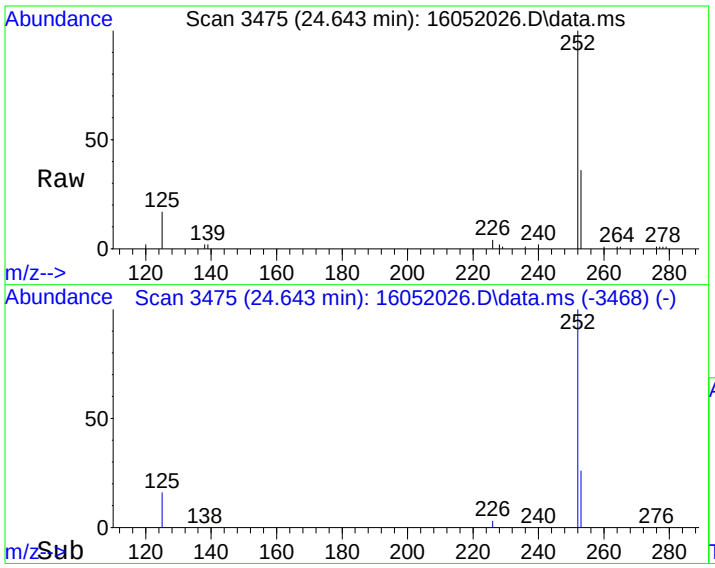


#22
Benzo[k]fluoranthene
Concen: 27.64 ug/kg
RT: 24.534 min Scan# 3460
Delta R.T. -0.021 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:252 Resp: 14718

Ion	Ratio	Lower	Upper
252	100		
253	20.9	2.5	42.5
125	12.0	0.0	32.6

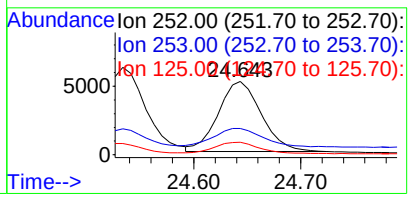


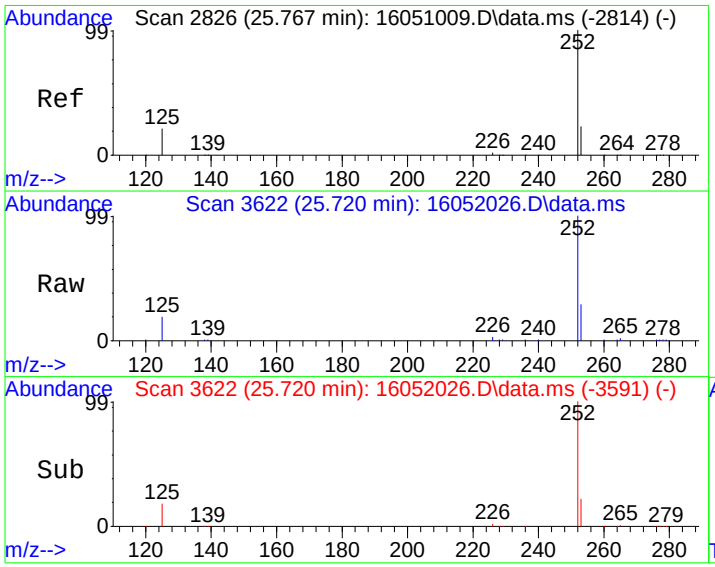


#23
Benzo(j)fluoranthene
Concen: 25.78 ug/kg
RT: 24.643 min Scan# 3475
Delta R.T. -0.022 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:252 Resp: 14268

Ion	Ratio	Lower	Upper
252	100		
253	29.6	2.2	42.2
125	16.3	0.0	37.3

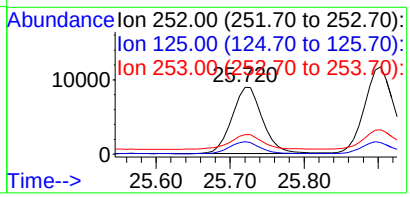


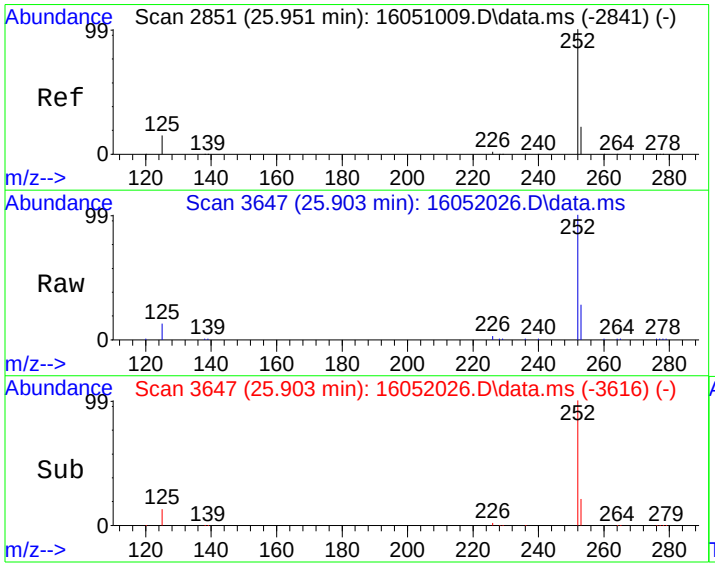


#24
Benzo(e)pyrene
Concen: 45.01 ug/kg
RT: 25.720 min Scan# 3622
Delta R.T. -0.022 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:252 Resp: 25572

Ion	Ratio	Lower	Upper
252	100		
125	18.1	0.0	38.7
253	24.0	2.3	42.3

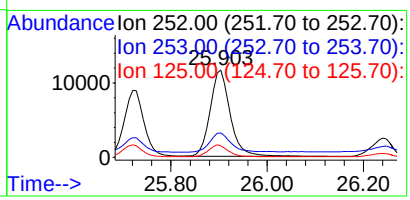


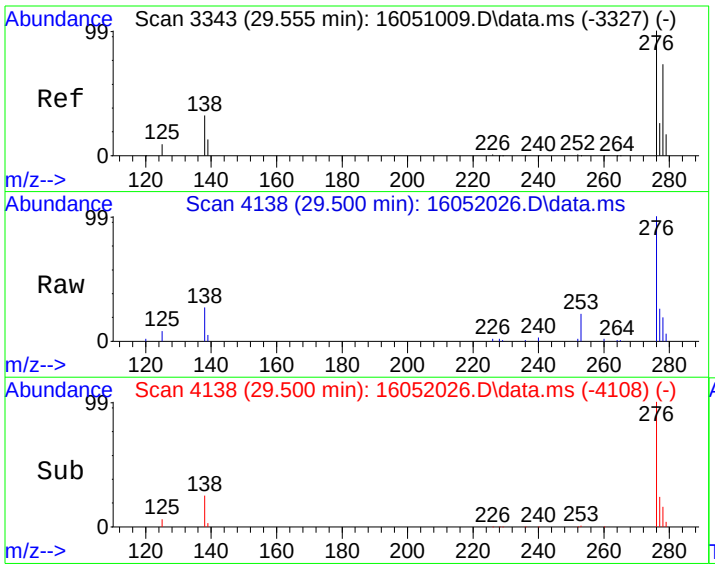


#25
Benzo[a]pyrene
Concen: 61.36 ug/kg
RT: 25.903 min Scan# 3647
Delta R.T. -0.022 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:252 Resp: 33510

Ion	Ratio	Lower	Upper
252	100		
253	22.2	2.3	42.3
125	12.9	0.0	33.5

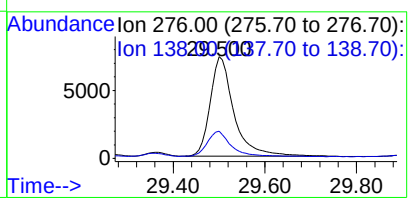


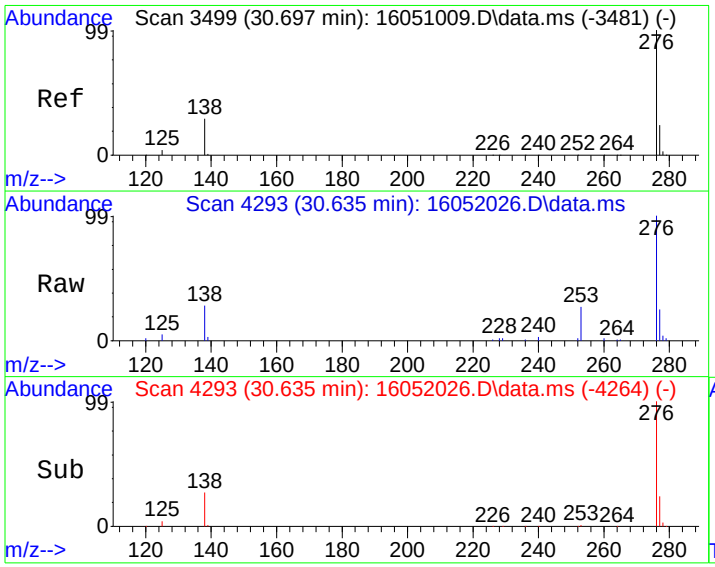


#26
Indeno[1,2,3-cd]pyrene
Concen: 37.40 ug/kg
RT: 29.500 min Scan# 4138
Delta R.T. -0.029 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:276 Resp: 26278

Ion	Ratio	Lower	Upper
276	100		
138	25.7	8.3	48.3

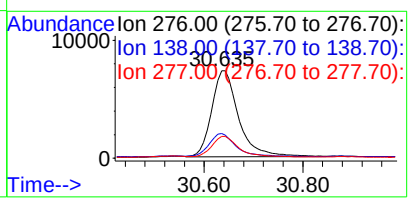




#28
Benzo[g,h,i]perylene
Concen: 46.20 ug/kg
RT: 30.635 min Scan# 4293
Delta R.T. -0.037 min
Lab File: 16052026.D
Acq: 21 May 2016 12:07 am

Tgt Ion:276 Resp: 27680

Ion	Ratio	Lower	Upper
276	100		
138	26.8	5.8	45.8
277	24.1	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052027.D
Acq On : 21 May 2016 12:44 am
Operator :
Sample : 1605098-08A
Misc : SAMP
ALS Vial : 27 Sample Multiplier: 10

Quant Time: May 23 10:01:41 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.269	136	1550113	4000.00	ug/kg	95
6) Acenaphthene-d10	12.856	164	1245872	4000.00	ug/kg	99
11) Phenanthrene-d10	14.974	188	2201768	4000.00	ug/kg	75
16) Chrysene-d12	20.980	240	2217591	4000.00	ug/kg	82
20) Perylene-d12	26.240	264	2088091	4000.00	ug/kg	84

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.754	172	31304	90.70	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.27%#			
17) 4-Terphenyl-d14	17.584	244	35706	76.07	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.90%#			

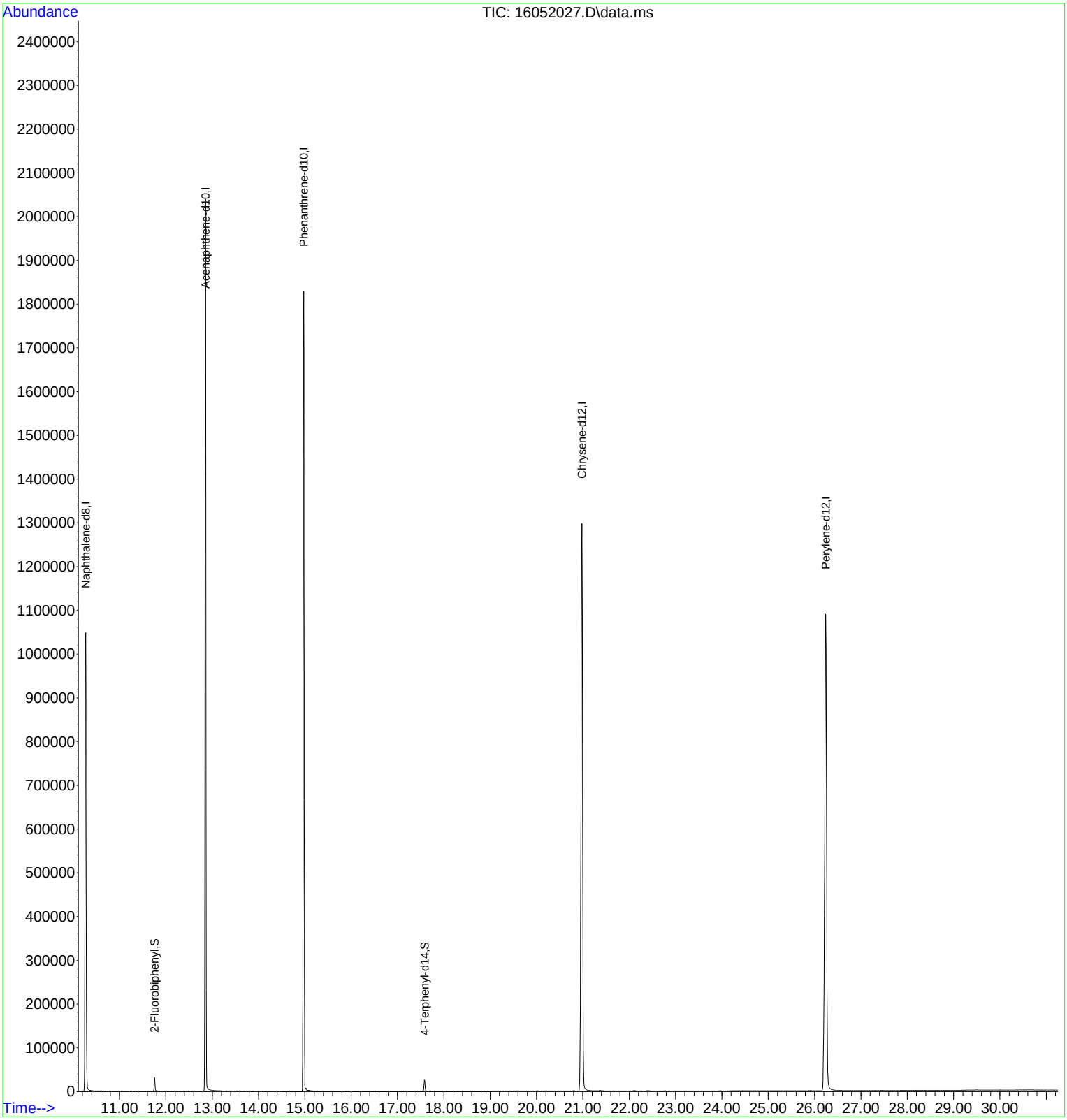
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052027.D
Acq On : 21 May 2016 12:44 am
Operator :
Sample : 1605098-08A
Misc : SAMP
ALS Vial : 27 Sample Multiplier: 10

Quant Time: May 23 10:01:41 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052028.D
Acq On : 21 May 2016 1:21 am
Operator :
Sample : 1605098-09A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 23 10:01:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1566163	4000.00	ug/kg	96
6) Acenaphthene-d10	12.856	164	1264073	4000.00	ug/kg	101
11) Phenanthrene-d10	14.973	188	2263311	4000.00	ug/kg	77
16) Chrysene-d12	20.981	240	2241457	4000.00	ug/kg	83
20) Perylene-d12	26.240	264	2113540	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	30871	88.53	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.21%#			
17) 4-Terphenyl-d14	17.584	244	36104	76.10	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.90%#			

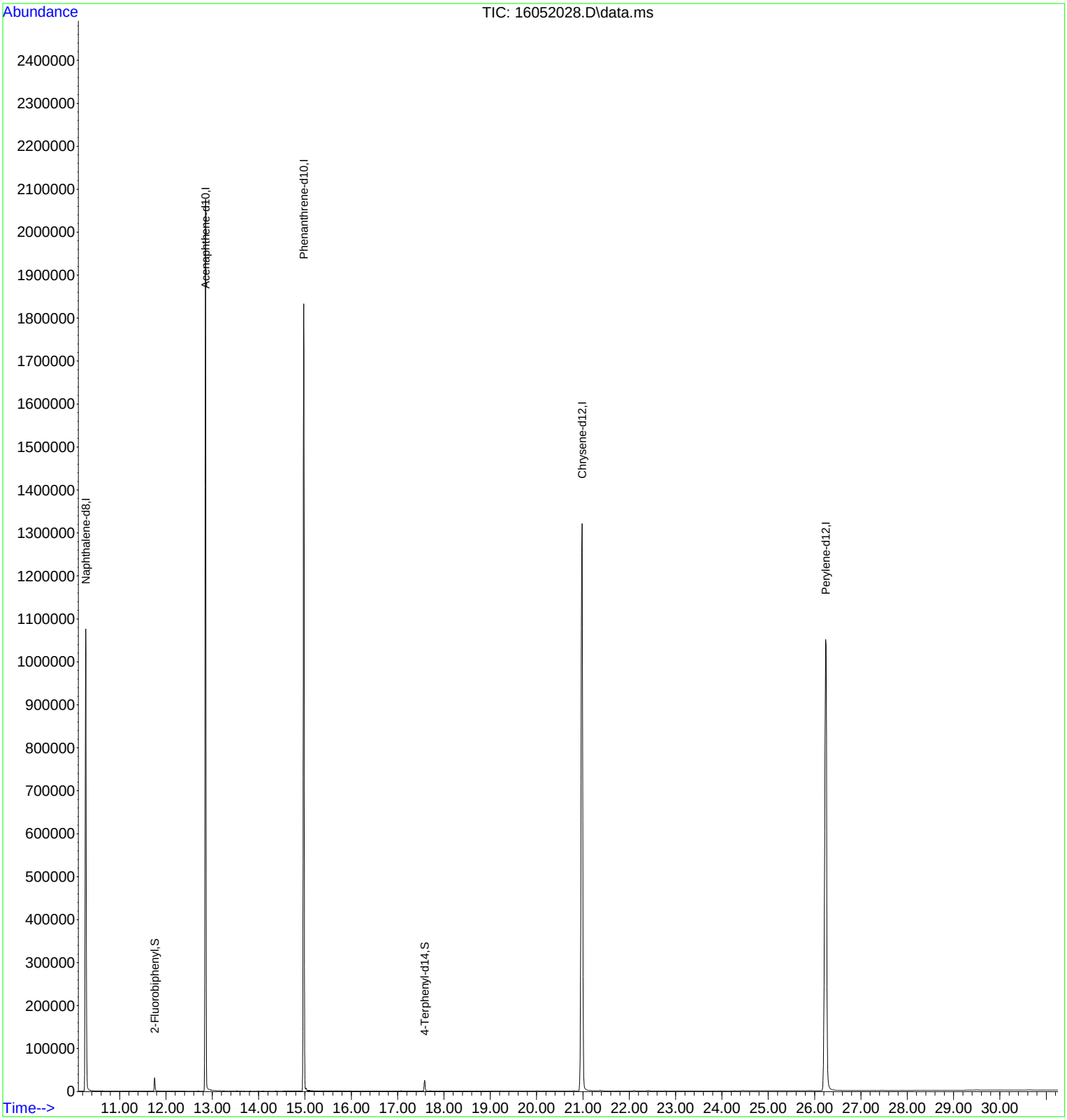
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052028.D
Acq On : 21 May 2016 1:21 am
Operator :
Sample : 1605098-09A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 23 10:01:43 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052029.D
Acq On : 21 May 2016 1:58 am
Operator :
Sample : 1605098-10A
Misc : SAMP
ALS Vial : 29 Sample Multiplier: 10

Quant Time: May 23 10:01:47 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1553377	4000.00	ug/kg	95
6) Acenaphthene-d10	12.852	164	1241039	4000.00	ug/kg	99
11) Phenanthrene-d10	14.974	188	2226423	4000.00	ug/kg	76
16) Chrysene-d12	20.980	240	2230049	4000.00	ug/kg	82
20) Perylene-d12	26.239	264	2106764	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	30168	87.23	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.18%#			
17) 4-Terphenyl-d14	17.584	244	35601	75.42	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.89%#			

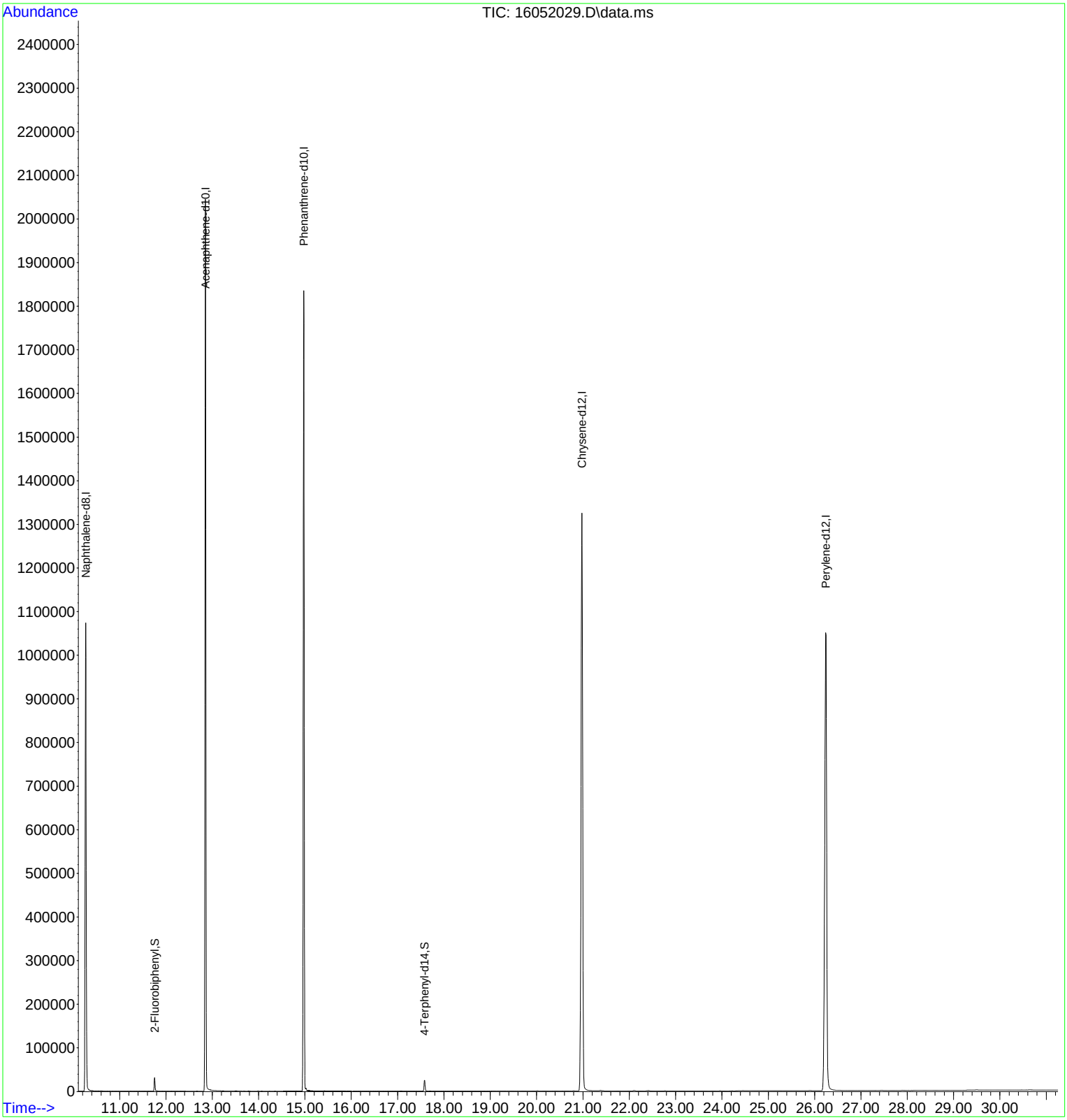
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052029.D
Acq On : 21 May 2016 1:58 am
Operator :
Sample : 1605098-10A
Misc : SAMP
ALS Vial : 29 Sample Multiplier: 10

Quant Time: May 23 10:01:47 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052030.D
Acq On : 21 May 2016 2:36 am
Operator :
Sample : 1605098-11A
Misc : SAMP
ALS Vial : 30 Sample Multiplier: 10

Quant Time: May 23 10:01:50 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1585140	4000.00	ug/kg	97
6) Acenaphthene-d10	12.852	164	1262811	4000.00	ug/kg	101
11) Phenanthrene-d10	14.976	188	2247823	4000.00	ug/kg	77
16) Chrysene-d12	20.981	240	2312725	4000.00	ug/kg	85
20) Perylene-d12	26.248	264	2183981	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.757	172	29696	84.14	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.10%#			
17) 4-Terphenyl-d14	17.583	244	35069	71.64	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.79%#			

Target Compounds						Qvalue
12) Phenanthrene	15.012	178	43303	70.01	ug/kg	97
13) Anthracene	15.054	178	8937	14.28	ug/kg	98
14) Fluoranthene	17.068	202	92662	147.13	ug/kg	98
15) Pyrene	17.697	202	74679	121.09	ug/kg	97
18) Benzo[a]anthracene	20.805	228	38306	62.09	ug/kg	99
19) Chrysene	21.069	228	41169	71.76	ug/kg	99
21) Benzo[b]fluoranthene	24.453	252	35294	59.00	ug/kg	99
22) Benzo[k]fluoranthene	24.541	252	16205	29.86	ug/kg	96
23) Benzo(j)fluoranthene	24.643	252	15713	28.03	ug/kg	90
24) Benzo(e)pyrene	25.727	252	25112	43.16	ug/kg	96
25) Benzo[a]pyrene	25.903	252	35234	63.19	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.500	276	25664	35.62	ug/kg	94
27) Dibenz[a,h]anthracene	29.485	278	5840	6.01	ug/kg	93
28) Benzo[g,h,i]perylene	30.643	276	25592	41.51	ug/kg	99

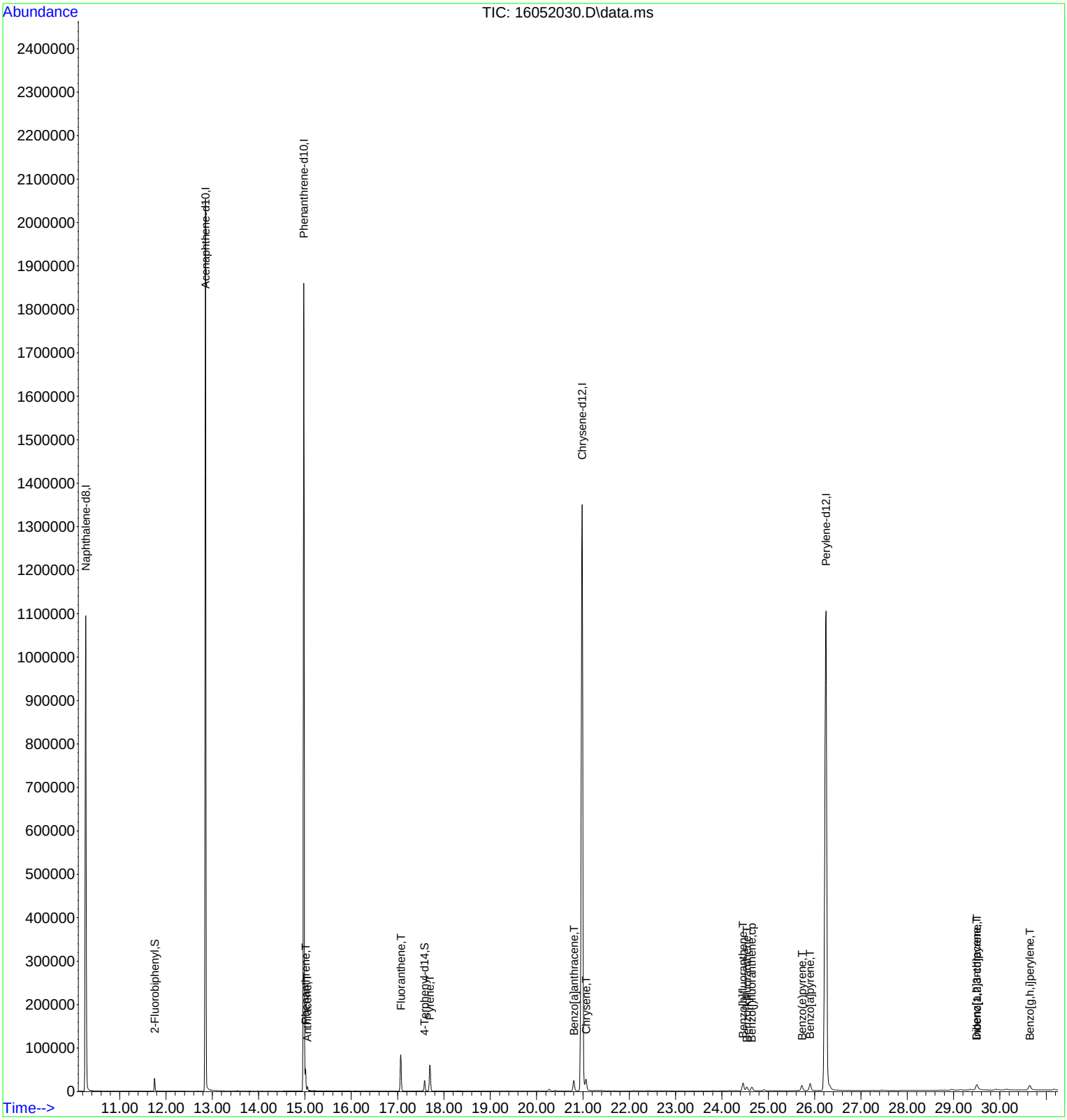
CONFIRMED
By Sherri Herschmann at 9:29:57 AM, 5/24/2016

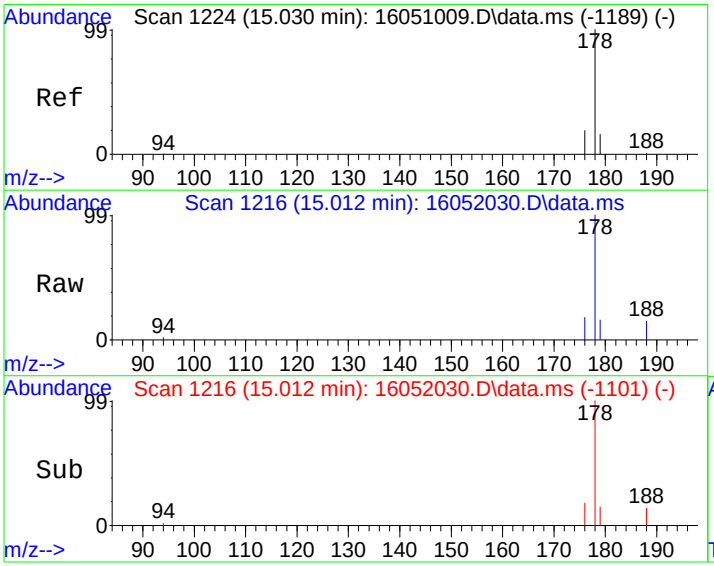
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052030.D
Acq On : 21 May 2016 2:36 am
Operator :
Sample : 1605098-11A
Misc : SAMP
ALS Vial : 30 Sample Multiplier: 10

Quant Time: May 23 10:01:50 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

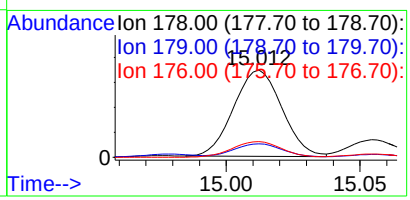


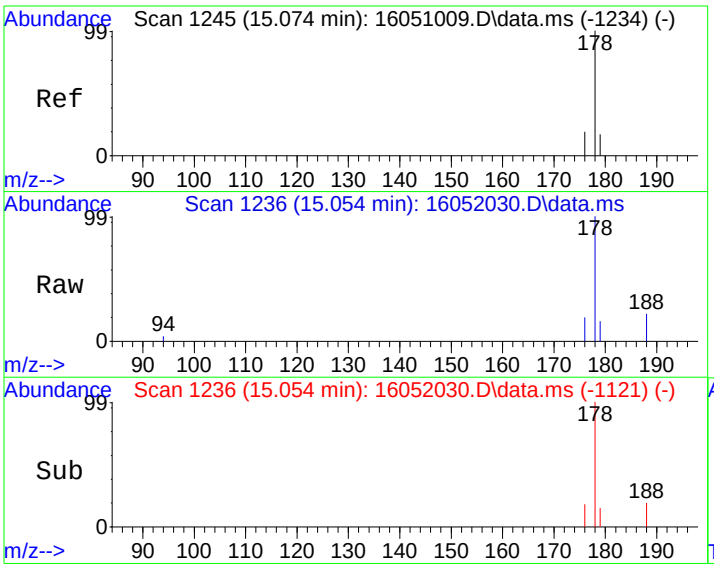


#12
Phenanthrene
Concen: 70.01 ug/kg
RT: 15.012 min Scan# 1216
Delta R.T. -0.007 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:178 Resp: 43303

Ion	Ratio	Lower	Upper
178	100		
179	15.0	0.0	36.4
176	18.0	0.0	39.0

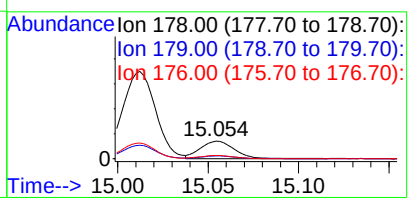


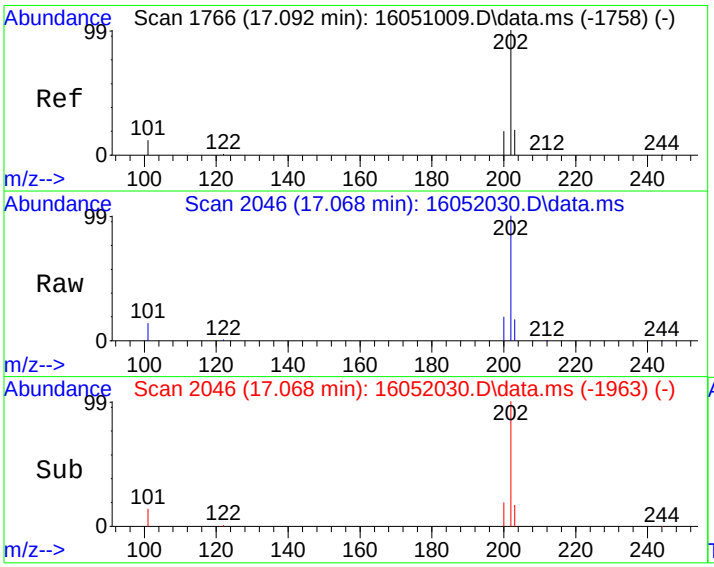


#13
Anthracene
Concen: 14.28 ug/kg
RT: 15.054 min Scan# 1236
Delta R.T. -0.007 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:178 Resp: 8937

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	36.3
176	17.8	0.0	38.5

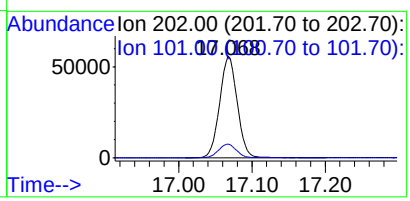


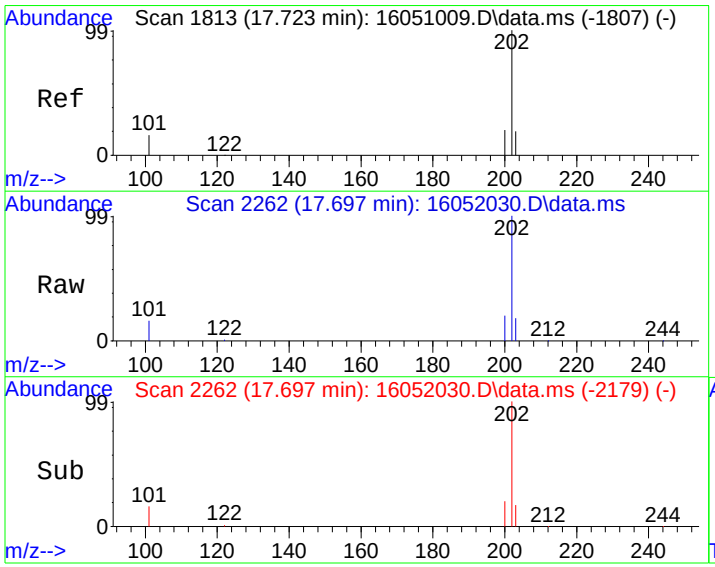


#14
Fluoranthene
Concen: 147.13 ug/kg
RT: 17.068 min Scan# 2046
Delta R.T. -0.008 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:202 Resp: 92662

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	34.4

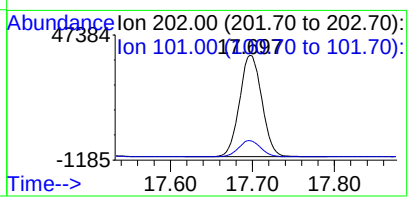


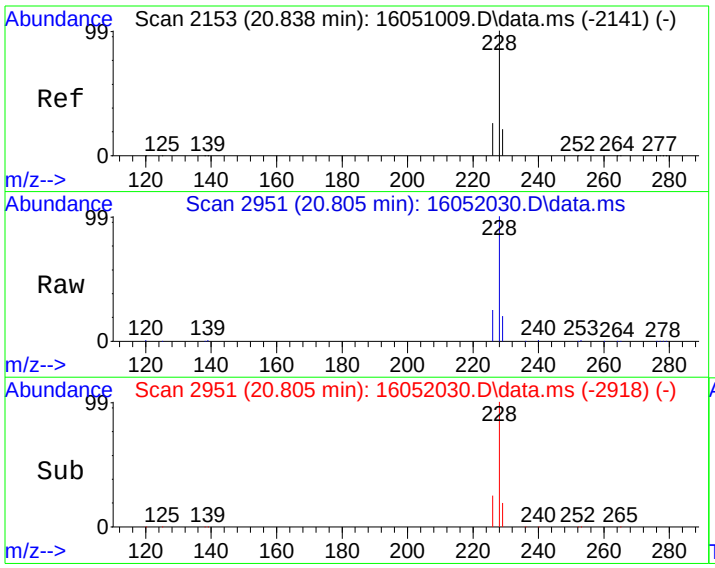


#15
Pyrene
Concen: 121.09 ug/kg
RT: 17.697 min Scan# 2262
Delta R.T. -0.009 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:202 Resp: 74679

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	37.3

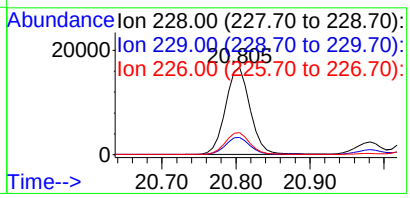


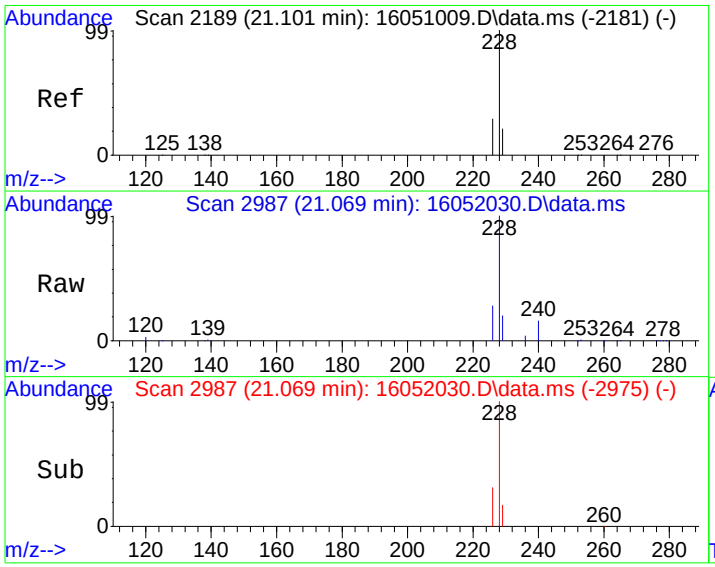


#18
Benzo[a]anthracene
Concen: 62.09 ug/kg
RT: 20.805 min Scan# 2951
Delta R.T. -0.007 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:228 Resp: 38306

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.3	40.3
226	25.0	5.7	45.7

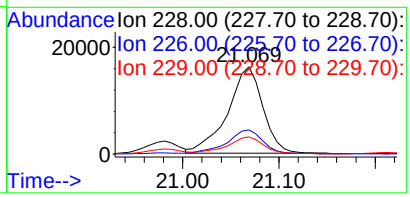


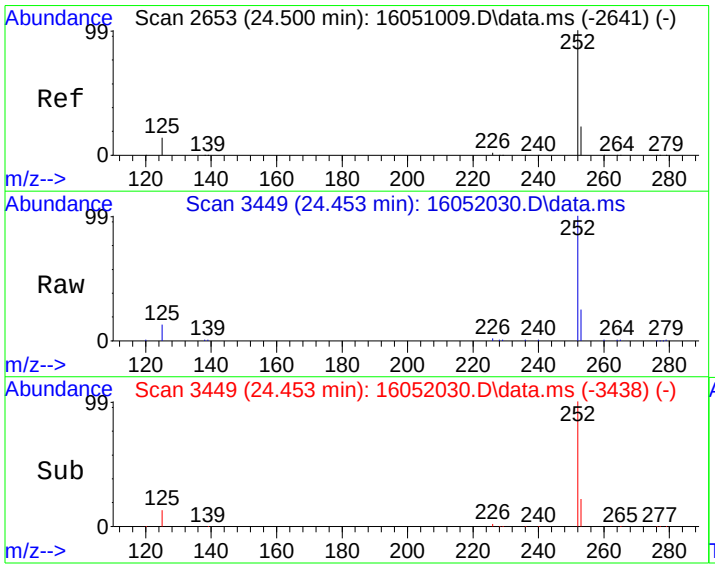


#19
Chrysene
Concen: 71.76 ug/kg
RT: 21.069 min Scan# 2987
Delta R.T. -0.014 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:228 Resp: 41169

Ion	Ratio	Lower	Upper
228	100		
226	27.6	8.2	48.2
229	19.6	0.3	40.3

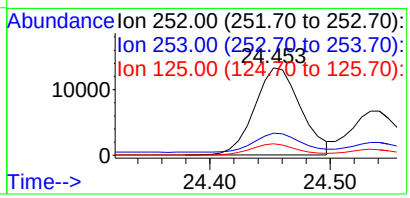


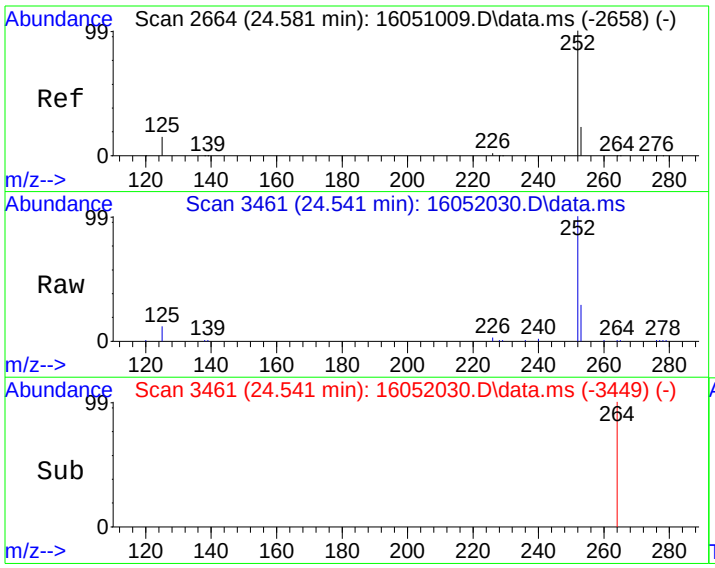


#21
Benzo[b]fluoranthene
Concen: 59.00 ug/kg
RT: 24.453 min Scan# 3449
Delta R.T. -0.022 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:252 Resp: 35294

Ion	Ratio	Lower	Upper
252	100		
253	21.8	2.3	42.3
125	12.8	0.0	32.2

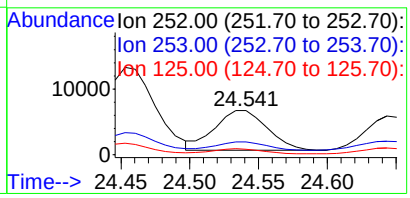


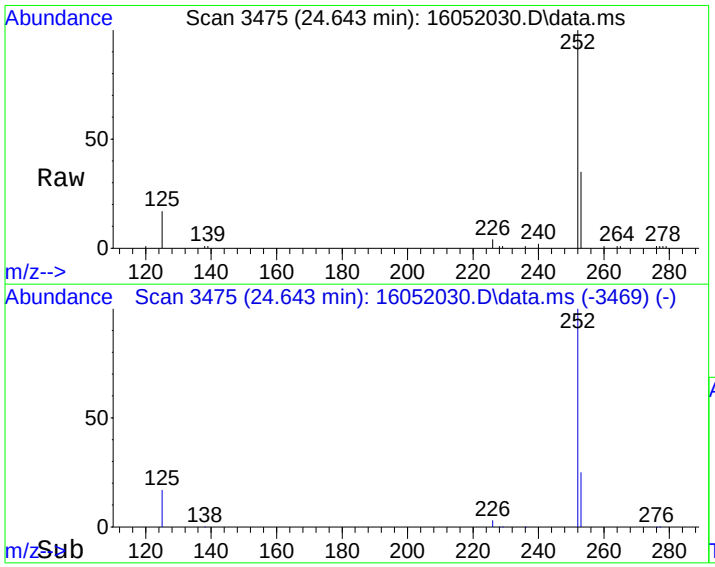


#22
Benzo[k]fluoranthene
Concen: 29.86 ug/kg
RT: 24.541 min Scan# 3461
Delta R.T. -0.014 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:252 Resp: 16205

Ion	Ratio	Lower	Upper
252	100		
253	20.2	2.5	42.5
125	11.2	0.0	32.6

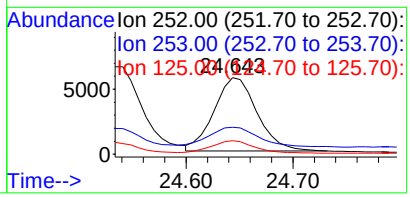


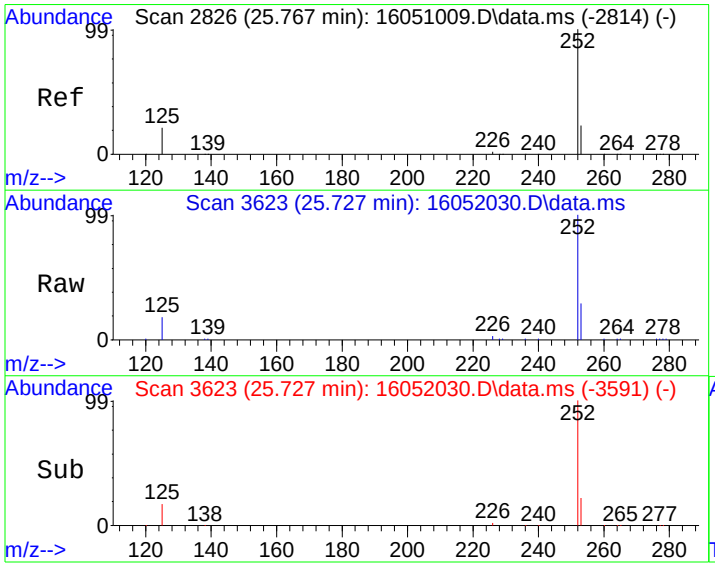


#23
Benzo(j)fluoranthene
Concen: 28.03 ug/kg
RT: 24.643 min Scan# 3475
Delta R.T. -0.022 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:252 Resp: 15713

Ion	Ratio	Lower	Upper
252	100		
253	29.7	2.2	42.2
125	16.5	0.0	37.3

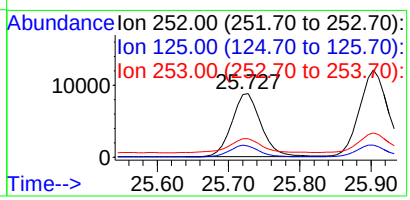


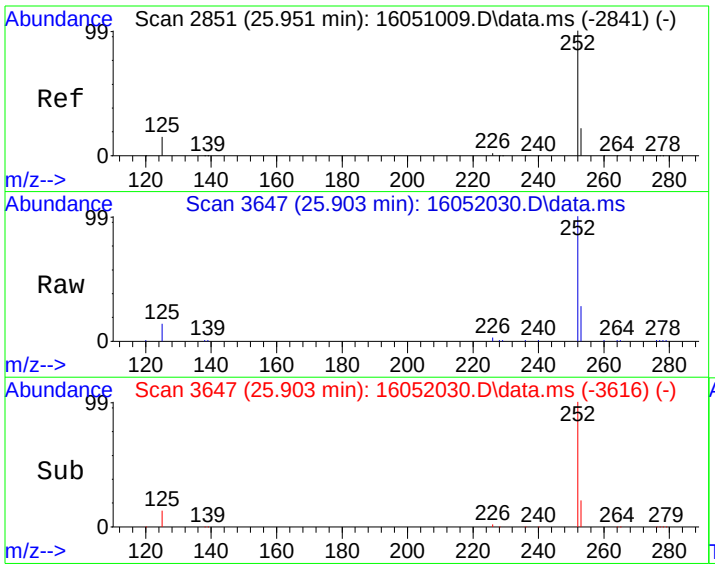


#24
Benzo(e)pyrene
Concen: 43.16 ug/kg
RT: 25.727 min Scan# 3623
Delta R.T. -0.015 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:252 Resp: 25112

Ion	Ratio	Lower	Upper
252	100		
125	18.3	0.0	38.7
253	25.5	2.3	42.3

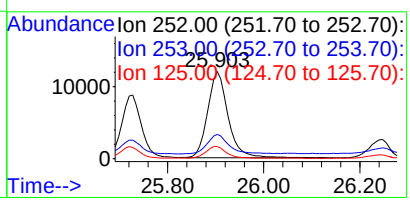


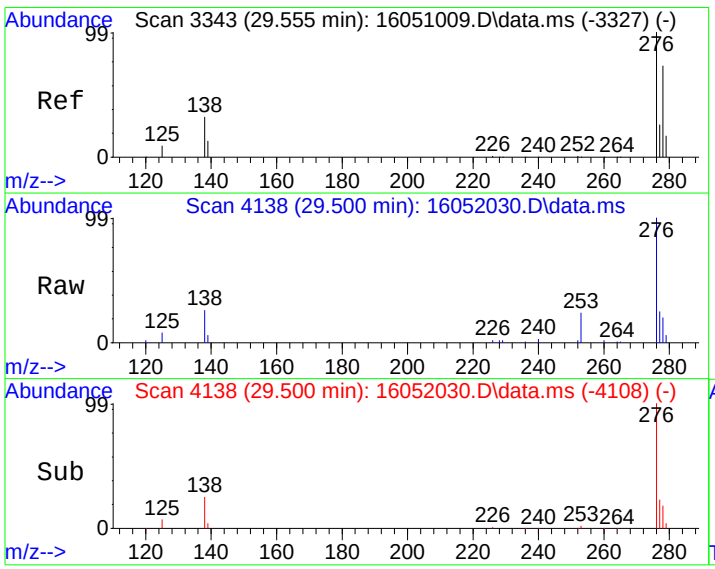


#25
Benzo[a]pyrene
Concen: 63.19 ug/kg
RT: 25.903 min Scan# 3647
Delta R.T. -0.022 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:252 Resp: 35234

Ion	Ratio	Lower	Upper
252	100		
253	22.3	2.3	42.3
125	13.5	0.0	33.5

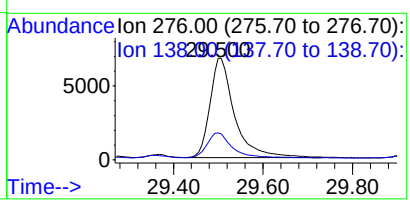


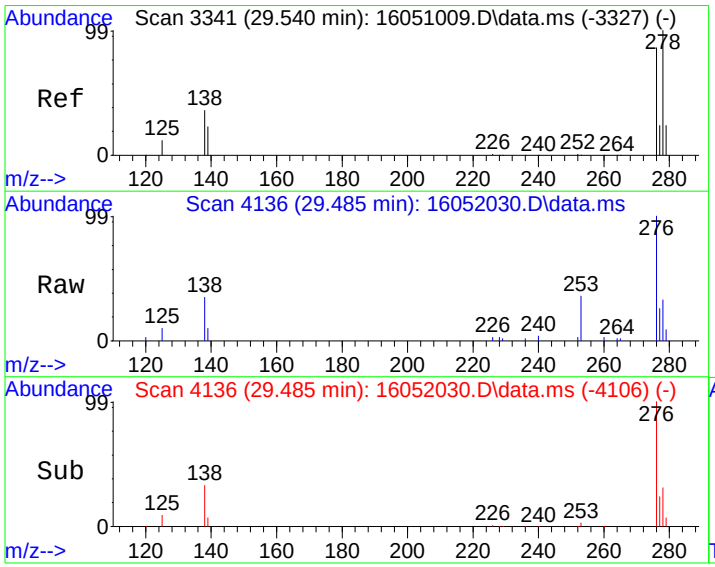


#26
Indeno[1,2,3-cd]pyrene
Concen: 35.62 ug/kg
RT: 29.500 min Scan# 4138
Delta R.T. -0.029 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:276 Resp: 25664

Ion	Ratio	Lower	Upper
276	100		
138	25.0	8.3	48.3

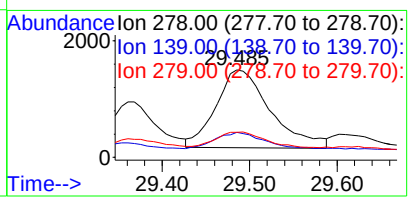


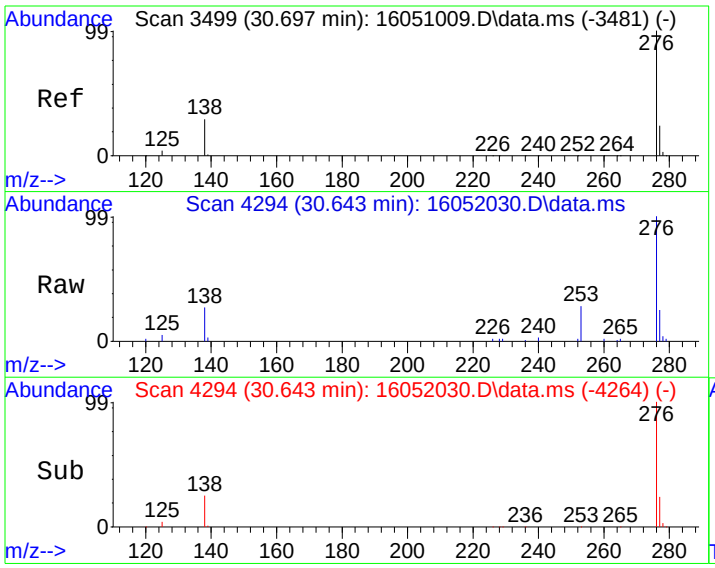


#27
Dibenz[a,h]anthracene
Concen: 6.01 ug/kg
RT: 29.485 min Scan# 4136
Delta R.T. -0.029 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:278 Resp: 5840

Ion	Ratio	Lower	Upper
278	100		
139	23.8	0.0	40.0
279	21.2	4.2	44.2

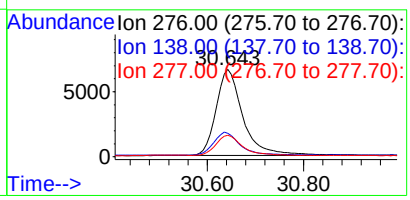




#28
Benzo[g,h,i]perylene
Concen: 41.51 ug/kg
RT: 30.643 min Scan# 4294
Delta R.T. -0.029 min
Lab File: 16052030.D
Acq: 21 May 2016 2:36 am

Tgt Ion:276 Resp: 25592

Ion	Ratio	Lower	Upper
276	100		
138	25.3	5.8	45.8
277	23.6	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052031.D
Acq On : 21 May 2016 3:13 am
Operator :
Sample : 1605098-17A
Misc : SAMP
ALS Vial : 31 Sample Multiplier: 10

Quant Time: May 23 10:01:58 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.270	136	1518247	4000.00	ug/kg	93
6) Acenaphthene-d10	12.857	164	1225110	4000.00	ug/kg	98
11) Phenanthrene-d10	14.976	188	2289762	4000.00	ug/kg	78
16) Chrysene-d12	20.980	240	2225683	4000.00	ug/kg	82
20) Perylene-d12	26.247	264	2074908	4000.00	ug/kg	84

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.755	172	30027	88.83	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.22%#			
17) 4-Terphenyl-d14	17.583	244	37125	78.81	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.97%#			

Target Compounds						Qvalue
8) Acenaphthene	12.906	153	3730	11.04	ug/kg	100
10) Fluorene	13.554	166	4748	10.17	ug/kg	98
12) Phenanthrene	15.012	178	170626	270.82	ug/kg	97
13) Anthracene	15.056	178	38803	60.87	ug/kg	98
14) Fluoranthene	17.067	202	329396	523.86	ug/kg	98
15) Pyrene	17.697	202	261661	424.94	ug/kg	97
18) Benzo[a]anthracene	20.804	228	125677	216.79	ug/kg	98
19) Chrysene	21.068	228	133648	249.52	ug/kg	99
21) Benzo[b]fluoranthene	24.452	252	111206	200.18	ug/kg	99
22) Benzo[k]fluoranthene	24.532	252	52078	103.78	ug/kg	98
23) Benzo(j)fluoranthene	24.642	252	51131	103.87	ug/kg	90
24) Benzo(e)pyrene	25.726	252	80778	152.38	ug/kg	97
25) Benzo[a]pyrene	25.902	252	115957	224.68	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.506	276	80821	124.91	ug/kg	91
27) Dibenz[a,h]anthracene	29.492	278	17093	27.91	ug/kg	96
28) Benzo[g,h,i]perylene	30.642	276	82023	147.52	ug/kg	99

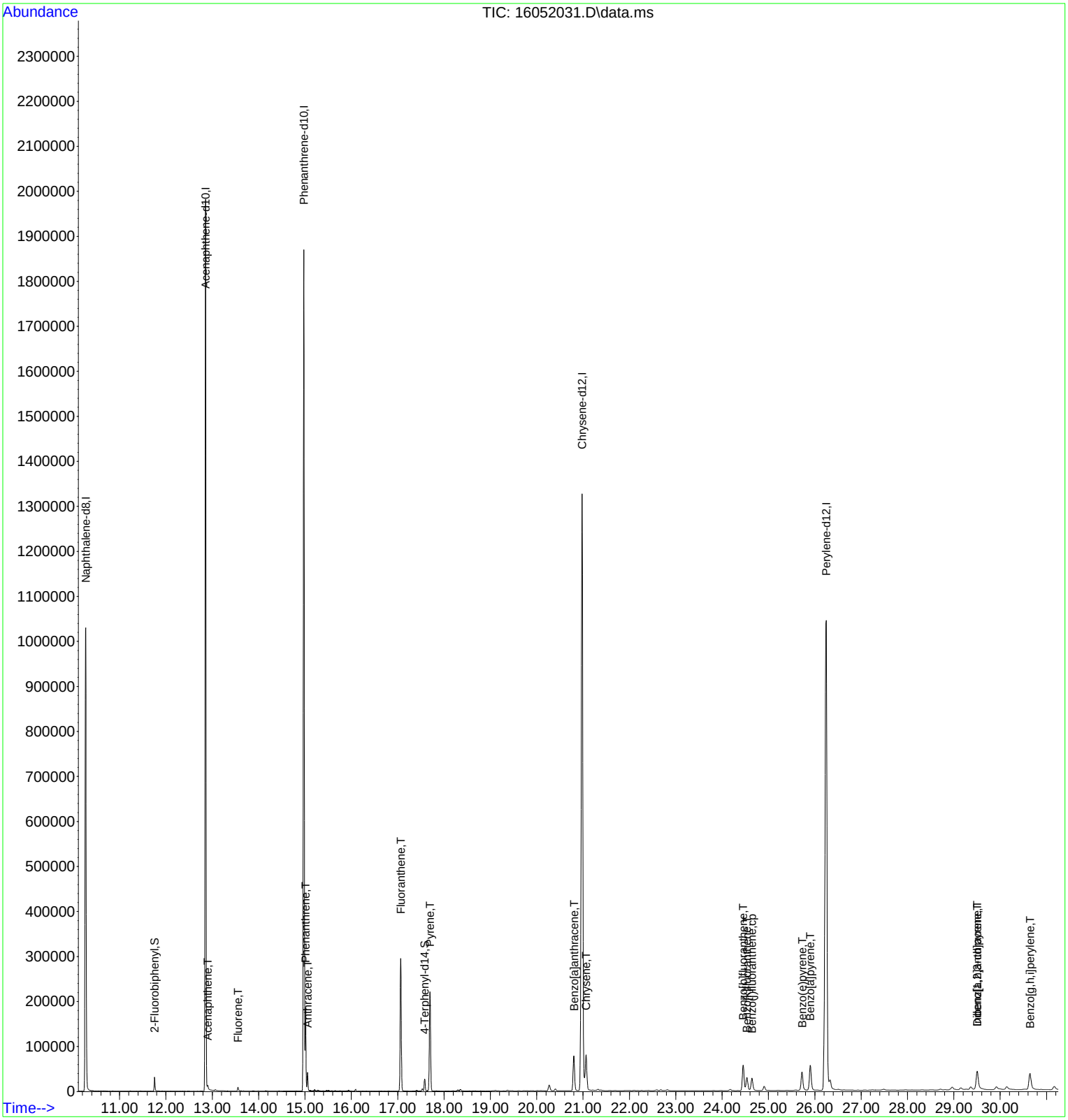
CONFIRMED
By Sherri Herschmann at 9:30:38 AM, 5/24/2016

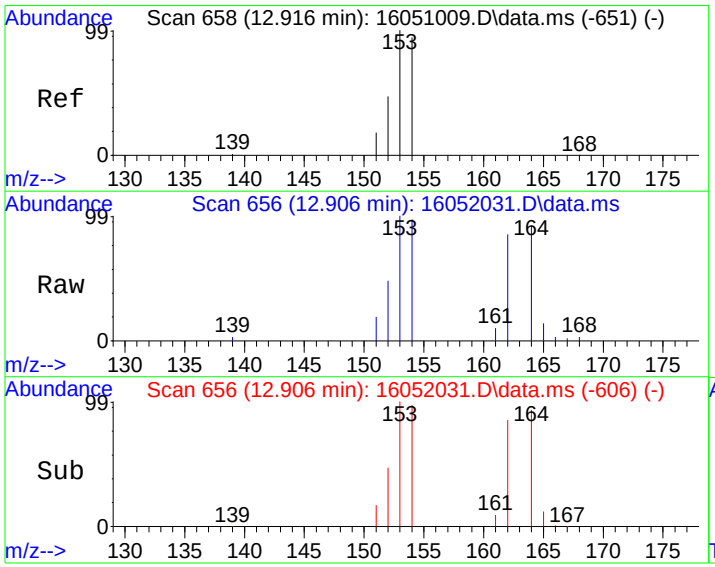
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052031.D
Acq On : 21 May 2016 3:13 am
Operator :
Sample : 1605098-17A
Misc : SAMP
ALS Vial : 31 Sample Multiplier: 10

Quant Time: May 23 10:01:58 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

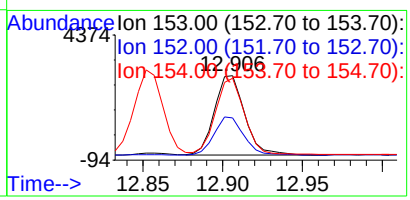


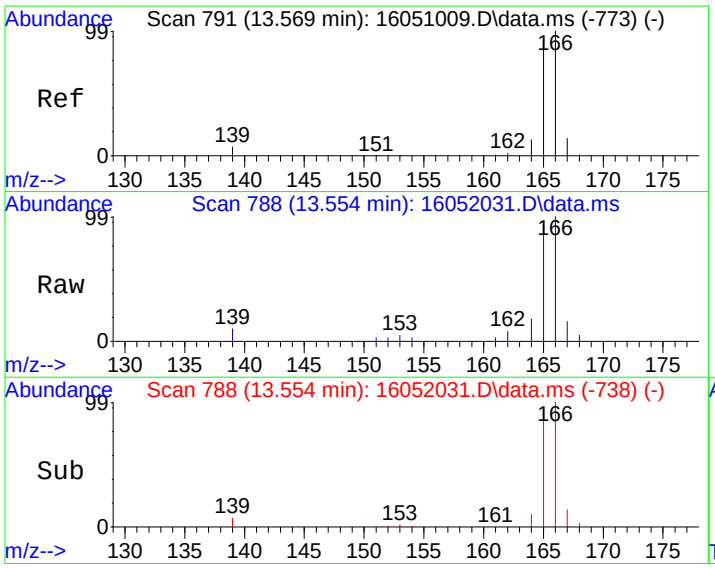


#8
Acenaphthene
Concen: 11.04 ug/kg
RT: 12.906 min Scan# 656
Delta R.T. -0.005 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:153 Resp: 3730

Ion	Ratio	Lower	Upper
153	100		
152	46.6	26.5	66.5
154	96.4	76.3	116.3

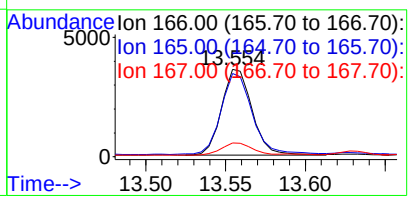


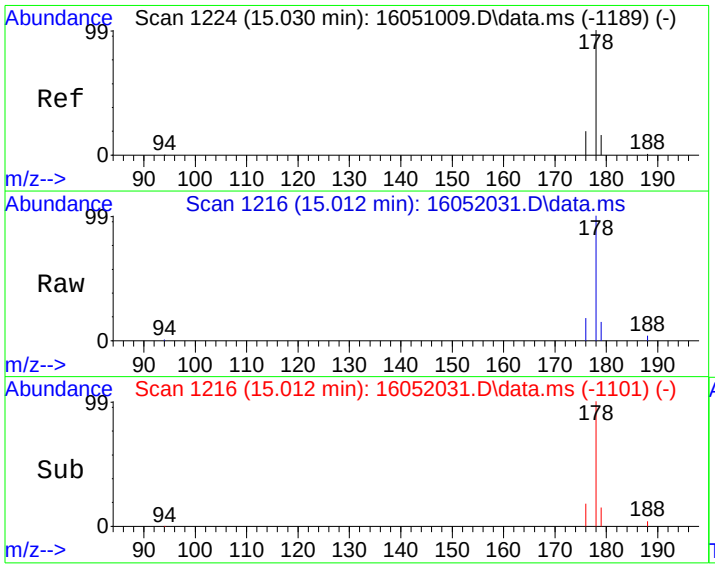


#10
Fluorene
Concen: 10.17 ug/kg
RT: 13.554 min Scan# 788
Delta R.T. -0.005 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:166 Resp: 4748

Ion	Ratio	Lower	Upper
166	100		
165	94.0	71.4	111.4
167	14.2	0.0	33.8

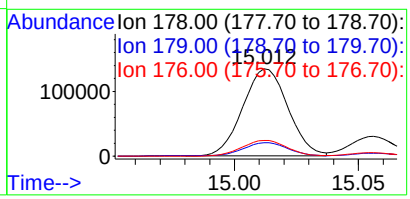


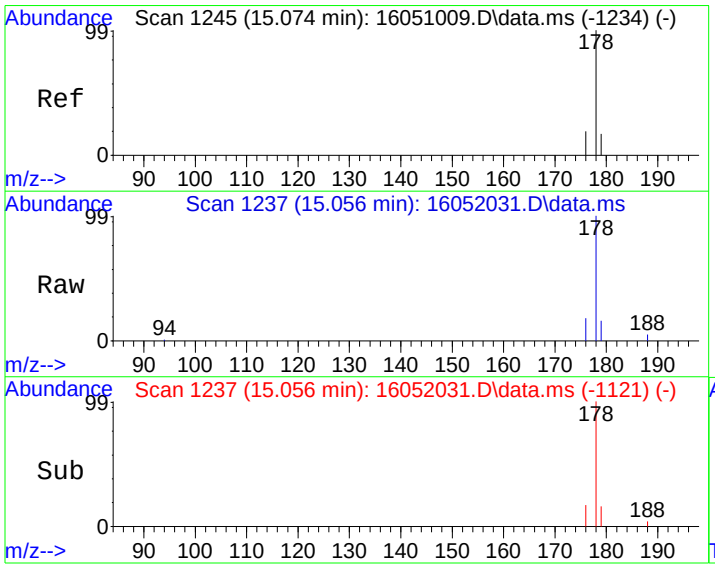


#12
Phenanthrene
Concen: 270.82 ug/kg
RT: 15.012 min Scan# 1216
Delta R.T. -0.007 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:178 Resp: 170626

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	36.4
176	18.2	0.0	39.0

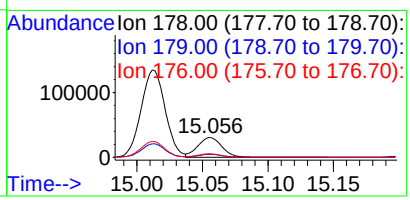


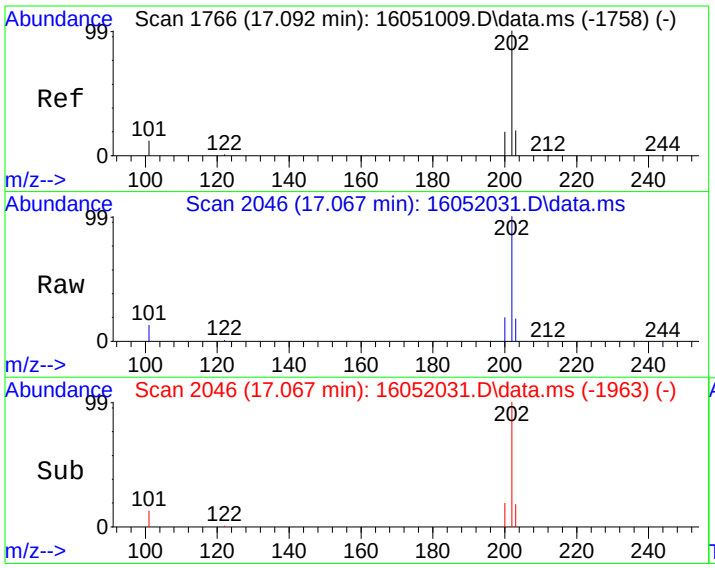


#13
Anthracene
Concen: 60.87 ug/kg
RT: 15.056 min Scan# 1237
Delta R.T. -0.005 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:178 Resp: 38803

Ion	Ratio	Lower	Upper
178	100		
179	15.5	0.0	36.3
176	17.5	0.0	38.5

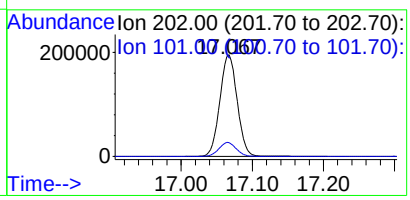


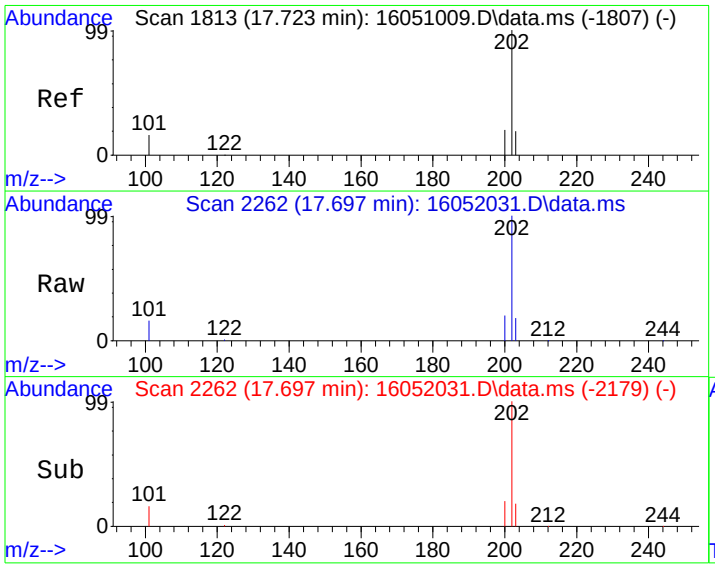


#14
Fluoranthene
Concen: 523.86 ug/kg
RT: 17.067 min Scan# 2046
Delta R.T. -0.009 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:202 Resp: 329396

Ion	Ratio	Lower	Upper
202	100		
101	13.4	0.0	34.4

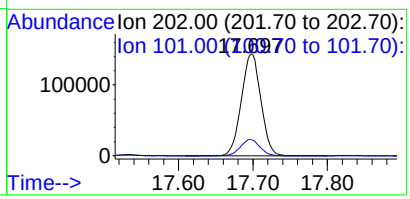


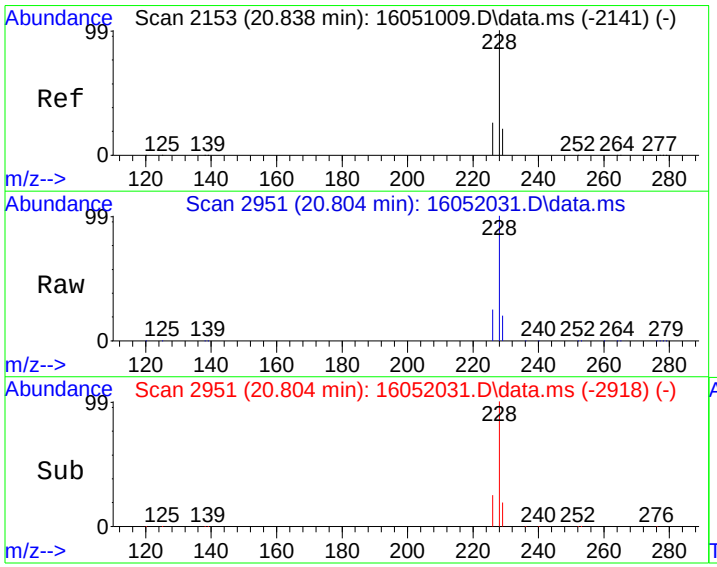


#15
Pyrene
Concen: 424.94 ug/kg
RT: 17.697 min Scan# 2262
Delta R.T. -0.009 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:202 Resp: 261661

Ion	Ratio	Lower	Upper
202	100		
101	16.0	0.0	37.3

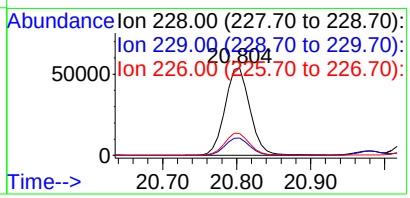


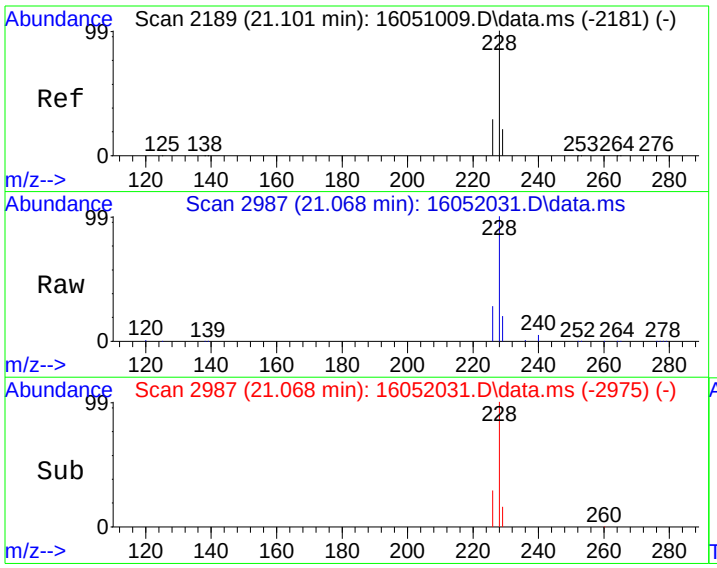


#18
Benzo[a]anthracene
Concen: 216.79 ug/kg
RT: 20.804 min Scan# 2951
Delta R.T. -0.008 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:228 Resp: 125677

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.3	40.3
226	24.9	5.7	45.7

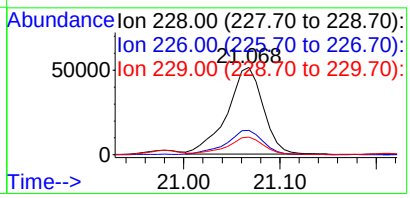


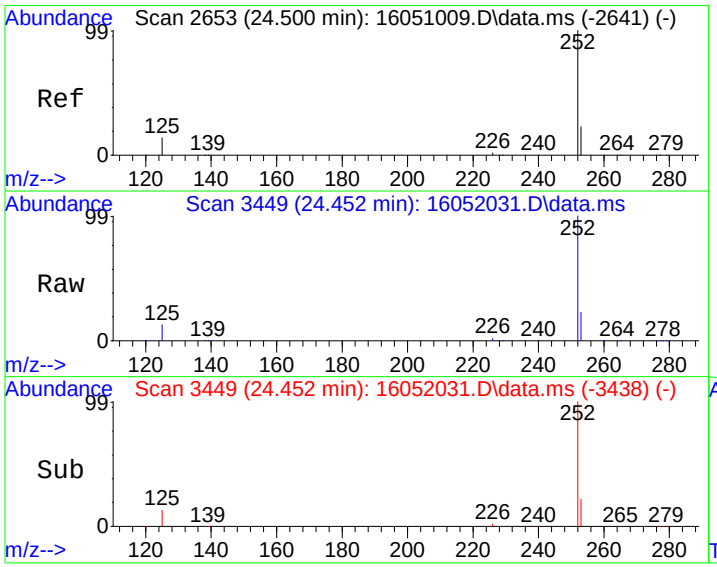


#19
Chrysene
Concen: 249.52 ug/kg
RT: 21.068 min Scan# 2987
Delta R.T. -0.015 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:228 Resp: 133648

Ion	Ratio	Lower	Upper
228	100		
226	27.9	8.2	48.2
229	20.1	0.3	40.3

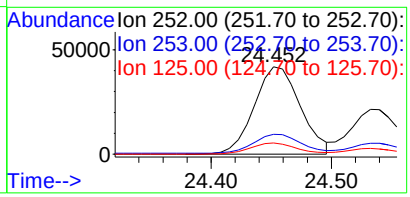


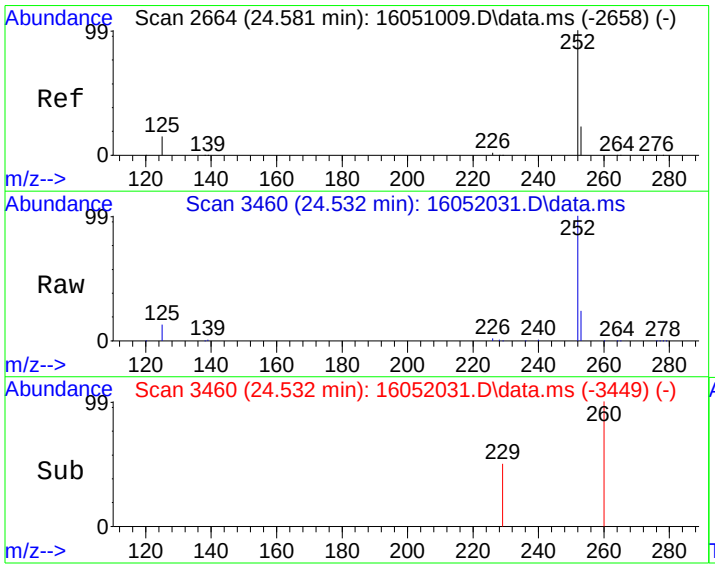


#21
Benzo[b]fluoranthene
Concen: 200.18 ug/kg
RT: 24.452 min Scan# 3449
Delta R.T. -0.023 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:252 Resp: 111206

Ion	Ratio	Lower	Upper
252	100		
253	21.8	2.3	42.3
125	12.6	0.0	32.2

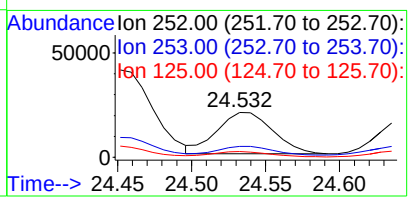


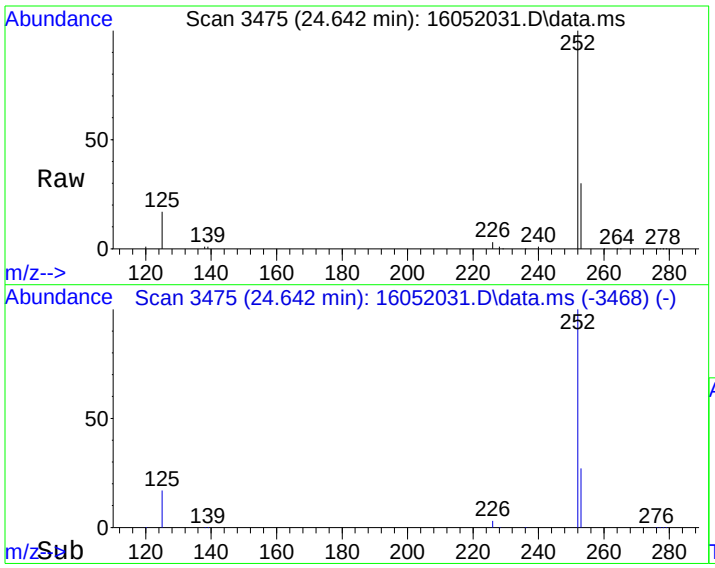


#22
Benzo[k]fluoranthene
Concen: 103.78 ug/kg
RT: 24.532 min Scan# 3460
Delta R.T. -0.023 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:252 Resp: 52078

Ion	Ratio	Lower	Upper
252	100		
253	20.9	2.5	42.5
125	12.6	0.0	32.6

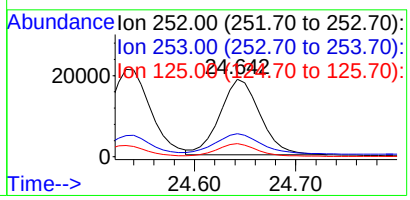


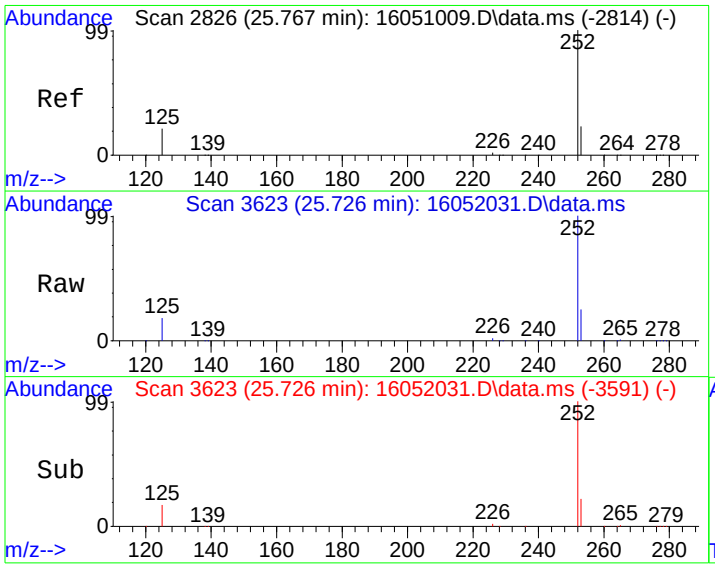


#23
Benzo(j)fluoranthene
Concen: 103.87 ug/kg
RT: 24.642 min Scan# 3475
Delta R.T. -0.023 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:252 Resp: 51131

Ion	Ratio	Lower	Upper
252	100		
253	29.9	2.2	42.2
125	16.5	0.0	37.3

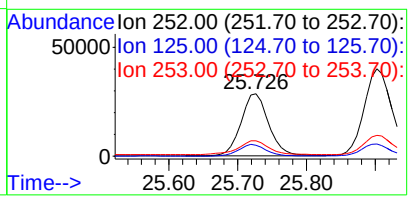


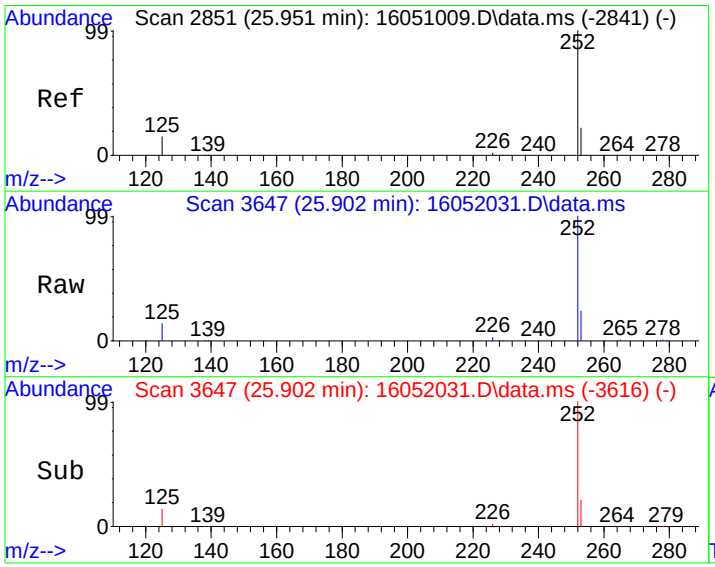


#24
Benzo(e)pyrene
Concen: 152.38 ug/kg
RT: 25.726 min Scan# 3623
Delta R.T. -0.016 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:252 Resp: 80778

Ion	Ratio	Lower	Upper
252	100		
125	18.1	0.0	38.7
253	24.5	2.3	42.3

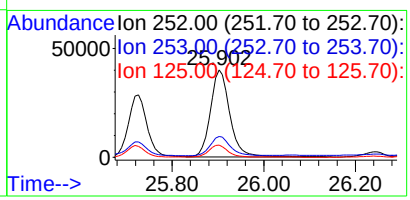


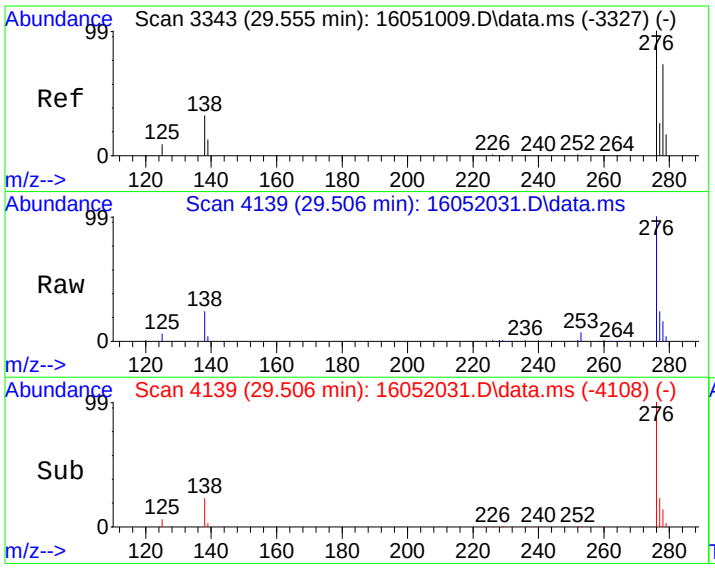


#25
Benzo[a]pyrene
Concen: 224.68 ug/kg
RT: 25.902 min Scan# 3647
Delta R.T. -0.023 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:252 Resp: 115957

Ion	Ratio	Lower	Upper
252	100		
253	22.2	2.3	42.3
125	13.8	0.0	33.5

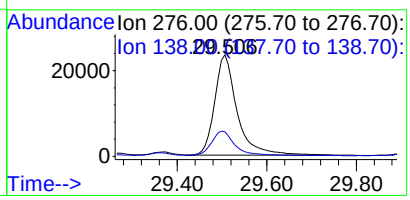


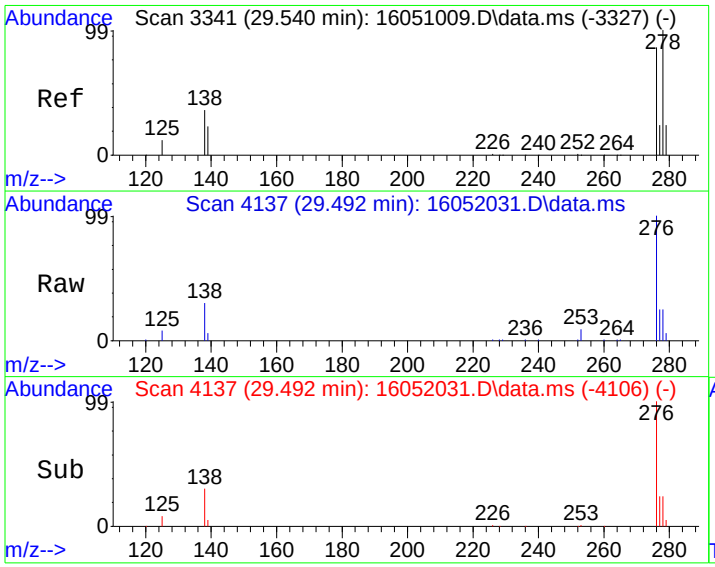


#26
Indeno[1,2,3-cd]pyrene
Concen: 124.91 ug/kg
RT: 29.506 min Scan# 4139
Delta R.T. -0.023 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:276 Resp: 80821

Ion	Ratio	Lower	Upper
276	100		
138	23.5	8.3	48.3

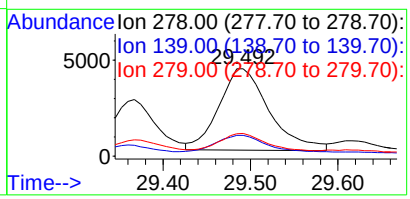


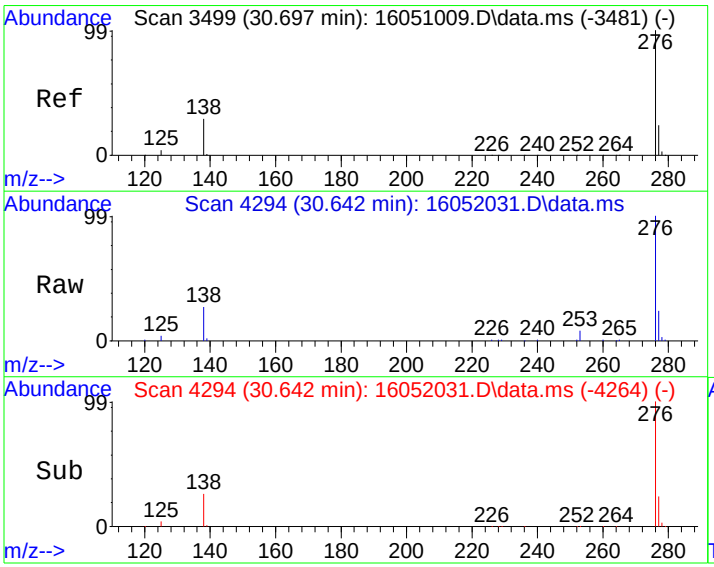


#27
Dibenz[a,h]anthracene
Concen: 27.91 ug/kg
RT: 29.492 min Scan# 4137
Delta R.T. -0.022 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:278 Resp: 17093

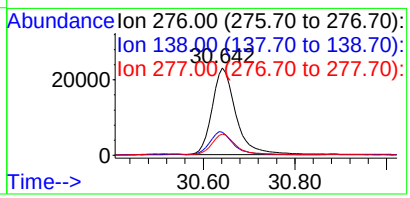
Ion	Ratio	Lower	Upper
278	100		
139	21.7	0.0	40.0
279	22.0	4.2	44.2





#28
Benzo[g,h,i]perylene
Concen: 147.52 ug/kg
RT: 30.642 min Scan# 4294
Delta R.T. -0.030 min
Lab File: 16052031.D
Acq: 21 May 2016 3:13 am

Tgt Ion:276	Resp:	82023	
Ion	Ratio	Lower	Upper
276	100		
138	25.9	5.8	45.8
277	23.4	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052032.D
Acq On : 21 May 2016 3:50 am
Operator :
Sample : 1605098-17AMS
Misc : MS
ALS Vial : 32 Sample Multiplier: 10

Quant Time: May 23 09:59:26 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1546708	4000.00	ug/kg	95
6) Acenaphthene-d10	12.856	164	1243908	4000.00	ug/kg	99
11) Phenanthrene-d10	14.974	188	2322328	4000.00	ug/kg	79
16) Chrysene-d12	20.980	240	2325282	4000.00	ug/kg	86
20) Perylene-d12	26.247	264	2202187	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.756	172	29466	85.56	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.14%#			
17) 4-Terphenyl-d14	17.584	244	35809	72.76	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.82%#			

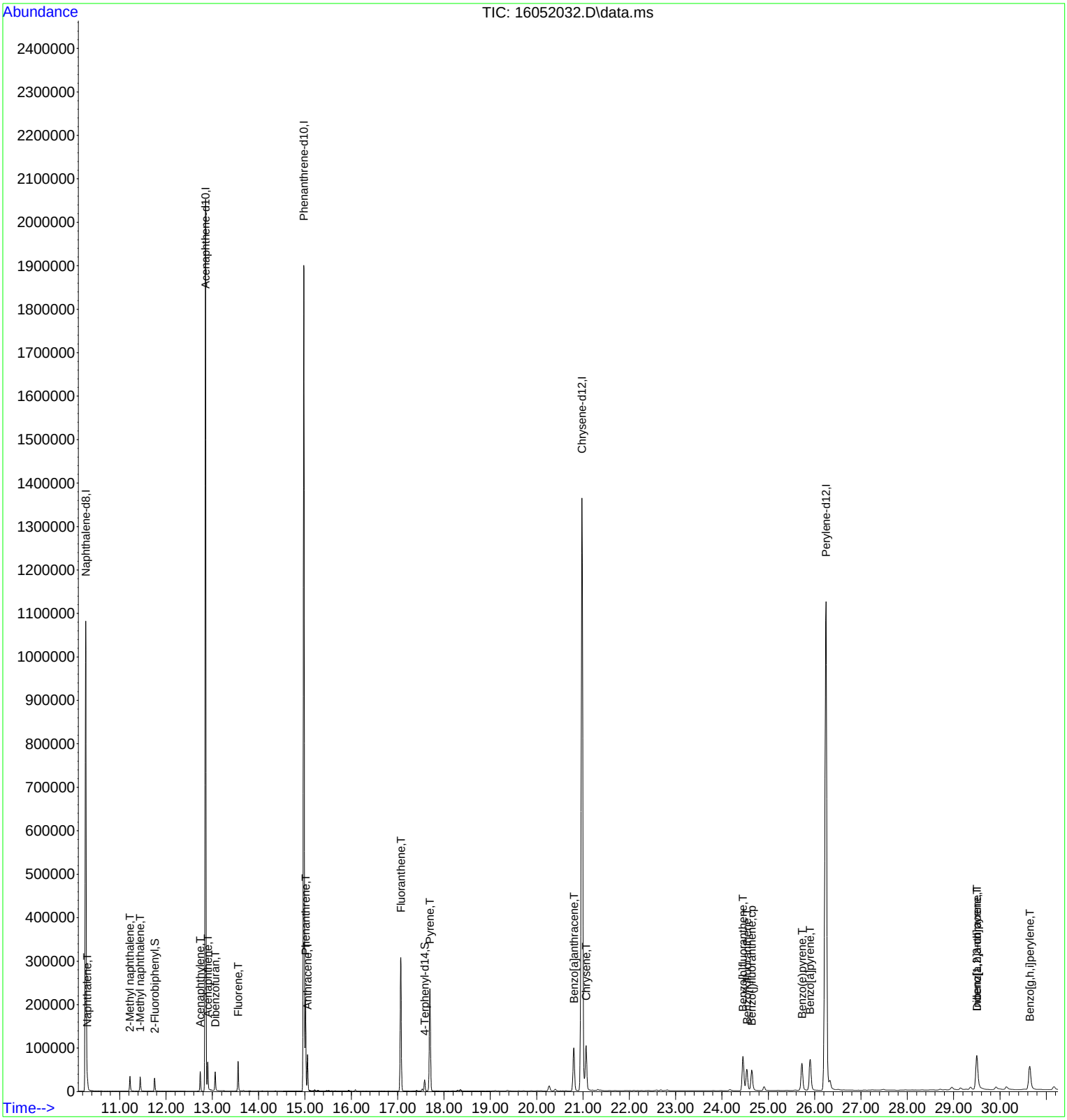
Target Compounds						Qvalue
2) Naphthalene	10.304	128	26915	77.68	ug/kg	100
3) 2-Methyl naphthalene	11.221	142	22607	83.93	ug/kg	98
4) 1-Methyl naphthalene	11.443	142	20915	82.05	ug/kg	99
7) Acenaphthylene	12.738	152	42776	78.67	ug/kg	98
8) Acenaphthene	12.905	153	29964	87.34	ug/kg	99
9) Dibenzofuran	13.062	168	42464	81.25	ug/kg	98
10) Fluorene	13.553	166	38056	80.25	ug/kg	98
12) Phenanthrene	15.012	178	192963	301.98	ug/kg	97
13) Anthracene	15.054	178	79911	123.59	ug/kg	98
14) Fluoranthene	17.068	202	337707	529.65	ug/kg	98
15) Pyrene	17.697	202	280637	449.75	ug/kg	97
18) Benzo[a]anthracene	20.804	228	160555	265.79	ug/kg	99
19) Chrysene	21.068	228	165888	297.27	ug/kg	99
21) Benzo[b]fluoranthene	24.452	252	151027	256.90	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	89162	168.25	ug/kg	98
23) Benzo(j)fluoranthene	24.642	252	87339	169.33	ug/kg	94
24) Benzo(e)pyrene	25.727	252	123176	220.32	ug/kg	98
25) Benzo[a]pyrene	25.902	252	150645	275.70	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.506	276	128417	188.67	ug/kg	94
27) Dibenz[a,h]anthracene	29.492	278	52258	88.98	ug/kg	98
28) Benzo[g,h,i]perylene	30.642	276	121876	207.99	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052032.D
Acq On : 21 May 2016 3:50 am
Operator :
Sample : 1605098-17AMS
Misc : MS
ALS Vial : 32 Sample Multiplier: 10

Quant Time: May 23 09:59:26 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052033.D
Acq On : 21 May 2016 4:27 am
Operator :
Sample : 1605098-17AMSD
Misc : MSD
ALS Vial : 33 Sample Multiplier: 10

Quant Time: May 23 09:59:29 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

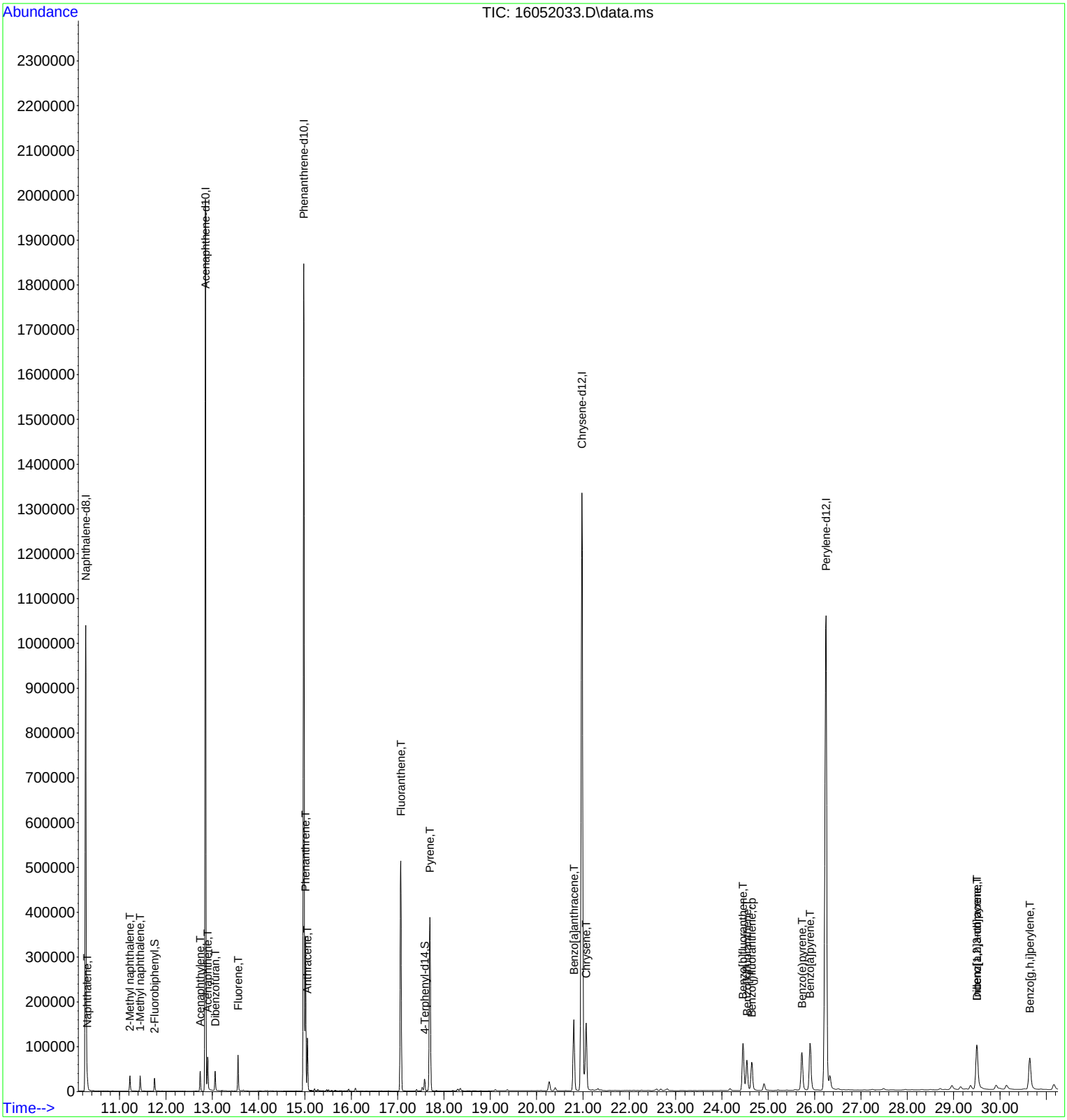
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.268	136	1502845	4000.00	ug/kg	92
6) Acenaphthene-d10	12.853	164	1197935	4000.00	ug/kg	96
11) Phenanthrene-d10	14.974	188	2240110	4000.00	ug/kg	77
16) Chrysene-d12	20.980	240	2241694	4000.00	ug/kg	83
20) Perylene-d12	26.246	264	2085790	4000.00	ug/kg	84
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.753	172	28683	85.72	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.14%#			
17) 4-Terphenyl-d14	17.583	244	36186	76.26	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.91%#			
Target Compounds						Qvalue
2) Naphthalene	10.305	128	27791	82.54	ug/kg	99
3) 2-Methyl naphthalene	11.222	142	22904	87.51	ug/kg	99
4) 1-Methyl naphthalene	11.444	142	21260	85.84	ug/kg	100
7) Acenaphthylene	12.740	152	42730	81.60	ug/kg	98
8) Acenaphthene	12.902	153	32795	99.26	ug/kg	97
9) Dibenzofuran	13.064	168	43975	87.37	ug/kg	96
10) Fluorene	13.555	166	42598	93.28	ug/kg	99
12) Phenanthrene	15.010	178	328245	532.54	ug/kg	98
13) Anthracene	15.054	178	114112	182.96	ug/kg	98
14) Fluoranthene	17.068	202	564920	930.12	ug/kg	98
15) Pyrene	17.697	202	456878	766.10	ug/kg	97
18) Benzo[a]anthracene	20.804	228	243287	420.30	ug/kg	99
19) Chrysene	21.068	228	247093	462.48	ug/kg	100
21) Benzo[b]fluoranthene	24.459	252	213385	384.99	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	114565	228.85	ug/kg	98
23) Benzo(j)fluoranthene	24.642	252	116524	240.16	ug/kg	94
24) Benzo(e)pyrene	25.726	252	163006	309.39	ug/kg	98
25) Benzo[a]pyrene	25.902	252	214363	416.14	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.506	276	165353	257.88	ug/kg	94
27) Dibenz[a,h]anthracene	29.491	278	67722	123.50	ug/kg	99
28) Benzo[g,h,i]perylene	30.641	276	155786	282.16	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052033.D
Acq On : 21 May 2016 4:27 am
Operator :
Sample : 1605098-17AMSD
Misc : MSD
ALS Vial : 33 Sample Multiplier: 10

Quant Time: May 23 09:59:29 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052034.D
Acq On : 21 May 2016 5:05 am
Operator :
Sample : CCV-160520
Misc : CCV
ALS Vial : 34 Sample Multiplier: 1

Quant Time: May 23 09:59:32 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.267	136	1657807	4000.00	ug/kg	102
6) Acenaphthene-d10	12.856	164	1340814	4000.00	ug/kg	107
11) Phenanthrene-d10	14.976	188	2555147	4000.00	ug/kg	87
16) Chrysene-d12	20.980	240	2371328	4000.00	ug/kg	87
20) Perylene-d12	26.247	264	2202301	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.752	172	388553	1052.66	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 26.32%#			
17) 4-Terphenyl-d14	17.584	244	499968	996.12	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.90%#			

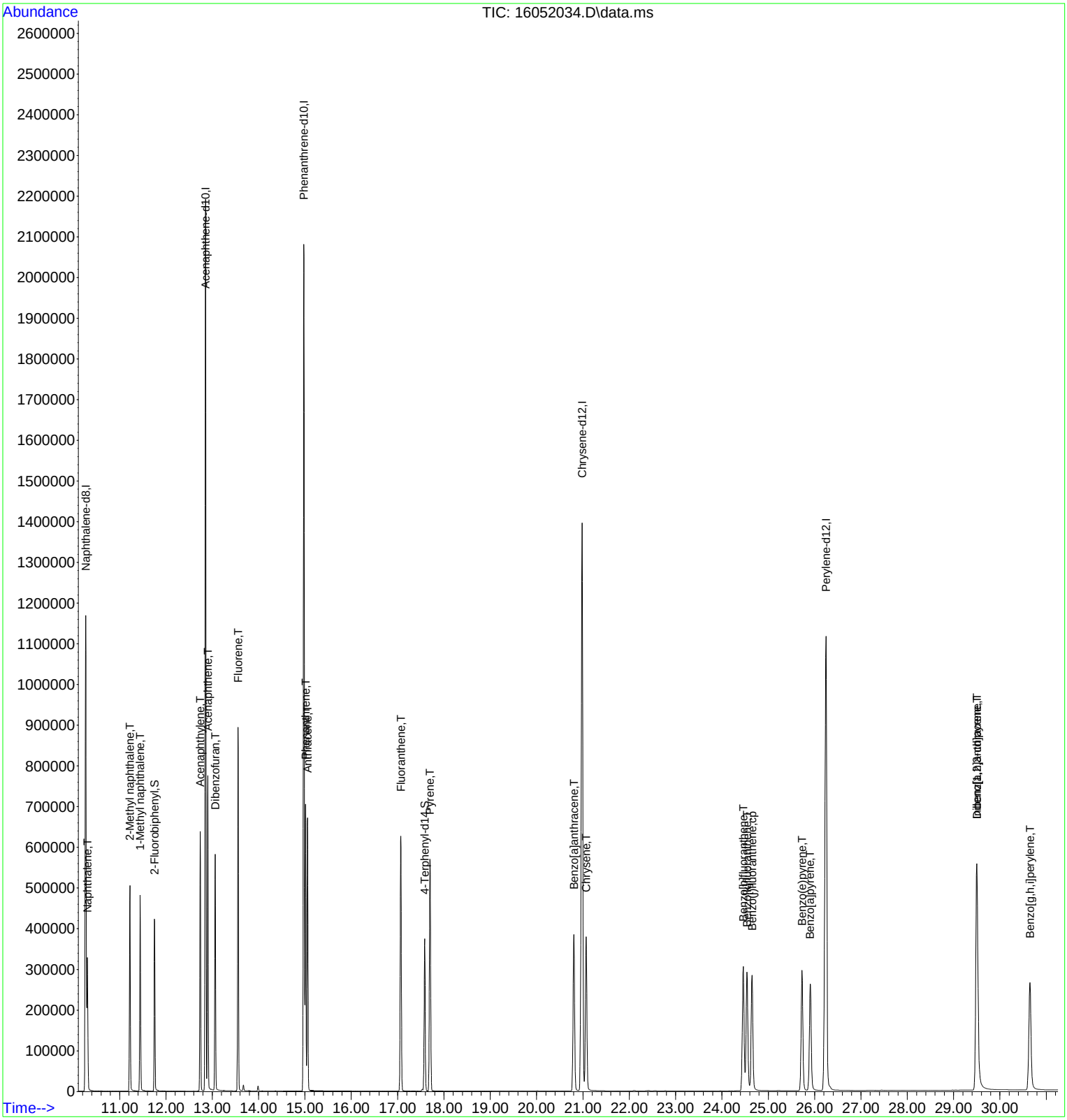
Target Compounds						Qvalue
2) Naphthalene	10.304	128	369727	995.51	ug/kg	99
3) 2-Methyl naphthalene	11.221	142	308302	1067.84	ug/kg	99
4) 1-Methyl naphthalene	11.444	142	285377	1044.55	ug/kg	100
7) Acenaphthylene	12.738	152	596469	1017.73	ug/kg	99
8) Acenaphthene	12.905	153	369365	998.78	ug/kg	100
9) Dibenzofuran	13.062	168	545114	967.62	ug/kg	99
10) Fluorene	13.553	166	475527	930.29	ug/kg	99
12) Phenanthrene	15.012	178	663788	944.14	ug/kg	99
13) Anthracene	15.056	178	657119	923.69	ug/kg	99
14) Fluoranthene	17.069	202	689199	996.80	ug/kg	99
15) Pyrene	17.698	202	674017	996.75	ug/kg	98
18) Benzo[a]anthracene	20.805	228	606814	1007.11	ug/kg	99
19) Chrysene	21.068	228	562257	1010.17	ug/kg	100
21) Benzo[b]fluoranthene	24.460	252	573845	994.66	ug/kg	100
22) Benzo[k]fluoranthene	24.540	252	525453	1009.70	ug/kg	99
23) Benzo(j)fluoranthene	24.650	252	498879	998.53	ug/kg	99
24) Benzo(e)pyrene	25.727	252	546890	1002.63	ug/kg	99
25) Benzo[a]pyrene	25.910	252	536193	997.33	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.507	276	665259	1005.60	ug/kg	96
27) Dibenz[a,h]anthracene	29.492	278	552815	1003.51	ug/kg	99
28) Benzo[g,h,i]perylene	30.650	276	570903	1000.58	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160520\
Data File : 16052034.D
Acq On : 21 May 2016 5:05 am
Operator :
Sample : CCV-160520
Misc : CCV
ALS Vial : 34 Sample Multiplier: 1

Quant Time: May 23 09:59:32 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



GCMS8_160523A
For

DHL Work Order
1605098

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS8_160523A
Batch Number(s): See Run Log. Matrix: See Run Log.	SOP: ORGANICS-PAH-01

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		x
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			x
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)	X			

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	x
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			x
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE	All deviations from the method and SOP that affect data quality			X	x
1. Are all non-conformances included and noted?					
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	___ Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: **See Run Log.**

Analyst: Dustin Bey Karyn Lane Date: 5/24/2016

Second-Level Review: Janice Whitt Date: 5/31/2016

REVIEWED BY
By Janice Whitt at 4:08:53 PM, 5/31/2016

DHL Analytical, Inc.

Run ID: GCMS8_160523A **Run No.:** 85951

Analytical Run Date: 5/23/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 660 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160517.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160523	1	PAH_LL_SDOD1	TUNE	R85951	5/23/2016 8:27:00 AM		
ICV-160523	1	PAH_LL_SDOD1	ICV	R85951	5/23/2016 9:05:00 AM		
LCS-75217	1	PAH_LL_SDOD1	LCS	75217	5/23/2016 9:42:00 AM		
MB-75217	1	PAH_LL_SDOD1	MBLK	75217	5/23/2016 10:20:00 AM		
1605098-12A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 10:56:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605098-13A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 11:34:00 AM		
1605098-14A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 12:11:00 PM		
1605098-15A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 12:48:00 PM		
1605098-16A	20	PAH_LL_SDOD1	SAMP	75217	5/23/2016 1:26:00 PM		
1605098-18A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 2:03:00 PM		
1605098-19A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 2:39:00 PM		
1605098-20A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 3:17:00 PM		
1605098-21A	20	PAH_LL_SDOD1	SAMP	75217	5/23/2016 3:54:00 PM		
1605098-22A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 4:31:00 PM		
1605098-23A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 5:09:00 PM		
1605098-24A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 5:46:00 PM		
1605098-22AMS	10	PAH_LL_SDOD1	MS	75217	5/23/2016 6:25:00 PM		
1605098-22AMSD	10	PAH_LL_SDOD1	MSD	75217	5/23/2016 7:02:00 PM		
DFTPP2-160523	1	PAH_LL_SDOD1	TUNE	R85951	5/23/2016 7:40:00 PM		
ICV2-160523	1	PAH_LL_SDOD1	ICV	R85951	5/23/2016 8:17:00 PM		
SB-160523	1	PAH_LL_SDOD1	SBLK	75217	5/23/2016 9:31:00 PM		
1605098-25A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 10:09:00 PM		
1605098-26A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 10:47:00 PM		
1605098-27A	10	PAH_LL_SDOD1	SAMP	75217	5/23/2016 11:24:00 PM		
1605098-28A	10	PAH_LL_SDOD1	SAMP	75217	5/24/2016 12:01:00 AM		
1605098-29A	10	PAH_LL_SDOD1	SAMP	75217	5/24/2016 12:38:00 AM		
1605098-30A	10	PAH_LL_SDOD1	SAMP	75217	5/24/2016 1:16:00 AM		
CCV1-160523	1	PAH_LL_SDOD1	CCV	R85951	5/24/2016 1:52:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

Sequence Name: C:\msdchem\1\sequence\160523.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160523\
Instrument Name: GCMS #8
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

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

Line		Sample Name/Misc Info		
1)	Sample	1	16052301 DFTPPPAH	DFTPP-160523
2)	Sample	2	16052302 PAH160517	ICV-160523
3)	Sample	3	16052303 PAH160517	LCS-75217
4)	Sample	4	16052304 PAH160517	MB-75217
5)	Sample	5	16052305 PAH160517	1605098-12A
6)	Sample	6	16052306 PAH160517	1605098-13A
7)	Sample	7	16052307 PAH160517	1605098-14A
8)	Sample	8	16052308 PAH160517	1605098-15A
9)	Sample	9	16052309 PAH160517	1605098-16A
10)	Sample	10	16052310 PAH160517	1605098-18A
11)	Sample	11	16052311 PAH160517	1605098-19A
12)	Sample	12	16052312 PAH160517	1605098-20A
13)	Sample	13	16052313 PAH160517	1605098-21A
14)	Sample	14	16052314 PAH160517	1605098-22A
15)	Sample	15	16052315 PAH160517	1605098-23A
16)	Sample	16	16052316 PAH160517	1605098-24A
17)	Sample	17	16052317 PAH160517	1605098-22AMS
18)	Sample	18	16052318 PAH160517	1605098-22AMSD
19)	Sample	19	16052319 DFTPPPAH	DFTPP2-160523
20)	Sample	20	16052320 PAH160517	~~ICV~~ICV2-160523
21)	Sample	21	16052321 PAH160517	SBLK
22)	Sample	22	16052322 PAH160517	SB-160523
23)	Sample	23	16052323 PAH160517	1605098-25A
24)	Sample	24	16052324 PAH160517	1605098-26A
25)	Sample	25	16052325 PAH160517	1605098-27A
26)	Sample	26	16052326 PAH160517	1605098-28A
27)	Sample	27	16052327 PAH160517	1605098-29A
28)	Sample	28	16052328 PAH160517	1605098-30A
29)	Sample	29	16052329 PAH160517	CCV1-160523

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/18/2016 8:37:03 AM**
Digestion:
Prep End Date: **5/18/2016 11:40:00 AM**

Prep Batch **75217** Prep Code: **3550_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-12A	Soil		10.15	10	0.985	1 of 1	
1605098-13A	Soil		10.11	10	0.989	1 of 1	
1605098-14A	Soil		10.18	10	0.982	1 of 1	
1605098-15A	Soil		10.2	10	0.980	1 of 1	
1605098-16A	Soil		10.6	10	0.943	1 of 1	
Slow to filter							
1605098-18A	Soil		10.79	10	0.927	1 of 1	
1605098-19A	Soil		10.67	10	0.937	1 of 1	
1605098-20A	Soil		10.46	10	0.956	1 of 1	
1605098-21A	Soil		10.4	10	0.962	1 of 1	
1605098-22A	Soil		10.17	10	0.983	1 of 1	
1605098-22AMS	Soil		10.33	10	0.968	of	
Slow to filter							
1605098-22AMSD	Soil		10.16	10	0.984	of	
Slow to filter							
1605098-23A	Soil		10.1	10	0.990	1 of 1	
1605098-24A	Soil		10.43	10	0.959	1 of 1	
1605098-25A	Soil		10.11	10	0.989	1 of 1	
1605098-26A	Soil		10.52	10	0.951	1 of 1	
1605098-27A	Soil		10.73	10	0.932	1 of 1	
1605098-28A	Soil		10.06	10	0.994	1 of 1	
1605098-29A	Soil		10.25	10	0.976	1 of 1	
1605098-30A	Soil		10.08	10	0.992	1 of 1	
1605098-32A	Soil		10.31	10	0.970	1 of 1	
Extract and hold							
1605098-33A	Soil		10.53	10	0.950	1 of 1	
Extract and hold							

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 3:25:50 PM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/18/2016 8:37:03 AM**
Digestion:
Prep End Date: **5/18/2016 11:40:00 AM**

Prep Batch **75217** Prep Code: **3550_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
LCS-75217	Soil		10	10	1.000	of	
MB-75217	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 3:25:53 PM, 5/31/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/18/2016 8:37:03 AM**
Digestion:
Prep End Date: 5/18/16 11:40AM

Prep Batch **75217** Prep Code: **3550_PAHDOD** Technician: **Duston Bezner**

Prep Factor Units: **mL/g**

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-12A	Soil		10.15	10	1.000	1 of 1	
1605098-13A	Soil		10.11	10	1.000	1 of 1	
1605098-14A	Soil		10.18	10	1.000	1 of 1	
1605098-15A	Soil		10.20	10	1.000	1 of 1	
1605098-16A	Soil		10.60	10	1.000	1 of 1	Slow to filter
1605098-18A	Soil		10.79	10	1.000	1 of 1	
1605098-19A	Soil		10.67	10	1.000	1 of 1	
1605098-20A	Soil		10.41	10	1.000	1 of 1	
1605098-21A	Soil		10.40	10	1.000	1 of 1	
1605098-22A	Soil		10.17	10	1.000	1 of 1	
1605098-22AMS	Soil		10.33	10	1.000	of	Slow to filter
1605098-22AMSD	Soil		10.16	10	1.000	of	
1605098-23A	Soil		10.10	10	1.000	1 of 1	
1605098-24A	Soil		10.43	10	1.000	1 of 1	
1605098-25A	Soil		10.11	10	1.000	1 of 1	
1605098-26A	Soil		10.52	10	1.000	1 of 1	
1605098-27A	Soil		10.73	10	1.000	1 of 1	
1605098-28A	Soil		10.06	10	1.000	1 of 1	
1605098-29A	Soil		10.25	10	1.000	1 of 1	
1605098-30A	Soil		10.08	10	1.000	1 of 1	
1605098-32A	Soil		10.31	10	1.000	1 of 1	clay like soil.
	Extract and hold						
1605098-33A	Soil		10.53	10	1.000	1 of 1	
	Extract and hold						
LCS-75217	Soil		10	10	1.000	of	
MB-75217	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 3:25:43 PM, 5/31/2016

5/18/16 5/18/16 HR 5/18/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/12/2016 5:00:00 PM**
Digestion: **Start: 5/12/2015 5:15:00 PM / Stop: 5/16/2016 8:30:00 AM**
Prep End Date:

Prep Batch **75144** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: mL

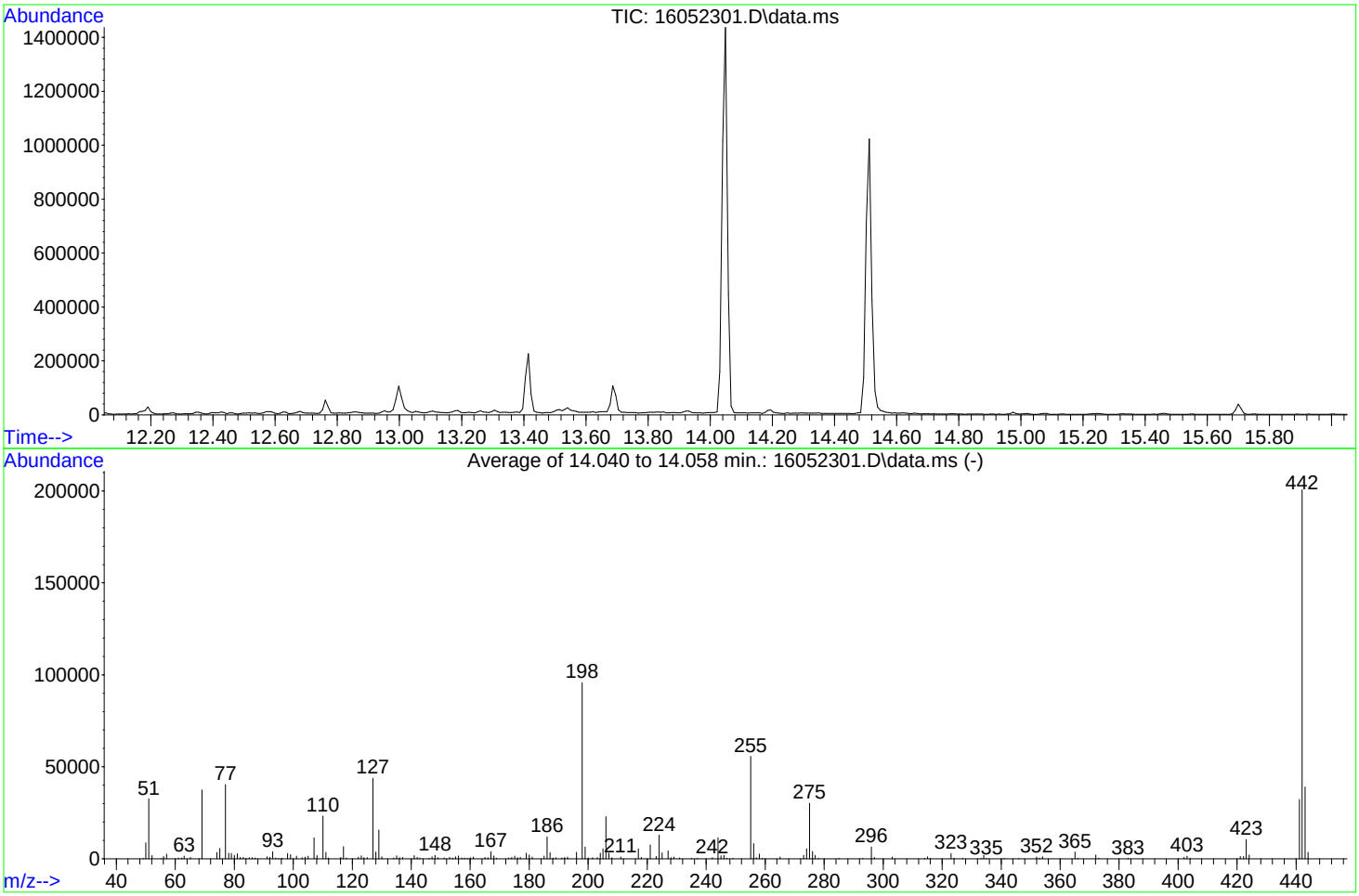
Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-11A	Soil		0	0	#Num!	1 of 1	
1605098-12A	Soil		0	0	#Num!	1 of 1	
1605098-13A	Soil		0	0	#Num!	1 of 1	
1605098-14A	Soil		0	0	#Num!	1 of 1	
1605098-15A	Soil		0	0	#Num!	1 of 1	
1605098-16A	Soil		0	0	#Num!	1 of 1	
1605098-17A	Soil		0	0	#Num!	1 of 1	
1605098-18A	Soil		0	0	#Num!	1 of 1	
1605098-19A	Soil		0	0	#Num!	1 of 1	
1605098-20A	Soil		0	0	#Num!	1 of 1	
1605098-21A	Soil		0	0	#Num!	1 of 1	
1605098-22A	Soil		0	0	#Num!	1 of 1	
1605098-23A	Soil		0	0	#Num!	1 of 1	
1605098-24A	Soil		0	0	#Num!	1 of 1	
1605098-25A	Soil		0	0	#Num!	1 of 1	
1605098-26A	Soil		0	0	#Num!	1 of 1	
1605098-27A	Soil		0	0	#Num!	1 of 1	
1605098-28A	Soil		0	0	#Num!	1 of 1	
1605098-29A	Soil		0	0	#Num!	1 of 1	
1605098-30A	Soil		0	0	#Num!	1 of 1	

REVIEWED BY
By Janice Whitt at 3:25:46 PM, 5/31/2016

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052301.D
Acq On : 23 May 2016 8:27 am
Operator :
Sample : DFTPP-160523
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 436, 437, 438; Background Corrected with Scan 432

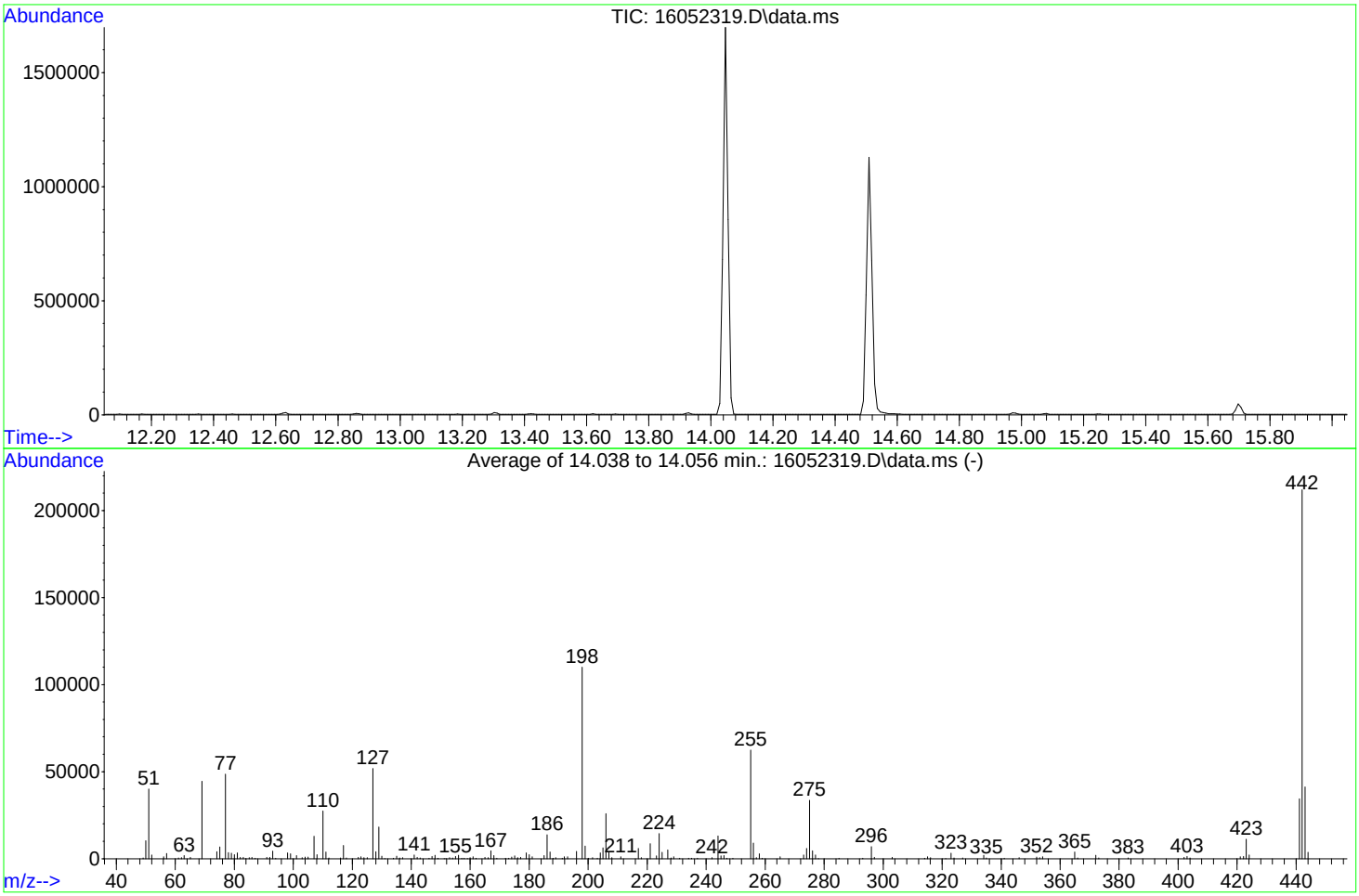
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	34.0	32567	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	39.2	37503	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	45.7	43737	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	95688	PASS
199	198	5	9	6.7	6404	PASS
275	198	10	60	31.5	30096	PASS
365	198	1	200	3.9	3686	PASS
441	442	0.01	24	16.1	32303	PASS
442	198	50	400	209.8	200709	PASS
443	442	15	24	19.4	39010	PASS

REVIEWED BY
By Janice Whitt at 3:25:55 PM, 5/31/2016

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052319.D
Acq On : 23 May 2016 7:40 pm
Operator :
Sample : DFTPP2-160523
Misc : TUNE
ALS Vial : 19 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 436, 437, 438; Background Corrected with Scan 432

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	36.4	40061	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.4	44484	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	47.0	51768	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	110090	PASS
199	198	5	9	6.7	7324	PASS
275	198	10	60	30.4	33464	PASS
365	198	1	200	3.5	3875	PASS
441	442	0.01	24	16.2	34359	PASS
442	198	50	400	192.6	211986	PASS
443	442	15	24	19.4	41227	PASS

REVIEWED BY
By Janice Whitt at 3:26:01 PM, 5/31/2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052302.D
Acq On : 23 May 2016 9:05 am
Operator :
Sample : ICV-160523
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 24 09:02:59 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.273	136	1681314	4000.00	ug/kg	103
6) Acenaphthene-d10	12.861	164	1295412	4000.00	ug/kg	103
11) Phenanthrene-d10	14.982	188	2793904	4000.00	ug/kg	95
16) Chrysene-d12	20.994	240	2629608	4000.00	ug/kg	97
20) Perylene-d12	26.261	264	2509501	4000.00	ug/kg	101

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.762	172	731424	1953.86	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 48.85%			
17) 4-Terphenyl-d14	17.593	244	1105414	1986.07	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 49.65%#			

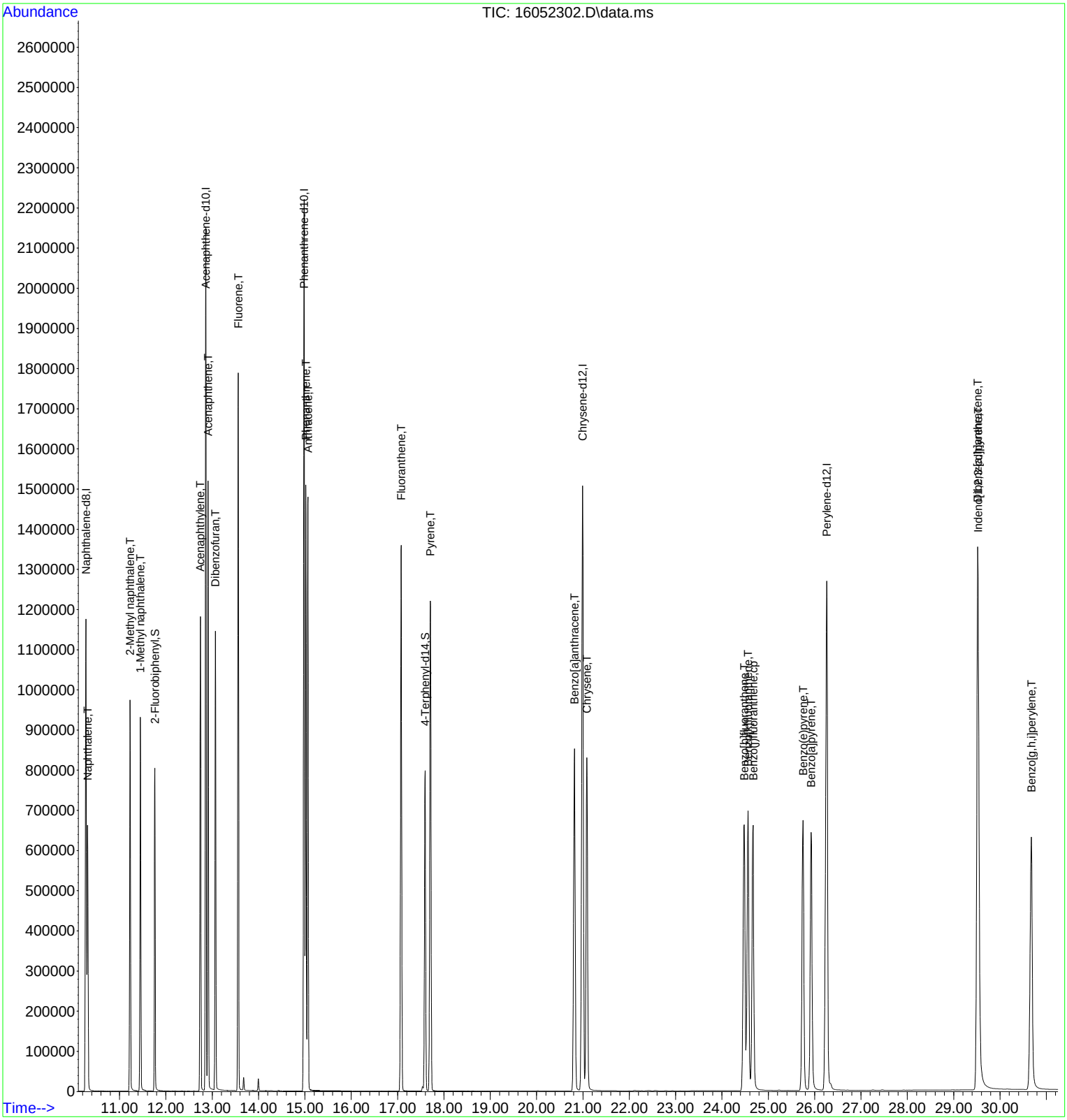
Target Compounds						Qvalue
2) Naphthalene	10.310	128	755404	2005.54	ug/kg	100
3) 2-Methyl naphthalene	11.227	142	600119	2049.52	ug/kg	100
4) 1-Methyl naphthalene	11.449	142	549979	1984.90	ug/kg	100
7) Acenaphthylene	12.743	152	1154283	2038.54	ug/kg	100
8) Acenaphthene	12.910	153	723291	2024.36	ug/kg	99
9) Dibenzofuran	13.067	168	1096321	2014.26	ug/kg	92
10) Fluorene	13.563	166	989002	2002.64	ug/kg	99
12) Phenanthrene	15.020	178	1448453	1884.16	ug/kg	100
13) Anthracene	15.064	178	1436439	1846.61	ug/kg	100
14) Fluoranthene	17.077	202	1504997	2052.12	ug/kg	100
15) Pyrene	17.707	202	1480083	2053.59	ug/kg	99
18) Benzo[a]anthracene	20.818	228	1381614	2125.32	ug/kg	100
19) Chrysene	21.082	228	1267616	2108.09	ug/kg	100
21) Benzo[b]fluoranthene	24.481	252	1363943	2122.25	ug/kg	100
22) Benzo[k]fluoranthene	24.561	252	1226822	2105.18	ug/kg	100
23) Benzo(j)fluoranthene	24.671	252	1182178	2128.33	ug/kg	100
24) Benzo(e)pyrene	25.748	252	1285296	2119.33	ug/kg	100
25) Benzo[a]pyrene	25.924	252	1279852	2127.27	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.535	276	1586679	2158.02	ug/kg	100
27) Dibenz[a,h]anthracene	29.520	278	1327270	2173.35	ug/kg	99
28) Benzo[g,h,i]perylene	30.678	276	1360824	2143.97	ug/kg	100

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052302.D
Acq On : 23 May 2016 9:05 am
Operator :
Sample : ICV-160523
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

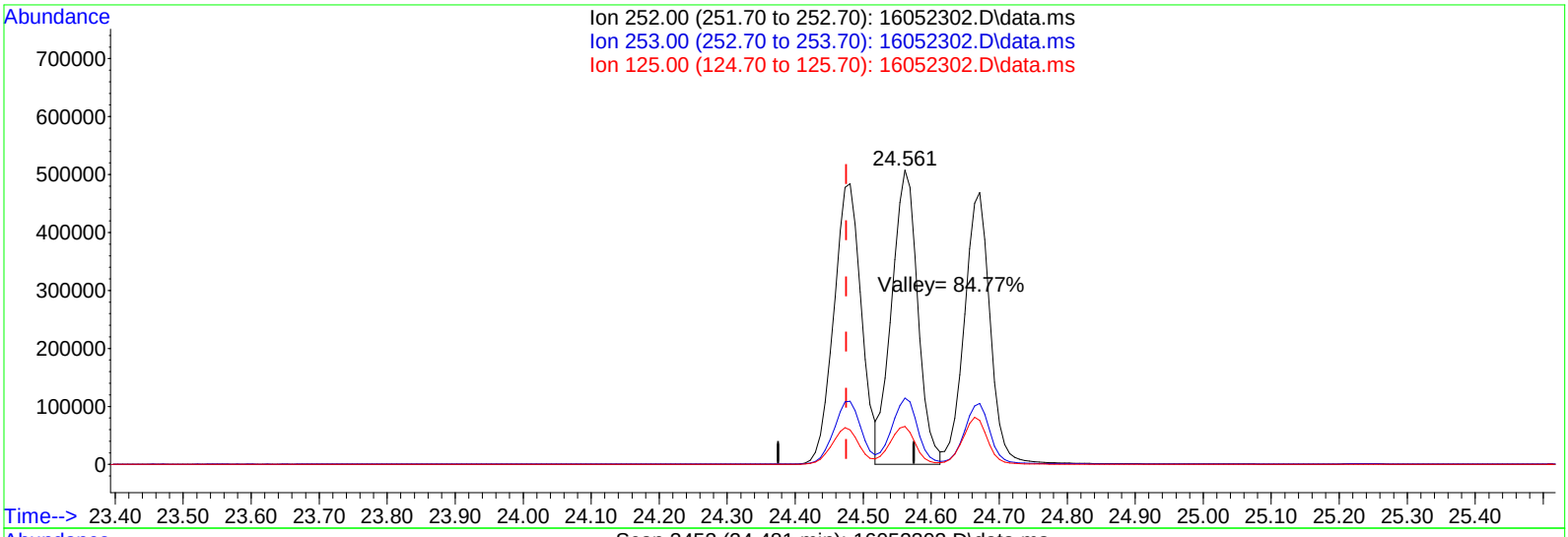
Quant Time: May 24 09:02:59 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

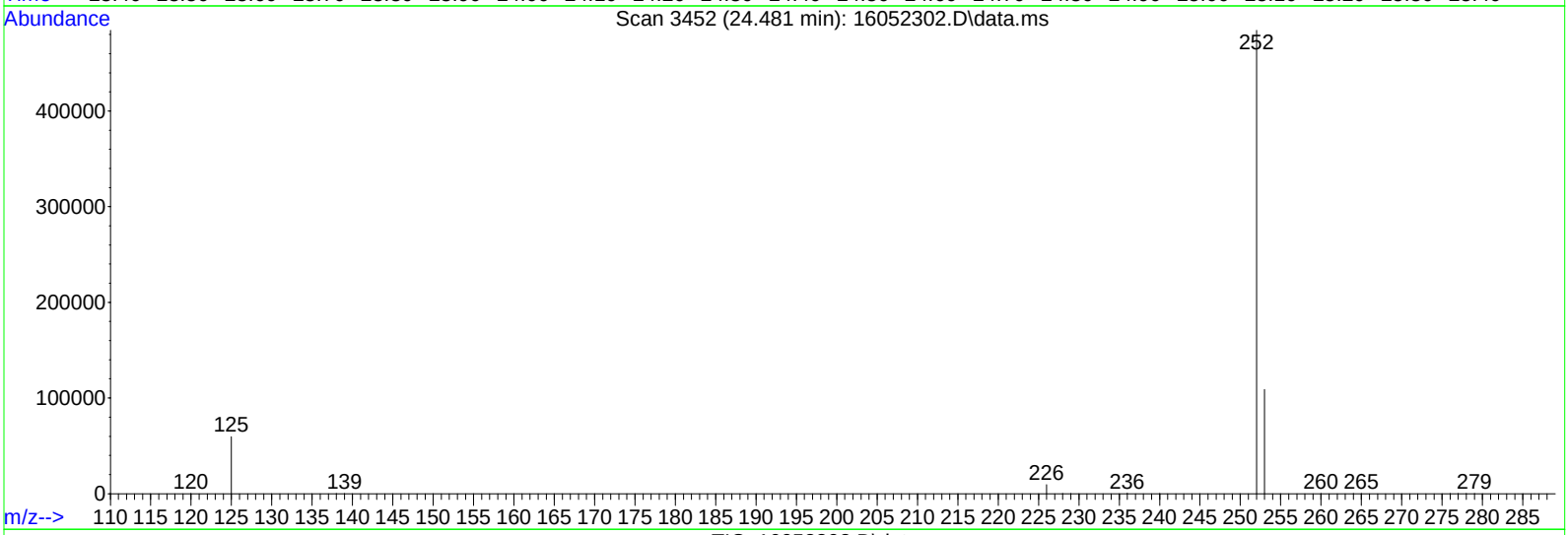


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052302.D
Acq On : 23 May 2016 9:05 am
Operator :
Sample : ICV-160523
Misc : ICV
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 23 09:36:29 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052302.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.481min (+0.006) 2122.25ug/kg

response 1363943

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.34
125.00	12.20	12.27
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052303.D
Acq On : 23 May 2016 9:42 am
Operator :
Sample : LCS-75217
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

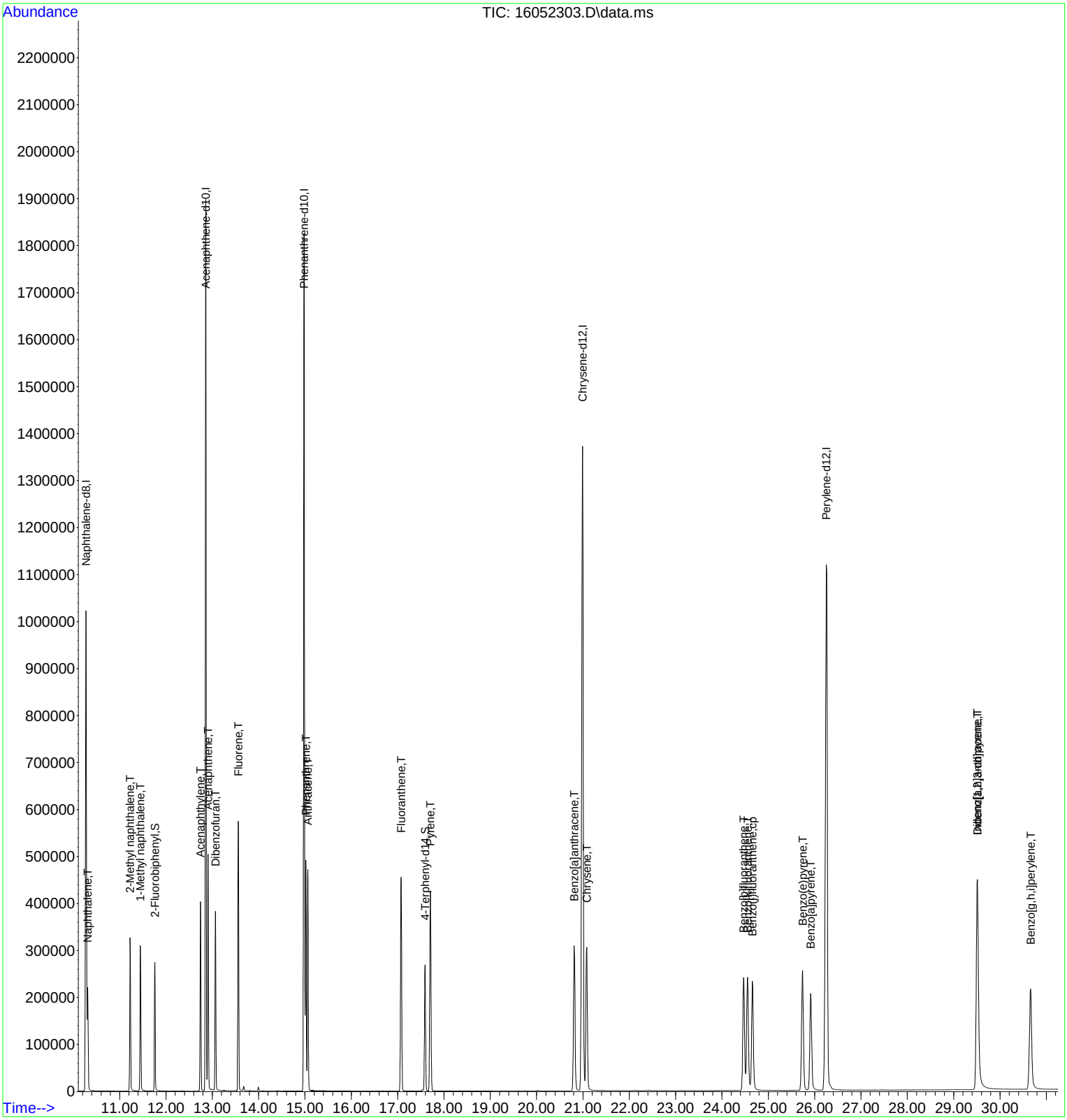
Quant Time: May 24 09:03:02 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1480011	4000.00	ug/kg	91
6) Acenaphthene-d10	12.861	164	1107870	4000.00	ug/kg	88
11) Phenanthrene-d10	14.980	188	2221956	4000.00	ug/kg	76
16) Chrysene-d12	20.993	240	2341021	4000.00	ug/kg	86
20) Perylene-d12	26.253	264	2232760	4000.00	ug/kg	90
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	246673	748.57	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 18.71%#			
17) 4-Terphenyl-d14	17.593	244	367187	741.04	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 18.53%#			
Target Compounds						Qvalue
2) Naphthalene	10.309	128	248163	748.47	ug/kg	100
3) 2-Methyl naphthalene	11.226	142	199894	775.53	ug/kg	98
4) 1-Methyl naphthalene	11.448	142	185189	759.26	ug/kg	99
7) Acenaphthylene	12.743	152	381217	787.22	ug/kg	99
8) Acenaphthene	12.910	153	237055	775.79	ug/kg	99
9) Dibenzofuran	13.067	168	362594	778.96	ug/kg	94
10) Fluorene	13.563	166	315974	748.13	ug/kg	99
12) Phenanthrene	15.018	178	465667	761.67	ug/kg	98
13) Anthracene	15.063	178	464065	750.14	ug/kg	98
14) Fluoranthene	17.074	202	515866	854.36	ug/kg	99
15) Pyrene	17.706	202	505848	857.19	ug/kg	98
18) Benzo[a]anthracene	20.810	228	480652	803.87	ug/kg	99
19) Chrysene	21.081	228	448929	812.90	ug/kg	99
21) Benzo[b]fluoranthene	24.465	252	473338	806.03	ug/kg	99
22) Benzo[k]fluoranthene	24.553	252	423407	799.72	ug/kg	99
23) Benzo(j)fluoranthene	24.656	252	416011	817.76	ug/kg	99
24) Benzo(e)pyrene	25.740	252	488269	880.43	ug/kg	99
25) Benzo[a]pyrene	25.916	252	422577	772.21	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.520	276	545391	809.41	ug/kg	98
27) Dibenz[a,h]anthracene	29.505	278	452771	806.44	ug/kg	99
28) Benzo[g,h,i]perylene	30.663	276	464369	799.03	ug/kg	99

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

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052303.D
Acq On : 23 May 2016 9:42 am
Operator :
Sample : LCS-75217
Misc : LCS
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 24 09:03:02 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052304.D
Acq On : 23 May 2016 10:20 am
Operator :
Sample : MB-75217
Misc : MBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 24 09:03:05 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1478616	4000.00	ug/kg	91
6) Acenaphthene-d10	12.862	164	1133473	4000.00	ug/kg	90
11) Phenanthrene-d10	14.981	188	2165661	4000.00	ug/kg	74
16) Chrysene-d12	20.988	240	2280483	4000.00	ug/kg	84
20) Perylene-d12	26.255	264	2168025	4000.00	ug/kg	87

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	259403	787.94	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 19.70%#			
17) 4-Terphenyl-d14	17.593	244	365738	757.71	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 18.94%#			

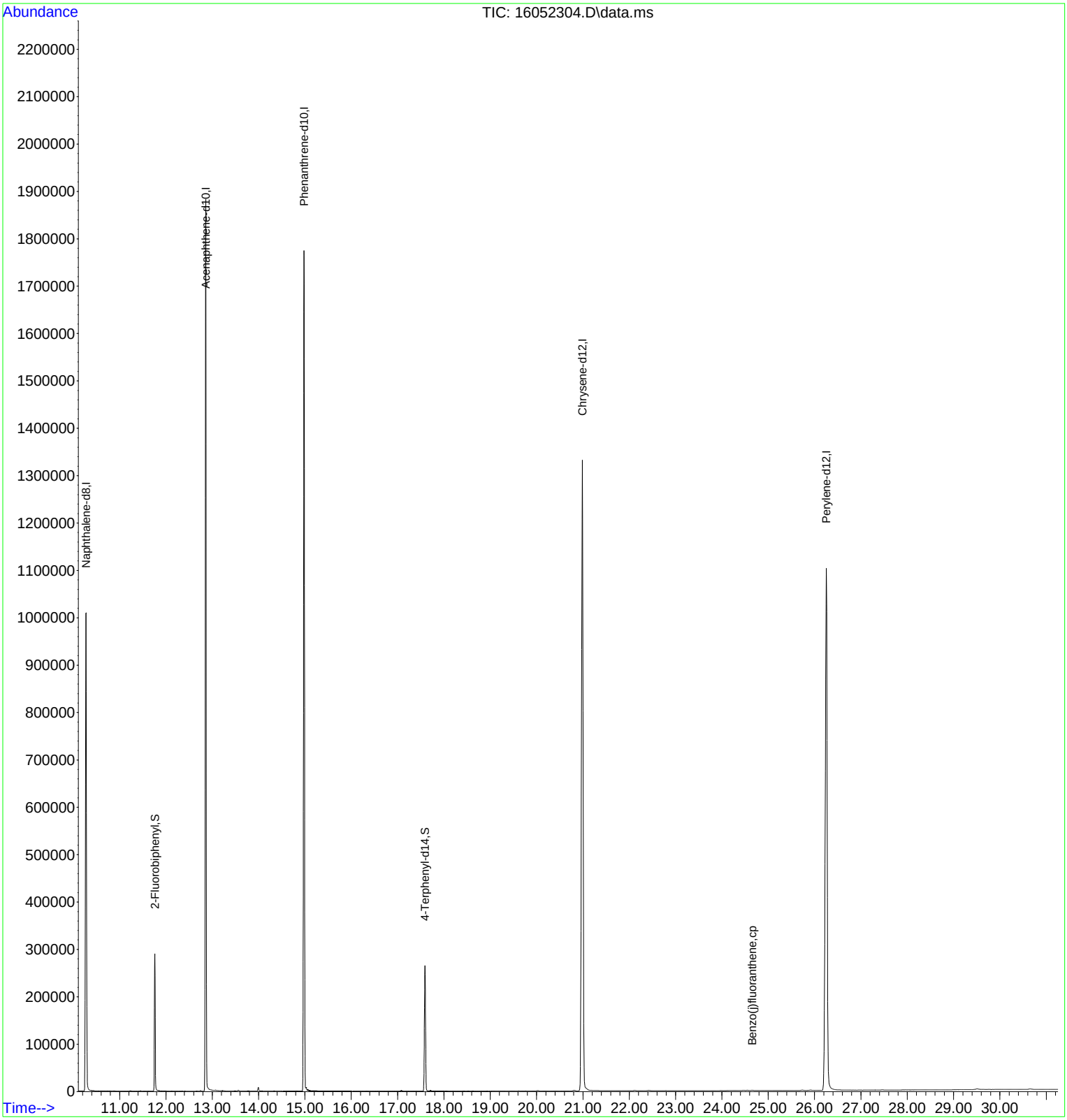
Target Compounds						Qvalue
23) Benzo(j)fluoranthene	24.658	252	1799	0.42	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052304.D
Acq On : 23 May 2016 10:20 am
Operator :
Sample : MB-75217
Misc : MBLK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 24 09:03:05 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052305.D
Acq On : 23 May 2016 10:56 am
Operator :
Sample : 1605098-12A
Misc : SAMP
ALS Vial : 5 Sample Multiplier: 10

Quant Time: May 24 09:04:17 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1552545	4000.00	ug/kg	95
6) Acenaphthene-d10	12.861	164	1245878	4000.00	ug/kg	99
11) Phenanthrene-d10	14.980	188	2216559	4000.00	ug/kg	76
16) Chrysene-d12	20.987	240	2155146	4000.00	ug/kg	80
20) Perylene-d12	26.254	264	2041952	4000.00	ug/kg	82

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	31373	90.76	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.27%#			
17) 4-Terphenyl-d14	17.590	244	37808	82.88	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 2.07%#			

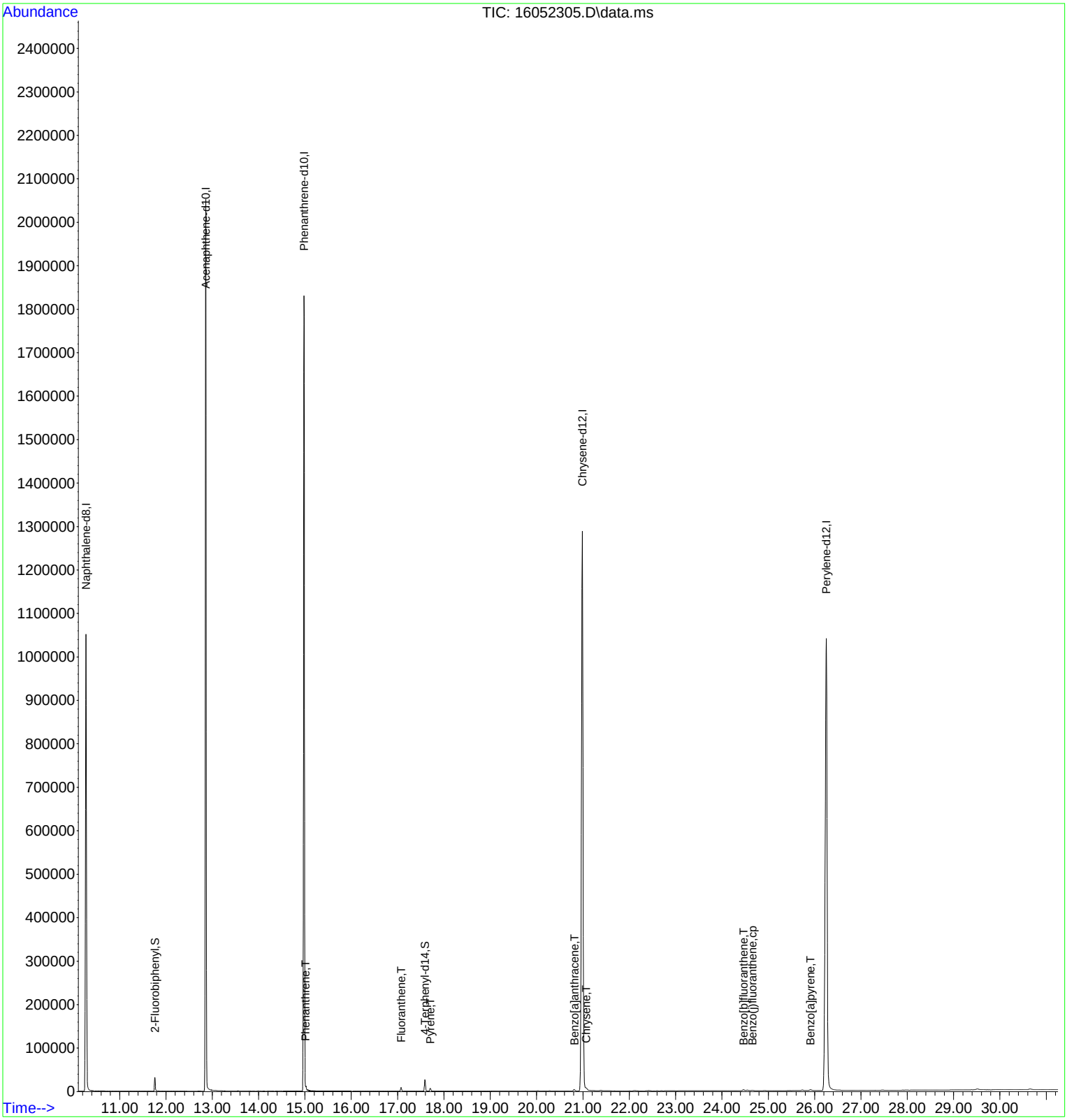
Target Compounds						Qvalue
12) Phenanthrene	15.018	178	5472	8.97	ug/kg	98
14) Fluoranthene	17.074	202	10546	15.11	ug/kg	97
15) Pyrene	17.706	202	8682	12.25	ug/kg	97
18) Benzo[a]anthracene	20.811	228	5344	7.75	ug/kg	99
19) Chrysene	21.075	228	5542	8.01	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	5125	7.71	ug/kg	99
23) Benzo(j)fluoranthene	24.657	252	2201	1.49	ug/kg	93
25) Benzo[a]pyrene	25.917	252	4882	7.55	ug/kg	98

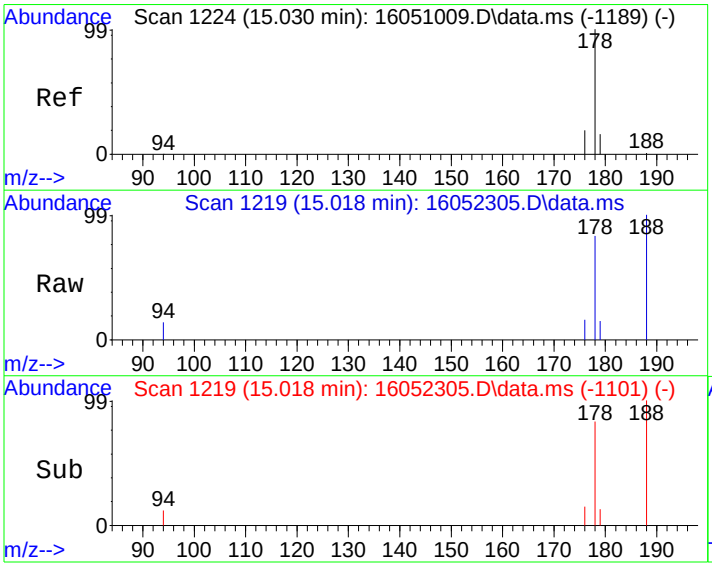
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052305.D
Acq On : 23 May 2016 10:56 am
Operator :
Sample : 1605098-12A
Misc : SAMP
ALS Vial : 5 Sample Multiplier: 10

Quant Time: May 24 09:04:17 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

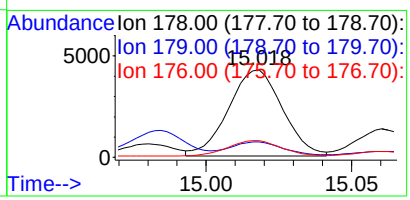


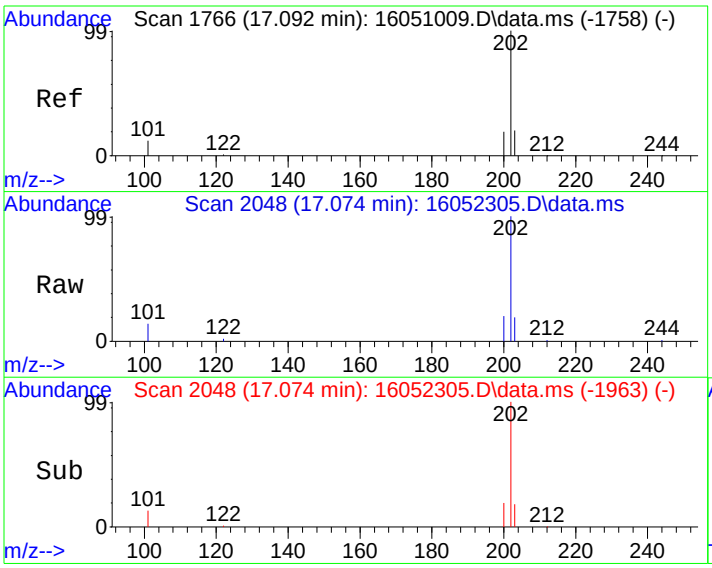


#12
Phenanthrene
Concen: 8.97 ug/kg
RT: 15.018 min Scan# 1219
Delta R.T. -0.001 min
Lab File: 16052305.D
Acq: 23 May 2016 10:56 am

Tgt Ion:178 Resp: 5472

Ion	Ratio	Lower	Upper
178	100		
179	15.5	0.0	36.4
176	18.2	0.0	39.0

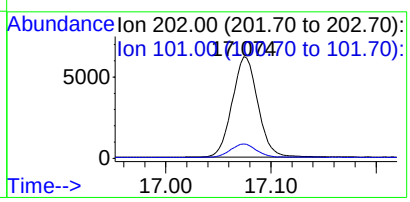


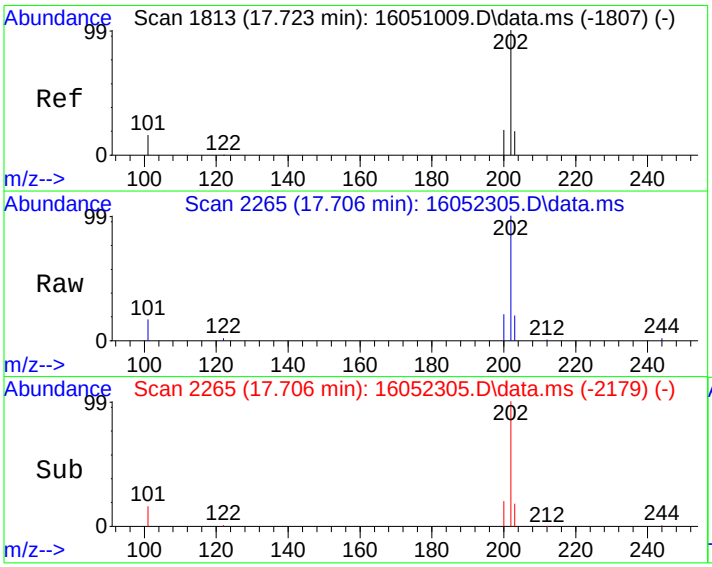


#14
Fluoranthene
Concen: 15.11 ug/kg
RT: 17.074 min Scan# 2048
Delta R.T. -0.002 min
Lab File: 16052305.D
Acq: 23 May 2016 10:56 am

Tgt Ion:202 Resp: 10546

Ion	Ratio	Lower	Upper
202	100		
101	13.2	0.0	34.4

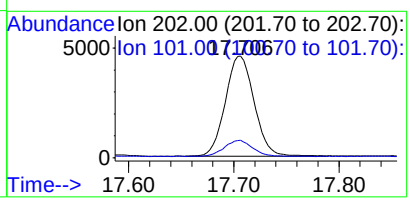


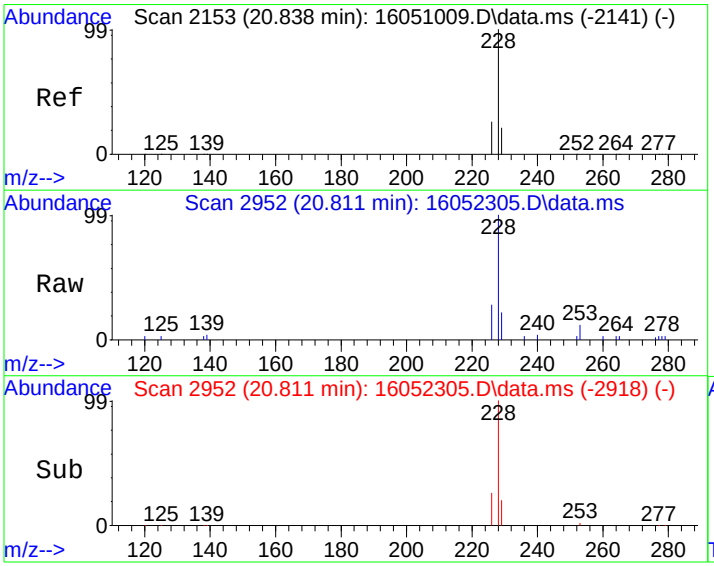


#15
Pyrene
Concen: 12.25 ug/kg
RT: 17.706 min Scan# 2265
Delta R.T. 0.000 min
Lab File: 16052305.D
Acq: 23 May 2016 10:56 am

Tgt Ion:202 Resp: 8682

Ion	Ratio	Lower	Upper
202	100		
101	16.0	0.0	37.3

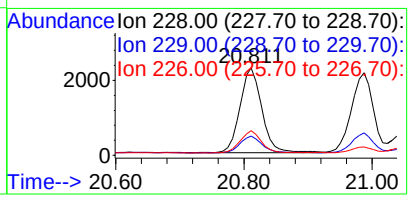


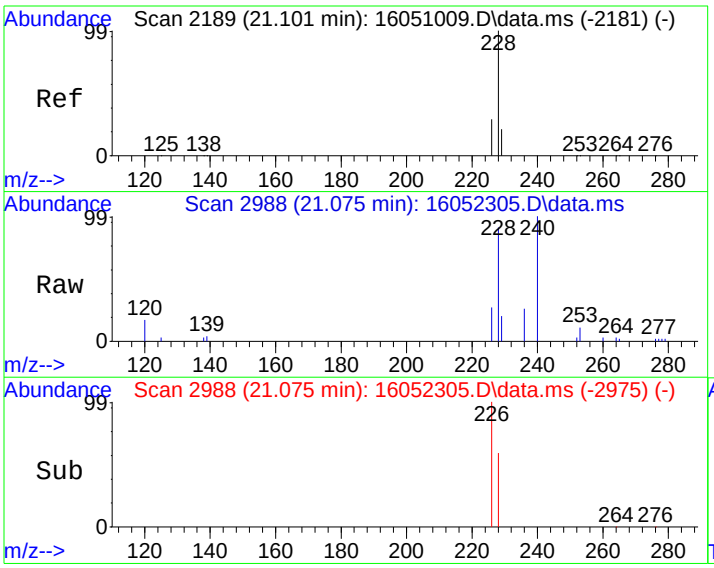


#18
Benzo[a]anthracene
Concen: 7.75 ug/kg
RT: 20.811 min Scan# 2952
Delta R.T. -0.001 min
Lab File: 16052305.D
Acq: 23 May 2016 10:56 am

Tgt Ion:228 Resp: 5344

Ion	Ratio	Lower	Upper
228	100		
229	19.8	0.3	40.3
226	26.0	5.7	45.7

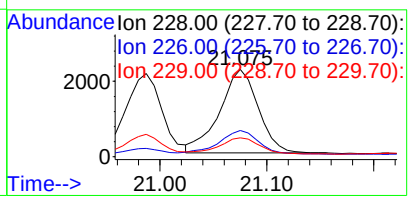


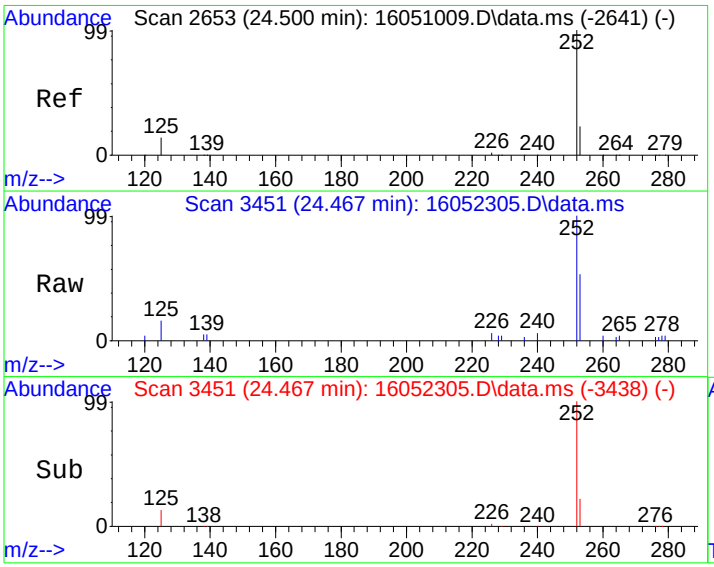


#19
Chrysene
Concen: 8.01 ug/kg
RT: 21.075 min Scan# 2988
Delta R.T. -0.008 min
Lab File: 16052305.D
Acq: 23 May 2016 10:56 am

Tgt Ion:228 Resp: 5542

Ion	Ratio	Lower	Upper
228	100		
226	28.2	8.2	48.2
229	19.2	0.3	40.3

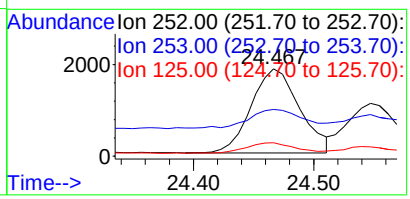


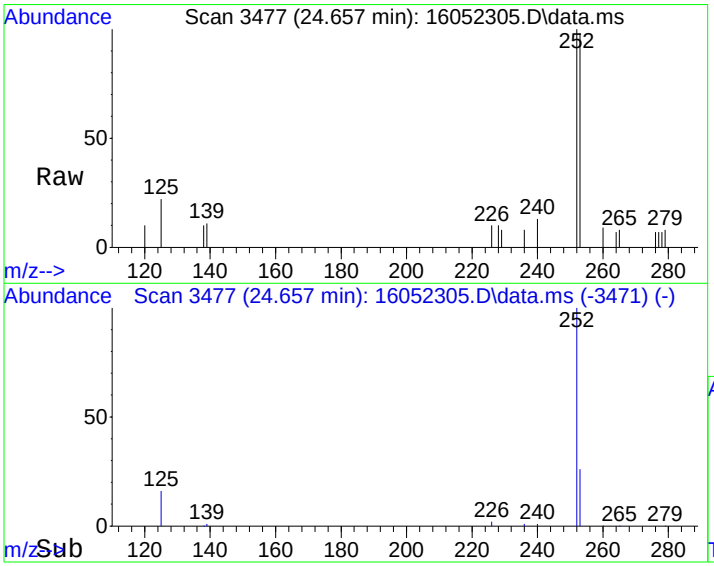


#21
Benzo[b]fluoranthene
Concen: 7.71 ug/kg
RT: 24.467 min Scan# 3451
Delta R.T. -0.008 min
Lab File: 16052305.D
Acq: 23 May 2016 10:56 am

Tgt Ion:252 Resp: 5125

Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.3	42.3
125	12.6	0.0	32.2

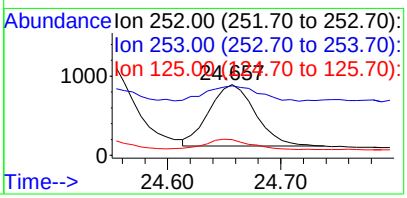


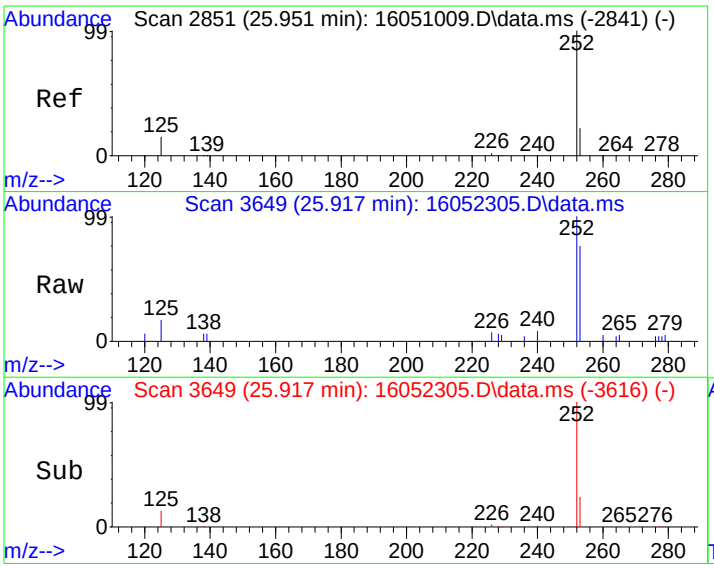


#23
Benzo(j)fluoranthene
Concen: 1.49 ug/kg
RT: 24.657 min Scan# 3477
Delta R.T. -0.008 min
Lab File: 16052305.D
Acq: 23 May 2016 10:56 am

Tgt Ion:252 Resp: 2201

Ion	Ratio	Lower	Upper
252	100		
253	27.6	2.2	42.2
125	16.9	0.0	37.3

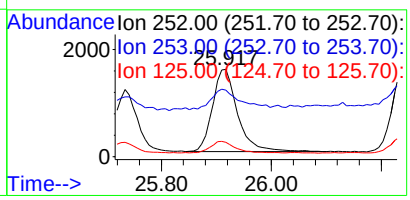




#25
Benzo[a]pyrene
Concen: 7.55 ug/kg
RT: 25.917 min Scan# 3649
Delta R.T. -0.008 min
Lab File: 16052305.D
Acq: 23 May 2016 10:56 am

Tgt Ion:252 Resp: 4882

Ion	Ratio	Lower	Upper
252	100		
253	21.6	2.3	42.3
125	12.8	0.0	33.5



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052306.D
Acq On : 23 May 2016 11:34 am
Operator :
Sample : 1605098-13A
Misc : SAMP
ALS Vial : 6 Sample Multiplier: 10

Quant Time: May 24 09:04:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1600379	4000.00	ug/kg	98
6) Acenaphthene-d10	12.861	164	1282586	4000.00	ug/kg	102
11) Phenanthrene-d10	14.980	188	2251209	4000.00	ug/kg	77
16) Chrysene-d12	20.987	240	2273688	4000.00	ug/kg	84
20) Perylene-d12	26.254	264	2198041	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	31620	88.74	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.22%#			
17) 4-Terphenyl-d14	17.592	244	36183	75.19	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.88%#			

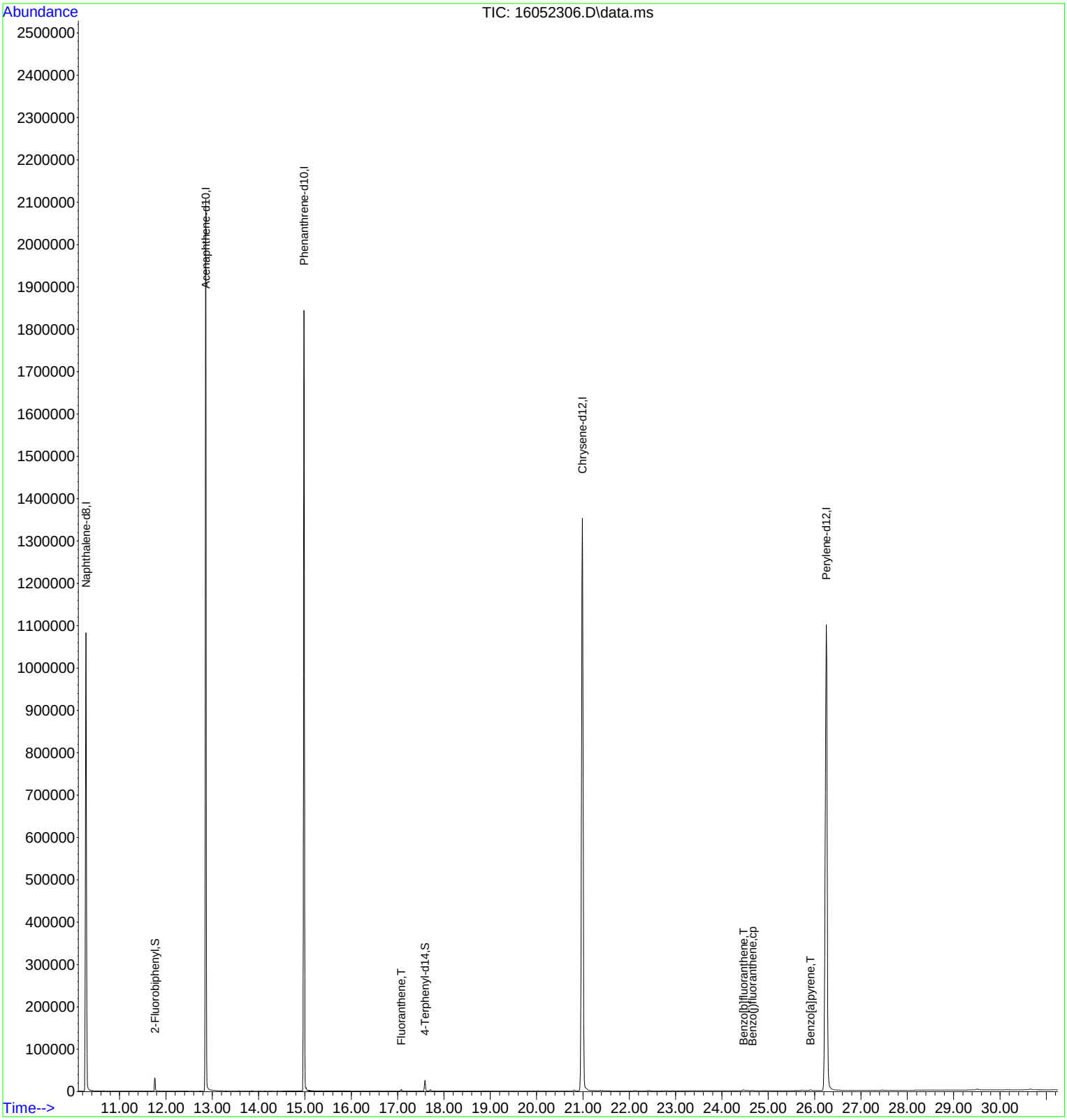
Target Compounds						Qvalue
14) Fluoranthene	17.076	202	4607	5.33	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	4479	5.94	ug/kg	95
23) Benzo(j)fluoranthene	24.657	252	1735	0.24	ug/kg	85
25) Benzo[a]pyrene	25.917	252	4393	5.96	ug/kg	96

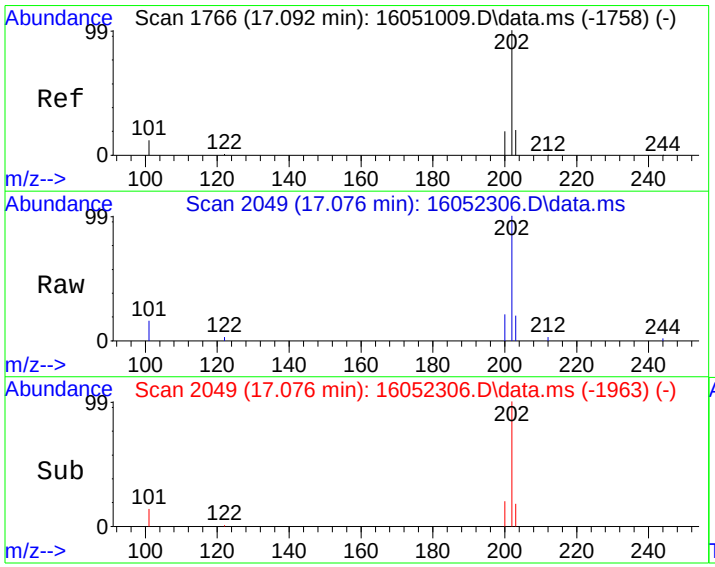
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052306.D
Acq On : 23 May 2016 11:34 am
Operator :
Sample : 1605098-13A
Misc : SAMP
ALS Vial : 6 Sample Multiplier: 10

Quant Time: May 24 09:04:22 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

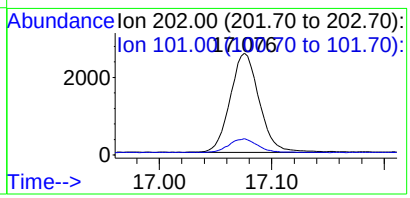


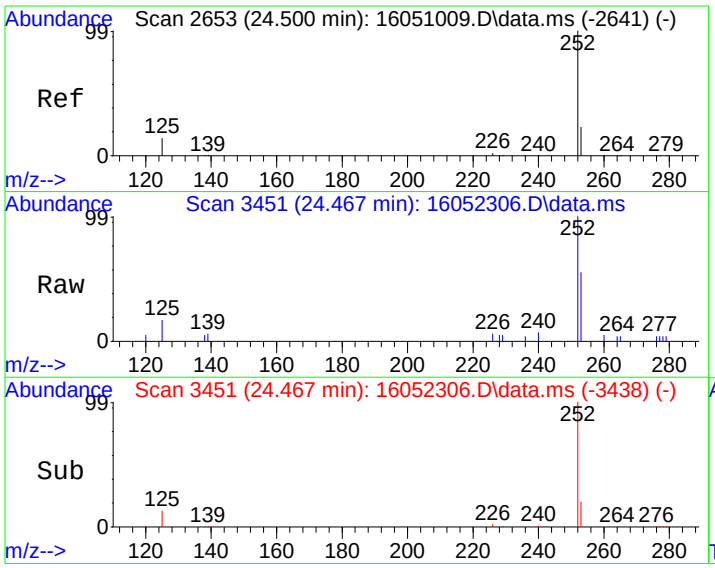


#14
Fluoranthene
Concen: 5.33 ug/kg
RT: 17.076 min Scan# 2049
Delta R.T. -0.000 min
Lab File: 16052306.D
Acq: 23 May 2016 11:34 am

Tgt Ion:202 Resp: 4607

Ion	Ratio	Lower	Upper
202	100		
101	13.8	0.0	34.4

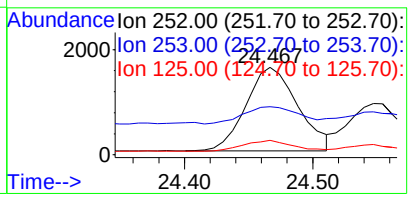


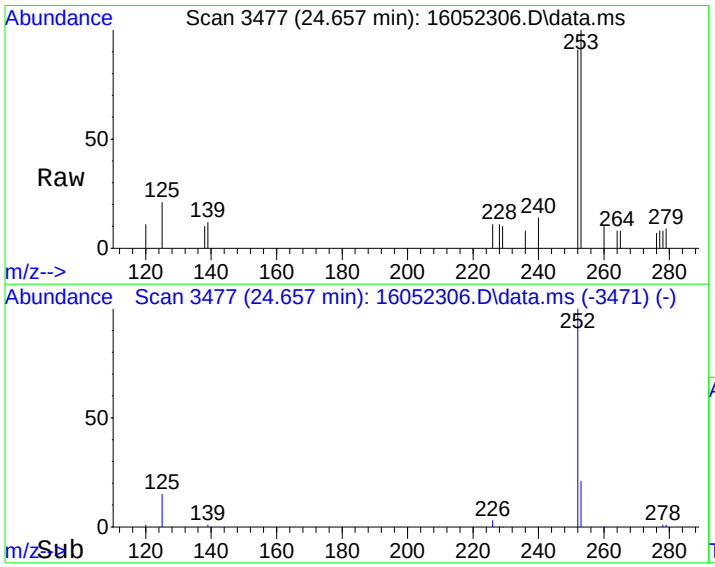


#21
Benzo[b]fluoranthene
Concen: 5.94 ug/kg
RT: 24.467 min Scan# 3451
Delta R.T. -0.008 min
Lab File: 16052306.D
Acq: 23 May 2016 11:34 am

Tgt Ion:252 Resp: 4479

Ion	Ratio	Lower	Upper
252	100		
253	19.5	2.3	42.3
125	13.1	0.0	32.2

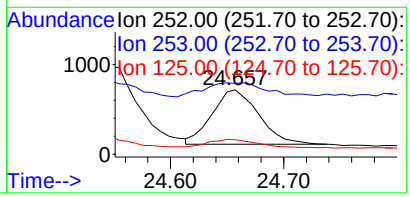


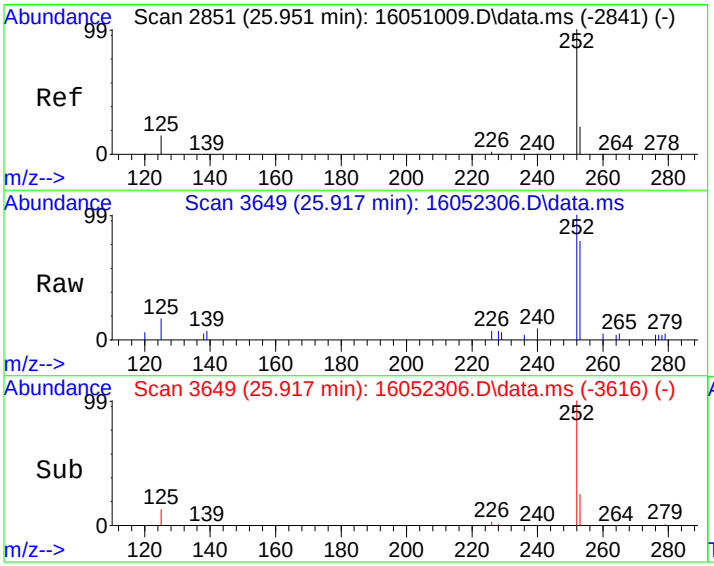


#23
Benzo(j)fluoranthene
Concen: 0.24 ug/kg
RT: 24.657 min Scan# 3477
Delta R.T. -0.008 min
Lab File: 16052306.D
Acq: 23 May 2016 11:34 am

Tgt Ion:252 Resp: 1735

Ion	Ratio	Lower	Upper
252	100		
253	34.6	2.2	42.2
125	17.1	0.0	37.3

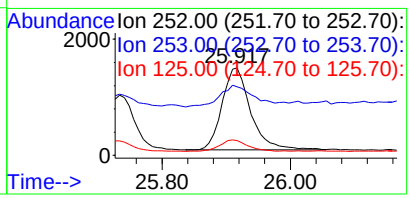




#25
Benzo[a]pyrene
Concen: 5.96 ug/kg
RT: 25.917 min Scan# 3649
Delta R.T. -0.008 min
Lab File: 16052306.D
Acq: 23 May 2016 11:34 am

Tgt Ion:252 Resp: 4393

Ion	Ratio	Lower	Upper
252	100		
253	24.9	2.3	42.3
125	13.3	0.0	33.5



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052307.D
Acq On : 23 May 2016 12:11 pm
Operator :
Sample : 1605098-14A
Misc : SAMP
ALS Vial : 7 Sample Multiplier: 10

Quant Time: May 24 09:04:27 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.275	136	1596297	4000.00	ug/kg	98
6) Acenaphthene-d10	12.862	164	1284719	4000.00	ug/kg	102
11) Phenanthrene-d10	14.981	188	2261341	4000.00	ug/kg	77
16) Chrysene-d12	20.988	240	2252864	4000.00	ug/kg	83
20) Perylene-d12	26.255	264	2158752	4000.00	ug/kg	87

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	31720	89.25	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.23%#			
17) 4-Terphenyl-d14	17.590	244	36821	77.22	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.93%#			

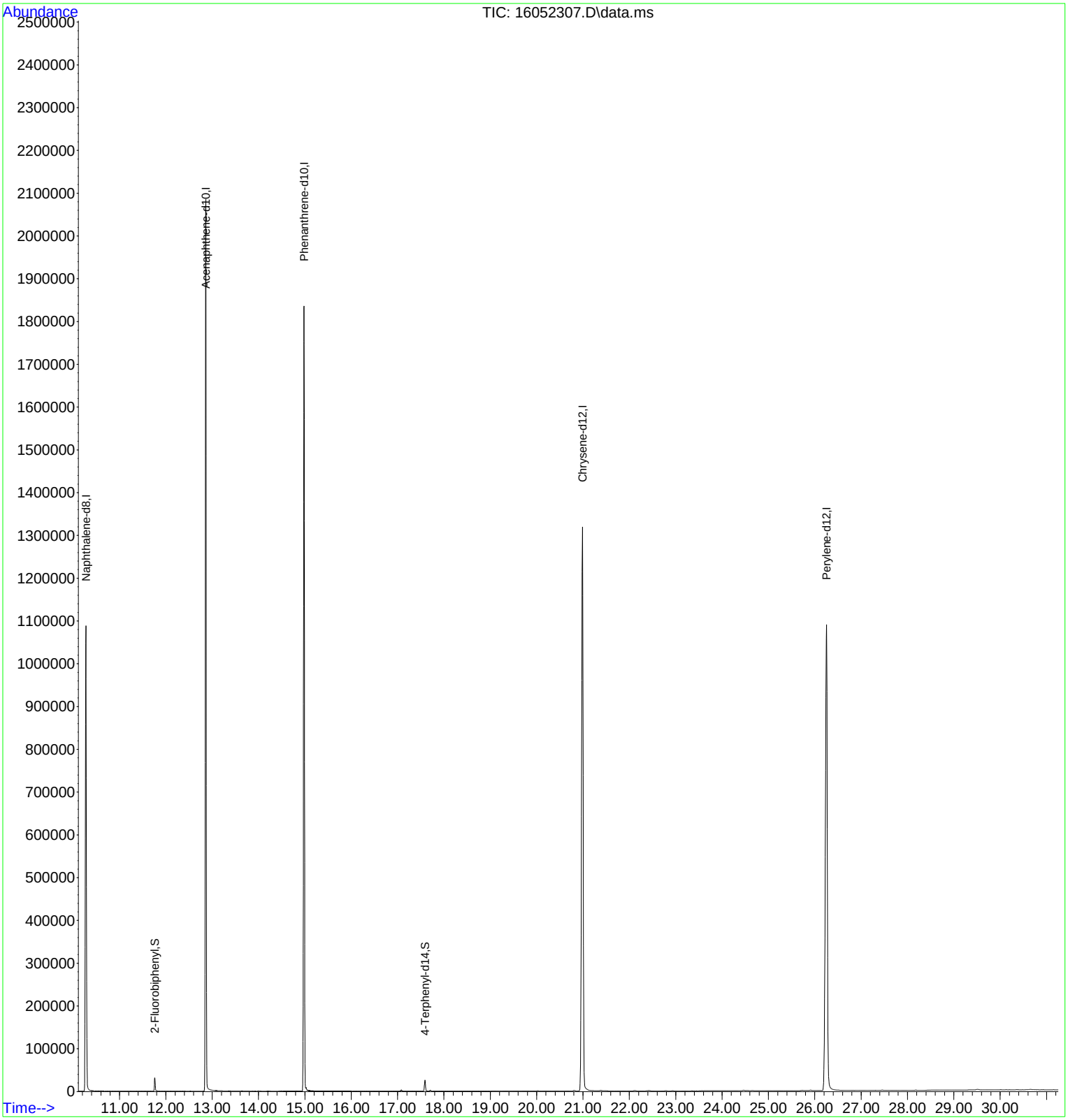
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052307.D
Acq On : 23 May 2016 12:11 pm
Operator :
Sample : 1605098-14A
Misc : SAMP
ALS Vial : 7 Sample Multiplier: 10

Quant Time: May 24 09:04:27 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052308.D
Acq On : 23 May 2016 12:48 pm
Operator :
Sample : 1605098-15A
Misc : SAMP
ALS Vial : 8 Sample Multiplier: 10

Quant Time: May 24 09:04:30 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.275	136	1580226	4000.00	ug/kg	97
6) Acenaphthene-d10	12.861	164	1276461	4000.00	ug/kg	102
11) Phenanthrene-d10	14.980	188	2268879	4000.00	ug/kg	78
16) Chrysene-d12	20.988	240	2337737	4000.00	ug/kg	86
20) Perylene-d12	26.254	264	2226977	4000.00	ug/kg	90

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	30493	86.67	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.17%#			
17) 4-Terphenyl-d14	17.590	244	35110	70.96	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.77%#			

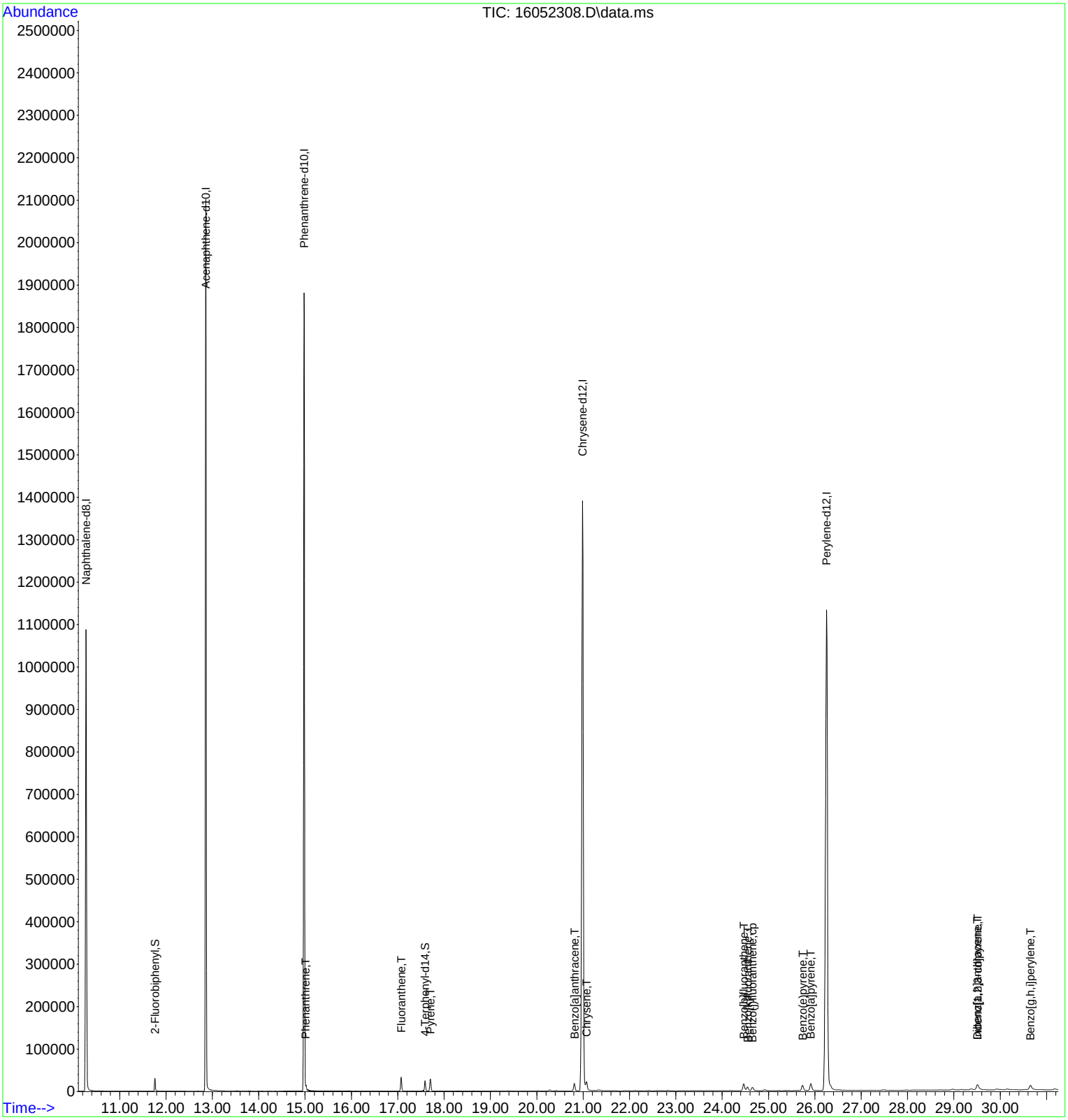
Target Compounds						Qvalue
12) Phenanthrene	15.016	178	7875	12.61	ug/kg	98
14) Fluoranthene	17.074	202	37897	58.25	ug/kg	98
15) Pyrene	17.704	202	35387	55.56	ug/kg	97
18) Benzo[a]anthracene	20.812	228	28525	45.25	ug/kg	98
19) Chrysene	21.076	228	32545	55.50	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	33932	55.53	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	15253	27.48	ug/kg	98
23) Benzo(j)fluoranthene	24.658	252	15108	26.25	ug/kg	92
24) Benzo(e)pyrene	25.734	252	26382	44.54	ug/kg	97
25) Benzo[a]pyrene	25.910	252	35690	62.76	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.514	276	25441	34.55	ug/kg	92
27) Dibenz[a,h]anthracene	29.499	278	7104	8.04	ug/kg	100
28) Benzo[g,h,i]perylene	30.649	276	26721	42.58	ug/kg	99

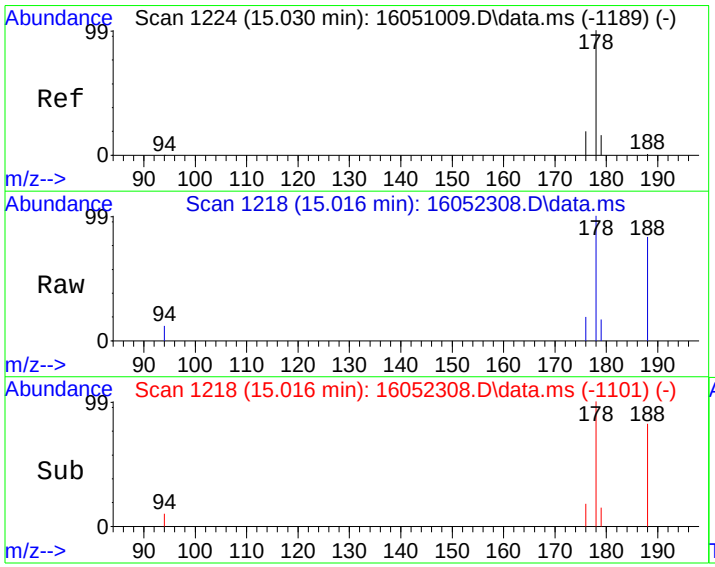
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052308.D
Acq On : 23 May 2016 12:48 pm
Operator :
Sample : 1605098-15A
Misc : SAMP
ALS Vial : 8 Sample Multiplier: 10

Quant Time: May 24 09:04:30 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

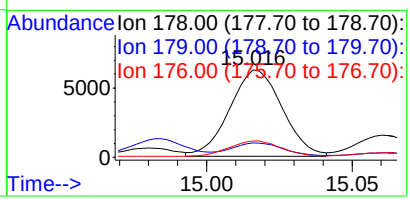


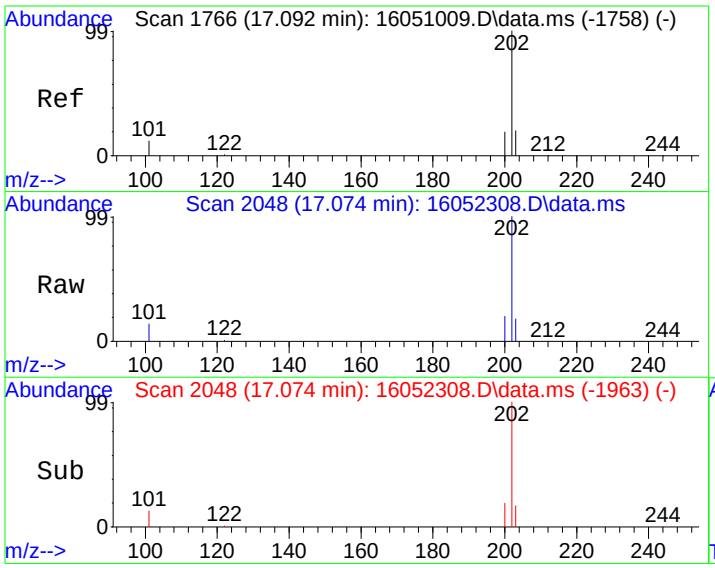


#12
Phenanthrene
Concen: 12.61 ug/kg
RT: 15.016 min Scan# 1218
Delta R.T. -0.003 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:178 Resp: 7875

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	36.4
176	18.3	0.0	39.0

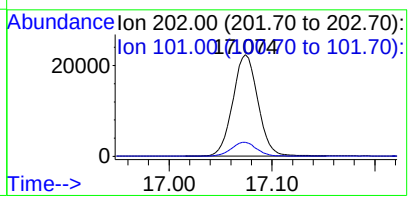


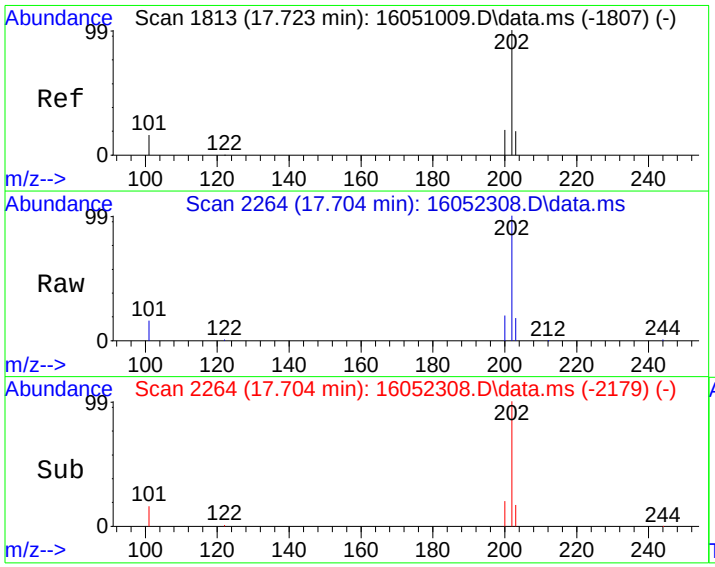


#14
Fluoranthene
Concen: 58.25 ug/kg
RT: 17.074 min Scan# 2048
Delta R.T. -0.002 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:202 Resp: 37897

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	34.4

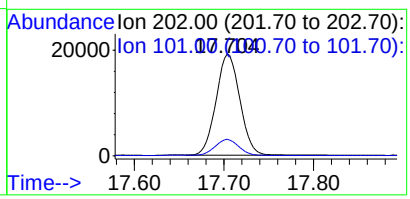


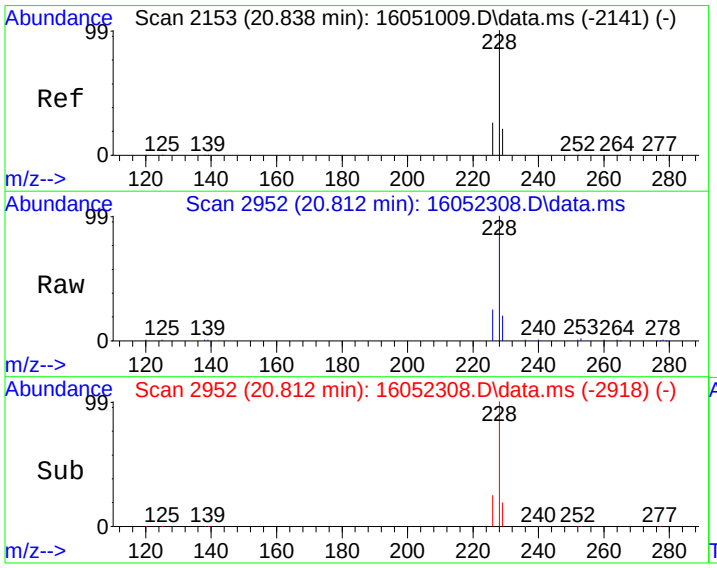


#15
Pyrene
Concen: 55.56 ug/kg
RT: 17.704 min Scan# 2264
Delta R.T. -0.002 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:202 Resp: 35387

Ion	Ratio	Lower	Upper
202	100		
101	16.1	0.0	37.3

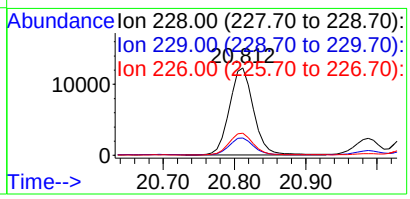


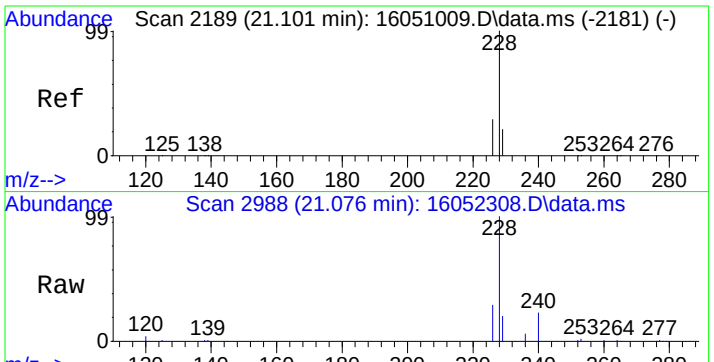


#18
Benzo[a]anthracene
Concen: 45.25 ug/kg
RT: 20.812 min Scan# 2952
Delta R.T. -0.000 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:228 Resp: 28525

Ion	Ratio	Lower	Upper
228	100		
229	19.5	0.3	40.3
226	25.0	5.7	45.7

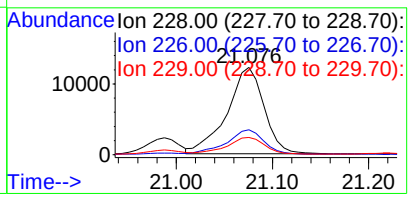


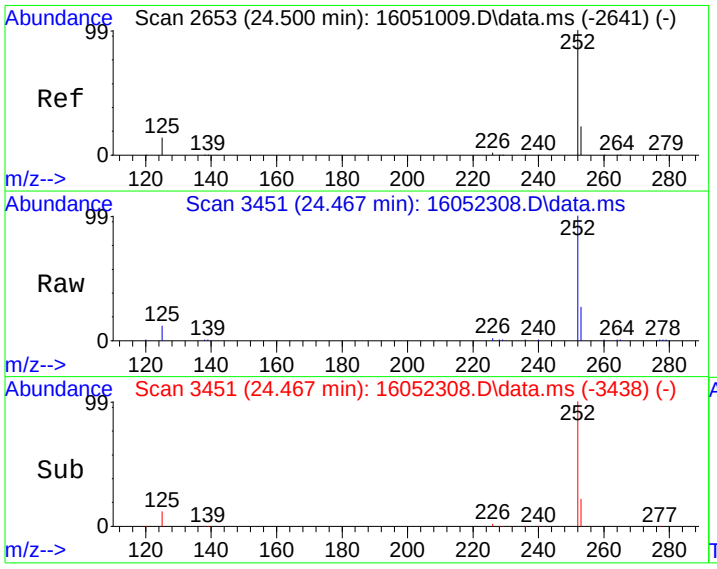


#19
Chrysene
Concen: 55.50 ug/kg
RT: 21.076 min Scan# 2988
Delta R.T. -0.007 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:228 Resp: 32545

Ion	Ratio	Lower	Upper
228	100		
226	28.3	8.2	48.2
229	19.5	0.3	40.3

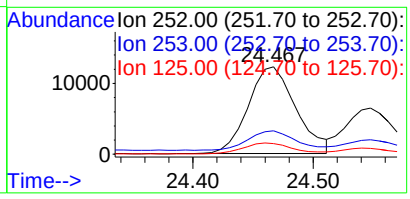


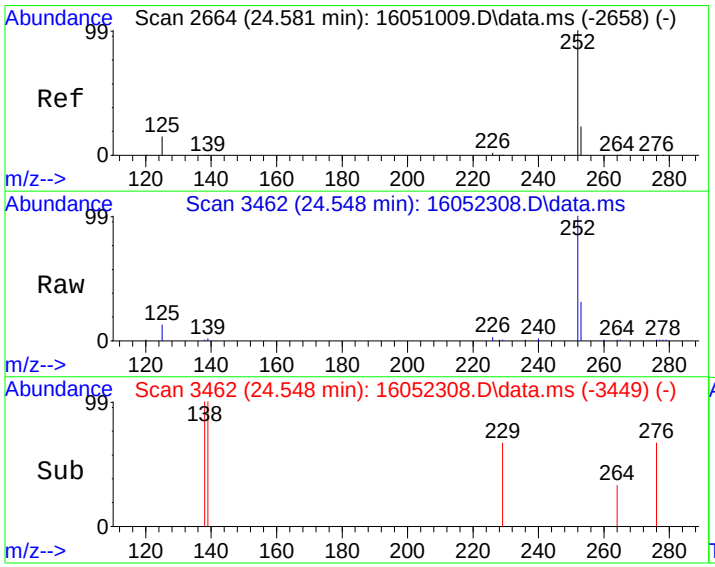


#21
Benzo[b]fluoranthene
Concen: 55.53 ug/kg
RT: 24.467 min Scan# 3451
Delta R.T. -0.008 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:252 Resp: 33932

Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.3	42.3
125	11.9	0.0	32.2

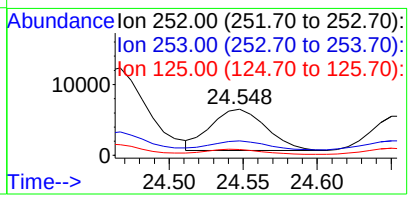


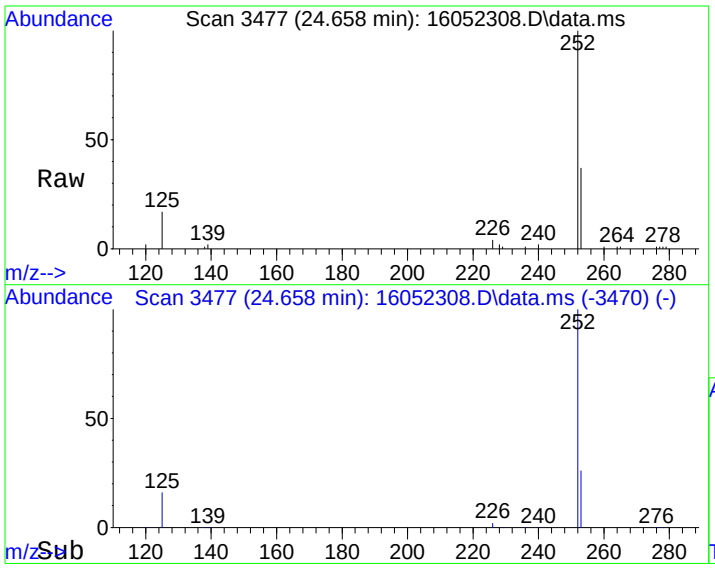


#22
Benzo[k]fluoranthene
Concen: 27.48 ug/kg
RT: 24.548 min Scan# 3462
Delta R.T. -0.007 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:252 Resp: 15253

Ion	Ratio	Lower	Upper
252	100		
253	21.4	2.5	42.5
125	11.8	0.0	32.6

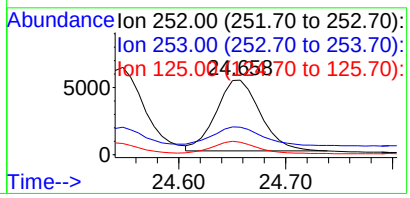


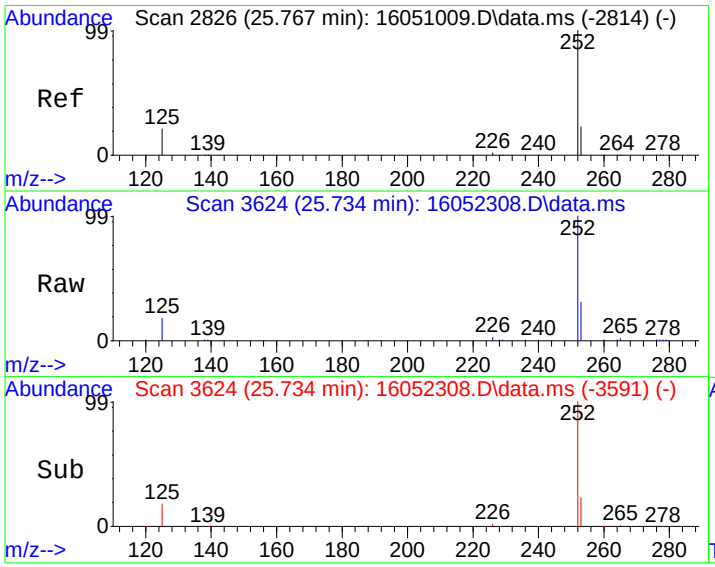


#23
Benzo(j)fluoranthene
Concen: 26.25 ug/kg
RT: 24.658 min Scan# 3477
Delta R.T. -0.007 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:252 Resp: 15108

Ion	Ratio	Lower	Upper
252	100		
253	28.5	2.2	42.2
125	16.7	0.0	37.3

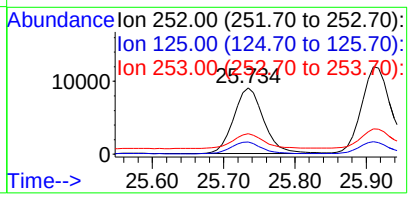


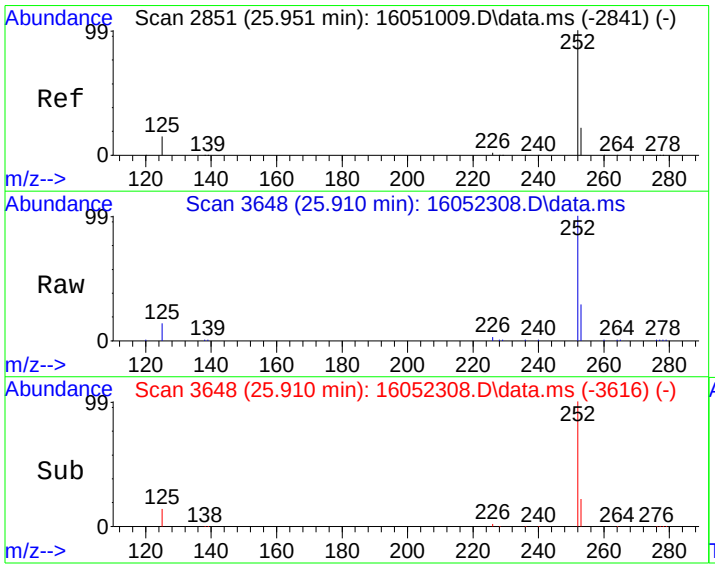


#24
Benzo(e)pyrene
Concen: 44.54 ug/kg
RT: 25.734 min Scan# 3624
Delta R.T. -0.008 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:252 Resp: 26382

Ion	Ratio	Lower	Upper
252	100		
125	18.1	0.0	38.7
253	24.1	2.3	42.3

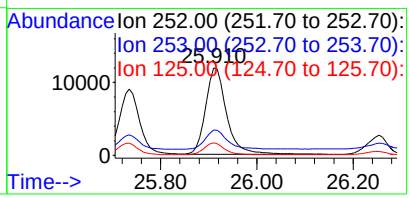


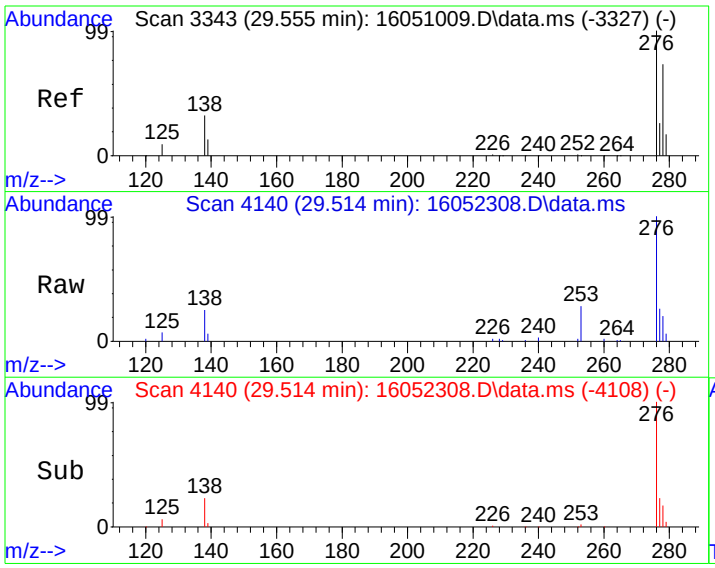


#25
Benzo[a]pyrene
Concen: 62.76 ug/kg
RT: 25.910 min Scan# 3648
Delta R.T. -0.015 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:252 Resp: 35690

Ion	Ratio	Lower	Upper
252	100		
253	22.3	2.3	42.3
125	13.9	0.0	33.5

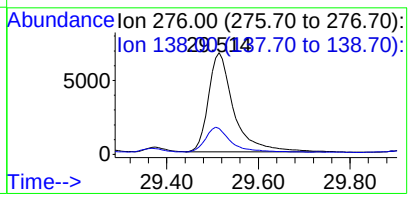


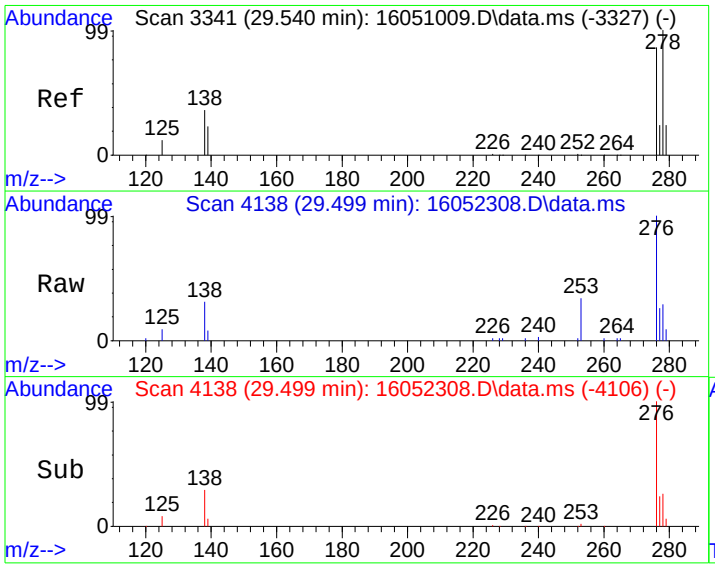


#26
Indeno[1,2,3-cd]pyrene
Concen: 34.55 ug/kg
RT: 29.514 min Scan# 4140
Delta R.T. -0.015 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:276 Resp: 25441

Ion	Ratio	Lower	Upper
276	100		
138	24.0	8.3	48.3

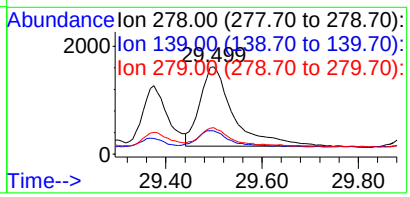


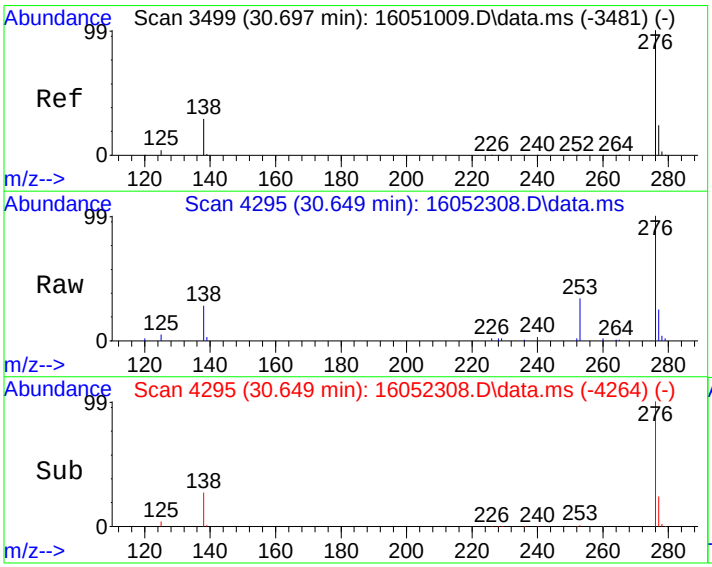


#27
Dibenz[a,h]anthracene
Concen: 8.04 ug/kg
RT: 29.499 min Scan# 4138
Delta R.T. -0.015 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:278 Resp: 7104

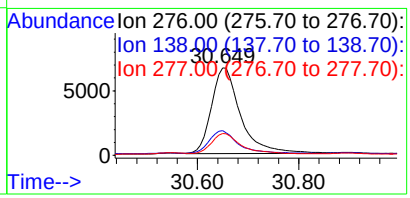
Ion	Ratio	Lower	Upper
278	100		
139	20.1	0.0	40.0
279	24.2	4.2	44.2





#28
Benzo[g,h,i]perylene
Concen: 42.58 ug/kg
RT: 30.649 min Scan# 4295
Delta R.T. -0.023 min
Lab File: 16052308.D
Acq: 23 May 2016 12:48 pm

Tgt Ion:276	Resp:	26721	
Ion	Ratio	Lower	Upper
276	100		
138	26.3	5.8	45.8
277	23.8	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052309.D
Acq On : 23 May 2016 1:26 pm
Operator :
Sample : 1605098-16A
Misc : SAMP
ALS Vial : 9 Sample Multiplier: 20

Quant Time: May 24 09:04:38 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1597996	4000.00	ug/kg	98
6) Acenaphthene-d10	12.862	164	1303090	4000.00	ug/kg	104
11) Phenanthrene-d10	14.981	188	2327736	4000.00	ug/kg	80
16) Chrysene-d12	20.987	240	2320943	4000.00	ug/kg	86
20) Perylene-d12	26.254	264	2195176	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	16420	46.15	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.15%#			
17) 4-Terphenyl-d14	17.592	244	19567	39.83	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.00%#			

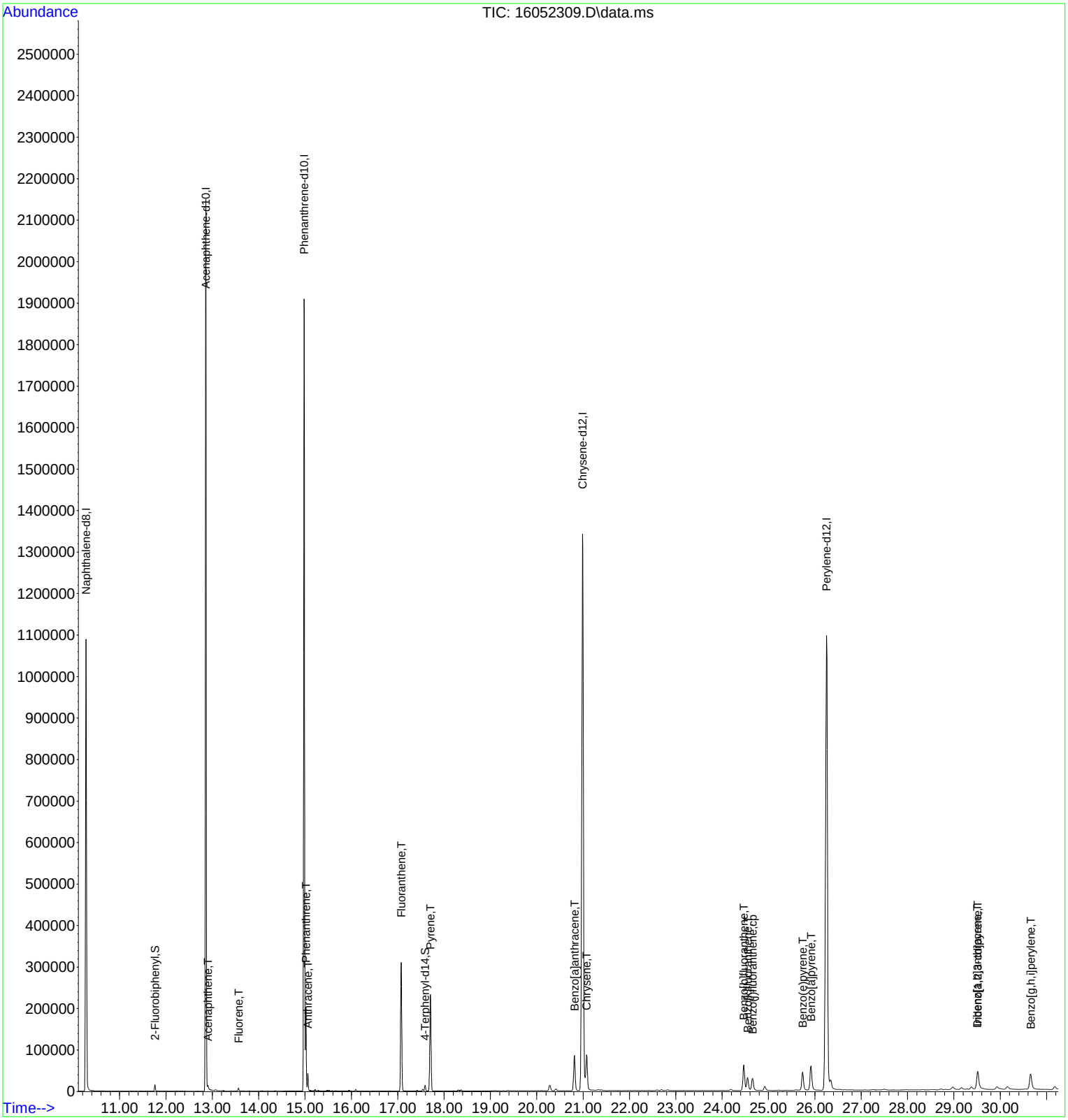
Target Compounds						Qvalue
8) Acenaphthene	12.911	153	3636	10.12	ug/kg	99
10) Fluorene	13.564	166	4211	8.48	ug/kg	100
12) Phenanthrene	15.017	178	187702	293.06	ug/kg	98
13) Anthracene	15.061	178	40853	63.04	ug/kg	98
14) Fluoranthene	17.076	202	349577	547.32	ug/kg	98
15) Pyrene	17.706	202	277523	443.64	ug/kg	97
18) Benzo[a]anthracene	20.812	228	132999	220.05	ug/kg	99
19) Chrysene	21.075	228	141236	252.92	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	119571	203.48	ug/kg	99
22) Benzo[k]fluoranthene	24.547	252	55261	104.09	ug/kg	97
23) Benzo(j)fluoranthene	24.657	252	54603	104.88	ug/kg	90
24) Benzo(e)pyrene	25.734	252	85999	153.36	ug/kg	97
25) Benzo[a]pyrene	25.917	252	121846	223.13	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.514	276	85749	125.28	ug/kg	93
27) Dibenz[a,h]anthracene	29.499	278	17892	27.57	ug/kg	96
28) Benzo[g,h,i]perylene	30.656	276	85636	145.54	ug/kg	98

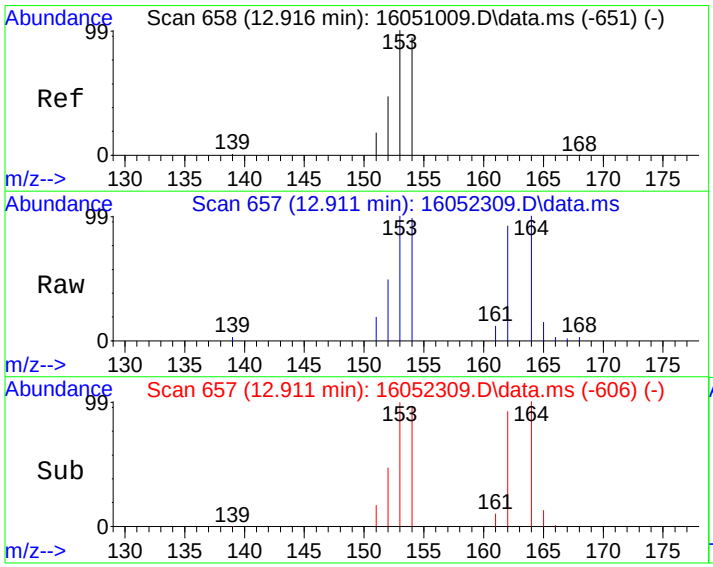
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052309.D
Acq On : 23 May 2016 1:26 pm
Operator :
Sample : 1605098-16A
Misc : SAMP
ALS Vial : 9 Sample Multiplier: 20

Quant Time: May 24 09:04:38 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

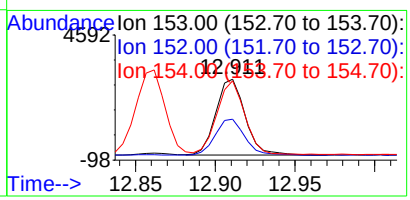


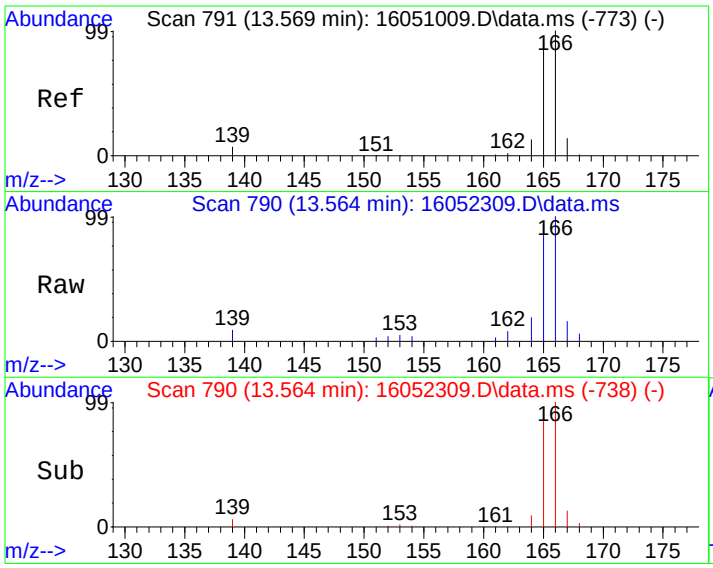


#8
Acenaphthene
Concen: 10.12 ug/kg
RT: 12.911 min Scan# 657
Delta R.T. -0.000 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:153 Resp: 3636

Ion	Ratio	Lower	Upper
153	100		
152	47.3	26.5	66.5
154	97.1	76.3	116.3

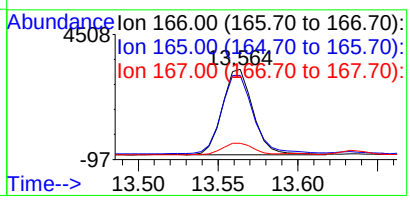


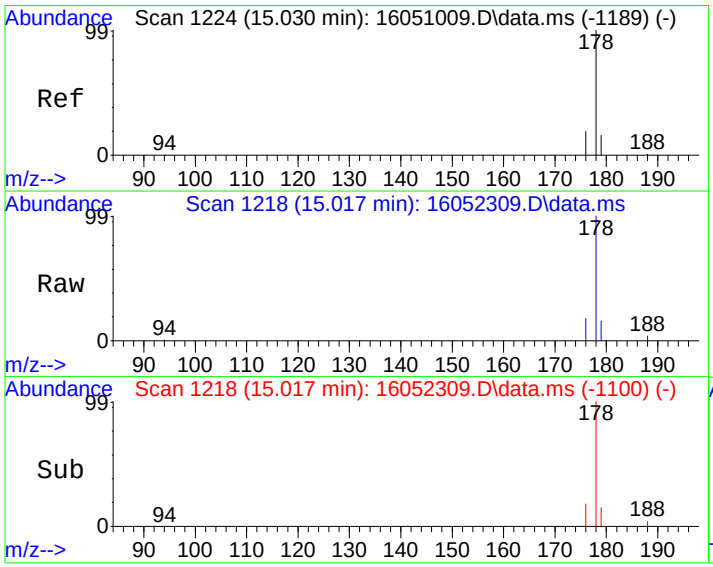


#10
Fluorene
Concen: 8.48 ug/kg
RT: 13.564 min Scan# 790
Delta R.T. 0.005 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:166 Resp: 4211

Ion	Ratio	Lower	Upper
166	100		
165	91.5	71.4	111.4
167	13.4	0.0	33.8

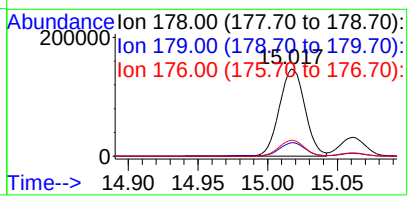


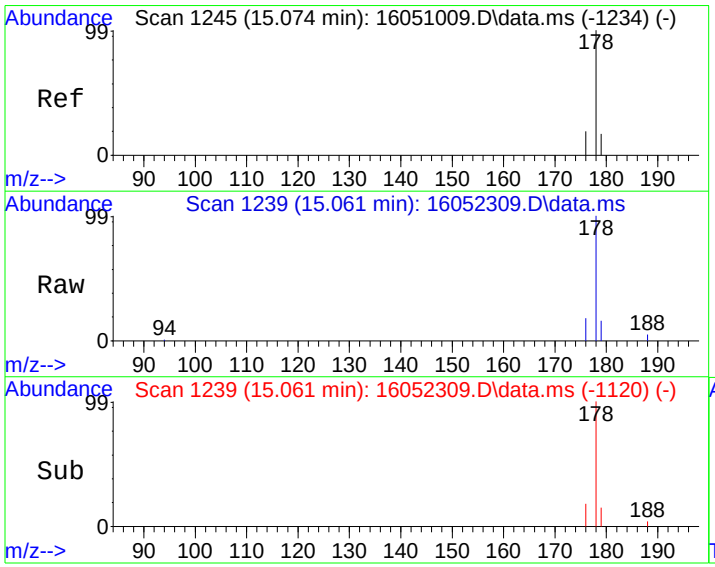


#12
Phenanthrene
Concen: 293.06 ug/kg
RT: 15.017 min Scan# 1218
Delta R.T. -0.002 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:178 Resp: 187702

Ion	Ratio	Lower	Upper
178	100		
179	15.4	0.0	36.4
176	18.2	0.0	39.0

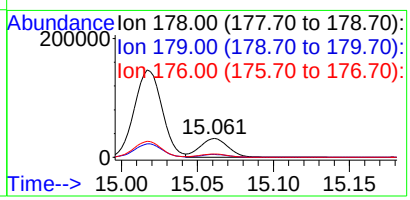


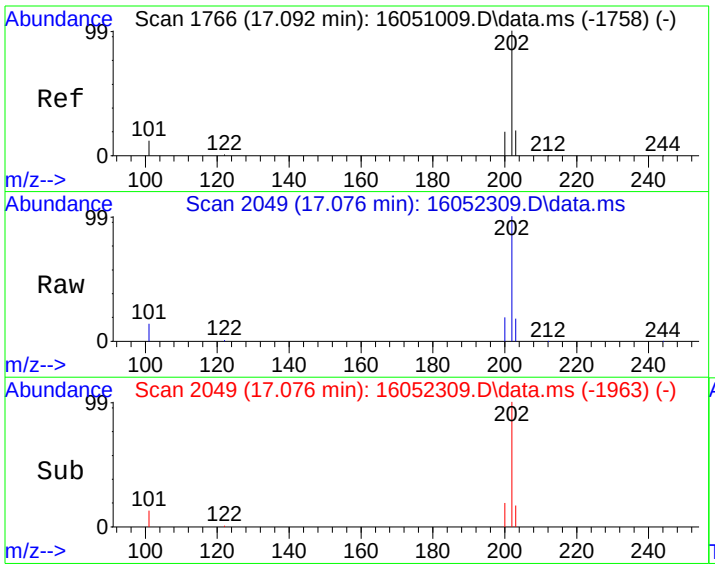


#13
Anthracene
Concen: 63.04 ug/kg
RT: 15.061 min Scan# 1239
Delta R.T. -0.000 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:178 Resp: 40853

Ion	Ratio	Lower	Upper
178	100		
179	15.3	0.0	36.3
176	17.6	0.0	38.5

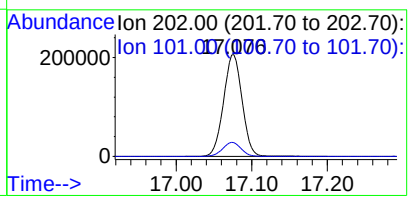


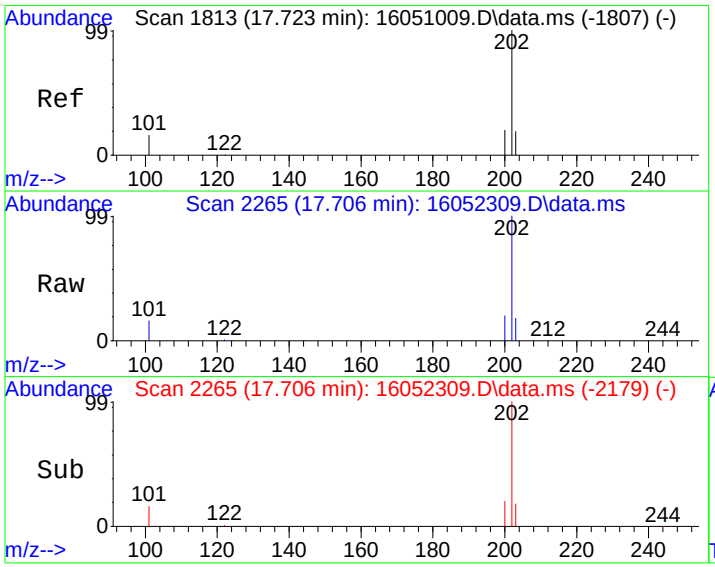


#14
Fluoranthene
Concen: 547.32 ug/kg
RT: 17.076 min Scan# 2049
Delta R.T. 0.000 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:202 Resp: 349577

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	34.4

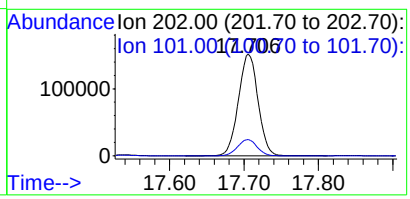


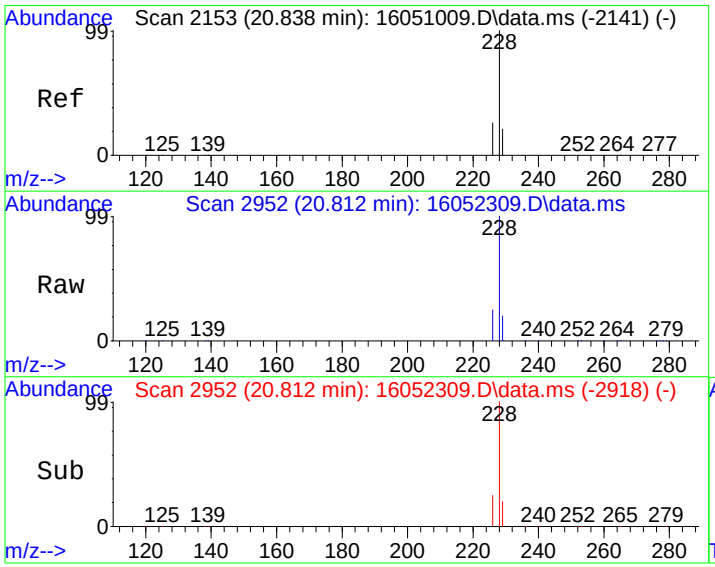


#15
Pyrene
Concen: 443.64 ug/kg
RT: 17.706 min Scan# 2265
Delta R.T. -0.000 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:202 Resp: 277523

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	37.3

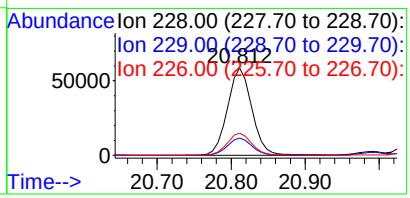


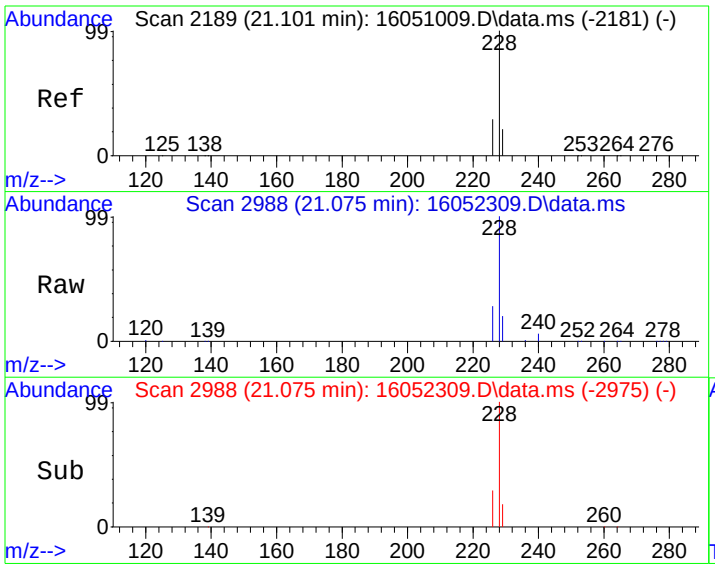


#18
Benzo[a]anthracene
Concen: 220.05 ug/kg
RT: 20.812 min Scan# 2952
Delta R.T. -0.000 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:228 Resp: 132999

Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.3	40.3
226	25.4	5.7	45.7

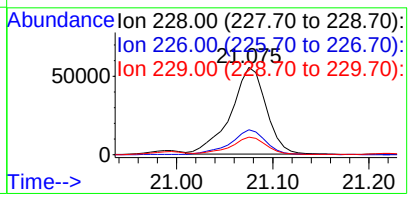


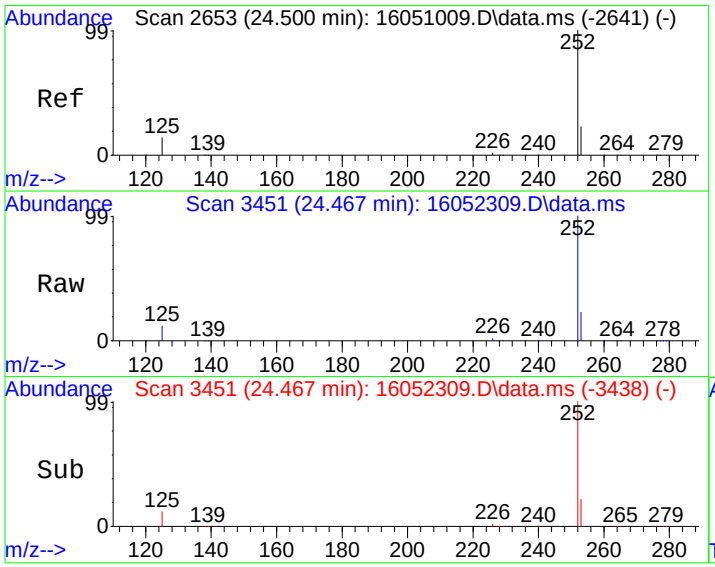


#19
Chrysene
Concen: 252.92 ug/kg
RT: 21.075 min Scan# 2988
Delta R.T. -0.008 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:228 Resp: 141236

Ion	Ratio	Lower	Upper
228	100		
226	28.4	8.2	48.2
229	19.9	0.3	40.3

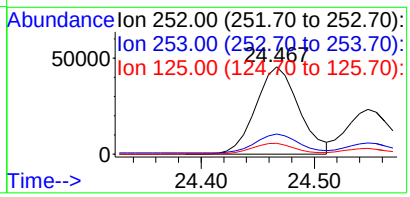


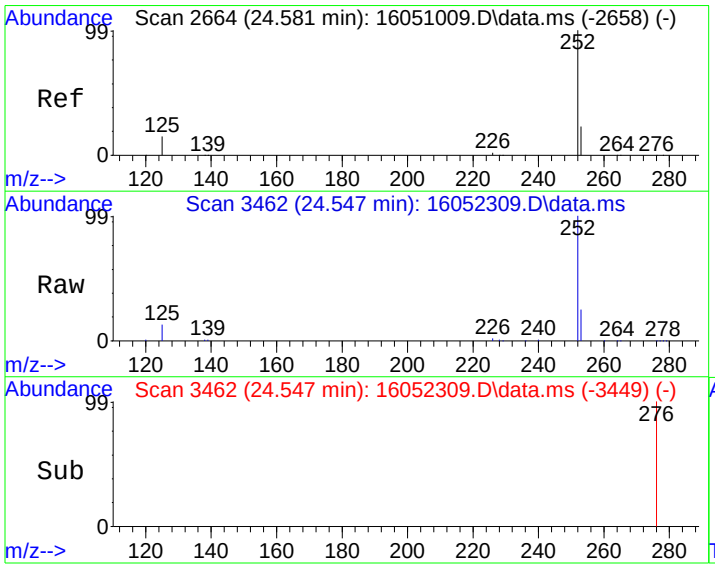


#21
Benzo[b]fluoranthene
Concen: 203.48 ug/kg
RT: 24.467 min Scan# 3451
Delta R.T. -0.008 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:252 Resp: 119571

Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.3	42.3
125	12.1	0.0	32.2

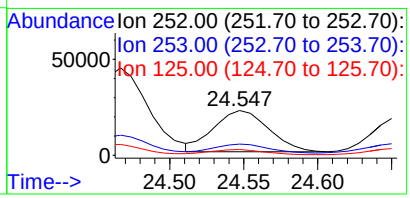


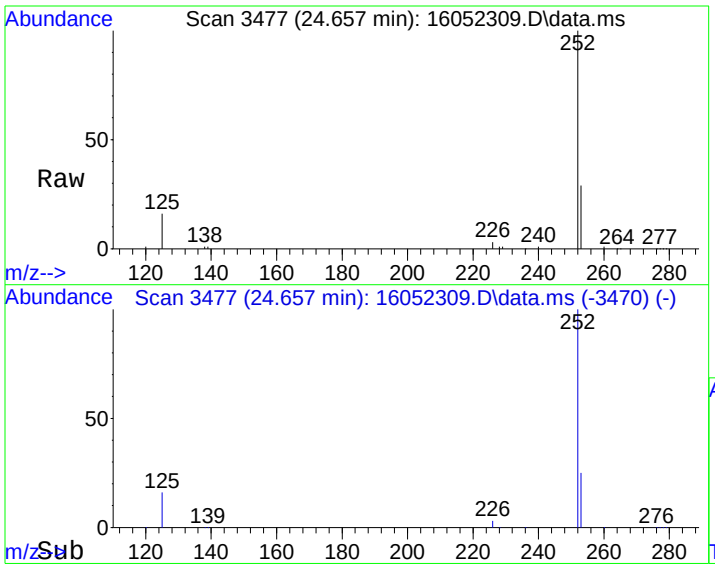


#22
Benzo[k]fluoranthene
Concen: 104.09 ug/kg
RT: 24.547 min Scan# 3462
Delta R.T. -0.008 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:252 Resp: 55261

Ion	Ratio	Lower	Upper
252	100		
253	20.6	2.5	42.5
125	12.2	0.0	32.6

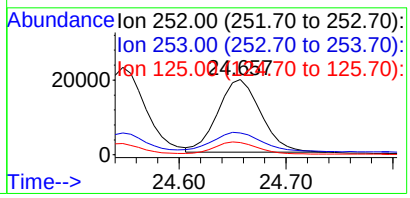


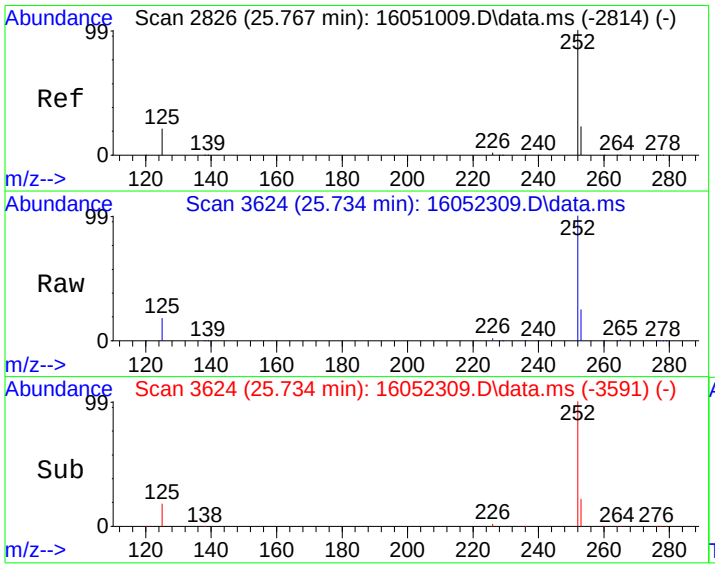


#23
Benzo(j)fluoranthene
Concen: 104.88 ug/kg
RT: 24.657 min Scan# 3477
Delta R.T. -0.008 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:252 Resp: 54603

Ion	Ratio	Lower	Upper
252	100		
253	29.9	2.2	42.2
125	16.7	0.0	37.3

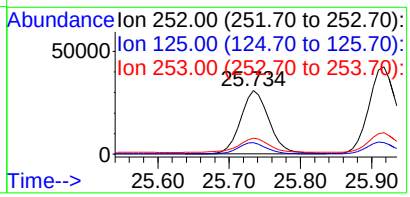


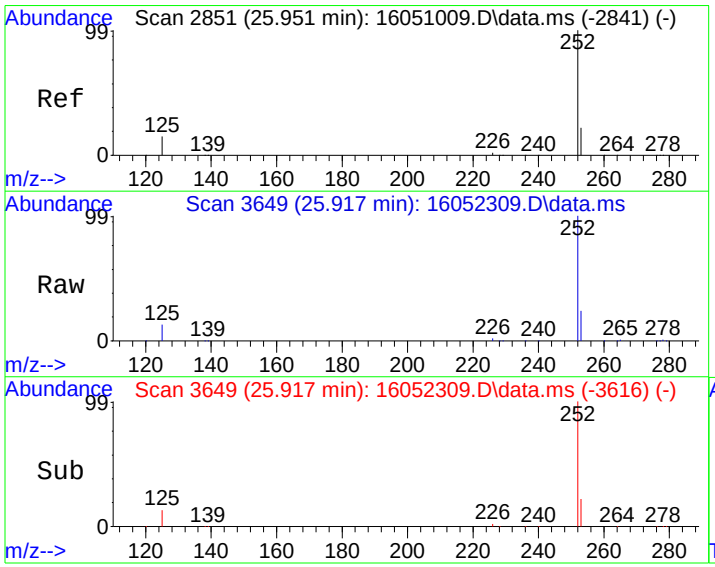


#24
Benzo(e)pyrene
Concen: 153.36 ug/kg
RT: 25.734 min Scan# 3624
Delta R.T. -0.008 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:252 Resp: 85999

Ion	Ratio	Lower	Upper
252	100		
125	18.1	0.0	38.7
253	24.3	2.3	42.3

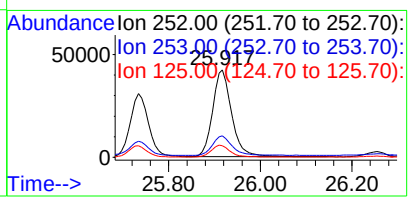


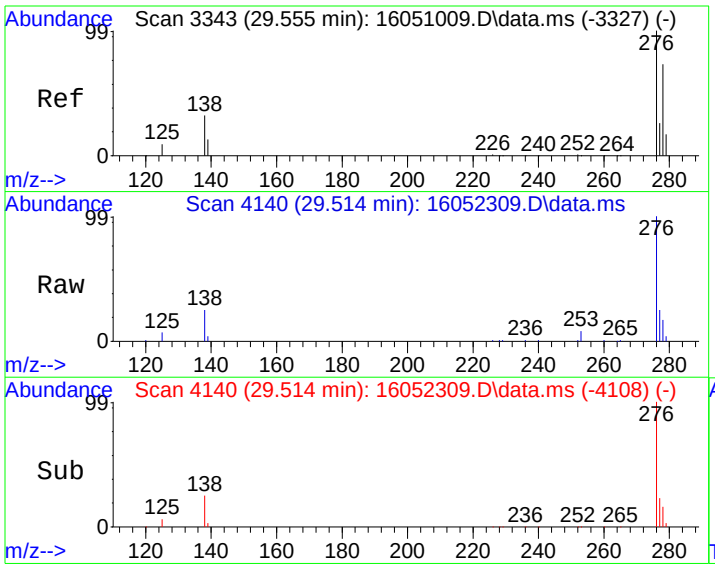


#25
Benzo[a]pyrene
Concen: 223.13 ug/kg
RT: 25.917 min Scan# 3649
Delta R.T. -0.008 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:252 Resp: 121846

Ion	Ratio	Lower	Upper
252	100		
253	22.3	2.3	42.3
125	13.1	0.0	33.5

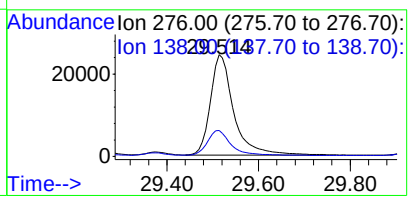


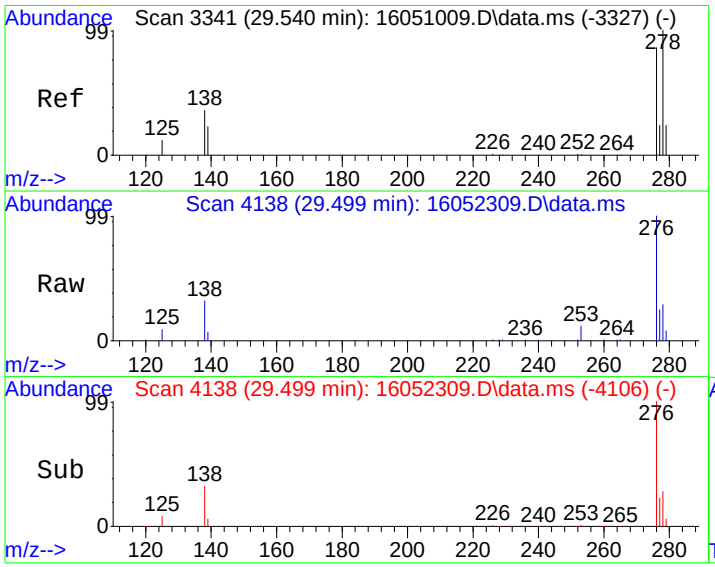


#26
Indeno[1,2,3-cd]pyrene
Concen: 125.28 ug/kg
RT: 29.514 min Scan# 4140
Delta R.T. -0.015 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:276 Resp: 85749

Ion	Ratio	Lower	Upper
276	100		
138	24.7	8.3	48.3

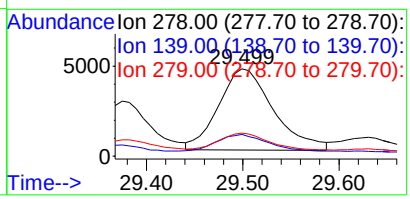


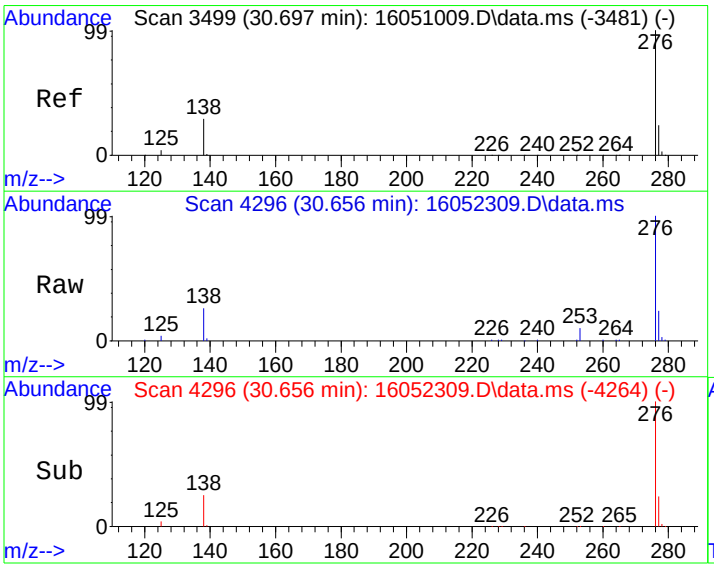


#27
Dibenz[a,h]anthracene
Concen: 27.57 ug/kg
RT: 29.499 min Scan# 4138
Delta R.T. -0.015 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:278 Resp: 17892

Ion	Ratio	Lower	Upper
278	100		
139	22.5	0.0	40.0
279	22.6	4.2	44.2

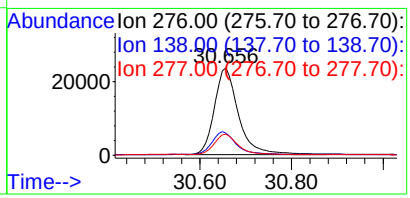




#28
Benzo[g,h,i]perylene
Concen: 145.54 ug/kg
RT: 30.656 min Scan# 4296
Delta R.T. -0.016 min
Lab File: 16052309.D
Acq: 23 May 2016 1:26 pm

Tgt Ion:276 Resp: 85636

Ion	Ratio	Lower	Upper
276	100		
138	24.7	5.8	45.8
277	23.4	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052310.D
Acq On : 23 May 2016 2:03 pm
Operator :
Sample : 1605098-18A
Misc : SAMP
ALS Vial : 10 Sample Multiplier: 10

Quant Time: May 24 09:04:48 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.277	136	1550287	4000.00	ug/kg	95
6) Acenaphthene-d10	12.862	164	1255558	4000.00	ug/kg	100
11) Phenanthrene-d10	14.981	188	2253286	4000.00	ug/kg	77
16) Chrysene-d12	20.988	240	2231244	4000.00	ug/kg	82
20) Perylene-d12	26.255	264	2137371	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.762	172	29953	86.78	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.17%#			
17) 4-Terphenyl-d14	17.590	244	36247	76.75	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.92%#			

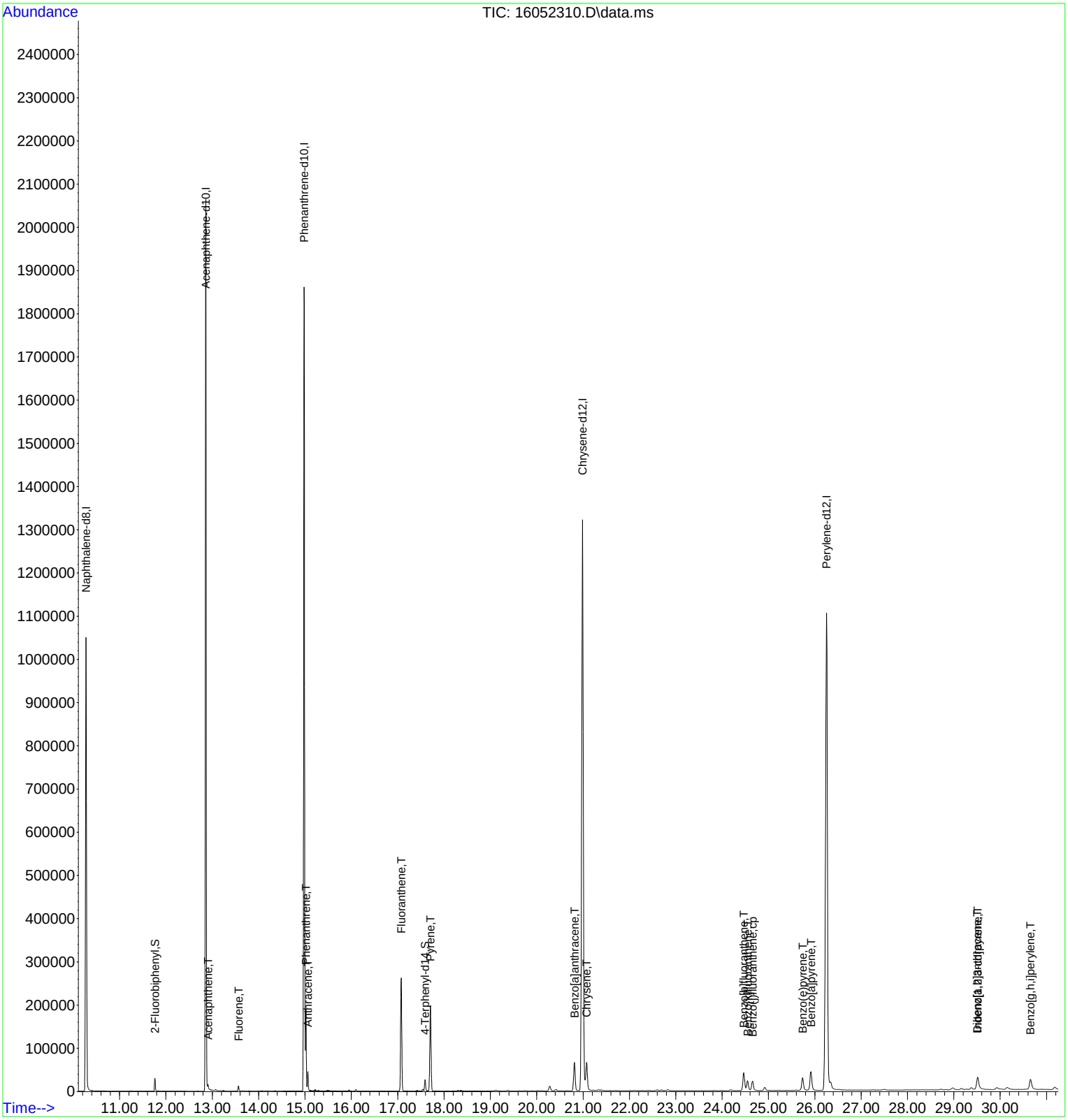
Target Compounds						Qvalue
8) Acenaphthene	12.911	153	4502	13.00	ug/kg	98
10) Fluorene	13.565	166	6623	13.84	ug/kg	99
12) Phenanthrene	15.019	178	174064	280.75	ug/kg	97
13) Anthracene	15.061	178	43147	68.78	ug/kg	98
14) Fluoranthene	17.077	202	297063	479.33	ug/kg	98
15) Pyrene	17.707	202	234062	385.73	ug/kg	97
18) Benzo[a]anthracene	20.812	228	105731	181.49	ug/kg	99
19) Chrysene	21.076	228	107513	199.46	ug/kg	100
21) Benzo[b]fluoranthene	24.467	252	84050	146.27	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	39857	76.79	ug/kg	97
23) Benzo(j)fluoranthene	24.658	252	39816	77.70	ug/kg	91
24) Benzo(e)pyrene	25.735	252	58120	105.58	ug/kg	97
25) Benzo[a]pyrene	25.918	252	90909	170.35	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.514	276	56902	84.40	ug/kg	95
27) Dibenz[a,h]anthracene	29.500	278	14316	21.85	ug/kg	97
28) Benzo[g,h,i]perylene	30.650	276	54001	93.09	ug/kg	98

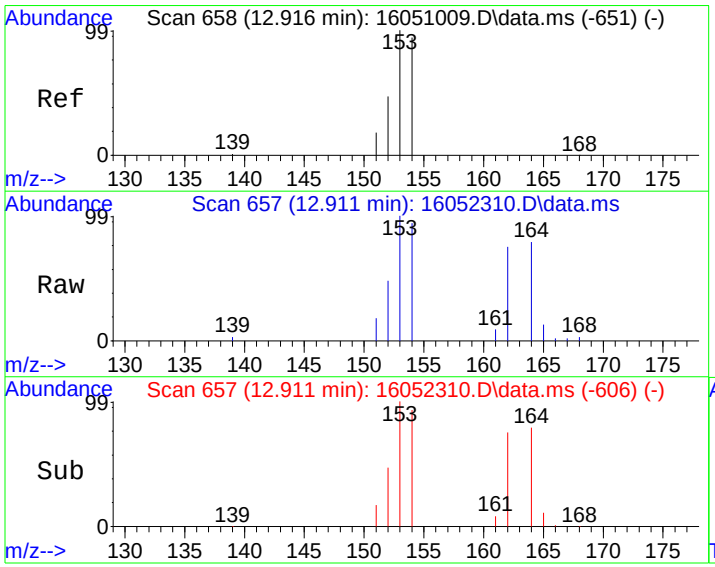
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052310.D
Acq On : 23 May 2016 2:03 pm
Operator :
Sample : 1605098-18A
Misc : SAMP
ALS Vial : 10 Sample Multiplier: 10

Quant Time: May 24 09:04:48 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

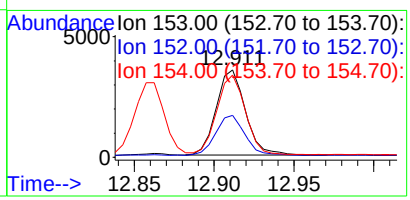


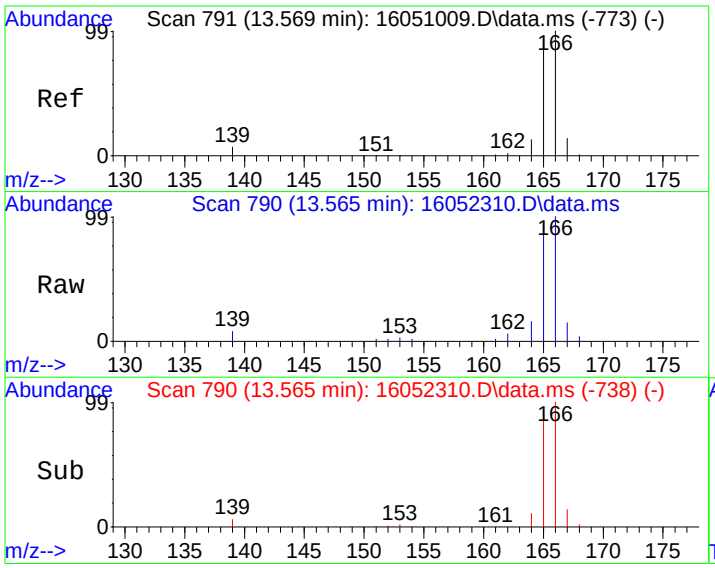


#8
Acenaphthene
Concen: 13.00 ug/kg
RT: 12.911 min Scan# 657
Delta R.T. 0.000 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:153 Resp: 4502

Ion	Ratio	Lower	Upper
153	100		
152	46.8	26.5	66.5
154	93.3	76.3	116.3

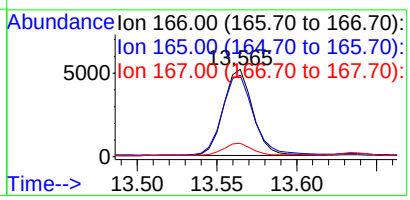


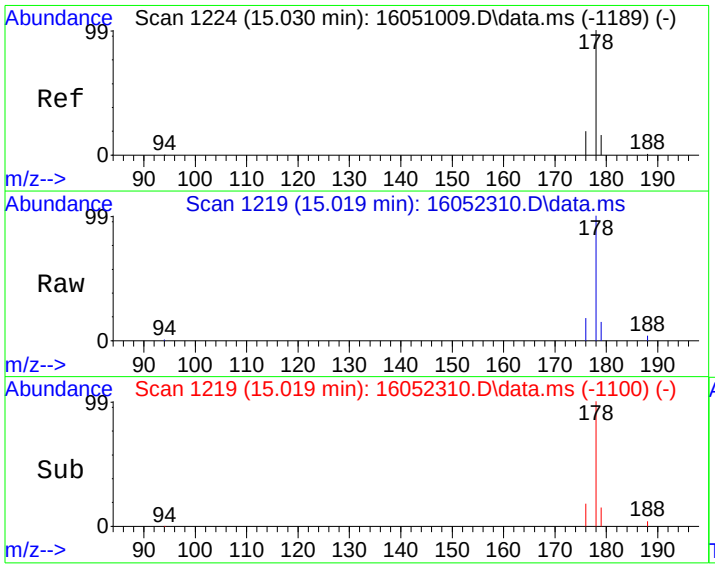


#10
Fluorene
Concen: 13.84 ug/kg
RT: 13.565 min Scan# 790
Delta R.T. 0.005 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:166 Resp: 6623

Ion	Ratio	Lower	Upper
166	100		
165	92.5	71.4	111.4
167	14.1	0.0	33.8

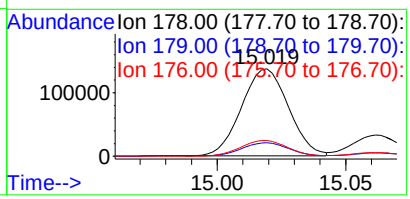


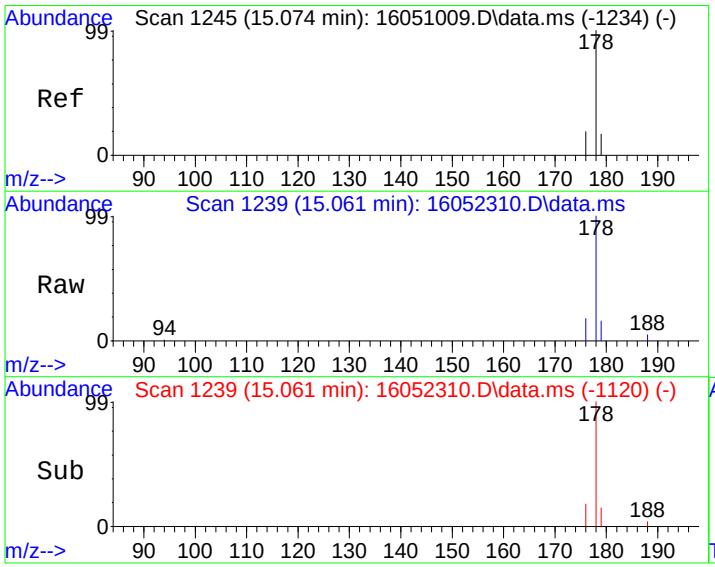


#12
Phenanthrene
Concen: 280.75 ug/kg
RT: 15.019 min Scan# 1219
Delta R.T. 0.000 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:178 Resp: 174064

Ion	Ratio	Lower	Upper
178	100		
179	14.8	0.0	36.4
176	18.1	0.0	39.0

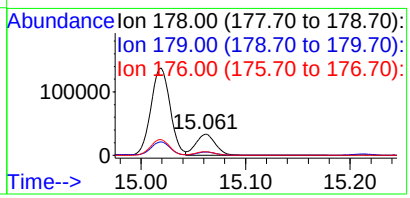


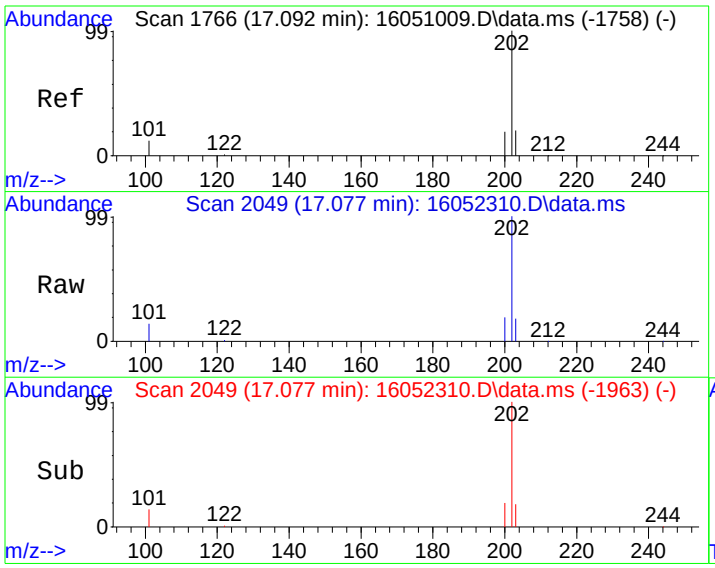


#13
Anthracene
Concen: 68.78 ug/kg
RT: 15.061 min Scan# 1239
Delta R.T. 0.000 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:178 Resp: 43147

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	36.3
176	17.5	0.0	38.5

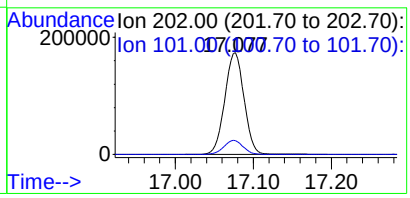


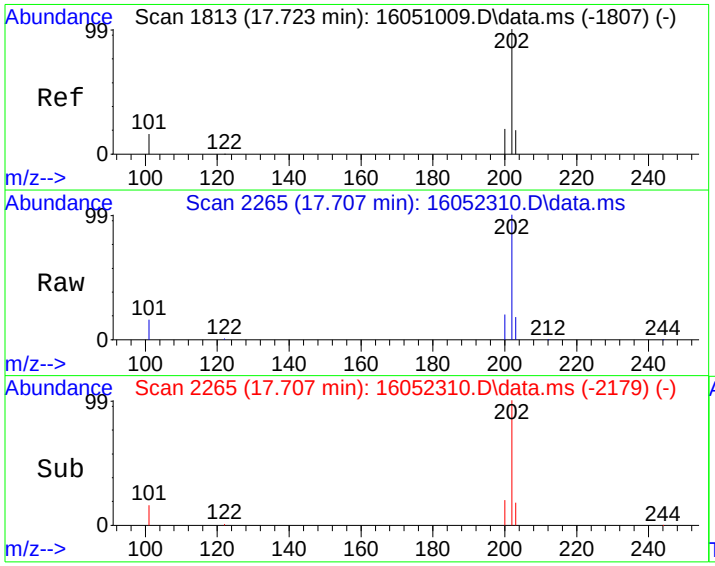


#14
Fluoranthene
Concen: 479.33 ug/kg
RT: 17.077 min Scan# 2049
Delta R.T. 0.001 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:202 Resp: 297063

Ion	Ratio	Lower	Upper
202	100		
101	13.6	0.0	34.4

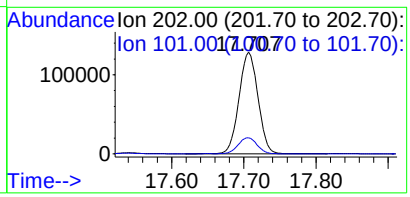


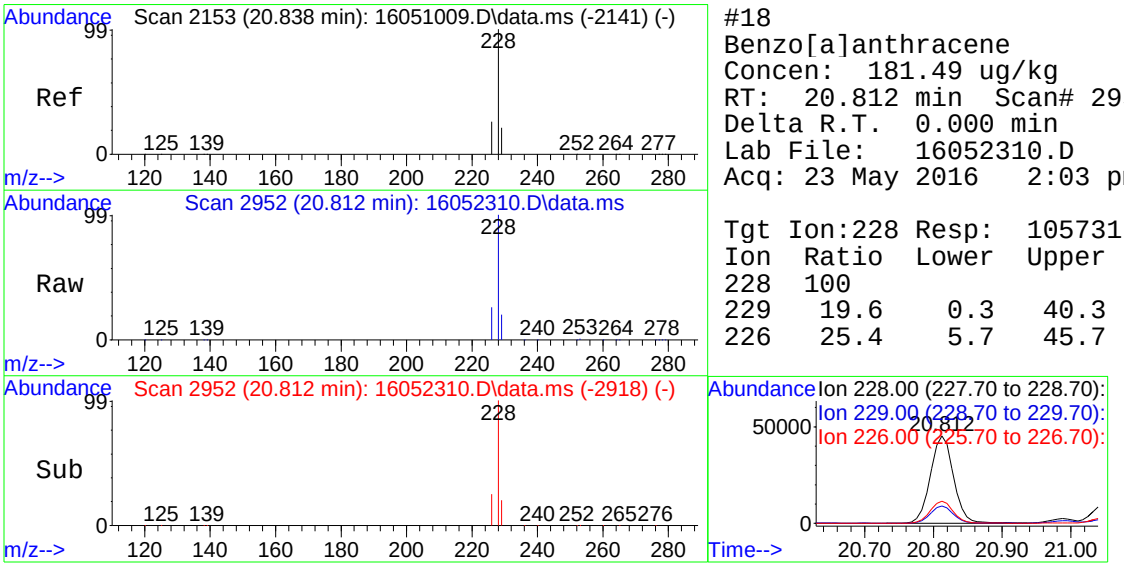


#15
Pyrene
Concen: 385.73 ug/kg
RT: 17.707 min Scan# 2265
Delta R.T. 0.001 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:202 Resp: 234062

Ion	Ratio	Lower	Upper
202	100		
101	15.8	0.0	37.3

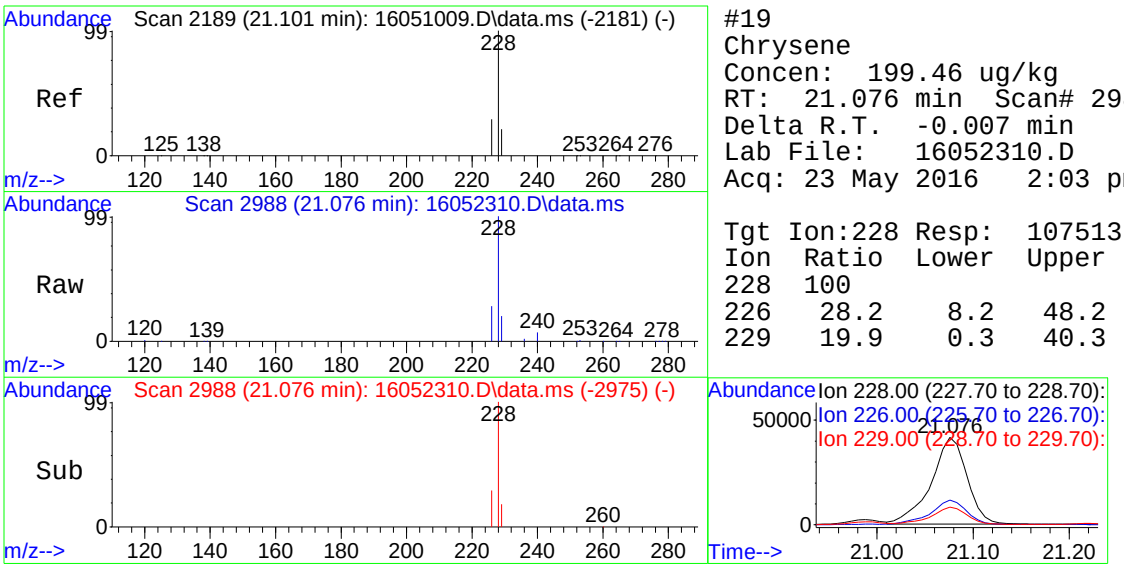




#18
Benzo[a]anthracene
Concen: 181.49 ug/kg
RT: 20.812 min Scan# 2952
Delta R.T. 0.000 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:228 Resp: 105731

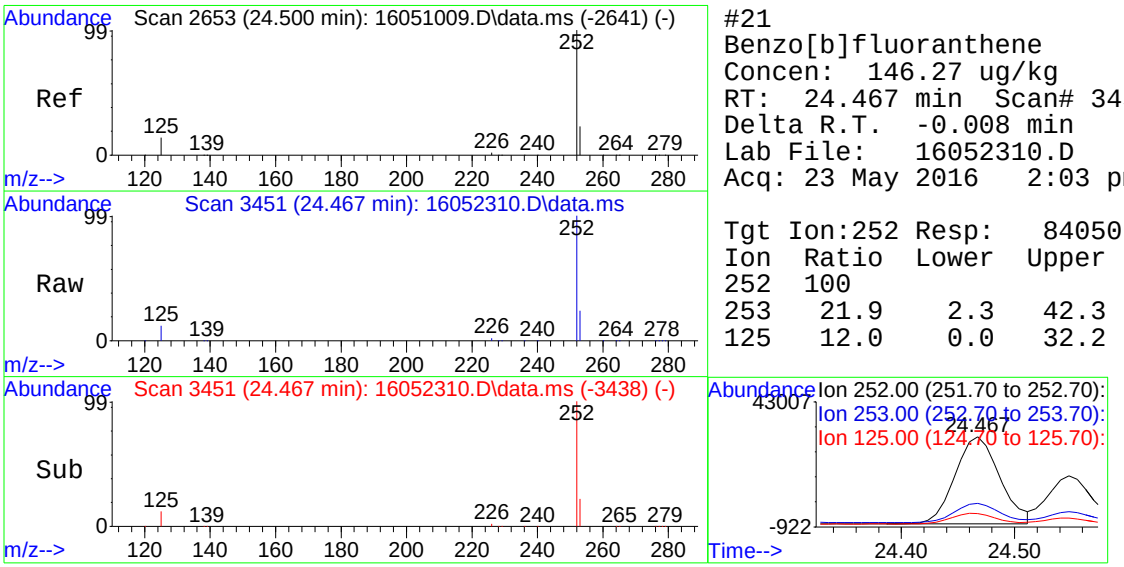
Ion	Ratio	Lower	Upper
228	100		
229	19.6	0.3	40.3
226	25.4	5.7	45.7



#19
Chrysene
Concen: 199.46 ug/kg
RT: 21.076 min Scan# 2988
Delta R.T. -0.007 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:228 Resp: 107513

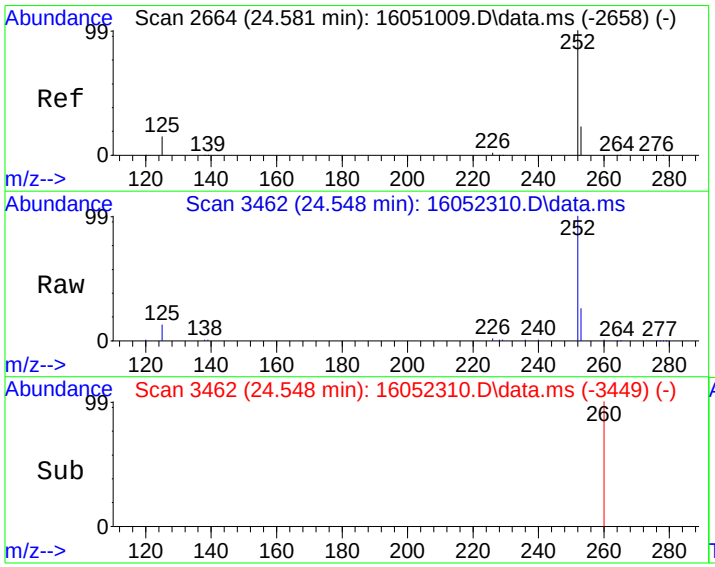
Ion	Ratio	Lower	Upper
228	100		
226	28.2	8.2	48.2
229	19.9	0.3	40.3



#21
Benzo[b]fluoranthene
Concen: 146.27 ug/kg
RT: 24.467 min Scan# 3451
Delta R.T. -0.008 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:252 Resp: 84050

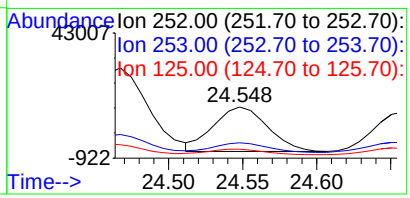
Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.3	42.3
125	12.0	0.0	32.2

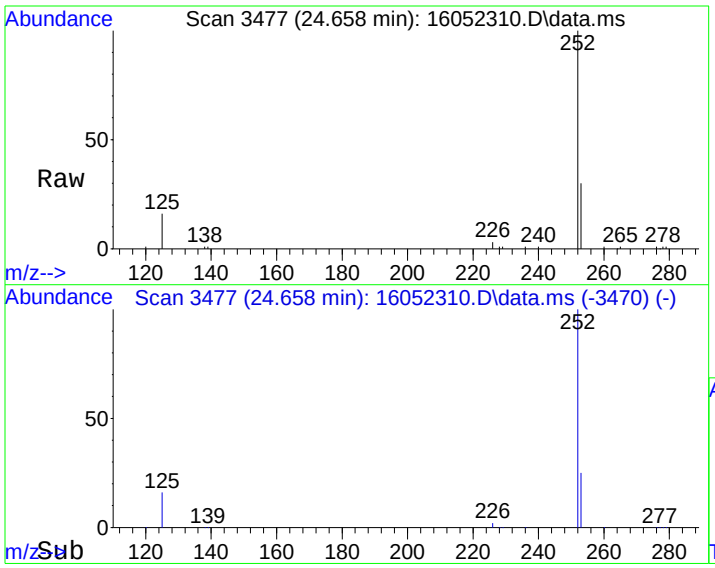


#22
Benzo[k]fluoranthene
Concen: 76.79 ug/kg
RT: 24.548 min Scan# 3462
Delta R.T. -0.007 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:252 Resp: 39857

Ion	Ratio	Lower	Upper
252	100		
253	21.0	2.5	42.5
125	11.9	0.0	32.6

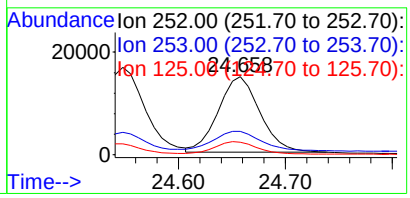


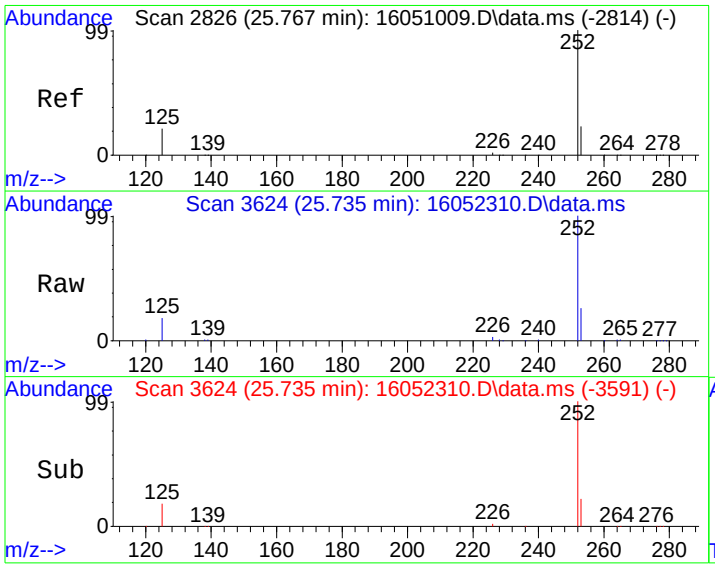


#23
Benzo(j)fluoranthene
Concen: 77.70 ug/kg
RT: 24.658 min Scan# 3477
Delta R.T. -0.007 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:252 Resp: 39816

Ion	Ratio	Lower	Upper
252	100		
253	29.0	2.2	42.2
125	16.6	0.0	37.3

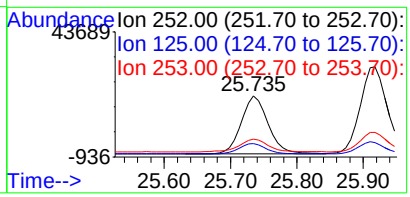


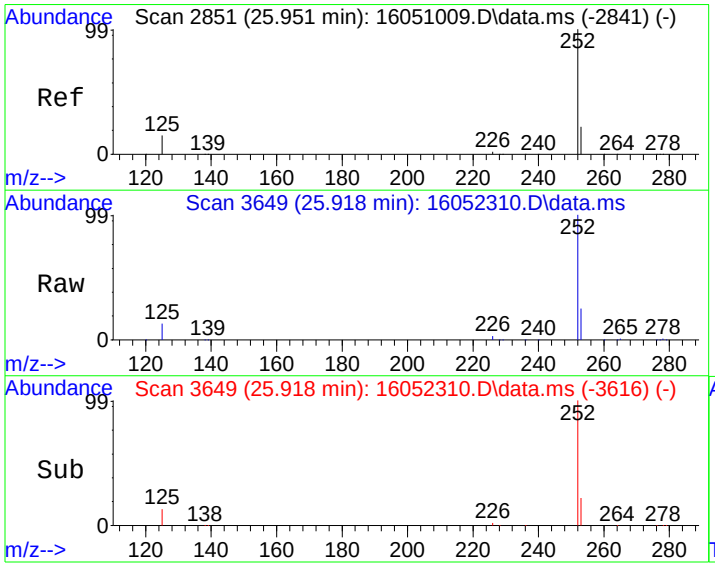


#24
Benzo(e)pyrene
Concen: 105.58 ug/kg
RT: 25.735 min Scan# 3624
Delta R.T. -0.007 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:252 Resp: 58120

Ion	Ratio	Lower	Upper
252	100		
125	18.1	0.0	38.7
253	24.3	2.3	42.3

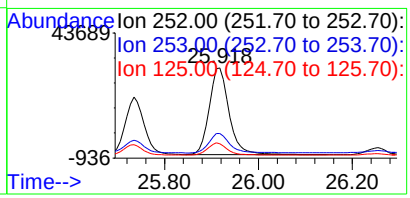


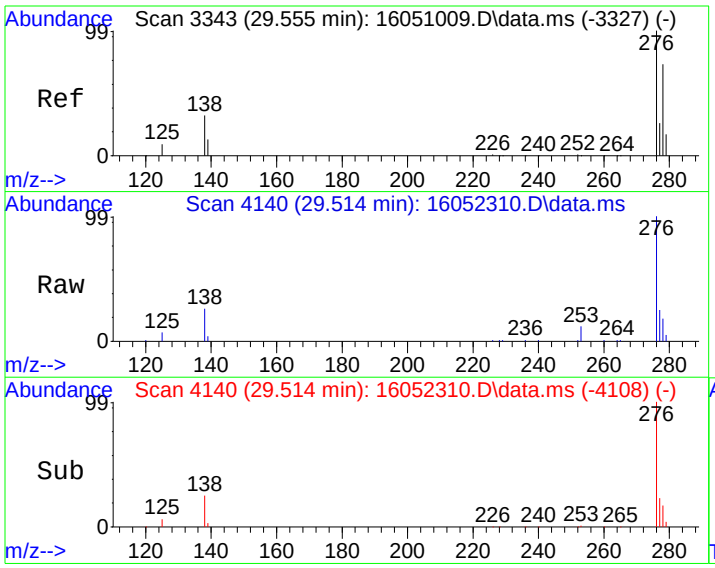


#25
Benzo[a]pyrene
Concen: 170.35 ug/kg
RT: 25.918 min Scan# 3649
Delta R.T. -0.007 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:252 Resp: 90909

Ion	Ratio	Lower	Upper
252	100		
253	22.3	2.3	42.3
125	13.2	0.0	33.5

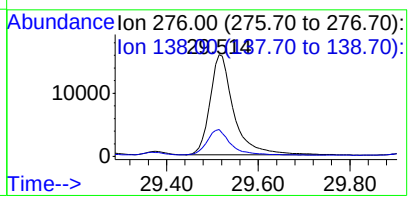


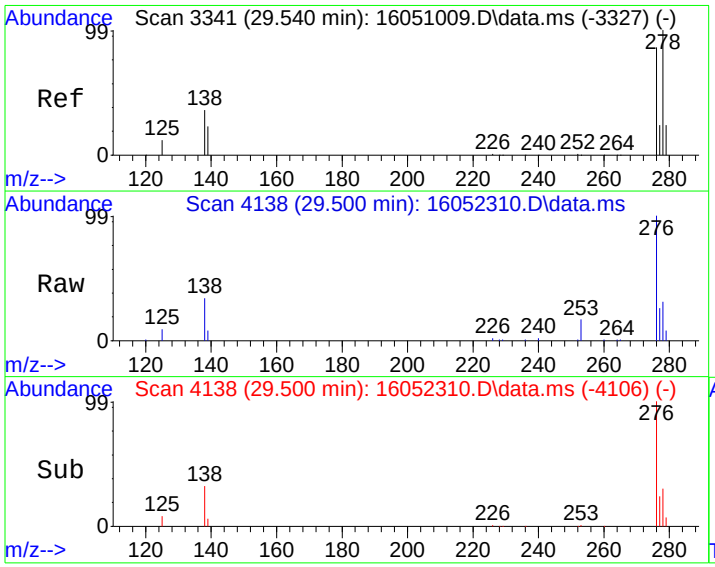


#26
Indeno[1,2,3-cd]pyrene
Concen: 84.40 ug/kg
RT: 29.514 min Scan# 4140
Delta R.T. -0.015 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:276 Resp: 56902

Ion	Ratio	Lower	Upper
276	100		
138	25.5	8.3	48.3

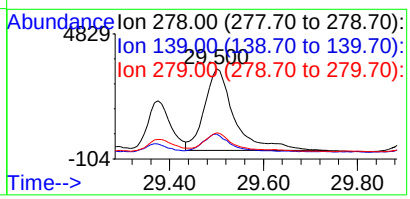


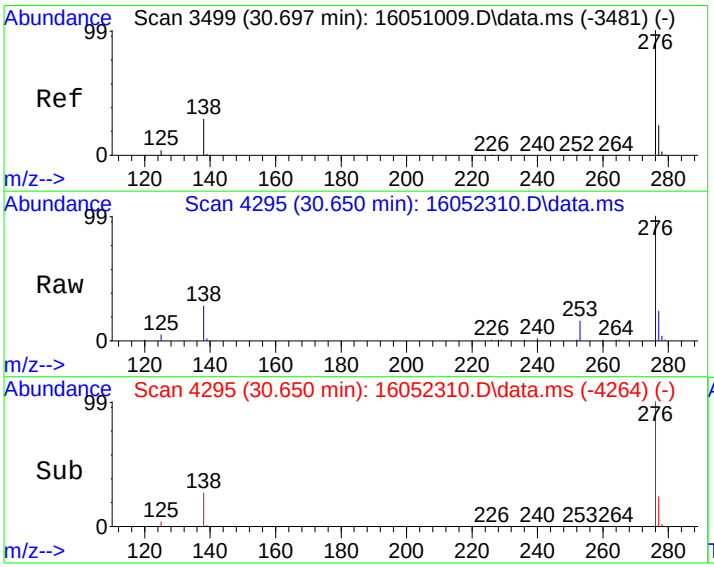


#27
Dibenz[a,h]anthracene
Concen: 21.85 ug/kg
RT: 29.500 min Scan# 4138
Delta R.T. -0.014 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:278 Resp: 14316

Ion	Ratio	Lower	Upper
278	100		
139	21.6	0.0	40.0
279	22.6	4.2	44.2

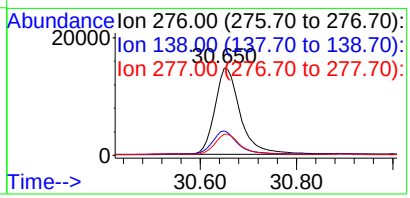




#28
Benzo[g,h,i]perylene
Concen: 93.09 ug/kg
RT: 30.650 min Scan# 4295
Delta R.T. -0.022 min
Lab File: 16052310.D
Acq: 23 May 2016 2:03 pm

Tgt Ion:276 Resp: 54001

Ion	Ratio	Lower	Upper
276	100		
138	26.6	5.8	45.8
277	23.4	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052311.D
Acq On : 23 May 2016 2:39 pm
Operator :
Sample : 1605098-19A
Misc : SAMP
ALS Vial : 11 Sample Multiplier: 10

Quant Time: May 24 09:04:57 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1591735	4000.00	ug/kg	98
6) Acenaphthene-d10	12.862	164	1274195	4000.00	ug/kg	102
11) Phenanthrene-d10	14.983	188	2240121	4000.00	ug/kg	77
16) Chrysene-d12	20.987	240	2251522	4000.00	ug/kg	83
20) Perylene-d12	26.254	264	2167387	4000.00	ug/kg	87

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	31579	89.10	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.23%#			
17) 4-Terphenyl-d14	17.592	244	36815	77.25	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.93%#			

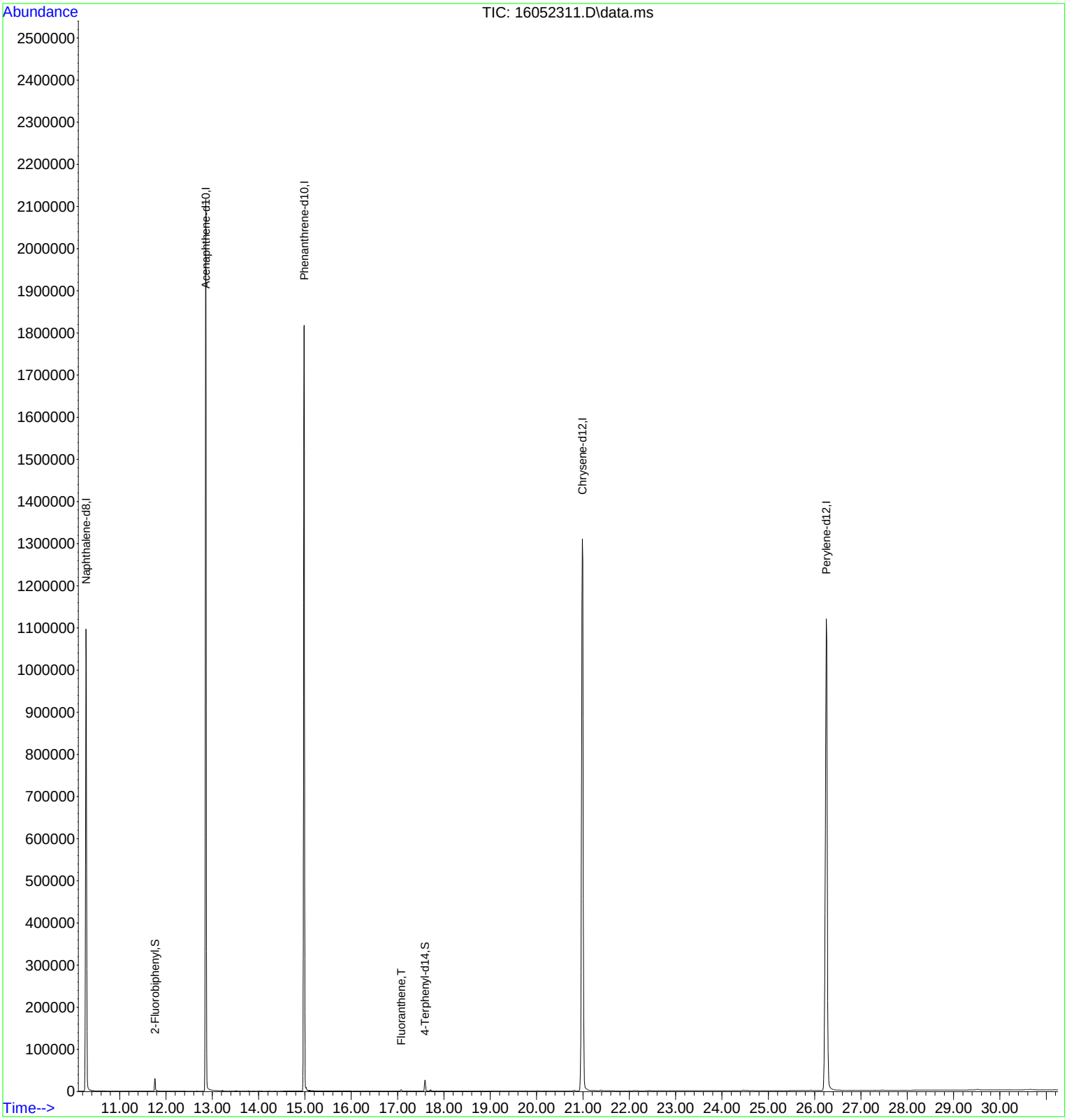
Target Compounds						Qvalue
14) Fluoranthene	17.076	202	4753	5.60	ug/kg	97

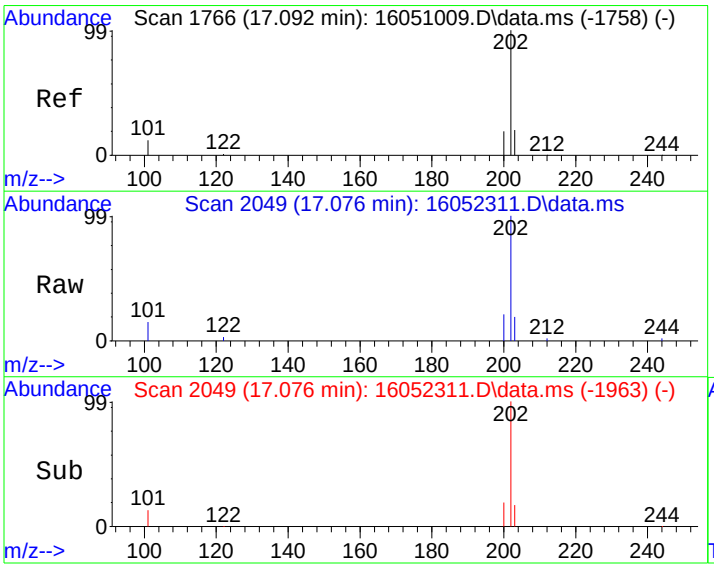
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052311.D
Acq On : 23 May 2016 2:39 pm
Operator :
Sample : 1605098-19A
Misc : SAMP
ALS Vial : 11 Sample Multiplier: 10

Quant Time: May 24 09:04:57 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

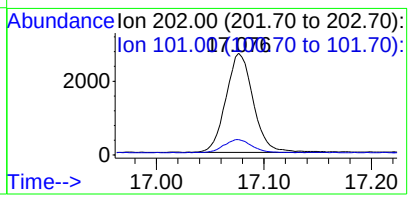




#14
Fluoranthene
Concen: 5.60 ug/kg
RT: 17.076 min Scan# 2049
Delta R.T. 0.000 min
Lab File: 16052311.D
Acq: 23 May 2016 2:39 pm

Tgt Ion:202 Resp: 4753

Ion	Ratio	Lower	Upper
202	100		
101	13.2	0.0	34.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052312.D
Acq On : 23 May 2016 3:17 pm
Operator :
Sample : 1605098-20A
Misc : SAMP
ALS Vial : 12 Sample Multiplier: 10

Quant Time: May 24 09:05:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1621840	4000.00	ug/kg	99
6) Acenaphthene-d10	12.862	164	1289532	4000.00	ug/kg	103
11) Phenanthrene-d10	14.983	188	2310259	4000.00	ug/kg	79
16) Chrysene-d12	20.995	240	2298204	4000.00	ug/kg	85
20) Perylene-d12	26.262	264	2197053	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	31008	85.87	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.15%#			
17) 4-Terphenyl-d14	17.593	244	36592	75.22	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.88%#			

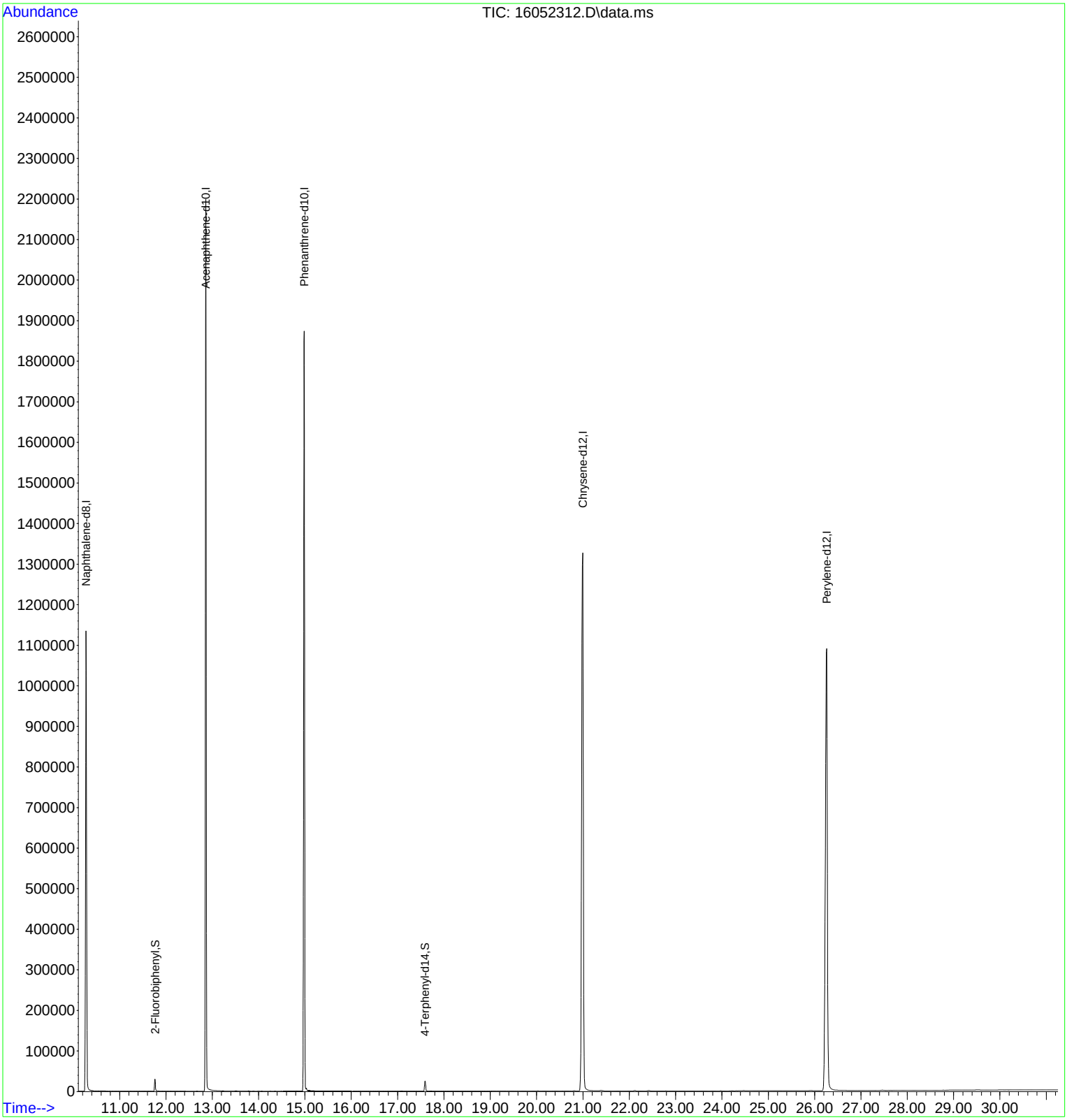
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052312.D
Acq On : 23 May 2016 3:17 pm
Operator :
Sample : 1605098-20A
Misc : SAMP
ALS Vial : 12 Sample Multiplier: 10

Quant Time: May 24 09:05:00 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052313.D
Acq On : 23 May 2016 3:54 pm
Operator :
Sample : 1605098-21A
Misc : SAMP
ALS Vial : 13 Sample Multiplier: 20

Quant Time: May 24 09:05:03 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1618730	4000.00	ug/kg	99
6) Acenaphthene-d10	12.862	164	1327644	4000.00	ug/kg	106
11) Phenanthrene-d10	14.983	188	2374120	4000.00	ug/kg	81
16) Chrysene-d12	20.996	240	2283076	4000.00	ug/kg	84
20) Perylene-d12	26.255	264	2161521	4000.00	ug/kg	87

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	17853	49.53	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 1.24%#			
17) 4-Terphenyl-d14	17.592	244	21041	43.54	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.09%#			

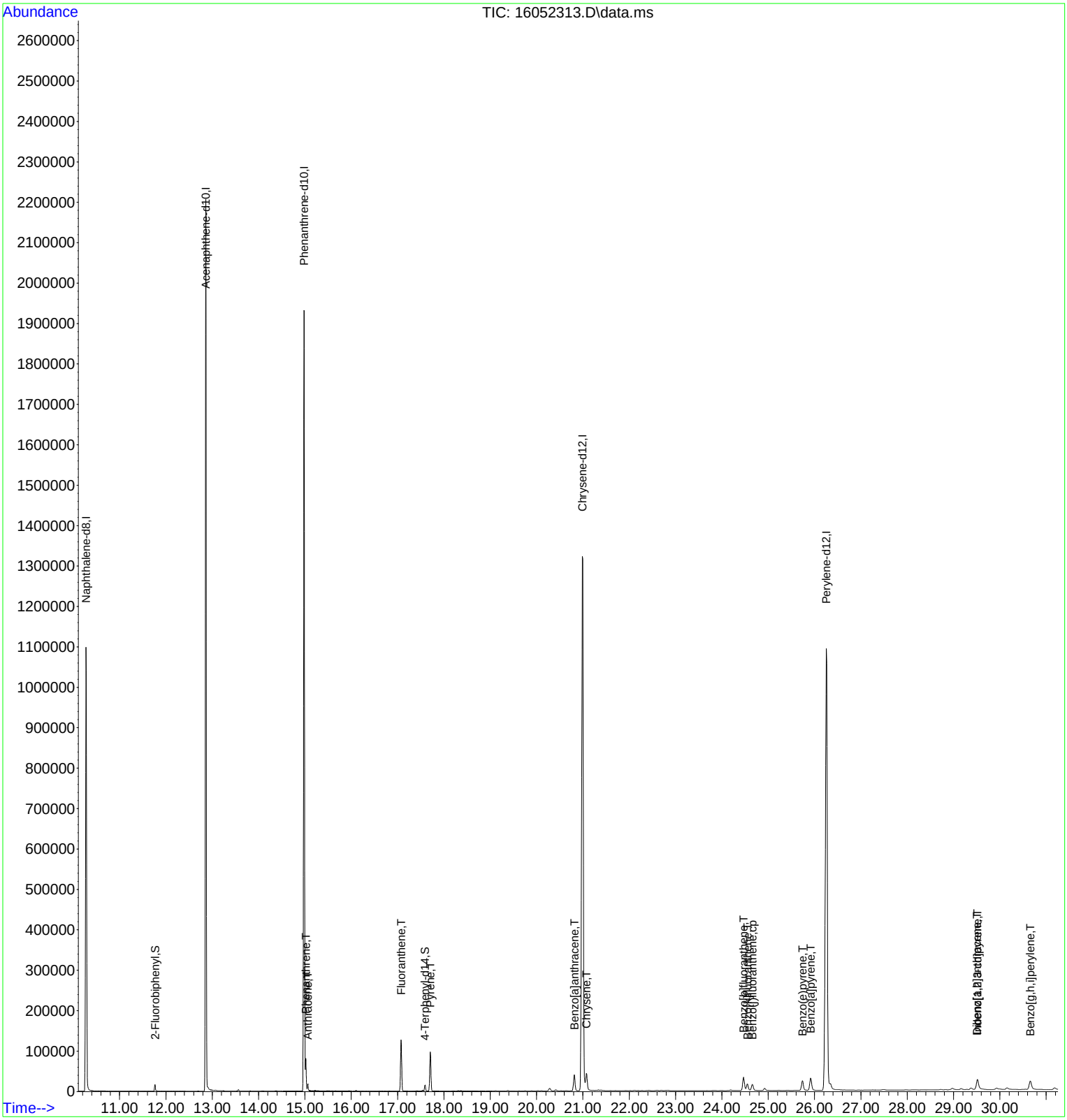
Target Compounds						Qvalue
12) Phenanthrene	15.019	178	70337	107.67	ug/kg	97
13) Anthracene	15.061	178	15802	23.91	ug/kg	98
14) Fluoranthene	17.076	202	144242	218.24	ug/kg	98
15) Pyrene	17.706	202	115998	179.39	ug/kg	97
18) Benzo[a]anthracene	20.813	228	63499	105.59	ug/kg	99
19) Chrysene	21.076	228	68934	123.76	ug/kg	99
21) Benzo[b]fluoranthene	24.468	252	65740	112.67	ug/kg	99
22) Benzo[k]fluoranthene	24.549	252	28740	54.41	ug/kg	98
23) Benzo(j)fluoranthene	24.658	252	28409	53.86	ug/kg	90
24) Benzo(e)pyrene	25.735	252	48134	85.98	ug/kg	97
25) Benzo[a]pyrene	25.918	252	65295	120.28	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.515	276	49574	72.29	ug/kg	94
27) Dibenz[a,h]anthracene	29.500	278	11112	15.72	ug/kg	98
28) Benzo[g,h,i]perylene	30.658	276	50632	86.08	ug/kg	99

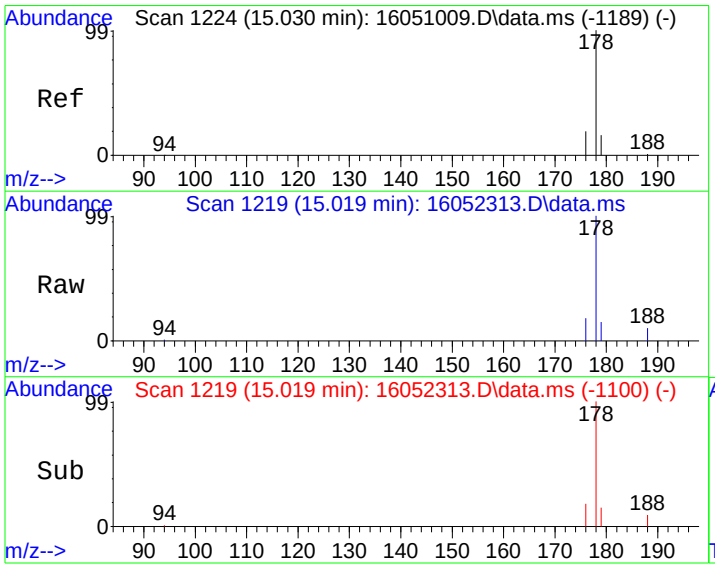
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052313.D
Acq On : 23 May 2016 3:54 pm
Operator :
Sample : 1605098-21A
Misc : SAMP
ALS Vial : 13 Sample Multiplier: 20

Quant Time: May 24 09:05:03 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

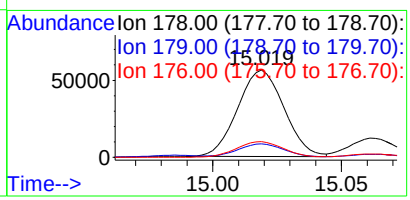


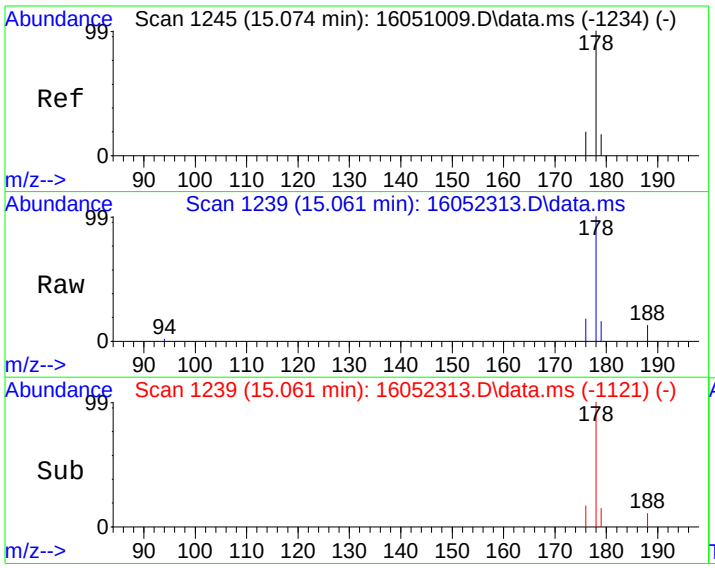


#12
Phenanthrene
Concen: 107.67 ug/kg
RT: 15.019 min Scan# 1219
Delta R.T. -0.000 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:178 Resp: 70337

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	36.4
176	18.2	0.0	39.0

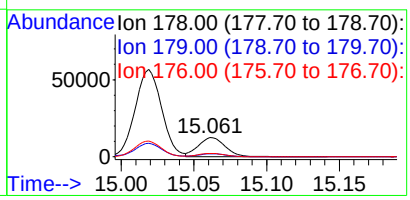


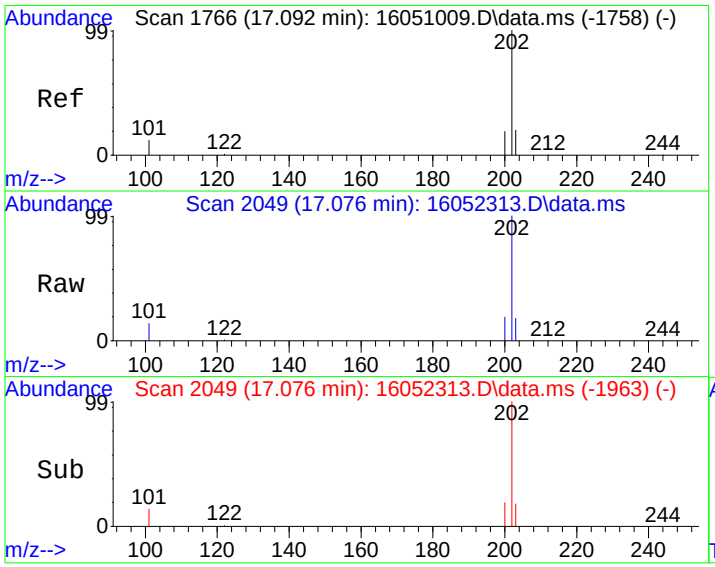


#13
Anthracene
Concen: 23.91 ug/kg
RT: 15.061 min Scan# 1239
Delta R.T. -0.000 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:178 Resp: 15802

Ion	Ratio	Lower	Upper
178	100		
179	15.2	0.0	36.3
176	17.5	0.0	38.5

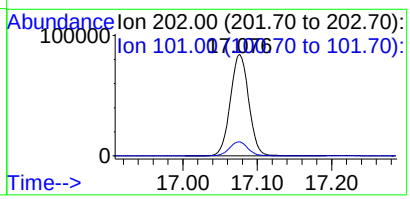


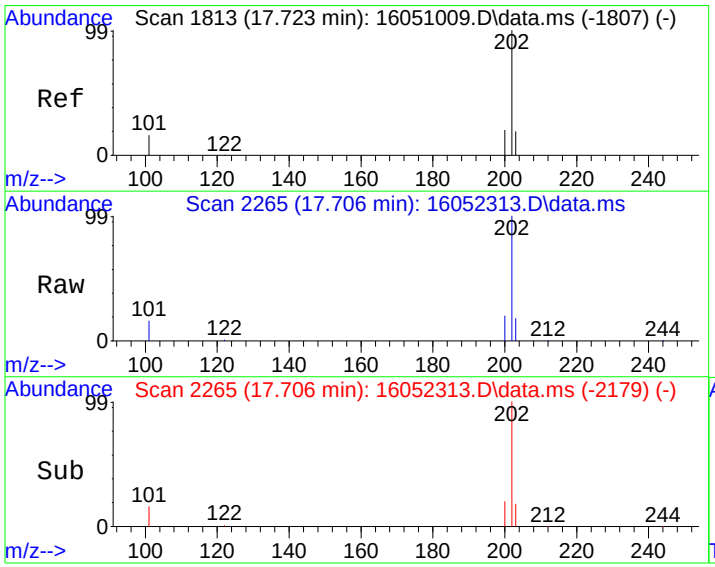


#14
Fluoranthene
Concen: 218.24 ug/kg
RT: 17.076 min Scan# 2049
Delta R.T. 0.000 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:202 Resp: 144242

Ion	Ratio	Lower	Upper
202	100		
101	13.6	0.0	34.4

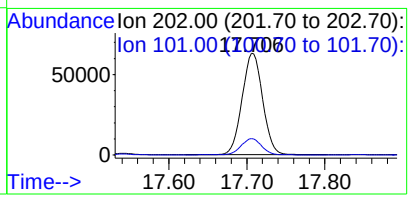


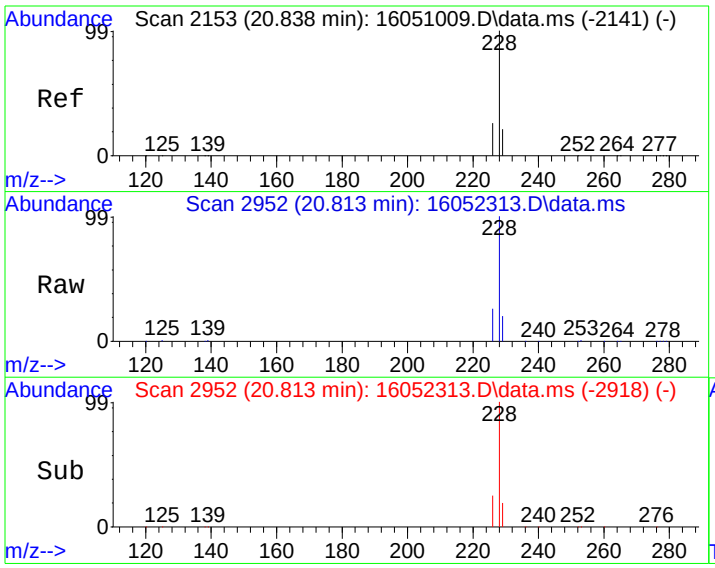


#15
Pyrene
Concen: 179.39 ug/kg
RT: 17.706 min Scan# 2265
Delta R.T. -0.000 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:202 Resp: 115998

Ion	Ratio	Lower	Upper
202	100		
101	16.0	0.0	37.3

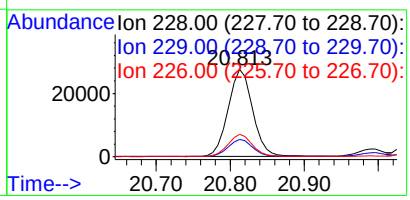


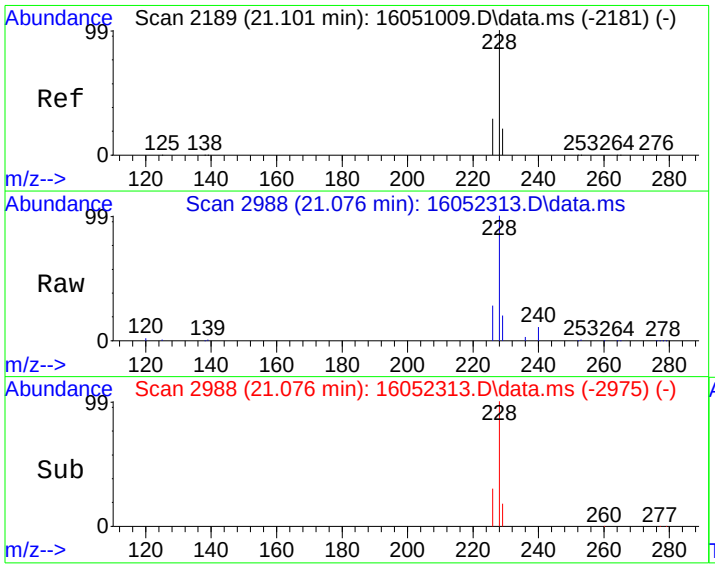


#18
Benzo[a]anthracene
Concen: 105.59 ug/kg
RT: 20.813 min Scan# 2952
Delta R.T. 0.001 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:228 Resp: 63499

Ion	Ratio	Lower	Upper
228	100		
229	19.4	0.3	40.3
226	25.5	5.7	45.7

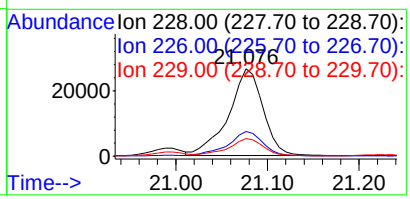


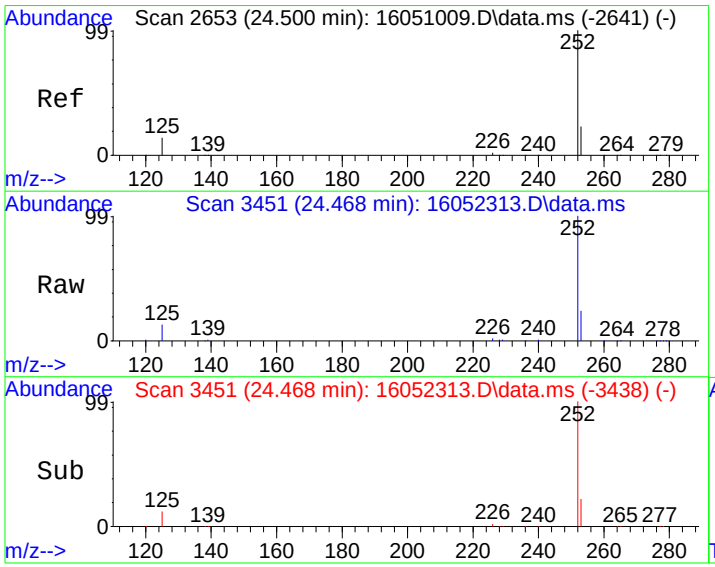


#19
Chrysene
Concen: 123.76 ug/kg
RT: 21.076 min Scan# 2988
Delta R.T. -0.007 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:228 Resp: 68934

Ion	Ratio	Lower	Upper
228	100		
226	28.1	8.2	48.2
229	19.8	0.3	40.3

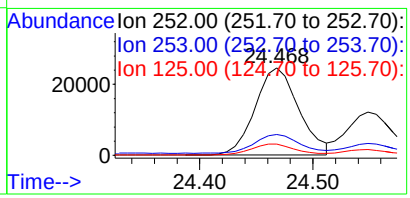


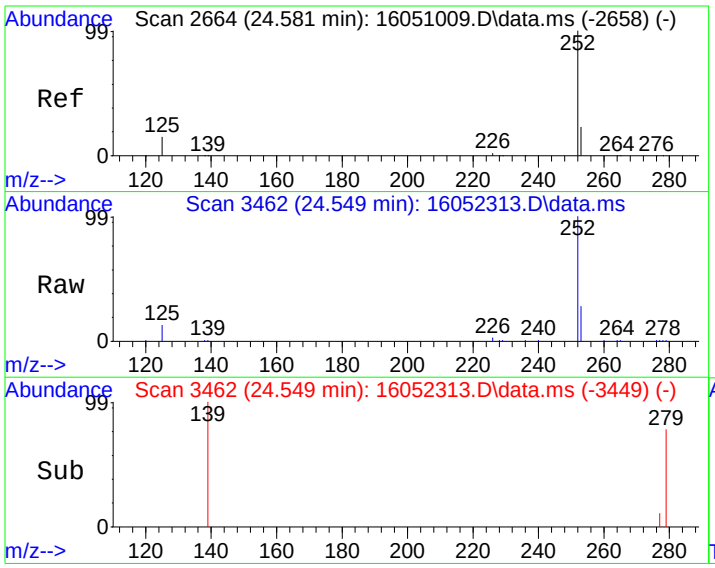


#21
Benzo[b]fluoranthene
Concen: 112.67 ug/kg
RT: 24.468 min Scan# 3451
Delta R.T. -0.007 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:252 Resp: 65740

Ion	Ratio	Lower	Upper
252	100		
253	21.6	2.3	42.3
125	12.2	0.0	32.2

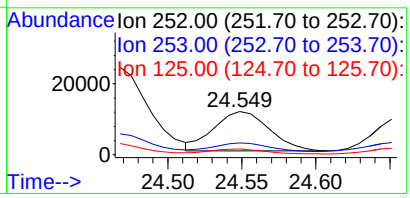


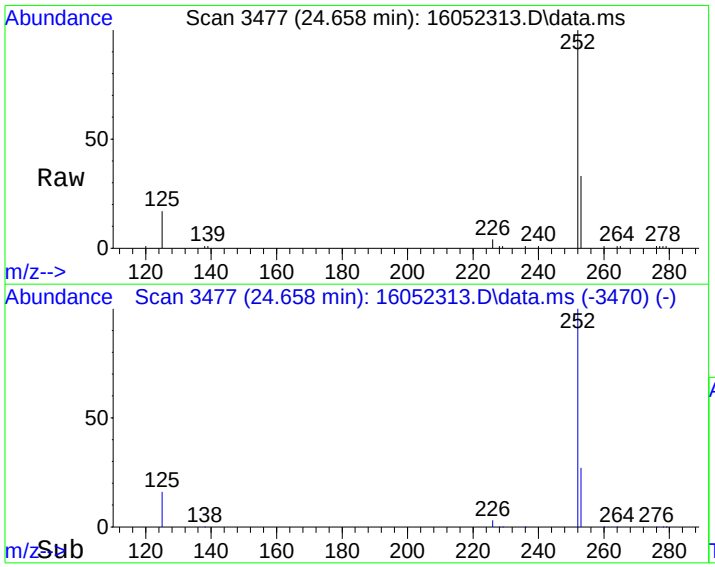


#22
Benzo[k]fluoranthene
Concen: 54.41 ug/kg
RT: 24.549 min Scan# 3462
Delta R.T. -0.006 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:252 Resp: 28740

Ion	Ratio	Lower	Upper
252	100		
253	21.2	2.5	42.5
125	12.5	0.0	32.6

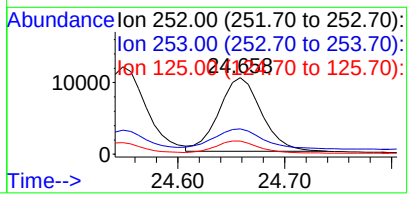


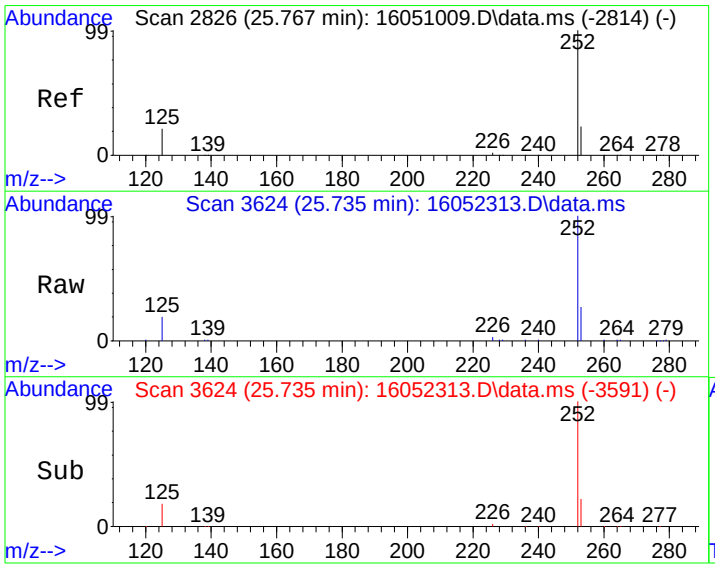


#23
Benzo(j)fluoranthene
Concen: 53.86 ug/kg
RT: 24.658 min Scan# 3477
Delta R.T. -0.007 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:252 Resp: 28409

Ion	Ratio	Lower	Upper
252	100		
253	30.2	2.2	42.2
125	16.3	0.0	37.3

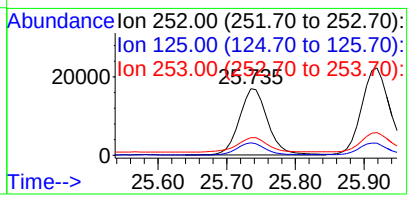


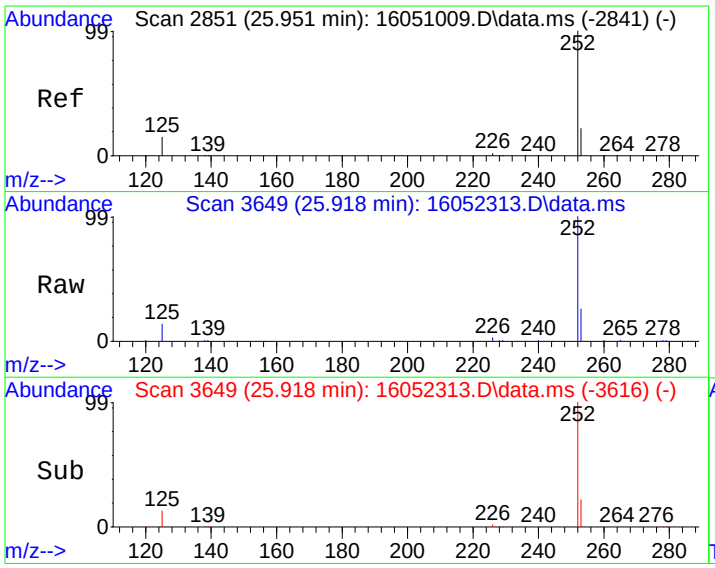


#24
Benzo(e)pyrene
Concen: 85.98 ug/kg
RT: 25.735 min Scan# 3624
Delta R.T. -0.007 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:252 Resp: 48134

Ion	Ratio	Lower	Upper
252	100		
125	18.3	0.0	38.7
253	24.3	2.3	42.3

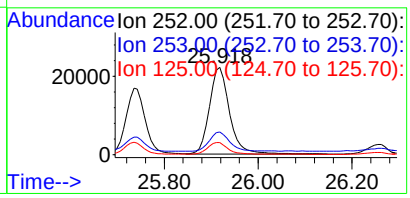


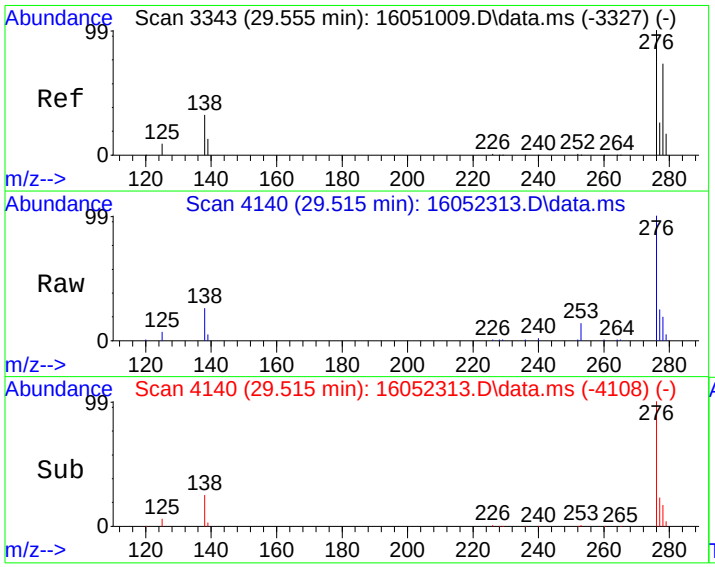


#25
Benzo[a]pyrene
Concen: 120.28 ug/kg
RT: 25.918 min Scan# 3649
Delta R.T. -0.007 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:252 Resp: 65295

Ion	Ratio	Lower	Upper
252	100		
253	22.2	2.3	42.3
125	13.4	0.0	33.5

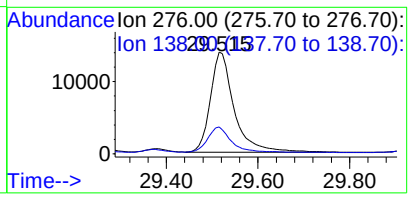


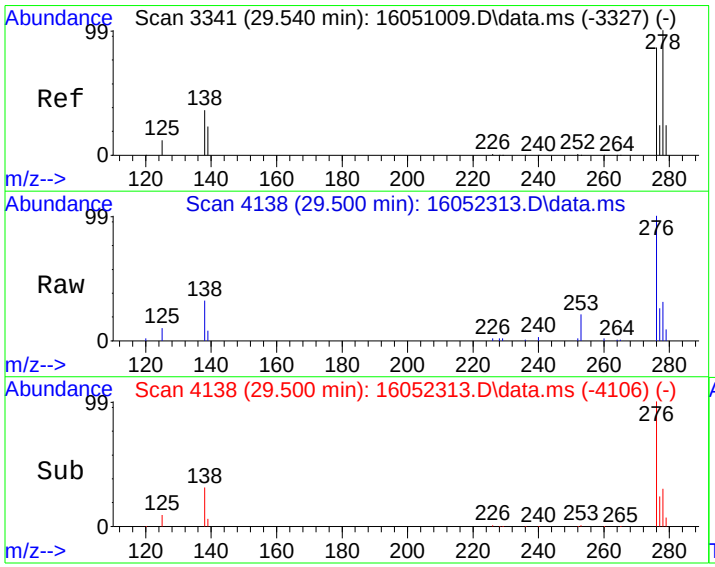


#26
Indeno[1,2,3-cd]pyrene
Concen: 72.29 ug/kg
RT: 29.515 min Scan# 4140
Delta R.T. -0.014 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:276 Resp: 49574

Ion	Ratio	Lower	Upper
276	100		
138	25.3	8.3	48.3

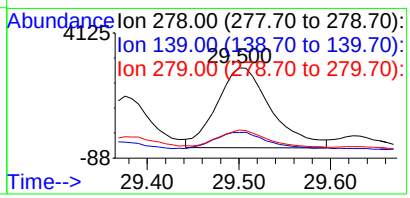


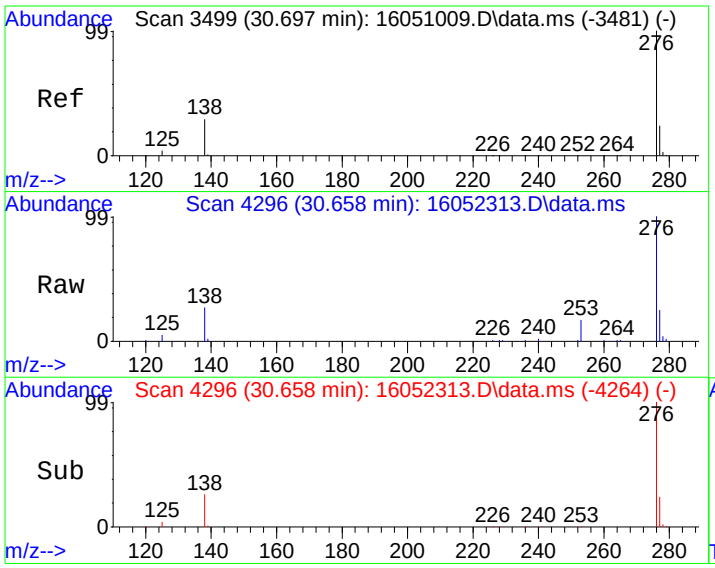


#27
Dibenz[a,h]anthracene
Concen: 15.72 ug/kg
RT: 29.500 min Scan# 4138
Delta R.T. -0.014 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:278 Resp: 11112

Ion	Ratio	Lower	Upper
278	100		
139	22.0	0.0	40.0
279	23.9	4.2	44.2

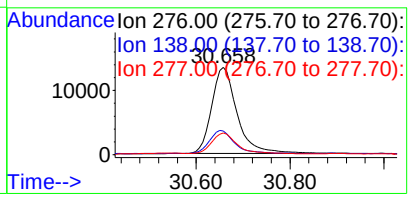




#28
Benzo[g,h,i]perylene
Concen: 86.08 ug/kg
RT: 30.658 min Scan# 4296
Delta R.T. -0.014 min
Lab File: 16052313.D
Acq: 23 May 2016 3:54 pm

Tgt Ion:276 Resp: 50632

Ion	Ratio	Lower	Upper
276	100		
138	26.0	5.8	45.8
277	23.8	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052314.D
Acq On : 23 May 2016 4:31 pm
Operator :
Sample : 1605098-22A
Misc : SAMP
ALS Vial : 14 Sample Multiplier: 10

Quant Time: May 24 09:05:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1622067	4000.00	ug/kg	100
6) Acenaphthene-d10	12.861	164	1304774	4000.00	ug/kg	104
11) Phenanthrene-d10	14.985	188	2302202	4000.00	ug/kg	79
16) Chrysene-d12	20.995	240	2344080	4000.00	ug/kg	86
20) Perylene-d12	26.262	264	2239033	4000.00	ug/kg	90

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	30694	84.99	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.12%#			
17) 4-Terphenyl-d14	17.595	244	36082	72.72	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.82%#			

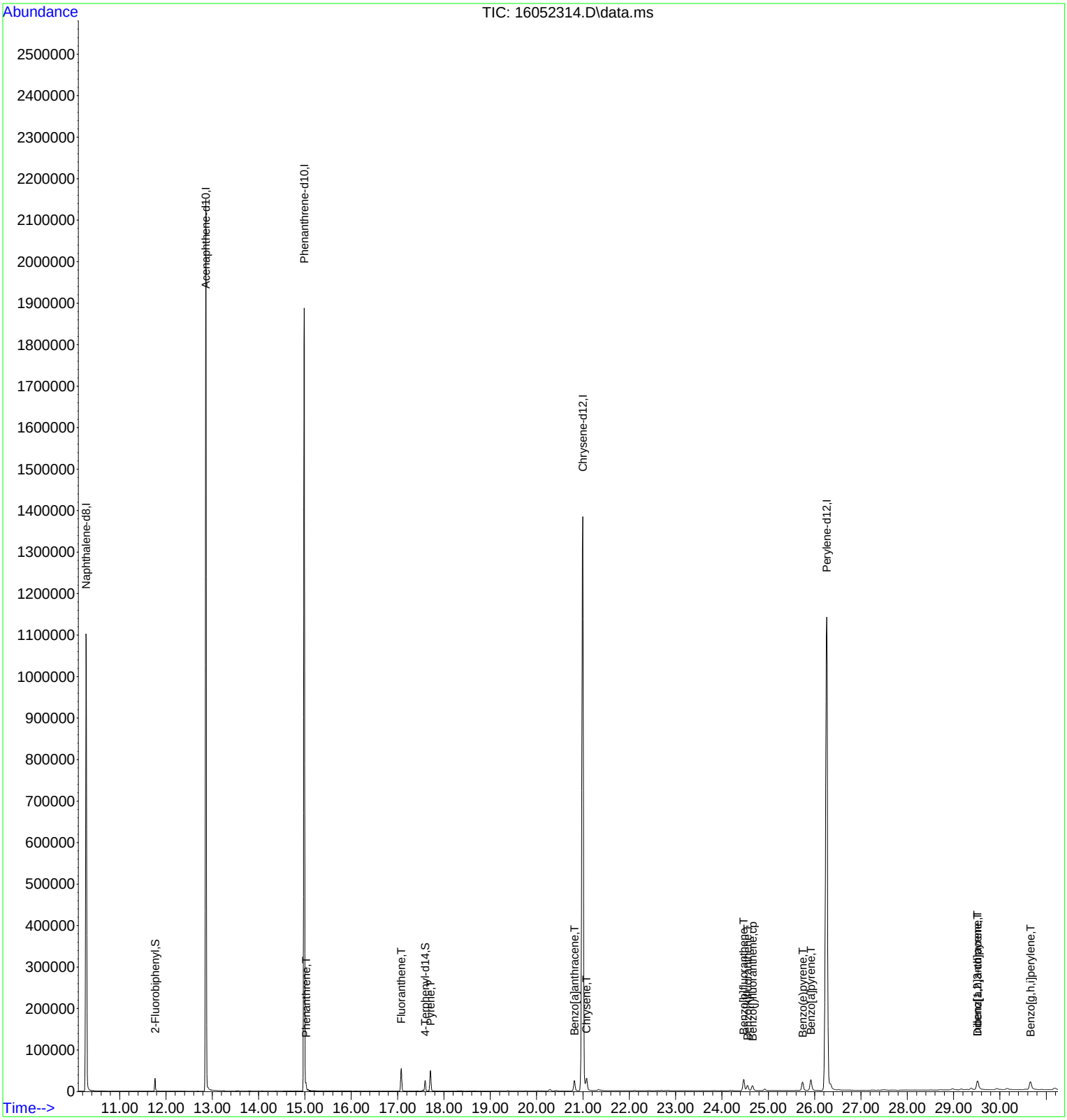
Target Compounds						Qvalue
12) Phenanthrene	15.021	178	14755	23.29	ug/kg	99
14) Fluoranthene	17.079	202	64199	98.74	ug/kg	97
15) Pyrene	17.708	202	59802	94.13	ug/kg	97
18) Benzo[a]anthracene	20.812	228	40198	64.35	ug/kg	99
19) Chrysene	21.083	228	48432	83.75	ug/kg	99
21) Benzo[b]fluoranthene	24.468	252	53877	88.74	ug/kg	99
22) Benzo[k]fluoranthene	24.548	252	23584	42.87	ug/kg	96
23) Benzo(j)fluoranthene	24.658	252	22524	40.47	ug/kg	89
24) Benzo(e)pyrene	25.742	252	41029	70.29	ug/kg	97
25) Benzo[a]pyrene	25.918	252	55143	97.64	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.522	276	43197	60.34	ug/kg	90
27) Dibenz[a,h]anthracene	29.507	278	7478	8.63	ug/kg	97
28) Benzo[g,h,i]perylene	30.657	276	45157	73.67	ug/kg	99

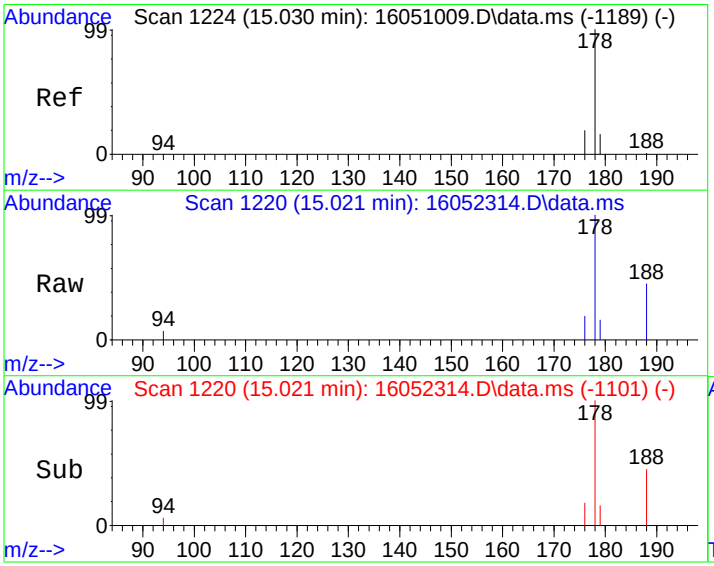
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052314.D
Acq On : 23 May 2016 4:31 pm
Operator :
Sample : 1605098-22A
Misc : SAMP
ALS Vial : 14 Sample Multiplier: 10

Quant Time: May 24 09:05:11 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

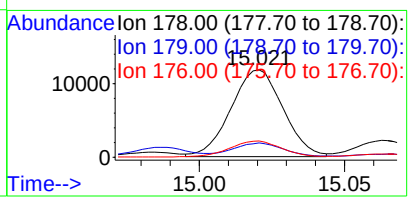


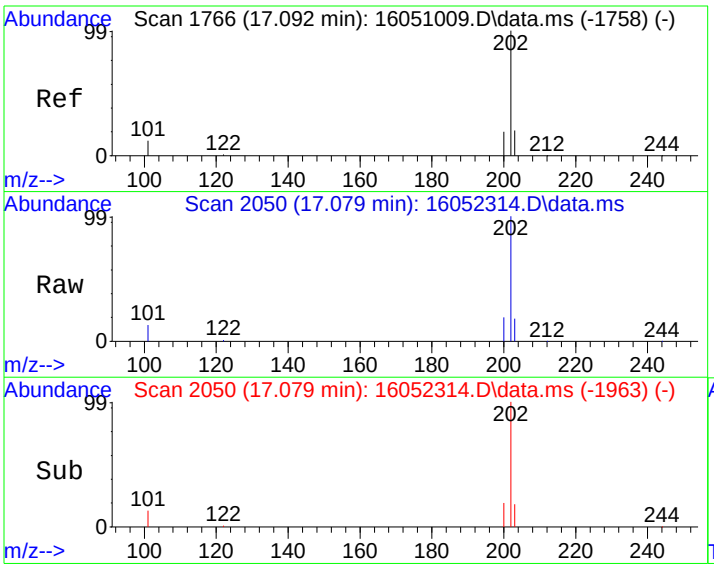


#12
Phenanthrene
Concen: 23.29 ug/kg
RT: 15.021 min Scan# 1220
Delta R.T. 0.001 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:178 Resp: 14755

Ion	Ratio	Lower	Upper
178	100		
179	15.6	0.0	36.4
176	18.5	0.0	39.0

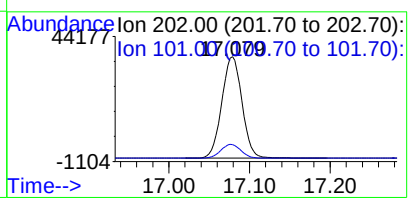


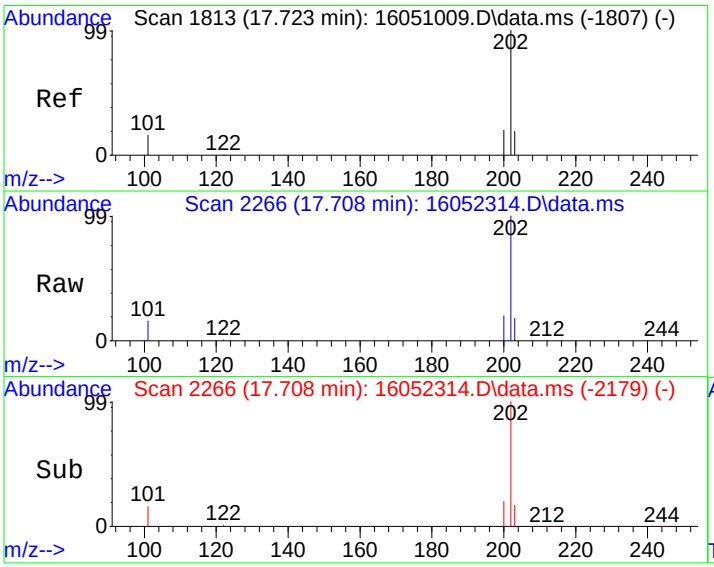


#14
Fluoranthene
Concen: 98.74 ug/kg
RT: 17.079 min Scan# 2050
Delta R.T. 0.003 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:202 Resp: 64199

Ion	Ratio	Lower	Upper
202	100		
101	13.3	0.0	34.4

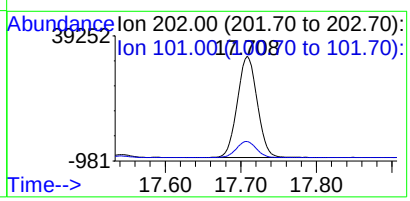


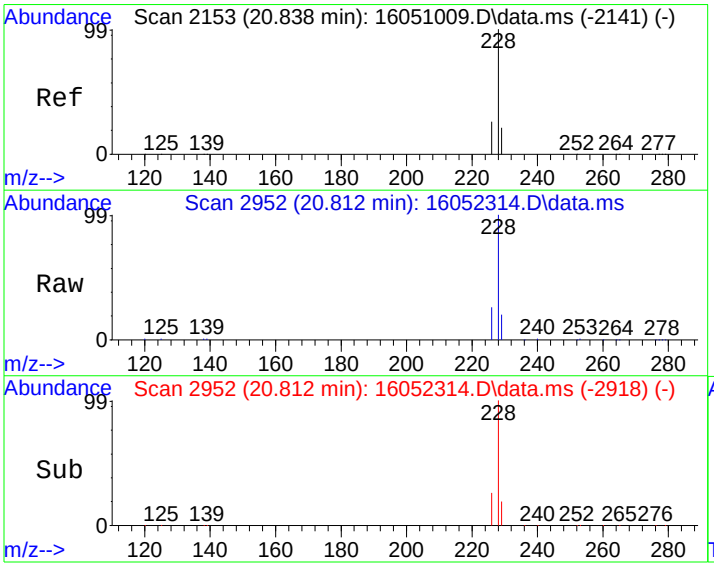


#15
Pyrene
Concen: 94.13 ug/kg
RT: 17.708 min Scan# 2266
Delta R.T. 0.002 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:202 Resp: 59802

Ion	Ratio	Lower	Upper
202	100		
101	15.9	0.0	37.3

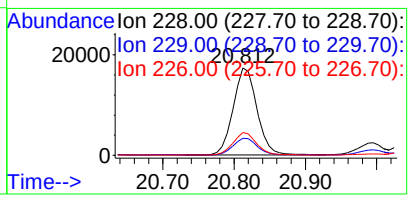


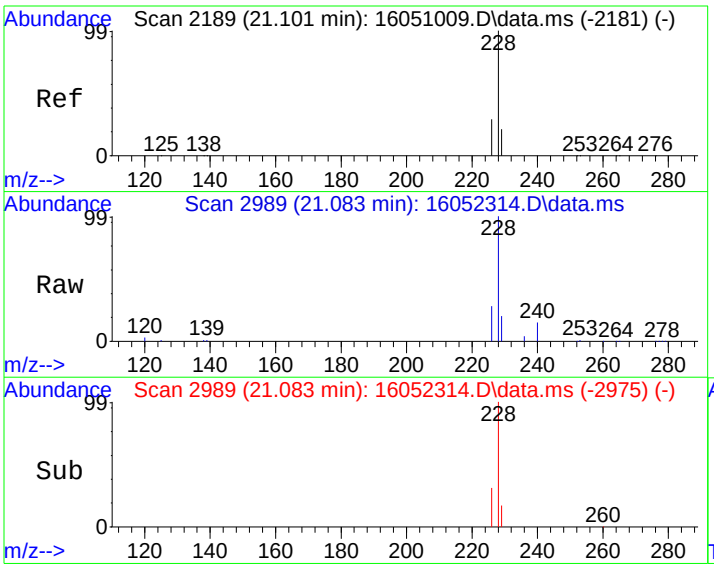


#18
Benzo[a]anthracene
Concen: 64.35 ug/kg
RT: 20.812 min Scan# 2952
Delta R.T. 0.000 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:228 Resp: 40198

Ion	Ratio	Lower	Upper
228	100		
229	19.2	0.3	40.3
226	25.6	5.7	45.7

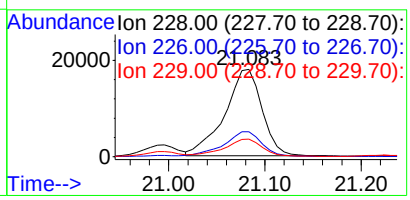


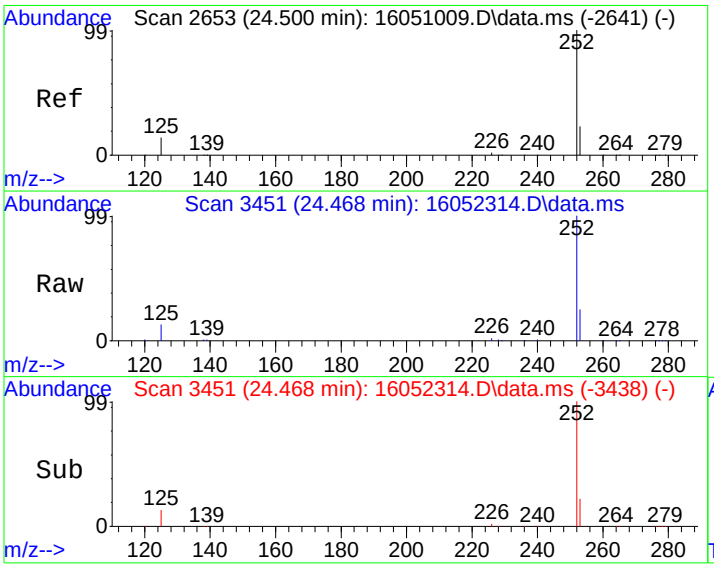


#19
Chrysene
Concen: 83.75 ug/kg
RT: 21.083 min Scan# 2989
Delta R.T. 0.000 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:228 Resp: 48432

Ion	Ratio	Lower	Upper
228	100		
226	28.2	8.2	48.2
229	19.7	0.3	40.3

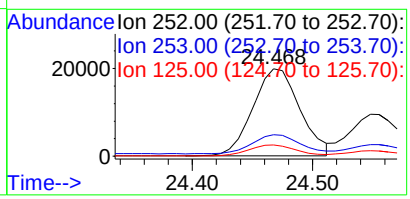


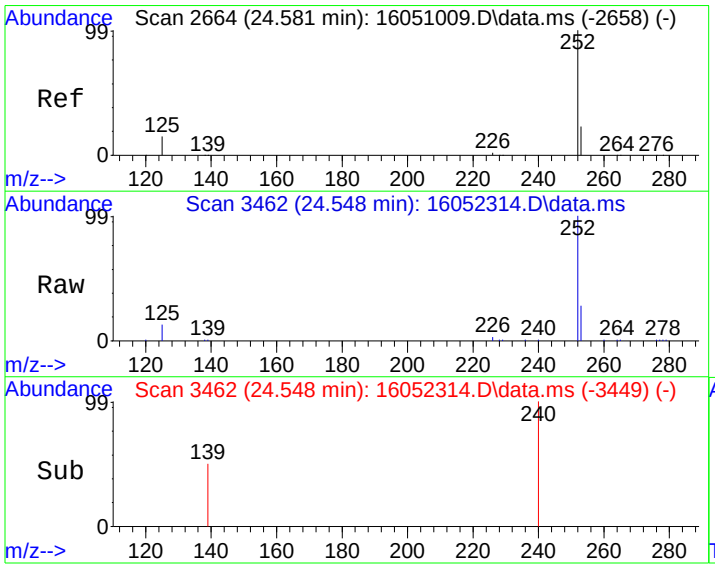


#21
Benzo[b]fluoranthene
Concen: 88.74 ug/kg
RT: 24.468 min Scan# 3451
Delta R.T. -0.007 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:252 Resp: 53877

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.3	42.3
125	12.6	0.0	32.2

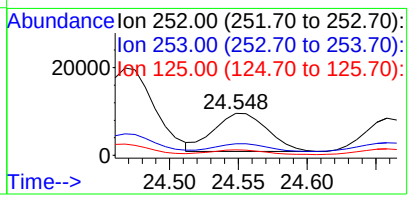


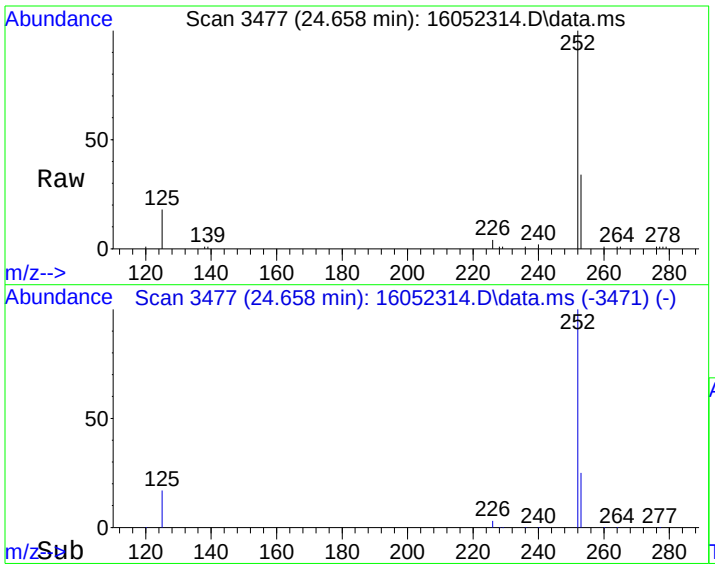


#22
Benzo[k]fluoranthene
Concen: 42.87 ug/kg
RT: 24.548 min Scan# 3462
Delta R.T. -0.007 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:252 Resp: 23584

Ion	Ratio	Lower	Upper
252	100		
253	19.7	2.5	42.5
125	12.4	0.0	32.6

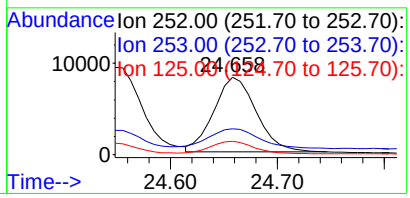


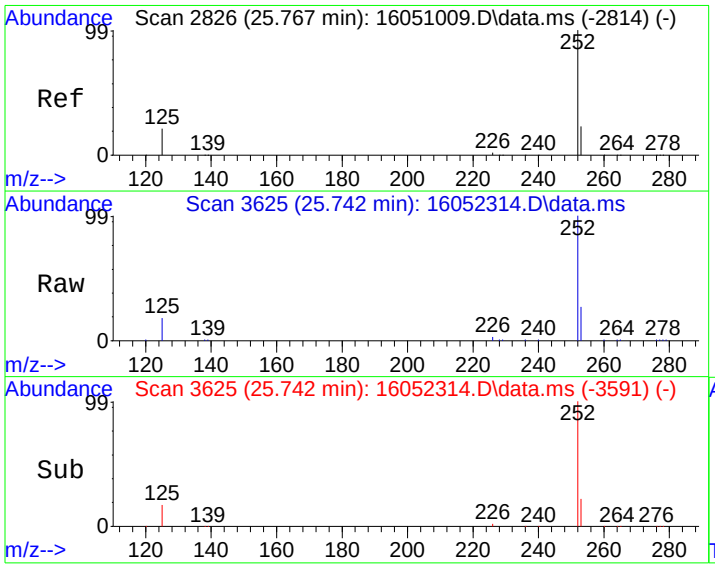


#23
Benzo(j)fluoranthene
Concen: 40.47 ug/kg
RT: 24.658 min Scan# 3477
Delta R.T. -0.007 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:252 Resp: 22524

Ion	Ratio	Lower	Upper
252	100		
253	30.9	2.2	42.2
125	16.7	0.0	37.3

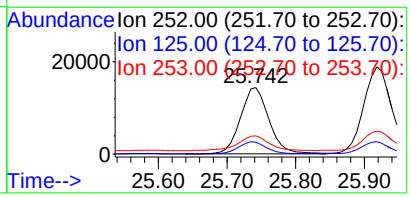


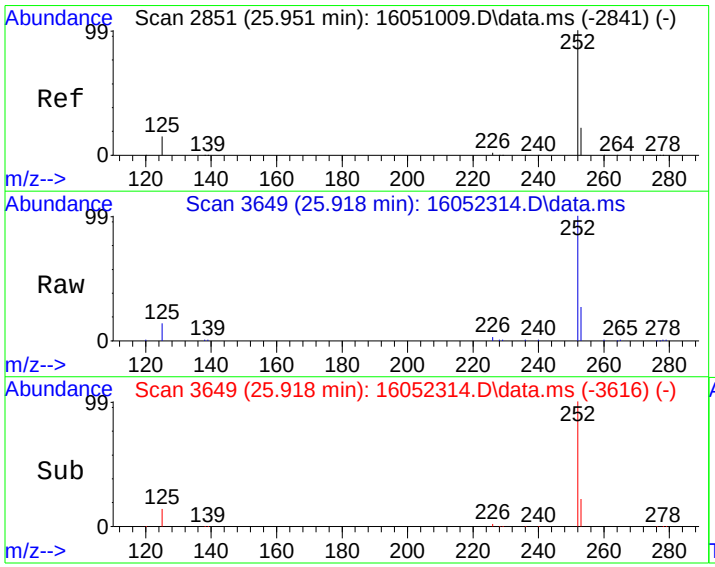


#24
Benzo(e)pyrene
Concen: 70.29 ug/kg
RT: 25.742 min Scan# 3625
Delta R.T. 0.000 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:252 Resp: 41029

Ion	Ratio	Lower	Upper
252	100		
125	18.0	0.0	38.7
253	24.2	2.3	42.3

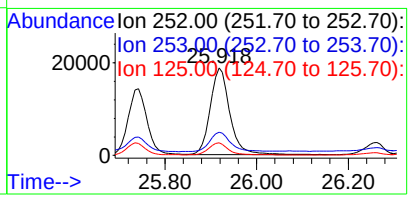


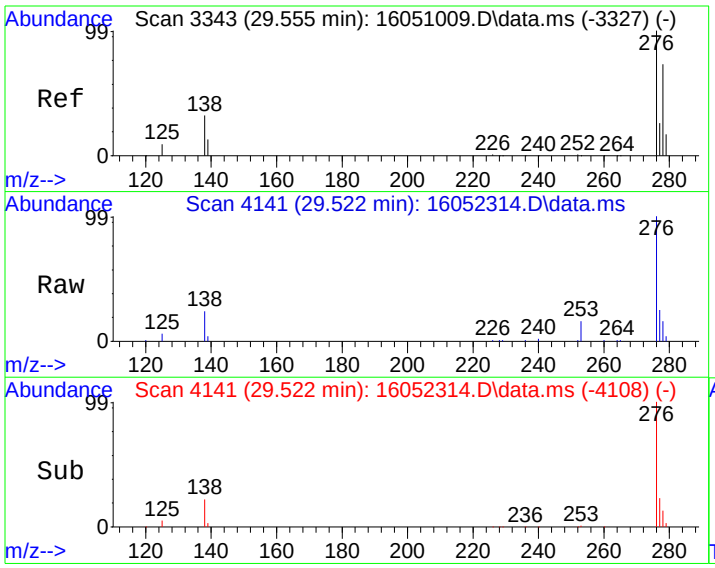


#25
Benzo[a]pyrene
Concen: 97.64 ug/kg
RT: 25.918 min Scan# 3649
Delta R.T. -0.007 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:252 Resp: 55143

Ion	Ratio	Lower	Upper
252	100		
253	22.2	2.3	42.3
125	13.8	0.0	33.5

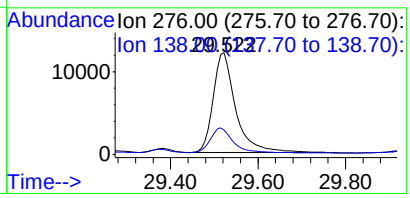


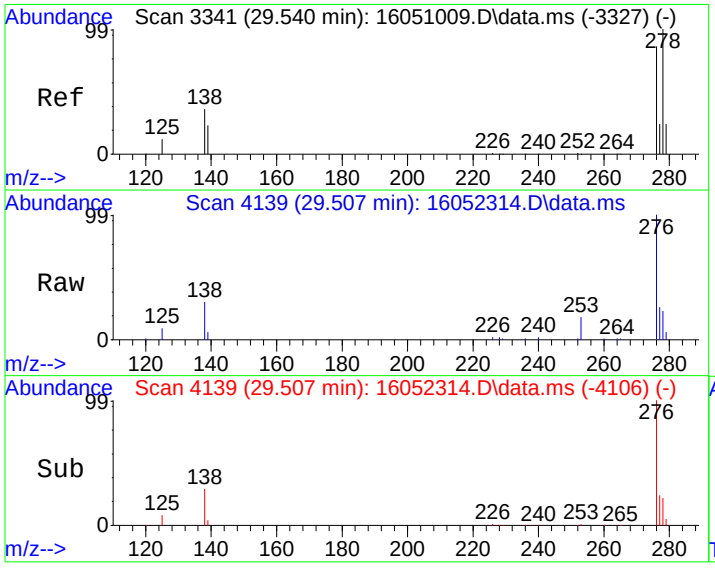


#26
Indeno[1,2,3-cd]pyrene
Concen: 60.34 ug/kg
RT: 29.522 min Scan# 4141
Delta R.T. -0.007 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:276 Resp: 43197

Ion	Ratio	Lower	Upper
276	100		
138	23.0	8.3	48.3

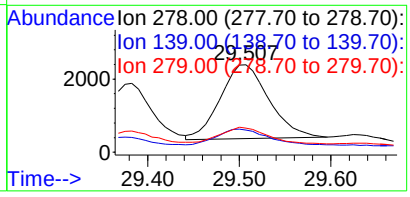


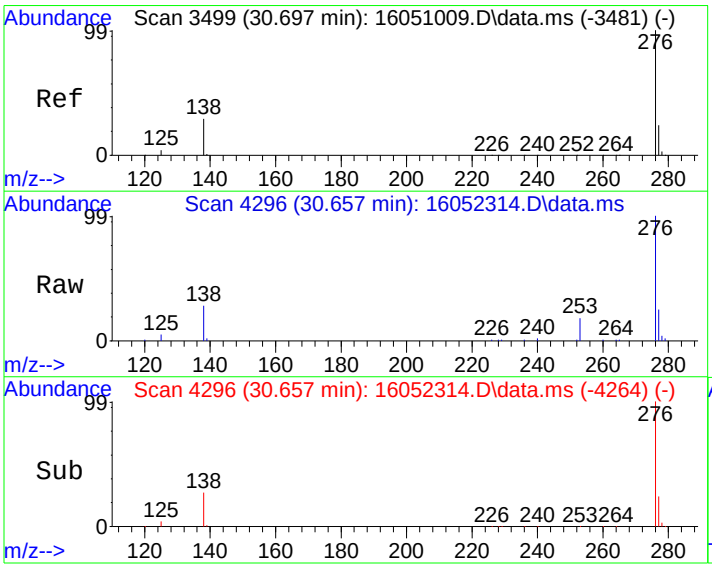


#27
Dibenz[a,h]anthracene
Concen: 8.63 ug/kg
RT: 29.507 min Scan# 4139
Delta R.T. -0.007 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:278 Resp: 7478

Ion	Ratio	Lower	Upper
278	100		
139	20.5	0.0	40.0
279	21.7	4.2	44.2

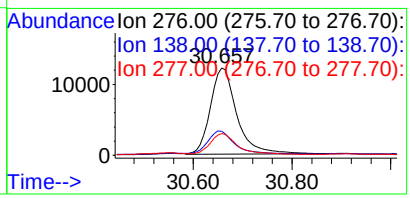




#28
Benzo[g,h,i]perylene
Concen: 73.67 ug/kg
RT: 30.657 min Scan# 4296
Delta R.T. -0.015 min
Lab File: 16052314.D
Acq: 23 May 2016 4:31 pm

Tgt Ion:276 Resp: 45157

Ion	Ratio	Lower	Upper
276	100		
138	26.3	5.8	45.8
277	24.1	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052315.D
Acq On : 23 May 2016 5:09 pm
Operator :
Sample : 1605098-23A
Misc : SAMP
ALS Vial : 15 Sample Multiplier: 10

Quant Time: May 24 09:05:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1583858	4000.00	ug/kg	97
6) Acenaphthene-d10	12.861	164	1278587	4000.00	ug/kg	102
11) Phenanthrene-d10	14.985	188	2258440	4000.00	ug/kg	77
16) Chrysene-d12	20.995	240	2235330	4000.00	ug/kg	82
20) Perylene-d12	26.262	264	2131542	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	31075	88.12	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.20%#			
17) 4-Terphenyl-d14	17.597	244	36400	76.93	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.92%#			

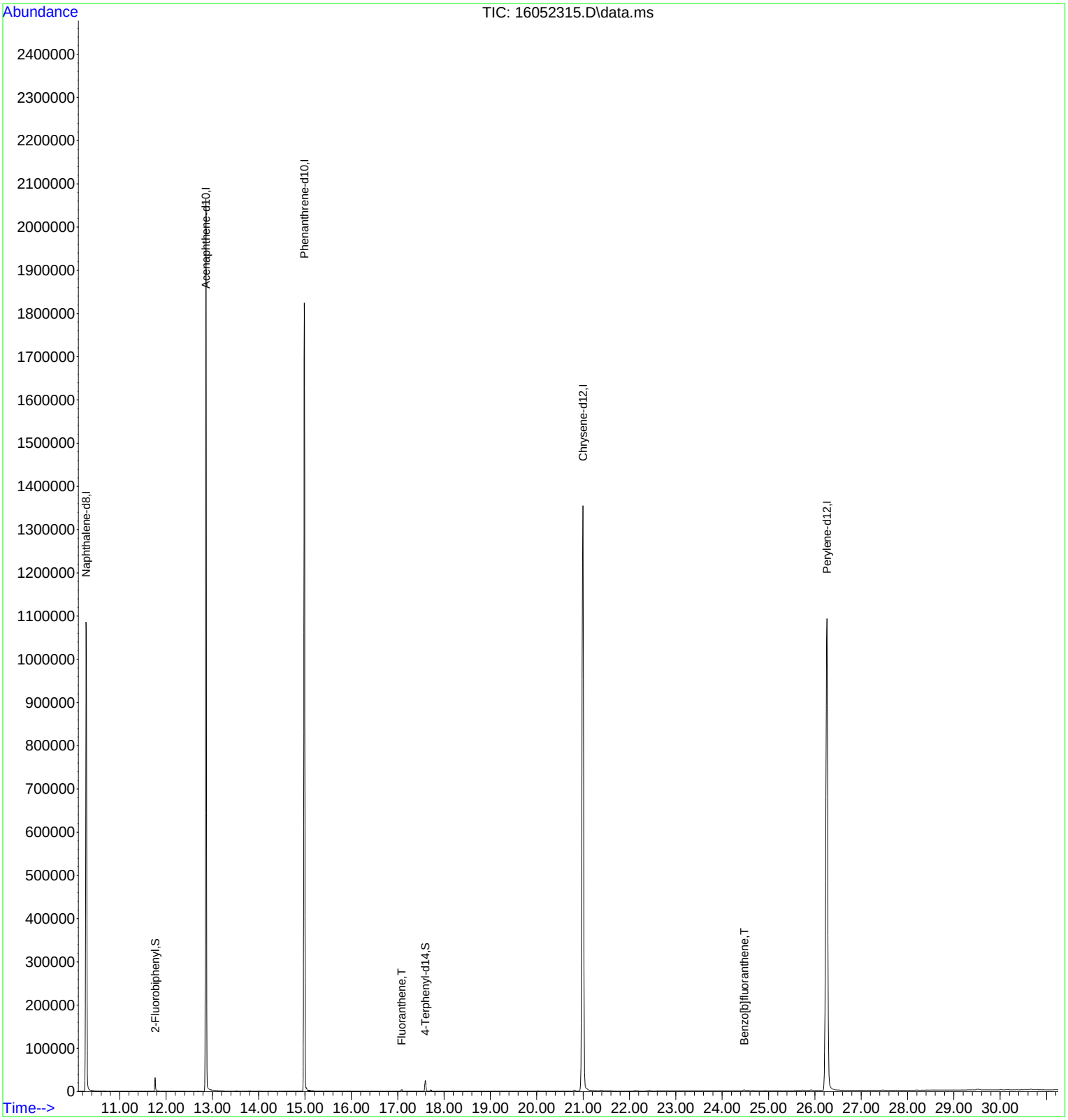
Target Compounds						Qvalue
14) Fluoranthene	17.081	202	4447	5.05	ug/kg	100
21) Benzo[b]fluoranthene	24.474	252	4018	5.37	ug/kg	99

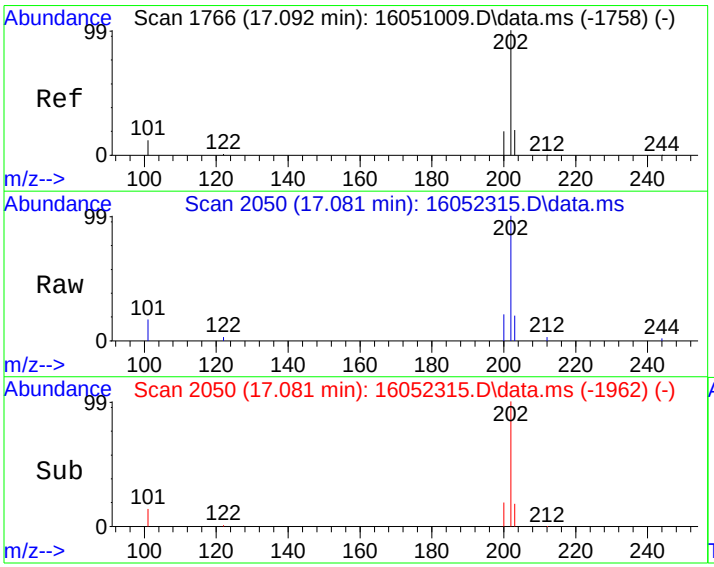
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052315.D
Acq On : 23 May 2016 5:09 pm
Operator :
Sample : 1605098-23A
Misc : SAMP
ALS Vial : 15 Sample Multiplier: 10

Quant Time: May 24 09:05:19 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

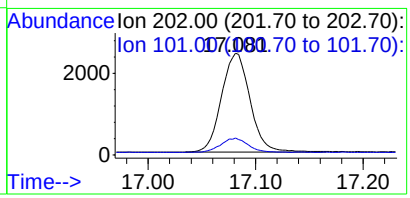


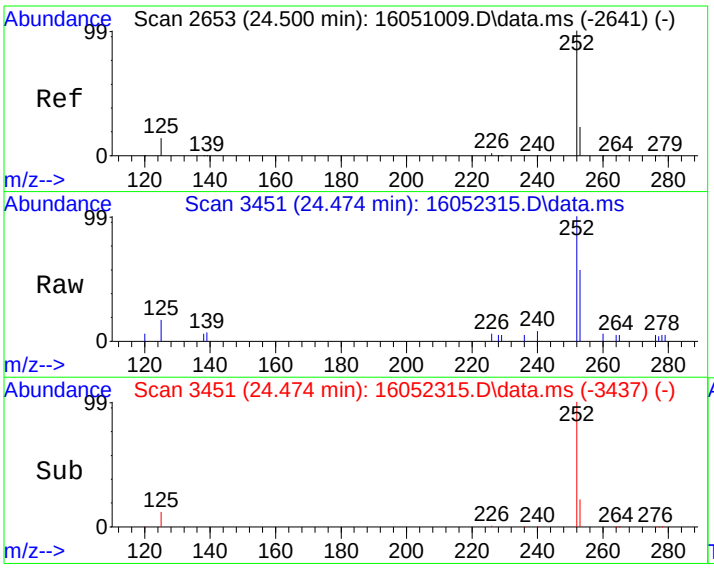


#14
Fluoranthene
Concen: 5.05 ug/kg
RT: 17.081 min Scan# 2050
Delta R.T. 0.005 min
Lab File: 16052315.D
Acq: 23 May 2016 5:09 pm

Tgt Ion:202 Resp: 4447

Ion	Ratio	Lower	Upper
202	100		
101	14.5	0.0	34.4

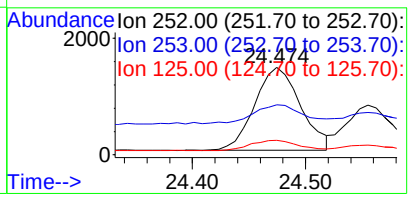




#21
Benzo[b]fluoranthene
Concen: 5.37 ug/kg
RT: 24.474 min Scan# 3451
Delta R.T. -0.001 min
Lab File: 16052315.D
Acq: 23 May 2016 5:09 pm

Tgt Ion:252 Resp: 4018

Ion	Ratio	Lower	Upper
252	100		
253	23.2	2.3	42.3
125	12.2	0.0	32.2



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052316.D
Acq On : 23 May 2016 5:46 pm
Operator :
Sample : 1605098-24A
Misc : SAMP
ALS Vial : 16 Sample Multiplier: 10

Quant Time: May 24 09:05:23 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.278	136	1639552	4000.00	ug/kg	101
6) Acenaphthene-d10	12.861	164	1322780	4000.00	ug/kg	105
11) Phenanthrene-d10	14.985	188	2358924	4000.00	ug/kg	81
16) Chrysene-d12	20.994	240	2344609	4000.00	ug/kg	86
20) Perylene-d12	26.261	264	2231270	4000.00	ug/kg	90

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.767	172	31506	86.31	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.16%#			
17) 4-Terphenyl-d14	17.595	244	37442	75.45	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.89%#			

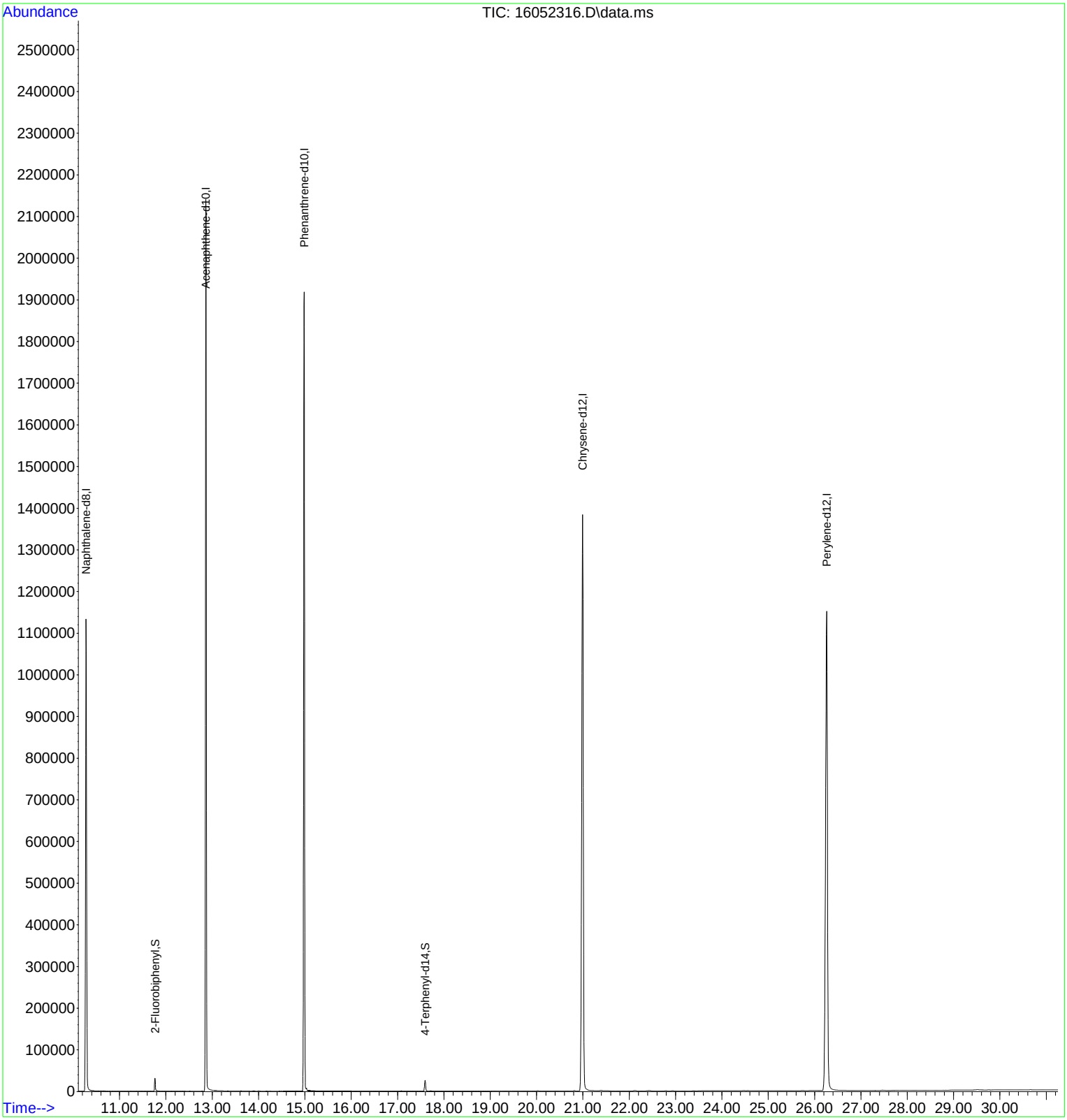
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052316.D
Acq On : 23 May 2016 5:46 pm
Operator :
Sample : 1605098-24A
Misc : SAMP
ALS Vial : 16 Sample Multiplier: 10

Quant Time: May 24 09:05:23 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052317.D
Acq On : 23 May 2016 6:25 pm
Operator :
Sample : 1605098-22AMS
Misc : MS
ALS Vial : 17 Sample Multiplier: 10

Quant Time: May 24 09:03:09 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.277	136	1624699	4000.00	ug/kg	100
6) Acenaphthene-d10	12.861	164	1290894	4000.00	ug/kg	103
11) Phenanthrene-d10	14.985	188	2315787	4000.00	ug/kg	79
16) Chrysene-d12	20.996	240	2317854	4000.00	ug/kg	86
20) Perylene-d12	26.263	264	2214309	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.766	172	29939	82.76	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.07%#		
17) 4-Terphenyl-d14	17.596	244	36220	73.83	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.85%#		

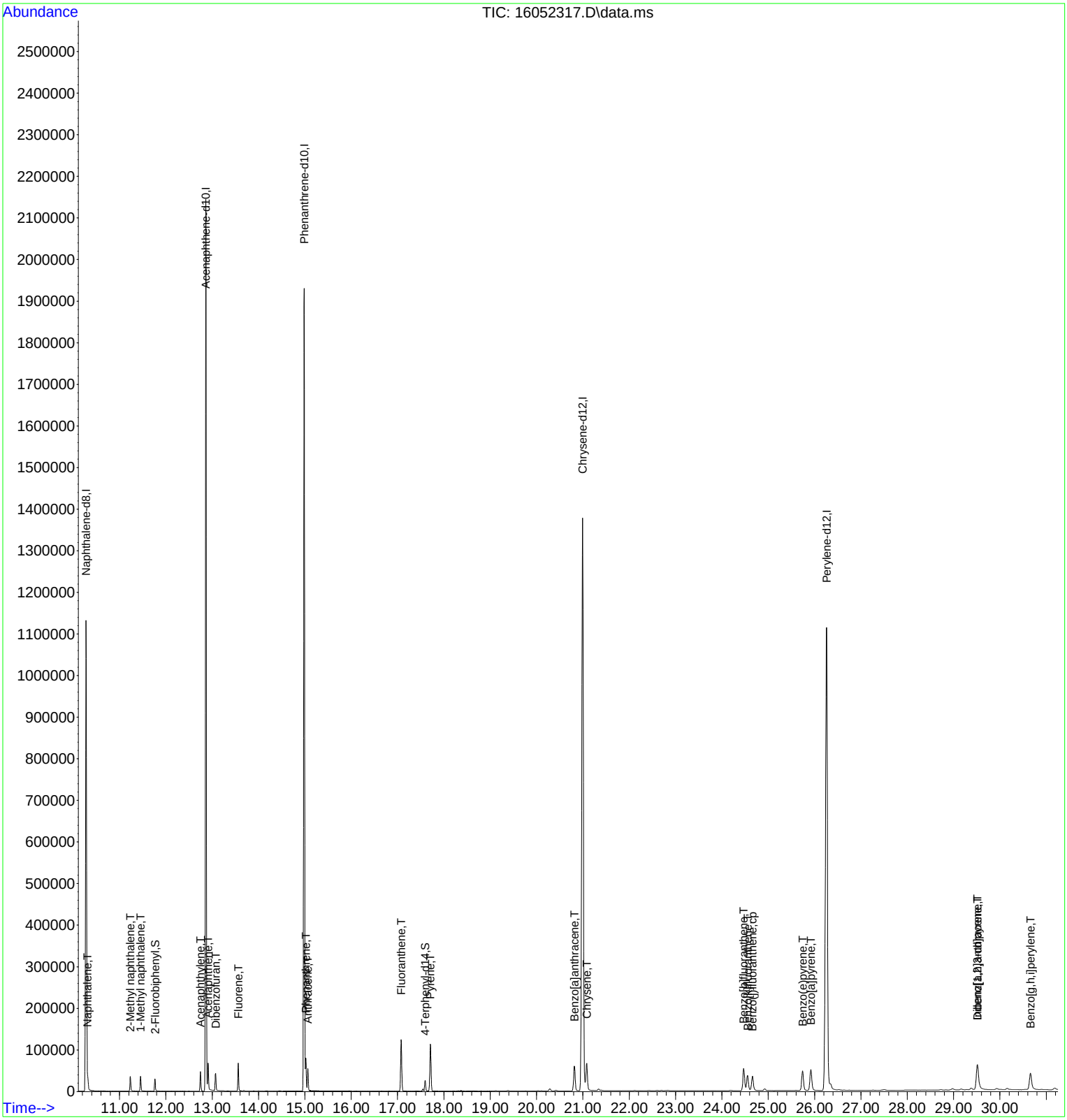
Target Compounds						Qvalue
2) Naphthalene	10.314	128	28147	77.33	ug/kg	100
3) 2-Methyl naphthalene	11.232	142	23809	84.15	ug/kg	98
4) 1-Methyl naphthalene	11.454	142	22141	82.69	ug/kg	99
7) Acenaphthylene	12.748	152	44754	79.32	ug/kg	98
8) Acenaphthene	12.910	153	29568	83.04	ug/kg	97
9) Dibenzofuran	13.073	168	41813	77.09	ug/kg	99
10) Fluorene	13.564	166	36092	73.34	ug/kg	99
12) Phenanthrene	15.021	178	70123	110.05	ug/kg	97
13) Anthracene	15.065	178	52642	81.65	ug/kg	98
14) Fluoranthene	17.077	202	139634	216.56	ug/kg	99
15) Pyrene	17.710	202	131344	208.74	ug/kg	97
18) Benzo[a]anthracene	20.813	228	96887	159.80	ug/kg	99
19) Chrysene	21.084	228	100688	179.47	ug/kg	99
21) Benzo[b]fluoranthene	24.468	252	103434	174.16	ug/kg	99
22) Benzo[k]fluoranthene	24.556	252	65613	122.75	ug/kg	97
23) Benzo(j)fluoranthene	24.658	252	65095	124.58	ug/kg	96
24) Benzo(e)pyrene	25.742	252	92318	163.40	ug/kg	98
25) Benzo[a]pyrene	25.918	252	104324	188.98	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.522	276	96968	140.84	ug/kg	94
27) Dibenz[a,h]anthracene	29.508	278	51441	87.01	ug/kg	99
28) Benzo[g,h,i]perylene	30.658	276	91201	153.85	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052317.D
Acq On : 23 May 2016 6:25 pm
Operator :
Sample : 1605098-22AMS
Misc : MS
ALS Vial : 17 Sample Multiplier: 10

Quant Time: May 24 09:03:09 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052318.D
Acq On : 23 May 2016 7:02 pm
Operator :
Sample : 1605098-22AMSD
Misc : MSD
ALS Vial : 18 Sample Multiplier: 10

Quant Time: May 24 09:03:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1615641	4000.00	ug/kg	99
6) Acenaphthene-d10	12.861	164	1292242	4000.00	ug/kg	103
11) Phenanthrene-d10	14.985	188	2335415	4000.00	ug/kg	80
16) Chrysene-d12	20.994	240	2309551	4000.00	ug/kg	85
20) Perylene-d12	26.261	264	2213923	4000.00	ug/kg	89

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.765	172	29049	80.75	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.02%#			
17) 4-Terphenyl-d14	17.596	244	34695	70.97	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.77%#			

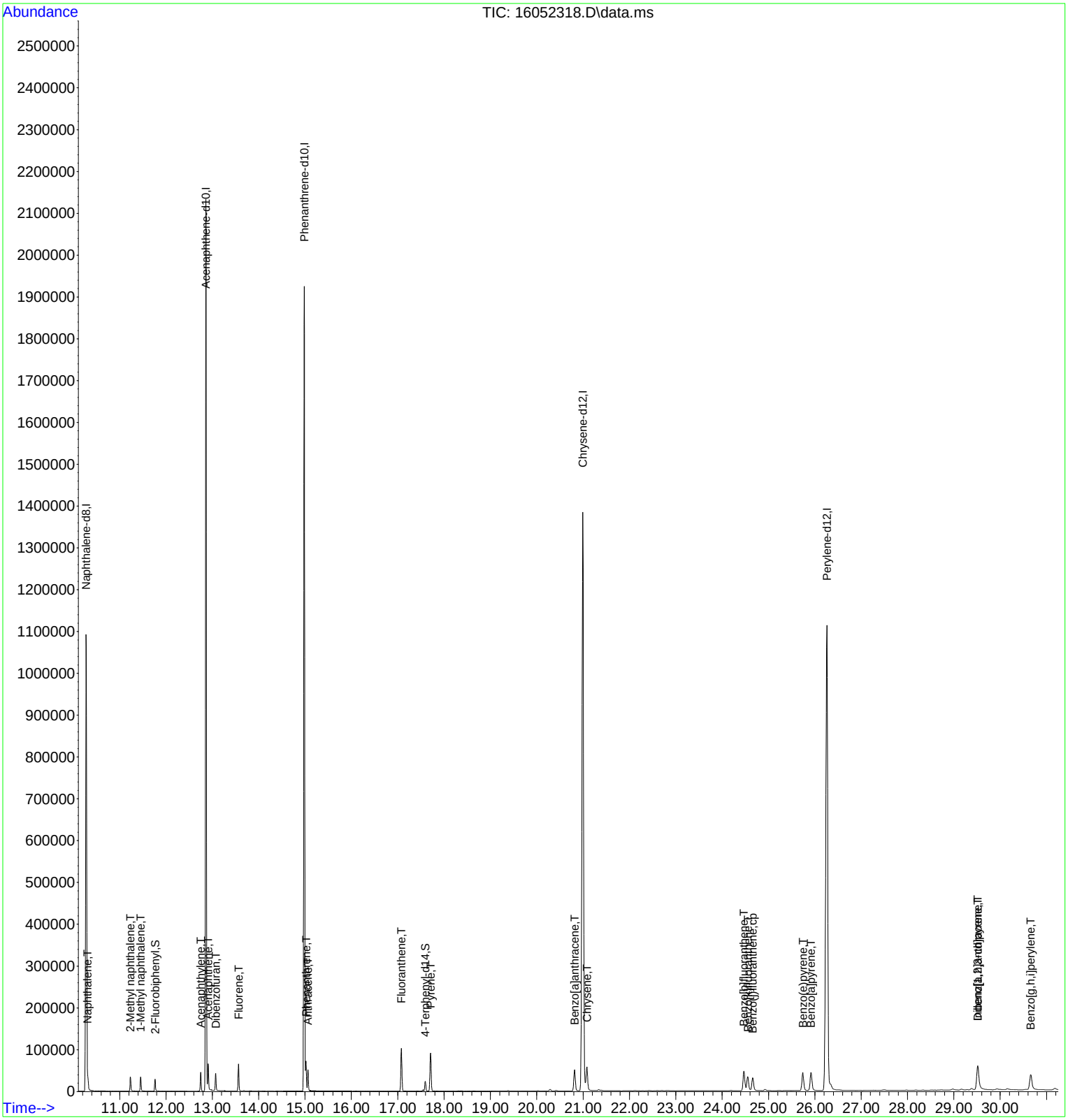
Target Compounds						Qvalue
2) Naphthalene	10.313	128	27032	74.68	ug/kg	99
3) 2-Methyl naphthalene	11.230	142	23164	82.33	ug/kg	97
4) 1-Methyl naphthalene	11.452	142	21407	80.40	ug/kg	99
7) Acenaphthylene	12.748	152	44118	78.11	ug/kg	98
8) Acenaphthene	12.910	153	28608	80.26	ug/kg	97
9) Dibenzofuran	13.072	168	41395	76.24	ug/kg	98
10) Fluorene	13.563	166	35340	71.74	ug/kg	99
12) Phenanthrene	15.020	178	62586	97.40	ug/kg	97
13) Anthracene	15.065	178	50383	77.49	ug/kg	97
14) Fluoranthene	17.080	202	115197	176.60	ug/kg	97
15) Pyrene	17.709	202	109559	172.12	ug/kg	97
18) Benzo[a]anthracene	20.819	228	81668	134.83	ug/kg	99
19) Chrysene	21.082	228	87620	156.31	ug/kg	99
21) Benzo[b]fluoranthene	24.466	252	93013	156.42	ug/kg	99
22) Benzo[k]fluoranthene	24.554	252	59947	112.06	ug/kg	98
23) Benzo(j)fluoranthene	24.657	252	59156	112.91	ug/kg	96
24) Benzo(e)pyrene	25.741	252	83585	147.69	ug/kg	99
25) Benzo[a]pyrene	25.917	252	90679	163.95	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.521	276	90945	131.91	ug/kg	94
27) Dibenz[a,h]anthracene	29.506	278	48851	82.41	ug/kg	99
28) Benzo[g,h,i]perylene	30.656	276	84758	142.76	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052318.D
Acq On : 23 May 2016 7:02 pm
Operator :
Sample : 1605098-22AMSD
Misc : MSD
ALS Vial : 18 Sample Multiplier: 10

Quant Time: May 24 09:03:12 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052320.D
Acq On : 23 May 2016 8:17 pm
Operator :
Sample : ICV-160523
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 24 09:03:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

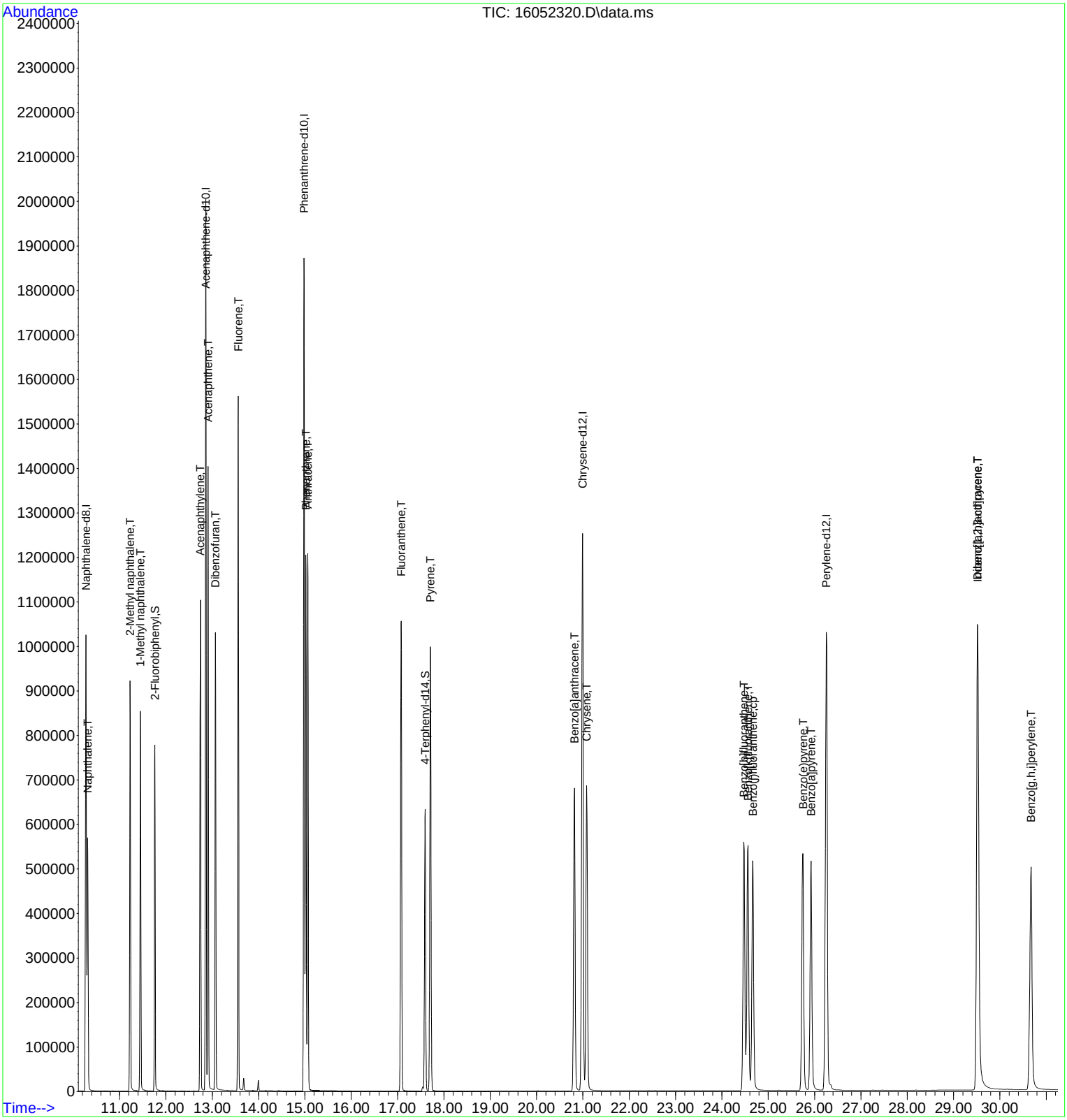
Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.274	136	1453343	4000.00	ug/kg	89
6) Acenaphthene-d10	12.862	164	1201666	4000.00	ug/kg	96
11) Phenanthrene-d10	14.983	188	2289878	4000.00	ug/kg	78
16) Chrysene-d12	20.995	240	2122147	4000.00	ug/kg	78
20) Perylene-d12	26.254	264	2031758	4000.00	ug/kg	82
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.763	172	702008	2169.44	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	54.24%		
17) 4-Terphenyl-d14	17.595	244	880038	1959.23	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	48.98%#		
Target Compounds						Qvalue
2) Naphthalene	10.311	128	662891	2035.98	ug/kg	100
3) 2-Methyl naphthalene	11.228	142	562194	2221.17	ug/kg	99
4) 1-Methyl naphthalene	11.450	142	512511	2139.82	ug/kg	99
7) Acenaphthylene	12.744	152	1077922	2052.20	ug/kg	100
8) Acenaphthene	12.911	153	671250	2025.27	ug/kg	99
9) Dibenzofuran	13.068	168	987720	1956.30	ug/kg	90
10) Fluorene	13.564	166	864527	1887.15	ug/kg	99
12) Phenanthrene	15.020	178	1173601	1862.66	ug/kg	100
13) Anthracene	15.065	178	1180224	1851.19	ug/kg	99
14) Fluoranthene	17.079	202	1206342	2004.19	ug/kg	99
15) Pyrene	17.709	202	1177818	1990.92	ug/kg	99
18) Benzo[a]anthracene	20.819	228	1103271	2101.77	ug/kg	100
19) Chrysene	21.083	228	1019692	2100.93	ug/kg	100
21) Benzo[b]fluoranthene	24.474	252	1101980	2117.62	ug/kg	99
22) Benzo[k]fluoranthene	24.562	252	977616	2070.89	ug/kg	99
23) Benzo(j)fluoranthene	24.665	252	933710	2073.87	ug/kg	100
24) Benzo(e)pyrene	25.749	252	1036801	2111.21	ug/kg	100
25) Benzo[a]pyrene	25.924	252	1017769	2088.15	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.528	276	1264942	2123.41	ug/kg	98
27) Dibenz[a,h]anthracene	29.514	278	1054574	2130.80	ug/kg	99
28) Benzo[g,h,i]perylene	30.671	276	1081573	2102.92	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052320.D
Acq On : 23 May 2016 8:17 pm
Operator :
Sample : ICV-160523
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

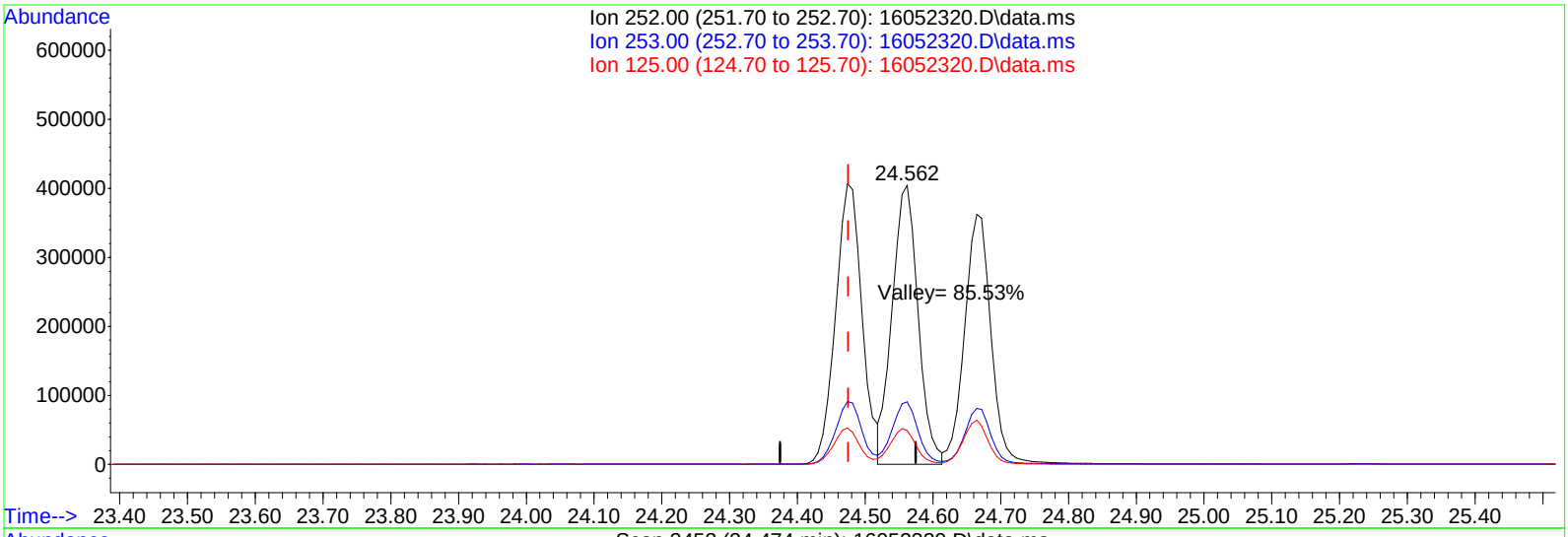
Quant Time: May 24 09:03:15 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

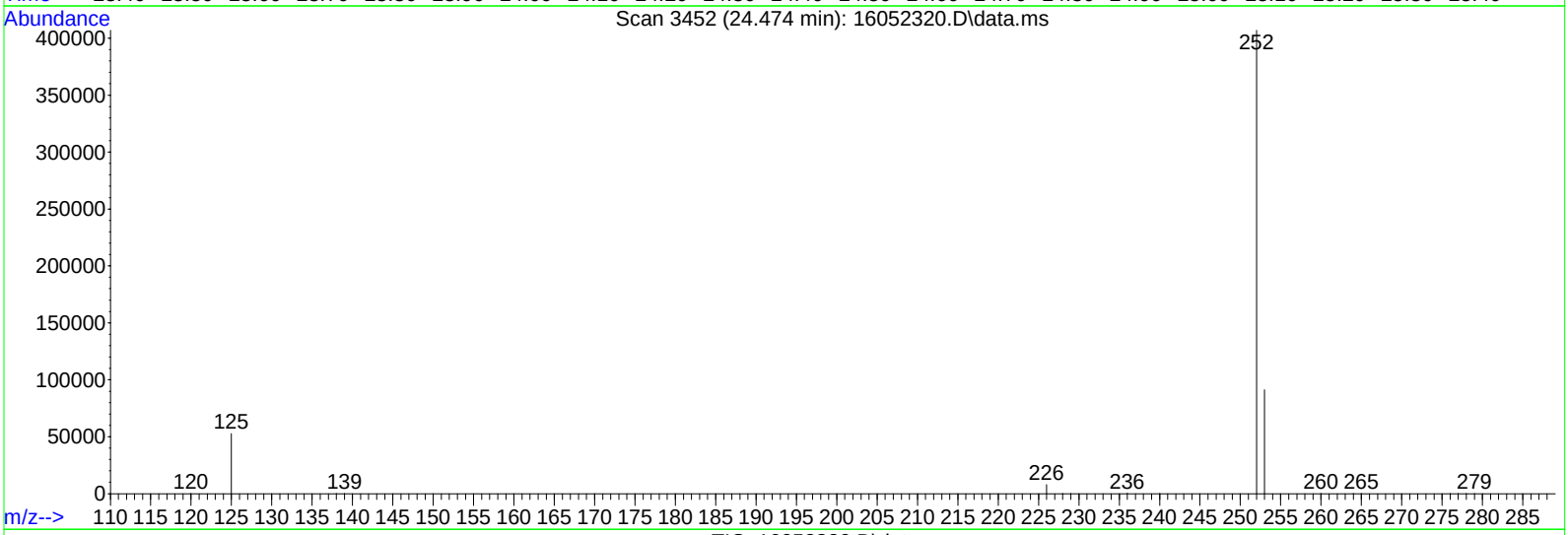


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052320.D
Acq On : 23 May 2016 8:17 pm
Operator :
Sample : ICV-160523
Misc : ICV
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 23 20:48:38 2016
Quant Method : C:\MSDCHEM\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration





TIC: 16052320.D\data.ms

(21) Benzo[b]fluoranthene (T)

24.474min (-0.001) 2117.62ug/kg

response 1101980

Ion	Exp%	Act%
252.00	100	100
253.00	22.30	22.31
125.00	12.20	12.93
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052322.D
Acq On : 23 May 2016 9:31 pm
Operator :
Sample : SB-160523
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 24 09:03:17 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.276	136	1641854	4000.00	ug/kg	101
6) Acenaphthene-d10	12.861	164	1346495	4000.00	ug/kg	107
11) Phenanthrene-d10	14.981	188	2355433	4000.00	ug/kg	80
16) Chrysene-d12	20.988	240	2221180	4000.00	ug/kg	82
20) Perylene-d12	26.255	264	2123128	4000.00	ug/kg	86

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.629	172	4	0.01	ug/kg	-0.13
Spiked Amount 4000.000	Range 40 - 140		Recovery = 0.00%#			
17) 4-Terphenyl-d14	17.596	244	271	0.58	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 0.01%#			

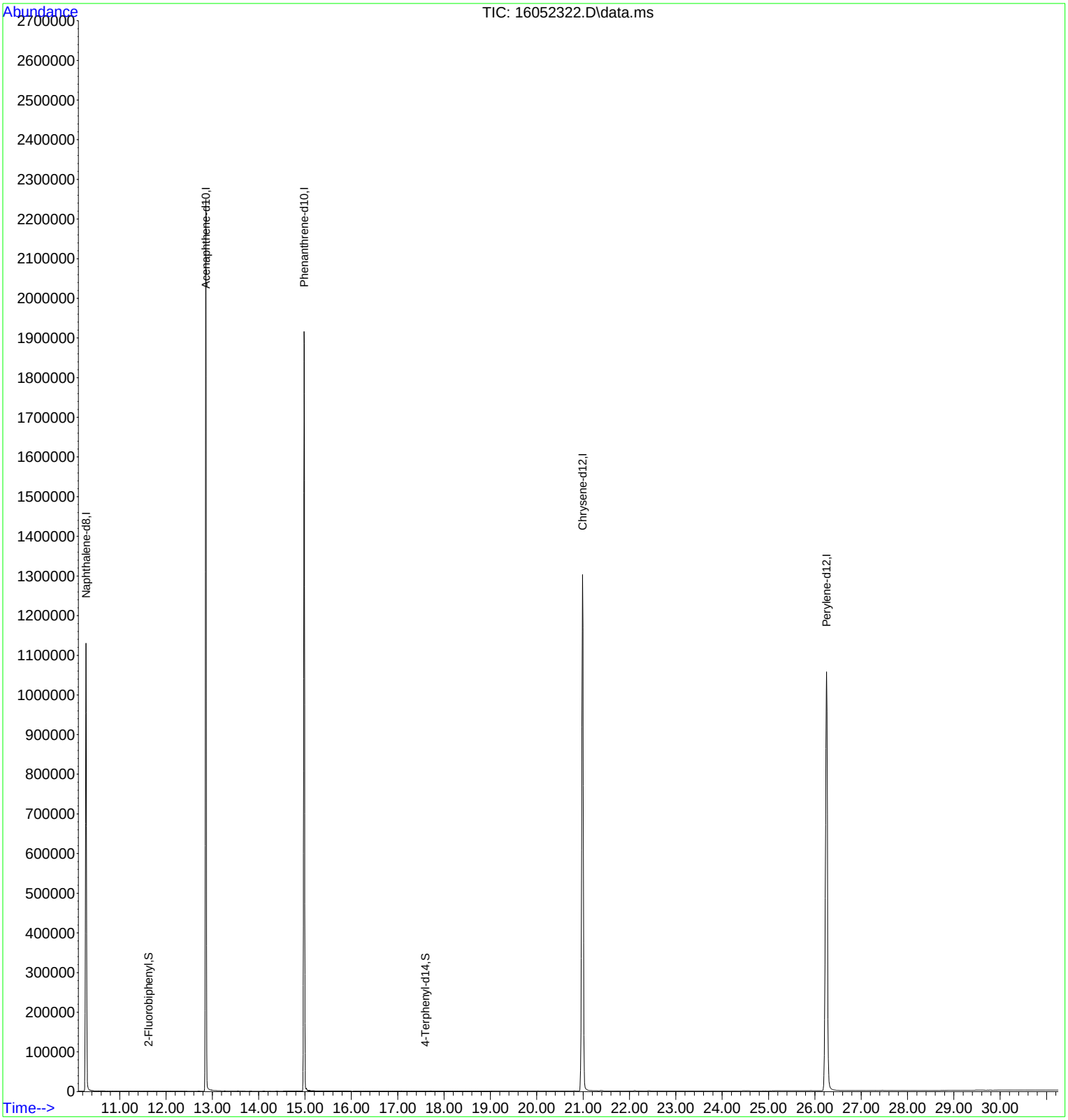
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052322.D
Acq On : 23 May 2016 9:31 pm
Operator :
Sample : SB-160523
Misc : SBLK
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 24 09:03:17 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052323.D
Acq On : 23 May 2016 10:09 pm
Operator :
Sample : 1605098-25A
Misc : SAMP
ALS Vial : 23 Sample Multiplier: 10

Quant Time: May 24 09:05:26 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1589190	4000.00	ug/kg	97
6) Acenaphthene-d10	12.861	164	1273806	4000.00	ug/kg	102
11) Phenanthrene-d10	14.981	188	2239625	4000.00	ug/kg	77
16) Chrysene-d12	20.987	240	2208740	4000.00	ug/kg	81
20) Perylene-d12	26.254	264	2116744	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	31112	87.93	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.20%#			
17) 4-Terphenyl-d14	17.590	244	35304	75.52	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.89%#			

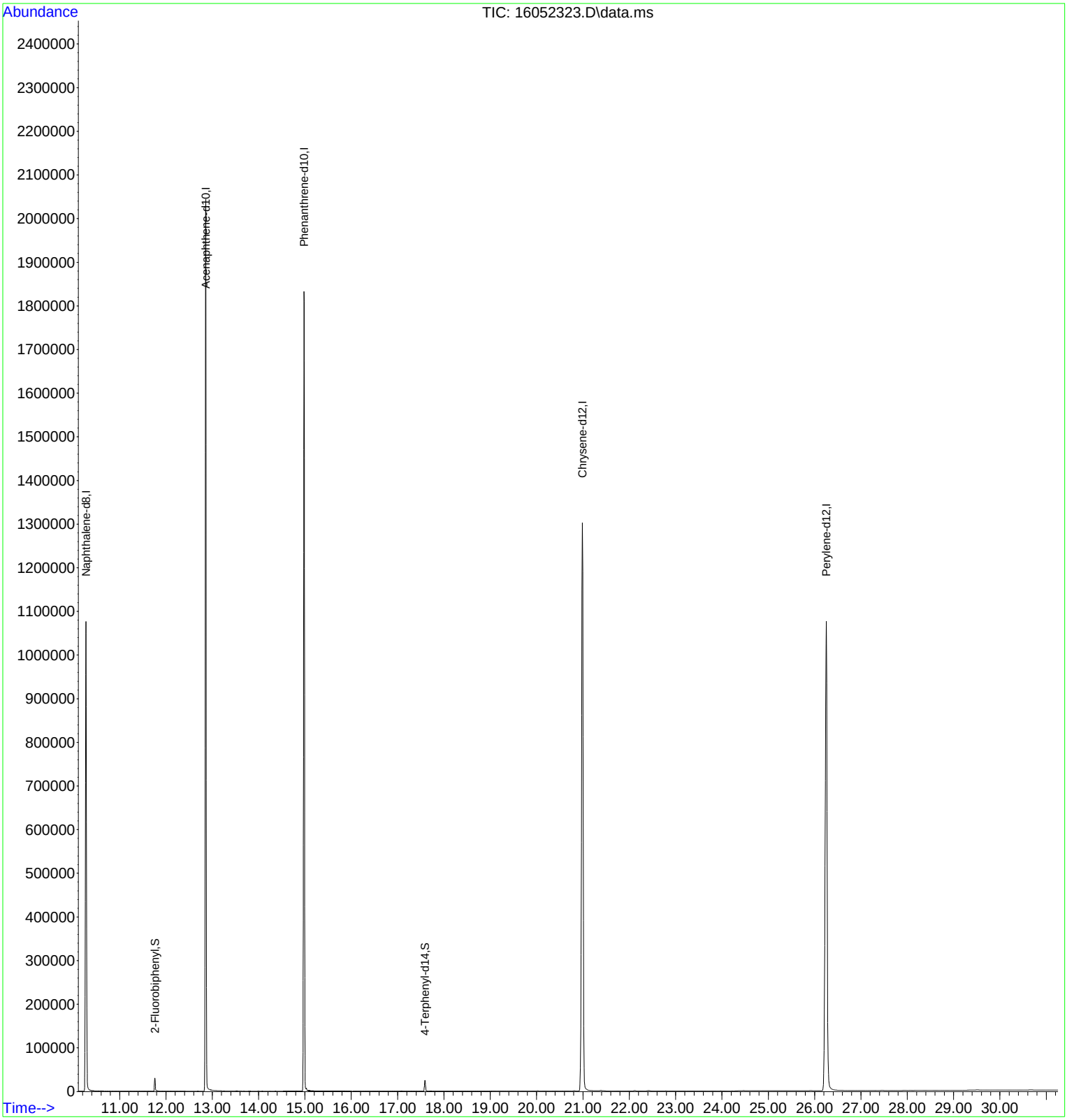
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052323.D
Acq On : 23 May 2016 10:09 pm
Operator :
Sample : 1605098-25A
Misc : SAMP
ALS Vial : 23 Sample Multiplier: 10

Quant Time: May 24 09:05:26 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052324.D
Acq On : 23 May 2016 10:47 pm
Operator :
Sample : 1605098-26A
Misc : SAMP
ALS Vial : 24 Sample Multiplier: 10

Quant Time: May 24 09:05:30 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.273	136	1613613	4000.00	ug/kg	99
6) Acenaphthene-d10	12.861	164	1295942	4000.00	ug/kg	103
11) Phenanthrene-d10	14.981	188	2322992	4000.00	ug/kg	79
16) Chrysene-d12	20.987	240	2313361	4000.00	ug/kg	85
20) Perylene-d12	26.254	264	2211464	4000.00	ug/kg	89

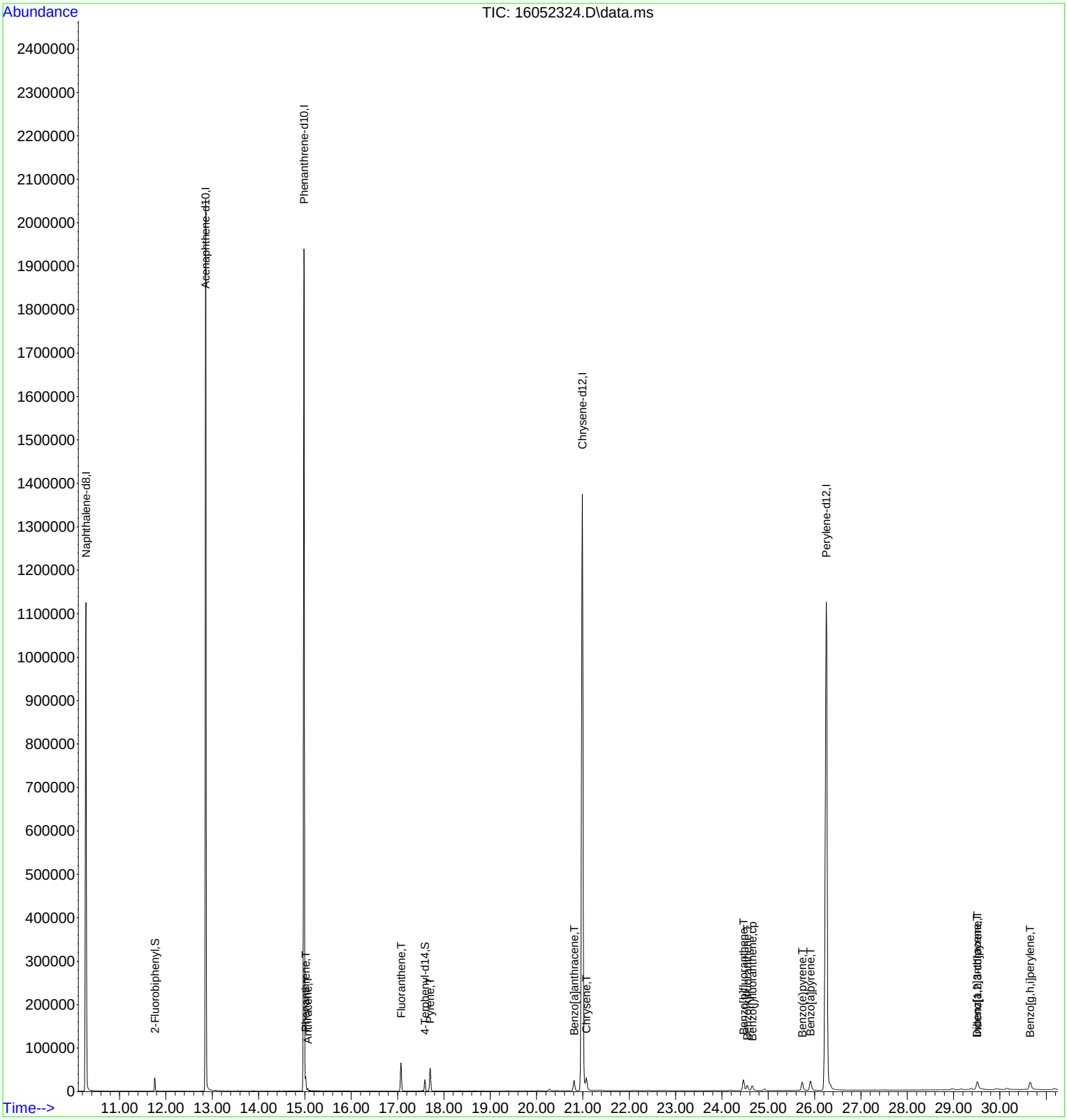
System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.762	172	30908	86.03	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.15%#			
17) 4-Terphenyl-d14	17.590	244	36877	75.31	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.88%#			

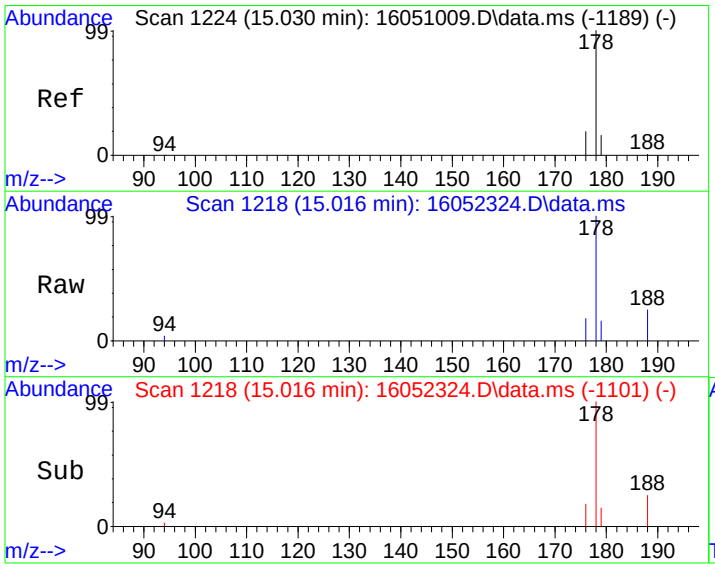
Target Compounds						Qvalue
12) Phenanthrene	15.016	178	26913	42.11	ug/kg	98
13) Anthracene	15.061	178	4975	7.69	ug/kg	98
14) Fluoranthene	17.074	202	72246	110.39	ug/kg	98
15) Pyrene	17.704	202	62963	98.32	ug/kg	97
18) Benzo[a]anthracene	20.811	228	39406	63.91	ug/kg	99
19) Chrysene	21.075	228	46708	81.77	ug/kg	99
21) Benzo[b]fluoranthene	24.467	252	49972	83.22	ug/kg	99
22) Benzo[k]fluoranthene	24.547	252	20973	38.48	ug/kg	97
23) Benzo(j)fluoranthene	24.657	252	21023	38.06	ug/kg	92
24) Benzo(e)pyrene	25.734	252	37798	65.39	ug/kg	96
25) Benzo[a]pyrene	25.910	252	47689	85.21	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.514	276	38106	53.58	ug/kg	94
27) Dibenz[a,h]anthracene	29.499	278	8164	10.02	ug/kg	95
28) Benzo[g,h,i]perylene	30.656	276	40548	66.69	ug/kg	98

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

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052324.D
Acq On : 23 May 2016 10:47 pm
Operator :
Sample : 1605098-26A
Misc : SAMP
ALS Vial : 24 Sample Multiplier: 10

Quant Time: May 24 09:05:30 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

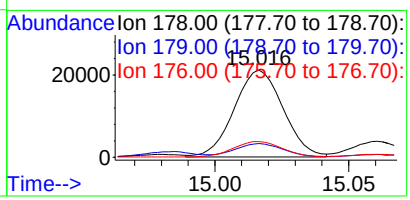


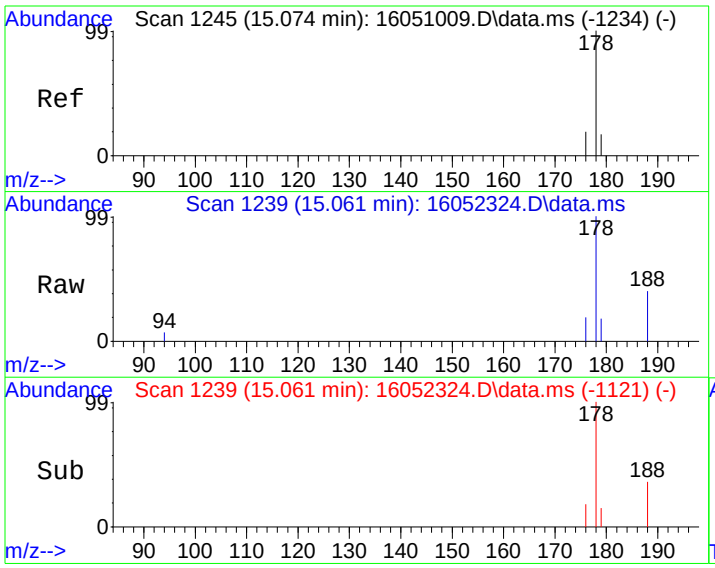


#12
Phenanthrene
Concen: 42.11 ug/kg
RT: 15.016 min Scan# 1218
Delta R.T. -0.003 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:178 Resp: 26913

Ion	Ratio	Lower	Upper
178	100		
179	15.1	0.0	36.4
176	18.2	0.0	39.0

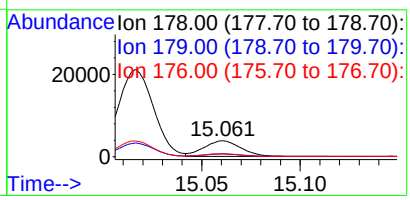


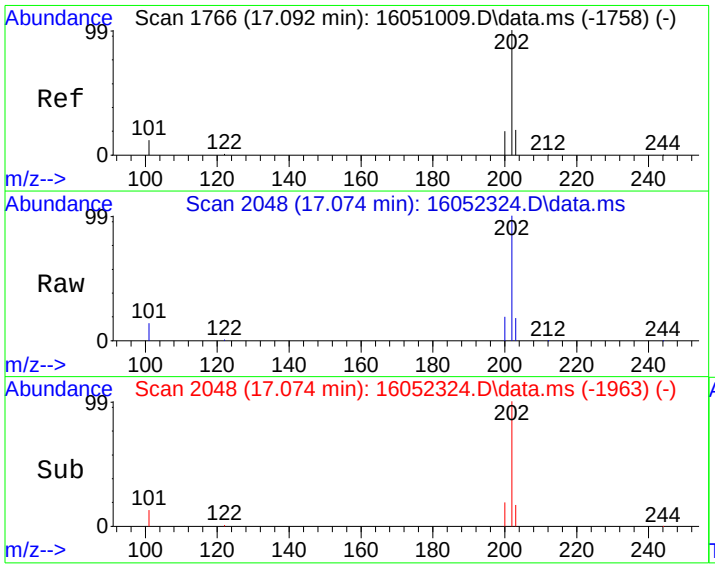


#13
Anthracene
Concen: 7.69 ug/kg
RT: 15.061 min Scan# 1239
Delta R.T. -0.001 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:178 Resp: 4975

Ion	Ratio	Lower	Upper
178	100		
179	15.6	0.0	36.3
176	17.6	0.0	38.5

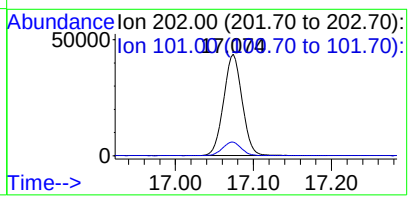


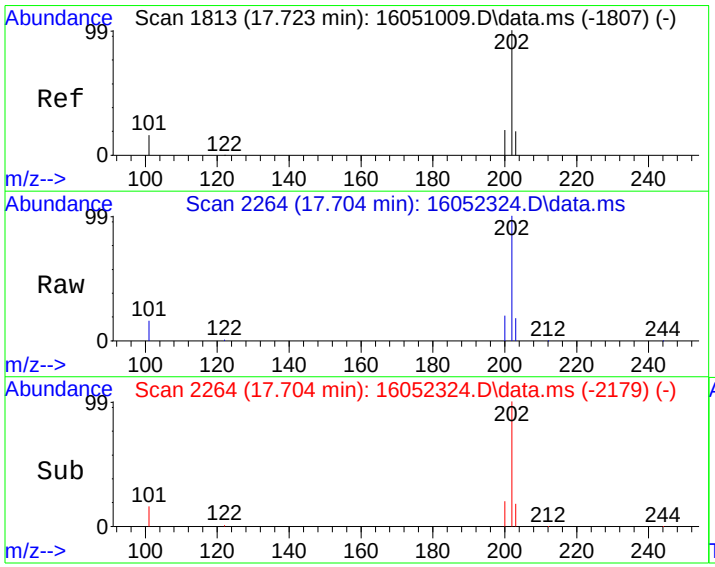


#14
Fluoranthene
Concen: 110.39 ug/kg
RT: 17.074 min Scan# 2048
Delta R.T. -0.002 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:202 Resp: 72246

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	34.4

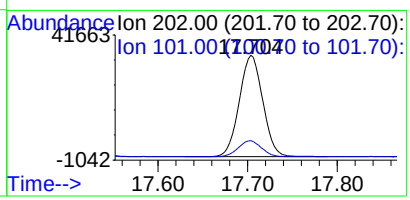


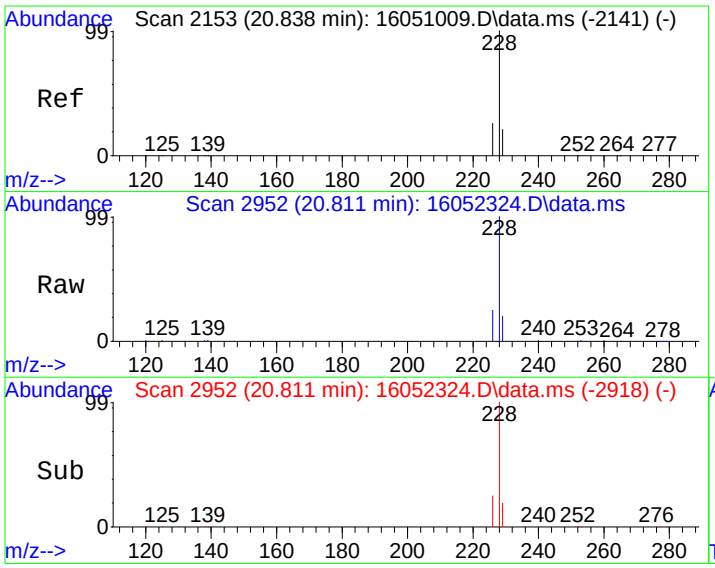


#15
Pyrene
Concen: 98.32 ug/kg
RT: 17.704 min Scan# 2264
Delta R.T. -0.002 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:202 Resp: 62963

Ion	Ratio	Lower	Upper
202	100		
101	15.8	0.0	37.3

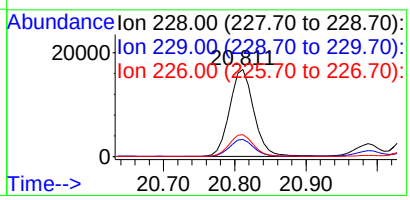


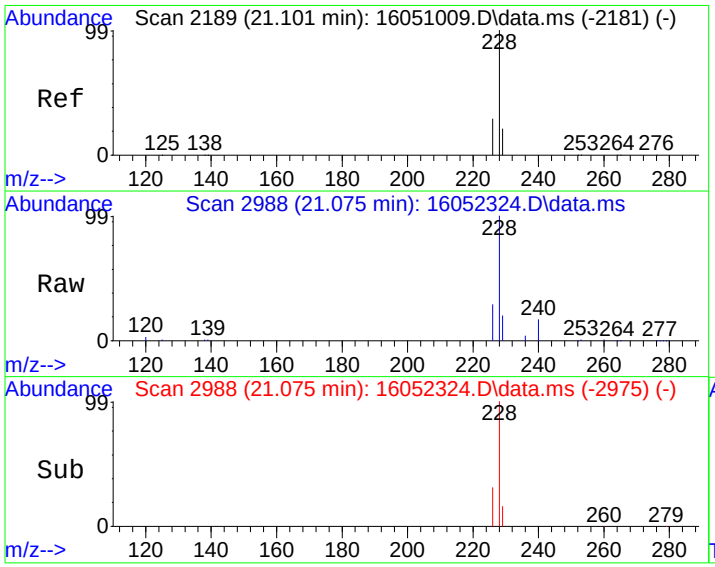


#18
Benzo[a]anthracene
Concen: 63.91 ug/kg
RT: 20.811 min Scan# 2952
Delta R.T. -0.001 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:228 Resp: 39406

Ion	Ratio	Lower	Upper
228	100		
229	19.5	0.3	40.3
226	25.1	5.7	45.7

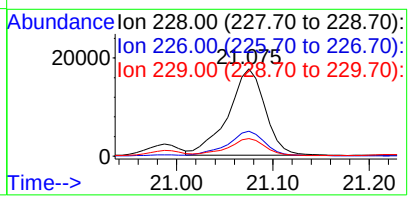


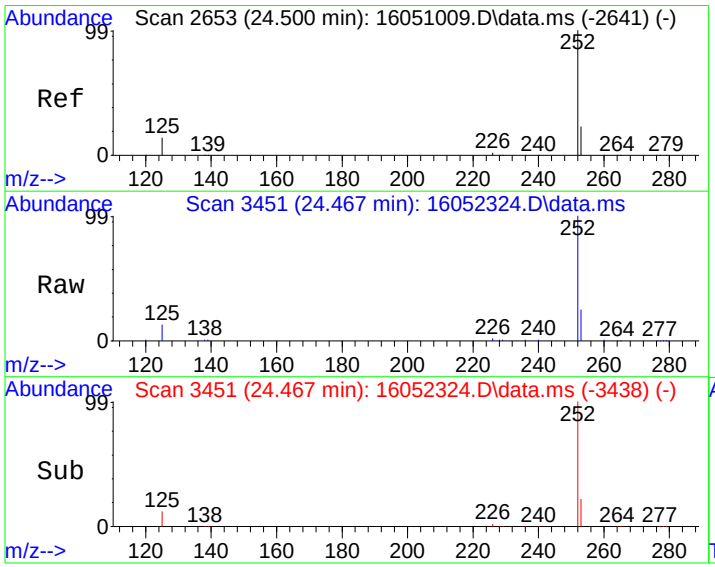


#19
Chrysene
Concen: 81.77 ug/kg
RT: 21.075 min Scan# 2988
Delta R.T. -0.008 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:228 Resp: 46708

Ion	Ratio	Lower	Upper
228	100		
226	28.3	8.2	48.2
229	19.7	0.3	40.3

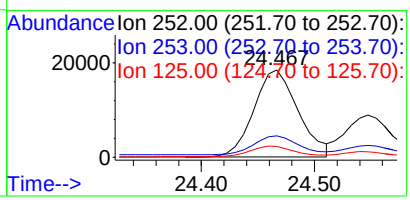


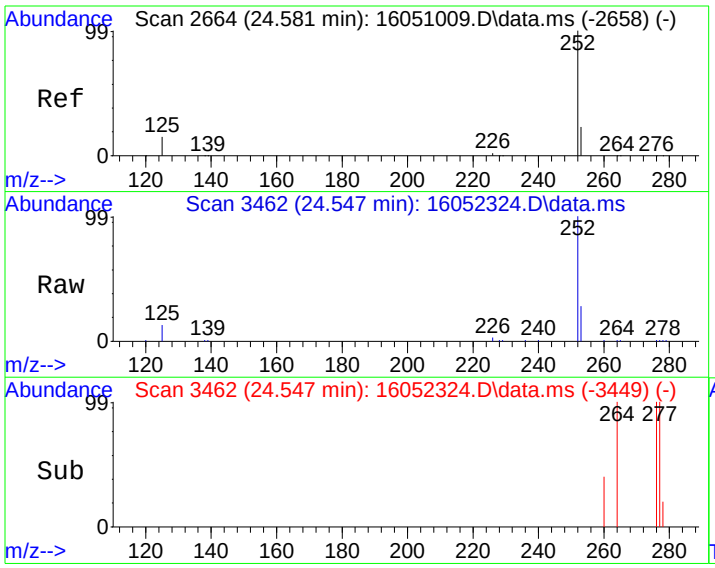


#21
Benzo[b]fluoranthene
Concen: 83.22 ug/kg
RT: 24.467 min Scan# 3451
Delta R.T. -0.008 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:252 Resp: 49972

Ion	Ratio	Lower	Upper
252	100		
253	21.8	2.3	42.3
125	11.7	0.0	32.2

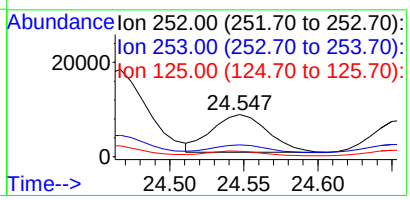


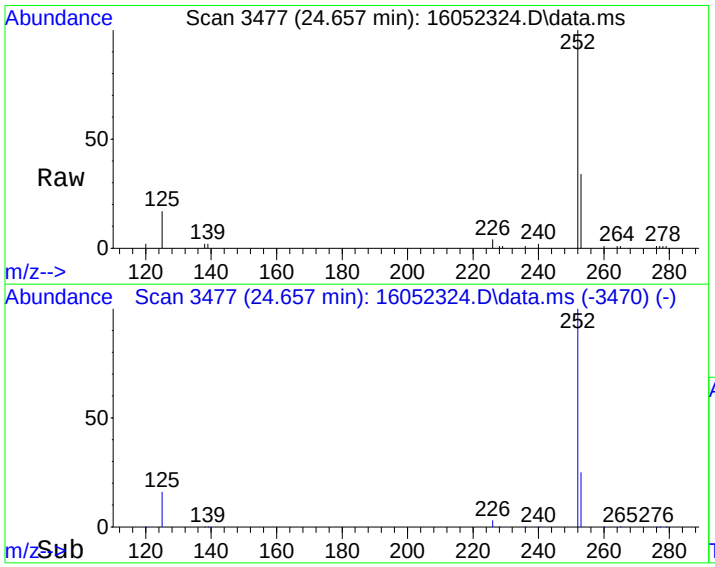


#22
Benzo[k]fluoranthene
Concen: 38.48 ug/kg
RT: 24.547 min Scan# 3462
Delta R.T. -0.008 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:252 Resp: 20973

Ion	Ratio	Lower	Upper
252	100		
253	20.5	2.5	42.5
125	12.0	0.0	32.6

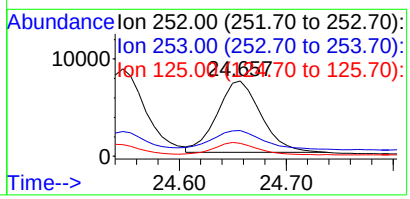


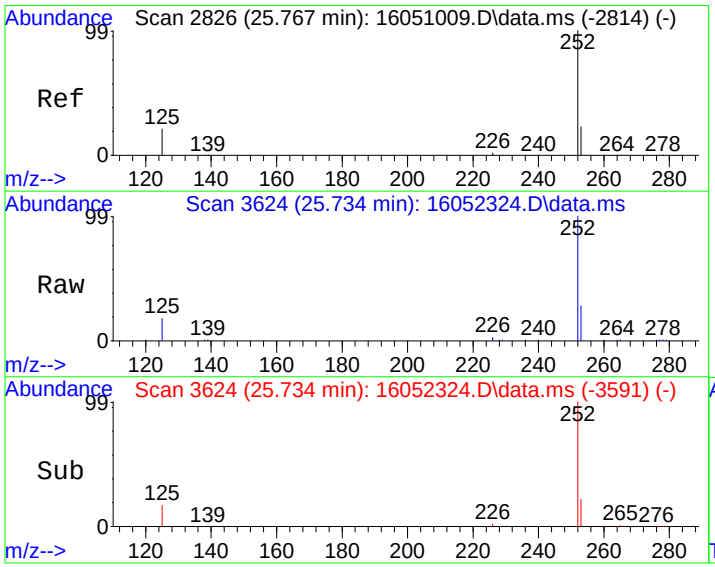


#23
Benzo(j)fluoranthene
Concen: 38.06 ug/kg
RT: 24.657 min Scan# 3477
Delta R.T. -0.008 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:252 Resp: 21023

Ion	Ratio	Lower	Upper
252	100		
253	28.7	2.2	42.2
125	16.6	0.0	37.3

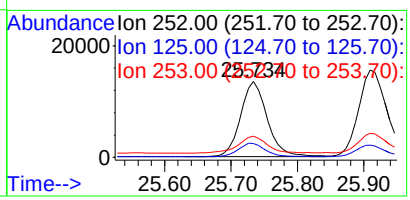


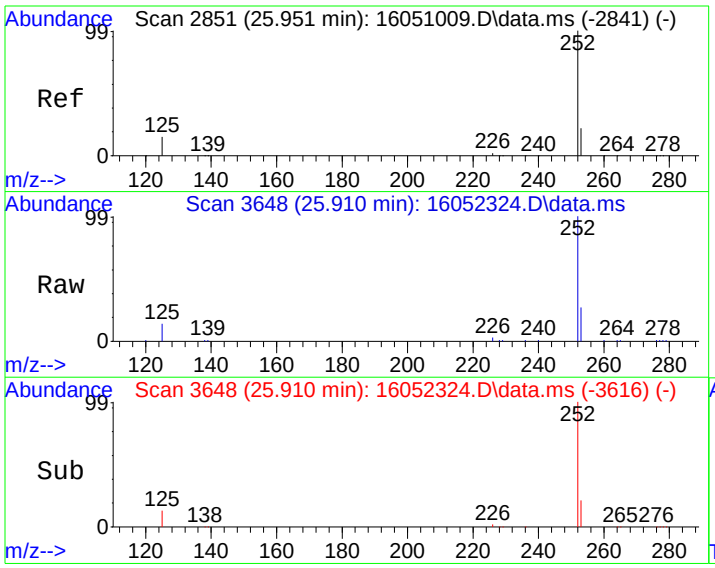


#24
Benzo(e)pyrene
Concen: 65.39 ug/kg
RT: 25.734 min Scan# 3624
Delta R.T. -0.008 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:252 Resp: 37798

Ion	Ratio	Lower	Upper
252	100		
125	17.9	0.0	38.7
253	24.9	2.3	42.3

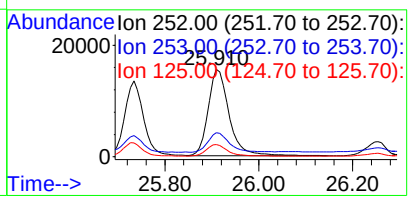


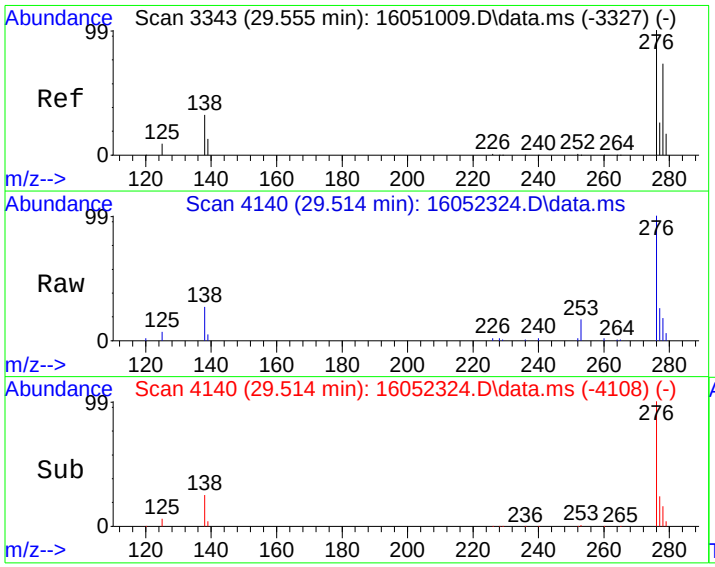


#25
Benzo[a]pyrene
Concen: 85.21 ug/kg
RT: 25.910 min Scan# 3648
Delta R.T. -0.015 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:252 Resp: 47689

Ion	Ratio	Lower	Upper
252	100		
253	22.2	2.3	42.3
125	13.4	0.0	33.5

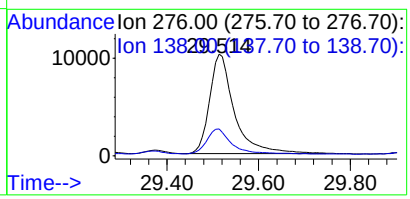


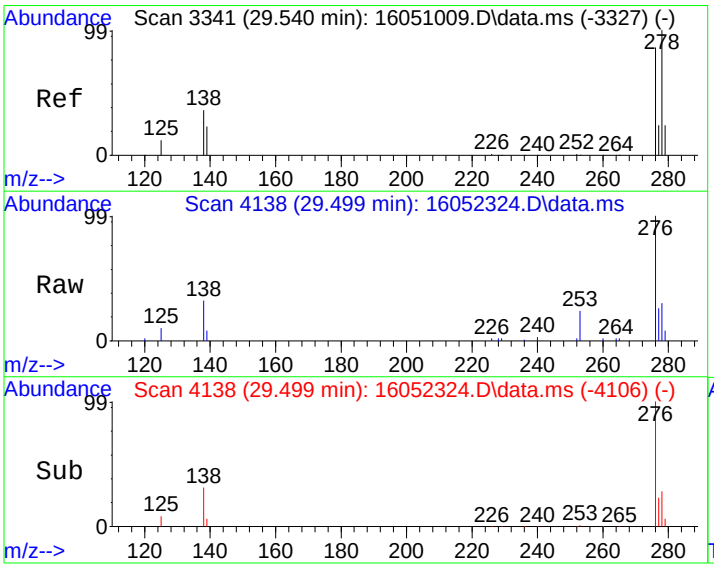


#26
Indeno[1,2,3-cd]pyrene
Concen: 53.58 ug/kg
RT: 29.514 min Scan# 4140
Delta R.T. -0.015 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:276 Resp: 38106

Ion	Ratio	Lower	Upper
276	100		
138	25.1	8.3	48.3

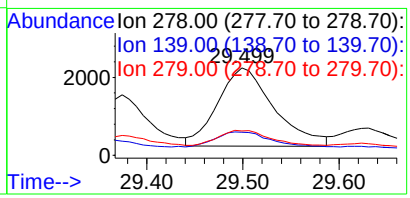


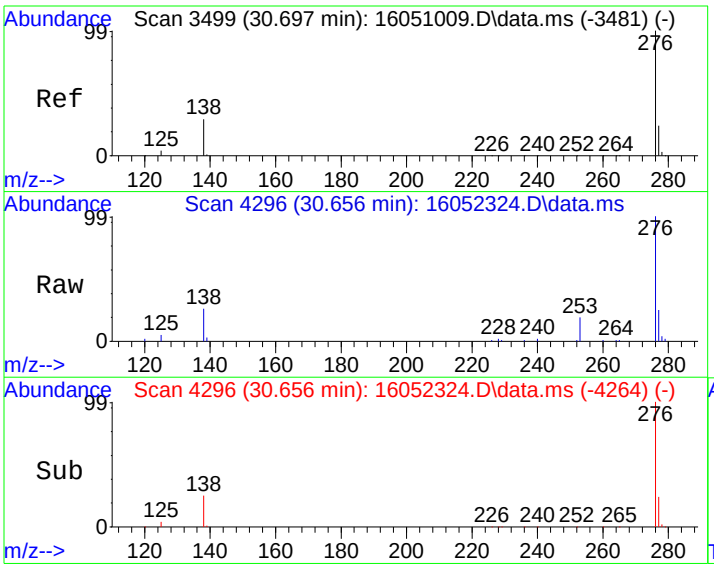


#27
Dibenz[a,h]anthracene
Concen: 10.02 ug/kg
RT: 29.499 min Scan# 4138
Delta R.T. -0.015 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:278 Resp: 8164

Ion	Ratio	Lower	Upper
278	100		
139	20.8	0.0	40.0
279	20.5	4.2	44.2

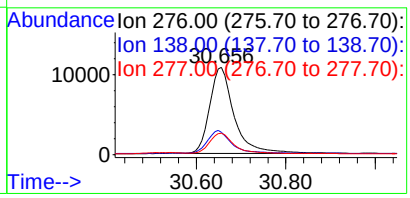




#28
Benzo[g,h,i]perylene
Concen: 66.69 ug/kg
RT: 30.656 min Scan# 4296
Delta R.T. -0.016 min
Lab File: 16052324.D
Acq: 23 May 2016 10:47 pm

Tgt Ion:276 Resp: 40548

Ion	Ratio	Lower	Upper
276	100		
138	24.5	5.8	45.8
277	23.7	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052325.D
Acq On : 23 May 2016 11:24 pm
Operator :
Sample : 1605098-27A
Misc : SAMP
ALS Vial : 25 Sample Multiplier: 10

Quant Time: May 24 09:05:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1606607	4000.00	ug/kg	99
6) Acenaphthene-d10	12.857	164	1300251	4000.00	ug/kg	104
11) Phenanthrene-d10	14.979	188	2345209	4000.00	ug/kg	80
16) Chrysene-d12	20.988	240	2271975	4000.00	ug/kg	84
20) Perylene-d12	26.255	264	2196154	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	30037	83.97	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery =	2.10%#		
17) 4-Terphenyl-d14	17.589	244	36177	75.23	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery =	1.88%#		

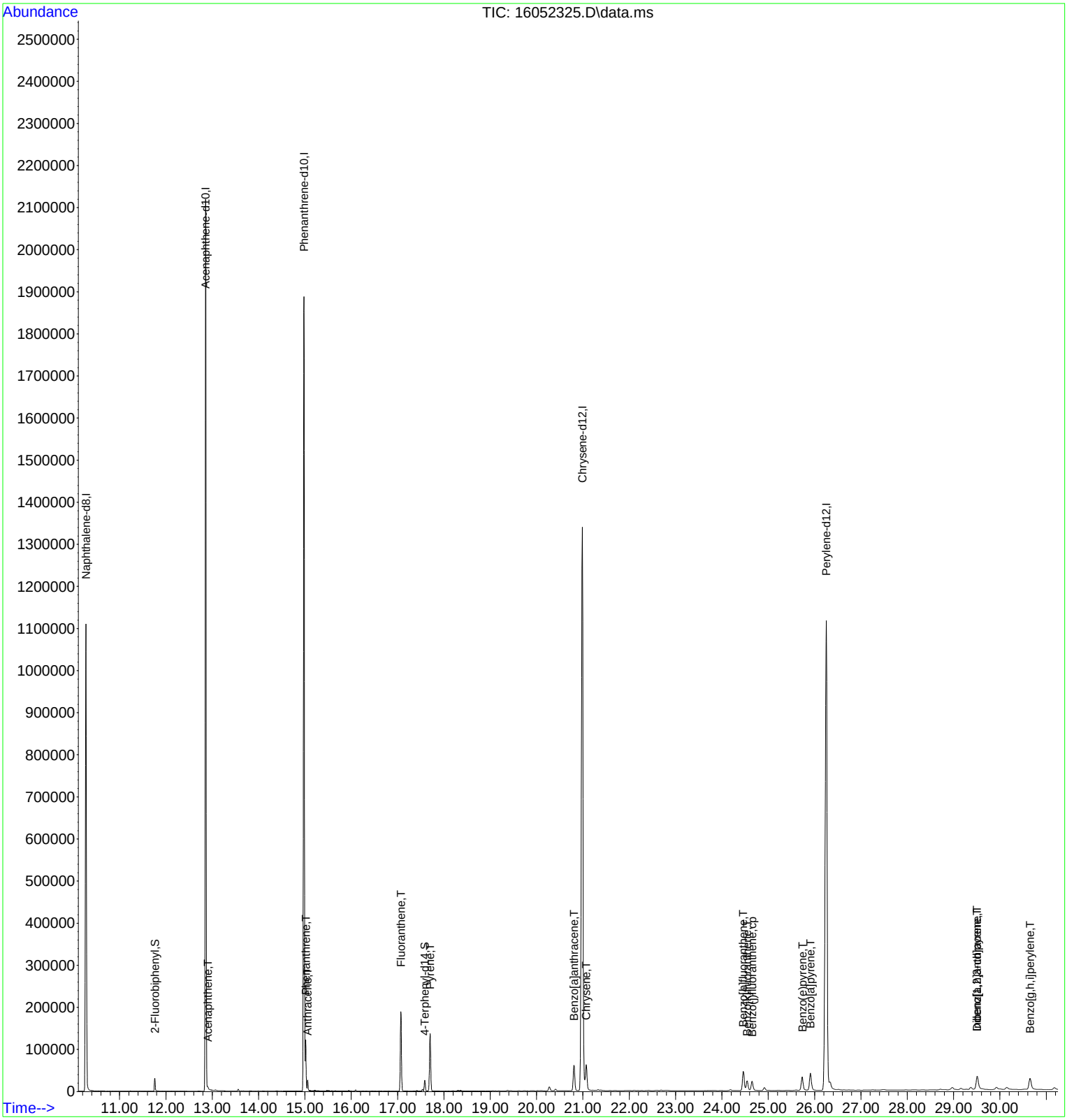
Target Compounds						Qvalue
8) Acenaphthene	12.906	153	2021	5.64	ug/kg	97
12) Phenanthrene	15.017	178	109872	170.27	ug/kg	97
13) Anthracene	15.059	178	24360	37.31	ug/kg	98
14) Fluoranthene	17.071	202	206878	318.66	ug/kg	98
15) Pyrene	17.703	202	160701	252.92	ug/kg	97
18) Benzo[a]anthracene	20.805	228	96748	162.84	ug/kg	99
19) Chrysene	21.068	228	102528	186.58	ug/kg	99
21) Benzo[b]fluoranthene	24.460	252	90712	153.74	ug/kg	99
22) Benzo[k]fluoranthene	24.541	252	41610	78.04	ug/kg	98
23) Benzo(j)fluoranthene	24.650	252	40924	77.73	ug/kg	89
24) Benzo(e)pyrene	25.735	252	65061	115.28	ug/kg	97
25) Benzo[a]pyrene	25.910	252	87651	159.69	ug/kg	100
26) Indeno[1,2,3-cd]pyrene	29.514	276	63464	91.87	ug/kg	93
27) Dibenz[a,h]anthracene	29.500	278	15107	22.56	ug/kg	96
28) Benzo[g,h,i]perylene	30.650	276	62159	104.68	ug/kg	99

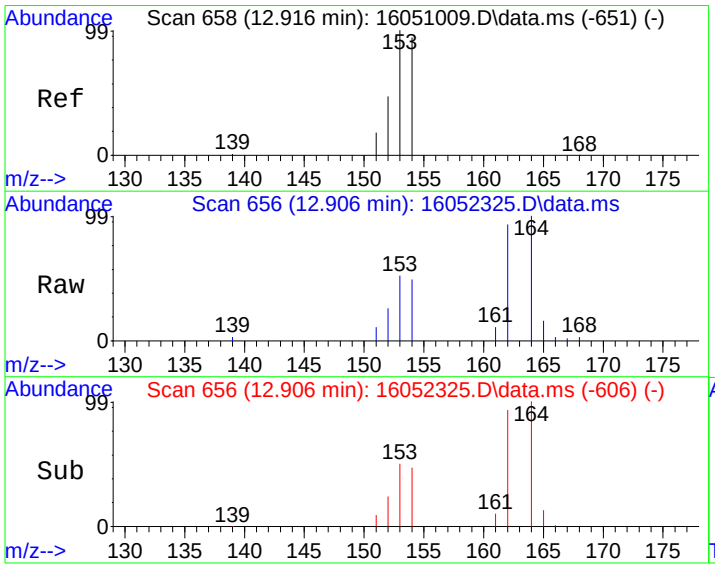
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052325.D
Acq On : 23 May 2016 11:24 pm
Operator :
Sample : 1605098-27A
Misc : SAMP
ALS Vial : 25 Sample Multiplier: 10

Quant Time: May 24 09:05:37 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

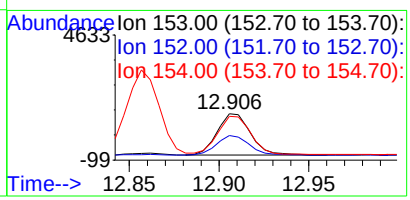


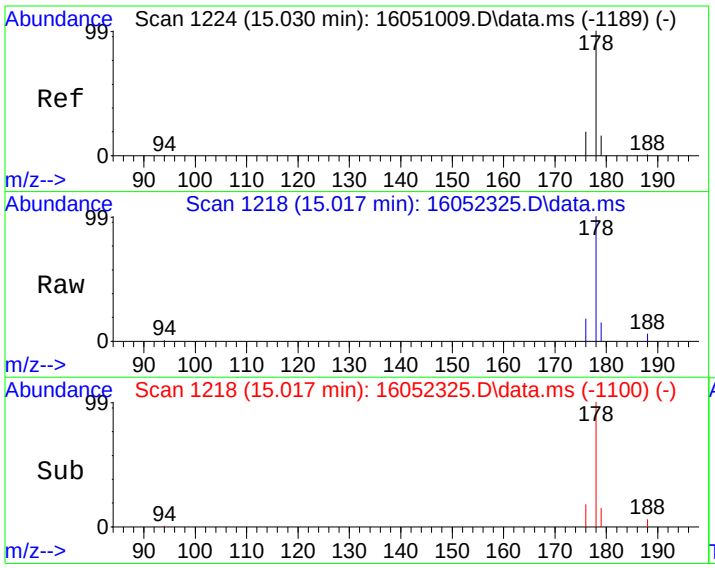


#8
Acenaphthene
Concen: 5.64 ug/kg
RT: 12.906 min Scan# 656
Delta R.T. -0.005 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:153 Resp: 2021

Ion	Ratio	Lower	Upper
153	100		
152	48.0	26.5	66.5
154	92.5	76.3	116.3

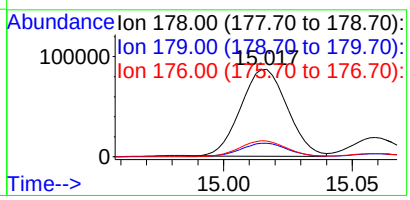


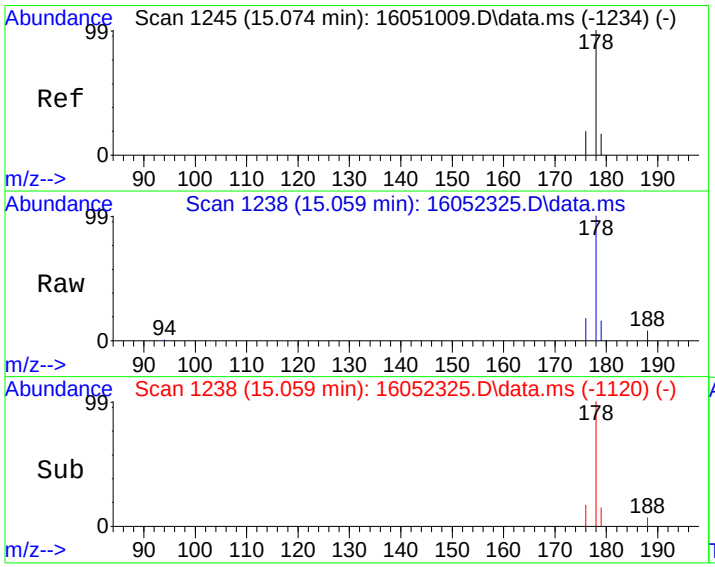


#12
Phenanthrene
Concen: 170.27 ug/kg
RT: 15.017 min Scan# 1218
Delta R.T. -0.002 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:178 Resp: 109872

Ion	Ratio	Lower	Upper
178	100		
179	14.9	0.0	36.4
176	18.1	0.0	39.0

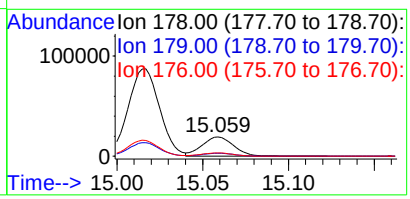


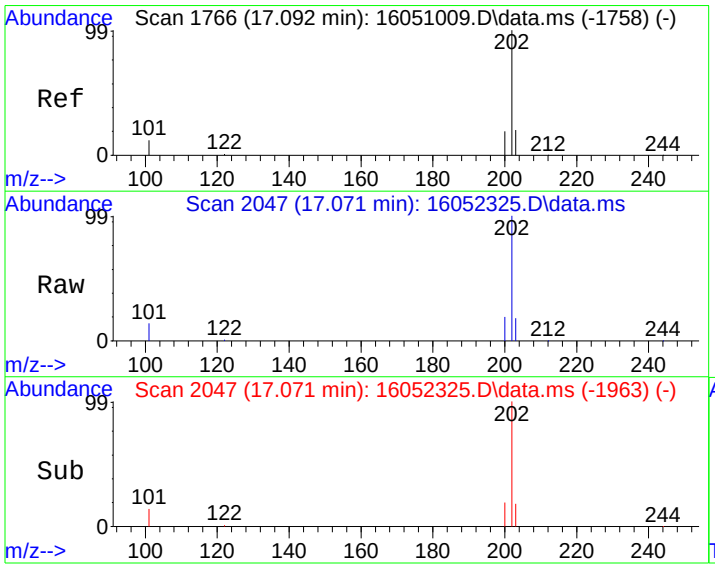


#13
Anthracene
Concen: 37.31 ug/kg
RT: 15.059 min Scan# 1238
Delta R.T. -0.002 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:178 Resp: 24360

Ion	Ratio	Lower	Upper
178	100		
179	15.6	0.0	36.3
176	17.3	0.0	38.5

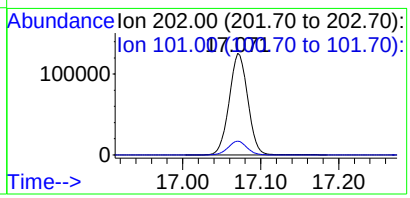


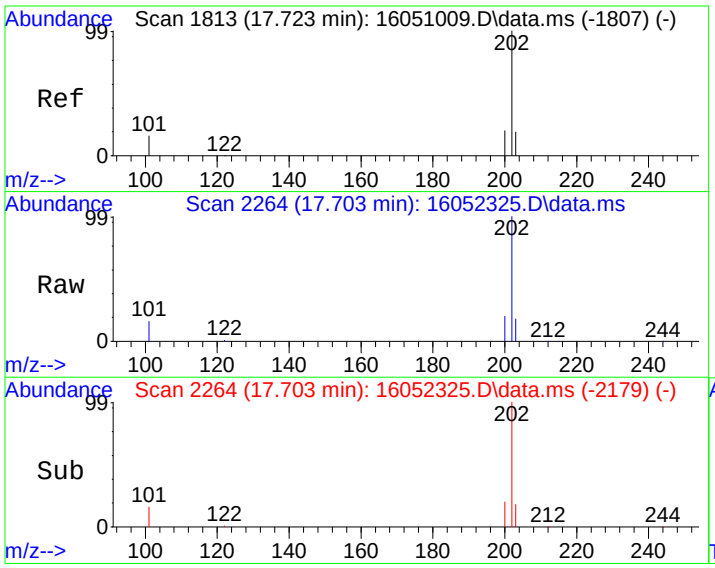


#14
Fluoranthene
Concen: 318.66 ug/kg
RT: 17.071 min Scan# 2047
Delta R.T. -0.005 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:202 Resp: 206878

Ion	Ratio	Lower	Upper
202	100		
101	13.5	0.0	34.4

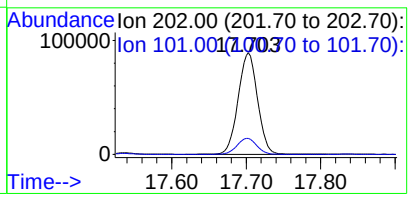


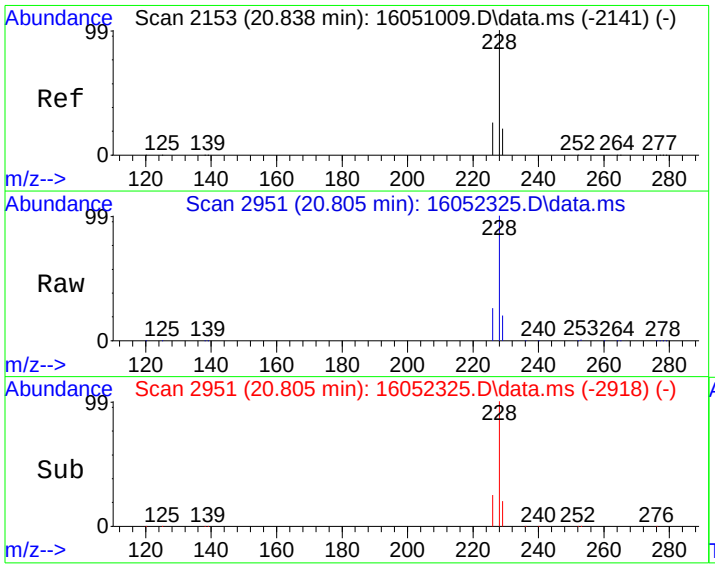


#15
Pyrene
Concen: 252.92 ug/kg
RT: 17.703 min Scan# 2264
Delta R.T. -0.003 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:202 Resp: 160701

Ion	Ratio	Lower	Upper
202	100		
101	15.8	0.0	37.3

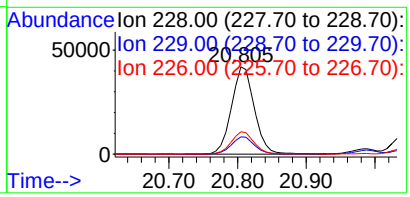


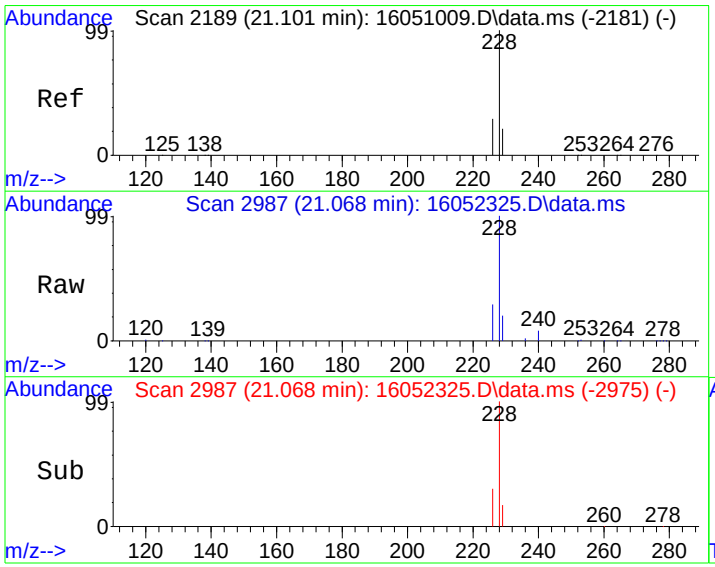


#18
Benzo[a]anthracene
Concen: 162.84 ug/kg
RT: 20.805 min Scan# 2951
Delta R.T. -0.007 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:228 Resp: 96748

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.3	40.3
226	25.5	5.7	45.7

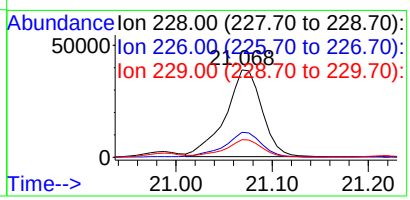


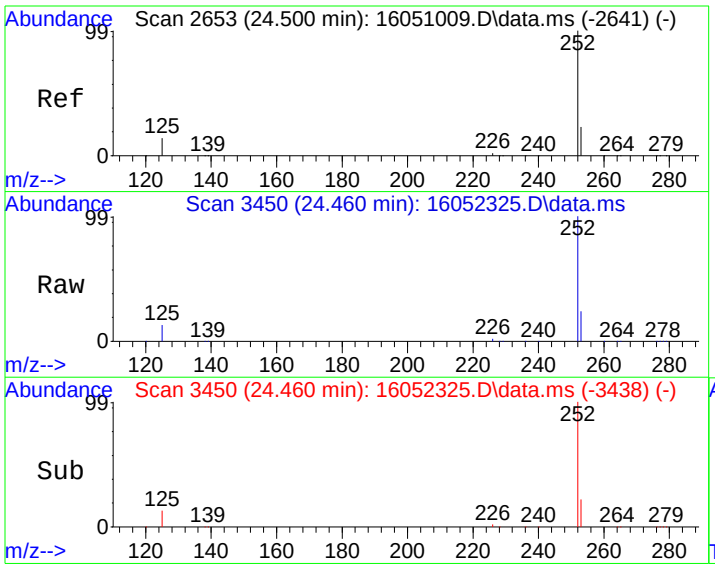


#19
Chrysene
Concen: 186.58 ug/kg
RT: 21.068 min Scan# 2987
Delta R.T. -0.015 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:228 Resp: 102528

Ion	Ratio	Lower	Upper
228	100		
226	28.4	8.2	48.2
229	19.9	0.3	40.3

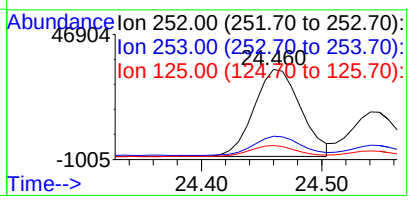


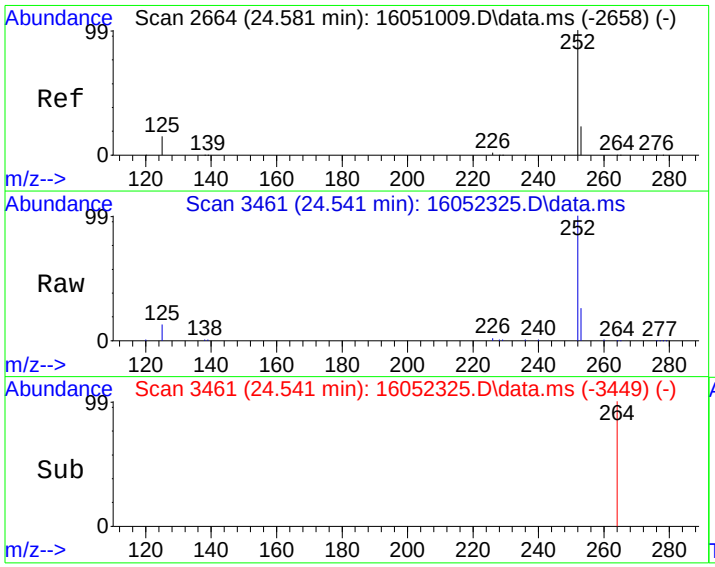


#21
Benzo[b]fluoranthene
Concen: 153.74 ug/kg
RT: 24.460 min Scan# 3450
Delta R.T. -0.015 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:252 Resp: 90712

Ion	Ratio	Lower	Upper
252	100		
253	22.0	2.3	42.3
125	12.7	0.0	32.2

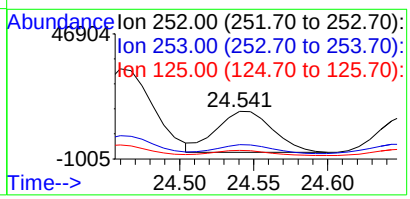


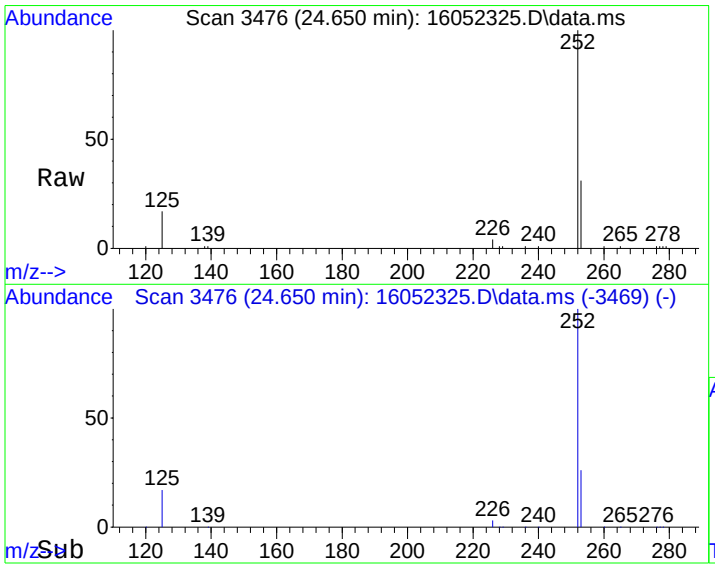


#22
Benzo[k]fluoranthene
Concen: 78.04 ug/kg
RT: 24.541 min Scan# 3461
Delta R.T. -0.014 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:252 Resp: 41610

Ion	Ratio	Lower	Upper
252	100		
253	21.3	2.5	42.5
125	12.8	0.0	32.6

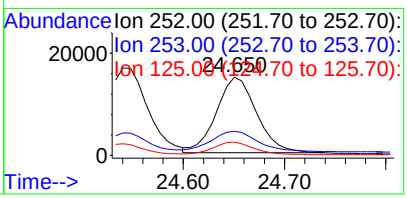


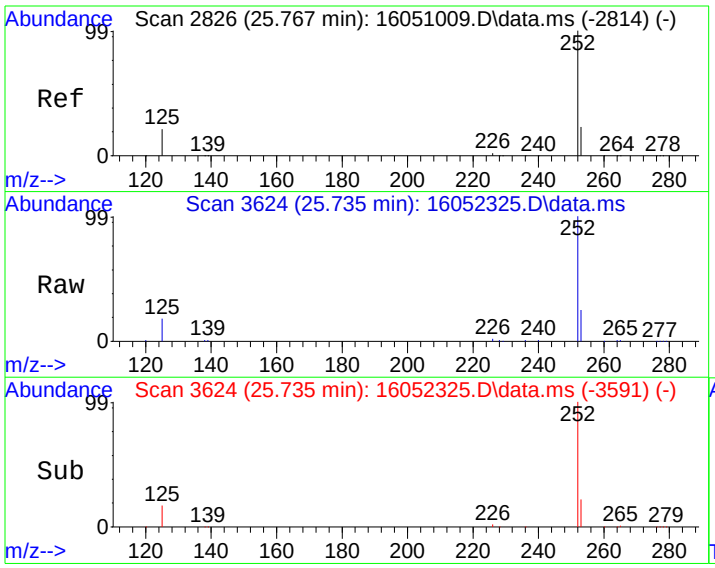


#23
Benzo(j)fluoranthene
Concen: 77.73 ug/kg
RT: 24.650 min Scan# 3476
Delta R.T. -0.015 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:252 Resp: 40924

Ion	Ratio	Lower	Upper
252	100		
253	31.0	2.2	42.2
125	16.5	0.0	37.3

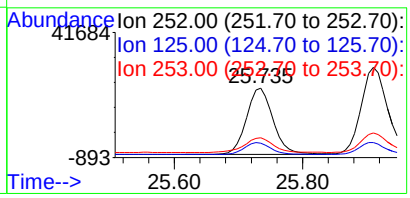


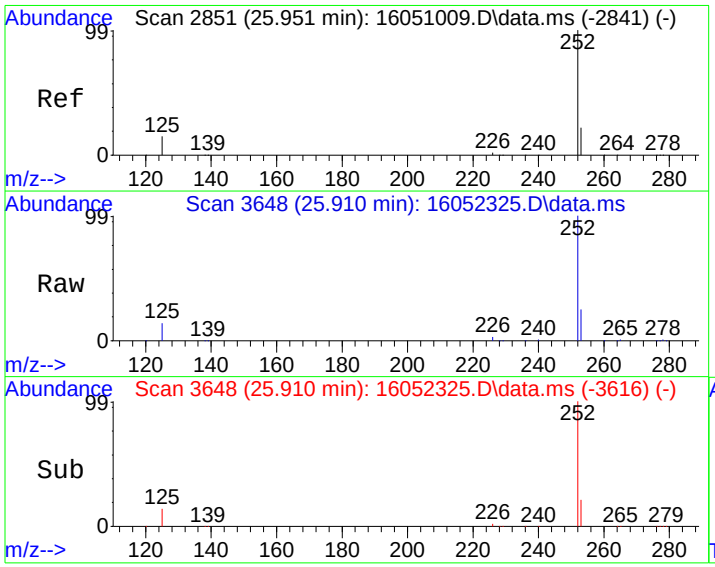


#24
Benzo(e)pyrene
Concen: 115.28 ug/kg
RT: 25.735 min Scan# 3624
Delta R.T. -0.007 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:252 Resp: 65061

Ion	Ratio	Lower	Upper
252	100		
125	17.8	0.0	38.7
253	24.4	2.3	42.3

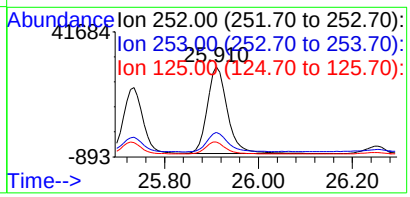


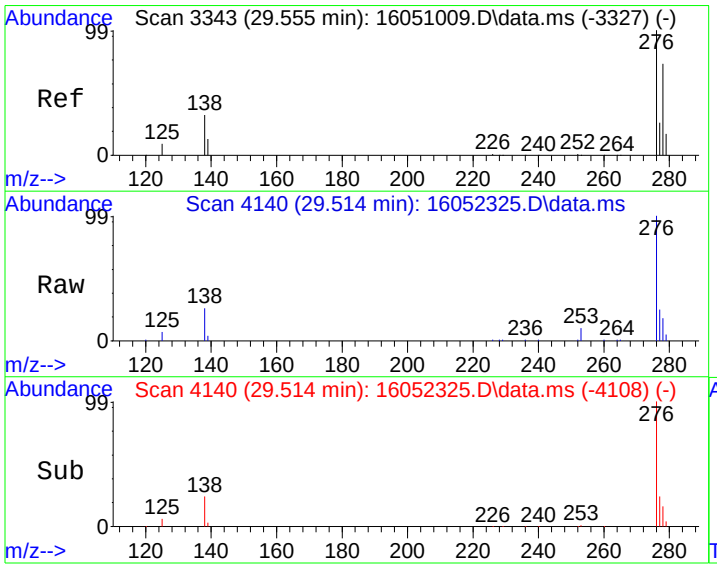


#25
Benzo[a]pyrene
Concen: 159.69 ug/kg
RT: 25.910 min Scan# 3648
Delta R.T. -0.015 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:252 Resp: 87651

Ion	Ratio	Lower	Upper
252	100		
253	22.4	2.3	42.3
125	13.7	0.0	33.5

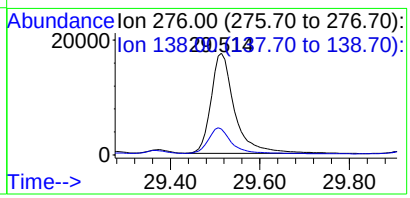


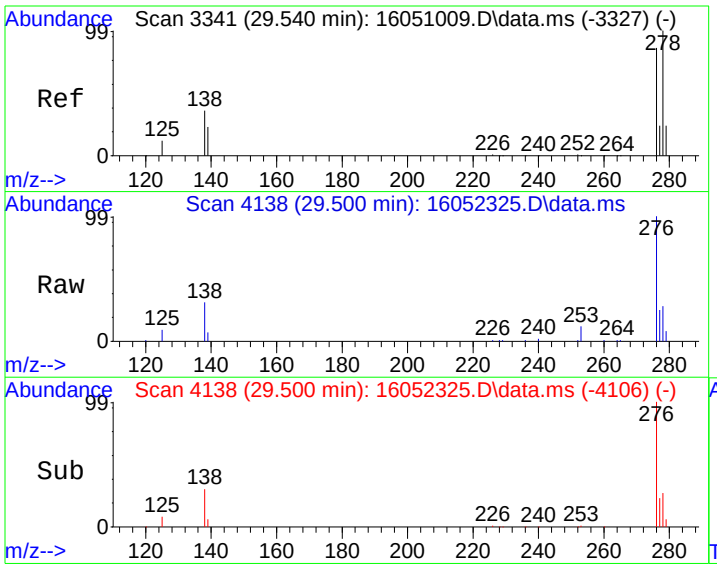


#26
Indeno[1,2,3-cd]pyrene
Concen: 91.87 ug/kg
RT: 29.514 min Scan# 4140
Delta R.T. -0.015 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:276 Resp: 63464

Ion	Ratio	Lower	Upper
276	100		
138	24.7	8.3	48.3

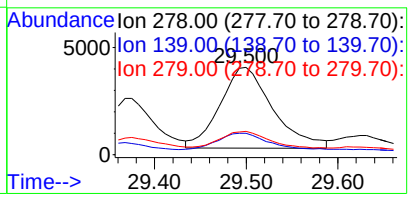


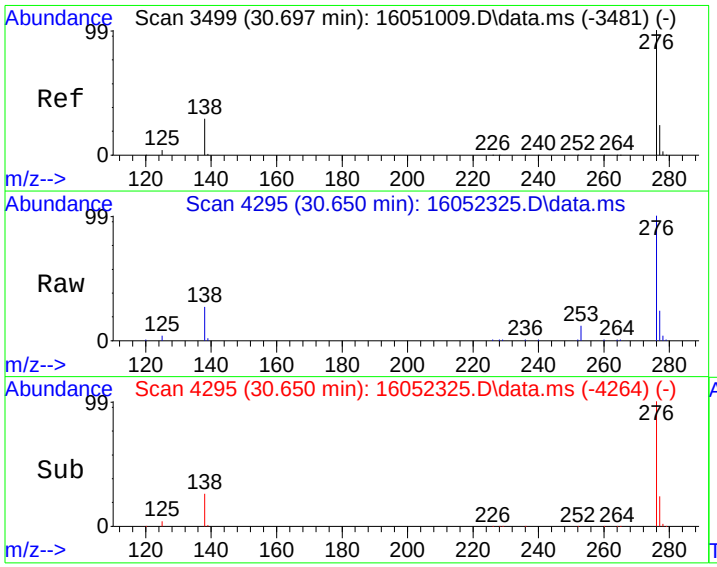


#27
Dibenz[a,h]anthracene
Concen: 22.56 ug/kg
RT: 29.500 min Scan# 4138
Delta R.T. -0.014 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:278 Resp: 15107

Ion	Ratio	Lower	Upper
278	100		
139	21.9	0.0	40.0
279	22.7	4.2	44.2

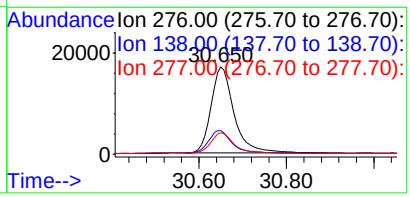




#28
Benzo[g,h,i]perylene
Concen: 104.68 ug/kg
RT: 30.650 min Scan# 4295
Delta R.T. -0.022 min
Lab File: 16052325.D
Acq: 23 May 2016 11:24 pm

Tgt Ion:276 Resp: 62159

Ion	Ratio	Lower	Upper
276	100		
138	26.1	5.8	45.8
277	23.6	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052326.D
Acq On : 24 May 2016 12:01 am
Operator :
Sample : 1605098-28A
Misc : SAMP
ALS Vial : 26 Sample Multiplier: 10

Quant Time: May 24 09:05:46 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.272	136	1601858	4000.00	ug/kg	98
6) Acenaphthene-d10	12.857	164	1297642	4000.00	ug/kg	103
11) Phenanthrene-d10	14.981	188	2292052	4000.00	ug/kg	78
16) Chrysene-d12	20.989	240	2279347	4000.00	ug/kg	84
20) Perylene-d12	26.255	264	2180131	4000.00	ug/kg	88

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.761	172	30842	86.48	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.16%#			
17) 4-Terphenyl-d14	17.590	244	36040	74.70	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.87%#			

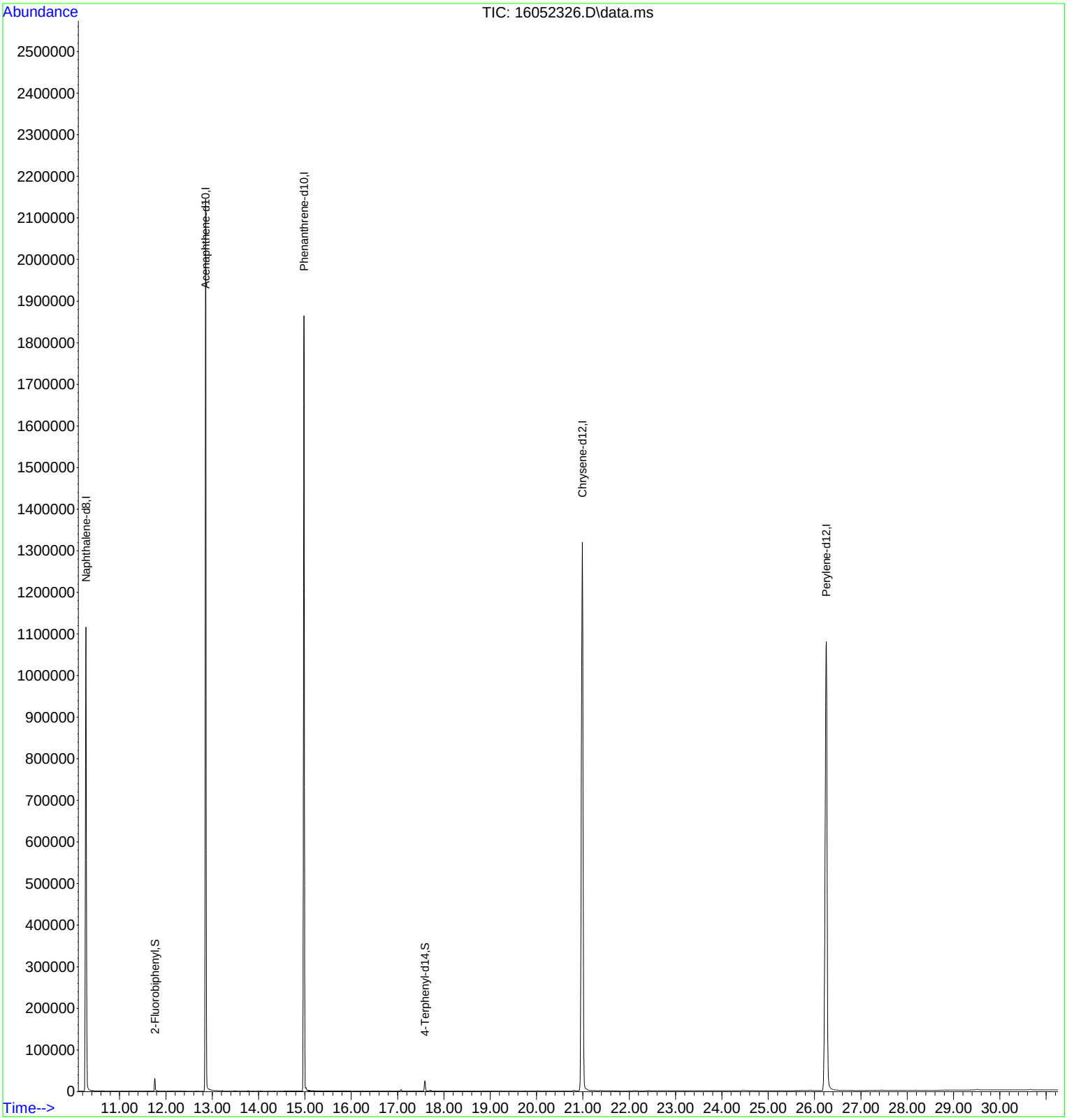
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052326.D
Acq On : 24 May 2016 12:01 am
Operator :
Sample : 1605098-28A
Misc : SAMP
ALS Vial : 26 Sample Multiplier: 10

Quant Time: May 24 09:05:46 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052327.D
Acq On : 24 May 2016 12:38 am
Operator :
Sample : 1605098-29A
Misc : SAMP
ALS Vial : 27 Sample Multiplier: 10

Quant Time: May 24 09:05:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.271	136	1615264	4000.00	ug/kg	99
6) Acenaphthene-d10	12.857	164	1302400	4000.00	ug/kg	104
11) Phenanthrene-d10	14.977	188	2234348	4000.00	ug/kg	76
16) Chrysene-d12	20.988	240	2181592	4000.00	ug/kg	80
20) Perylene-d12	26.254	264	2121570	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.760	172	31220	86.81	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.17%#			
17) 4-Terphenyl-d14	17.589	244	34993	75.78	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.89%#			

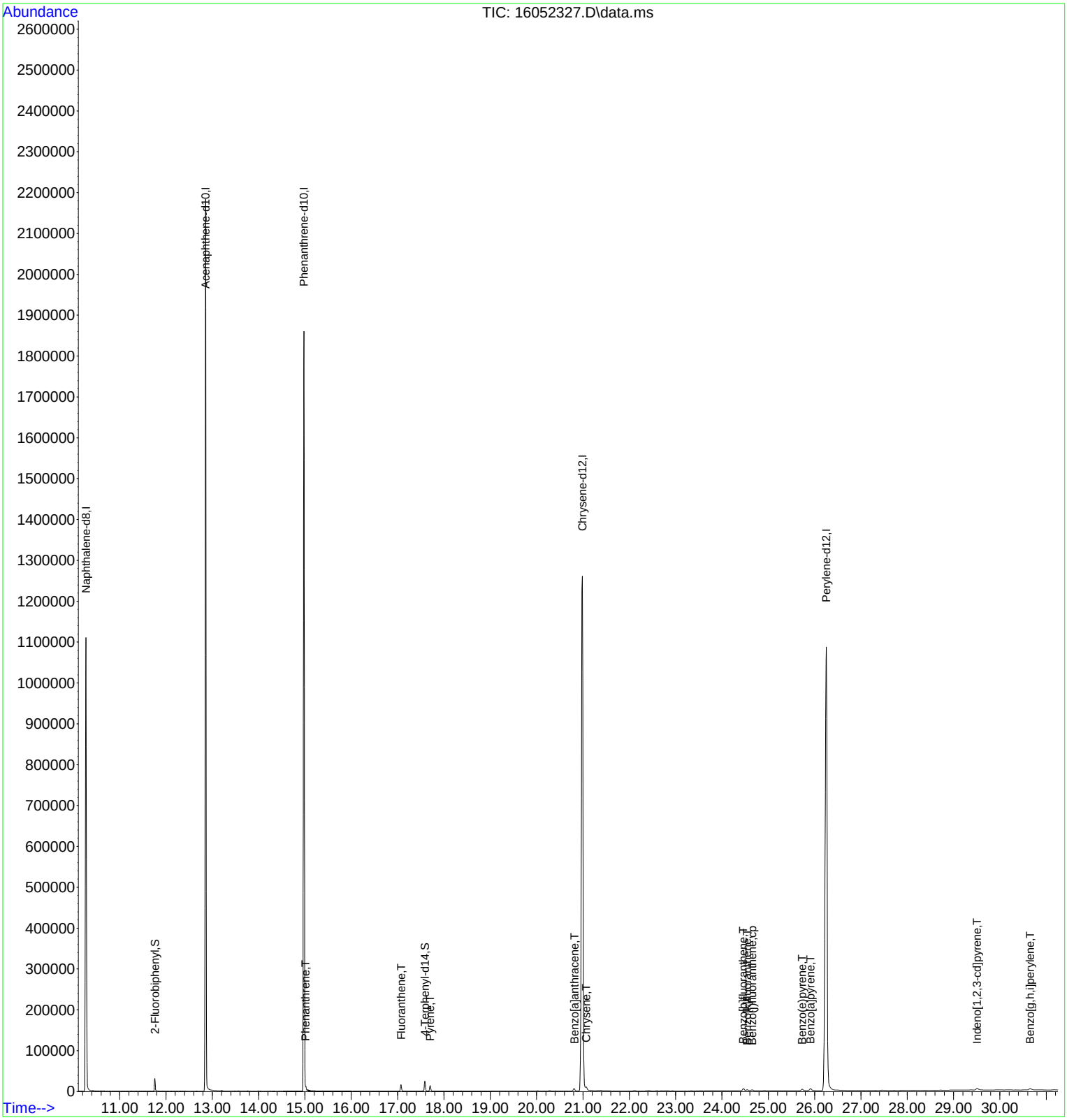
Target Compounds						Qvalue
12) Phenanthrene	15.015	178	6659	10.83	ug/kg	98
14) Fluoranthene	17.073	202	19229	29.00	ug/kg	97
15) Pyrene	17.703	202	16857	25.69	ug/kg	97
18) Benzo[a]anthracene	20.812	228	9983	15.83	ug/kg	99
19) Chrysene	21.076	228	11206	18.73	ug/kg	99
21) Benzo[b]fluoranthene	24.460	252	10896	17.57	ug/kg	99
22) Benzo[k]fluoranthene	24.540	252	5023	8.77	ug/kg	97
23) Benzo(j)fluoranthene	24.658	252	4368	5.75	ug/kg	89
24) Benzo(e)pyrene	25.727	252	7832	12.16	ug/kg	96
25) Benzo[a]pyrene	25.910	252	11351	19.52	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.514	276	8519	10.28	ug/kg	93
28) Benzo[g,h,i]perylene	30.649	276	8706	12.56	ug/kg	98

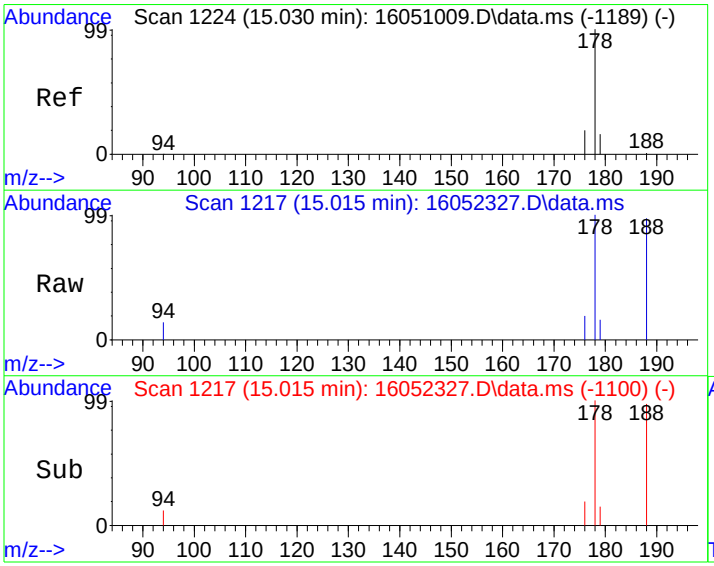
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052327.D
Acq On : 24 May 2016 12:38 am
Operator :
Sample : 1605098-29A
Misc : SAMP
ALS Vial : 27 Sample Multiplier: 10

Quant Time: May 24 09:05:49 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

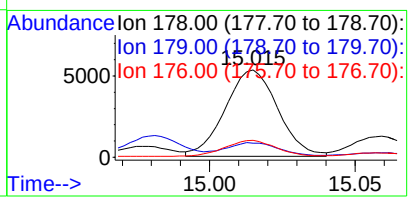


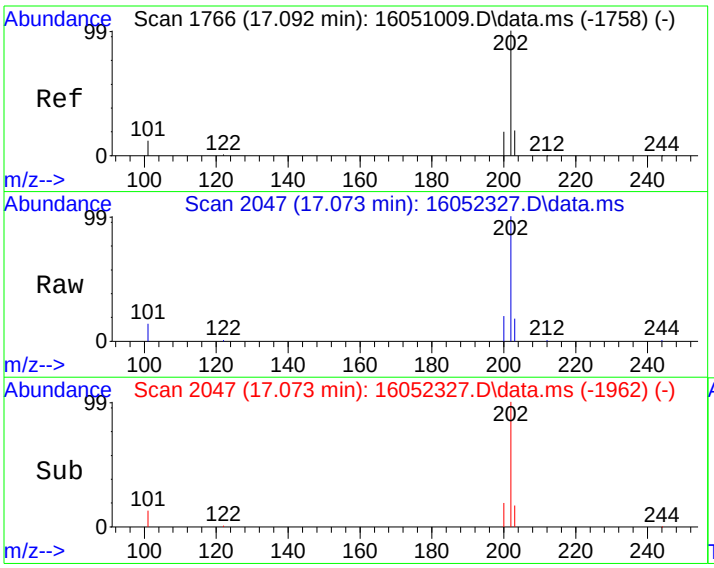


#12
Phenanthrene
Concen: 10.83 ug/kg
RT: 15.015 min Scan# 1217
Delta R.T. -0.004 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:178 Resp: 6659

Ion	Ratio	Lower	Upper
178	100		
179	14.4	0.0	36.4
176	18.9	0.0	39.0

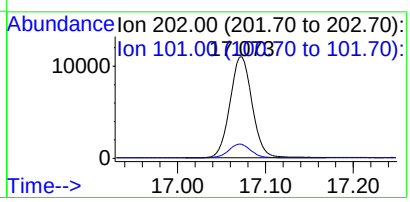


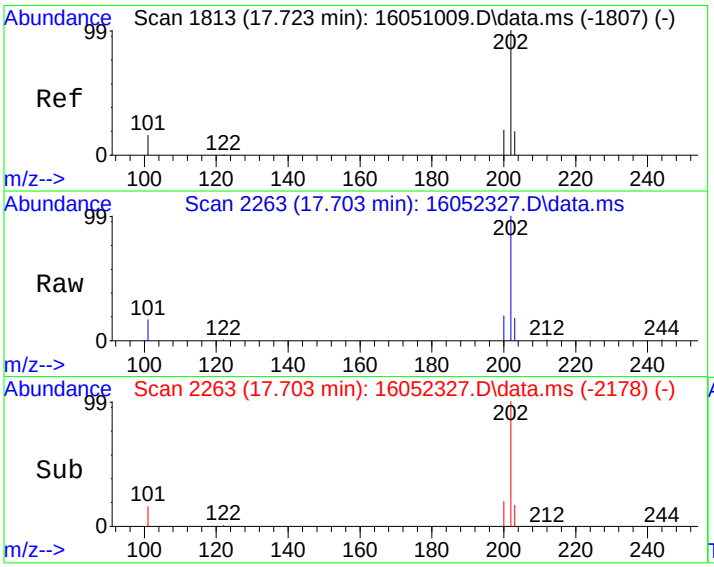


#14
Fluoranthene
Concen: 29.00 ug/kg
RT: 17.073 min Scan# 2047
Delta R.T. -0.003 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:202 Resp: 19229

Ion	Ratio	Lower	Upper
202	100		
101	13.3	0.0	34.4

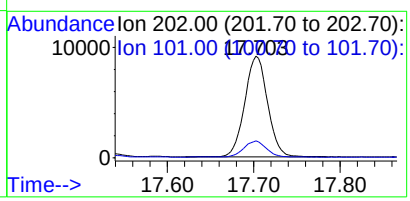


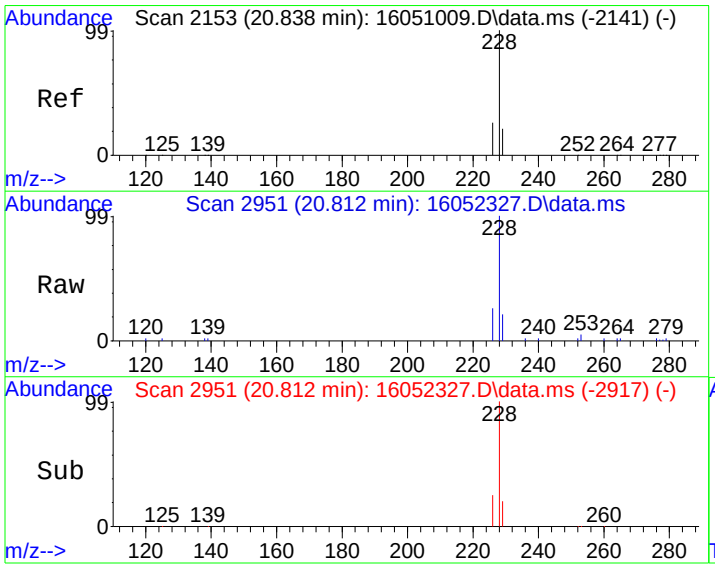


#15
Pyrene
Concen: 25.69 ug/kg
RT: 17.703 min Scan# 2263
Delta R.T. -0.003 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:202 Resp: 16857

Ion	Ratio	Lower	Upper
202	100		
101	16.0	0.0	37.3

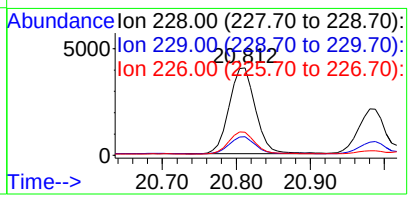


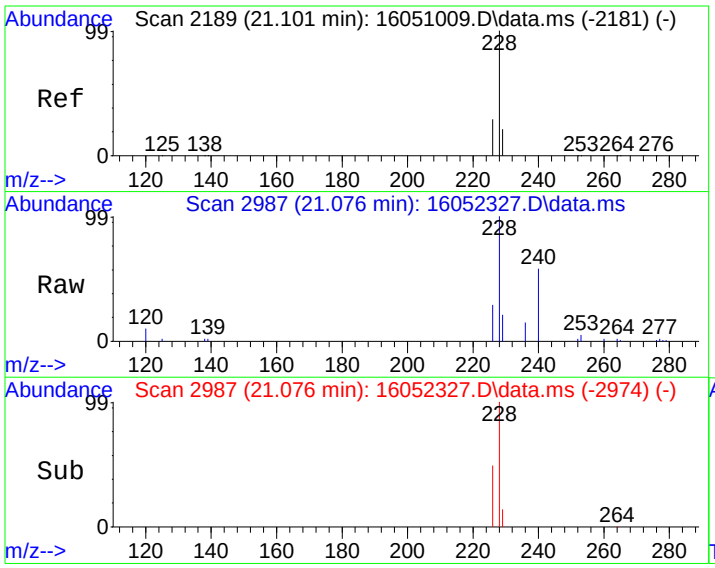


#18
Benzo[a]anthracene
Concen: 15.83 ug/kg
RT: 20.812 min Scan# 2951
Delta R.T. -0.000 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:228 Resp: 9983

Ion	Ratio	Lower	Upper
228	100		
229	19.7	0.3	40.3
226	25.2	5.7	45.7

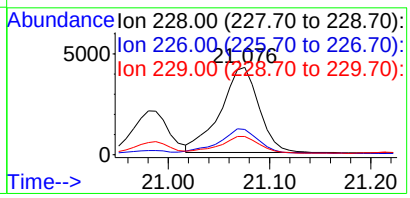


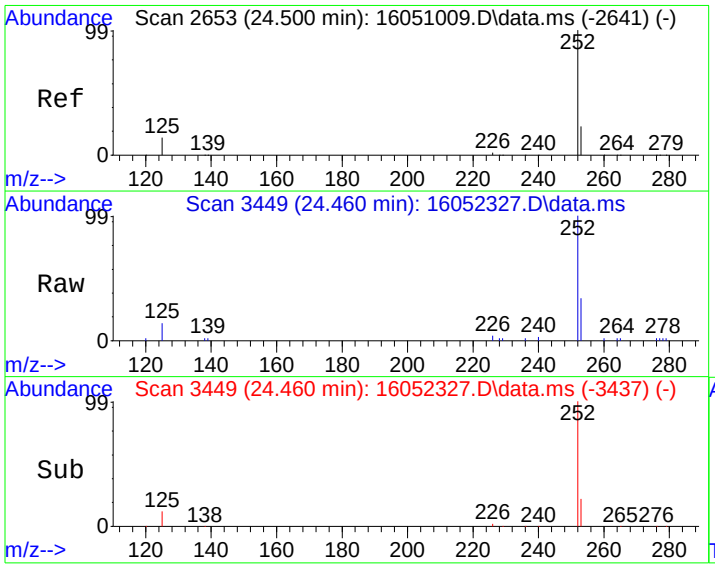


#19
Chrysene
Concen: 18.73 ug/kg
RT: 21.076 min Scan# 2987
Delta R.T. -0.007 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:228 Resp: 11206

Ion	Ratio	Lower	Upper
228	100		
226	28.0	8.2	48.2
229	19.6	0.3	40.3

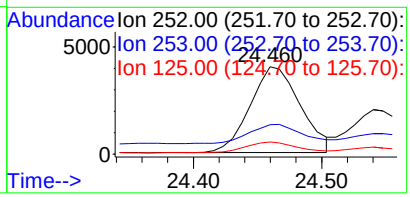


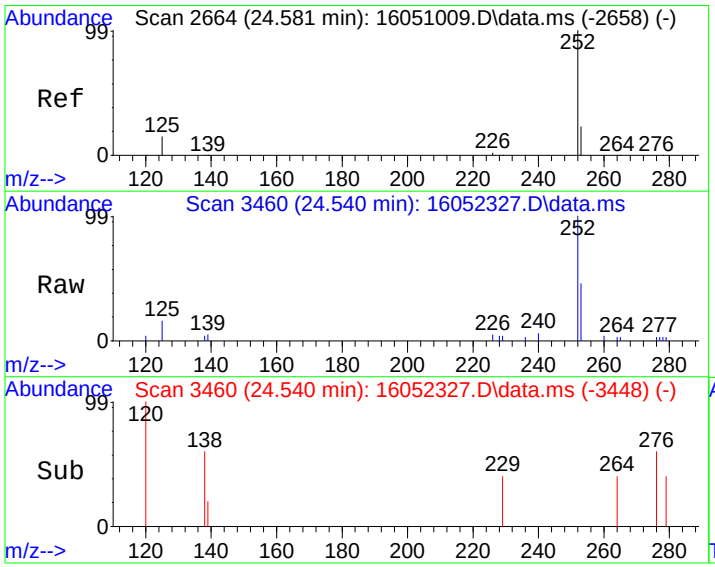


#21
Benzo[b]fluoranthene
Concen: 17.57 ug/kg
RT: 24.460 min Scan# 3449
Delta R.T. -0.015 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:252 Resp: 10896

Ion	Ratio	Lower	Upper
252	100		
253	21.9	2.3	42.3
125	12.4	0.0	32.2

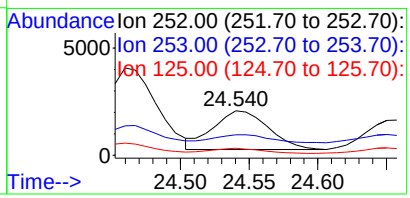


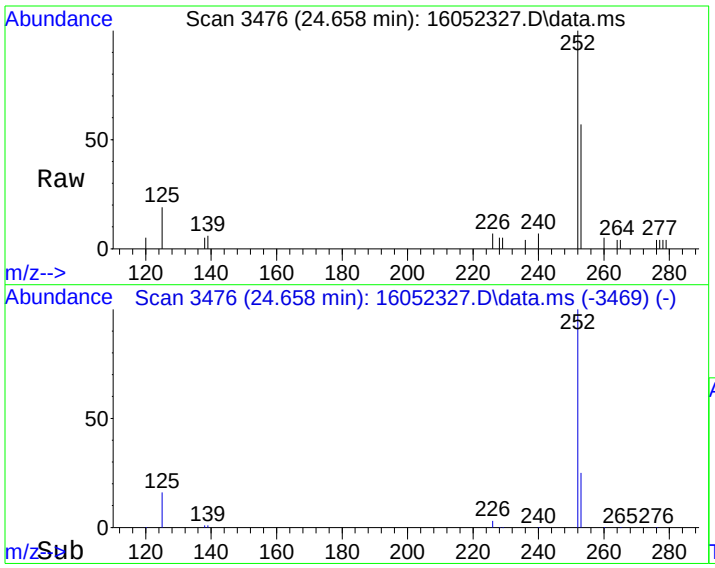


#22
Benzo[k]fluoranthene
Concen: 8.77 ug/kg
RT: 24.540 min Scan# 3460
Delta R.T. -0.015 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:252 Resp: 5023

Ion	Ratio	Lower	Upper
252	100		
253	20.4	2.5	42.5
125	12.6	0.0	32.6

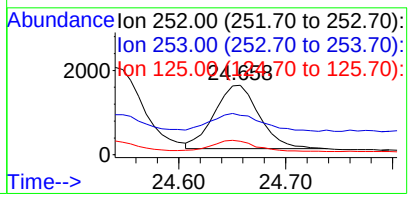


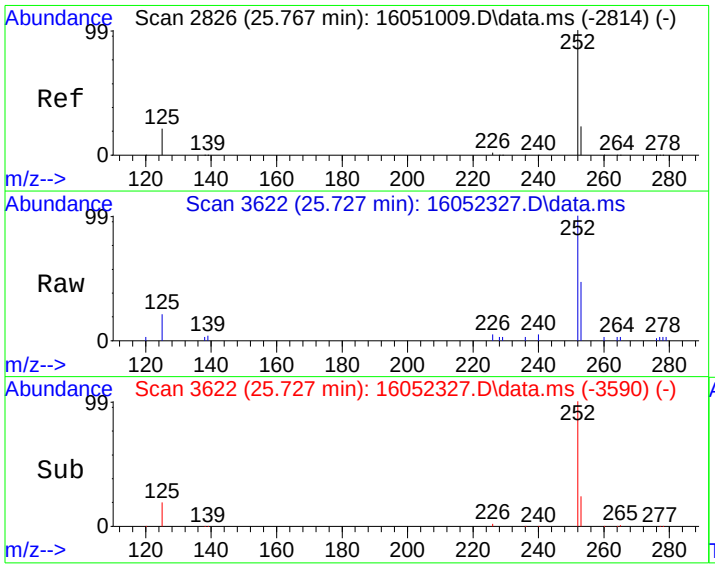


#23
Benzo(j)fluoranthene
Concen: 5.75 ug/kg
RT: 24.658 min Scan# 3476
Delta R.T. -0.007 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:252 Resp: 4368

Ion	Ratio	Lower	Upper
252	100		
253	31.5	2.2	42.2
125	16.9	0.0	37.3

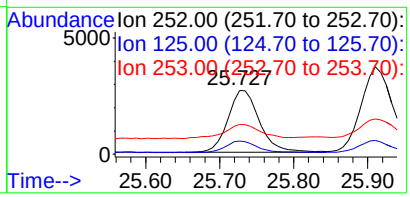


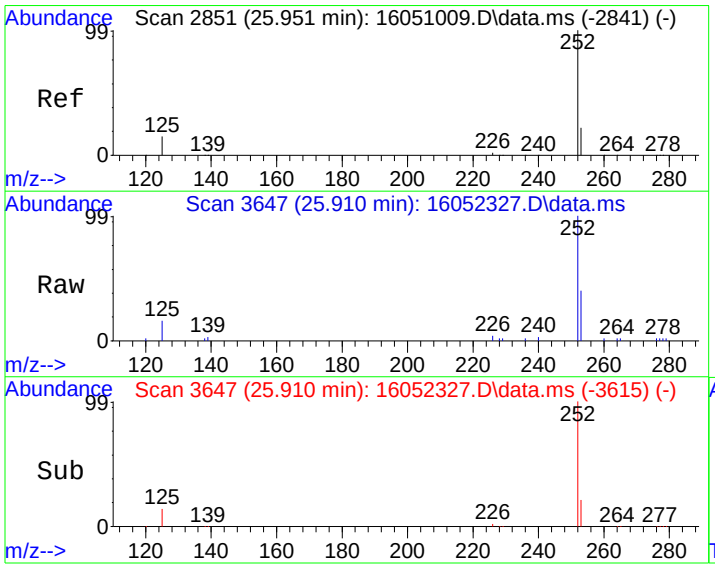


#24
Benzo(e)pyrene
Concen: 12.16 ug/kg
RT: 25.727 min Scan# 3622
Delta R.T. -0.015 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:252 Resp: 7832

Ion	Ratio	Lower	Upper
252	100		
125	18.8	0.0	38.7
253	25.6	2.3	42.3

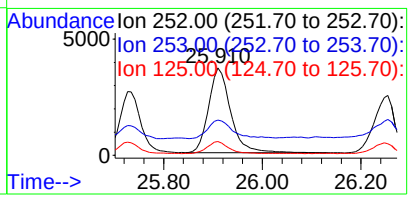


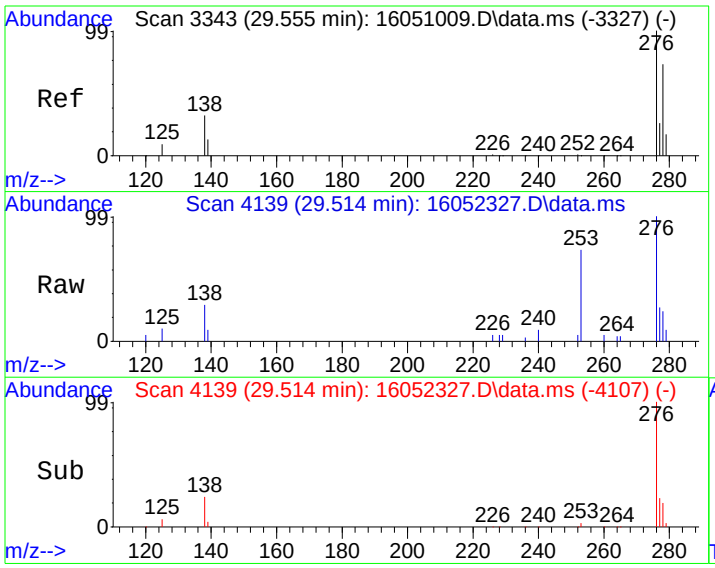


#25
Benzo[a]pyrene
Concen: 19.52 ug/kg
RT: 25.910 min Scan# 3647
Delta R.T. -0.015 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:252 Resp: 11351

Ion	Ratio	Lower	Upper
252	100		
253	21.8	2.3	42.3
125	13.9	0.0	33.5

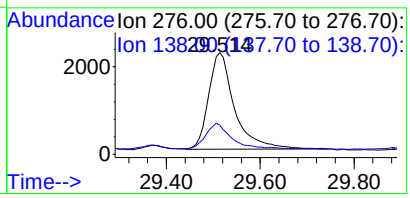


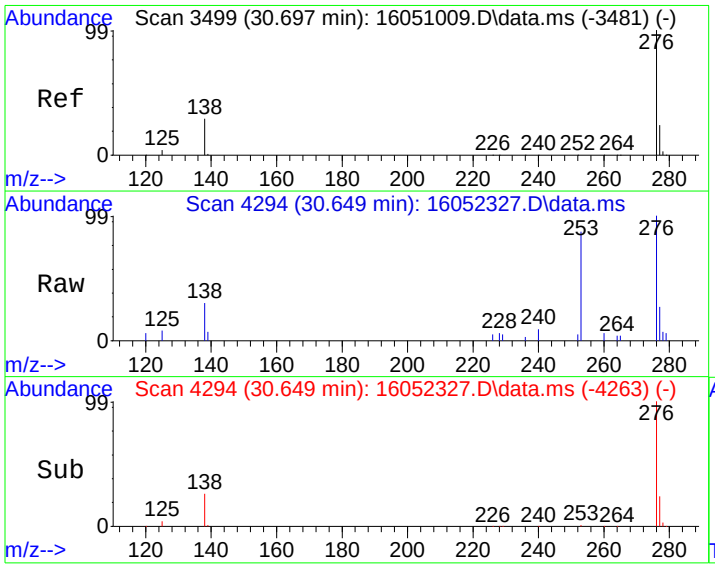


#26
Indeno[1,2,3-cd]pyrene
Concen: 10.28 ug/kg
RT: 29.514 min Scan# 4139
Delta R.T. -0.015 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:276 Resp: 8519

Ion	Ratio	Lower	Upper
276	100		
138	24.7	8.3	48.3

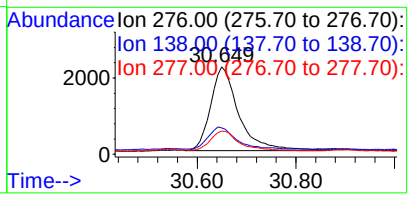




#28
Benzo[g,h,i]perylene
Concen: 12.56 ug/kg
RT: 30.649 min Scan# 4294
Delta R.T. -0.023 min
Lab File: 16052327.D
Acq: 24 May 2016 12:38 am

Tgt Ion:276 Resp: 8706

Ion	Ratio	Lower	Upper
276	100		
138	25.3	5.8	45.8
277	23.2	4.4	44.4



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052328.D
Acq On : 24 May 2016 1:16 am
Operator :
Sample : 1605098-30A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 24 09:05:56 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.274	136	1546340	4000.00	ug/kg	95
6) Acenaphthene-d10	12.857	164	1259719	4000.00	ug/kg	100
11) Phenanthrene-d10	14.979	188	2217800	4000.00	ug/kg	76
16) Chrysene-d12	20.989	240	2217610	4000.00	ug/kg	82
20) Perylene-d12	26.255	264	2102975	4000.00	ug/kg	85

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	29744	86.39	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 2.16%#			
17) 4-Terphenyl-d14	17.590	244	35379	75.37	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 1.88%#			

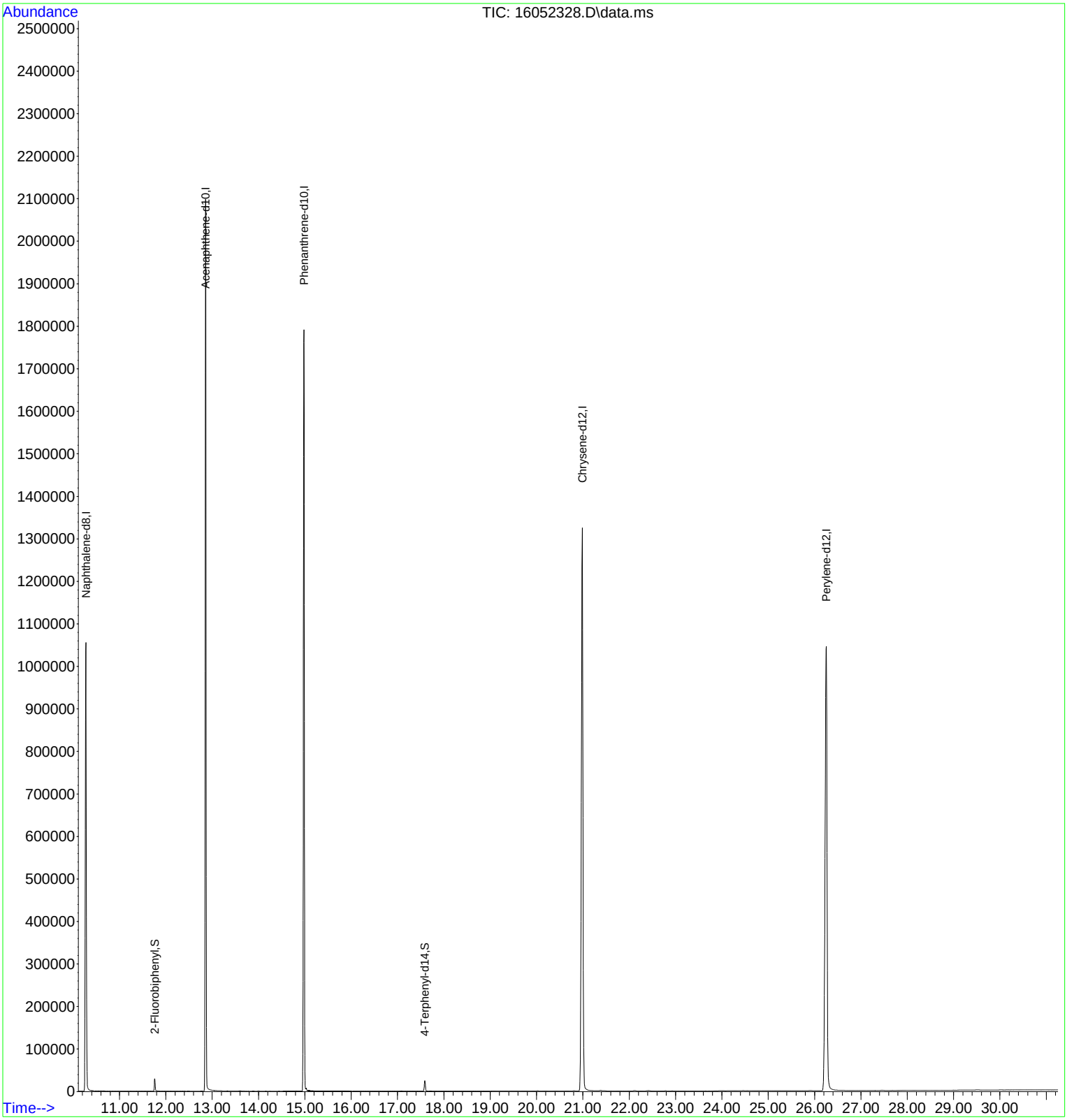
Target Compounds	Qvalue

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052328.D
Acq On : 24 May 2016 1:16 am
Operator :
Sample : 1605098-30A
Misc : SAMP
ALS Vial : 28 Sample Multiplier: 10

Quant Time: May 24 09:05:56 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052329.D
Acq On : 24 May 2016 1:52 am
Operator :
Sample : CCV1-160523
Misc : CCV
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 24 09:03:21 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	%Rec
1) Naphthalene-d8	10.274	136	1793583	4000.00	ug/kg	110
6) Acenaphthene-d10	12.857	164	1454145	4000.00	ug/kg	116
11) Phenanthrene-d10	14.981	188	2711477	4000.00	ug/kg	93
16) Chrysene-d12	20.988	240	2521012	4000.00	ug/kg	93
20) Perylene-d12	26.255	264	2423970	4000.00	ug/kg	98

System Monitoring Compounds						Dev(Min)
5) 2-Fluorobiphenyl	11.759	172	429268	1074.93	ug/kg	0.00
Spiked Amount 4000.000	Range 40 - 140		Recovery = 26.87%#			
17) 4-Terphenyl-d14	17.590	244	521587	977.49	ug/kg	0.00
Spiked Amount 4000.000	Range 51 - 135		Recovery = 24.44%#			

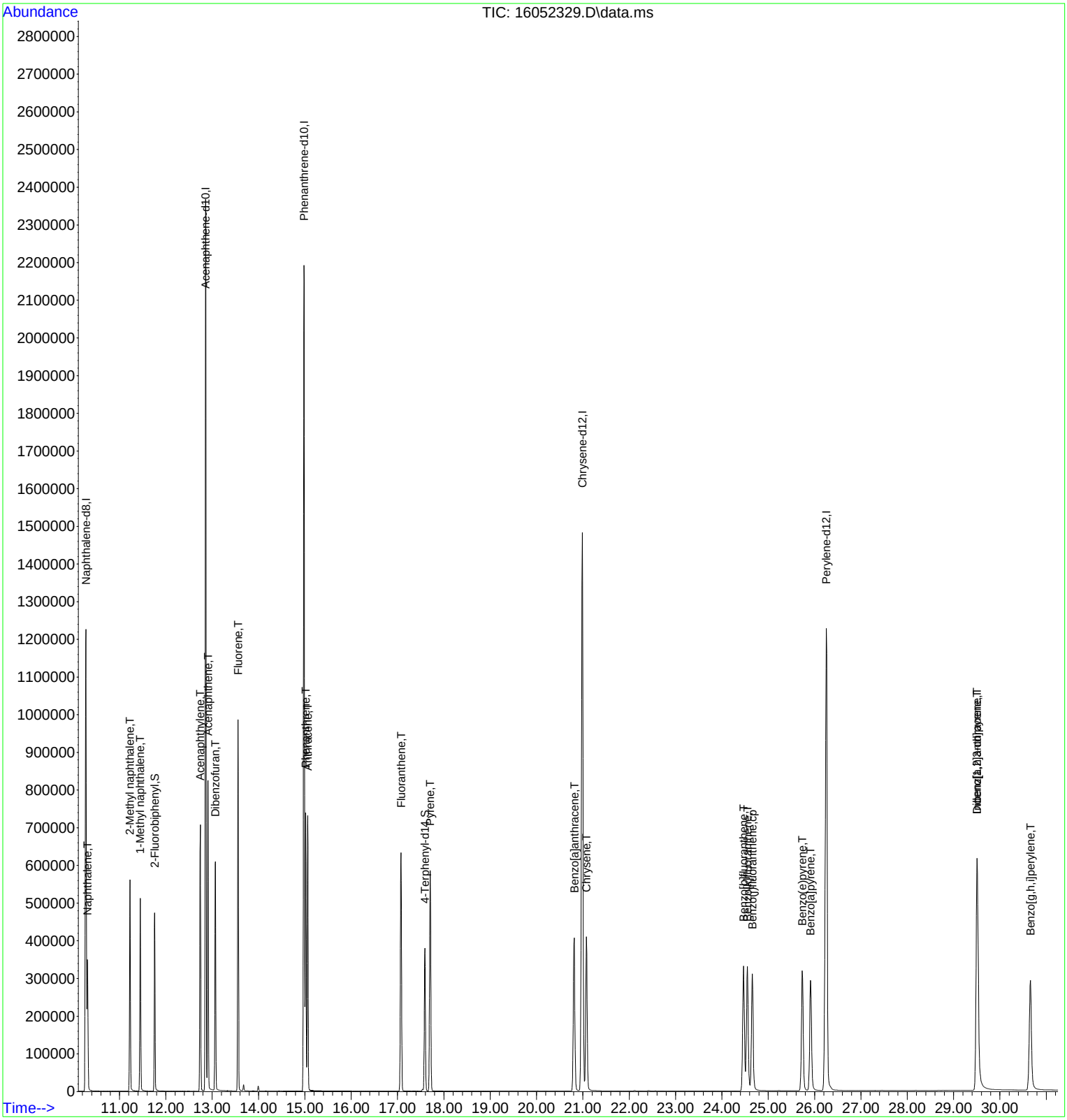
Target Compounds						Qvalue
2) Naphthalene	10.307	128	400639	997.08	ug/kg	100
3) 2-Methyl naphthalene	11.224	142	341856	1094.42	ug/kg	98
4) 1-Methyl naphthalene	11.450	142	311615	1054.24	ug/kg	98
7) Acenaphthylene	12.744	152	653568	1028.25	ug/kg	99
8) Acenaphthene	12.906	153	401829	1001.88	ug/kg	98
9) Dibenzofuran	13.068	168	591617	968.32	ug/kg	97
10) Fluorene	13.559	166	516820	932.28	ug/kg	99
12) Phenanthrene	15.017	178	705917	946.18	ug/kg	99
13) Anthracene	15.061	178	700973	928.53	ug/kg	99
14) Fluoranthene	17.074	202	717641	977.54	ug/kg	99
15) Pyrene	17.706	202	702413	978.40	ug/kg	97
18) Benzo[a]anthracene	20.813	228	645298	1007.40	ug/kg	99
19) Chrysene	21.076	228	595461	1006.20	ug/kg	99
21) Benzo[b]fluoranthene	24.468	252	643980	1014.57	ug/kg	100
22) Benzo[k]fluoranthene	24.548	252	564056	984.35	ug/kg	99
23) Benzo(j)fluoranthene	24.658	252	548842	998.07	ug/kg	99
24) Benzo(e)pyrene	25.735	252	605884	1009.36	ug/kg	99
25) Benzo[a]pyrene	25.918	252	593507	1003.07	ug/kg	99
26) Indeno[1,2,3-cd]pyrene	29.515	276	739675	1016.09	ug/kg	97
27) Dibenz[a,h]anthracene	29.500	278	615589	1015.58	ug/kg	99
28) Benzo[g,h,i]perylene	30.657	276	631097	1005.03	ug/kg	99

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\160523\
Data File : 16052329.D
Acq On : 24 May 2016 1:52 am
Operator :
Sample : CCV1-160523
Misc : CCV
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 24 09:03:21 2016
Quant Method : C:\msdchem\1\METHODS\PAH160517.M
Quant Title : CLP BNA Calibration - Large Volume Injection
QLast Update : Wed May 18 08:55:04 2016
Response via : Initial Calibration



GCMS8_160525A
For

DHL Work Order
1605098

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

SEE RUN LOG FOR ALL PROJECT AND BATCH NUMBERS AND MATRICES	Run ID: GCMS8_160525A
Batch Number(s): See Run Log. Matrix: See Run Log.	SOP: ORGANICS-PAH-01

Review Item	Yes	No	N/A	2nd Level Review
Data Folder Contents 1. Is the Prep Batch Report included? Check and record the following: ***Prep Start/End Dates, Sample Amounts, Bottle #s***	X			x
2. Are the reagents and spikes listed on the Prep Batch Report current with a valid expiration date? ***All standard/QC sample preparations shall be documented in LIMS***	X			
3. Is the Run Log and instrument sequence included? ***Check the Test Code, Sample Type, Batch ID, and Analysis Date/Time***	X			
4. Is the System Verification - Tune Report included? ***Date/Tme of Tune starts 12-hour analysis window***	X			
5. Is the Evaluate Continuing Calibration Report included?	X			

Daily Demonstration of Performance

QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in the Variance/Comment Section on page 2.

Review Item	Frequency	Limits	Pass	Fail (List Batch/Sample) **See Run Log**	2nd Level Review
Tune	Before ICAL Every 12 hours	See Tune Eval Report	X		x
Resolution Check - Benzo(b) and Benzo(k)phenanthrene	Before ICAL Every 12 hours	Benzo(b) and Benzo(k) Valley > 50%	X		
Initial Calibration Curve (ICAL) (minimum: 5 Standards)	Prior to samples and when ICV fails	Avg. RF - %RSD ≤ 15% Curve (COD) - R^2 ≥ 0.990	X		
SSCV - (Second Source)	After calibration (ICAL)	80-120%	X		
ICV - (Daily Initial Cal Verification)	Every 12 hours	ISTDs Area% (50-200%) Surrogates %R (See LIMS) Analytes %R (80-120%)	X		

Review Item	Frequency	Limits	Pass	Fail	N/A	Review
Method Blank (MB) System Blank (SYS Blank)	Every Batch (MB) Daily (SYS BL)	< MDL / <½ RL (DoD) or <1/10 the sample/reg limit	X			x
Lab Control Sample (LCS)	Every Batch	See LIMS	X			
Lab Control Sample Dup (LCSD)	Insufficient sample Sample Matrix	See LIMS			X	
LCSD - RPD	Every LCS/LCSD	≤ 30 (Aq/Soil/DoD)			X	
Field Samples	Up to 20 per prep batch	ISTDs Area% (50-200%) Surrogates %R (See LIMS) RRT ± 0.06 RRT Standard Q value > 70 - check for #	X			
Matrix Spike (MS)	Every Batch/20 samples	See LIMS	X			
Matrix Spike Duplicate (MSD) (MSD is N/A for Method 625)	Every Prep Batch except Method 625	See LIMS	X			
MSD - RPD (MSD is N/A for Method 625)	Every MS/MSD except Method 625	≤ 30 (Aq/Soil/DoD)	X			

Lab Data Review Check List
EPA Method 8270 / 625 - PAH: Polynuclear Aromatic Hydrocarbons

Review Item	Criteria	Yes	No	N/A	2nd Level Review
Sample Analysis	7 days (Aq) - extraction			X	
1. Are all sample hold times met?	14 days (Soil) - extraction	X			
	40 days analysis	X			
2. Are all manual integrations signed (Before & After) and printouts included ? Put in LIMS Comment Section ***Include MI form for DoD work***	Before & After - signed Comment Section in LIMS MI Form - DoD only			X	x
3. Are all samples with concentrations > the highest standard used for calibration diluted and reanalyzed?	> highest standard	X			
Review Item #3 is N/A ONLY if all sample results are within Calibration range or NO if dilution is in different folder					
4. Is mass spectra reviewed/verified if Q value is <70 and/or # flag for results >MDL?	Q value <70 - All hits	X			x
5. Are ALL reported analytes > MDL (+ J flags) circled by the analyst?		X	**Return to analyst if NO**		
VARIANCE REPORT					
QC items that do not meet method/SOP/project requirements will be described on the run log. All variances that impact data quality will be described in this section.					
NON-CONFORMANCES / VARIANCE	All deviations from the method and SOP that affect data quality			X	x
1. Are all non-conformances included and noted?					
2. Are all corrective actions included?				X	
3. Does the variance require approval by the Technical Director/General Manager/QA Manager?				X	

Approved by: Date:

Description and Corrective Actions of QC items that do not meet method/SOP/project requirements:

****INCLUDE VARIANCE ITEM / REASON / CORRECTIVE ACTION / IMPACT ON DATA****

VARIANCE ITEM	REASON	CORRECTIVE ACTION
___ Hold Time exceeded (7D/14D-Ext/40D-Analysis)	___ Sample Received out of HT	___ Reanalyze QC to confirm
___ ICV out of control (±20%)	___ Carryover from previous run	___ Recalibrate
___ MB/SYS BL out of control (> MDL / >½ RL)	___ Cross contamination	___ Reprep/Reanalyze sample
___ LCS ___LCSD out of control (See LIMS)	___ Lab Artifact	___ Reprep/Reanalyze Batch
___ RPD out of control for LCS/LCSD (>30)	___ Prep Spike error (describe)	___ Reanalyze Batch/Sample/QC
___ MS ___ MSD out of control (See LIMS)	___ High Levels of target analytes	___ Verify H2O/reagents are clean
___ RPD out of control for MS/MSD (>30)	___ High Levels of non-targets	___ Reanalyze sample to confirm
___ Internal Standard(s) out of control	___ Insufficient sample for QC	___ Sample results ND w/ dilution
___ Multiple Surrogates out of control	___ Prep Error	___ Client notified and approved
___ No MS/MSD prepared - LCS/LCSD used instead	___ Analytical Error	___ Flag data / Case narrative
___ Missing QC (other than MS/MSD)	___ Client Request	___ Instrument Maintenance
___ QC sample(s) was mis-spiked	___ Other (describe below)	___ Accept data
___ Other (describe below)		___ Cannot reanalyze (HT out/Lack of Sample)

General Comments and Impact on Data: **See Run Log.**

Analyst: Don Winston Date: 5/26/2016

Second-Level Review: Janice Whitt Date: 5/31/2016

REVIEWED BY
By Janice Whitt at 4:45:35 PM, 5/31/2016

DHL Analytical, Inc.

Run ID: GCMS8_160525A **Run No.:** 86005

Analytical Run Date: 5/25/2016 **InstrumentID:** GCMS8

Analyst: Karyn Lane **Column:** Rtx-5Sil MS (30m x 0.25mm ID x 0.5µm df)

Calibration ID: 660 **Column ID:** 0.18mm

Column Length: 20m

Cal Comments: PAH160517.M

SampID	DF	TestCode	SampType	Batch ID	Analysis Date/Time	Q	Comments
DFTPP-160525	1	PAH_LL_SDOD1	TUNE	R86005	5/25/2016 8:53:00 AM		
ICV-160525	1	PAH_LL_SDOD1	ICV	R86005	5/25/2016 9:31:00 AM		
LCS-75241	1	PAH_LL_SDOD1	LCS	75241	5/25/2016 10:11:00 AM		
MB-75241	1	PAH_LL_SDOD1	MBLK	75241	5/25/2016 10:48:00 AM		
1605135-10A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 11:25:00 AM		All samples in this batch run at 10x - detection limit is sufficient and is approved by project managers.
1605135-11A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 12:02:00 PM		
1605135-12A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 12:41:00 PM		
1605135-13A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 1:18:00 PM		
1605135-14A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 1:56:00 PM		
1605135-15A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 2:33:00 PM		
1605135-43A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 3:10:00 PM		
1605135-44A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 3:47:00 PM		
1605135-45A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 4:24:00 PM		
1605144-13A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 5:02:00 PM		
1605144-14A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 5:38:00 PM		
1605144-15A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 6:16:00 PM		
1605144-17A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 6:53:00 PM		
1605144-18A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 7:30:00 PM		
DFTPP2-160525	1	PAH_LL_SDOD1	TUNE	R86005	5/25/2016 8:07:00 PM		
ICV2-160525	1	PAH_LL_SDOD1	ICV	R86005	5/25/2016 8:44:00 PM		
SBLK-160525	1	PAH_LL_SDOD1	SBLK	75241	5/25/2016 9:59:00 PM		
1605144-19A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 10:36:00 PM		
1605144-20A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 11:12:00 PM		
1605144-21A	10	PAH_LL_SDOD1	SAMP	75241	5/25/2016 11:49:00 PM		
1605135-14AMS	10	PAH_LL_SDOD1	MS	75241	5/26/2016 12:27:00 AM		
1605135-14AMSD	10	PAH_LL_SDOD1	MSD	75241	5/26/2016 1:04:00 AM		
1605098-36A	10	PAH_LL_SDOD1	SAMP	75218	5/26/2016 1:41:00 AM		
1605098-39A	10	PAH_LL_SDOD1	SAMP	75218	5/26/2016 2:18:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

DHL Analytical, Inc.

Run ID: GCMS8_160525A **Run No.:** 86005

CCV-160525	1	PAH_LL_SDOD1	CCV	R86005	5/26/2016 2:55:00 AM		

Std ID	Std Name	Type	Exp. Date
DFTPP160509	2.5 PPM 525 TUNE STD.	TUNE	05/07/2017
PAHCCV-160509	1 PPM PAH CCV STANDARD	CCV	08/07/2016
PAHICV160509	2 PPM PAH ICV	ICV	08/07/2016
SVI150810-09	4000 PPM INTERNAL STANDAR	ALL	05/13/2017

Sequence Name: C:\msdchem\1\sequence\160525.S
Comment:
Operator:
Data Path: C:\MSDCHEM\1\DATA\160525\
Instrument Name: GCMS #8
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

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

Line		Sample Name/Misc Info		
1)	Sample	1	16052501 DFTPPPAH	DFTPP-160525
2)	Sample	2	16052502 PAH160517	ICV-160525
3)	Sample	3	16052503 PAH160517	LCS-75240
4)	Sample	4	16052504 PAH160517	MB-75240
5)	Sample	5	16052505 PAH160517	1605135-10A
6)	Sample	6	16052506 PAH160517	1605135-11A
7)	Sample	7	16052507 PAH160517	1605135-12A
8)	Sample	8	16052508 PAH160517	1605135-13A
9)	Sample	9	16052509 PAH160517	1605135-14A
10)	Sample	10	16052510 PAH160517	1605135-15A
11)	Sample	11	16052511 PAH160517	1605135-43A
12)	Sample	12	16052512 PAH160517	1605135-44A
13)	Sample	13	16052513 PAH160517	1605135-45A
14)	Sample	14	16052514 PAH160517	1605144-13A
15)	Sample	15	16052515 PAH160517	1605144-14A
16)	Sample	16	16052516 PAH160517	1605144-15A
17)	Sample	17	16052517 PAH160517	1605144-17A
18)	Sample	18	16052518 PAH160517	1605144-18A
19)	Sample	19	16052519 DFTPPPAH	DFTPP2-160525
20)	Sample	20	16052520 PAH160517	ICV2-160525
21)	Sample	21	16052521 PAH160517	SBLK
22)	Sample	22	16052522 PAH160517	SBLK-160525
23)	Sample	23	16052523 PAH160517	1605144-19A
24)	Sample	24	16052524 PAH160517	1605144-20A
25)	Sample	25	16052525 PAH160517	1605144-21A
26)	Sample	26	16052526 PAH160517	1605135-14AMS
27)	Sample	27	16052527 PAH160517	1605135-14AMSD
28)	Sample	28	16052528 PAH160517	1605098-36A
29)	Sample	29	16052529 PAH160517	1605098-39A
30)	Sample	30	16052530 PAH160517	CCV-160525

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/18/2016 8:50:22 AM**
Digestion:
Prep End Date: **5/18/2016 1:50:00 PM**

Prep Batch **75218** Prep Code: **3550_PAHDOD** Technician: **Alex Robbins**

Prep Factor Units: **mL/g**

Equipment List

Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-35A	Soil		10.41	10	0.961	1 of 1	
1605098-36A	Soil		10.24	10	0.977	1 of 1	
1605098-38A	Soil		10.36	10	0.965	1 of 1	
1605098-39A	Soil		10.98	10	0.911	1 of 1	
1605098-40A	Soil		10.45	10	0.957	1 of 1	
1605098-41A	Soil		10.8	10	0.926	1 of 1	
1605121-01A	Soil		10.56	10	0.947	1 of 1	
1605121-01AMS	Soil		10.3	10	0.971	of	
1605121-01AMSD	Soil		10.39	10	0.962	of	
1605121-02A	Soil		10.77	10	0.929	1 of 1	
1605121-03A	Soil		10.45	10	0.957	1 of 1	
1605121-04A	Soil		10.26	10	0.975	1 of 1	
1605121-05A	Soil		10.02	10	0.998	1 of 1	
1605121-06A	Soil		10.13	10	0.987	1 of 1	
1605121-07A	Soil		10.86	10	0.921	1 of 1	
1605121-08A	Soil		10.32	10	0.969	1 of 1	
1605121-09A	Soil		10.05	10	0.995	1 of 1	
1605121-10A	Soil		10.17	10	0.983	1 of 1	
1605121-11A	Soil		10.01	10	0.999	1 of 1	
1605121-12A	Soil		10.4	10	0.962	1 of 1	
1605121-13A	Soil		10.07	10	0.993	1 of 1	
1605121-14A	Soil		10.15	10	0.985	1 of 1	
LCS-75218	Soil		10	10	1.000	of	
MB-75218	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED/APPROVED

By Sherri Herschmann at 5:24:16 PM, 5/25/2016

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/18/2016 8:50:22 AM**
Digestion:
Prep End Date: 5/18/16 1:50PM

Prep Batch **75218** Prep Code: **3550_PAHDOD** Technician: **Alex Robbins**

Prep Factor Units: mL/g

Equipment List
Turbo-Vap # 1,2,3
Balance # 25
Sonicators # 1,2,3,4

Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605098-35A	Soil		10.41	10	1.000	1 of 1	
1605098-36A	Soil		10.24 ~~10.24~~ 5/18/16	10	1.000	1 of 1	
Extract and hold							
1605098-38A	Soil		10.36	10	1.000	1 of 1	
1605098-39A	Soil		10.98	10	1.000	1 of 1	
Extract and hold							
1605098-40A	Soil		10.45	10	1.000	1 of 1	
1605098-41A	Soil		10.80	10	1.000	1 of 1	
1605121-01A	Soil		10.56	10	1.000	1 of 1	
1605121-01AMS	Soil		10.30	10	1.000	of	
1605121-01AMSD	Soil		10.39	10	1.000	of	
1605121-02A	Soil		10.77	10	1.000	1 of 1	
1605121-03A	Soil		10.45	10	1.000	1 of 1	
1605121-04A	Soil		10.26	10	1.000	1 of 1	
1605121-05A	Soil		10.02	10	1.000	1 of 1	
1605121-06A	Soil		10.13	10	1.000	1 of 1	
1605121-07A	Soil		10.86	10	1.000	1 of 1	
1605121-08A	Soil		10.32	10	1.000	1 of 1	
1605121-09A	Soil		10.05	10	1.000	1 of 1	
1605121-10A	Soil		10.17	10	1.000	1 of 1	
1605121-11A	Soil		10.01	10	1.000	1 of 1	
1605121-12A	Soil		10.40	10	1.000	1 of 1	
1605121-13A	Soil		10.07	10	1.000	1 of 1	
1605121-14A	Soil		10.15	10	1.000	1 of 1	
LCS-75218	Soil		10	10	1.000	of	
MB-75218	Soil		10	10	1.000	of	

Number	Reagent Name	Amt	Units	Exp. Da
10215	Whatman 41 Filter	1	filter	03/20/2026
10216	Purified Sodium Sulfate	10	g	03/30/2026
10340	Methylene Chloride	8	ml	05/05/2026
10343	1:1 MeCl2/Acetone	120	ml	05/09/2026

Spk ID	Spike Name	SampType	Amt (mL or g)	Exp. Date
PAHPREP160516	200 PPM PAH Spike Mix	LCS/MS/MSD	0.05	08/16/2016
SVPREP160517	40 PPM Surrogate Standard	ALL	0.25	08/15/2016

REVIEWED BY
By Janice Whitt at 1:28:06 PM, 5/23/2016

5/18/16

5/18/16

5/18/16

DHL Analytical, Inc.

PREP BATCH REPORT

Prep Start Date: **5/13/2016 1:00:00 PM**
Digestion: **Start: 5/13/2016 2:00:00 PM / Stop: 5/17/2016 9:00:00 AM**
Prep End Date: **5/17/2016 12:00:00 PM**

Prep Batch **75155** Prep Code: **ISM2MM_PREP** Technician: **Jennifer Barker**

Prep Factor Units: **mL/**

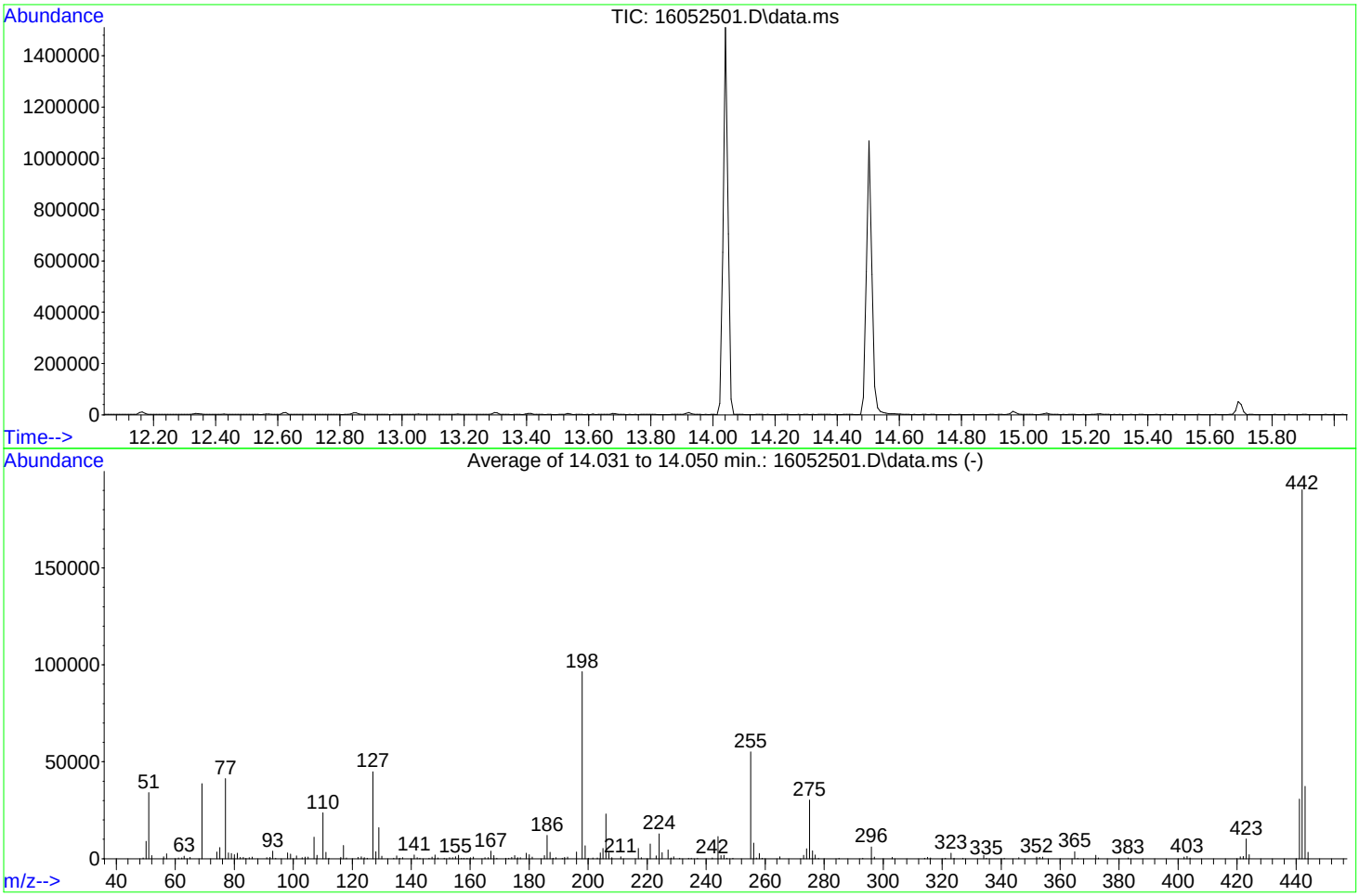
Sample ID	Matrix	pH	SampAmt	Fin Vol	Factor	Bottle #	Cleanup
1605121-01A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling - MS/MSD						
1605121-02A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-03A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-04A	Soil		0	0	#Num!	1 of 1	
1605121-05A	Soil		0	0	#Num!	1 of 1	
1605121-06A	Soil		0	0	#Num!	1 of 1	
1605121-07A	Soil		0	0	#Num!	1 of 1	
1605121-08A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-09A	Soil		0	0	#Num!	1 of 1	
1605121-10A	Soil		0	0	#Num!	1 of 1	
1605121-11A	Soil		0	0	#Num!	1 of 1	
1605121-12A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-13A	Soil		0	0	#Num!	1 of 1	
1605121-14A	Soil		0	0	#Num!	1 of 1	
1605121-15A	Soil		0	0	#Num!	1 of 1	
1605121-16A	Soil		0	0	#Num!	1 of 1	
1605121-17A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-18A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						
1605121-19A	Soil		0	0	#Num!	1 of 1	
	Sieve only no subsampling hard clay						

REVIEWED BY
By Janice Whitt at 1:25:15 PM, 5/23/2016

Data Path : C:\msdchem\1\DATA\160525\
Data File : 16052501.D
Acq On : 25 May 2016 8:53 am
Operator :
Sample : DFTPP-160525
Misc : TUNE
ALS Vial : 1 Sample Multiplier: 1

Integration File: RTEINT.P

Method : C:\msdchem\1\METHODS\DFTPPPAH.M
Title : CLP BNA Calibration - Large Volume Injection
Last Update : Thu Aug 27 07:24:43 2015



AutoFind: Scans 435, 436, 437; Background Corrected with Scan 431

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	10	80	35.4	34181	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	40.1	38708	PASS
70	69	0.00	2	0.0	0	PASS
127	198	10	80	46.5	44912	PASS
197	198	0.00	2	0.0	0	PASS
198	198	100	100	100.0	96589	PASS
199	198	5	9	6.9	6644	PASS
275	198	10	60	31.3	30208	PASS
365	198	1	200	3.7	3576	PASS
441	442	0.01	24	16.2	30808	PASS
442	198	50	400	197.1	190405	PASS
443	442	15	24	19.6	37297	PASS

REVIEWED BY
By Janice Whitt at 4:22:39 PM, 5/31/2016