



complaint 200444807

facility 757228

# GC/MS Semivolatiles

## SIMPAH

### Case Narrative

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## COGCC

Complaint 200444807

Work Order Number: 1712475

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 12/22/17.
2. The sample was prepared and analyzed according to SW-846, 3rd Edition procedures. Specifically, the water sample was extracted using continuous liquid-liquid extractors, according to SW-846 Method 3520C, utilizing the current revision of SOP 617.
3. The extract was analyzed using GC/MS with a DB-5MS capillary column according to the current revision of SOP 506 based on SW-846 Method 8270D. The samples were analyzed using selective ion monitoring (SIM), in order to achieve lower reporting limits. All positive results were quantitated against the initial calibration standards using the internal standard technique. The identification of positive results was achieved by a comparison of the retention time and a limited number of major ions from the mass spectrum of the sample versus the daily calibration standard.
4. All initial calibration criteria were met. If average response factors were used in the initial calibration, %RSD was  $\leq 20\%$ . If linear or higher order regression calibrations were used in the initial calibration, the coefficient of determination ( $r^2$ )  $\geq 0.99$ .
5. All initial calibration standards are verified by comparing a second source standard initial calibration verification (ICV) against the calibration curve. All target compounds in the second source verification had a %D  $\leq 30\%$ .
6. All compounds in the daily (continuing) calibration verifications were within 20%D.
7. All method blank criteria were met.



8. All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria.
9. A matrix spike and matrix spike duplicate were not performed because of insufficient sample. A laboratory control sample and laboratory control sample duplicate were performed instead.
10. The sample was extracted and analyzed within the established holding time.
11. All surrogate recoveries were within acceptance criteria with the following exception:

Surrogate	Sample	Direction
Terphenyl-D <sub>14</sub>		Low

The re-analysis of this sample confirmed the original surrogate analysis. This suggests that the outliers were due to matrix effects. No further action was taken.

12. All internal standard recoveries were within acceptance criteria.
13. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

*Mindy Norton*

Mindy Norton  
Organics Primary Data Reviewer

12/30/17  
Date

*Kath M. O.*

Organics Final Data Reviewer

12/31/17  
Date

**ALS**  
**Data Qualifier Flags**  
**Organics**

- U or ND:** This flag indicates that the compound was analyzed for but not detected.
- J:** This flag indicates an estimated value. This flag is used as follows : (1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the reporting limit (RL) but greater than the method detection limit (MDL); (3) when the retention time data indicate the presence of a compound that meets the GC identification criteria, and the result is less than the RL but greater than the MDL; and (4) the reported value is estimated.
- B:** This flag is used when the analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user. This flag shall be used for a tentatively identified compound (TIC) as well as for a positively identified target compound.
- E:** This flag identifies compounds whose concentration exceeds the upper level of the calibration range.
- A:** This flag indicates that a tentatively identified compound is a suspected aldol-condensation product.
- X:** This flag indicates that the analyte was diluted below an accurate quantitation level.
- \*:** This flag indicates that a spike recovery is equal to or outside the control criteria used.
- +:** This flag indicates that the relative percent difference (RPD) equals or exceeds the control criteria.

# ALS -- Fort Collins

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1712475

**Client Name:** COGCC

**Client Project Name:** Complaint 200444807

**Client Project Number:**

**Client PO Number:** GAE 2018-0302

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
757228 Ditlev-Simonsen flowline	1712475-1		WATER	21-Dec-17	14:04

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225 Commerce Drive, Fort Collins, Colorado 80524  
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

## Chain-of-Custody

Turnaround time for samples received after 2 p.m. will be calculated beginning from the next business day.

**ALS WORKORDER #**

1712475

[illegible]



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Co. Oil + Gas  
Project Manager: 110

Workorder No: 1712475  
Initials: KS Date: 12-22-17

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	<input checked="" type="radio"/> NO
7. Were airbills / shipping documents present and/or removable?	<input checked="" type="radio"/> DROP OFF	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<input checked="" type="radio"/> N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	<input checked="" type="radio"/> YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: <input checked="" type="checkbox"/> dusting ____ moderate <input checked="" type="checkbox"/> heavy	N/A	<input checked="" type="radio"/> YES	NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <input checked="" type="radio"/> #3 #4		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>3.3</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>11</u>			
Background µR/hr reading: <u>11</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / NA (If no, see Form 008.)			

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

6. Test requested for the 1L amber sample was listed incorrectly.

15. Bottles 1-3 (40va) have lite dusting. Bottle 4 (1L amber) has heavy sediment.

If applicable, was the client contacted? ☒ YES / NO / NA Contact: Peter Gintautas Date/Time: 12/22/17 15:30

Project Manager Signature / Date: \_\_\_\_\_

# GC/MS Semi-volatiles

Method SW8270SIMD

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1712475

Client Name: COGCC

ClientProject ID: Complaint 200444807

Lab ID: EX171227-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 27-Dec-17

Date Analyzed: 28-Dec-17

Prep Batch: EX171227-2

QCBatchID: EX171227-2-1

Run ID: SV171228-4

Cleanup: NONE

Basis: N/A

File Name: S07385

Sample Aliquot: 1000 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL
91-20-3	NAPHTHALENE	1	0.1	U	0.1	0.03
91-57-6	2-METHYLNAPHTHALENE	1	0.1	U	0.1	0.03
90-12-0	1-METHYLNAPHTHALENE	1	0.1	U	0.1	0.03
208-96-8	ACENAPHTHYLENE	1	0.1	U	0.1	0.03
83-32-9	ACENAPHTHENE	1	0.1	U	0.1	0.03
86-73-7	FLUORENE	1	0.1	U	0.1	0.03
85-01-8	PHENANTHRENE	1	0.1	U	0.1	0.03
120-12-7	ANTHRACENE	1	0.1	U	0.1	0.03
206-44-0	FLUORANTHENE	1	0.1	U	0.1	0.03
129-00-0	PYRENE	1	0.1	U	0.1	0.03
56-55-3	BENZO(A)ANTHRACENE	1	0.1	U	0.1	0.03
218-01-9	CHRYSENE	1	0.1	U	0.1	0.03
205-99-2	BENZO(B)FLUORANTHENE	1	0.1	U	0.1	0.03
207-08-9	BENZO(K)FLUORANTHENE	1	0.1	U	0.1	0.03
50-32-8	BENZO(A)PYRENE	1	0.1	U	0.1	0.03
193-39-5	INDENO(1,2,3-CD)PYRENE	1	0.1	U	0.1	0.03
53-70-3	DIBENZO(A,H)ANTHRACENE	1	0.1	U	0.1	0.03
191-24-2	BENZO(G,H,I)PERYLENE	1	0.1	U	0.1	0.03

## Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
321-60-8	2-FLUOROBIPHENYL	1.62		2	81	21 - 106
4165-60-0	NITROBENZENE-D5	1.6		2	80	34 - 111
1718-51-0	TERPHENYL-D14	1.8		2	90	33 - 111

Data Package ID: SV1712475-1

Date Printed: Saturday, December 30, 2017

ALS -- Fort Collins

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LIMS Version: 6.851

# GC/MS Semi-volatiles

Method SW8270SIM

## Tentatively Identified Compounds

Lab Name: ALS -- Fort Collins

Work Order Number: 1712475

Client Name: COGCC

ClientProject ID: Complaint 200444807

Field ID:

Lab ID: EX171227-2MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 27-Dec-17

Date Analyzed: 28-Dec-17

Prep Batch: EX171227-2

QCBatchID: EX171227-2-1

Run ID: SV171228-4

Cleanup: NONE

Basis: As Received

Sample Aliquot: 1000 ml

Final Volume: 1 ml

Clean DF: 1

File Name: S07385

CASNO	Retention Time	Target Analyte	Dilution Factor	Result	Units	Qualifier
		NONE DETECTED	1			U

Data Package ID: SV1712475-1



# GC/MS Semi-volatiles

Method SW8270SIMD

## Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1712475

Client Name: COGCC

ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo  
Lab ID: 1712475-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 21-Dec-17

Date Extracted: 27-Dec-17

Date Analyzed: 28-Dec-17

Prep Method: SW3520BN Rev C

Prep Batch: EX171227-2

QC Batch ID: EX171227-2-1

Run ID: SV171228-4

Cleanup: NONE

Basis: As Received

File Name: S07389

Analyst: Tyler Knaebel

Sample Aliquot: 960 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
91-20-3	NAPHTHALENE	1	0.18		0.1	0.031
91-57-6	2-METHYLNAPHTHALENE	1	0.6		0.1	0.031
90-12-0	1-METHYLNAPHTHALENE	1	6.6		0.1	0.031
208-96-8	ACENAPHTHYLENE	1	0.086	J	0.1	0.031
83-32-9	ACENAPHTHENE	1	0.18		0.1	0.031
86-73-7	FLUORENE	1	1.8		0.1	0.031
85-01-8	PHENANTHRENE	1	1.3		0.1	0.031
120-12-7	ANTHRACENE	1	0.1	U	0.1	0.031
206-44-0	FLUORANTHENE	1	0.1	U	0.1	0.031
129-00-0	PYRENE	1	0.1	U	0.1	0.031
56-55-3	BENZO(A)ANTHRACENE	1	0.1	U	0.1	0.031
218-01-9	CHRYSENE	1	0.1	U	0.1	0.031
205-99-2	BENZO(B)FLUORANTHENE	1	0.1	U	0.1	0.031
207-08-9	BENZO(K)FLUORANTHENE	1	0.1	U	0.1	0.031
50-32-8	BENZO(A)PYRENE	1	0.1	U	0.1	0.031
193-39-5	INDENO(1,2,3-CD)PYRENE	1	0.1	U	0.1	0.031
53-70-3	DIBENZO(A,H)ANTHRACENE	1	0.1	U	0.1	0.031
191-24-2	BENZO(G,H,I)PERYLENE	1	0.1	U	0.1	0.031

Data Package ID: SV1712475-1

Date Printed: Saturday, December 30, 2017

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# GC/MS Semi-volatiles

Method SW8270SIMD

## Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1712475

Client Name: COGCC

ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo  
Lab ID: 1712475-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 21-Dec-17

Date Extracted: 27-Dec-17

Date Analyzed: 28-Dec-17

Prep Method: SW3520BN Rev C

Prep Batch: EX171227-2

QC Batch ID: EX171227-2-1

Run ID: SV171228-4

Cleanup: NONE

Basis: As Received

File Name: S07389

Analyst: Tyler Knaebel

Sample Aliquot: 960 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
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## Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
321-60-8	2-FLUOROBIPHENYL	1.51		2.08	73	21 - 106
4165-60-0	NITROBENZENE-D5	1.61		2.08	77	34 - 111
1718-51-0	TERPHENYL-D14	0.574	*	2.08	28	33 - 111

Data Package ID: SV1712475-1

Date Printed: Saturday, December 30, 2017

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# GC/MS Semi-volatiles

Method SW8270SIM

## Tentatively Identified Compounds

Lab Name: ALS -- Fort Collins

Work Order Number: 1712475

Client Name: COGCC

ClientProject ID: Complaint 200444807

Field ID:	757228 Ditlev-Simonsen flo
Lab ID:	1712475-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 21-Dec-17

Date Extracted: 27-Dec-17

Date Analyzed: 28-Dec-17

Prep Batch: EX171227-2

QCBatchID: EX171227-2-1

Run ID: SV171228-4

Cleanup: NONE

Basis: As Received

Sample Aliquot: 960 ml

Final Volume: 1 ml

Clean DF: 1

File Name: S07389

CASNO	Retention Time	Target Analyte	Dilution Factor	Result	Units	Qualifier
		NONE DETECTED	1			U

Data Package ID: SV1712475-1

# GC/MS Semi-volatiles

## Method SW8270SIMD

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1712475

Client Name: COGCC

ClientProject ID: Complaint 200444807

Lab ID: EX171227-2LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 12/27/2017

Date Analyzed: 12/28/2017

Prep Method: SW3520BNC

Prep Batch: EX171227-2

QCBatchID: EX171227-2-1

Run ID: SV171228-4

Cleanup: NONE

Basis: N/A

File Name: S07386

Sample Aliquot: 1000 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
91-20-3	NAPHTHALENE	2	1.54	0.1		77	39 - 102%
91-57-6	2-METHYLNAPHTHALENE	2	1.57	0.1		79	46 - 104%
90-12-0	1-METHYLNAPHTHALENE	2	1.54	0.1		77	60 - 100%
208-96-8	ACENAPHTHYLENE	2	1.51	0.1		75	33 - 127%
83-32-9	ACENAPHTHENE	2	1.58	0.1		79	47 - 108%
86-73-7	FLUORENE	2	1.57	0.1		78	50 - 112%
85-01-8	PHENANTHRENE	2	1.55	0.1		78	51 - 117%
120-12-7	ANTHRACENE	2	1.53	0.1		76	54 - 112%
206-44-0	FLUORANTHENE	2	1.59	0.1		80	39 - 133%
129-00-0	PYRENE	2	1.71	0.1		86	50 - 117%
56-55-3	BENZO(A)ANTHRACENE	2	1.69	0.1		84	47 - 132%
218-01-9	CHRYSENE	2	1.66	0.1		83	52 - 112%
205-99-2	BENZO(B)FLUORANTHENE	2	1.73	0.1		86	51 - 124%
207-08-9	BENZO(K)FLUORANTHENE	2	1.65	0.1		82	53 - 128%
50-32-8	BENZO(A)PYRENE	2	1.51	0.1		76	45 - 116%
193-39-5	INDENO(1,2,3-CD)PYRENE	2	1.64	0.1		82	43 - 141%
53-70-3	DIBENZO(A,H)ANTHRACENE	2	1.64	0.1		82	43 - 141%
191-24-2	BENZO(G,H,I)PERYLENE	2	1.56	0.1		78	38 - 123%

Data Package ID: SV1712475-1

Date Printed: Saturday, December 30, 2017

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# GC/MS Semi-volatiles

## Method SW8270SIMD

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1712475

Client Name: COGCC

ClientProject ID: Complaint 200444807

Lab ID: EX171227-2LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 12/27/2017

Date Analyzed: 12/28/2017

Prep Method: SW3520BNC

Prep Batch: EX171227-2

QC Batch ID: EX171227-2-1

Run ID: SV171228-4

Cleanup: NONE

Basis: N/A

File Name: S07387

Sample Aliquot: 1000 ml

Final Volume: 1 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
91-20-3	NAPHTHALENE	2	1.67	0.1		84	20	8
91-57-6	2-METHYLNAPHTHALENE	2	1.68	0.1		84	20	7
90-12-0	1-METHYLNAPHTHALENE	2	1.66	0.1		83	20	7
208-96-8	ACENAPHTHYLENE	2	1.59	0.1		79	20	5
83-32-9	ACENAPHTHENE	2	1.69	0.1		84	20	6
86-73-7	FLUORENE	2	1.64	0.1		82	20	4
85-01-8	PHENANTHRENE	2	1.59	0.1		80	20	3
120-12-7	ANTHRACENE	2	1.55	0.1		78	20	2
206-44-0	FLUORANTHENE	2	1.59	0.1		79	20	0
129-00-0	PYRENE	2	1.7	0.1		85	20	1
56-55-3	BENZO(A)ANTHRACENE	2	1.65	0.1		83	20	2
218-01-9	CHRYSENE	2	1.71	0.1		85	20	3
205-99-2	BENZO(B)FLUORANTHENE	2	1.72	0.1		86	20	1
207-08-9	BENZO(K)FLUORANTHENE	2	1.74	0.1		87	20	6
50-32-8	BENZO(A)PYRENE	2	1.52	0.1		76	20	0
193-39-5	INDENO(1,2,3-CD)PYRENE	2	1.68	0.1		84	20	2
53-70-3	DIBENZO(A,H)ANTHRACENE	2	1.69	0.1		84	20	3
191-24-2	BENZO(G,H,I)PERYLENE	2	1.62	0.1		81	20	4

### Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
321-60-8	2-FLUOROBIPHENYL	2	80		84		21 - 106
4165-60-0	NITROBENZENE-D5	2	80		84		34 - 111
1718-51-0	TERPHENYL-D14	2	91		90		33 - 111

Data Package ID: SV1712475-1

Date Printed: Saturday, December 30, 2017

ALS -- Fort Collins

LIMS Version: 6.851

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Data Path : C:\msdchem\1\data\2017\122817\  
 Data File : S07385.D  
 Acq On : 28 Dec 2017 11:59  
 Operator : TK HPSV4 sn #: CV11451177  
 Sample : EX171227-2MB  
 Misc :  
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 28 15:13:57 2017  
 Quant Method : C:\msdchem\1\methods\121417SP.M  
 Quant Title : SW8270D Full Scan Analysis  
 QLast Update : Thu Dec 28 15:13:21 2017  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
-----						
Internal Standards						
1) Naphthalene-d8	4.190	136	245587	2000.00	ng/ml	# 0.00
6) Acenaphthene-d10	5.738	164	122163	2000.00	ng/ml	# 0.00
11) Phenanthrene-d10	7.032	188	228760	2000.00	ng/ml	# 0.00
15) Chrysene-d12	9.338	240	170199	2000.00	ng/ml	# 0.01
20) Perylene-d12	10.817	264	136481	2000.00	ng/ml	# 0.02
System Monitoring Compounds						
2) Nitrobenzene-d5	3.557	82	79834	1598.09	ng/ml	0.00
Spiked Amount 2000.000	Range 34 - 111		Recovery =	79.90%		
7) 2-Fluorobiphenyl	5.131	172	176181	1615.61	ng/ml	0.00
Spiked Amount 2000.000	Range 21 - 106		Recovery =	80.78%		
17) p-Terphenyl-d14	8.377	244	157846	1804.17	ng/ml	0.00
Spiked Amount 2000.000	Range 33 - 111		Recovery =	90.21%		

Target Compounds Qvalue

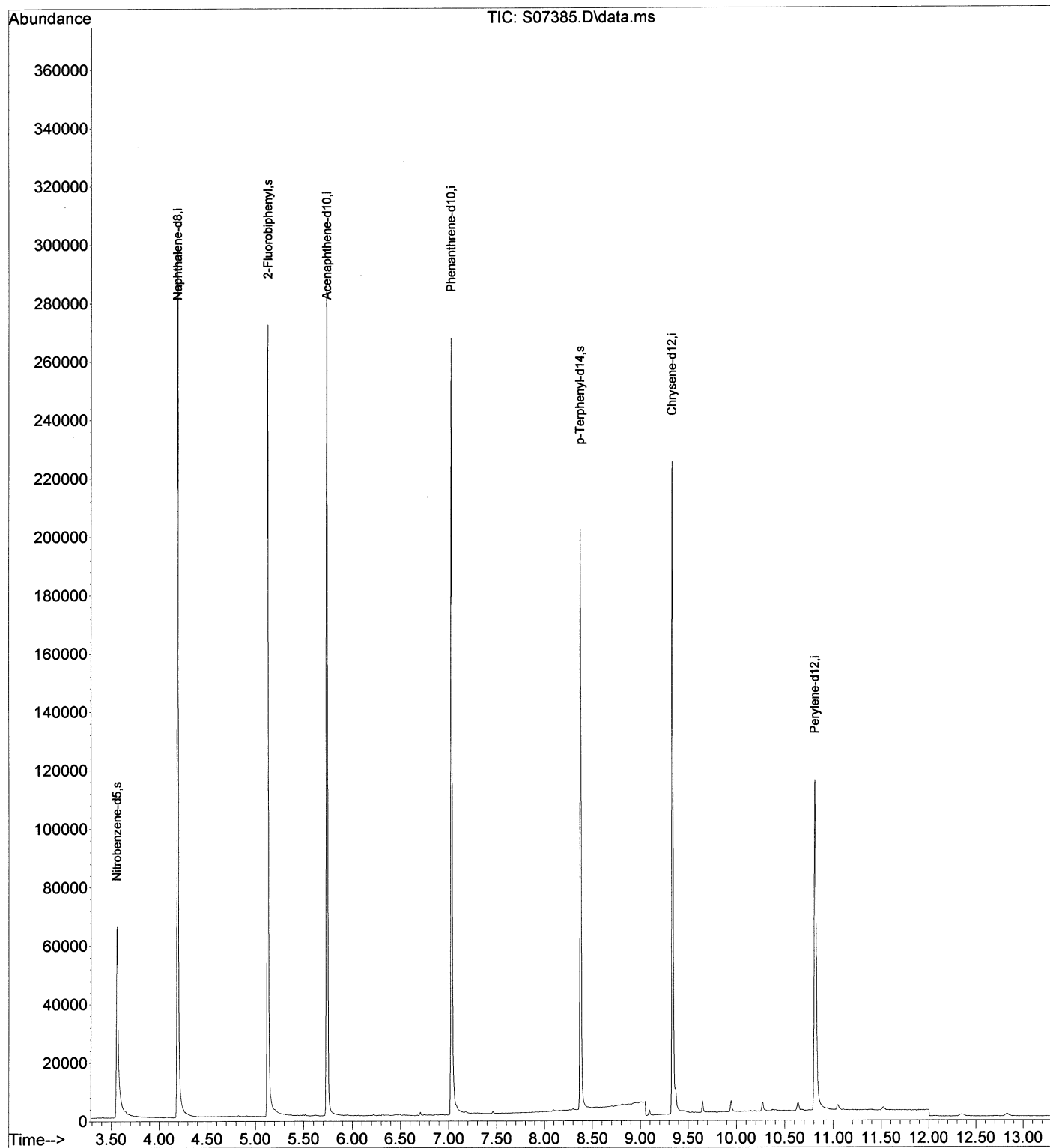
-----

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

*an 12/29/17*

Data Path : C:\msdchem\1\data\2017\122817\  
 Data File : S07385.D  
 Acq On : 28 Dec 2017 11:59  
 Operator : TK HPSV4 sn #: CV11451177  
 Sample : EX171227-2MB  
 Misc :  
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 28 15:13:57 2017  
 Quant Method : C:\msdchem\1\methods\121417SP.M  
 Quant Title : SW8270D Full Scan Analysis  
 QLast Update : Thu Dec 28 15:13:21 2017  
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2017\122817\  
 Data File : S07389.D  
 Acq On : 28 Dec 2017 13:06  
 Operator : TK HPSV4 sn #: CV11451177  
 Sample : 1712475-1  
 Misc :  
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 28 15:15:19 2017  
 Quant Method : C:\msdchem\1\methods\121417SP.M  
 Quant Title : SW8270D Full Scan Analysis  
 QLast Update : Thu Dec 28 15:13:21 2017  
 Response via : Initial Calibration

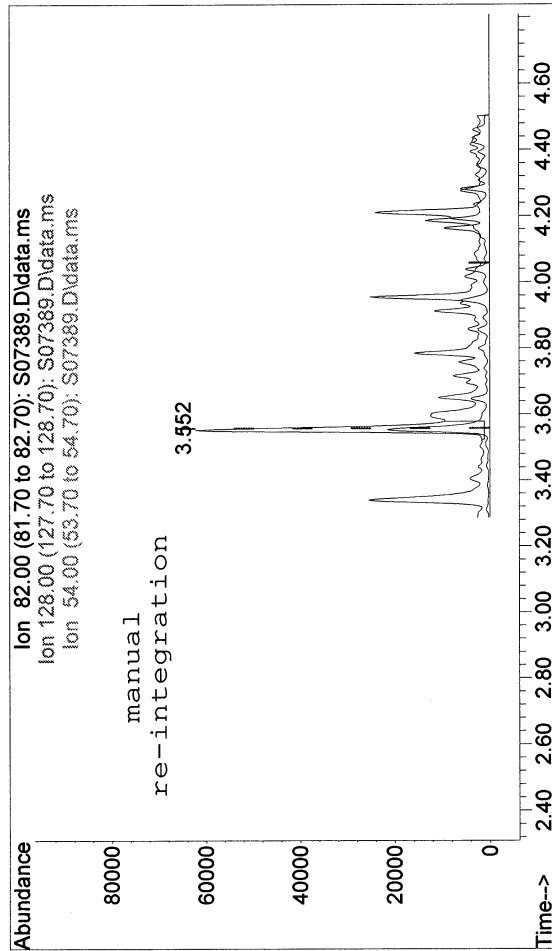
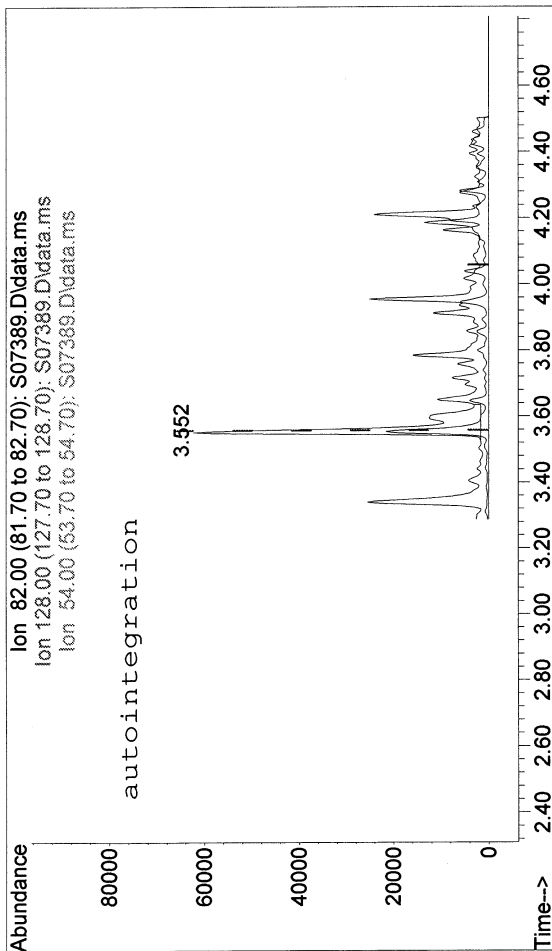
Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
Internal Standards						
1) Naphthalene-d8	4.188	136	225634	2000.00	ng/ml	# 0.00
6) Acenaphthene-d10	5.733	164	125410	2000.00	ng/ml	# 0.00
11) Phenanthrene-d10	7.026	188	250703	2000.00	ng/ml	# 0.00
15) Chrysene-d12	9.323	240	186629	2000.00	ng/ml	# 0.00
20) Perylene-d12	10.798	264	147583	2000.00	ng/ml	# 0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	3.552	82	70789m	1542.34	ng/ml	0.00
Spiked Amount 2000.000	Range 34	- 111	Recovery	=	77.12%	
7) 2-Fluorobiphenyl	5.126	172	162474	1451.34	ng/ml	0.00
Spiked Amount 2000.000	Range 21	- 106	Recovery	=	72.57%	
17) p-Terphenyl-d14	8.371	244	52821	550.59	ng/ml	0.00
Spiked Amount 2000.000	Range 33	- 111	Recovery	=	27.53%#	* ↓
Target Compounds						
						Qvalue
3) Naphthalene	4.210	128	22164m	173.07	ng/ml	✓
4) 2-Methylnaphthalene	4.815	142	47911	573.74	ng/ml#	93
5) 1-Methylnaphthalene	4.903	142	502884	6293.32	ng/ml	✓ 98
8) Acenaphthylene	5.608	152	9783	82.36	ng/ml#	No 1
9) Acenaphthene	5.759	154	14765	172.44	ng/ml#	✓ 70
10) Fluorene	6.210	166	164379	1690.86	ng/ml#	✓ 91
12) Phenanthrene	7.046	178	196970	1211.12	ng/ml#	✓ 92

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

\* RR & confirmed ↓

m 12/29/17





TIC: S07389.D\data.ms

(2) Nitrobenzene-d5 (s)  
3.552min (-0.007) 1956.46 ng/ml

response	89796
Ion	
82.00	100.00
128.00	33.60
54.00	0.00
0.00	0.00

Reason for manual re-integration?

☐ missed peak assignment

☐ peak saturation (detector shutdown)

☒ over-integrated peak's area

☐ under-integrated peak's area

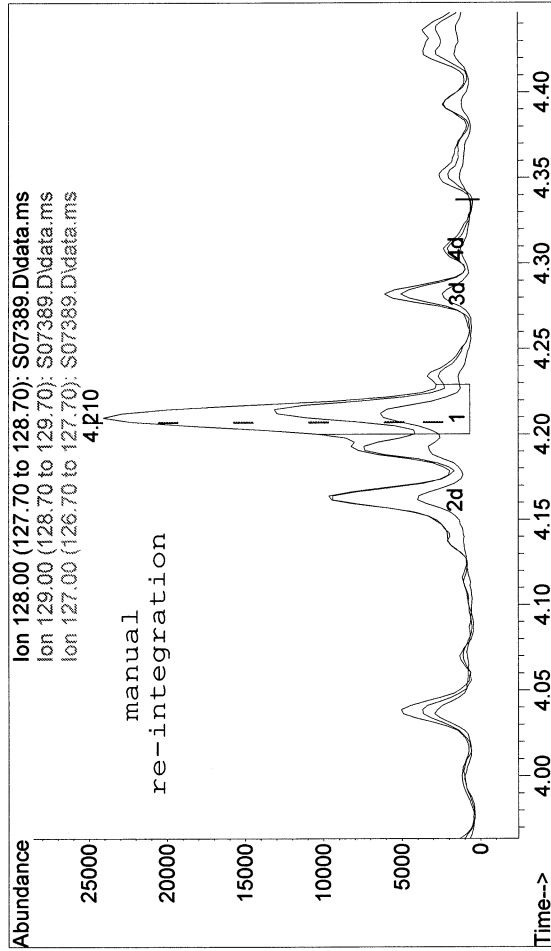
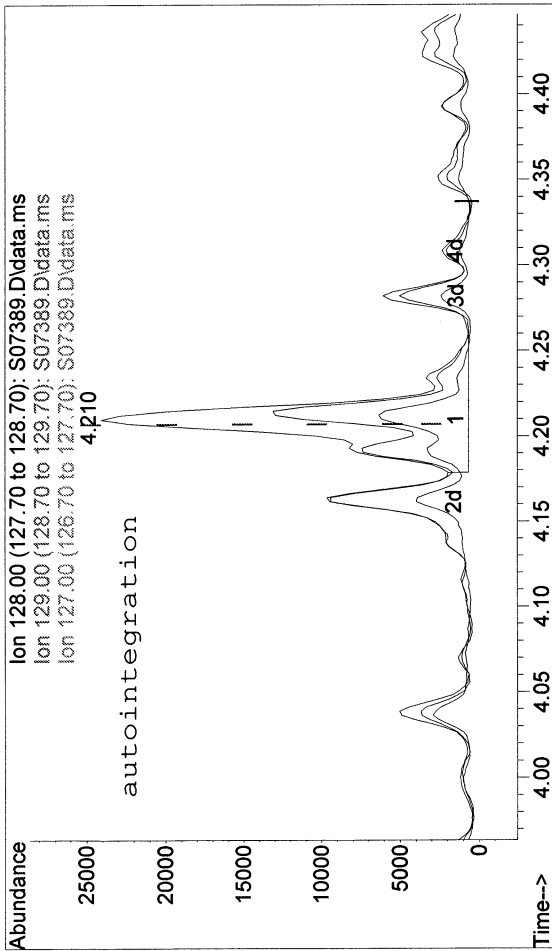
☐ other ( )

initials:   *RL*   date: 12 / 29 / 17

TIC: S07389.D\data.ms

(2) Nitrobenzene-d5 (s)  
3.552min (-0.007) 1542.34 ng/ml m

response	70789
Ion	
82.00	100.00
128.00	33.60
54.00	0.00
0.00	0.00



TIC: S07389.D\data.ms

(3) Naphthalene (tm)  
4.210min (+ 0.002) 249.39 ng/ml

response	31938	
Ion	Exp%	Act%
128.00	100.00	100.00
129.00	10.70	41.64#
127.00	14.00	18.99#
0.00	0.00	0.00

Reason for manual re-integration?

☐ missed peak assignment

☐ peak saturation (detector shutdown)

☒ over-integrated peak's area

☐ under-integrated peak's area

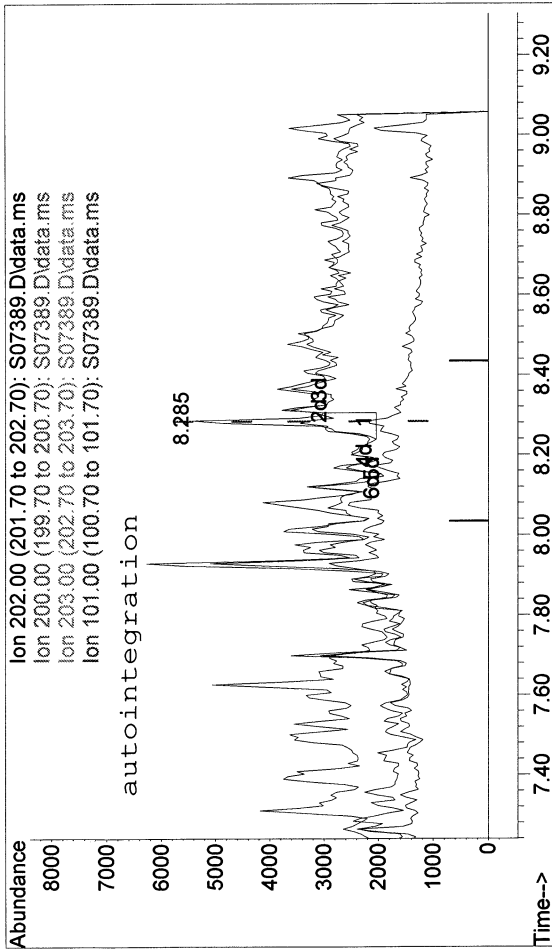
☐ other ( )

initials:   a   date:   12/29/17  

TIC: S07389.D\data.ms

(3) Naphthalene (tm)  
4.210min (+ 0.002) 173.07 ng/ml m

response	22164	
Ion	Exp%	Act%
128.00	100.00	100.00
129.00	10.70	60.00#
127.00	14.00	27.37#
0.00	0.00	0.00



TIC: S07389.D\data.ms

(16) Pyrene (tm)		
8.285min (+ 0.000)	35.12 ng/ml	
response	4990	
Ion	Exp%	Act%
202.00	100.00	100.00
200.00	20.90	39.22#
203.00	17.70	52.71#
101.00	0.00	0.00

Reason for manual re-integration?

☐ missed peak assignment

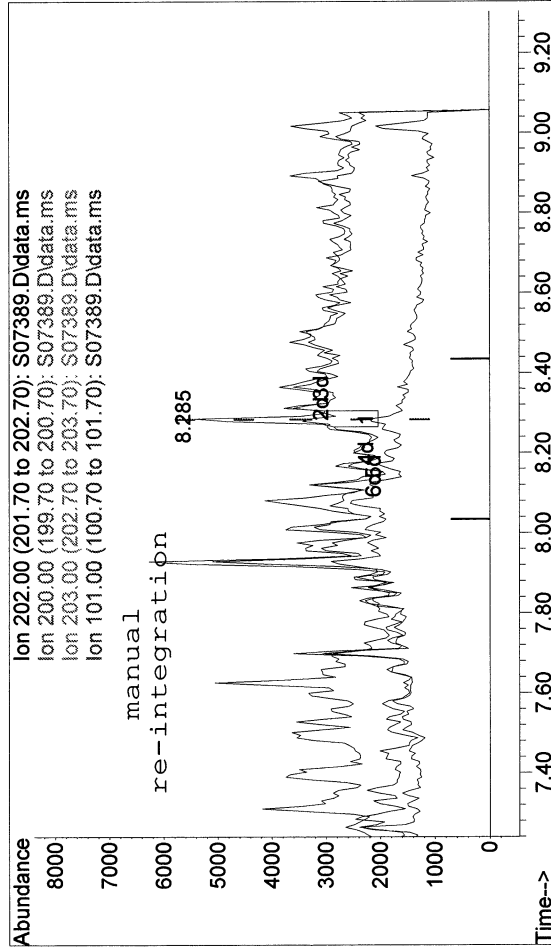
☐ peak saturation (detector shutdown)

☒ over-integrated peak's area

☐ under-integrated peak's area

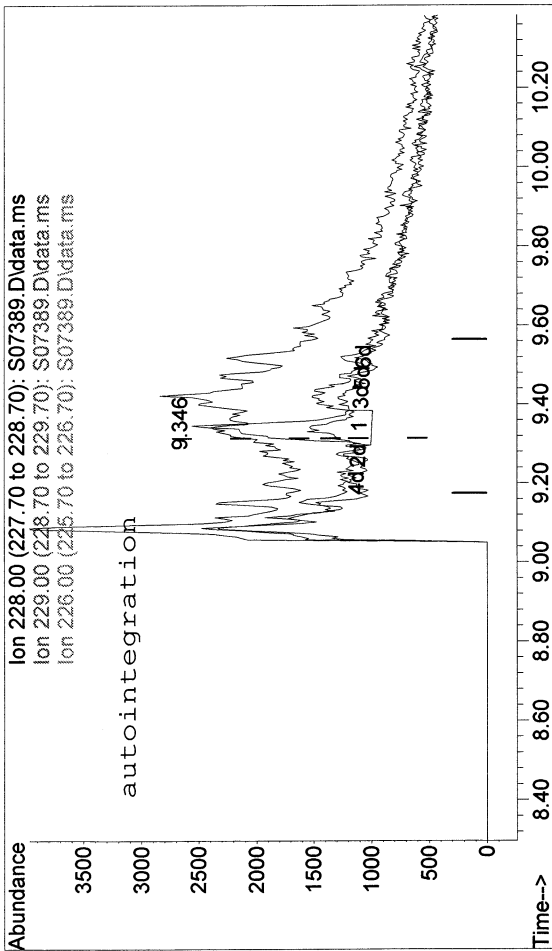
☐ other ( )

initials: th date: 12/29/17



TIC: S07389.D\data.ms

(16) Pyrene (tm)		
8.285min (+ 0.000)	29.49 ng/ml	m
response	4191	
Ion	Exp%	Act%
202.00	100.00	100.00
200.00	20.90	46.70#
203.00	17.70	62.75#
101.00	0.00	0.00



TIC: S07389.D\data.ms

(18) Benzo[a]anthracene (tm)

9.346min (+ 0.030) 36.11 ng/ml

response

Ion

Exp%

Act%

228.00 100.00 100.00

229.00 19.40 75.87#

226.00 26.80 86.36#

0.00 0.00 0.00

Reason for manual re-integration?

☒ missed peak assignment

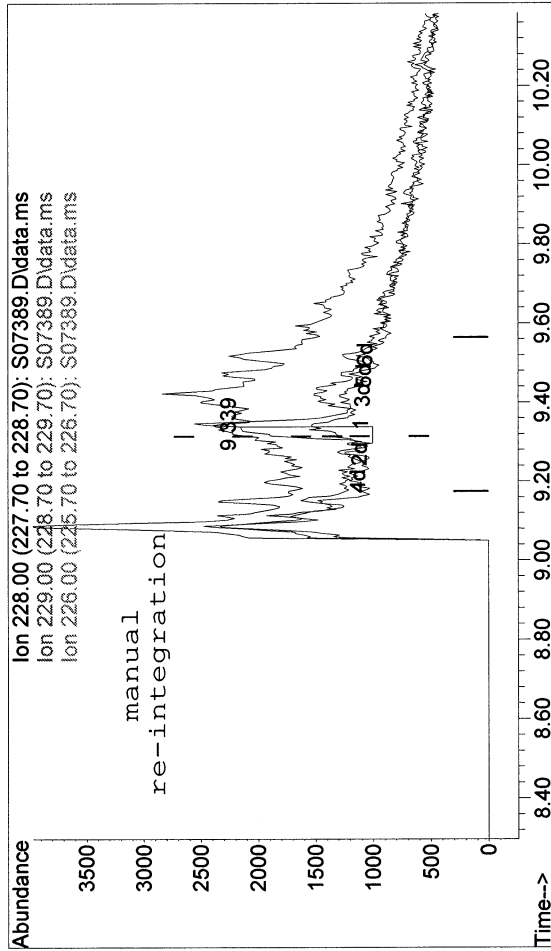
☐ peak saturation (detector shutdown)

☐ over-integrated peak's area

☐ under-integrated peak's area

☐ other ( )

initials:   *AL*   date:   12/29/17  



TIC: S07389.D\data.ms

(18) Benzo[a]anthracene (tm)

9.339min (+ 0.023) 19.18 ng/ml m

response

Ion

Exp%

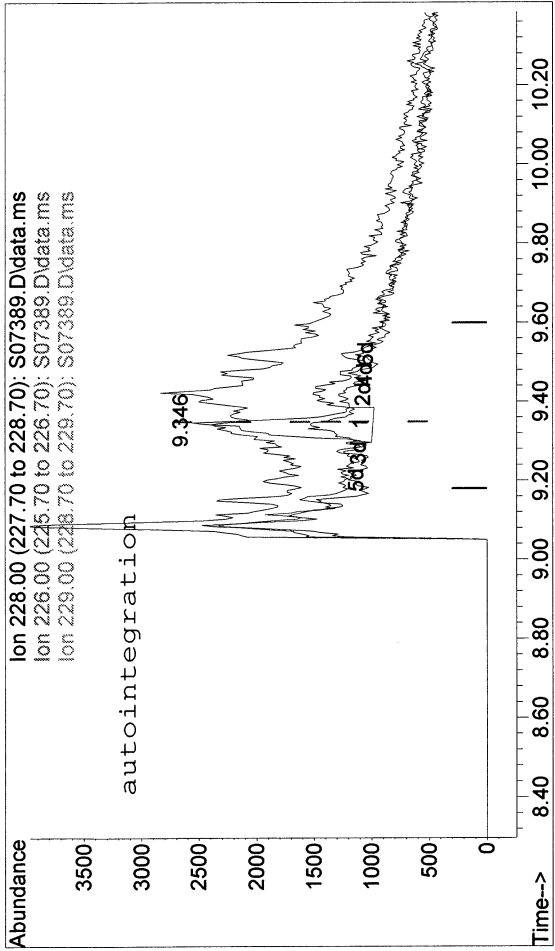
Act%

228.00 100.00 100.00

229.00 19.40 142.81#

226.00 26.80 162.57#

0.00 0.00 0.00



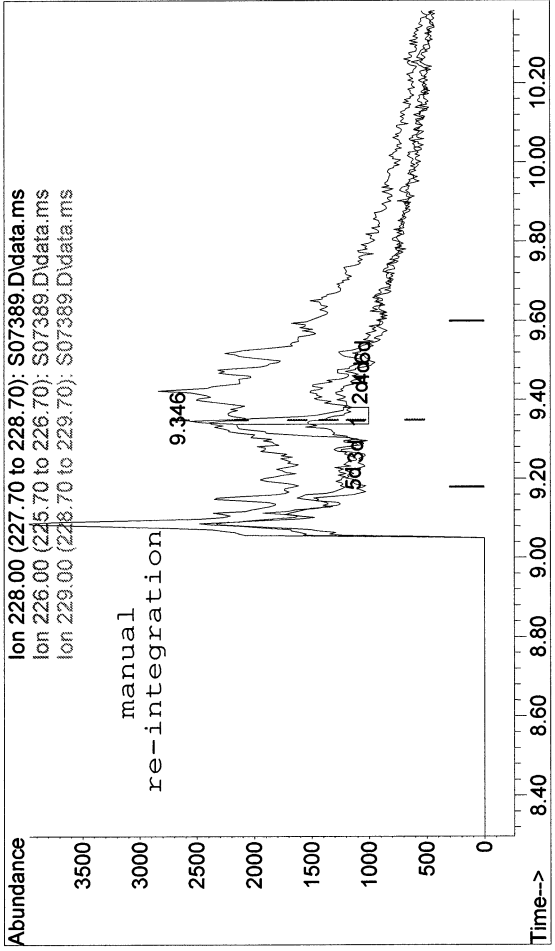
TIC: S07389.D\data.ms

(19) Chrysene (tm)	9.346min (-0.004)	28.94 ng/ml
response	3846	
Ion		
228.00	Exp%	Act%
226.00	100.00	100.00
226.00	29.10	85.60#
229.00	19.60	81.59#
0.00	0.00	0.00

Reason for manual re-integration?

- ☐ missed peak assignment
- ☐ peak saturation (detector shutdown)
- ☒ over-integrated peak's area
- ☐ under-integrated peak's area
- ☐ other ( )

initials: TL date: 12/29/17

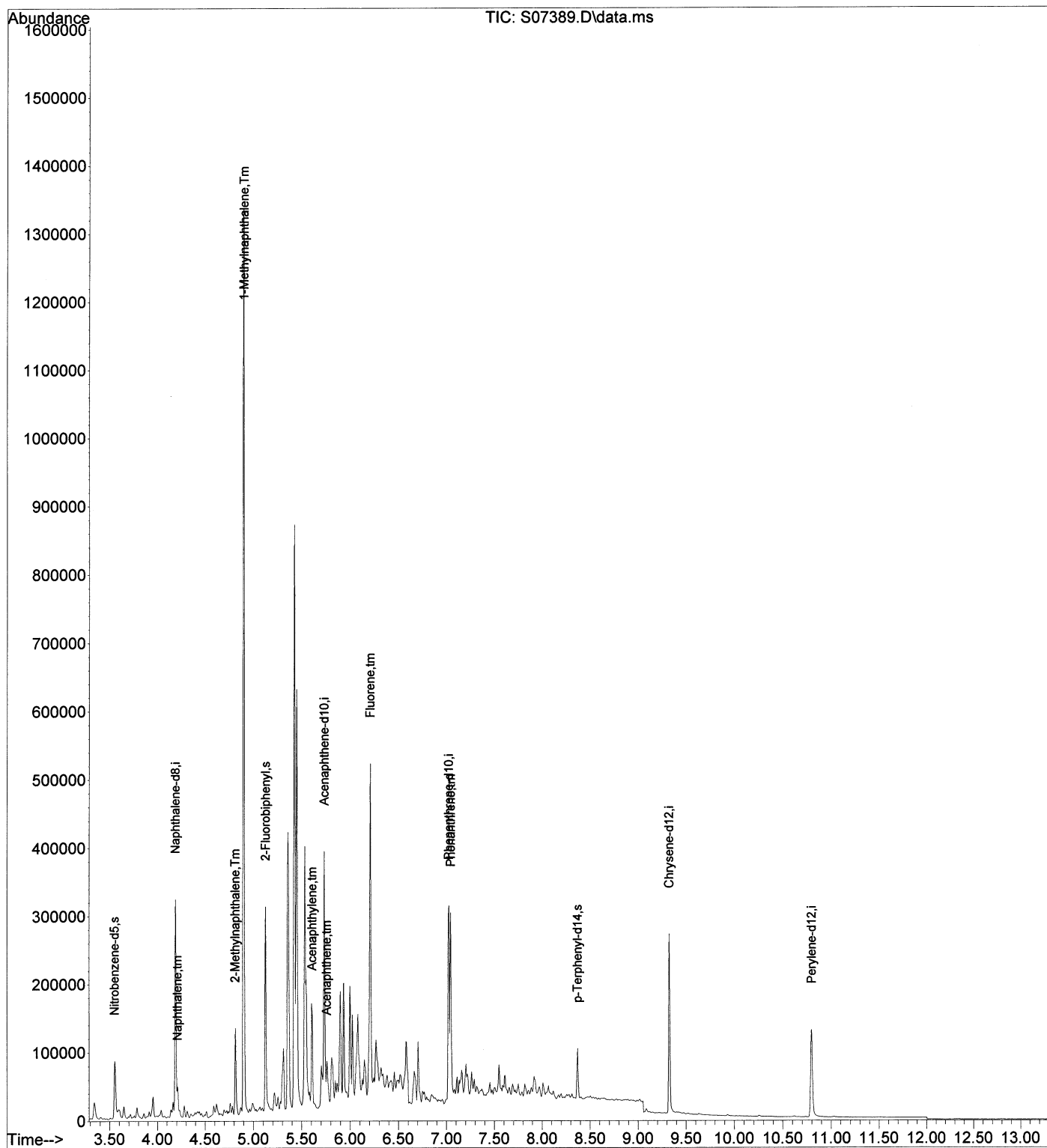


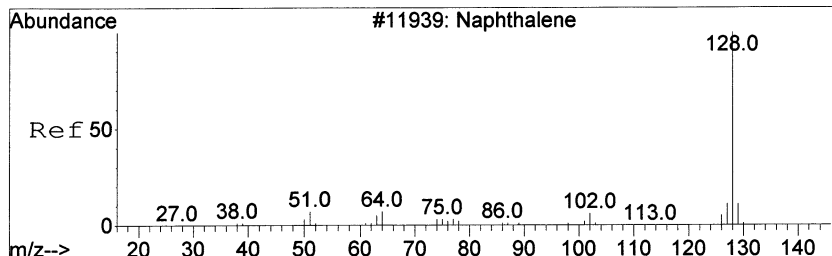
TIC: S07389.D\data.ms

(19) Chrysene (tm)	9.346min (-0.004)	12.98 ng/ml m
response	1725	
Ion		
228.00	Exp%	Act%
226.00	100.00	100.00
226.00	29.10	190.84#
229.00	19.60	181.91#
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\2017\122817\  
Data File : S07389.D  
Acq On : 28 Dec 2017 13:06  
Operator : TK HPSV4 sn #: CV11451177  
Sample : 1712475-1  
Misc :  
ALS Vial : 8 Sample Multiplier: 1

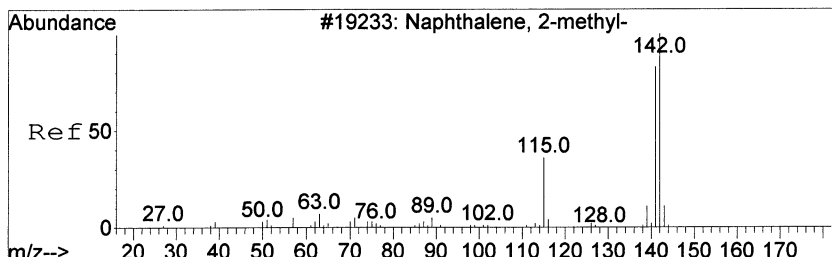
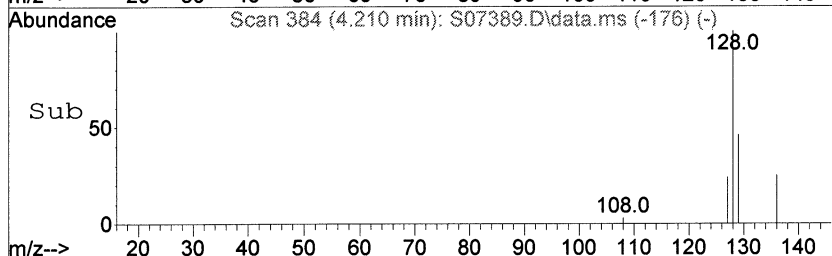
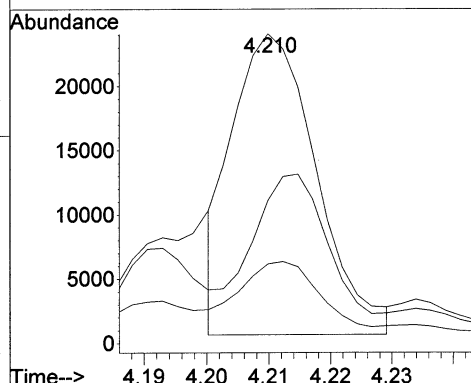
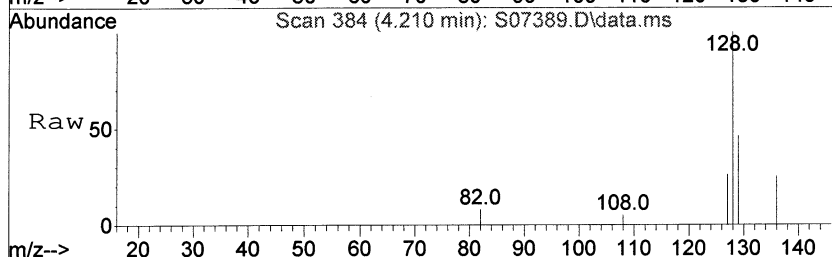
Quant Time: Dec 28 15:15:19 2017  
Quant Method : C:\msdchem\1\methods\121417SP.M  
Quant Title : SW8270D Full Scan Analysis  
QLast Update : Thu Dec 28 15:13:21 2017  
Response via : Initial Calibration





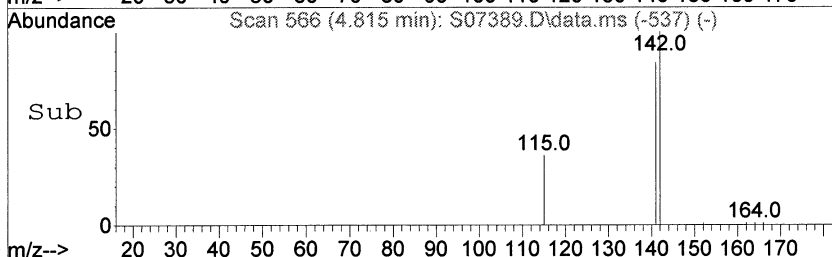
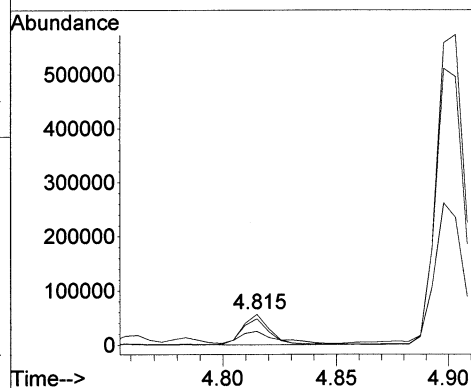
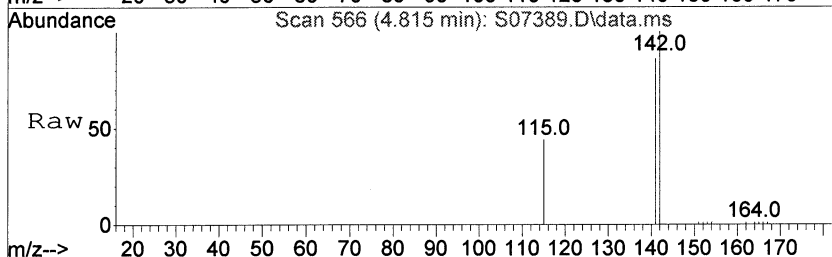
#3  
Naphthalene  
Concen: 173.07 ng/ml m  
RT: 4.210 min Scan# 384  
Delta R.T. 0.002 min  
Lab File: S07389.D  
Acq: 28 Dec 2017 13:06

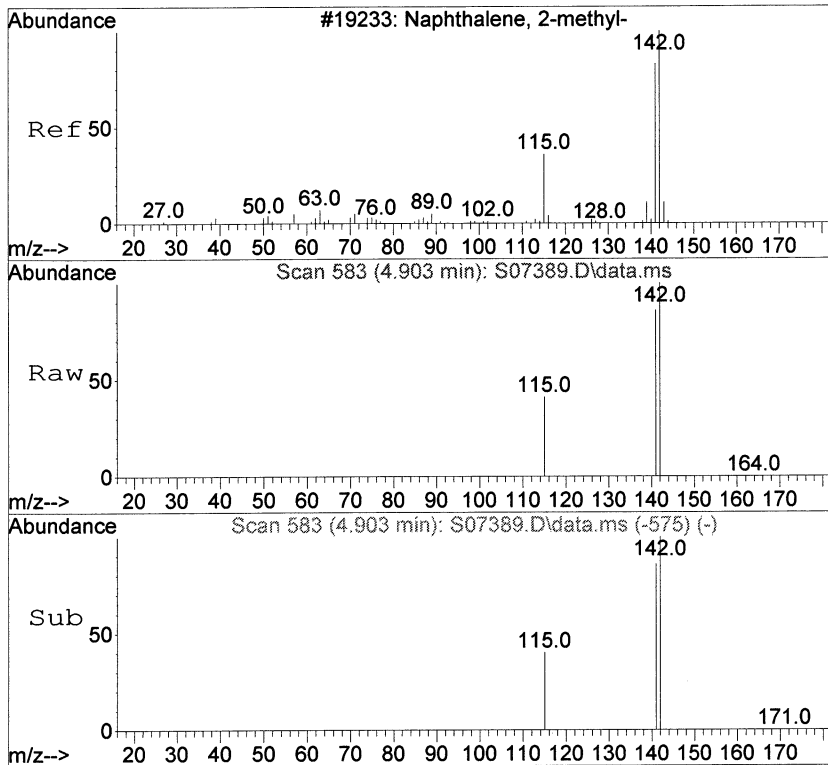
Tgt Ion:128 Resp: 22164  
Ion Ratio Lower Upper  
128 100  
129 60.0 8.6 12.8#  
127 27.4 11.2 16.8#



#4  
2-Methylnaphthalene  
Concen: 573.74 ng/ml  
RT: 4.815 min Scan# 566  
Delta R.T. 0.000 min  
Lab File: S07389.D  
Acq: 28 Dec 2017 13:06

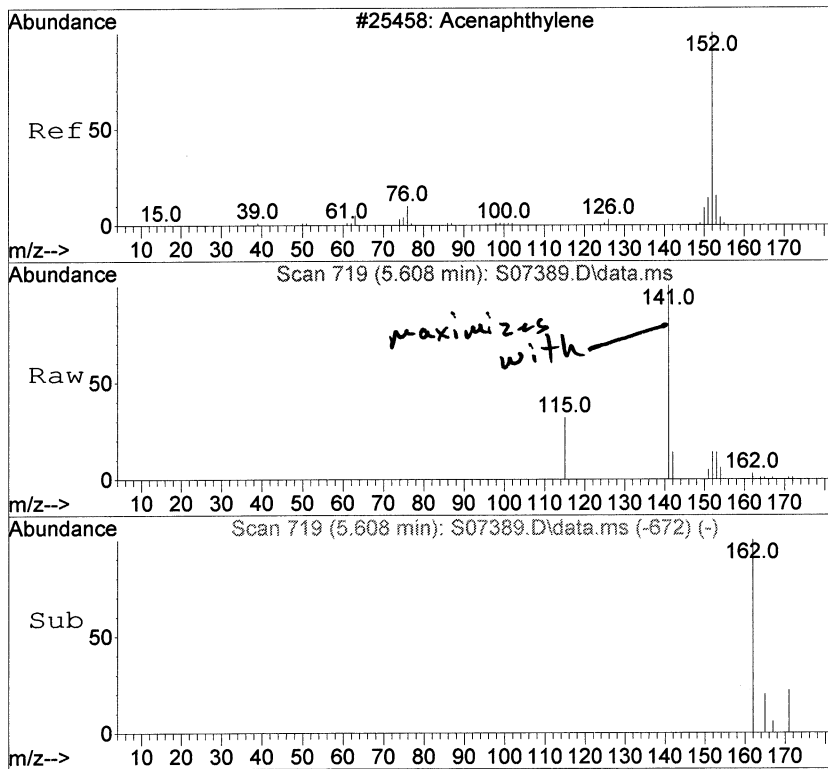
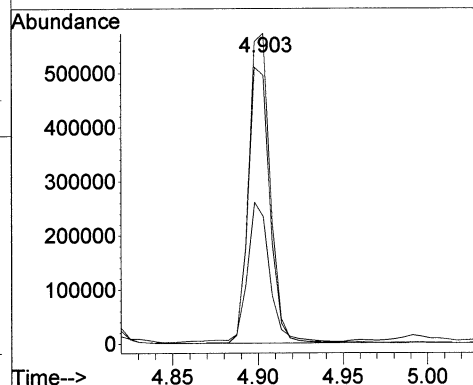
Tgt Ion:142 Resp: 47911  
Ion Ratio Lower Upper  
142 100  
141 84.4 69.0 103.4  
115 50.9 32.5 48.7#





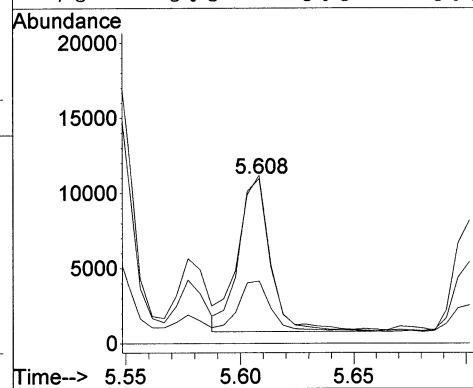
#5  
1-Methylnaphthalene  
Concen: 6293.32 ng/ml  
RT: 4.903 min Scan# 583  
Delta R.T. 0.000 min  
Lab File: S07389.D  
Acq: 28 Dec 2017 13:06

Tgt Ion:	142	Resp:	502884
Ion Ratio	Lower	Upper	
142	100		
141	88.9	71.7	107.5
115	45.8	34.5	51.7

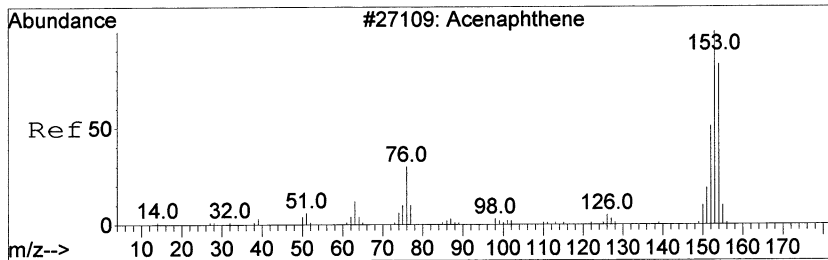


#8  
Acenaphthylene  
Concen: 82.36 ng/ml  
RT: 5.608 min Scan# 719  
Delta R.T. -0.005 min  
Lab File: S07389.D  
Acq: 28 Dec 2017 13:06

Tgt Ion:	152	Resp:	9783
Ion Ratio	Lower	Upper	
152	100		
151	34.3	17.0	25.4#
153	104.5	10.3	15.5#
76	0.0	0.0	0.0

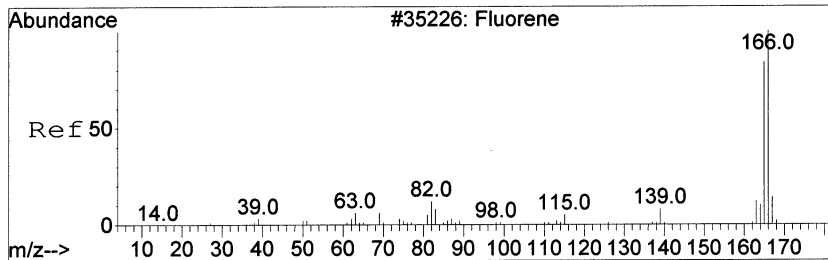
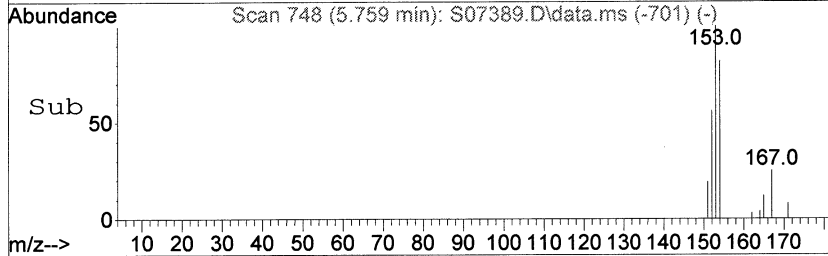
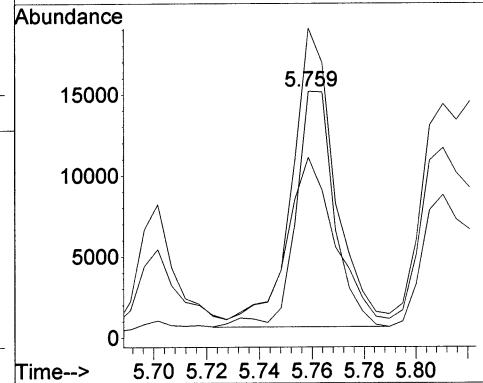
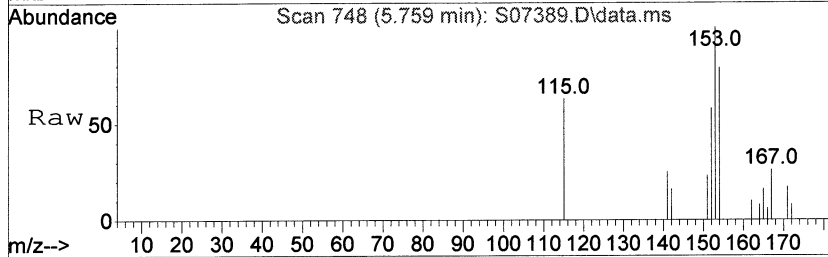






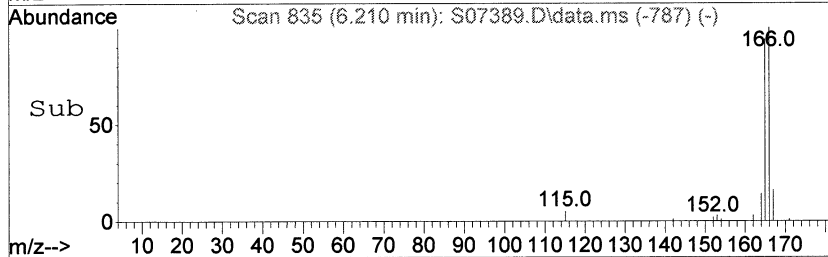
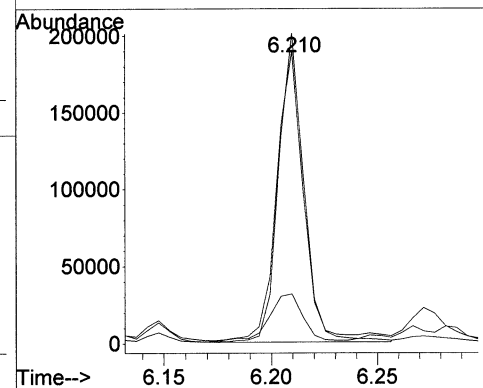
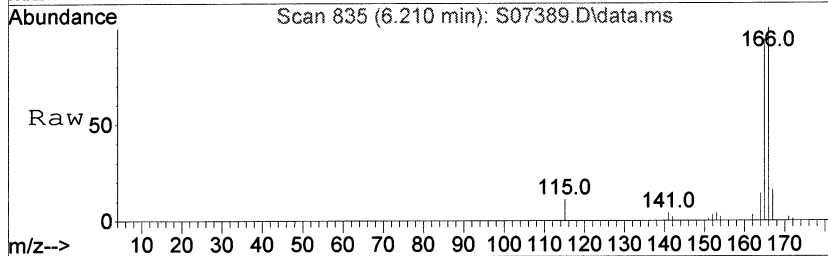
#9  
Acenaphthene  
Concen: 172.44 ng/ml  
RT: 5.759 min Scan# 748  
Delta R.T. -0.005 min  
Lab File: S07389.D  
Acq: 28 Dec 2017 13:06

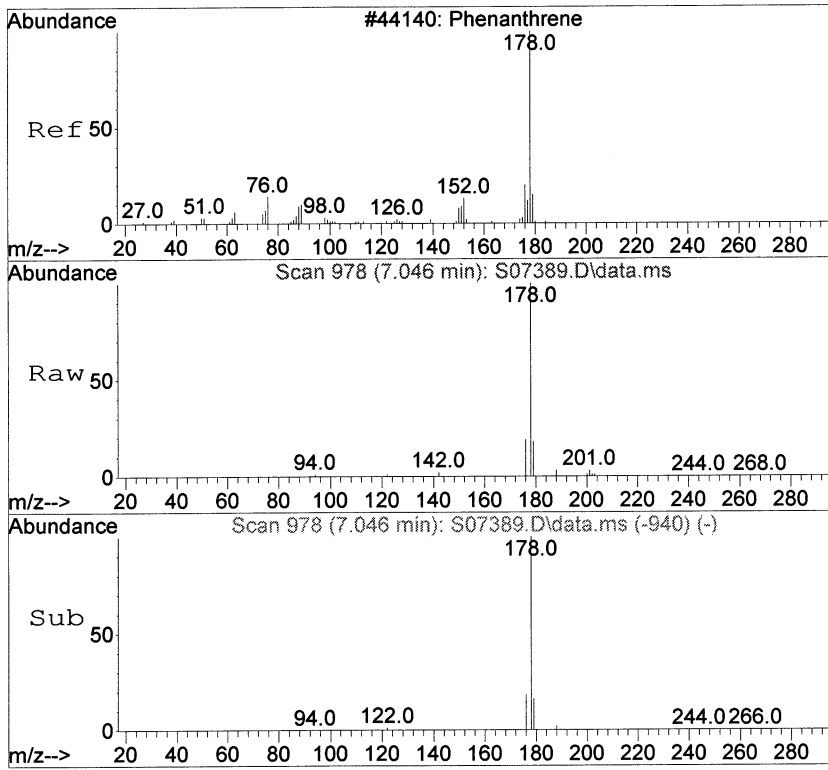
Tgt Ion	Ratio	Resp	Lower	Upper
154	100	14765		
153	131.3		85.4	128.2#
152	84.0		43.1	64.7#



#10  
Fluorene  
Concen: 1690.86 ng/ml  
RT: 6.210 min Scan# 835  
Delta R.T. 0.000 min  
Lab File: S07389.D  
Acq: 28 Dec 2017 13:06

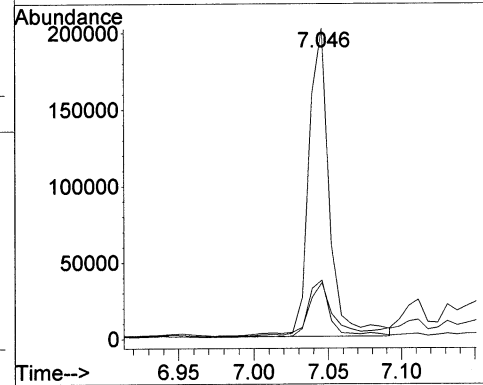
Tgt Ion	Ratio	Resp	Lower	Upper
166	100	164379		
165	100.7		74.5	111.7
167	20.9		10.5	15.7#





#12  
 Phenanthrene  
 Concen: 1211.12 ng/ml  
 RT: 7.046 min Scan# 978  
 Delta R.T. 0.000 min  
 Lab File: S07389.D  
 Acq: 28 Dec 2017 13:06

Tgt Ion	Ratio	Resp	Lower	Upper
178	100	196970		
179	21.3		12.2	18.4#
176	20.1		15.3	22.9



Data Path : C:\msdchem\1\data\2017\122817\  
 Data File : S07386.D  
 Acq On : 28 Dec 2017 12:15  
 Operator : TK HPSV4 sn #: CV11451177  
 Sample : EX171227-2LCS  
 Misc :  
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 28 15:14:04 2017  
 Quant Method : C:\msdchem\1\methods\121417SP.M  
 Quant Title : SW8270D Full Scan Analysis  
 QLast Update : Thu Dec 28 15:13:21 2017  
 Response via : Initial Calibration

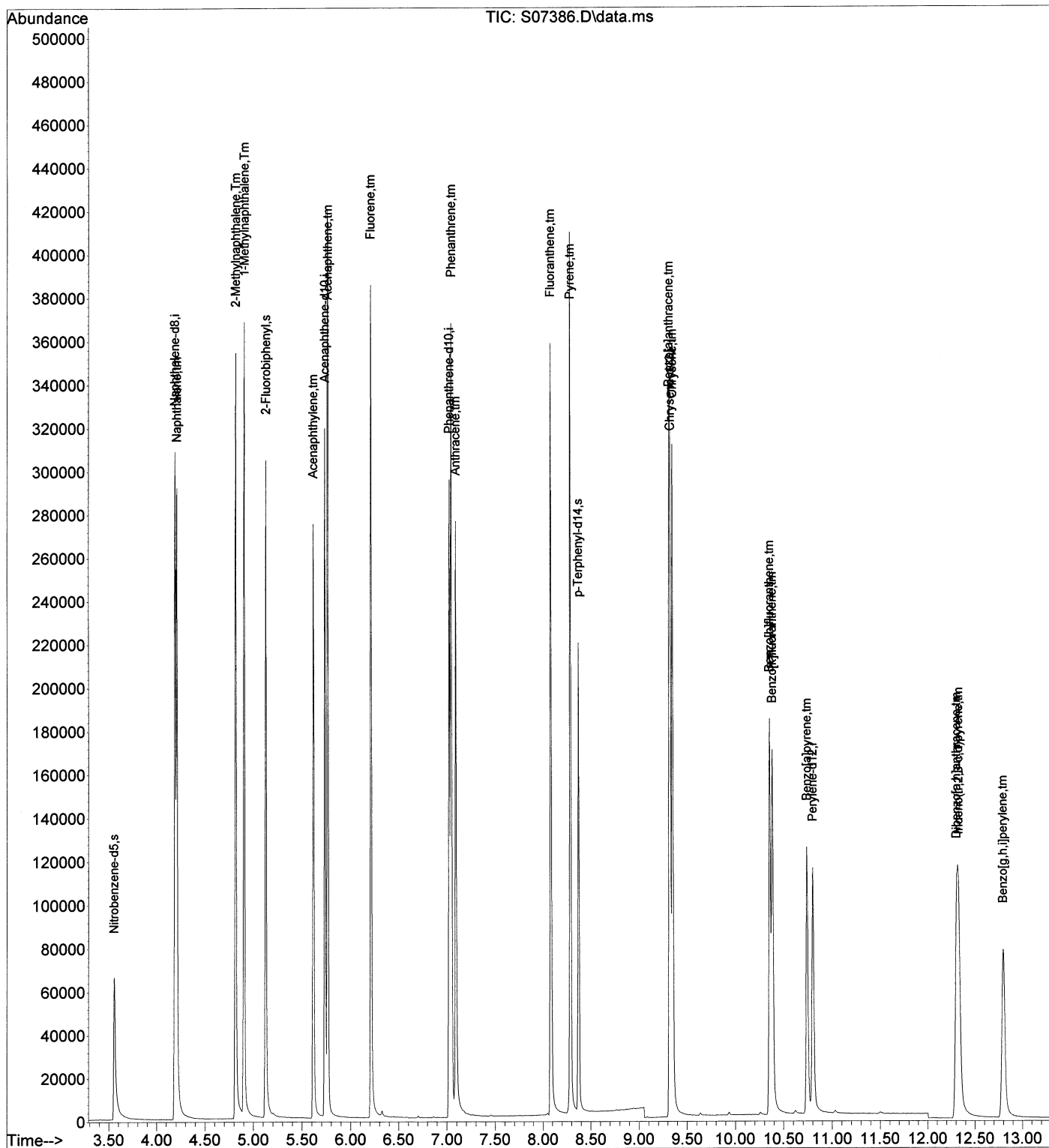
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Naphthalene-d8	4.188	136	245433	2000.00	ng/ml	# 0.00
6) Acenaphthene-d10	5.733	164	123507	2000.00	ng/ml	# 0.00
11) Phenanthrene-d10	7.026	188	227226	2000.00	ng/ml	# 0.00
15) Chrysene-d12	9.327	240	172933	2000.00	ng/ml	# 0.00
20) Perylene-d12	10.802	264	128924	2000.00	ng/ml	# 0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	3.554	82	80075	1603.92	ng/ml	0.00
Spiked Amount 2000.000	Range	34 - 111	Recovery	=	80.20%	
7) 2-Fluorobiphenyl	5.126	172	177289	1608.08	ng/ml	0.00
Spiked Amount 2000.000	Range	21 - 106	Recovery	=	80.40%	
17) p-Terphenyl-d14	8.371	244	161096	1812.20	ng/ml	0.00
Spiked Amount 2000.000	Range	33 - 111	Recovery	=	90.61%	
Target Compounds						
						Qvalue
3) Naphthalene	4.207	128	214709	1541.29	ng/ml	99
4) 2-Methylnaphthalene	4.815	142	142802	1572.11	ng/ml	99
5) 1-Methylnaphthalene	4.903	142	133945	1541.03	ng/ml	100
8) Acenaphthylene	5.613	152	176130	1505.56	ng/ml	# 100
9) Acenaphthene	5.764	154	133569	1583.99	ng/ml	100
10) Fluorene	6.210	166	150213	1568.95	ng/ml	100
12) Phenanthrene	7.045	178	228639	1551.10	ng/ml	100
13) Anthracene	7.092	178	193244	1529.34	ng/ml	100
14) Fluoranthene	8.081	202	217039	1590.04	ng/ml	# 100
16) Pyrene	8.285	202	225649	1713.71	ng/ml	# 100
18) Benzo[a]anthracene	9.316	228	165045	1687.13	ng/ml	99
19) Chrysene	9.350	228	204775	1662.96	ng/ml	99
21) Benzo[b]fluoranthene	10.356	252	161322	1729.43	ng/ml	99
22) Benzo[k]fluoranthene	10.382	252	159443	1645.43	ng/ml	98
23) Benzo[a]pyrene	10.741	252	126695	1511.54	ng/ml	100
24) Indeno(1,2,3-c,d)pyrene	12.328	276	145869	1643.46	ng/ml	99
25) Dibenzo[a,h]anthracene	12.306	278	120180	1640.60	ng/ml	99
26) Benzo[g,h,i]perylene	12.798	276	124480	1559.71	ng/ml	99
-----						

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

*u* 12/29/17

Data Path : C:\msdchem\1\data\2017\122817\  
 Data File : S07386.D  
 Acq On : 28 Dec 2017 12:15  
 Operator : TK HPSV4 sn #: CV11451177  
 Sample : EX171227-2LCS  
 Misc :  
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 28 15:14:04 2017  
 Quant Method : C:\msdchem\1\methods\121417SP.M  
 Quant Title : SW8270D Full Scan Analysis  
 QLast Update : Thu Dec 28 15:13:21 2017  
 Response via : Initial Calibration



Data Path : C:\msdchem\1\data\2017\122817\  
 Data File : S07387.D  
 Acq On : 28 Dec 2017 12:32  
 Operator : TK HPSV4 sn #: CV11451177  
 Sample : EX171227-2LCSD  
 Misc :  
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 28 15:14:21 2017  
 Quant Method : C:\msdchem\1\methods\121417SP.M  
 Quant Title : SW8270D Full Scan Analysis  
 QLast Update : Thu Dec 28 15:13:21 2017  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
-----						
Internal Standards						
1) Naphthalene-d8	4.188	136	230368	2000.00	ng/ml	# 0.00
6) Acenaphthene-d10	5.733	164	115723	2000.00	ng/ml	# 0.00
11) Phenanthrene-d10	7.026	188	213347	2000.00	ng/ml	# 0.00
15) Chrysene-d12	9.323	240	163036	2000.00	ng/ml	# 0.00
20) Perylene-d12	10.798	264	118747	2000.00	ng/ml	# 0.00
System Monitoring Compounds						
2) Nitrobenzene-d5	3.554	82	79064	1687.24	ng/ml	0.00
Spiked Amount 2000.000	Range 34	- 111	Recovery	=	84.36%	
7) 2-Fluorobiphenyl	5.126	172	174279	1687.11	ng/ml	0.00
Spiked Amount 2000.000	Range 21	- 106	Recovery	=	84.36%	
17) p-Terphenyl-d14	8.371	244	150166	1791.79	ng/ml	0.00
Spiked Amount 2000.000	Range 33	- 111	Recovery	=	89.59%	
Target Compounds						
						Qvalue
3) Naphthalene	4.208	128	218399	1670.30	ng/ml	99
4) 2-Methylnaphthalene	4.815	142	143571	1683.94	ng/ml	100
5) 1-Methylnaphthalene	4.903	142	135406	1659.71	ng/ml	99
8) Acenaphthylene	5.614	152	173962	1587.05	ng/ml#	100
9) Acenaphthene	5.759	154	133194	1685.78	ng/ml	100
10) Fluorene	6.210	166	146904	1637.60	ng/ml	100
12) Phenanthrene	7.046	178	220651	1594.29	ng/ml	100
13) Anthracene	7.092	178	184212	1552.69	ng/ml	100
14) Fluoranthene	8.081	202	203621	1588.79	ng/ml#	100
16) Pyrene	8.285	202	211230	1701.59	ng/ml#	100
18) Benzo[a]anthracene	9.316	228	152362	1652.03	ng/ml	100
19) Chrysene	9.346	228	198195	1707.23	ng/ml	99
21) Benzo[b]fluoranthene	10.352	252	147656	1718.59	ng/ml	99
22) Benzo[k]fluoranthene	10.379	252	155655	1744.01	ng/ml	99
23) Benzo[a]pyrene	10.737	252	117218	1518.33	ng/ml	99
24) Indeno(1,2,3-c,d)pyrene	12.326	276	136989	1675.69	ng/ml	99
25) Dibenzo[a,h]anthracene	12.301	278	113842	1687.27	ng/ml	100
26) Benzo[g,h,i]perylene	12.796	276	118853	1616.84	ng/ml	100
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(#) = qualifier out of range (m) = manual integration (+) = signals summed

*m 12/29/17*

Data Path : C:\msdchem\1\data\2017\122817\  
 Data File : S07387.D  
 Acq On : 28 Dec 2017 12:32  
 Operator : TK HPSV4 sn #: CV11451177  
 Sample : EX171227-2LCSD  
 Misc :  
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 28 15:14:21 2017  
 Quant Method : C:\msdchem\1\methods\121417SP.M  
 Quant Title : SW8270D Full Scan Analysis  
 QLast Update : Thu Dec 28 15:13:21 2017  
 Response via : Initial Calibration

