complaint 200444807

facility 757228

GC/MS Volatiles

Case Narrative

COGCC

Complaint 200444807

Work Order Number: 1712513

1. This report consists of 2 water samples. The samples were received intact by ALS on 12/28/17. The samples were received at 7.1°C.

   The water samples were free of headspace prior to analysis.

   Sample 1712513-2, provided for volatiles, had a pH > 2 at the time of analysis. Sample -1 had a pH < 2 at the time of analysis.

2. These samples were prepared according to SW-846, 3rd Edition procedures. Specifically, the water samples were prepared using purge and trap procedures based on Method 5030C.

3. The samples were analyzed using GC/MS with an RTX-624, RTX-VMS, or equivalent capillary column according to the current revision of SOP 525 based on SW-846 Method 8260. 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 mass spectrum of the sample versus the daily calibration standard.

4. All initial calibration criteria were met.

5. All initial calibrations are verified by comparing a second source standard calibration verification (ICV) against the calibration curve. All criteria for initial calibration verification were met.

6. All compounds in the daily (continuing) calibration verifications were within 20%D.

7. Methylene chloride, acetone and 2-butanone are common laboratory contaminants. In order to minimize the levels of these compounds detected in the gc/ms analysis, ALS has designated its volatile laboratory as a restricted access area. In addition, the laboratory has been equipped with a dedicated, air intake and exhaust system that operates under positive pressure in order to minimize cross contamination of these compounds. Due to fluctuations in ambient laboratory

conditions, reported sample values for common laboratory contaminants may be due to lab contamination even if the compound in question is not detected in the associated method blank.

The method blank VL171229-3MB had methylene chloride detected below the reporting limit. This compound was not detected in the associated samples.

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 samples were analyzed within the established holding time.

11. All surrogate recoveries were within acceptance criteria.

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

1/3/18
Date

Organics Final Data Reviewer

1/4/18
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

OrderNum: 1712513
Client Name: COGCC
Client Project Name: Complaint 200444807
Client Project Number:
Client PO Number: GAE 2018-0302

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
757228 Ditlev-Simonsen flowline	1712513-1		WATER	27-Dec-17	11:10
757228 Ditlev-Simonsen flowline	1712513-2		WATER	28-Dec-17	12:45

ALS Environmental

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.
Turnaround time for samples received Saturday will be calculated beginning from the next business day.

ALS WORKORDER #	
1712513	
PAGE	1 of 1
DISPOSAL	BY LAB or

TURNAROUND TIME	14 days	SAMPLER	PAG
SITE ID			
EDD FORMAT	COGCC		
PURCHASE ORDER	GAE-2018-0302		
BILL TO COMPANY			
INVOICE ATTN TO			
ADDRESS			
CITY / STATE / ZIP			
PHONE			
FAX			
E-MAIL			

PROJECT NAME	Complaint 200444807
PROJECT No.	
COMPANY NAME	Colorado Oil & Gas Conservation Commission
SEND REPORT TO	Peter Gintautas
ADDRESS	1120 Lincoln St., Suite 801
CITY / STATE / ZIP	Denver, CO 80203
PHONE	719-679-1326
FAX	
E-MAIL	peter.gintautas@state.co.us

PARAMETER/METHOD REQUEST FOR ANALYSIS

A	8260 extended list with oxygenates (plus TICs) & 8260GRO
B	
C	
D	
E	
F	
G	
H	
I	
J	

LAB ID	FIELD ID	MATRIX	SAMPLE DATE	SAMPLE TIME	# OF BOTTLES	PRESERVATIVE	QC	A	B	C	D	E	F	G	H	I	J	SEE NOTES SECTION
1	757228 Ditlev-Simonsen flowline excavation	W	12/27/17	11:10	3	1		X										
2 COC 12-28-17	757228 Ditlev-Simonsen flowline excavation	W	12/28/17	12:45	3	1		X										

*Time Zone (Circle): MST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

NOTES

1.4

REPORT LEVEL / QC REQUIRED	
	Summary (Standard QC)
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

PRESERVATION KEY: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaOH/ZnAcetate 6-NaHSO4 7-4°C 8-Other

Form 202r9	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Peter Gintautas	12/28/2017	14:00
RECEIVED BY	C Trimble	C Trimble	12-28-17	1600
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC Workorder No: 1712513

Project Manager: _____ Initials: CAS Date: 12-28-17

1.	Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2.	Are custody seals on shipping containers intact?	(NONE)	YES	NO
3.	Are Custody seals on sample containers intact?	(NONE)	YES	NO
4.	Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5.	Are the COC and bottle labels complete and legible?		(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)	NO
7.	Were airbills / shipping documents present and/or removable?	(DROP OFF)	YES	NO
8.	Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9.	Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10.	Is there sufficient sample for the requested analyses?		(YES)	NO
11.	Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12.	Are all samples within holding times for the requested analyses?		(YES)	NO
13.	Were all sample containers received intact? (not broken or leaking, etc.)		(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	YES	(NO)
15.	Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	(NO)
16.	Were the samples shipped on ice?		(YES)	NO
17.	Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	RAD ONLY	YES	(NO)

Cooler #:	1							
Temperature (°C):	7.4							
No. of custody seals on cooler:	0							
DOT Survey/ Acceptance Information — External µR/hr reading:	NA							
Background µR/hr reading:	NA							

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.

HEADSPACE: 1712513-1-1< green pea

If applicable, was the client contacted? **YES / NO / NA** Contact: _____ Date/Time: _____

Project Manager Signature / Date: _____ 12/28/17

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

GC/MS Volatiles

Method SW8260_25C

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: N/A
File Name: C79127

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL
110-54-3	HEXANE	1	1	U	1	0.31
108-87-2	METHYL CYCLOHEXANE	1	1	U	1	0.3
71-36-3	N-BUTANOL	1	50	U	50	30
75-65-0	TERT-BUTANOL	1	50	U	50	60
75-71-8	DICHLORODIFLUOROMETHANE	1	1	U	1	0.32
74-87-3	CHLOROMETHANE	1	1	U	1	0.3
75-01-4	VINYL CHLORIDE	1	1	U	1	0.31
74-83-9	BROMOMETHANE	1	1	U	1	0.3
75-00-3	CHLOROETHANE	1	1	U	1	0.32
75-69-4	TRICHLOROFLUOROMETHANE	1	1	U	1	0.31
75-35-4	1,1-DICHLOROETHENE	1	1	U	1	0.3
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROET	1	1	U	1	0.3
67-64-1	ACETONE	1	10	U	10	3
74-88-4	IODOMETHANE	1	1	U	1	0.3
75-15-0	CARBON DISULFIDE	1	1	U	1	0.3
75-09-2	METHYLENE CHLORIDE	1	0.34	J	1	0.3
156-60-5	TRANS-1,2-DICHLOROETHENE	1	1	U	1	0.33
1634-04-4	METHYL TERTIARY BUTYL ETHER	1	1	U	1	0.31
75-34-3	1,1-DICHLOROETHANE	1	1	U	1	0.3
108-05-4	VINYL ACETATE	1	2	U	2	0.78
156-59-2	CIS-1,2-DICHLOROETHENE	1	1	U	1	0.33
78-93-3	2-BUTANONE	1	10	U	10	3
74-97-5	BROMOCHLOROMETHANE	1	1	U	1	0.32
67-66-3	CHLOROFORM	1	1	U	1	0.3
71-55-6	1,1,1-TRICHLOROETHANE	1	1	U	1	0.3
594-20-7	2,2-DICHLOROPROPANE	1	1	U	1	0.33
110-82-7	CYCLOHEXANE	1	1	U	1	0.32
56-23-5	CARBON TETRACHLORIDE	1	1	U	1	0.32

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: N/A
File Name: C79127

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL
563-58-6	1,1-DICHLOROPROPENE	1	1	U	1	0.3
107-06-2	1,2-DICHLOROETHANE	1	1	U	1	0.3
71-43-2	BENZENE	1	1	U	1	0.32
79-01-6	TRICHLOROETHENE	1	1	U	1	0.31
78-87-5	1,2-DICHLOROPROPANE	1	1	U	1	0.3
74-95-3	DIBROMOMETHANE	1	1	U	1	0.31
75-27-4	BROMODICHLOROMETHANE	1	1	U	1	0.35
10061-01-5	CIS-1,3-DICHLOROPROPENE	1	1	U	1	0.33
108-10-1	4-METHYL-2-PENTANONE	1	10	U	10	3
108-88-3	TOLUENE	1	1	U	1	0.31
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	1	U	1	0.33
79-00-5	1,1,2-TRICHLOROETHANE	1	1	U	1	0.3
591-78-6	2-HEXANONE	1	10	U	10	3
127-18-4	TETRACHLOROETHENE	1	1	U	1	0.3
142-28-9	1,3-DICHLOROPROPANE	1	1	U	1	0.3
124-48-1	DIBROMOCHLOROMETHANE	1	1	U	1	0.35
106-93-4	1,2-DIBROMOETHANE	1	1	U	1	0.3
544-10-5	1-CHLOROHEXANE	1	1	U	1	0.3
108-90-7	CHLOROBENZENE	1	1	U	1	0.3
630-20-6	1,1,1,2-TETRACHLOROETHANE	1	1	U	1	0.3
100-41-4	ETHYLBENZENE	1	1	U	1	0.31
179601-23-1	M+P-XYLENE	1	1	U	1	0.31
95-47-6	O-XYLENE	1	1	U	1	0.31
100-42-5	STYRENE	1	1	U	1	0.32
75-25-2	BROMOFORM	1	1	U	1	0.34
98-82-8	ISOPROPYLBENZENE	1	1	U	1	0.3
96-18-4	1,2,3-TRICHLOROPROPANE	1	1	U	1	0.3
79-34-5	1,1,2,2-TETRACHLOROETHANE	1	1	U	1	0.3

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: N/A
File Name: C79127

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL
108-86-1	BROMOBENZENE	1	1	U	1	0.3
103-65-1	N-PROPYLBENZENE	1	1	U	1	0.3
95-49-8	2-CHLOROTOLUENE	1	1	U	1	0.3
108-67-8	1,3,5-TRIMETHYLBENZENE	1	1	U	1	0.3
106-43-4	4-CHLOROTOLUENE	1	1	U	1	0.3
98-06-6	TERT-BUTYLBENZENE	1	1	U	1	0.3
95-63-6	1,2,4-TRIMETHYLBENZENE	1	1	U	1	0.3
135-98-8	SEC-BUTYLBENZENE	1	1	U	1	0.3
541-73-1	1,3-DICHLOROBENZENE	1	1	U	1	0.3
99-87-6	P-ISOPROPYLTOLUENE	1	1	U	1	0.3
106-46-7	1,4-DICHLOROBENZENE	1	1	U	1	0.3
104-51-8	N-BUTYLBENZENE	1	1	U	1	0.3
95-50-1	1,2-DICHLOROBENZENE	1	1	U	1	0.3
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1	2	U	2	0.66
120-82-1	1,2,4-TRICHLOROBENZENE	1	1	U	1	0.3
87-68-3	HEXACHLOROBUTADIENE	1	1	U	1	0.3
91-20-3	NAPHTHALENE	1	1	U	1	0.3
87-61-6	1,2,3-TRICHLOROBENZENE	1	1	U	1	0.3
123-91-1	1,4-DIOXANE	1	100	U	100	60
64-17-5	ETHANOL	1	40	U	40	60
78-83-1	ISOBUTYL ALCOHOL	1	40	U	40	30

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: N/A
File Name: C79127

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	25.3		25	101	85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	24.1		25	96	84 - 118
2037-26-5	TOLUENE-D8	25.5		25	102	85 - 115

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-4MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17

Prep Batch: VL171229-4
QCBatchID: VL171229-4-3
Run ID: VL171229-4A
Cleanup: NONE
Basis: N/A
File Name: D63979

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	DF	Result	Result Qualifier	Reporting Limit	MDL
8006-61-9	GASOLINE RANGE ORGANICS	1	100	U	100	47

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25

Tentatively Identified Compounds

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID:
Lab ID: VL171229-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 10 ml
Final Volume: 10 ml
Clean DF: 1
File Name: C79127

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

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1712513-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 27-Dec-17
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17
Prep Method: SW5030 Rev C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received
File Name: C79136

Analyst: Joe Kostelnik
Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
110-54-3	HEXANE	1	1	U	1	0.31
108-87-2	METHYL CYCLOHEXANE	1	0.99	J	1	0.3
71-36-3	N-BUTANOL	1	35	J	50	30
75-65-0	TERT-BUTANOL	1	50	U	50	60
75-71-8	DICHLORODIFLUOROMETHANE	1	1	U	1	0.32
8006-61-9	GASOLINE RANGE ORGANICS	1	52	J	100	47
74-87-3	CHLOROMETHANE	1	1	U	1	0.3
75-01-4	VINYL CHLORIDE	1	1	U	1	0.31
74-83-9	BROMOMETHANE	1	1	U	1	0.3
75-00-3	CHLOROETHANE	1	1	U	1	0.32
75-69-4	TRICHLOROFLUOROMETHANE	1	1	U	1	0.31
75-35-4	1,1-DICHLOROETHENE	1	1	U	1	0.3
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1	1	U	1	0.3
67-64-1	ACETONE	1	5.3	J	10	3
74-88-4	IODOMETHANE	1	1	U	1	0.3
75-15-0	CARBON DISULFIDE	1	1	U	1	0.3
75-09-2	METHYLENE CHLORIDE	1	1	U	1	0.3
156-60-5	TRANS-1,2-DICHLOROETHENE	1	1	U	1	0.33
1634-04-4	METHYL TERTIARY BUTYL ETHER	1	1	U	1	0.31
75-34-3	1,1-DICHLOROETHANE	1	1	U	1	0.3
108-05-4	VINYL ACETATE	1	2	U	2	0.78
156-59-2	CIS-1,2-DICHLOROETHENE	1	1	U	1	0.33
78-93-3	2-BUTANONE	1	11		10	3
74-97-5	BROMOCHLOROMETHANE	1	1	U	1	0.32
67-66-3	CHLOROFORM	1	1	U	1	0.3
71-55-6	1,1,1-TRICHLOROETHANE	1	1	U	1	0.3

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1712513-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 27-Dec-17
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17
Prep Method: SW5030 Rev C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received
File Name: C79136

Analyst: Joe Kostelnik
Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
594-20-7	2,2-DICHLOROPROPANE	1	1	U	1	0.33
110-82-7	CYCLOHEXANE	1	1	U	1	0.32
56-23-5	CARBON TETRACHLORIDE	1	1	U	1	0.32
563-58-6	1,1-DICHLOROPROPENE	1	1	U	1	0.3
107-06-2	1,2-DICHLOROETHANE	1	1	U	1	0.3
71-43-2	BENZENE	1	8.2		1	0.32
79-01-6	TRICHLOROETHENE	1	1	U	1	0.31
78-87-5	1,2-DICHLOROPROPANE	1	1	U	1	0.3
74-95-3	DIBROMOMETHANE	1	1	U	1	0.31
75-27-4	BROMODICHLOROMETHANE	1	1	U	1	0.35
10061-01-5	CIS-1,3-DICHLOROPROPENE	1	1	U	1	0.33
108-10-1	4-METHYL-2-PENTANONE	1	10	U	10	3
108-88-3	TOLUENE	1	1.6		1	0.31
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	1	U	1	0.33
79-00-5	1,1,2-TRICHLOROETHANE	1	1	U	1	0.3
591-78-6	2-HEXANONE	1	10	U	10	3
127-18-4	TETRACHLOROETHENE	1	1	U	1	0.3
142-28-9	1,3-DICHLOROPROPANE	1	1	U	1	0.3
124-48-1	DIBROMOCHLOROMETHANE	1	1	U	1	0.35
106-93-4	1,2-DIBROMOETHANE	1	1	U	1	0.3
544-10-5	1-CHLOROHEXANE	1	1	U	1	0.3
108-90-7	CHLOROBENZENE	1	1	U	1	0.3
630-20-6	1,1,1,2-TETRACHLOROETHANE	1	1	U	1	0.3
100-41-4	ETHYLBENZENE	1	1	U	1	0.31
179601-23-1	M+P-XYLENE	1	0.83	J	1	0.31
95-47-6	O-XYLENE	1	0.31	J	1	0.31

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1712513-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 27-Dec-17
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17
Prep Method: SW5030 Rev C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received
File Name: C79136

Analyst: Joe Kostelnik
Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
100-42-5	STYRENE	1	1	U	1	0.32
75-25-2	BROMOFORM	1	1	U	1	0.34
98-82-8	ISOPROPYLBENZENE	1	0.34	J	1	0.3
96-18-4	1,2,3-TRICHLOROPROPANE	1	1	U	1	0.3
79-34-5	1,1,2,2-TETRACHLOROETHANE	1	1	U	1	0.3
108-86-1	BROMOBENZENE	1	1	U	1	0.3
103-65-1	N-PROPYLBENZENE	1	1	U	1	0.3
95-49-8	2-CHLOROTOLUENE	1	1	U	1	0.3
108-67-8	1,3,5-TRIMETHYLBENZENE	1	0.39	J	1	0.3
106-43-4	4-CHLOROTOLUENE	1	1	U	1	0.3
98-06-6	TERT-BUTYLBENZENE	1	1	U	1	0.3
95-63-6	1,2,4-TRIMETHYLBENZENE	1	1.3		1	0.3
135-98-8	SEC-BUTYLBENZENE	1	0.3	J	1	0.3
541-73-1	1,3-DICHLOROBENZENE	1	1	U	1	0.3
99-87-6	P-ISOPROPYLTOLUENE	1	1	U	1	0.3
106-46-7	1,4-DICHLOROBENZENE	1	1	U	1	0.3
104-51-8	N-BUTYLBENZENE	1	1	U	1	0.3
95-50-1	1,2-DICHLOROBENZENE	1	1	U	1	0.3
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1	2	U	2	0.66
120-82-1	1,2,4-TRICHLOROBENZENE	1	1	U	1	0.3
87-68-3	HEXACHLOROBUTADIENE	1	1	U	1	0.3
91-20-3	NAPHTHALENE	1	1.7		1	0.3
87-61-6	1,2,3-TRICHLOROBENZENE	1	1	U	1	0.3
123-91-1	1,4-DIOXANE	1	100	U	100	60
64-17-5	ETHANOL	1	40	U	40	60
78-83-1	ISOBUTYL ALCOHOL	1	40	U	40	30

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1712513-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 27-Dec-17
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17
Prep Method: SW5030 Rev C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received
File Name: C79136

Analyst: Joe Kostelnik
Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	24.9		25	100	85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	24.7		25	99	84 - 118
2037-26-5	TOLUENE-D8	25.4		25	102	85 - 115

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25

Tentatively Identified Compounds

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1712513-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 27-Dec-17
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 10 ml
Final Volume: 10 ml
Clean DF: 1
File Name: C79136

CASNO	Retention Time	Target Analyte	Dilution Factor	Result	Units	Qualifier
	1.36	UNKNOWN1	1	2.5	UG/L	J
	10.76	TRIMETHYLBENZENE	1	1.2	UG/L	J

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1712513-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 28-Dec-17
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17
Prep Method: SW5030 Rev C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received
File Name: C79137

Analyst: Joe Kostelnik
Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
110-54-3	HEXANE	1	1	U	1	0.31
108-87-2	METHYL CYCLOHEXANE	1	0.95	J	1	0.3
71-36-3	N-BUTANOL	1	50	U	50	30
75-65-0	TERT-BUTANOL	1	50	U	50	60
75-71-8	DICHLORODIFLUOROMETHANE	1	1	U	1	0.32
8006-61-9	GASOLINE RANGE ORGANICS	1	58	J	100	47
74-87-3	CHLOROMETHANE	1	1	U	1	0.3
75-01-4	VINYL CHLORIDE	1	1	U	1	0.31
74-83-9	BROMOMETHANE	1	1	U	1	0.3
75-00-3	CHLOROETHANE	1	1	U	1	0.32
75-69-4	TRICHLOROFLUOROMETHANE	1	1	U	1	0.31
75-35-4	1,1-DICHLOROETHENE	1	1	U	1	0.3
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	1	1	U	1	0.3
67-64-1	ACETONE	1	3.9	J	10	3
74-88-4	IODOMETHANE	1	1	U	1	0.3
75-15-0	CARBON DISULFIDE	1	1	U	1	0.3
75-09-2	METHYLENE CHLORIDE	1	1	U	1	0.3
156-60-5	TRANS-1,2-DICHLOROETHENE	1	1	U	1	0.33
1634-04-4	METHYL TERTIARY BUTYL ETHER	1	1	U	1	0.31
75-34-3	1,1-DICHLOROETHANE	1	1	U	1	0.3
108-05-4	VINYL ACETATE	1	2	U	2	0.78
156-59-2	CIS-1,2-DICHLOROETHENE	1	1	U	1	0.33
78-93-3	2-BUTANONE	1	4.8	J	10	3
74-97-5	BROMOCHLOROMETHANE	1	1	U	1	0.32
67-66-3	CHLOROFORM	1	1	U	1	0.3
71-55-6	1,1,1-TRICHLOROETHANE	1	1	U	1	0.3

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1712513-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 28-Dec-17
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17
Prep Method: SW5030 Rev C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received
File Name: C79137

Analyst: Joe Kostelnik
Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
594-20-7	2,2-DICHLOROPROPANE	1	1	U	1	0.33
110-82-7	CYCLOHEXANE	1	1	U	1	0.32
56-23-5	CARBON TETRACHLORIDE	1	1	U	1	0.32
563-58-6	1,1-DICHLOROPROPENE	1	1	U	1	0.3
107-06-2	1,2-DICHLOROETHANE	1	1	U	1	0.3
71-43-2	BENZENE	1	9		1	0.32
79-01-6	TRICHLOROETHENE	1	1	U	1	0.31
78-87-5	1,2-DICHLOROPROPANE	1	1	U	1	0.3
74-95-3	DIBROMOMETHANE	1	1	U	1	0.31
75-27-4	BROMODICHLOROMETHANE	1	1	U	1	0.35
10061-01-5	CIS-1,3-DICHLOROPROPENE	1	1	U	1	0.33
108-10-1	4-METHYL-2-PENTANONE	1	10	U	10	3
108-88-3	TOLUENE	1	1.5		1	0.31
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	1	U	1	0.33
79-00-5	1,1,2-TRICHLOROETHANE	1	1	U	1	0.3
591-78-6	2-HEXANONE	1	10	U	10	3
127-18-4	TETRACHLOROETHENE	1	1	U	1	0.3
142-28-9	1,3-DICHLOROPROPANE	1	1	U	1	0.3
124-48-1	DIBROMOCHLOROMETHANE	1	1	U	1	0.35
106-93-4	1,2-DIBROMOETHANE	1	1	U	1	0.3
544-10-5	1-CHLOROHEXANE	1	1	U	1	0.3
108-90-7	CHLOROBENZENE	1	1	U	1	0.3
630-20-6	1,1,1,2-TETRACHLOROETHANE	1	1	U	1	0.3
100-41-4	ETHYLBENZENE	1	1	U	1	0.31
179601-23-1	M+P-XYLENE	1	0.73	J	1	0.31
95-47-6	O-XYLENE	1	1	U	1	0.31

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1712513-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 28-Dec-17
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17
Prep Method: SW5030 Rev C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received
File Name: C79137

Analyst: Joe Kostelnik
Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL
100-42-5	STYRENE	1	1	U	1	0.32
75-25-2	BROMOFORM	1	1	U	1	0.34
98-82-8	ISOPROPYLBENZENE	1	0.39	J	1	0.3
96-18-4	1,2,3-TRICHLOROPROPANE	1	1	U	1	0.3
79-34-5	1,1,2,2-TETRACHLOROETHANE	1	1	U	1	0.3
108-86-1	BROMOBENZENE	1	1	U	1	0.3
103-65-1	N-PROPYLBENZENE	1	1	U	1	0.3
95-49-8	2-CHLOROTOLUENE	1	1	U	1	0.3
108-67-8	1,3,5-TRIMETHYLBENZENE	1	0.43	J	1	0.3
106-43-4	4-CHLOROTOLUENE	1	1	U	1	0.3
98-06-6	TERT-BUTYLBENZENE	1	1	U	1	0.3
95-63-6	1,2,4-TRIMETHYLBENZENE	1	1.4		1	0.3
135-98-8	SEC-BUTYLBENZENE	1	0.31	J	1	0.3
541-73-1	1,3-DICHLOROBENZENE	1	1	U	1	0.3
99-87-6	P-ISOPROPYLTOLUENE	1	1	U	1	0.3
106-46-7	1,4-DICHLOROBENZENE	1	1	U	1	0.3
104-51-8	N-BUTYLBENZENE	1	1	U	1	0.3
95-50-1	1,2-DICHLOROBENZENE	1	1	U	1	0.3
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1	2	U	2	0.66
120-82-1	1,2,4-TRICHLOROBENZENE	1	1	U	1	0.3
87-68-3	HEXACHLOROBUTADIENE	1	1	U	1	0.3
91-20-3	NAPHTHALENE	1	1.9		1	0.3
87-61-6	1,2,3-TRICHLOROBENZENE	1	1	U	1	0.3
123-91-1	1,4-DIOXANE	1	100	U	100	60
64-17-5	ETHANOL	1	40	U	40	60
78-83-1	ISOBUTYL ALCOHOL	1	40	U	40	30

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1712513-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 28-Dec-17
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17
Prep Method: SW5030 Rev C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received
File Name: C79137

Analyst: Joe Kostelnik
Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Result Qualifier	Reporting Limit	MDL

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	25.5		25	102	85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	24.7		25	99	84 - 118
2037-26-5	TOLUENE-D8	25		25	100	85 - 115

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25

Tentatively Identified Compounds

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1712513-2

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 28-Dec-17
Date Extracted: 29-Dec-17
Date Analyzed: 29-Dec-17

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 10 ml
Final Volume: 10 ml
Clean DF: 1
File Name: C79137

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

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-3LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 12/29/2017
Date Analyzed: 12/29/2017
Prep Method: SW5030C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: N/A
File Name: C79124

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
110-54-3	HEXANE	10	10.4	1		104	60 - 140%
108-87-2	METHYL CYCLOHEXANE	10	10.9	1		109	60 - 140%
71-36-3	N-BUTANOL	500	467	50		93	50 - 150%
75-65-0	TERT-BUTANOL	500	504	50		101	50 - 150%
75-71-8	DICHLORODIFLUOROMETHANE	10	8.24	1		82	63 - 125%
74-87-3	CHLOROMETHANE	10	8.47	1		85	73 - 122%
75-01-4	VINYL CHLORIDE	10	8.95	1		90	72 - 123%
74-83-9	BROMOMETHANE	10	8.71	1		87	68 - 123%
75-00-3	CHLOROETHANE	10	9.38	1		94	74 - 124%
75-69-4	TRICHLOROFLUOROMETHANE	10	9.44	1		94	74 - 124%
75-35-4	1,1-DICHLOROETHENE	10	10.5	1		105	77 - 119%
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETH	10	10.5	1		105	79 - 122%
67-64-1	ACETONE	40	40.6	10		101	62 - 142%
74-88-4	IODOMETHANE	10	10.9	1		109	72 - 126%
75-15-0	CARBON DISULFIDE	10	10.6	1		106	76 - 121%
75-09-2	METHYLENE CHLORIDE	10	9.65	1		96	71 - 130%
156-60-5	TRANS-1,2-DICHLOROETHENE	10	9.99	1		100	82 - 117%
1634-04-4	METHYL TERTIARY BUTYL ETHER	20	19.7	1		99	77 - 119%
75-34-3	1,1-DICHLOROETHANE	10	10.4	1		104	83 - 119%
108-05-4	VINYL ACETATE	10	10.2	2		102	76 - 121%
156-59-2	CIS-1,2-DICHLOROETHENE	10	10.2	1		102	83 - 117%
78-93-3	2-BUTANONE	40	38.9	10		97	70 - 135%
74-97-5	BROMOCHLOROMETHANE	10	10.5	1		105	83 - 121%
67-66-3	CHLOROFORM	10	10.1	1		101	82 - 119%
71-55-6	1,1,1-TRICHLOROETHANE	10	10.8	1		108	80 - 120%
594-20-7	2,2-DICHLOROPROPANE	10	11.2	1		112	83 - 125%

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-3LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 12/29/2017
Date Analyzed: 12/29/2017
Prep Method: SW5030C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: N/A
File Name: C79124

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
110-82-7	CYCLOHEXANE	20	21.4	1		107	60 - 140%
56-23-5	CARBON TETRACHLORIDE	10	10.6	1		106	77 - 122%
563-58-6	1,1-DICHLOROPROPENE	10	10.6	1		106	84 - 118%
107-06-2	1,2-DICHLOROETHANE	10	9.33	1		93	74 - 128%
71-43-2	BENZENE	10	9.99	1		100	83 - 117%
79-01-6	TRICHLOROETHENE	10	10.3	1		103	83 - 117%
78-87-5	1,2-DICHLOROPROPANE	10	10.1	1		101	84 - 120%
74-95-3	DIBROMOMETHANE	10	10.1	1		101	79 - 122%
75-27-4	BROMODICHLOROMETHANE	10	10.2	1		102	76 - 122%
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	10.6	1		106	81 - 120%
108-10-1	4-METHYL-2-PENTANONE	40	40.2	10		100	73 - 125%
108-88-3	TOLUENE	10	9.73	1		97	82 - 113%
10061-02-6	TRANS-1,3-DICHLOROPROPENE	10	9.54	1		95	81 - 114%
79-00-5	1,1,2-TRICHLOROETHANE	10	9.57	1		96	78 - 116%
591-78-6	2-HEXANONE	40	34.6	10		86	71 - 124%
127-18-4	TETRACHLOROETHENE	10	9.99	1		100	84 - 117%
142-28-9	1,3-DICHLOROPROPANE	10	9.82	1		98	80 - 115%
124-48-1	DIBROMOCHLOROMETHANE	10	9.75	1		97	82 - 118%
106-93-4	1,2-DIBROMOETHANE	10	9.42	1		94	79 - 114%
544-10-5	1-CHLOROHEXANE	10	10.2	1		102	80 - 117%
108-90-7	CHLOROBENZENE	10	9.87	1		99	81 - 113%
630-20-6	1,1,1,2-TETRACHLOROETHANE	10	9.97	1		100	78 - 113%
100-41-4	ETHYLBENZENE	10	10	1		100	81 - 113%
179601-23-	M+P-XYLENE	20	19.2	1		96	82 - 115%
95-47-6	O-XYLENE	10	10.2	1		102	81 - 115%
100-42-5	STYRENE	10	10.3	1		103	78 - 118%
75-25-2	BROMOFORM	10	9.74	1		97	70 - 120%

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-3LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 12/29/2017
Date Analyzed: 12/29/2017
Prep Method: SW5030C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: N/A
File Name: C79124

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
98-82-8	ISOPROPYLBENZENE	10	9.4	1		94	80 - 113%
96-18-4	1,2,3-TRICHLOROPROPANE	10	9.65	1		97	78 - 117%
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	9.47	1		95	75 - 121%
108-86-1	BROMOBENZENE	10	9.77	1		98	81 - 114%
103-65-1	N-PROPYLBENZENE	10	9.5	1		95	79 - 116%
95-49-8	2-CHLOROTOLUENE	10	9.6	1		96	79 - 116%
108-67-8	1,3,5-TRIMETHYLBENZENE	10	9.71	1		97	78 - 116%
106-43-4	4-CHLOROTOLUENE	10	9.35	1		93	78 - 115%
98-06-6	TERT-BUTYLBENZENE	10	10.4	1		104	76 - 120%
95-63-6	1,2,4-TRIMETHYLBENZENE	10	10.1	1		101	80 - 117%
135-98-8	SEC-BUTYLBENZENE	10	9.9	1		99	78 - 115%
541-73-1	1,3-DICHLOROBENZENE	10	10.1	1		101	79 - 115%
99-87-6	P-ISOPROPYLTOLUENE	10	10	1		100	77 - 116%
106-46-7	1,4-DICHLOROBENZENE	10	10.1	1		101	82 - 114%
104-51-8	N-BUTYLBENZENE	10	10	1		100	79 - 117%
95-50-1	1,2-DICHLOROBENZENE	10	9.78	1		98	82 - 114%
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	10	9.78	2		98	73 - 125%
120-82-1	1,2,4-TRICHLOROBENZENE	10	10.2	1		102	75 - 120%
87-68-3	HEXACHLOROBUTADIENE	10	10.7	1		107	71 - 124%
91-20-3	NAPHTHALENE	10	9.65	1		96	71 - 131%
87-61-6	1,2,3-TRICHLOROBENZENE	10	10.6	1		106	70 - 131%
123-91-1	1,4-DIOXANE	200	211	100		106	50 - 150%
64-17-5	ETHANOL	200	184	40		92	50 - 150%
78-83-1	ISOBUTYL ALCOHOL	200	199	40		99	50 - 150%

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-3LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 12/29/2017
Date Analyzed: 12/29/2017
Prep Method: SW5030C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: N/A
File Name: C79125

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
110-54-3	HEXANE	10	9.22	1		92	30	12
108-87-2	METHYL CYCLOHEXANE	10	9.59	1		96	30	12
71-36-3	N-BUTANOL	500	454	50		91	30	3
75-65-0	TERT-BUTANOL	500	478	50		96	30	5
75-71-8	DICHLORODIFLUOROMETHANE	10	7.7	1		77	20	7
74-87-3	CHLOROMETHANE	10	8.37	1		84	20	1
75-01-4	VINYL CHLORIDE	10	8.36	1		84	20	7
74-83-9	BROMOMETHANE	10	8.42	1		84	20	3
75-00-3	CHLOROETHANE	10	9.29	1		93	20	1
75-69-4	TRICHLOROFLUOROMETHANE	10	8.74	1		87	20	8
75-35-4	1,1-DICHLOROETHENE	10	10.4	1		104	20	1
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETH	10	10.5	1		105	20	0
67-64-1	ACETONE	40	40.8	10		102	30	0
74-88-4	IODOMETHANE	10	10.5	1		105	20	4
75-15-0	CARBON DISULFIDE	10	9.9	1		99	20	7
75-09-2	METHYLENE CHLORIDE	10	9.43	1		94	20	2
156-60-5	TRANS-1,2-DICHLOROETHENE	10	9.37	1		94	20	6
1634-04-4	METHYL TERTIARY BUTYL ETHER	20	18.9	1		95	20	4
75-34-3	1,1-DICHLOROETHANE	10	9.83	1		98	20	5
108-05-4	VINYL ACETATE	10	9.73	2		97	20	5
156-59-2	CIS-1,2-DICHLOROETHENE	10	9.6	1		96	20	6
78-93-3	2-BUTANONE	40	37	10		92	30	5
74-97-5	BROMOCHLOROMETHANE	10	10.2	1		102	20	3
67-66-3	CHLOROFORM	10	9.31	1		93	20	8
71-55-6	1,1,1-TRICHLOROETHANE	10	9.79	1		98	20	10
594-20-7	2,2-DICHLOROPROPANE	10	10.4	1		104	20	7
110-82-7	CYCLOHEXANE	20	19.5	1		97	30	9

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-3LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 12/29/2017
Date Analyzed: 12/29/2017
Prep Method: SW5030C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: N/A
File Name: C79125

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
56-23-5	CARBON TETRACHLORIDE	10	9.89	1		99	20	7
563-58-6	1,1-DICHLOROPROPENE	10	9.9	1		99	20	7
107-06-2	1,2-DICHLOROETHANE	10	8.98	1		90	20	4
71-43-2	BENZENE	10	9.43	1		94	20	6
79-01-6	TRICHLOROETHENE	10	10	1		100	20	3
78-87-5	1,2-DICHLOROPROPANE	10	9.33	1		93	20	8
74-95-3	DIBROMOMETHANE	10	9.62	1		96	20	5
75-27-4	BROMODICHLOROMETHANE	10	9.87	1		99	20	4
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	10.1	1		101	20	5
108-10-1	4-METHYL-2-PENTANONE	40	39.7	10		99	30	1
108-88-3	TOLUENE	10	9.69	1		97	20	0
10061-02-6	TRANS-1,3-DICHLOROPROPENE	10	10.1	1		101	20	6
79-00-5	1,1,2-TRICHLOROETHANE	10	9.81	1		98	20	3
591-78-6	2-HEXANONE	40	36.7	10		92	30	6
127-18-4	TETRACHLOROETHENE	10	9.88	1		99	20	1
142-28-9	1,3-DICHLOROPROPANE	10	9.91	1		99	20	1
124-48-1	DIBROMOCHLOROMETHANE	10	9.94	1		99	20	2
106-93-4	1,2-DIBROMOETHANE	10	9.6	1		96	20	2
544-10-5	1-CHLOROHEXANE	10	9.96	1		100	20	3
108-90-7	CHLOROBENZENE	10	9.49	1		95	20	4
630-20-6	1,1,1,2-TETRACHLOROETHANE	10	10	1		100	20	0
100-41-4	ETHYLBENZENE	10	9.87	1		99	20	1
179601-23-	M+P-XYLENE	20	19.6	1		98	20	2
95-47-6	O-XYLENE	10	9.88	1		99	20	3
100-42-5	STYRENE	10	10.2	1		102	20	1
75-25-2	BROMOFORM	10	9.74	1		97	20	0
98-82-8	ISOPROPYLBENZENE	10	9.9	1		99	20	5

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-3LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 12/29/2017
Date Analyzed: 12/29/2017
Prep Method: SW5030C

Prep Batch: VL171229-3
QCBatchID: VL171229-3-1
Run ID: VL171229-3A
Cleanup: NONE
Basis: N/A
File Name: C79125

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
96-18-4	1,2,3-TRICHLOROPROPANE	10	9.26	1		93	20	4
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	9.59	1		96	20	1
108-86-1	BROMOBENZENE	10	9.61	1		96	20	2
103-65-1	N-PROPYLBENZENE	10	9.39	1		94	20	1
95-49-8	2-CHLOROTOLUENE	10	9.66	1		97	20	1
108-67-8	1,3,5-TRIMETHYLBENZENE	10	9.6	1		96	20	1
106-43-4	4-CHLOROTOLUENE	10	9.61	1		96	20	3
98-06-6	TERT-BUTYLBENZENE	10	10.1	1		101	20	3
95-63-6	1,2,4-TRIMETHYLBENZENE	10	9.71	1		97	20	4
135-98-8	SEC-BUTYLBENZENE	10	9.46	1		95	20	5
541-73-1	1,3-DICHLOROBENZENE	10	10.1	1		101	20	0
99-87-6	P-ISOPROPYLTOLUENE	10	9.92	1		99	20	1
106-46-7	1,4-DICHLOROBENZENE	10	9.45	1		95	20	6
104-51-8	N-BUTYLBENZENE	10	9.62	1		96	20	4
95-50-1	1,2-DICHLOROBENZENE	10	9.44	1		94	20	4
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	10	9.93	2		99	20	2
120-82-1	1,2,4-TRICHLOROBENZENE	10	11	1		110	20	8
87-68-3	HEXACHLOROBUTADIENE	10	10.9	1		109	20	1
91-20-3	NAPHTHALENE	10	10	1		100	20	4
87-61-6	1,2,3-TRICHLOROBENZENE	10	10.8	1		108	20	3
123-91-1	1,4-DIOXANE	200	191	100		96	30	10
64-17-5	ETHANOL	200	182	40		91	30	1
78-83-1	ISOBUTYL ALCOHOL	200	191	40		95	30	4

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: **ALS -- Fort Collins**
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Surrogate Recovery LCS/LCSD

CASNO	Target Analyte	Spike Added	LCS % Rec.	LCS Flag	LCSD % Rec.	LCSD Flag	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	25	92		93		85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	25	105		100		84 - 118
2037-26-5	TOLUENE-D8	25	98		101		85 - 115

Data Package ID: *VL1712513-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1712513
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL171229-8LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 12/29/2017
Date Analyzed: 12/29/2017
Prep Method: SW5030C

Prep Batch: VL171229-4
QCBatchID: VL171229-4-3
Run ID: VL171229-4A
Cleanup: NONE
Basis: N/A
File Name: D63976

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
8006-61-9	GASOLINE RANGE ORGANICS	1000	995	100		99	80 - 120%

Lab ID: VL171229-8LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 12/29/2017
Date Analyzed: 12/29/2017
Prep Method: SW5030C

Prep Batch: VL171229-4
QCBatchID: VL171229-4-3
Run ID: VL171229-4A
Cleanup: NONE
Basis: N/A
File Name: D63977

Sample Aliquot: 10 ml
Final Volume: 10 ml
Result Units: UG/L
Clean DF: 1

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
8006-61-9	GASOLINE RANGE ORGANICS	1000	906	100		91	20	9

Data Package ID: *VL1712513-1*

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2017\122917\C79127.D Vial: 7
Acq On : 29 Dec 2017 11:13 am Operator: JK-sop525r16
Sample : VL1712293MB 1/3/18 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Dec 29 18:44 2017 Quant Results File: 122217W.RES

Quant Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Fri Dec 29 18:43:59 2017
Response via : Initial Calibration
DataAcq Meth : 122217W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	5.21	96	1897760	25.00	ppb	0.00
58) Chlorobenzene-d5	8.83	82	718820	25.00	ppb	0.00
78) 1,4-Dichlorobenzene-d4	11.07	152	484028	25.00	ppb	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	4.47	113	551052	24.10	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 96.40%			
42) 1,2-dichloroethane-d4	4.85	65	477422	23.78	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 95.12%			
59) Toluene-d8	7.09	98	1608298	25.51	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 102.04%			
79) 4-Bromofluorobenzene	10.04	95	533304	25.25	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 101.00%			
Target Compounds						Qvalue
19) Methylene chloride	2.67	84	9247	0.39	ppb	# 79

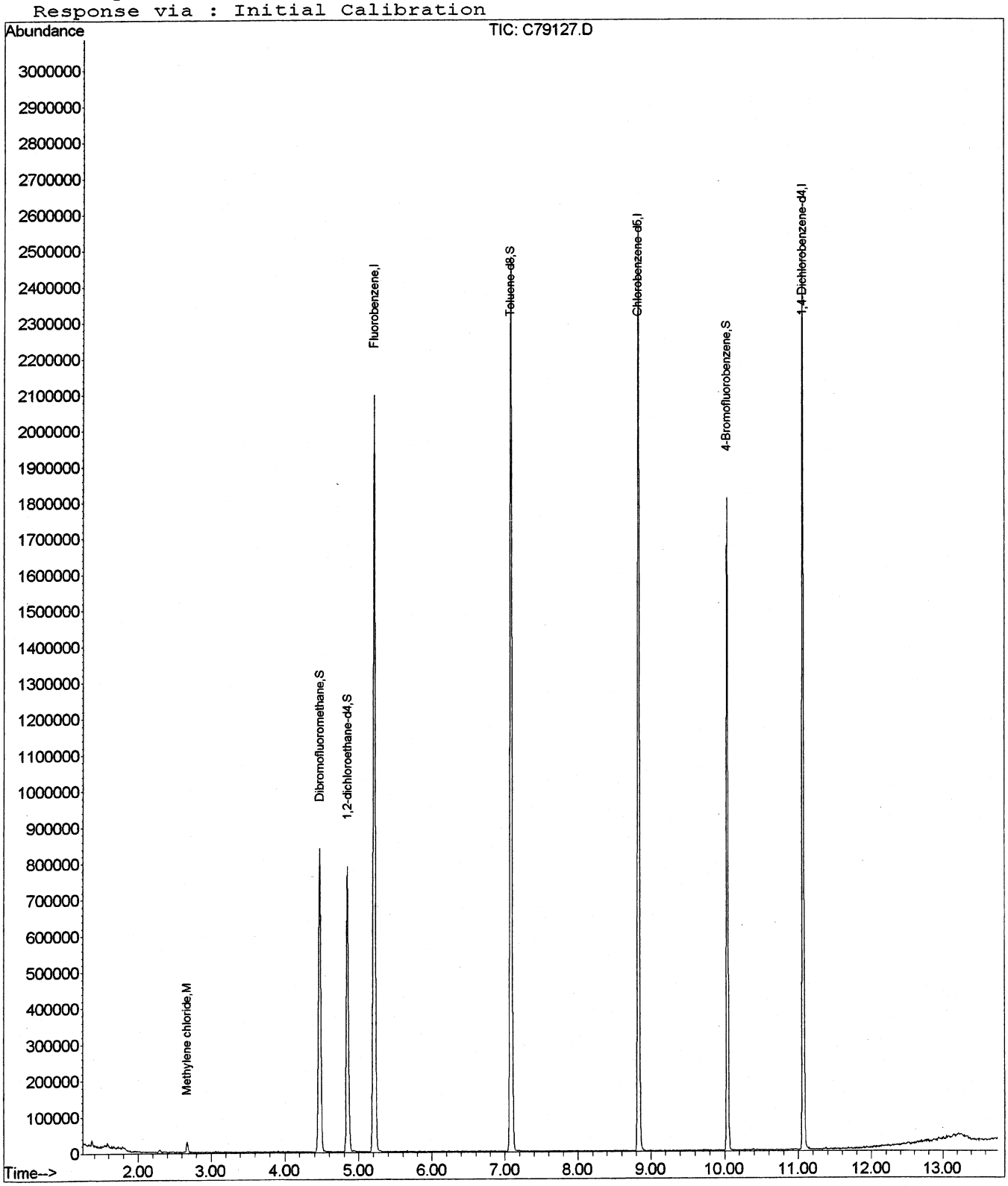
12/29/17

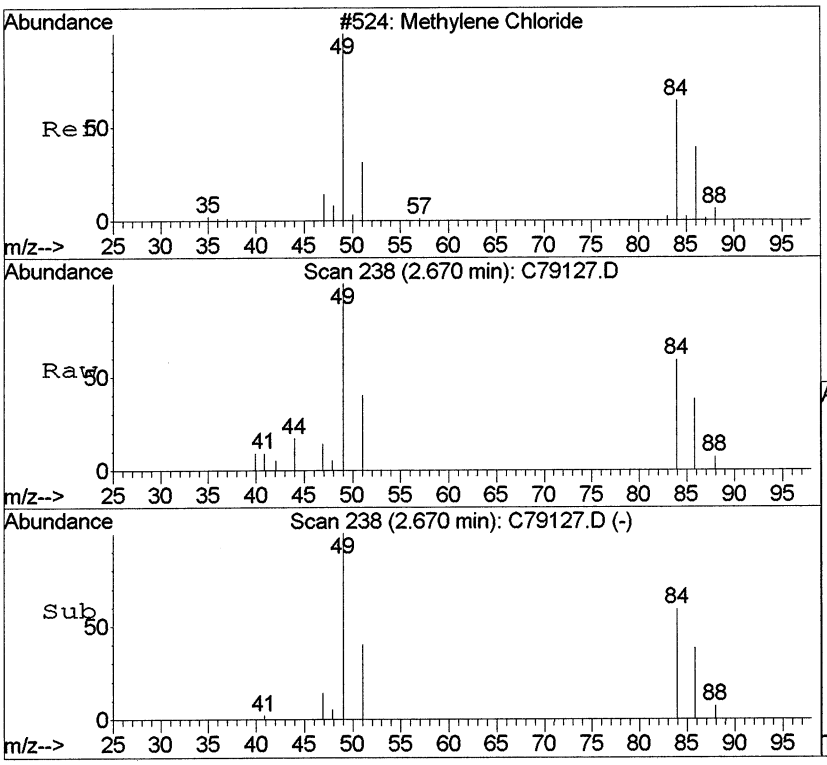
(#) = qualifier out of range (m) = manual integration
C79127.D 122217W.M Fri Dec 29 18:44:37 2017 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2017\122917\C79127.D Vial: 7
Acq On : 29 Dec 2017 11:13 am Operator: JK-sop525r16
Sample : VL1712293MB 1.3.18 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Dec 29 18:44 2017 Quant Results File: 122217W.RES

Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Fri Dec 29 18:43:59 2017
Response via : Initial Calibration

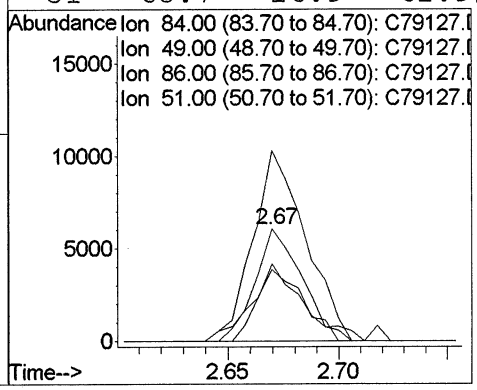




#19
Methylene chloride
Concen: 0.39 ppb
RT: 2.67 min Scan# 238
Delta R.T. -0.00 min
Lab File: C79127.D
Acq: 29 Dec 2017 11:13 am

Tgt Ion: 84 Resp: 9247

Ion	Ratio	Lower	Upper
84	100		
49	170.3	84.2	196.6
86	64.0	40.3	93.9
51	68.7	26.9	62.9#



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2017\122917\C79136.D Vial: 16
Acq On : 29 Dec 2017 3:18 pm Operator: JK-sop525r16
Sample : 1712513-1 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Dec 29 15:39 2017 Quant Results File: 122217W.RES

Quant Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Sat Dec 23 06:00:59 2017
Response via : Initial Calibration
DataAcq Meth : 122217W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	5.21	96	1755721	25.00	ppb	0.00
58) Chlorobenzene-d5	8.83	82	668656	25.00	ppb	0.00
78) 1,4-Dichlorobenzene-d4	11.07	152	453026	25.00	ppb	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	4.46	113	523284	24.73	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 98.92%			
42) 1,2-dichloroethane-d4	4.84	65	456576	24.58	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 98.32%			
59) Toluene-d8	7.08	98	1488402	25.38	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 101.52%			
79) 4-Bromofluorobenzene	10.03	95	492612	24.92	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 99.68%			
Target Compounds						Qvalue
13) Acetone	2.29	43	33059	5.28	ppb	97
31) 2-Butanone	3.90	43	99491	10.60	ppb	92
45) Benzene	4.87	78	604800	8.17	ppb	93
49) Methyl Cyclohexane	5.89	55	24196	0.99	ppb	73
60) Toluene	7.17	91	95618	1.58	ppb	91
73) m,p-Xylene	9.11	106	19062	0.83	ppb	86
74) o-Xylene	9.51	106	7098	0.31	ppb	97
77) Isopropylbenzene	9.87	105	17343	0.34	ppb	96
85) 1,3,5-Trimethylbenzene	10.44	105	15445	0.39	ppb	95
89) 1,2,4-Trimethylbenzene	10.76	105	48938	1.27	ppb	94
90) sec-Butylbenzene	10.90	105	14645	0.30	ppb	93
100) Naphthalene	12.84	128	30808	1.74	ppb	98

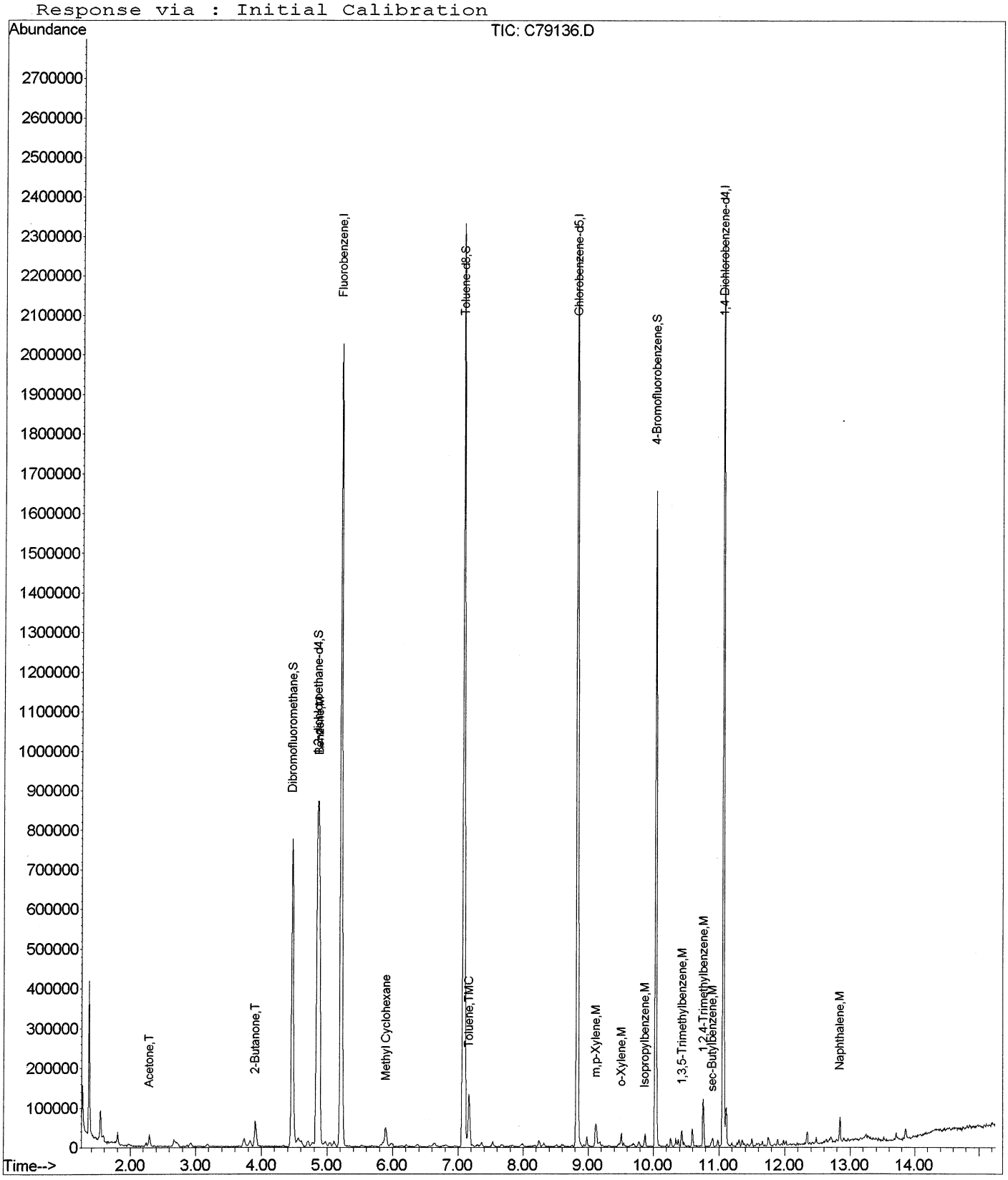
(#) = qualifier out of range (m) = manual integration
C79136.D 122217W.M Fri Dec 29 15:40:11 2017 Page 1

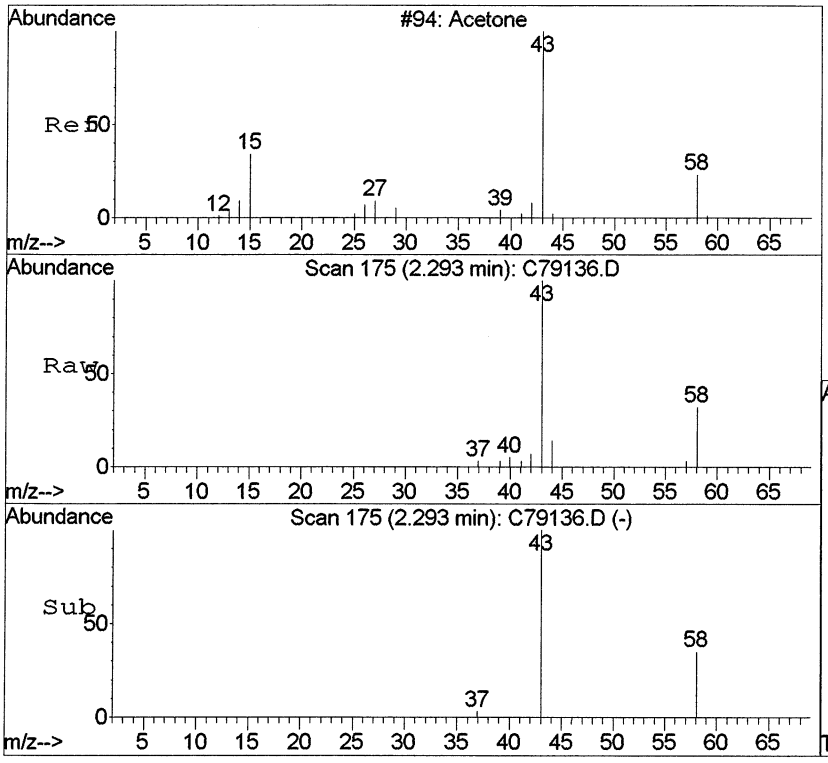
12-29-17

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2017\122917\C79136.D Vial: 16
Acq On : 29 Dec 2017 3:18 pm Operator: JK-sop525r16
Sample : 1712513-1 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Dec 29 15:39 2017 Quant Results File: 122217W.RES

Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Sat Dec 23 06:00:59 2017
Response via : Initial Calibration

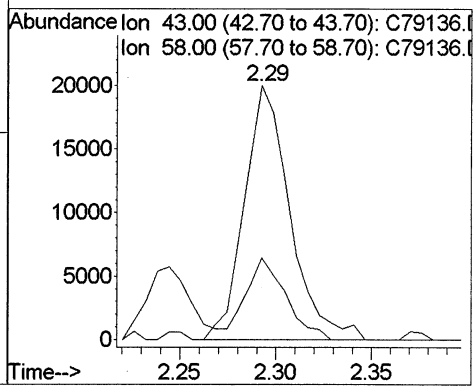


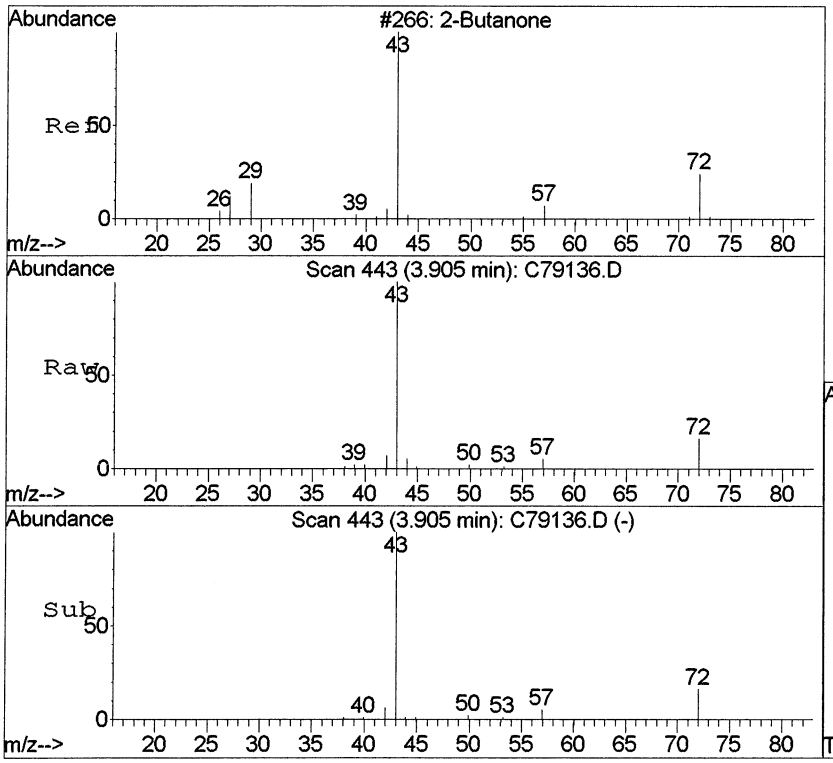


#13
Acetone
Concen: 5.28 ppb
RT: 2.29 min Scan# 175
Delta R.T. 0.00 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion: 43 Resp: 33059

Ion	Ratio	Lower	Upper
43	100		
58	32.4	0.0	211.0

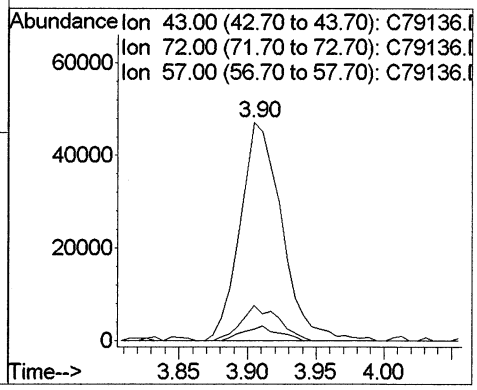


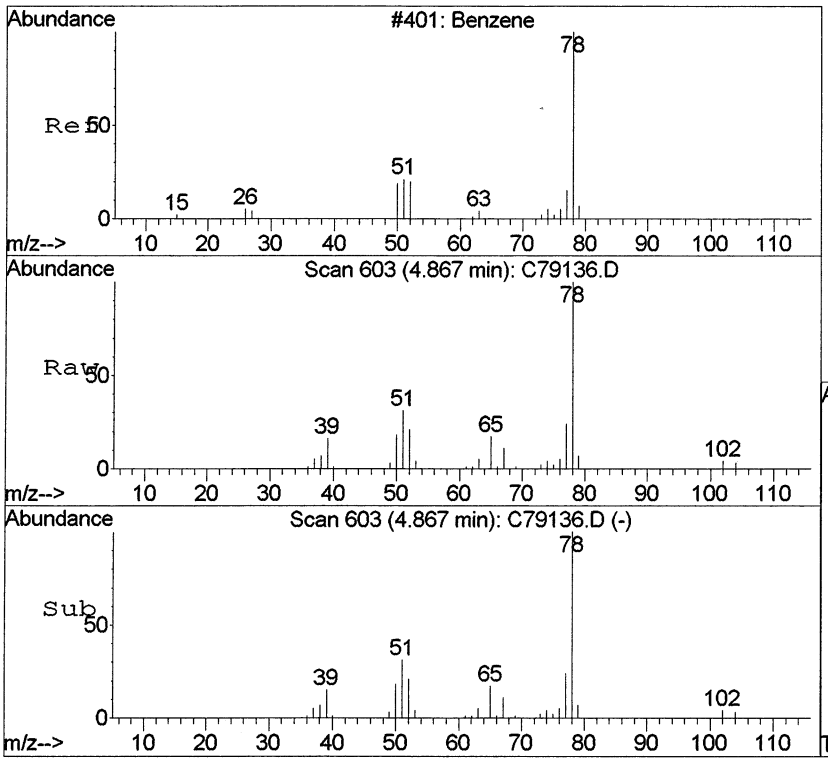


#31
2-Butanone
Concen: 10.60 ppb
RT: 3.90 min Scan# 443
Delta R.T. -0.00 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion: 43 Resp: 99491

Ion	Ratio	Lower	Upper
43	100		
72	16.1	12.4	29.0
57	5.2	2.9	6.7

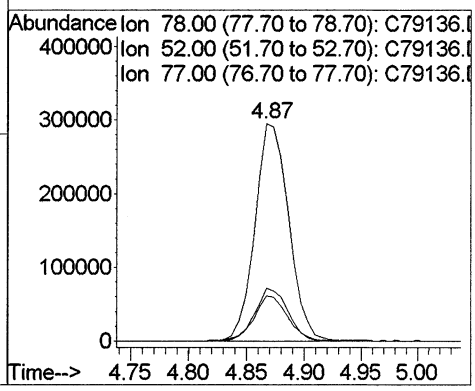


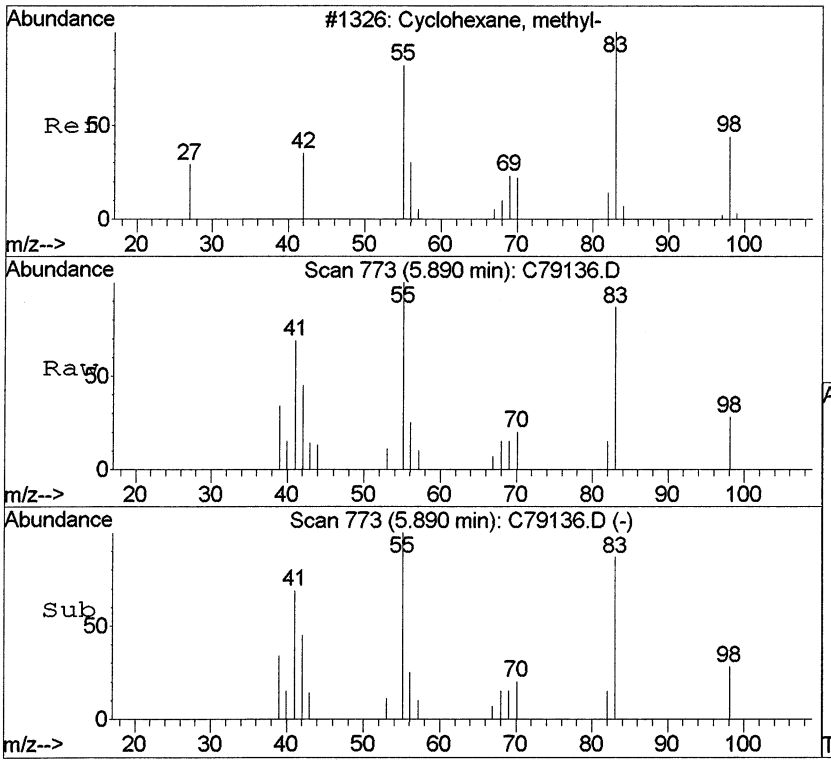


#45
Benzene
Concen: 8.17 ppb
RT: 4.87 min Scan# 603
Delta R.T. -0.01 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion: 78 Resp: 604800

Ion	Ratio	Lower	Upper
78	100		
52	20.7	9.5	22.1
77	24.2	13.5	31.5

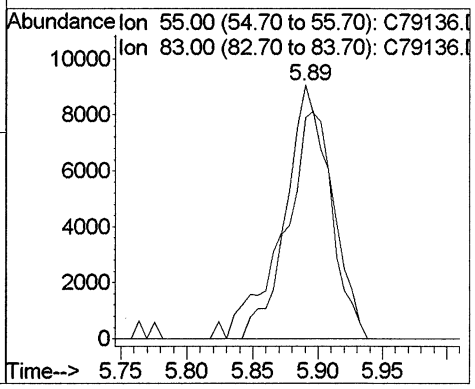


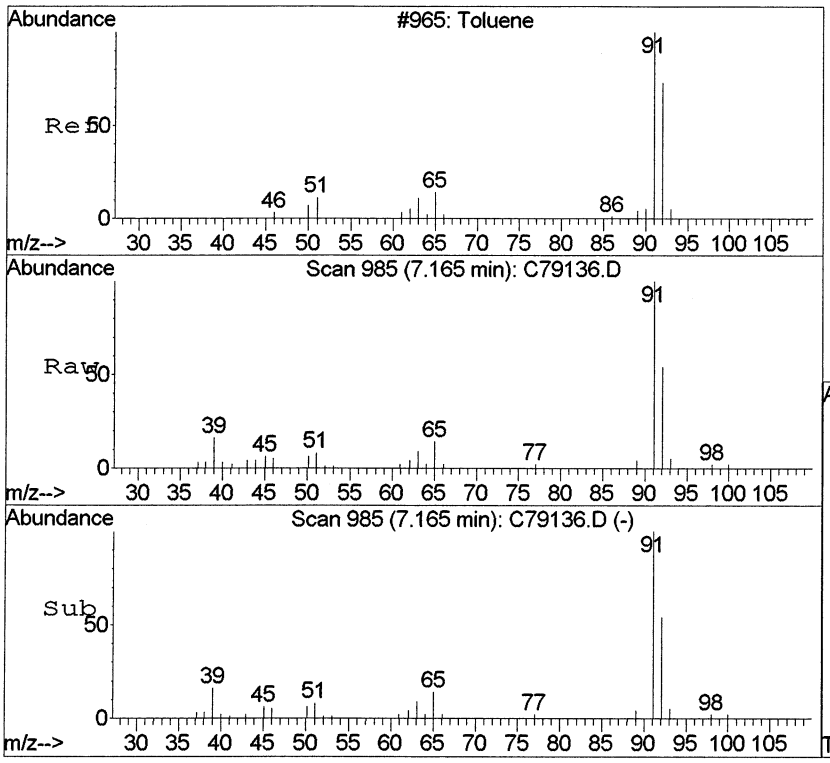


#49
Methyl Cyclohexane
Concen: 0.99 ppb
RT: 5.89 min Scan# 773
Delta R.T. -0.01 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion: 55 Resp: 24196

Ion	Ratio	Lower	Upper
55	100		
83	87.3	69.8	163.0

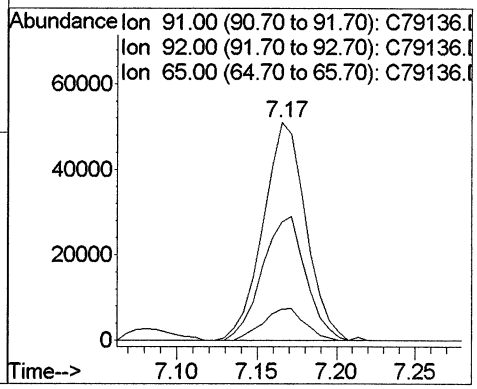


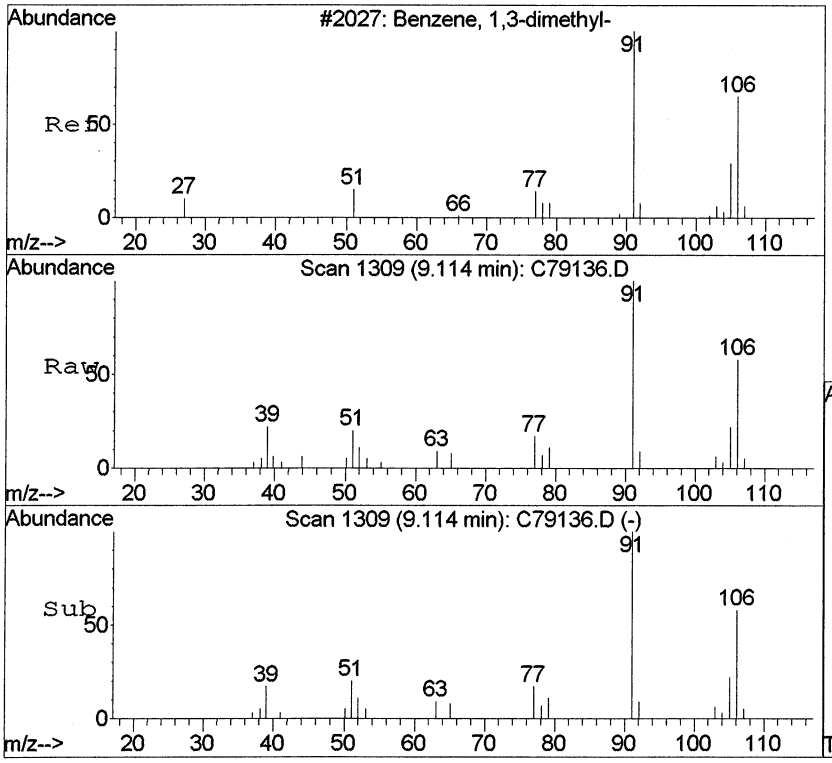


#60
Toluene
Concen: 1.58 ppb
RT: 7.17 min Scan# 985
Delta R.T. -0.01 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion: 91 Resp: 95618

Ion	Ratio	Lower	Upper
91	100		
92	54.2	37.0	86.4
65	14.3	6.8	16.0

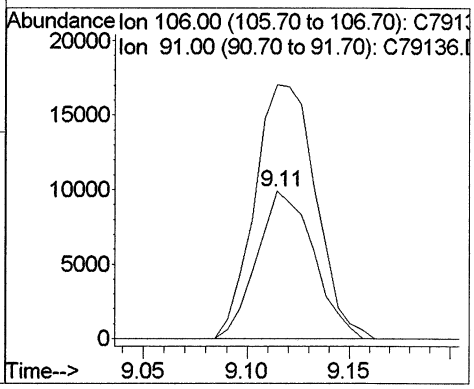


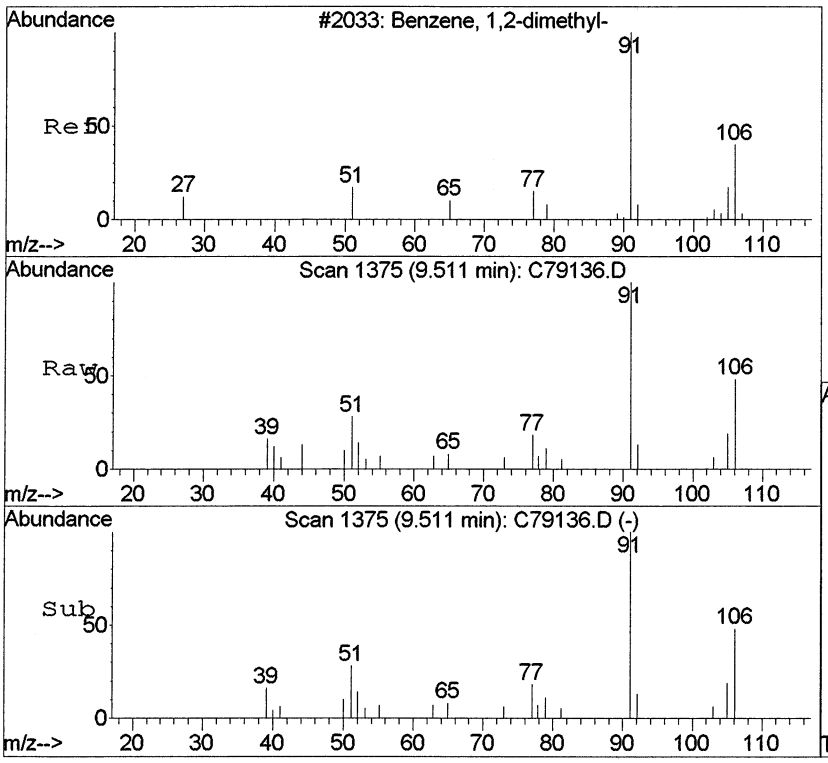


#73
m,p-Xylene
Concen: 0.83 ppb
RT: 9.11 min Scan# 1309
Delta R.T. -0.01 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion:106 Resp: 19062

Ion	Ratio	Lower	Upper
106	100		
91	171.9	115.6	269.6

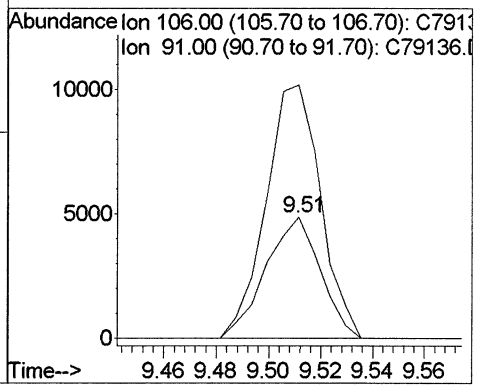


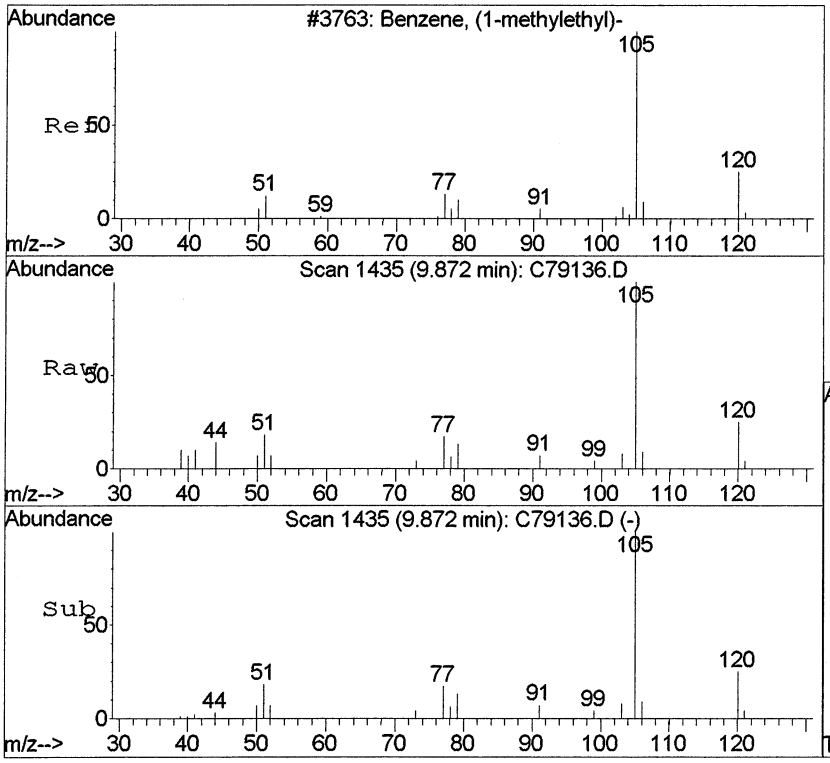


#74
o-Xylene
Concen: 0.31 ppb
RT: 9.51 min Scan# 1375
Delta R.T. 0.00 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion:106 Resp: 7098

Ion	Ratio	Lower	Upper
106	100		
91	208.8	122.6	286.0

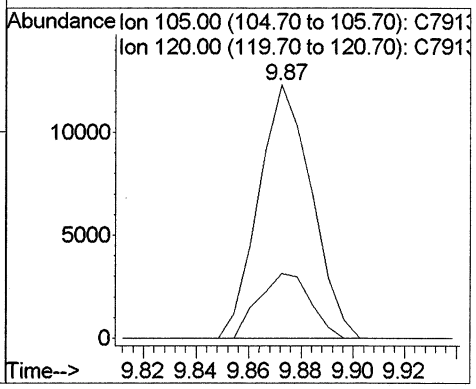


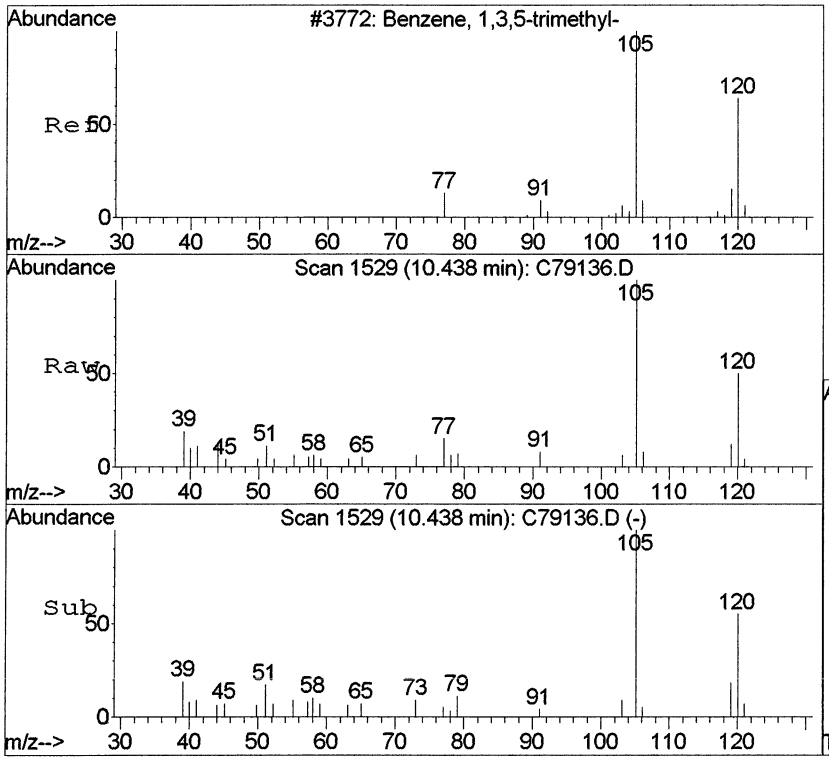


#77
Isopropylbenzene
Concen: 0.34 ppb
RT: 9.87 min Scan# 1435
Delta R.T. -0.01 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion:105 Resp: 17343

Ion	Ratio	Lower	Upper
105	100		
120	25.4	16.6	38.6

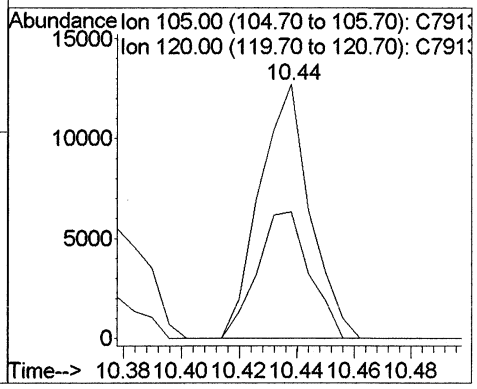


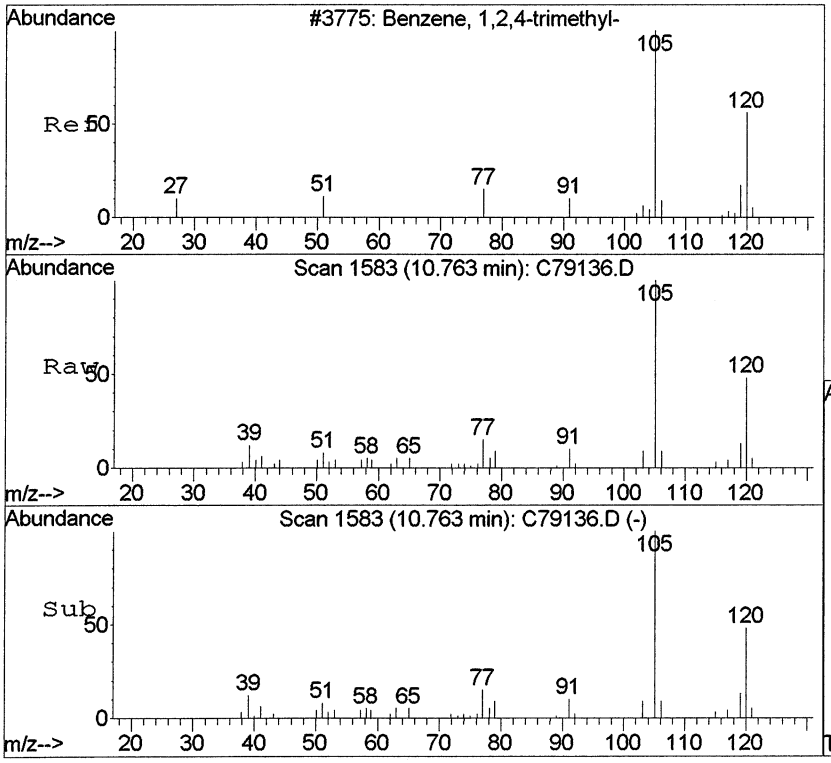


#85
1,3,5-Trimethylbenzene
Concen: 0.39 ppb
RT: 10.44 min Scan# 1529
Delta R.T. 0.00 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion:105 Resp: 15445

Ion	Ratio	Lower	Upper
105	100		
120	50.1	32.0	74.8

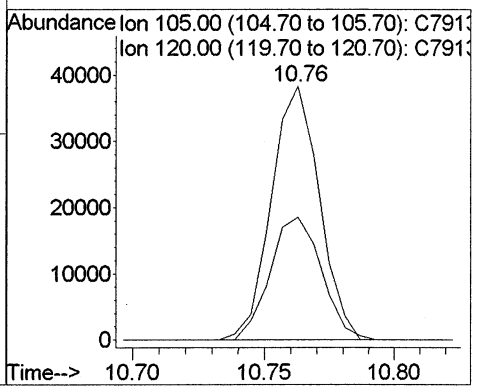


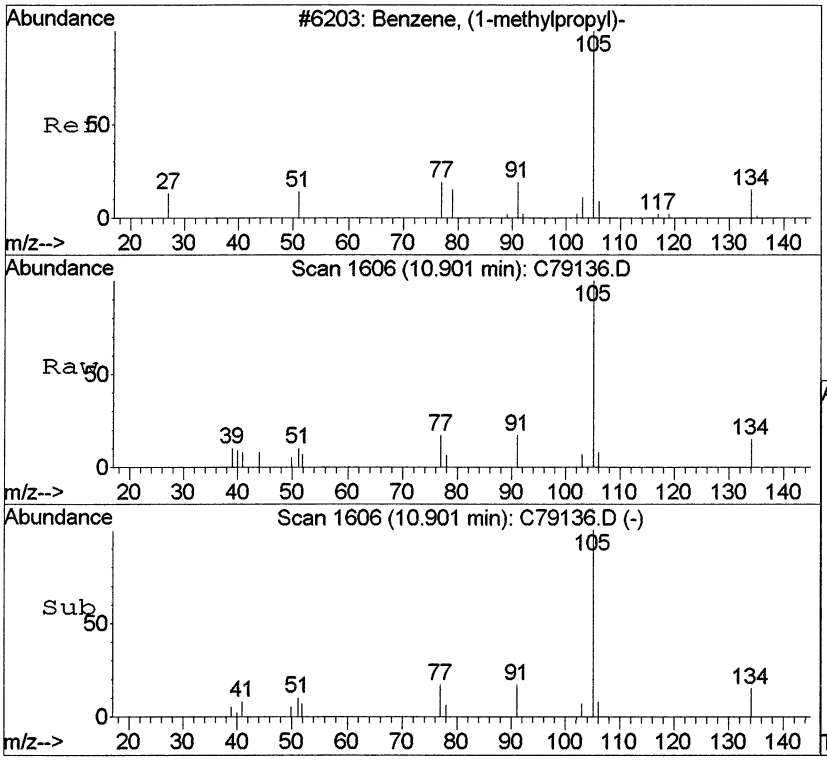


#89
1,2,4-Trimethylbenzene
Concen: 1.27 ppb
RT: 10.76 min Scan# 1583
Delta R.T. 0.00 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion:105 Resp: 48938

Ion	Ratio	Lower	Upper
105	100		
120	48.4	31.5	73.5

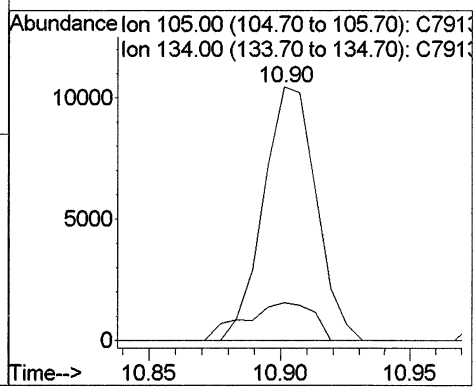


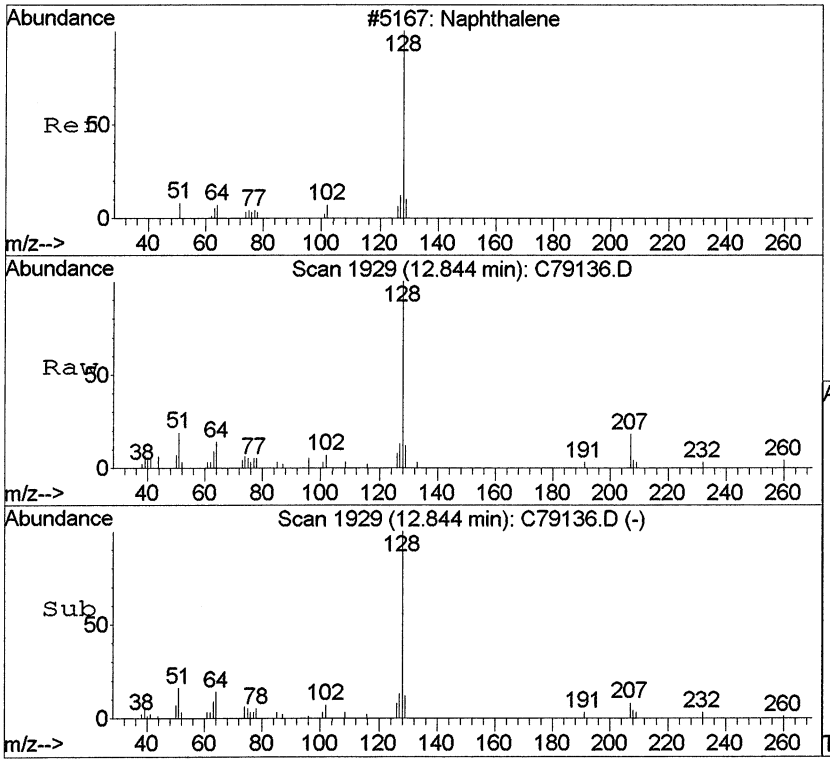


#90
sec-Butylbenzene
Concen: 0.30 ppb
RT: 10.90 min Scan# 1606
Delta R.T. -0.01 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion:105 Resp: 14645

Ion	Ratio	Lower	Upper
105	100		
134	14.9	10.7	24.9

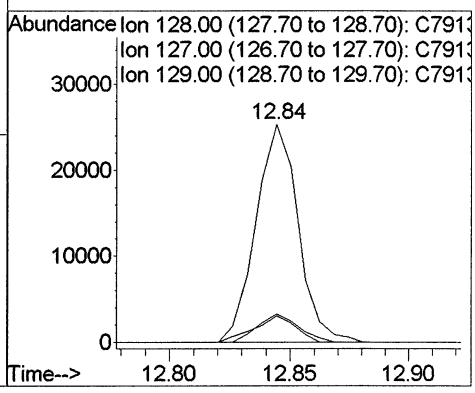




#100
Naphthalene
Concen: 1.74 ppb
RT: 12.84 min Scan# 1929
Delta R.T. -0.00 min
Lab File: C79136.D
Acq: 29 Dec 2017 3:18 pm

Tgt Ion:128 Resp: 30808

Ion	Ratio	Lower	Upper
128	100		
127	12.9	7.7	17.9
129	11.9	6.4	15.0



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\2017\122917\C79136.D Vial: 16
Acq On : 29 Dec 2017 3:18 pm Operator: JK-sop525r16
Sample : 1712513-1 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ETTICS.P

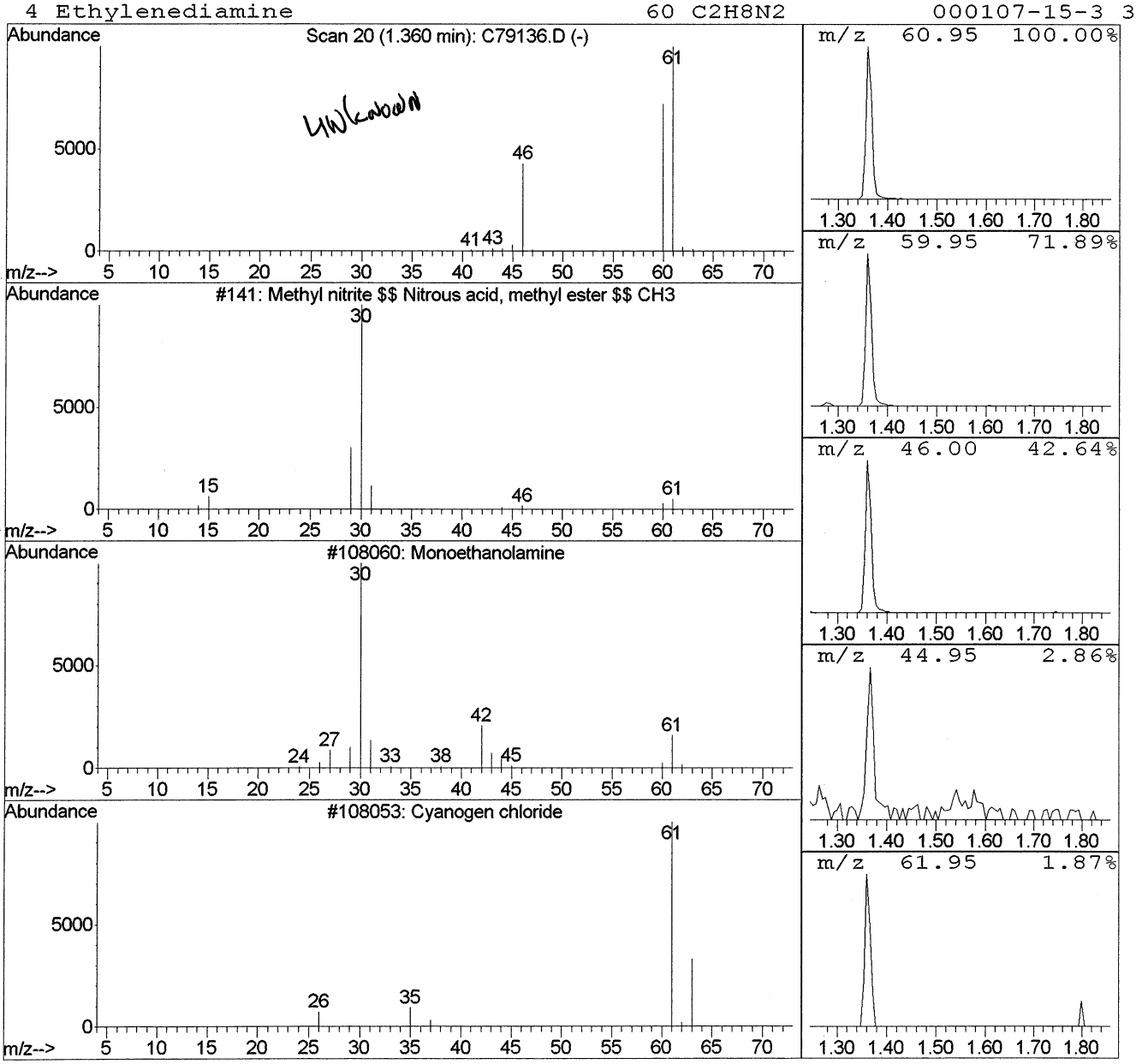
Quant Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Library : C:\DATABASE\NIST129k.l

****

Peak Number 1 Methyl nitrite $$ Nitrous acid Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
1.36	2.49 ppb	402310	Fluorobenzene	5.21

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Methyl nitrite $$ Nitrous acid, met	61	CH3NO2	000624-91-9	5
2	Monoethanolamine	61	C2H7NO	000141-43-5	4
3	Cyanogen chloride	61	CClN	000506-77-4	4
4	Ethylenediamine	60	C2H8N2	000107-15-3	3



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\2017\122917\C79136.D Vial: 16
Acq On : 29 Dec 2017 3:18 pm Operator: JK-sop525r16
Sample : 1712513-1 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ETTICS.P

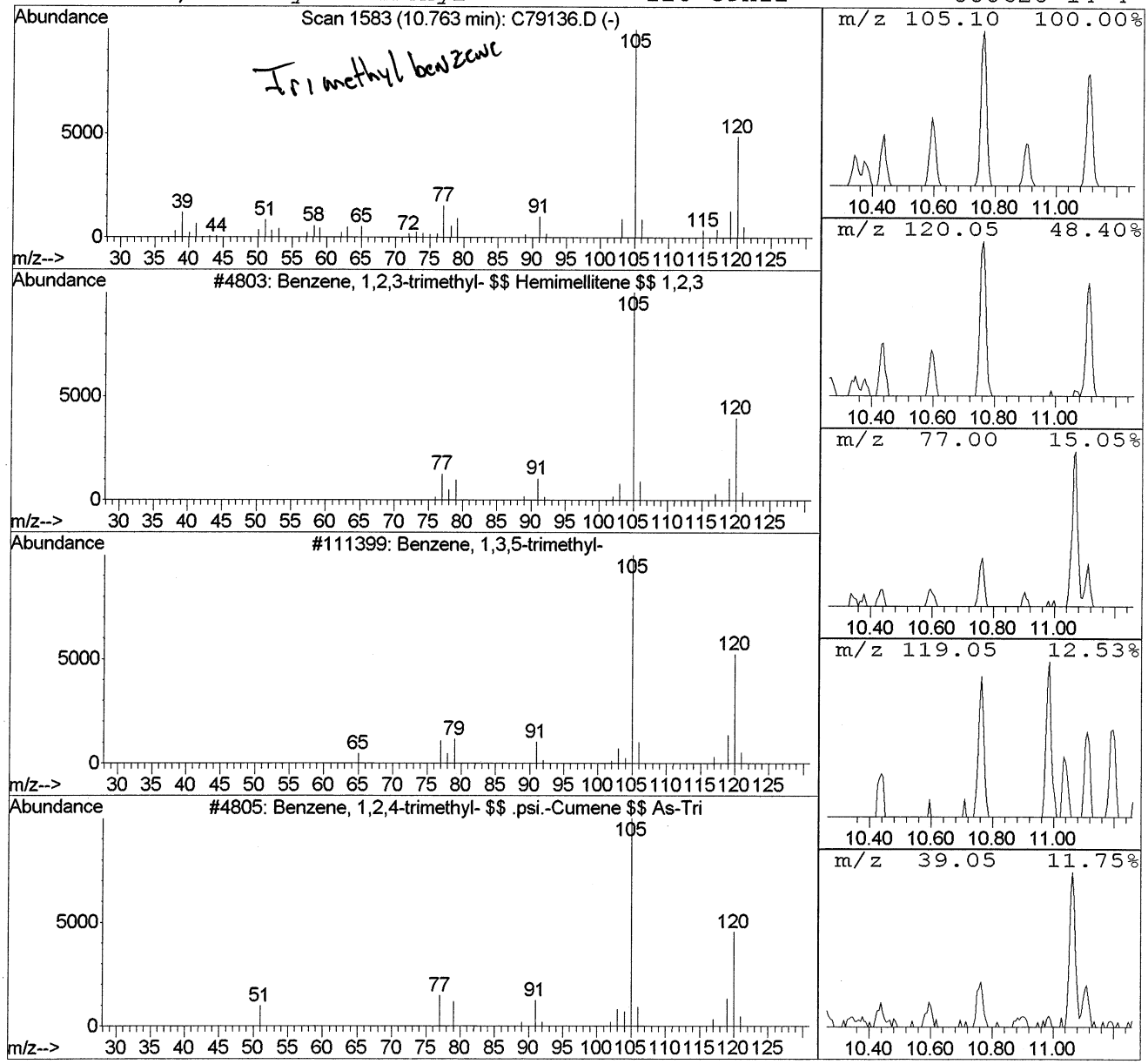
Quant Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Library : C:\DATABASE\NIST129k.l

****

Peak Number 1 Benzene, 1,2,3-trimethyl- $$ H Concentration Rank 2

R.T.	EstConc	Area	Relative to ISTD	R.T.
10.76	1.22 ppb	147840	1,4-Dichlorobenzene-d4	11.07

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Benzene, 1,2,3-trimethyl- $$ Hemime	120	C9H12	000526-73-8	95
2	Benzene, 1,3,5-trimethyl-	120	C9H12	000108-67-8	94
3	Benzene, 1,2,4-trimethyl- $$ .psi.-	120	C9H12	000095-63-6	94
4	Benzene, 1-ethyl-3-methyl-	120	C9H12	000620-14-4	91



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2017\122917\C79137.D Vial: 17
Acq On : 29 Dec 2017 3:39 pm Operator: JK-sop525r16
Sample : 1712513-2 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Dec 29 15:57 2017 Quant Results File: 122217W.RES

Quant Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Sat Dec 23 06:00:59 2017
Response via : Initial Calibration
DataAcq Meth : 122217W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	5.21	96	1826138	25.00	ppb	0.00
58) Chlorobenzene-d5	8.83	82	684920	25.00	ppb	0.00
78) 1,4-Dichlorobenzene-d4	11.07	152	463764	25.00	ppb	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	4.46	113	543839	24.71	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 98.84%			
42) 1,2-dichloroethane-d4	4.85	65	470485	24.35	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 97.40%			
59) Toluene-d8	7.09	98	1500978	24.99	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 99.96%			
79) 4-Bromofluorobenzene	10.03	95	515299	25.47	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 101.88%			
Target Compounds						Qvalue
13) Acetone	2.29	43	28075	3.89	ppb	93
31) 2-Butanone	3.91	43	46801	4.80	ppb	86
45) Benzene	4.87	78	696518	9.05	ppb	93
49) Methyl Cyclohexane	5.89	55	24107	0.95	ppb	66
60) Toluene	7.16	91	94432	1.52	ppb	95
73) m,p-Xylene	9.12	106	17332	0.73	ppb	96
77) Isopropylbenzene	9.87	105	20330	0.39	ppb	96
85) 1,3,5-Trimethylbenzene	10.44	105	17260	0.43	ppb	98
89) 1,2,4-Trimethylbenzene	10.76	105	54506	1.38	ppb	100
90) sec-Butylbenzene	10.90	105	15271	0.31	ppb	92
100) Naphthalene	12.84	128	35025	1.90	ppb	97

(#) = qualifier out of range (m) = manual integration
C79137.D 122217W.M Fri Dec 29 15:57:50 2017

JK 12-27-17

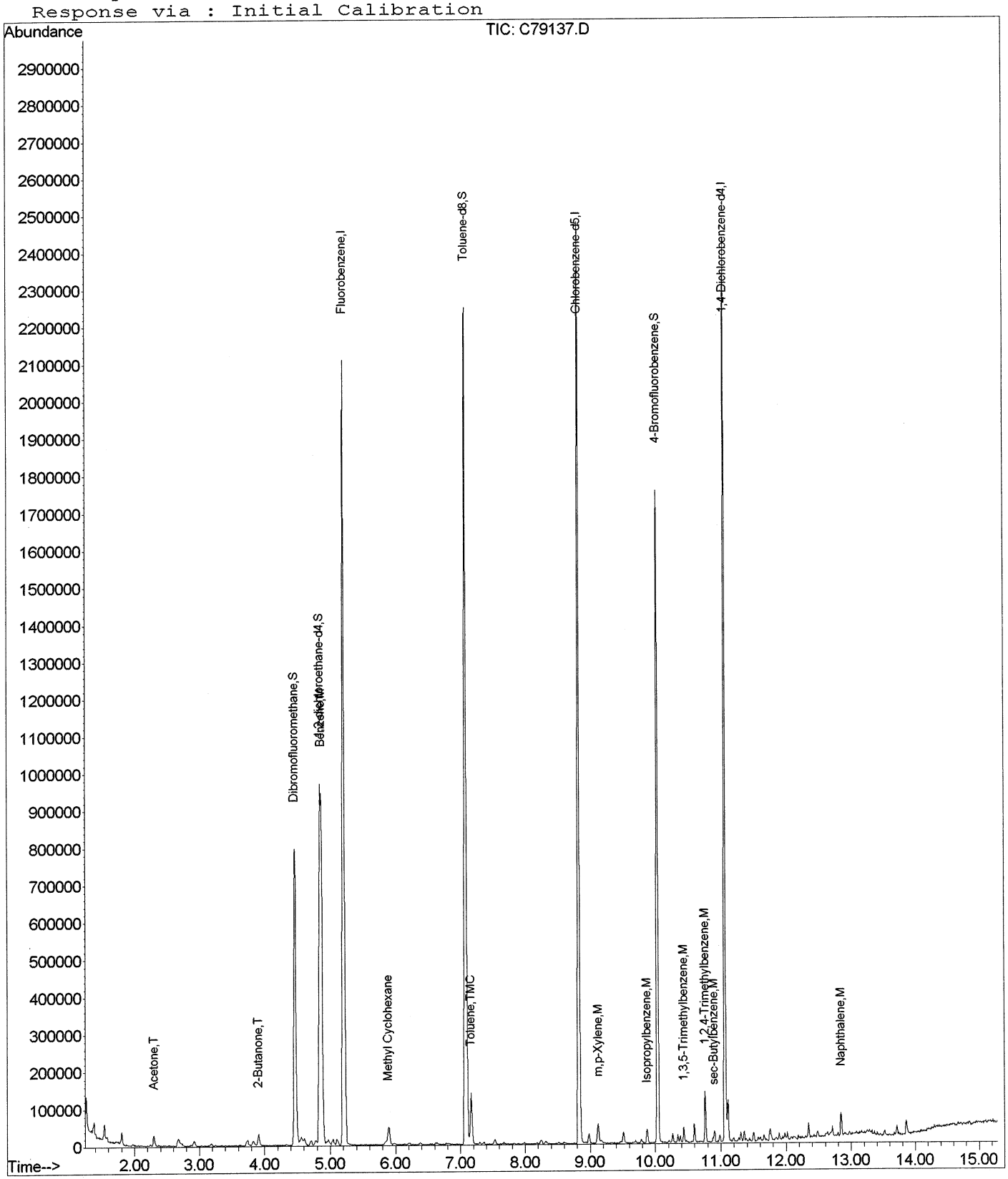
Quantitation Report

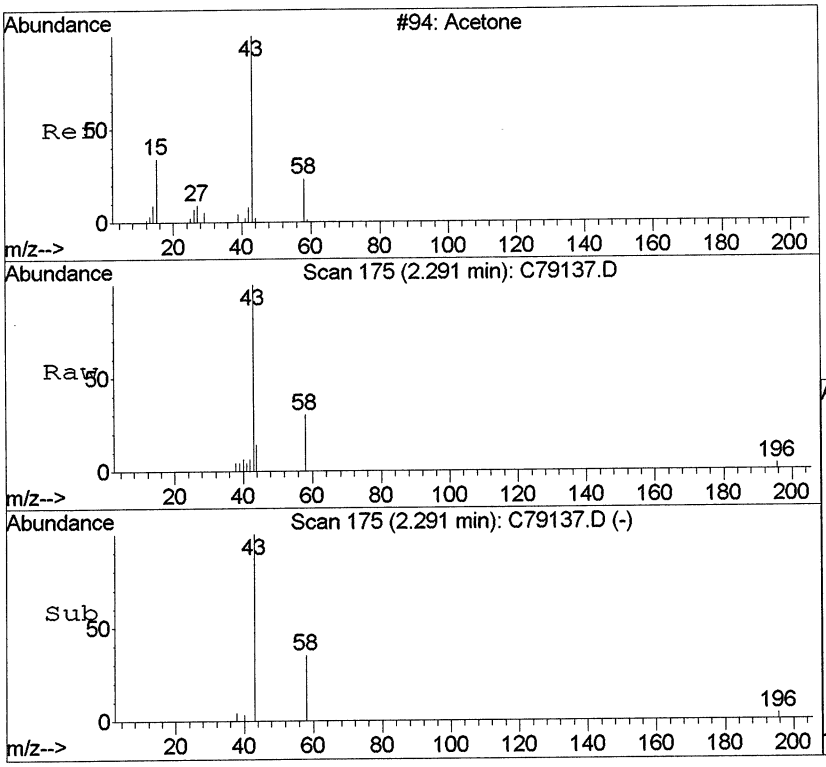
Data File : C:\HPCHEM\1\DATA\2017\122917\C79137.D
Acq On : 29 Dec 2017 3:39 pm
Sample : 1712513-2
Misc : 8260 - 10mL water
MS Integration Params: ettics.p
Quant Time: Dec 29 15:57 2017

Vial: 17
Operator: JK-sop525r16
Inst : CSS Instr
Multiplr: 1.00

Quant Results File: 122217W.RES

Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Sat Dec 23 06:00:59 2017
Response via : Initial Calibration

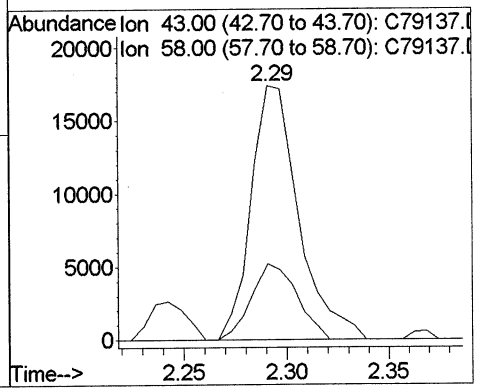


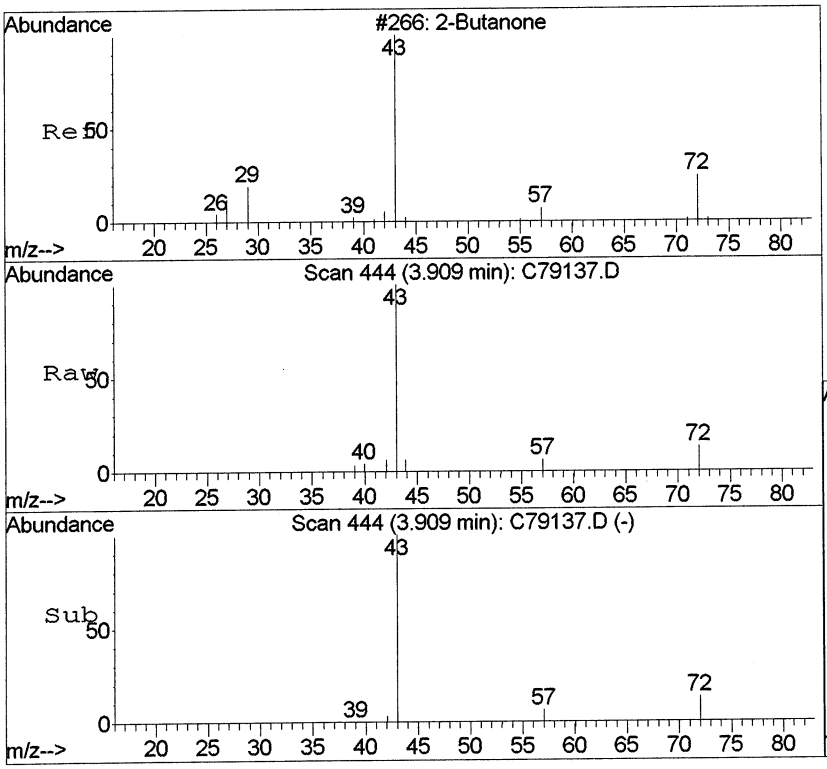


#13
Acetone
Concen: 3.89 ppb
RT: 2.29 min Scan# 175
Delta R.T. -0.00 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion: 43 Resp: 28075

Ion	Ratio	Lower	Upper
43	100		
58	30.1	0.0	211.0

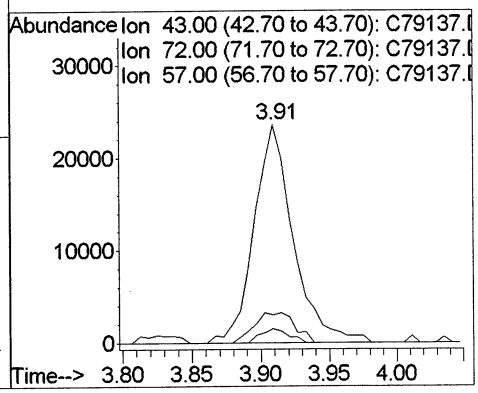


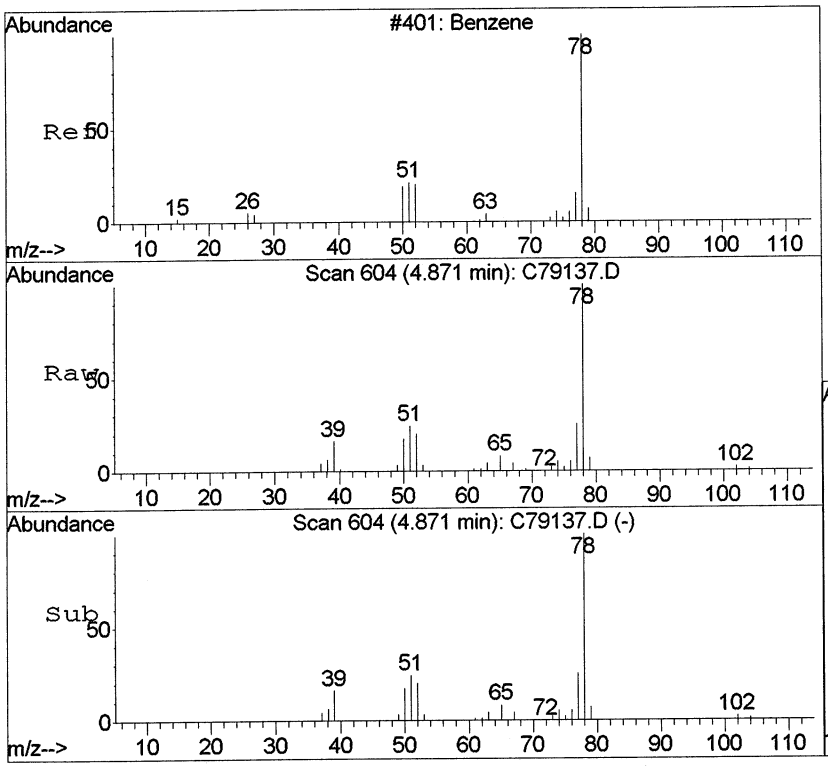


#31
2-Butanone
Concen: 4.80 ppb
RT: 3.91 min Scan# 444
Delta R.T. -0.00 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion: 43 Resp: 46801

Ion	Ratio	Lower	Upper
43	100		
72	12.9	12.4	29.0
57	6.4	2.9	6.7

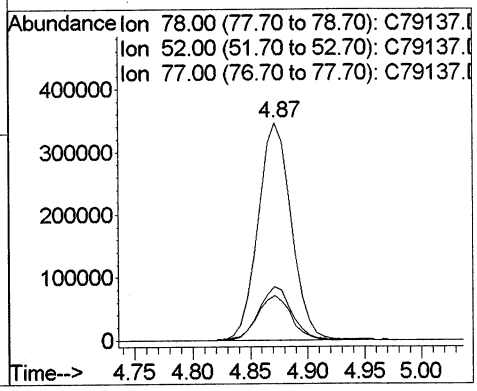


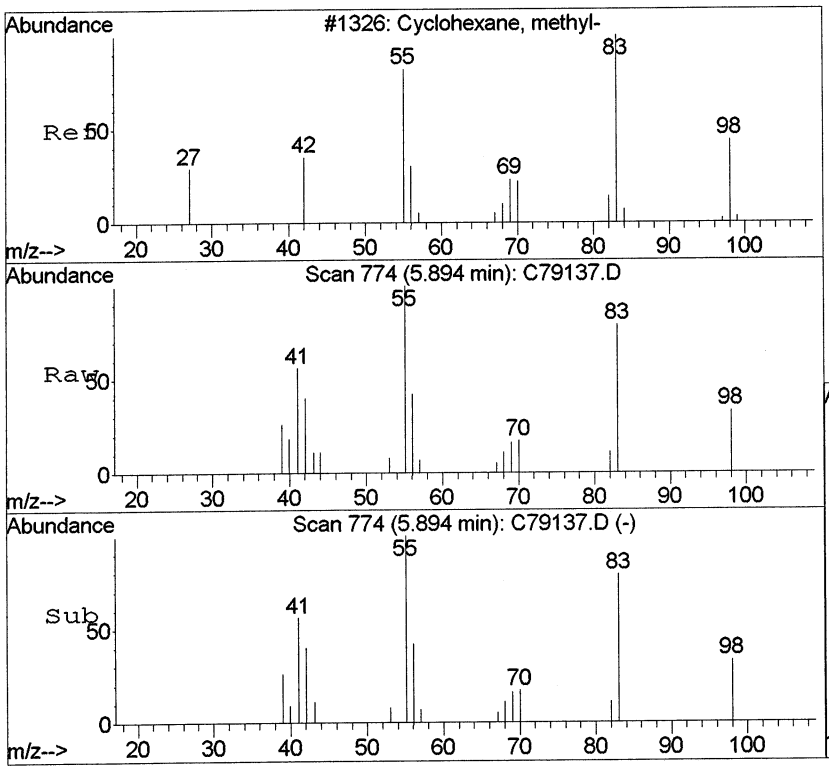


#45
Benzene
Concen: 9.05 ppb
RT: 4.87 min Scan# 604
Delta R.T. -0.00 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion: 78 Resp: 696518

Ion	Ratio	Lower	Upper
78	100		
52	20.5	9.5	22.1
77	24.5	13.5	31.5

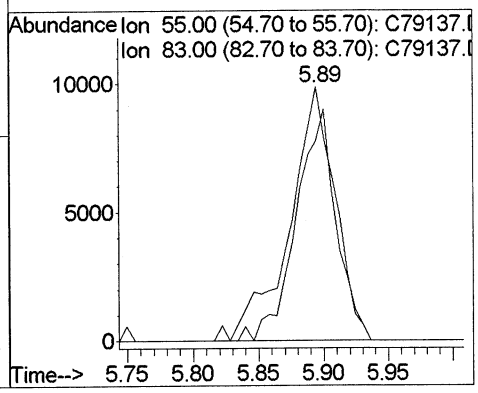


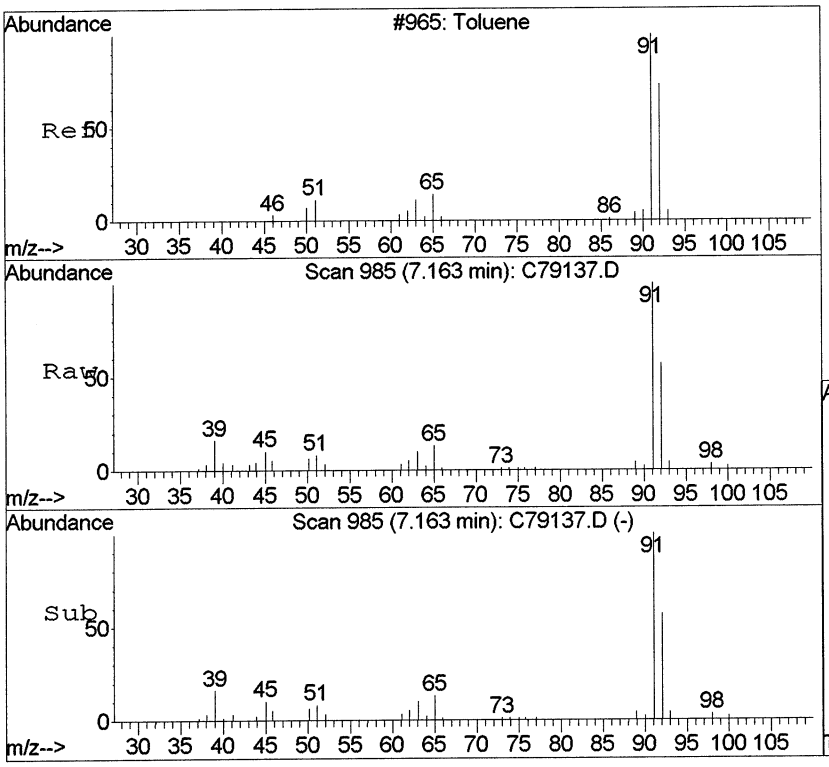


#49
Methyl Cyclohexane
Concen: 0.95 ppb
RT: 5.89 min Scan# 774
Delta R.T. -0.00 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion: 55 Resp: 24107

Ion	Ratio	Lower	Upper
55	100		
83	79.0	69.8	163.0

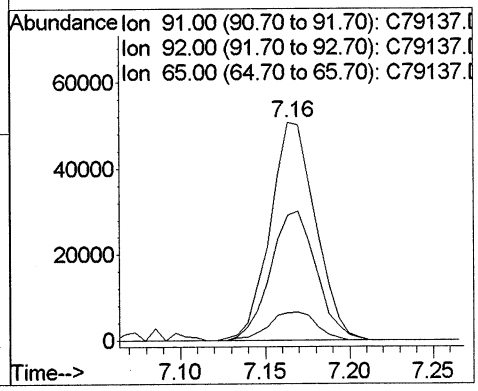


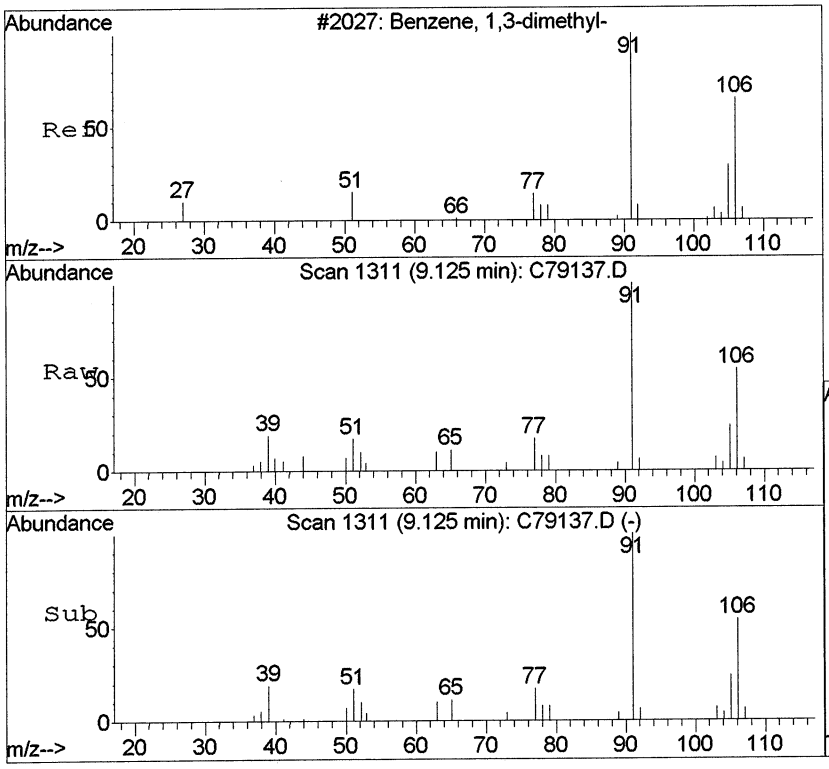


#60
Toluene
Concen: 1.52 ppb
RT: 7.16 min Scan# 985
Delta R.T. -0.01 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion: 91 Resp: 94432

Ion	Ratio	Lower	Upper
91	100		
92	57.2	37.0	86.4
65	12.6	6.8	16.0

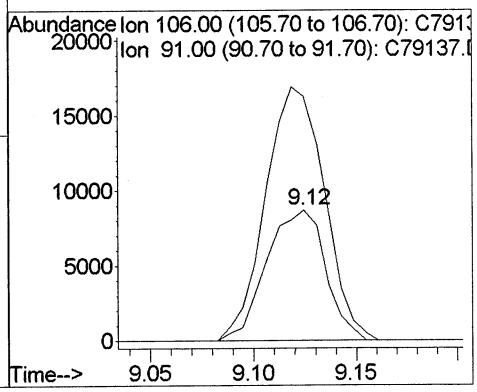


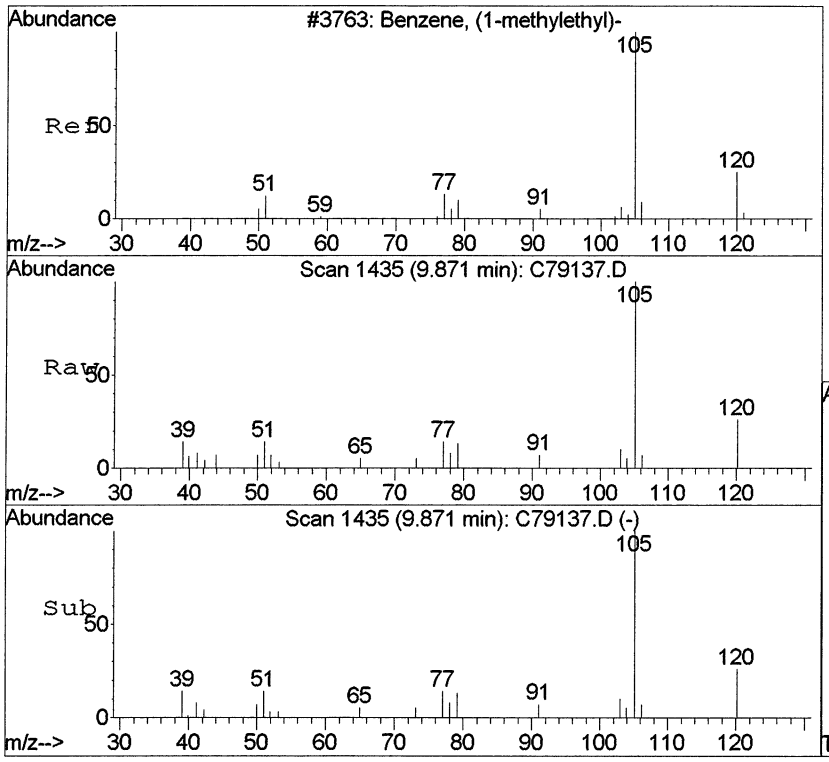


#73
m,p-Xylene
Concen: 0.73 ppb
RT: 9.12 min Scan# 1311
Delta R.T. -0.00 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion:106 Resp: 17332

Ion	Ratio	Lower	Upper
106	100		
91	186.8	115.6	269.6

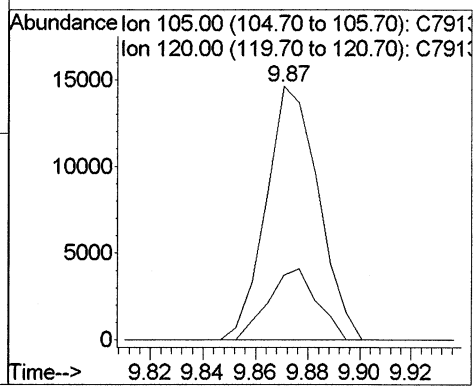


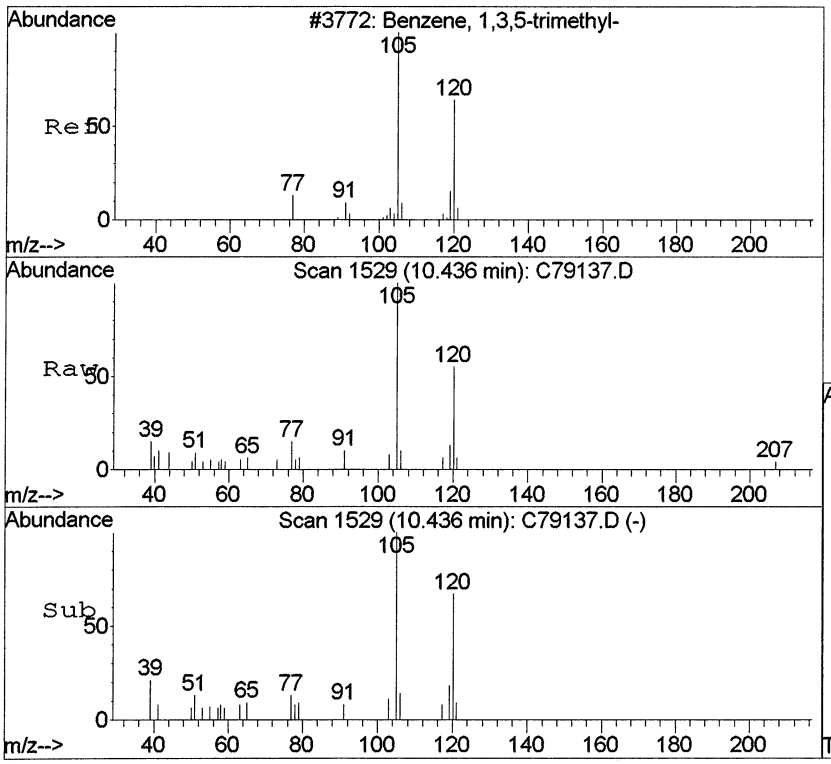


#77
Isopropylbenzene
Concen: 0.39 ppb
RT: 9.87 min Scan# 1435
Delta R.T. -0.01 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion:105 Resp: 20330

Ion	Ratio	Lower	Upper
105	100		
120	25.5	16.6	38.6

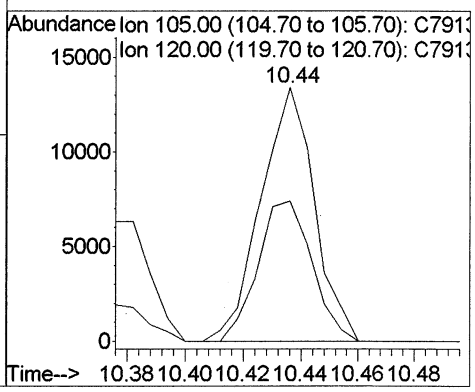


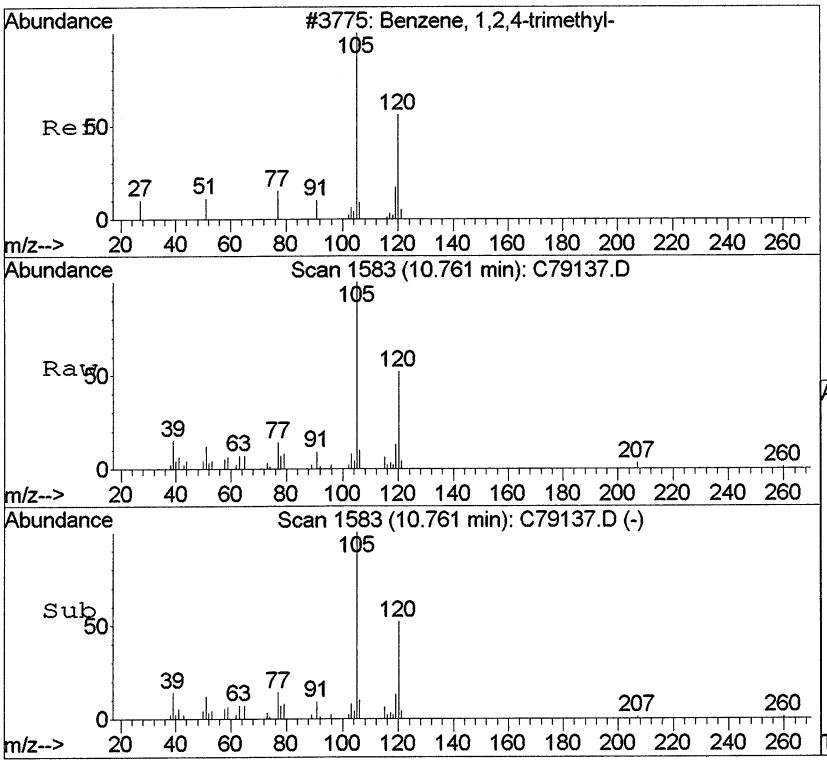


#85
1,3,5-Trimethylbenzene
Concen: 0.43 ppb
RT: 10.44 min Scan# 1529
Delta R.T. -0.00 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion:105 Resp: 17260

Ion	Ratio	Lower	Upper
105	100		
120	55.1	32.0	74.8

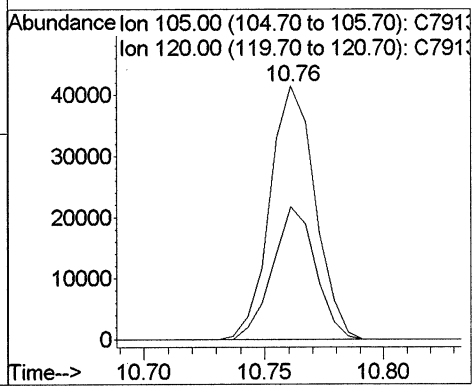


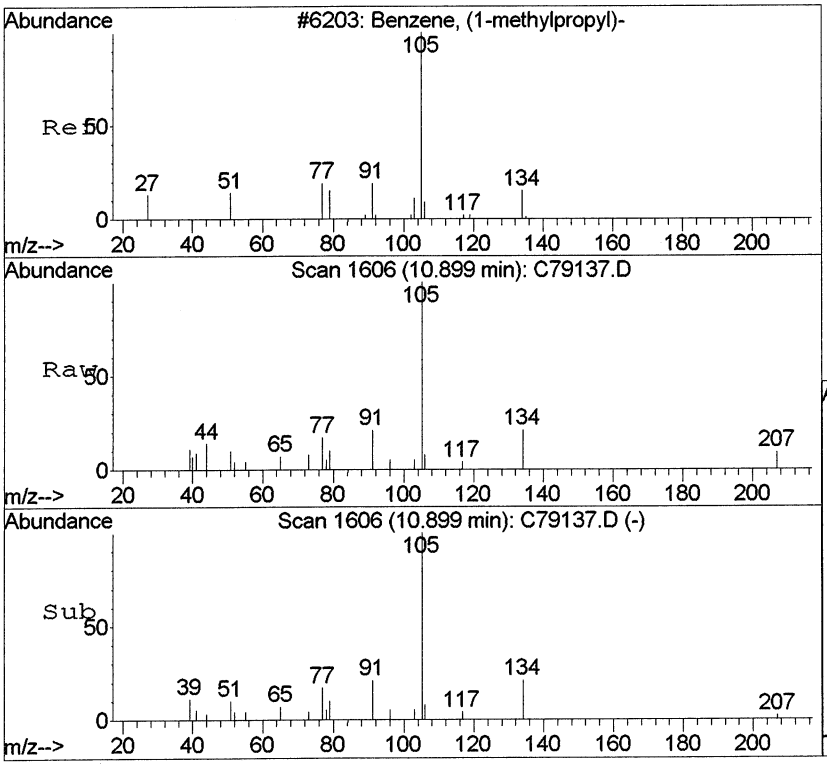


#89
1,2,4-Trimethylbenzene
Concen: 1.38 ppb
RT: 10.76 min Scan# 1583
Delta R.T. -0.00 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion:105 Resp: 54506

Ion	Ratio	Lower	Upper
105	100		
120	52.4	31.5	73.5

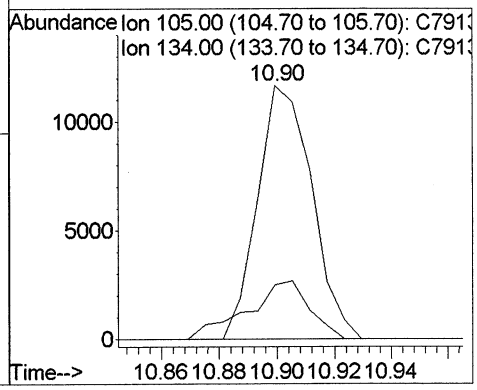


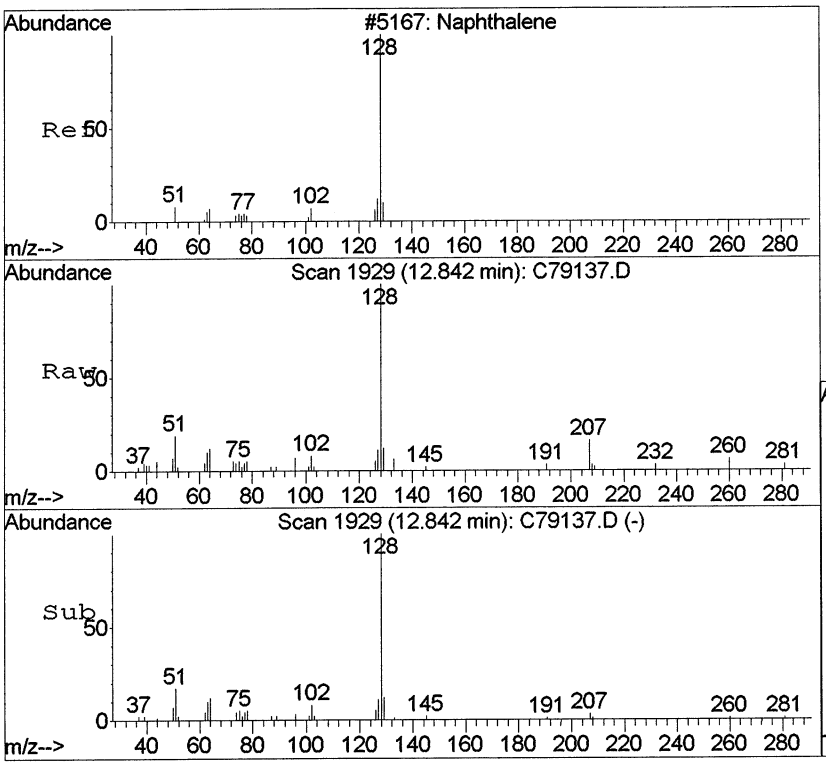


#90
sec-Butylbenzene
Concen: 0.31 ppb
RT: 10.90 min Scan# 1606
Delta R.T. -0.01 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion:105 Resp: 15271

Ion	Ratio	Lower	Upper
105	100		
134	21.4	10.7	24.9

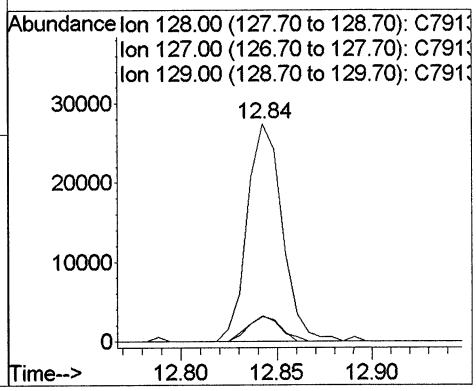




#100
Naphthalene
Concen: 1.90 ppb
RT: 12.84 min Scan# 1929
Delta R.T. -0.01 min
Lab File: C79137.D
Acq: 29 Dec 2017 3:39 pm

Tgt Ion:128 Resp: 35025

Ion	Ratio	Lower	Upper
128	100		
127	11.4	7.7	17.9
129	11.8	6.4	15.0



Tentatively Identified Compound (LSC) summary

Operator ID: JK-sop525r16 Date Acquired: 29 Dec 2017 3:39 pm
Data File: C:\HPCHEM\1\DATA\2017\122917\C79137.D
Name: 1712513-2
Misc: 8260 - 10mL water
Method: C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title: HPV3 - GC/MS Volatiles (S.O.P. 525)
Library Searched: C:\DATABASE\NIST129k.l

TIC Top Hit name	RT	EstConc	Units	Area	IntStd	ISRT	ISArea	ISConc

C79137.D 122217W.M Fri Dec 29 15:59:45 2017

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\2017\122917\C79124.D Vial: 4
Acq On : 29 Dec 2017 9:31 am Operator: JK-sop525r16
Sample : VL1712243CCS mn 1.3.18 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Dec 29 14:02 2017 Quant Results File: 122217W.RES

Quant Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Sat Dec 23 06:00:59 2017
Response via : Initial Calibration
DataAcq Meth : 122217W

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	5.21	96	1922378	25.00	ppb		0.00
58) Chlorobenzene-d5	8.83	82	773051	25.00	ppb		0.00
78) 1,4-Dichlorobenzene-d4	11.07	152	546520	25.00	ppb		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	4.47	113	605243	26.13	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 104.52%				
42) 1,2-dichloroethane-d4	4.85	65	527817	25.95	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 103.80%				
59) Toluene-d8	7.09	98	1659232	24.47	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 97.88%				
79) 4-Bromofluorobenzene	10.03	95	547868	22.98	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 91.92%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.29	85	194296	8.24	ppb		98
3) Chloromethane	1.40	50	412628	8.47	ppb		97
4) Vinyl chloride	1.47	62	277266	8.95	ppb		98
5) Bromomethane	1.68	96	157879	8.71	ppb		94
6) Chloroethane	1.75	64	126271	9.38	ppb		96
7) Trichlorofluoromethane	1.92	101	205615	9.44	ppb		98
8) Ethanol	1.99	45	50199	183.94	ppb	#	84
9) Diethyl Ether	2.09	59	163369	9.86	ppb		82
10) Acrolein	2.20	56	326723	97.10	ppb		93
11) 1,1,2-Trichloro-1,2,2-trif	2.28	101	178536	10.47	ppb		98
12) 1,1-Dichloroethene	2.29	96	173069	10.46	ppb		72
13) Acetone	2.29	43	206331	40.59	ppb		86
14) Iodomethane	2.41	142	229562	10.90	ppb		90
15) Carbon Disulfide	2.48	76	765398	10.61	ppb		94
16) Methyl Acetate	2.54	43	218995	9.28	ppb		86
17) Allyl chloride	2.57	76	130660	10.26	ppb	#	57
18) Acetonitrile	2.51	41	269624	88.49	ppb		99
19) Methylene chloride	2.67	84	229040	9.65	ppb		69
20) tert-Butanol	2.72	59	742589	504.21	ppb	#	92
21) Methyl-t-butyl-ether	2.90	73	831674	19.75	ppb	#	88
22) trans-1,2-Dichloroethene	2.92	96	194653	9.99	ppb		73
23) Acrylonitrile	2.86	53	693891	93.01	ppb		97
24) Hexane	3.18	57	210366	10.42	ppb	#	84
25) Isopropyl ether	3.36	45	1079746	9.88	ppb	#	94
26) Vinyl Acetate	3.34	86	18390	10.22	ppb	#	1
27) 1,1-Dichloroethane	3.35	63	489978	10.36	ppb		99
28) Chloroprene	3.42	53	319045	10.47	ppb	#	83
29) Ethyl tert-butyl ether	3.74	59	691168	9.89	ppb	#	92
30) 2,2-Dichloropropane	3.95	77	263178	11.16	ppb		94
31) 2-Butanone	3.91	43	399586	38.89	ppb		91
32) cis-1,2-Dichloroethene	3.93	96	220472	10.23	ppb		75
33) Propionitrile	3.98	54	230053	97.06	ppb	#	97
34) Methacrylonitrile	4.15	67	64392	9.81	ppb	#	64
35) Bromochloromethane	4.19	128	106011	10.45	ppb	#	68
36) Chloroform	4.30	83	352085	10.08	ppb		96
38) 1,1,1-Trichloroethane	4.48	97	222936	10.79	ppb		90
39) Cyclohexane	4.57	84	489807	21.41	ppb	#	69
40) Carbon tetrachloride	4.66	117	186218	10.58	ppb		97
41) 1,1-Dichloropropene	4.66	75	282682	10.64	ppb		98
43) Isobutyl alcohol	4.76	43	157134	198.50	ppb	#	86

(#) = qualifier out of range (m) = manual integration JK 12-29-17
C79124.D 122217W.M Fri Dec 29 14:02:36 2017 Page 1

Data File : C:\HPCHEM\1\DATA\2017\122917\C79124.D Vial: 4
Acq On : 29 Dec 2017 9:31 am Operator: JK-sop525r16
Sample : VL1712291 3CCS Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Dec 29 14:02 2017 Quant Results File: 122217W.RES

Quant Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Sat Dec 23 06:00:59 2017
Response via : Initial Calibration
DataAcq Meth : 122217W

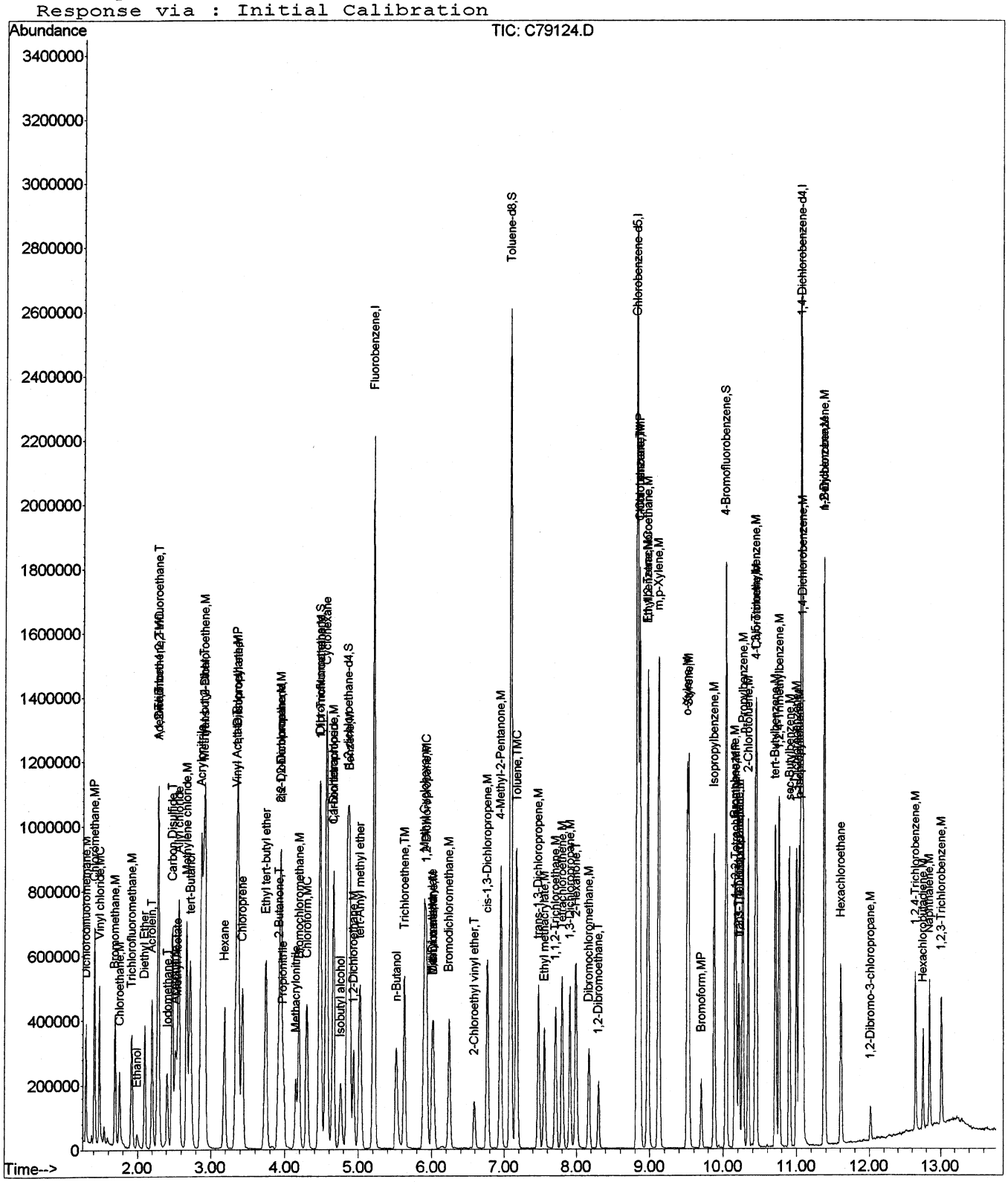
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
44)	tert-Amyl methyl ether	5.02	87	83935	10.34	ppb	#	86
45)	Benzene	4.88	78	809314	9.99	ppb		96
46)	1,2-Dichloroethane	4.93	62	212933	9.33	ppb		88
47)	n-Butanol	5.52	56	198987	466.60	ppb		82
48)	Trichloroethene	5.63	130	184983	10.34	ppb		97
49)	Methyl Cyclohexane	5.90	55	290786	10.85	ppb		73
50)	1,2-Dichloropropane	5.93	63	271303	10.13	ppb		94
51)	Methyl methacrylate	6.00	69	102463	10.48	ppb	#	62
52)	1,4-Dioxane	6.01	88	24657	211.37	ppb	#	59
53)	Dibromomethane	6.03	93	118841	10.14	ppb		92
54)	Bromodichloromethane	6.24	83	252885	10.25	ppb		95
55)	2-Chloroethyl vinyl ether	6.59	63	64847	9.39	ppb		92
56)	cis-1,3-Dichloropropene	6.77	75	352955	10.60	ppb		87
57)	4-Methyl-2-Pentanone	6.95	43	808212	40.20	ppb	#	87
60)	Toluene	7.17	91	680355	9.73	ppb		97
61)	Ethyl methacrylate	7.56	69	198211	9.83	ppb	#	93
62)	trans-1,3-Dichloropropene	7.47	75	277310	9.54	ppb		86
63)	1,1,2-Trichloroethane	7.71	83	137703	9.57	ppb		94
64)	Tetrachloroethene	7.80	164	126241	9.99	ppb		93
65)	2-Hexanone	8.00	58	240066	34.56	ppb		72
66)	1,3-Dichloropropane	7.91	76	281299	9.82	ppb		93
67)	Dibromochloromethane	8.17	129	164518	9.75	ppb		97
68)	1,2-Dibromoethane	8.30	107	147613	9.42	ppb		100
69)	1-Chlorohexane	8.87	91	250527	10.25	ppb		91
70)	Chlorobenzene	8.86	112	454811	9.87	ppb		93
71)	Ethylbenzene	8.98	91	720106	10.01	ppb		97
72)	1,1,1,2-Tetrachloroethane	8.97	131	161449	9.97	ppb		90
73)	m,p-Xylene	9.13	106	512403	19.23	ppb		93
74)	o-Xylene	9.51	106	266948	10.17	ppb		98
75)	Styrene	9.54	104	430509	10.32	ppb		93
76)	Bromoform	9.70	173	77265	9.74	ppb		98
77)	Isopropylbenzene	9.88	105	557142	9.40	ppb		94
80)	1,1,2,2-Tetrachloroethane	10.18	83	192861	9.47	ppb		99
81)	trans-1,4-Dichloro-2-buten	10.21	53	39422	10.19	ppb		87
82)	n-Propylbenzene	10.27	91	756182	9.50	ppb		98
83)	1,2,3-Trichloropropane	10.22	110	36010	9.65	ppb		66
84)	Bromobenzene	10.16	156	170967	9.77	ppb		92
85)	1,3,5-Trimethylbenzene	10.44	105	461721	9.71	ppb		100
86)	2-Chlorotoluene	10.34	126	167931	9.60	ppb		96
87)	4-Chlorotoluene	10.46	126	160881	9.35	ppb		99
88)	tert-Butylbenzene	10.71	134	99814	10.41	ppb		92
89)	1,2,4-Trimethylbenzene	10.77	105	469510	10.08	ppb		98
90)	sec-Butylbenzene	10.91	105	577315	9.90	ppb		100
91)	p-Isopropyltoluene	11.04	119	428709	10.00	ppb		98
92)	1,3-Dichlorobenzene	11.00	146	312358	10.06	ppb		95
93)	1,4-Dichlorobenzene	11.09	146	311046	10.07	ppb		97
94)	n-Butylbenzene	11.38	91	447036	10.02	ppb		98
95)	1,2-Dichlorobenzene	11.38	146	279241	9.78	ppb		97
96)	Hexachloroethane	11.60	119	119388	9.76	ppb		96
97)	1,2-Dibromo-3-chloropropan	12.02	157	20831	9.78	ppb		90
98)	1,2,4-Trichlorobenzene	12.65	180	103260	10.17	ppb		99
99)	Hexachlorobutadiene	12.76	225	41116	10.74	ppb		91
100)	Naphthalene	12.84	128	243839	9.65	ppb		99
101)	1,2,3-Trichlorobenzene	13.01	180	89414	10.57	ppb		98

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2017\122917\C79124.D Vial: 4
Acq On : 29 Dec 2017 9:31 am Operator: JK-sop525r16
Sample : VL1712289-3CCS mn 1.3.18 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Dec 29 14:02 2017 Quant Results File: 122217W.RES

Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Sat Dec 23 06:00:59 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\2017\122917\C79125.D Vial: 5
Acq On : 29 Dec 2017 9:52 am Operator: JK-sop525r16
Sample : VL171229 3LCSD mn 1.3.18 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Dec 29 14:02 2017 Quant Results File: 122217W.RES

Quant Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Sat Dec 23 06:00:59 2017
Response via : Initial Calibration
DataAcq Meth : 122217W

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	5.22	96	1840749	25.00	ppb		0.00
58) Chlorobenzene-d5	8.83	82	712878	25.00	ppb		0.00
78) 1,4-Dichlorobenzene-d4	11.07	152	523948	25.00	ppb		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	4.47	113	556750	25.10	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 100.40%				
42) 1,2-dichloroethane-d4	4.85	65	490220	25.17	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 100.68%				
59) Toluene-d8	7.09	98	1578719	25.25	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 101.00%				
79) 4-Bromofluorobenzene	10.04	95	534269	23.37	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 93.48%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.29	85	173817	7.70	ppb		94
3) Chloromethane	1.40	50	390511	8.37	ppb		98
4) Vinyl chloride	1.47	62	247974	8.36	ppb		99
5) Bromomethane	1.68	96	146244	8.42	ppb		94
6) Chloroethane	1.75	64	119814	9.29	ppb		95
7) Trichlorofluoromethane	1.92	101	182292	8.74	ppb		96
8) Ethanol	1.99	45	47582	182.08	ppb	#	84
9) Diethyl Ether	2.09	59	151144	9.52	ppb		85
10) Acrolein	2.20	56	300339	93.22	ppb		96
11) 1,1,2-Trichloro-1,2,2-trif	2.28	101	171093	10.48	ppb		97
12) 1,1-Dichloroethene	2.29	96	164567	10.38	ppb		68
13) Acetone	2.30	43	198377	40.76	ppb		91
14) Iodomethane	2.41	142	209930	10.47	ppb		91
15) Carbon Disulfide	2.48	76	683766	9.90	ppb		95
16) Methyl Acetate	2.54	43	205434	9.09	ppb		89
17) Allyl chloride	2.56	76	114682	9.40	ppb	#	38
18) Acetonitrile	2.51	41	251776	86.29	ppb		99
19) Methylene chloride	2.68	84	214449	9.43	ppb		76
20) tert-Butanol	2.72	59	674726	478.45	ppb		96
21) Methyl-t-butyl-ether	2.90	73	763710	18.94	ppb	#	89
22) trans-1,2-Dichloroethene	2.92	96	174804	9.37	ppb		75
23) Acrylonitrile	2.87	53	642123	89.89	ppb		99
24) Hexane	3.19	57	178335	9.22	ppb	#	87
25) Isopropyl ether	3.36	45	984653	9.41	ppb	#	92
26) Vinyl Acetate	3.33	86	16771	9.73	ppb	#	1
27) 1,1-Dichloroethane	3.35	63	444879	9.83	ppb		99
28) Chloroprene	3.43	53	298586	10.23	ppb	#	83
29) Ethyl tert-butyl ether	3.74	59	647120	9.67	ppb	#	93
30) 2,2-Dichloropropane	3.95	77	235046	10.41	ppb		94
31) 2-Butanone	3.91	43	363537	36.95	ppb		90
32) cis-1,2-Dichloroethene	3.94	96	198240	9.60	ppb		69
33) Propionitrile	3.98	54	228436	100.65	ppb	#	96
34) Methacrylonitrile	4.14	67	60353	9.60	ppb	#	70
35) Bromochloromethane	4.19	128	98763	10.17	ppb	#	67
36) Chloroform	4.29	83	311299	9.31	ppb		94
38) 1,1,1-Trichloroethane	4.48	97	193589	9.79	ppb		87
39) Cyclohexane	4.57	84	426994	19.49	ppb	#	68
40) Carbon tetrachloride	4.66	117	166770	9.89	ppb		96
41) 1,1-Dichloropropene	4.66	75	251829	9.90	ppb		95
43) Isobutyl alcohol	4.76	43	144610	190.78	ppb	#	92

(#) = qualifier out of range (m) = manual integration
C79125.D 122217W.M Fri Dec 29 14:02:52 2017 1(12-29-17) Page 1

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\2017\122917\C79125.D Vial: 5
Acq On : 29 Dec 2017 9:52 am Operator: JK-sop525r16
Sample : VL171229[13]3LCSD mm 1.3.18 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Dec 29 14:02 2017 Quant Results File: 122217W.RES

Quant Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Sat Dec 23 06:00:59 2017
Response via : Initial Calibration
DataAcq Meth : 122217W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
44)	tert-Amyl methyl ether	5.02	87	78356	10.08	ppb	#	78
45)	Benzene	4.88	78	731326	9.43	ppb		94
46)	1,2-Dichloroethane	4.93	62	196161	8.98	ppb		92
47)	n-Butanol	5.52	56	185027	454.10	ppb		81
48)	Trichloroethene	5.63	130	171171	10.00	ppb		98
49)	Methyl Cyclohexane	5.90	55	246021	9.59	ppb		70
50)	1,2-Dichloropropane	5.92	63	239099	9.33	ppb		97
51)	Methyl methacrylate	6.00	69	88811	9.48	ppb	#	64
52)	1,4-Dioxane	6.01	88	21381	191.41	ppb	#	74
53)	Dibromomethane	6.03	93	107893	9.62	ppb		92
54)	Bromodichloromethane	6.24	83	233263	9.87	ppb		95
55)	2-Chloroethyl vinyl ether	6.59	63	61436	9.30	ppb		93
56)	cis-1,3-Dichloropropene	6.77	75	320478	10.05	ppb		84
57)	4-Methyl-2-Pentanone	6.95	43	764002	39.68	ppb	#	87
60)	Toluene	7.17	91	624976	9.69	ppb		99
61)	Ethyl methacrylate	7.56	69	177580	9.56	ppb		97
62)	trans-1,3-Dichloropropene	7.48	75	270623	10.09	ppb		85
63)	1,1,2-Trichloroethane	7.71	83	130234	9.81	ppb		92
64)	Tetrachloroethene	7.81	164	115133	9.88	ppb		94
65)	2-Hexanone	7.99	58	235668	36.67	ppb		72
66)	1,3-Dichloropropane	7.91	76	261848	9.91	ppb		94
67)	Dibromochloromethane	8.17	129	154663	9.94	ppb		99
68)	1,2-Dibromoethane	8.30	107	138717	9.60	ppb		96
69)	1-Chlorohexane	8.87	91	224635	9.96	ppb		94
70)	Chlorobenzene	8.87	112	403406	9.49	ppb		95
71)	Ethylbenzene	8.98	91	654439	9.87	ppb		97
72)	1,1,1,2-Tetrachloroethane	8.97	131	149536	10.01	ppb		95
73)	m,p-Xylene	9.13	106	482197	19.63	ppb		94
74)	o-Xylene	9.52	106	239236	9.88	ppb		99
75)	Styrene	9.53	104	393611	10.23	ppb		90
76)	Bromoform	9.70	173	71290	9.74	ppb		97
77)	Isopropylbenzene	9.88	105	541396	9.90	ppb		100
80)	1,1,2,2-Tetrachloroethane	10.18	83	187359	9.59	ppb		100
81)	trans-1,4-Dichloro-2-buten	10.21	53	36511	9.85	ppb	#	93
82)	n-Propylbenzene	10.27	91	716081	9.39	ppb		98
83)	1,2,3-Trichloropropane	10.22	110	33117	9.26	ppb		52
84)	Bromobenzene	10.16	156	161091	9.61	ppb		89
85)	1,3,5-Trimethylbenzene	10.44	105	437800	9.60	ppb		100
86)	2-Chlorotoluene	10.34	126	162042	9.66	ppb		97
87)	4-Chlorotoluene	10.45	126	158599	9.61	ppb		99
88)	tert-Butylbenzene	10.71	134	92733	10.09	ppb		92
89)	1,2,4-Trimethylbenzene	10.77	105	433606	9.71	ppb		94
90)	sec-Butylbenzene	10.91	105	528539	9.46	ppb		100
91)	p-Isopropyltoluene	11.04	119	407692	9.92	ppb		99
92)	1,3-Dichlorobenzene	11.00	146	299236	10.05	ppb		97
93)	1,4-Dichlorobenzene	11.09	146	279906	9.45	ppb		97
94)	n-Butylbenzene	11.38	91	411446	9.62	ppb		97
95)	1,2-Dichlorobenzene	11.38	146	258352	9.44	ppb		98
96)	Hexachloroethane	11.61	119	111013	9.46	ppb		95
97)	1,2-Dibromo-3-chloropropan	12.02	157	20313	9.93	ppb		96
98)	1,2,4-Trichlorobenzene	12.65	180	107640	11.05	ppb		99
99)	Hexachlorobutadiene	12.76	225	39929	10.88	ppb		95
100)	Naphthalene	12.84	128	243342	10.03	ppb		99
101)	1,2,3-Trichlorobenzene	13.01	180	87899	10.84	ppb		98

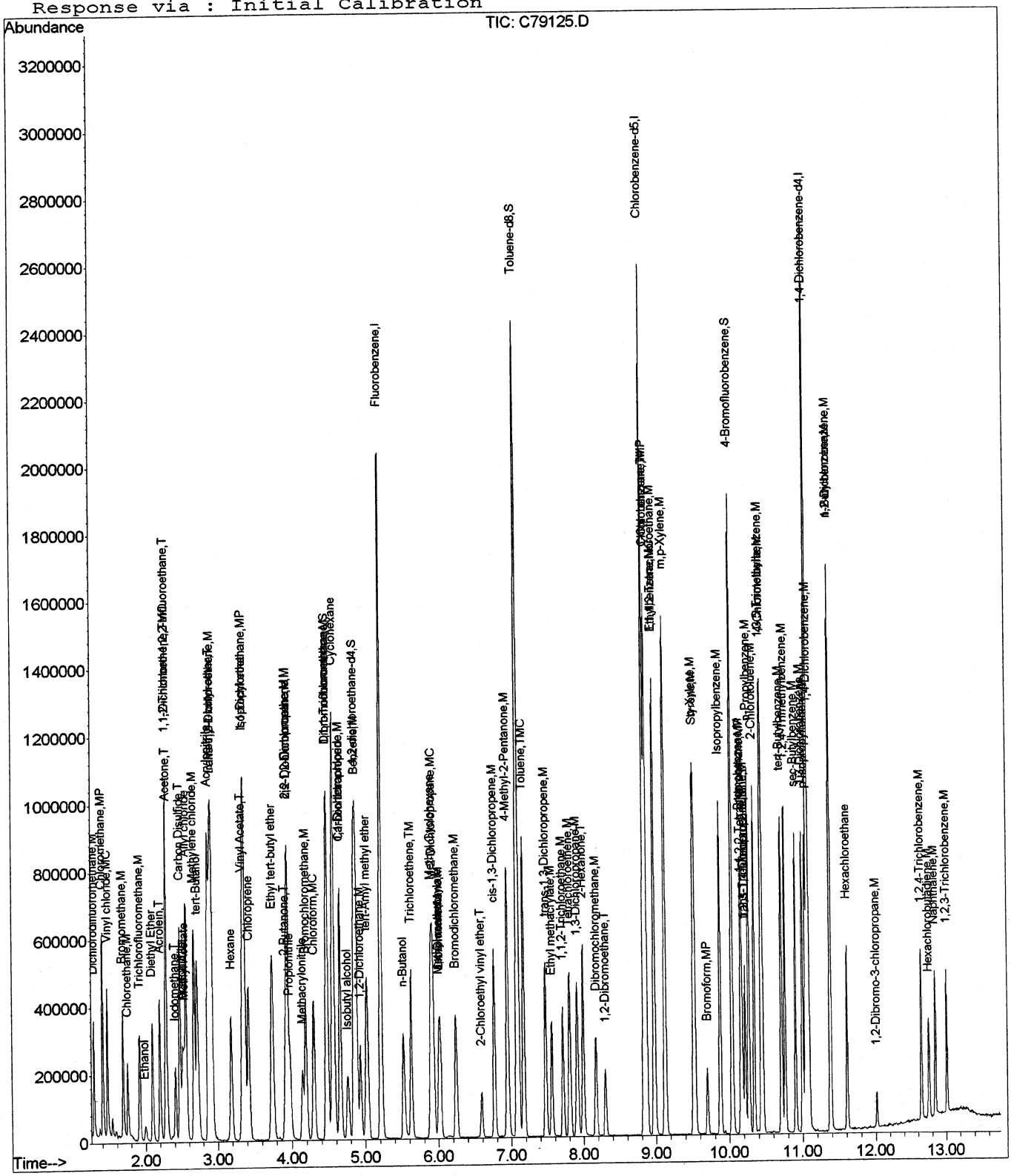
(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\2017\122917\C79125.D
Acq On : 29 Dec 2017 9:52 am
Sample : VL171228-3LCSD
Misc : 8260 - 10mL water
MS Integration Params: ettics.p
Quant Time: Dec 29 14:02 2017

Vial: 5
Operator: JK-sop525r16
Inst : CSS Instr
Multiplr: 1.00

Quant Results File: 122217W.RES

Method : C:\HPCHEM\1\METHODS\122217W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Sat Dec 23 06:00:59 2017
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63979.D
Acq On : 29 Dec 2017 12:20 pm
Operator : CJW sop525r16
Sample : VL171229-4MB
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 29 12:58:14 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration

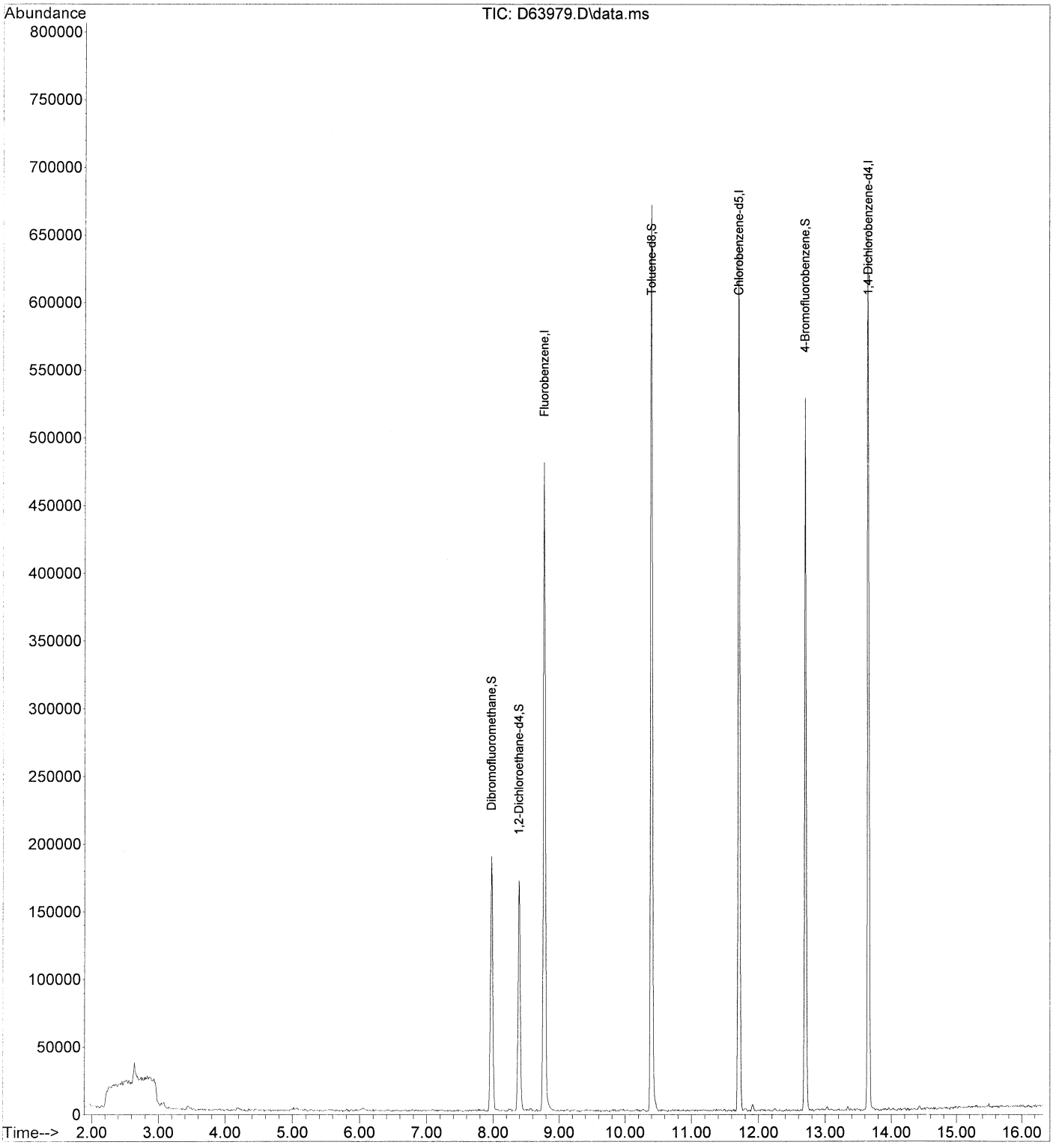
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.773	96	471271	25.00	ppb	0.00
63) Chlorobenzene-d5	11.710	117	358350	25.00	ppb	0.00
84) 1,4-Dichlorobenzene-d4	13.654	152	177930	25.00	ppb	0.00
System Monitoring Compounds						
40) Dibromofluoromethane	7.973	113	132246	25.25	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 101.00%			
44) 1,2-Dichloroethane-d4	8.388	67	71354	25.45	ppb	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.80%			
67) Toluene-d8	10.403	98	478221	26.51	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 106.04%			
85) 4-Bromofluorobenzene	12.702	176	145324	24.76	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 99.04%			
Target Compounds						Qvalue

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

cf 12/29/2017

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63979.D
Acq On : 29 Dec 2017 12:20 pm
Operator : CJW sop525r16
Sample : VL171229-4MB
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 29 12:58:14 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63979.D
Acq On : 29 Dec 2017 12:20 pm
Operator : CJW sop525r16
Sample : VL171229-4MB
Misc :
ALS Vial : 10 Sample Multiplier: 1

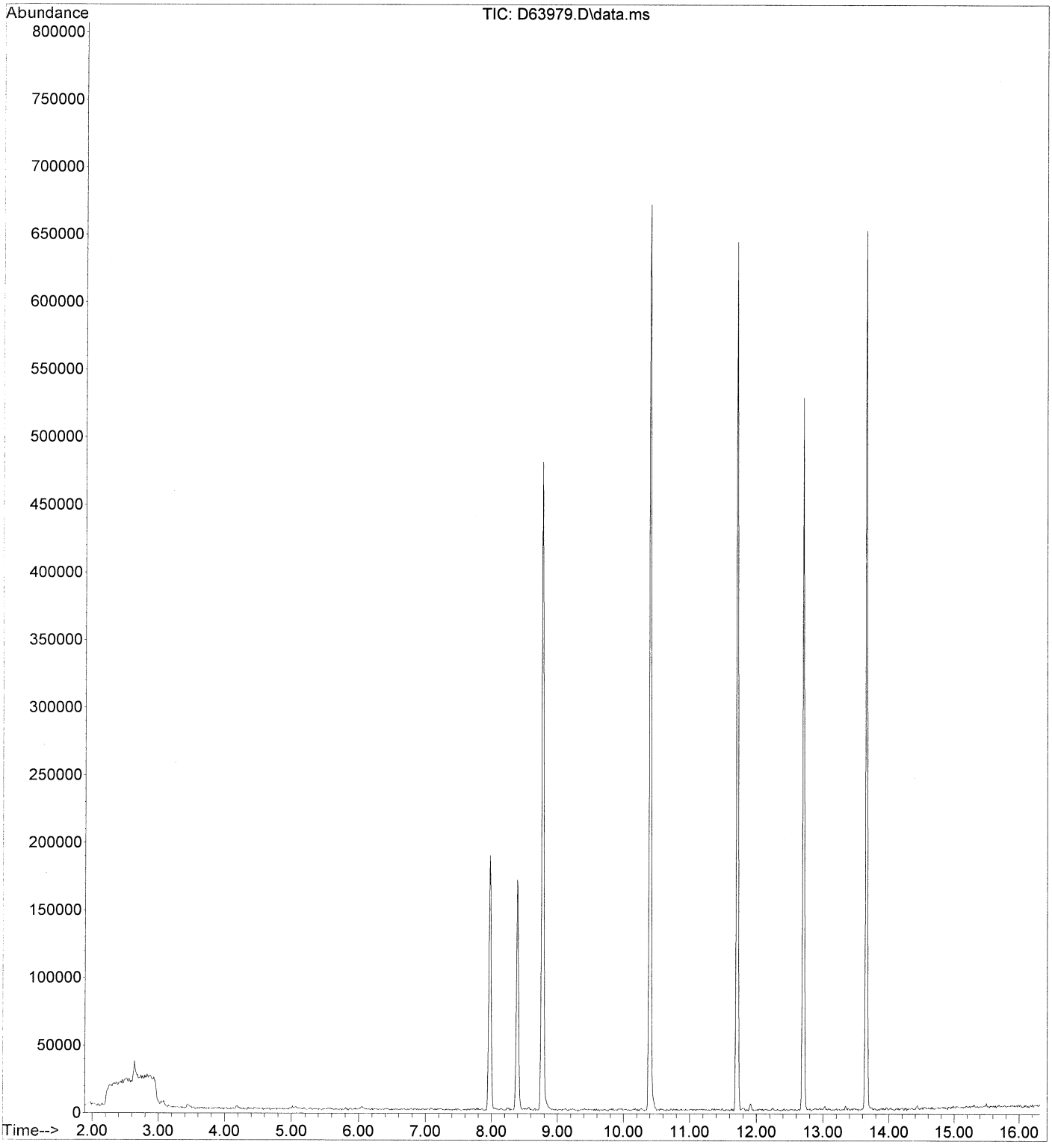
Quant Time: Dec 29 18:22:33 2017
Quant Method : C:\msdchem\1\METHODS\022717GRO.M
Quant Title :
QLast Update : Thu Mar 30 11:56:43 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
3) 1,4-Dichlorobenzene-d4	0.000	TIC	0m	25.00	ppb	-13.21
Target Compounds						Qvalue

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

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63979.D
Acq On : 29 Dec 2017 12:20 pm
Operator : CJW sop525r16
Sample : VL171229-4MB
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Dec 29 18:22:33 2017
Quant Method : C:\msdchem\1\METHODS\022717GRO.M
Quant Title :
QLast Update : Thu Mar 30 11:56:43 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63985.D
Acq On : 29 Dec 2017 3:02 pm
Operator : CJW sop525r16
Sample : 1712513-1
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 29 15:31:46 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration

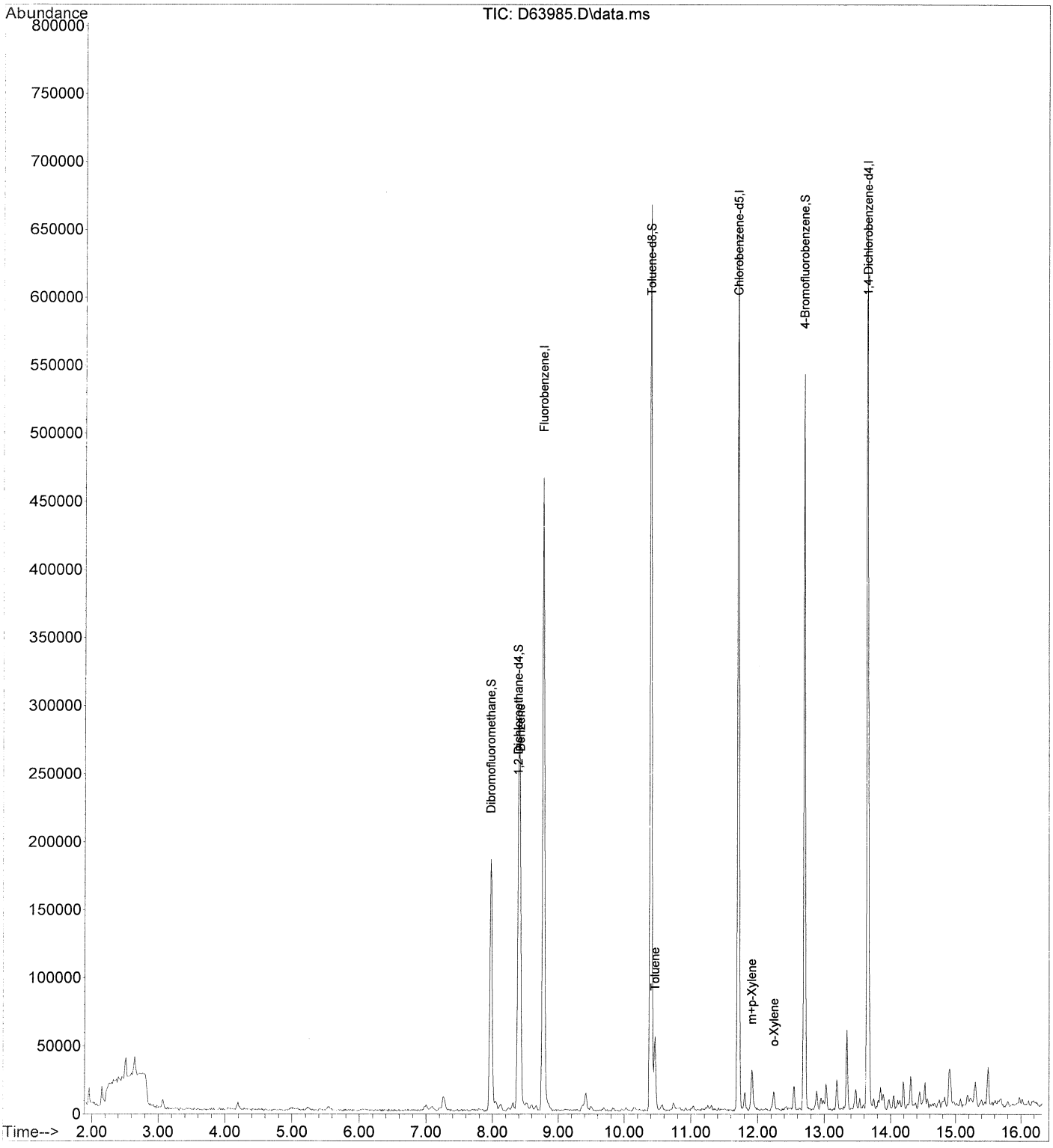
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.773	96	463516	25.00	ppb	-0.01
63) Chlorobenzene-d5	11.710	117	360397	25.00	ppb	0.00
84) 1,4-Dichlorobenzene-d4	13.654	152	177255	25.00	ppb	0.00
System Monitoring Compounds						
40) Dibromofluoromethane	7.973	113	131104	25.45	ppb	-0.01
Spiked Amount 25.000	Range 85 - 115		Recovery = 101.80%			
44) 1,2-Dichloroethane-d4	8.388	67	70209	25.46	ppb	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.84%			
67) Toluene-d8	10.403	98	474138	26.13	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 104.52%			
85) 4-Bromofluorobenzene	12.702	176	145505	24.89	ppb	-0.01
Spiked Amount 25.000	Range 85 - 115		Recovery = 99.56%			
Target Compounds						Qvalue
51) Benzene	8.418	78	204669	7.58	ppb	98
68) Toluene	10.464	92	22806	1.43	ppb	97
79) m+p-Xylene	11.912	106	8881	0.76	ppb	93
82) o-Xylene	12.246	106	3502	0.30	ppb	79

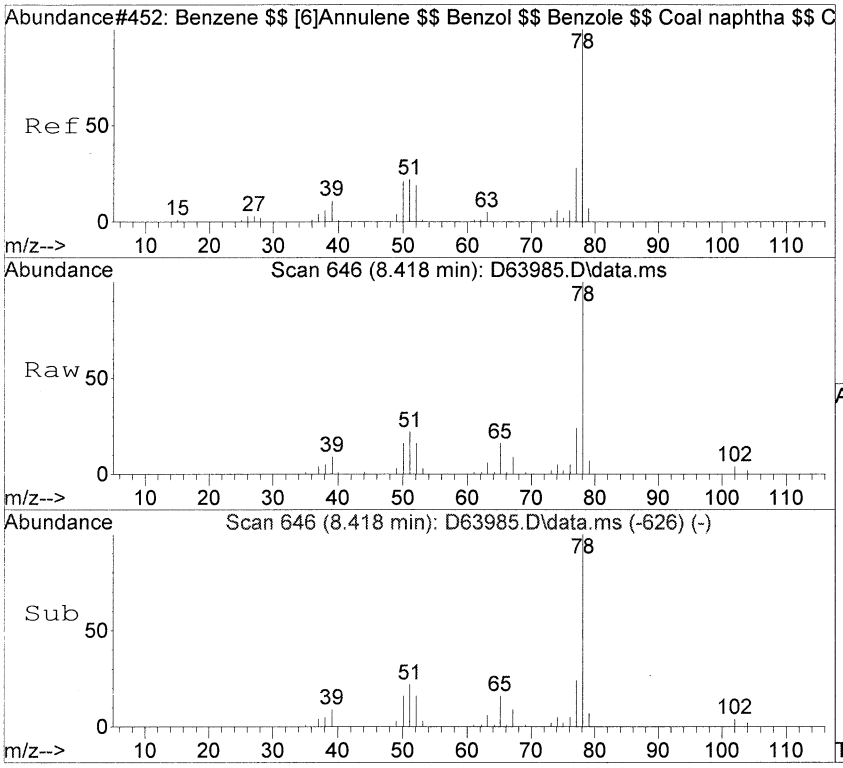
(#) = qualifier out of range (m) = manual integration (+) = signals summed

12/29/2017

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63985.D
Acq On : 29 Dec 2017 3:02 pm
Operator : CJW sop525r16
Sample : 1712513-1
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 29 15:31:46 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration

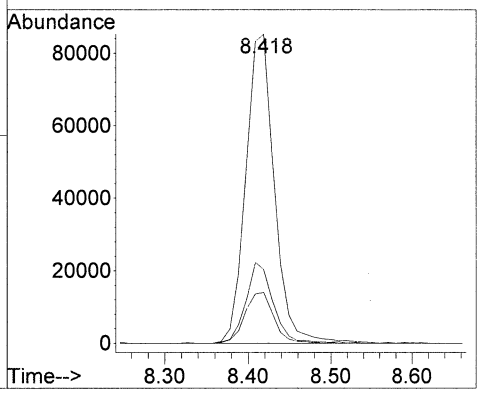


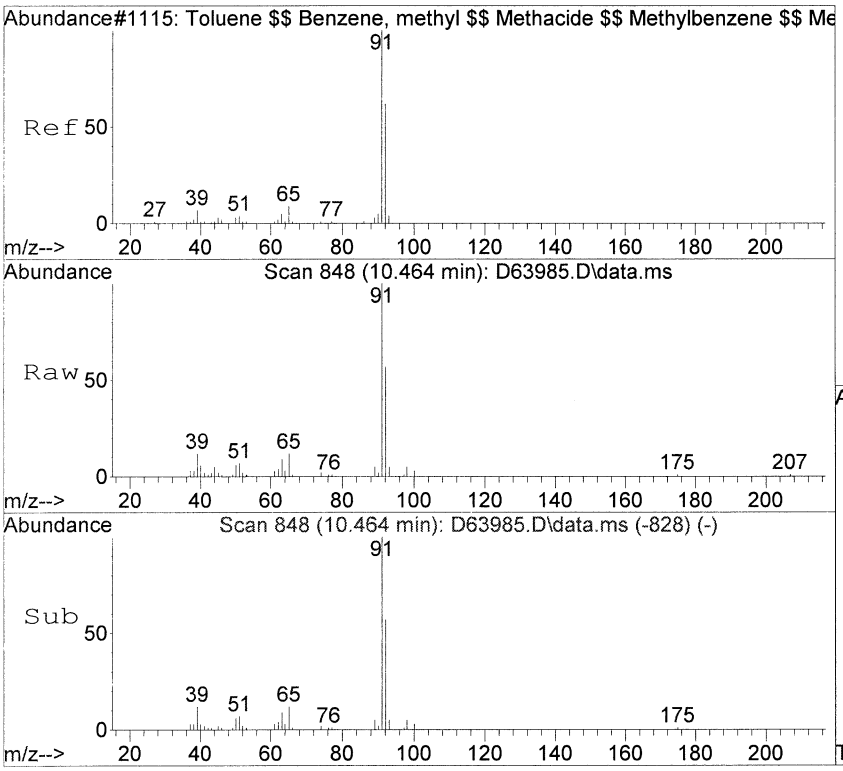


#51
Benzene
Concen: 7.58 ppb
RT: 8.418 min Scan# 646
Delta R.T. 0.000 min
Lab File: D63985.D
Acq: 29 Dec 17 3:02 pm

Tgt Ion: 78 Resp: 204669

Ion	Ratio	Lower	Upper
78	100		
52	16.5	12.2	22.6
77	23.9	17.1	31.9

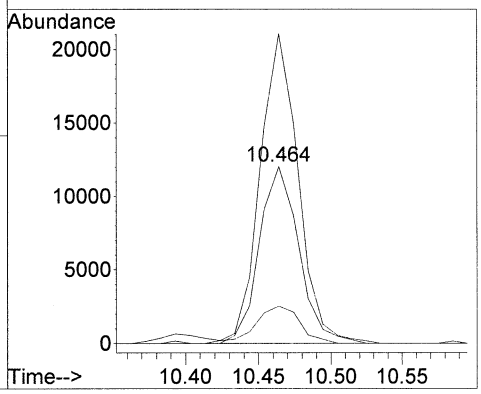


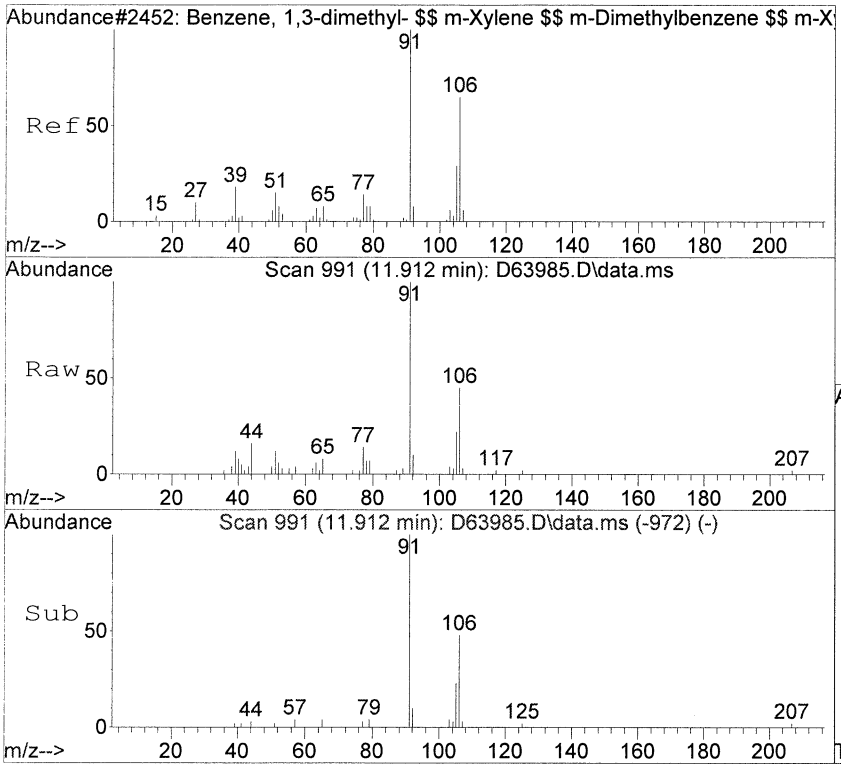


#68
Toluene
Concen: 1.43 ppb
RT: 10.464 min Scan# 848
Delta R.T. 0.000 min
Lab File: D63985.D
Acq: 29 Dec 17 3:02 pm

Tgt Ion: 92 Resp: 22806

Ion	Ratio	Lower	Upper
92	100		
91	175.1	120.0	222.8
65	20.9	14.2	26.4

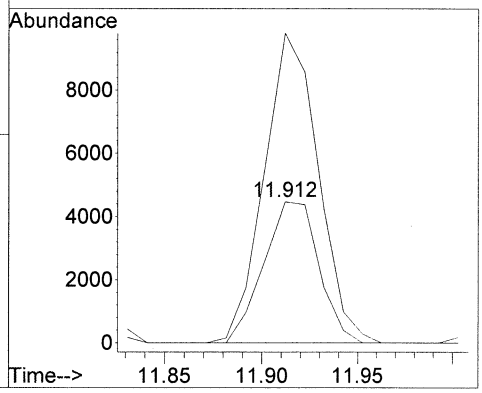


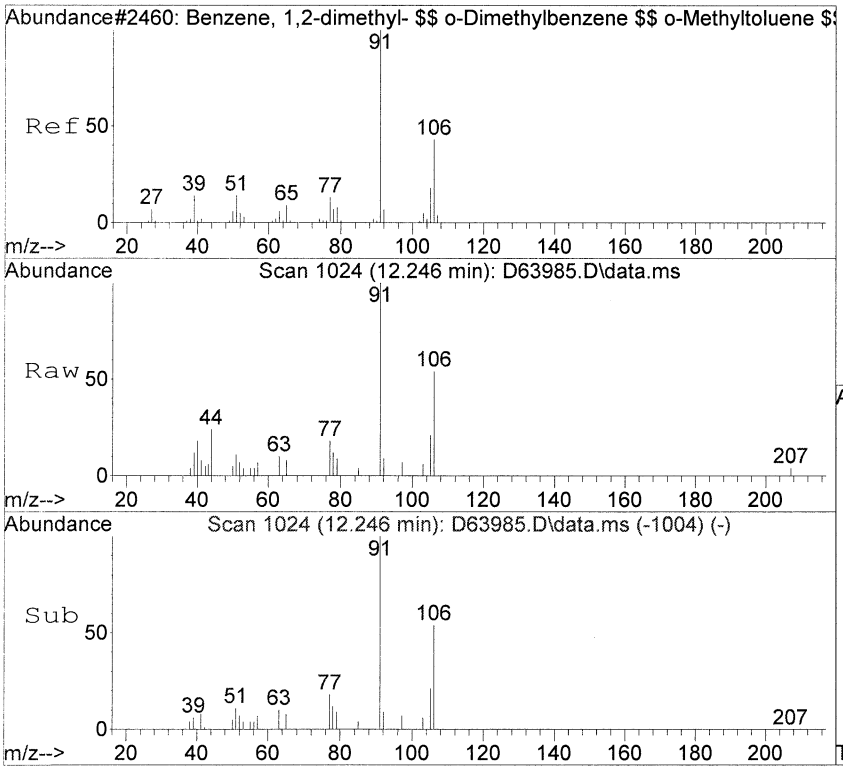


#79
m+p-Xylene
Concen: 0.76 ppb
RT: 11.912 min Scan# 991
Delta R.T. -0.010 min
Lab File: D63985.D
Acq: 29 Dec 17 3:02 pm

Tgt Ion:106 Resp: 8881

Ion	Ratio	Lower	Upper
106	100		
91	219.8	146.4	272.0

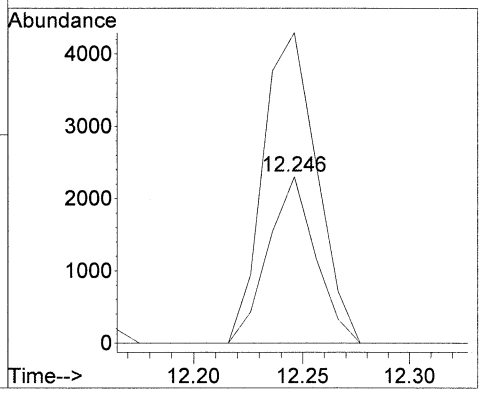




#82
o-Xylene
Concen: 0.30 ppb
RT: 12.246 min Scan# 1024
Delta R.T. 0.000 min
Lab File: D63985.D
Acq: 29 Dec 17 3:02 pm

Tgt Ion:106 Resp: 3502

Ion	Ratio	Lower	Upper
106	100		
91	186.3	153.8	285.6

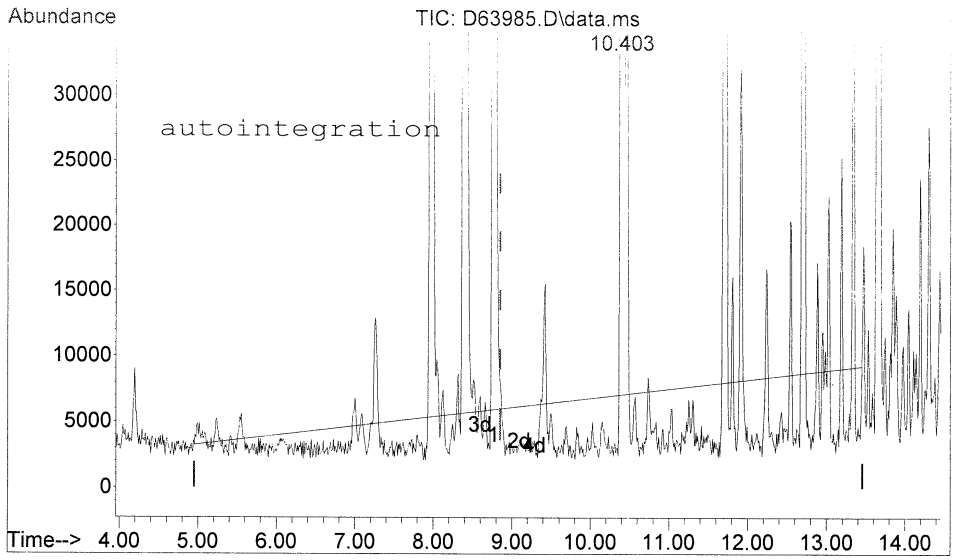


Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63985.D
Acq On : 29 Dec 2017 3:02 pm
Operator : CJW sop525r16
Sample : 1712513-1
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 29 15:27:25 2017
Quant Method : C:\msdchem\1\METHODS\022717GRO.M
Quant Title :
QLast Update : Thu Mar 30 11:56:43 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
3) 1,4-Dichlorobenzene-d4	0.000	TIC	0m	25.00	ppb	-13.21
Target Compounds						Qvalue
1) GRO	8.855	TIC	6721075m	51.73	ppb	
2) 4-Bromofluorobenzene	12.428	TIC	12813	No Calib		

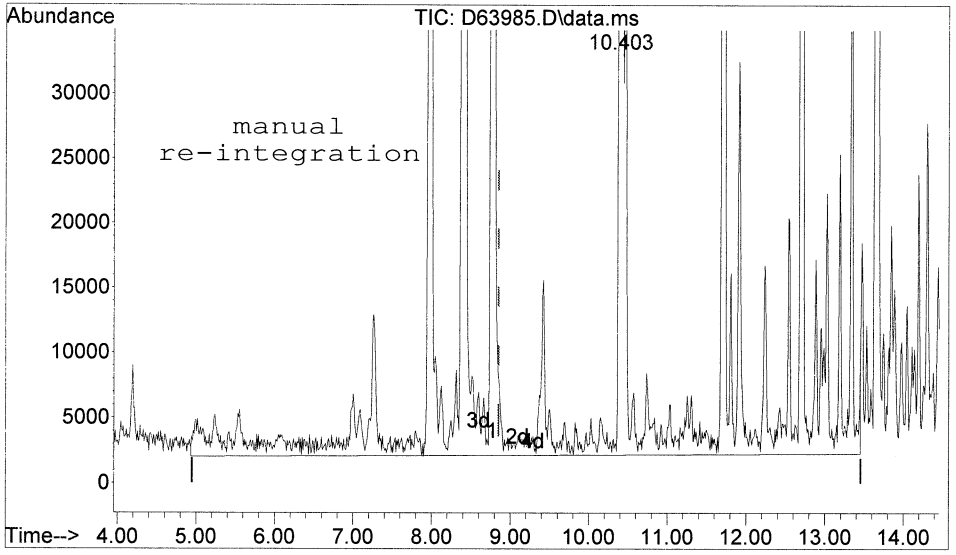
(#) = qualifier out of range (m) = manual integration (+) = signals summed



TIC: D63985.D\data.ms

(1) GRO (H)
8.855min (0.000) 41.29 ppb m
response 6339323

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
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: _____ date: 12 / 29 / 2017

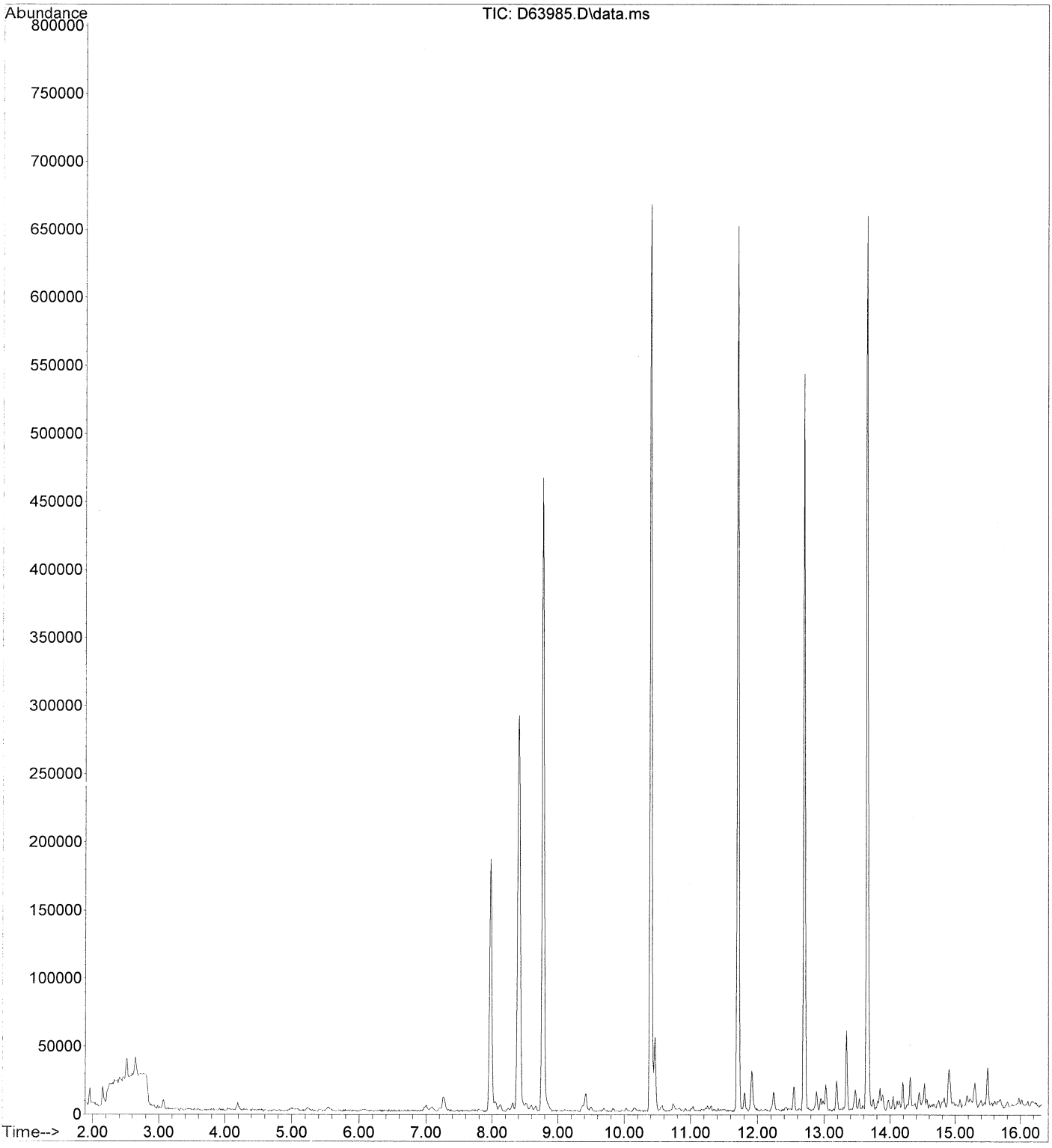
TIC: D63985.D\data.ms

(1) GRO (H)
8.855min (0.000) 51.73 ppb m
response 6721075

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63985.D
Acq On : 29 Dec 2017 3:02 pm
Operator : CJW sop525r16
Sample : 1712513-1
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Dec 29 15:27:25 2017
Quant Method : C:\msdchem\1\METHODS\022717GRO.M
Quant Title :
QLast Update : Thu Mar 30 11:56:43 2017
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63986.D
Acq On : 29 Dec 2017 3:26 pm
Operator : CJW sop525r16
Sample : 1712513-2
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 29 15:45:30 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration

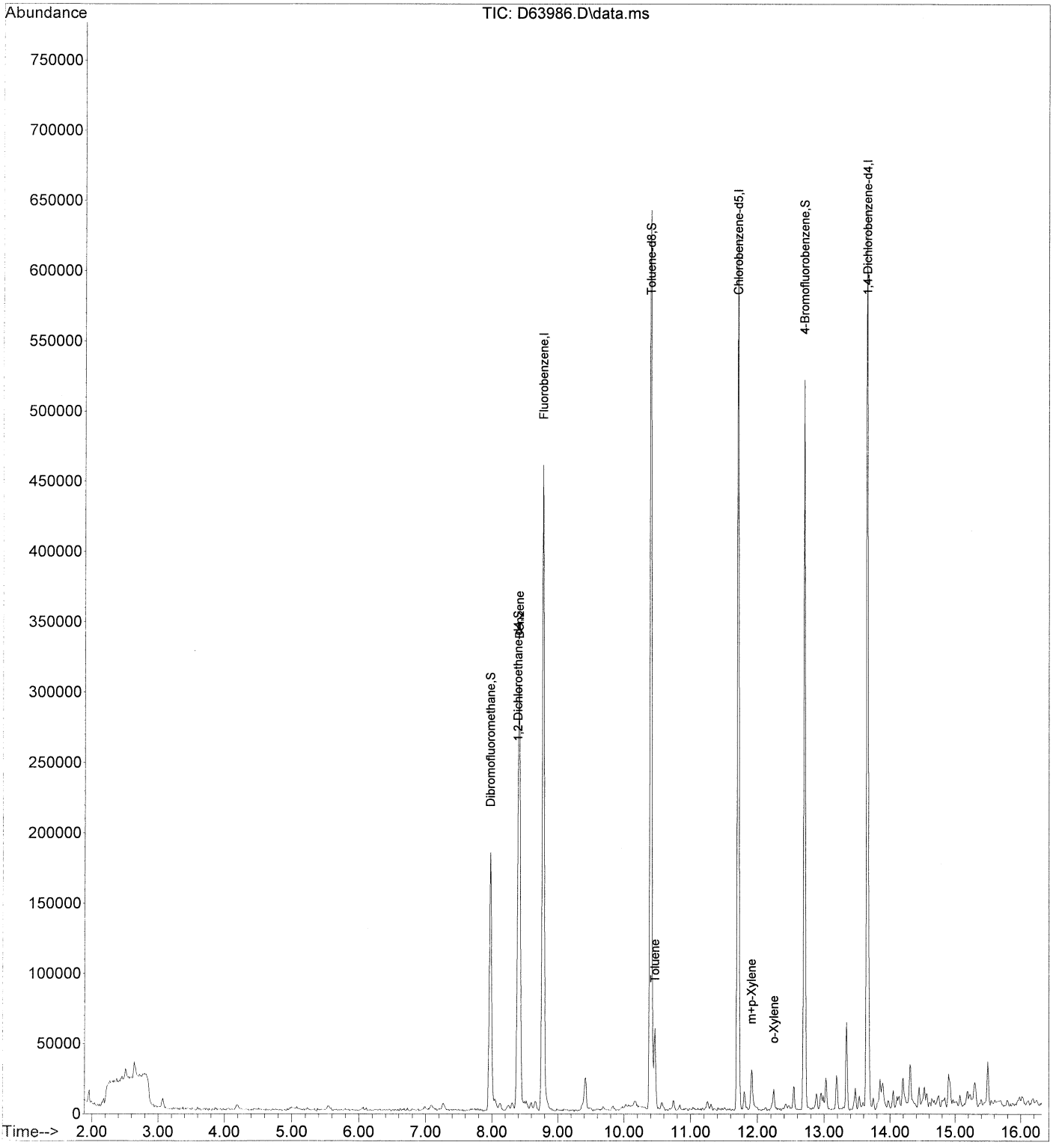
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.773	96	452836	25.00	ppb	-0.01
63) Chlorobenzene-d5	11.710	117	351915	25.00	ppb	0.00
84) 1,4-Dichlorobenzene-d4	13.654	152	173722	25.00	ppb	0.00
System Monitoring Compounds						
40) Dibromofluoromethane	7.973	113	127897	25.42	ppb	-0.01
Spiked Amount 25.000	Range 85 - 115		Recovery = 101.68%			
44) 1,2-Dichloroethane-d4	8.388	67	69849	25.93	ppb	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.72%			
67) Toluene-d8	10.403	98	464041	26.19	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 104.76%			
85) 4-Bromofluorobenzene	12.702	176	144480	25.22	ppb	-0.01
Spiked Amount 25.000	Range 85 - 115		Recovery = 100.88%			
Target Compounds						Qvalue
51) Benzene	8.408	78	230188	8.72	ppb	98
68) Toluene	10.464	92	24523	1.58	ppb	98
79) m+p-Xylene	11.912	106	9109	0.79	ppb	93
82) o-Xylene	12.246	106	3537	0.31	ppb	98

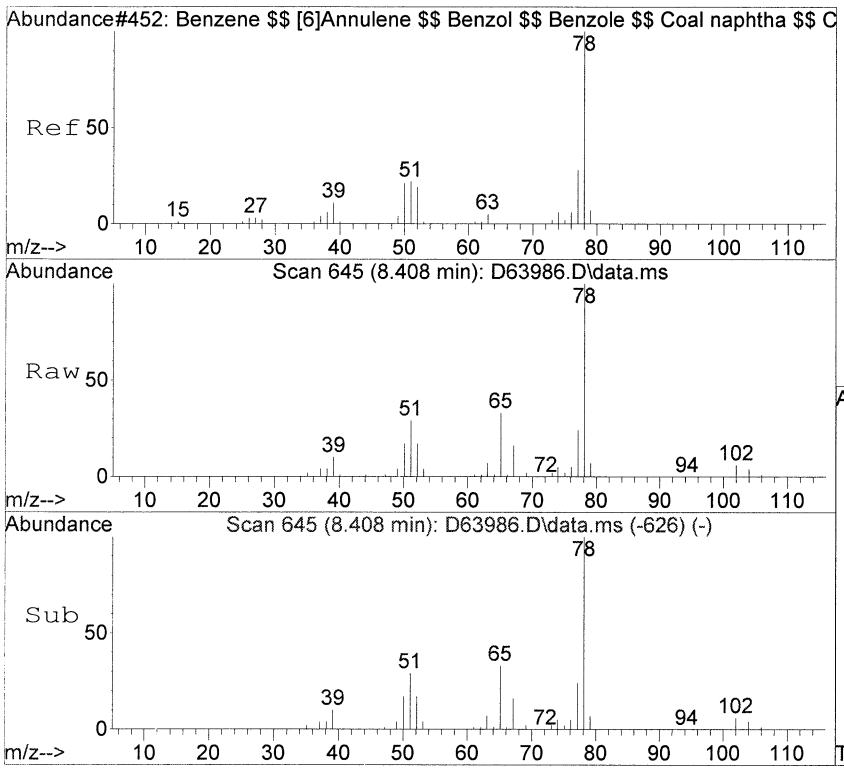
(#) = qualifier out of range (m) = manual integration (+) = signals summed

qr 1/29/2018

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63986.D
Acq On : 29 Dec 2017 3:26 pm
Operator : CJW sop525r16
Sample : 1712513-2
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 29 15:45:30 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration

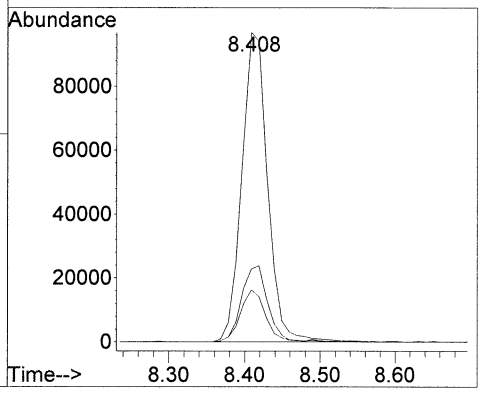


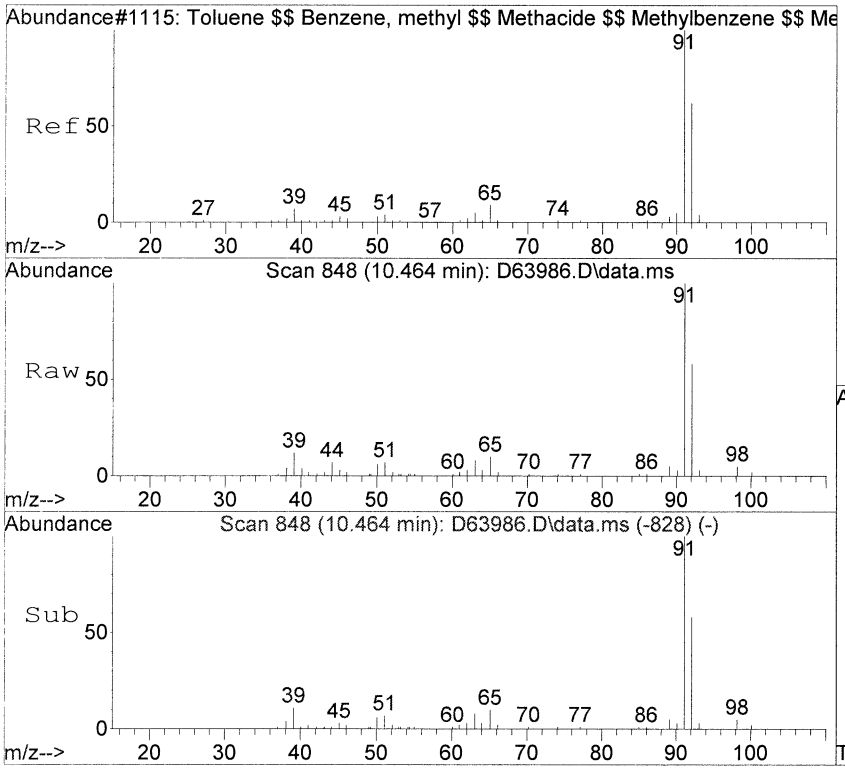


#51
Benzene
Concen: 8.72 ppb
RT: 8.408 min Scan# 645
Delta R.T. -0.010 min
Lab File: D63986.D
Acq: 29 Dec 17 3:26 pm

Tgt Ion: 78 Resp: 230188

Ion	Ratio	Lower	Upper
78	100		
52	16.8	12.2	22.6
77	23.6	17.1	31.9

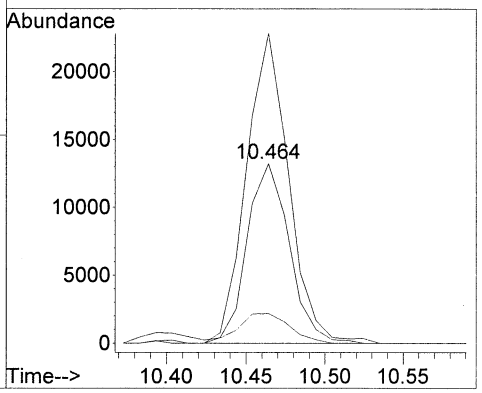


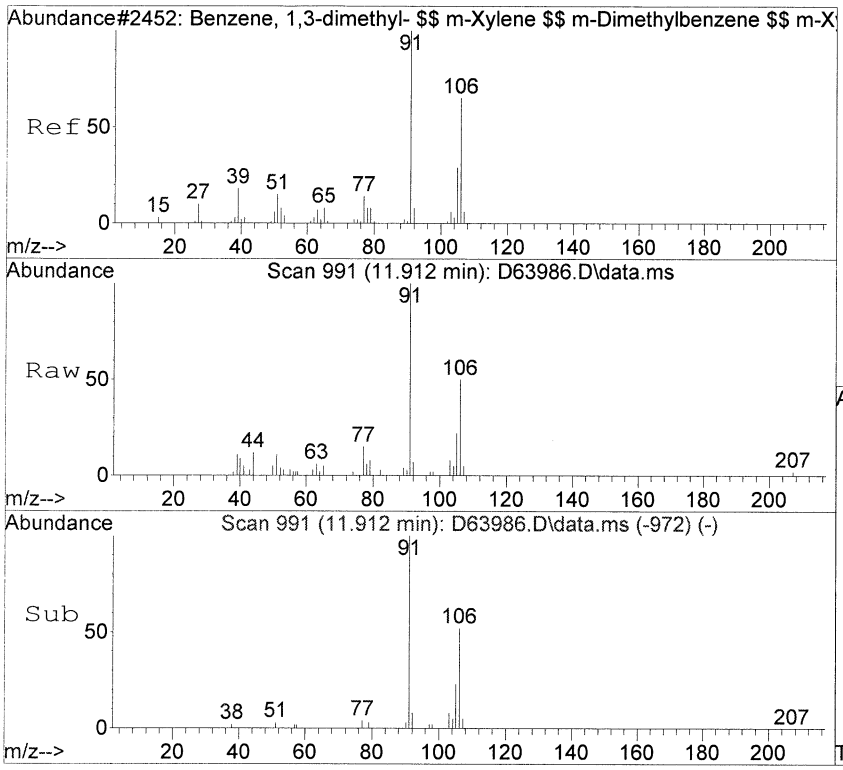


#68
Toluene
Concen: 1.58 ppb
RT: 10.464 min Scan# 848
Delta R.T. 0.000 min
Lab File: D63986.D
Acq: 29 Dec 17 3:26 pm

Tgt Ion: 92 Resp: 24523

Ion	Ratio	Lower	Upper
92	100		
91	172.5	120.0	222.8
65	16.5	14.2	26.4

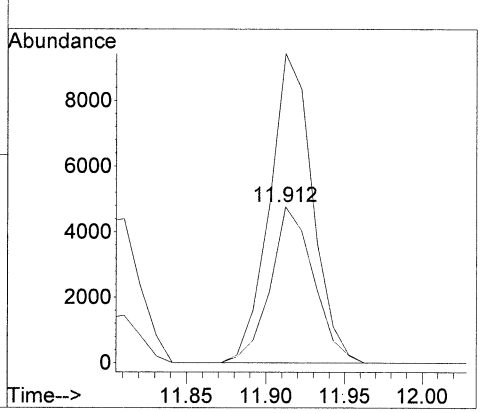


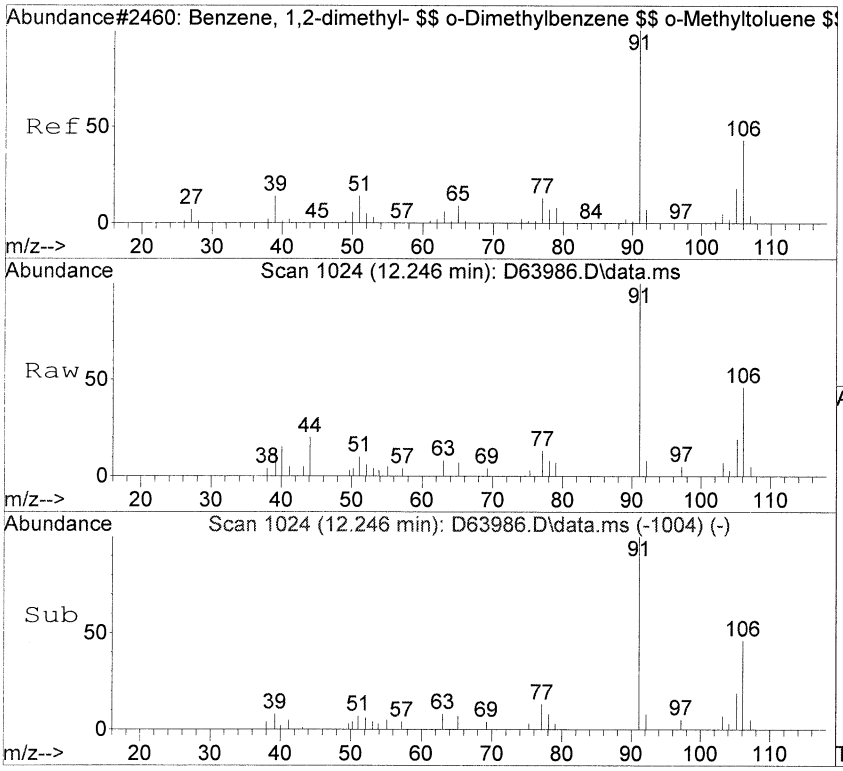


#79
m+p-Xylene
Concen: 0.79 ppb
RT: 11.912 min Scan# 991
Delta R.T. -0.010 min
Lab File: D63986.D
Acq: 29 Dec 17 3:26 pm

Tgt Ion:106 Resp: 9109

Ion	Ratio	Lower	Upper
106	100		
91	198.3	146.4	272.0

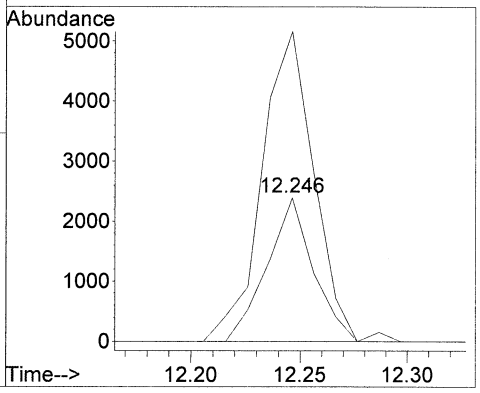




#82
o-Xylene
Concen: 0.31 ppb
RT: 12.246 min Scan# 1024
Delta R.T. 0.000 min
Lab File: D63986.D
Acq: 29 Dec 17 3:26 pm

Tgt Ion:106 Resp: 3537

Ion	Ratio	Lower	Upper
106	100		
91	215.7	153.8	285.6



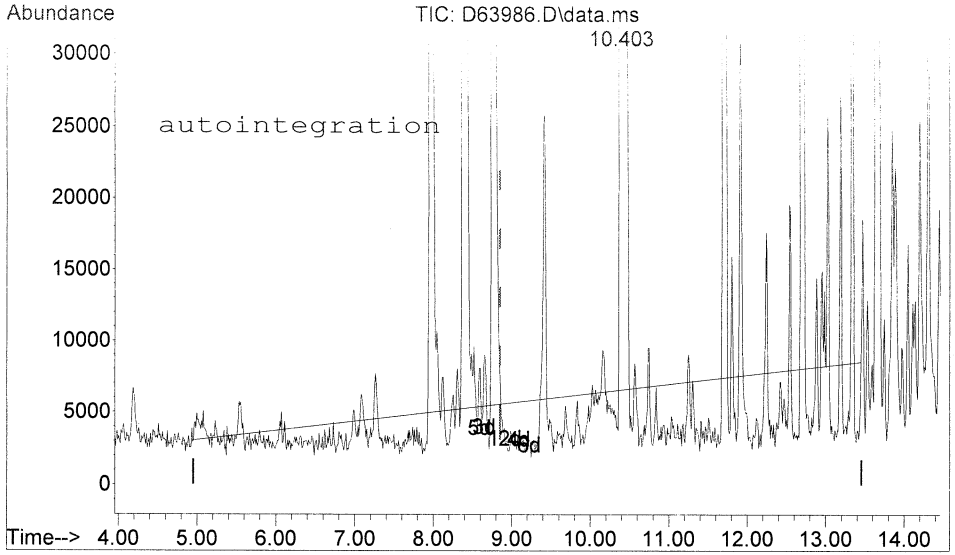
Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63986.D
Acq On : 29 Dec 2017 3:26 pm
Operator : CJW sop525r16
Sample : 1712513-2
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 29 15:43:46 2017
Quant Method : C:\msdchem\1\METHODS\022717GRO.M
Quant Title :
QLast Update : Thu Mar 30 11:56:43 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
3) 1,4-Dichlorobenzene-d4	0.000	TIC	0m	25.00 ppb	-13.21
Target Compounds					Qvalue
1) GRO	8.855	TIC	6943201m	57.80 ppb	
2) 4-Bromofluorobenzene	12.428	TIC	14686	No Calib	

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



TIC: D63986.D\data.ms

(1) GRO (H)
8.855min (0.000) 41.23 ppb m
response 6337279

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Reason for manual re-integration?

[] missed peak assignment

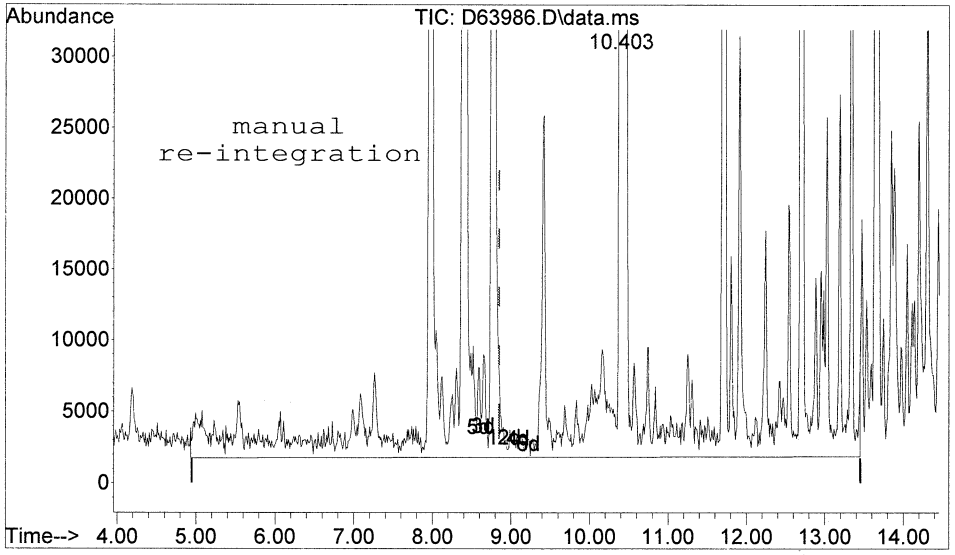
[] peak saturation (detector shutdown)

[] over-integrated peak's area

[✓] under-integrated peak's area

[] other (_____)

initials: q date: 12 / 29 / 2017



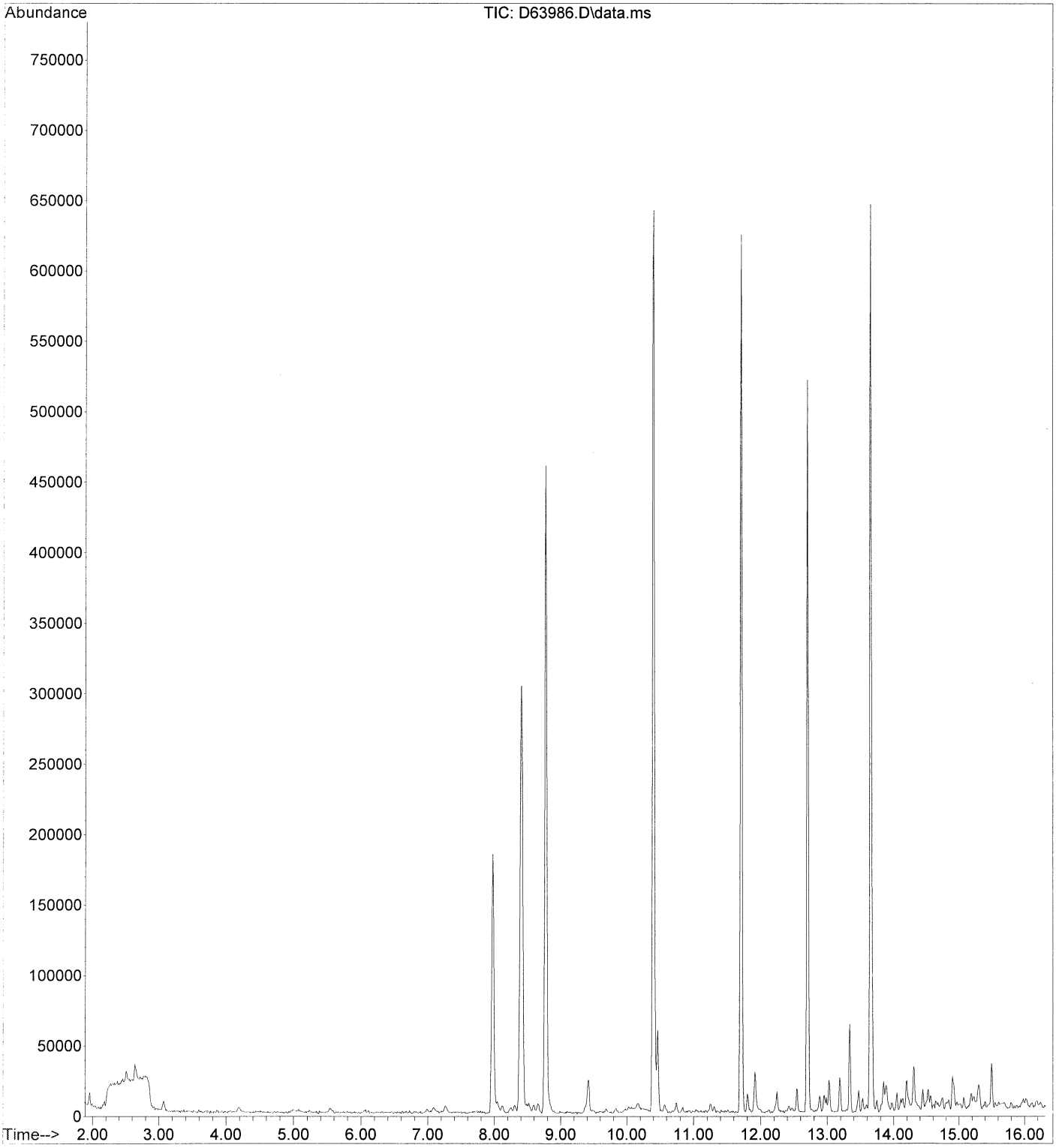
TIC: D63986.D\data.ms

(1) GRO (H)
8.855min (0.000) 57.80 ppb m
response 6943201

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63986.D
Acq On : 29 Dec 2017 3:26 pm
Operator : CJW sop525r16
Sample : 1712513-2
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Dec 29 15:43:46 2017
Quant Method : C:\msdchem\1\METHODS\022717GRO.M
Quant Title :
QLast Update : Thu Mar 30 11:56:43 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63973.D
Acq On : 29 Dec 2017 9:55 am
Operator : CJW sop525r16
Sample : VL171229-4CCS
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 29 10:12:08 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	8.773	96	485466	25.00	ppb		0.00
63) Chlorobenzene-d5	11.710	117	376361	25.00	ppb		0.00
84) 1,4-Dichlorobenzene-d4	13.654	152	190280	25.00	ppb		0.00
System Monitoring Compounds							
40) Dibromofluoromethane	7.973	113	139154	25.80	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 103.20%				
44) 1,2-Dichloroethane-d4	8.388	67	75455	26.13	ppb		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.52%				
67) Toluene-d8	10.403	98	491603	25.95	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 103.80%				
85) 4-Bromofluorobenzene	12.702	176	150635	24.00	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 96.00%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.998	85	64410	6.99	ppb		94
3) Chloromethane	2.211	50	83459	8.18	ppb		99
4) Vinyl chloride	2.363	62	89607	8.92	ppb		96
5) Bromomethane	2.798	96	56541	9.89	ppb		94
6) Chloroethane	2.950	64	39171	8.05	ppb		99
7) Ethanol	3.578	45	9219	183.58	ppb	#	89
8) Acrolein	3.953	56	62681	78.98	ppb		100
9) Acetonitrile	4.672	41	40645	81.35	ppb		96
10) Trichlorofluoromethane	3.315	101	97913	9.19	ppb		96
11) Acetone	4.186	58	11908	31.86	ppb		97
12) Diethyl Ether	3.740	74	28209	8.28	ppb		94
13) tert-Butanol	5.229	59	204527	416.29	ppb		97
14) 1,1-Dichloroethene	4.115	96	58777	9.20	ppb		89
15) Acrylonitrile	5.462	53	134446	79.99	ppb		99
16) Iodomethane	4.348	142	51092	6.56	ppb		99
18) Methylene Chloride	5.016	84	64403	8.50	ppb		89
19) Methyl acetate	4.753	74	9298	9.19	ppb		82
20) Allyl chloride	4.763	76	35049	8.72	ppb		96
21) 1,1,2-Trichloro-1,2,2-...	4.135	101	59357	9.94	ppb		92
22) Carbon disulfide	4.469	76	181391	9.09	ppb		98
23) trans-1,2-Dichloroethene	5.533	96	64113	8.84	ppb		94
24) Methyl-t-butyl ether	5.522	73	293028	17.00	ppb		96
25) Hexane	6.049	57	52707	10.19	ppb		94
26) 1,1-Dichloroethane	6.322	63	122688	9.06	ppb		98
27) Propionitrile	7.345	54	50730	86.70	ppb		96
28) Vinyl acetate	6.353	86	6882	8.32	ppb		61
29) Chloroprene	6.444	53	106705	9.46	ppb		97
31) 2-Butanone	7.254	72	17412	32.05	ppb		97
32) Isopropyl ether	6.414	45	199282	8.55	ppb		98
33) Methacrylonitrile	7.568	41	27127	9.04	ppb		98
34) cis-1,2-Dichloroethene	7.264	96	74066	9.77	ppb		94
36) Bromochloromethane	7.608	128	33128	8.99	ppb		96
37) Chloroform	7.770	83	123404	9.31	ppb		98
38) 2,2-Dichloropropane	7.264	77	110652	9.86	ppb		96
39) Ethyl tert-butyl ether	7.021	59	170533	8.12	ppb		98
43) Isobutyl Alcohol	8.338	43	34037	151.13	ppb		95
45) 1,2-Dichloroethane	8.479	62	83123	9.25	ppb		99
46) 1,1,1-Trichloroethane	7.963	97	112741	9.51	ppb		95

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63973.D
Acq On : 29 Dec 2017 9:55 am
Operator : CJW sop525r16
Sample : VL171229-4CCS
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 29 10:12:08 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
47)	1,1-Dichloropropene	8.176	75	88244	9.29	ppb		95
48)	n-Butanol	9.087	56	48240	395.01	ppb		98
49)	Cyclohexane	8.044	84	171860	18.60	ppb		98
50)	Carbon tetrachloride	8.165	117	92645	9.55	ppb		96
51)	Benzene	8.408	78	252834	8.94	ppb		99
52)	Tert-amyl methyl ether	8.581	87	35722	7.77	ppb		94
53)	Dibromomethane	9.543	93	36371	9.00	ppb		99
54)	1,2-Dichloropropane	9.451	63	63922	8.74	ppb	#	95
55)	Trichloroethene	9.178	95	66720	8.98	ppb		98
56)	Bromodichloromethane	9.725	83	94302	8.95	ppb		97
57)	1,4-Dioxane	9.522	88	7601	162.59	ppb	#	86
58)	Methyl methacrylate	9.512	69	28870	7.73	ppb		85
59)	Methyl cyclohexane	9.421	83	96386	8.83	ppb		97
61)	2-Chloroethyl vinyl ether	9.998	63	24711	6.65	ppb	#	91
62)	cis-1,3-Dichloropropene	10.150	75	96226	8.51	ppb		97
64)	4-Methyl-2-pentanone	10.282	100	23162	36.90	ppb		82
65)	trans-1,3-Dichloropropene	10.677	75	81984	8.53	ppb		93
66)	1,1,2-Trichloroethane	10.859	83	40018	9.37	ppb		96
68)	Toluene	10.464	92	154342	9.29	ppb		95
69)	1,3-Dichloropropane	11.001	76	79348	9.06	ppb		98
70)	Ethyl methacrylate	10.717	69	56122	7.96	ppb		98
71)	2-Hexanone	11.041	58	52137	32.08	ppb	#	97
72)	Dibromochloromethane	11.203	129	60272	9.18	ppb		94
73)	1,2-Dibromoethane	11.315	107	43605	9.14	ppb		97
74)	Tetrachloroethene	10.940	164	61566	9.81	ppb		96
75)	1,1,1,2-Tetrachloroethane	11.811	131	64045	9.57	ppb		97
76)	Chlorobenzene	11.740	112	176546	9.60	ppb		93
77)	1-Chlorohexane	11.699	91	79873	8.72	ppb		94
78)	Ethylbenzene	11.811	91	296828	9.72	ppb		98
79)	m+p-Xylene	11.912	106	228015	18.57	ppb		96
80)	Bromoform	12.429	173	34299	9.21	ppb		97
81)	Styrene	12.256	104	186921	9.09	ppb		99
82)	o-Xylene	12.246	106	113436	9.40	ppb		93
83)	Isopropylbenzene	12.550	105	278211	9.55	ppb		99
86)	1,1,2,2-Tetrachloroethane	12.793	83	52682	8.85	ppb		97
87)	trans-1,4-Dichloro-2-b...	12.823	53	11308	8.36	ppb		88
88)	Bromobenzene	12.834	156	74691	9.33	ppb		90
89)	1,2,3-Trichloropropane	12.854	110	16205	9.92	ppb		94
90)	n-Propylbenzene	12.884	91	325474	10.11	ppb		99
91)	2-Chlorotoluene	12.975	126	70511	9.62	ppb		94
92)	4-Chlorotoluene	13.077	126	70932	9.46	ppb		98
93)	1,3,5-Trimethylbenzene	13.026	105	245753	10.28	ppb		99
94)	tert-Butylbenzene	13.299	134	49428	9.68	ppb		98
95)	1,2,4-Trimethylbenzene	13.340	105	237205	10.10	ppb		99
96)	sec-Butylbenzene	13.472	105	273577	10.04	ppb		97
97)	1,3-Dichlorobenzene	13.593	146	136231	9.70	ppb		98
98)	1,4-Dichlorobenzene	13.674	146	131413	9.55	ppb		98
99)	p-Isopropyltoluene	13.593	119	229160	10.08	ppb		97
100)	1,2-Dichlorobenzene	13.968	146	123962	9.68	ppb		97
101)	n-Butylbenzene	13.917	91	215580	10.40	ppb		98
102)	1,2-Dibromo-3-chloropr...	14.585	75	8438	9.62	ppb		99
103)	Hexachloroethane	14.201	201	30736	8.23	ppb	#	81
104)	1,2,4-Trichlorobenzene	15.254	180	77877	9.88	ppb		93
105)	Naphthalene	15.497	128	139198	9.99	ppb		97

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63973.D
Acq On : 29 Dec 2017 9:55 am
Operator : CJW sop525r16
Sample : VL171229-4CCS
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 29 10:12:08 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration

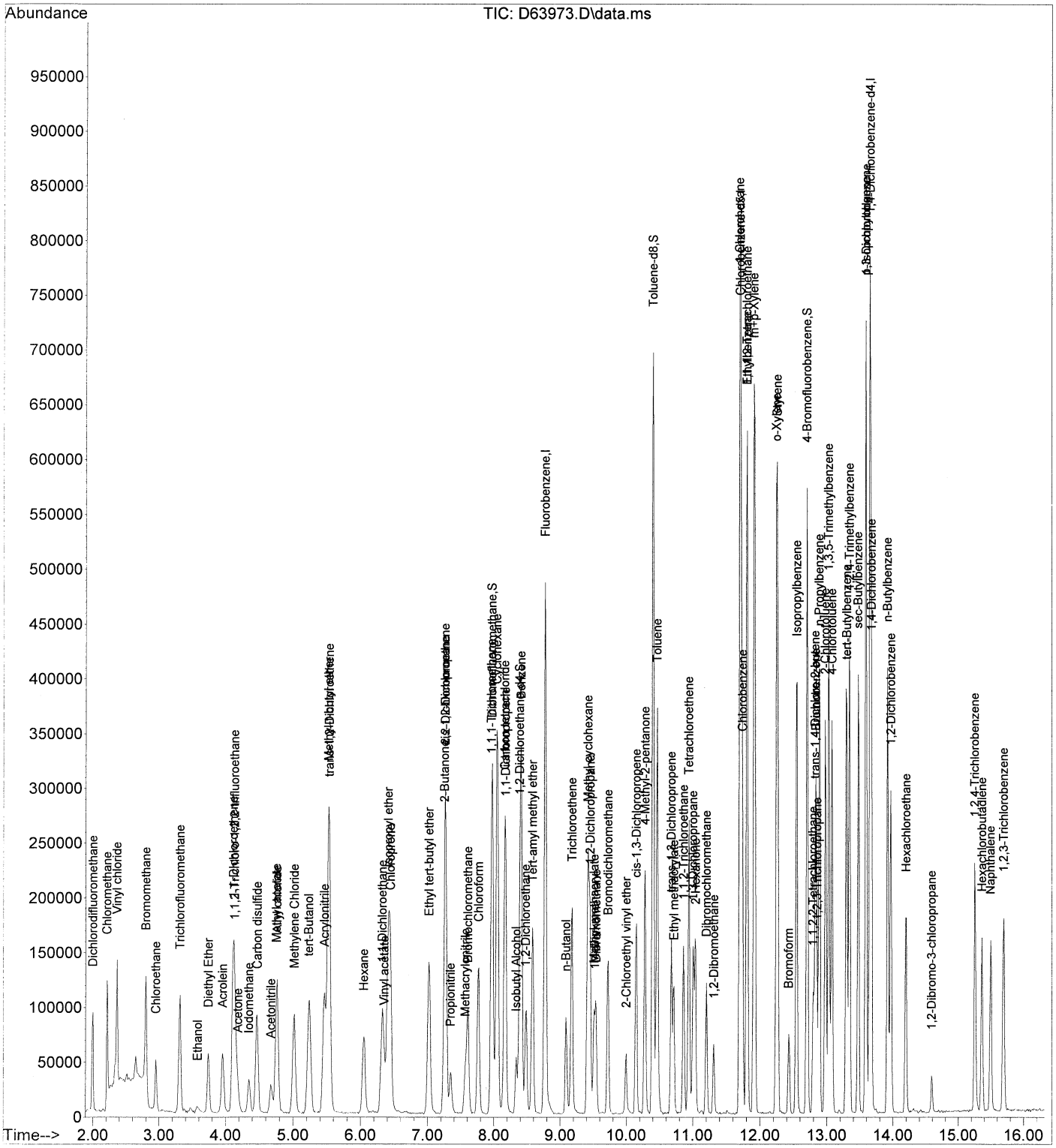
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
106) Hexachlorobutadiene	15.365	225	33629	9.69	ppb	95
107) 1,2,3-Trichlorobenzene	15.699	180	67703	10.52	ppb	96

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

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63973.D
Acq On : 29 Dec 2017 9:55 am
Operator : CJW sop525r16
Sample : VL171229-4CCS
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Dec 29 10:12:08 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63974.D
Acq On : 29 Dec 2017 10:20 am
Operator : CJW sop525r16
Sample : VL171229-4LCSD
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 29 12:49:12 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) Fluorobenzene	8.773	96	478573	25.00	ppb		0.00
63) Chlorobenzene-d5	11.710	117	372270	25.00	ppb		0.00
84) 1,4-Dichlorobenzene-d4	13.654	152	185346	25.00	ppb		0.00
System Monitoring Compounds							
40) Dibromofluoromethane	7.973	113	137152	25.79	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 103.16%				
44) 1,2-Dichloroethane-d4	8.388	67	72646	25.52	ppb		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.08%				
67) Toluene-d8	10.403	98	483848	25.82	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 103.28%				
85) 4-Bromofluorobenzene	12.702	176	149980	24.53	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 98.12%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.999	85	58227	6.41	ppb		94
3) Chloromethane	2.211	50	76790	7.63	ppb		98
4) Vinyl chloride	2.363	62	84806	8.56	ppb		99
5) Bromomethane	2.799	96	51633	9.13	ppb		94
6) Chloroethane	2.950	64	35798	7.46	ppb		97
7) Ethanol	3.568	45	8285	167.36	ppb		82
8) Acrolein	3.953	56	63220	80.81	ppb		97
9) Acetonitrile	4.672	41	39749	80.71	ppb		96
10) Trichlorofluoromethane	3.315	101	93487	8.90	ppb		97
11) Acetone	4.186	58	12322	33.61	ppb		94
12) Diethyl Ether	3.740	74	28235	8.40	ppb		91
13) tert-Butanol	5.229	59	204989	423.24	ppb		97
14) 1,1-Dichloroethene	4.115	96	52545	8.35	ppb		93
15) Acrylonitrile	5.452	53	133088	80.32	ppb		97
16) Iodomethane	4.348	142	45767	5.96	ppb		99
18) Methylene Chloride	5.016	84	59770	8.00	ppb		91
19) Methyl acetate	4.763	74	7727	7.75	ppb		93
20) Allyl chloride	4.763	76	32943	8.31	ppb		86
21) 1,1,2-Trichloro-1,2,2-...	4.135	101	53975	9.17	ppb		94
22) Carbon disulfide	4.469	76	169020	8.59	ppb		99
23) trans-1,2-Dichloroethene	5.533	96	61008	8.53	ppb		91
24) Methyl-t-butyl ether	5.522	73	292750	17.23	ppb		98
25) Hexane	6.049	57	47714	9.33	ppb		96
26) 1,1-Dichloroethane	6.322	63	117128	8.77	ppb		95
27) Propionitrile	7.345	54	49598	85.95	ppb		96
28) Vinyl acetate	6.353	86	6667	8.17	ppb		80
29) Chloroprene	6.444	53	97213	8.74	ppb		97
31) 2-Butanone	7.264	72	17089	31.90	ppb		92
32) Isopropyl ether	6.414	45	193150	8.41	ppb		97
33) Methacrylonitrile	7.568	41	24737	8.31	ppb		95
34) cis-1,2-Dichloroethene	7.264	96	67358	8.99	ppb		97
36) Bromochloromethane	7.608	128	31848	8.77	ppb		95
37) Chloroform	7.771	83	116883	8.95	ppb		97
38) 2,2-Dichloropropane	7.264	77	101030	9.13	ppb		95
39) Ethyl tert-butyl ether	7.021	59	165734	8.01	ppb		98
43) Isobutyl Alcohol	8.338	43	36375	164.78	ppb	#	97
45) 1,2-Dichloroethane	8.489	62	82661	9.33	ppb		99
46) 1,1,1-Trichloroethane	7.963	97	103054	8.81	ppb		95

12/29/17

Data Path : C:\msdchem\1\DATA\2017\122917\
Data File : D63974.D
Acq On : 29 Dec 2017 10:20 am
Operator : CJW sop525r16
Sample : VL171229-4LCSD
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 29 12:49:12 2017
Quant Method : C:\msdchem\1\METHODS\121717W.M
Quant Title : HPV4 - GC/MS Volatiles (SOP 525)
QLast Update : Mon Dec 18 09:29:38 2017
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
47)	1,1-Dichloropropene	8.176	75	81537	8.71	ppb		99
48)	n-Butanol	9.087	56	49039	407.34	ppb		99
49)	Cyclohexane	8.054	84	160084	17.58	ppb		93
50)	Carbon tetrachloride	8.155	117	84598	8.85	ppb		99
51)	Benzene	8.408	78	241041	8.64	ppb		100
52)	Tert-amyl methyl ether	8.581	87	34381	7.59	ppb		95
53)	Dibromomethane	9.543	93	34074	8.55	ppb		95
54)	1,2-Dichloropropane	9.451	63	61908	8.58	ppb	#	99
55)	Trichloroethene	9.178	95	63491	8.66	ppb		97
56)	Bromodichloromethane	9.725	83	90522	8.72	ppb		97
57)	1,4-Dioxane	9.522	88	7868	170.73	ppb		89
58)	Methyl methacrylate	9.512	69	28830	7.83	ppb		96
59)	Methyl cyclohexane	9.421	83	89345	8.30	ppb		96
61)	2-Chloroethyl vinyl ether	9.998	63	25457	6.95	ppb		93
62)	cis-1,3-Dichloropropene	10.150	75	91851	8.24	ppb		98
64)	4-Methyl-2-pentanone	10.282	100	23785	38.31	ppb		96
65)	trans-1,3-Dichloropropene	10.677	75	78958	8.30	ppb		90
66)	1,1,2-Trichloroethane	10.859	83	39927	9.45	ppb		96
68)	Toluene	10.464	92	146808	8.93	ppb		98
69)	1,3-Dichloropropane	11.001	76	77760	8.98	ppb		97
70)	Ethyl methacrylate	10.717	69	54392	7.80	ppb		96
71)	2-Hexanone	11.031	58	51394	31.97	ppb		93
72)	Dibromochloromethane	11.203	129	59705	9.20	ppb		99
73)	1,2-Dibromoethane	11.315	107	41609	8.82	ppb		99
74)	Tetrachloroethene	10.940	164	57466	9.25	ppb		97
75)	1,1,1,2-Tetrachloroethane	11.811	131	60669	9.16	ppb		95
76)	Chlorobenzene	11.730	112	165466	9.10	ppb		99
77)	1-Chlorohexane	11.699	91	75160	8.29	ppb		96
78)	Ethylbenzene	11.811	91	279108	9.24	ppb		98
79)	m+p-Xylene	11.912	106	215992	17.78	ppb		97
80)	Bromoform	12.429	173	32631	8.86	ppb		91
81)	Styrene	12.256	104	181151	8.90	ppb		97
82)	o-Xylene	12.246	106	110345	9.24	ppb		93
83)	Isopropylbenzene	12.550	105	268125	9.31	ppb		97
86)	1,1,2,2-Tetrachloroethane	12.793	83	50137	8.65	ppb		92
87)	trans-1,4-Dichloro-2-b...	12.823	53	10892	8.26	ppb		79
88)	Bromobenzene	12.834	156	70713	9.07	ppb		88
89)	1,2,3-Trichloropropane	12.854	110	14762	9.26	ppb		93
90)	n-Propylbenzene	12.884	91	313502	9.99	ppb		97
91)	2-Chlorotoluene	12.975	126	67157	9.41	ppb		93
92)	4-Chlorotoluene	13.077	126	66474	9.10	ppb		91
93)	1,3,5-Trimethylbenzene	13.026	105	225185	9.67	ppb		100
94)	tert-Butylbenzene	13.299	134	44860	9.02	ppb		93
95)	1,2,4-Trimethylbenzene	13.340	105	224498	9.81	ppb		97
96)	sec-Butylbenzene	13.472	105	257501	9.70	ppb		100
97)	1,3-Dichlorobenzene	13.593	146	129265	9.45	ppb		99
98)	1,4-Dichlorobenzene	13.674	146	126273	9.42	ppb		98
99)	p-Isopropyltoluene	13.593	119	216570	9.78	ppb		97
100)	1,2-Dichlorobenzene	13.968	146	120092	9.63	ppb		99
101)	n-Butylbenzene	13.917	91	200329	9.92	ppb		99
102)	1,2-Dibromo-3-chloropr...	14.585	75	8321	9.74	ppb		94
103)	Hexachloroethane	14.201	201	28035	7.71	ppb	#	84
104)	1,2,4-Trichlorobenzene	15.254	180	78576	10.23	ppb		97
105)	Naphthalene	15.497	128	146164	10.77	ppb		98

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Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
106) Hexachlorobutadiene	15.365	225	31533	9.33	ppb	93
107) 1,2,3-Trichlorobenzene	15.699	180	64710	10.32	ppb	93

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

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