GC/MS Volatiles

Case Narrative

COGCC

Complaint 200444807

Work Order Number: 1802032

1. This report consists of 1 water sample. The sample was received cool and intact by ALS on 02/02/18.

   The water sample was free of headspace prior to analysis.

   The sample had a pH < 2 at the time of analysis.

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

3. The sample was 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 with the exceptions of dichlorodifluoromethane and chloroethane which were low. These compounds were not detected in the associated sample.

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.

All method blank criteria were met.

8. All laboratory control sample and laboratory control sample duplicate recoveries and RPDs were within the acceptance criteria.

9. A matrix spike and matrix spike duplicate were not performed because of insufficient sample. A laboratory control sample and laboratory control sample duplicate were performed instead.

10. The sample was 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

2/9/18
Date

Organics Final Data Reviewer

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
Data Qualifier Flags
Fuels

G: **This flag indicates that a pattern resembling gasoline was detected in this sample.**

D: **This flag indicates that a pattern resembling diesel was detected in this sample.**

M: **This flag indicates that a pattern resembling motor oil was detected in this sample.**

C: **This flag indicates that a pattern resembling crude oil was detected in this sample.**

4: **This flag indicates that a pattern resembling JP-4 was detected in this sample.**

5: **This flag indicates that a pattern resembling JP-5 was detected in this sample.**

H: **This flag indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.**

L: **This flag indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.**

Z: **This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:**
gasoline
JP-8
diesel
mineral spirits
motor oil
Stoddard solvent
bunker C

Multiple flags may be used to indicate the presence of more than one product or component.

ALS -- Fort Collins

Sample Number(s) Cross-Reference Table

OrderNum: 1802032
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	1802032-1		WATER	02-Feb-18	9:11

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 #
1802032

TURNAROUND TIME	14 days	SAMPLER	PAG	PAGE	1 of 1
	4 business days if possible			DISPOSAL	BY LAB or

PROJECT NAME	Complaint 200444807	SITE ID		PARAMETER/METHOD REQUEST FOR ANALYSIS	
PROJECT No.		EDD FORMAT	COGCC		
		PURCHASE ORDER	GAE-2018-0302	A	8260 extended list with oxygenates (plus TICs) & 8260GRC
COMPANY NAME	Colorado Oil & Gas Conservation Commission	BILL TO COMPANY		B	
SEND REPORT TO	Peter Gintautas	INVOICE ATTN TO		C	
ADDRESS	1120 Lincoln St., Suite 801	ADDRESS		D	
CITY / STATE / ZIP	Denver, CO 80203	CITY / STATE / ZIP		E	
PHONE	719-679-1326	PHONE		F	
FAX		FAX		G	
E-MAIL	peter.gintautas@state.co.us	E-MAIL		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	2/2/18	09:11	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	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	2/2/2018	13:25
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

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 #	
1802032	
PAGE	1 of 1
DISPOSAL	BY LAB or RETURN

PROJECT NAME	LOGC Logfest	TURNAROUND TIME	4 workdays if possible	SAMPLER	PAC
PROJECT No.		SITE ID		EDD FORMAT	
		PURCHASE ORDER			
COMPANY NAME	Colo. Oil + Gas Cons. Comm.	BILL TO COMPANY			
SEND REPORT TO	Peter Gintautas	INVOICE ATTN TO			
ADDRESS		ADDRESS			
CITY / STATE / ZIP	Denver CO 80203	CITY / STATE / ZIP			
PHONE	719-629-1326	PHONE			
FAX		FAX			
E-MAIL	peter.gintautas@state.co.us	E-MAIL			

PARAMETER/METHOD REQUEST FOR ANALYSIS

A	8260 extended list + HCs
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)	15722 D. Harsimeson Excavation	W	2Feb16	09:11	3	HCl		X										

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

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

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	PAC	Peter Gintautas	2Feb16	13:25
RECEIVED BY	Joe Kostelnik	Joe Kostelnik	2-2-16	13:35
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC Workorder No: 1802032

Project Manager: ko Initials: COT Date: 2-2-18

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) see notes	(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 (#3) #4	RAD ONLY	(YES)	NO

Cooler #:	1							
Temperature (°C):	3.0							
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.

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

Project Manager Signature / Date: [signature] 2/2/18

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

Form 201r24.xls (06/04/2012)

GC/MS Volatiles

Method SW8260_25C

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 08-Feb-18
Date Analyzed: 08-Feb-18

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79728

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
8006-61-9	GASOLINE RANGE ORGANICS	1	100	U	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-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	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	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

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 08-Feb-18
Date Analyzed: 08-Feb-18

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79728

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
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	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

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 08-Feb-18
Date Analyzed: 08-Feb-18

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79728

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
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	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: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Method Blank

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 08-Feb-18
Date Analyzed: 08-Feb-18

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79728

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	25.6		25	102	85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	24.9		25	100	84 - 118
2037-26-5	TOLUENE-D8	24.6		25	98	85 - 115

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25

Tentatively Identified Compounds

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID:
Lab ID: VL180208-3MB

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 08-Feb-18
Date Analyzed: 08-Feb-18

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 10 ml
Final Volume: 10 ml
Clean DF: 1
File Name: C79728

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

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1802032-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 02-Feb-18
Date Extracted: 08-Feb-18
Date Analyzed: 08-Feb-18
Prep Method: SW5030 Rev C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: As Received
File Name: C79731

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	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
8006-61-9	GASOLINE RANGE ORGANICS	1	100	U	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	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	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	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

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1802032-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 02-Feb-18
Date Extracted: 08-Feb-18
Date Analyzed: 08-Feb-18
Prep Method: SW5030 Rev C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: As Received
File Name: C79731

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	0.64	J	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

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1802032-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 02-Feb-18
Date Extracted: 08-Feb-18
Date Analyzed: 08-Feb-18
Prep Method: SW5030 Rev C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: As Received
File Name: C79731

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	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
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: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Sample Results

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1802032-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 02-Feb-18
Date Extracted: 08-Feb-18
Date Analyzed: 08-Feb-18
Prep Method: SW5030 Rev C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: As Received
File Name: C79731

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	24.7		25	99	85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	24.9		25	100	84 - 118
2037-26-5	TOLUENE-D8	24.7		25	99	85 - 115

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25

Tentatively Identified Compounds

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Field ID: 757228 Ditlev-Simonsen flo
Lab ID: 1802032-1

Sample Matrix: WATER
% Moisture: N/A
Date Collected: 02-Feb-18
Date Extracted: 08-Feb-18
Date Analyzed: 08-Feb-18

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 10 ml
Final Volume: 10 ml
Clean DF: 1
File Name: C79731

CASNO	Retention Time	Target Analyte	Dilution Factor	Result	Units	Qualifier
	1.25	SATURATED HYDROCARBON	1	1.2	UG/L	J

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-3LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 02/08/2018
Date Analyzed: 02/08/2018
Prep Method: SW5030C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79721

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	9.01	1		90	60 - 140%
108-87-2	METHYL CYCLOHEXANE	10	8.87	1		89	60 - 140%
71-36-3	N-BUTANOL	500	419	50		84	50 - 150%
75-65-0	TERT-BUTANOL	500	447	50		89	50 - 150%
75-71-8	DICHLORODIFLUOROMETHANE	10	7.84	1		78	63 - 125%
74-87-3	CHLOROMETHANE	10	9.09	1		91	73 - 122%
75-01-4	VINYL CHLORIDE	10	8.32	1		83	72 - 123%
74-83-9	BROMOMETHANE	10	9.11	1		91	68 - 123%
75-00-3	CHLOROETHANE	10	7.98	1		80	74 - 124%
75-69-4	TRICHLOROFLUOROMETHANE	10	9.89	1		99	74 - 124%
75-35-4	1,1-DICHLOROETHENE	10	9.86	1		99	77 - 119%
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETH	10	9.97	1		100	79 - 122%
67-64-1	ACETONE	40	37.2	10		93	62 - 142%
74-88-4	IODOMETHANE	10	11	1		110	72 - 126%
75-15-0	CARBON DISULFIDE	10	8.84	1		88	76 - 121%
75-09-2	METHYLENE CHLORIDE	10	9.33	1		93	71 - 130%
156-60-5	TRANS-1,2-DICHLOROETHENE	10	9.66	1		97	82 - 117%
1634-04-4	METHYL TERTIARY BUTYL ETHER	20	17.8	1		89	77 - 119%
75-34-3	1,1-DICHLOROETHANE	10	8.96	1		90	83 - 119%
108-05-4	VINYL ACETATE	10	8.69	2		87	76 - 121%
156-59-2	CIS-1,2-DICHLOROETHENE	10	9.73	1		97	83 - 117%
78-93-3	2-BUTANONE	40	35	10		87	70 - 135%
74-97-5	BROMOCHLOROMETHANE	10	10.2	1		102	83 - 121%
67-66-3	CHLOROFORM	10	9.55	1		96	82 - 119%
71-55-6	1,1,1-TRICHLOROETHANE	10	9.93	1		99	80 - 120%
594-20-7	2,2-DICHLOROPROPANE	10	10.3	1		103	83 - 125%

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-3LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 02/08/2018
Date Analyzed: 02/08/2018
Prep Method: SW5030C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79721

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	19.3	1		97	60 - 140%
56-23-5	CARBON TETRACHLORIDE	10	9.67	1		97	77 - 122%
563-58-6	1,1-DICHLOROPROPENE	10	9.68	1		97	84 - 118%
107-06-2	1,2-DICHLOROETHANE	10	9.25	1		92	74 - 128%
71-43-2	BENZENE	10	9.45	1		95	83 - 117%
79-01-6	TRICHLOROETHENE	10	9.73	1		97	83 - 117%
78-87-5	1,2-DICHLOROPROPANE	10	8.88	1		89	84 - 120%
74-95-3	DIBROMOMETHANE	10	9.76	1		98	79 - 122%
75-27-4	BROMODICHLOROMETHANE	10	9.58	1		96	76 - 122%
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	9.53	1		95	81 - 120%
108-10-1	4-METHYL-2-PENTANONE	40	35.1	10		88	73 - 125%
108-88-3	TOLUENE	10	10.2	1		102	82 - 113%
10061-02-6	TRANS-1,3-DICHLOROPROPENE	10	9.33	1		93	81 - 114%
79-00-5	1,1,2-TRICHLOROETHANE	10	9.58	1		96	78 - 116%
591-78-6	2-HEXANONE	40	36	10		90	71 - 124%
127-18-4	TETRACHLOROETHENE	10	10.4	1		104	84 - 117%
142-28-9	1,3-DICHLOROPROPANE	10	9.78	1		98	80 - 115%
124-48-1	DIBROMOCHLOROMETHANE	10	9.22	1		92	82 - 118%
106-93-4	1,2-DIBROMOETHANE	10	9.93	1		99	79 - 114%
544-10-5	1-CHLOROHEXANE	10	9.8	1		98	80 - 117%
108-90-7	CHLOROBENZENE	10	10.2	1		102	81 - 113%
630-20-6	1,1,1,2-TETRACHLOROETHANE	10	10.2	1		102	78 - 113%
100-41-4	ETHYLBENZENE	10	10.4	1		104	81 - 113%
179601-23-	M+P-XYLENE	20	20.4	1		102	82 - 115%
95-47-6	O-XYLENE	10	9.97	1		100	81 - 115%
100-42-5	STYRENE	10	9.74	1		97	78 - 118%
75-25-2	BROMOFORM	10	9.66	1		97	70 - 120%

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-3LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 02/08/2018
Date Analyzed: 02/08/2018
Prep Method: SW5030C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79721

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	10.2	1		102	80 - 113%
96-18-4	1,2,3-TRICHLOROPROPANE	10	9.39	1		94	78 - 117%
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	9.3	1		93	75 - 121%
108-86-1	BROMOBENZENE	10	10	1		100	81 - 114%
103-65-1	N-PROPYLBENZENE	10	9.6	1		96	79 - 116%
95-49-8	2-CHLOROTOLUENE	10	10	1		100	79 - 116%
108-67-8	1,3,5-TRIMETHYLBENZENE	10	9.36	1		94	78 - 116%
106-43-4	4-CHLOROTOLUENE	10	9.84	1		98	78 - 115%
98-06-6	TERT-BUTYLBENZENE	10	9.53	1		95	76 - 120%
95-63-6	1,2,4-TRIMETHYLBENZENE	10	9.68	1		97	80 - 117%
135-98-8	SEC-BUTYLBENZENE	10	9.79	1		98	78 - 115%
541-73-1	1,3-DICHLOROBENZENE	10	9.84	1		98	79 - 115%
99-87-6	P-ISOPROPYLTOLUENE	10	9.74	1		97	77 - 116%
106-46-7	1,4-DICHLOROBENZENE	10	9.77	1		98	82 - 114%
104-51-8	N-BUTYLBENZENE	10	9.93	1		99	79 - 117%
95-50-1	1,2-DICHLOROBENZENE	10	10.1	1		101	82 - 114%
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	10	9.69	2		97	73 - 125%
120-82-1	1,2,4-TRICHLOROBENZENE	10	9.93	1		99	75 - 120%
87-68-3	HEXACHLOROBUTADIENE	10	9.31	1		93	71 - 124%
91-20-3	NAPHTHALENE	10	9.61	1		96	71 - 131%
87-61-6	1,2,3-TRICHLOROBENZENE	10	10	1		100	70 - 131%
123-91-1	1,4-DIOXANE	200	190	100		95	50 - 150%
64-17-5	ETHANOL	200	179	40		89	50 - 150%
78-83-1	ISOBUTYL ALCOHOL	200	166	40		83	50 - 150%

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-3LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 02/08/2018
Date Analyzed: 02/08/2018
Prep Method: SW5030C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79722

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	8.89	1		89	30	1
108-87-2	METHYL CYCLOHEXANE	10	8.66	1		87	30	2
71-36-3	N-BUTANOL	500	436	50		87	30	4
75-65-0	TERT-BUTANOL	500	469	50		94	30	5
75-71-8	DICHLORODIFLUOROMETHANE	10	7.72	1		77	20	1
74-87-3	CHLOROMETHANE	10	8.37	1		84	20	8
75-01-4	VINYL CHLORIDE	10	7.99	1		80	20	4
74-83-9	BROMOMETHANE	10	8.45	1		85	20	8
75-00-3	CHLOROETHANE	10	8.27	1		83	20	4
75-69-4	TRICHLOROFLUOROMETHANE	10	9.55	1		96	20	3
75-35-4	1,1-DICHLOROETHENE	10	9.38	1		94	20	5
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETH	10	9.58	1		96	20	4
67-64-1	ACETONE	40	37.6	10		94	30	1
74-88-4	IODOMETHANE	10	11	1		110	20	0
75-15-0	CARBON DISULFIDE	10	8.51	1		85	20	4
75-09-2	METHYLENE CHLORIDE	10	9.08	1		91	20	3
156-60-5	TRANS-1,2-DICHLOROETHENE	10	9.76	1		98	20	1
1634-04-4	METHYL TERTIARY BUTYL ETHER	20	19	1		95	20	6
75-34-3	1,1-DICHLOROETHANE	10	8.82	1		88	20	2
108-05-4	VINYL ACETATE	10	8.15	2		81	20	6
156-59-2	CIS-1,2-DICHLOROETHENE	10	9.46	1		95	20	3
78-93-3	2-BUTANONE	40	36.1	10		90	30	3
74-97-5	BROMOCHLOROMETHANE	10	9.99	1		100	20	2
67-66-3	CHLOROFORM	10	9.04	1		90	20	6
71-55-6	1,1,1-TRICHLOROETHANE	10	9.53	1		95	20	4
594-20-7	2,2-DICHLOROPROPANE	10	10.1	1		101	20	2
110-82-7	CYCLOHEXANE	20	18.7	1		94	30	3

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-3LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 02/08/2018
Date Analyzed: 02/08/2018
Prep Method: SW5030C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79722

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	9.41	1		94	20	3
563-58-6	1,1-DICHLOROPROPENE	10	9.24	1		92	20	5
107-06-2	1,2-DICHLOROETHANE	10	8.87	1		89	20	4
71-43-2	BENZENE	10	8.97	1		90	20	5
79-01-6	TRICHLOROETHENE	10	9.88	1		99	20	2
78-87-5	1,2-DICHLOROPROPANE	10	9.01	1		90	20	1
74-95-3	DIBROMOMETHANE	10	9.47	1		95	20	3
75-27-4	BROMODICHLOROMETHANE	10	9.28	1		93	20	3
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	9.34	1		93	20	2
108-10-1	4-METHYL-2-PENTANONE	40	36.5	10		91	30	4
108-88-3	TOLUENE	10	9.88	1		99	20	3
10061-02-6	TRANS-1,3-DICHLOROPROPENE	10	9.88	1		99	20	6
79-00-5	1,1,2-TRICHLOROETHANE	10	9.89	1		99	20	3
591-78-6	2-HEXANONE	40	34.6	10		86	30	4
127-18-4	TETRACHLOROETHENE	10	10.2	1		102	20	2
142-28-9	1,3-DICHLOROPROPANE	10	9.5	1		95	20	3
124-48-1	DIBROMOCHLOROMETHANE	10	9.32	1		93	20	1
106-93-4	1,2-DIBROMOETHANE	10	10.1	1		101	20	2
544-10-5	1-CHLOROHEXANE	10	9.49	1		95	20	3
108-90-7	CHLOROBENZENE	10	9.66	1		97	20	5
630-20-6	1,1,1,2-TETRACHLOROETHANE	10	9.83	1		98	20	4
100-41-4	ETHYLBENZENE	10	9.48	1		95	20	9
179601-23-	M+P-XYLENE	20	19.2	1		96	20	6
95-47-6	O-XYLENE	10	9.94	1		99	20	0
100-42-5	STYRENE	10	9.98	1		100	20	2
75-25-2	BROMOFORM	10	9.56	1		96	20	1
98-82-8	ISOPROPYLBENZENE	10	9.62	1		96	20	6

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-3LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 02/08/2018
Date Analyzed: 02/08/2018
Prep Method: SW5030C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-3
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79722

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	1
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	9.59	1		96	20	3
108-86-1	BROMOBENZENE	10	9.87	1		99	20	2
103-65-1	N-PROPYLBENZENE	10	9.52	1		95	20	1
95-49-8	2-CHLOROTOLUENE	10	9.65	1		96	20	4
108-67-8	1,3,5-TRIMETHYLBENZENE	10	9.24	1		92	20	1
106-43-4	4-CHLOROTOLUENE	10	9.31	1		93	20	6
98-06-6	TERT-BUTYLBENZENE	10	9.45	1		95	20	1
95-63-6	1,2,4-TRIMETHYLBENZENE	10	9.24	1		92	20	5
135-98-8	SEC-BUTYLBENZENE	10	9.41	1		94	20	4
541-73-1	1,3-DICHLOROBENZENE	10	9.31	1		93	20	5
99-87-6	P-ISOPROPYLTOLUENE	10	9.01	1		90	20	8
106-46-7	1,4-DICHLOROBENZENE	10	9.72	1		97	20	1
104-51-8	N-BUTYLBENZENE	10	8.94	1		89	20	10
95-50-1	1,2-DICHLOROBENZENE	10	9.33	1		93	20	8
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	10	9.86	2		99	20	2
120-82-1	1,2,4-TRICHLOROBENZENE	10	10.3	1		103	20	3
87-68-3	HEXACHLOROBUTADIENE	10	9.41	1		94	20	1
91-20-3	NAPHTHALENE	10	9.86	1		99	20	3
87-61-6	1,2,3-TRICHLOROBENZENE	10	10.6	1		106	20	5
123-91-1	1,4-DIOXANE	200	213	100		106	30	11
64-17-5	ETHANOL	200	183	40		91	30	2
78-83-1	ISOBUTYL ALCOHOL	200	176	40		88	30	6

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: **ALS -- Fort Collins**
Work Order Number: 1802032
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	101		98		85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	25	99		100		84 - 118
2037-26-5	TOLUENE-D8	25	103		102		85 - 115

Data Package ID: *VL1802032-1*

GC/MS Volatiles

Method SW8260_25C

Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins
Work Order Number: 1802032
Client Name: COGCC
ClientProject ID: Complaint 200444807

Lab ID: VL180208-6LCS

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 02/08/2018
Date Analyzed: 02/08/2018
Prep Method: SW5030C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-4
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79724

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	902	100		90	80 - 120%

Lab ID: VL180208-6LCSD

Sample Matrix: WATER
% Moisture: N/A
Date Collected: N/A
Date Extracted: 02/08/2018
Date Analyzed: 02/08/2018
Prep Method: SW5030C

Prep Batch: VL180208-3
QCBatchID: VL180208-3-4
Run ID: VL180208-3A
Cleanup: NONE
Basis: N/A
File Name: C79725

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	952	100		95	20	5

Data Package ID: *VL1802032-1*

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2018\020818\C79728.D Vial: 11
Acq On : 8 Feb 2018 12:31 pm Operator: JK-sop525r16
Sample : VL180208-3MB Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 8 12:56 2018 Quant Results File: 012418W.RES

Quant Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration
DataAcq Meth : 012418W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	5.17	96	1760927	25.00	ppb	0.00
58) Chlorobenzene-d5	8.78	82	726427	25.00	ppb	0.00
78) 1,4-Dichlorobenzene-d4	11.03	152	470277	25.00	ppb	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	4.43	113	488309	24.89	ppb	0.01
Spiked Amount 25.000	Range 85 - 115		Recovery = 99.56%			
42) 1,2-dichloroethane-d4	4.81	65	485510	23.69	ppb	0.01
Spiked Amount 25.000	Range 85 - 115		Recovery = 94.76%			
59) Toluene-d8	7.04	98	1441130	24.62	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 98.48%			
79) 4-Bromofluorobenzene	10.00	95	500764	25.58	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 102.32%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
C79728.D 012418W.M Fri Feb 09 07:51:12 2018 2/12-9-18

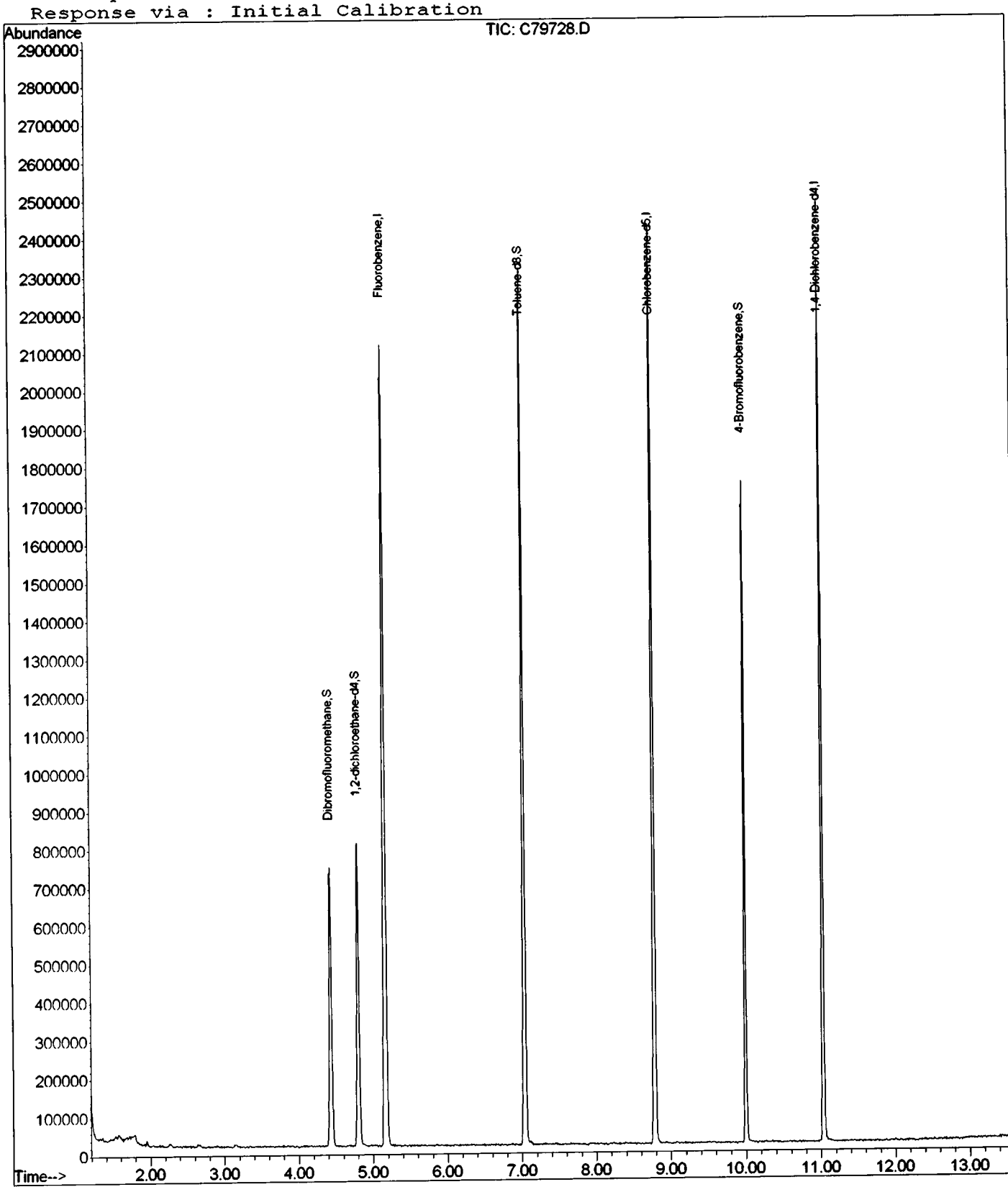
Quantitation Report

Data File : C:\HPCHEM\1\DATA\2018\020818\C79728.D
Acq On : 8 Feb 2018 12:31 pm
Sample : VL180208-3MB
Misc : 8260 - 10mL water
MS Integration Params: rteint.p
Quant Time: Feb 8 12:56 2018

Vial: 11
Operator: JK-sop525r16
Inst : CSS Instr
Multiplr: 1.00

Quant Results File: 012418W.RES

Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration



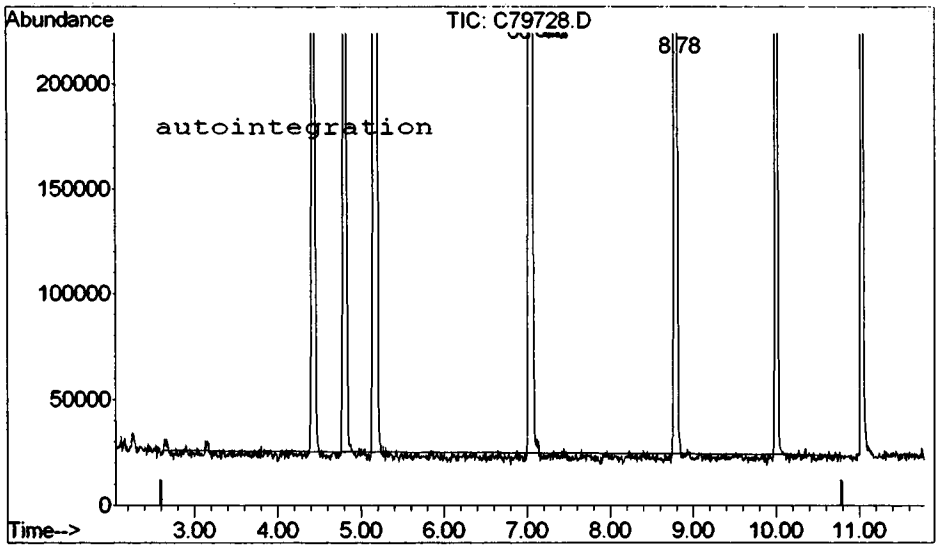
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2018\020818\C79728.D Vial: 11
Acq On : 8 Feb 2018 12:31 pm Operator: JK-sop525r16
Sample : VL18020[illegible]-3MB Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Feb 8 12:55 2018 Quant Results File: 013018GR.RES

Quant Method : C:\HPCHEM\1\METHODS\013018GR.M (RTE Integrator)
Title : GC/MS Volatiles (S.O.P. 525)
Last Update : Wed Jan 31 11:03:58 2018
Response via : Initial Calibration
DataAcq Meth : 012418W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) 1,4-Dichlorobenzene-d4	0.00	TIC	0m	25.00	ppb	-11.03
System Monitoring Compounds						
3) 4-Bromofluorobenzene	0.00	TIC	0d	0.00	ppb	
Spiked Amount 25.000	Range 85 - 115		Recovery =	0.00%#		
Target Compounds						Qvalue
1) GRO	8.78	TIC	18804514m	Below Cal		

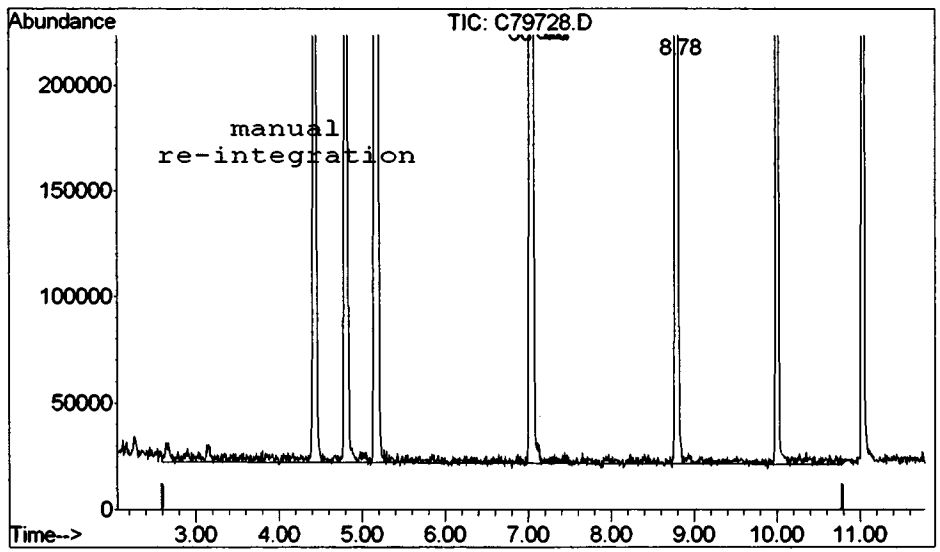
(#) = qualifier out of range (m) = manual integration
C79728.D 013018GR.M Thu Feb 08 12:55:42 2018



TIC: C79728.D

(1) GRO (H)
7.13min -81.72ppb m
response 16283244

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: JR date: 2/9/12

TIC: C79728.D

(1) GRO (H)
8.78min -58.13ppb m
response 18804514

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

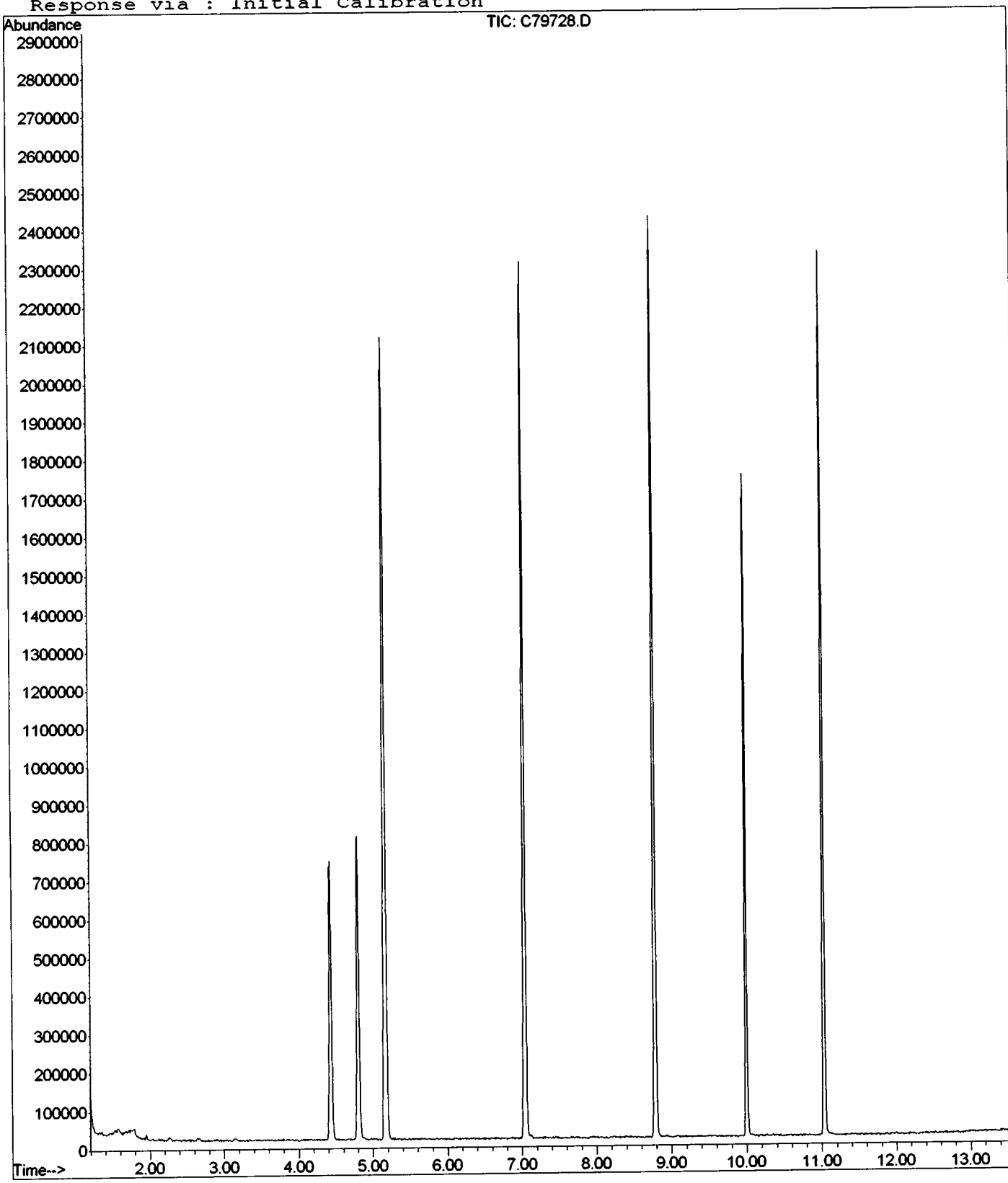
Quantitation Report

Data File : C:\HPCHEM\1\DATA\2018\020818\C79728.D
Acq On : 8 Feb 2018 12:31 pm
Sample : VL180206-3MB
Misc : 8260 - 10mL water
MS Integration Params: ettics.p
Quant Time: Feb 8 12:55 2018

Vial: 11
Operator: JK-sop525r16
Inst : CSS Instr
Multiplr: 1.00

Quant Results File: 013018GR.RES

Method : C:\HPCHEM\1\METHODS\013018GR.M (RTE Integrator)
Title : GC/MS Volatiles (S.O.P. 525)
Last Update : Wed Jan 31 11:03:58 2018
Response via : Initial Calibration



Tentatively Identified Compound (LSC) summary

Operator ID: JK-sop525r16 Date Acquired: 8 Feb 2018 12:31 pm
Data File: C:\HPCHEM\1\DATA\2018\020818\C79728.D
Name: VL180208-3MB
Misc: 8260 - 10mL water
Method: C:\HPCHEM\1\METHODS\012418W.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

C79728.D 012418W.M Fri Feb 09 08:33:21 2018

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2018\020818\C79731.D Vial: 14
Acq On : 8 Feb 2018 1:34 pm Operator: JK-sop525r16
Sample : 1802032-1 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 8 13:50 2018 Quant Results File: 012418W.RES

Quant Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration
DataAcq Meth : 012418W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	5.17	96	1704554	25.00	ppb	0.01
58) Chlorobenzene-d5	8.78	82	739083	25.00	ppb	0.00
78) 1,4-Dichlorobenzene-d4	11.03	152	490143	25.00	ppb	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	4.43	113	473516	24.94	ppb	0.02
Spiked Amount 25.000	Range 85 - 115		Recovery = 99.76%			
42) 1,2-dichloroethane-d4	4.81	65	490233	24.71	ppb	0.02
Spiked Amount 25.000	Range 85 - 115		Recovery = 98.84%			
59) Toluene-d8	7.04	98	1468983	24.67	ppb	0.01
Spiked Amount 25.000	Range 85 - 115		Recovery = 98.68%			
79) 4-Bromofluorobenzene	9.99	95	504821	24.74	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 98.96%			
Target Compounds						Qvalue
45) Benzene	4.83	78	57734	0.64	ppb	97

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

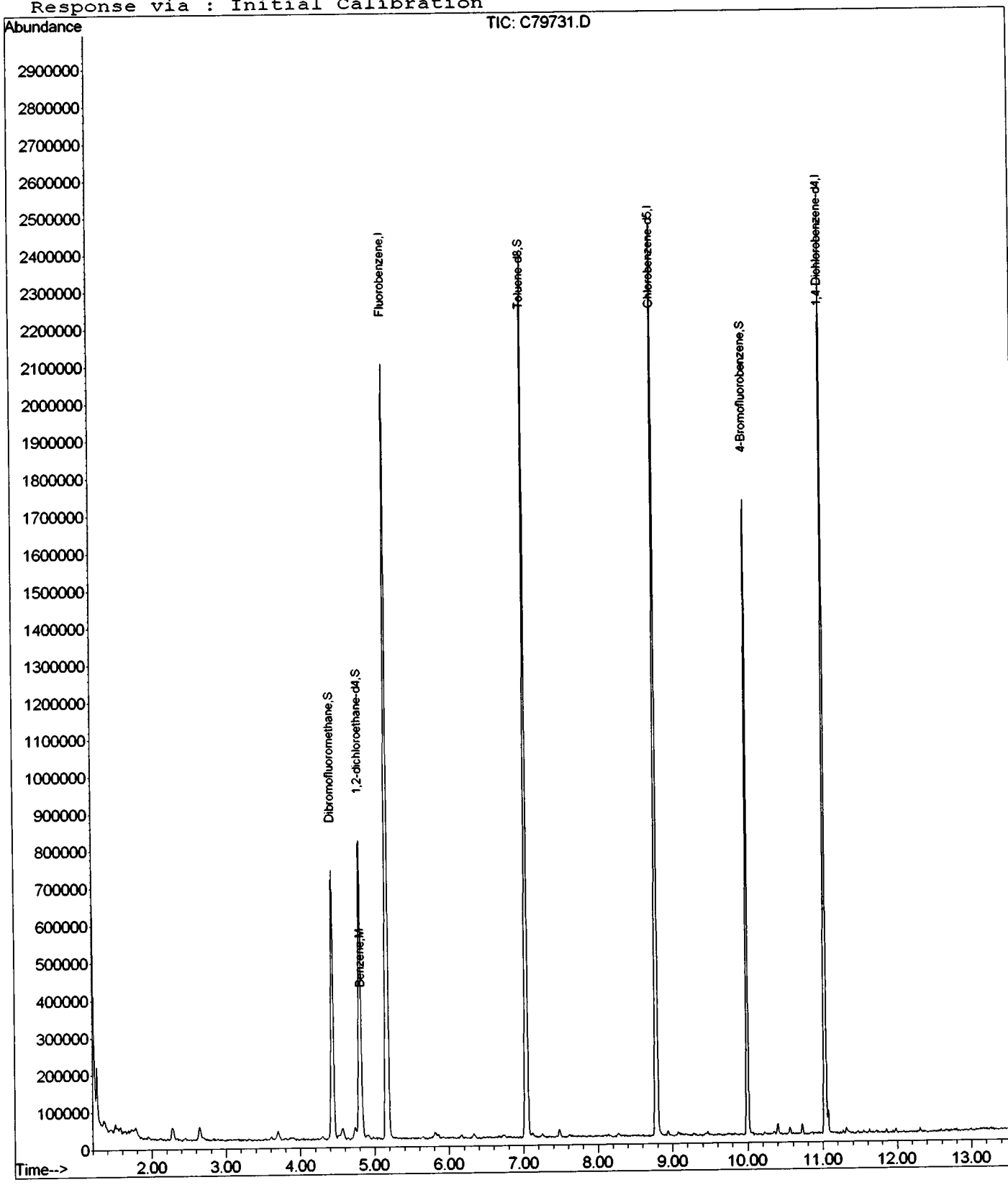
Quantitation Report

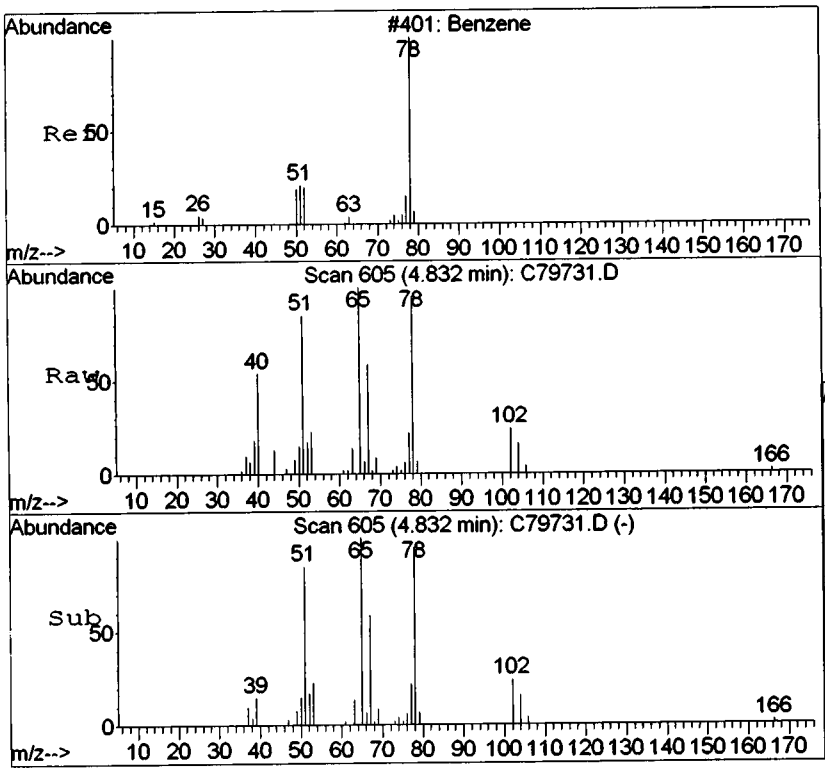
Data File : C:\HPCHEM\1\DATA\2018\020818\C79731.D
Acq On : 8 Feb 2018 1:34 pm
Sample : 1802032-1
Misc : 8260 - 10mL water
MS Integration Params: rteint.p
Quant Time: Feb 8 13:50 2018

Vial: 14
Operator: JK-sop525r16
Inst : CSS Instr
Multiplr: 1.00

Quant Results File: 012418W.RES

Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration

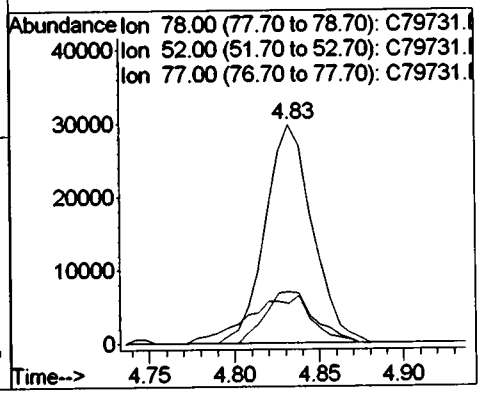




#45
Benzene
Concen: 0.64 ppb
RT: 4.83 min Scan# 605
Delta R.T. 0.01 min
Lab File: C79731.D
Acq: 8 Feb 2018 1:34 pm

Tgt Ion: 78 Resp: 57734

Ion	Ratio	Lower	Upper
78	100		
52	18.0	12.4	29.0
77	23.4	14.2	33.0



Library Search Compound Report

Data File : C:\HPCHEM\1\DATA\2018\020818\C79731.D
Acq On : 8 Feb 2018 1:34 pm
Sample : 1802032-1
Misc : 8260 - 10mL water
MS Integration Params: ETTICS.P

Vial: 14
Operator: JK-sop525r16
Inst : CSS Instr
Multiplr: 1.00

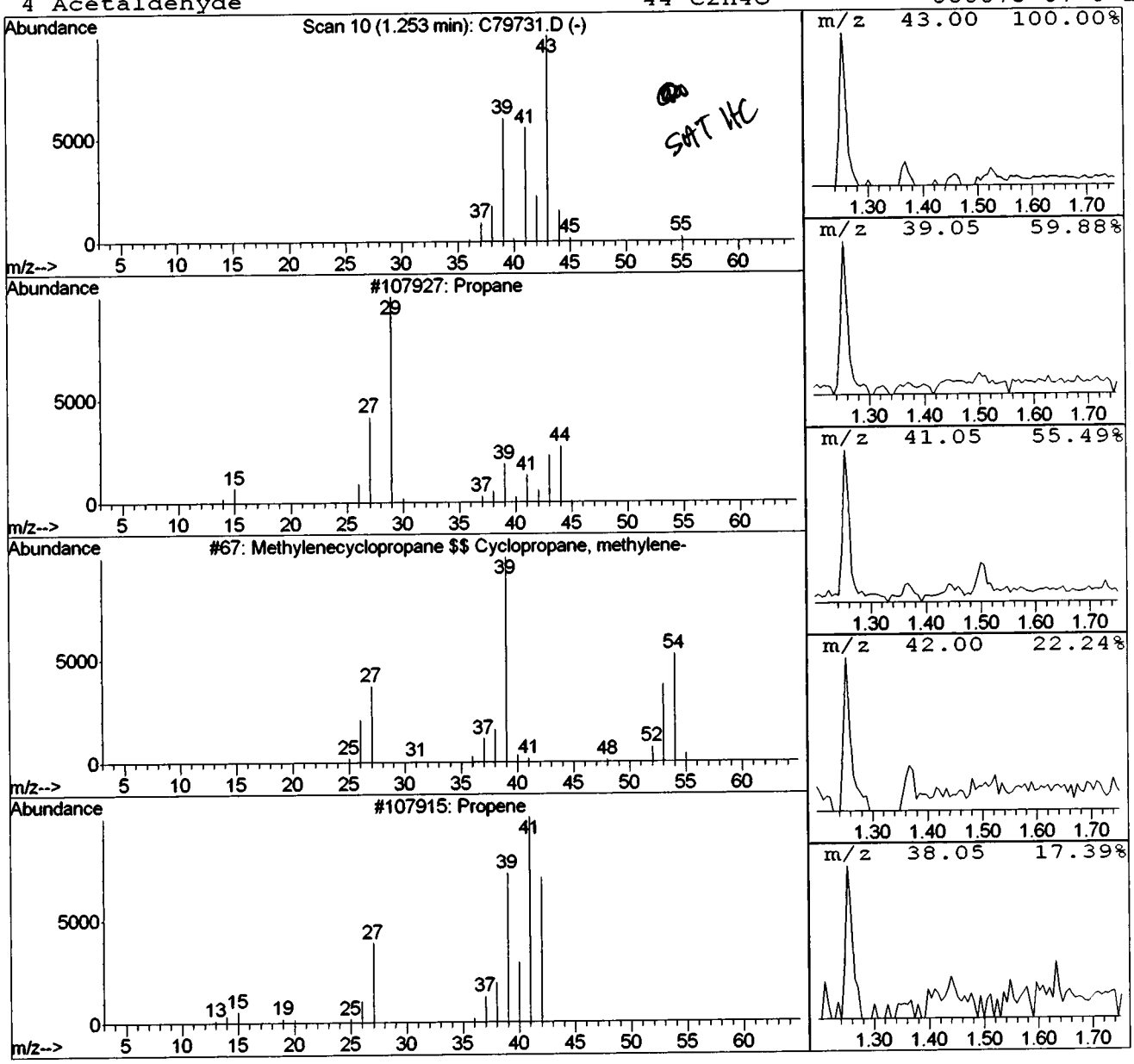
Quant Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Library : C:\DATABASE\NIST129k.l

****

Peak Number 1 Propane — Concentration Rank 1

R.T.	EstConc	Area	Relative to ISTD	R.T.
1.25	1.15 ppb	188407	Fluorobenzene	5.17

Hit# of 5	Tentative ID	MW	MolForm	CAS#	Qual
1	Propane	44	C3H8	000074-98-6	9
2	Methylenecyclopropane $$ Cyclopropa	54	C4H6	006142-73-0	4
3	Propene	42	C3H6	000115-07-1	4
4	Acetaldehyde	44	C2H4O	000075-07-0	2



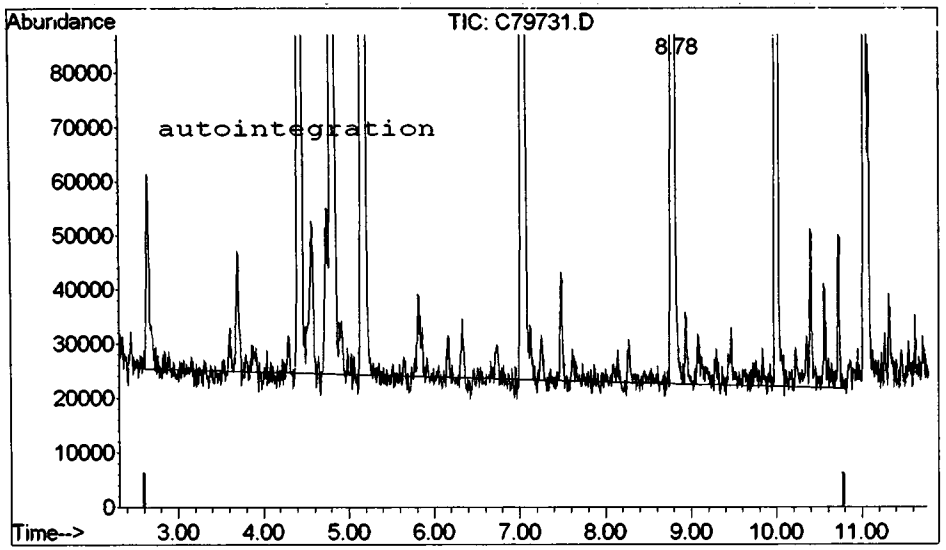
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2018\020818\C79731.D Vial: 14
Acq On : 8 Feb 2018 1:34 pm Operator: JK-sop525r16
Sample : 1802032-1 Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Feb 8 13:49 2018 Quant Results File: 013018GR.RES

Quant Method : C:\HPCHEM\1\METHODS\013018GR.M (RTE Integrator)
Title : GC/MS Volatiles (S.O.P. 525)
Last Update : Wed Jan 31 11:03:58 2018
Response via : Initial Calibration
DataAcq Meth : 012418W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) 1,4-Dichlorobenzene-d4	11.03	TIC	3188200	25.00	ppb	0.00
System Monitoring Compounds						
3) 4-Bromofluorobenzene	10.00	TIC	2472309	23.37	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 93.48%			
Target Compounds						Qvalue
1) GRO	8.78	TIC	19490190m	Below Cal		

(#) = qualifier out of range (m) = manual integration
C79731.D 013018GR.M Thu Feb 08 13:49:53 2018 Page 1



TIC: C79731.D

(1) GRO (H)
7.13min -73.46ppb m
response 17166540

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

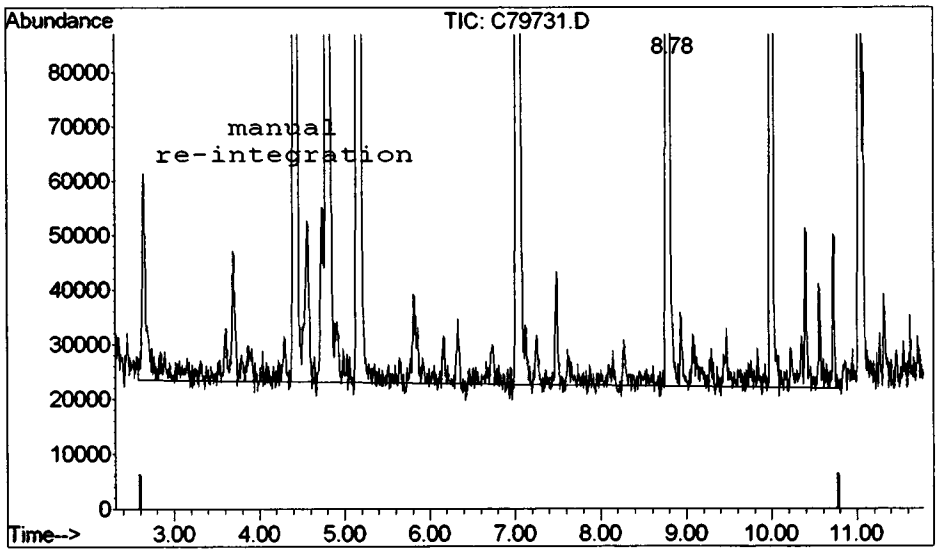
[ ] peak saturation (detector shutdown)

[ ] over-integrated peak's area

[✓] under-integrated peak's area

[ ] other (_____)

initials: JLC date: 2 / 8 / 12



TIC: C79731.D

(1) GRO (H)
8.78min -51.72ppb m
response 19490190

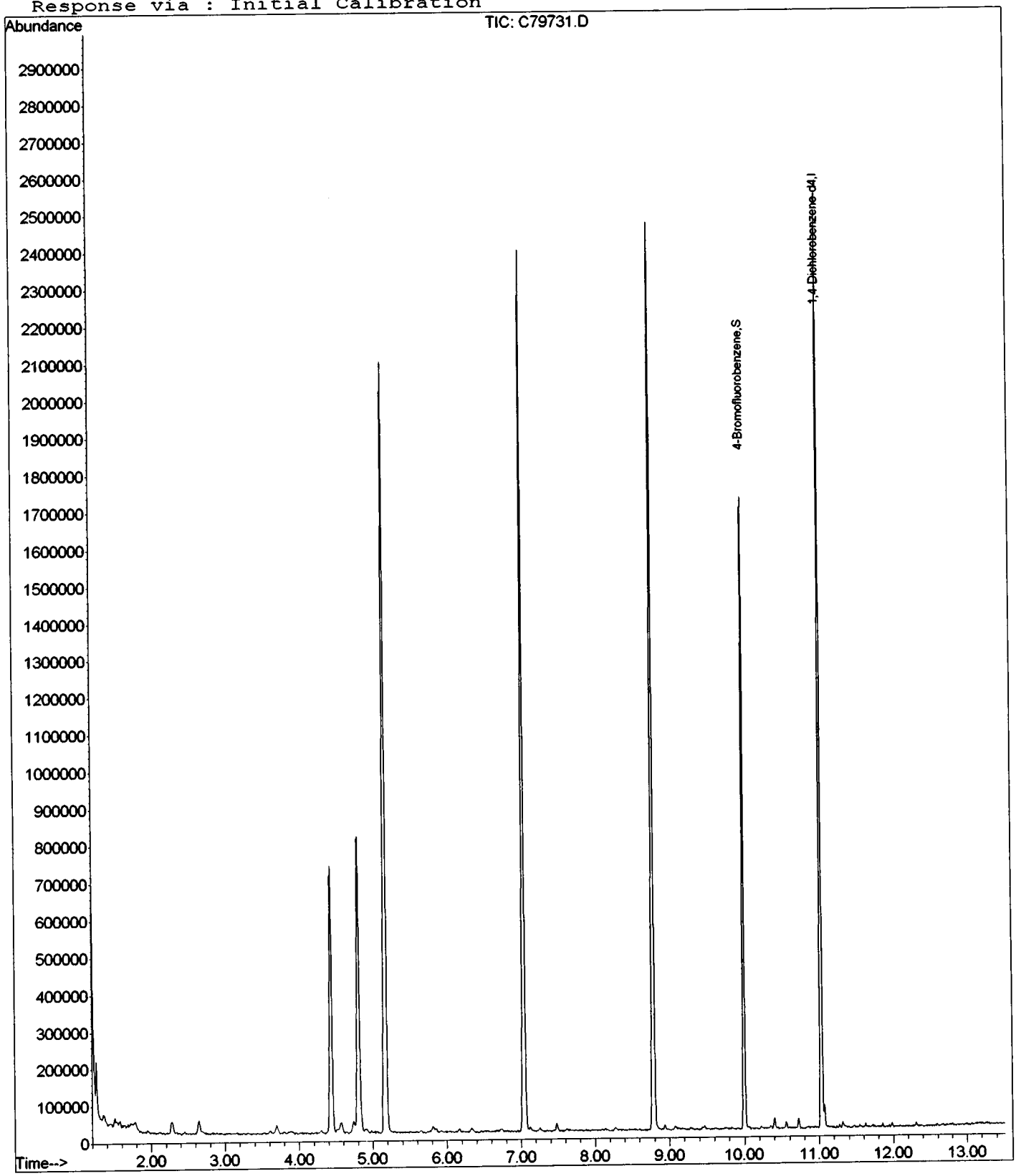
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2018\020818\C79731.D
Acq On : 8 Feb 2018 1:34 pm
Sample : 1802032-1
Misc : 8260 - 10mL water
MS Integration Params: ettics.p
Quant Time: Feb 8 13:49 2018

Vial: 14
Operator: JK-sop525r16
Inst : CSS Instr
Multiplr: 1.00
Quant Results File: 013018GR.RES

Method : C:\HPCHEM\1\METHODS\013018GR.M (RTE Integrator)
Title : GC/MS Volatiles (S.O.P. 525)
Last Update : Wed Jan 31 11:03:58 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\2018\020818\C79721.D Vial: 4
Acq On : 8 Feb 2018 10:01 am Operator: JK-sop525r16
Sample : VL180208-3CCS Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 8 10:21 2018 Quant Results File: 012418W.RES

Quant Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration
DataAcq Meth : 012418W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	5.16	96	1744398	25.00	ppb	0.00
58) Chlorobenzene-d5	8.78	82	719336	25.00	ppb	0.00
78) 1,4-Dichlorobenzene-d4	11.02	152	510253	25.00	ppb	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	4.42	113	479224	24.66	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 98.64%			
42) 1,2-dichloroethane-d4	4.80	65	491882	24.23	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 96.92%			
59) Toluene-d8	7.03	98	1494125	25.78	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 103.12%			
79) 4-Bromofluorobenzene	9.99	95	534503	25.16	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 100.64%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.27	85	220745	7.84	ppb	97
3) Chloromethane	1.39	50	489868	9.09	ppb	99
4) Vinyl chloride	1.45	62	299207	8.32	ppb	97
5) Bromomethane	1.66	96	160020	9.11	ppb	94
6) Chloroethane	1.73	64	135252	7.98	ppb	98
7) Trichlorofluoromethane	1.89	101	221393	9.89	ppb	97
8) Ethanol	1.96	45	59385	178.66	ppb	93
9) Diethyl Ether	2.07	59	181338	9.42	ppb	96
10) Acrolein	2.17	56	412646	94.05	ppb	98
11) 1,1,2-Trichloro-1,2,2-trif	2.25	101	176919	9.97	ppb	98
12) 1,1-Dichloroethene	2.25	96	172161	9.86	ppb	90
13) Acetone	2.26	43	229996	37.25	ppb	99
14) Iodomethane	2.38	142	232420	10.99	ppb	96
15) Carbon Disulfide	2.44	76	771573	8.84	ppb	99
16) Methyl Acetate	2.50	43	198546	8.48	ppb	97
17) Allyl chloride	2.53	76	137684	9.33	ppb	96
18) Acetonitrile	2.48	41	333408	93.48	ppb	97
19) Methylene chloride	2.64	84	241651	9.33	ppb	97
20) tert-Butanol	2.68	59	845608	447.48	ppb	98
21) Methyl-t-butyl-ether	2.86	73	876568	17.82	ppb	100
22) trans-1,2-Dichloroethene	2.88	96	185558	9.66	ppb	92
23) Acrylonitrile	2.82	53	798133	92.08	ppb	99
24) Hexane	3.14	57	232049	9.01	ppb	95
25) Isopropyl ether	3.32	45	1184998	8.98	ppb	99
26) Vinyl Acetate	3.29	86	28486	8.69	ppb	75
27) 1,1-Dichloroethane	3.30	63	491069	8.96	ppb	98
28) Chloroprene	3.38	53	322802	8.73	ppb	96
29) Ethyl tert-butyl ether	3.70	59	727924	9.12	ppb	99
30) 2,2-Dichloropropane	3.90	77	266485	10.28	ppb	97
31) 2-Butanone	3.86	43	450352	34.97	ppb	98
32) cis-1,2-Dichloroethene	3.89	96	210331	9.73	ppb	98
33) Propionitrile	3.93	54	266359	87.03	ppb	99
34) Methacrylonitrile	4.10	67	69135	8.50	ppb	100
35) Bromochloromethane	4.14	128	96828	10.23	ppb	97
36) Chloroform	4.25	83	361229	9.55	ppb	96
38) 1,1,1-Trichloroethane	4.44	97	208605	9.93	ppb	95
39) Cyclohexane	4.51	84	486458	19.31	ppb	96
40) Carbon tetrachloride	4.60	117	165263	9.67	ppb	98
41) 1,1-Dichloropropene	4.60	75	301016	9.68	ppb	98
43) Isobutyl alcohol	4.71	43	191166	165.96	ppb	98

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

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\2018\020818\C79721.D Vial: 4
Acq On : 8 Feb 2018 10:01 am Operator: JK-sop525r16
Sample : VL180208-3CCS Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 8 10:21 2018 Quant Results File: 012418W.RES

Quant Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration
DataAcq Meth : 012418W

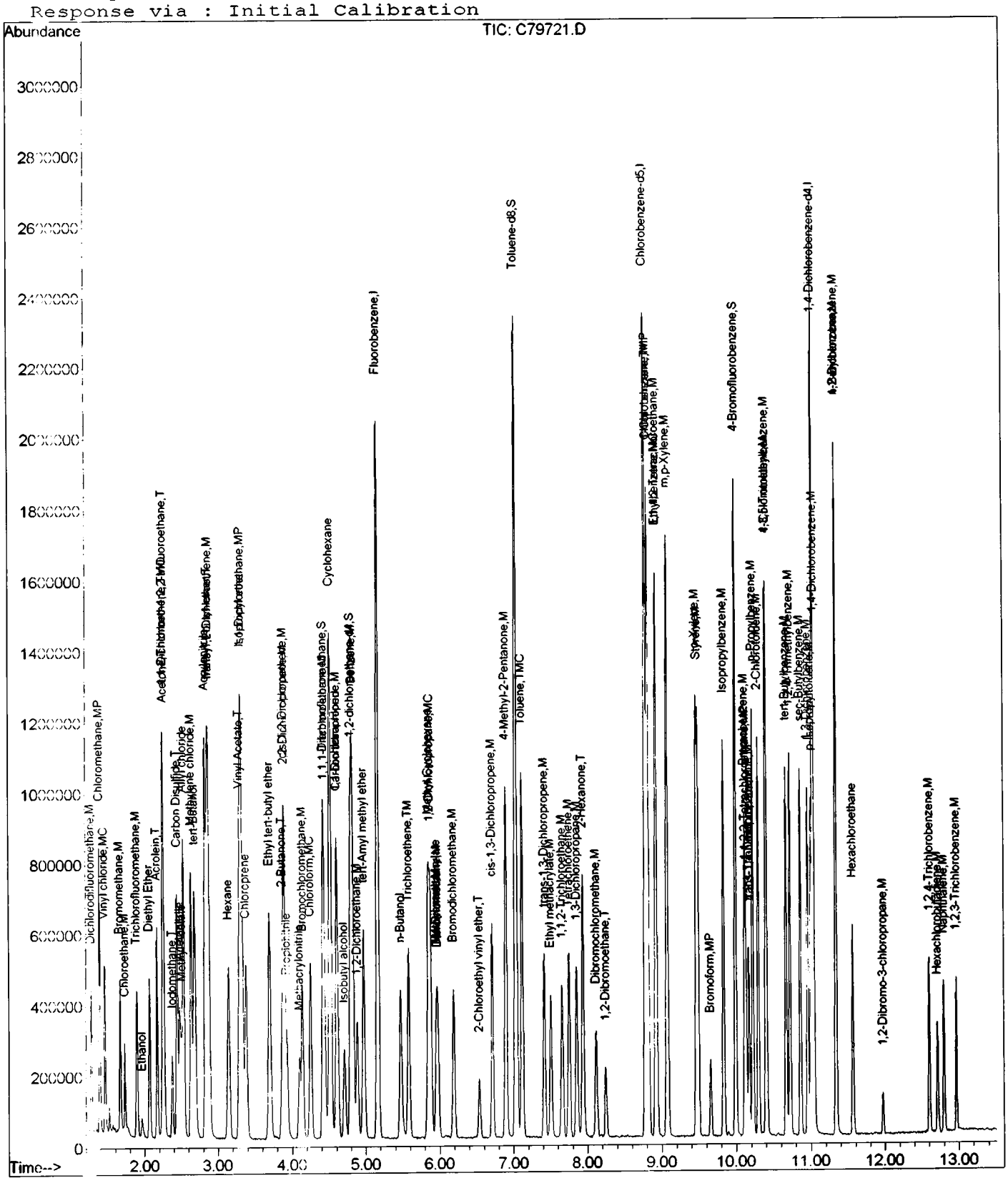
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) tert-Amyl methyl ether	4.97	87	89773	9.31 ppb	89
45) Benzene	4.83	78	873949	9.45 ppb	98
46) 1,2-Dichloroethane	4.89	62	227697	9.25 ppb	98
47) n-Butanol	5.47	56	247296	419.40 ppb	98
48) Trichloroethene	5.58	130	173632	9.73 ppb	96
49) Methyl Cyclohexane	5.84	55	305723	8.87 ppb	95
50) 1,2-Dichloropropane	5.87	63	281248	8.88 ppb	98
51) Methyl methacrylate	5.95	69	110763	8.50 ppb	97
52) 1,4-Dioxane	5.95	88	25823	190.00 ppb	86
53) Dibromomethane	5.98	93	115977	9.76 ppb	94
54) Bromodichloromethane	6.19	83	268798	9.58 ppb	96
55) 2-Chloroethyl vinyl ether	6.54	63	73738	9.88 ppb	98
56) cis-1,3-Dichloropropene	6.72	75	381562	9.53 ppb	97
57) 4-Methyl-2-Pentanone	6.90	43	953254	35.14 ppb	98
60) Toluene	7.11	91	716825	10.22 ppb	99
61) Ethyl methacrylate	7.50	69	212661	8.70 ppb	98
62) trans-1,3-Dichloropropene	7.42	75	278258	9.33 ppb	100
63) 1,1,2-Trichloroethane	7.66	83	146091	9.58 ppb	98
64) Tetrachloroethene	7.74	164	126327	10.42 ppb	93
65) 2-Hexanone	7.94	58	300736	36.03 ppb	96
66) 1,3-Dichloropropane	7.85	76	283678	9.78 ppb	100
67) Dibromochloromethane	8.12	129	160120	9.22 ppb	98
68) 1,2-Dibromoethane	8.24	107	143666	9.93 ppb	93
69) 1-Chlorohexane	8.82	91	258335	9.80 ppb	100
70) Chlorobenzene	8.82	112	422025	10.16 ppb	97
71) Ethylbenzene	8.93	91	771990	10.36 ppb	100
72) 1,1,1,2-Tetrachloroethane	8.92	131	155523	10.21 ppb	96
73) m,p-Xylene	9.08	106	520338	20.38 ppb	95
74) o-Xylene	9.46	106	255596	9.97 ppb	91
75) Styrene	9.49	104	414044	9.74 ppb	95
76) Bromoform	9.66	173	82556	9.66 ppb	96
77) Isopropylbenzene	9.83	105	595328	10.24 ppb	96
80) 1,1,2,2-Tetrachloroethane	10.13	83	214028	9.30 ppb	98
81) trans-1,4-Dichloro-2-buten	10.17	53	40587	8.33 ppb	96
82) n-Propylbenzene	10.22	91	783836	9.60 ppb	97
83) 1,2,3-Trichloropropane	10.17	110	34468	9.39 ppb	89
84) Bromobenzene	10.11	156	177267	10.02 ppb	88
85) 1,3,5-Trimethylbenzene	10.40	105	460701	9.36 ppb	99
86) 2-Chlorotoluene	10.30	126	165946	10.04 ppb	94
87) 4-Chlorotoluene	10.41	126	160942	9.84 ppb	96
88) tert-Butylbenzene	10.67	134	94772	9.53 ppb	94
89) 1,2,4-Trimethylbenzene	10.72	105	455462	9.68 ppb	97
90) sec-Butylbenzene	10.86	105	611656	9.79 ppb	97
91) p-Isopropyltoluene	11.00	119	412708	9.74 ppb	98
92) 1,3-Dichlorobenzene	10.96	146	313733	9.84 ppb	98
93) 1,4-Dichlorobenzene	11.05	146	311396	9.77 ppb	99
94) n-Butylbenzene	11.34	91	474239	9.93 ppb	99
95) 1,2-Dichlorobenzene	11.34	146	292223	10.08 ppb	99
96) Hexachloroethane	11.56	119	112063	9.18 ppb	93
97) 1,2-Dibromo-3-chloropropan	11.97	157	22860	9.69 ppb	91
98) 1,2,4-Trichlorobenzene	12.61	180	105666	9.93 ppb	97
99) Hexachlorobutadiene	12.71	225	41939	9.31 ppb	95
100) Naphthalene	12.80	128	235816	9.61 ppb	99
101) 1,2,3-Trichlorobenzene	12.97	180	87599	10.04 ppb	99

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2018\020818\C79721.D Vial: 4
Acq On : 8 Feb 2018 10:01 am Operator: JK-sop525r16
Sample : VL180208-3CCS Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 8 10:21 2018 Quant Results File: 012418W.RES

Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\2018\020818\C79722.D Vial: 5
Acq On : 8 Feb 2018 10:22 am Operator: JK-sop525r16
Sample : VL180208-3LCSD Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 8 10:40 2018 Quant Results File: 012418W.RES

Quant Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration
DataAcq Meth : 012418W

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	5.16	96	1758048	25.00	ppb		0.00
58) Chlorobenzene-d5	8.78	82	716649	25.00	ppb		0.00
78) 1,4-Dichlorobenzene-d4	11.02	152	503673	25.00	ppb		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	4.42	113	491230	25.08	ppb		0.01
Spiked Amount 25.000	Range 85 - 115		Recovery = 100.32%				
42) 1,2-dichloroethane-d4	4.80	65	487413	23.82	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 95.28%				
59) Toluene-d8	7.03	98	1476490	25.57	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 102.28%				
79) 4-Bromofluorobenzene	9.99	95	514454	24.54	ppb		0.00
Spiked Amount 25.000	Range 85 - 115		Recovery = 98.16%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	1.27	85	219236	7.72	ppb		99
3) Chloromethane	1.39	50	454492	8.37	ppb		99
4) Vinyl chloride	1.46	62	289635	7.99	ppb		94
5) Bromomethane	1.66	96	149583	8.45	ppb		97
6) Chloroethane	1.73	64	141260	8.27	ppb		97
7) Trichlorofluoromethane	1.89	101	215509	9.55	ppb		98
8) Ethanol	1.97	45	61276	182.92	ppb		94
9) Diethyl Ether	2.07	59	179708	9.26	ppb		97
10) Acrolein	2.17	56	424209	95.93	ppb		100
11) 1,1,2-Trichloro-1,2,2-trif	2.25	101	171312	9.58	ppb		99
12) 1,1-Dichloroethene	2.25	96	164976	9.38	ppb		89
13) Acetone	2.26	43	233782	37.58	ppb		98
14) Iodomethane	2.38	142	233395	10.95	ppb		97
15) Carbon Disulfide	2.44	76	751263	8.51	ppb		99
16) Methyl Acetate	2.50	43	210341	8.91	ppb		99
17) Allyl chloride	2.53	76	135361	9.10	ppb		97
18) Acetonitrile	2.48	41	335840	93.43	ppb	#	94
19) Methylene chloride	2.64	84	237038	9.08	ppb		94
20) tert-Butanol	2.69	59	892909	468.84	ppb		98
21) Methyl-t-butyl-ether	2.86	73	940216	18.97	ppb		98
22) trans-1,2-Dichloroethene	2.88	96	188944	9.76	ppb		91
23) Acrylonitrile	2.83	53	842012	96.38	ppb		99
24) Hexane	3.14	57	230890	8.89	ppb		95
25) Isopropyl ether	3.32	45	1167335	8.78	ppb		96
26) Vinyl Acetate	3.29	86	26918	8.15	ppb		63
27) 1,1-Dichloroethane	3.30	63	487161	8.82	ppb		97
28) Chloroprene	3.38	53	326251	8.76	ppb		96
29) Ethyl tert-butyl ether	3.70	59	732134	9.10	ppb		99
30) 2,2-Dichloropropane	3.90	77	262749	10.06	ppb		98
31) 2-Butanone	3.86	43	468150	36.07	ppb		98
32) cis-1,2-Dichloroethene	3.89	96	206104	9.46	ppb		99
33) Propionitrile	3.93	54	268737	87.13	ppb		99
34) Methacrylonitrile	4.10	67	73377	8.95	ppb		98
35) Bromochloromethane	4.14	128	95234	9.99	ppb		94
36) Chloroform	4.25	83	344435	9.04	ppb		95
38) 1,1,1-Trichloroethane	4.44	97	201773	9.53	ppb		97
39) Cyclohexane	4.51	84	475918	18.74	ppb		93
40) Carbon tetrachloride	4.60	117	162016	9.41	ppb		99
41) 1,1-Dichloropropene	4.61	75	289592	9.24	ppb		98
43) Isobutyl alcohol	4.71	43	204319	176.00	ppb		97

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

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\2018\020818\C79722.D Vial: 5
Acq On : 8 Feb 2018 10:22 am Operator: JK-sop525r16
Sample : VL180208-3LCSD Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 8 10:40 2018 Quant Results File: 012418W.RES

Quant Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration
DataAcq Meth : 012418W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
44)	tert-Amyl methyl ether	4.97	87	91124	9.38	ppb	#	81
45)	Benzene	4.83	78	836082	8.97	ppb		99
46)	1,2-Dichloroethane	4.89	62	220180	8.87	ppb		99
47)	n-Butanol	5.47	56	259015	435.87	ppb		96
48)	Trichloroethene	5.58	130	177774	9.88	ppb		95
49)	Methyl Cyclohexane	5.85	55	300710	8.66	ppb		89
50)	1,2-Dichloropropane	5.88	63	287383	9.01	ppb		98
51)	Methyl methacrylate	5.96	69	111019	8.45	ppb		98
52)	1,4-Dioxane	5.96	88	29174	212.98	ppb	#	87
53)	Dibromomethane	5.98	93	113511	9.47	ppb		89
54)	Bromodichloromethane	6.19	83	262483	9.28	ppb		95
55)	2-Chloroethyl vinyl ether	6.54	63	78858	10.48	ppb		98
56)	cis-1,3-Dichloropropene	6.72	75	376606	9.34	ppb		100
57)	4-Methyl-2-Pentanone	6.90	43	997227	36.47	ppb		97
60)	Toluene	7.12	91	690425	9.88	ppb		97
61)	Ethyl methacrylate	7.51	69	219860	9.03	ppb		99
62)	trans-1,3-Dichloropropene	7.42	75	293717	9.88	ppb		99
63)	1,1,2-Trichloroethane	7.66	83	150343	9.89	ppb		97
64)	Tetrachloroethene	7.75	164	123087	10.20	ppb		92
65)	2-Hexanone	7.94	58	287378	34.56	ppb		93
66)	1,3-Dichloropropane	7.86	76	274692	9.50	ppb		99
67)	Dibromochloromethane	8.12	129	161201	9.32	ppb		98
68)	1,2-Dibromoethane	8.25	107	146187	10.14	ppb		97
69)	1-Chlorohexane	8.82	91	249403	9.49	ppb		99
70)	Chlorobenzene	8.82	112	400091	9.66	ppb		99
71)	Ethylbenzene	8.93	91	703628	9.48	ppb		99
72)	1,1,1,2-Tetrachloroethane	8.92	131	149199	9.83	ppb		98
73)	m,p-Xylene	9.07	106	488702	19.21	ppb		98
74)	o-Xylene	9.46	106	253957	9.94	ppb		94
75)	Styrene	9.49	104	422761	9.98	ppb		99
76)	Bromoform	9.66	173	81403	9.56	ppb		96
77)	Isopropylbenzene	9.83	105	557385	9.62	ppb		98
80)	1,1,2,2-Tetrachloroethane	10.13	83	218037	9.59	ppb		98
81)	trans-1,4-Dichloro-2-buten	10.17	53	42753	8.89	ppb	#	89
82)	n-Propylbenzene	10.22	91	767243	9.52	ppb		97
83)	1,2,3-Trichloropropane	10.17	110	33529	9.26	ppb		84
84)	Bromobenzene	10.11	156	172260	9.87	ppb		90
85)	1,3,5-Trimethylbenzene	10.40	105	448833	9.24	ppb		95
86)	2-Chlorotoluene	10.30	126	157434	9.65	ppb		89
87)	4-Chlorotoluene	10.41	126	150185	9.31	ppb		97
88)	tert-Butylbenzene	10.67	134	92804	9.45	ppb		99
89)	1,2,4-Trimethylbenzene	10.72	105	429136	9.24	ppb		97
90)	sec-Butylbenzene	10.86	105	580781	9.41	ppb		98
91)	p-Isopropyltoluene	11.00	119	376939	9.01	ppb		98
92)	1,3-Dichlorobenzene	10.96	146	293169	9.31	ppb		98
93)	1,4-Dichlorobenzene	11.05	146	305793	9.72	ppb		98
94)	n-Butylbenzene	11.34	91	421744	8.94	ppb		99
95)	1,2-Dichlorobenzene	11.34	146	266957	9.33	ppb		96
96)	Hexachloroethane	11.56	119	106509	8.84	ppb		97
97)	1,2-Dibromo-3-chloropropan	11.97	157	22968	9.86	ppb		95
98)	1,2,4-Trichlorobenzene	12.61	180	107954	10.28	ppb		97
99)	Hexachlorobutadiene	12.71	225	41844	9.41	ppb		97
100)	Naphthalene	12.80	128	239000	9.86	ppb		99
101)	1,2,3-Trichlorobenzene	12.97	180	91274	10.59	ppb		98

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

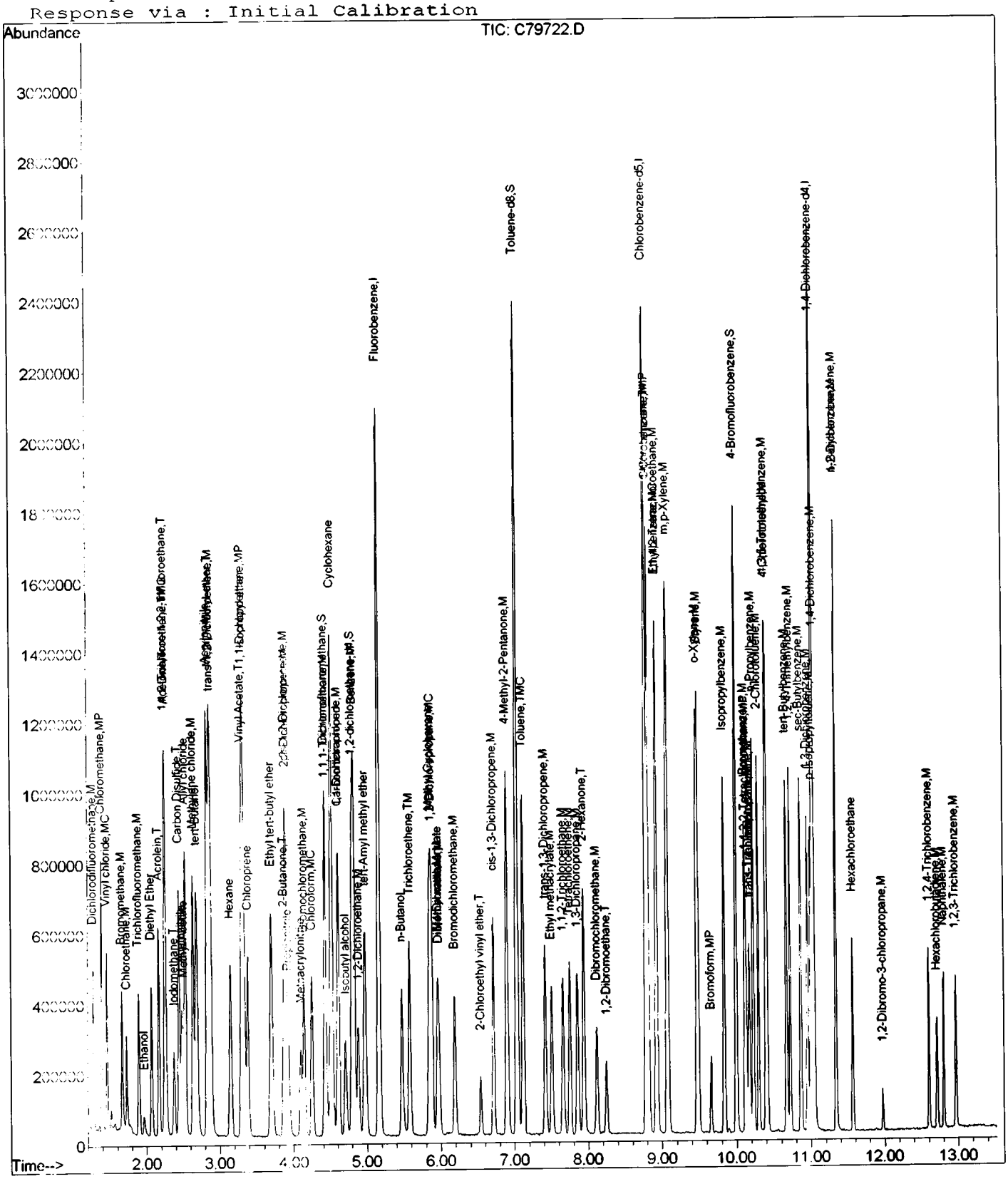
Quantitation Report

Data File : C:\HPCHEM\1\DATA\2018\020818\C79722.D
Acq On : 8 Feb 2018 10:22 am
Sample : VL180209-3LCSD
Misc : 8260 - 10mL water
MS Integration Params: rteint.p
Quant Time: Feb 8 10:40 2018

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

Quant Results File: 012418W.RES

Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

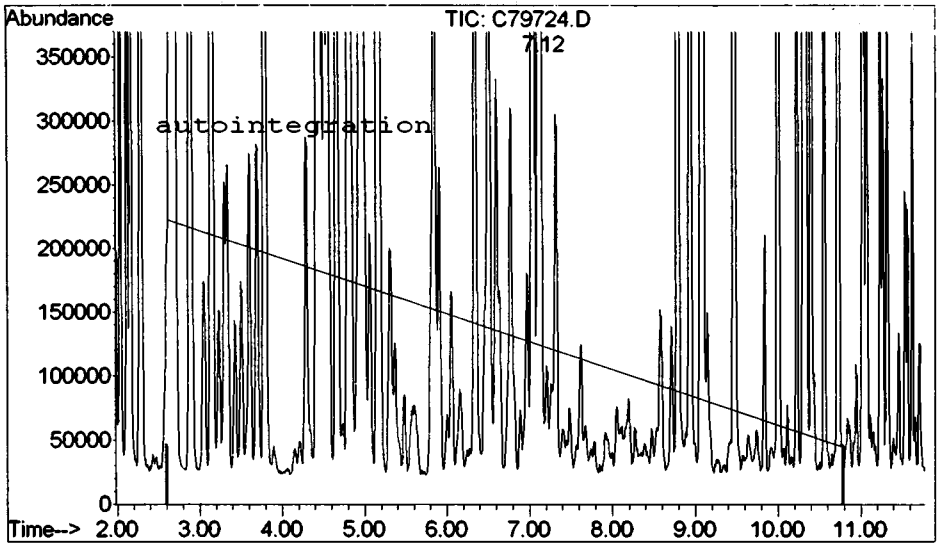
Data File : C:\HPCHEM\1\DATA\2018\020818\C79724.D Vial: 7
Acq On : 8 Feb 2018 11:07 am Operator: JK-sop525r16
Sample : VL180208-6CCS Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Feb 8 11:52 2018 Quant Results File: 013018GR.RES

Quant Method : C:\HPCHEM\1\METHODS\013018GR.M (RTE Integrator)
Title : GC/MS Volatiles (S.O.P. 525)
Last Update : Wed Jan 31 11:03:58 2018
Response via : Initial Calibration
DataAcq Meth : 012418W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) 1,4-Dichlorobenzene-d4	0.00	TIC	0m	25.00	ppb	-11.03
System Monitoring Compounds						
3) 4-Bromofluorobenzene	0.00	TIC	0d	0.00	ppb	
Spiked Amount 25.000	Range 85 - 115		Recovery =	0.00%#		
Target Compounds						Qvalue
1) GRO	7.12	TIC	121491308m	902.50	ppb	

(#) = qualifier out of range (m) = manual integration
C79724.D 012418W.M Fri Feb 09 07:56:08 2018

JK 2-9-18



TIC: C79724.D

(1) GRO (H)
7.13min 834.85ppb m
response 114260014

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

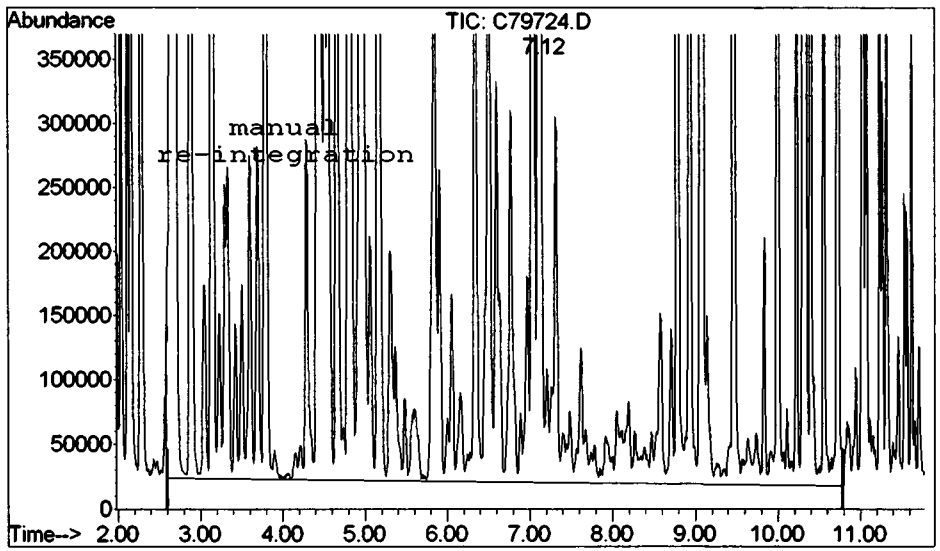
[] peak saturation (detector shutdown)

[] over-integrated peak's area

[✓] under-integrated peak's area

[] other (_____)

initials: _____ date: 2 / 2 / 12



TIC: C79724.D

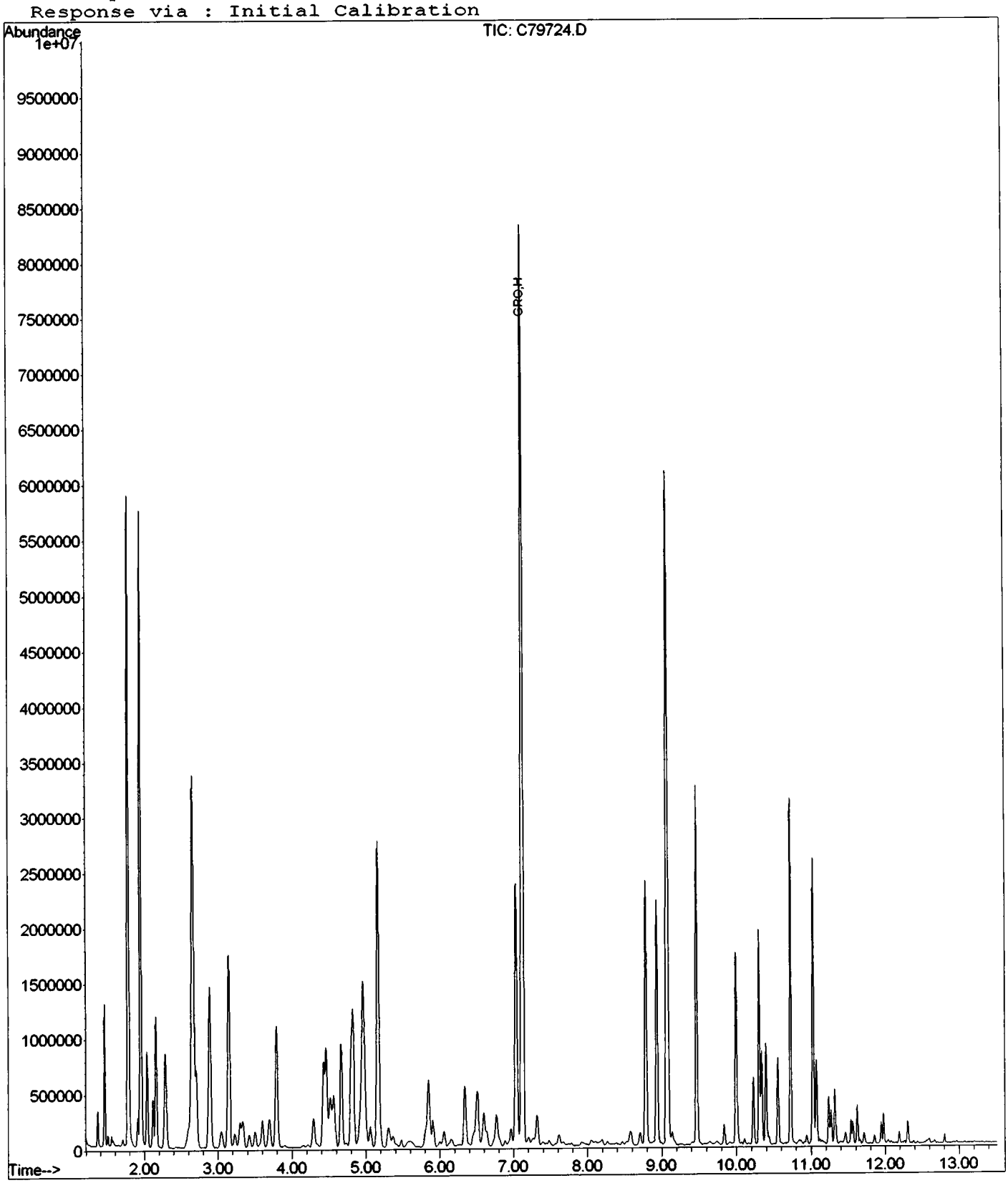
(1) GRO (H)
7.12min 902.50ppb m
response 121491308

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2018\020818\C79724.D Vial: 7
Acq On : 8 Feb 2018 11:07 am Operator: JK-sop525r16
Sample : VL180208-6CCS Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Feb 8 11:52 2018 Quant Results File: 013018GR.RES

Method : C:\HPCHEM\1\METHODS\012418W.M (RTE Integrator)
Title : HPV3 - GC/MS Volatiles (S.O.P. 525)
Last Update : Thu Feb 01 15:14:36 2018
Response via : Initial Calibration



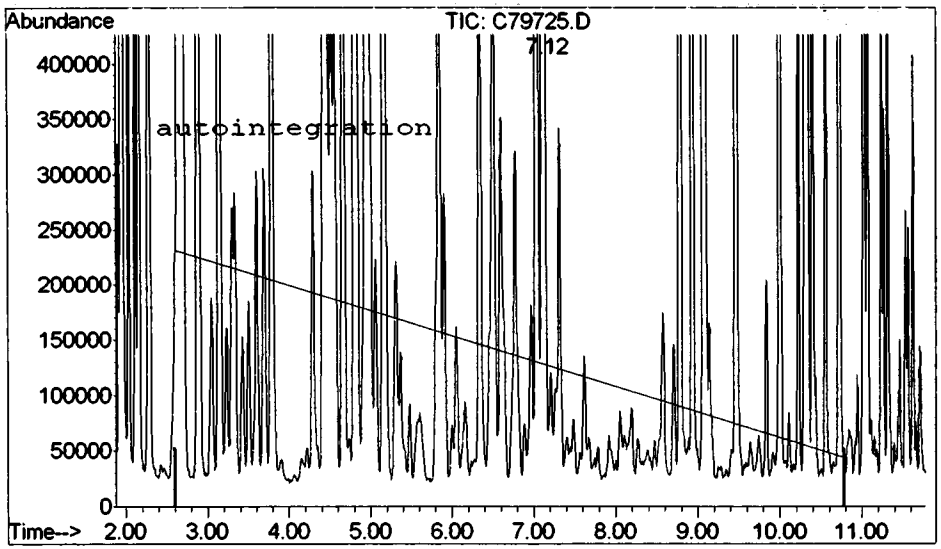
Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\2018\020818\C79725.D Vial: 8
Acq On : 8 Feb 2018 11:28 am Operator: JK-sop525r16
Sample : VL180208-6LCSD Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Feb 8 11:54 2018 Quant Results File: 013018GR.RES

Quant Method : C:\HPCHEM\1\METHODS\013018GR.M (RTE Integrator)
Title : GC/MS Volatiles (S.O.P. 525)
Last Update : Wed Jan 31 11:03:58 2018
Response via : Initial Calibration
DataAcq Meth : 012418W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
2) 1,4-Dichlorobenzene-d4	0.00	TIC	0m	25.00	ppb	-11.03
System Monitoring Compounds						
3) 4-Bromofluorobenzene	0.00	TIC	0d	0.00	ppb	
Spiked Amount 25.000	Range 85 - 115		Recovery =	0.00%#		
Target Compounds						Qvalue
1) GRO	7.12	TIC	126751970m	951.71	ppb	

(#) = qualifier out of range (m) = manual integration
C79725.D 013018GR.M Fri Feb 09 07:57:01 2018



TIC: C79725.D

(1) GRO (H)
7.13min 858.36ppb m
response 116773290

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

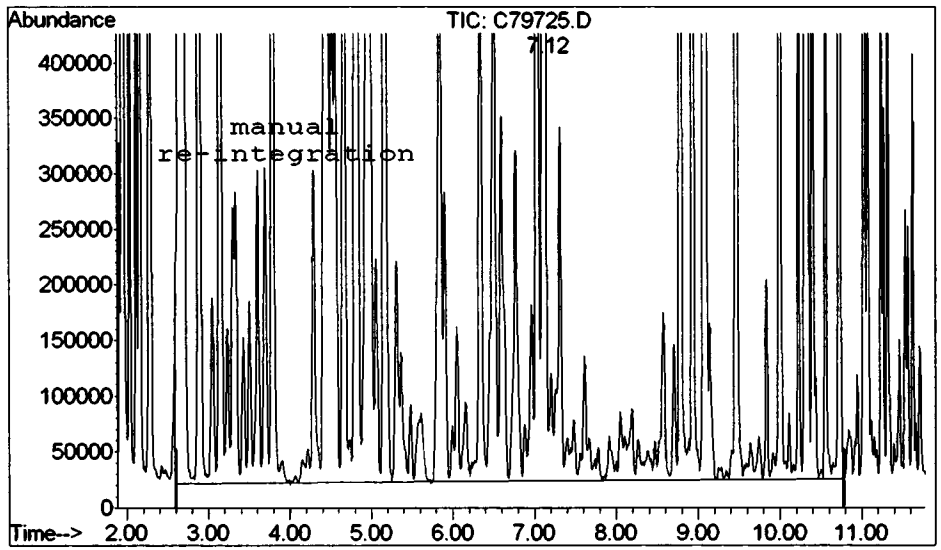
[] peak saturation (detector shutdown)

[] over-integrated peak's area

[✓] under-integrated peak's area

[] other (_____)

initials: _____ date: 2/3/09



TIC: C79725.D

(1) GRO (H)
7.12min 951.71ppb m
response 126751970

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

Quantitation Report

Data File : C:\HPCHEM\1\DATA\2018\020818\C79725.D Vial: 8
Acq On : 8 Feb 2018 11:28 am Operator: JK-sop525r16
Sample : VL180208-6LCSD Inst : CSS Instr
Misc : 8260 - 10mL water Multiplr: 1.00
MS Integration Params: ettics.p
Quant Time: Feb 8 11:54 2018 Quant Results File: 013018GR.RES

Method : C:\HPCHEM\1\METHODS\013018GR.M (RTE Integrator)
Title : GC/MS Volatiles (S.O.P. 525)
Last Update : Wed Jan 31 11:03:58 2018
Response via : Initial Calibration