



## GC/MS Volatiles Case Narrative

---

### Colorado Oil & Gas Conservation Commission TBAL

Work Order Number: 1312158

1. This report consists of one water sample. The sample was received cool and intact by ALS on 12/13/13. The water sample was free of headspace and 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.

The sample was also analyzed for Gasoline Range Organics (GRO). The carbon range integrated for GRO extends from C6 to C10, which is identified by analyzing a gasoline component standard. A gasoline composite standard is used for initial calibration and the quantification of sample results. The concentration of GRO is calculated using the external standard technique, and the sum of all peak responses within the 2-methyl pentane to 1,2,4-trimethyl benzene retention time range.

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 continuing calibration verification had a %D of less than 20% with the exception of vinyl acetate which was low. This compound was 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

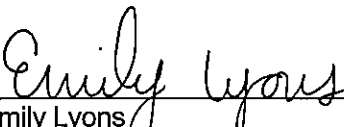


volatile laboratory as a restricted access area. In addition, the laboratory has been equipped with a dedicated, air intake and exhaust system that operates under positive pressure in order to minimize cross contamination of these compounds. Due to fluctuations in ambient laboratory conditions, reported 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.

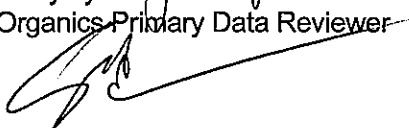
The method blank had acetone detected above the reporting limit. This compound was not detected in the associated sample.

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. Whenever manual integrations are performed, before and after chromatograms of the peak that was manually integrated are included in the report along with the reason why the re-integration was necessary.

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.

  
\_\_\_\_\_  
Emily Lyons  
Organics Primary Data Reviewer

12/27/13  
Date

  
\_\_\_\_\_  
Organics Final Data Reviewer

12/27/12  
Date



**ALS**  
**Data Qualifier Flags**  
**Chromatography and Mass Spectrometry**

- 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.



## **Chain of Custody**

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

---

**OrderNum:** 1312158

**Client Name:** Colorado Oil & Gas Conservation Commission

**Client Project Name:** TBAL

**Client Project Number:**

**Client PO Number:** PHA 14-22

---

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
285485 Molokai 13-36	1312158-1		WATER	12-Dec-13	10:03



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

## Chain-of-Custody

Form 202r8

Comments:	<p>Alloys = <math>Pb, Cu, Fe, Ni, Zn, Sn</math></p> <p>After + preserve metals upon receipt</p>							QC PACKAGE (check below)	
								LEVEL II (Standard QC)	
								LEVEL III (Std QC + forms)	
								LEVEL IV (Std QC + forms + raw data)	<input checked="" type="checkbox"/>
Preservative Key:									
1-HCl	2-HNO <sub>3</sub>	3-H <sub>2</sub> SO <sub>4</sub>	4-NaOH	5-NaHSO <sub>4</sub>	7-Other	8-4 degrees C		9-5035	



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC

Workorder No: 1312158

Project Manager: ARW

Initials: JLR

Date: 12/13/13

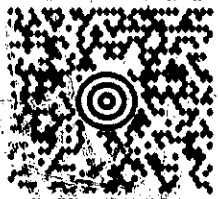

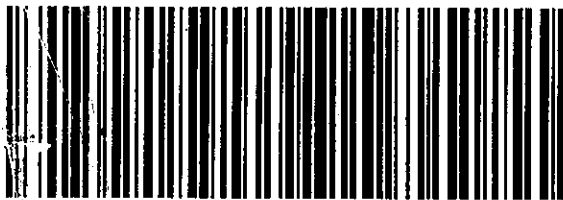
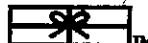
1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	<input checked="" type="radio"/> YES	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ____ < green pea ____ > green pea	N/A	<input checked="" type="radio"/> YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY	<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>5°</u>			
No. of custody seals on cooler: <u>1</u>			
External µR/hr reading: <u>10</u>			
Background µR/hr reading: <u>10</u>			
<div style="border: 1px solid black; padding: 2px; width: 50px; float: left;">DOT Survey/ Acceptance Information</div> Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> 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] 12-13-13

1312158

PETER GINTAUTAS 719-846-3091 COLORADO OIL & GAS CONSERVATIO 213 CORUNDUM RD TRINIDAD CO 81082		21 LBS	1 OF 1
SHIP TO: AMY WOLF 970-490-1511 ALS LABORATORY GROUP 225 COMMERCE DRIVE FORT COLLINS CO 80524-2762		DWT: 14,13,12	10 1-
	CO 805 0-01 		
UPS NEXT DAY AIR		1	
TRACKING #: 1Z 014 8WR 01 9135 4328			
			
BILLING: P/P			
Reference#1: Project T3AL Project 2130			
UPS 15.6.12		WNTIE70 45.0A 10/2013	
			

Temp = 5°C





## **Analytical Results**

# GC/MS Volatiles

Method SW8260\_25C

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-4MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Dec-13

Date Analyzed: 17-Dec-13

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: N/A

File Name: D45837

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ	MDL	Result Qualifier	EPA Qualifier
110-54-3	HEXANE	1	1	1	0.3	U	
108-87-2	METHYL CYCLOHEXANE	1	1	1	0.3	U	
71-36-3	N-BUTANOL	1	50	50	17	U	
75-65-0	TERT-BUTANOL	1	50	50	15	U	
75-71-8	DICHLORODIFLUOROMETHANE	1	1	1	0.3	U	
74-87-3	CHLOROMETHANE	1	1	1	0.3	U	
75-01-4	VINYL CHLORIDE	1	1	1	0.3	U	
74-83-9	BROMOMETHANE	1	1	1	0.3	U	
75-00-3	CHLOROETHANE	1	1	1	0.3	U	
75-69-4	TRICHLOROFLUOROMETHANE	1	1	1	0.3	U	
75-35-4	1,1-DICHLOROETHENE	1	1	1	0.3	U	
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROET	1	1	1	0.3	U	
67-64-1	ACETONE	1	21	10	3		
74-88-4	IODOMETHANE	1	1	1	0.3	U	
75-15-0	CARBON DISULFIDE	1	1	1	0.3	U	
75-09-2	METHYLENE CHLORIDE	1	1	1	0.34	U	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	1	1	0.3	U	
1634-04-4	METHYL TERTIARY BUTYL ETHER	1	1	1	0.3	U	
75-34-3	1,1-DICHLOROETHANE	1	1	1	0.3	U	
108-05-4	VINYL ACETATE	1	2	2	0.6	U	
156-59-2	CIS-1,2-DICHLOROETHENE	1	1	1	0.3	U	
78-93-3	2-BUTANONE	1	10	10	3	U	
74-97-5	BROMOCHLOROMETHANE	1	1	1	0.3	U	
67-66-3	CHLOROFORM	1	1	1	0.3	U	
71-55-6	1,1,1-TRICHLOROETHANE	1	1	1	0.3	U	
594-20-7	2,2-DICHLOROPROPANE	1	1	1	0.3	U	
110-82-7	CYCLOHEXANE	1	1	1	0.3	U	
56-23-5	CARBON TETRACHLORIDE	1	1	1	0.3	U	

Data Package ID: VL1312158-1

# GC/MS Volatiles

Method SW8260\_25C

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-4MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Dec-13

Date Analyzed: 17-Dec-13

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: N/A

File Name: D45837

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ	MDL	Result Qualifier	EPA Qualifier
563-58-6	1,1-DICHLOROPROPENE	1	1	1	0.3	U	
107-06-2	1,2-DICHLOROETHANE	1	1	1	0.3	U	
71-43-2	BENZENE	1	1	1	0.3	U	
79-01-6	TRICHLOROETHENE	1	1	1	0.3	U	
78-87-5	1,2-DICHLOROPROPANE	1	1	1	0.3	U	
74-95-3	DIBROMOMETHANE	1	1	1	0.3	U	
75-27-4	BROMODICHLOROMETHANE	1	1	1	0.3	U	
10061-01-5	CIS-1,3-DICHLOROPROPENE	1	1	1	0.3	U	
108-10-1	4-METHYL-2-PENTANONE	1	10	10	3	U	
108-88-3	TOLUENE	1	1	1	0.3	U	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	1	1	0.3	U	
79-00-5	1,1,2-TRICHLOROETHANE	1	1	1	0.3	U	
591-78-6	2-HEXANONE	1	10	10	3	U	
127-18-4	TETRACHLOROETHENE	1	1	1	0.21	U	
142-28-9	1,3-DICHLOROPROPANE	1	1	1	0.3	U	
124-48-1	DIBROMOCHLOROMETHANE	1	1	1	0.3	U	
106-93-4	1,2-DIBROMOETHANE	1	1	1	0.3	U	
544-10-5	1-CHLOROHEXANE	1	1	1	0.3	U	
108-90-7	CHLOROBENZENE	1	1	1	0.3	U	
630-20-6	1,1,1,2-TETRACHLOROETHANE	1	1	1	0.3	U	
100-41-4	ETHYLBENZENE	1	1	1	0.3	U	
136777-61-2	M+P-XYLENE	1	1	1	0.3	U	
95-47-6	O-XYLENE	1	1	1	0.3	U	
100-42-5	STYRENE	1	1	1	0.3	U	
75-25-2	BROMOFORM	1	1	1	0.3	U	
98-82-8	ISOPROPYLBENZENE	1	1	1	0.3	U	
96-18-4	1,2,3-TRICHLOROPROPANE	1	1	1	0.3	U	
79-34-5	1,1,2,2-TETRACHLOROETHANE	1	1	1	0.3	U	

Data Package ID: VL1312158-1

# GC/MS Volatiles

Method SW8260\_25C

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-4MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Dec-13

Date Analyzed: 17-Dec-13

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: N/A

File Name: D45837

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ	MDL	Result Qualifier	EPA Qualifier
108-86-1	BROMOBENZENE	1	1	1	0.3	U	
103-65-1	N-PROPYLBENZENE	1	1	1	0.3	U	
95-49-8	2-CHLOROTOLUENE	1	1	1	0.3	U	
108-67-8	1,3,5-TRIMETHYLBENZENE	1	1	1	0.3	U	
106-43-4	4-CHLOROTOLUENE	1	1	1	0.3	U	
98-06-6	TERT-BUTYLBENZENE	1	1	1	0.3	U	
95-63-6	1,2,4-TRIMETHYLBENZENE	1	1	1	0.3	U	
135-98-8	SEC-BUTYLBENZENE	1	1	1	0.3	U	
541-73-1	1,3-DICHLOROBENZENE	1	1	1	0.3	U	
99-87-6	P-ISOPROPYLTOLUENE	1	1	1	0.3	U	
106-46-7	1,4-DICHLOROBENZENE	1	1	1	0.3	U	
104-51-8	N-BUTYLBENZENE	1	1	1	0.3	U	
95-50-1	1,2-DICHLOROBENZENE	1	1	1	0.3	U	
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1	2	2	0.6	U	
120-82-1	1,2,4-TRICHLOROBENZENE	1	1	1	0.3	U	
87-68-3	HEXACHLOROBUTADIENE	1	1	1	0.3	U	
91-20-3	NAPHTHALENE	1	1	1	0.3	U	
87-61-6	1,2,3-TRICHLOROBENZENE	1	1	1	0.3	U	
123-91-1	1,4-DIOXANE	1	100	100	30	U	
64-17-5	ETHANOL	1	40	40	13	U	
78-83-1	ISOBUTYL ALCOHOL	1	40	40	17	U	
8006-61-9	GASOLINE RANGE ORGANICS	1	100	100	30	U	

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 3 of 4

LIMS Version: 6.682

# GC/MS Volatiles

Method SW8260\_25C

Method Blank

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-4MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Dec-13

Date Analyzed: 17-Dec-13

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: N/A

File Name: D45837

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ	MDL	Result Qualifier	EPA Qualifier
-------	----------------	----	--------	------------------	-----	---------------------	------------------

## Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	25.9		25	103	85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	25.9		25	103	84 - 118
2037-26-5	TOLUENE-D8	24		25	96	85 - 115

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

LIMS Version: 6.682

Page 4 of 4

# GC/MS Volatiles

Method SW8260\_25

## Tentatively Identified Compounds

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID:	
Lab ID:	VL131217-4MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 17-Dec-13

Date Analyzed: 17-Dec-13

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 10 ml

Final Volume: 10 ml

Clean DF: 1

File Name: D45837

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

Data Package ID: VL1312158-1

# GC/MS Volatiles

Method SW8260\_25C

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: 285485 Molokai 13-36

Lab ID: 1312158-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Dec-13

Date Extracted: 17-Dec-13

Date Analyzed: 17-Dec-13

Prep Method: SW5030 Rev C

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: As Received

File Name: D45847

Analyst: Steven D. White

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ	MDL/LOD/DL	Result Qualifier	EPA Qualifier
110-54-3	HEXANE	1	1	1	0.3	U	
108-87-2	METHYL CYCLOHEXANE	1	1	1	0.3	U	
71-36-3	N-BUTANOL	1	50	50	17	U	
75-65-0	TERT-BUTANOL	1	50	50	15	U	
75-71-8	DICHLORODIFLUOROMETHANE	1	1	1	0.3	U	
74-87-3	CHLOROMETHANE	1	1	1	0.3	U	
75-01-4	VINYL CHLORIDE	1	1	1	0.3	U	
74-83-9	BROMOMETHANE	1	1	1	0.3	U	
75-00-3	CHLOROETHANE	1	1	1	0.3	U	
75-69-4	TRICHLOROFLUOROMETHANE	1	1	1	0.3	U	
75-35-4	1,1-DICHLOROETHENE	1	1	1	0.3	U	
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETH	1	1	1	0.3	U	
67-64-1	ACETONE	1	10	10	3	U	
74-88-4	IODOMETHANE	1	1	1	0.3	U	
75-15-0	CARBON DISULFIDE	1	1	1	0.3	U	
75-09-2	METHYLENE CHLORIDE	1	1	1	0.34	U	
156-60-5	TRANS-1,2-DICHLOROETHENE	1	1	1	0.3	U	
1634-04-4	METHYL TERTIARY BUTYL ETHER	1	1	1	0.3	U	
75-34-3	1,1-DICHLOROETHANE	1	1	1	0.3	U	
108-05-4	VINYL ACETATE	1	2	2	0.6	U	
156-59-2	CIS-1,2-DICHLOROETHENE	1	1	1	0.3	U	
78-93-3	2-BUTANONE	1	10	10	3	U	
74-97-5	BROMOCHLOROMETHANE	1	1	1	0.3	U	
67-66-3	CHLOROFORM	1	1	1	0.3	U	
71-55-6	1,1,1-TRICHLOROETHANE	1	1	1	0.3	U	
594-20-7	2,2-DICHLOROPROPANE	1	1	1	0.3	U	

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 1 of 4

LIMS Version: 6.682

# GC/MS Volatiles

Method SW8260\_25C

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: 285485 Molokai 13-36

Lab ID: 1312158-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Dec-13

Date Extracted: 17-Dec-13

Date Analyzed: 17-Dec-13

Prep Method: SW5030 Rev C

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: As Received

File Name: D45847

Analyst: Steven D. White

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ	MDL/LOD/DL	Result Qualifier	EPA Qualifier
110-82-7	CYCLOHEXANE	1	1	1	0.3	U	
56-23-5	CARBON TETRACHLORIDE	1	1	1	0.3	U	
563-58-6	1,1-DICHLOROPROPENE	1	1	1	0.3	U	
107-06-2	1,2-DICHLOROETHANE	1	1	1	0.3	U	
71-43-2	BENZENE	1	1	1	0.3	U	
79-01-6	TRICHLOROETHENE	1	1	1	0.3	U	
78-87-5	1,2-DICHLOROPROPANE	1	1	1	0.3	U	
74-95-3	DIBROMOMETHANE	1	1	1	0.3	U	
75-27-4	BROMODICHLOROMETHANE	1	1	1	0.3	U	
10061-01-5	CIS-1,3-DICHLOROPROPENE	1	1	1	0.3	U	
108-10-1	4-METHYL-2-PENTANONE	1	10	10	3	U	
108-88-3	TOLUENE	1	1	1	0.3	U	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	1	1	1	0.3	U	
79-00-5	1,1,2-TRICHLOROETHANE	1	1	1	0.3	U	
591-78-6	2-HEXANONE	1	10	10	3	U	
127-18-4	TETRACHLOROETHENE	1	1	1	0.21	U	
142-28-9	1,3-DICHLOROPROPANE	1	1	1	0.3	U	
124-48-1	DIBROMOCHLOROMETHANE	1	1	1	0.3	U	
106-93-4	1,2-DIBROMOETHANE	1	1	1	0.3	U	
544-10-5	1-CHLOROHEXANE	1	1	1	0.3	U	
108-90-7	CHLOROBENZENE	1	1	1	0.3	U	
630-20-6	1,1,1,2-TETRACHLOROETHANE	1	1	1	0.3	U	
100-41-4	ETHYLBENZENE	1	1	1	0.3	U	
136777-61-2	M+P-XYLENE	1	1	1	0.3	U	
95-47-6	O-XYLENE	1	1	1	0.3	U	
100-42-5	STYRENE	1	1	1	0.3	U	

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 2 of 4

LIMS Version: 6.682



# GC/MS Volatiles

Method SW8260\_25C

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: 285485 Molokai 13-36

Lab ID: 1312158-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Dec-13

Date Extracted: 17-Dec-13

Date Analyzed: 17-Dec-13

Prep Method: SW5030 Rev C

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: As Received

File Name: D45847

Analyst: Steven D. White

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/LOQ	MDL/LOD/DL	Result Qualifier	EPA Qualifier
75-25-2	BROMOFORM	1	1	1	0.3	U	
98-82-8	ISOPROPYLBENZENE	1	1	1	0.3	U	
96-18-4	1,2,3-TRICHLOROPROPANE	1	1	1	0.3	U	
79-34-5	1,1,2,2-TETRACHLOROETHANE	1	1	1	0.3	U	
108-86-1	BROMOBENZENE	1	1	1	0.3	U	
103-65-1	N-PROPYLBENZENE	1	1	1	0.3	U	
95-49-8	2-CHLOROTOLUENE	1	1	1	0.3	U	
108-67-8	1,3,5-TRIMETHYLBENZENE	1	1	1	0.3	U	
106-43-4	4-CHLOROTOLUENE	1	1	1	0.3	U	
98-06-6	TERT-BUTYLBENZENE	1	1	1	0.3	U	
95-63-6	1,2,4-TRIMETHYLBENZENE	1	1	1	0.3	U	
135-98-8	SEC-BUTYLBENZENE	1	1	1	0.3	U	
541-73-1	1,3-DICHLOROBENZENE	1	1	1	0.3	U	
99-87-6	P-ISOPROPYLTOLUENE	1	1	1	0.3	U	
106-46-7	1,4-DICHLOROBENZENE	1	1	1	0.3	U	
104-51-8	N-BUTYLBENZENE	1	1	1	0.3	U	
95-50-1	1,2-DICHLOROBENZENE	1	1	1	0.3	U	
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	1	2	2	0.6	U	
120-82-1	1,2,4-TRICHLOROBENZENE	1	1	1	0.3	U	
87-68-3	HEXACHLOROBUTADIENE	1	1	1	0.3	U	
91-20-3	NAPHTHALENE	1	1	1	0.3	U	
87-61-6	1,2,3-TRICHLOROBENZENE	1	1	1	0.3	U	
123-91-1	1,4-DIOXANE	1	100	100	30	U	
64-17-5	ETHANOL	1	40	40	13	U	
78-83-1	ISOBUTYL ALCOHOL	1	40	40	17	U	
8006-61-9	GASOLINE RANGE ORGANICS	1	100	100	30	U	

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 3 of 4

LIMS Version: 6.682

# GC/MS Volatiles

Method SW8260\_25C

## Sample Results

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: 285485 Molokai 13-36

Lab ID: 1312158-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Dec-13

Date Extracted: 17-Dec-13

Date Analyzed: 17-Dec-13

Prep Method: SW5030 Rev C

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: As Received

File Name: D45847

Analyst: Steven D. White

Sample Aliquot: 10 ml

Final Volume: 10 ml

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ	MDL/ LOD/DL	Result Qualifier	EPA Qualifier
-------	----------------	-----------------	--------	---------------	-------------	------------------	---------------

## Surrogate Recovery

CASNO	Surrogate Analyte	Result	Flag	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	25.2		25	101	85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	25.9		25	104	84 - 118
2037-26-5	TOLUENE-D8	24.1		25	96	85 - 115

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

LIMS Version: 6.682

Page 4 of 4

# GC/MS Volatiles

Method SW8260\_25

## Tentatively Identified Compounds

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Field ID: 285485 Molokai 13-36

Lab ID: 1312158-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12-Dec-13

Date Extracted: 17-Dec-13

Date Analyzed: 17-Dec-13

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 10 ml

Final Volume: 10 ml

Clean DF: 1

File Name: D45847

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

Data Package ID: VL1312158-1



## **Supporting QA/QC Data**

# Surrogate Summary for GC/MS Volatiles

Method SW8260\_25C

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

PrepBatchID: VL131217-4

QC Batch ID: VL131217-4-6

Date Extracted: 12/17/2013

Surrogate Compound	Control Limits	
	Lower	Upper
Dibromofluoromethane	84	118
Toluene-d8	85	115
4-Bromofluorobenzene	85	115
1,2-dichloroethane-d4		

Lab ID	Client Sample ID	Date Collected	Date Received	DBFM % Recovery	BZMED8 % Recovery	BR4FBZ % Recovery	12DCED4 % Recovery
VL131217-4LCS	XXXXXXX	NA	XXXXXXX	107	96	105	
VL131217-4LCSD	XXXXXXX	NA	XXXXXXX	107	97	106	
VL131217-4MB	XXXXXXX	NA	XXXXXXX	103	96	103	
1312158-1	285485 Molokai 13-36	12/12/2013	12/13/2013	104	96	101	

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 1 of 1

Shaded values exceed established control limits.

LIMS Version: 6.682

# GC/MS Volatiles

Method SW8260\_25C

## Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-4LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 12/17/2013

Date Analyzed: 12/17/2013

Prep Method: SW5030C

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: N/A

File Name: D45834

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	9.66	1		97	60 - 140%
108-87-2	METHYL CYCLOHEXANE	10	9.71	1		97	60 - 140%
71-36-3	N-BUTANOL	500	464	50		93	50 - 150%
75-65-0	TERT-BUTANOL	500	478	50		96	50 - 150%
75-71-8	DICHLORODIFLUOROMETHANE	10	8.86	1		89	63 - 125%
74-87-3	CHLOROMETHANE	10	9.68	1		97	73 - 122%
75-01-4	VINYL CHLORIDE	10	9.97	1		100	72 - 123%
74-83-9	BROMOMETHANE	10	8.63	1		86	68 - 123%
75-00-3	CHLOROETHANE	10	9.55	1		95	74 - 124%
75-69-4	TRICHLOROFLUOROMETHANE	10	10.3	1		103	74 - 124%
75-35-4	1,1-DICHLOROETHENE	10	9.26	1		93	77 - 119%
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETH	10	9.16	1		92	79 - 122%
67-64-1	ACETONE	40	35.5	10		89	62 - 142%
74-88-4	IODOMETHANE	10	8.47	1		85	72 - 126%
75-15-0	CARBON DISULFIDE	10	8.96	1		90	76 - 121%
75-09-2	METHYLENE CHLORIDE	10	9.1	1		91	71 - 130%
156-60-5	TRANS-1,2-DICHLOROETHENE	10	9.27	1		93	82 - 117%
1634-04-4	METHYL TERTIARY BUTYL ETHER	20	19.2	1		96	77 - 119%
75-34-3	1,1-DICHLOROETHANE	10	9	1		90	83 - 119%
108-05-4	VINYL ACETATE	10	7.77	2		78	76 - 121%
156-59-2	CIS-1,2-DICHLOROETHENE	10	9.75	1		98	83 - 117%
78-93-3	2-BUTANONE	40	38.7	10		97	70 - 135%
74-97-5	BROMOCHLOROMETHANE	10	10.1	1		101	83 - 121%
67-66-3	CHLOROFORM	10	9.44	1		94	82 - 119%
71-55-6	1,1,1-TRICHLOROETHANE	10	9.52	1		95	80 - 120%
594-20-7	2,2-DICHLOROPROPANE	10	9.29	1		93	83 - 125%

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 1 of 8

LIMS Version: 6.682

# GC/MS Volatiles

Method SW8260\_25C

## Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-4LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 12/17/2013

Date Analyzed: 12/17/2013

Prep Method: SW5030C

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: N/A

File Name: D45834

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	18.7	1		94	60 - 140%
56-23-5	CARBON TETRACHLORIDE	10	9.88	1		99	77 - 122%
563-58-6	1,1-DICHLOROPROPENE	10	9.23	1		92	84 - 118%
107-06-2	1,2-DICHLOROETHANE	10	8.88	1		89	74 - 128%
71-43-2	BENZENE	10	9.29	1		93	83 - 117%
79-01-6	TRICHLOROETHENE	10	9.53	1		95	83 - 117%
78-87-5	1,2-DICHLOROPROPANE	10	9.19	1		92	84 - 120%
74-95-3	DIBROMOMETHANE	10	9.29	1		93	79 - 122%
75-27-4	BROMODICHLOROMETHANE	10	9.98	1		100	76 - 122%
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	9.7	1		97	81 - 120%
108-10-1	4-METHYL-2-PENTANONE	40	36.6	10		91	73 - 125%
108-88-3	TOLUENE	10	8.94	1		89	82 - 113%
10061-02-6	TRANS-1,3-DICHLOROPROPENE	10	9.14	1		91	81 - 114%
79-00-5	1,1,2-TRICHLOROETHANE	10	8.72	1		87	78 - 116%
591-78-6	2-HEXANONE	40	34.7	10		87	71 - 124%
127-18-4	TETRACHLOROETHENE	10	9.56	1		96	84 - 117%
142-28-9	1,3-DICHLOROPROPANE	10	8.42	1		84	80 - 115%
124-48-1	DIBROMOCHLOROMETHANE	10	10.3	1		103	82 - 118%
106-93-4	1,2-DIBROMOETHANE	10	9.12	1		91	79 - 114%
544-10-5	1-CHLOROHEXANE	10	8.67	1		87	80 - 117%
108-90-7	CHLOROBENZENE	10	9.04	1		90	81 - 113%
630-20-6	1,1,1,2-TETRACHLOROETHANE	10	9.55	1		95	78 - 113%
100-41-4	ETHYLBENZENE	10	8.86	1		89	81 - 113%
136777-61-	M+P-XYLENE	20	18.2	1		91	82 - 115%
95-47-6	O-XYLENE	10	9.18	1		92	81 - 115%
100-42-5	STYRENE	10	9.38	1		94	78 - 118%
75-25-2	BROMOFORM	10	10.9	1		109	70 - 120%

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 2 of 8

LIMS Version: 6.682

# GC/MS Volatiles

Method SW8260\_25C

## Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-4LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 12/17/2013

Date Analyzed: 12/17/2013

Prep Method: SW5030C

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: N/A

File Name: D45834

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	9.21	1		92	80 - 113%
96-18-4	1,2,3-TRICHLOROPROPANE	10	9.59	1		96	78 - 117%
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	8.68	1		87	75 - 121%
108-86-1	BROMOBENZENE	10	9.42	1		94	81 - 114%
103-65-1	N-PROPYLBENZENE	10	8.77	1		88	79 - 116%
95-49-8	2-CHLOROTOLUENE	10	9.1	1		91	79 - 116%
108-67-8	1,3,5-TRIMETHYLBENZENE	10	9.03	1		90	78 - 116%
106-43-4	4-CHLOROTOLUENE	10	9.21	1		92	78 - 115%
98-06-6	TERT-BUTYLBENZENE	10	9.43	1		94	76 - 120%
95-63-6	1,2,4-TRIMETHYLBENZENE	10	9.04	1		90	80 - 117%
135-98-8	SEC-BUTYLBENZENE	10	9.01	1		90	78 - 115%
541-73-1	1,3-DICHLOROBENZENE	10	9.09	1		91	79 - 115%
99-87-6	P-ISOPROPYLTOLUENE	10	9.19	1		92	77 - 116%
106-46-7	1,4-DICHLOROBENZENE	10	8.84	1		88	82 - 114%
104-51-8	N-BUTYLBENZENE	10	9.28	1		93	79 - 117%
95-50-1	1,2-DICHLOROBENZENE	10	9.14	1		91	82 - 114%
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	10	9.26	2		93	73 - 125%
120-82-1	1,2,4-TRICHLOROBENZENE	10	9.71	1		97	75 - 120%
87-68-3	HEXACHLOROBUTADIENE	10	9.31	1		93	71 - 124%
91-20-3	NAPHTHALENE	10	9.6	1		96	71 - 131%
87-61-6	1,2,3-TRICHLOROBENZENE	10	9.85	1		99	70 - 131%
123-91-1	1,4-DIOXANE	200	183	100		91	50 - 150%
64-17-5	ETHANOL	200	171	40		86	50 - 150%
78-83-1	ISOBUTYL ALCOHOL	200	179	40		89	50 - 150%

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 3 of 8

LIMS Version: 6.682



# GC/MS Volatiles

Method SW8260\_25C

## Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-4LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 12/17/2013

Date Analyzed: 12/17/2013

Prep Method: SW5030C

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: N/A

File Name: D45835

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	9.21	1		92	30	5
108-87-2	METHYL CYCLOHEXANE	10	9.13	1		91	30	6
71-36-3	N-BUTANOL	500	489	50		98	30	5
75-65-0	TERT-BUTANOL	500	481	50		96	30	1
75-71-8	DICHLORODIFLUOROMETHANE	10	8.35	1		83	20	6
74-87-3	CHLOROMETHANE	10	9.2	1		92	20	5
75-01-4	VINYL CHLORIDE	10	9.61	1		96	20	4
74-83-9	BROMOMETHANE	10	7.91	1		79	20	9
75-00-3	CHLOROETHANE	10	9	1		90	20	6
75-69-4	TRICHLOROFLUOROMETHANE	10	9.6	1		96	20	7
75-35-4	1,1-DICHLOROETHENE	10	8.71	1		87	20	6
76-13-1	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETH	10	8.69	1		87	20	5
67-64-1	ACETONE	40	36.5	10		91	30	3
74-88-4	IODOMETHANE	10	9.07	1		91	20	7
75-15-0	CARBON DISULFIDE	10	8.49	1		85	20	5
75-09-2	METHYLENE CHLORIDE	10	8.63	1		86	20	5
156-60-5	TRANS-1,2-DICHLOROETHENE	10	8.95	1		89	20	4
1634-04-4	METHYL TERTIARY BUTYL ETHER	20	19	1		95	20	1
75-34-3	1,1-DICHLOROETHANE	10	8.64	1		86	20	4
108-05-4	VINYL ACETATE	10	8.61	2		86	20	10
156-59-2	CIS-1,2-DICHLOROETHENE	10	9.27	1		93	20	5
78-93-3	2-BUTANONE	40	36.9	10		92	30	5
74-97-5	BROMOCHLOROMETHANE	10	9.8	1		98	20	3
67-66-3	CHLOROFORM	10	9.12	1		91	20	3
71-55-6	1,1,1-TRICHLOROETHANE	10	9.24	1		92	20	3
594-20-7	2,2-DICHLOROPROPANE	10	8.69	1		87	20	7
110-82-7	CYCLOHEXANE	20	17.6	1		88	30	6

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 4 of 8

LIMS Version: 6.682

# GC/MS Volatiles

Method SW8260\_25C

## Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-4LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 12/17/2013

Date Analyzed: 12/17/2013

Prep Method: SW5030C

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: N/A

File Name: D45835

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	9.58	1		96	20	3
563-58-6	1,1-DICHLOROPROPENE	10	8.84	1		88	20	4
107-06-2	1,2-DICHLOROETHANE	10	8.93	1		89	20	1
71-43-2	BENZENE	10	8.95	1		90	20	4
79-01-6	TRICHLOROETHENE	10	9.25	1		93	20	3
78-87-5	1,2-DICHLOROPROPANE	10	8.81	1		88	20	4
74-95-3	DIBROMOMETHANE	10	9.24	1		92	20	1
75-27-4	BROMODICHLOROMETHANE	10	9.5	1		95	20	5
10061-01-5	CIS-1,3-DICHLOROPROPENE	10	9.73	1		97	20	0
108-10-1	4-METHYL-2-PENTANONE	40	38	10		95	30	4
108-88-3	TOLUENE	10	8.69	1		87	20	3
10061-02-6	TRANS-1,3-DICHLOROPROPENE	10	9.18	1		92	20	0
79-00-5	1,1,2-TRICHLOROETHANE	10	8.61	1		86	20	1
591-78-6	2-HEXANONE	40	35.7	10		89	30	3
127-18-4	TETRACHLOROETHENE	10	9.48	1		95	20	1
142-28-9	1,3-DICHLOROPROPANE	10	8.76	1		88	20	4
124-48-1	DIBROMOCHLOROMETHANE	10	10.2	1		102	20	1
106-93-4	1,2-DIBROMOETHANE	10	9.16	1		92	20	0
544-10-5	1-CHLOROHEXANE	10	8.44	1		84	20	3
108-90-7	CHLOROBENZENE	10	9.02	1		90	20	0
630-20-6	1,1,1,2-TETRACHLOROETHANE	10	9.62	1		96	20	1
100-41-4	ETHYLBENZENE	10	8.87	1		89	20	0
136777-61-	M+P-XYLENE	20	17.9	1		90	20	2
95-47-6	O-XYLENE	10	8.8	1		88	20	4
100-42-5	STYRENE	10	9.2	1		92	20	2
75-25-2	BROMOFORM	10	11.1	1		111	20	1
98-82-8	ISOPROPYLBENZENE	10	8.79	1		88	20	5

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 5 of 8

LIMS Version: 6.682

# GC/MS Volatiles

Method SW8260\_25C

## Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-4LCSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 12/17/2013

Date Analyzed: 12/17/2013

Prep Method: SW5030C

Prep Batch: VL131217-4

QCBatchID: VL131217-4-6

Run ID: VL131217-4A

Cleanup: NONE

Basis: N/A

File Name: D45835

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	8.74	1		87	20	9
79-34-5	1,1,2,2-TETRACHLOROETHANE	10	8.79	1		88	20	1
108-86-1	BROMOBENZENE	10	9.22	1		92	20	2
103-65-1	N-PROPYLBENZENE	10	8.59	1		86	20	2
95-49-8	2-CHLOROTOLUENE	10	9.21	1		92	20	1
108-67-8	1,3,5-TRIMETHYLBENZENE	10	8.84	1		88	20	2
106-43-4	4-CHLOROTOLUENE	10	9.2	1		92	20	0
98-06-6	TERT-BUTYLBENZENE	10	8.8	1		88	20	7
95-63-6	1,2,4-TRIMETHYLBENZENE	10	9.01	1		90	20	0
135-98-8	SEC-BUTYLBENZENE	10	9.12	1		91	20	1
541-73-1	1,3-DICHLOROBENZENE	10	8.99	1		90	20	1
99-87-6	P-ISOPROPYLTOLUENE	10	9.13	1		91	20	1
106-46-7	1,4-DICHLOROBENZENE	10	9.01	1		90	20	2
104-51-8	N-BUTYLBENZENE	10	9.05	1		90	20	3
95-50-1	1,2-DICHLOROBENZENE	10	8.92	1		89	20	2
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	10	9.04	2		90	20	2
120-82-1	1,2,4-TRICHLOROBENZENE	10	9.57	1		96	20	1
87-68-3	HEXACHLOROBUTADIENE	10	9.63	1		96	20	3
91-20-3	NAPHTHALENE	10	9.79	1		98	20	2
87-61-6	1,2,3-TRICHLOROBENZENE	10	9.96	1		100	20	1
123-91-1	1,4-DIOXANE	200	182	100		91	30	0
64-17-5	ETHANOL	200	165	40		82	30	4
78-83-1	ISOBUTYL ALCOHOL	200	182	40		91	30	2

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

Page 6 of 8

LIMS Version: 6.682

# GC/MS Volatiles

Method SW8260\_25C

## Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

### 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	105		106		85 - 115
1868-53-7	DIBROMOFLUOROMETHANE	25	107		107		84 - 118
2037-26-5	TOLUENE-D8	25	96		97		85 - 115

Data Package ID: VL1312158-1

Date Printed: Friday, December 27, 2013

ALS Environmental -- FC

LIMS Version: 6.682

Page 7 of 8

# GC/MS Volatiles

Method SW8260\_25C

## Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS Environmental -- FC

Work Order Number: 1312158

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: TBAL

Lab ID: VL131217-7LCS

Sample Matrix: WATER

Prep Batch: VL131217-4

Sample Aliquot: 10 ml

% Moisture: N/A

QCBatchID: VL131217-4-6

Final Volume: 10 ml

Date Collected: N/A

Run ID: VL131217-4A

Result Units: UG/L

Date Extracted: 12/17/2013

Cleanup: NONE

Clean DF: 1

Date Analyzed: 12/17/2013

Basis: N/A

Prep Method: SW5030C

File Name: D45831

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
8006-61-9	GASOLINE RANGE ORGANICS	500	429	100		86	80 - 120%

Lab ID: VL131217-7LCSD

Sample Matrix: WATER

Prep Batch: VL131217-4

Sample Aliquot: 10 ml

% Moisture: N/A

QCBatchID: VL131217-4-6

Final Volume: 10 ml

Date Collected: N/A

Run ID: VL131217-4A

Result Units: UG/L

Date Extracted: 12/17/2013

Cleanup: NONE

Clean DF: 1

Date Analyzed: 12/17/2013

Basis: N/A

Prep Method: SW5030C

File Name: D45832

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
8006-61-9	GASOLINE RANGE ORGANICS	500	404	100		81	20	6

Data Package ID: VL1312158-1

# Prep Batch ID: VL131217-4

Start Date: 12/17/13

End Date: 12/17/13

Concentration Method: NONE

Batch Created By: sdw

Start Time: 9:15

End Time: 17:21

Extract Method: SW5030C

Date Created: 12/17/13

Prep Analyst: Steven D. White

Initial Volume Units: ml

Time Created: 8:55

## Comments:

Final Volume Units: ml

Validated By: sdw

UN-heated purge waters; insufficient sample provided for MS/MSD

Date Validated: 12/18/13

Time Validated: 9:27

## QC Batch ID: VL131217-4-6

Lab ID	QC Type	Field ID	Matrix	Date Collected	Initial Wt/Vol	Final Wt/Vol	Cleanup Method	Cleanup DF	Order Number
VL131217-4	MB	XXXXXX	WATER	XXXXXX	10	10	NONE	1	1312134
VL131217-4	LCS	XXXXXX	WATER	XXXXXX	10	10	NONE	1	1312134
VL131217-7	LCS	XXXXXX	WATER	XXXXXX	10	10	NONE	1	1312134
VL131217-4	LCSD	XXXXXX	WATER	XXXXXX	10	10	NONE	1	1312134
VL131217-7	LCSD	XXXXXX	WATER	XXXXXX	10	10	NONE	1	1312134
1312134-1	SMP	XXXXXX	WATER	XXXXXX	10	10	NONE	1	1312134
1312158-1	SMP	285485 Molokai 13-36	WATER	12/12/2013	10	10	NONE	1	1312158

## QC Types

CAR	Carrier reference sample	DUP	Laboratory Duplicate
LCS	Laboratory Control Sample	LCSD	Laboratory Control Sample Duplicat
MB	Method Blank	MS	Laboratory Matrix Spike
MSD	Laboratory Matrix Spike Duplicate	REP	Sample replicate
RVS	Reporting Level Verification Standar	SMP	Field Sample
SYS	Sample Yield Spike		

# 5A

## Volatile Organic GC/MS Tuning And Mass Calibration--Bromofluorobenzene (BFB)

Lab Name: ALS Environmental -- FC  
Work Order Number: 1312158  
Client Name: Colorado Oil & Gas Conservation Commission  
ClientProject ID: TBAL

BFB Injection Date: 9/9/2013  
BFB Injection Time: 11:32  
Instrument ID: HPV4

Reported on: Friday, December 27, 2013

Level: Low

Column: CAP

FileID: D44101

m/e	Ion Abundance Criteria SW8260_25C	% Relative Abundance
50	15.0 - 40.0 percent of mass 95	23.8
75	30.0 - 60.0 percent of mass 95	49.8
95	Base peak, 100 percent of relative abundance	100
96	5.0 - 9.0 percent of mass 95	6.9
173	Less than 2.0 percent of mass 174	0
174	Greater than 50.0 percent of mass 95	75.8
175	5.0 - 9.0 percent of mass 174	7.9
176	Greater than 95.0 percent < 101.0 percent of mass 174	96.2
177	5.0 - 9.0 percent of mass 176	6.7

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS/MSD, BLANKS, AND STANDARDS:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	QC BatchID
XXXXXXX	GRO_Marker_CSTD	D44102	9/9/2013	11:46	VL130909-4A
XXXXXXX	GRO_50ppb_ICAL_CSTD	D44103	9/9/2013	12:09	VL130909-4A
XXXXXXX	GRO_100ppb_ICAL_CSTD	D44104	9/9/2013	12:32	VL130909-4A
XXXXXXX	GRO_500ppb_ICAL_CSTD	D44105	9/9/2013	12:55	VL130909-4A
XXXXXXX	GRO_1,000ppb_ICAL_CSTD	D44106	9/9/2013	13:19	VL130909-4A
XXXXXXX	GRO_2,000ppb_ICAL_CSTD	D44108	9/9/2013	14:06	VL130909-4A
XXXXXXX	GRO_4,000ppb_ICAL_CSTD	D44110	9/9/2013	14:53	VL130909-4A
XXXXXXX	VL130909-7LCS	D44112	9/9/2013	15:39	VL130909-4-1
XXXXXXX	VL130909-7LCS	D44112	9/9/2013	15:39	VL130909-4-2
XXXXXXX	VL130909-7ICV	D44112	9/9/2013	15:39	VL130909-4A
XXXXXXX	VL130909-7LCSD	D44113	9/9/2013	16:03	VL130909-4-2
XXXXXXX	VL130909-7LCSD	D44113	9/9/2013	16:03	VL130909-4-1
XXXXXXX	VL130909-4RVS	D44114	9/9/2013	16:26	VL130909-4-4
XXXXXXX	CCV1CCV	D44115	9/9/2013	16:49	VL130909-4A
XXXXXXX	VL130909-4LCS	D44115	9/9/2013	16:49	VL130909-4-1
XXXXXXX	VL130909-4LCS	D44115	9/9/2013	16:49	VL130909-4-2
XXXXXXX	VL130909-4LCS	D44115	9/9/2013	16:49	VL130909-4-3

Data Package ID: VL1312158-1

# 5A

## Volatile Organic GC/MS Tuning And Mass Calibration--Bromofluorobenzene (BFB)

Lab Name: ALS Environmental -- FC  
Work Order Number: 1312158  
Client Name: Colorado Oil & Gas Conservation Commission  
ClientProject ID: TBAL

BFB Injection Date: 9/23/2013  
BFB Injection Time: 15:43  
Instrument ID: HPV4

Reported on: Friday, December 27, 2013

Level: Low

Column: CAP

FileID: D44432

m/e	Ion Abundance Criteria SW8260_25C	% Relative Abundance
50	15.0 - 40.0 percent of mass 95	22
75	30.0 - 60.0 percent of mass 95	48.8
95	Base peak, 100 percent of relative abundance	100
96	5.0 - 9.0 percent of mass 95	6.3
173	Less than 2.0 percent of mass 174	0
174	Greater than 50.0 percent of mass 95	81.6
175	5.0 - 9.0 percent of mass 174	8.9
176	Greater than 95.0 percent < 101.0 percent of mass 174	96.9
177	5.0 - 9.0 percent of mass 176	6.4

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS/MSD, BLANKS, AND STANDARDS:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	QC BatchID
XXXXXXX	VOC_0.25ppb_ICALCSTD	D44434	9/23/2013	16:20	VL130923-4A
XXXXXXX	VOC_0.50ppb_ICALCSTD	D44435	9/23/2013	16:43	VL130923-4A
XXXXXXX	VOC_1.0ppb_ICALCSTD	D44436	9/23/2013	17:06	VL130923-4A
XXXXXXX	VOC_2.0ppb_ICALCSTD	D44437	9/23/2013	17:29	VL130923-4A
XXXXXXX	VOC_4.0ppb_ICALCSTD	D44438	9/23/2013	17:52	VL130923-4A
XXXXXXX	VOC_10ppb_ICALCSTD	D44439	9/23/2013	18:16	VL130923-4A
XXXXXXX	VOC_20ppb_ICALCSTD	D44441	9/23/2013	19:02	VL130923-4A
XXXXXXX	VOC_40ppb_ICALCSTD	D44443	9/23/2013	19:49	VL130923-4A
XXXXXXX	VOC_60ppb_ICALCSTD	D44445	9/23/2013	20:35	VL130923-4A
XXXXXXX	VL130923-4ICV	D44448	9/23/2013	21:44	VL130923-4A

Data Package ID: VL1312158-1



# 5A

## Volatile Organic GC/MS Tuning And Mass Calibration--Bromofluorobenzene (BFB)

Lab Name: ALS Environmental -- FC  
Work Order Number: 1312158  
Client Name: Colorado Oil & Gas Conservation Commission  
ClientProject ID: TBAL

BFB Injection Date: 12/17/2013  
BFB Injection Time: 9:15  
Instrument ID: HPV4

Reported on: Friday, December 27, 2013

Level: Low

Column: CAP

FileID: D45828

m/e	Ion Abundance Criteria SW8260_25C	% Relative Abundance
50	15.0 - 40.0 percent of mass 95	19.6
75	30.0 - 60.0 percent of mass 95	46.6
95	Base peak, 100 percent of relative abundance	100
96	5.0 - 9.0 percent of mass 95	6.6
173	Less than 2.0 percent of mass 174	0
174	Greater than 50.0 percent of mass 95	89.5
175	5.0 - 9.0 percent of mass 174	8.7
176	Greater than 95.0 percent < 101.0 percent of mass 174	95.8
177	5.0 - 9.0 percent of mass 176	6.9

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS/MSD, BLANKS, AND STANDARDS:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	QC BatchID
XXXXXXX	VL131217-7RVS	D45830	12/17/2013	9:51	VL131217-4-9
XXXXXXX	VL131217-7LCS	D45831	12/17/2013	11:07	VL131217-4-2
XXXXXXX	VL131217-7LCS	D45831	12/17/2013	11:07	VL131217-4-6
XXXXXXX	VL131217-7LCSD	D45832	12/17/2013	11:30	VL131217-4-2
XXXXXXX	VL131217-7LCSD	D45832	12/17/2013	11:30	VL131217-4-6
XXXXXXX	VL131217-4RVS	D45833	12/17/2013	11:54	VL131217-4-9
XXXXXXX	CCV1CCV	D45834	12/17/2013	12:18	VL131217-4A
XXXXXXX	VL131217-4LCS	D45834	12/17/2013	12:18	VL131217-4-1
XXXXXXX	VL131217-4LCS	D45834	12/17/2013	12:18	VL131217-4-2
XXXXXXX	VL131217-4LCS	D45834	12/17/2013	12:18	VL131217-4-6
XXXXXXX	VL131217-4LCSD	D45835	12/17/2013	12:42	VL131217-4-6
XXXXXXX	VL131217-4LCSD	D45835	12/17/2013	12:42	VL131217-4-1
XXXXXXX	VL131217-4LCSD	D45835	12/17/2013	12:42	VL131217-4-2
XXXXXXX	VL131217-4MB	D45837	12/17/2013	13:29	VL131217-4-2
XXXXXXX	VL131217-4MB	D45837	12/17/2013	13:29	VL131217-4-6
XXXXXXX	VL131217-4MB	D45837	12/17/2013	13:29	VL131217-4-1
XXXXXXX	1312214-1	D45838	12/17/2013	13:53	VL131217-4-1

Data Package ID: VL1312158-1

# 5A

## Volatile Organic GC/MS Tuning And Mass Calibration--Bromofluorobenzene (BFB)

Lab Name: ALS Environmental -- FC  
Work Order Number: 1312158  
Client Name: Colorado Oil & Gas Conservation Commission  
ClientProject ID: TBAL

BFB Injection Date: 12/17/2013  
BFB Injection Time: 9:15  
Instrument ID: HPV4

Reported on: Friday, December 27, 2013

Level: Low

Column: CAP

FileID: D45828

m/e	Ion Abundance Criteria SW8260_25C	% Relative Abundance
50	15.0 - 40.0 percent of mass 95	19.6
75	30.0 - 60.0 percent of mass 95	46.6
95	Base peak, 100 percent of relative abundance	100
96	5.0 - 9.0 percent of mass 95	6.6
173	Less than 2.0 percent of mass 174	0
174	Greater than 50.0 percent of mass 95	89.5
175	5.0 - 9.0 percent of mass 174	8.7
176	Greater than 95.0 percent < 101.0 percent of mass 174	95.8
177	5.0 - 9.0 percent of mass 176	6.9

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS/MSD, BLANKS, AND STANDARDS:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	QC BatchID
XXXXXXX	1312214-2	D45839	12/17/2013	14:16	VL131217-4-1
XXXXXXX	1312214-3	D45841	12/17/2013	15:04	VL131217-4-1
XXXXXXX	1312134-1	D45842	12/17/2013	15:27	VL131217-4-6
XXXXXXX	1312150-1	D45843	12/17/2013	15:50	VL131217-4-2
XXXXXXX	1312150-2	D45844	12/17/2013	16:13	VL131217-4-2
XXXXXXX	1312151-1	D45845	12/17/2013	16:36	VL131217-4-2
XXXXXXX	1312151-2	D45846	12/17/2013	16:59	VL131217-4-2
285485 Molokai 13-36	1312158-1	D45847	12/17/2013	17:21	VL131217-4-6

Data Package ID: VL1312158-1

Calibration ID: 090913GROM  
Instrument ID: HPV4  
Calibration Date: 9/9/2013

# ALS Environmental -- FC

## Initial Calibration Report

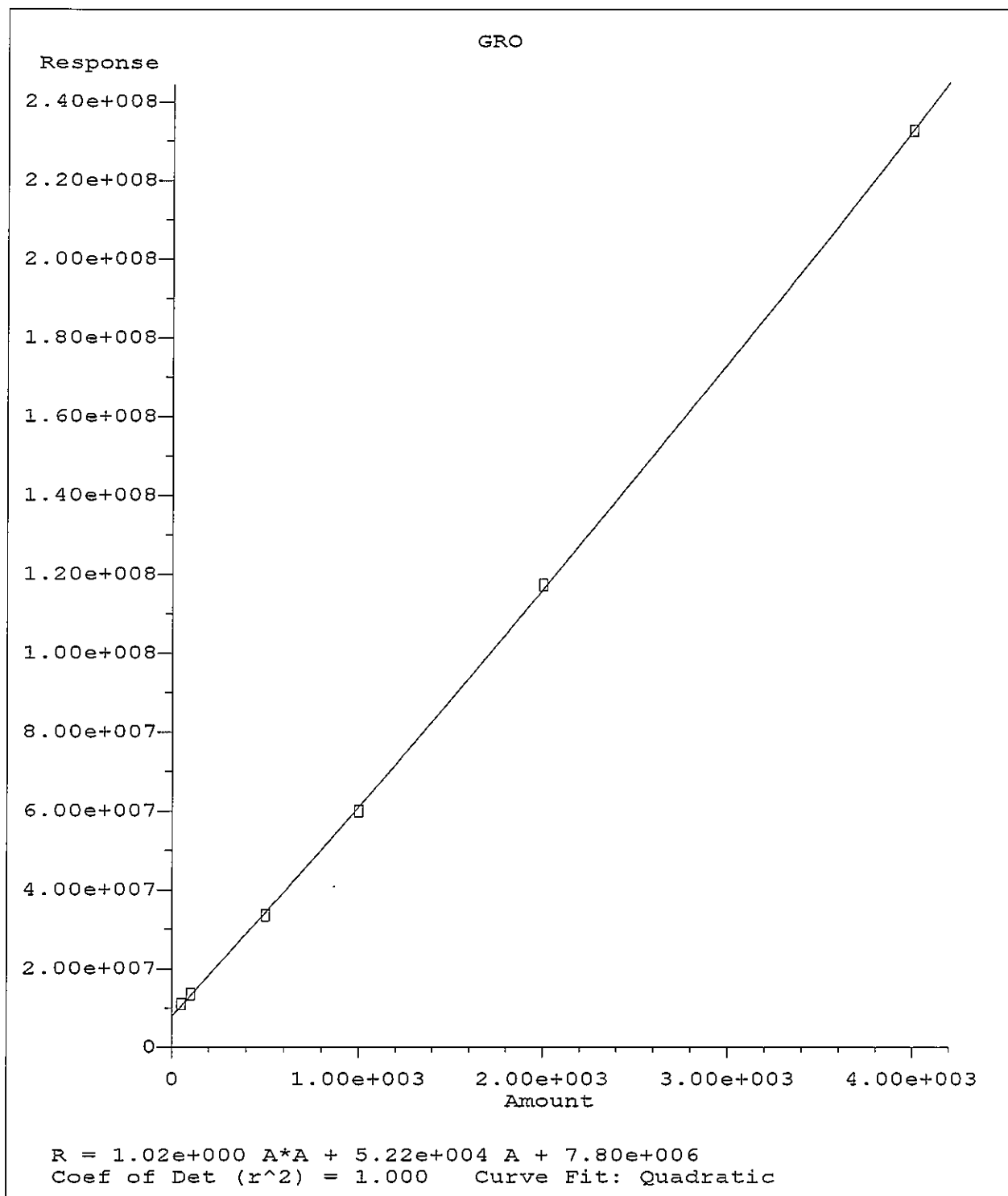
Analyte	FileName:	SD 100 ppb 1000 21000 11000						Curve Type	Higher Order Equation			
		D44103.D	D44104.D	D44105.D	D44106.D	D44108.D	D44110.D		Corr	Quad Term	Linear Term	Const Term
4-bromofluorobenzene	Cal LVL ID:	25	25	25	25	25	25	AvgRF %RSD				
		51288.0800	53161.5600	58721.4400	60700.1200	69520.2400	87619.3600	31.8000 21.18 SUR				
1,4-dichlorobenzene-d4								ISTD AvgRF				
gasoline range organics		219903.1000	134048.1000	66808.4800	59851.1800	58551.0200	58147.6100	51.5900 66.15	quadratic 0.9999	1.023174	52152.42	7803603.

Average RSD = 43.67

### Concentration Multipliers

- a: cyclohexane - 2X
- b: m,p-xylene - 2X
- c: methyl-*t*-butyl-ether - 2X
- d: 2-butanone - 4X
- e: 2-hexanone - 4X
- f: 4-methyl-2-pentanone - 4X
- g: acetone - 4X
- h: acetonitrile - 10X
- i: acrolein - 10X
- j: acrylonitrile - 10X
- k: chloroacetonitrile - 10X
- l: propionitrile - 10X
- m: isobutyl alcohol - 20X
- n: 1,4-dioxane - 20X
- p: ethanol - 20X
- q: n-butanol - 50X
- r: tert-butanol - 50X

Operator: sdw-sop525r16 Notes: 10mL un-heated purge - GRO - IGV/LCS



Method Name: C:\msdchem\1\METHODS\090913GRO.M  
Calibration Table Last Updated: Mon Sep 09 15:12:42 2013

9/10/13

# ALS Environmental -- FC

## Initial Calibration Verification

Lab Sample ID: VL130909-7ICV	Calibration ID: 090913GROM
Analysis Date: 9/9/2013	Instrument ID: HPV4
File Name: D44112	Calibration Date: 9/9/2013

	Analyte	AvgRF	CCRF	Expected Conc.	Found Conc.	%Dev. or % Drift	%Diff (Area)	RT Dev.	Curve Type
83) ISTD	1,4-dichlorobenzene-d4						7.5	0.003	AvgRF
10	gasoline range organics			500.000	515.12	3.0		-0.005	quadratic

Operator: sdw-sop525r16

sdw 9/10/13

Calibration ID: 092313VWM

Instrument ID: HPV4

Calibration Date: 9/23/2013

## ALS Environmental -- FC

## Initial Calibration Report

Analyte	File Name: D44434.D D44435.D D44436.D D44437.D D44438.D D44439.D D44441.D D44443.D D44445.D										AvgR	%RSD	Curve Type	Higher Order Equation			
	Cal	LVL	ID:	0.25	0.6	1	2	4	10	20	40	60		Corr	Quad Term	Linear Term	Const Term
fluorobenzene													ISTD				
dichlorodifluoromethane				0.4818	0.4474	0.4576	0.4510	0.4686	0.4290	0.4476	0.4528		0.4545	3.44			AvgRF
chloromethane				0.5388	0.4559	0.4376	0.4813	0.4587	0.4217	0.4461	0.4589		0.4625	7.64			AvgRF
vinyl chloride				0.4450	0.3966	0.3774	0.3916	0.3866	0.3558	0.3747	0.3864		0.3880	6.60			AvgRF
bromomethane				0.3762	0.3347	0.3125	0.2937	0.2684	0.2373	0.2372	0.2282		0.2860	18.54			quadratic
chloroethane				0.2660	0.2481	0.2468	0.2507	0.2630	0.2393	0.2554	0.2511		0.2525	3.45	0.9997	-0.00786	0.245117 0.005135
trichlorofluoromethane				0.4965	0.4934	0.5066	0.5205	0.5343	0.4718	0.5030	0.5124		0.5048	3.72			AvgRF
diethyl ether				0.1587	0.1521	0.1673	0.1787	0.1747	0.1750	0.1720	0.1747		0.1692	5.48			AvgRF
ethanol				0.0030	0.0039	0.0040	0.0036	0.0036	0.0037	0.0035	0.0035		0.0036	8.87			AvgRF
acrolein				0.0478	0.0482	0.0508	0.0520	0.0520	0.0522	0.0526	0.0489		0.0506	4.02			AvgRF
1,1,2-trichloro-1,2,2-trifluoroethane				0.3082	0.3009	0.3199	0.3039	0.2981	0.3033	0.2983	0.3054		0.3049	2.26			AvgRF
1,1-dichloroethane				0.2880	0.2862	0.2788	0.2829	0.2870	0.2831	0.2871	0.2927		0.2857	1.45			AvgRF
acetone				0.0199	0.0227	0.0226	0.0227	0.0226	0.0237	0.0231	0.0239		0.0227	5.39			AvgRF
iodomethane				0.0821	0.0998	0.1368	0.2033	0.2695	0.3220	0.3688	0.3941		0.2346	52.04	0.9996	0.037498	0.311049 -0.01293
carbon disulfide				1.0529	0.9999	1.0136	1.0590	1.0515	1.0335	1.0454	1.0646		1.0400	2.19			AvgRF
allyl chloride				0.1890	0.1830	0.1889	0.1818	0.1813	0.1819	0.1859	0.1822		0.1842	1.75			AvgRF
acetonitrile				0.0310	0.0334	0.0373	0.0380	0.0397	0.0403	0.0399	0.0398		0.0374	9.18			AvgRF
methylene chloride				0.4269	0.4036	0.3744	0.3613	0.3493	0.3448	0.3428	0.3461		0.3686	8.46			AvgRF
methyl acetate				0.0403	0.0392	0.0497	0.0449	0.0472	0.0481	0.0456			0.0447	8.31			AvgRF
tert-butanol				0.0272	0.0275	0.0292	0.0301	0.0307	0.0291	0.0283	0.0279		0.0287	4.31			AvgRF
methyl tertiary butyl ether	0.8053			0.8614	0.8554	0.8578	0.8637	0.8616	0.8694	0.8594	0.8619		0.8551	2.23			AvgRF
hexane				0.2725	0.2582	0.2640	0.2730	0.2572	0.2605	0.2609	0.2696		0.2642	2.53			AvgRF
trans-1,2-dichloroethene				0.3408	0.3194	0.3127	0.3276	0.3214	0.3240	0.3229	0.3324		0.3252	2.63			AvgRF
acrylonitrile				0.1039	0.1021	0.1074	0.1105	0.1089	0.1077	0.1069	0.1062		0.1067	2.50			AvgRF
isopropyl ether				1.3845	1.3522	1.3917	1.3638	1.3613	1.3595	1.3460	1.3624		1.3652	1.13			AvgRF
vinyl acetate				0.7100	0.7193	0.6752	0.7136	0.7578	0.7969	0.7931	0.7442		0.7388	5.74			AvgRF
1,1-dichloroethane				0.7077	0.6660	0.6840	0.6969	0.6722	0.6720	0.6708	0.6827		0.6819	2.06			AvgRF
chloroprene				0.5779	0.5314	0.5715	0.5858	0.5851	0.5803	0.5831	0.5917		0.5759	3.29			AvgRF
ethyl tert-butyl ether				1.0426	1.0276	1.0675	1.0643	1.0605	1.0563	1.0375	1.0537		1.0512	1.33			AvgRF
2,2-dichloropropane				0.5415	0.4763	0.5018	0.4925	0.4532	0.4520	0.4348	0.4326		0.4731	7.93			AvgRF
cyclohexane				0.4674	0.4398	0.4649	0.4607	0.4595	0.4569	0.4559	0.4628		0.4587	1.85			AvgRF
2-butanone				0.0293	0.0235	0.0275	0.0316	0.0315	0.0307	0.0301	0.0312		0.0294	9.33			AvgRF
cis-1,2-dichloroethene				0.3788	0.3629	0.3879	0.3672	0.3754	0.3670	0.3723	0.3777		0.3737	2.15			AvgRF
propionitrile				0.0339	0.0353	0.0413	0.0418	0.0420	0.0404	0.0389	0.0388		0.0391	7.74			AvgRF
methyl acrylate																	
methacrylonitrile				0.1926	0.1943	0.2019	0.2154	0.2112	0.2091	0.2085	0.2045		0.2047	3.94			AvgRF
bromochloromethane				0.1649	0.1514	0.1675	0.1652	0.1605	0.1647	0.1613	0.1610		0.1621	3.06			AvgRF
chloroform				0.6636	0.6169	0.6328	0.6573	0.6485	0.6351	0.6317	0.6387		0.6409	2.26			AvgRF
1-chlorobutane																	
dibromofluoromethane	0.2892			0.2733	0.2663	0.2728	0.2717	0.2712	0.2733	0.2755	0.2785		0.2725	1.37	SUR		AvgRF
1,1,1-trichloroethane				0.5146	0.5121	0.5132	0.5268	0.5171	0.5182	0.5257	0.5388		0.5208	1.74			AvgRF
pentafluorobenzene																	
carbon tetrachloride				0.3751	0.3751	0.3793	0.3983	0.4081	0.4167	0.4245	0.4380		0.4019	5.97			AvgRF
1,1-dichloropropene				0.4948	0.4660	0.4784	0.4949	0.4894	0.4794	0.4837	0.4983		0.4856	2.24			AvgRF
1,2-dichloroethane-d4	0.1621			0.1642	0.1637	0.1665	0.1630	0.1629	0.1645	0.1619	0.1614		0.1634	0.97	SUR		AvgRF
isobutyl alcohol				0.0155	0.0146	0.0150	0.0164	0.0186	0.0157	0.0150	0.0150		0.0155	4.58			AvgRF
tert-amyl methyl ether				0.2029	0.1793	0.1981	0.2010	0.1970	0.1977	0.1932	0.1919		0.1951	3.77			AvgRF
benzene				1.4942	1.4261	1.4144	1.4009	1.3982	1.3838	1.3613	1.3878		1.4081	2.84			AvgRF
1,2-dichloroethane				0.5115	0.4694	0.4969	0.4802	0.4741	0.4666	0.4594	0.4527		0.4732	3.73			AvgRF
methyl cyclohexane				0.4881	0.4672	0.4734	0.4839	0.4734	0.4802	0.4756	0.4839		0.4782	1.46			AvgRF
trichloroethene				0.3593	0.3677	0.3482	0.3566	0.3570	0.3514	0.3528	0.3596		0.3565	1.69			AvgRF
n-butanol				0.0068	0.0067	0.0069	0.0078	0.0082	0.0080	0.0073	0.0075		0.0074	8.20			AvgRF
1,2-dichloropropane				0.4166	0.3853	0.3952	0.4089	0.4126	0.4053	0.4009	0.4050		0.4037	2.47			AvgRF
methyl methacrylate				0.1765	0.2002	0.1906	0.1912	0.1969	0.1963	0.1983	0.1965		0.1933	3.90			AvgRF
1,4-dioxane				0.0021	0.0027	0.0025	0.0027	0.0027	0.0027	0.0024	0.0025		0.0026	7.66			AvgRF
dibromomethane				0.2001	0.2046	0.1921	0.2041	0.2075	0.1970	0.1995	0.1983		0.2004	2.44			AvgRF
bromodichloromethane				0.4604	0.4264	0.4313	0.4591	0.4644	0.4661	0.4662	0.4747		0.4563	3.87			AvgRF
chloroacetonitrile																	
2-chloroethyl vinyl ether				0.1914	0.1777	0.1767	0.1824	0.1809	0.1717	0.1680	0.1713		0.1775	4.21			AvgRF
cis-1,3-dichloropropene				0.5196	0.4983	0.5531	0.5619	0.5758	0.5798	0.5823	0.5839		0.5569	5.73			AvgRF
chlorobenzene-d5													ISTD				
toluene-d8	1.3951			1.4031	1.4288	1.3867	1.3989	1.3979	1.3815	1.3819	1.3737		1.3942	1.16	SUR		AvgRF
toluene				1.1992	1.1502	1.1271	1.1745	1.1415	1.1099	1.1122	1.1342		1.1435	2.70			AvgRF
4-methyl-2-pentanone				0.0454	0.0456	0.0463	0.0497	0.0486	0.0478	0.0473	0.0467		0.0472	3.19			AvgRF
ethyl methacrylate				0.5324	0.5106	0.5160	0.5678	0.5649	0.5630	0.5580	0.5466		0.5449	4.16			AvgRF
trans-1,3-dichloropropene				0.6316	0.6347	0.6328	0.6693	0.6881	0.6842	0.6911	0.6938		0.6657	4.21			AvgRF

Operator: twk-sop525r16 Notes: 10mL UN-htd purge water

Calibration ID: 092313WM

Instrument ID: HPV4

Calibration Date: 9/23/2013

## ALS Environmental -- FC

## Initial Calibration Report

Analyte	FileName:	D44434.D	D44435.D	D44436.D	D44437.D	D44438.D	D44439.D	D44441.D	D44443.D	D44445.D	AvgR	%RSD	Curve	Higher Order Equation			
	Cal LVL ID:	0.25	0.5	1	2	4	10	20	40	60			Type	Corr	Quad Term	Linear Term	Const Term
1,1,2-trichloroethane			0.3705	0.3441	0.3527	0.3808	0.3819	0.3585	0.3445	0.3452	0.3572	3.74	AvgRF				
tetrachloroethene		0.6059	0.4835	0.4280	0.3779	0.3876	0.3749	0.3629	0.3593	0.3884	0.4174	19.40	linear	0.9998		0.364555	0.001934
2-hexanone			0.1339	0.1415	0.1462	0.1550	0.1611	0.1554	0.1498	0.1487	0.1490	5.76	AvgRF				
1,3-dichloropropane			0.7717	0.7045	0.7040	0.7268	0.7176	0.7110	0.6820	0.6890	0.7146	3.67	AvgRF				
dibromochloromethane			0.3971	0.3803	0.3808	0.4161	0.4404	0.4489	0.4527	0.4553	0.4215	7.61	AvgRF				
1,2-dibromoethane			0.3657	0.3699	0.3728	0.4029	0.3958	0.3869	0.3878	0.3847	0.3833	3.37	AvgRF				
1-chlorohexane			0.6084	0.5822	0.5329	0.5575	0.5399	0.5411	0.5395	0.5495	0.5564	4.69	AvgRF				
chlorobenzene			1.2686	1.2422	1.2104	1.2964	1.2381	1.2280	1.2190	1.2234	1.2408	2.31	AvgRF				
ethylbenzene			2.0422	2.0519	2.0365	2.0979	2.0858	2.0789	2.0824	2.0835	2.0674	1.08	AvgRF				
1,1,1,2-tetrachloroethane			0.4127	0.4337	0.4036	0.4579	0.4502	0.4550	0.4496	0.4613	0.4405	4.93	AvgRF				
m+p-xylene		0.7452	0.7392	0.7232	0.7171	0.7611	0.7480	0.7611	0.7849	0.7778	0.7486	2.66	AvgRF				
o-xylene			0.7519	0.7086	0.7201	0.7629	0.7709	0.7703	0.7808	0.8013	0.7609	4.21	AvgRF				
styrene			1.2045	1.1610	1.1719	1.2719	1.2983	1.2983	1.3167	1.3368	1.2572	5.43	AvgRF				
bromoform			0.2043	0.2069	0.2223	0.2379	0.2454	0.2578	0.2648	0.2889	0.2385	10.59	AvgRF				
isopropylbenzene			1.6495	1.7332	1.6074	1.7408	1.7375	1.7337	1.7419	1.7950	1.7174	3.47	AvgRF				
4-bromofluorobenzene		0.8464	0.8674	0.8316	0.8423	0.8399	0.8136	0.8151	0.8051	0.8138	0.8305	2.43	SUR	AvgRF			
1,4-dichlorobenzene-d4													ISTD	AvgRF			
1,1,2,2-tetrachloroethane			1.0467	0.9989	1.0281	1.0847	1.0177	0.9780	0.9427	0.8967	0.9989	5.98	AvgRF				
trans-1,4-dichloro-2-butene			0.2361	0.2688	0.2573	0.2621	0.2507	0.2416	0.2335		0.2500	5.40	AvgRF				
n-propylbenzene			4.9433	4.6486	4.8065	4.8503	4.8526	4.8158	4.4782	4.5476	4.6430	2.92	AvgRF				
1,2,3-trichloropropane			0.2524	0.3004	0.2840	0.3151	0.2947	0.2813	0.2682	0.2541	0.2813	7.88	AvgRF				
bromobenzene			1.0915	1.0987	1.1129	1.1469	1.1182	1.1069	1.0624	1.0684	1.1007	2.48	AvgRF				
1,3,5-trimethylbenzene			3.4134	3.1837	3.0048	3.1381	3.0777	3.0759	2.9803	3.0751	3.1186	4.35	AvgRF				
2-chlorotoluene			0.9312	0.9972	0.9793	0.9801	0.9768	0.9894	0.9815	0.9670	0.9703	1.97	AvgRF				
4-chlorotoluene			0.9685	0.9428	0.9556	1.0061	0.9489	0.9782	0.9387	0.9729	0.9637	2.30	AvgRF				
tert-butylbenzene			0.6582	0.6154	0.6156	0.6378	0.5999	0.6187	0.5990	0.6161	0.6198	3.07	AvgRF				
1,2,4-trimethylbenzene			3.1680	3.0300	3.0035	3.1843	3.0508	3.0342	2.9830	3.0306	3.0581	2.54	AvgRF				
sec-butylbenzene			3.6689	3.5684	3.4928	3.6699	3.6016	3.6411	3.5298	3.6399	3.6013	1.83	AvgRF				
p-isopropyltoluene			3.0105	2.8436	2.7878	2.9783	2.8625	2.8490	2.7980	2.9037	2.8789	2.78	AvgRF				
1,3-dichlorobenzene			1.9079	1.9829	1.8598	1.9384	1.8929	1.8768	1.8211	1.8716	1.8937	2.62	AvgRF				
1,4-dichlorobenzene			1.8001	1.8066	1.9058	1.8800	1.8446	1.8369	1.7595	1.8119	1.8435	2.73	AvgRF				
n-butylbenzene			2.7460	2.4977	2.5534	2.6170	2.5527	2.5695	2.4985	2.5853	2.5775	3.07	AvgRF				
1,2-dichlorobenzene			1.8480	1.6665	1.7384	1.7774	1.7626	1.7537	1.7154	1.7350	1.7496	2.98	AvgRF				
hexachloroethane			0.3305	0.3888	0.4037	0.4088	0.4118	0.4258	0.4586		0.4040	9.68	AvgRF				
1,2-dibromo-3-chloropropane			0.1524	0.1408	0.1322	0.1301	0.1451	0.1461	0.1396	0.1377	0.1405	5.24	AvgRF				
1,2,4-trichlorobenzene			0.8144	0.9447	0.9427	0.9843	0.9543	0.9638	0.9233	0.9368	0.9330	5.50	AvgRF				
hexachlorobutadiene			0.4176	0.3924	0.3930	0.4215	0.3931	0.4071	0.3838	0.3603	0.3986	3.81	AvgRF				
naphthalene			1.7705	1.7612	1.8975	1.9443	2.0095	2.0247	1.9185	1.9455	1.9087	5.14	AvgRF				
1,2,3-trichlorobenzene			0.7148	0.7860	0.8020	0.8368	0.8120	0.8612	0.8068	0.8046	0.8030	5.30	AvgRF				

Average RSD = 4.88

## Concentration Multipliers

a: cyclohexane - 2X  
 b: m,p-xylene - 2X  
 c: methyl-t-butyl-ether - 2X  
 d: 2-butanone - 4X  
 e: 2-hexanone - 4X  
 f: 4-methyl-2-pentanone - 4X  
 g: acetone - 4X  
 h: acetonitrile - 10X  
 i: acrolein - 10X  
 j: acrylonitrile - 10X  
 k: chloroacetonitrile - 10X  
 l: propionitrile - 10X  
 m: isobutyl alcohol - 20X  
 n: 1,4-dioxane - 20X  
 o: ethanol - 20X  
 p: n-butanol - 50X  
 q: tert-butanol - 50X

Operator: twk-sop525r16 Notes: 10mL UN-htd purge water

# ALS Environmental -- FC

## Initial Calibration Verification

Lab Sample ID: VL130923-4ICV

Calibration ID: 092313WM

Analysis Date: 9/23/2013

Instrument ID: HPV4

File Name: D44448

Calibration Date: 9/23/2013

	Analyte	AvgRF	CCRF	Expected Conc.	Found Conc.	%Dev. or % Drift	%Diff (Area)	RT Dev.	Curve Type
1) ISTD	fluorobenzene						0.0	0.001	AvgRF
2)	dichlorodifluoromethane	0.4545	0.4897			3.4		-0.001	AvgRF
3)	chloromethane	0.4625	0.4763			3.0		0.001	AvgRF
4)	vinyl chloride	0.3880	0.4102			5.7		0.003	AvgRF
5)	bromomethane			20.000	21.15	5.8		-0.002	quadratic
6)	chloroethane	0.2525	0.2666			5.6		-0.001	AvgRF
7)	trichlorofluoromethane	0.5048	0.5378			6.5		0.003	AvgRF
8)	diethyl ether	0.1692	0.1737			2.7		-0.002	AvgRF
9)	ethanol	0.0036	0.0032			-10.0		-0.004	AvgRF
10	acrolein	0.0506	0.0525			3.8		0.000	AvgRF
11	1,1,2-trichloro-1,2,2-trifluoroethane	0.3049	0.2824			-7.4		0.002	AvgRF
12	1,1-dichloroethene	0.2857	0.2838			-7.7		0.002	AvgRF
13	acetone	0.0227	0.0215			-5.3		0.003	AvgRF
14	iodomethane			20.000	18.57	-7.1		0.005	quadratic
15	carbon disulfide	1.0400	0.9628			-7.4		-0.004	AvgRF
16	allyl chloride	0.1842	0.1692			-8.1		-0.001	AvgRF
17	acetonitrile	0.0374	0.0362			-3.3		-0.002	AvgRF
18	methylene chloride	0.3686	0.3230			-12.4		0.002	AvgRF
19	methyl acetate	0.0447	0.0425			-4.9		-0.001	AvgRF
20	tert-butanol	0.0287	0.0272			-5.5		0.004	AvgRF
21	methyl tertiary butyl ether	0.8551	0.7998			-6.5		-0.002	AvgRF
22	hexane	0.2642	0.2765			4.6		0.005	AvgRF
23	trans-1,2-dichloroethene	0.3252	0.3019			-7.2		-0.002	AvgRF
24	acrylonitrile	0.1067	0.1081			1.3		-0.003	AvgRF
25	isopropyl ether	1.3652	1.3073			-4.2		-0.001	AvgRF
26	vinyl acetate	0.7388	0.6857			-7.2		-0.001	AvgRF
27	1,1-dichloroethane	0.6819	0.6287			-7.8		-0.002	AvgRF
28	chloroprene	0.5759	0.5540			-3.8		0.000	AvgRF
29	ethyl tert-butyl ether	1.0512	1.0176			-3.2		-0.003	AvgRF
30	2,2-dichloropropane	0.4731	0.3795			-19.8		0.000	AvgRF
31	cyclohexane	0.4587	0.4221			-8.0		0.001	AvgRF
32	2-butanone	0.0294	0.0285			-3.1		0.000	AvgRF
33	cis-1,2-dichloroethene	0.3737	0.3475			-7.0		0.000	AvgRF
34	propionitrile	0.0391	0.0368			-5.7		0.001	AvgRF
35	methyl acrylate							0.001	
36	methacrylonitrile	0.2047	0.1887			-7.8		0.004	AvgRF
37	bromochloromethane	0.1621	0.1511			-6.8		-0.005	AvgRF
38	chloroform	0.6409	0.6009			-6.3		-0.003	AvgRF
39	1-chlorobutane							0.001	
41	1,1,1-trichloroethane	0.5208	0.4857			-6.7		0.000	AvgRF
42	pentafluorobenzene							0.000	
43	carbon tetrachloride	0.4019	0.3844			-4.3		0.003	AvgRF
44	1,1-dichloropropene	0.4856	0.4562			-6.1		0.003	AvgRF
46	isobutyl alcohol	0.0155	0.0139			-10.0		0.005	AvgRF
47	tert-amyl methyl ether	0.1951	0.1868			-4.3		-0.002	AvgRF
48	benzene	1.4081	1.2893			-8.4		-0.004	AvgRF
49	1,2-dichloroethane	0.4732	0.4245			-10.3		-0.003	AvgRF
50	methyl cyclohexane	0.4782	0.4390			-8.2		-0.001	AvgRF
51	trichloroethene	0.3565	0.3271			-8.3		-0.004	AvgRF
52	n-butanol	0.0074	0.0073			-0.6		0.005	AvgRF
53	1,2-dichloropropane	0.4037	0.3813			-5.5		0.000	AvgRF
54	methyl methacrylate	0.1933	0.1832			-5.2		0.000	AvgRF
55	1,4-dioxane	0.0026	0.0024			-7.3		0.000	AvgRF
56	dibromomethane	0.2004	0.1860			-7.2		0.001	AvgRF
57	bromodichloromethane	0.4563	0.4309			-5.6		0.003	AvgRF
58	chloroacetonitrile							-0.003	
59	2-chloroethyl vinyl ether	0.1775	0.1689			-4.9		-0.003	AvgRF
60	cis-1,3-dichloropropene	0.5569	0.5267			-5.4		-0.001	AvgRF
61 ISTD	chlorobenzene-d5						0.2	-0.002	AvgRF
63	toluene	1.1435	1.0677			-6.6		0.003	AvgRF
64	4-methyl-2-pentanone	0.0472	0.0423			-10.4		0.000	AvgRF
65	ethyl methacrylate	0.5449	0.5046			-7.4		-0.004	AvgRF
66	trans-1,3-dichloropropene	0.6657	0.6147			-7.7		-0.005	AvgRF

Operator: twk-sop525r16

9/24/13



# ALS Environmental -- FC

## Initial Calibration Verification

Lab Sample ID: VL130923-4ICV

Calibration ID: 092313WM

Analysis Date: 9/23/2013

Instrument ID: HPV4

File Name: D44448

Calibration Date: 9/23/2013

	Analyte	AvgRF	CCRF	Expected Conc.	Found Conc.	%Dev. or % Drift	%Diff (Area)	RT Dev.	Curve Type
67	1,1,2-trichloroethane	0.3572	0.3266			-8.6		-0.002	AvgRF
68	tetrachloroethene			20.000	18.96	-5.2		-0.001	linear
69	2-hexanone	0.1490	0.1402			-5.9		0.000	AvgRF
70	1,3-dichloropropane	0.7146	0.6562			-8.2		0.000	AvgRF
71	dibromochloromethane	0.4215	0.4110			-2.5		0.002	AvgRF
72	1,2-dibromoethane	0.3833	0.3582			-6.5		0.003	AvgRF
73	1-chlorohexane	0.5564	0.5012			-9.9		-0.002	AvgRF
74	chlorobenzene	1.2408	1.1554			-6.9		-0.001	AvgRF
75	ethylbenzene	2.0674	1.9567			-5.4		0.000	AvgRF
76	1,1,1,2-tetrachloroethane	0.4405	0.4160			-5.6		0.000	AvgRF
77	m+p-xylene	0.7486	0.7068			-5.6		0.001	AvgRF
78	o-xylene	0.7609	0.7154			-6.0		-0.005	AvgRF
79	styrene	1.2572	1.2247			-2.6		-0.005	AvgRF
80	bromoform	0.2385	0.2280			-4.4		-0.002	AvgRF
81	isopropylbenzene	1.7174	1.6467			-4.1		-0.001	AvgRF
83	ISTD 1,4-dichlorobenzene-d4						1.4	0.003	AvgRF
84	1,1,2,2-tetrachloroethane	0.9989	0.8707			-12.8		0.002	AvgRF
85	trans-1,4-dichloro-2-butene	0.2500	0.1958			-21.7		0.002	AvgRF
86	n-propylbenzene	4.6430	4.2712			-8.0		0.003	AvgRF
87	1,2,3-trichloropropane	0.2813	0.2443			-13.2		0.003	AvgRF
88	bromobenzene	1.1007	1.0247			-6.9		0.003	AvgRF
89	1,3,5-trimethylbenzene	3.1186	2.8804			-7.6		-0.005	AvgRF
90	2-chlorotoluene	0.9703	0.9068			-6.5		0.004	AvgRF
91	4-chlorotoluene	0.9637	0.8946			-7.2		-0.004	AvgRF
92	tert-butylbenzene	0.6198	0.5727			-7.6		-0.001	AvgRF
93	1,2,4-trimethylbenzene	3.0581	2.8652			-6.3		-0.001	AvgRF
94	sec-butylbenzene	3.6013	3.4328			-4.7		0.001	AvgRF
95	p-isopropyltoluene	2.8789	2.6815			-6.9		0.002	AvgRF
96	1,3-dichlorobenzene	1.8937	1.7511			-7.5		0.002	AvgRF
97	1,4-dichlorobenzene	1.8435	1.6859			-8.6		0.003	AvgRF
98	n-butylbenzene	2.5775	2.3878			-7.4		-0.004	AvgRF
99	1,2-dichlorobenzene	1.7496	1.6375			-6.4		-0.003	AvgRF
10	hexachloroethane	0.4040	0.3961			-2.0		0.000	AvgRF
10	1,2-dibromo-3-chloropropane	0.1405	0.1209			-13.9		0.005	AvgRF
10	1,2,4-trichlorobenzene	0.9330	0.9095			-2.5		0.003	AvgRF
10	hexachlorobutadiene	0.3986	0.3947			-1.0		0.004	AvgRF
10	naphthalene	1.9087	1.7963			-5.9		-0.004	AvgRF
10	1,2,3-trichlorobenzene	0.8030	0.7703			-4.1		-0.002	AvgRF

Operator: twk-sop525r16

Date Printed: Tuesday, September 24, 2013

ALS Environmental -- FC

LIMS Version: 6.670

Page 2 of 2  
41 of 153

9/24/13

# ALS Environmental -- FC

## Continuing Calibration Verification

Lab Sample ID: VL131217-7CCV

Calibration ID: 090913GROM

Analysis Date: 12/17/2013

Instrument ID: HPV4

File Name: D45831

Calibration Date: 9/9/2013

	Analyte	AvgRF	CCRF	Expected Conc.	Found Conc.	%Dev. or % Drift	%Diff (Area)	RT Dev. (min)	Curve Type
83) ISTD	1,4-dichlorobenzene-d4						<del>MT -200.0</del>	0.000	AvgRF
10	gasoline range organics			500.000	429.40	-14.1		-0.005	quadratic

### Nickname Filters

8260\_25\_BTEX+GRO\_COGCC

8260\_25\_BTEX+GRO\_Walter

8260\_25Full\_COGCCExt+GRO

Operator: sdw-sop525r16

SN 12/18/13

# ALS Environmental -- FC

## Continuing Calibration Verification

Lab Sample ID: VL131217-4CCV

Calibration ID: 092313WM

Analysis Date: 12/17/2013

Instrument ID: HPV4

File Name: D45834

Calibration Date: 9/23/2013

	Analyte	AvgRF	CCRF	Expected Conc.	Found Conc.	%Dev. or % Drift	%Diff (Area)	RT Dev. (min)	Curve Type
1) ISTD	fluorobenzene						3.4	0.001	AvgRF
2)	dichlorodifluoromethane	0.4545	0.4025			-11.4		-0.001	AvgRF
3)	chloromethane	0.4625	0.4477			-3.2		0.001	AvgRF
4)	vinyl chloride	0.3880	0.3869			-0.3		0.003	AvgRF
5)	bromomethane			10.000	8.63	-13.7		-0.002	quadratic
6)	chloroethane	0.2525	0.2411			-4.5		-0.001	AvgRF
7)	trichlorofluoromethane	0.5048	0.5221			3.4		0.003	AvgRF
9)	ethanol	0.0036	0.0031			-14.5		-0.004	AvgRF
11)	1,1,2-trichloro-1,2,2-trifluoroethane	0.3049	0.2793			-8.4		0.002	AvgRF
12)	1,1-dichloroethene	0.2857	0.2646			-7.4		0.002	AvgRF
13)	acetone	0.0227	0.0201			-11.3		0.003	AvgRF
14)	iodomethane			10.000	8.47	-15.3		0.005	quadratic
15)	carbon disulfide	1.0400	0.9314			-10.4		-0.004	AvgRF
18)	methylene chloride	0.3686	0.3355			-9.0		0.002	AvgRF
20)	tert-butanol	0.0287	0.0275			-4.4		0.004	AvgRF
21)	methyl tertiary butyl ether	0.8551	0.8189			-4.2		-0.002	AvgRF
22)	hexane	0.2642	0.2553			-3.4		0.005	AvgRF
23)	trans-1,2-dichloroethene	0.3252	0.3014			-7.3		-0.002	AvgRF
26)	vinyl acetate	0.7388	0.5742			-22.3		-0.002	AvgRF
27)	1,1-dichloroethane	0.6819	0.6138			-10.0		-0.002	AvgRF
30)	2,2-dichloropropane	0.4731	0.4394			-7.1		0.000	AvgRF
31)	cyclohexane	0.4587	0.4290			-6.5		0.001	AvgRF
32)	2-butanone	0.0294	0.0285			-3.2		0.000	AvgRF
33)	cis-1,2-dichloroethene	0.3737	0.3643			-2.5		0.000	AvgRF
37)	bromochloromethane	0.1621	0.1643			1.4		0.005	AvgRF
38)	chloroform	0.6409	0.6048			-5.6		-0.003	AvgRF
41)	1,1,1-trichloroethane	0.5208	0.4959			-4.8		0.000	AvgRF
43)	carbon tetrachloride	0.4019	0.3969			-1.2		0.003	AvgRF
44)	1,1-dichloropropene	0.4856	0.4481			-7.7		0.003	AvgRF
46)	isobutyl alcohol	0.0155	0.0138			-10.7		0.005	AvgRF
48)	benzene	1.4081	1.3086			-7.1		-0.004	AvgRF
49)	1,2-dichloroethane	0.4732	0.4204			-11.2		-0.003	AvgRF
50)	methyl cyclohexane	0.4782	0.4643			-2.9		-0.001	AvgRF
51)	trichloroethene	0.3565	0.3396			-4.7		-0.004	AvgRF
52)	n-butanol	0.0074	0.0069			-7.2		0.005	AvgRF
53)	1,2-dichloropropane	0.4037	0.3711			-8.1		-0.001	AvgRF
55)	1,4-dioxane	0.0026	0.0023			-8.6		0.000	AvgRF
56)	dibromomethane	0.2004	0.1861			-7.1		0.001	AvgRF
57)	bromodichloromethane	0.4563	0.4554			-0.2		0.003	AvgRF
60)	cis-1,3-dichloropropene	0.5569	0.5403			-3.0		-0.001	AvgRF
61) ISTD	chlorobenzene-d5						5.8	-0.002	AvgRF
63)	toluene	1.1435	1.0225			-10.6		0.003	AvgRF
64)	4-methyl-2-pentanone	0.0472	0.0431			-8.5		0.000	AvgRF
66)	trans-1,3-dichloropropene	0.6657	0.6086			-8.6		-0.005	AvgRF
67)	1,1,2-trichloroethane	0.3572	0.3114			-12.8		-0.002	AvgRF
68)	tetrachloroethene			10.000	9.56	-4.4		-0.001	linear
69)	2-hexanone	0.1490	0.1293			-13.2		0.000	AvgRF
70)	1,3-dichloropropane	0.7146	0.6020			-15.8		0.000	AvgRF
71)	dibromochloromethane	0.4215	0.4348			3.2		0.002	AvgRF
72)	1,2-dibromoethane	0.3833	0.3496			-8.8		0.003	AvgRF
73)	1-chlorohexane	0.5564	0.4826			-13.3		-0.002	AvgRF
74)	chlorobenzene	1.2408	1.1218			-9.6		-0.001	AvgRF
75)	ethylbenzene	2.0674	1.8311			-11.4		0.000	AvgRF
76)	1,1,1,2-tetrachloroethane	0.4405	0.4206			-4.5		0.000	AvgRF
77)	m+p-xylene	0.7486	0.6828			-8.8		0.001	AvgRF
78)	o-xylene	0.7609	0.6986			-8.2		-0.005	AvgRF
79)	styrene	1.2572	1.1793			-6.2		-0.005	AvgRF
80)	bromoform	0.2385	0.2602			9.1		-0.002	AvgRF
81)	isopropylbenzene	1.7174	1.5819			-7.9		-0.001	AvgRF
83) ISTD	1,4-dichlorobenzene-d4						5.9	0.003	AvgRF
84)	1,1,2,2-tetrachloroethane	0.9989	0.8669			-13.2		0.002	AvgRF
86)	n-propylbenzene	4.6430	4.0719			-12.3		0.003	AvgRF
87)	1,2,3-trichloropropane	0.2813	0.2698			-4.1		0.003	AvgRF
88)	bromobenzene	1.1007	1.0366			-5.8		0.002	AvgRF

Operator: sdw-sop525r16

# ALS Environmental -- FC

## Continuing Calibration Verification

Lab Sample ID: VL131217-4CCV

Calibration ID: 092313WM

Analysis Date: 12/17/2013

Instrument ID: HPV4

File Name: D45834

Calibration Date: 9/23/2013

	Analyte	AvgRF	CCRF	Expected Conc.	Found Conc.	%Dev. or % Drift	%Diff (Area)	RT Dev. (min)	Curve Type
89)	1,3,5-trimethylbenzene	3.1186	2.8154			-9.7		-0.005	AvgRF
90)	2-chlorotoluene	0.9703	0.8833			-9.0		0.004	AvgRF
91)	4-chlorotoluene	0.9637	0.8877			-7.9		-0.004	AvgRF
92)	tert-butylbenzene	0.6198	0.5848			-5.7		-0.002	AvgRF
93)	1,2,4-trimethylbenzene	3.0581	2.7637			-9.6		-0.001	AvgRF
94)	sec-butylbenzene	3.6013	3.2437			-9.9		0.001	AvgRF
95)	p-isopropyltoluene	2.8789	2.6470			-8.1		0.002	AvgRF
96)	1,3-dichlorobenzene	1.8937	1.7219			-9.1		0.002	AvgRF
97)	1,4-dichlorobenzene	1.8435	1.6301			-11.6		0.003	AvgRF
98)	n-butylbenzene	2.5775	2.3908			-7.2		-0.004	AvgRF
99)	1,2-dichlorobenzene	1.7496	1.5984			-8.6		-0.003	AvgRF
10	1,2-dibromo-3-chloropropane	0.1405	0.1301			-7.4		0.005	AvgRF
10	1,2,4-trichlorobenzene	0.9330	0.9062			-2.9		0.003	AvgRF
10	hexachlorobutadiene	0.3986	0.3711			-6.9		0.004	AvgRF
10	naphthalene	1.9087	1.8329			-4.0		-0.004	AvgRF
10	1,2,3-trichlorobenzene	0.8030	0.7912			-1.5		-0.002	AvgRF

### Nickname Filters

8260\_25  
8260\_25\_BTEX+GRO\_COGCC  
8260\_25\_BTEX+GRO\_Walter  
8260\_25Full\_COGCCExt+GRO

Operator: sdw-sop525r16

# 8A

## Volatile Internal Standard Area Summary

Lab Name: ALS Environmental -- FC  
 Work Order Number: 1312158  
 Client Name: Colorado Oil & Gas Conservation Commission  
 ClientProject ID: TBAL

Date Analyzed: 12/17/2013  
 Time Analyzed: 12:18

Reported on: Friday, December 27, 2013

Instrument ID: HPV4  
 Lab File ID: D45834

	IS1		IS2		IS3		IS4		IS5		IS6	
	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT	Area	RT
12 Hour STD	685098	8.33	524980	11.36	247012	13.32						
Upper Limit	1370196	8.83	1049960	11.9	494024	13.8						
Lower Limit	342549	7.83	262490	10.9	123506	12.8						
Lab Sample ID												
VL131217-7LCS												
VL131217-7LCSD												
VL131217-4LCS	685098	8.33	524980	11.36	247012	13.32						
VL131217-4LCSD	692110	8.33	523369	11.36	245839	13.32						
VL131217-4MB	736285	8.33	542262	11.36	250226	13.32						
1312134-1	698759	8.33	520256	11.36	243539	13.32						
1312158-1	735922	8.33	542584	11.36	256617	13.32						

Shaded values exceed established area count limits.

LIMS Version: 6.682

Upper Limit = + 100 percent of internal standard area.

Lower Limit = - 50 percent of internal standard area.



## Supporting Raw Data

GCMS Volatile Instrument Run Log - HPV4  
ALS Laboratory Group - Fort Collins, CO

Sequence Name: C:\msdchem\1\sequence\090913.S  
Comment: HPV4 - 8260 - 10mL UN-htd purge: Serial Number US10451271  
Data Path: C:\msdchem\1\DATA\2013\090913\  
Operator:sdw-sop525r16 Analysis Date: 9-9-13  
Istd\Sur ID's (5.0uL): 5T130823-1  
Logbook Number: 3096 purge time: 8.0 min. desorb time & temp.: 0.5 min. @ 250 C

BFB - 5T130814-5

A - { 5T130814-1  
5T130829-2 }

C - 5T130814-7

D - 5T130814-8

B - 5T130829-3

E - 5T130814-6

Vial	DataFile	Method	Sample Name	Dil.	Samp. Amt.	RA?	pH<2?	HS?	Comment
1	D44098	070113GRO	GRO Test	IX	10uL	NO	NA	NA	
2	D44099	082313W	Prime						
3	D44100	082313W	Blank						
100	D44101	BFB	BFB-TUNE-1		1uL				
1	D44102	090913GRO	GRO Marker		10uL				BFB injected 11/32
2	D44103	090913GRO	GRO_50ppb_ICAL						25uL to 50uL E
3	D44104	090913GRO	GRO_100ppb_ICAL						5uL to 100uL C
4	D44105	090913GRO	GRO_500ppb_ICAL						25uL to 50uL
5	D44106	090913GRO	GRO_1,000ppb_IC						25uL
6	D44107	090913GRO	Blank						50uL
7	D44108	090913GRO	GRO_2,000ppb_IC						100uL
8	D44109	090913GRO	Blank						200uL
9	D44110	090913GRO	GRO_4,000ppb_IC						
10	D44111	090913GRO	Blank						
11	D44112	090913GRO	VL130909-7ICS						25uL to 50uL D (500uL)
12	D44113	090913GRO	VL130909-7LCSD						10uL to 100uL B (1uL)
13	D44114	082313W	VL130909-4RVS						10uL to 100uL A (10uL)
14	D44115	082313W	VL130909-4CCS						
15	D44116	082313W	VL130909-4LCSD						
16	D44117	082313W	VL130909-4MB						
17	D44118	082313W	1308462-1						All Targets < 4uL
18	D44119	082313W	1308462-2						
19	D44120	082313W	1308546-1						
20	D44121	082313W	1308546-2						
21	D44122	082313W	1309021-1						
22	D44123	082313W	1309022-1						
23	D44124	082313W	1309023-1						
24	D44125	082313W	1309024-1						
25	D44126	082313W	1309025-1						
26	D44127	082313W	1309026-1						
27	D44128	082313W	1309027-1						
28	D44129	082313W	1309028-1						All Targets < 4uL
29	D44130	082313W	VL130909-4MMB 50X	50X	1uL to 50uL E				
30	D44131	082313W	1309054-2 500X	500X	1uL				MeOH Extra
31	D44132	082313W	1309054-1 500X	500X	1uL				
32	D44133	082313W	Blank						
33	D44134	082313W	Blank	IX	10uL				Cleanups

GCMS Volatile Instrument Run Log - HPV4  
ALS Laboratory Group - Fort Collins, CO

Sequence Name: C:\msdchem\1\sequence\092313.S  
Comment: HPV4 - 8260 - 10mL UN-htd purge: Serial Number US10451271  
Data Path: C:\msdchem\1\DATA\2013\092313\  
Operator: twk-sop525r16 Analysis Date: 09/23/13 24  
Istd\Surf ID's (5.0uL): ST130623-1 CAL Standard ID's: see comments  
Logbook Number: 3096 purge time: 8 min. desorb time & temp.: 0.5 min. @ 250 C

Vial	DataFile	Method	Sample Name	Dil.	Samp. Amt.	RA?	pH<2?	HS?	Comment
100	D44432	BFB	BFB-TUNE-1	—	10 µL	NO	NA	NA	ST130814-5 injection @ 15:43
1	D44433	092313W	Blank	—	10 µL	—	—	—	ST130923-2 5 µL to 100 mL
2	D44434	092313W	VOC 0.25ppb ICAL	—	—	—	—	—	5 µL to 50 mL
3	D44435	092313W	VOC 0.50ppb ICAL	—	—	—	—	—	10 µL
4	D44436	092313W	VOC 1.0ppb ICAL	—	—	—	—	—	20 µL
5	D44437	092313W	VOC 2.0ppb ICAL	—	—	—	—	—	ST130923-1-3 4 µL to 100 mL
6	D44438	092313W	VOC 4.0ppb ICAL	—	—	—	—	—	5 µL to 50 mL
7	D44439	092313W	VOC 10ppb ICAL	—	—	—	—	—	NA
8	D44440	092313W	Blank	—	—	—	—	—	10 µL to 50 mL
9	D44441	092313W	VOC 20ppb ICAL	—	—	—	—	—	NA
10	D44442	092313W	Blank	—	—	—	—	—	20 µL to 50 mL
11	D44443	092313W	VOC 40ppb ICAL	—	—	—	—	—	NA
12	D44444	092313W	Blank	—	—	—	—	—	NA
13	D44445	092313W	VOC 60ppb ICAL	—	—	—	—	—	20 µL to 50 mL
14	D44446	092313W	Blank	—	—	—	—	—	NA
15	D44447	092313W	Blank	—	—	—	—	—	20 µL to 50 mL
16	D44448	092313W	VL130923-4ICV	—	—	—	—	—	desorb @ 21:44
				—	—	—	—	—	ST130814-6-11 4 ST130910-3 10 µL to 50 mL



BFB - 5/13/13.3

Sequence Name: C:\msdchem\1\sequence\121713.S

Comment: HPV4 - 8260 - 10mL UN-htd purge: Serial Number US10451271

Data Path: C:\msdchem\1\DATA\2013\121713\

Operator: sdw-sop525r16

Istd\Surr ID's (5.0uL): 5/13/13.3

Logbook Number: 3096 purge time: 8.0 min. desorb time & temp.: 0.5 min. @ 250 C

A - { 5/13/13.3-1  
5/13/12-1  
5/13/12-3 } C - 5/13/13.6

B - 5/13/13.7

Vial	DataFile	Method	Sample Name	Dil.	Samp. Amt.	RA?	pH<2?	HS?	Comment
1	D45827	092313W	Prime						
100	D45828	BFB	BFB-TUNE-1						
3	D45829	090913GRO	GRO Marker						
4	D45830	090913GRO	VL131217-7RVS						
5	D45831	090913GRO	VL131217-7CCS						
6	D45832	090913GRO	VL131217-7LCSD						
7	D45833	092313W	VL131217-4RVS						
8	D45834	092313W	VL131217-4CCS						
9	D45835	092313W	VL131217-4LCSD						
10	D45836	092313W	Blank						
11	D45837	092313W	VL131217-4MB						
12	D45838	092313W	1312214-1						
13	D45839	092313W	1312214-2						
14	D45840	092313W	1312214-3						
15	D45841	092313W	1312214-3						
16	D45842	092313W	1312134-1						
17	D45843	092313W	1312150-1						
18	D45844	092313W	1312150-2						
19	D45845	092313W	1312151-1						
20	D45846	092313W	1312151-2						
21	D45847	092313W	1312158-1						
22	D45848	092313W	1312182-1						
23	D45849	092313W	1312190-1						
24	D45850	092313W	1312201-1						
25	D45851	092313W	1312216-3						
26	D45852	092313W	1312216-6						
27	D45853	092313W	1312216-10						
28	D45854	092313W	Blank						
29	D45855	092313W	Blank						

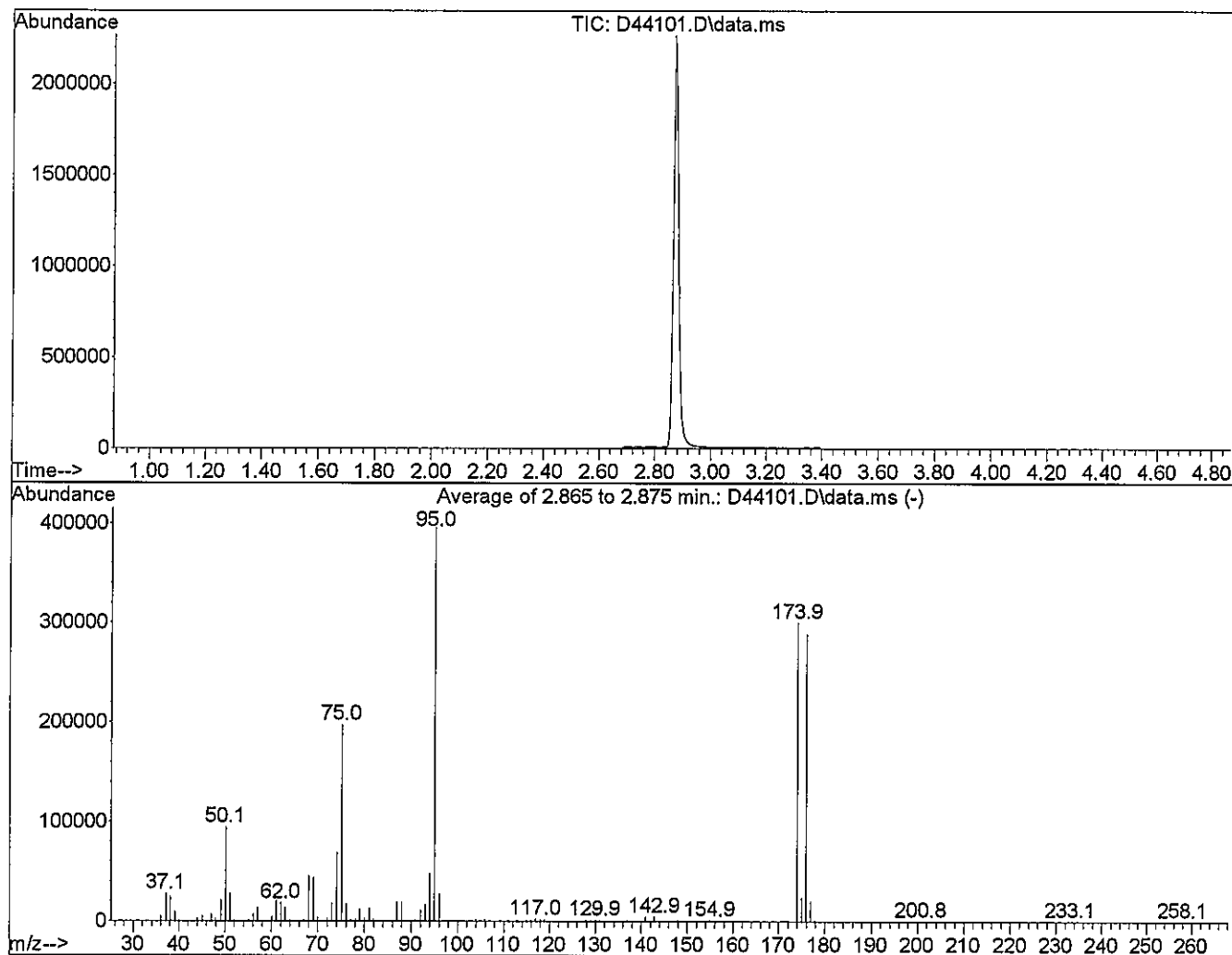


## Calibration Raw Data

Data Path : C:\msdchem\1\DATA\2013\090913\  
 Data File : D44101.D  
 Acq On : 9 Sep 2013 11:32  
 Operator : sdw-sop525r16  
 Sample : BFB-TUNE-1  
 Misc : 50ng 4-BFB (1uL direct injection)  
 ALS Vial : 100 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\090913GRO.M  
 Title :  
 Last Update : Tue Jul 16 09:41:59 2013



AutoFind: Scans 35, 36, 37; Background Corrected with Scan 26

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.8	94202	PASS
75	95	30	60	49.8	197226	PASS
95	95	100	100	100.0	396032	PASS
96	95	5	9	6.9	27149	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.8	300010	PASS
175	174	5	9	7.9	23797	PASS
176	174	95	101	96.2	288618	PASS
177	176	5	9	6.7	19459	PASS

9/10/13

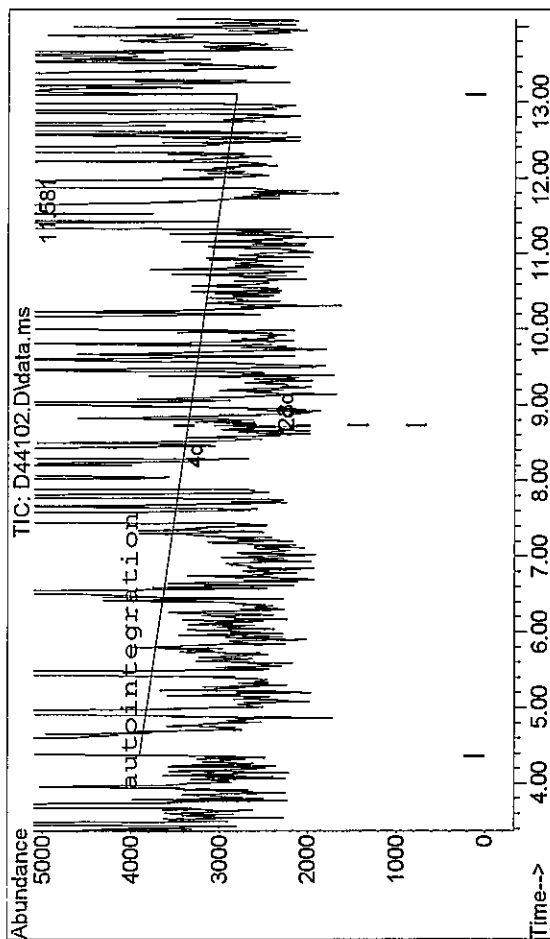
Data Path : C:\msdchem\1\DATA\2013\090913\  
Data File : D44102.D  
Acq On : 9 Sep 2013 11:46  
Operator : sdw-sop525r16  
Sample : GRO\_Marker  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 09 14:56:10 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:55:14 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
-----						
Internal Standards						
3) 1,4-Dichlorobenzene-d4	13.333	TIC	1968191	25.00	ppb	0.00
Target Compounds						
1) GRO	8.735	TIC	53056542m	841.35	ppb	Qvalue
2) 4-Bromofluorobenzene	12.371	TIC	1618338	27.58	ppb	100
-----						

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

9/9/10/17



TIC: D44102.D\data.ms

(1) GRO (H)  
8.735min (0.000) 745.88 ppb m  
response 47855398  
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)

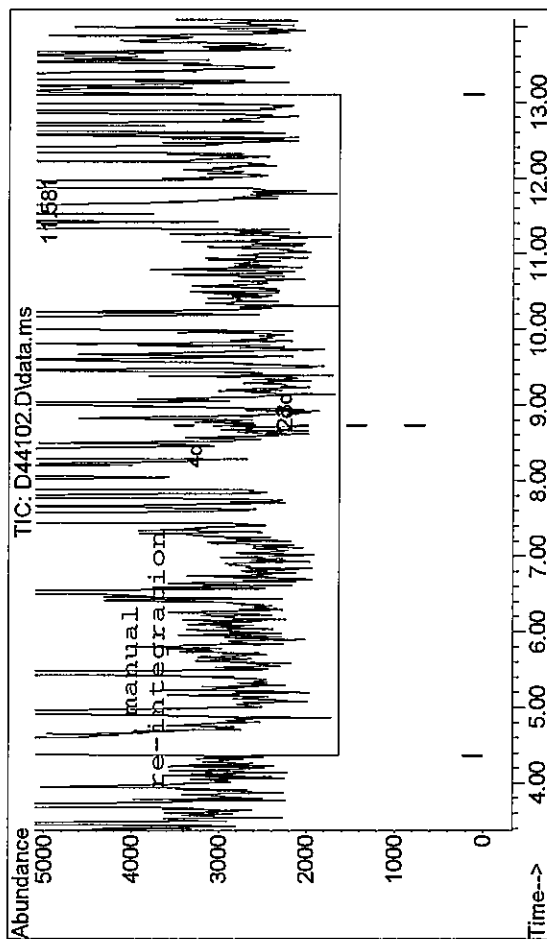
☐ over-integrated peak's area

☒ under-integrated peak's area

☐ other ( )

initials: SW

date: 9/10/17

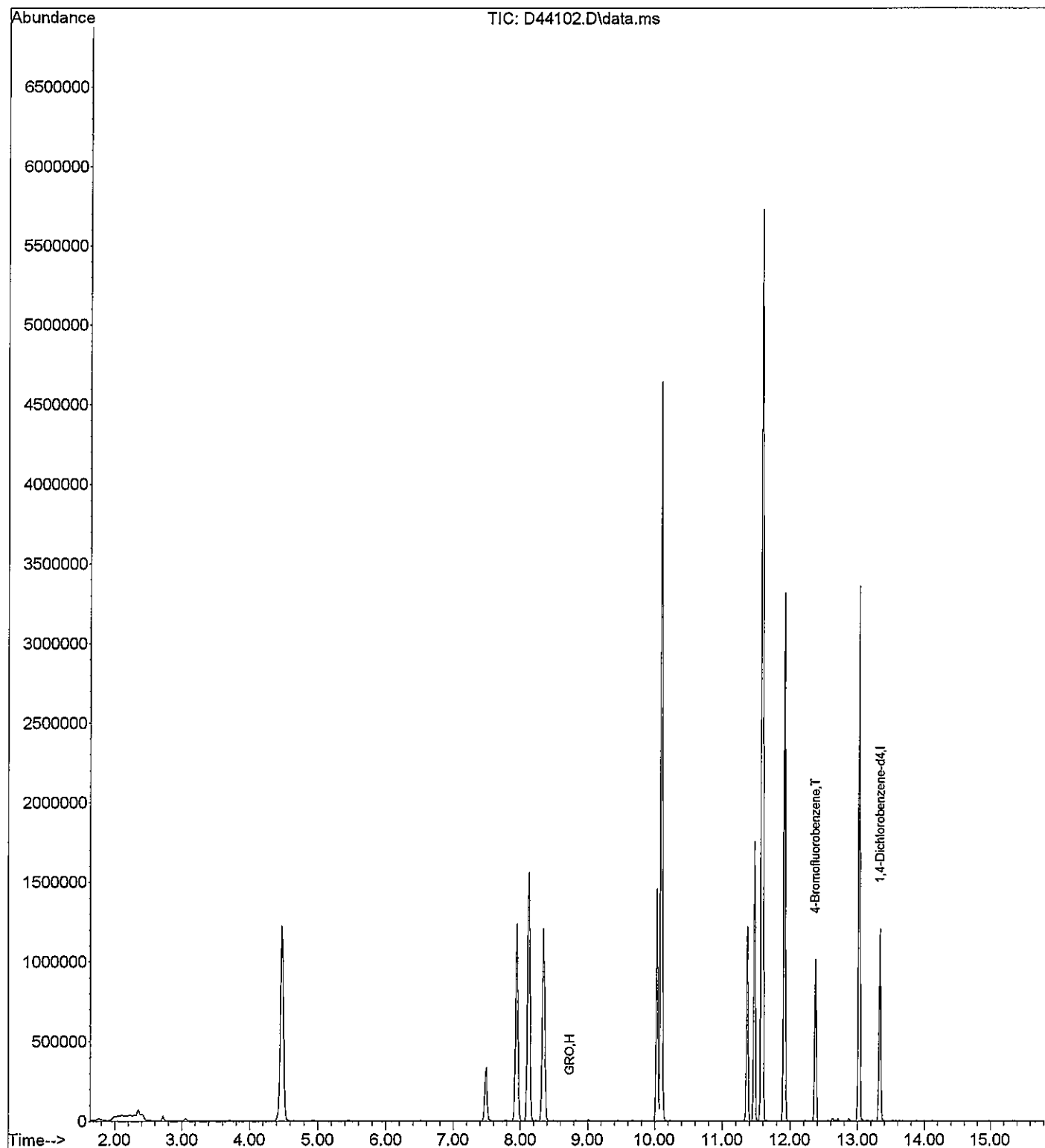


TIC: D44102.D\data.ms

(1) GRO (H)  
8.735min (0.000) 841.35 ppb m  
response 53056542  
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\2013\090913\  
Data File : D44102.D  
Acq On : 9 Sep 2013 11:46  
Operator : sdw-sop525r16  
Sample : GRO\_Marker  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 09 14:56:10 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:55:14 2013  
Response via : Initial Calibration



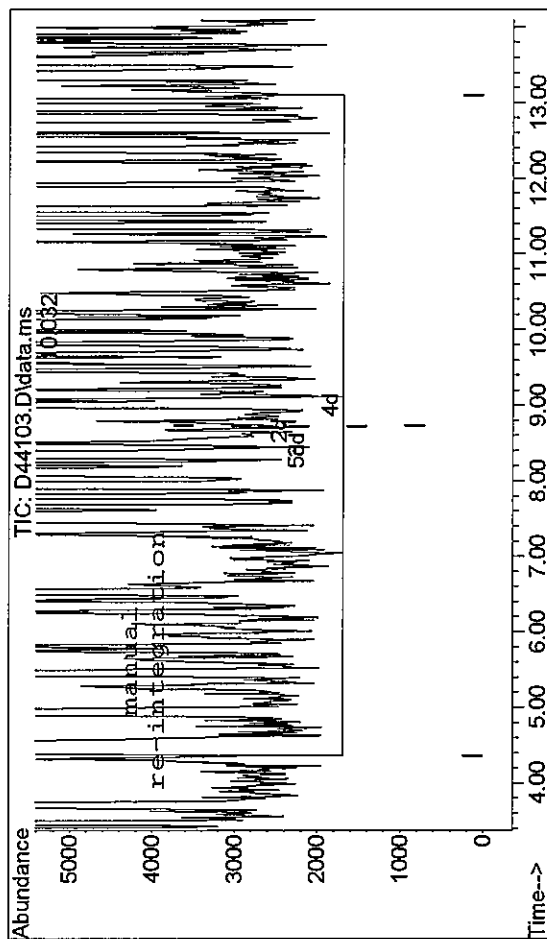
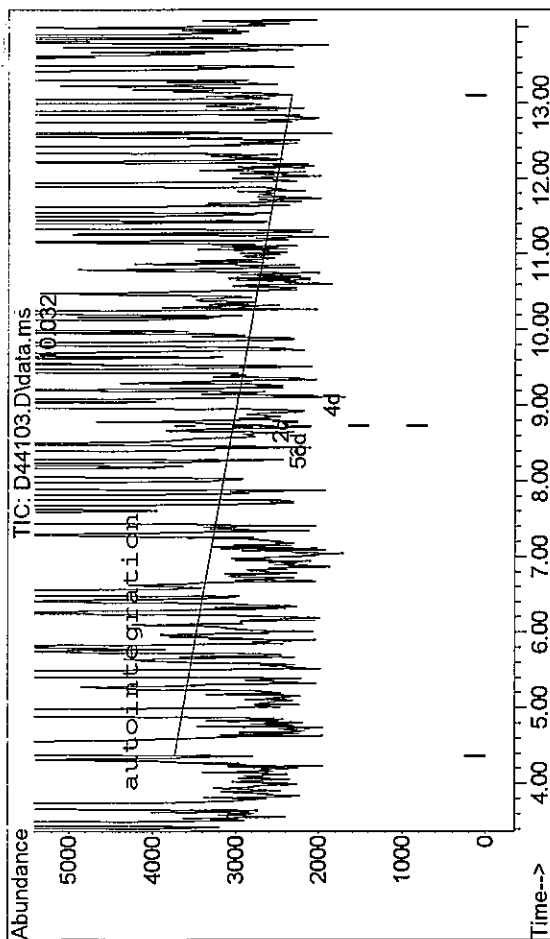
Data Path : C:\msdchem\1\DATA\2013\090913\  
Data File : D44103.D  
Acq On : 9 Sep 2013 12:09  
Operator : sdw-sop525r16  
Sample : GRO\_50ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 09 14:53:01 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:49:14 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
3) 1,4-Dichlorobenzene-d4	13.333	TIC	1592722	25.00	ppb	0.00
Target Compounds						
1) GRO	8.735	TIC	10990156m	187.32	ppb	Qvalue
2) 4-Bromofluorobenzene	12.371	TIC	1282202	18.44	ppb	100
-----						

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

9/10/13



TIC: D44103.D\data.ms

(1) GRO (H)  
8.735min (0.000) 172.63 ppb m  
response 10128117  
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: SW

date: 9/10/13

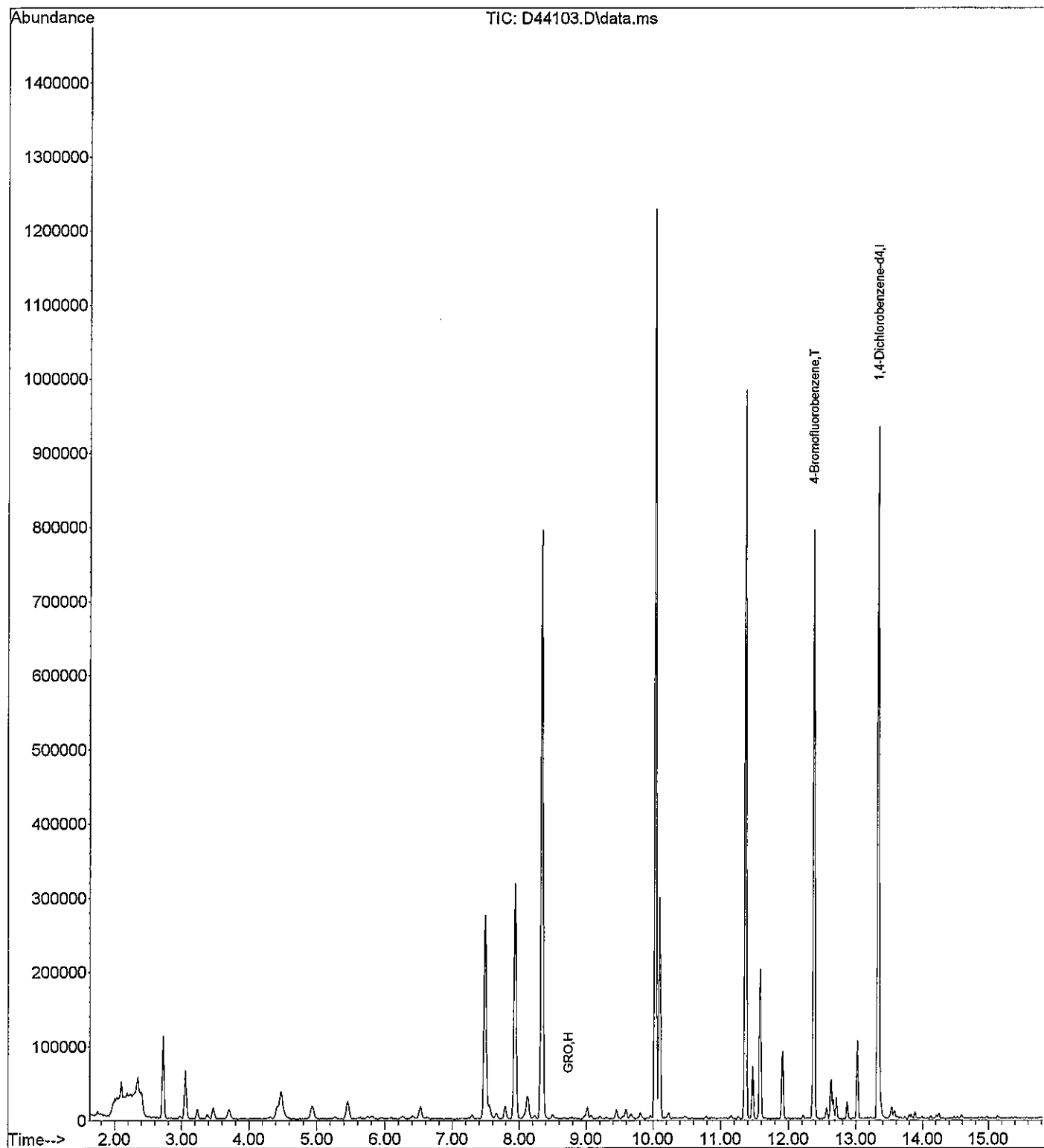
TIC: D44103.D\data.ms

(1) GRO (H)  
8.735min (0.000) 187.32 ppb m  
response 10990156  
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\2013\090913\  
Data File : D44103.D  
Acq On : 9 Sep 2013 12:09  
Operator : sdw-sop525r16  
Sample : GRO\_50ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 09 14:53:01 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:49:14 2013  
Response via : Initial Calibration



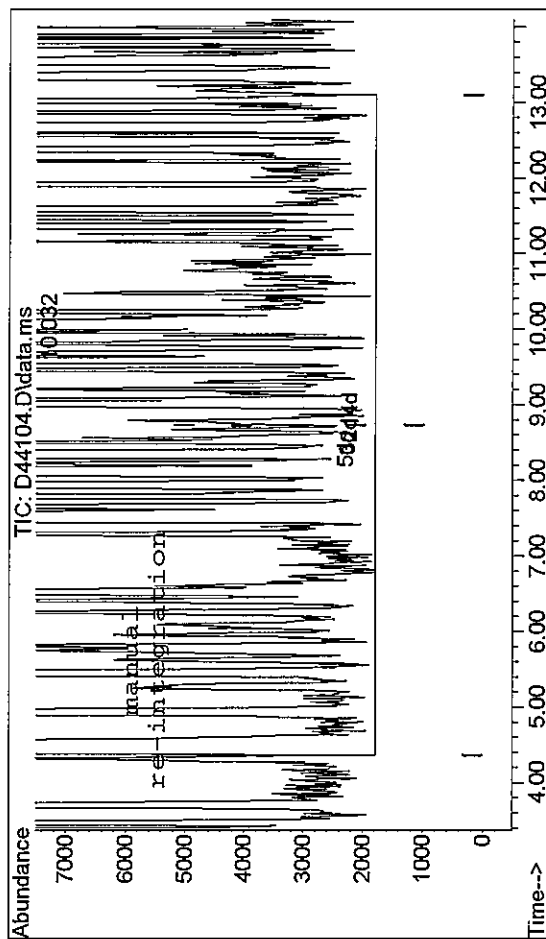
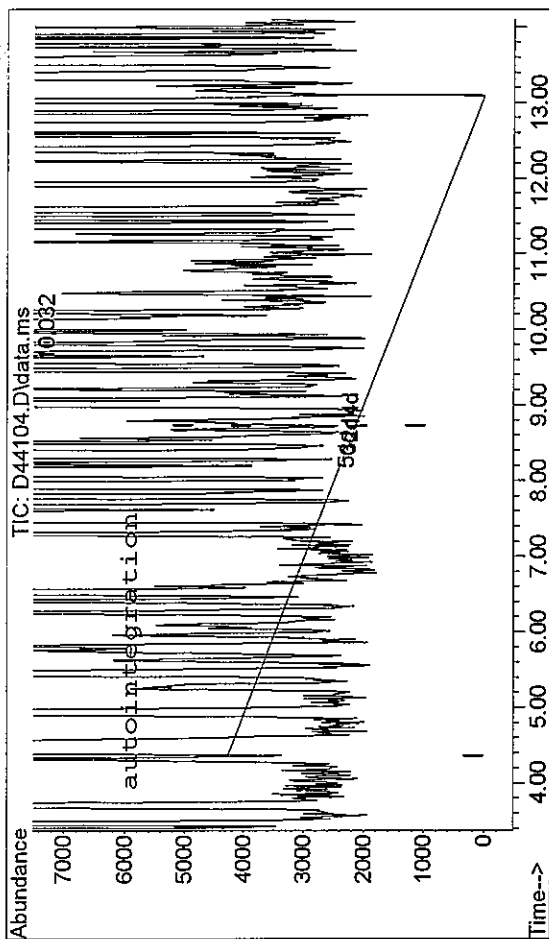
Data Path : C:\msdchem\1\DATA\2013\090913\  
Data File : D44104.D  
Acq On : 9 Sep 2013 12:32  
Operator : sdw-sop525r16  
Sample : GRO\_100ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 09 14:52:20 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:49:14 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
-----						
Internal Standards						
3) 1,4-Dichlorobenzene-d4	13.333	TIC	1687391	25.00	ppb	0.00
Target Compounds						
1) GRO	8.735	TIC	13404810m	228.48	ppb	Qvalue
2) 4-Bromofluorobenzene	12.371	TIC	1329039	19.12	ppb	100
-----						

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

sdw 9/10/13



TIC: D44104.D\data.ms

(1) GRO (H)  
8.735min (0.000) 204.85 ppb m  
response 12018469  
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 ( )

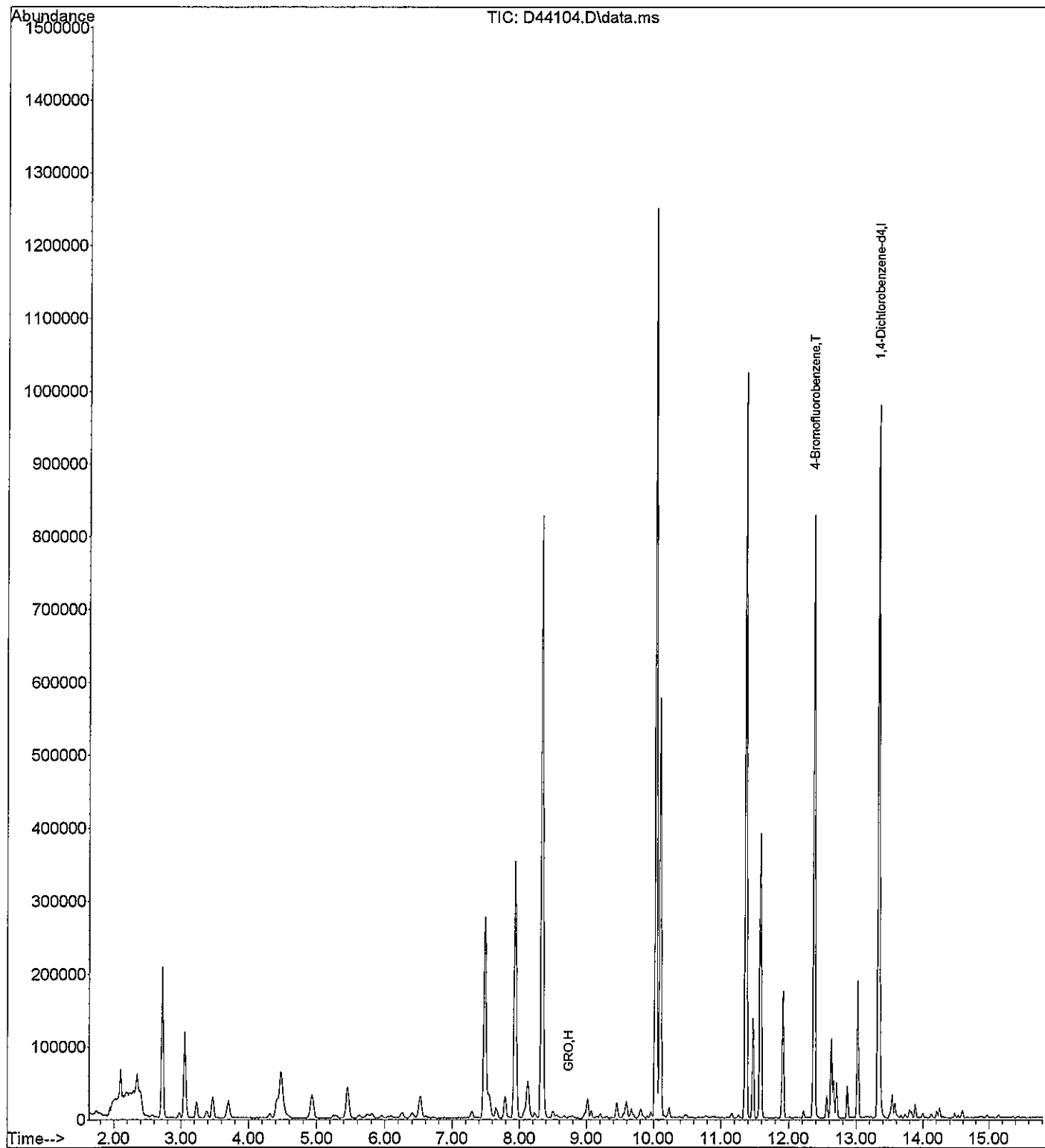
initials: sm date: 9/10/13

TIC: D44104.D\data.ms

(1) GRO (H)  
8.735min (0.000) 228.48 ppb m  
response 13404810  
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\2013\090913\  
Data File : D44104.D  
Acq On : 9 Sep 2013 12:32  
Operator : sdw-sop525r16  
Sample : GRO\_100ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 09 14:52:20 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:49:14 2013  
Response via : Initial Calibration



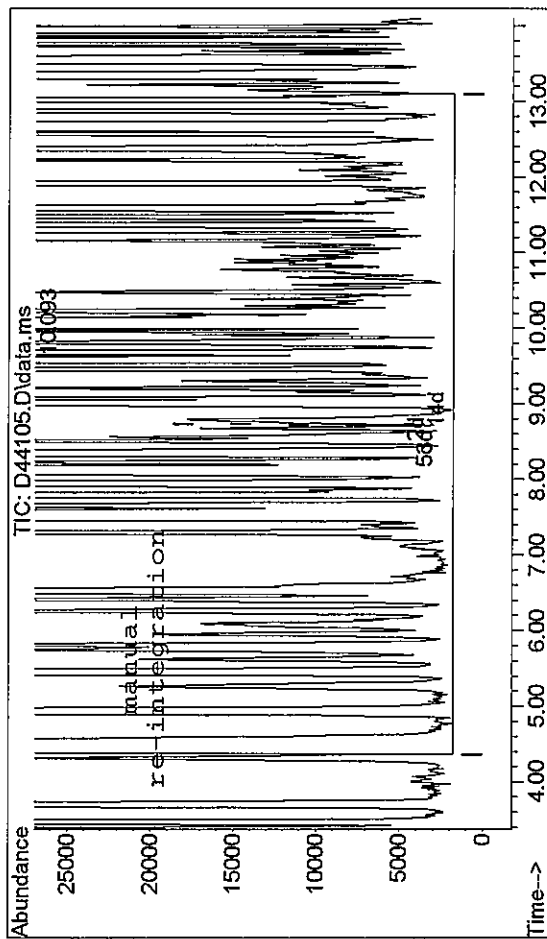
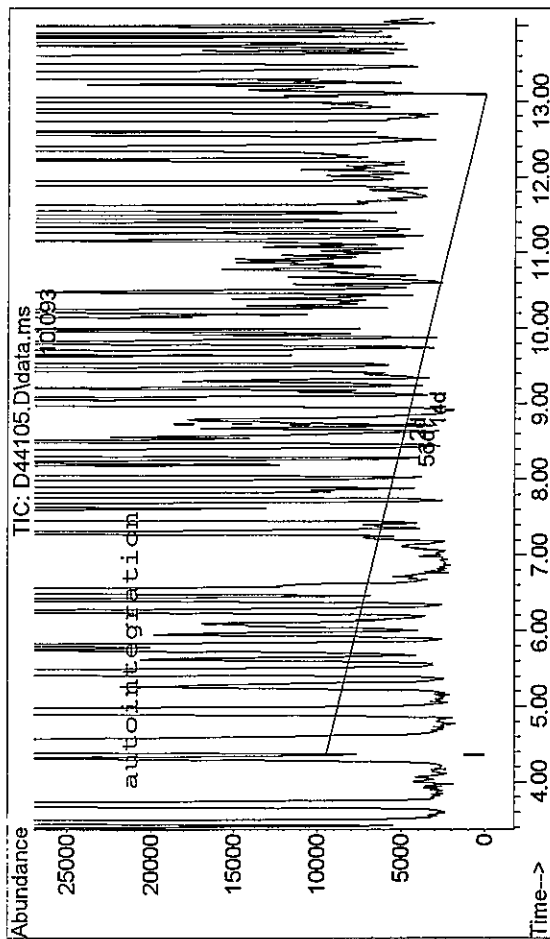
Data Path : C:\msdchem\1\DATA\2013\090913\  
Data File : D44105.D  
Acq On : 9 Sep 2013 12:55  
Operator : sdw-sop525r16  
Sample : GRO\_500ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 09 14:51:35 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:49:14 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
3) 1,4-Dichlorobenzene-d4	13.333	TIC	2109507	25.00	ppb	0.00
Target Compounds						
1) GRO	8.735	TIC	33404242m	569.35	ppb	Qvalue
2) 4-Bromofluorobenzene	12.371	TIC	1468036	21.12	ppb	100
-----						

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

sdw 9/10/13



TIC: D44105.D\data.ms

(1) GRO (H)  
8.735min (0.000) 527.49 ppb m  
response 30947996  
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 ( )

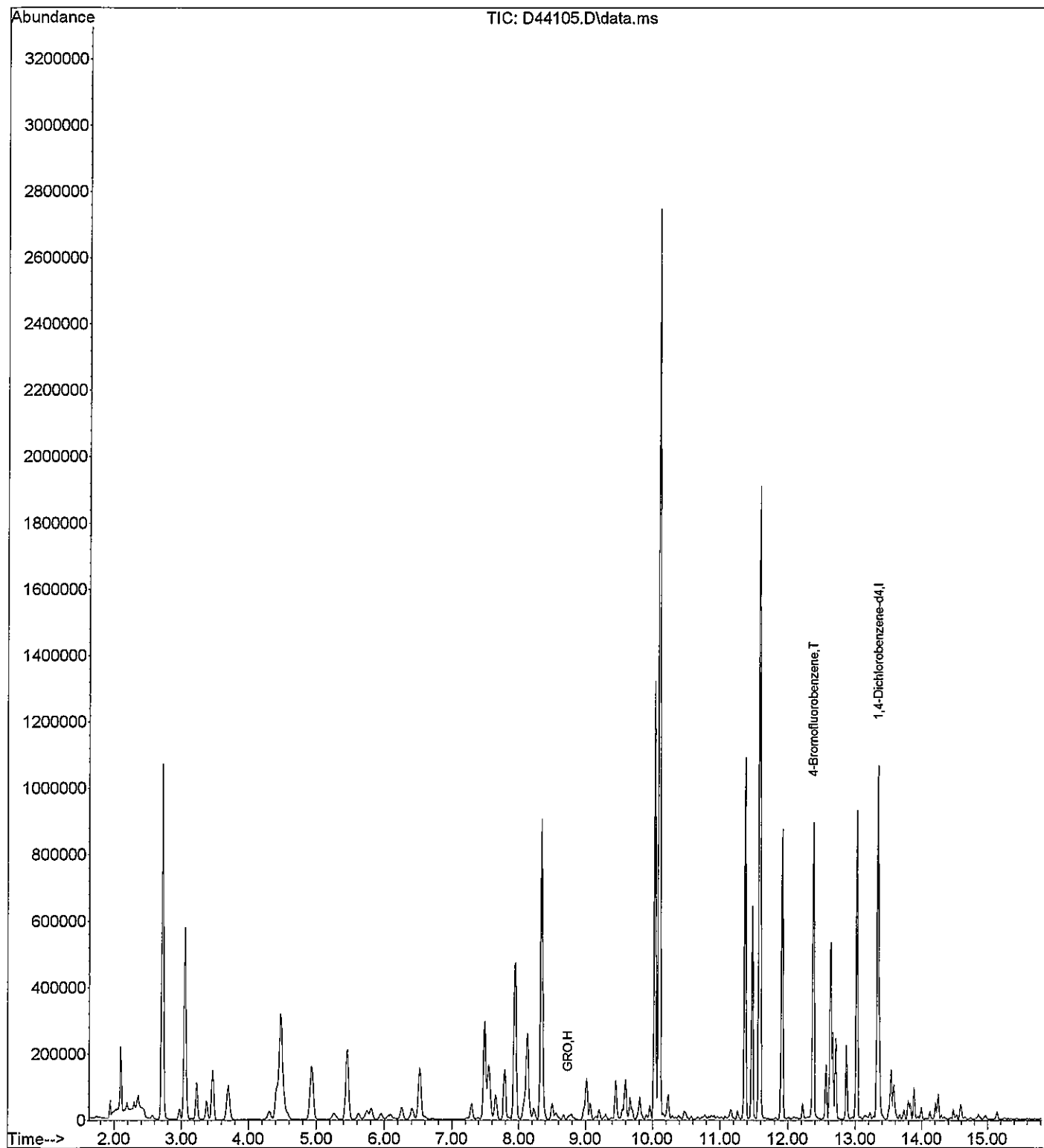
initials: SW date: 9/10/13

TIC: D44105.D\data.ms

(1) GRO (H)  
8.735min (0.000) 569.35 ppb m  
response 33404242  
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\2013\090913\  
Data File : D44105.D  
Acq On : 9 Sep 2013 12:55  
Operator : sdw-sop525r16  
Sample : GRO\_500ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 09 14:51:35 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:49:14 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\090913\  
Data File : D44106.D  
Acq On : 9 Sep 2013 13:19  
Operator : sdw-sop525r16  
Sample : GRO\_1,000ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 5 Sample Multiplier: 1

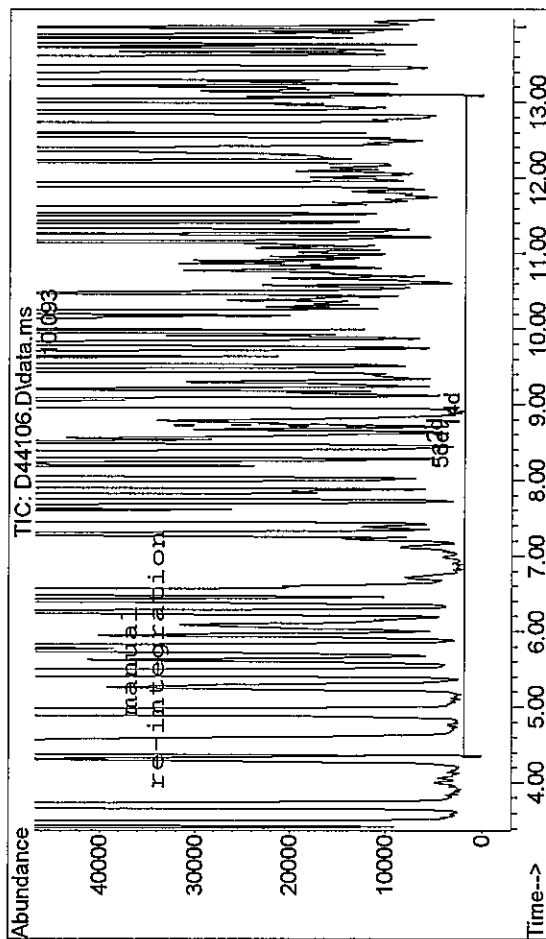
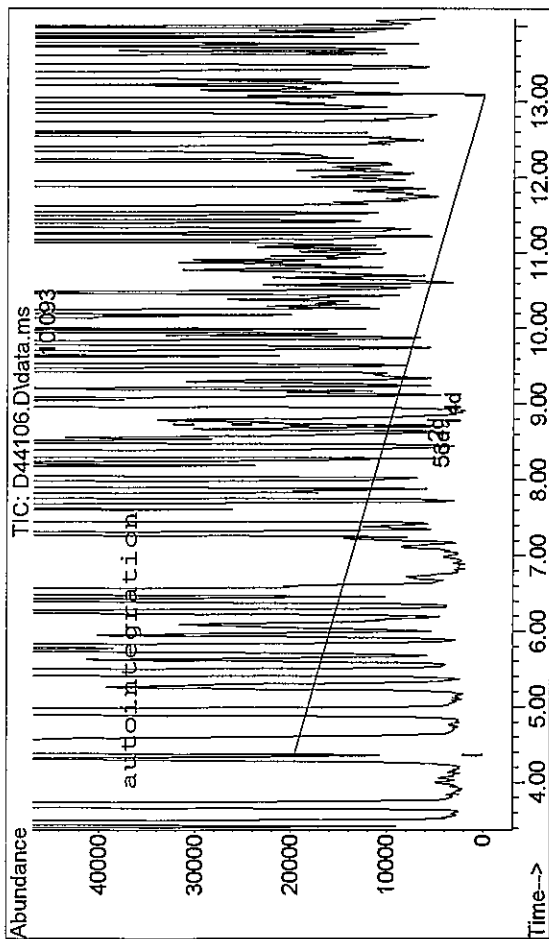
Quant Time: Sep 09 14:50:50 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:49:14 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
3) 1,4-Dichlorobenzene-d4	13.333	TIC	2534427	25.00	ppb	0.00
Target Compounds						
1) GRO	8.735	TIC	59851181m	1020.12	ppb	Qvalue
2) 4-Bromofluorobenzene	12.371	TIC	1517503	21.83	ppb	100
-----						

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

sdw 9/10/13





TIC: D44106.D\data.ms

(1) GRO (H)  
8.735min (0.000) 934.62 ppb m  
response 54834754  
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 ( )

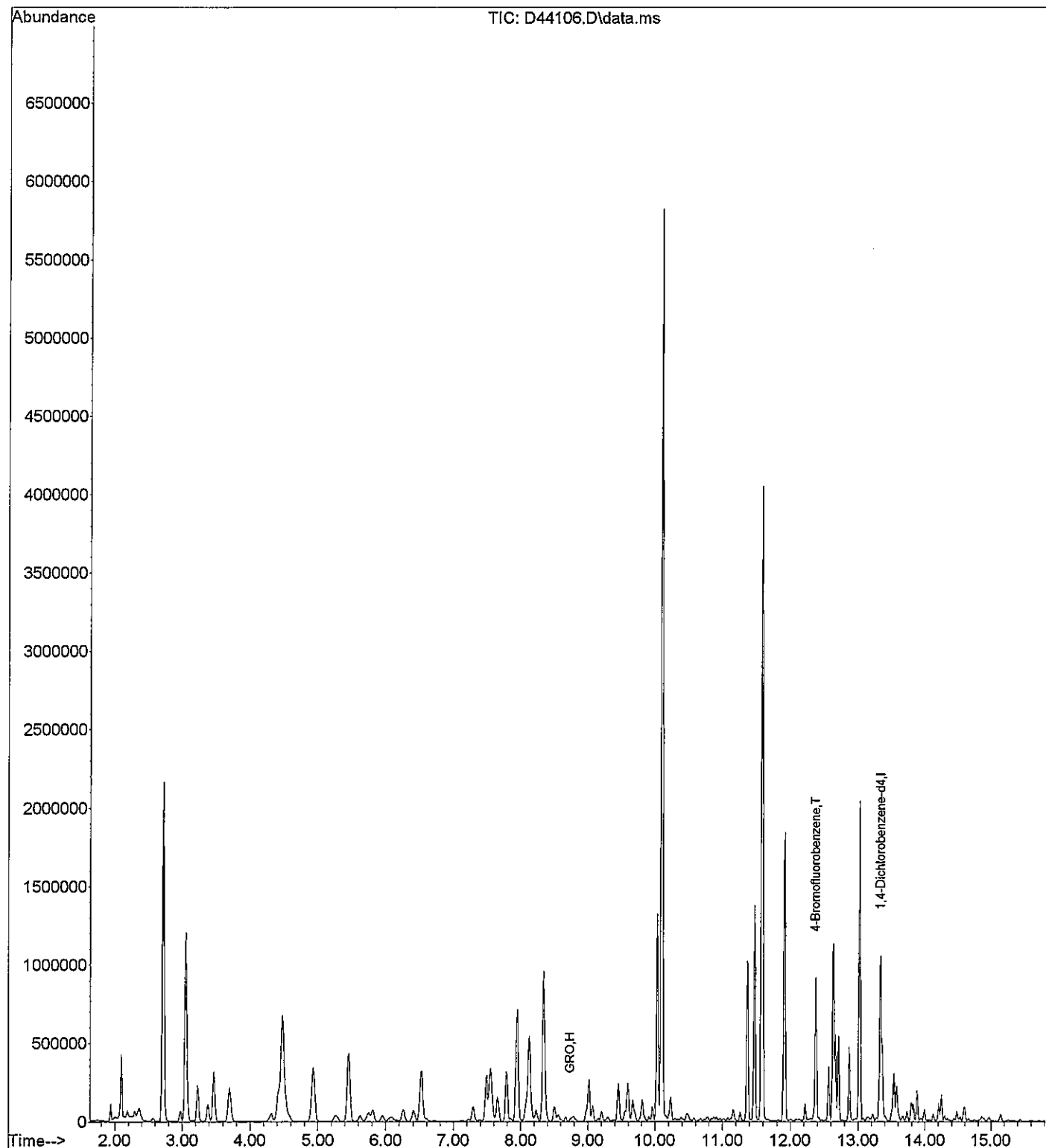
initials: sw date: 9/10/13

TIC: D44106.D\data.ms

(1) GRO (H)  
8.735min (0.000) 1020.12 ppb m  
response 59851181  
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\2013\090913\  
Data File : D44106.D  
Acq On : 9 Sep 2013 13:19  
Operator : sdw-sop525r16  
Sample : GRO\_1,000ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 09 14:50:50 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:49:14 2013  
Response via : Initial Calibration

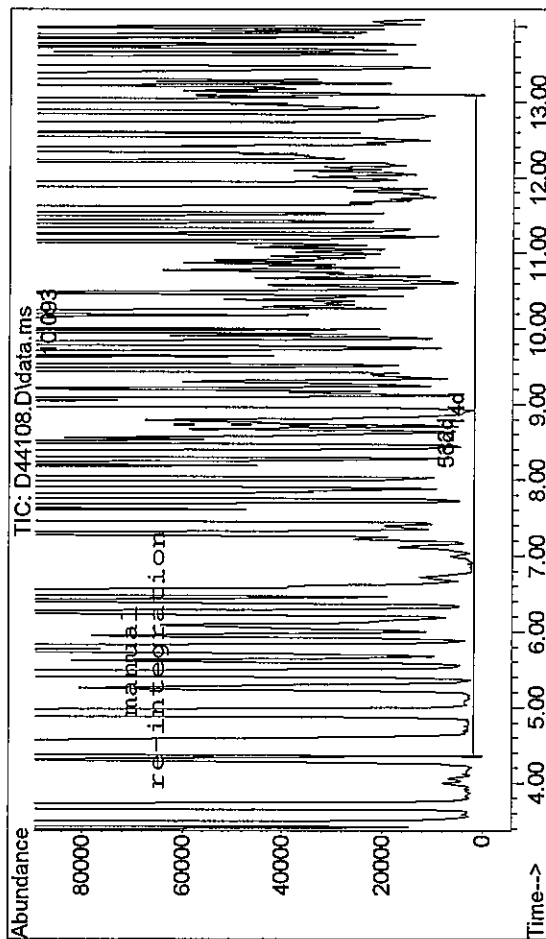
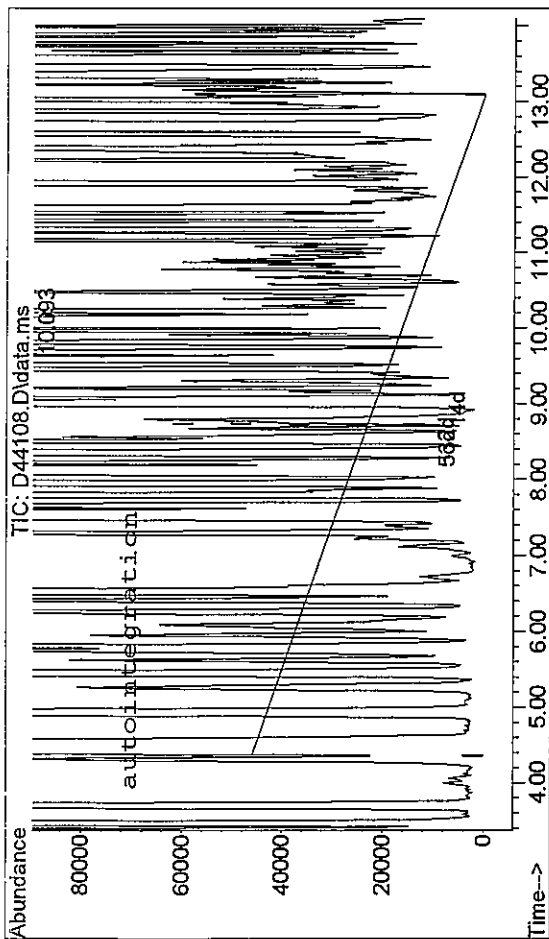


Data Path : C:\msdchem\1\DATA\2013\090913\  
Data File : D44108.D  
Acq On : 9 Sep 2013 14:06  
Operator : sdw-sop525r16  
Sample : GRO\_2,000ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 09 14:50:07 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:49:14 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
3) 1,4-Dichlorobenzene-d4	13.333	TIC	3558871	25.00	ppb	0.00
Target Compounds						
1) GRO	8.735	TIC	117302028m	1999.33	ppb	Qvalue
2) 4-Bromofluorobenzene	12.371	TIC	1738006	25.00	ppb	100
-----						

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



TIC: D44108.D\data.ms

(1) GRO (H)  
8.735min (0.000) 1814.68 ppb m  
response 106468705  
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 ( )

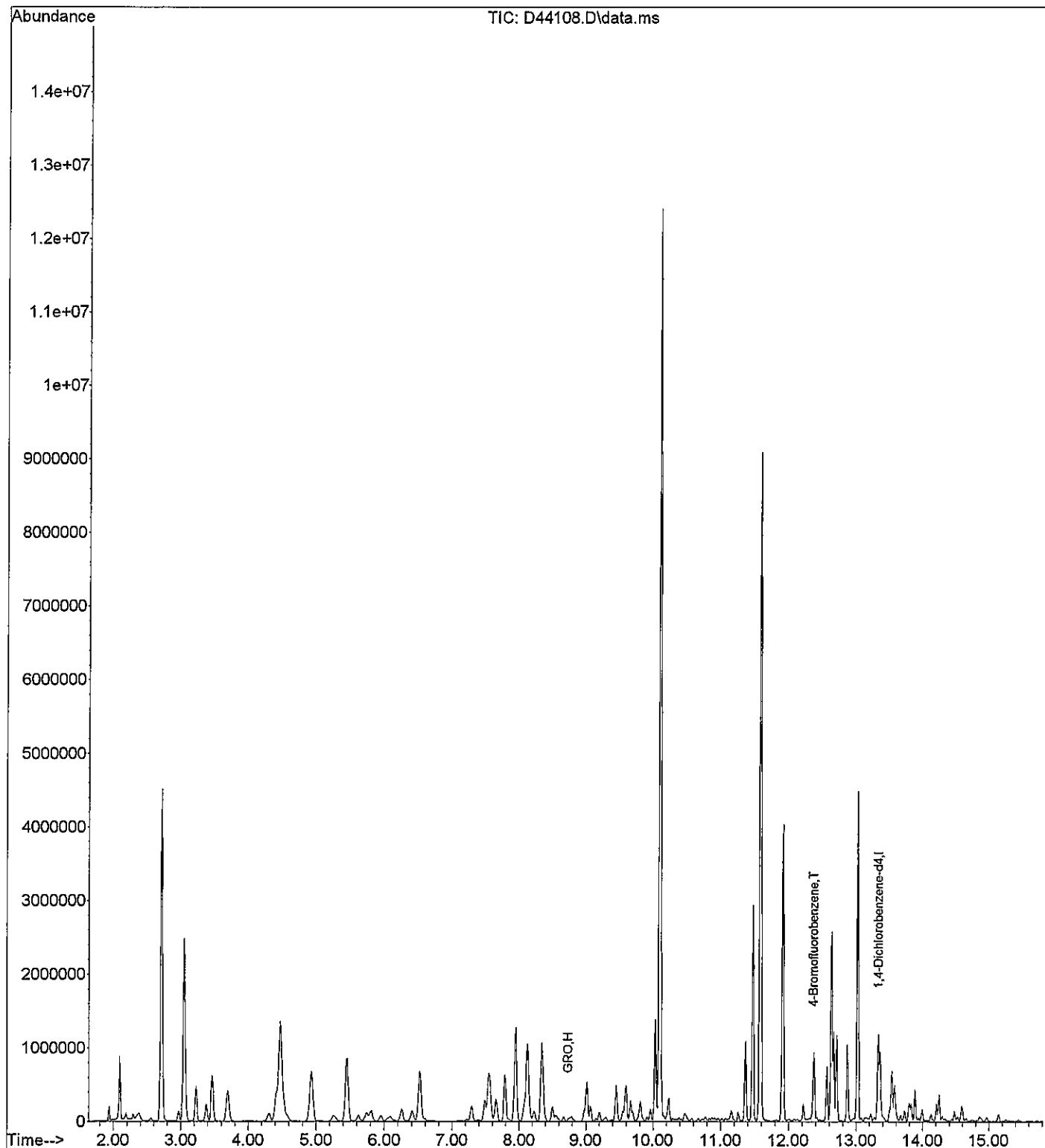
initials:   *W*   date:   9   /   10   /   13  

TIC: D44108.D\data.ms

(1) GRO (H)  
8.735min (0.000) 1999.33 ppb m  
response 117302028  
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\2013\090913\  
Data File : D44108.D  
Acq On : 9 Sep 2013 14:06  
Operator : sdw-sop525r16  
Sample : GRO\_2,000ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 09 14:50:07 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:49:14 2013  
Response via : Initial Calibration



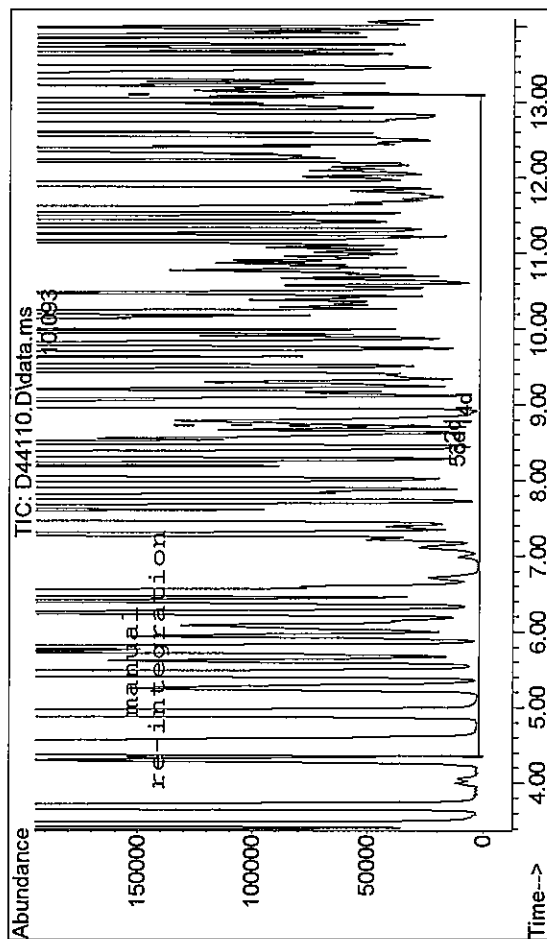
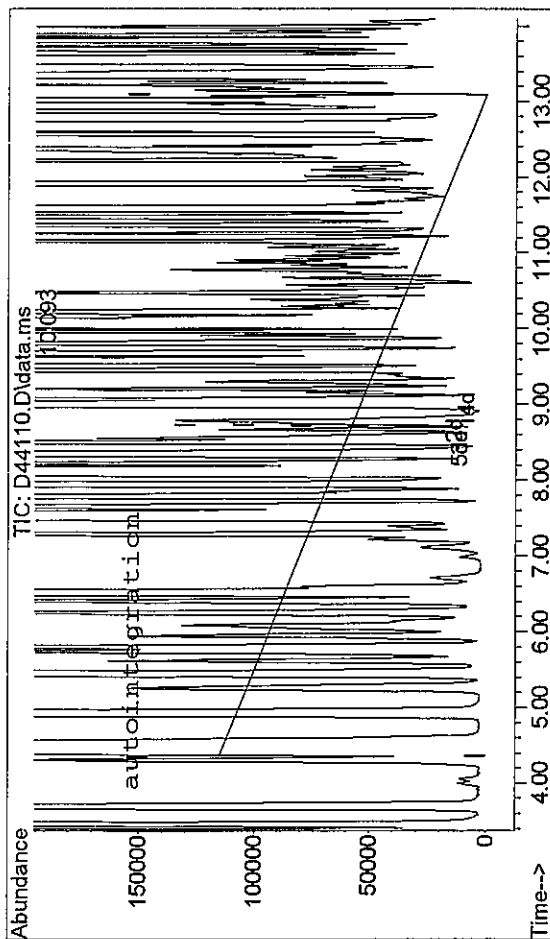
Data Path : C:\msdchem\1\DATA\2013\090913\  
Data File : D44110.D  
Acq On : 9 Sep 2013 14:53  
Operator : sdw-sop525r16  
Sample : GRO\_4,000ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 09 15:12:15 2013  
Quant Method : C:\MSDCHEM\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:55:14 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
3) 1,4-Dichlorobenzene-d4	13.363	TIC	5513457	25.00	ppb	0.03
Target Compounds						
1) GRO	8.735	TIC	232590443m	4136.92	ppb	Qvalue
2) 4-Bromofluorobenzene	12.371	TIC	2190484	37.33	ppb	100
-----						

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

9/9/13



TIC: D44110.D\data.ms

(1) GRO (H)  
8.735min (0.000) 3731.75 ppb m  
response 210517679  
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 ( )

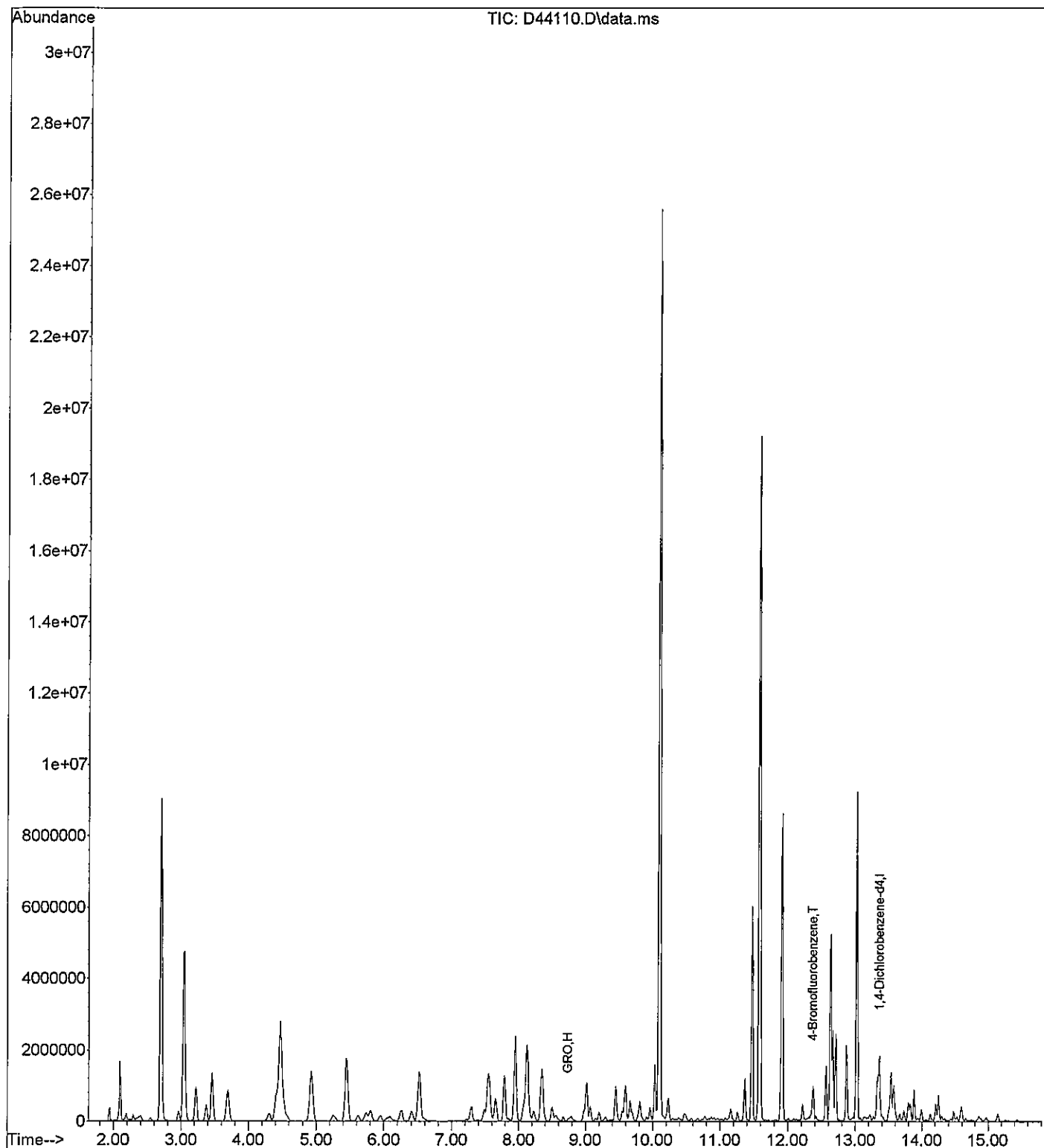
initials: SW date: 9 / 10 / 17

TIC: D44110.D\data.ms

(1) GRO (H)  
8.735min (0.000) 4136.92 ppb m  
response 232590443  
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\2013\090913\  
Data File : D44110.D  
Acq On : 9 Sep 2013 14:53  
Operator : sdw-sop525r16  
Sample : GRO\_4,000ppb\_ICAL  
Misc : 10mL un-heated purge - GRO  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 09 15:12:15 2013  
Quant Method : C:\MSDCHEM\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 14:55:14 2013  
Response via : Initial Calibration





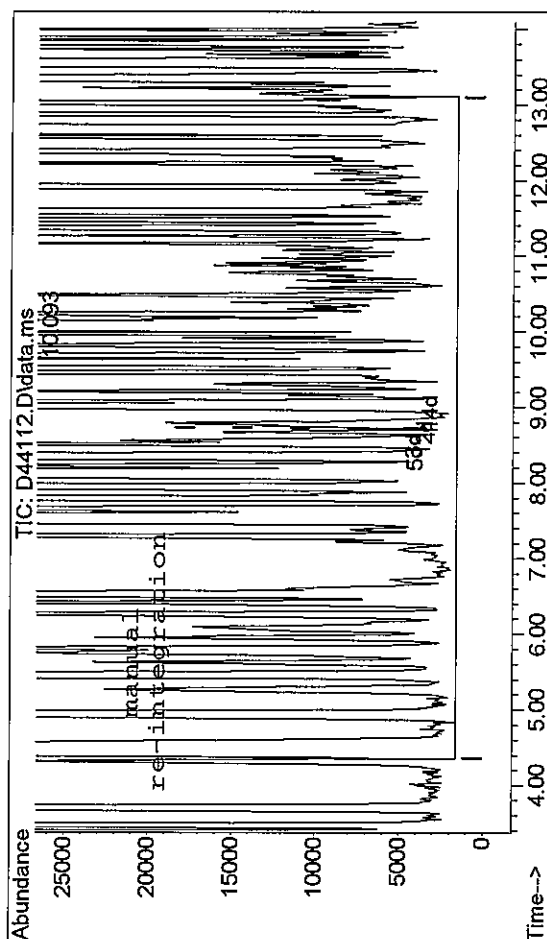
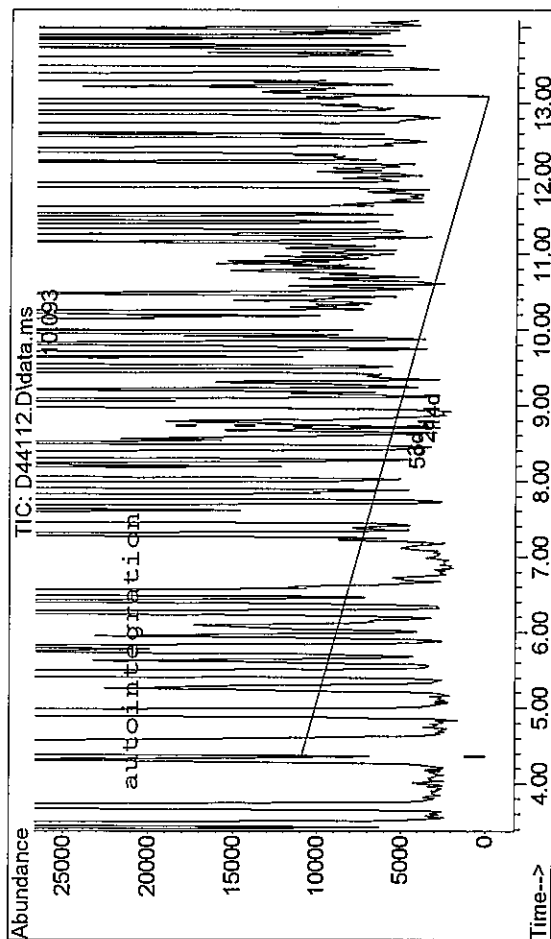
Data Path : C:\msdchem\1\DATA\2013\090913\  
Data File : D44112.D  
Acq On : 9 Sep 2013 15:39  
Operator : sdw-sop525r16  
Sample : VL130909-7ICS  
Misc : 10mL un-heated purge - GRO - ICV/LCS  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 09 15:58:01 2013  
Quant Method : C:\MSDCHEM\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
3) 1,4-Dichlorobenzene-d4	13.333	TIC	2273977	25.00	ppb	0.00
Target Compounds						
1) GRO	8.735	TIC	34940056m	515.12	ppb	Qvalue
2) 4-Bromofluorobenzene	12.371	TIC	1584493	24.95	ppb	103,024%
-----						

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

9/9/13



TIC: D44112.D\data.ms

(1) GRO (H)  
8.735min (0.000) 466.49 ppb m  
response 32355019  
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 ( )

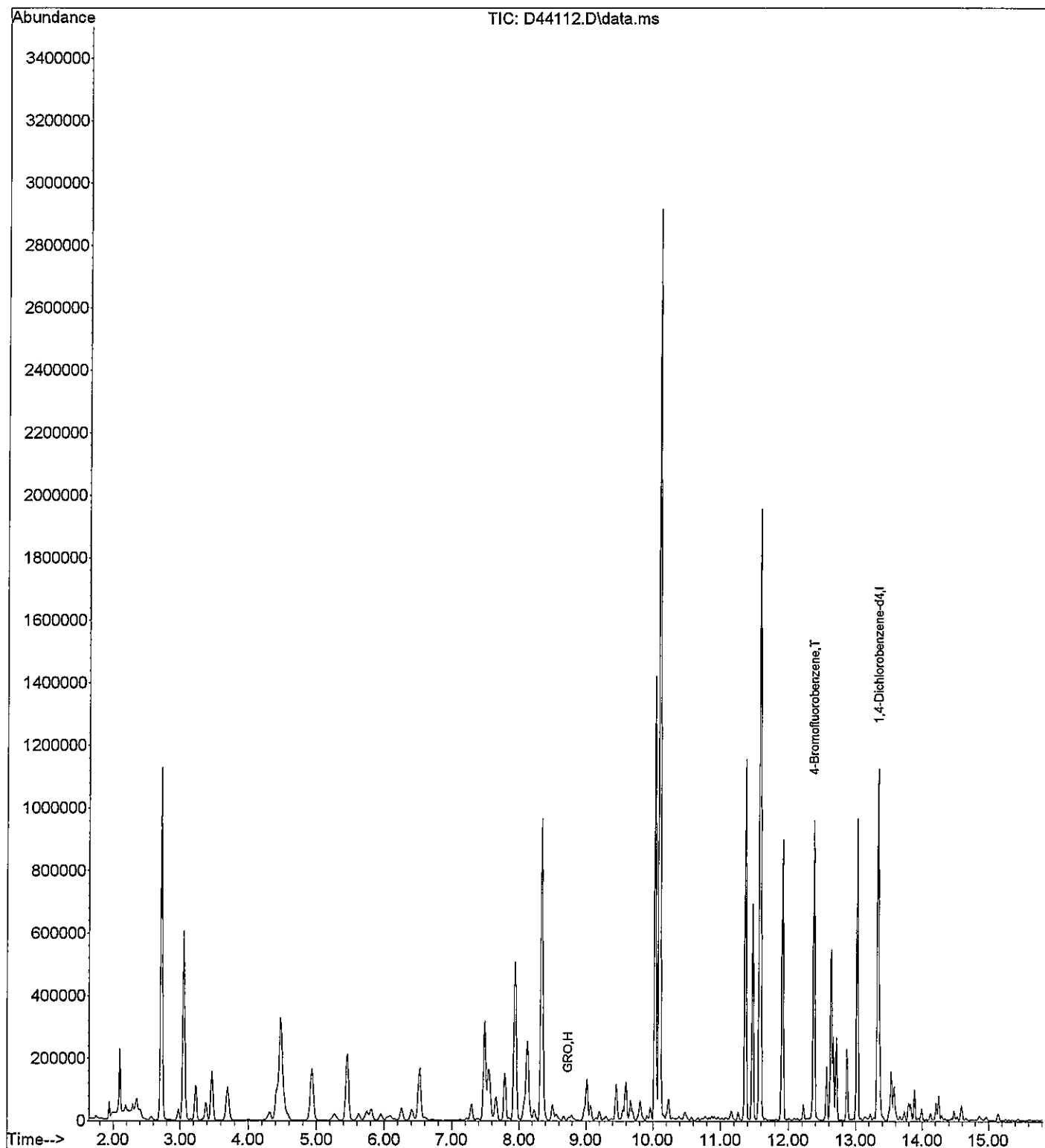
initials:          date: 9 / 9 / 13

TIC: D44112.D\data.ms

(1) GRO (H)  
8.735min (0.000) 515.12 ppb m  
response 34940056  
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\2013\090913\  
Data File : D44112.D  
Acq On : 9 Sep 2013 15:39  
Operator : sdw-sop525r16  
Sample : VL130909-7ICS  
Misc : 10mL un-heated purge - GRO - ICV/LCS  
ALS Vial : 11 Sample Multiplier: 1

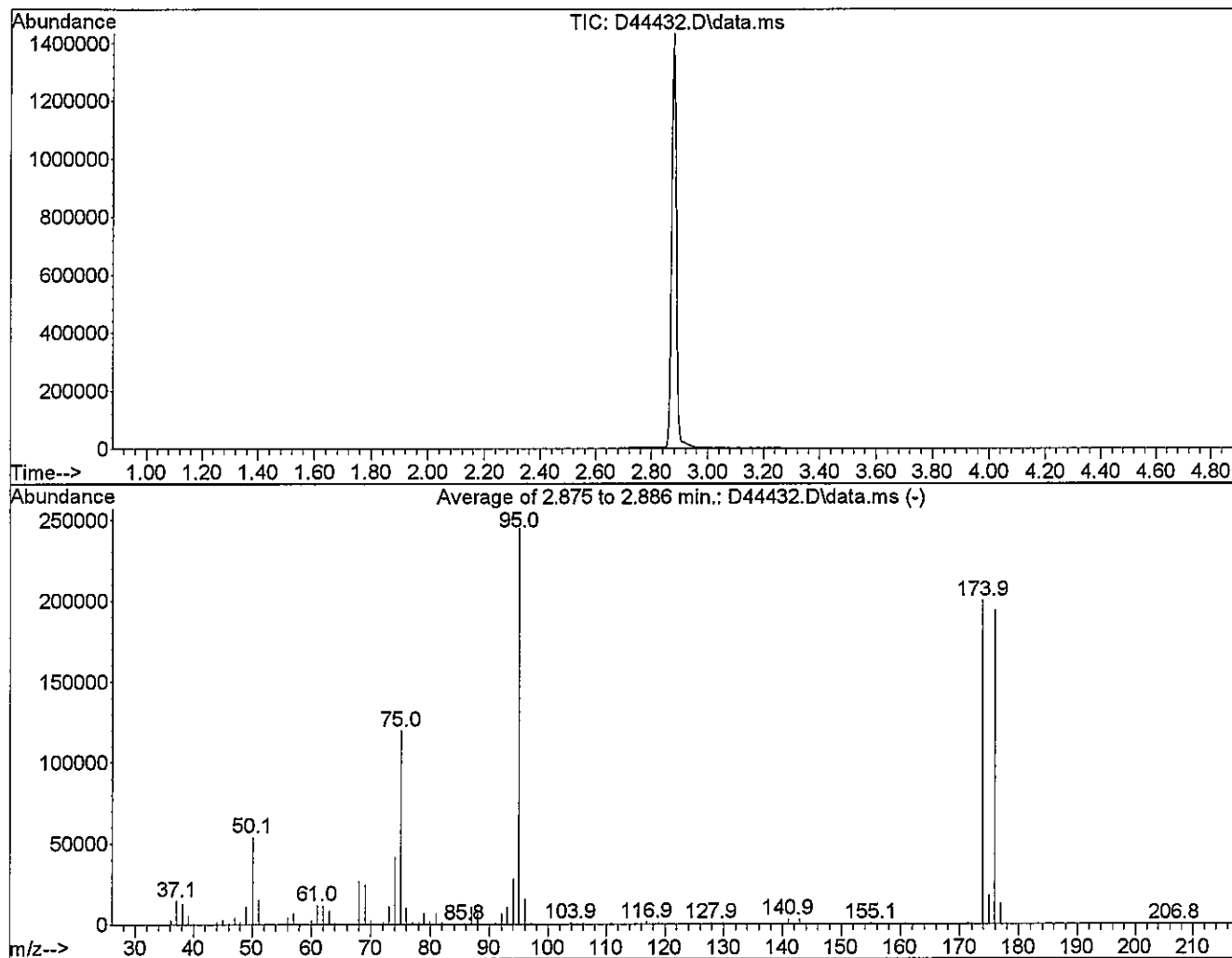
Quant Time: Sep 09 15:58:01 2013  
Quant Method : C:\MSDCHEM\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44432.D  
 Acq On : 23 Sep 2013 15:43  
 Operator : twk-sop525r16  
 Sample : BFB-TUNE-1  
 Misc : 50ng 4-BFB (1uL direct injection)  
 ALS Vial : 100 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\092313W.M  
 Title :  
 Last Update : Fri Aug 30 20:44:53 2013



AutoFind: Scans 37, 38, 39; Background Corrected with Scan 30

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	53802	PASS
75	95	30	60	48.8	119490	PASS
95	95	100	100	100.0	244778	PASS
96	95	5	9	6.3	15513	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	81.6	199808	PASS
175	174	5	9	8.9	17793	PASS
176	174	95	101	96.9	193600	PASS
177	176	5	9	6.4	12404	PASS

*twk 9/24/13*

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44434.D  
 Acq On : 23 Sep 2013 16:20  
 Operator : twk-sop525r16  
 Sample : VOC\_0.25ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 24 12:38:04 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:36:38 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.331	96	707502	25.00	ppb	-0.01
61) Chlorobenzene-d5	11.368	117	488202	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.333	152	215466	25.00	ppb	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	7.490	113	190444	24.79	ppb	0.00
Spiked Amount	25.000	Range	85 - 115	Recovery	=	99.16%
42) 1,2-Dichloroethane-d4	7.936	67	114654	24.68	ppb	0.00
Spiked Amount	25.000	Range	85 - 115	Recovery	=	98.72%
65) Toluene-d8	10.032	98	681090	24.92	ppb	0.00
Spiked Amount	25.000	Range	85 - 115	Recovery	=	99.68%
83) 4-Bromofluorobenzene	12.381	176	182380	25.35	ppb	0.00
Spiked Amount	25.000	Range	85 - 115	Recovery	=	101.40%
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d	
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl chloride	0.000		0	N.D.	d	
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Ethanol	0.000		0	N.D.	d	
8) Acrolein	0.000		0	N.D.	d	
9) Acetonitrile	0.000		0	N.D.	d	
10) Trichlorofluoromethane	0.000		0	N.D.	d	
11) Acetone	0.000		0	N.D.	d	
12) Diethyl Ether	0.000		0	N.D.	d	
13) tert-Butanol	0.000		0	N.D.	d	
14) 1,1-Dichloroethene	0.000		0	N.D.	d	
15) Acrylonitrile	0.000		0	N.D.	d	
16) Iodomethane	0.000		0	N.D.	d	
17) Methylene Chloride	0.000		0	N.D.	d	
18) Methyl acetate	0.000		0	N.D.	d	
19) Allyl chloride	0.000		0	N.D.	d	
20) 1,1,2-Trichloro-1,2,2-...	0.000		0	N.D.	d	
21) Carbon disulfide	0.000		0	N.D.	d	
22) trans-1,2-Dichloroethene	0.000		0	N.D.	d	
23) Methyl-t-butyl ether	4.898	73	11395	0.47	ppb	91
24) Hexane	0.000		0	N.D.	d	
25) 1,1-Dichloroethane	0.000		0	N.D.	d	
26) Propionitrile	0.000		0	N.D.	d	
27) Vinyl acetate	0.000		0	N.D.	d	
28) Chloroprene	0.000		0	N.D.	d	
29) 2-Butanone	0.000		0	N.D.	d	
30) Isopropyl ether	0.000		0	N.D.	d	
31) Methacrylonitrile	0.000		0	N.D.	d	
32) cis-1,2-Dichloroethene	0.000		0	N.D.	d	
33) Methyl Acrylate	0.000		0	N.D.	d	
34) Bromochloromethane	0.000		0	N.D.	d	
35) Chloroform	0.000		0	N.D.	d	
36) 2,2-Dichloropropane	0.000		0	N.D.	d	
37) Ethyl tert-butyl ether	0.000		0	N.D.	d	
39) Pentafluorobenzene	0.000		0	N.D.	d	
40) 1-Chlorobutane	0.000		0	N.D.	d	
41) Isobutyl Alcohol	0.000		0	N.D.	d	

an 9/24/13

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44434.D  
 Acq On : 23 Sep 2013 16:20  
 Operator : twk-sop525r16  
 Sample : VOC\_0.25ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 24 12:38:04 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:36:38 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,2-Dichloroethane	0.000		0	N.D.	d	
44) 1,1,1-Trichloroethane	0.000		0	N.D.	d	
45) 1,1-Dichloropropene	0.000		0	N.D.	d	
46) n-Butanol	0.000		0	N.D.	d	
47) Cyclohexane	0.000		0	N.D.	d	
48) Carbon tetrachloride	0.000		0	N.D.	d	
49) Benzene	0.000		0	N.D.	d	
50) Tert-amyl methyl ether	0.000		0	N.D.	d	
51) Dibromomethane	0.000		0	N.D.	d	
52) 1,2-Dichloropropane	0.000		0	N.D.	d	
53) Trichloroethene	0.000		0	N.D.	d	
54) Bromodichloromethane	0.000		0	N.D.	d	
55) 1,4-Dioxane	0.000		0	N.D.	d	
56) Methyl methacrylate	0.000		0	N.D.	d	
57) Methyl cyclohexane	0.000		0	N.D.	d	
58) Chloroacetonitrile	0.000		0	N.D.	d	
59) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d	
60) cis-1,3-Dichloropropene	0.000		0	N.D.	d	
62) 4-Methyl-2-pentanone	0.000		0	N.D.	d	
63) trans-1,3-Dichloropropene	0.000		0	N.D.	d	
64) 1,1,2-Trichloroethane	0.000		0	N.D.	d	
66) Toluene	0.000		0	N.D.	d	
67) 1,3-Dichloropropane	0.000		0	N.D.	d	
68) Ethyl methacrylate	0.000		0	N.D.	d	
69) 2-Hexanone	0.000		0	N.D.	d	
70) Dibromochloromethane	0.000		0	N.D.	d	
71) 1,2-Dibromoethane	0.000		0	N.D.	d	
72) Tetrachloroethene	10.579	164	2958	0.38	ppb	90
73) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	d	
74) Chlorobenzene	0.000		0	N.D.	d	
75) 1-Chlorohexane	0.000		0	N.D.	d	
76) Ethylbenzene	0.000		0	N.D.	d	
77) m+p-Xylene	11.581	106	7276	0.50	ppb	# 57
78) Bromoform	0.000		0	N.D.	d	
79) Styrene	0.000		0	N.D.	d	
80) o-Xylene	0.000		0	N.D.	d	
81) Isopropylbenzene	0.000		0	N.D.	d	
84) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	d	
85) trans-1,4-Dichloro-2-b...	0.000		0	N.D.	d	
86) Bromobenzene	0.000		0	N.D.	d	
87) 1,2,3-Trichloropropane	0.000		0	N.D.	d	
88) n-Propylbenzene	0.000		0	N.D.	d	
89) 2-Chlorotoluene	0.000		0	N.D.	d	
90) 4-Chlorotoluene	0.000		0	N.D.	d	
91) 1,3,5-Trimethylbenzene	0.000		0	N.D.	d	
92) tert-Butylbenzene	0.000		0	N.D.	d	
93) 1,2,4-Trimethylbenzene	0.000		0	N.D.	d	
94) sec-Butylbenzene	0.000		0	N.D.	d	
95) 1,3-Dichlorobenzene	0.000		0	N.D.	d	
96) 1,4-Dichlorobenzene	0.000		0	N.D.	d	
97) p-Isopropyltoluene	0.000		0	N.D.	d	
98) 1,2-Dichlorobenzene	0.000		0	N.D.	d	
99) n-Butylbenzene	0.000		0	N.D.	d	
100) 1,2-Dibromo-3-chloropr...	0.000		0	N.D.	d	
101) Hexachloroethane	0.000		0	N.D.	d	

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44434.D  
Acq On : 23 Sep 2013 16:20  
Operator : twk-sop525r16  
Sample : VOC\_0.25ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 2 Sample Multiplier: 1

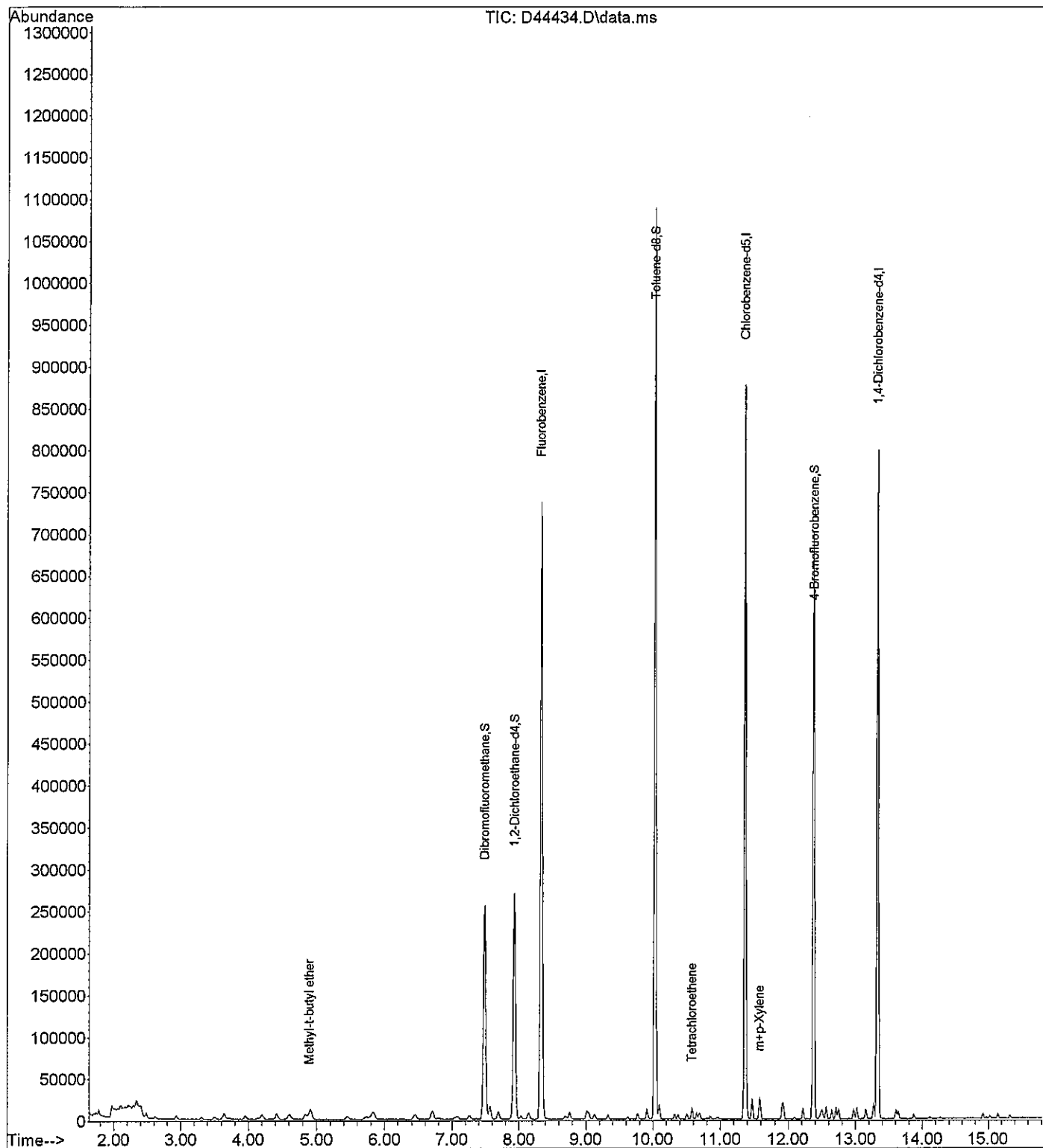
Quant Time: Sep 24 12:38:04 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:36:38 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	0.000		0	N.D.	d	
103) Naphthalene	0.000		0	N.D.	d	
104) Hexachlorobutadiene	0.000		0	N.D.	d	
105) 1,2,3-Trichlorobenzene	0.000		0	N.D.	d	

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

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44434.D  
Acq On : 23 Sep 2013 16:20  
Operator : twk-sop525r16  
Sample : VOC\_0.25ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 24 12:38:04 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:36:38 2013  
Response via : Initial Calibration





Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44435.D  
 Acq On : 23 Sep 2013 16:43  
 Operator : twk-sop525r16  
 Sample : VOC\_0.50ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 24 12:35:52 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:35:44 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.341	96	680549	25.00	ppb	0.00
61) Chlorobenzene-d5	11.368	117	470467	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.333	152	206410	25.00	ppb	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	7.490	113	186000	25.21	ppb	0.00
Spiked Amount	25.000	Range 85 - 115	Recovery	=	100.84%	
42) 1,2-Dichloroethane-d4	7.936	67	111764	25.01	ppb	0.00
Spiked Amount	25.000	Range 85 - 115	Recovery	=	100.04%	
65) Toluene-d8	10.032	98	660097	25.08	ppb	0.00
Spiked Amount	25.000	Range 85 - 115	Recovery	=	100.32%	
83) 4-Bromofluorobenzene	12.381	176	179039	26.18	ppb	0.00
Spiked Amount	25.000	Range 85 - 115	Recovery	=	104.72%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	6558	0.53	ppb	97
3) Chloromethane	1.971	50	7333	0.60	ppb	# 96
4) Vinyl chloride	2.103	62	6057	0.59	ppb	99
5) Bromomethane	2.478	96	5120	0.65	ppb	93
6) Chloroethane	2.619	64	3620	0.53	ppb	# 91
7) Ethanol	3.176	45	811	7.92	ppb	# 43
8) Acrolein	3.500	56	6478	4.65	ppb	94
9) Acetonitrile	4.128	41	4219	4.11	ppb	# 93
10) Trichlorofluoromethane	2.933	101	6758	0.49	ppb	89
11) Acetone	3.723	58	1083	1.74	ppb	74
12) Diethyl Ether	3.318	74	2160	0.47	ppb	83
13) tert-Butanol	4.604	59	18489	23.16	ppb	97
14) 1,1-Dichloroethene	3.642	96	3920	0.51	ppb	98
15) Acrylonitrile	4.837	53	14143	4.84	ppb	88
16) Iodomethane	3.845	142	1117	0.20	ppb	# 82
17) Methylene Chloride	4.422	84	5810	0.58	ppb	93
18) Methyl acetate	4.219	74	137	0.11	ppb	# 15
19) Allyl chloride	4.209	76	2572	0.52	ppb	# 77
20) 1,1,2-Trichloro-1,2,2-...	3.652	101	4195	0.50	ppb	# 85
21) Carbon disulfide	3.966	76	14331	0.51	ppb	93
22) trans-1,2-Dichloroethene	4.918	96	4639	0.53	ppb	92
23) Methyl-t-butyl ether	4.918	73	23448	1.00	ppb	94
24) Hexane	5.455	57	3709	0.52	ppb	# 74
25) 1,1-Dichloroethane	5.728	63	9632	0.52	ppb	91
26) Propionitrile	6.812	54	4613	4.22	ppb	95
27) Vinyl acetate	5.769	43	9664	0.48	ppb	99
28) Chloroprene	5.850	53	7866	0.51	ppb	95
29) 2-Butanone	6.710	72	1597	2.03	ppb	# 68
30) Isopropyl ether	5.819	45	18844	0.51	ppb	98
31) Methacrylonitrile	7.034	41	2621	0.47	ppb	90
32) cis-1,2-Dichloroethene	6.710	96	5156	0.51	ppb	95
33) Methyl Acrylate	0.000		0	N.D.		
34) Bromochloromethane	7.075	128	2244	0.51	ppb	68
35) Chloroform	7.257	83	9032	0.52	ppb	93
36) 2,2-Dichloropropane	6.710	77	7370	0.57	ppb	89
37) Ethyl tert-butyl ether	6.457	59	14191	0.49	ppb	98
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	7.571	56	17932	0.53	ppb	90
41) Isobutyl Alcohol	7.885	43	4225	9.92	ppb	# 78

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44435.D  
 Acq On : 23 Sep 2013 16:43  
 Operator : twk-sop525r16  
 Sample : VOC\_0.50ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 24 12:35:52 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:35:44 2013  
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43)	1,2-Dichloroethane	8.037	62	6962	0.54	ppb	93
44)	1,1,1-Trichloroethane	7.480	97	7004	0.50	ppb	91
45)	1,1-Dichloropropene	7.703	75	6735	0.51	ppb	87
46)	n-Butanol	8.685	56	4520	22.08	ppb	87
47)	Cyclohexane	7.571	84	12724	1.02	ppb	96
48)	Carbon tetrachloride	7.682	117	5105	0.47	ppb	92
49)	Benzene	7.946	78	20338	0.53	ppb	94
50)	Tert-amyl methyl ether	8.138	87	2761	0.52	ppb	96
51)	Dibromomethane	9.141	93	2723	0.50	ppb	86
52)	1,2-Dichloropropane	9.050	63	5670	0.52	ppb	# 90
53)	Trichloroethene	8.756	95	4890	0.50	ppb	97
54)	Bromodichloromethane	9.333	83	6266	0.51	ppb	93
55)	1,4-Dioxane	9.120	88	583	8.04	ppb	# 57
56)	Methyl methacrylate	9.120	69	2403	0.45	ppb	# 76
57)	Methyl cyclohexane	9.009	83	6643	0.51	ppb	89
58)	Chloroacetonitrile	9.758	48	271	5.60	ppb	# 1
59)	2-Chloroethyl vinyl ether	9.627	63	2605	0.54	ppb	90
60)	cis-1,3-Dichloropropene	9.768	75	7072	0.47	ppb	99
62)	4-Methyl-2-pentanone	9.910	100	1708	1.91	ppb	84
63)	trans-1,3-Dichloropropene	10.325	75	5943	0.48	ppb	91
64)	1,1,2-Trichloroethane	10.498	83	3486	0.52	ppb	83
66)	Toluene	10.093	92	11284	0.53	ppb	84
67)	1,3-Dichloropropane	10.649	76	7261	0.54	ppb	95
68)	Ethyl methacrylate	10.366	69	5010	0.49	ppb	# 97
69)	2-Hexanone	10.690	58	5041	1.76	ppb	# 91
70)	Dibromochloromethane	10.852	129	3736	0.48	ppb	87
71)	1,2-Dibromoethane	10.963	107	3441	0.47	ppb	# 89
72)	Tetrachloroethene	10.579	164	4549	0.62	ppb	88
73)	1,1,1,2-Tetrachloroethane	11.470	131	3883	0.47	ppb	92
74)	Chlorobenzene	11.389	112	11937	0.51	ppb	98
75)	1-Chlorohexane	11.368	91	5725	0.55	ppb	# 43
76)	Ethylbenzene	11.470	91	19216	0.49	ppb	98
77)	m+p-Xylene	11.581	106	13910	1.00	ppb	82
78)	Bromoform	12.098	173	1922	0.44	ppb	# 88
79)	Styrene	11.925	104	11334	0.49	ppb	94
80)	o-Xylene	11.915	106	7075	0.50	ppb	82
81)	Isopropylbenzene	12.219	105	15521	0.48	ppb	98
84)	1,1,2,2-Tetrachloroethane	12.472	83	4321	0.51	ppb	99
85)	trans-1,4-Dichloro-2-b...	12.503	53	743	0.35	ppb	# 73
86)	Bromobenzene	12.492	156	4506	0.49	ppb	# 71
87)	1,2,3-Trichloropropane	12.523	110	1042	0.43	ppb	70
88)	n-Propylbenzene	12.563	91	20407	0.53	ppb	94
89)	2-Chlorotoluene	12.644	126	3844	0.47	ppb	81
90)	4-Chlorotoluene	12.746	126	3990	0.50	ppb	88
91)	1,3,5-Trimethylbenzene	12.705	105	14091	0.55	ppb	90
92)	tert-Butylbenzene	12.968	134	2709	0.53	ppb	89
93)	1,2,4-Trimethylbenzene	13.019	105	13078	0.52	ppb	85
94)	sec-Butylbenzene	13.151	105	15146	0.51	ppb	95
95)	1,3-Dichlorobenzene	13.272	146	7876	0.50	ppb	95
96)	1,4-Dichlorobenzene	13.353	146	7844	0.51	ppb	# 90
97)	p-Isopropyltoluene	13.272	119	12428	0.53	ppb	98
98)	1,2-Dichlorobenzene	13.647	146	7629	0.53	ppb	97
99)	n-Butylbenzene	13.606	91	11336	0.54	ppb	96
100)	1,2-Dibromo-3-chloropr...	14.265	75	629	0.55	ppb	# 71
101)	Hexachloroethane	13.870	201	1123	0.35	ppb	# 71

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44435.D  
Acq On : 23 Sep 2013 16:43  
Operator : twk-sop525r16  
Sample : VOC\_0.50ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 3 Sample Multiplier: 1

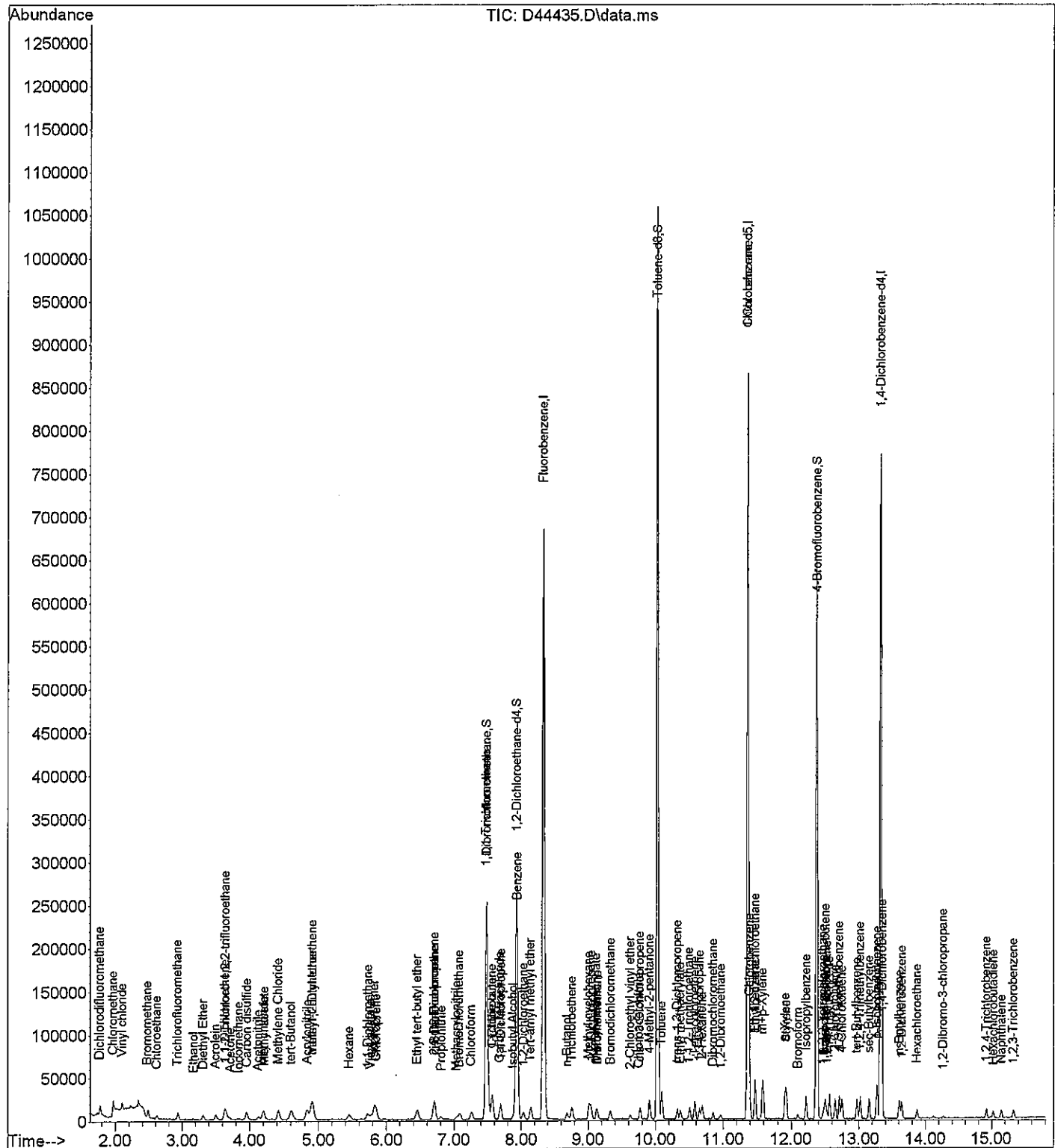
Quant Time: Sep 24 12:35:52 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:35:44 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.923	180	3362	0.43	ppb	95
103) Naphthalene	15.146	128	7309	0.46	ppb #	97
104) Hexachlorobutadiene	15.024	225	1724	0.52	ppb	86
105) 1,2,3-Trichlorobenzene	15.328	180	2951	0.44	ppb	96

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

```
Data Path   : C:\msdchem\1\DATA\2013\092313\  
Data File  : D44435.D  
Acq On     : 23 Sep 2013   16:43  
Operator   : twk-sop525r16  
Sample     : VOC_0.50ppb_ICAL_CSTD  
Misc       : 10mL UN-htd purge water  
ALS Vial   : 3      Sample Multiplier: 1
```

Quant Time: Sep 24 12:35:52 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:35:44 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44436.D  
 Acq On : 23 Sep 2013 17:06  
 Operator : twk-sop525r16  
 Sample : VOC 1.0ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 24 12:34:38 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:34:30 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.341	96	698968	25.00	ppb	0.00
61) Chlorobenzene-d5	11.368	117	480440	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.333	152	215495	25.00	ppb	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	7.490	113	186149	24.45	ppb	0.00
Spiked Amount	25.000	Range 85 - 115	Recovery	=	97.80%	
42) 1,2-Dichloroethane-d4	7.936	67	114450	24.92	ppb	0.00
Spiked Amount	25.000	Range 85 - 115	Recovery	=	99.68%	
65) Toluene-d8	10.032	98	686443	25.67	ppb	0.00
Spiked Amount	25.000	Range 85 - 115	Recovery	=	102.68%	
83) 4-Bromofluorobenzene	12.381	176	179208	25.13	ppb	0.00
Spiked Amount	25.000	Range 85 - 115	Recovery	=	100.52%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	12509	0.99	ppb	97
3) Chloromethane	1.971	50	12746	1.01	ppb	# 93
4) Vinyl chloride	2.103	62	10808	1.02	ppb	89
5) Bromomethane	2.488	96	9359	1.20	ppb	96
6) Chloroethane	2.619	64	6936	0.99	ppb	# 94
7) Ethanol	3.166	45	2168	20.78	ppb	# 71
8) Acrolein	3.500	56	13489	9.30	ppb	92
9) Acetonitrile	4.118	41	9347	8.62	ppb	87
10) Trichlorofluoromethane	2.933	101	13794	0.97	ppb	99
11) Acetone	3.703	58	2543	3.97	ppb	63
12) Diethyl Ether	3.308	74	4252	0.87	ppb	97
13) tert-Butanol	4.604	59	38468	46.21	ppb	98
14) 1,1-Dichloroethene	3.632	96	8003	1.01	ppb	89
15) Acrylonitrile	4.827	53	28554	9.40	ppb	95
16) Iodomethane	3.855	142	2791	0.43	ppb	# 77
17) Methylene Chloride	4.422	84	11283	1.13	ppb	94
18) Methyl acetate	4.209	74	1128	0.89	ppb	# 57
19) Allyl chloride	4.209	76	5117	1.00	ppb	84
20) 1,1,2-Trichloro-1,2,2-...	3.662	101	8414	0.98	ppb	94
21) Carbon disulfide	3.956	76	27957	0.96	ppb	97
22) trans-1,2-Dichloroethene	4.918	96	8931	0.99	ppb	89
23) Methyl-t-butyl ether	4.908	73	47834	1.98	ppb	97
24) Hexane	5.455	57	7162	0.97	ppb	# 83
25) 1,1-Dichloroethane	5.728	63	18703	0.98	ppb	# 93
26) Propionitrile	6.802	54	9874	8.53	ppb	# 92
27) Vinyl acetate	5.769	43	20111	0.98	ppb	97
28) Chloroprene	5.850	53	14858	0.92	ppb	94
29) 2-Butanone	6.700	72	2630	3.10	ppb	77
30) Isopropyl ether	5.819	45	37805	0.99	ppb	93
31) Methacrylonitrile	7.045	41	5432	0.93	ppb	92
32) cis-1,2-Dichloroethene	6.710	96	10147	0.97	ppb	88
33) Methyl Acrylate	0.000		0	N.D.		
34) Bromochloromethane	7.095	128	4233	0.92	ppb	81
35) Chloroform	7.267	83	17333	0.96	ppb	93
36) 2,2-Dichloropropane	6.710	77	13317	1.00	ppb	97
37) Ethyl tert-butyl ether	6.457	59	28730	0.97	ppb	99
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	7.571	56	33671	0.97	ppb	96
41) Isobutyl Alcohol	7.885	43	8168	18.37	ppb	96

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44436.D  
 Acq On : 23 Sep 2013 17:06  
 Operator : twk-sop525r16  
 Sample : VOC\_1.0ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 24 12:34:38 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:34:30 2013  
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43)	1,2-Dichloroethane	8.037	62	13123	0.99	ppb	96
44)	1,1,1-Trichloroethane	7.470	97	14317	0.99	ppb	94
45)	1,1-Dichloropropene	7.703	75	13028	0.96	ppb	95
46)	n-Butanol	8.685	56	9337	43.19	ppb	92
47)	Cyclohexane	7.571	84	24591	1.91	ppb	97
48)	Carbon tetrachloride	7.683	117	10486	0.94	ppb	92
49)	Benzene	7.956	78	39871	1.02	ppb	96
50)	Tert-amyl methyl ether	8.138	87	5012	0.90	ppb	98
51)	Dibromomethane	9.141	93	5719	1.02	ppb	91
52)	1,2-Dichloropropane	9.039	63	10773	0.95	ppb	97
53)	Trichloroethene	8.766	95	10281	1.04	ppb	91
54)	Bromodichloromethane	9.333	83	11921	0.94	ppb	97
55)	1,4-Dioxane	9.120	88	1491	20.02	ppb	# 83
56)	Methyl methacrylate	9.120	69	5598	1.03	ppb	90
57)	Methyl cyclohexane	9.009	83	13062	0.98	ppb	94
58)	Chloroacetone nitrile	9.769	48	541	11.23	ppb	# 1
59)	2-Chloroethyl vinyl ether	9.627	63	4969	1.00	ppb	91
60)	cis-1,3-Dichloropropene	9.769	75	13933	0.88	ppb	89
62)	4-Methyl-2-pentanone	9.910	100	3505	3.79	ppb	91
63)	trans-1,3-Dichloropropene	10.315	75	12197	0.95	ppb	93
64)	1,1,2-Trichloroethane	10.508	83	6613	0.95	ppb	80
66)	Toluene	10.093	92	22104	1.01	ppb	99
67)	1,3-Dichloropropane	10.650	76	13539	0.99	ppb	95
68)	Ethyl methacrylate	10.366	69	9813	0.92	ppb	98
69)	2-Hexanone	10.690	58	10878	3.66	ppb	98
70)	Dibromochloromethane	10.852	129	7309	0.90	ppb	79
71)	1,2-Dibromoethane	10.963	107	7108	0.95	ppb	90
72)	Tetrachloroethene	10.579	164	8186	1.13	ppb	89
73)	1,1,1,2-Tetrachloroethane	11.470	131	8334	0.98	ppb	95
74)	Chlorobenzene	11.389	112	23872	1.00	ppb	96
75)	1-Chlorohexane	11.368	91	11189	1.07	ppb	78
76)	Ethylbenzene	11.470	91	39432	0.99	ppb	97
77)	m+p-Xylene	11.581	106	27795	1.94	ppb	90
78)	Bromoform	12.098	173	3977	0.86	ppb	91
79)	Styrene	11.925	104	22311	0.92	ppb	97
80)	o-Xylene	11.915	106	13617	0.93	ppb	95
81)	Isopropylbenzene	12.219	105	33307	1.02	ppb	98
84)	1,1,2,2-Tetrachloroethane	12.472	83	8610	0.97	ppb	95
85)	trans-1,4-Dichloro-2-b...	12.503	53	2035	0.91	ppb	98
86)	Bromobenzene	12.503	156	9471	0.98	ppb	95
87)	1,2,3-Trichloropropane	12.523	110	2589	1.02	ppb	# 78
88)	n-Propylbenzene	12.563	91	40070	1.00	ppb	93
89)	2-Chlorotoluene	12.644	126	8596	1.02	ppb	94
90)	4-Chlorotoluene	12.746	126	8127	0.97	ppb	99
91)	1,3,5-Trimethylbenzene	12.715	105	27443	1.04	ppb	97
92)	tert-Butylbenzene	12.979	134	5305	1.00	ppb	86
93)	1,2,4-Trimethylbenzene	13.019	105	26118	0.99	ppb	97
94)	sec-Butylbenzene	13.151	105	30742	0.99	ppb	100
95)	1,3-Dichlorobenzene	13.262	146	17092	1.05	ppb	92
96)	1,4-Dichlorobenzene	13.353	146	15598	0.97	ppb	# 93
97)	p-Isopropyltoluene	13.272	119	24511	0.99	ppb	96
98)	1,2-Dichlorobenzene	13.637	146	14365	0.95	ppb	# 88
99)	n-Butylbenzene	13.606	91	21530	0.97	ppb	96
100)	1,2-Dibromo-3-chloropr...	14.275	75	1214	1.02	ppb	94
101)	Hexachloroethane	13.880	201	2849	0.82	ppb	85

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44436.D  
Acq On : 23 Sep 2013 17:06  
Operator : twk-sop525r16  
Sample : VOC\_1.0ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 4 Sample Multiplier: 1

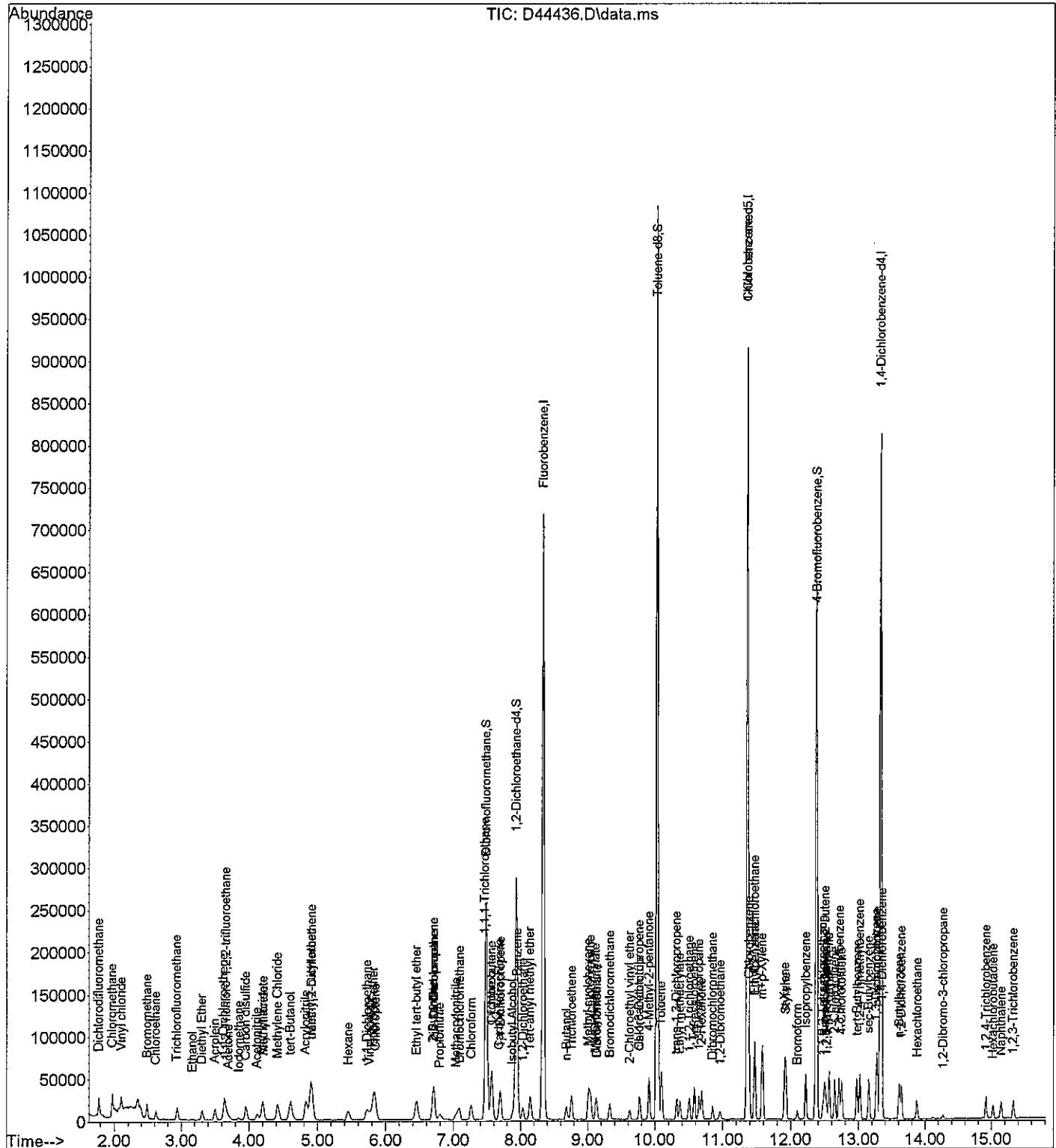
Quant Time: Sep 24 12:34:38 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:34:30 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.923	180	8143	0.98	ppb	95
103) Naphthalene	15.146	128	15181	0.89	ppb #	95
104) Hexachlorobutadiene	15.024	225	3382	0.97	ppb	88
105) 1,2,3-Trichlorobenzene	15.328	180	6775	0.95	ppb	83

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

```
Data Path   : C:\msdchem\1\DATA\2013\092313\  
Data File  : D44436.D  
Acq On     : 23 Sep 2013  17:06  
Operator   : twk-sop525r16  
Sample     : VOC_1.0ppb_ICAL_CSTD  
Misc       : 10mL UN-htd purge water  
ALS Vial   : 4      Sample Multiplier: 1
```

Quant Time: Sep 24 12:34:38 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:34:30 2013  
Response via : Initial Calibration





Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44437.D  
 Acq On : 23 Sep 2013 17:29  
 Operator : twk-sop525r16  
 Sample : VOC\_2.0ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 24 12:34:16 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:34:09 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.341	96	687059	25.00	ppb	0.00
61) Chlorobenzene-d5	11.368	117	484435	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.333	152	214111	25.00	ppb	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	7.490	113	187439	25.07	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	100.28%	
42) 1,2-Dichloroethane-d4	7.936	67	114404	25.46	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	101.84%	
65) Toluene-d8	10.032	98	671753	24.89	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	99.56%	
83) 4-Bromofluorobenzene	12.381	176	180337	25.60	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	102.40%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	25151	2.04	ppb	95
3) Chloromethane	1.971	50	24055	1.93	ppb	96
4) Vinyl chloride	2.103	62	20745	2.00	ppb	91
5) Bromomethane	2.478	96	17175	2.35	ppb	100
6) Chloroethane	2.619	64	13567	1.97	ppb	# 95
7) Ethanol	3.156	45	4446	44.60	ppb	96
8) Acrolein	3.490	56	27941	19.48	ppb	94
9) Acetonitrile	4.118	41	20478	18.96	ppb	87
10) Trichlorofluoromethane	2.933	101	27845	1.99	ppb	97
11) Acetone	3.703	58	4961	7.83	ppb	79
12) Diethyl Ether	3.308	74	9195	1.90	ppb	81
13) tert-Butanol	4.604	59	80342	97.60	ppb	98
14) 1,1-Dichloroethene	3.642	96	15324	1.96	ppb	81
15) Acrylonitrile	4.827	53	59017	19.70	ppb	96
16) Iodomethane	3.845	142	7521	1.03	ppb	89
17) Methylene Chloride	4.422	84	20580	2.13	ppb	92
18) Methyl acetate	4.209	74	2155	1.66	ppb	93
19) Allyl chloride	4.199	76	10383	2.08	ppb	91
20) 1,1,2-Trichloro-1,2,2-...	3.662	101	17581	2.12	ppb	98
21) Carbon disulfide	3.956	76	55713	1.93	ppb	95
22) trans-1,2-Dichloroethene	4.928	96	17187	1.93	ppb	97
23) Methyl-t-butyl ether	4.908	73	94312	3.97	ppb	97
24) Hexane	5.455	57	14509	2.00	ppb	96
25) 1,1-Dichloroethane	5.728	63	37594	2.01	ppb	91
26) Propionitrile	6.791	54	22708	19.95	ppb	98
27) Vinyl acetate	5.758	43	37114	1.79	ppb	96
28) Chloroprene	5.850	53	31415	1.96	ppb	93
29) 2-Butanone	6.700	72	6043	7.04	ppb	89
30) Isopropyl ether	5.819	45	76492	2.04	ppb	92
31) Methacrylonitrile	7.044	41	11097	1.91	ppb	87
32) cis-1,2-Dichloroethene	6.700	96	21322	2.10	ppb	88
33) Methyl Acrylate	0.000		0	N.D.		
34) Bromochloromethane	7.095	128	9208	2.05	ppb	77
35) Chloroform	7.257	83	34773	1.96	ppb	99
36) 2,2-Dichloropropane	6.710	77	27583	2.15	ppb	97
37) Ethyl tert-butyl ether	6.457	59	58675	2.01	ppb	97
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	7.571	56	67806	1.98	ppb	96
41) Isobutyl Alcohol	7.885	43	16438	36.87	ppb	88

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44437.D  
 Acq On : 23 Sep 2013 17:29  
 Operator : twk-sop525r16  
 Sample : VOC\_2.0ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 24 12:34:16 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:34:09 2013  
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43)	1,2-Dichloroethane	8.037	62	25814	1.98	ppb	98
44)	1,1,1-Trichloroethane	7.470	97	28208	1.97	ppb	98
45)	1,1-Dichloropropene	7.703	75	26293	1.96	ppb	96
46)	n-Butanol	8.675	56	18982	86.26	ppb	86
47)	Cyclohexane	7.571	84	51109	4.05	ppb	98
48)	Carbon tetrachloride	7.682	117	20846	1.86	ppb	94
49)	Benzene	7.946	78	77743	2.03	ppb	100
50)	Tert-amyl methyl ether	8.148	87	10889	2.00	ppb	96
51)	Dibromomethane	9.130	93	10557	1.89	ppb	89
52)	1,2-Dichloropropane	9.049	63	21722	1.93	ppb	99
53)	Trichloroethene	8.766	95	19139	1.96	ppb	97
54)	Bromodichloromethane	9.333	83	23709	1.86	ppb	97
55)	1,4-Dioxane	9.120	88	2788	37.49	ppb	97
56)	Methyl methacrylate	9.120	69	10477	1.96	ppb	93
57)	Methyl cyclohexane	9.019	83	26021	1.98	ppb	94
58)	Chloroacetonitrile	9.768	48	971	20.76	ppb	# 1
59)	2-Chloroethyl vinyl ether	9.627	63	9712	1.98	ppb	92
60)	cis-1,3-Dichloropropene	9.768	75	30399	1.93	ppb	96
62)	4-Methyl-2-pentanone	9.910	100	7173	7.60	ppb	98
63)	trans-1,3-Dichloropropene	10.325	75	24525	1.86	ppb	95
64)	1,1,2-Trichloroethane	10.508	83	13667	1.92	ppb	99
66)	Toluene	10.092	92	43680	1.97	ppb	96
67)	1,3-Dichloropropane	10.649	76	27282	1.96	ppb	94
68)	Ethyl methacrylate	10.366	69	19997	1.83	ppb	96
69)	2-Hexanone	10.690	58	22669	7.44	ppb	95
70)	Dibromochloromethane	10.852	129	14757	1.75	ppb	100
71)	1,2-Dibromoethane	10.963	107	14446	1.89	ppb	100
72)	Tetrachloroethene	10.579	164	14647	2.00	ppb	98
73)	1,1,1,2-Tetrachloroethane	11.470	131	15641	1.78	ppb	96
74)	Chlorobenzene	11.389	112	46907	1.93	ppb	98
75)	1-Chlorohexane	11.368	91	20651	1.95	ppb	# 78
76)	Ethylbenzene	11.470	91	78926	1.95	ppb	98
77)	m+p-Xylene	11.581	106	55585	3.79	ppb	97
78)	Bromoform	12.097	173	8614	1.80	ppb	97
79)	Styrene	11.925	104	45415	1.82	ppb	96
80)	o-Xylene	11.915	106	27908	1.86	ppb	95
81)	Isopropylbenzene	12.219	105	62294	1.85	ppb	99
84)	1,1,2,2-Tetrachloroethane	12.472	83	17611	2.00	ppb	90
85)	trans-1,4-Dichloro-2-b...	12.492	53	4605	2.09	ppb	# 62
86)	Bromobenzene	12.503	156	19062	1.98	ppb	99
87)	1,2,3-Trichloropropane	12.523	110	4865	1.91	ppb	90
88)	n-Propylbenzene	12.563	91	78904	1.99	ppb	99
89)	2-Chlorotoluene	12.644	126	16775	2.01	ppb	99
90)	4-Chlorotoluene	12.746	126	16368	1.95	ppb	87
91)	1,3,5-Trimethylbenzene	12.705	105	51469	1.94	ppb	100
92)	tert-Butylbenzene	12.978	134	10544	1.99	ppb	91
93)	1,2,4-Trimethylbenzene	13.019	105	51447	1.94	ppb	97
94)	sec-Butylbenzene	13.151	105	59828	1.92	ppb	94
95)	1,3-Dichlorobenzene	13.262	146	31857	1.96	ppb	93
96)	1,4-Dichlorobenzene	13.353	146	32644	2.06	ppb	95
97)	p-Isopropyltoluene	13.272	119	47752	1.93	ppb	95
98)	1,2-Dichlorobenzene	13.637	146	29777	1.97	ppb	# 91
99)	n-Butylbenzene	13.606	91	43737	1.98	ppb	99
100)	1,2-Dibromo-3-chloropr...	14.264	75	2264	1.88	ppb	97
101)	Hexachloroethane	13.880	201	6659	1.91	ppb	88

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44437.D  
Acq On : 23 Sep 2013 17:29  
Operator : twk-sop525r16  
Sample : VOC\_2.0ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 24 12:34:16 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:34:09 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.923	180	16148	1.95	ppb	97
103) Naphthalene	15.145	128	32502	1.90	ppb	96
104) Hexachlorobutadiene	15.024	225	6732	1.93	ppb	94
105) 1,2,3-Trichlorobenzene	15.328	180	13737	1.92	ppb	98

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

Quant Time: Sep 24 12:34:16 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:34:09 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44438.D  
 Acq On : 23 Sep 2013 17:52  
 Operator : twk-sop525r16  
 Sample : VOC\_4.0ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 24 12:33:53 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:33:42 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	8.341	96	704869	25.00	ppb	0.00
61) Chlorobenzene-d5	11.368	117	487289	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.333	152	222825	25.00	ppb	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	7.490	113	191540	24.95	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	99.80%	
42) 1,2-Dichloroethane-d4	7.936	67	114927	24.90	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	99.60%	
65) Toluene-d8	10.032	98	681679	25.17	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	100.68%	
83) 4-Bromofluorobenzene	12.381	176	186928	25.75	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	103.00%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	50859	4.02	ppb	99
3) Chloromethane	1.971	50	54279	4.37	ppb	98
4) Vinyl chloride	2.103	62	44160	4.22	ppb	99
5) Bromomethane	2.488	96	33121	4.65	ppb	98
6) Chloroethane	2.619	64	28275	3.99	ppb	97
7) Ethanol	3.146	45	8094	78.72	ppb	91
8) Acrolein	3.490	56	58689	39.81	ppb	100
9) Acetonitrile	4.118	41	42808	37.99	ppb	99
10) Trichlorofluoromethane	2.933	101	58706	4.14	ppb	98
11) Acetone	3.703	58	10242	15.64	ppb	96
12) Diethyl Ether	3.318	74	20159	4.09	ppb	84
13) tert-Butanol	4.604	59	169459	200.99	ppb	99
14) 1,1-Dichloroethene	3.632	96	31903	3.97	ppb	95
15) Acrylonitrile	4.827	53	124676	40.84	ppb	99
16) Iodomethane	3.855	142	22927	2.75	ppb	96
17) Methylene Chloride	4.422	84	40747	4.16	ppb	95
18) Methyl acetate	4.199	74	5602	4.32	ppb	# 92
19) Allyl chloride	4.199	76	20503	4.00	ppb	93
20) 1,1,2-Trichloro-1,2,2-...	3.662	101	34275	4.04	ppb	98
21) Carbon disulfide	3.956	76	119430	4.06	ppb	99
22) trans-1,2-Dichloroethene	4.918	96	36951	4.06	ppb	94
23) Methyl-t-butyl ether	4.908	73	194805	7.98	ppb	100
24) Hexane	5.455	57	30786	4.22	ppb	97
25) 1,1-Dichloroethane	5.728	63	78591	4.15	ppb	95
26) Propionitrile	6.791	54	47162	40.60	ppb	96
27) Vinyl acetate	5.758	43	80479	3.67	ppb	98
28) Chloroprene	5.850	53	66065	4.02	ppb	97
29) 2-Butanone	6.710	72	14236	16.23	ppb	62
30) Isopropyl ether	5.819	45	153811	4.01	ppb	97
31) Methacrylonitrile	7.044	41	24298	4.10	ppb	93
32) cis-1,2-Dichloroethene	6.700	96	41411	3.96	ppb	100
33) Methyl Acrylate	0.000		0	N.D.		
34) Bromochloromethane	7.095	128	18631	4.06	ppb	82
35) Chloroform	7.257	83	74127	4.10	ppb	97
36) 2,2-Dichloropropane	6.710	77	55543	4.35	ppb	98
37) Ethyl tert-butyl ether	6.457	59	120030	4.02	ppb	97
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	7.571	56	141303	4.05	ppb	# 95
41) Isobutyl Alcohol	7.875	43	36940	81.14	ppb	94

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44438.D  
 Acq On : 23 Sep 2013 17:52  
 Operator : twk-sop525r16  
 Sample : VOC\_4.0ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 24 12:33:53 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:33:42 2013  
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43)	1,2-Dichloroethane	8.037	62	54156	4.07	ppb	99
44)	1,1,1-Trichloroethane	7.470	97	59415	4.07	ppb	98
45)	1,1-Dichloropropene	7.703	75	55813	4.09	ppb	99
46)	n-Butanol	8.675	56	43898	191.80	ppb	94
47)	Cyclohexane	7.571	84	103905	8.03	ppb	98
48)	Carbon tetrachloride	7.682	117	44917	3.86	ppb	97
49)	Benzene	7.946	78	157991	4.03	ppb	98
50)	Tert-amyl methyl ether	8.148	87	22666	4.07	ppb	96
51)	Dibromomethane	9.130	93	23019	4.04	ppb	96
52)	1,2-Dichloropropane	9.049	63	46117	4.00	ppb	# 89
53)	Trichloroethene	8.756	95	40214	4.03	ppb	96
54)	Bromodichloromethane	9.333	83	51782	3.94	ppb	99
55)	1,4-Dioxane	9.120	88	6152	80.97	ppb	87
56)	Methyl methacrylate	9.120	69	21559	3.89	ppb	94
57)	Methyl cyclohexane	9.019	83	54575	4.06	ppb	94
58)	Chloroacetonitrile	9.768	48	2067	46.66	ppb	# 1
59)	2-Chloroethyl vinyl ether	9.627	63	20568	4.14	ppb	96
60)	cis-1,3-Dichloropropene	9.768	75	63372	3.89	ppb	92
62)	4-Methyl-2-pentanone	9.910	100	15509	16.50	ppb	89
63)	trans-1,3-Dichloropropene	10.325	75	52183	3.90	ppb	98
64)	1,1,2-Trichloroethane	10.508	83	29677	4.23	ppb	98
66)	Toluene	10.092	92	91574	4.18	ppb	99
67)	1,3-Dichloropropane	10.649	76	56665	4.07	ppb	93
68)	Ethyl methacrylate	10.366	69	44271	4.03	ppb	98
69)	2-Hexanone	10.690	58	48352	15.67	ppb	95
70)	Dibromochloromethane	10.852	129	32443	3.74	ppb	98
71)	1,2-Dibromoethane	10.963	107	31410	4.12	ppb	93
72)	Tetrachloroethene	10.579	164	31003	4.31	ppb	93
73)	1,1,1,2-Tetrachloroethane	11.470	131	35701	4.05	ppb	97
74)	Chlorobenzene	11.389	112	101079	4.21	ppb	99
75)	1-Chlorohexane	11.368	91	43470	4.13	ppb	89
76)	Ethylbenzene	11.470	91	163568	4.03	ppb	100
77)	m+p-Xylene	11.581	106	118685	8.07	ppb	97
78)	Bromoform	12.097	173	18552	3.78	ppb	90
79)	Styrene	11.925	104	99166	3.92	ppb	98
80)	o-Xylene	11.915	106	61043	4.06	ppb	98
81)	Isopropylbenzene	12.219	105	135708	4.01	ppb	96
84)	1,1,2,2-Tetrachloroethane	12.472	83	38670	4.35	ppb	98
85)	trans-1,4-Dichloro-2-b...	12.503	53	9173	4.01	ppb	# 81
86)	Bromobenzene	12.503	156	40890	4.12	ppb	97
87)	1,2,3-Trichloropropane	12.523	110	11233	4.38	ppb	90
88)	n-Propylbenzene	12.563	91	165794	4.01	ppb	100
89)	2-Chlorotoluene	12.654	126	34941	4.03	ppb	79
90)	4-Chlorotoluene	12.746	126	35871	4.18	ppb	99
91)	1,3,5-Trimethylbenzene	12.705	105	111879	4.08	ppb	100
92)	tert-Butylbenzene	12.978	134	22738	4.19	ppb	94
93)	1,2,4-Trimethylbenzene	13.019	105	113526	4.19	ppb	97
94)	sec-Butylbenzene	13.151	105	130838	4.05	ppb	99
95)	1,3-Dichlorobenzene	13.272	146	69037	4.11	ppb	98
96)	1,4-Dichlorobenzene	13.353	146	67024	4.09	ppb	99
97)	p-Isopropyltoluene	13.272	119	106112	4.17	ppb	98
98)	1,2-Dichlorobenzene	13.647	146	63367	4.04	ppb	96
99)	n-Butylbenzene	13.606	91	93301	4.09	ppb	99
100)	1,2-Dibromo-3-chloropr...	14.265	75	4638	3.57	ppb	96
101)	Hexachloroethane	13.880	201	14394	3.94	ppb	88

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44438.D  
Acq On : 23 Sep 2013 17:52  
Operator : twk-sop525r16  
Sample : VOC\_4.0ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 6 Sample Multiplier: 1

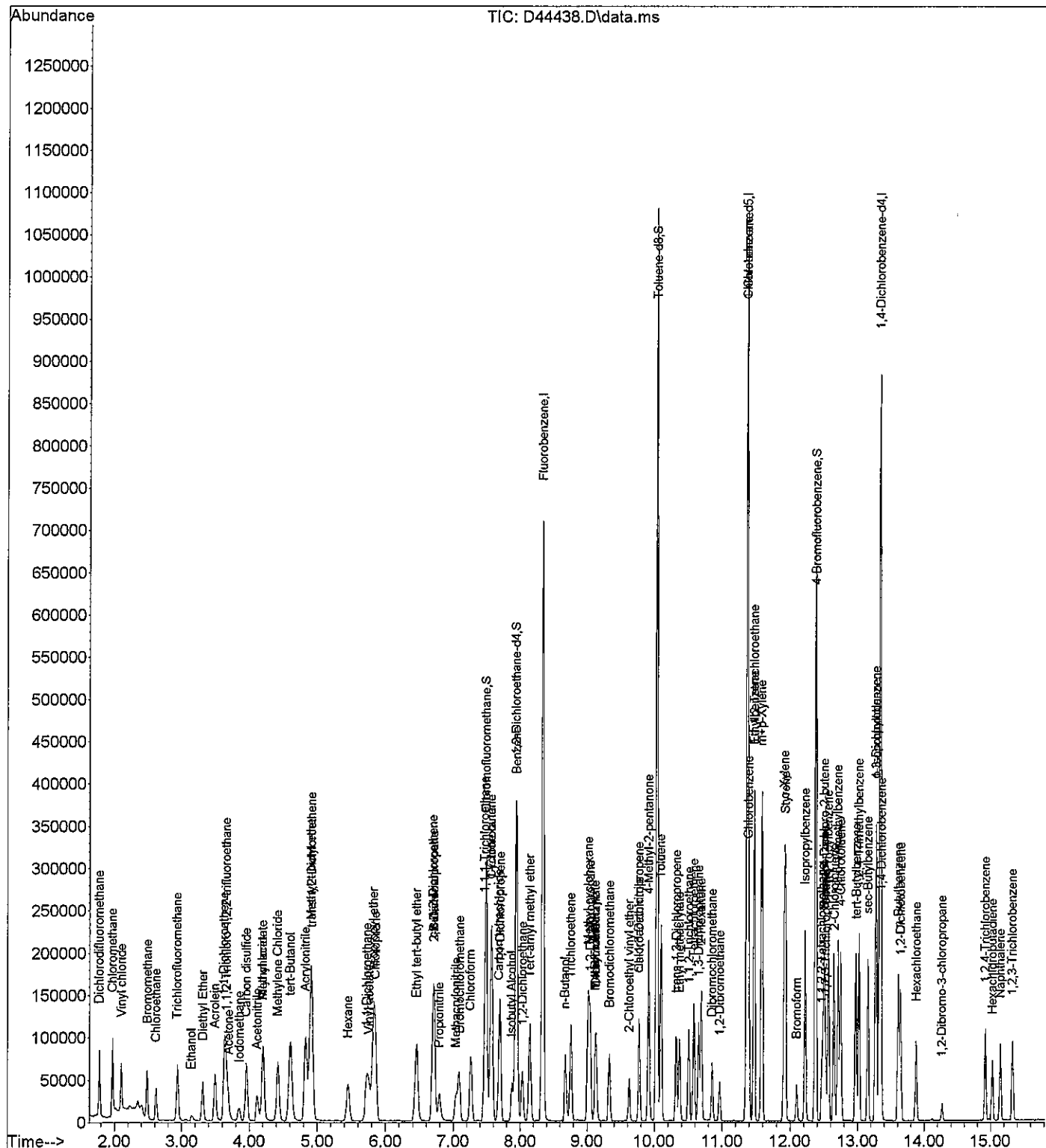
Quant Time: Sep 24 12:33:53 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:33:42 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.923	180	35091	4.11	ppb	96
103) Naphthalene	15.145	128	69318	3.86	ppb	98
104) Hexachlorobutadiene	15.024	225	15026	4.21	ppb	88
105) 1,2,3-Trichlorobenzene	15.328	180	29834	4.00	ppb	99

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

```
Data Path   : C:\msdchem\1\DATA\2013\092313\  
Data File  : D44438.D  
Acq On     : 23 Sep 2013  17:52  
Operator   : twk-sop525r16  
Sample     : VOC_4.0ppb_ICAL_CSTD  
Misc       : 10mL UN-htd purge water  
ALS Vial   : 6      Sample Multiplier: 1
```

Quant Time: Sep 24 12:33:53 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:33:42 2013  
Response via : Initial Calibration





Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44439.D  
 Acq On : 23 Sep 2013 18:16  
 Operator : twk-sop525r16  
 Sample : VOC\_10ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 24 12:33:22 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:32:43 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	8.341	96	708514	25.00	ppb	0.00
61) Chlorobenzene-d5	11.368	117	495367	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.333	152	232740	25.00	ppb	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	7.490	113	192150	24.81	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery =	99.24%		
42) 1,2-Dichloroethane-d4	7.936	67	115384	24.74	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery =	98.96%		
65) Toluene-d8	10.032	98	692467	25.29	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery =	101.16%		
83) 4-Bromofluorobenzene	12.381	176	189354	24.95	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery =	99.80%		
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	132792	10.92	ppb	99
3) Chloromethane	1.971	50	130286	10.90	ppb	98
4) Vinyl chloride	2.103	62	109571	10.87	ppb	99
5) Bromomethane	2.488	96	76054	11.31	ppb	96
6) Chloroethane	2.619	64	74523	10.99	ppb	98
7) Ethanol	3.146	45	20490	196.55	ppb	97
8) Acrolein	3.490	56	148411	100.33	ppb	100
9) Acetonitrile	4.108	41	112399	98.48	ppb	100
10) Trichlorofluoromethane	2.933	101	151417	11.32	ppb	97
11) Acetone	3.693	58	25795	38.39	ppb	88
12) Diethyl Ether	3.308	74	49499	9.98	ppb	97
13) tert-Butanol	4.604	59	434736	526.66	ppb	99
14) 1,1-Dichloroethene	3.632	96	81340	10.14	ppb	94
15) Acrylonitrile	4.827	53	308501	101.09	ppb	98
16) Iodomethane	3.845	142	76371	8.37	ppb	98
17) Methylene Chloride	4.422	84	98987	10.13	ppb	97
18) Methyl acetate	4.199	74	12723	9.52	ppb	# 76
19) Allyl chloride	4.209	76	51372	9.96	ppb	93
20) 1,1,2-Trichloro-1,2,2-...	3.662	101	84476	9.83	ppb	95
21) Carbon disulfide	3.956	76	297996	10.17	ppb	99
22) trans-1,2-Dichloroethene	4.918	96	91096	9.92	ppb	97
23) Methyl-t-butyl ether	4.908	73	488370	19.82	ppb	98
24) Hexane	5.455	57	72889	9.87	ppb	97
25) 1,1-Dichloroethane	5.728	63	190505	10.00	ppb	100
26) Propionitrile	6.791	54	119073	104.02	ppb	98
27) Vinyl acetate	5.759	43	214753	9.51	ppb	98
28) Chloroprene	5.850	53	165826	10.08	ppb	97
29) 2-Butanone	6.700	72	35661	40.93	ppb	90
30) Isopropyl ether	5.819	45	385795	10.01	ppb	96
31) Methacrylonitrile	7.034	41	59849	10.10	ppb	96
32) cis-1,2-Dichloroethene	6.710	96	106398	10.23	ppb	98
33) Methyl Acrylate	0.000		0	N.D.		
34) Bromochloromethane	7.085	128	45485	9.75	ppb	94
35) Chloroform	7.257	83	183775	10.21	ppb	99
36) 2,2-Dichloropropane	6.710	77	128433	10.03	ppb	100
37) Ethyl tert-butyl ether	6.457	59	300544	10.04	ppb	99
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	7.571	56	351004	No Calib		
41) Isobutyl Alcohol	7.875	43	93852	210.45	ppb	99

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44439.D  
 Acq On : 23 Sep 2013 18:16  
 Operator : twk-sop525r16  
 Sample : VOC\_10ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 24 12:33:22 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:32:43 2013  
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
43)	1,2-Dichloroethane	8.037	62	134369	10.12	ppb	98
44)	1,1,1-Trichloroethane	7.480	97	146559	9.98	ppb	96
45)	1,1-Dichloropropene	7.703	75	138685	10.21	ppb	99
46)	n-Butanol	8.675	56	116904	516.55	ppb	96
47)	Cyclohexane	7.571	84	260424	20.02	ppb	98
48)	Carbon tetrachloride	7.683	117	115658	9.79	ppb	98
49)	Benzene	7.946	78	395691	10.09	ppb	99
50)	Tert-amyl methyl ether	8.148	87	55822	9.96	ppb	96
51)	Dibromomethane	9.131	93	58808	10.53	ppb	97
52)	1,2-Dichloropropane	9.050	63	116940	10.18	ppb	96
53)	Trichloroethene	8.756	95	101164	10.16	ppb	97
54)	Bromodichloromethane	9.333	83	131620	9.92	ppb	100
55)	1,4-Dioxane	9.120	88	15402	203.36	ppb	95
56)	Methyl methacrylate	9.120	69	55795	10.03	ppb	97
57)	Methyl cyclohexane	9.019	83	134154	9.86	ppb	98
58)	Chloroacetonitrile	9.769	48	4453	No Calib	#	
59)	2-Chloroethyl vinyl ether	9.627	63	51274	10.54	ppb	99
60)	cis-1,3-Dichloropropene	9.769	75	163192	9.93	ppb	97
62)	4-Methyl-2-pentanone	9.910	100	38556	40.71	ppb	84
63)	trans-1,3-Dichloropropene	10.325	75	136354	10.06	ppb	96
64)	1,1,2-Trichloroethane	10.508	83	71712	10.10	ppb	97
66)	Toluene	10.093	92	226190	10.29	ppb	98
67)	1,3-Dichloropropane	10.650	76	142198	10.09	ppb	99
68)	Ethyl methacrylate	10.366	69	111934	10.03	ppb	98
69)	2-Hexanone	10.690	58	127708	41.47	ppb	99
70)	Dibromochloromethane	10.852	129	87264	9.81	ppb	96
71)	1,2-Dibromoethane	10.963	107	78383	10.22	ppb	98
72)	Tetrachloroethene	10.579	164	74289	10.33	ppb	97
73)	1,1,1,2-Tetrachloroethane	11.470	131	89196	9.89	ppb	95
74)	Chlorobenzene	11.389	112	245324	10.08	ppb	96
75)	1-Chlorohexane	11.368	91	106987	9.98	ppb	99
76)	Ethylbenzene	11.470	91	413251	10.03	ppb	100
77)	m+p-Xylene	11.581	106	296433	19.66	ppb	99
78)	Bromoform	12.098	173	48618	9.52	ppb	94
79)	Styrene	11.925	104	256855	9.98	ppb	98
80)	o-Xylene	11.915	106	152742	10.01	ppb	95
81)	Isopropylbenzene	12.219	105	344285	10.02	ppb	99
84)	1,1,2,2-Tetrachloroethane	12.472	83	94745	10.43	ppb	99
85)	trans-1,4-Dichloro-2-b...	12.503	53	24401	10.46	ppb	97
86)	Bromobenzene	12.503	156	104104	10.10	ppb	98
87)	1,2,3-Trichloropropane	12.523	110	27437	10.48	ppb	# 87
88)	n-Propylbenzene	12.563	91	433135	10.08	ppb	99
89)	2-Chlorotoluene	12.655	126	90914	10.07	ppb	83
90)	4-Chlorotoluene	12.746	126	88335	9.70	ppb	89
91)	1,3,5-Trimethylbenzene	12.705	105	286521	10.01	ppb	98
92)	tert-Butylbenzene	12.979	134	55847	9.70	ppb	91
93)	1,2,4-Trimethylbenzene	13.019	105	284023	10.06	ppb	99
94)	sec-Butylbenzene	13.151	105	335296	9.89	ppb	99
95)	1,3-Dichlorobenzene	13.272	146	176219	10.09	ppb	98
96)	1,4-Dichlorobenzene	13.353	146	171726	10.04	ppb	98
97)	p-Isopropyltoluene	13.272	119	266489	10.05	ppb	97
98)	1,2-Dichlorobenzene	13.647	146	164095	10.05	ppb	96
99)	n-Butylbenzene	13.606	91	237649	9.93	ppb	98
100)	1,2-Dibromo-3-chloropr...	14.265	75	13510	9.93	ppb	93
101)	Hexachloroethane	13.880	201	38061	9.93	ppb	95

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44439.D  
Acq On : 23 Sep 2013 18:16  
Operator : twk-sop525r16  
Sample : VOC\_10ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 7 Sample Multiplier: 1

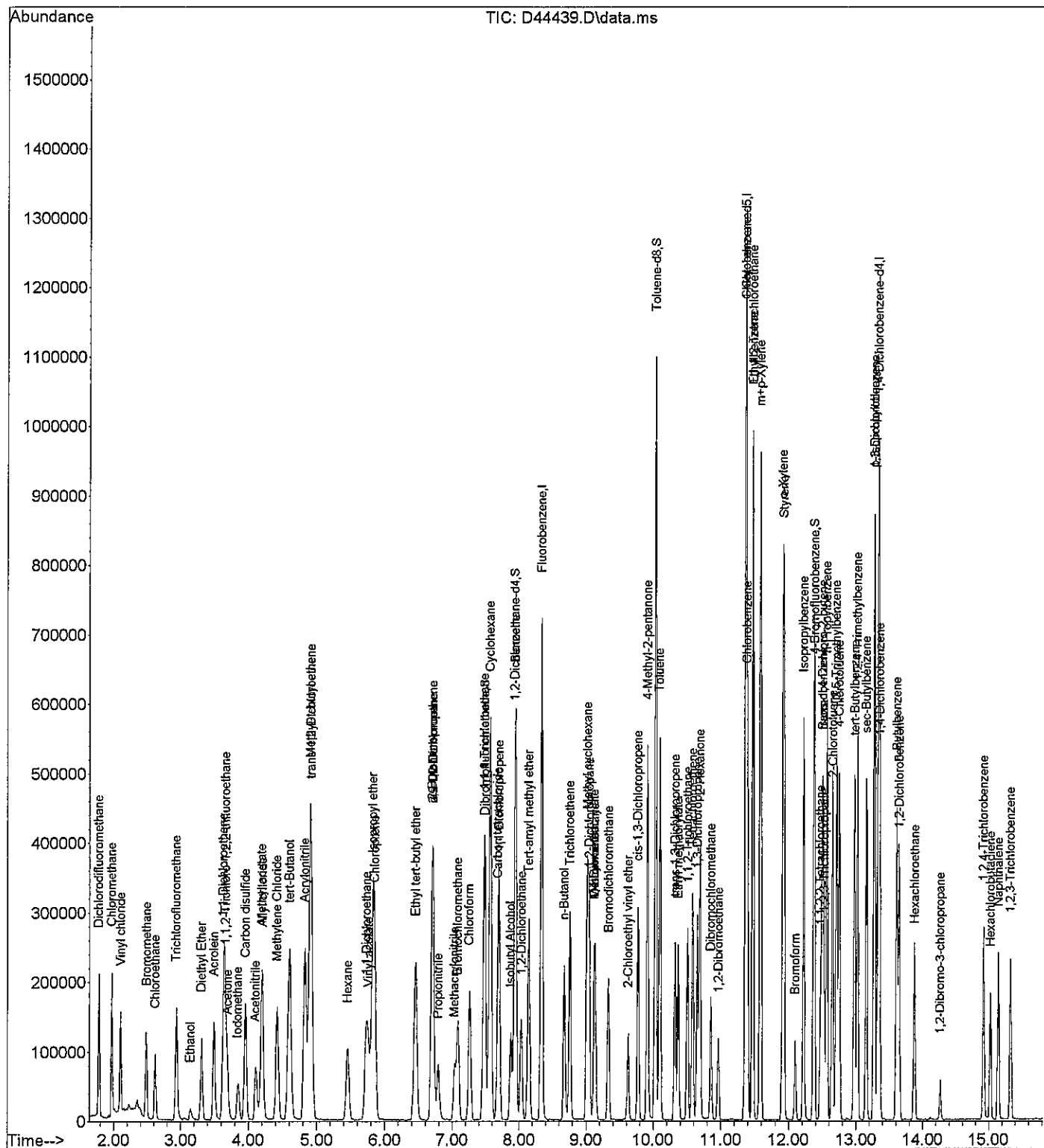
Quant Time: Sep 24 12:33:22 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:32:43 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.923	180	88839	9.90	ppb	98
103) Naphthalene	15.146	128	187079	9.92	ppb	99
104) Hexachlorobutadiene	15.024	225	36592	9.66	ppb	95
105) 1,2,3-Trichlorobenzene	15.328	180	75591	9.43	ppb	99

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

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44439.D  
Acq On : 23 Sep 2013 18:16  
Operator : twk-sop525r16  
Sample : VOC\_10ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 24 12:33:22 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:32:43 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44441.D  
 Acq On : 23 Sep 2013 19:02  
 Operator : twk-sop525r16  
 Sample : VOC\_20ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 24 12:32:48 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:32:43 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	8.341	96	689254	25.00	ppb	0.00
61) Chlorobenzene-d5	11.368	117	483508	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.333	152	228869	25.00	ppb	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	7.490	113	188352	25.00	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	100.00%	
42) 1,2-Dichloroethane-d4	7.936	67	113416	25.00	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	100.00%	
65) Toluene-d8	10.032	98	668012	25.00	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	100.00%	
83) 4-Bromofluorobenzene	12.381	176	186549	25.00	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	100.00%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	236571	20.00	ppb	100
3) Chloromethane	1.971	50	232510	20.00	ppb	100
4) Vinyl chloride	2.103	62	196168	20.00	ppb	100
5) Bromomethane	2.478	96	130851	20.00	ppb	100
6) Chloroethane	2.619	64	131941	20.00	ppb	100
7) Ethanol	3.146	45	40566	400.00	ppb	100
8) Acrolein	3.490	56	287812	200.00	ppb	100
9) Acetonitrile	4.108	41	222066	200.00	ppb	100
10) Trichlorofluoromethane	2.933	101	260160	20.00	ppb	100
11) Acetone	3.693	58	52288	80.00	ppb	100
12) Diethyl Ether	3.308	74	96522	20.00	ppb	100
13) tert-Butanol	4.604	59	803019	1000.00	ppb	100
14) 1,1-Dichloroethene	3.632	96	156129	20.00	ppb	100
15) Acrylonitrile	4.827	53	593740	200.00	ppb	100
16) Iodomethane	3.845	142	177551	20.00	ppb	100
17) Methylene Chloride	4.422	84	190104	20.00	ppb	100
18) Methyl acetate	4.199	74	26005	20.00	ppb	100
19) Allyl chloride	4.209	76	100312	20.00	ppb	100
20) 1,1,2-Trichloro-1,2,2-...	3.652	101	167241	20.00	ppb	100
21) Carbon disulfide	3.956	76	569864	20.00	ppb	100
22) trans-1,2-Dichloroethene	4.918	96	178674	20.00	ppb	100
23) Methyl-t-butyl ether	4.908	73	958766	40.00	ppb	100
24) Hexane	5.455	57	143655	20.00	ppb	100
25) 1,1-Dichloroethane	5.718	63	370532	20.00	ppb	100
26) Propionitrile	6.791	54	222713	200.00	ppb	100
27) Vinyl acetate	5.758	43	439396	20.00	ppb	100
28) Chloroprene	5.850	53	319972	20.00	ppb	100
29) 2-Butanone	6.700	72	67809	80.00	ppb	100
30) Isopropyl ether	5.819	45	749606	20.00	ppb	100
31) Methacrylonitrile	7.034	41	115285	20.00	ppb	100
32) cis-1,2-Dichloroethene	6.700	96	202368	20.00	ppb	100
33) Methyl Acrylate	6.710	85	118	No Calib	#	
34) Bromochloromethane	7.085	128	90794	20.00	ppb	100
35) Chloroform	7.257	83	350170	20.00	ppb	100
36) 2,2-Dichloropropane	6.710	77	249245	20.00	ppb	100
37) Ethyl tert-butyl ether	6.457	59	582442	20.00	ppb	100
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	7.571	56	683698	No Calib		
41) Isobutyl Alcohol	7.875	43	173535	400.00	ppb	100

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44441.D  
 Acq On : 23 Sep 2013 19:02  
 Operator : twk-sop525r16  
 Sample : VOC\_20ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Sep 24 12:32:48 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:32:43 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
43) 1,2-Dichloroethane	8.037	62	258408	20.00	ppb	100
44) 1,1,1-Trichloroethane	7.470	97	285754	20.00	ppb	100
45) 1,1-Dichloropropene	7.703	75	264344	20.00	ppb	100
46) n-Butanol	8.675	56	220164	1000.00	ppb	100
47) Cyclohexane	7.571	84	506108	40.00	ppb	100
48) Carbon tetrachloride	7.682	117	229744	20.00	ppb	100
49) Benzene	7.946	78	763037	20.00	ppb	100
50) Tert-amyl methyl ether	8.148	87	109039	20.00	ppb	100
51) Dibromomethane	9.131	93	108624	20.00	ppb	100
52) 1,2-Dichloropropane	9.039	63	223504	20.00	ppb	100
53) Trichloroethene	8.756	95	193747	20.00	ppb	100
54) Bromodichloromethane	9.333	83	258107	20.00	ppb	100
55) 1,4-Dioxane	9.120	88	29471	400.00	ppb	100
56) Methyl methacrylate	9.120	69	108258	20.00	ppb	100
57) Methyl cyclohexane	9.019	83	264765	20.00	ppb	100
58) Chloroacetone nitrile	9.768	48	9599	No Calib	#	
59) 2-Chloroethyl vinyl ether	9.627	63	94663	20.00	ppb	100
60) cis-1,3-Dichloropropene	9.768	75	319723	20.00	ppb	100
62) 4-Methyl-2-pentanone	9.910	100	73952	80.00	ppb	100
63) trans-1,3-Dichloropropene	10.325	75	264665	20.00	ppb	100
64) 1,1,2-Trichloroethane	10.508	83	138668	20.00	ppb	100
66) Toluene	10.093	92	428935	20.00	ppb	100
67) 1,3-Dichloropropane	10.649	76	275013	20.00	ppb	100
68) Ethyl methacrylate	10.366	69	217763	20.00	ppb	100
69) 2-Hexanone	10.690	58	240439	80.00	ppb	100
70) Dibromochloromethane	10.852	129	173623	20.00	ppb	100
71) 1,2-Dibromoethane	10.963	107	149657	20.00	ppb	100
72) Tetrachloroethene	10.579	164	140387	20.00	ppb	100
73) 1,1,1,2-Tetrachloroethane	11.470	131	176009	20.00	ppb	100
74) Chlorobenzene	11.389	112	475006	20.00	ppb	100
75) 1-Chlorohexane	11.368	91	209292	20.00	ppb	100
76) Ethylbenzene	11.470	91	804133	20.00	ppb	100
77) m+p-Xylene	11.581	106	588808	40.00	ppb	100
78) Bromoform	12.098	173	99726	20.00	ppb	100
79) Styrene	11.925	104	502182	20.00	ppb	100
80) o-Xylene	11.915	106	297952	20.00	ppb	100
81) Isopropylbenzene	12.219	105	670613	20.00	ppb	100
84) 1,1,2,2-Tetrachloroethane	12.472	83	178694	20.00	ppb	100
85) trans-1,4-Dichloro-2-b...	12.503	53	45898	20.00	ppb	100
86) Bromobenzene	12.503	156	202666	20.00	ppb	100
87) 1,2,3-Trichloropropane	12.523	110	51500	20.00	ppb	100
88) n-Propylbenzene	12.563	91	845123	20.00	ppb	100
89) 2-Chlorotoluene	12.644	126	177484	20.00	ppb	100
90) 4-Chlorotoluene	12.746	126	179103	20.00	ppb	100
91) 1,3,5-Trimethylbenzene	12.705	105	563174	20.00	ppb	100
92) tert-Butylbenzene	12.979	134	113288	20.00	ppb	100
93) 1,2,4-Trimethylbenzene	13.019	105	555541	20.00	ppb	100
94) sec-Butylbenzene	13.151	105	666668	20.00	ppb	100
95) 1,3-Dichlorobenzene	13.272	146	343633	20.00	ppb	100
96) 1,4-Dichlorobenzene	13.353	146	336325	20.00	ppb	100
97) p-Isopropyltoluene	13.272	119	521643	20.00	ppb	100
98) 1,2-Dichlorobenzene	13.647	146	321102	20.00	ppb	100
99) n-Butylbenzene	13.606	91	470461	20.00	ppb	100
100) 1,2-Dibromo-3-chloropr...	14.265	75	26748	20.00	ppb	100
101) Hexachloroethane	13.880	201	75398	20.00	ppb	100

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44441.D  
Acq On : 23 Sep 2013 19:02  
Operator : twk-sop525r16  
Sample : VOC\_20ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 9 Sample Multiplier: 1

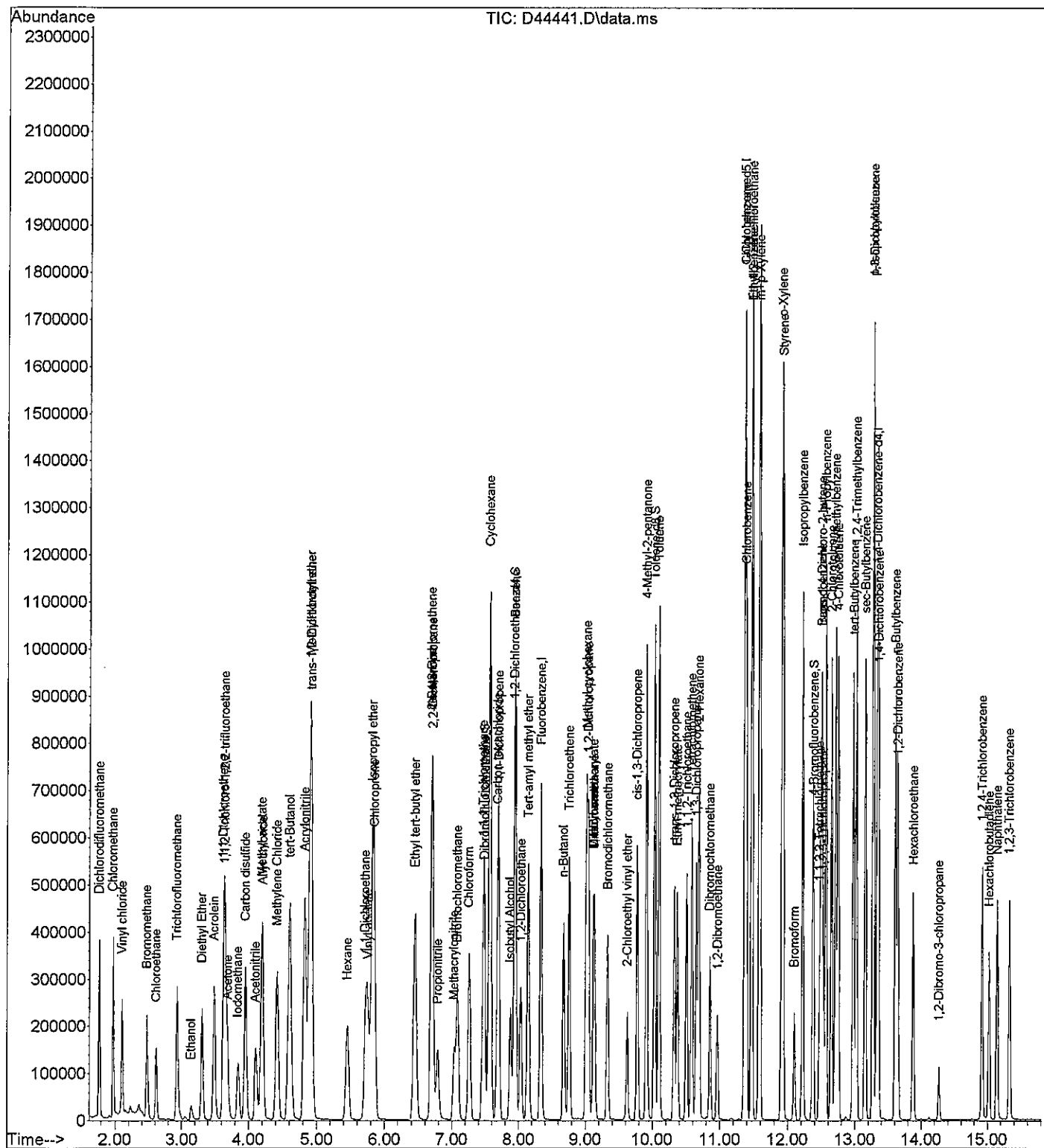
Quant Time: Sep 24 12:32:48 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:32:43 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.923	180	176472	20.00	ppb	100
103) Naphthalene	15.146	128	370716	20.00	ppb	100
104) Hexachlorobutadiene	15.024	225	74532	20.00	ppb	100
105) 1,2,3-Trichlorobenzene	15.328	180	157689	20.00	ppb	100

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

```
Data Path   : C:\msdchem\1\DATA\2013\092313\  
Data File  : D44441.D  
Acq On     : 23 Sep 2013  19:02  
Operator   : twk-sop525r16  
Sample     : VOC_20ppb_ICAL_CSTD  
Misc       : 10mL UN-htd purge water  
ALS Vial   : 9      Sample Multiplier: 1
```

Quant Time: Sep 24 12:32:48 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:32:43 2013  
Response via : Initial Calibration





Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44443.D  
 Acq On : 23 Sep 2013 19:49  
 Operator : twk-sop525r16  
 Sample : VOC\_40ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 24 12:38:36 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:36:38 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	8.341	96	705065	25.00	ppb	0.00
61) Chlorobenzene-d5	11.368	117	500732	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.333	152	248616	25.00	ppb	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	7.490	113	194215	25.37	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	101.48%	
42) 1,2-Dichloroethane-d4	7.936	67	114178	24.66	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	98.64%	
65) Toluene-d8	10.032	98	691976	24.69	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	98.76%	
83) 4-Bromofluorobenzene	12.381	176	200165	24.11	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	96.44%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	504928	39.27	ppb	99
3) Chloromethane	1.971	50	505521	38.48	ppb	99
4) Vinyl chloride	2.103	62	422735	38.39	ppb	100
5) Bromomethane	2.478	96	267581	31.23	ppb	97
6) Chloroethane	2.609	64	288086	40.49	ppb	99
7) Ethanol	3.146	45	77898	760.81	ppb	98
8) Acrolein	3.490	56	592820	415.86	ppb	98
9) Acetonitrile	4.108	41	450533	436.52	ppb	98
10) Trichlorofluoromethane	2.933	101	567442	39.93	ppb	97
11) Acetone	3.693	58	104181	164.96	ppb	98
12) Diethyl Ether	3.308	74	194027	41.01	ppb	98
13) tert-Butanol	4.604	59	1594102	1951.58	ppb	99
14) 1,1-Dichloroethene	3.632	96	323856	40.38	ppb	97
15) Acrylonitrile	4.827	53	1205496	400.42	ppb	98
16) Iodomethane	3.855	142	416082	79.50	ppb	99
17) Methylene Chloride	4.422	84	386758	36.40	ppb	99
18) Methyl acetate	4.189	74	52056	47.87	ppb	70
19) Allyl chloride	4.209	76	209704	40.34	ppb	95
20) 1,1,2-Trichloro-1,2,2-...	3.652	101	337644	39.16	ppb	99
21) Carbon disulfide	3.956	76	1179291	40.40	ppb	99
22) trans-1,2-Dichloroethene	4.918	96	364300	39.83	ppb	98
23) Methyl-t-butyl ether	4.908	73	1938941	79.80	ppb	99
24) Hexane	5.455	57	294270	39.54	ppb	98
25) 1,1-Dichloroethane	5.718	63	756676	39.25	ppb	99
26) Propionitrile	6.791	54	438269	397.20	ppb	99
27) Vinyl acetate	5.758	43	894695	43.53	ppb	100
28) Chloroprene	5.850	53	657801	40.78	ppb	98
29) 2-Butanone	6.700	72	135606	165.71	ppb	97
30) Isopropyl ether	5.819	45	1518402	39.33	ppb	97
31) Methacrylonitrile	7.034	41	235266	40.88	ppb	96
32) cis-1,2-Dichloroethene	6.710	96	419942	39.90	ppb	92
33) Methyl Acrylate	6.710	85	614	No Calib	#	
34) Bromochloromethane	7.085	128	182010	39.75	ppb	98
35) Chloroform	7.257	83	712582	39.31	ppb	99
36) 2,2-Dichloropropane	6.710	77	490238	35.75	ppb	97
37) Ethyl tert-butyl ether	6.457	59	1170438	39.41	ppb	99
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	7.571	56	1398182	39.68	ppb	# 95
41) Isobutyl Alcohol	7.875	43	337982	766.97	ppb	97

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44443.D  
 Acq On : 23 Sep 2013 19:49  
 Operator : twk-sop525r16  
 Sample : VOC\_40ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 24 12:38:36 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:36:38 2013  
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43)	1,2-Dichloroethane	8.037	62	518244	38.37	ppb	97
44)	1,1,1-Trichloroethane	7.470	97	592989	40.67	ppb	99
45)	1,1-Dichloropropene	7.703	75	545696	39.99	ppb	96
46)	n-Butanol	8.675	56	413248	1986.91	ppb	99
47)	Cyclohexane	7.571	84	1028554	79.54	ppb	98
48)	Carbon tetrachloride	7.682	117	478936	43.31	ppb	98
49)	Benzene	7.946	78	1535689	38.37	ppb	99
50)	Tert-amyl methyl ether	8.148	87	217936	39.43	ppb	97
51)	Dibromomethane	9.131	93	225047	39.72	ppb	97
52)	1,2-Dichloropropane	9.039	63	452300	39.70	ppb	95
53)	Trichloroethene	8.756	95	397805	39.55	ppb	99
54)	Bromodichloromethane	9.333	83	525899	41.29	ppb	99
55)	1,4-Dioxane	9.120	88	55014	756.98	ppb	96
56)	Methyl methacrylate	9.120	69	223747	41.33	ppb	98
57)	Methyl cyclohexane	9.019	83	536576	39.83	ppb	98
58)	Chloroacetonitrile	9.627	48	2536	49.43	ppb	94
59)	2-Chloroethyl vinyl ether	9.627	63	189569	37.32	ppb	98
60)	cis-1,3-Dichloropropene	9.768	75	656949	42.50	ppb	99
62)	4-Methyl-2-pentanone	9.910	100	151454	160.08	ppb	95
63)	trans-1,3-Dichloropropene	10.325	75	553701	42.09	ppb	99
64)	1,1,2-Trichloroethane	10.508	83	275985	38.13	ppb	95
66)	Toluene	10.093	92	891081	38.68	ppb	100
67)	1,3-Dichloropropane	10.649	76	554434	38.31	ppb	100
68)	Ethyl methacrylate	10.366	69	447069	41.15	ppb	99
69)	2-Hexanone	10.690	58	479469	160.80	ppb	98
70)	Dibromochloromethane	10.852	129	362730	44.11	ppb	96
71)	1,2-Dibromoethane	10.963	107	310699	40.58	ppb	98
72)	Tetrachloroethene	10.579	164	287900	35.60	ppb	99
73)	1,1,1,2-Tetrachloroethane	11.470	131	360215	41.30	ppb	98
74)	Chlorobenzene	11.389	112	976634	39.09	ppb	99
75)	1-Chlorohexane	11.368	91	432219	38.51	ppb	99
76)	Ethylbenzene	11.470	91	1652334	39.94	ppb	99
77)	m+p-Xylene	11.581	106	1225587	82.51	ppb	99
78)	Bromoform	12.098	173	212180	46.24	ppb	99
79)	Styrene	11.925	104	1054916	42.68	ppb	99
80)	o-Xylene	11.915	106	625674	41.61	ppb	99
81)	Isopropylbenzene	12.219	105	1395546	40.98	ppb	99
84)	1,1,2,2-Tetrachloroethane	12.472	83	374997	36.78	ppb	99
85)	trans-1,4-Dichloro-2-b...	12.503	53	96093	39.85	ppb	99
86)	Bromobenzene	12.503	156	422598	38.20	ppb	99
87)	1,2,3-Trichloropropane	12.523	110	106690	37.25	ppb	95
88)	n-Propylbenzene	12.563	91	1781763	38.23	ppb	100
89)	2-Chlorotoluene	12.654	126	382488	39.56	ppb	75
90)	4-Chlorotoluene	12.746	126	373382	38.85	ppb	99
91)	1,3,5-Trimethylbenzene	12.705	105	1185531	37.86	ppb	99
92)	tert-Butylbenzene	12.979	134	238264	38.40	ppb	95
93)	1,2,4-Trimethylbenzene	13.019	105	1178655	38.50	ppb	100
94)	sec-Butylbenzene	13.151	105	1404102	39.15	ppb	99
95)	1,3-Dichlorobenzene	13.272	146	724398	38.15	ppb	99
96)	1,4-Dichlorobenzene	13.353	146	699887	37.78	ppb	99
97)	p-Isopropyltoluene	13.272	119	1112992	38.75	ppb	99
98)	1,2-Dichlorobenzene	13.637	146	682351	39.03	ppb	# 93
99)	n-Butylbenzene	13.606	91	993849	38.60	ppb	99
100)	1,2-Dibromo-3-chloropr...	14.265	75	55548	39.58	ppb	95
101)	Hexachloroethane	13.880	201	169365	46.12	ppb	94

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44443.D  
Acq On : 23 Sep 2013 19:49  
Operator : twk-sop525r16  
Sample : VOC\_40ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 11 Sample Multiplier: 1

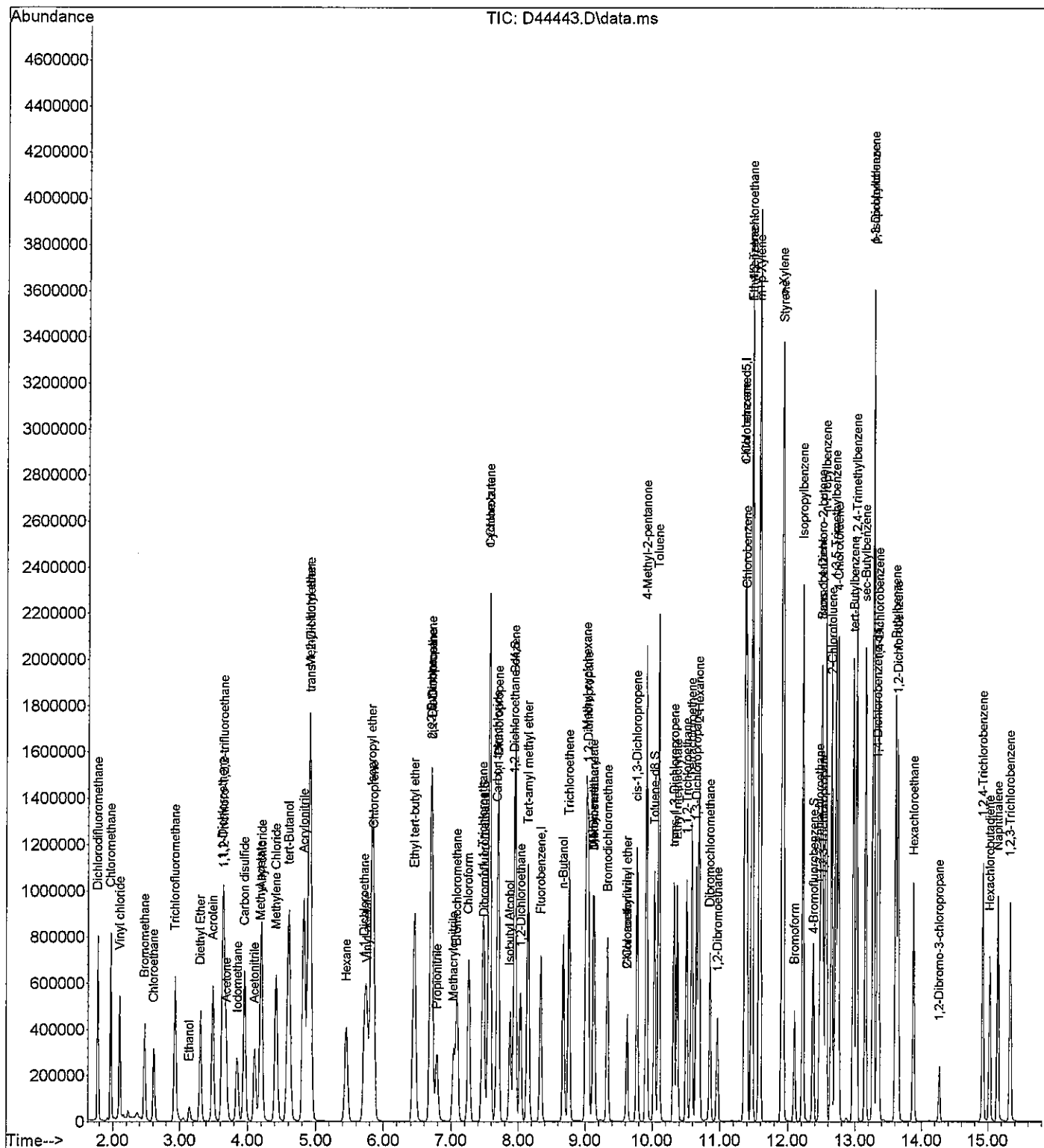
Quant Time: Sep 24 12:38:36 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:36:38 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.923	180	367295	39.54	ppb	97
103) Naphthalene	15.146	128	762363	40.32	ppb	98
104) Hexachlorobutadiene	15.024	225	152657	37.99	ppb	97
105) 1,2,3-Trichlorobenzene	15.328	180	320952	40.23	ppb	98

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

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44443.D  
Acq On : 23 Sep 2013 19:49  
Operator : twk-sop525r16  
Sample : VOC\_40ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Sep 24 12:38:36 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:36:38 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44445.D  
 Acq On : 23 Sep 2013 20:35  
 Operator : twk-sop525r16  
 Sample : VOC\_60ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 24 12:38:56 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:38:49 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	8.341	96	697816	25.00	ppb	0.00
61) Chlorobenzene-d5	11.368	117	496168	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.333	152	248317	25.00	ppb	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	7.490	113	195070	25.69	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	102.76%	
42) 1,2-Dichloroethane-d4	7.936	67	112624	24.63	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	98.52%	
65) Toluene-d8	10.032	98	681603	24.58	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	98.32%	
83) 4-Bromofluorobenzene	12.381	176	202087	24.50	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	98.00%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	758338	59.75	ppb	99
3) Chloromethane	1.971	50	765165	59.17	ppb	99
4) Vinyl chloride	2.103	62	647181	59.72	ppb	100
5) Bromomethane	2.467	96	382129	46.52	ppb	98
6) Chloroethane	2.609	64	420611	59.62	ppb	100
7) Ethanol	3.146	45	115618	1148.99	ppb	98
8) Acrolein	3.490	56	819725	577.73	ppb	97
9) Acetonitrile	4.108	41	666555	644.13	ppb	99
10) Trichlorofluoromethane	2.933	101	858220	61.04	ppb	100
11) Acetone	3.693	58	159926	254.73	ppb	95
12) Diethyl Ether	3.308	74	292624	62.27	ppb	98
13) tert-Butanol	4.604	59	2338716	2902.96	ppb	99
14) 1,1-Dichloroethene	3.632	96	490183	61.68	ppb	97
15) Acrylonitrile	4.827	53	1778449	596.78	ppb	98
16) Iodomethane	3.845	142	660100	111.68	ppb	99
17) Methylene Chloride	4.422	84	579717	55.85	ppb	97
18) Methyl acetate	4.189	74	76397	69.04	ppb	66
19) Allyl chloride	4.209	76	305094	59.23	ppb	93
20) 1,1,2-Trichloro-1,2,2-...	3.652	101	511520	60.12	ppb	96
21) Carbon disulfide	3.956	76	1782936	61.62	ppb	99
22) trans-1,2-Dichloroethene	4.918	96	556746	61.53	ppb	99
23) Methyl-t-butyl ether	4.908	73	2887052	120.09	ppb	99
24) Hexane	5.455	57	451587	61.41	ppb	98
25) 1,1-Dichloroethane	5.718	63	1143401	60.08	ppb	98
26) Propionitrile	6.791	54	650245	596.03	ppb	99
27) Vinyl acetate	5.758	43	1246276	60.50	ppb	99
28) Chloroprene	5.850	53	991006	61.90	ppb	98
29) 2-Butanone	6.700	72	209184	256.97	ppb	94
30) Isopropyl ether	5.819	45	2281642	59.86	ppb	97
31) Methacrylonitrile	7.034	41	342543	59.95	ppb	95
32) cis-1,2-Dichloroethene	6.700	96	632532	60.74	ppb	96
33) Methyl Acrylate	6.720	85	1091	71.81	ppb	# 1
34) Bromochloromethane	7.085	128	269596	59.54	ppb	97
35) Chloroform	7.257	83	1069688	59.76	ppb	99
36) 2,2-Dichloropropane	6.710	77	724553	54.21	ppb	98
37) Ethyl tert-butyl ether	6.457	59	1764692	60.16	ppb	99
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	7.571	56	2118385	60.83	ppb	93
41) Isobutyl Alcohol	7.875	43	503600	1161.52	ppb	99

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44445.D  
 Acq On : 23 Sep 2013 20:35  
 Operator : twk-sop525r16  
 Sample : VOC\_60ppb\_ICAL\_CSTD  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 24 12:38:56 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:38:49 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43) 1,2-Dichloroethane	8.037	62	758119	57.04	ppb	98
44) 1,1,1-Trichloroethane	7.470	97	902318	62.38	ppb	99
45) 1,1-Dichloropropene	7.703	75	834529	61.80	ppb	98
46) n-Butanol	8.675	56	628527	3056.23	ppb	99
47) Cyclohexane	7.571	84	1550288	121.23	ppb	98
48) Carbon tetrachloride	7.682	117	733462	66.24	ppb	99
49) Benzene	7.946	78	2324188	59.01	ppb	99
50) Tert-amyl methyl ether	8.148	87	321371	58.87	ppb	93
51) Dibromomethane	9.131	93	332162	59.30	ppb	95
52) 1,2-Dichloropropane	9.050	63	678327	60.22	ppb	# 98
53) Trichloroethene	8.756	95	602294	60.59	ppb	97
54) Bromodichloromethane	9.333	83	795075	62.78	ppb	98
55) 1,4-Dioxane	9.120	88	84551	1184.59	ppb	94
56) Methyl methacrylate	9.120	69	329120	61.13	ppb	99
57) Methyl cyclohexane	9.019	83	810240	60.80	ppb	98
58) Chloroacetonitrile	9.627	48	4111	94.80	ppb	# 90
59) 2-Chloroethyl vinyl ether	9.627	63	286960	57.63	ppb	98
60) cis-1,3-Dichloropropene	9.768	75	977895	63.35	ppb	99
62) 4-Methyl-2-pentanone	9.910	100	222214	237.01	ppb	93
63) trans-1,3-Dichloropropene	10.325	75	826184	62.91	ppb	98
64) 1,1,2-Trichloroethane	10.508	83	411012	57.69	ppb	99
66) Toluene	10.093	92	1350570	59.44	ppb	99
67) 1,3-Dichloropropane	10.649	76	820417	57.56	ppb	99
68) Ethyl methacrylate	10.366	69	650910	60.21	ppb	98
69) 2-Hexanone	10.690	58	708455	239.60	ppb	98
70) Dibromochloromethane	10.852	129	542229	65.58	ppb	98
71) 1,2-Dibromoethane	10.963	107	458073	60.25	ppb	99
72) Tetrachloroethene	10.579	164	438716	55.62	ppb	99
73) 1,1,1,2-Tetrachloroethane	11.470	131	549292	63.26	ppb	99
74) Chlorobenzene	11.389	112	1456862	59.04	ppb	99
75) 1-Chlorohexane	11.368	91	654373	59.16	ppb	97
76) Ethylbenzene	11.470	91	2480979	60.53	ppb	99
77) m+p-Xylene	11.581	106	1852527	125.30	ppb	99
78) Bromoform	12.098	173	320187	68.88	ppb	99
79) Styrene	11.925	104	1591881	64.38	ppb	99
80) o-Xylene	11.915	106	954147	63.67	ppb	97
81) Isopropylbenzene	12.219	105	2137550	63.12	ppb	100
84) 1,1,2,2-Tetrachloroethane	12.472	83	534427	53.09	ppb	98
85) trans-1,4-Dichloro-2-b...	12.503	53	139129	57.79	ppb	99
86) Bromobenzene	12.503	156	636733	57.99	ppb	99
87) 1,2,3-Trichloropropane	12.523	110	151425	53.46	ppb	97
88) n-Propylbenzene	12.563	91	2710220	58.60	ppb	99
89) 2-Chlorotoluene	12.644	126	576281	59.77	ppb	97
90) 4-Chlorotoluene	12.746	126	579805	60.65	ppb	99
91) 1,3,5-Trimethylbenzene	12.705	105	1832644	59.05	ppb	98
92) tert-Butylbenzene	12.978	134	367148	59.58	ppb	94
93) 1,2,4-Trimethylbenzene	13.019	105	1806122	59.39	ppb	99
94) sec-Butylbenzene	13.151	105	2169245	60.74	ppb	98
95) 1,3-Dichlorobenzene	13.262	146	1115425	59.20	ppb	94
96) 1,4-Dichlorobenzene	13.353	146	1079844	58.83	ppb	100
97) p-Isopropyltoluene	13.272	119	1730498	60.59	ppb	98
98) 1,2-Dichlorobenzene	13.637	146	1033984	59.43	ppb	# 93
99) n-Butylbenzene	13.606	91	1540728	60.21	ppb	99
100) 1,2-Dibromo-3-chloropr...	14.265	75	82069	58.64	ppb	93
101) Hexachloroethane	13.880	201	273329	72.92	ppb	89

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44445.D  
Acq On : 23 Sep 2013 20:35  
Operator : twk-sop525r16  
Sample : VOC\_60ppb\_ICAL\_CSTD  
Misc : 10mL UN-htd purge water  
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Sep 24 12:38:56 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:38:49 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.923	180	558307	60.28	ppb	99
103) Naphthalene	15.146	128	1159416	61.32	ppb	99
104) Hexachlorobutadiene	15.024	225	226627	56.87	ppb	98
105) 1,2,3-Trichlorobenzene	15.328	180	479490	60.13	ppb	99

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





Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44448.D  
 Acq On : 23 Sep 2013 21:44  
 Operator : twk-sop525r16  
 Sample : VL130923-4ICV  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 24 12:45:55 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:45:35 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	8.341	96	689231	25.00	ppb	0.01
61) Chlorobenzene-d5	11.368	117	484567	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.333	152	232088	25.00	ppb	0.00
System Monitoring Compounds						
38) Dibromofluoromethane	7.490	113	191025	25.42	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	101.68%	
42) 1,2-Dichloroethane-d4	7.936	67	109690	24.35	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	97.40%	
65) Toluene-d8	10.032	98	682763	25.27	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	101.08%	
83) 4-Bromofluorobenzene	12.381	176	194217	25.19	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	100.76%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	259012	20.67	ppb	100
3) Chloromethane	1.971	50	262616	20.60	ppb	99
4) Vinyl chloride	2.103	62	226157	21.14	ppb	99
5) Bromomethane	2.478	96	142612	21.15	ppb	98
6) Chloroethane	2.619	64	147010	21.11	ppb	99
7) Ethanol	3.146	45	35607	360.18	ppb	97
8) Acrolein	3.490	56	289658	207.65	ppb	97
9) Acetonitrile	4.108	41	199431	193.34	ppb	99
10) Trichlorofluoromethane	2.933	101	296516	21.31	ppb	100
11) Acetone	3.693	58	47329	75.74	ppb	94
12) Diethyl Ether	3.308	74	95777	20.54	ppb	95
13) tert-Butanol	4.604	59	748758	944.80	ppb	99
14) 1,1-Dichloroethene	3.632	96	145475	18.47	ppb	99
15) Acrylonitrile	4.827	53	596065	202.64	ppb	99
16) Iodomethane	3.855	142	164596	18.57	ppb	99
17) Methylene Chloride	4.422	84	178095	17.52	ppb	97
18) Methyl acetate	4.189	74	23440	19.01	ppb	75
19) Allyl chloride	4.209	76	93313	18.37	ppb	99
20) 1,1,2-Trichloro-1,2,2-...	3.652	101	155709	18.53	ppb	97
21) Carbon disulfide	3.956	76	530895	18.52	ppb	99
22) trans-1,2-Dichloroethene	4.918	96	166442	18.57	ppb	97
23) Methyl-t-butyl ether	4.908	73	881973	37.41	ppb	99
24) Hexane	5.455	57	152465	20.93	ppb	97
25) 1,1-Dichloroethane	5.728	63	346636	18.44	ppb	97
26) Propionitrile	6.791	54	203129	188.67	ppb	98
27) Vinyl acetate	5.759	43	378077	18.56	ppb	100
28) Chloroprene	5.850	53	305494	19.24	ppb	99
29) 2-Butanone	6.700	72	62881	77.52	ppb	90
30) Isopropyl ether	5.819	45	720798	19.15	ppb	98
31) Methacrylonitrile	7.034	41	104044	18.44	ppb	96
32) cis-1,2-Dichloroethene	6.710	96	191597	18.60	ppb	93
33) Methyl Acrylate	6.721	85	197	No Calib	#	
34) Bromochloromethane	7.085	128	83317	18.65	ppb	96
35) Chloroform	7.257	83	331301	18.75	ppb	100
36) 2,2-Dichloropropane	6.710	77	209276	16.05	ppb	99
37) Ethyl tert-butyl ether	6.457	59	561062	19.36	ppb	99
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	7.571	56	640499	No Calib		
41) Isobutyl Alcohol	7.875	43	153522	359.94	ppb	98

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44448.D  
 Acq On : 23 Sep 2013 21:44  
 Operator : twk-sop525r16  
 Sample : VL130923-4ICV  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 16 Sample Multiplier: 1

Quant Time: Sep 24 12:45:55 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:45:35 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
43) 1,2-Dichloroethane	8.037	62	234075	17.94	ppb	98
44) 1,1,1-Trichloroethane	7.470	97	267807	18.65	ppb	99
45) 1,1-Dichloropropene	7.703	75	251540	18.79	ppb	99
46) n-Butanol	8.675	56	202327	993.75	ppb	99
47) Cyclohexane	7.571	84	465477	36.81	ppb	97
48) Carbon tetrachloride	7.683	117	211976	19.13	ppb	96
49) Benzene	7.946	78	710888	18.31	ppb	99
50) Tert-amyl methyl ether	8.148	87	103008	19.15	ppb	96
51) Dibromomethane	9.131	93	102568	18.57	ppb	97
52) 1,2-Dichloropropane	9.050	63	210262	18.89	ppb	96
53) Trichloroethene	8.756	95	180355	18.35	ppb	99
54) Bromodichloromethane	9.333	83	237597	18.89	ppb	96
55) 1,4-Dioxane	9.120	88	26089	370.67	ppb	92
56) Methyl methacrylate	9.120	69	101015	18.95	ppb	99
57) Methyl cyclohexane	9.019	83	242076	18.36	ppb	98
58) Chloroacetoneitrile	9.627	48	1389	No Calib	#	
59) 2-Chloroethyl vinyl ether	9.627	63	93105	19.02	ppb	100
60) cis-1,3-Dichloropropene	9.769	75	290439	18.92	ppb	98
62) 4-Methyl-2-pentanone	9.910	100	65555	71.71	ppb	92
63) trans-1,3-Dichloropropene	10.325	75	238284	18.47	ppb	97
64) 1,1,2-Trichloroethane	10.508	83	126603	18.28	ppb	99
66) Toluene	10.093	92	413916	18.68	ppb	98
67) 1,3-Dichloropropane	10.650	76	254374	18.37	ppb	98
68) Ethyl methacrylate	10.366	69	195606	18.52	ppb	99
69) 2-Hexanone	10.690	58	217423	75.31	ppb	100
70) Dibromochloromethane	10.852	129	159327	19.50	ppb	98
71) 1,2-Dibromoethane	10.963	107	138846	18.69	ppb	97
72) Tetrachloroethene	10.579	164	134882	18.96	ppb	98
73) 1,1,1,2-Tetrachloroethane	11.470	131	161270	18.89	ppb	97
74) Chlorobenzene	11.389	112	447895	18.62	ppb	98
75) 1-Chlorohexane	11.368	91	194291	18.02	ppb	99
76) Ethylbenzene	11.470	91	758525	18.93	ppb	99
77) m+p-Xylene	11.581	106	547954	37.76	ppb	96
78) Bromoform	12.098	173	88380	19.12	ppb	97
79) Styrene	11.925	104	474749	19.48	ppb	99
80) o-Xylene	11.915	106	277317	18.80	ppb	97
81) Isopropylbenzene	12.219	105	638351	19.18	ppb	99
84) 1,1,2,2-Tetrachloroethane	12.472	83	161655	17.43	ppb	98
85) trans-1,4-Dichloro-2-b...	12.492	53	36357	15.66	ppb	79
86) Bromobenzene	12.503	156	190263	18.62	ppb	96
87) 1,2,3-Trichloropropane	12.523	110	45355	17.37	ppb	92
88) n-Propylbenzene	12.563	91	793030	18.40	ppb	100
89) 2-Chlorotoluene	12.644	126	168369	18.69	ppb	98
90) 4-Chlorotoluene	12.746	126	166103	18.57	ppb	90
91) 1,3,5-Trimethylbenzene	12.705	105	534810	18.47	ppb	99
92) tert-Butylbenzene	12.979	134	106338	18.48	ppb	95
93) 1,2,4-Trimethylbenzene	13.019	105	531980	18.74	ppb	99
94) sec-Butylbenzene	13.151	105	637365	19.06	ppb	98
95) 1,3-Dichlorobenzene	13.262	146	325119	18.49	ppb	93
96) 1,4-Dichlorobenzene	13.353	146	313018	18.29	ppb	98
97) p-Isopropyltoluene	13.272	119	497874	18.63	ppb	99
98) 1,2-Dichlorobenzene	13.637	146	304028	18.72	ppb	# 93
99) n-Butylbenzene	13.606	91	443338	18.53	ppb	99
100) 1,2-Dibromo-3-chloropr...	14.265	75	22456	17.22	ppb	93
101) Hexachloroethane	13.880	201	73546	19.61	ppb	96

Data Path : C:\msdchem\1\DATA\2013\092313\  
 Data File : D44448.D  
 Acq On : 23 Sep 2013 21:44  
 Operator : twk-sop525r16  
 Sample : VL130923-4ICV  
 Misc : 10mL UN-htd purge water  
 ALS Vial : 16 Sample Multiplier: 1

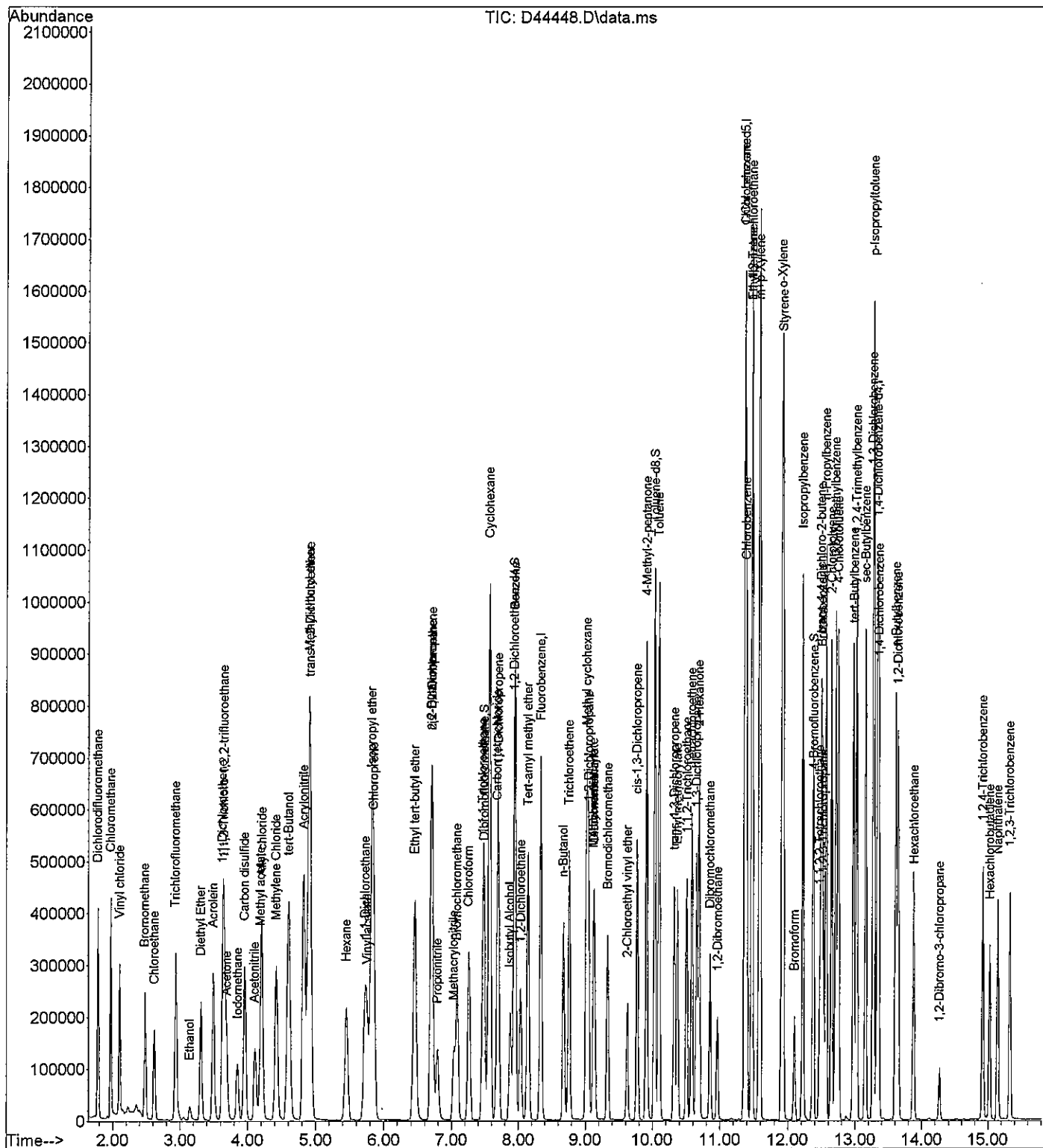
Quant Time: Sep 24 12:45:55 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Tue Sep 24 12:45:35 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.923	180	168865	19.50	ppb	97
103) Naphthalene	15.146	128	333525	18.82	ppb	99
104) Hexachlorobutadiene	15.024	225	73275	19.80	ppb	99
105) 1,2,3-Trichlorobenzene	15.328	180	143027	19.19	ppb	99

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

Data Path : C:\msdchem\1\DATA\2013\092313\  
Data File : D44448.D  
Acq On : 23 Sep 2013 21:44  
Operator : twk-sop525r16  
Sample : VL130923-4ICV  
Misc : 10mL UN-htd purge water  
ALS Vial : 16 Sample Multiplier: 1

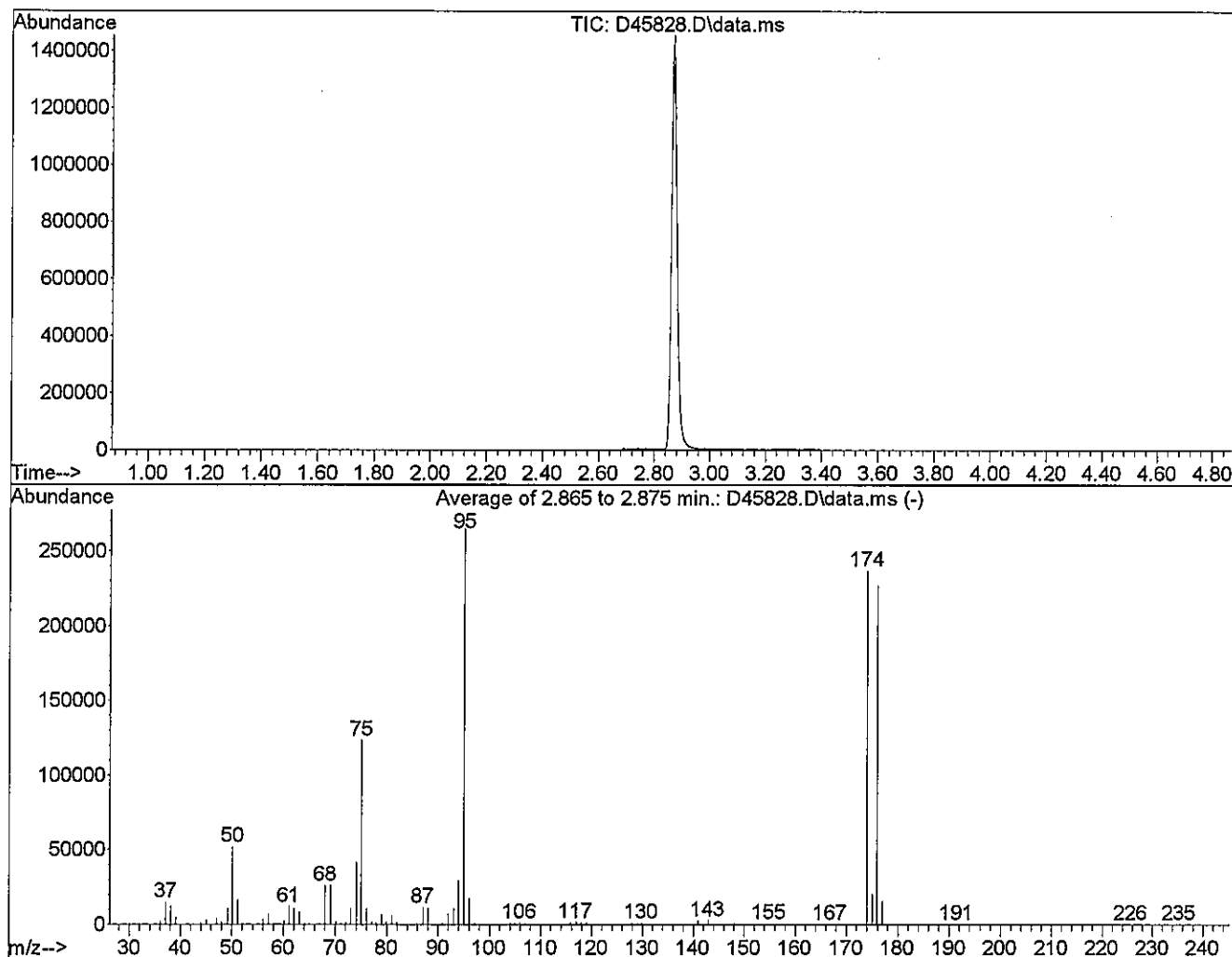
Quant Time: Sep 24 12:45:55 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Tue Sep 24 12:45:35 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\121713\  
 Data File : D45828.D  
 Acq On : 17 Dec 2013 9:15  
 Operator : sdw-sop525r16  
 Sample : BFB-TUNE-1  
 Misc : 50ng 4-BFB (1uL direct injection)  
 ALS Vial : 100 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\METHODS\092313W.M  
 Title :  
 Last Update : Fri Oct 25 14:24:27 2013



AutoFind: Scans 35, 36, 37; Background Corrected with Scan 27

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.6	51864	PASS
75	95	30	60	46.6	123413	PASS
95	95	100	100	100.0	264682	PASS
96	95	5	9	6.6	17563	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.5	236949	PASS
175	174	5	9	8.7	20501	PASS
176	174	95	101	95.8	226965	PASS
177	176	5	9	6.9	15564	PASS

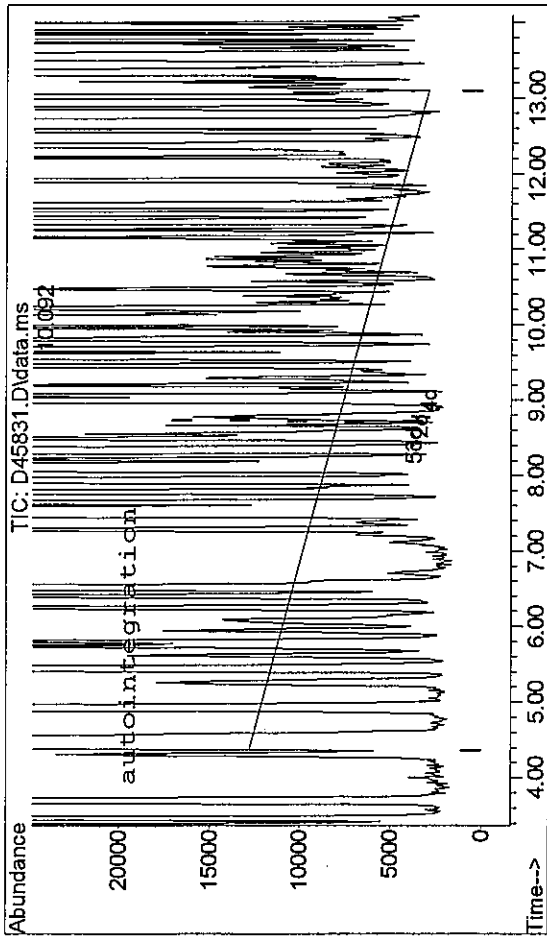
12/17/13

Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45831.D  
Acq On : 17 Dec 2013 11:07  
Operator : sdw-sop525r16  
Sample : VL131217-7CCS  
Misc : 10ml UN-htd purge water - GRO - CCV/LCS  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 17 11:23:54 2013  
Quant Method : C:\MSDCHEM\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
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	-13.33
Target Compounds						
1) GRO	8.735	TIC	30386540m	429.40	ppb	Qvalue
2) 4-Bromofluorobenzene	0.000		0	N.D.	d	85.88%
-----						

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



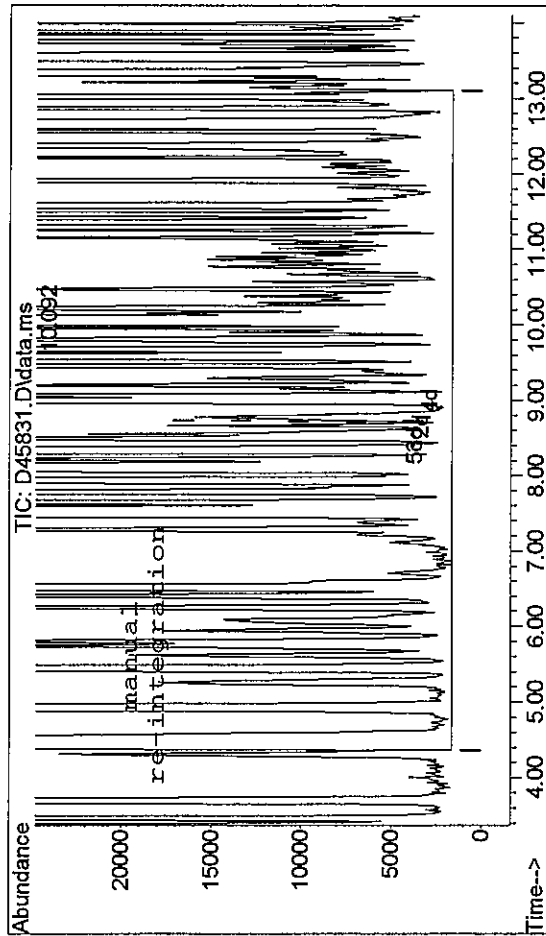
TIC: D45831.D\data.ms

(1) GRO (H)	8.735min (0.000)	387.16 ppb m
response	28148050	
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: W date: 12/17/13

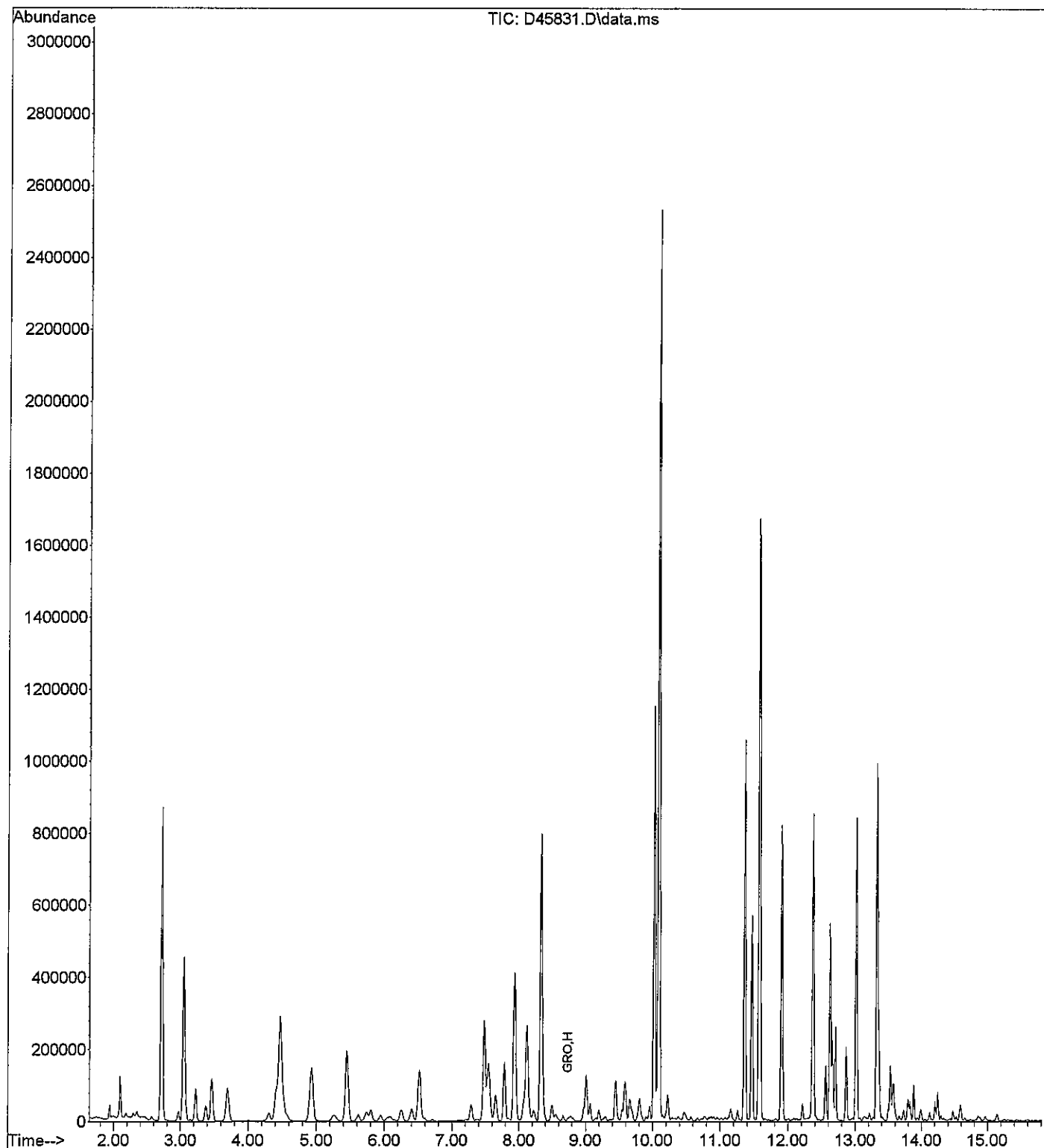


TIC: D45831.D\data.ms

(1) GRO (H)	8.735min (0.000)	429.40 ppb m
response	30386540	
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\2013\121713\  
Data File : D45831.D  
Acq On : 17 Dec 2013 11:07  
Operator : sdw-sop525r16  
Sample : VL131217-7CCS  
Misc : 10ml UN-htd purge water - GRO - CCV/LCS  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 17 11:23:54 2013  
Quant Method : C:\MSDCHEM\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
Response via : Initial Calibration





Data Path : C:\msdchem\1\DATA\2013\121713\  
 Data File : D45834.D  
 Acq On : 17 Dec 2013 12:18  
 Operator : sdw-sop525r16  
 Sample : VL131217-4CCS  
 Misc : 10ml UN-htd purge water - CCV/LCS  
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 17 12:35:09 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Fri Oct 25 14:24:27 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	8.331	96	685098	25.00	ppb	0.00
61) Chlorobenzene-d5	11.358	117	524980	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.323	152	247012	25.00	ppb	-0.01
System Monitoring Compounds						
38) Dibromofluoromethane	7.480	113	200598	26.86	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	107.44%	
42) 1,2-Dichloroethane-d4	7.926	67	106354	23.76	ppb	-0.01
Spiked Amount 25.000	Range 85	- 115	Recovery	=	95.04%	
65) Toluene-d8	10.022	98	699037	23.88	ppb	-0.01
Spiked Amount 25.000	Range 85	- 115	Recovery	=	95.52%	
83) 4-Bromofluorobenzene	12.371	176	215201	26.23	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	104.92%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	110298	8.86	ppb	99
3) Chloromethane	1.971	50	122676	9.68	ppb	98
4) Vinyl chloride	2.103	62	106015	9.97	ppb	98
5) Bromomethane	2.478	96	60815	8.63	ppb	96
6) Chloroethane	2.619	64	66067	9.55	ppb	97
7) Ethanol	3.136	45	16808	171.04	ppb	94
8) Acrolein	3.490	56	121661	87.74	ppb	97
9) Acetonitrile	4.108	41	91042	88.80	ppb	97
10) Trichlorofluoromethane	2.933	101	143065	10.34	ppb	99
11) Acetone	3.683	58	22032	35.47	ppb	97
12) Diethyl Ether	3.308	74	42466	9.16	ppb	89
13) tert-Butanol	4.594	59	376711	478.21	ppb	95
14) 1,1-Dichloroethene	3.632	96	72507	9.26	ppb	89
15) Acrylonitrile	4.817	53	282470	96.61	ppb	97
16) Iodomethane	3.845	142	66297	8.47	ppb	97
17) Methylene Chloride	4.412	84	91950	9.10	ppb	86
18) Methyl acetate	4.189	74	12028	9.81	ppb	87
19) Allyl chloride	4.199	76	46170	9.14	ppb	93
20) 1,1,2-Trichloro-1,2,2-...	3.652	101	76551	9.16	ppb	96
21) Carbon disulfide	3.956	76	255245	8.96	ppb	97
22) trans-1,2-Dichloroethene	4.908	96	82607	9.27	ppb	99
23) Methyl-t-butyl ether	4.898	73	448847	19.15	ppb	97
24) Hexane	5.445	57	69966	9.66	ppb	95
25) 1,1-Dichloroethane	5.718	63	168205	9.00	ppb	99
26) Propionitrile	6.781	54	95229	88.98	ppb	97
27) Vinyl acetate	5.748	43	157360	7.77	ppb	97
28) Chloroprene	5.840	53	141664	8.98	ppb	98
29) 2-Butanone	6.700	72	31215	38.72	ppb	74
30) Isopropyl ether	5.809	45	326052	8.72	ppb	97
31) Methacrylonitrile	7.024	41	48354	8.62	ppb	96
32) cis-1,2-Dichloroethene	6.700	96	99840	9.75	ppb	89
33) Methyl Acrylate	0.000		0	N.D.		
34) Bromochloromethane	7.075	128	45030	10.14	ppb	88
35) Chloroform	7.257	83	165751	9.44	ppb	97
36) 2,2-Dichloropropane	6.700	77	120421	9.29	ppb	98
37) Ethyl tert-butyl ether	6.447	59	270233	9.38	ppb	98
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	0.000		0	N.D.	d	
41) Isobutyl Alcohol	7.875	43	75736	178.64	ppb	97

Data Path : C:\msdchem\1\DATA\2013\121713\  
 Data File : D45834.D  
 Acq On : 17 Dec 2013 12:18  
 Operator : sdw-sop525r16  
 Sample : VL131217-4CCS  
 Misc : 10ml UN-htd purge water - CCV/LCS  
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 17 12:35:09 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Fri Oct 25 14:24:27 2013  
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43)	1,2-Dichloroethane	8.027	62	115208	8.88	ppb	98
44)	1,1,1-Trichloroethane	7.470	97	135890	9.52	ppb	96
45)	1,1-Dichloropropene	7.693	75	122787	9.23	ppb	98
46)	n-Butanol	8.665	56	93910	464.03	ppb	96
47)	Cyclohexane	7.561	84	235153	18.71	ppb	94
48)	Carbon tetrachloride	7.683	117	108759	9.88	ppb	97
49)	Benzene	7.946	78	358596	9.29	ppb	98
50)	Tert-amyl methyl ether	8.138	87	51662	9.66	ppb	# 91
51)	Dibromomethane	9.131	93	51002	9.29	ppb	87
52)	1,2-Dichloropropane	9.039	63	101697	9.19	ppb	# 93
53)	Trichloroethene	8.756	95	93072	9.53	ppb	92
54)	Bromodichloromethane	9.323	83	124791	9.98	ppb	99
55)	1,4-Dioxane	9.120	88	12791	182.83	ppb	90
56)	Methyl methacrylate	9.120	69	50856	9.60	ppb	94
57)	Methyl cyclohexane	9.009	83	127225	9.71	ppb	97
58)	Chloroacetonitrile	0.000		0	N.D.	d	
59)	2-Chloroethyl vinyl ether	9.617	63	44871	9.22	ppb	98
60)	cis-1,3-Dichloropropene	9.769	75	148052	9.70	ppb	95
62)	4-Methyl-2-pentanone	9.900	100	36242	36.59	ppb	94
63)	trans-1,3-Dichloropropene	10.315	75	127796	9.14	ppb	99
64)	1,1,2-Trichloroethane	10.498	83	65390	8.72	ppb	99
66)	Toluene	10.093	92	214725	8.94	ppb	98
67)	1,3-Dichloropropane	10.650	76	126420	8.42	ppb	97
68)	Ethyl methacrylate	10.366	69	101770	8.89	ppb	# 97
69)	2-Hexanone	10.680	58	108645	34.73	ppb	99
70)	Dibromochloromethane	10.852	129	91296	10.32	ppb	92
71)	1,2-Dibromoethane	10.953	107	73415	9.12	ppb	# 93
72)	Tetrachloroethene	10.579	164	74224	9.56	ppb	96
73)	1,1,1,2-Tetrachloroethane	11.470	131	88321	9.55	ppb	100
74)	Chlorobenzene	11.389	112	235575	9.04	ppb	92
75)	1-Chlorohexane	11.358	91	101332	8.67	ppb	95
76)	Ethylbenzene	11.470	91	384521	8.86	ppb	97
77)	m+p-Xylene	11.581	106	286782	18.24	ppb	95
78)	Bromoform	12.098	173	54645	10.91	ppb	97
79)	Styrene	11.925	104	247649	9.38	ppb	95
80)	o-Xylene	11.905	106	146697	9.18	ppb	99
81)	Isopropylbenzene	12.219	105	332192	9.21	ppb	99
84)	1,1,2,2-Tetrachloroethane	12.462	83	85653	8.68	ppb	96
85)	trans-1,4-Dichloro-2-b...	12.492	53	21399	8.66	ppb	84
86)	Bromobenzene	12.492	156	102425	9.42	ppb	91
87)	1,2,3-Trichloropropane	12.523	110	26656	9.59	ppb	# 57
88)	n-Propylbenzene	12.563	91	402321	8.77	ppb	94
89)	2-Chlorotoluene	12.644	126	87274	9.10	ppb	88
90)	4-Chlorotoluene	12.746	126	87706	9.21	ppb	90
91)	1,3,5-Trimethylbenzene	12.705	105	278173	9.03	ppb	97
92)	tert-Butylbenzene	12.968	134	57780	9.43	ppb	91
93)	1,2,4-Trimethylbenzene	13.019	105	273069	9.04	ppb	93
94)	sec-Butylbenzene	13.151	105	320494	9.01	ppb	94
95)	1,3-Dichlorobenzene	13.262	146	170129	9.09	ppb	96
96)	1,4-Dichlorobenzene	13.343	146	161064	8.84	ppb	95
97)	p-Isopropyltoluene	13.272	119	261541	9.19	ppb	94
98)	1,2-Dichlorobenzene	13.637	146	157934	9.14	ppb	97
99)	n-Butylbenzene	13.596	91	236227	9.28	ppb	97
100)	1,2-Dibromo-3-chloropr...	14.265	75	12855	9.26	ppb	83
101)	Hexachloroethane	13.870	201	43023	10.78	ppb	91

Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45834.D  
Acq On : 17 Dec 2013 12:18  
Operator : sdw-sop525r16  
Sample : VL131217-4CCS  
Misc : 10ml UN-htd purge water - CCV/LCS  
ALS Vial : 8 Sample Multiplier: 1

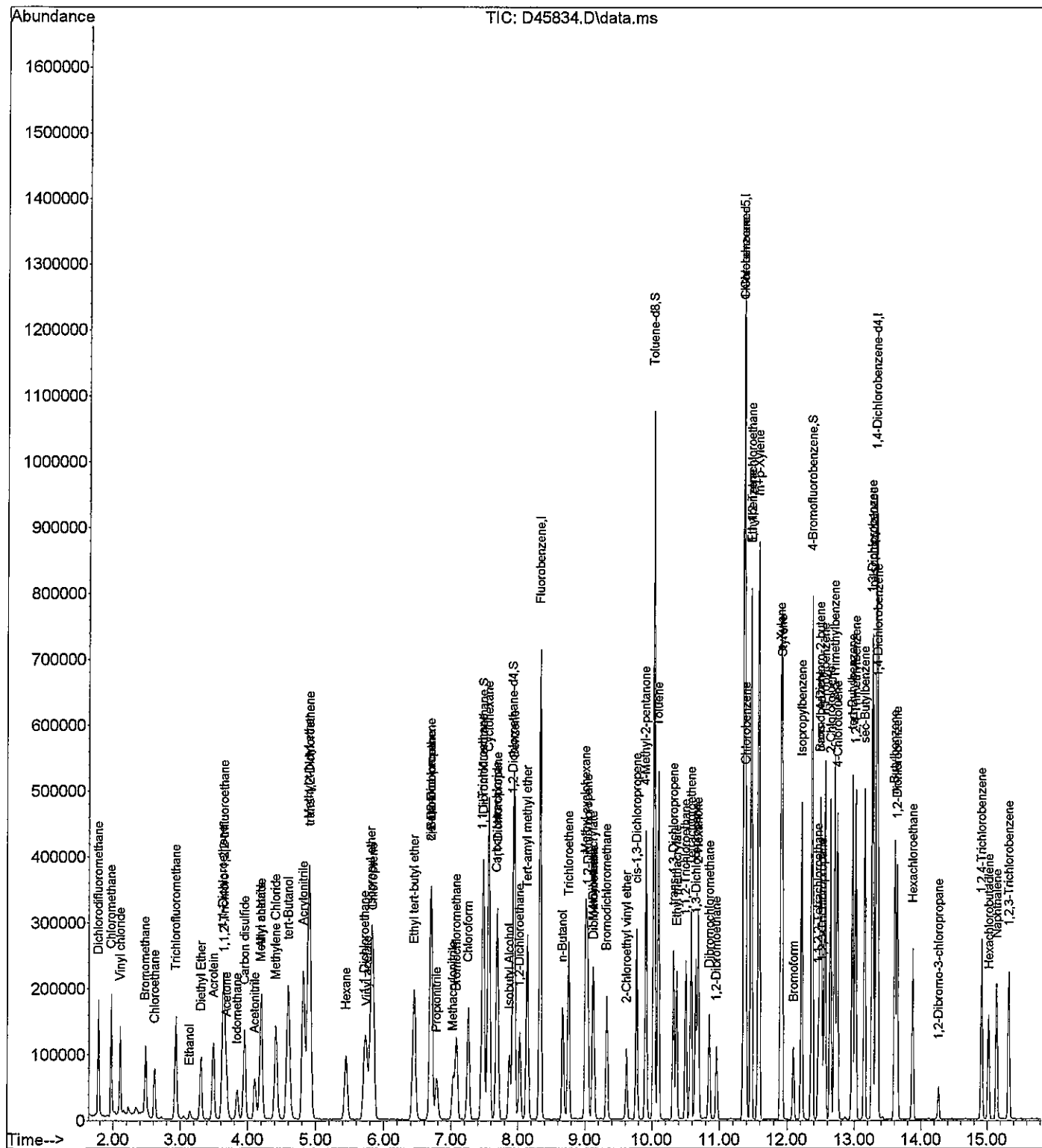
Quant Time: Dec 17 12:35:09 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Fri Oct 25 14:24:27 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.913	180	89539	9.71	ppb	97
103) Naphthalene	15.146	128	181096	9.60	ppb	97
104) Hexachlorobutadiene	15.024	225	36670	9.31	ppb	89
105) 1,2,3-Trichlorobenzene	15.328	180	78175	9.85	ppb	94

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

Data Path : C:\msdchem\1\DATA\2013\121713\  
 Data File : D45834.D  
 Acq On : 17 Dec 2013 12:18  
 Operator : sdw-sop525r16  
 Sample : VL131217-4CCS  
 Misc : 10ml UN-htd purge water - CCV/LCS  
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 17 12:35:09 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Fri Oct 25 14:24:27 2013  
 Response via : Initial Calibration





## Sample Raw Data

Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45837.D  
Acq On : 17 Dec 2013 13:29  
Operator : sdw-sop525r16  
Sample : VL131217-4MB  
Misc : 10ml UN-htd purge water  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 17 13:48:12 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Fri Oct 25 14:24:27 2013  
Response via : Initial Calibration

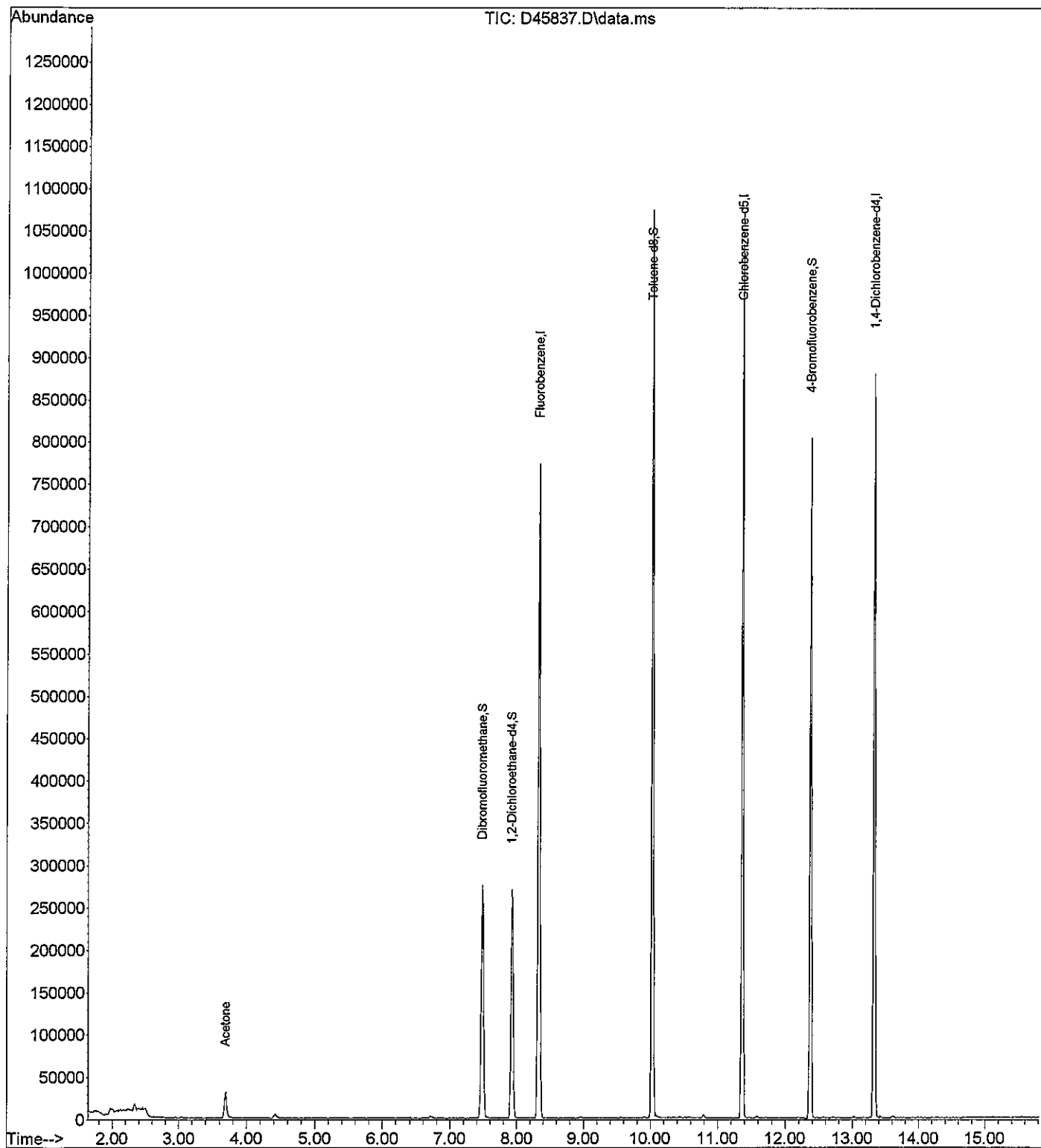
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	8.331	96	736285	25.00	ppb	0.00
61) Chlorobenzene-d5	11.358	117	542262	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.323	152	250226	25.00	ppb	-0.01
System Monitoring Compounds						
38) Dibromofluoromethane	7.480	113	207560	25.86	ppb	0.00
Spiked Amount 25.000	Range	85 - 115	Recovery	=	103.44%	
42) 1,2-Dichloroethane-d4	7.926	67	116704	24.26	ppb	-0.01
Spiked Amount 25.000	Range	85 - 115	Recovery	=	97.04%	
65) Toluene-d8	10.022	98	725332	23.99	ppb	-0.01
Spiked Amount 25.000	Range	85 - 115	Recovery	=	95.96%	
83) 4-Bromofluorobenzene	12.371	176	214966	25.86	ppb	0.00
Spiked Amount 25.000	Range	85 - 115	Recovery	=	103.44%	
Target Compounds						
11) Acetone	3.693	58	13834	20.72	ppb	88
-----						

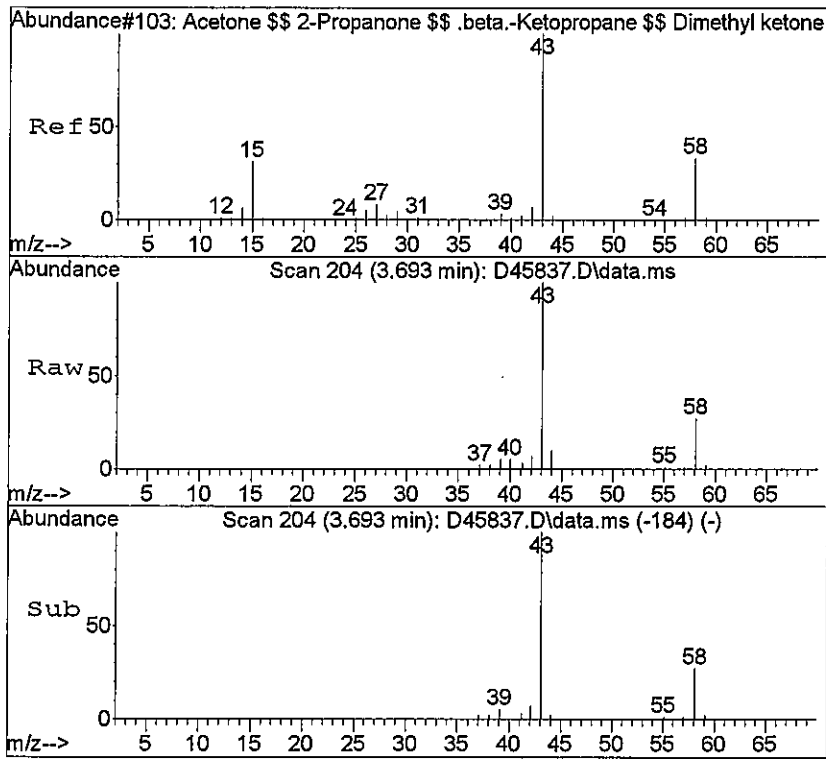
(#) = qualifier out of range (m) = manual integration (+) = signals summed

sdw 12/17/13

Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45837.D  
Acq On : 17 Dec 2013 13:29  
Operator : sdw-sop525r16  
Sample : VL131217-4MB  
Misc : 10ml UN-htd purge water  
ALS Vial : 11 Sample Multiplier: 1

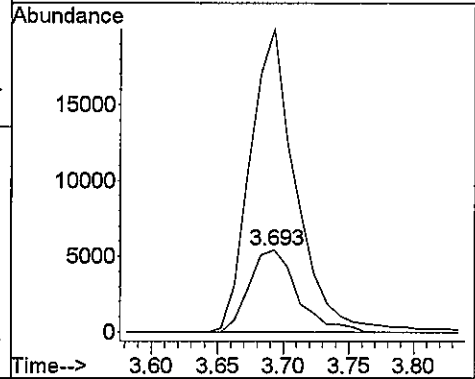
Quant Time: Dec 17 13:48:12 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Fri Oct 25 14:24:27 2013  
Response via : Initial Calibration





#11  
 Acetone  
 Concen: 20.72 ppb  
 RT: 3.693 min Scan# 204  
 Delta R.T. -0.000 min  
 Lab File: D45837.D  
 Acq: 17 Dec 13 1:29 pm

Tgt Ion: 58 Resp: 13834  
 Ion Ratio Lower Upper  
 58 100  
 43 368.8 240.5 446.7



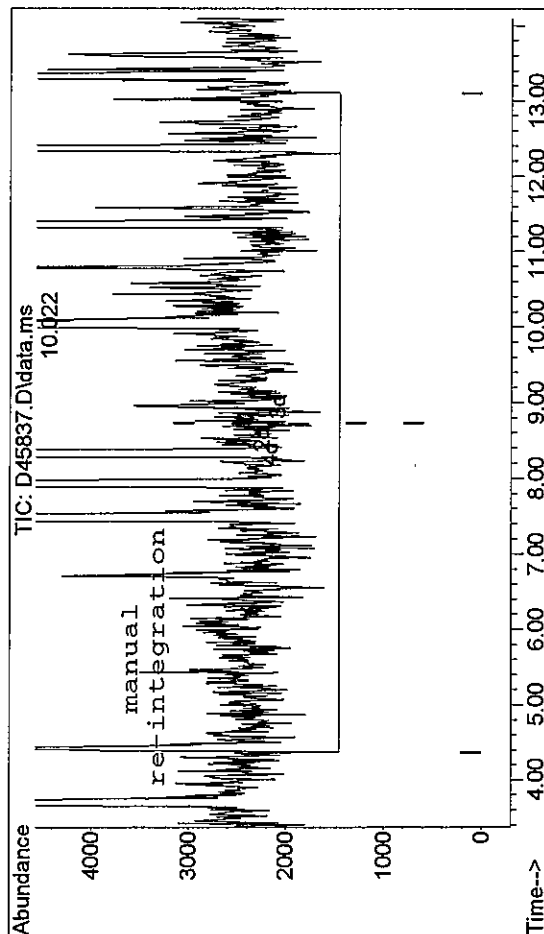
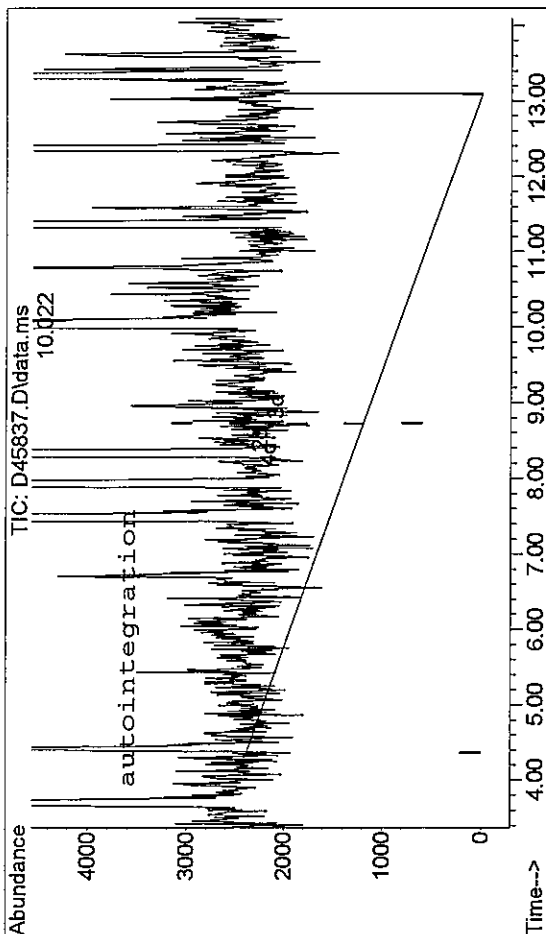


Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45837.D  
Acq On : 17 Dec 2013 13:29  
Operator : sdw-sop525r16  
Sample : VL131217-4MB  
Misc : 10ml UN-htd purge water  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 18 09:06:17 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
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	-13.33
Target Compounds						
1) GRO	8.735	TIC	8108873m	5.85	ppb	Qvalue 4.41 ✓
2) 4-Bromofluorobenzene	0.000		0	N.D.	d	
-----						

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



TIC: D45837.D\data.ms

(1) GRO (H)  
8.735min (0.000) -0.85 ppb m  
response 7759371  
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 ( )

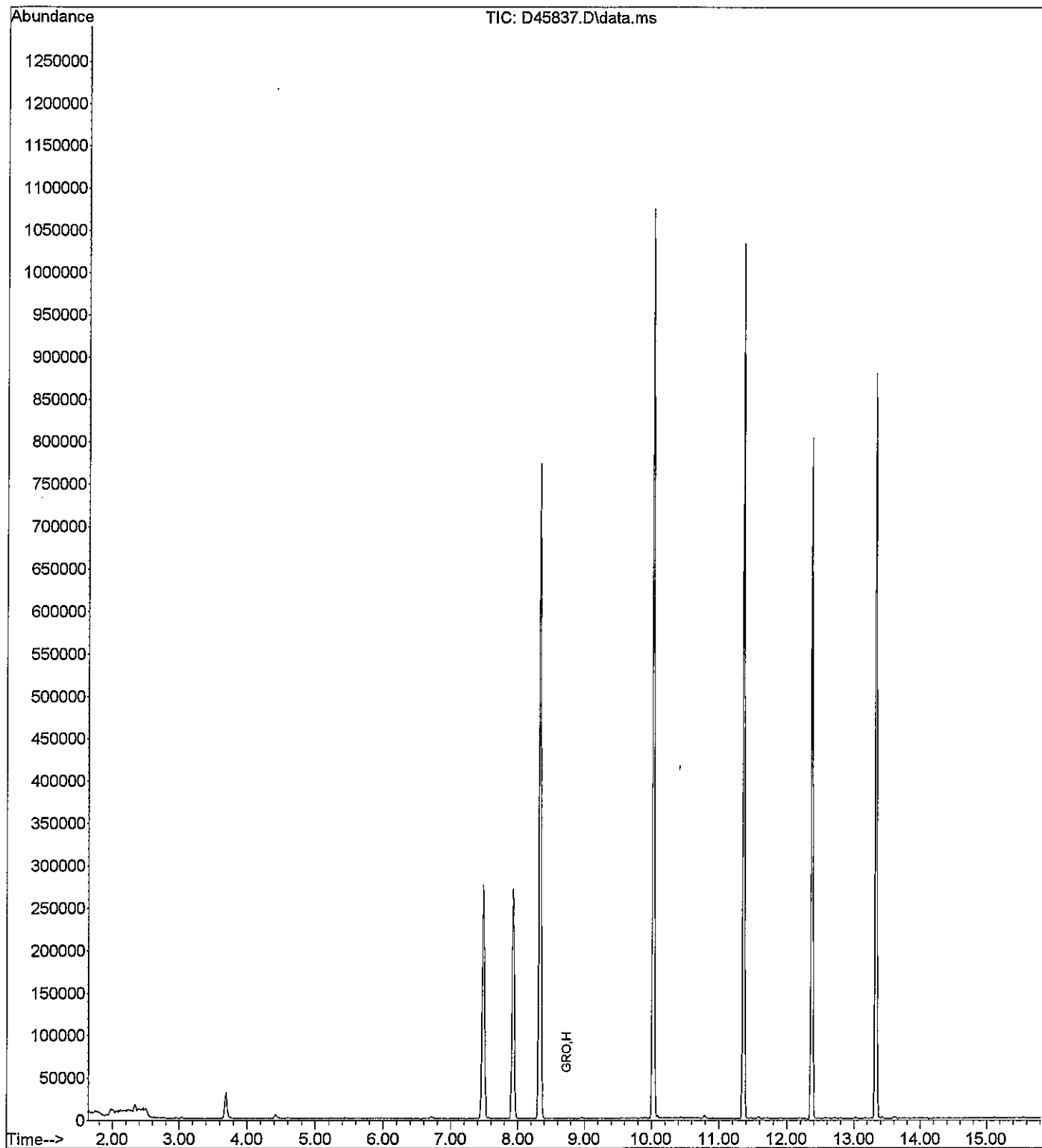
initials: SW date: 12/18/13

TIC: D45837.D\data.ms

(1) GRO (H)  
8.735min (0.000) 5.85 ppb m  
response 8108873  
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\2013\121713\  
Data File : D45837.D  
Acq On : 17 Dec 2013 13:29  
Operator : sdw-sop525r16  
Sample : VL131217-4MB  
Misc : 10ml UN-htd purge water  
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Dec 18 09:06:17 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45837.D  
Acq On : 17 Dec 2013 13:299  
Operator : sdw-sop525r166  
Sample : VL131217-4MBE *12/17/13*  
Misc : 10ml UN-htd purge waterr  
ALS Vial : 11 Sample Multiplier: 11

Quant Method : C:\msdchem\1\METHODS\092313W.MM  
Quant Title :

TIC Library : C:\Database\NIST129K.LL  
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	---Internal Standard---
					# RT Resp Conc

No Library Search Compounds Detected

\*\*\*\*\*

Data Path : C:\msdchem\1\DATA\2013\121713\  
 Data File : D45847.D  
 Acq On : 17 Dec 2013 17:21  
 Operator : sdw-sop525r16  
 Sample : 1312158-1  
 Misc : 10ml UN-htd purge water  
 ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 18 08:57:31 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Fri Oct 25 14:24:27 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	8.331	96	735922	25.00	ppb	0.00
61) Chlorobenzene-d5	11.358	117	542584	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.323	152	256617	25.00	ppb	-0.01
System Monitoring Compounds						
38) Dibromofluoromethane	7.480	113	207722	25.89	ppb	0.00
Spiked Amount 25.000	Range	85 - 115	Recovery	=	103.56%	
42) 1,2-Dichloroethane-d4	7.925	67	110676	23.01	ppb	-0.01
Spiked Amount 25.000	Range	85 - 115	Recovery	=	92.04%	
65) Toluene-d8	10.032	98	729244	24.10	ppb	0.00
Spiked Amount 25.000	Range	85 - 115	Recovery	=	96.40%	
83) 4-Bromofluorobenzene	12.371	176	215156	25.24	ppb	0.00
Spiked Amount 25.000	Range	85 - 115	Recovery	=	100.96%	

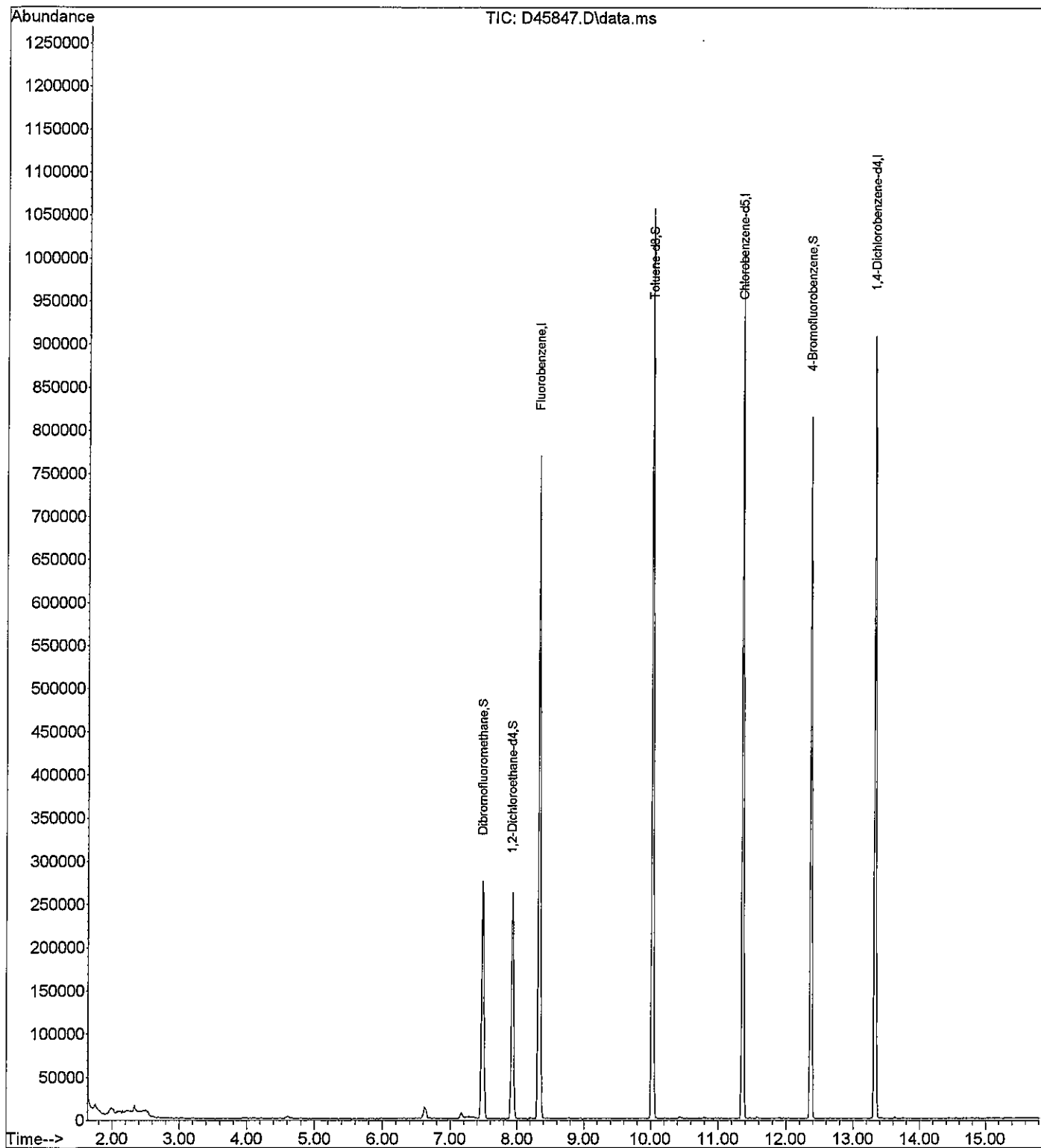
Target Compounds Qvalue

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

smw 12/18/13

Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45847.D  
Acq On : 17 Dec 2013 17:21  
Operator : sdw-sop525r16  
Sample : 1312158-1  
Misc : 10ml UN-htd purge water  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 18 08:57:31 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Fri Oct 25 14:24:27 2013  
Response via : Initial Calibration



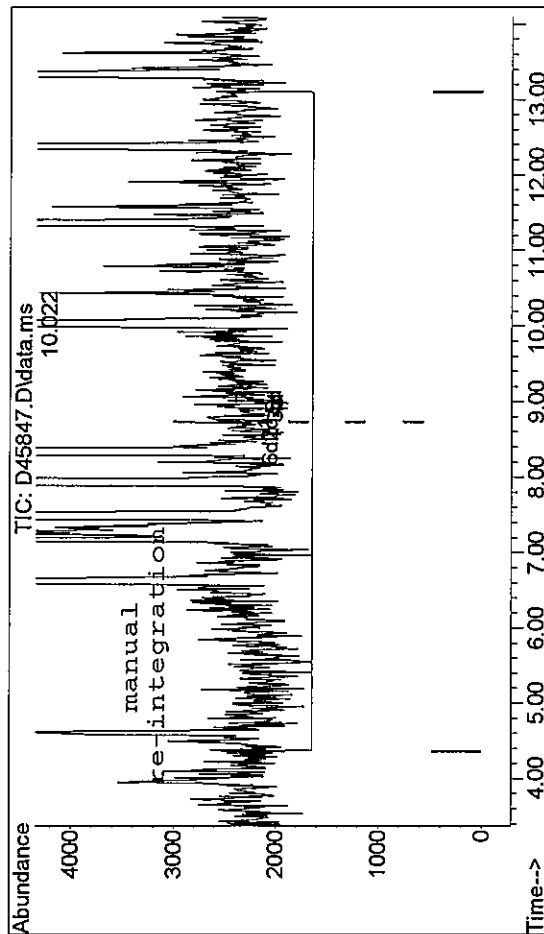
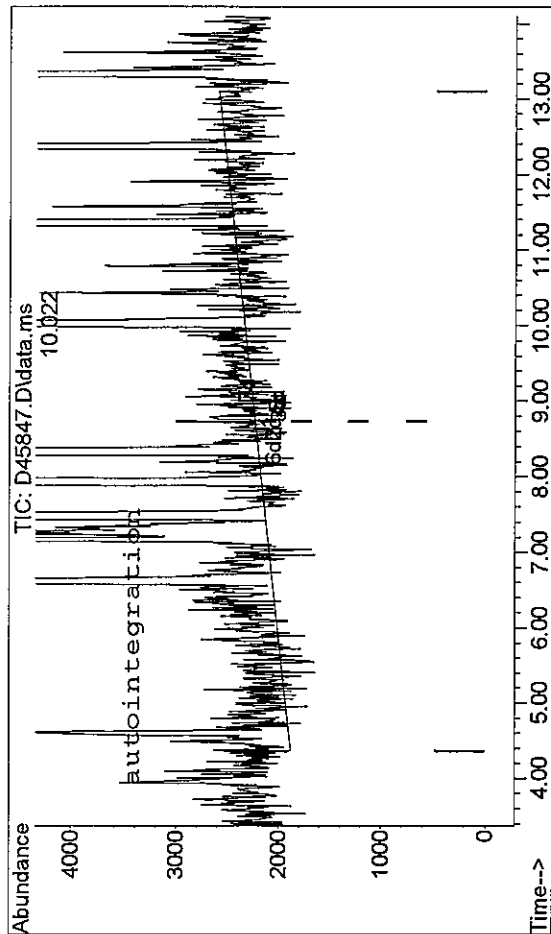
Data Path : C:\msdchem\1\DATA\2013\121713\  
 Data File : D45847.D  
 Acq On : 17 Dec 2013 17:21  
 Operator : sdw-sop525r16  
 Sample : 1312158-1  
 Misc : 10ml UN-htd purge water  
 ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 18 09:10:32 2013  
 Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
 Quant Title :  
 QLast Update : Mon Sep 09 15:21:41 2013  
 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	-13.33
Target Compounds						
1) GRO	8.735	TIC	8041903m	4.57	ppb	Qvalue <i>2.40</i> ✓
2) 4-Bromofluorobenzene	0.000		0	N.D.	d	
-----						

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

*sdw 12/18/13*



TIC: D45847.D\data.ms

(1) GRO (H)  
8.735min (0.000) 1.05 ppb m  
response 7858549  
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: 6 date: 12 / 18 / 13

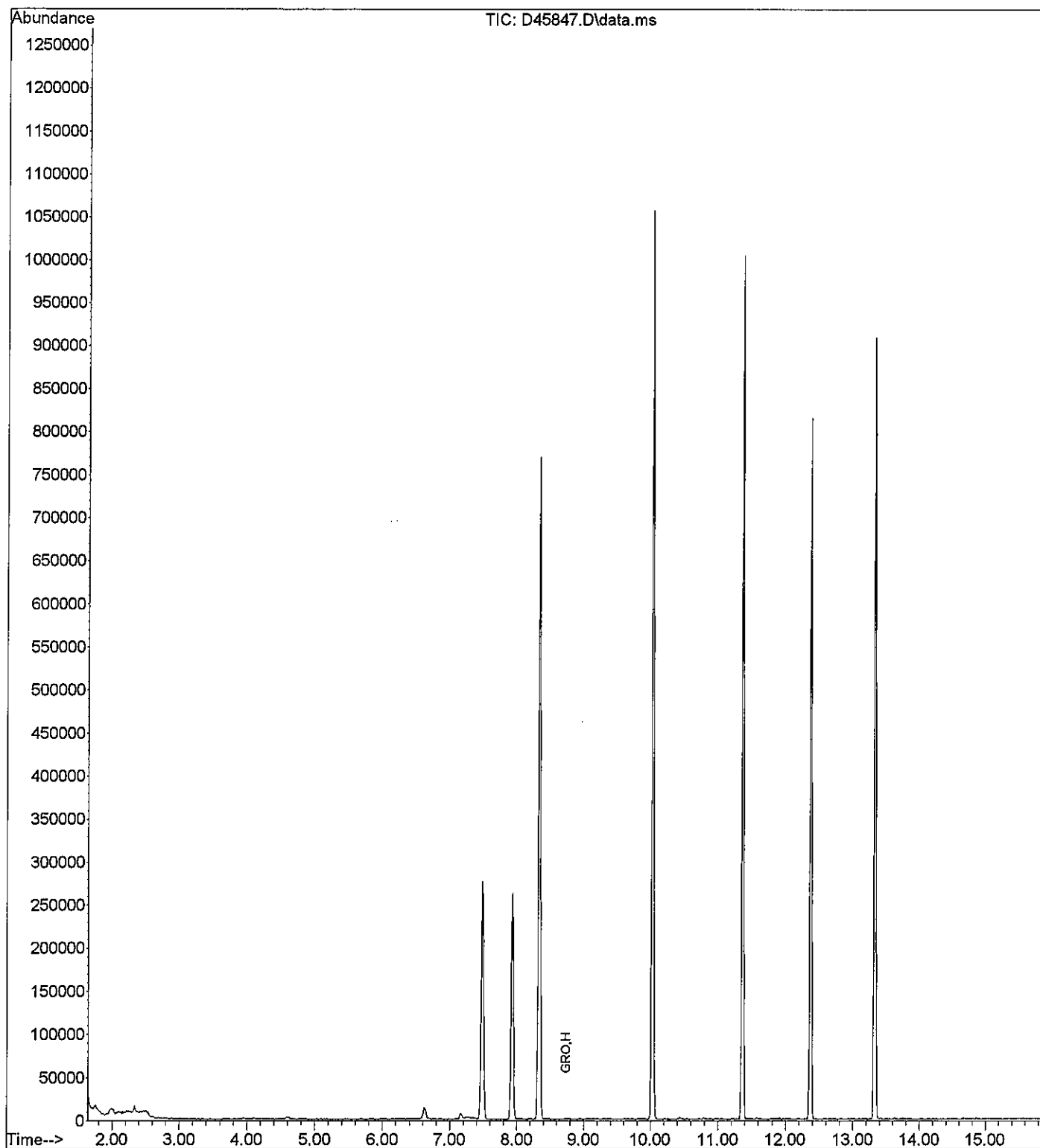
TIC: D45847.D\data.ms

(1) GRO (H)  
8.735min (0.000) 4.57 ppb m  
response 8041903  
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\2013\121713\  
Data File : D45847.D  
Acq On : 17 Dec 2013 17:21  
Operator : sdw-sop525r16  
Sample : 1312158-1  
Misc : 10ml UN-htd purge water  
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Dec 18 09:10:32 2013  
Quant Method : C:\msdchem\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45847.D  
Acq On : 17 Dec 2013 17:211  
Operator : sdw-sop525r166  
Sample : 1312158-11  
Misc : 10ml UN-htd purge waterr  
ALS Vial : 21 Sample Multiplier: 11

Quant Method : C:\msdchem\1\METHODS\092313W.MM  
Quant Title :

TIC Library : C:\Database\NIST129K.LL  
TIC Integration Parameters: LSCINT.PP

TIC Top Hit name	RT	EstConc	Units	Response	--Internal Standard--	#	RT	Resp	Conc
------------------	----	---------	-------	----------	-----------------------	---	----	------	------

No Library Search Compounds Detected

\*\*\*\*\*



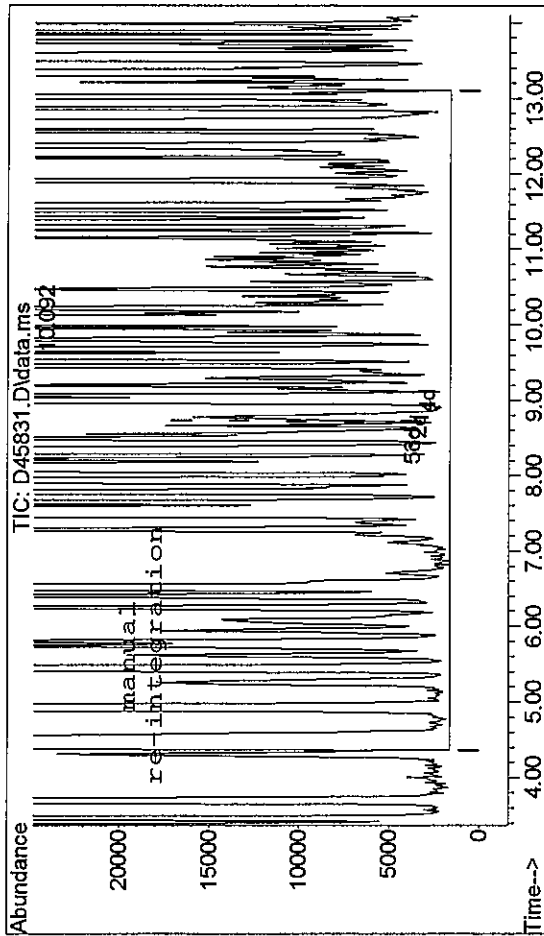
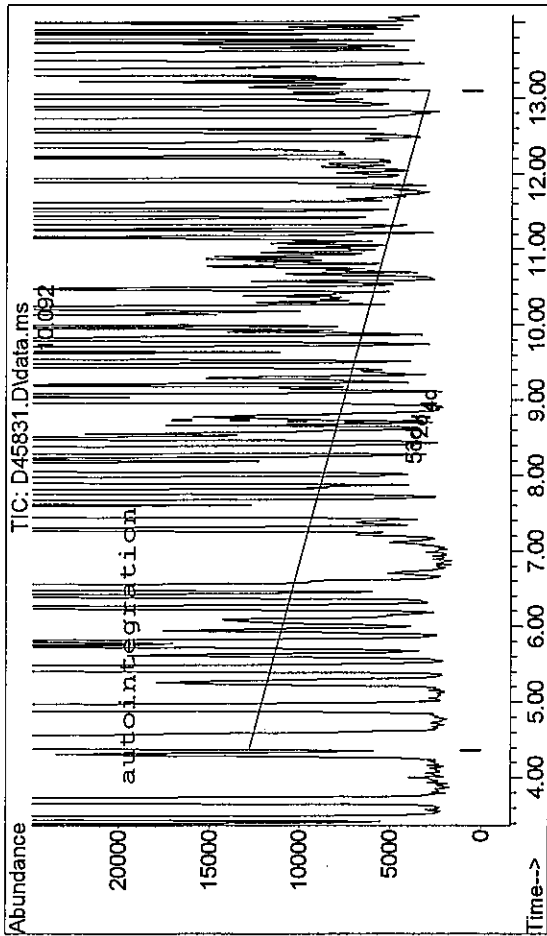
## **Raw Data Quality Control Samples**

Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45831.D  
Acq On : 17 Dec 2013 11:07  
Operator : sdw-sop525r16  
Sample : VL131217-7CCS  
Misc : 10ml UN-htd purge water - GRO - CCV/LCS  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 17 11:23:54 2013  
Quant Method : C:\MSDCHEM\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
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	-13.33
Target Compounds						
1) GRO	8.735	TIC	30386540m	429.40	ppb	Qvalue
2) 4-Bromofluorobenzene	0.000		0	N.D.	d	85.88%
-----						

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



TIC: D45831.D\data.ms

(1) GRO (H)  
8.735min (0.000) 387.16 ppb m  
response 28148050  
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: W

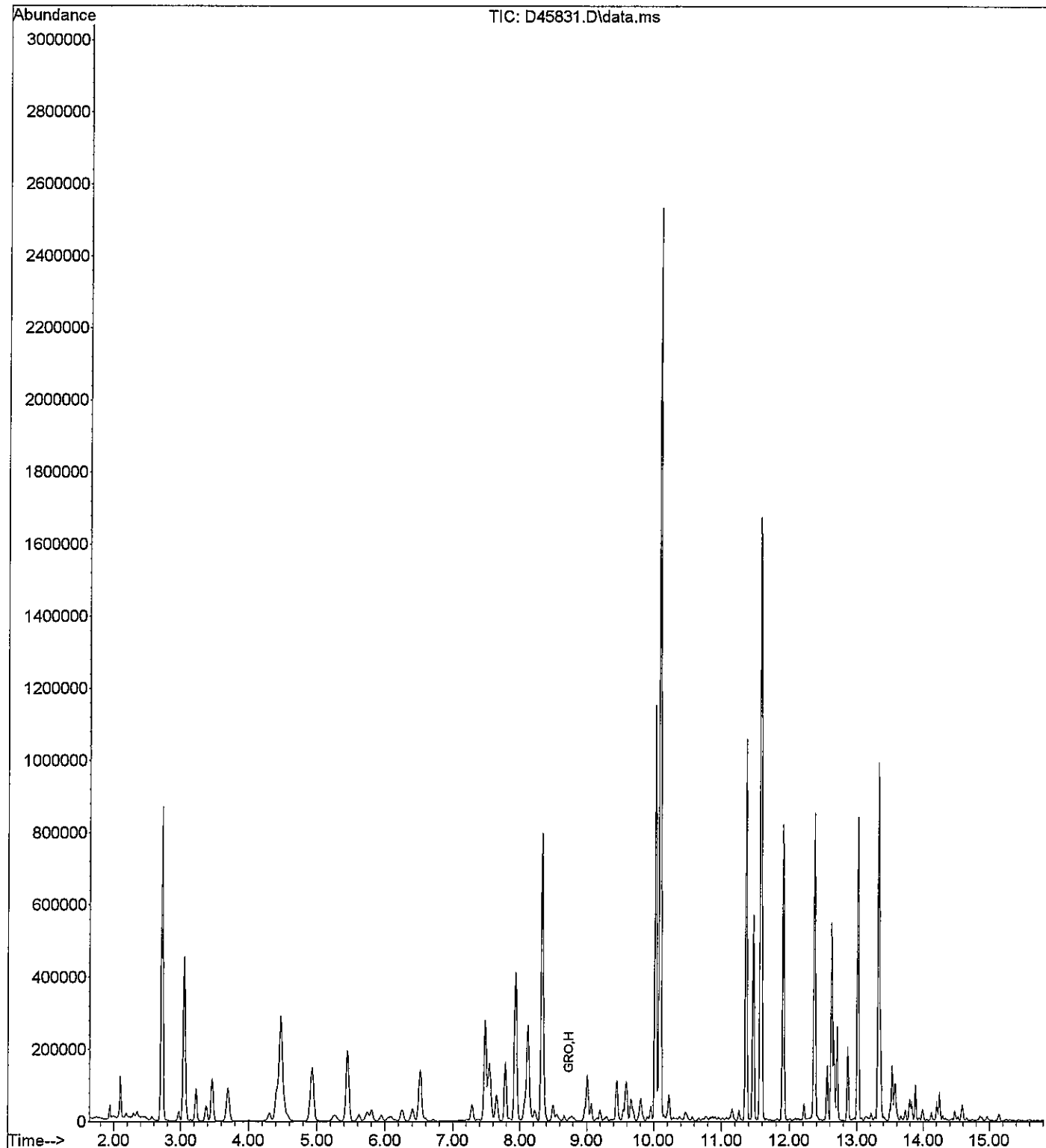
date: 12/17/13

TIC: D45831.D\data.ms

(1) GRO (H)  
8.735min (0.000) 429.40 ppb m  
response 30386540  
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\2013\121713\  
Data File : D45831.D  
Acq On : 17 Dec 2013 11:07  
Operator : sdw-sop525r16  
Sample : VL131217-7CCS  
Misc : 10ml UN-htd purge water - GRO - CCV/LCS  
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Dec 17 11:23:54 2013  
Quant Method : C:\MSDCHEM\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
Response via : Initial Calibration

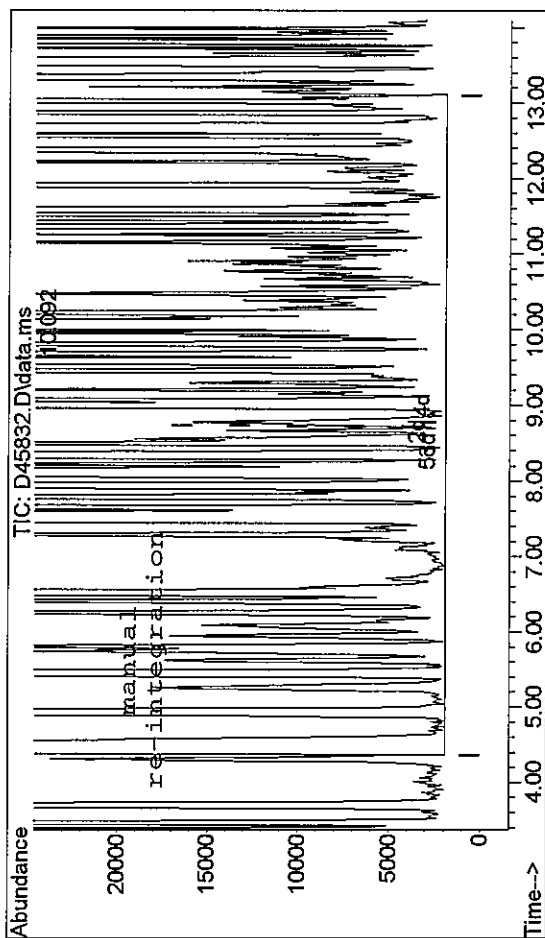
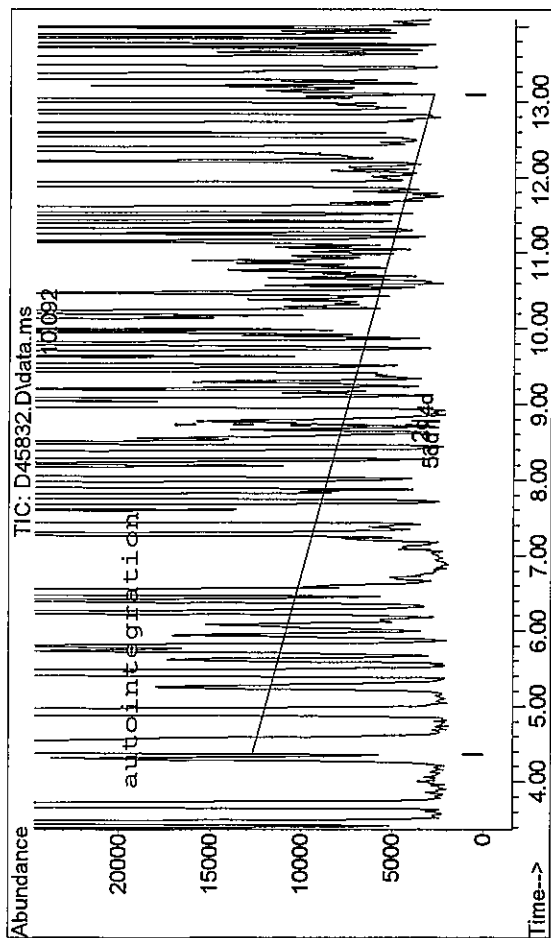


Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45832.D  
Acq On : 17 Dec 2013 11:30  
Operator : sdw-sop525r16  
Sample : VL131217-7LCSD  
Misc : 10ml UN-htd purge water - GRO  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 17 11:52:30 2013  
Quant Method : C:\MSDCHEM\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
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	-13.33
Target Compounds						
1) GRO	8.735	TIC	29061266m	404.40	ppb	Qvalue
2) 4-Bromofluorobenzene	0.000		0	N.D.	d	80.88%
-----						

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



TIC: D45832.D\data.ms

(1) GRO (H)  
8.735min (0.000) 366.85 ppb m  
response 27073419  
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: low

date: 12/17/13

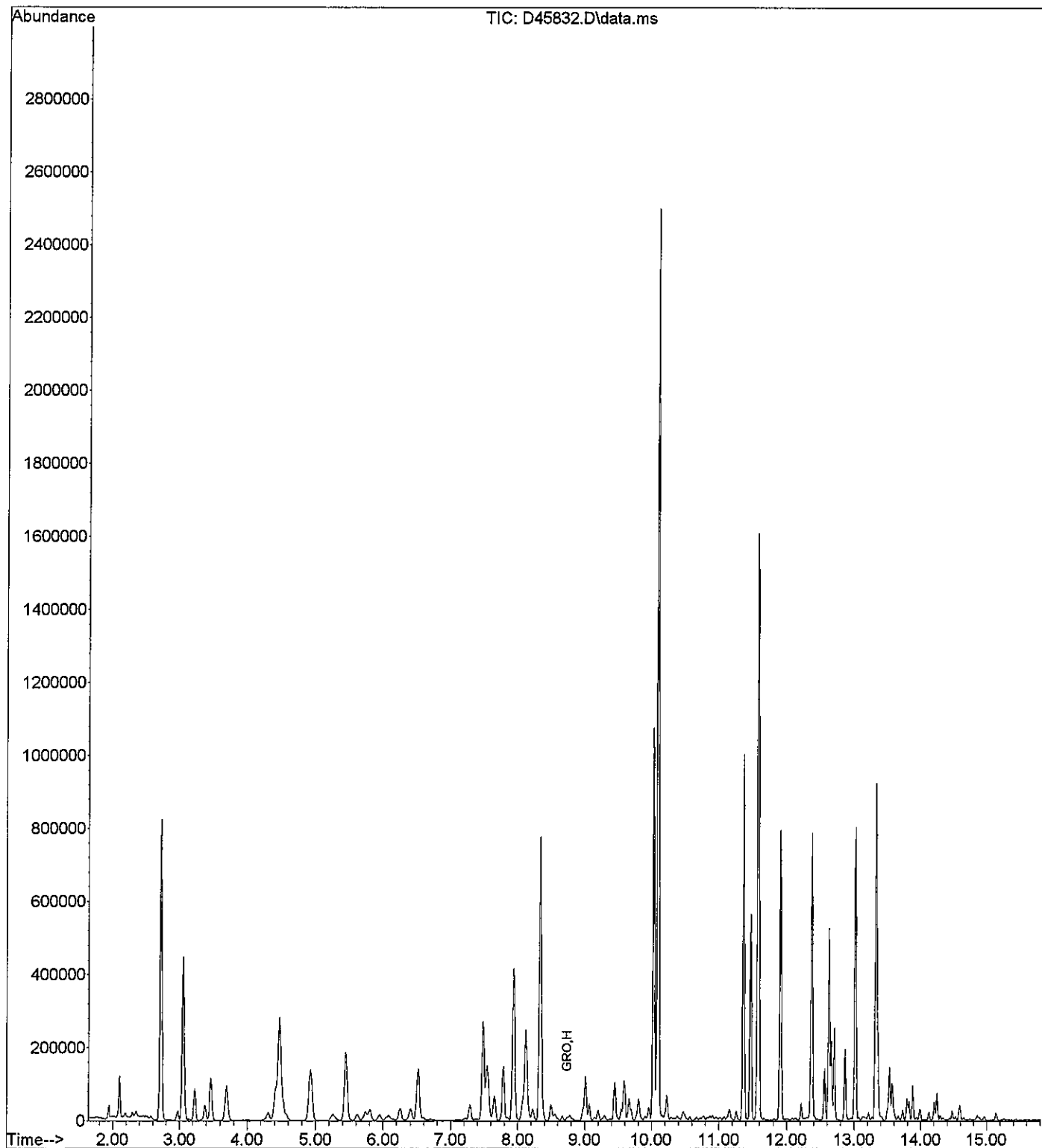
TIC: D45832.D\data.ms

(1) GRO (H)  
8.735min (0.000) 404.40 ppb m  
response 29061266  
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\2013\121713\  
Data File : D45832.D  
Acq On : 17 Dec 2013 11:30  
Operator : sdw-sop525r16  
Sample : VL131217-7LCSD  
Misc : 10ml UN-htd purge water - GRO  
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Dec 17 11:52:30 2013  
Quant Method : C:\MSDCHEM\1\METHODS\090913GRO.M  
Quant Title :  
QLast Update : Mon Sep 09 15:21:41 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\121713\  
 Data File : D45834.D  
 Acq On : 17 Dec 2013 12:18  
 Operator : sdw-sop525r16  
 Sample : VL131217-4CCS  
 Misc : 10ml UN-htd purge water - CCV/LCS  
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 17 12:35:09 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Fri Oct 25 14:24:27 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	8.331	96	685098	25.00	ppb	0.00
61) Chlorobenzene-d5	11.358	117	524980	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.323	152	247012	25.00	ppb	-0.01
System Monitoring Compounds						
38) Dibromofluoromethane	7.480	113	200598	26.86	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery	=	107.44%	
42) 1,2-Dichloroethane-d4	7.926	67	106354	23.76	ppb	-0.01
Spiked Amount 25.000	Range 85 - 115		Recovery	=	95.04%	
65) Toluene-d8	10.022	98	699037	23.88	ppb	-0.01
Spiked Amount 25.000	Range 85 - 115		Recovery	=	95.52%	
83) 4-Bromofluorobenzene	12.371	176	215201	26.23	ppb	0.00
Spiked Amount 25.000	Range 85 - 115		Recovery	=	104.92%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	110298	8.86	ppb	99
3) Chloromethane	1.971	50	122676	9.68	ppb	98
4) Vinyl chloride	2.103	62	106015	9.97	ppb	98
5) Bromomethane	2.478	96	60815	8.63	ppb	96
6) Chloroethane	2.619	64	66067	9.55	ppb	97
7) Ethanol	3.136	45	16808	171.04	ppb	94
8) Acrolein	3.490	56	121661	87.74	ppb	97
9) Acetonitrile	4.108	41	91042	88.80	ppb	97
10) Trichlorofluoromethane	2.933	101	143065	10.34	ppb	99
11) Acetone	3.683	58	22032	35.47	ppb	97
12) Diethyl Ether	3.308	74	42466	9.16	ppb	89
13) tert-Butanol	4.594	59	376711	478.21	ppb	95
14) 1,1-Dichloroethene	3.632	96	72507	9.26	ppb	89
15) Acrylonitrile	4.817	53	282470	96.61	ppb	97
16) Iodomethane	3.845	142	66297	8.47	ppb	97
17) Methylene Chloride	4.412	84	91950	9.10	ppb	86
18) Methyl acetate	4.189	74	12028	9.81	ppb	87
19) Allyl chloride	4.199	76	46170	9.14	ppb	93
20) 1,1,2-Trichloro-1,2,2-...	3.652	101	76551	9.16	ppb	96
21) Carbon disulfide	3.956	76	255245	8.96	ppb	97
22) trans-1,2-Dichloroethene	4.908	96	82607	9.27	ppb	99
23) Methyl-t-butyl ether	4.898	73	448847	19.15	ppb	97
24) Hexane	5.445	57	69966	9.66	ppb	95
25) 1,1-Dichloroethane	5.718	63	168205	9.00	ppb	99
26) Propionitrile	6.781	54	95229	88.98	ppb	97
27) Vinyl acetate	5.748	43	157360	7.77	ppb	97
28) Chloroprene	5.840	53	141664	8.98	ppb	98
29) 2-Butanone	6.700	72	31215	38.72	ppb	74
30) Isopropyl ether	5.809	45	326052	8.72	ppb	97
31) Methacrylonitrile	7.024	41	48354	8.62	ppb	96
32) cis-1,2-Dichloroethene	6.700	96	99840	9.75	ppb	89
33) Methyl Acrylate	0.000		0	N.D.		
34) Bromochloromethane	7.075	128	45030	10.14	ppb	88
35) Chloroform	7.257	83	165751	9.44	ppb	97
36) 2,2-Dichloropropane	6.700	77	120421	9.29	ppb	98
37) Ethyl tert-butyl ether	6.447	59	270233	9.38	ppb	98
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	0.000		0	N.D.	d	
41) Isobutyl Alcohol	7.875	43	75736	178.64	ppb	97

Data Path : C:\msdchem\1\DATA\2013\121713\  
 Data File : D45834.D  
 Acq On : 17 Dec 2013 12:18  
 Operator : sdw-sop525r16  
 Sample : VL131217-4CCS  
 Misc : 10ml UN-htd purge water - CCV/LCS  
 ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 17 12:35:09 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Fri Oct 25 14:24:27 2013  
 Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
43)	1,2-Dichloroethane	8.027	62	115208	8.88	ppb	98
44)	1,1,1-Trichloroethane	7.470	97	135890	9.52	ppb	96
45)	1,1-Dichloropropene	7.693	75	122787	9.23	ppb	98
46)	n-Butanol	8.665	56	93910	464.03	ppb	96
47)	Cyclohexane	7.561	84	235153	18.71	ppb	94
48)	Carbon tetrachloride	7.683	117	108759	9.88	ppb	97
49)	Benzene	7.946	78	358596	9.29	ppb	98
50)	Tert-amyl methyl ether	8.138	87	51662	9.66	ppb	# 91
51)	Dibromomethane	9.131	93	51002	9.29	ppb	87
52)	1,2-Dichloropropane	9.039	63	101697	9.19	ppb	# 93
53)	Trichloroethene	8.756	95	93072	9.53	ppb	92
54)	Bromodichloromethane	9.323	83	124791	9.98	ppb	99
55)	1,4-Dioxane	9.120	88	12791	182.83	ppb	90
56)	Methyl methacrylate	9.120	69	50856	9.60	ppb	94
57)	Methyl cyclohexane	9.009	83	127225	9.71	ppb	97
58)	Chloroacetonitrile	0.000		0	N.D.	d	
59)	2-Chloroethyl vinyl ether	9.617	63	44871	9.22	ppb	98
60)	cis-1,3-Dichloropropene	9.769	75	148052	9.70	ppb	95
62)	4-Methyl-2-pentanone	9.900	100	36242	36.59	ppb	94
63)	trans-1,3-Dichloropropene	10.315	75	127796	9.14	ppb	99
64)	1,1,2-Trichloroethane	10.498	83	65390	8.72	ppb	99
66)	Toluene	10.093	92	214725	8.94	ppb	98
67)	1,3-Dichloropropane	10.650	76	126420	8.42	ppb	97
68)	Ethyl methacrylate	10.366	69	101770	8.89	ppb	# 97
69)	2-Hexanone	10.680	58	108645	34.73	ppb	99
70)	Dibromochloromethane	10.852	129	91296	10.32	ppb	92
71)	1,2-Dibromoethane	10.953	107	73415	9.12	ppb	# 93
72)	Tetrachloroethene	10.579	164	74224	9.56	ppb	96
73)	1,1,1,2-Tetrachloroethane	11.470	131	88321	9.55	ppb	100
74)	Chlorobenzene	11.389	112	235575	9.04	ppb	92
75)	1-Chlorohexane	11.358	91	101332	8.67	ppb	95
76)	Ethylbenzene	11.470	91	384521	8.86	ppb	97
77)	m+p-Xylene	11.581	106	286782	18.24	ppb	95
78)	Bromoform	12.098	173	54645	10.91	ppb	97
79)	Styrene	11.925	104	247649	9.38	ppb	95
80)	o-Xylene	11.905	106	146697	9.18	ppb	99
81)	Isopropylbenzene	12.219	105	332192	9.21	ppb	99
84)	1,1,2,2-Tetrachloroethane	12.462	83	85653	8.68	ppb	96
85)	trans-1,4-Dichloro-2-b...	12.492	53	21399	8.66	ppb	84
86)	Bromobenzene	12.492	156	102425	9.42	ppb	91
87)	1,2,3-Trichloropropane	12.523	110	26656	9.59	ppb	# 57
88)	n-Propylbenzene	12.563	91	402321	8.77	ppb	94
89)	2-Chlorotoluene	12.644	126	87274	9.10	ppb	88
90)	4-Chlorotoluene	12.746	126	87706	9.21	ppb	90
91)	1,3,5-Trimethylbenzene	12.705	105	278173	9.03	ppb	97
92)	tert-Butylbenzene	12.968	134	57780	9.43	ppb	91
93)	1,2,4-Trimethylbenzene	13.019	105	273069	9.04	ppb	93
94)	sec-Butylbenzene	13.151	105	320494	9.01	ppb	94
95)	1,3-Dichlorobenzene	13.262	146	170129	9.09	ppb	96
96)	1,4-Dichlorobenzene	13.343	146	161064	8.84	ppb	95
97)	p-Isopropyltoluene	13.272	119	261541	9.19	ppb	94
98)	1,2-Dichlorobenzene	13.637	146	157934	9.14	ppb	97
99)	n-Butylbenzene	13.596	91	236227	9.28	ppb	97
100)	1,2-Dibromo-3-chloropr...	14.265	75	12855	9.26	ppb	83
101)	Hexachloroethane	13.870	201	43023	10.78	ppb	91

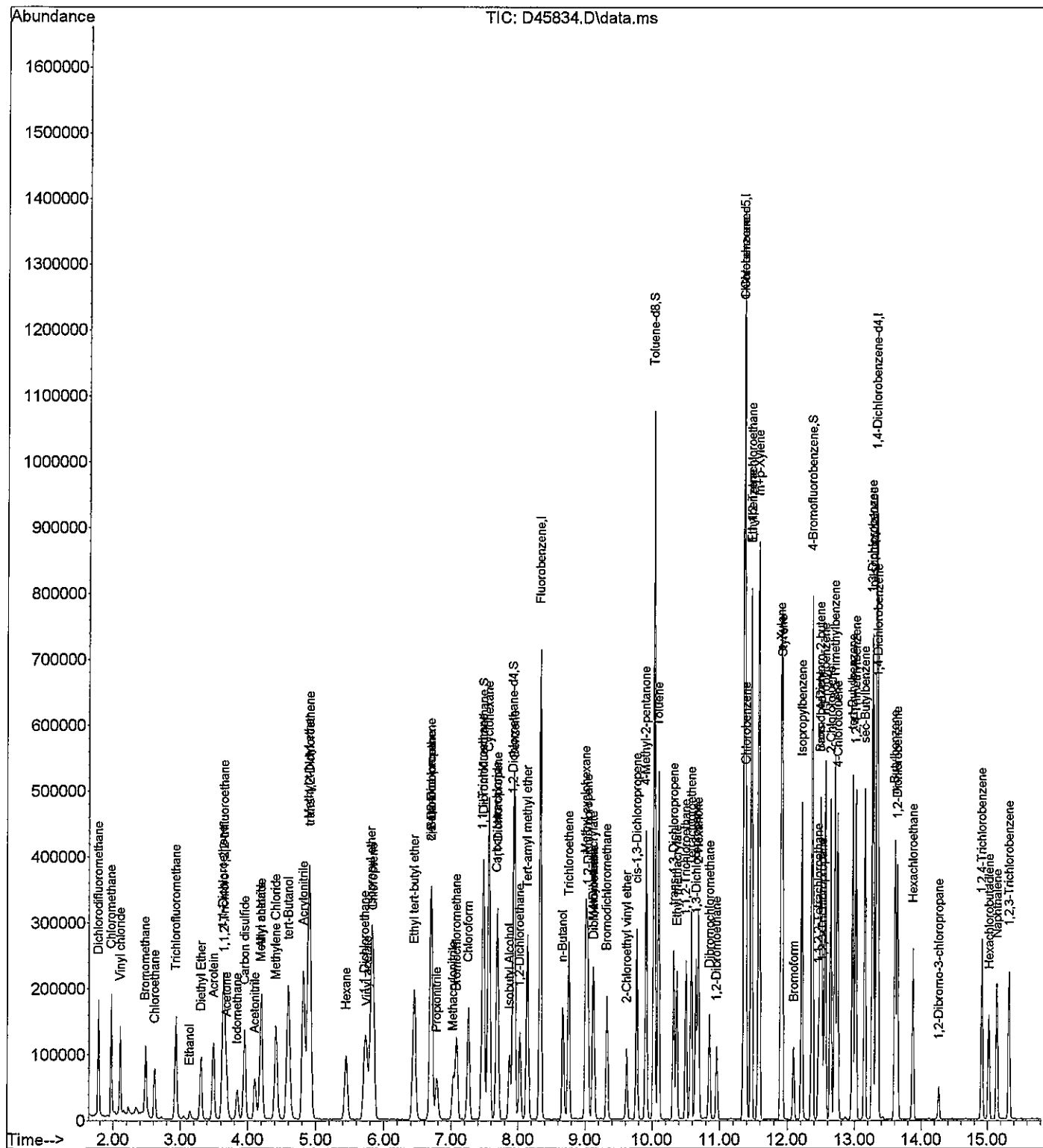
Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45834.D  
Acq On : 17 Dec 2013 12:18  
Operator : sdw-sop525r16  
Sample : VL131217-4CCS  
Misc : 10ml UN-htd purge water - CCV/LCS  
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Dec 17 12:35:09 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Fri Oct 25 14:24:27 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.913	180	89539	9.71	ppb	97
103) Naphthalene	15.146	128	181096	9.60	ppb	97
104) Hexachlorobutadiene	15.024	225	36670	9.31	ppb	89
105) 1,2,3-Trichlorobenzene	15.328	180	78175	9.85	ppb	94

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

Quant Time: Dec 17 12:35:09 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Fri Oct 25 14:24:27 2013  
Response via : Initial Calibration



Data Path : C:\msdchem\1\DATA\2013\121713\  
 Data File : D45835.D  
 Acq On : 17 Dec 2013 12:42  
 Operator : sdw-sop525r16  
 Sample : VL131217-4LCSD  
 Misc : 10ml UN-htd purge water  
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 17 13:17:31 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Fri Oct 25 14:24:27 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
-----						
Internal Standards						
1) Fluorobenzene	8.331	96	692110	25.00	ppb	0.00
61) Chlorobenzene-d5	11.358	117	523369	25.00	ppb	0.00
82) 1,4-Dichlorobenzene-d4	13.323	152	245839	25.00	ppb	-0.01
System Monitoring Compounds						
38) Dibromofluoromethane	7.480	113	202330	26.82	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	107.28%	
42) 1,2-Dichloroethane-d4	7.926	67	109340	24.18	ppb	-0.01
Spiked Amount 25.000	Range 85	- 115	Recovery	=	96.72%	
65) Toluene-d8	10.022	98	705114	24.16	ppb	-0.01
Spiked Amount 25.000	Range 85	- 115	Recovery	=	96.64%	
83) 4-Bromofluorobenzene	12.371	176	216178	26.47	ppb	0.00
Spiked Amount 25.000	Range 85	- 115	Recovery	=	105.88%	
Target Compounds						
						Qvalue
2) Dichlorodifluoromethane	1.779	85	105051	8.35	ppb	99
3) Chloromethane	1.971	50	117754	9.20	ppb	98
4) Vinyl chloride	2.103	62	103189	9.61	ppb	98
5) Bromomethane	2.478	96	56676	7.91	ppb	90
6) Chloroethane	2.619	64	62936	9.00	ppb	94
7) Ethanol	3.136	45	16333	164.53	ppb	99
8) Acrolein	3.490	56	126040	89.98	ppb	98
9) Acetonitrile	4.108	41	87013	84.01	ppb	98
10) Trichlorofluoromethane	2.933	101	134160	9.60	ppb	96
11) Acetone	3.683	58	22900	36.50	ppb	91
12) Diethyl Ether	3.308	74	43049	9.19	ppb	95
13) tert-Butanol	4.594	59	382491	480.63	ppb	97
14) 1,1-Dichloroethene	3.632	96	68927	8.71	ppb	88
15) Acrylonitrile	4.817	53	279668	94.68	ppb	99
16) Iodomethane	3.845	142	72587	9.07	ppb	98
17) Methylene Chloride	4.412	84	88111	8.63	ppb	93
18) Methyl acetate	4.189	74	13413	10.83	ppb	# 91
19) Allyl chloride	4.199	76	46318	9.08	ppb	89
20) 1,1,2-Trichloro-1,2,2-...	3.652	101	73387	8.69	ppb	95
21) Carbon disulfide	3.956	76	244325	8.49	ppb	98
22) trans-1,2-Dichloroethene	4.908	96	80528	8.95	ppb	98
23) Methyl-t-butyl ether	4.898	73	450374	19.02	ppb	98
24) Hexane	5.445	57	67359	9.21	ppb	89
25) 1,1-Dichloroethane	5.718	63	163186	8.64	ppb	95
26) Propionitrile	6.781	54	96888	89.62	ppb	97
27) Vinyl acetate	5.759	43	176182	8.61	ppb	96
28) Chloroprene	5.840	53	140141	8.79	ppb	95
29) 2-Butanone	6.690	72	30023	36.86	ppb	97
30) Isopropyl ether	5.809	45	327256	8.66	ppb	98
31) Methacrylonitrile	7.034	41	50533	8.92	ppb	92
32) cis-1,2-Dichloroethene	6.700	96	95925	9.27	ppb	91
33) Methyl Acrylate	0.000		0	N.D.		
34) Bromochloromethane	7.085	128	43952	9.80	ppb	84
35) Chloroform	7.257	83	161771	9.12	ppb	97
36) 2,2-Dichloropropane	6.700	77	113762	8.69	ppb	96
37) Ethyl tert-butyl ether	6.447	59	271834	9.34	ppb	97
39) Pentafluorobenzene	0.000		0	N.D.		
40) 1-Chlorobutane	0.000		0	N.D.	d	
41) Isobutyl Alcohol	7.875	43	77883	181.84	ppb	94

Data Path : C:\msdchem\1\DATA\2013\121713\  
 Data File : D45835.D  
 Acq On : 17 Dec 2013 12:42  
 Operator : sdw-sop525r16  
 Sample : VL131217-4LCSD  
 Misc : 10ml UN-htd purge water  
 ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 17 13:17:31 2013  
 Quant Method : C:\msdchem\1\METHODS\092313W.M  
 Quant Title :  
 QLast Update : Fri Oct 25 14:24:27 2013  
 Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev (Min)
43) 1,2-Dichloroethane	8.027	62	116972	8.93	ppb	98
44) 1,1,1-Trichloroethane	7.470	97	133268	9.24	ppb	96
45) 1,1-Dichloropropene	7.693	75	118893	8.84	ppb	98
46) n-Butanol	8.675	56	99967	488.95	ppb	87
47) Cyclohexane	7.561	84	223354	17.59	ppb	96
48) Carbon tetrachloride	7.683	117	106587	9.58	ppb	91
49) Benzene	7.946	78	348965	8.95	ppb	97
50) Tert-amyl methyl ether	8.138	87	54820	10.15	ppb	# 90
51) Dibromomethane	9.131	93	51245	9.24	ppb	84
52) 1,2-Dichloropropane	9.039	63	98506	8.81	ppb	# 95
53) Trichloroethene	8.756	95	91334	9.25	ppb	95
54) Bromodichloromethane	9.323	83	119963	9.50	ppb	97
55) 1,4-Dioxane	9.120	88	12873	182.14	ppb	94
56) Methyl methacrylate	9.110	69	52263	9.76	ppb	97
57) Methyl cyclohexane	9.009	83	120904	9.13	ppb	96
58) Chloroacetonitrile	0.000		0	N.D.	d	
59) 2-Chloroethyl vinyl ether	9.617	63	45283	9.21	ppb	96
60) cis-1,3-Dichloropropene	9.769	75	149997	9.73	ppb	94
62) 4-Methyl-2-pentanone	9.910	100	37543	38.02	ppb	63
63) trans-1,3-Dichloropropene	10.315	75	127892	9.18	ppb	99
64) 1,1,2-Trichloroethane	10.498	83	64418	8.61	ppb	96
66) Toluene	10.093	92	208031	8.69	ppb	98
67) 1,3-Dichloropropane	10.650	76	130998	8.76	ppb	98
68) Ethyl methacrylate	10.366	69	103462	9.07	ppb	97
69) 2-Hexanone	10.680	58	111217	35.67	ppb	99
70) Dibromochloromethane	10.852	129	89706	10.17	ppb	95
71) 1,2-Dibromoethane	10.953	107	73463	9.16	ppb	# 99
72) Tetrachloroethene	10.579	164	73396	9.48	ppb	94
73) 1,1,1,2-Tetrachloroethane	11.470	131	88719	9.62	ppb	94
74) Chlorobenzene	11.389	112	234324	9.02	ppb	92
75) 1-Chlorohexane	11.358	91	98282	8.44	ppb	97
76) Ethylbenzene	11.470	91	384053	8.87	ppb	97
77) m+p-Xylene	11.581	106	280558	17.90	ppb	94
78) Bromoform	12.098	173	55200	11.05	ppb	99
79) Styrene	11.925	104	242163	9.20	ppb	96
80) o-Xylene	11.905	106	140232	8.80	ppb	96
81) Isopropylbenzene	12.219	105	316064	8.79	ppb	99
84) 1,1,2,2-Tetrachloroethane	12.462	83	86344	8.79	ppb	99
85) trans-1,4-Dichloro-2-b...	12.493	53	22502	9.15	ppb	82
86) Bromobenzene	12.493	156	99847	9.22	ppb	87
87) 1,2,3-Trichloropropane	12.523	110	24160	8.74	ppb	# 78
88) n-Propylbenzene	12.563	91	392249	8.59	ppb	96
89) 2-Chlorotoluene	12.644	126	87846	9.21	ppb	90
90) 4-Chlorotoluene	12.746	126	87170	9.20	ppb	86
91) 1,3,5-Trimethylbenzene	12.705	105	271039	8.84	ppb	96
92) tert-Butylbenzene	12.968	134	53664	8.80	ppb	85
93) 1,2,4-Trimethylbenzene	13.019	105	271089	9.01	ppb	92
94) sec-Butylbenzene	13.151	105	322810	9.12	ppb	96
95) 1,3-Dichlorobenzene	13.262	146	167348	8.99	ppb	96
96) 1,4-Dichlorobenzene	13.343	146	163353	9.01	ppb	95
97) p-Isopropyltoluene	13.272	119	258594	9.13	ppb	96
98) 1,2-Dichlorobenzene	13.637	146	153542	8.92	ppb	94
99) n-Butylbenzene	13.596	91	229261	9.05	ppb	97
100) 1,2-Dibromo-3-chloropr...	14.265	75	12486	9.04	ppb	85
101) Hexachloroethane	13.870	201	43203	10.87	ppb	90

Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45835.D  
Acq On : 17 Dec 2013 12:42  
Operator : sdw-sop525r16  
Sample : VL131217-4LCSD  
Misc : 10ml UN-htd purge water  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 17 13:17:31 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Fri Oct 25 14:24:27 2013  
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
102) 1,2,4-Trichlorobenzene	14.913	180	87849	9.57	ppb	95
103) Naphthalene	15.146	128	183819	9.79	ppb	98
104) Hexachlorobutadiene	15.024	225	37751	9.63	ppb	96
105) 1,2,3-Trichlorobenzene	15.328	180	78676	9.96	ppb	94

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



Data Path : C:\msdchem\1\DATA\2013\121713\  
Data File : D45835.D  
Acq On : 17 Dec 2013 12:42  
Operator : sdw-sop525r16  
Sample : VL131217-4LCSD  
Misc : 10ml UN-htd purge water  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Dec 17 13:17:31 2013  
Quant Method : C:\msdchem\1\METHODS\092313W.M  
Quant Title :  
QLast Update : Fri Oct 25 14:24:27 2013  
Response via : Initial Calibration

